


# INLINE

COMMERCIAL CONSTRUCTION INC.

## HIGHLAND PARK MS

26 00 00

## Electrical Submittal Package

SHOP DRAWINGS AND PRODUCT DATA	
<input checked="" type="checkbox"/> REVIEWED	<b>INLINE</b> COMMERCIAL CONSTRUCTION INC. 503-642-5117 OR CCB #51888
<input type="checkbox"/> REVIEWED AS NOTED	
<input type="checkbox"/> REVISE AND RESUBMIT	
<p>Reviewed only for general conformance with the design concept of the Project and general compliance with the information given in the Contract Documents. The review does not affect the Subcontractor's responsibility to perform all contract requirements with no change in contract price or time. Any actions shown are subject to the requirements of the plans and specifications. Subcontractor is responsible to confirm and correlate dimensions on the site for information that pertains solely to the fabrication processes for the means, methods, techniques, procedures, sequences and quantities necessary to complete the contract and for coordination of the work with all trades and the satisfactory performance of work. Any review is undertaken solely to satisfy Contractor's obligations, if any, to the Owner and shall not give rise to any claim by Subcontractor or other parties against Contractor, Architect or Owner.</p>	
Date <b>03/04/20</b>	Job # <b>8796-19</b>
Signed  Charles Lottridge	Submittal # <b>260000-01</b>

### NO EXCEPTION TAKEN

CHECKING IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. ANY ACTION SHOWN IS SUBJECT TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR: DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOB SITE; FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATION OF THEIR WORK WITH THAT OF ALL OTHER TRADES AND THE SATISFACTORY PERFORMANCE OF HIS WORK.

**MFIA, INC.**  
**CONSULTING ENGINEERS**  
**2007 S.E. ASH STREET**  
**PORTLAND, OR 97214**

DATE: 3.13.2020 BY: R CONNELL

# Highland Park Middle School

## Electrical Equipment Submittals

Date Submitted: 03/04/2020

IES Submittal # 01

(Sect 26 05 19) Electrical Power Conductors and Cables

IES Commercial  
16135 SW 74th Ave  
Tigard, OR 97224

Ph: (503) 648-1900

Project Manager - xxx





- No pulling lube required
- Sequential footage markings  
—1 AWG and larger
- Max Print® for easy ID

#### APPLICATIONS

- 600 volt building wire for use in commercial and industrial applications as specified in the NEC®
- 8-1 AWG is marked VW-1
- 1/0—750 MCM rated for CT use
- 1 AWG –750 MCM in black; Rated sunlight resistant
- Pulling lube is not required

#### CONDUCTORS

- Uncoated copper per ASTM-B3, ASTM-B787 (6 AWG-500 MCM) & ASTM-B8 (600 MCM-750 MCM)

#### INSULATION

- Color coded, heat and moisture resistant PVC (polyvinyl chloride)

#### JACKET

- Nylon (polyamide), color coded

#### INDUSTRY STANDARDS

- UL 83: File No. E15119
- UL 1063 (MTW): File No. E85964
- AWM: File No. E11829
- Canadian Standard C22.2 No. 75 and CSA Bulletin No. 1451
- ASTM: B3, B8, B787
- WC70/ICEA S-95-658
- Federal Specification A-A-59544
- NFPA70: National Electrical Code®

#### SURFACE PRINT

- Sample: CERRO WIRE VINYLON-A 350 KCMIL (UL) MTW OR THWN-2 OR THHN OR GASOLINE AND OIL RESISTANT II OR AWM FOR CT USE SUNLIGHT RESISTANT 600V—C(UL) TWN75 OR T90 NYLON

Product Code	Conductors		Covering		Approx O.D. Inches	Allowable Ampacities*			Approx Net Wt. lbs./m ft.
	AWG Size	No. of Strands	PVC Ins. Mils.	Nylon Jkt. Mils.		60°C **	75°C ***	90°C ****	
112-40XX	8+	19	30	5	0.217	40	50	55	63
112-42XX	6+	19	30	5	0.253	55	65	75	96
112-44XX	4+	19	40	6	0.322	70	85	95	153
112-45XX	3+	19	40	6	0.350	85	100	110	190
112-46XX	2+	19	50	7	0.380	95	115	130	233
112-47XX	1	19	50	7	0.440	110	130	150	299
112-50XX	1/0	19	50	7	0.480	125	150	170	371
112-52XX	2/0	19	50	7	0.524	145	175	195	459
112-54XX	3/0	19	50	7	0.575	165	200	225	571
112-56XX	4/0	19	50	7	0.630	195	230	260	710
112-60XX	250	37	60	8	0.700	215	255	290	848
112-64XX	300	37	60	8	0.750	240	285	320	1006
112-68XX	350	37	60	8	0.802	260	310	350	1166
112-72XX	400	37	60	8	0.847	280	335	380	1324
112-80XX	500	37	60	8	0.930	320	380	430	1640
112-84XX	600	61	70	9	1.030	355	420	475	1988
112-88XX	750	61	70	9	1.136	400	475	535	2459

+ Available in green only

XX Color Add Code (see chart)

\* Per Table 310-16 NEC®

\*\* For termination to equipment for circuits rated 100 amperes or less, or marked for size 14 through 1 AWG conductors. Also for MTW used in wet locations or exposed to oil or coolant.

\*\*\* For termination to equipment for circuits rated over 100 amperes or marked for conductors larger than 1 AWG. Also for THWN-2 exposed to oil or coolant and MTW in dry locations.

\*\*\*\* For THHN used in dry locations and THWN-2 used in wet or dry locations. For ampacity derating purposes.



- **No pulling lube required**
- Sequential footage markings  
- 1 AWG and larger
- Max Print® for easy ID

## APPLICATIONS

- 600 volt building wire for use in commercial and industrial applications as specified in the NEC®
- 8-1 AWG is marked VW-1
- 1/0—750 MCM rated for CT use
- 1 AWG –750 MCM in black; Rated sunlight resistant
- Pulling lube is not required

## CONDUCTORS

- Uncoated copper per ASTM-B3, ASTM-B787 (6 AWG-500 MCM) & ASTM-B8 (600 MCM-750 MCM)

## INSULATION

- Color coded, heat and moisture resistant PVC (polyvinyl chloride)

## JACKET

- Nylon (polyamide), color coded

## INDUSTRY STANDARDS

- UL 83: File No. E15119
- UL 1063 (MTW): File No. E85964
- AWM: File No. E11829
- Canadian Standard C22.2 No. 75 and CSA Bulletin No. 1451
- ASTM: B3, B8, B787
- WC70/ICEA S-95-658
- Federal Specification A-A-59544
- NFPA70: National Electrical Code®

## SURFACE PRINT

- Sample: CERRO WIRE VINYLON-A 350 KCMIL (UL) MTW OR THWN-2 OR THHN OR GASOLINE AND OIL RESISTANT II OR AWM FOR CT USE SUNLIGHT RESISTANT 600V—C(UL) TWN75 OR T90 NYLON

### Color Available (Product Code 6th and 7th Digits)

Size	Black 01	White 02	Red 03	Blue 04	Green 05	Orange 06	Yellow 07	Brown 08	Grey 10
8 AWG					X <sup>4</sup>				
6 AWG					X <sup>4</sup>				
4 AWG					X <sup>5</sup>				
3 AWG					X <sup>1</sup>				
2 AWG					X <sup>5</sup>				
1 AWG	X <sup>0</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
1/0 AWG	X <sup>0</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
2/0 AWG	X <sup>0</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
3/0 AWG	X <sup>0</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
4/0 AWG	X <sup>0</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
250 MCM	X <sup>0</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
300 MCM	X <sup>0</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
350 MCM	X <sup>0</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
400 MCM	X <sup>0</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>
500 MCM	X <sup>0</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>
600 MCM	X <sup>0</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>
750 MCM	X <sup>0</sup>								

0 Only black 8 AWG and larger rated sunlight resistant

1 Only available in 5000' reels

2 Only available in 2500' reels

3 Only available in 2000' reels

4 Only available in 500', 1000', 2500', 5000' reels

5 Only available in 500', 1000', 5000' reels

Package Code	J	K	L	R	M	Q	04	P	08	09	11	12	14	15
Size	500' reel	1000' reel	1500' reel	2000' reel	2500' reel	4000' reel	4500' reel	5000' reel	8000' reel	9000' reel	11000' reel	12000' reel	14000' reel	15000' reel
8 AWG	X <sup>3</sup>	X <sup>3</sup>			X <sup>3</sup>			X <sup>3</sup>						
6 AWG	X <sup>3</sup>	X <sup>3</sup>			X <sup>3</sup>			X <sup>3</sup>						
4 AWG	X <sup>3</sup>	X <sup>3</sup>						X <sup>3</sup>						
3 AWG								X <sup>3</sup>						
2 AWG	X <sup>3</sup>	X <sup>3</sup>						X <sup>3</sup>						
1 AWG	X <sup>1</sup>	X <sup>1</sup>			X <sup>1</sup>			X <sup>2</sup>						X <sup>1</sup>
1/0 AWG	X <sup>1</sup>	X <sup>1</sup>			X <sup>1</sup>			X <sup>2</sup>		X <sup>1</sup>		X <sup>1</sup>		
2/0 AWG	X <sup>1</sup>	X <sup>1</sup>			X <sup>1</sup>			X <sup>2</sup>	X <sup>1</sup>				X <sup>1</sup>	
3/0 AWG	X <sup>1</sup>	X <sup>1</sup>			X <sup>1</sup>			X <sup>2</sup>			X <sup>1</sup>			
4/0 AWG	X <sup>1</sup>	X <sup>1</sup>			X <sup>1</sup>			X <sup>2</sup>		X <sup>1</sup>				
250 MCM	X <sup>1</sup>	X <sup>1</sup>			X <sup>2</sup>			X <sup>1</sup>						
300 MCM	X <sup>1</sup>	X <sup>1</sup>			X <sup>2</sup>		X <sup>1</sup>							
350 MCM	X <sup>1</sup>	X <sup>1</sup>			X <sup>2</sup>			X <sup>1</sup>						
400 MCM	X <sup>1</sup>	X <sup>1</sup>		X <sup>2</sup>		X <sup>1</sup>								
500 MCM	X <sup>1</sup>	X <sup>1</sup>		X	X <sup>2</sup>	X <sup>1</sup>								
600 MCM	X <sup>1</sup>	X <sup>1</sup>		X <sup>2</sup>										
750 MCM	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>											

1 Available in black only

2 Available in all colors except purple and pink

3 Available in green only



# TYPE THHN / MTW / THWN-2 / T90 - COPPER CONDUCTOR - SUPERSLICK ELITE - 600V

## ENGINEERING SPECIFICATIONS

### Standards

Underwriters Laboratories Standards UL-83, UL-1063, UL-1581, UL-2556; AWM Spec 1316, 1317, 1318, 1319, 1320, 1321; ASTM Stranding Class B3, B8, B787; Federal Specification A-A-59544; American National Standards Institute; Canadian Standards Association C22.2 No. 75; NEMA WC70/ICEA S-95-658; UL 1685-FT4/IEEE 1202 (70,000 Btu/hr) Flame Test (1/0 AWG and larger); New York State DOS-16120-87-1222-1048; ICEA T-29-520 (210,000 Btu/hr) Flame Test; NFPA 70 (NEC®) Article 310; ARRA 2009 Section 1605 "Buy American" Compliant; RoHS Compliant; MasterSpec Division 26 Sections 260519, 260523; UL Listing #E-123774, #E-156878, #E-156879



Listed E-123774  
Listed E-156878  
Listed E-156879



## CONSTRUCTION

### Conductors

Solid, uncoated copper conductors per ASTM-B3; Stranded, uncoated copper conductors per ASTM-B3, ASTM-B8 and ASTM-B787

### Insulation

Color-coded Polyvinyl Chloride (PVC), heat and moisture-resistant, flame retardant compound per UL-83 and UL-1063

### Jacket

A tough, polyamide, Nylon outer covering per UL-83 and UL-1063

## APPLICATIONS

Type THHN/THWN-2 building wire is intended for general purpose applications as defined by the National Electrical Code (NEC). Type THHN/THWN-2 is permitted for new construction or rewiring for 600-volt applications. For applications requiring Type THHN or THWN-2, the conductor is appropriate for use in wet or dry locations at temperatures not to exceed 90°C or not to exceed 75°C in oil or coolants. For applications requiring Type MTW, the conductor is appropriate for use in dry locations at 90°C, or not to exceed 60°C in wet locations or where exposed to oils or coolants.

## FEATURES

A great alternative to eliminate the need for lube. Slick Nylon outer jacket for easy pulling. SuperSlick Elite is available in sizes 14 AWG through 1000 KCMIL. All sizes rated gasoline and oil resistant II. On 250 KCMIL and larger, sequential footage markings located every foot for easy measuring. For 1 AWG through 4/0 AWG sequential foot markings located on master reels only unless otherwise specified. 6 AWG and larger Sunlight Resistant in all colors. For 1/0 AWG and larger conductors are rated for cable tray use and comply with IEEE 1202/FT4 (70,000 Btu/hr.) flame test and ICEA T-29-20 (210,000 Btu/hr.) flame test.



- 1 SuperSlick Elite<sup>®</sup> Nylon Jacket
- 2 PVC Insulation
- 3 Stranded Copper Conductor

Size (AWG or KCMIL)	No. of Strands	Cross Sect. Area (mm <sup>2</sup> )	PVC Insulation Thickness (Conductor)		Nylon Jacket Thickness		Outside Diameter		Approximate Net Weight		Allowable Ampacity (Amps) <sup>2</sup>			Standard Packaging (ft)
			(mm)	(in)	(mm)	(in)	(mm)	(in)	(kg/km)	(lbs/1000 ft)	60°C	75°C	90°C	
14 <sup>3</sup>	19	6.258	0.380	0.015	0.100	0.004	2.77	0.109	25	16	15	20	25	2000' carton (4 x 500'), 2500' Reels
12 <sup>3</sup>	19	8.581	0.380	0.015	0.100	0.004	3.23	0.127	36	23	20	25	30	2000' carton (4 x 500'), 2500' Reels
10 <sup>3</sup>	19	13.62	0.510	0.015	0.100	0.004	4.07	0.160	57	38	30	35	40	100' carton, 2500' Reels
8	19	23.61	0.760	0.030	0.130	0.005	5.39	0.212	94	62	40	50	55	500' 1000' 2500' 5000' Reels
6	19	32.71	0.760	0.030	0.130	0.005	6.30	0.248	141	94	55	65	75	500' 1000' 2500' 5000' Reels
4	19	53.16	1.020	0.040	0.150	0.006	8.06	0.317	228	153	70	85	95	500' 1000' 2500' 5000' 20,000' Reels
3	19	62.77	1.020	0.040	0.150	0.006	8.74	0.344	281	189	85	100	115	500' 1000' 2500' 5000' 15,000' Reels
2	19	74.71	1.020	0.040	0.150	0.006	9.53	0.375	348	233	95	115	130	500' 1000' 2500' 5000' 14,000' Reels
1	19	100.80	1.270	0.050	0.180	0.007	11.05	0.435	445	298	110	130	145	500' 1000' 2500' 5000' 22,000' Reels
1/0	19	119.70	1.270	0.050	0.180	0.007	12.04	0.474	554	372	125	150	170	500' 1000' 2500' 5000' 16,000' Reels
2/0	19	143.40	1.270	0.050	0.180	0.007	13.16	0.518	687	462	145	175	195	500' 1000' 2500' 5000' 14,000' Reels
3/0	19	172.80	1.270	0.050	0.180	0.007	14.43	0.568	851	572	165	200	225	500' 1000' 2500' 5000' 12,000' Reels
4/0	19	208.80	1.270	0.050	0.180	0.007	15.85	0.624	1059	712	195	230	260	500' 1000' 2500' 5000' 9000' Reels
250	37	256.10	1.520	0.060	0.200	0.008	17.23	0.678	1266	849	215	255	290	500' 1000' 2500' 4000' 8500' Reels
300	37	297.30	1.524	0.060	0.203	0.008	18.54	0.730	1503	1010	240	285	320	500' 1000' 3500' 7000' Reels
350	37	338.20	1.520	0.060	0.200	0.008	19.74	0.777	1741	1170	260	310	350	500' 1000' 3000' 6000' Reels
400	37	378.30	1.524	0.060	0.203	0.008	20.85	0.821	1979	1330	280	335	380	500' 1000' 3000' 5000' Reels
500	37	456.30	1.520	0.060	0.200	0.008	22.91	0.902	2455	1650	320	380	430	500' 1000' 2500' 4000' Reels
600	61	559.70	1.778	0.070	0.229	0.009	26.70	1.051	3004	2019	350	420	475	500' 1000' 2000' 3000' Reels
750	61	677.20	1.778	0.070	0.229	0.009	29.36	1.156	3670	2466	400	475	535	500' 1000' 1500' 2500' Reels
1000	61	869.50	1.778	0.070	0.229	0.009	33.27	1.310	4851	3260	455	545	615	500' 1000' Reels

<sup>1</sup> SuperSlick Elite manufactured under Patent No. 8,658,576

<sup>2</sup> Ampacity of conductors are based on NFPA 70 (NEC) Table 310.15(B)(16). See 110.14(C), 240.4(D) and 310.15(B) for other limitations where applicable.

<sup>3</sup> 14 AWG - 10 AWG: Available in solid conductors.

### PRINT LEGEND:

14 AWG THROUGH 8 AWG: ENCORE"WIRE"CORP"(SIZE)"TYPE"MTW"OR"THHN"OR"THWN-2"GR2"WV-1"600V"(UL)"OR"AWM"OR"CUL"TYPE"T90"NYLON"OR"TWN"75 SUPERSLICK ELITE

6 AWG THROUGH 1 AWG: ENCORE"WIRE"CORP"(SIZE)"TYPE"MTW"OR"THHN"OR"THWN-2"GR2"SUN-RES"WV-1"600V"(UL)"OR"AWM"OR"CUL"TYPE"T90"NYLON"OR"TWN"75"DATE"TIME"OPERATOR"QC SUPERSLICK ELITE

1/0 AWG THROUGH 1000 KCMIL: ENCORE"WIRE"CORP"(SIZE)"TYPE"MTW"OR"THHN"OR"THWN-2"GR2"SUN-RES"WV-1"FT4"IEEE"1202"600V"FOR"CT"USE"(UL)"OR"CUL"TYPE"T90"NYLON"OR"TWN"75"DATE"TIME"OPERATOR"QC SUPERSLICK ELITE

**PACKAGING:** Available in Encore's Cyclone Barrel Packs, Reel Payoff and Reel Deal.

# SIMpull THHN® Cable

**600 Volts. Copper Conductor  
Thermoplastic Insulation/SIM Nylon Sheath  
Heat, Moisture, Gasoline, and Oil Resistant 1  
Also Rated MTW and THWN-2  
SIM Technology® for easier pulling**



## APPLICATIONS

Southwire SIMpull THHN® or THWN-2 conductors are primarily used in conduit and cable trays for services, feeders, and branch circuits in commercial or industrial applications as specified in the National Electrical Code<sup>2</sup>. When used as Type THHN, or T90 Nylon conductor is suitable for use in dry locations at temperatures not to exceed 90 °C. When used as Type THWN-2 or TWN75, conductor is suitable for use in wet or dry locations at temperatures not to exceed 90 °C or not to exceed 75 °C when exposed to oil or coolant. When used as Type MTW, conductor is suitable for use in wet locations or when exposed to oil or coolant at temperatures not to exceed 60 °C or dry locations at temperatures not to exceed 90 °C (with ampacity limited to that for 75 °C conductor temperature per NFPA 79). Voltage for all applications is 600 volts. This cable may be installed without the need for pulling lubricant.

## SPECIFICATIONS

Southwire SIMpull THHN® or THWN-2 or MTW (also AWM) meets or exceeds all applicable ASTM specifications, UL Standard 83, UL 1581, UL Standard 1063 (MTW), CSA, NOM-ANCE 90(D)C Federal Specification A-A-59544, and requirements of the National Electrical Code.

- VW-1 - Sizes 14 through 1 AWG
- CT - UL 1685, Sizes 1/0 AWG and larger for CT use.
- FT1 - Sizes through 500 kcmil
- T90 Nylon - Sizes through 500 kcmil
- TWN 75 - Sizes through 500 kcmil
- RoHS Compliant
- Sunlight Resistant - Colors available in sizes 2 AWG and larger

## CONSTRUCTION

Southwire SIMpull THHN® or THWN-2 or MTW copper conductors are annealed (soft) copper, compressed strand, insulated with a tough heat and moisture resistant polyvinyl chloride (PVC), over which a SIM (SLIKQWIK® Infused Membrane) nylon (polyamide) or UL-listed equal jacket is applied. Available in black, white, red, blue, green, yellow, brown, orange, and gray. Some colors standard, some subject to economic order quantity. Conductor sizes 2 AWG and larger listed and marked sunlight resistant in all colors.

<sup>1</sup> Oil and gasoline resistant II as defined by Underwriters Laboratories.

<sup>2</sup> 2008 Edition.



**Southwire**  
One Southwire Drive  
Carrollton, Ga. 30119 USA



**NoLube™**

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of Southwire Company

Conductor		Insulation Thickness (mils)	Jacket Thickness (mils)	Nominal O.D. (mils)	Approx. Net Weight Per 1000 ft. (lbs.)	Allowable Ampacities+			Standard Package
Size (AWG or kcmil)	Num. Strands					60 °C	75 °C	90 °C	
14**	19	15	4	109	16	15	15	15	DNF
12**	19	15	4	128	24	20	20	20	DNF
10**	19	20	4	161	38	30	30	30	DQF
8	19	30	5	213	63	40	50	55	F
6	19	30	5	249	95	55	65	75	E
4	19	40	6	318	152	70	85	95	C
3	19	40	6	346	189	85	100	110	BC
2	19	40	6	378	234	95	115	130	C
1	19	50	7	435	299	110	130	150	B
1/0	19	50	7	474	372	125	150	170	B
2/0	19	50	7	518	462	145	175	195	B
3/0	19	50	7	568	575	165	200	225	B
4/0	19	50	7	624	718	195	230	260	B
250	37	60	8	694	851	215	255	290	B
300	37	60	8	747	1012	240	285	320	B
350	37	60	8	797	1174	260	310	350	B
400	37	60	8	842	1334	280	335	380	B
500	37	60	8	926	1655	320	380	430	B
600	61	70	9	1024	1987	355	420	475	C
750	61	70	9	1126	2464	400	475	535	C
1000	61	70	9	1275	3254	455	545	615	C

\*\*Sizes 14 - 10 AWG not available with patented SIM Technology® No Lube® jacket.

Sizes 1 and larger available with patented SIM Technology®.

+ Allowable ampacities shown are for general uses as specified by the National Electrical Code, 2008 Edition, section 310.15 unless the equipment is marked for use at higher temperatures the conductor ampacity shall be limited to the following.

60 °C - When terminated to equipment for circuits rated 100 amperes or less or marked for size 14 through 1 AWG conductors. MTW wet locations or when exposed to oil or coolant.

75 °C - When terminated to equipment for circuits rated over 100 amperes or marked for conductors larger than size 1 AWG.

THWN-2 when exposed to oil or coolant. MTW dry locations.

90 °C - THHN dry locations. THWN-2 wet or dry locations. For ampacity derating purposes.

Sizes 8 AWG - 2 AWG are made in SIM green only.

STANDARD PACKAGE CODES:

B - 1000 ft. reel

C - 500 ft. reel

D - 2500 ft. spool

E - 1000 ft. spool

F - 500 ft. spool

N - 2000 ft. carton

Q - 350 ft. carton

# Highland Park Middle School

## Electrical Equipment Submittals

Date Submitted: 03/04/2020

IES Submittal # 02

(Sect 26 05 29) Hangers and Supports for Electrical Systems

IES Commercial  
16135 SW 74th Ave  
Tigard, OR 97224

Ph: (503) 648-1900

Project Manager - xxx

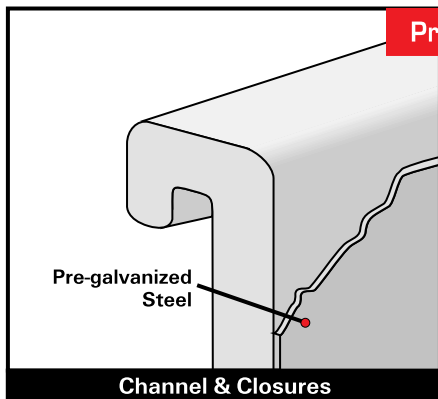




## **STRUT, BRACKETS & FITTINGS**

**Submittals Prepared by IES  
and Crescent Electric Supply**

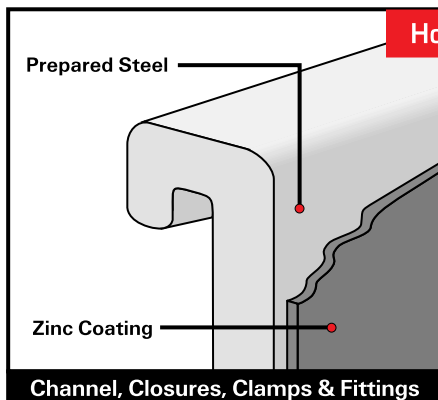




## Pregalvanized (PG)

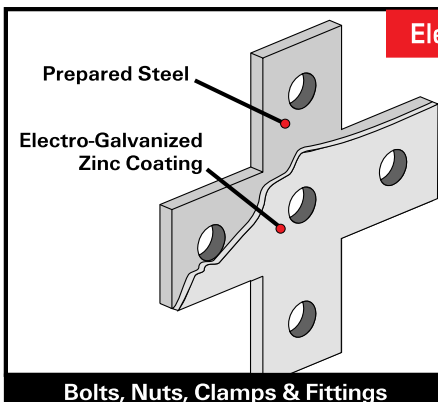
Material (steel strip) is coated with zinc by hot-dip process prior to roll-forming or press operations.

The zinc coating conforms to ASTM A653, Grade 90 General Requirement for Steel Sheet, Zinc-Coated (Galvanized) by Hot Dip Process.



## Hot-Dipped Galvanized (HG)

Material is coated with zinc after being roll-formed or after all manufacturing operations are completed, conforming to ASTM specification No. A123 or A153.

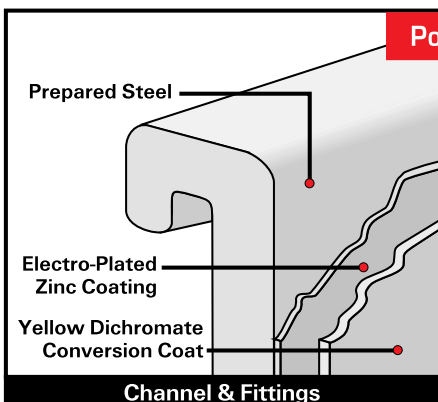


## Electro-Galvanized (EG)

Fittings and hardware are electrolytically coated with zinc to commercial standards (ASTM-B633 Type III C1).

SC1 (mild) has a Zinc coating of 0.2 and is recommended for dry indoor use. SC1 is the standard finish thickness.

SC3 (Severe) has a Zinc coating of 0.5 mill and is the standard finish thickness only on UL Listed raceway products.



## Power-Gold (ZD)

A Electro-galvanized zinc plate is applied with a cohesive molecular bond to the steel base metal, in compliance with the ASTM B633 standard. Yellow Dichromate is applied over the zinc and results in a gold appearance which acts as a nonporous barrier sealant.

SC1 (mild) has a Zinc coating of 0.2 and is recommended for dry indoor use. SC1 is the standard finish thickness

SC3 (Severe) has a Zinc coating of 0.5 mill and is the standard finish thickness only on UL Listed raceway products.

## ZINC COATING

Power-Strut products are available in four types of zinc coatings:

- Electroplated (EG)
- Pregalvanized (PG)
- Hot-Dipped Galvanized (HG)
- Yellow Dichromate (ZD)

Zinc coatings offer two types of protection:

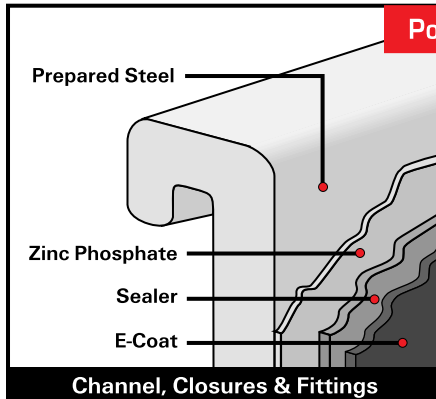
1. **Barrier:** The zinc coating protects the steel substrate from direct contact with the environment.
2. **Sacrificial:** The zinc coating will protect scratches, cut edges, etc. through an anodic sacrificial process.

The service life of zinc coating is directly related to the zinc coating thickness as shown below.

## COMPARISON OF ZINC GALVANIZED FINISHES

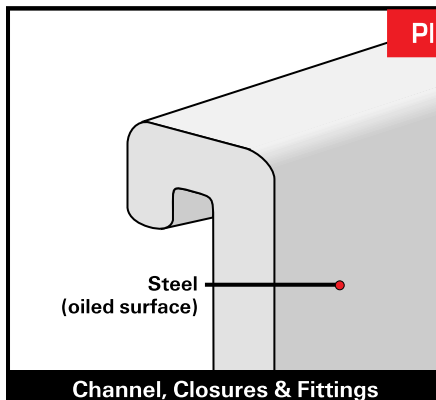
Finish	Zinc Thickness
Hot-Dipped Galvanized	2.6 MIL
Pregalvanized	0.75 MIL
Electro-Galvanized (SC1)	0.2 MIL
Electro-Galvanized (SC3)	0.5 MIL
Power-Gold (SC1)	0.2 MIL
Power-Gold (SC3)	0.5 MIL





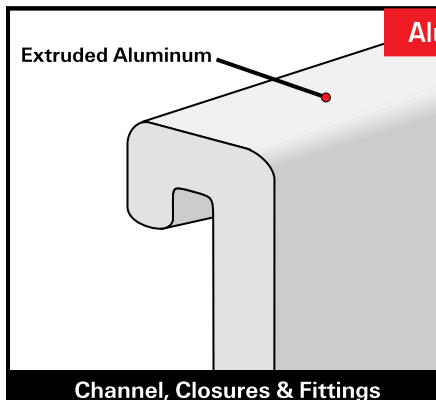
## Power-Green® (GR)

Channel and parts are cleaned and phosphated. Immediately afterward, a uniform coat of rust-inhibiting thermoset epoxy paint is applied by cathodic electro-deposition and thoroughly baked.



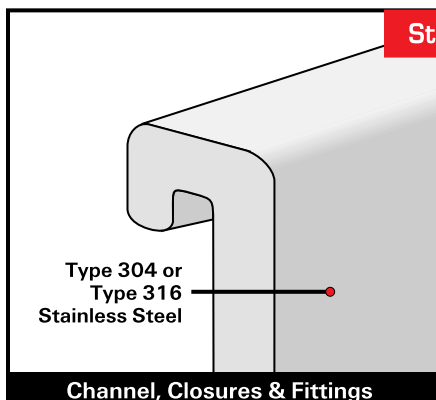
## Plain (PL)

Plain finish designation means that the channel retains the oiled surface applied to the raw steel during the rolling process. The fittings have the original oiled surface of the bar-stock material.



## Aluminum (AL)

Channel is extruded aluminum in accordance with ASTM B221 Type 6063-T6.



## Stainless Steel (SS)

Material in accordance with ASTM A240 (Type 304 or type 316).

## POWER-GREEN® TECHNICAL DATA

### STEEL SUBSTRATE PREPARATION

Eight stage continuous cleaning, rinse, zinc phosphate conversion coating and sealer.

### COATING

Thermoset epoxy

**Color:** Federal Highway Green  
Color Tolerance Chart  
PR Color No. 4.

**Hardness:** 2H+

**Coating Process:** Cathodic Electrodeposition.

### PERFORMANCE

**Salt Spray:**

**Scribed:** exceeds 400 hrs per ASTM B117. (1/8 Creep)

**Unscribed:** exceeds 600 hours per ASTM B117. (6% Red Rust)

### ENVIRONMENTAL ISSUES

Formulated as a "heavy metal"- free coating (trace elements only).

**Outgassing in service:** essentially none at 350°F for 24 hrs.

## Finishes (Ordering):

When ordering, add the finish to the part number.

Examples: PS 200-10 PG  
PS 200-10 ZD  
PS 200-10 GR  
PS 200-10 HG

## Materials:

### Channel\* & Closures – Pregalvanized

ASTM A653 Grade 33, Steel Sheet Zinc Coated by Hot Dip Process

### Channel\* – Plain, Painted or Hot Dip Galvanized

ASTM A-1011 Grade 33, Hot Rolled Carbon Steel Sheet and Strip, Structural Quality

### Channel\* – Stainless Steel

ASTM A-240, Type 304, Heat Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, Strip for Pressure Vessel

### Channel\* – Aluminum

ASTM B-221, Type 6063 T6, Aluminum Alloy Extruded Bar, Rod, Wire, Shape and Tube

### Closures – Plain, Painted or Hot Dip Galvanized

ASTM A1008, Steel, Strip, Carbon, Cold-Rolled

### Fittings\* – Steel

1/4" Nominal Thickness – ASTM A-575 and A576†

3/8" Nominal Thickness – A36 (Structural Steel)

### Fittings\* – Aluminum

ASTM B-209

### Accessories – Steel

Less than 1/4" Nominal Thickness – ASTM A-569, 1008-1010 Grade, or (when Pre-Galvanized) ASTM A-527/Coating Designation G90

### Pipe Clamps – Steel

A-1011SS Grade 33

### Pipe Clamps – Stainless Steel

ASTM A-240, Type 304

### Pipe Clamps – Aluminum

ASTM B-209, 5052, H32 Grade, Sheet and Plate

### Channel Nuts

ASTM (3/8" & 1/2") A-576 Grade 1015M, A-675 (1/4") Grade 60, Case Hardened to RC25 min.

### Hex Nuts and Bolts

ASTM A-563, Grade A and ASTM A-307, Grade A

### Threaded

Low Carbon Steel

Yield = 32 ksi min.

Tensile = 52 ksi min

## Product Load Testing

Product testing is an important Part of Power-Strut's Quality Assurance Program. We utilize our own testing facilities, as well as those of independent testing laboratories, to determine design loads with proper and adequate safety factors. These design loads are indicated, where applicable, throughout the catalog. Loads are based on AISI Specification For The Design Of Cold-Formed Steel Structural Members, 2001 Edition.

Destructive and non-destructive testing procedures are used to test for variables such as corrosion, conductivity, electro-static dissipation, ultra-violet resistance, wind resistance, dimensional accuracy, material integrity and slip resistance.

In short, if there's a specification to meet, Power-Strut will develop a test to quantify and verify it. Using design properties of the Power-Strut framing members, load data given in this catalog, and/or design procedures of the American Iron & Steel Institute Specification For The Design Of Cold-Formed Steel Structural Members, 2001 Edition, it is possible to design any type of structure within the capabilities of the system.

Assemblies or connections that cannot be calculated using provisions of the AISI specifications must be established by application-specific tests.

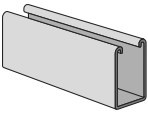
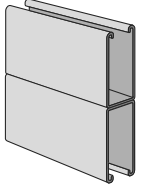
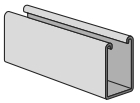
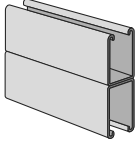
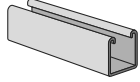
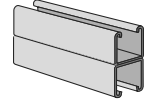
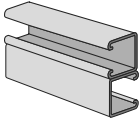
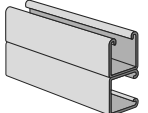
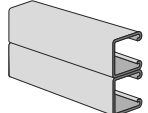
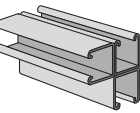
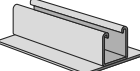
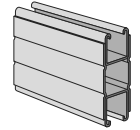
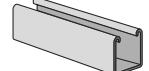
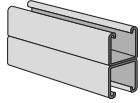
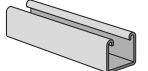
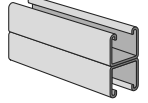
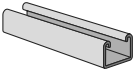
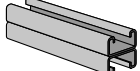
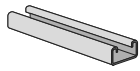
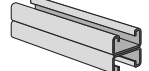
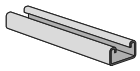
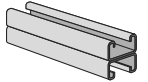
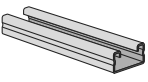
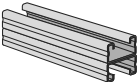
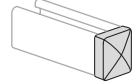
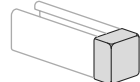
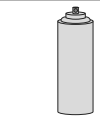
*We reserve the right to make specification changes without notice.*

*While every effort has been made to assure the accuracy of information contained in this catalog at the time of publication, we cannot accept responsibility for inaccuracies resulting from undetected errors or omissions.*




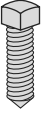





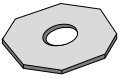

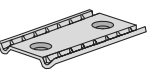

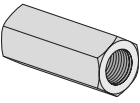
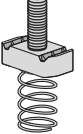
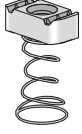
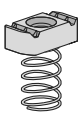





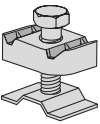
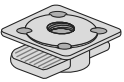

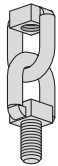

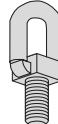
\* Channel referenced is 1 5/8" wide, fittings referenced are for 1 5/8" channel.

† Some 1/4" fittings are produced from A-36 Structural Steel.

## Channel

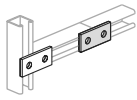
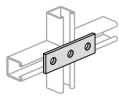
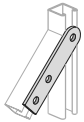

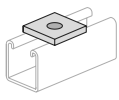
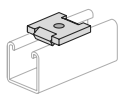
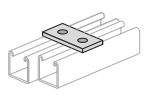
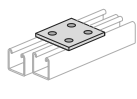
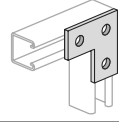
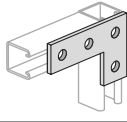
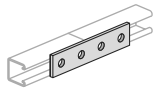
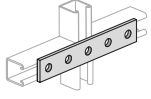
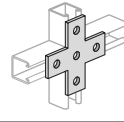
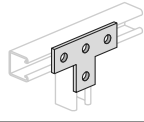
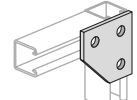
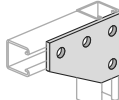
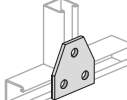
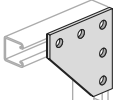
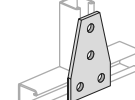
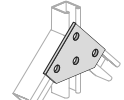
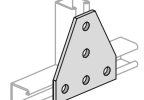
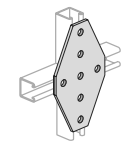
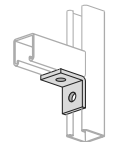
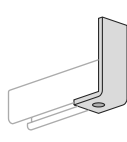


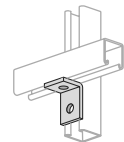
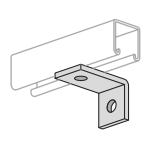
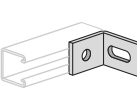
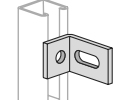
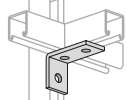
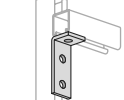
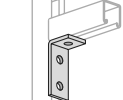
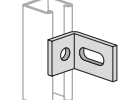
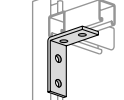
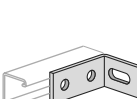
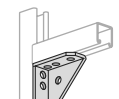
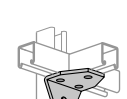
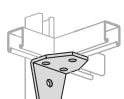
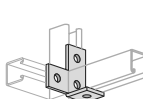
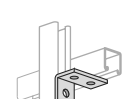
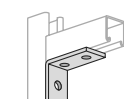
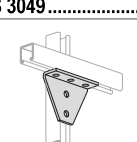
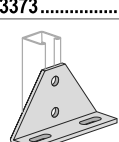
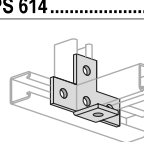
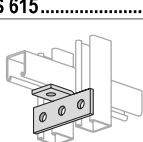
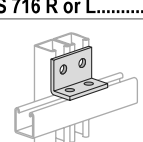
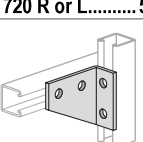
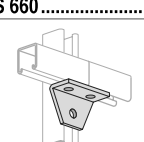
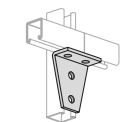
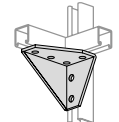
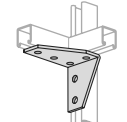

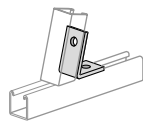

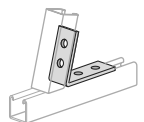
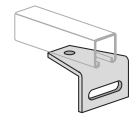
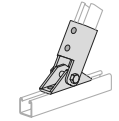
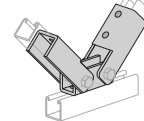
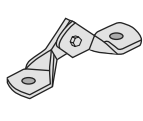
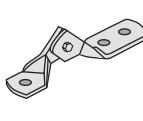
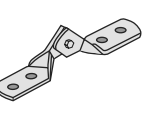
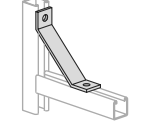
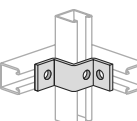
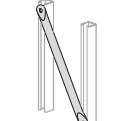

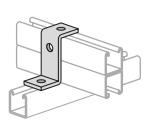
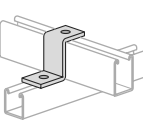
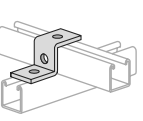
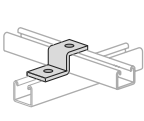
						
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PS 200 2T4 ..... 28	PS 200 2T5 ..... 28	PS 200 3T6 ..... 28	PS 200 PLA ..... 29	PS 200 PLC ..... 29	PS 210 ..... 30	PS 210 2T3 ..... 30
						
PS 300 ..... 32	PS 300 2T3 ..... 32	PS 400 ..... 34	PS 400 2T3 ..... 34	PS 500 ..... 36	PS 500 2T3 ..... 36	PS 520 ..... 38
						
PS 520 2T3 ..... 38	PS 560 ..... 40	PS 560 2T3 ..... 40	PS 6152 ..... 42	PS 6153 ..... 42	PS 9050 ..... 42	

## Fasteners

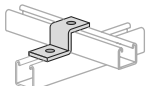
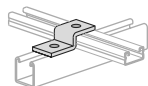
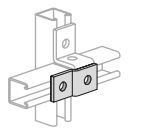
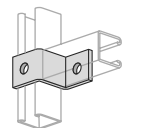
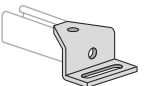
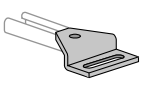
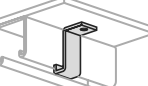
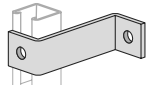
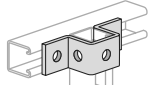
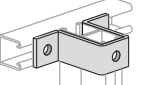
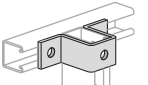
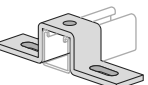
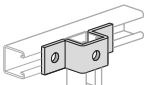
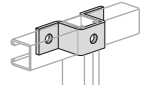
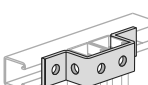
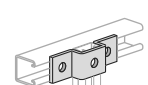
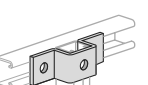
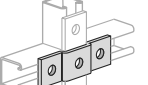
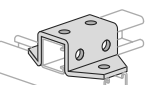
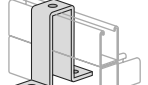
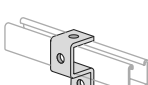
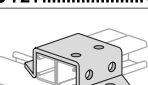
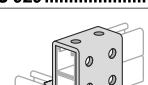
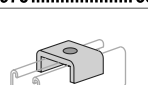
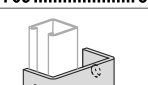
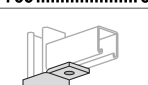
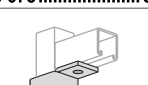
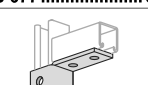
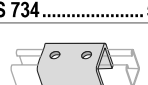
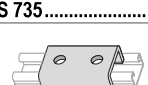
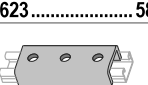
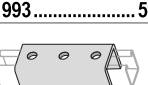
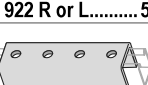
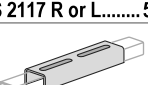
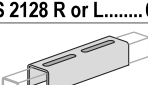
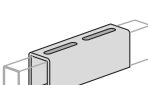
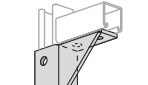
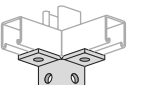
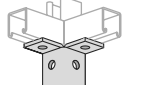
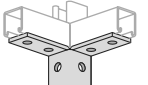
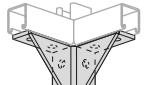
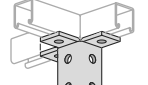
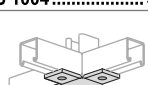
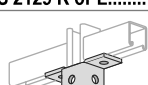
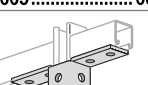
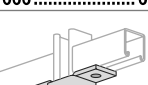
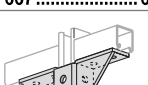
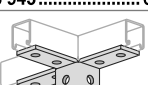
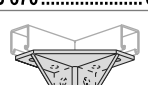
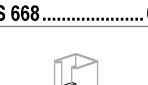
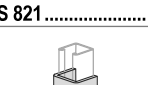
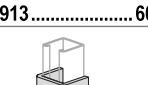

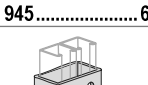
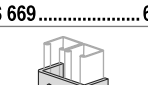
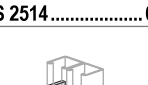
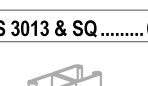


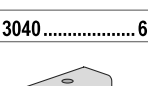








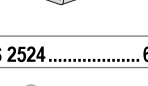

						
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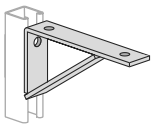
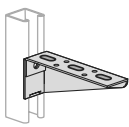
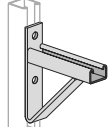
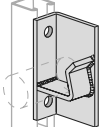
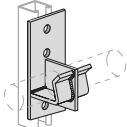
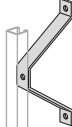
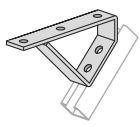
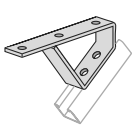
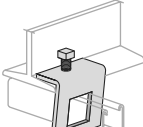
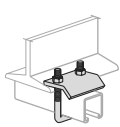
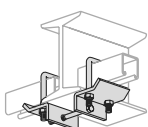
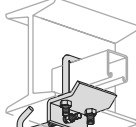
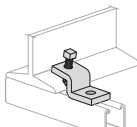
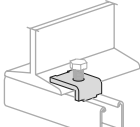
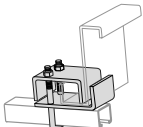
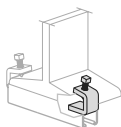
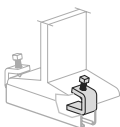
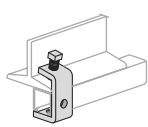
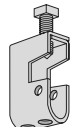

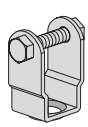

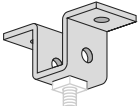
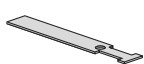
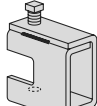
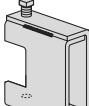
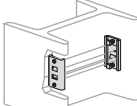
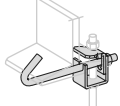
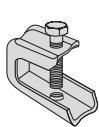
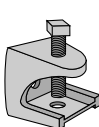
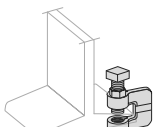
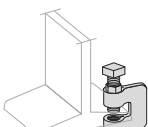
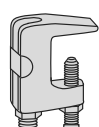

						
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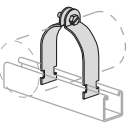
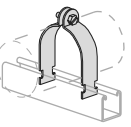
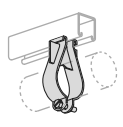
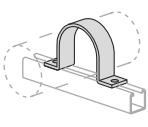
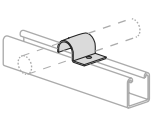
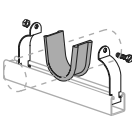


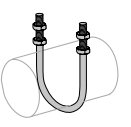
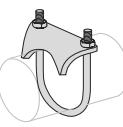
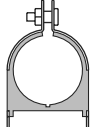
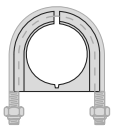
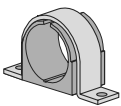

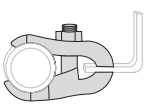
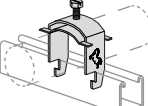
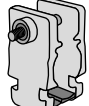
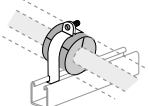
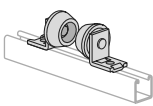
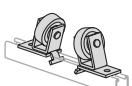
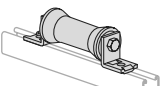
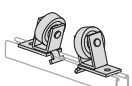
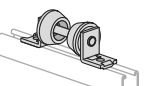
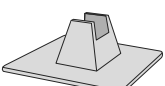
						
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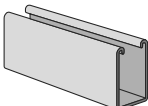
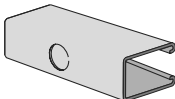
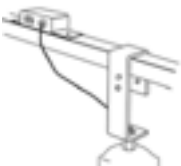


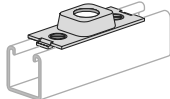
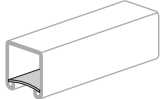

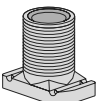
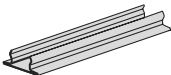
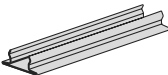
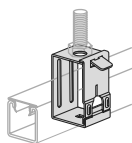
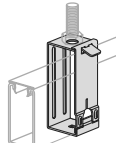
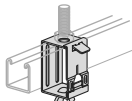
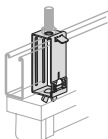

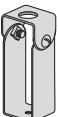
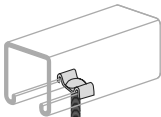

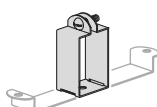
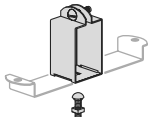
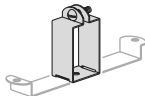
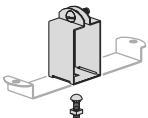


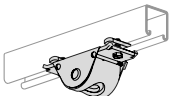
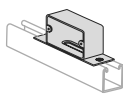



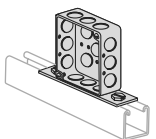
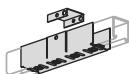
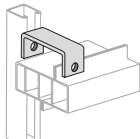
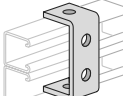
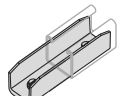
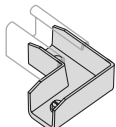
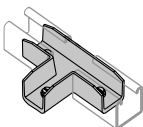

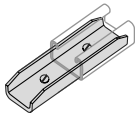
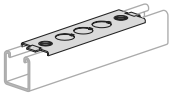
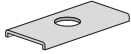
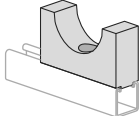
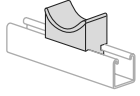
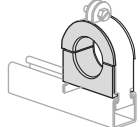
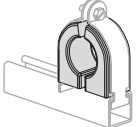
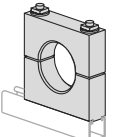
						
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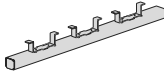
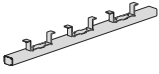
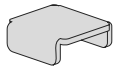
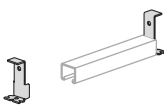
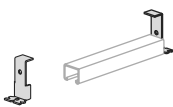
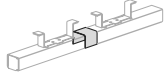
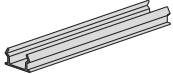
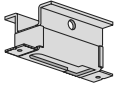
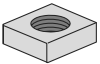

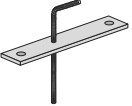
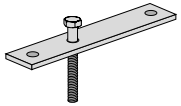
						
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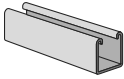
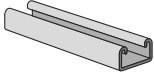


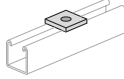
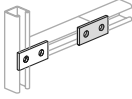
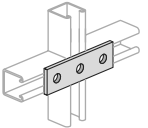
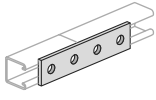
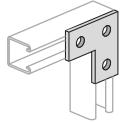
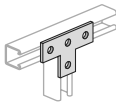
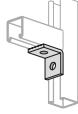
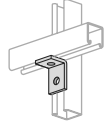
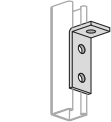
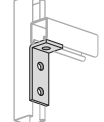
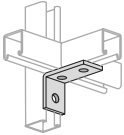
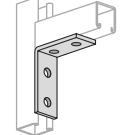
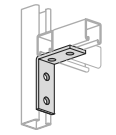
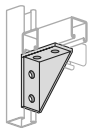
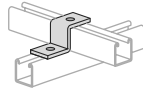
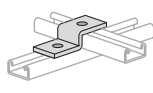
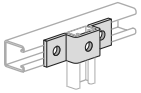

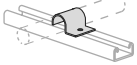
						
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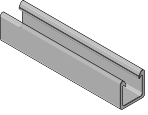
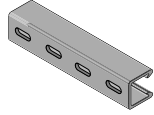
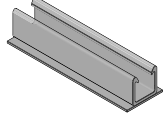
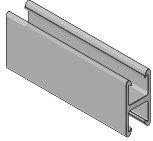
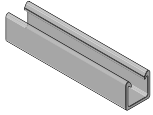
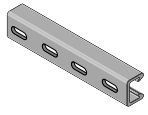
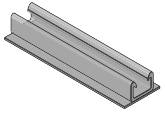
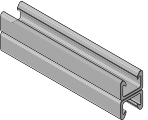
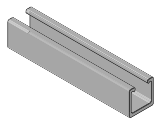
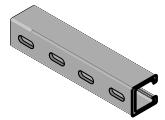
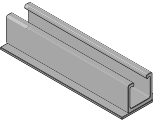
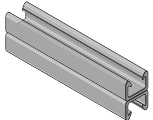
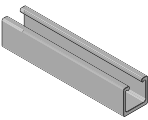
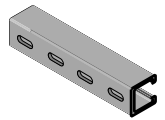
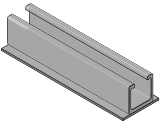
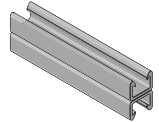
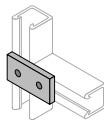
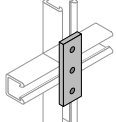
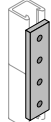
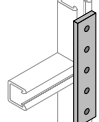
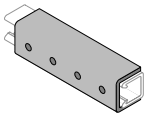
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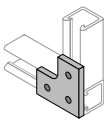
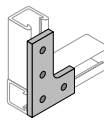
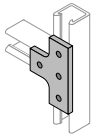
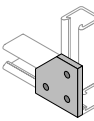
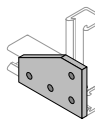
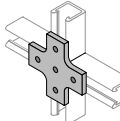
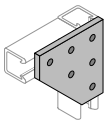
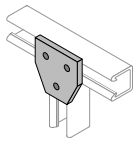
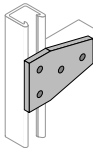
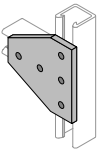

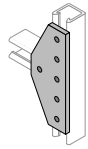
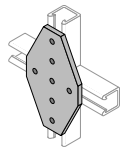
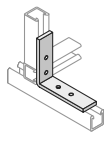
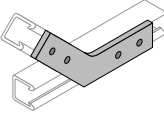
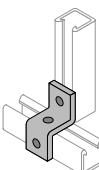
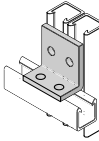
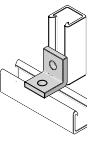
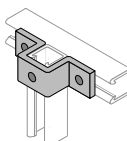
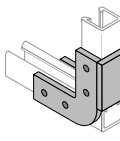
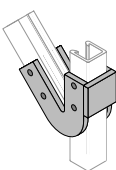
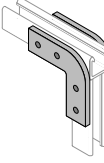
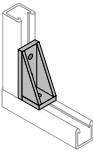
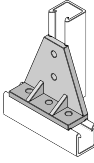
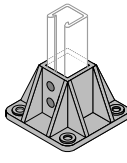
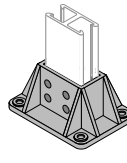
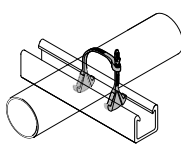

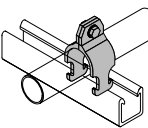
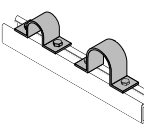
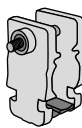
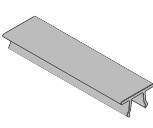

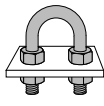







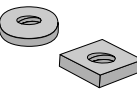


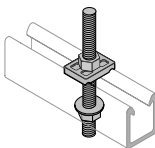
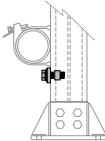
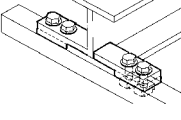
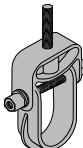
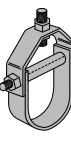
						
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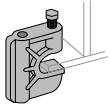
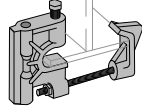


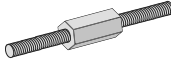




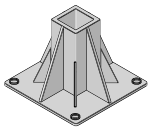
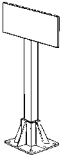
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
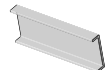
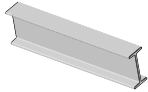
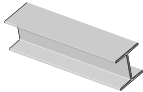
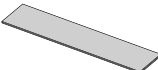
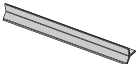


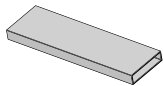
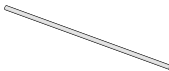


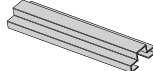
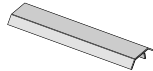
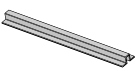
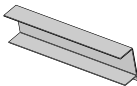




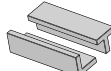
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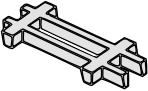


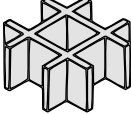
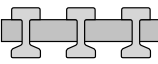
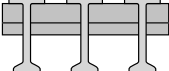

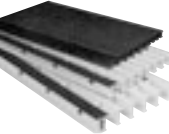
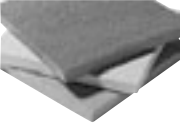
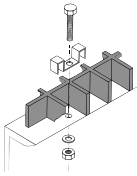
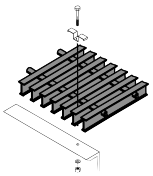
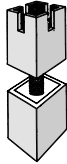
## Fiberglass Aickinshapes®

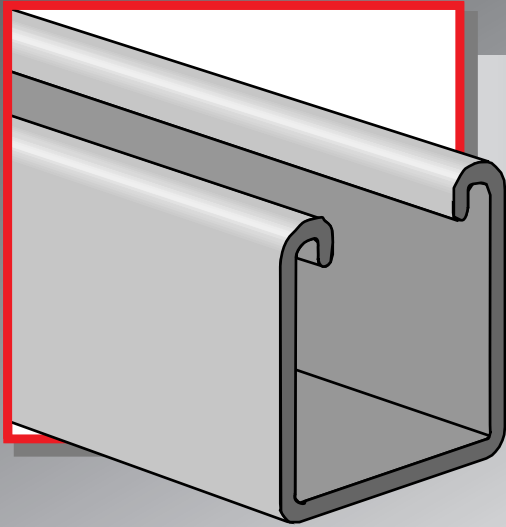
						
Equal Leg Angle... 127	Channel..... 127	I-Beam..... 127	Wide Flange I-Beam..... 127	Flat Sheet..... 128	Embedment Angle 128	Square Tube ..... 128
						
Square Bar..... 128	Rectangular Tube 128	Round Rod ..... 128	Flat Strip ..... 129	Round Tube..... 129	Door Frame..... 129	Threshold ..... 129
						
Hat Section ..... 129	Flight Channel..... 129	Toe Plate..... 130	Square Bar..... 130	Square Tube..... 130	Fixed Connector .. 130	Handrail Connectors ..... 130

## Fiberglass Sealers, Coatings & Promotional Material

						
Aickinzip..... 131	Aickincoat..... 131	Distributor Display ..... 131	Distributor Literature Display..... 131	Adj. Pipe Clamp Sample ..... 131	Rigid Pipe Clamp Sample ..... 131	Aickinstrut Sample Box ..... 131

## Fiberglass AickinGrate®

						
1" Molded Grating..... 134	1" Molded Grating..... 134	1 1/2" Molded Grating ..... 134	2" Molded Grating..... 134	"I" Bar Pultruded Grating ..... 136-137	"T" Bar Pultruded Grating..... 138-139	Molded Stair Treads ..... 141
						
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## CHANNEL

*Power-Strut channel sections are produced by multiple sets of forming rolls which cold-work strip steel into the channel configuration. This type of roll forming produces a uniform channel section held to the specifications of MFMA-4.*

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### **MATERIALS:**

Plain and painted green channels are formed from structural quality strip steel which conforms to the requirements of ASTM A-1011 SS Grade 33. Pre-galvanized channel conforms to the requirements of ASTM A-653 Grade 33.

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### **STANDARD LENGTHS:**

Stock lengths are 10 and 20 feet. Special lengths are available upon request.

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### **STANDARD FINISHES:**

Standard Power-Strut channel is available in plain, painted green, zinc dichromate or pre-galvanized finishes.

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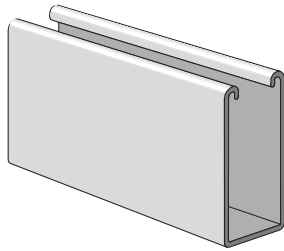
### **ORDERING INFORMATION:**

When ordering, add the length or size and finish to the part number. See page 8 - 9 for finish abbreviations and an example.

Type of Load	Safety Factor to Yield Strength	Safety Factor to Ultimate Strength
Beam Loads	1.67	2.0
Column Load	1.80	2.2

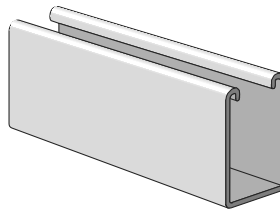
**PS 100** – 1<sup>5</sup>/<sub>8</sub>" x 3<sup>1</sup>/<sub>4</sub>" x 12 ga.

*See Pages 22-23*



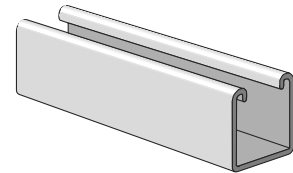
**PS 150** – 1<sup>5</sup>/<sub>8</sub>" x 2<sup>7</sup>/<sub>16</sub>" x 12 ga.

*See Pages 24-25*



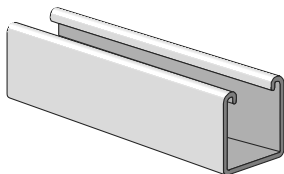
**PS 200** – 1<sup>5</sup>/<sub>8</sub>" x 1<sup>5</sup>/<sub>8</sub>" x 12 ga.

*See Pages 26-29*



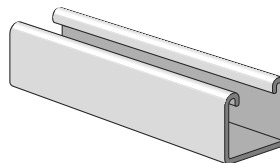
**PS 210** – 1<sup>5</sup>/<sub>8</sub>" x 1<sup>5</sup>/<sub>8</sub>" x 14 ga.

*See Pages 30-31*



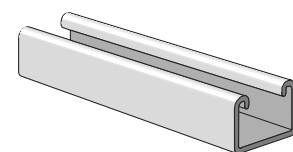
**PS 300** – 1<sup>5</sup>/<sub>8</sub>" x 1<sup>3</sup>/<sub>8</sub>" x 12 ga.

*See Pages 32 -33*



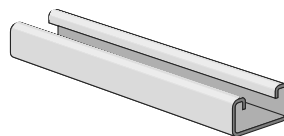
**PS 400** – 1<sup>5</sup>/<sub>8</sub>" x 1" x 12 ga.

*See Pages 34-35*



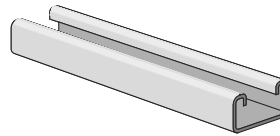
**PS 500** – 1<sup>5</sup>/<sub>8</sub>" x 1<sup>3</sup>/<sub>16</sub>" x 14 ga.

*See Pages 36-37*



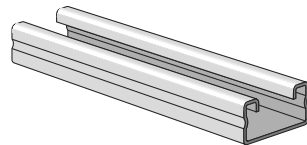
**PS 520** – 1<sup>5</sup>/<sub>8</sub>" x 1<sup>3</sup>/<sub>16</sub>" x 12 ga.

*See Pages 38-39*



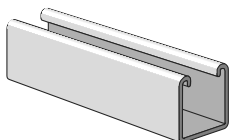
**PS 560** – 1<sup>5</sup>/<sub>8</sub>" x 1<sup>3</sup>/<sub>16</sub>" x 16 ga.

*See Pages 40-41*



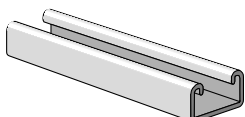
**PS 600J** – 1<sup>3</sup>/<sub>16</sub>" x 1<sup>3</sup>/<sub>16</sub>" x 19 ga.

*See Junior Channel  
Page 96*



**PS 700J** – 1<sup>3</sup>/<sub>16</sub>" x 1<sup>3</sup>/<sub>32</sub>" x 19 ga.

*See Junior Channel  
Page 97*



## Maximum Allowable Pull-Out and Slip Loads

Channel Nut Size-Thread	Allowable Gauge Channel	Pull-Out Strength (Lbs.)	Resistance to Slip (Lbs.)	Torque Ft.-Lbs.
3/4"-10	12 Gauge PS 100 PS 150 PS 200 PS 300	2,500	1,700	*125
5/8"-11		2,500	1,500	*100
1/2"-13		2,000	1,500	50
5/16"-14		1,400	1,000	35
3/8"-16		1,000	800	19
5/16"-18		800	500	11
1/4"-20		600	300	6
1/2"-13	12 Gauge PS 400 PS 520	1,500	1,500	50
3/8"-16		1,000	800	19
5/16"-18		800	500	11
1/4"-20		600	300	6
1/2"-13	14 Gauge PS 210 PS 500	1,400	1,000	50
3/8"-16		1,000	750	19
5/16"-18		800	400	11
1/4"-20		600	300	6
1/2"-13	16 Gauge PS 560	1,000	1,000	50
3/8"-16		1,000	750	19
5/16"-18		800	400	11
1/4"-20		600	300	6

\* May require 3/8" or 1/2" thick fitting.

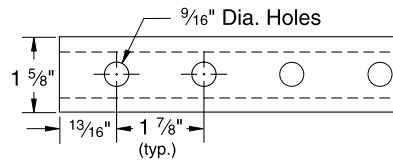
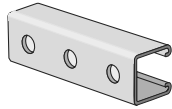
Nut design loads include a minimum safety factor of 3.

**Note:** Refer to the Channel Nut Selection Chart on page 44 for the part number



Channel

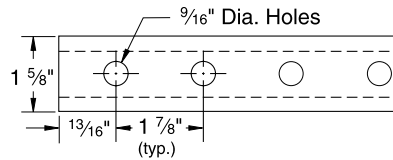
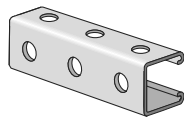
## Channel with Holes (H)



### Available With These Select Channel Types:

PS 100	PS 150	PS 150 2T3	PS 200	PS 200 2T3	PS 210	PS 300	PS 300 2T3	PS 400	PS 500	PS 500 2T3	PS 520	PS 560
■	■		■		■	■		■	■		■	

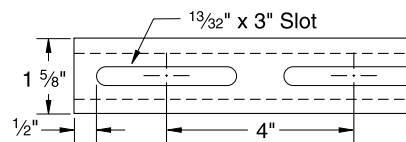
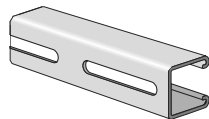
## Channel with Holes on Three Sides (H3)



### Available With These Select Channel Types:

PS 100	PS 150	PS 150 2T3	PS 200	PS 200 2T3	PS 210	PS 300	PS 300 2T3	PS 400	PS 500	PS 500 2T3	PS 520	PS 560
			■									

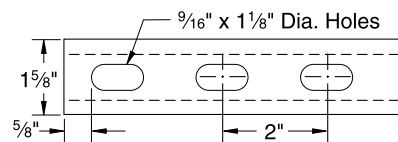
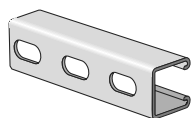
## Channel with Slots (S)



### Available With These Select Channel Types:

PS 100	PS 150	PS 150 2T3	PS 200	PS 200 2T3	PS 210	PS 300	PS 300 2T3	PS 400	PS 500	PS 500 2T3	PS 520	PS 560
■	■		■		■	■		■	■		■	■

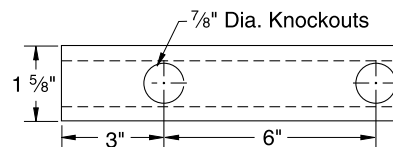
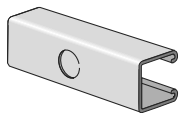
## Channel with Elongated Holes (EH)



### Available With These Select Channel Types:

PS 100	PS 150	PS 150 2T3	PS 200	PS 200 2T3	PS 210	PS 300	PS 300 2T3	PS 400	PS 500	PS 500 2T3	PS 520	PS 560
■	■	■	■	■	■	■	■	■	■	■	■	■

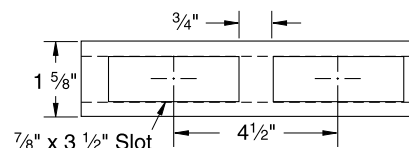
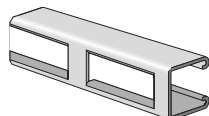
## Channel with Knockouts (KO6)



### Available With These Select Channel Types:

PS 100	PS 150	PS 150 2T3	PS 200	PS 200 2T3	PS 210	PS 300	PS 300 2T3	PS 400	PS 500	PS 500 2T3	PS 520	PS 560
■	■		■		■							

## Channel with Slotted Back (SB)



### Available With These Select Channel Types:

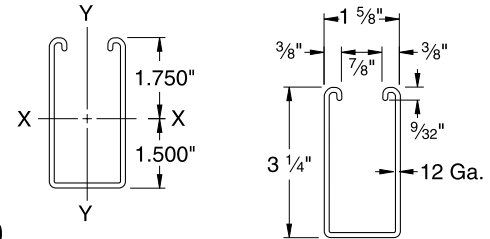
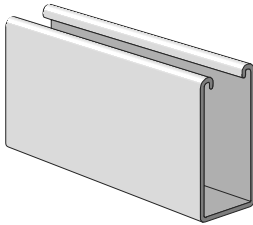
PS 100	PS 150	PS 150 2T3	PS 200	PS 200 2T3	PS 210	PS 300	PS 300 2T3	PS 400	PS 500	PS 500 2T3	PS 520	PS 560
			■									

# CHANNEL

**Finish:** Plain, Painted Green, or Pregalvanized **Order By:** No., Length and Finish



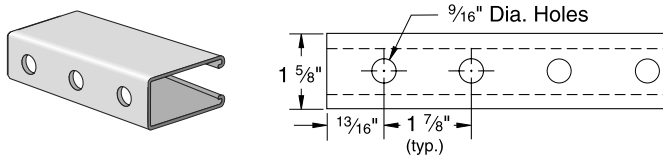
## PS 100 - Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 3<sup>1</sup>/<sub>4</sub>" x 12 ga.)



ELEMENTS OF SECTION – PS 100

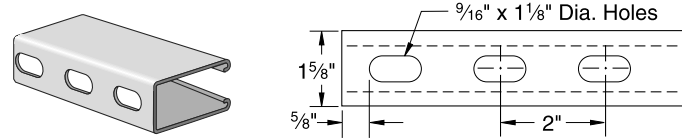
Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
305	0.897	1.098	0.627	1.107	0.433	0.533	0.695

## PS 100 H - Channel with Holes



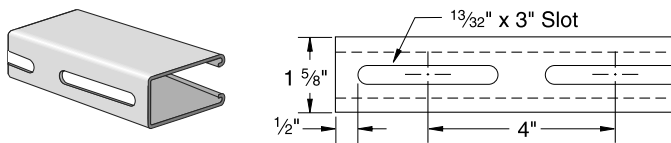
Weight: 300 lbs./100 ft.

## PS 100 EH - Channel with Elongated Holes



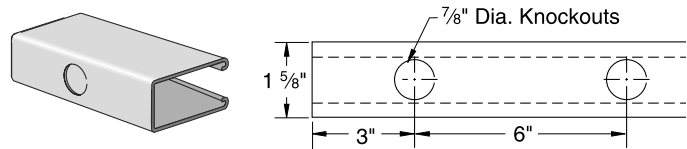
Weight: 300 lbs./100 ft.

## PS 100 S - Channel with Slots



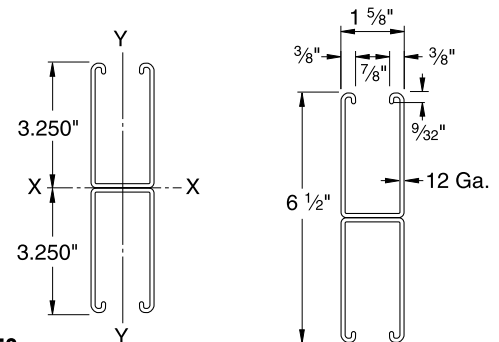
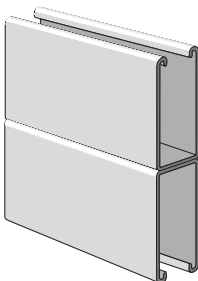
Weight: 300 lbs./100 ft.

## PS 100 K06 - Channel with Knockouts



Weight: 305 lbs./100 ft.

## PS 100 2T3 - Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 6<sup>1</sup>/<sub>2</sub>" x 12 ga.)



ELEMENTS OF SECTION – PS 100 2T3

Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
610	1.793	6.226	1.916	1.864	0.866	1.066	0.695



## PS 100 & PS 100 2T3 - Load Data

### BEAM LOADING – PS 100

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	5,260	0.03	5,260	5,260	5,260
36	3,500	0.07	3,500	3,500	3,500
48	2,630	0.12	2,630	2,630	2,630
60	2,100	0.18	2,100	2,100	1,920
72	1,750	0.26	1,750	1,750	1,330
84	1,500	0.36	1,500	1,470	980
96	1,310	0.47	1,310	1,120	750
108	1,170	0.59	1,170	890	590
120	1,050	0.73	960	720	480
144	880	1.06	670	500	330
168	750	1.43	490	370	240
192	660	1.88	370	280	190
216	580	2.35	300	220	150
240	530	2.95	240	180	120

\* Bearing load may govern capacity.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8. This load table is based on a solid channel section.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

For Pierced Channels, reduce beam load values as follows:

PS-100-EH	15%	PS-100-S	15%
PS-100-H	10%	PS-100-K06	5%

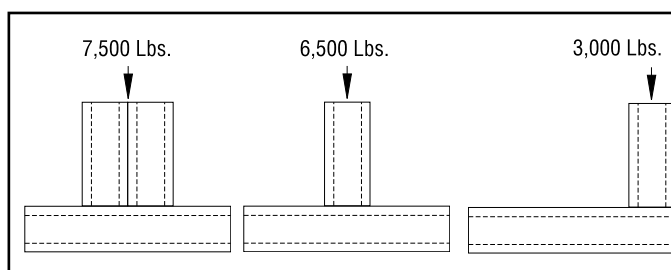
### COLUMN LOADING – PS 100

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	5,650	16,870	15,180	12,850	10,600
36	4,690	13,140	10,600	7,650	5,660
48	3,560	9,550	6,860	4,790	3,660
60	2,730	6,680	4,790	3,450	2,710
72	2,160	4,980	3,660	2,710	2,170
84	1,760	3,950	2,960	2,240	1,820
96	1,500	3,270	2,500	1,930	1,580
108	1,310	2,800	2,170	1,690	1,390
120	1,170	2,450	1,930	1,510	**
144	980	1,980	1,580	**	**
168	850	1,670	1,340	**	**

\*\*  $K_L > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

### PS100 – Crush Loads



Resistance to Slip – 1,500 lbs. per bolt when 1/2" PS NS channel nuts are used.

Pull Out Strength – 2,000 lbs. per bolt when 1/2" PS NS channel nuts are used.

### BEAM LOADING – PS 100 2T3

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	6,890 *	0.01	6,890 *	6,890 *	6,890 *
36	6,890 *	0.02	6,890 *	6,890 *	6,890 *
48	6,890 *	0.05	6,890 *	6,890 *	6,890 *
60	6,420	0.10	6,420	6,420	6,420
72	5,350	0.14	5,350	5,350	5,350
84	4,590	0.19	4,590	4,590	4,590
96	4,020	0.25	4,020	4,020	4,020
108	3,570	0.32	3,570	3,570	3,360
120	3,210	0.39	3,210	3,210	2,720
144	2,680	0.57	2,680	2,680	1,890
168	2,290	0.77	2,290	2,080	1,390
192	2,010	1.01	2,010	1,590	1,060
216	1,780	1.27	1,680	1,260	840
240	1,610	1.58	1,360	1,020	680

\* Load limited by spot weld shear.

† Bearing load may govern capacity.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

### COLUMN LOADING – PS 100 2T3

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	10,670	39,230	38,030	36,210	34,240
36	10,350	36,450	34,240	31,200	28,260
48	9,940	33,220	30,200	26,430	23,190
60	9,290	29,950	26,430	22,470	19,380
72	8,560	26,880	23,190	19,380	16,450
84	7,860	24,140	20,520	17,040	12,090
96	7,220	21,790	18,370	13,330	9,250
108	6,600	19,790	16,450	10,530	7,310
120	5,760	18,130	13,330	8,530	**
144	4,390	14,020	9,250	**	**
168	3,420	10,300	6,800	**	**

\*\*  $K_L > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

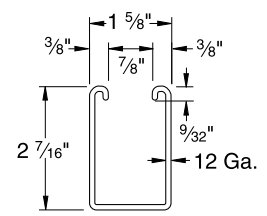
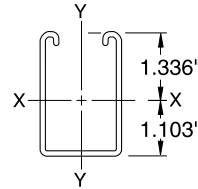
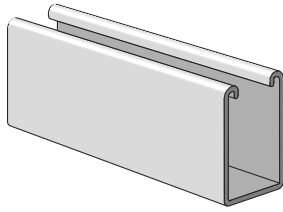


# CHANNEL

Finish: Plain, Painted Green, or Pregalvanized Order By: No., Length and Finish



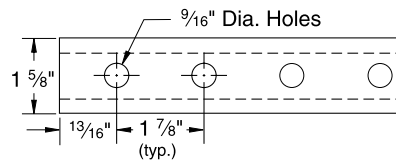
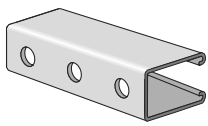
## PS 150 – Steel Channel ( $1\frac{5}{8}" \times 2\frac{7}{16}" \times 12$ ga.)



ELEMENTS OF SECTION – PS 150

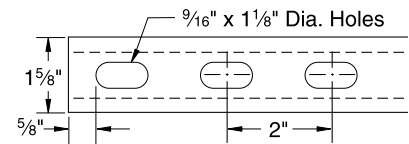
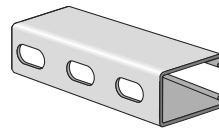
Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyrations (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyrations (Inch)
247	0.726	0.522	0.390	0.848	0.334	0.411	0.679

## PS 150 H - Channel with Holes



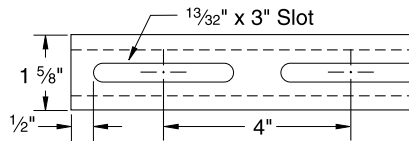
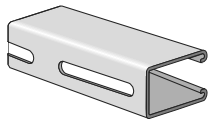
Weight: 242 lbs./100 ft.

## PS 150 EH – Channel with Elongated Holes



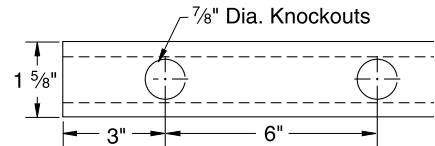
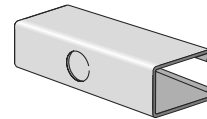
Weight: 242 lbs./100 ft.

## PS 150 S - Channel with Slots



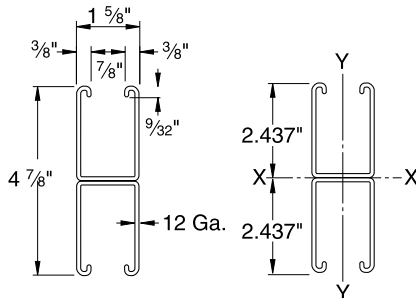
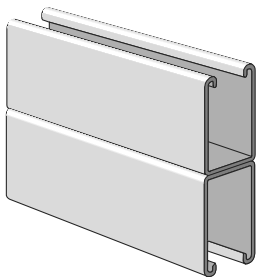
Weight: 242 lbs./100 ft.

## PS 150 K06 – Channel with Knockouts

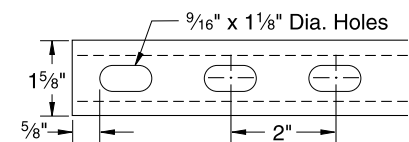
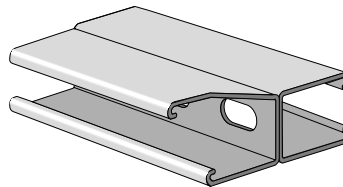


Weight: 247 lbs./100 ft.

## PS 150 2T3 – Steel Channel ( $1\frac{5}{8}" \times 4\frac{7}{8}" \times 12$ ga.)



## PS 150 2T3 EH – Channel with Elongated Holes



Weight: 494 lbs./100 ft.

ELEMENTS OF SECTION – PS 150 2T3

Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyrations (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyrations (Inch)
494	1.452	2.805	1.151	1.390	0.669	0.823	0.679





## PS 150 & PS 150 2T3 - Load Data

### BEAM LOADING – PS 150

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	3,270	0.04	3,270	3,270	3,270
36	2,180	0.09	2,180	2,180	2,180
48	1,640	0.15	1,640	1,640	1,420
60	1,310	0.24	1,310	1,310	910
72	1,090	0.34	1,090	950	630
84	940	0.47	930	700	470
96	820	0.61	710	530	360
108	730	0.78	560	420	280
120	650	0.95	460	340	230
144	550	1.39	320	240	160
168	470	1.89	230	170	120
192	410	2.46	180	130	90
216	360	3.07	140	110	70
240	330	3.86	110	90	60

\* Bearing load may govern capacity.

This load table is based on a solid channel section.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

For Pierced Channels, reduce beam load values as follows:

PS-150-EH 15%

PS-150-S 15%

PS-150-H 10%

PS-150-K06 5%

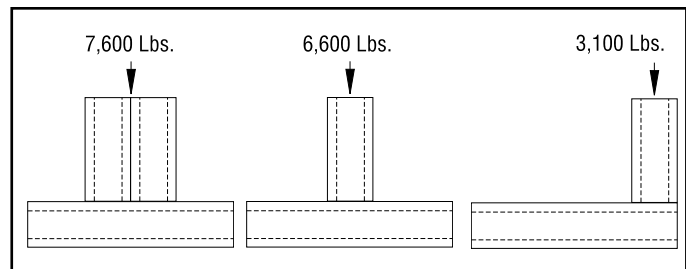
### COLUMN LOADING – PS 150

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	4,640	13,840	12,570	10,840	9,190
36	3,970	11,050	9,190	7,030	5,370
48	3,180	8,420	6,390	4,620	3,630
60	2,550	6,250	4,620	3,450	2,780
72	2,120	4,790	3,630	2,780	2,260
84	1,810	3,890	3,010	2,330	1,910
96	1,580	3,290	2,580	2,020	1,650
108	1,400	2,860	2,260	1,770	1,440
120	1,270	2,530	2,020	1,580	**
144	1,060	2,070	1,650	**	**
168	920	1,750	1,380	**	**

\*\*  $K_L / > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

### PS150 – Crush Loads



Resistance to Slip – 1,500 lbs. per bolt when 1/2" PS NS channel nuts are used.  
Pull Out Strength – 2,000 lbs. per bolt when 1/2" PS NS channel nuts are used.

### BEAM LOADING – PS 150 2T3

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	5,220 *	0.01	5,220 *	5,220 *	5,220 *
36	5,220 *	0.04	5,220 *	5,220 *	5,220 *
48	4,820	0.08	4,820	4,820	4,820
60	3,860	0.13	3,860	3,860	3,860
72	3,220	0.19	3,220	3,220	3,220
84	2,760	0.26	2,760	2,760	2,500
96	2,410	0.34	2,410	2,410	1,920
108	2,140	0.42	2,140	2,140	1,510
120	1,930	0.52	1,930	1,840	1,230
144	1,610	0.76	1,610	1,280	850
168	1,380	1.03	1,250	940	630
192	1,210	1.35	960	720	480
216	1,070	1.70	760	570	380
240	960	2.09	610	460	310

\* Load limited by spot weld shear.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

### COLUMN LOADING – PS 150 2T3

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	8,580	31,810	30,880	29,520	28,100
36	8,350	29,700	28,100	26,000	24,070
48	8,080	27,390	25,330	22,910	20,940
60	7,720	25,170	22,910	20,510	17,170
72	7,270	23,190	20,940	17,170	12,700
84	6,780	21,510	18,740	13,430	9,330
96	6,130	20,110	15,630	10,290	7,150
108	5,450	17,750	12,700	8,130	5,650
120	4,800	15,260	10,290	6,590	**
144	3,760	10,830	7,150	**	**
168	2,970	7,950	5,250	**	**

\*\*  $K_L / > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

For Pierced Channels, reduce beam load values as follows:

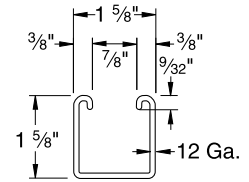
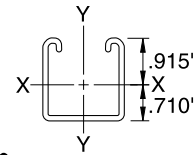
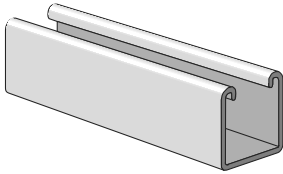
PS-150 2T3-EH 15%

# CHANNEL

Finish: Plain, Painted Green, or Pregalvanized Order By: No., Length and Finish



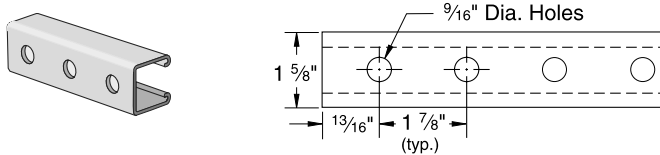
## PS 200 – Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 1<sup>5</sup>/<sub>8</sub>" x 12 ga.)



ELEMENTS OF SECTION – PS 200

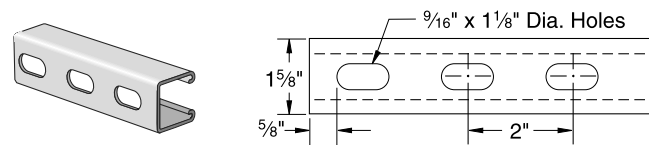
Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
189	0.555	0.185	0.202	0.577	0.236	0.290	0.651

### PS 200 H - Channel with Holes



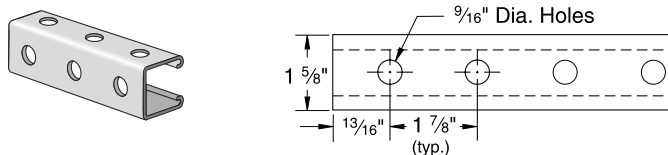
Weight: 186 lbs./100 ft.

### PS 200 EH – Channel with Elongated Holes



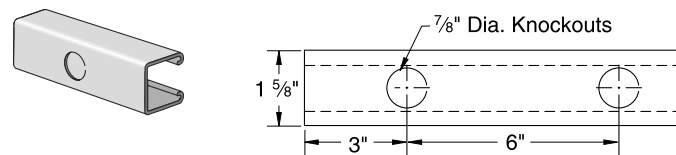
Weight: 185 lbs./100 ft.

### PS 200 H3 - Channel with Holes



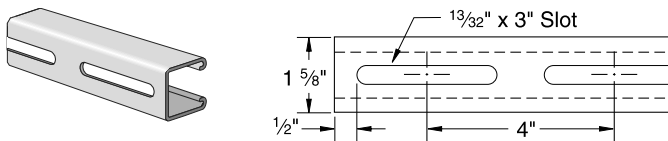
Weight: 175 lbs./100 ft.

### PS 200 K06 – Channel with Knockouts



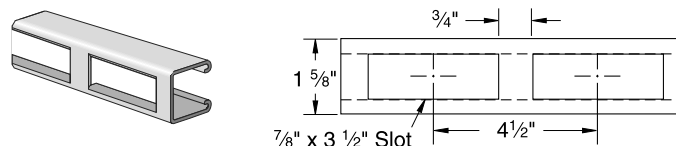
Weight: 189 lbs./100 ft.

### PS 200 S - Channel with Slots



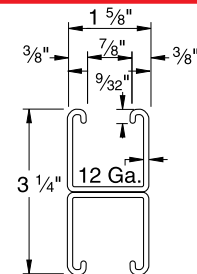
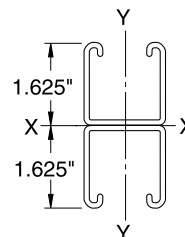
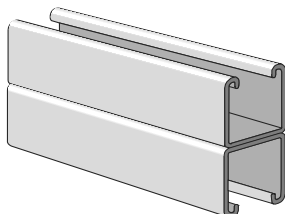
Weight: 185 lbs./100 ft.

### PS 200 SB – Channel with Slotted Back



Weight: 173 lbs./100 ft.

## PS 200 2T3 – Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 3<sup>1</sup>/<sub>4</sub>" x 12 ga.)



ELEMENTS OF SECTION – PS 200 2T3

Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
378	1.111	0.928	0.571	0.914	0.471	0.580	0.651



Channel

## PS 200 & PS 200 2T3 – Load Data

### BEAM LOADING – PS 200

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	1,690	0.06	1,690	1,690	1,690
36	1,130	0.13	1,130	1,130	900
48	850	0.22	850	760	500
60	680	0.35	650	480	320
72	560	0.50	450	340	220
84	480	0.68	330	250	160
96	420	0.89	250	190	130
108	380	1.14	200	150	100
120	340	1.40	160	120	80
144	280	2.00	110	80	60
168	240	2.72	80	60	40
192	210	3.55	60	50	NR
216	190	4.58	50	40	NR
240	170	5.62	40	NR	NR

\* Bearing load may govern capacity.

NR - Not Recommended

This load table is based on a solid channel section.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

For Pierced Channels, reduce beam load values as follows:

PS-200-EH 15% PS-200-S 15%

PS-200-H 10% PS-200-KO6 5%

PS-200-SB 30%

For Extruded Aluminum Channels, reduce beam load values 38%.

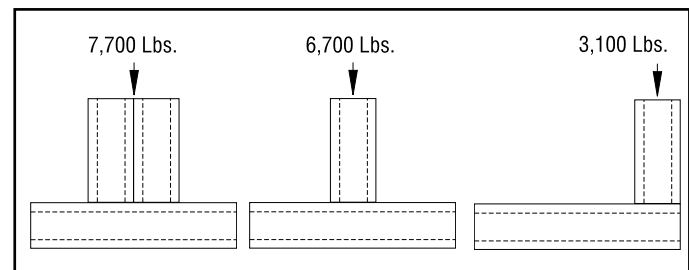
### COLUMN LOADING – PS 200

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	3,550	10,740	9,890	8,770	7,740
36	3,190	8,910	7,740	6,390	5,310
48	2,770	7,260	6,010	4,690	3,800
60	2,380	5,910	4,690	3,630	2,960
72	2,080	4,840	3,800	2,960	2,400
84	1,860	4,040	3,200	2,480	1,980
96	1,670	3,480	2,750	2,110	1,660
108	1,510	3,050	2,400	1,810	**
120	1,380	2,700	2,110	**	**
144	1,150	2,180	1,660	**	**

\*\*  $K_L > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

### PS200 – Crush Loads



Resistance to Slip – 1,500 lbs. per bolt when 1/2" PS NS channel nuts are used.  
Pull Out Strength – 2,000 lbs. per bolt when 1/2" PS NS channel nuts are used.

### BEAM LOADING – PS 200 2T3

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	3,500 *	0.02	3,500 *	3,500 *	3,500 *
36	3,190	0.07	3,190	3,190	3,190
48	2,390	0.13	2,390	2,390	2,390
60	1,910	0.20	1,910	1,910	1,620
72	1,600	0.28	1,600	1,600	1,130
84	1,370	0.39	1,370	1,240	830
96	1,200	0.51	1,200	950	630
108	1,060	0.64	1,000	750	500
120	960	0.79	810	610	410
144	800	1.14	560	420	280
168	680	1.53	410	310	210
192	600	2.02	320	240	160
216	530	2.54	250	190	130
240	480	3.16	200	150	100

\* Load limited by spot weld shear.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8. This load table is based on a solid channel section.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

### COLUMN LOADING – PS 200 2T3

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	6,430	24,280	23,610	22,700	21,820
36	6,290	22,810	21,820	20,650	19,670
48	6,160	21,410	20,300	18,670	16,160
60	6,000	20,210	18,670	15,520	12,390
72	5,620	18,970	16,160	12,390	8,950
84	5,170	16,950	13,630	9,470	6,580
96	4,690	14,890	11,190	7,250	5,040
108	4,170	12,850	8,950	5,730	3,980
120	3,690	10,900	7,250	4,640	**
144	2,930	7,630	5,040	**	**

\*\*  $K_L > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

For Pierced Channels, reduce beam load values as follows:

PS 200 2T3 EH

15%

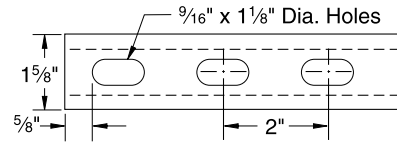
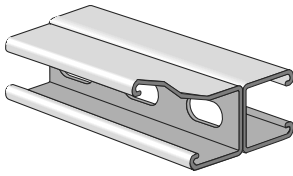
(See PS 200 2T3 EH on page 28.)

# CHANNEL

Finish: Plain, Painted Green, or Pregalvanized Order By: No., Length and Finish

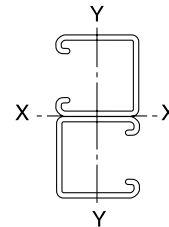
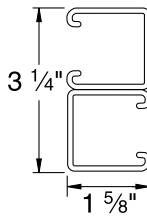
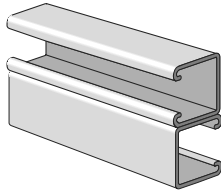


## PS 200 2T3 EH – Channel with Elongated Holes



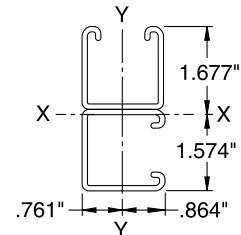
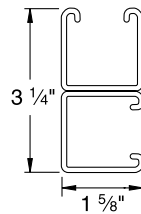
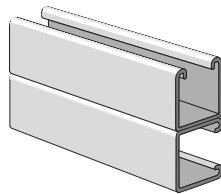
Weight: 370 lbs./100 ft.

## PS 200 2T2 – Welded Steel Channel (1 5/8" x 3 1/4" x 12 ga.)



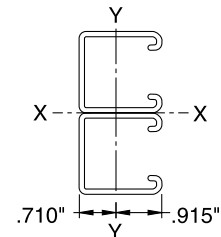
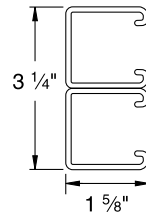
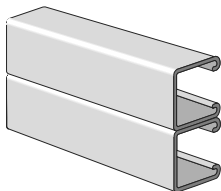
Weight: 378 lbs./100 ft.  
Allowable Moment 18,640 In-Lbs

## PS 200 2T4 – Welded Steel Channel (1 5/8" x 3 1/4" x 12 ga.)



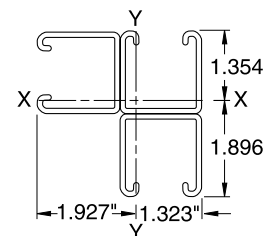
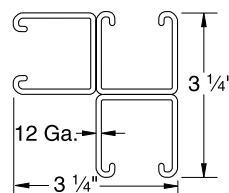
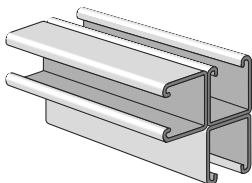
Weight: 378 lbs./100 ft.  
Allowable Moment 15,950 In-Lbs

## PS 200 2T5 – Welded Steel Channel (1 5/8" x 3 1/4" x 12 ga.)



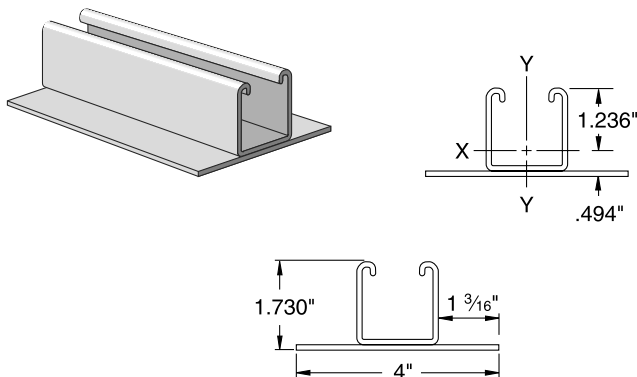
Weight: 378 lbs./100 ft.  
Allowable Moment 18,640 In-Lbs

## PS 200 3T6 – Welded Steel Channel (3 1/4" x 3 1/4" x 12 ga.)

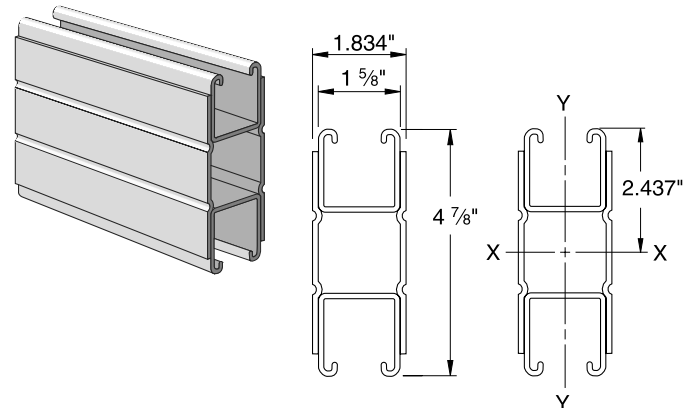


Weight: 566 lbs./100 ft.  
Allowable Moment 18,680 In-Lbs

## PS 200 PLA – Welded Steel Channel & Plate



## PS 200 PLC – Welded Steel Channel & Plate



### ELEMENTS OF SECTION

Part No.	Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
			Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
PS 200 PLA	333	0.739	0.287	0.248	0.623	0.617	0.290	0.914
PS 200 PLC	668	1.965	4.068	1.669	1.439	1.092	1.190	0.745

## PS 200 PLC – Load Data

### BEAM LOADING – PS 200 PLC

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	9,100 *	0.01	9,100 *	9,100 *	9,100 *
36	9,100 *	0.05	9,100 *	9,100 *	9,100 *
48	7,000	0.08	7,000	7,000	7,000
60	5,600	0.13	5,600	5,600	5,600
72	4,660	0.19	4,660	4,660	4,660
84	4,000	0.26	4,000	4,000	3,630
96	3,500	0.34	3,500	3,500	2,780
108	3,110	0.43	3,110	3,110	2,200
120	2,800	0.52	2,800	2,670	1,780
144	2,330	0.75	2,330	1,850	1,230
168	2,000	1.03	1,810	1,360	910
192	1,750	1.34	1,390	1,040	690
216	1,550	1.69	1,100	820	550
240	1,400	2.10	890	670	440

### COLUMN LOADING – PS 200 PLC

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	11,420	36,800	33,890	30,440	27,600
36	10,600	30,840	27,600	24,400	22,160
48	9,860	26,400	23,560	21,060	19,470
60	9,160	23,370	21,060	19,160	18,020
72	8,610	21,310	19,470	18,020	17,140
84	8,170	19,890	18,410	17,260	15,240
96	7,790	18,890	17,670	16,760	11,670
108	7,460	18,160	17,140	13,280	9,220
120	7,150	17,590	16,760	10,750	7,470
144	5,660	16,840	11,670	7,470	**
168	4,520	12,990	8,570	**	**

\*\* KL/λ > 200

Column loads are for allowable axial loads and must be reduced for eccentric loading.

\*Load limited by spot weld shear.

† Bearing load may govern capacity.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8. This load table is based on a solid channel section.

Loads include weight of channel, which must be deducted.

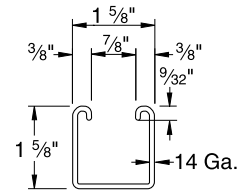
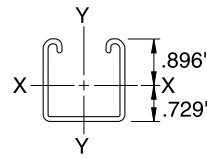
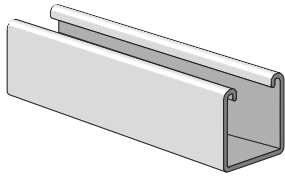
Loads must be multiplied by the applicable unbraced factor from page 42.

# CHANNEL

**Finish:** Plain, Painted Green, or Pregalvanized **Order By:** No., Length and Finish



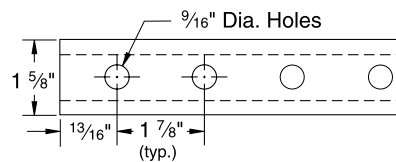
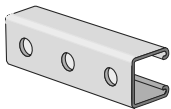
## PS 210 – Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 1<sup>5</sup>/<sub>8</sub>" x 14 ga.)



### ELEMENTS OF SECTION – PS 210

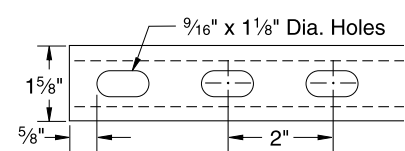
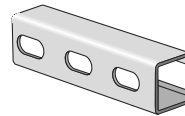
Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
142	0.418	0.145	0.162	0.589	0.176	0.217	0.650

### PS 210 H - Channel with Holes



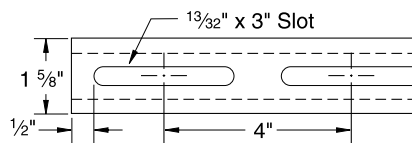
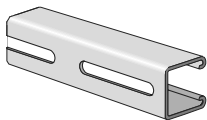
Weight: 137 lbs./100 ft.

### PS 210 EH – Channel with Elongated Holes



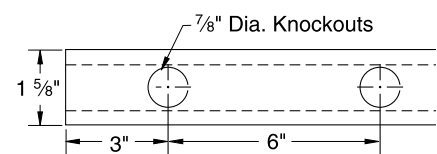
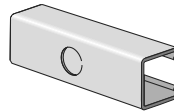
Weight: 137 lbs./100 ft.

### PS 210 S - Channel with Slots



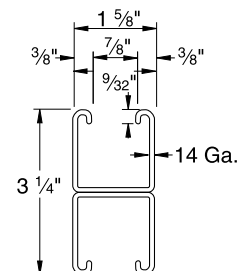
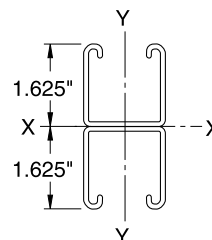
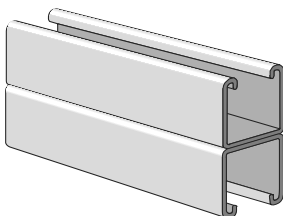
Weight: 137 lbs./100 ft.

### PS 210 K06 – Channel with Knockouts



Weight: 141 lbs./100 ft.

## PS 210 2T3 – Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 3<sup>1</sup>/<sub>4</sub>" x 14 ga.)



### ELEMENTS OF SECTION – PS 210 2T3

Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
284	0.835	0.733	0.451	0.937	0.353	0.434	0.650

## PS 210 & PS 210 2T3 – Load Data



### BEAM LOADING – PS 210

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	1,350	0.06	1,350	1,350	1,350
36	900	0.13	900	900	700
48	680	0.23	680	590	400
60	540	0.36	510	380	250
72	450	0.51	350	260	180
84	390	0.70	260	190	130
96	340	0.92	200	150	100
108	300	1.15	160	120	80
120	270	1.42	130	90	60
144	230	2.09	90	70	40
168	190	2.75	60	50	30
192	170	3.67	50	40	NR
216	150	4.61	40	30	NR
240	140	5.90	30	NR	NR

\* Bearing load may govern capacity.

NR - Not Recommended

This load table is based on a solid channel section.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

For Pierced Channels, reduce beam load values as follows:

PS-210-EH 15%  
PS-210-S 15%  
PS-210-H 10%  
PS-210-K06 5%

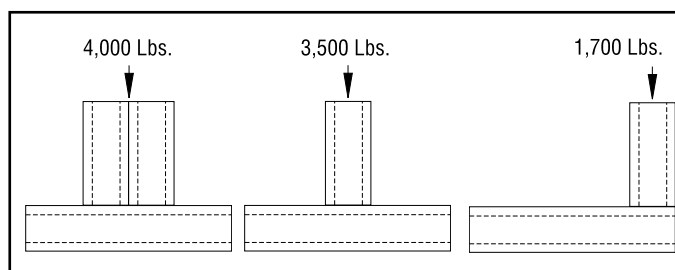
### COLUMN LOADING – PS 210

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	2,800	8,040	7,330	6,360	5,430
36	2,410	6,480	5,430	4,190	3,210
48	1,940	4,990	3,830	2,760	2,160
60	1,550	3,740	2,760	2,050	1,640
72	1,290	2,860	2,160	1,640	1,320
84	1,100	2,310	1,780	1,370	1,110
96	950	1,950	1,520	1,180	950
108	840	1,690	1,320	1,030	**
120	760	1,490	1,180	**	**
144	630	1,210	950	**	**

\*\*  $K_L > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

### PS210 – Crush Loads



Resistance to Slip – 1,000 lbs. per bolt when 1/2" PS NS channel nuts are used.  
Pull Out Strength – 1,400 lbs. per bolt when 1/2" PS NS channel nuts are used.

### BEAM LOADING – PS 210 2T3

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	2,180 *	0.02	2,180 *	2,180 *	2,180 *
36	2,180 *	0.06	2,180 *	2,180 *	2,180 *
48	1,890	0.13	1,890	1,890	1,890
60	1,510	0.20	1,510	1,510	1,280
72	1,260	0.28	1,260	1,260	890
84	1,080	0.39	1,080	980	650
96	950	0.51	950	750	500
108	840	0.64	790	590	400
120	760	0.79	640	480	320
144	630	1.13	440	330	220
168	540	1.54	330	250	160
192	470	2.00	250	190	130
216	420	2.55	200	150	100
240	380	3.16	160	120	80

\* Load limited by spot weld shear.

† Bearing load may govern capacity.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8. This load table is based on a solid channel section.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

### COLUMN LOADING – PS 210 2T3

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	5,010	18,250	17,700	16,880	16,030
36	4,860	16,990	16,030	14,770	13,620
48	4,700	15,610	14,380	12,930	11,750
60	4,480	14,280	12,930	11,490	9,290
72	4,210	13,100	11,750	9,290	6,700
84	3,880	12,090	10,220	7,090	4,930
96	3,480	11,170	8,390	5,430	3,770
108	3,060	9,640	6,700	4,290	2,980
120	2,680	8,170	5,430	3,480	**
144	2,090	5,710	3,770	**	**

\*\*  $K_L > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

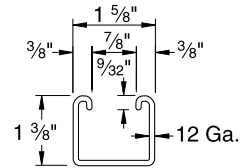
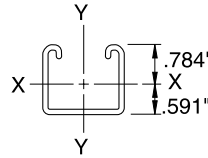
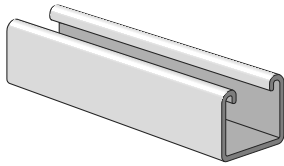


# CHANNEL

Finish: Plain, Painted Green, or Pregalvanized Order By: No., Length and Finish



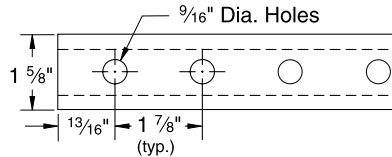
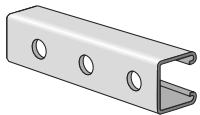
## PS 300 – Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 1<sup>3</sup>/<sub>8</sub>" x 12 ga.)



### ELEMENTS OF SECTION – PS 300

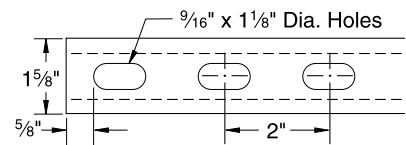
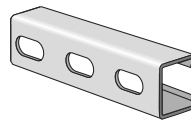
Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
170	0.500	0.120	0.153	0.489	0.203	0.250	0.638

## PS 300 H - Channel with Holes



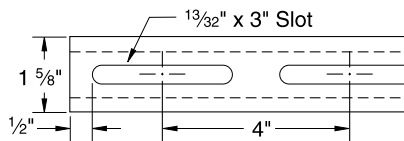
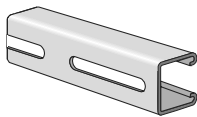
Weight: 165 lbs./100 ft.

## PS 300 EH – Channel with Elongated Holes



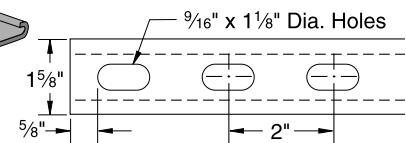
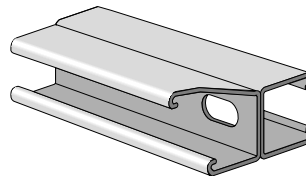
Weight: 165 lbs./100 ft.

## PS 300 S - Channel with Slots



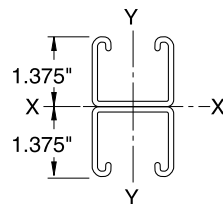
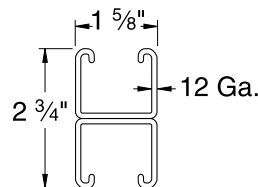
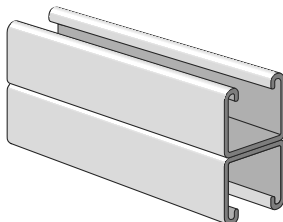
Weight: 165 lbs./100 ft.

## PS 300 2T3 EH – Channel with Elongated Holes



Weight: 340 lbs./100 ft.

## PS 300 2T3 – Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 2<sup>3</sup>/<sub>4</sub>" x 12 ga.)



### ELEMENTS OF SECTION – PS 300 2T3

Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
340	1.000	0.591	0.430	0.769	0.407	0.501	0.638



## PS 300 & PS 300 2T3 – Load Data



Channel

### BEAM LOADING – PS 300

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	1,280	0.07	1,280	1,280	1,280
36	850	0.15	850	850	580
48	640	0.26	640	490	330
60	510	0.41	420	310	210
72	430	0.59	290	220	150
84	370	0.81	210	160	110
96	320	1.05	160	120	80
108	280	1.30	130	100	60
120	260	1.66	100	80	50
144	210	2.32	70	50	40
168	180	3.15	50	40	30
192	160	4.18	40	30	NR
216	140	5.21	NR	NR	NR
240	130	6.64	NR	NR	NR

\* Bearing load may govern capacity.

NR - Not Recommended

This load table is based on a solid channel section.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

For Pierced Channels, reduce beam load values as follows:

PS-300-EH 15%

PS-300-S 15%

PS-300-H 10%

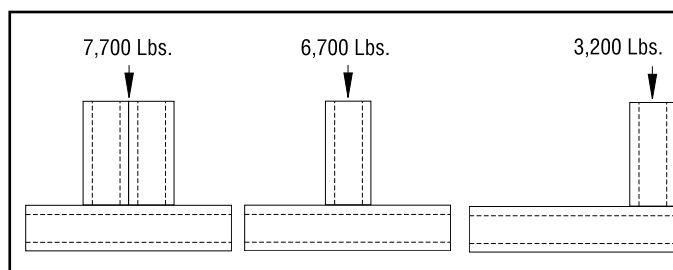
### COLUMN LOADING – PS 300

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	3,180	9,690	8,980	8,050	7,210
36	2,920	8,160	7,210	6,130	5,240
48	2,590	6,820	5,810	4,730	3,860
60	2,300	5,740	4,730	3,690	2,990
72	2,040	4,850	3,860	2,990	2,270
84	1,830	4,100	3,240	2,400	**
96	1,650	3,530	2,770	1,840	**
108	1,450	3,080	2,270	**	**
120	1,250	2,710	1,840	**	**

\*\*  $K_L / > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

### PS300 – Crush Loads



Resistance to Slip – 1,500 lbs. per bolt when 1/2" PS NS channel nuts are used.

Pull Out Strength – 2,000 lbs. per bolt when 1/2" PS NS channel nuts are used.

### BEAM LOADING – PS 300 2T3

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	2,960 *	0.03	2,960 *	2,960 *	2,960 *
36	2,400	0.08	2,400	2,400	2,400
48	1,800	0.15	1,800	1,800	1,610
60	1,440	0.23	1,440	1,440	1,030
72	1,200	0.33	1,200	1,080	720
84	1,030	0.46	1,030	790	530
96	900	0.59	810	610	400
108	800	0.75	640	480	320
120	720	0.93	520	390	260
144	600	1.34	360	270	180
168	510	1.81	260	200	130
192	450	2.38	200	150	100
216	400	3.01	160	120	80
240	360	3.72	130	100	NR

\* Load limited by spot weld shear.

† Bearing load may govern capacity.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8. This load table is based on a solid channel section.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

### COLUMN LOADING – PS 300 2T3

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	5,740	21,780	21,200	20,430	19,720
36	5,620	20,520	19,720	18,830	17,680
48	5,520	19,400	18,570	16,570	14,260
60	5,330	18,510	16,570	13,670	10,810
72	5,030	16,850	14,260	10,810	7,730
84	4,630	14,990	11,930	8,180	5,680
96	4,190	13,090	9,720	6,260	4,350
108	3,720	11,230	7,730	4,950	**
120	3,300	9,460	6,260	4,010	**
144	2,620	6,590	4,350	**	**

\*\*  $K_L / > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

For Pierced Channels, reduce beam load values as follows:

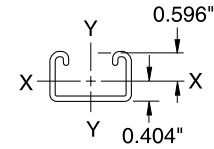
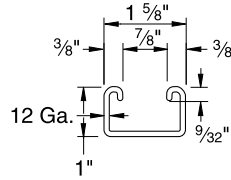
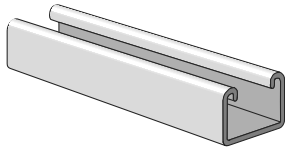
PS-300 2T3 EH 15%

# CHANNEL

Finish: Plain, Painted Green, or Pregalvanized Order By: No., Length and Finish



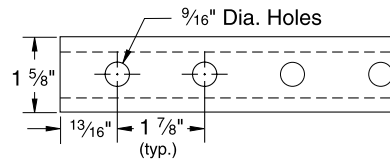
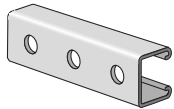
## PS 400 – Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 1" x 12 ga.)



### ELEMENTS OF SECTION – PS 400

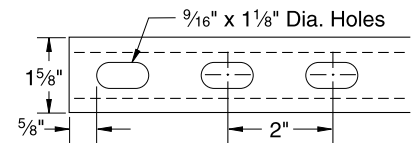
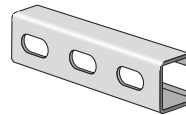
Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
144	0.424	0.053	0.092	0.354	0.161	0.198	0.616

## PS 400 H - Channel with Holes



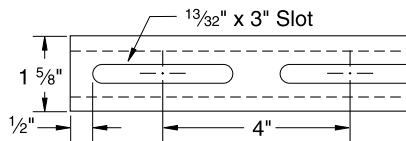
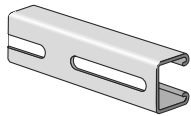
Weight: 136 lbs./100 ft.

## PS 400 EH – Channel with Elongated Holes



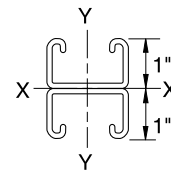
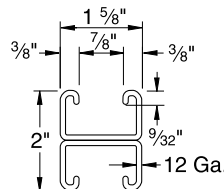
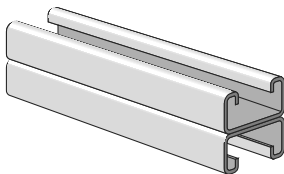
Weight: 136 lbs./100 ft.

## PS 400 S - Channel with Slots



Weight: 136 lbs./100 ft.

## PS 400 2T3 – Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 2" x 12 ga.)



### ELEMENTS OF SECTION – PS 400 2T3

Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
288	0.849	0.255	0.255	0.548	0.322	0.396	0.616



Channel

## PS 400 & PS 400 2T3 – Load Data

### BEAM LOADING – PS 400

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	770	0.09	770	770	580
36	510	0.20	510	390	260
48	380	0.35	290	220	150
60	310	0.56	190	140	90
72	260	0.80	130	100	60
84	220	1.08	90	70	50
96	190	1.39	70	50	40
108	170	1.78	60	40	30
120	150	2.15	50	30	20
144	130	3.22	30	20	20
168	110	4.32	NR	NR	NR
192	100	5.87	NR	NR	NR
216	90	7.52	NR	NR	NR

\* Bearing load may govern capacity.

NR - Not Recommended

This load table is based on a solid channel section.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

For Pierced Channels, reduce beam load values as follows:

PS-400-EH	15%
PS-400-S	15%
PS-400-H	10%

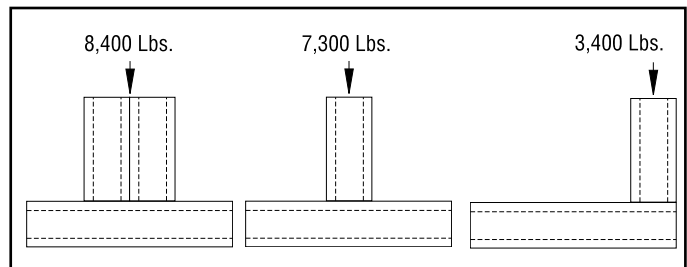
### COLUMN LOADING – PS 400

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	2,620	8,280	7,760	7,140	6,580
36	2,470	7,210	6,580	5,310	4,030
48	2,180	6,200	4,870	3,280	2,280
60	1,770	4,760	3,280	2,100	**
72	1,420	3,450	2,280	**	**
84	1,150	2,530	1,670	**	**
96	**	1,940	**	**	**

\*\*  $K_L > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

### PS400 – Crush Loads



Resistance to Slip – 1,500 lbs. per bolt when ½" PS NS channel nuts are used.  
Pull Out Strength – 2,000 lbs. per bolt when ½" PS NS channel nuts are used.

### BEAM LOADING – PS 400 2T3

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	2,140 *	0.05	2,140 *	2,140 *	2,140 *
36	1,420	0.11	1,420	1,420	1,240
48	1,070	0.20	1,070	1,040	700
60	850	0.32	850	670	450
72	710	0.46	620	460	310
84	610	0.63	450	340	230
96	530	0.81	350	260	170
108	470	1.03	280	210	140
120	430	1.29	220	170	110
144	360	1.86	150	120	80
168	310	2.54	110	90	60
192	270	3.31	90	70	NR
216	240	4.19	70	NR	NR
240	210	5.03	60	NR	NR

\* Load limited by spot weld shear.

† Bearing load may govern capacity.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8. This load table is based on a solid channel section.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

### COLUMN LOADING – PS 400 2T3

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	4,720	18,310	17,840	17,300	16,760
36	4,640	17,360	16,760	15,260	13,610
48	4,470	16,280	14,720	12,460	10,170
60	4,230	14,590	12,460	9,610	6,980
72	3,930	12,750	10,170	6,980	4,840
84	3,520	10,880	7,990	5,130	3,560
96	3,070	9,050	6,130	3,920	**
108	2,690	7,340	4,840	3,100	**
120	2,360	5,940	3,920	**	**

\*\*  $K_L > 200$

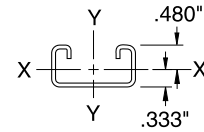
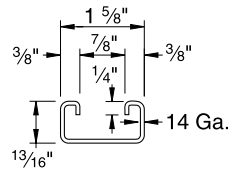
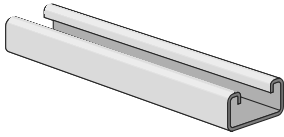
Column loads are for allowable axial loads and must be reduced for eccentric loading.

# CHANNEL

Finish: Plain, Painted Green, or Pregalvanized Order By: No., Length and Finish



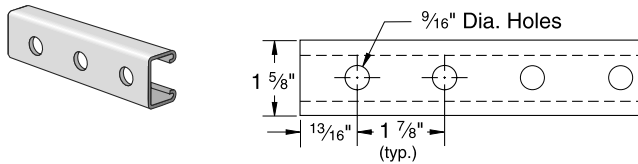
## PS 500 – Steel Channel ( $1\frac{5}{8}" \times 1\frac{3}{16}" \times 14$ ga.)



### ELEMENTS OF SECTION – PS 500

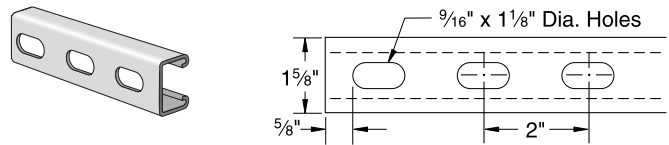
Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
98	0.290	0.026	0.054	0.298	0.107	0.132	0.609

## PS 500 H - Channel with Holes



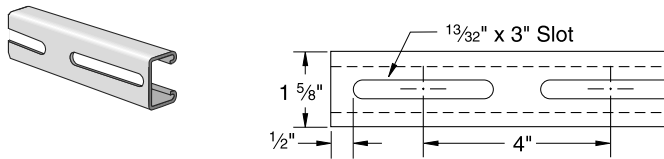
Weight: 87 lbs./100 ft.

## PS 500 EH – Channel with Elongated Holes



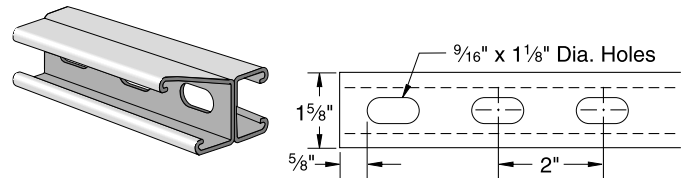
Weight: 87 lbs./100 ft.

## PS 500 S - Channel with Slots



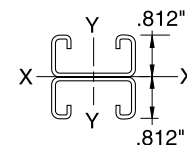
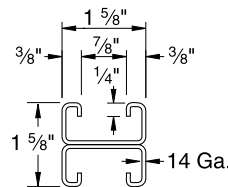
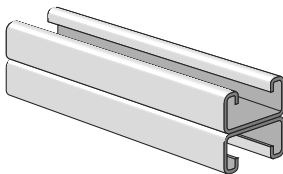
Weight: 87 lbs./100 ft.

## PS 500 2T3 EH – Channel with Elongated Holes



Weight: 174 lbs./100 ft.

## PS 500 2T3 – Steel Channel ( $1\frac{5}{8}" \times 1\frac{5}{8}" \times 14$ ga.)



### ELEMENTS OF SECTION – PS 500 2T3

Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
197	0.579	0.117	0.143	0.449	0.214	0.264	0.608



## PS 500 & PS 500 2T3 – Load Data

### BEAM LOADING – PS 500

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	450	0.11	450	420	280
36	300	0.24	250	190	130
48	230	0.44	140	110	70
60	180	0.67	90	70	50
72	150	0.96	60	50	30
84	130	1.32	50	30	20
96	110	1.67	40	30	20
108	100	2.16	30	20	10
120	90	2.67	20	20	10

\* Bearing load may govern capacity.

This load table is based on a solid channel section.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

For Pierced Channels, reduce beam load values as follows:

PS-500-EH 15%

PS-500-S 15%

PS-500-H 10%

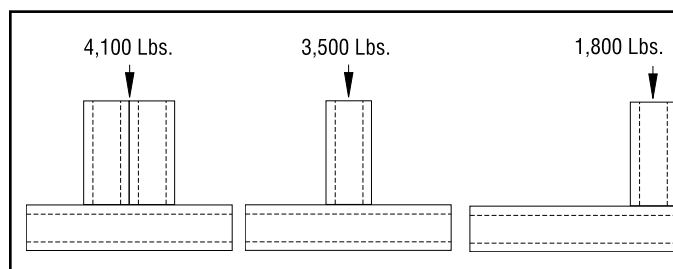
### COLUMN LOADING – PS 500

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	1,840	5,610	5,210	4,570	3,850
36	1,640	4,660	3,850	2,800	1,960
48	1,310	3,490	2,480	1,590	1,100
60	1,000	2,400	1,590	**	**
72	770	1,670	1,100	**	**

\*\*  $K L / r > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

### PS500 – Crush Loads



Resistance to Slip – 1,000 lbs. per bolt when 1/2" PS NS channel nuts are used.

Pull Out Strength – 1,400 lbs. per bolt when 1/2" PS NS channel nuts are used.

### BEAM LOADING – PS 500 2T3

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	1,090 *	0.06	1,090 *	1,090 *	1,090 *
36	800	0.14	800	800	570
48	600	0.25	600	480	320
60	480	0.39	410	310	200
72	400	0.57	280	210	140
84	340	0.76	210	160	100
96	300	1.00	160	120	80
108	270	1.29	130	90	60
120	240	1.57	100	80	50

\*Load limited by spot weld shear.

† Bearing load may govern capacity.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8. This load table is based on a solid channel section.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

### COLUMN LOADING – PS 500 2T3

Unbraced Height	Max Allowable Load at Slot Face	Max. Column Load Applied at C.G.			
		K = 0.65	K = 0.80	K = 1.0	K = 1.2
24	3,240	12,370	11,950	11,370	10,540
36	3,120	11,470	10,540	9,160	7,720
48	2,940	10,090	8,680	6,770	4,980
60	2,680	8,560	6,770	4,590	3,190
72	2,310	7,010	4,980	3,190	2,220
84	1,950	5,530	3,660	2,340	**
96	1,650	4,250	2,800	**	**
108	1,410	3,360	2,220	**	**

\*\*  $K L / r > 200$

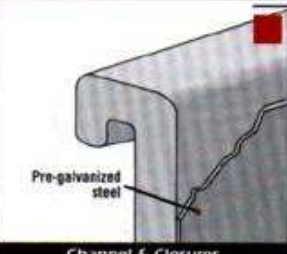
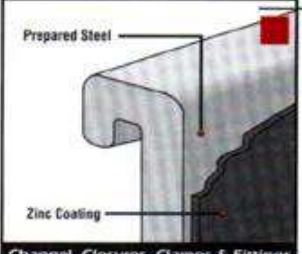

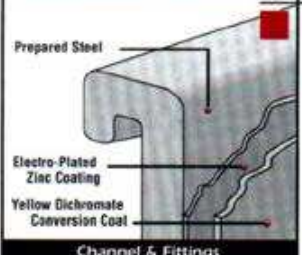
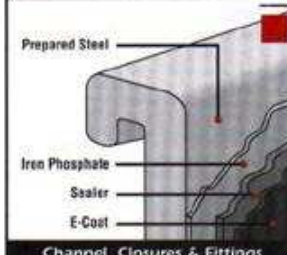
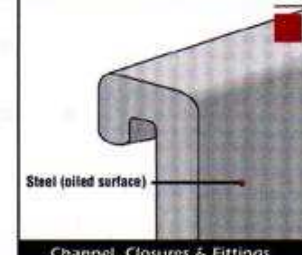
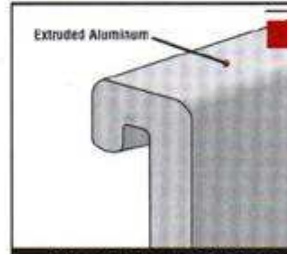
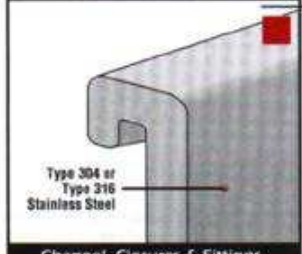
Column loads are for allowable axial loads and must be reduced for eccentric loading.

For Pierced Channels, reduce beam load values as follows:

PS-500 2T3 EH 15%



## Powerstrut Finishes

 <p>Pre-galvanized steel</p> <p>Channel &amp; Closures</p>	<p><b>PREGALVANIZED (PG)</b></p> <p>Material (steel strip) is coated with zinc by hot-dip process prior to roll-forming or press operations.</p> <p>The zinc coating conforms to ASTM A-653, Grade 90 General Requirement for Steel Sheet, Zinc-Coated (Galvanized) by Hot Dip Process.</p>	 <p>Prepared Steel</p> <p>Zinc Coating</p> <p>Channel, Closures, Clamps &amp; Fittings</p>	<p><b>HOT-DIPPED GALVANIZED (HG)</b></p> <p>Material is coated with zinc after being roll-formed or after all manufacturing operations are completed, conforming to ASTM specification No. A123 or A153.</p>
 <p>Prepared Steel</p> <p>Electro-Galvanized Zinc Coating</p> <p>Bolts, Nuts, Clamps &amp; Fittings</p>	<p><b>ELECTRO-GALVANIZED (EG)</b></p> <p>Fittings and hardware are electrolytically coated with zinc to commercial standards (ASTM-B633 Type III C1).</p>	 <p>Prepared Steel</p> <p>Electro-Plated Zinc Coating</p> <p>Yellow Dichromate Conversion Coat</p> <p>Channel &amp; Fittings</p>	<p><b>POWER-GOLD (ZD)</b></p> <p>A .5 mil Electro-galvanized zinc plate is applied with a cohesive molecular bond to the steel base metal, in compliance with the ASTM B633 standard. Yellow Dichromate is applied over the zinc and results in a gold appearance which acts as a nonporous barrier sealant.</p>
 <p>Prepared Steel</p> <p>Iron Phosphate</p> <p>Sealer</p> <p>E-Coat</p> <p>Channel, Closures &amp; Fittings</p>	<p><b>POWER-GREEN® (GR)</b></p> <p>Channel and parts are cleaned and phosphated. Immediately afterward, a uniform coat of rust-inhibiting acrylic enamel paint is applied by electro-deposition and thoroughly baked.</p>	 <p>Steel (oiled surface)</p> <p>Channel, Closures &amp; Fittings</p>	<p><b>PLAIN (PL)</b></p> <p>Plain finish designation means that the channel retains the oiled surface applied to the raw steel during the rolling process. The fittings have the original oiled surface of the bar-stock material.</p>
 <p>Extruded Aluminum</p> <p>Channel, Closures &amp; Fittings</p>	<p><b>ALUMINUM (AL)</b></p> <p>Channel is extruded aluminum in accordance with ASTM B221 Type 6063-T6.</p>	 <p>Type 304 or Type 316 Stainless Steel</p> <p>Channel, Closures &amp; Fittings</p>	<p><b>STAINLESS STEEL (SS)</b></p> <p>Material in accordance with ASTM A 240 (Type 304 or type 316).</p>



## ZINC COATING

Power-Strut products are available in four types of zinc coatings:

- electrolated (EG)
- pregalvanized (PG)
- hot dip galvanized (HG)
- yellow dichromate (ZD)

Zinc coatings offer two types of protection:

1. **Barrier:** The zinc coating protects the steel substrate from direct contact with the environment.
2. **Sacrificial:** The zinc coating will protect scratches, cut edges, etc. through an anodic sacrificial process.

The service life of zinc coating is directly related to the zinc coating thickness as shown below.

### COMPARISON OF ZINC GALVANIZED FINISHES

Finish	Zinc Thickness
Hot Dip Galvanized	2.6 MIL
Pregalvanized	.75 MIL
Electro-Galvanized	.2 to .5 MIL
Power-Gold	.5 MIL

## POWER-GREEN® TECHNICAL DATA

### STEEL SUBSTRATE PREPARATION

Eight stage continuous cleaning, phosphate process.

Substrate after "prep": sealed iron phosphate conversion coating.

### COATING

Thermoset acrylic.

Color: Green Federal STD. 595A, Color No. 14109, Dark Lime V.

Hardness: 2H.

Coating Process: Anodic Electrodeposition.

### PERFORMANCE

Salt Spray:

Scribed: exceeds 400 hrs per ASTM B117.

Unscribed: exceeds 600 hrs per ASTM B117.

Chalk: nominal at 1,000 hrs per weatherometer G-23 test.

Checking: None at 1,000 hrs per weatherometer G-23 test.

Fade: Less than 50% compared to standard epoxy E.C. coatings.

### ENVIRONMENTAL ISSUES

Formulated as a "heavy metal"-free coating (trace elements only).

Outgassing in service: essentially none at 350°F for 24 hrs.

## MATERIALS:

**Channel® & Closures - Pregalvanized**  
ASTM A653 Grade 33, Steel Sheet Zinc Coated by Hot Dip Process.

**Channel® - Plain, Painted or Hot Dip Galvanized**  
ASTM A-1011 Grade 33, Hot Rolled Carbon Steel Sheet and Strip, Structural Quality.

**Channel® - Stainless Steel**  
ASTM A-240, Type 304, Heat Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, Strip for Pressure Vessel.

**Channel® - Aluminum**  
ASTM B-221, Type 6063 T6, Aluminum Alloy Extruded Bar, Rod, Wire, Shape and Tube.

**Closures - Plain, Painted or Hot Dip Galvanized**  
ASTM A1008, Steel, Strip, Carbon, Cold-Rolled.

**Fittings\* - Steel**  
• 1/2" Nominal Thickness - ASTM A-575 and A576  
• 3/4" Nominal Thickness - A36 (Structural Steel)

**Fittings\* - Aluminum**  
ASTM B-209

**Accessories - Steel**  
• Lugs: Bar 1/2" Nominal Thickness - ASTM A-569, 1008-1010 Grade, or (when Pre-Galvanized) ASTM A-527/Coating Designation G90.

**Pipe Clamps - Steel**  
A-1011S Grade 33

**Pipe Clamps - Stainless Steel**  
ASTM A-240, Type 304

**Pipe Clamps - Aluminum**  
ASTM B-209, 3052, H32 Grade, Sheet and Plate.

**Channel Nuts**  
ASTM (1/2" & 3/4") A-575 Grade 1015M, A-675 (1/2") Grade 90, Case Hardened to RC23 min.

**Hex Nuts and Bolts**  
ASTM A-563, Grade A and ASTM A-307, Grade A.

**Threaded Rod**  
ASTM A-510, Hot Rolled, 1008-1010 Grade.

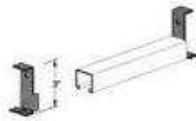
## FINISHES (Ordering):

When ordering, add the finish to the part number.

Examples: PS 200-10 PG  
PS 200-10 ZD  
PS 200-10 GR  
PS 200-10 HG

\* Channel referenced is 1 1/2" wide. Fittings referenced are for 1 1/2" channel.  
† Some 1/2" fittings are produced from A-36 Structural Steel.

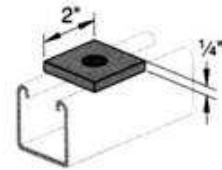


**CHANNEL**

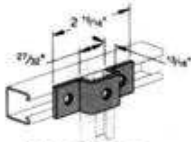
## CONCRETE INSERTS



## FASTENERS



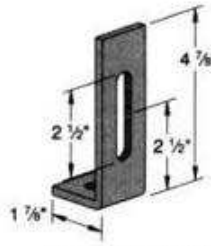
## HEAVY DUTY CHANNEL



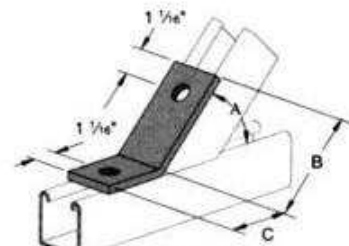
## JUNIOR CHANNEL



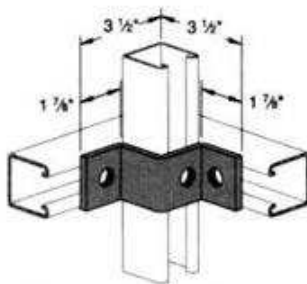
## FLAT PLATE FITTINGS



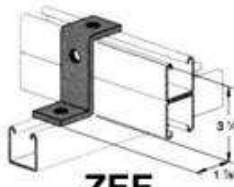
## FITTINGS



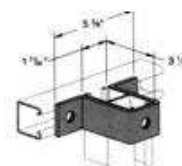
## ANGLE FITTINGS



## BRACE FITTINGS



## ZEE FITTINGS



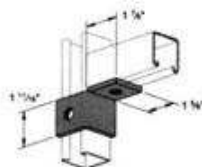
## "U" FITTINGS



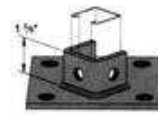
## JOINER FITTINGS



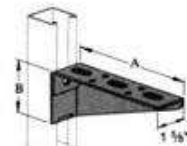
## TROLLEY FITTINGS



## WING FITTINGS



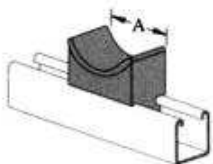
## POST BASE FITTINGS



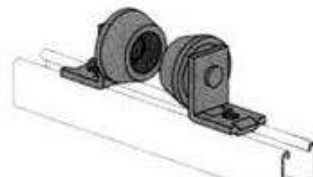
## BRACKETS



## PIPE & CONDUIT CLAMPS



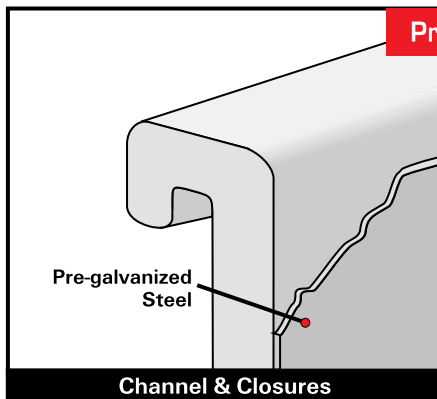
## ELECTRICAL



REAM CI AMDS

[ [Home](#) | [Powerstrut](#) | [Gripstrut](#) | [Specialty](#) | [Bar Grating](#) | [Fiberglass Grating](#) ]

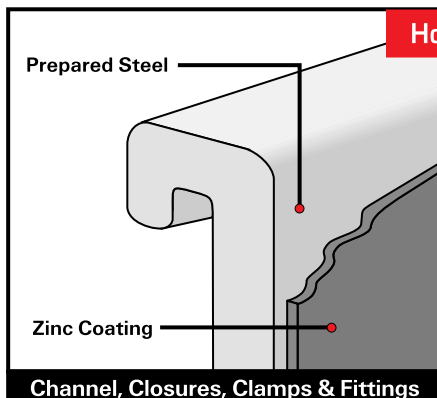
Power Engineering Co. Inc.  
420 Boston Turnpike  
Shrewsbury, MA 01545  
Phone: 1-800-274-1303  
Fax: 508-842-9833  
Email: [paul@powerengco.com](mailto:paul@powerengco.com)



## Pregalvanized (PG)

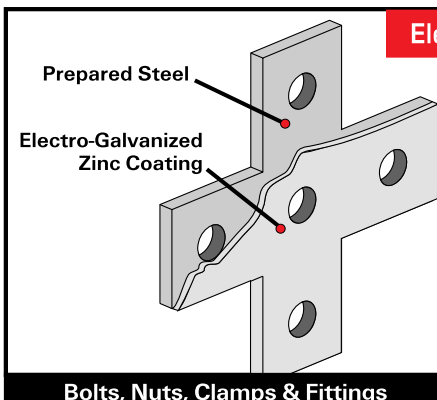
Material (steel strip) is coated with zinc by hot-dip process prior to roll-forming or press operations.

The zinc coating conforms to ASTM A653, Grade 90 General Requirement for Steel Sheet, Zinc-Coated (Galvanized) by Hot Dip Process.



## Hot-Dipped Galvanized (HG)

Material is coated with zinc after being roll-formed or after all manufacturing operations are completed, conforming to ASTM specification No. A123 or A153.

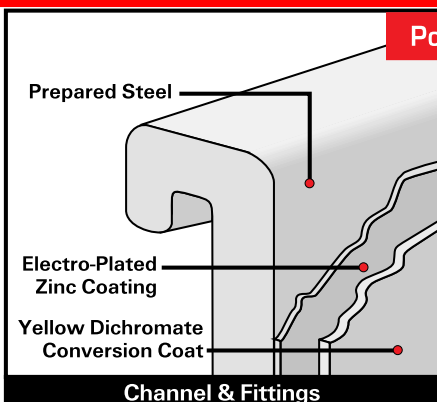


## Electro-Galvanized (EG)

Fittings and hardware are electrolytically coated with zinc to commercial standards (ASTM-B633 Type III C1).

SC1 (mild) has a Zinc coating of 0.2 and is recommended for dry indoor use. SC1 is the standard finish thickness.

SC3 (Severe) has a Zinc coating of 0.5 mill and is the standard finish thickness only on UL Listed raceway products.



## Power-Gold (ZD)

A Electro-galvanized zinc plate is applied with a cohesive molecular bond to the steel base metal, in compliance with the ASTM B633 standard. Yellow Dichromate is applied over the zinc and results in a gold appearance which acts as a nonporous barrier sealant.

SC1 (mild) has a Zinc coating of 0.2 and is recommended for dry indoor use. SC1 is the standard finish thickness

SC3 (Severe) has a Zinc coating of 0.5 mill and is the standard finish thickness only on UL Listed raceway products.

## ZINC COATING

Power-Strut products are available in four types of zinc coatings:

- Electroplated (EG)
- Pregalvanized (PG)
- Hot-Dipped Galvanized (HG)
- Yellow Dichromate (ZD)

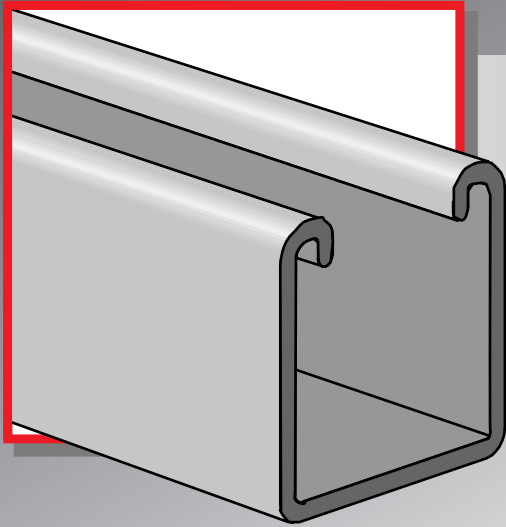
Zinc coatings offer two types of protection:

1. **Barrier:** The zinc coating protects the steel substrate from direct contact with the environment.
2. **Sacrificial:** The zinc coating will protect scratches, cut edges, etc. through an anodic sacrificial process.

The service life of zinc coating is directly related to the zinc coating thickness as shown below.

## COMPARISON OF ZINC GALVANIZED FINISHES

Finish	Zinc Thickness
Hot-Dipped Galvanized	2.6 MIL
Pregalvanized	0.75 MIL
Electro-Galvanized (SC1)	0.2 MIL
Electro-Galvanized (SC3)	0.5 MIL
Power-Gold (SC1)	0.2 MIL
Power-Gold (SC3)	0.5 MIL



## CHANNEL

*Power-Strut channel sections are produced by multiple sets of forming rolls which cold-work strip steel into the channel configuration. This type of roll forming produces a uniform channel section held to the specifications of MFMA-4.*

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### **MATERIALS:**

Plain and painted green channels are formed from structural quality strip steel which conforms to the requirements of ASTM A-1011 SS Grade 33. Pre-galvanized channel conforms to the requirements of ASTM A-653 Grade 33.

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### **STANDARD LENGTHS:**

Stock lengths are 10 and 20 feet. Special lengths are available upon request.

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### **STANDARD FINISHES:**

Standard Power-Strut channel is available in plain, painted green, zinc dichromate or pre-galvanized finishes.

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### **ORDERING INFORMATION:**

When ordering, add the length or size and finish to the part number. See page 8 - 9 for finish abbreviations and an example.

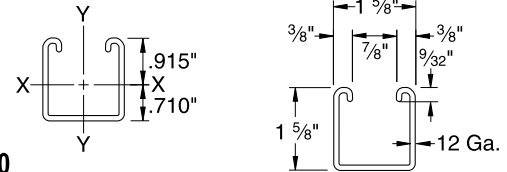
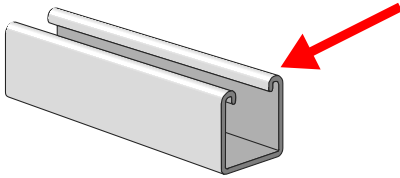
Type of Load	Safety Factor to Yield Strength	Safety Factor to Ultimate Strength
Beam Loads	1.67	2.0
Column Load	1.80	2.2

# CHANNEL

Finish: Plain, Painted Green, or Pregalvanized Order By: No., Length and Finish



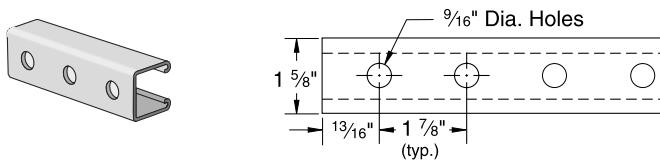
## PS 200 – Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 1<sup>5</sup>/<sub>8</sub>" x 12 ga.)



ELEMENTS OF SECTION – PS 200

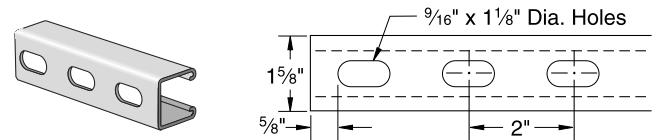
Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
189	0.555	0.185	0.202	0.577	0.236	0.290	0.651

### PS 200 H - Channel with Holes



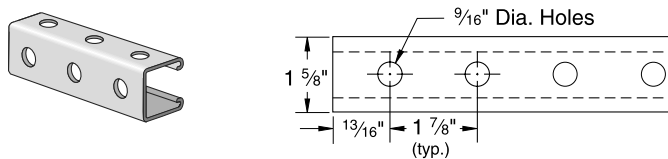
Weight: 186 lbs./100 ft.

### PS 200 EH – Channel with Elongated Holes



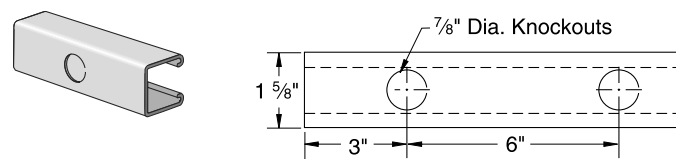
Weight: 185 lbs./100 ft.

### PS 200 H3 - Channel with Holes



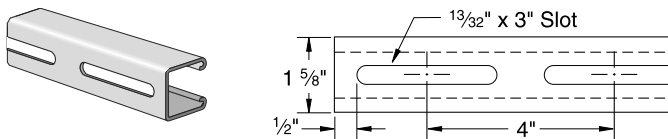
Weight: 175 lbs./100 ft.

### PS 200 K06 – Channel with Knockouts



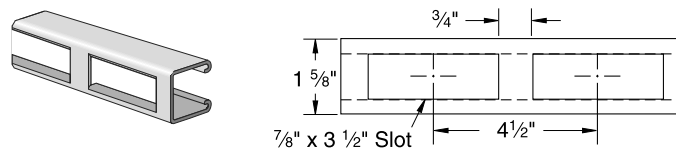
Weight: 189 lbs./100 ft.

### PS 200 S - Channel with Slots



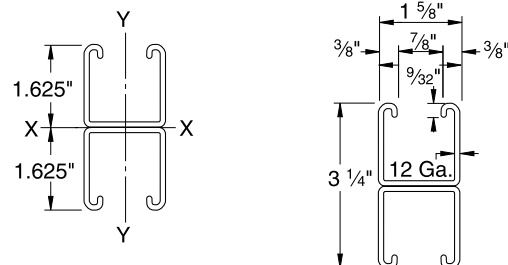
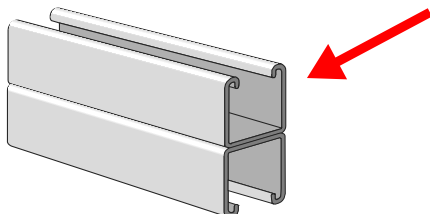
Weight: 185 lbs./100 ft.

### PS 200 SB – Channel with Slotted Back



Weight: 173 lbs./100 ft.

## PS 200 2T3 – Steel Channel (1<sup>5</sup>/<sub>8</sub>" x 3<sup>1</sup>/<sub>4</sub>" x 12 ga.)



ELEMENTS OF SECTION – PS 200 2T3

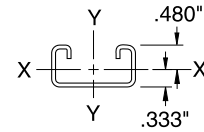
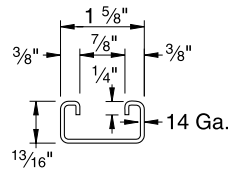
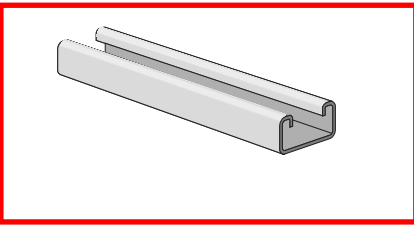
Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
378	1.111	0.928	0.571	0.914	0.471	0.580	0.651

# CHANNEL

Finish: Plain, Painted Green, or Pregalvanized Order By: No., Length and Finish



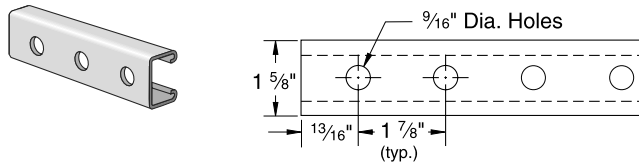
## PS 500 – Steel Channel ( $1\frac{5}{8}" \times 1\frac{3}{16}" \times 14$ ga.)



### ELEMENTS OF SECTION – PS 500

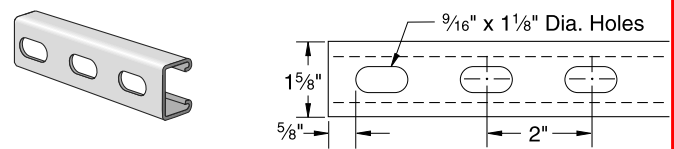
Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
98	0.290	0.026	0.054	0.298	0.107	0.132	0.609

## PS 500 H - Channel with Holes



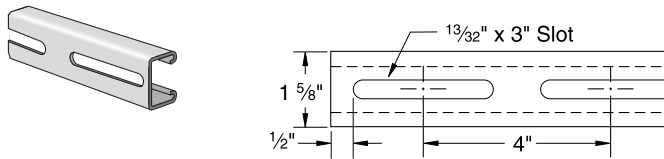
Weight: 87 lbs./100 ft.

## PS 500 EH – Channel with Elongated Holes



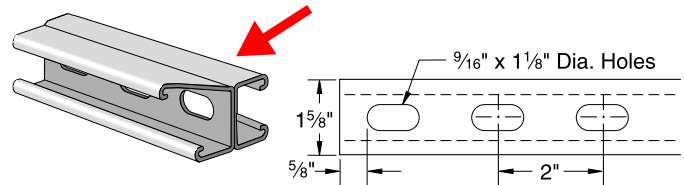
Weight: 87 lbs./100 ft.

## PS 500 S - Channel with Slots



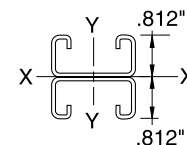
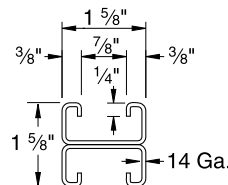
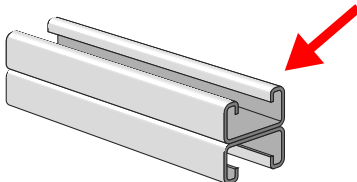
Weight: 87 lbs./100 ft.

## PS 500 2T3 EH – Channel with Elongated Holes



Weight: 174 lbs./100 ft.

## PS 500 2T3 – Steel Channel ( $1\frac{5}{8}" \times 1\frac{5}{8}" \times 14$ ga.)



### ELEMENTS OF SECTION – PS 500 2T3

Weight (lbs./100 ft.)	Area of Section (Inch <sup>2</sup> )	X-X Axis			Y-Y Axis		
		Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)	Moment of Inertia (Inch <sup>4</sup> )	Section Modulus (Inch <sup>3</sup> )	Radius of Gyration (Inch)
197	0.579	0.117	0.143	0.449	0.214	0.264	0.608



Channel

## PS 500 & PS 500 2T3 – Load Data

### BEAM LOADING – PS 500

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	450	0.11	450	420	280
36	300	0.24	250	190	130
48	230	0.44	140	110	70
60	180	0.67	90	70	50
72	150	0.96	60	50	30
84	130	1.32	50	30	20
96	110	1.67	40	30	20
108	100	2.16	30	20	10
120	90	2.67	20	20	10

\* Bearing load may govern capacity.

This load table is based on a solid channel section.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

For Pierced Channels, reduce beam load values as follows:

PS-500-EH 15%

PS-500-S 15%

PS-500-H 10%

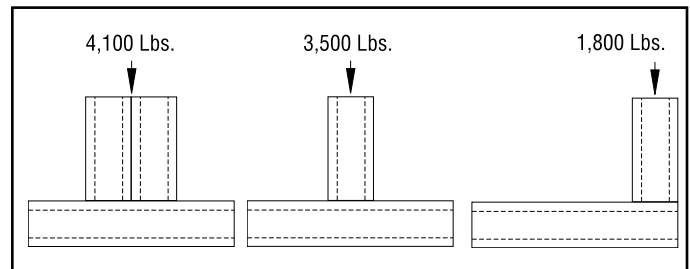
### COLUMN LOADING – PS 500

Unbraced Height (in)	Max. Allowable Load at Slot Face (lbs)	Maximum Column Load Applied at C.G.			
		K = 0.65 (lbs)	K = 0.80 (lbs)	K = 1.0 (lbs)	K = 1.2 (lbs)
24	1,840	5,610	5,210	4,570	3,850
36	1,640	4,660	3,850	2,800	1,960
48	1,310	3,490	2,480	1,590	1,100
60	1,000	2,400	1,590	**	**
72	770	1,670	1,100	**	**

\*\*  $K L / r > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

### PS500 – Crush Loads



Resistance to Slip – 1,000 lbs. per bolt when 1/2" PS NS channel nuts are used.

Pull Out Strength – 1,400 lbs. per bolt when 1/2" PS NS channel nuts are used.

### BEAM LOADING – PS 500 2T3

Span (in)	Max Allowable Uniform Load (lb)	Defl. at Uniform Load (in)	Uniform Loading at Deflection		
			Span/180 (lbs)	Span/240 (lbs)	Span/360 (lbs)
24	1,090 *	0.06	1,090 *	1,090 *	1,090 *
36	800	0.14	800	800	570
48	600	0.25	600	480	320
60	480	0.39	410	310	200
72	400	0.57	280	210	140
84	340	0.76	210	160	100
96	300	1.00	160	120	80
108	270	1.29	130	90	60
120	240	1.57	100	80	50

\*Load limited by spot weld shear.

† Bearing load may govern capacity.

For concentrated load at center of span, divide uniform load by 2 and multiply corresponding deflection by 0.8. This load table is based on a solid channel section.

Loads include weight of channel, which must be deducted.

Loads must be multiplied by the applicable unbraced factor from page 42.

### COLUMN LOADING – PS 500 2T3

Unbraced Height	Max Allowable Load at Slot Face	Max. Column Load Applied at C.G.			
		K = 0.65	K = 0.80	K = 1.0	K = 1.2
24	3,240	12,370	11,950	11,370	10,540
36	3,120	11,470	10,540	9,160	7,720
48	2,940	10,090	8,680	6,770	4,980
60	2,680	8,560	6,770	4,590	3,190
72	2,310	7,010	4,980	3,190	2,220
84	1,950	5,530	3,660	2,340	**
96	1,650	4,250	2,800	**	**
108	1,410	3,360	2,220	**	**

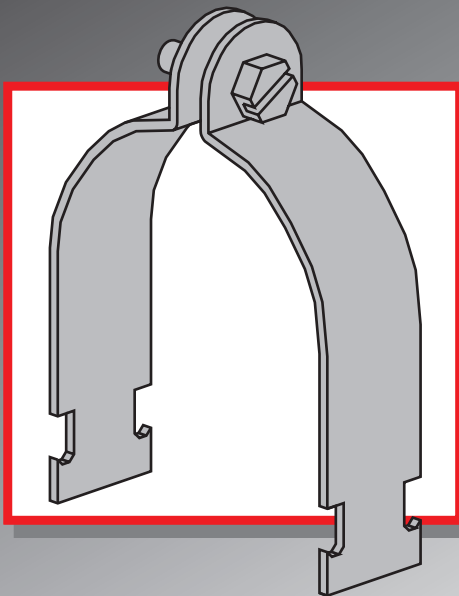
\*\*  $K L / r > 200$

Column loads are for allowable axial loads and must be reduced for eccentric loading.

For Pierced Channels, reduce beam load values as follows:

PS-500 2T3 EH 15%





## PIPE & CONDUIT CLAMPS

*Power-Strut pipe, conduit and O.D. tubing clamps are formed in punch press dies in a wide selection of sizes to meet every requirement.*

### **MATERIAL:**

Power-Strut pipe, conduit and O.D. tubing clamps are made on punch press dies from hot rolled, pickled and oiled steel which conforms to the ASTM A-1008, A-1011 SS, A-575 and A-576 standards. Select sizes of O.D. tubing clamps are available in stainless steel or aluminum.

### **STANDARD FINISH:**

All steel clamps are electro-galvanized. Select sizes of O.D. tubing clamps are available in copper plated finish. PVC coatings are available upon special request.

### **ORDERING INFORMATION:**

When ordering, add the length or size and finish to the part number. See pages 8-9 for finish abbreviations and an example.

### **RECOMMENDED BOLT TORQUE:**

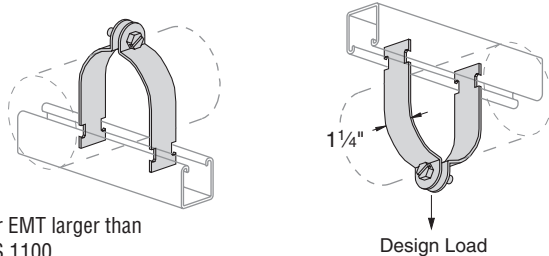
Bolt Size	1/4"-20	5/16"-18	3/8"-16	1/2"-13	5/8"-11	3/4"-10
Rec. Torque Ft/Lbs	6	11	19	50	100	125
Max. Torque Ft/Lbs	7	15	25	70	125	135

# PIPE & CONDUIT CLAMPS

Finish: Electro-galvanized Order By: No., and Finish



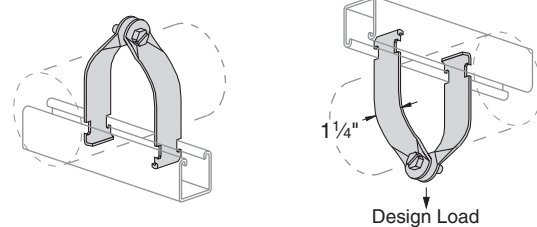
## PS 1000 – EMT Conduit Clamp



Note: For EMT larger than 2" use PS 1100

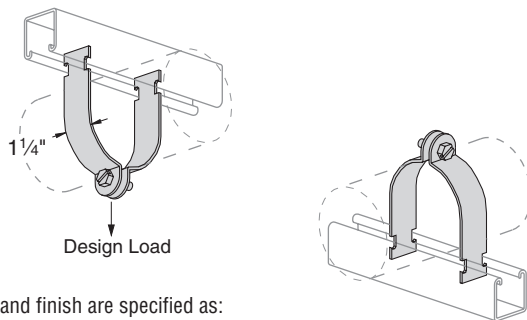
EMT Size	Stock Thickness	Hanging Load Rating/lbs.	Wt./100 pcs
1/2"	.060	400	11
3/4"			12
1"	.075	600	15
1 1/4"			18
1 1/2"	.105	800	29
2"			33

## PS 1300 – Universal Clamp for EMT, IMC & GRC



Nominal Size	Fits O.D.	Stock Thickness	Hanging Load Rating/lbs.	Wt./100 pcs
1/2"	0.706-0.840	.060	250	10
3/4"	0.922-1.050	.060	400	11
1"	1.163-1.315			12
1 1/4"	1.510-1.660	.075	400	18
1 1/2"	1.740-1.900	.075	500	20
2"	2.197-2.375			22

## PS 1100, PS 1116, PS 1117 – Standard Pipe Clamp (GRC, IMC and SCH 40/SCH 80 steel pipe)



Material and finish are specified as:

**1100 AL** Alum. clamp, EG fasteners

**1100 HG** Clamp, Stainless Steel fasteners

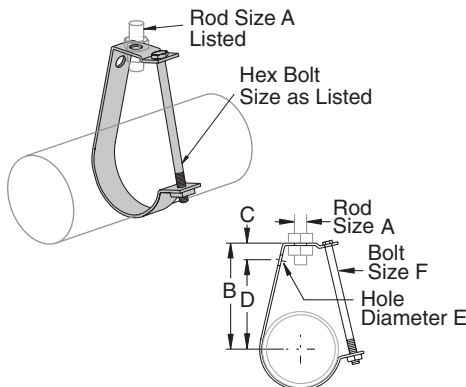
**1116** Alum. clamp and fasteners

**1117** Alum. clamp, Stainless Steel fasteners

**1100SS** Stainless Steel clamp and fasteners

Pipe Size	Stock Thickness	Hanging Load Rating/lbs.	Wt./100 pcs
3/8"	.060	400	10
1/2"			11
3/4"	.075	600	15
1"			17
1 1/4"	.105	800	19
1 1/2"			29
2"	.125	1,000	34
2 1/2"			40
3"	.135	1,000	47
3 1/2"			62
4"	.125	1,000	67
5"			80
6"	.135	1,000	102
8"			130
10"	.135	1,000	143
12"			174

## PS 67 – "J" Pipe or Conduit Hanger



### Notes:

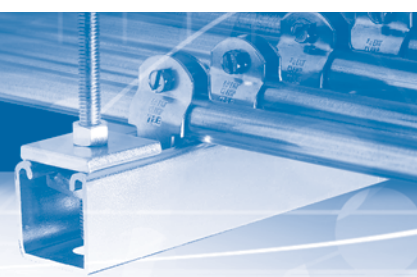
Plastic Coated hanger is available ("N" Suffix). Please contact factory for additional information.

Maximum operating temperature is 300°F

Minimum safety factor of five (5) on ultimate load.

Conduit Size	A Rod Size	B	C	D	E	F	Load Rating/lbs.	Wt./100 pcs
1/2"	3/8	2 5/8	1	2	1 3/32	1/4 x 2 1/4	400	20
3/4"		2 7/8		2 1/4		1/4 x 2 1/2		21
1"		3		2 3/8		1/4 x 2 3/4		24
1 1/4"		3 1/4		2 1/2		1/4 x 3		27
1 1/2"	1/2	3 1/2	1 1/8	2 5/8	9/16	1/4 x 3 1/2	800	29
2"		3 3/4		2 5/8		3/8 x 4 1/2		33
2 1/2"		4 3/8		3 5/8		3/8 x 5		71
3"		4 7/8		4		3/8 x 6		78
3 1/2"	5/8	5 1/8	1 1/4	4 1/4	5/8	3/8 x 7 1/2	1,000	85
4"		6 1/8		5 1/8		3/8 x 8 1/2		178
5"		6 3/4		5 3/4		3/8 x 10		199
6"		7 3/4		6 1/2				231
8"	7/8	9 1/4	1 1/4	8			1,200	449

## Pipe Straps, Conduit Clamps & Hangers



### Excellent Corrosion Resistance and a Superior Paint Base

GoldGalv® hardware finish is standard for all Superstrut® products. This is a multi-process finish of electro-plated zinc, followed by gold-colored zinc dichromate to give excellent corrosion resistance and a superior paint base. See **page D-3** for a complete description of the GoldGalv® hardware finish. GoldGalv® hardware will be furnished if no other finish is specified.

#### Materials

Most products are manufactured from hot-rolled carbon steel bars or hot-rolled strip steel. Pipe rollers are cast iron. Products which are copper plated carry the letter "T" in the prefix.

#### Design Loads

Where design loads are indicated, they provide for a safety factor of 3 in conformance with the "AMERICAN STANDARD CODE FOR PRESSURE PIPING."

#### Hanger Design

Pipe hangers are of advanced design and afford a new and better way of ordinary use.

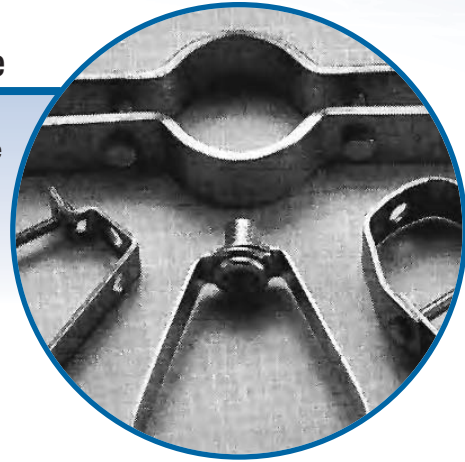
#### Standard Dimensions

The following, except where noted, apply to all beam clamp fittings.

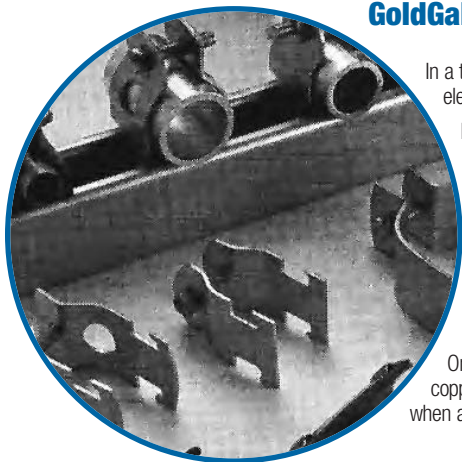
Hole Size:  $\frac{5}{16}$ " diameter

Material:  $1\frac{1}{2}$ " wide

Material:  $\frac{1}{4}$ " thick



### GoldGalv® Outperforms Copper Plated



In a test conforming to ASTM G-87-84, also known as the Kesternich Test, Superstrut's GoldGalv® electrogalvanized zinc dichromate finish achieved superior corrosion resistance in comparison to copper plated.

Performed and certified by an independent testing laboratory, the stringent Kesternich test is equivalent to an acid rain environment. The test procedure exposes subject material to condensed moisture containing harsh sulfur dioxide (SO<sub>2</sub>) which accelerates the aging process. During the series of test time cycles, the material is thoroughly inspected for signs and progression of damaging red rust.

The first test series conducted included various light-duty adjustable clevis hangers assembled to copper tubing. The GoldGalv® finish exhibited five times the red rust resistance as compared to copper plated.

The second test series was performed on various O.D. pipe straps attached to copper tubing and continuous slot channel. GoldGalv® achieved greater red rust resistance by seven times over copper plating.

Once tests were completed, all copper tubes were split open and inspected for signs of electrolysis. The copper tubes showed minimal deterioration as a result of the test and no indication of electrolysis occurrence when attached to material with GoldGalv® finish.

### ASTM G-87-84 Corrosion Test Results

FINISH	INITIAL RED RUST	50% RED RUST	100% RED RUST
<b>Test Series I: Light-Duty Adjustable Clevis Hanger</b>			
GoldGalv®	120 hours	216 hours	*Never obtained
Copper Plated	24 hours	48 hours	72 hours
<b>Test Series II: O.D. Pipe Straps</b>			
GoldGalv®	168 hours	192 hours	240 hours
Copper plated	24 hours	48 hours	168 hours

\*Test series ended after 360 hours.

Standard Finish – GoldGalv®, unless otherwise stated.

# Superstrut®

## Pipe Straps, Conduit Clamps & Hangers

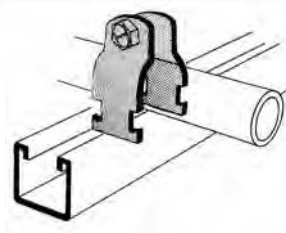
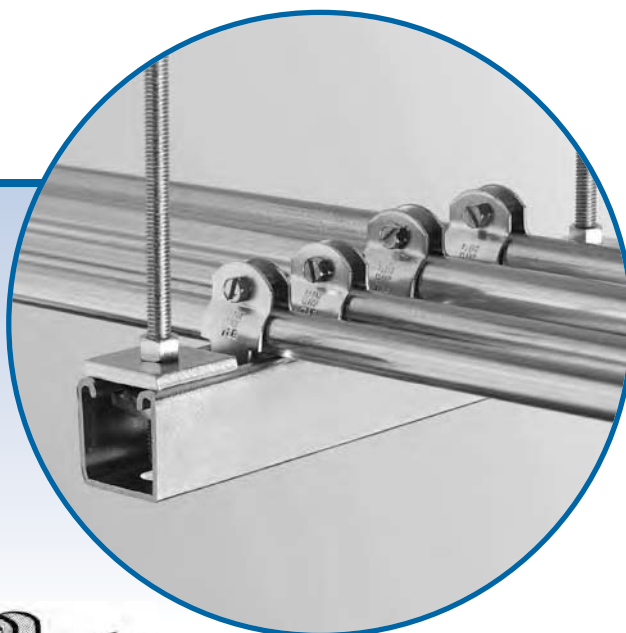
### Superstrut® Pipe Straps

Pre-Assembled for Easy Handling and Sorting

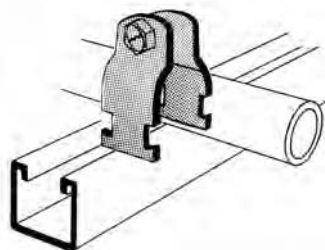
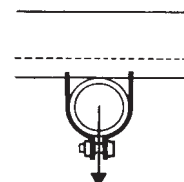
Superstrut® Pipe Straps are designed to be twist inserted anywhere along the slot side of the channel. Pipes can be placed as closely as pipe couplings permit.

**Some unique features of the straps include:**

- Bolt head is combination slot and hex head for flexibility of attachment
- Square nut is captivated on the shoulder for easy one-handed tightening
- Straps are interchangeable with 1½" strut for broader application
- Straps are shipped assembled so counting and sorting are easier
- Pipe or conduit sizes are shown on the strap for easy identification
- All Superstrut® Straps are preassembled for easy handling and sorting



Design Loads



### 700 — Superstrut® Straps for EMT

CAT. NO.	EMT SIZE (IN.)	O.D. SIZE (IN.)	STEEL STRAP THICKNESS	DESIGN LOAD (LBS.)	STD. CTN.
<i>Standard Finishes – GoldGalv® brand. Consult Factory regarding other Finishes and Materials</i>					
700 3/8-STR	3/8	0.577	14 ga.	750	100
700 1/2-STR	1/2	0.706	14 ga.	750	100
700 3/4-STR	3/4	0.922	14 ga.	750	100
700 1-STR	1	1.163	14 ga.	750	100
700 1-1/4-STR	1 1/4	1.510	14 ga.	750	50
700 1-1/2-STR	1 1/2	1.740	12 ga.	800	50
700 2-STR	2	2.197	12 ga.	800	50

### 701 — Superstrut® Straps for O.D. Tubing

CAT. NO.	TUBING O.D. (IN.)	STEEL STRAP THICKNESS	DESIGN LOAD (LBS.)	STD. CTN.
701-1/4	1/4	14 ga.	750	100
701-3/8	3/8	14 ga.	750	100
701-1/2-STR	1/2	14 ga.	750	100
701-5/8	5/8	14 ga.	750	100
701-3/4	3/4	14 ga.	750	100
701-7/8	7/8	14 ga.	750	100
701-1-STR	1	14 ga.	750	50
701-1-1/8	1 1/8	14 ga.	1,000	100
701-1-1/4	1 1/4	14 ga.	1,000	25
701-1-3/8	1 3/8	14 ga.	1,000	100
701-1-1/2	1 1/2	14 ga.	1,000	25
701-1-5/8	1 5/8	14 ga.	1,000	100
701-1-3/4	1 3/4	12 ga.	1,000	25
701-1-7/8	1 7/8	12 ga.	1,000	50
701-2	2	12 ga.	1,000	50
701-2-1/8	2 1/8	12 ga.	1,300	50
701-2-1/4	2 1/4	12 ga.	1,300	25
701-2-3/8	2 3/8	12 ga.	1,300	25
701-2-1/2	2 1/2	12 ga.	1,300	25
701-2-5/8	2 5/8	12 ga.	1,300	50

**Thomas & Betts**

www.tnb.com

Corporate Office

Tel: 901.252.8000

800.816.7809

Fax: 901.252.1354

Customer Service

Tel: 800.816.7809

Fax: 800.816.7810

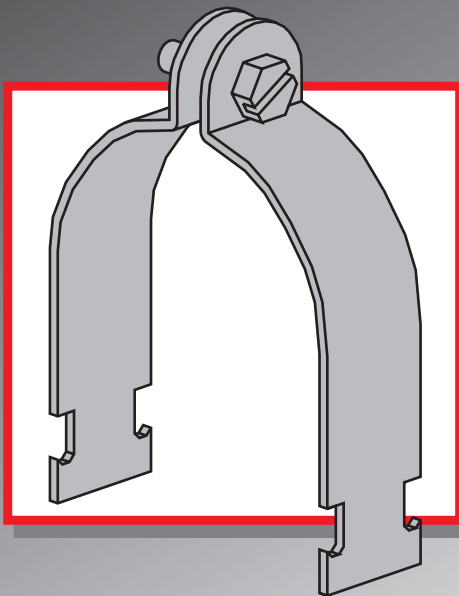
Technical Services

Tel: 888.862.3289

Fax: 901.252.1321

Tool Services

Tel: 800.284.8665



## PIPE & CONDUIT CLAMPS

*Power-Strut pipe, conduit and O.D. tubing clamps are formed in punch press dies in a wide selection of sizes to meet every requirement.*

### **MATERIAL:**

Power-Strut pipe, conduit and O.D. tubing clamps are made on punch press dies from hot rolled, pickled and oiled steel which conforms to the ASTM A-1008, A-1011 SS, A-575 and A-576 standards. Select sizes of O.D. tubing clamps are available in stainless steel or aluminum.

### **STANDARD FINISH:**

All steel clamps are electro-galvanized. Select sizes of O.D. tubing clamps are available in copper plated finish. PVC coatings are available upon special request.

### **ORDERING INFORMATION:**

When ordering, add the length or size and finish to the part number. See pages 8-9 for finish abbreviations and an example.

### **RECOMMENDED BOLT TORQUE:**

Bolt Size	1/4"-20	5/16"-18	3/8"-16	1/2"-13	5/8"-11	3/4"-10
Rec. Torque Ft/Lbs	6	11	19	50	100	125
Max. Torque Ft/Lbs	7	15	25	70	125	135

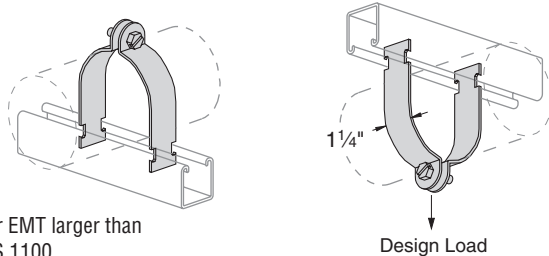


# PIPE & CONDUIT CLAMPS

Finish: Electro-galvanized Order By: No., and Finish



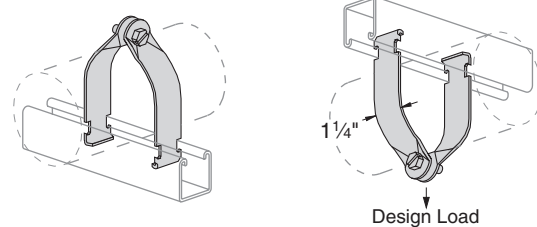
## PS 1000 – EMT Conduit Clamp



Note: For EMT larger than 2" use PS 1100

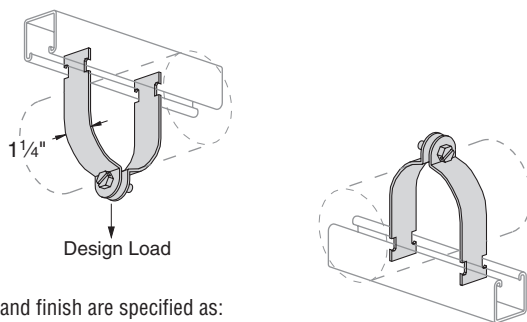
EMT Size	Stock Thickness	Hanging Load Rating/lbs.	Wt./100 pcs
1/2"	.060	400	11
3/4"			12
1"			15
1 1/4"	.075	600	18
1 1/2"			29
2"	.105	800	33

## PS 1300 – Universal Clamp for EMT, IMC & GRC



Nominal Size	Fits O.D.	Stock Thickness	Hanging Load Rating/lbs.	Wt./100 pcs
1/2"	0.706-0.840	.060	250	10
3/4"	0.922-1.050		400	11
1"	1.163-1.315			12
1 1/4"	1.510-1.660	.075	400	18
1 1/2"	1.740-1.900		500	20
2"	2.197-2.375			22

## PS 1100, PS 1116, PS 1117 – Standard Pipe Clamp (GRC, IMC and SCH 40/SCH 80 steel pipe)



Material and finish are specified as:

**1100 AL** Alum. clamp, EG fasteners

**1100 HG** Clamp, Stainless Steel fasteners

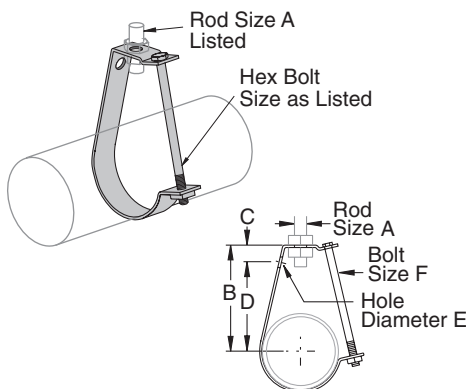
**1116** Alum. clamp and fasteners

**1117** Alum. clamp, Stainless Steel fasteners

**1100SS** Stainless Steel clamp and fasteners

Pipe Size	Stock Thickness	Hanging Load Rating/lbs.	Wt./100 pcs
3/8"	.060	400	10
1/2"			11
3/4"			15
1"	.075	600	17
1 1/4"			19
1 1/2"			29
2"	.105	800	34
2 1/2"			40
3"			47
3 1/2"	.125	1,000	62
4"			67
5"			80
6"	.135	1,000	102
8"			130
10"			143
12"			174

## PS 67 – "J" Pipe or Conduit Hanger



### Notes:

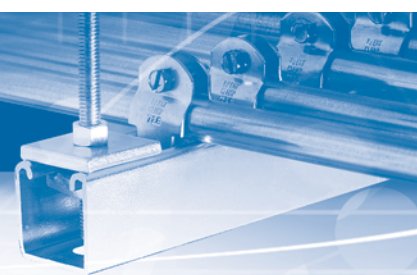
Plastic Coated hanger is available ("N" Suffix). Please contact factory for additional information.

Maximum operating temperature is 300°F

Minimum safety factor of five (5) on ultimate load.

Conduit Size	A Rod Size	B	C	D	E	F	Load Rating/lbs.	Wt./100 pcs	
1/2	3/8	2 5/8	1	2	13/32	1/4 x 2 1/4	400	20	
3/4		2 7/8		2 1/4		21			
1		3		2 3/8		1/4 x 2 1/2		24	
1 1/4		3 1/4		2 1/2		1/4 x 2 3/4		27	
1 1/2		3 1/2		2 5/8		1/4 x 3		29	
2		3 3/4	1 1/8	2 5/8		1/4 x 3 1/2		33	
2 1/2	1/2	4 3/8	1 1/8	3 5/8	9/16	3/8 x 4 1/2	800	71	
3		4 7/8		4		3/8 x 5		78	
3 1/2		5 1/8		4 1/4		3/8 x 6		85	
4	5/8	6 1/8		5 1/8		3/8 x 7 1/2		1,000	178
5		6 3/4		5 3/4					199
6	3/4	7 3/4	1 1/4	6 1/2			3/8 x 8 1/2		1,000
8	7/8	9 1/4	1 1/4	8	3/8 x 10	1,200	449		

## Pipe Straps, Conduit Clamps & Hangers



### Excellent Corrosion Resistance and a Superior Paint Base

GoldGalv® hardware finish is standard for all Superstrut® products. This is a multi-process finish of electro-plated zinc, followed by gold-colored zinc dichromate to give excellent corrosion resistance and a superior paint base. See **page D-3** for a complete description of the GoldGalv® hardware finish. GoldGalv® hardware will be furnished if no other finish is specified.

#### Materials

Most products are manufactured from hot-rolled carbon steel bars or hot-rolled strip steel. Pipe rollers are cast iron. Products which are copper plated carry the letter "T" in the prefix.

#### Design Loads

Where design loads are indicated, they provide for a safety factor of 3 in conformance with the "AMERICAN STANDARD CODE FOR PRESSURE PIPING."

#### Hanger Design

Pipe hangers are of advanced design and afford a new and better way of ordinary use.

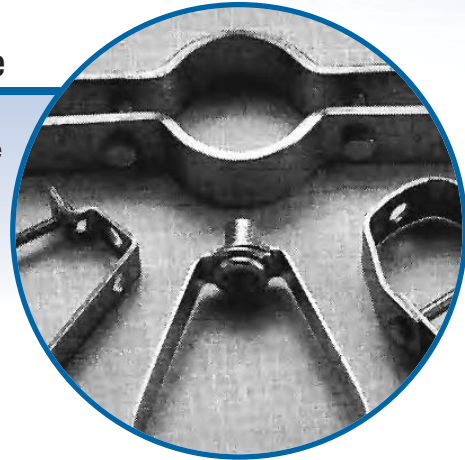
#### Standard Dimensions

The following, except where noted, apply to all beam clamp fittings.

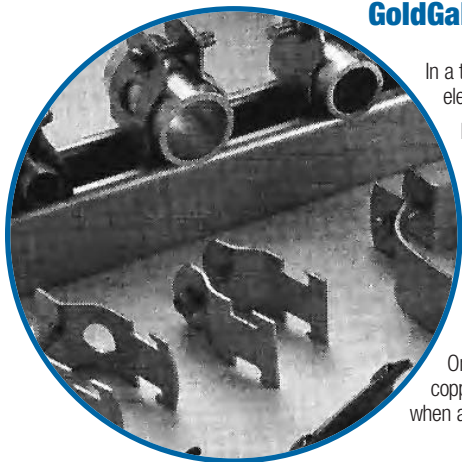
Hole Size:  $\frac{5}{16}$ " diameter

Material:  $1\frac{1}{2}$ " wide

Material:  $\frac{1}{4}$ " thick



### GoldGalv® Outperforms Copper Plated



In a test conforming to ASTM G-87-84, also known as the Kesternich Test, Superstrut's GoldGalv® electrogalvanized zinc dichromate finish achieved superior corrosion resistance in comparison to copper plated.

Performed and certified by an independent testing laboratory, the stringent Kesternich test is equivalent to an acid rain environment. The test procedure exposes subject material to condensed moisture containing harsh sulfur dioxide (SO<sub>2</sub>) which accelerates the aging process. During the series of test time cycles, the material is thoroughly inspected for signs and progression of damaging red rust.

The first test series conducted included various light-duty adjustable clevis hangers assembled to copper tubing. The GoldGalv® finish exhibited five times the red rust resistance as compared to copper plated.

The second test series was performed on various O.D. pipe straps attached to copper tubing and continuous slot channel. GoldGalv® achieved greater red rust resistance by seven times over copper plating.

Once tests were completed, all copper tubes were split open and inspected for signs of electrolysis. The copper tubes showed minimal deterioration as a result of the test and no indication of electrolysis occurrence when attached to material with GoldGalv® finish.

### ASTM G-87-84 Corrosion Test Results

FINISH	INITIAL RED RUST	50% RED RUST	100% RED RUST
<b>Test Series I: Light-Duty Adjustable Clevis Hanger</b>			
GoldGalv®	120 hours	216 hours	*Never obtained
Copper Plated	24 hours	48 hours	72 hours
<b>Test Series II: O.D. Pipe Straps</b>			
GoldGalv®	168 hours	192 hours	240 hours
Copper plated	24 hours	48 hours	168 hours

\*Test series ended after 360 hours.

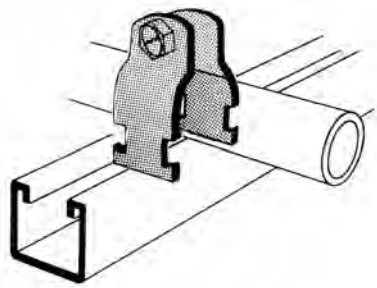
Standard Finish – GoldGalv®, unless otherwise stated.



## Pipe Straps, Conduit Clamps & Hangers

### Superstrut® Pipe Straps (continued)

#### 701 — Superstrut® Straps for O.D. Tubing (continued)



CAT. NO.	TUBING O.D. (IN.)	STEEL STRAP THICKNESS	DESIGN LOAD (LBS.)	STD. CTN.
701-2-3/4	2¾	12 ga.	1,300	25
701-2-7/8	2⅞	12 ga.	1,300	25
701-3	3	12 ga.	1,300	25
701-3-1/8	3⅛	12 ga.	1,300	25
701-3-1/4	3¼	12 ga.	1,300	25
701-3-3/8	3⅜	12 ga.	1,300	25
701-3-1/2	3½	12 ga.	1,300	25
701-3-5/8	3⅝	11 ga.	1,650	25
701-3-3/4	3¾	11 ga.	1,650	25
701-3-7/8	3⅞	11 ga.	1,650	25
701-4	4	11 ga.	1,650	25
701-4-1/8	4⅛	11 ga.	1,650	25
701-4-1/4	4¼	11 ga.	1,650	25
701-4-3/8	4⅜	11 ga.	1,650	25
701-4-1/2	4½	11 ga.	1,650	10
701-4-5/8	4⅝	11 ga.	1,650	10
701-4-3/4	4¾	11 ga.	1,650	10
701-4-7/8	4⅞	11 ga.	1,650	10
701-5	5	11 ga.	1,650	25
701-5-1/8	5⅛	11 ga.	1,650	10
701-5-1/4	5¼	11 ga.	1,650	10
701-5-3/8	5⅜	11 ga.	1,650	10
701-5-1/2	5½	11 ga.	1,650	10
701-5-5/8	5⅝	10 ga.	1,650	10
701-5-3/4	5¾	10 ga.	1,650	10
701-5-7/8	5⅞	10 ga.	1,650	10
701-6	6	10 ga.	1,650	10
701-6-1/8	6⅛	10 ga.	1,650	10
701-6-1/4	6¼	10 ga.	1,650	10
701-6-3/8	6⅜	10 ga.	1,650	10
701-6-1/2	6½	10 ga.	1,650	10
701-6-5/8	6⅝	10 ga.	1,650	10
701-6-3/4	6¾	10 ga.	1,650	10
701-6-7/8	6⅞	10 ga.	1,650	10
701-8	8	10 ga.	1,650	10

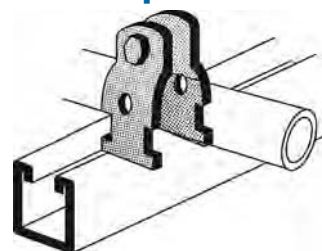
#### 702 — Superstrut® Straps for Rigid Conduit, IMC and Pipe

- For Rigid or IMC Conduit, Pipe and Electric Metal Tubing (EMT)

CAT. NO.	RIGID CONDUIT OR PIPE SIZE (IN.)	O.D. SIZE (IN.)	STEEL STRAP THICKNESS	DESIGN LOAD (LBS.)	STD. CTN.
<b>Standard Finishes — GoldGalv® brand, Electro-Galvanized EG (Silver)</b>					
702-3/8	¾	0.675	14 ga.	750	100
702-1/2	½	0.840	14 ga.	750	100
702-3/4	¾	1.050	14 ga.	750	100
702-1	1	1.315	14 ga.	750	100
702-1-1/4	1¼	1.660	14 ga.	800	50
702-1-1/2	1½	1.900	12 ga.	800	50
702-2-STR	2	2.375	12 ga.	800	50
702-2-1/2	2½	2.875	12 ga.	1,000	50
702-3	3	3.500	12 ga.	1,650	50
702-3-1/2	3½	4.000	11 ga.	1,650	25
702-4	4	4.500	11 ga.	1,650	25
702-4-1/2	4½	5.000	11 ga.	1,650	25
702-5	5	5.563	11 ga.	1,650	25
702-6	6	6.625	11 ga.	1,650	10
702-8	8	8.625	11 ga.	1,650	10
702-10	10	10.750	10 ga.	1,650	25
702-12	12	12.750	10 ga.	1,650	25

Standard Finish — GoldGalv®, unless otherwise stated.

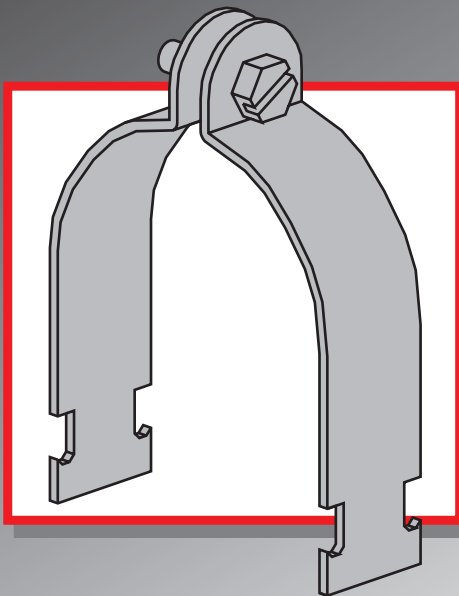
#### 703 — Universal Clamp



CAT. NO.	PIPE O.D. (IN.)	STEEL STRAP THICKNESS	DESIGN LOAD (LBS.)	STD. CTN.
<b>Standard Finishes — GoldGalv® brand, Electro-Galvanized (Silver) — use EG suffix, (i.e.) 703-1-1/2EG</b>				
703-1/2	.706-.840	16 ga.	400	100
703-3/4	.932-1.050	14 ga.	550	100
703 1	1.163-1.315	14 ga.	550	100
703-1-1/4	1.508-1.660	14 ga.	800	50
703-1-1/2	1.738-1.900	14 ga.	800	50
703-2	2.195-2.375	14 ga.	800	50

Standard Finishes — GoldGalv® brand, Electro-Galvanized (i.e.) 701-1-1/2EG (Silver) Copper Plated CT701-1-1/2.

Consult factory regarding other finishes and materials.



## PIPE & CONDUIT CLAMPS

*Power-Strut pipe, conduit and O.D. tubing clamps are formed in punch press dies in a wide selection of sizes to meet every requirement.*

### **MATERIAL:**

Power-Strut pipe, conduit and O.D. tubing clamps are made on punch press dies from hot rolled, pickled and oiled steel which conforms to the ASTM A-1008, A-1011 SS, A-575 and A-576 standards. Select sizes of O.D. tubing clamps are available in stainless steel or aluminum.

### **STANDARD FINISH:**

All steel clamps are electro-galvanized. Select sizes of O.D. tubing clamps are available in copper plated finish. PVC coatings are available upon special request.

### **ORDERING INFORMATION:**

When ordering, add the length or size and finish to the part number. See pages 8-9 for finish abbreviations and an example.

### **RECOMMENDED BOLT TORQUE:**

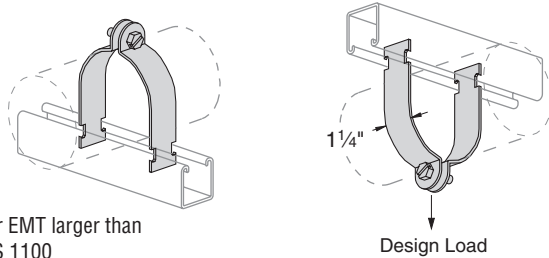
Bolt Size	1/4"-20	5/16"-18	3/8"-16	1/2"-13	5/8"-11	3/4"-10
Rec. Torque Ft/Lbs	6	11	19	50	100	125
Max. Torque Ft/Lbs	7	15	25	70	125	135

# PIPE & CONDUIT CLAMPS

Finish: Electro-galvanized Order By: No., and Finish



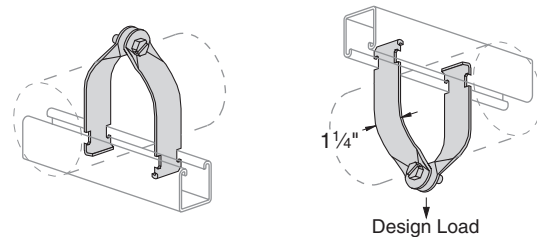
## PS 1000 – EMT Conduit Clamp



Note: For EMT larger than 2" use PS 1100

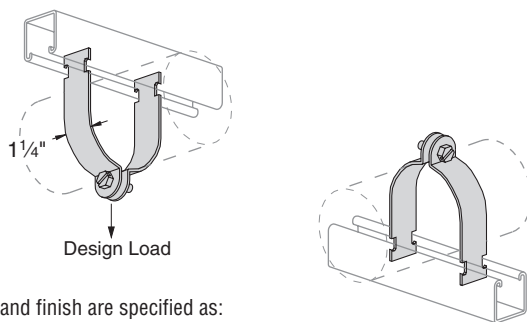
EMT Size	Stock Thickness	Hanging Load Rating/lbs.	Wt./100 pcs
1/2"	.060	400	11
3/4"			12
1"	.075	600	15
1 1/4"			18
1 1/2"	.105	800	29
2"			33

## PS 1300 – Universal Clamp for EMT, IMC & GRC



Nominal Size	Fits O.D.	Stock Thickness	Hanging Load Rating/lbs.	Wt./100 pcs
1/2"	0.706-0.840	.060	250	10
3/4"	0.922-1.050	.060	400	11
1"	1.163-1.315			12
1 1/4"	1.510-1.660	.075	400	18
1 1/2"	1.740-1.900	.075	500	20
2"	2.197-2.375			22

## PS 1100, PS 1116, PS 1117 – Standard Pipe Clamp (GRC, IMC and SCH 40/SCH 80 steel pipe)



Material and finish are specified as:

**1100 AL** Alum. clamp, EG fasteners

**1100 HG** Clamp, Stainless Steel fasteners

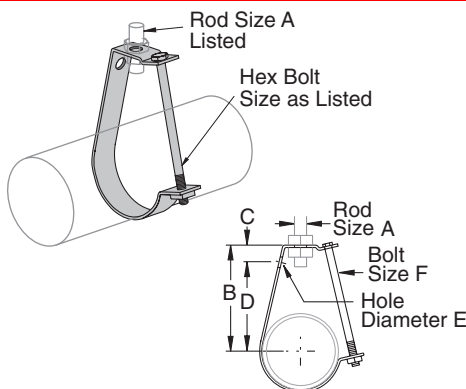
**1116** Alum. clamp and fasteners

**1117** Alum. clamp, Stainless Steel fasteners

**1100SS** Stainless Steel clamp and fasteners

Pipe Size	Stock Thickness	Hanging Load Rating/lbs.	Wt./100 pcs
3/8"	.060	400	10
1/2"			11
3/4"	.075	600	15
1"			17
1 1/4"			19
1 1/2"	.105	800	29
2"			34
2 1/2"			40
3"			47
3 1/2"	.125	1,000	62
4"			67
5"			80
6"	.135		102
8"			130
10"			143
12"			174

## PS 67 – "J" Pipe or Conduit Hanger



### Notes:

Plastic Coated hanger is available ("N" Suffix). Please contact factory for additional information.

Maximum operating temperature is 300°F

Minimum safety factor of five (5) on ultimate load.

Conduit Size	A Rod Size	B	C	D	E	F	Load Rating/lbs.	Wt./100 pcs
1/2"	3/8	2 5/8	1	2	1 3/32	1/4 x 2 1/4	400	20
3/4"		2 7/8		2 1/4		1/4 x 2 1/2		21
1"		3		2 3/8		1/4 x 2 3/4		24
1 1/4"		3 1/4		2 1/2		1/4 x 3		27
1 1/2"	1/2	3 1/2	1 1/8	2 5/8	9/16	1/4 x 3 1/2	800	29
2"		3 3/4		2 5/8		1/4 x 3 1/2		33
2 1/2"		4 3/8		3 5/8		3/8 x 4 1/2		71
3"		4 7/8		4		3/8 x 5		78
3 1/2"	5/8	5 5/8	1 1/8	4 1/4	9/16	3/8 x 6	1,000	85
4"		6 1/8		5 1/8		3/8 x 7 1/2		178
5"		6 3/4		5 3/4		3/8 x 8 1/2		199
6"	3/4	7 3/4	1 1/4	6 1/2	9/16	3/8 x 10	1,000	231
8"	7/8	9 1/4	1 1/4	8		3/8 x 10	1,200	449

# Superstrut®

## Fittings & Brackets

### Fittings & Brackets — Series 200



#### Material

Superstrut® fittings and brackets are manufactured from hot rolled carbon steel.

#### Dimensions

The following standard dimensions apply to all fittings except as indicated on the individual drawings.

- Hole spacing:  $\frac{13}{16}$ " from end of fittings
- Hole spacing:  $1\frac{7}{8}$ " centers
- Hole size:  $\frac{9}{16}$ " diameter
- Material:  $1\frac{5}{8}$ " wide
- Material:  $\frac{1}{4}$ " thickness

#### Application Instructions

Parts drawings illustrate a typical use for the fitting, and in many cases other uses for the part are appropriate.

#### Design Data

Ratings vary when used with 12 or 14 gauge channel and are shown for each channel material.

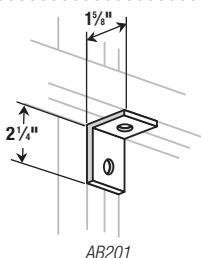
GoldGalv® hardware finish is standard for all Superstrut® products. This is a multi-process finish of electro-plated zinc, followed by gold-colored zinc dichromate to give excellent corrosion resistance and a superior paint base. See **page D-3** for complete description of the GoldGalv® hardware finish. GoldGalv® hardware will be furnished if no other finish is specified.

#### Nuts and Bolts Required

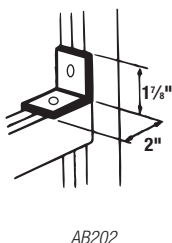
Unless otherwise noted, nuts and bolts for use with fittings and brackets should be ordered separately.

The standard bolt for the  $\frac{9}{16}$ " hole is a  $\frac{1}{2}$ " hex head cap screw  $\frac{15}{16}$ " long. The  $\frac{15}{16}$ " length may be used with all series channel.

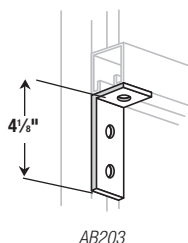
*Standard Finish — GoldGalv®, unless otherwise stated.*



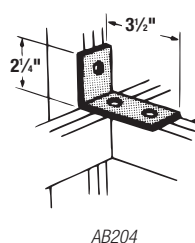
AB201



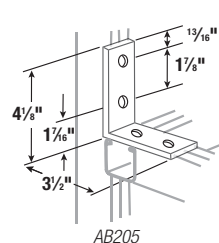
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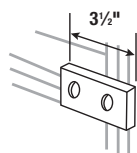
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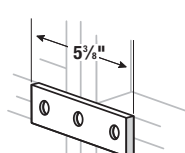
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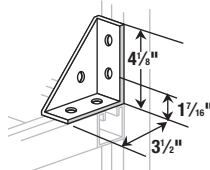
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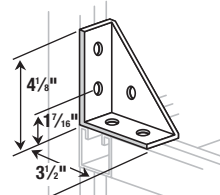
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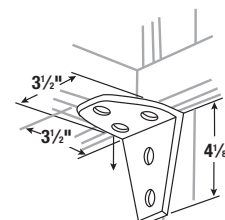
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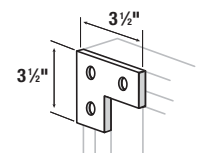
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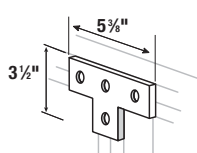
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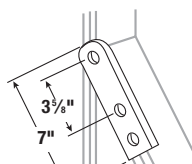
AB216



AB219



AB220



AB240

#### Standard Dimensions

- Hole Spacing:  $\frac{13}{16}$ " From End
- Hole Spacing:  $1\frac{7}{8}$ " Centers
- Hole Size:  $\frac{9}{16}$ " Diameter
- Material:  $1\frac{5}{8}$ " Width
- Material:  $\frac{1}{4}$ " Thick

*Standard Finish — GoldGalv®, unless otherwise stated.*

**Thomas & Betts**

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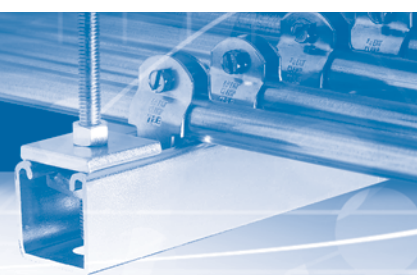
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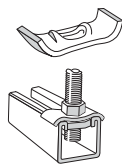
Tool Services  
Tel: 800.284.8665

# Superstrut®

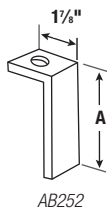
## Fittings & Brackets



Superstrut® Metal Framing, Pipe Hangers and Accessories

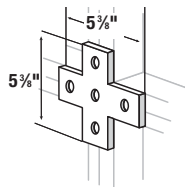


AB-242  
For use with either 3/8" or 1/2" hanger rod

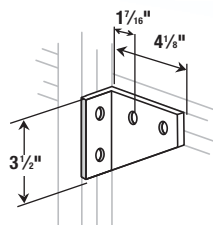


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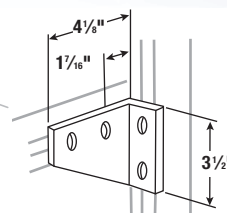
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AB252 2	5 7/8	10
AB252 3	7 7/8	10
AB252 4	9 7/8	10



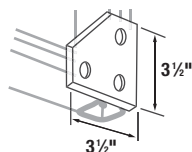
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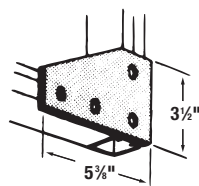
AB254 L



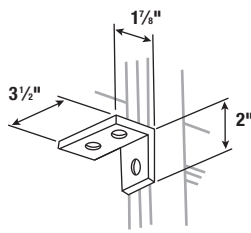
AB254 R



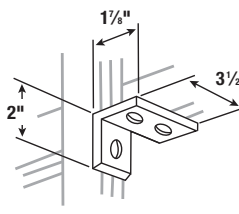
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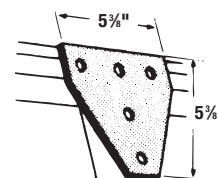
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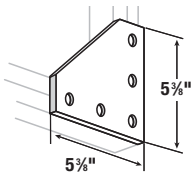
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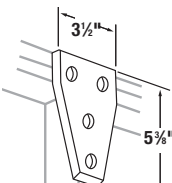
AB260 R



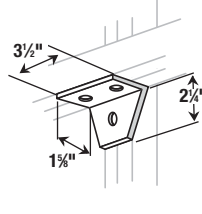
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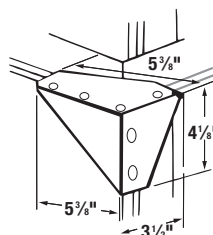
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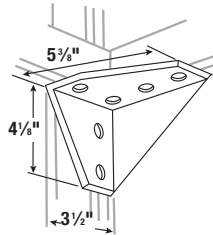
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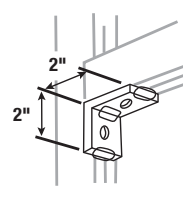
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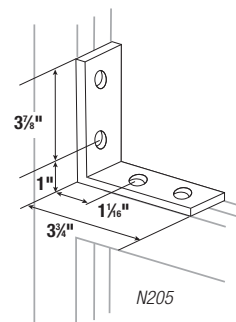
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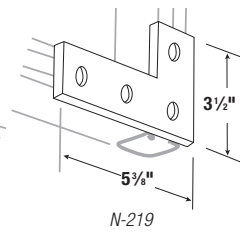
AB284 R



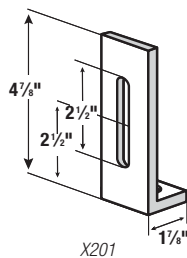
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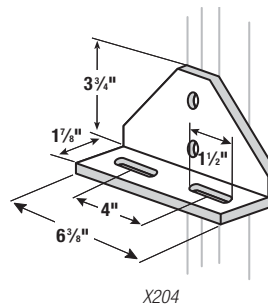
N205



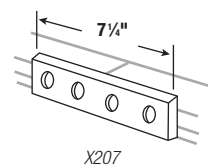
N-219



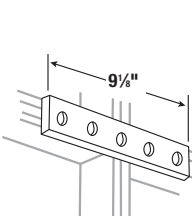
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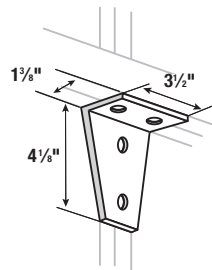
X204  
Slot size is 9/16" x 1 1/2"



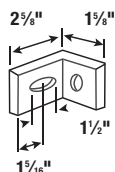
X207



X208



X289



X299

### Standard Dimensions

- Hole Spacing: 13/16" From End
- Hole Spacing: 1 7/8" Centers
- Hole Size: 9/16" Diameter
- Material: 1 3/8" Width
- Material: 1/4" Thick

Standard Finish – GoldGalv®, unless otherwise stated.

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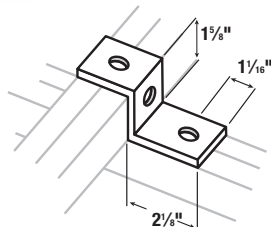
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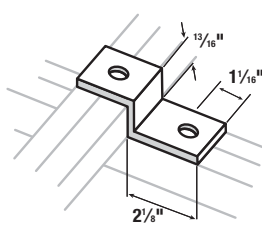
# Superstrut®

## Fittings & Brackets

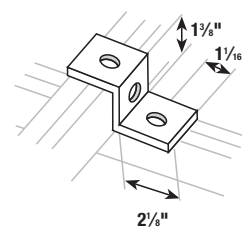
### Z Shape Fittings



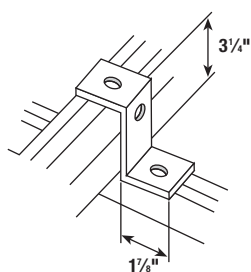
A209  
For attaching "A" series channel.



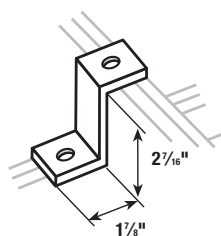
B209  
For attaching "B" series channel.



C209  
For attaching "C" series channel.



CZ209  
For attaching "A" back to back.



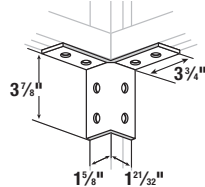
EZ209  
For attaching "E" series channel.

#### ..... Standard Dimensions .....

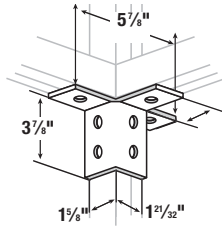
- Hole Spacing: 1 1/16" From End
- Hole Spacing: 1 7/8" Centers
- Hole Size: 1" Diameter
- Material: 1 5/8" Width
- Material: 1/4" Thick

Standard Finish – GoldGalv®, unless otherwise stated.

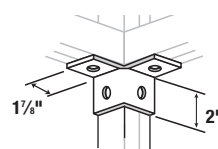
### Wing Shape Fittings



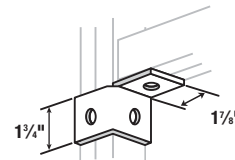
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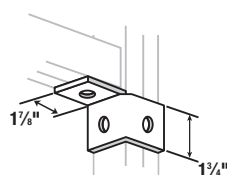
A218



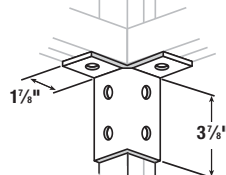
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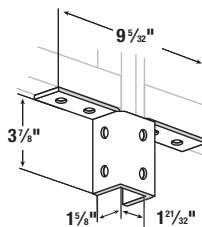
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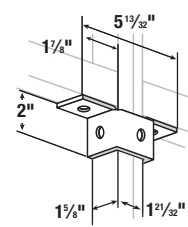
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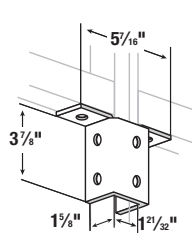
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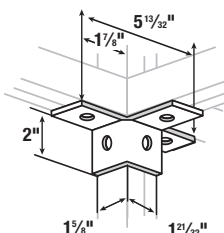
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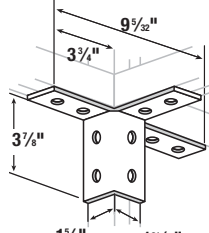
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AW224



AW226



AW228

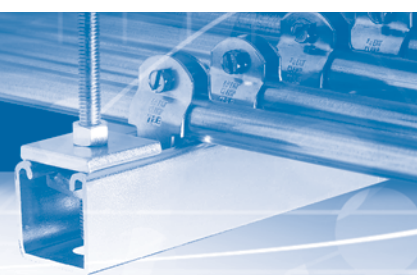
#### ..... Standard Dimensions .....

- Hole Spacing: 1 1/16" From End
- Hole Spacing: 1 7/8" Centers
- Hole Size: 1" Diameter
- Material: 1 5/8" Width
- Material: 1/4" Thick

Standard Finish – GoldGalv®, unless otherwise stated.

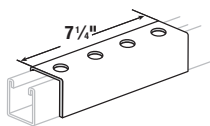
# Superstrut®

## Fittings & Brackets

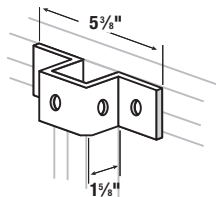


Superstrut® Metal Framing, Pipe Hangers and Accessories

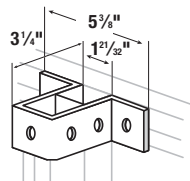
### U Shape Fittings



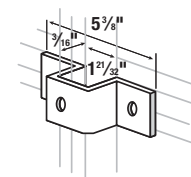
**A208**  
Does not include strut nut or bolts. For "A" series channel.



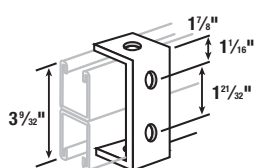
**A210**  
For attaching "A" series channel



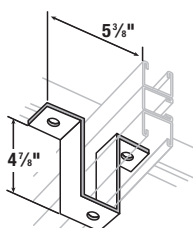
**A211**  
For attaching "A" series channel.



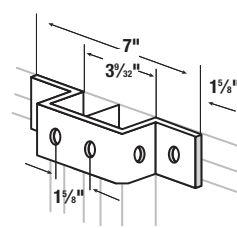
**B210**



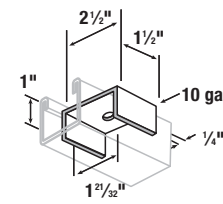
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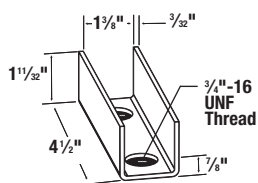
**AN211**



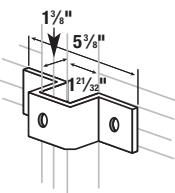
**A212**



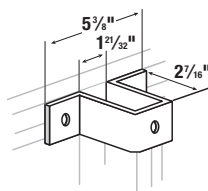
**AB-288**



**A-213**



**C210**  
For attaching "C" series channel.



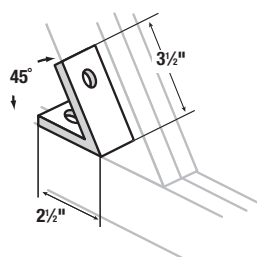
**E210**  
For attaching "E" series channel.

#### Standard Dimensions

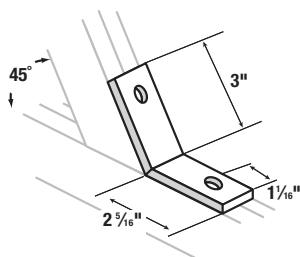
- Hole Spacing: 1 3/16" From End
- Hole Spacing: 1 7/8" Centers
- Hole Size: 9/16" Diameter
- Material: 1 1/8" Width
- Material: 1/4" Thick

Standard Finish – GoldGalv®, unless otherwise stated.

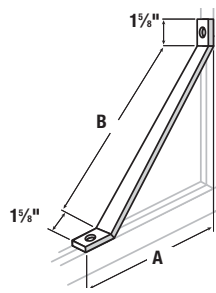
### Angular Fittings



**AB225**



**AB227**



**AB-239**

CAT. NO.	A (IN.)	B (IN.)	STD. CTN.
AB239 1	7 13/16	8 1/2	15
AB-239-2	13 3/4	17	10
AB-239-3	19 3/4	25 1/2	10

Standard Finish – GoldGalv®, unless otherwise stated.

**Corporate Office**  
Tel: 901.252.8000  
800.816.7809  
Fax: 901.252.1354

**Customer Service**  
Tel: 800.816.7809  
Fax: 800.816.7810

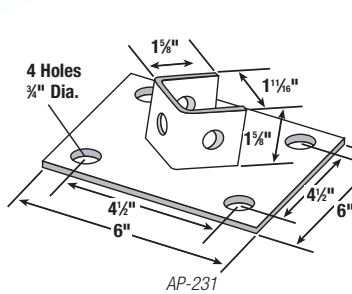
**Technical Services**  
Tel: 888.862.3289  
Fax: 901.252.1321

**Tool Services**  
Tel: 800.284.8665

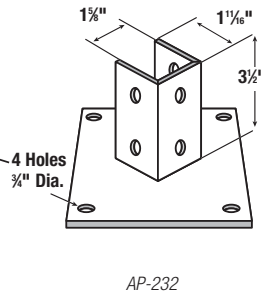
**Thomas & Betts**  
www.tnb.com



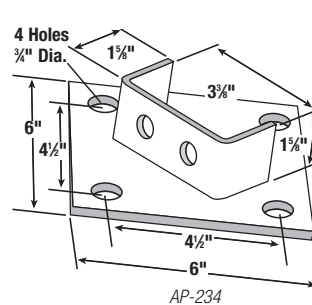
### Post Bases



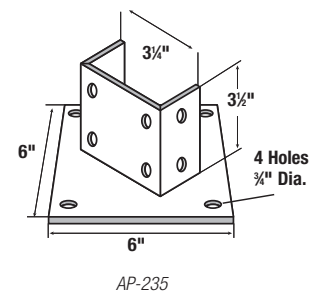
AP-231



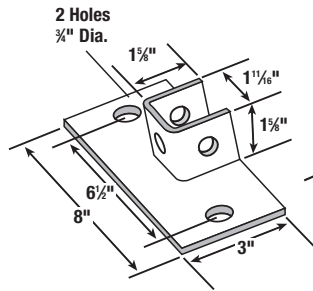
AP-232



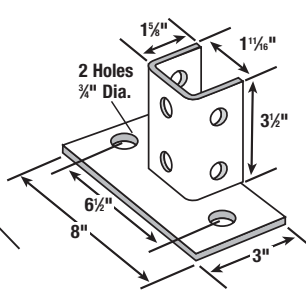
AP-234



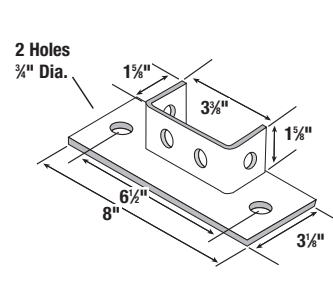
AP-235



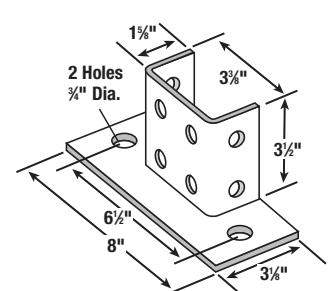
AP-231FL



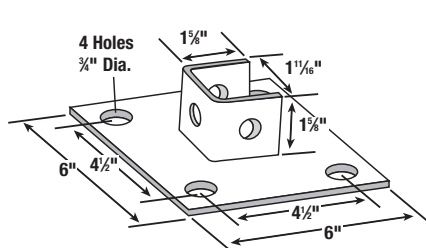
AP-232FL



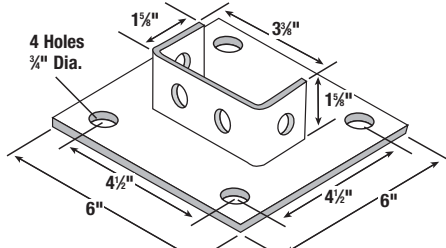
AP-234FL



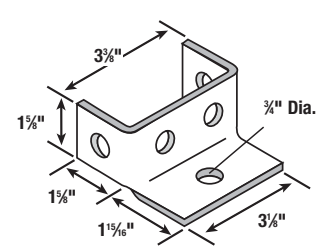
AP-235FL



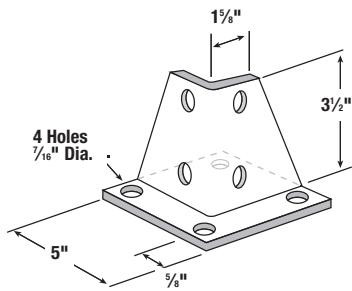
AP-231SQ



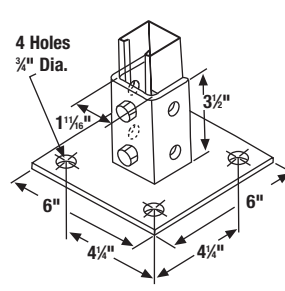
AP-234SQ



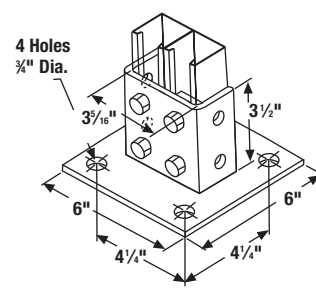
AW-239



AP-206

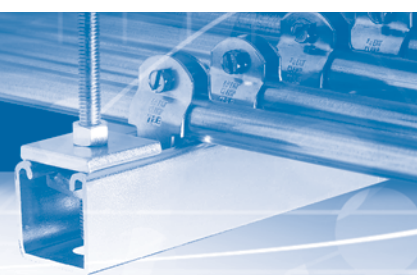


AP-232SQ

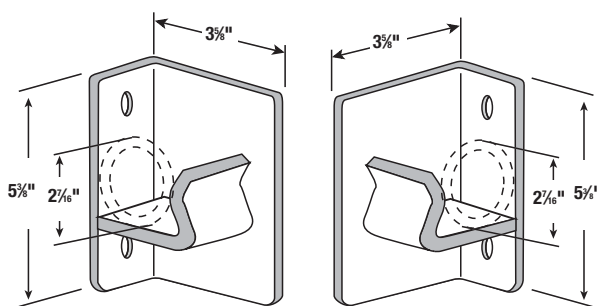
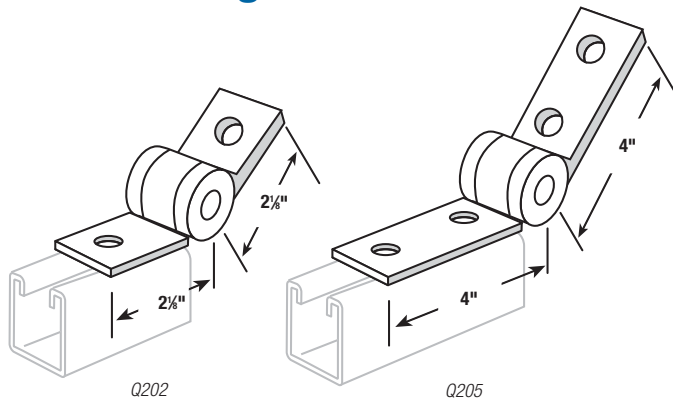


AP-235SQ

Standard Finish – GoldGalv®, unless otherwise stated.

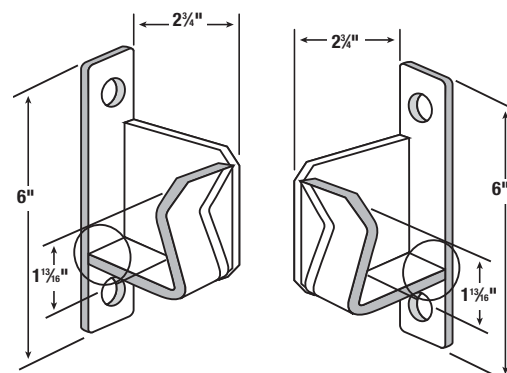


### Special Application Fittings

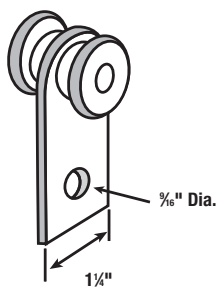


Q255  
For 2" standard pipe.  
Load 1,500 lbs.

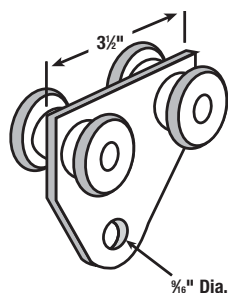
Q256  
For 2" standard pipe.  
Load 1,500 lbs.



Q254  
For 1 1/4" standard pipe.  
Load 1,500 lbs.



TR292  
Frictionless needle bearings.  
Design load: 500 lbs.  
Safety factor of 5.



TR294  
Frictionless needle bearings.  
Design load: 1,000 lbs.  
Safety factor of 5.

#### Standard Dimensions

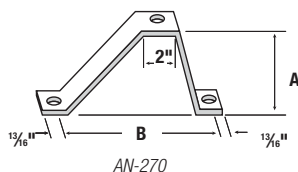
- Hole Spacing: 1 1/8" From End
- Hole Spacing: 1 1/8" Centers
- Hole Size: 3/16" Diameter
- Material: 1 1/2" Width
- Material: 1/4" Thick

Standard Finish — GoldGalv®, unless otherwise stated.

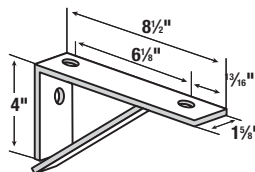
# Superstrut®

## Fittings & Brackets

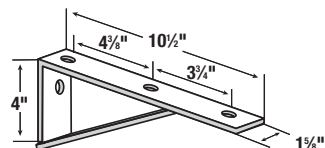
### Special Application Fittings (continued)



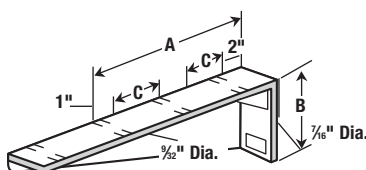
AN-270



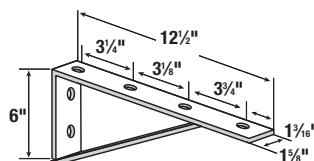
S204  
Design Uniform Load/lbs.  
A-1,200 650  
A-1,400 500



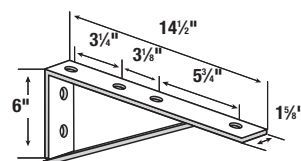
S205  
Design Uniform Load/lbs.  
A-1,200 650  
A-1,400 500



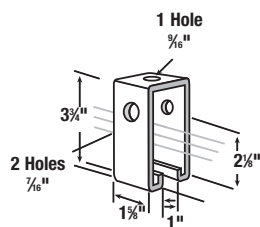
S-201-L and R  
R as shown — L opposite hand.  
12 ga. steel. Design Uniform Load/lbs.  
A-1,200 250  
A-1,400 200



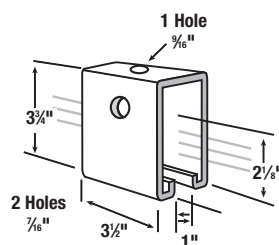
S217  
Design Uniform Load/lbs.  
A-1,200 750  
A-1,400 650



S218  
Design Uniform Load/lbs.  
A-1,200 750  
A-1,400 650



TS-272  
Track Support  
Requires 3/8" x 2 1/2" bolt  
and nut (not included).  
Design load: 1,000 lbs.



TS273  
Track Support  
For uses over channel splice. Requires  
3/8" x 2 1/2" bolt and nut (not included).  
Design load: 2,000 lbs.

Standard Finish — GoldGalv®, unless otherwise stated.

### ..... Standard Dimensions .....

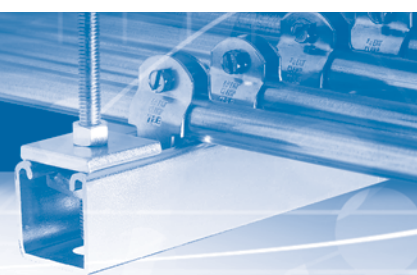
- Hole Spacing: 1 1/8" From End
- Hole Spacing: 1 1/8" Centers
- Hole Size: 3/8" Diameter
- Material: 1 1/2" Width
- Material: 3/4" Thick

CAT. NO.	A (IN.)	B (IN.)	C (IN.)	STD. CTN.
S201-L6 or R6	6	1 15/16	3	25
S201-L8 or R8	8	2 7/16	5	25
S201L 10 or R 10	10	2 15/16	7	5
S201-L12 or R12	12	3 1/16	3	5
S201-L14 or R14	14	3 15/16	4	5
S201-L16 or R16	16	4 1/16	5	15
S201-L18 or R18	18	4 15/16	6	5
S201-L20 or R20	20	5 7/16	7	10

CAT. NO.	A (IN.)	B (IN.)	STD. CTN.
AN-270-1	2 3/8	6	10
AN-270-2	4 3/8	8	10
AN-270-3	6 3/8	10	10
AN-270-4	8 3/8	12	15
AN-270-5	10 3/8	14	10

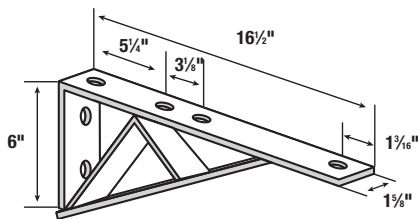
# Superstrut®

## Fittings & Brackets

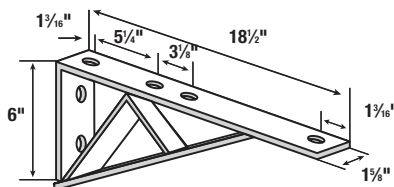


Superstrut® Metal Framing, Pipe Hangers and Accessories

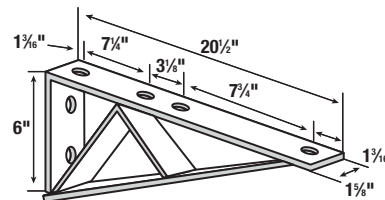
### Brackets



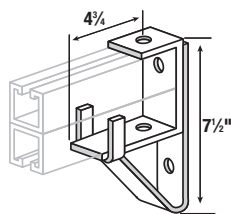
**S222**  
Design Uniform Load/lbs.  
A-1,200 1,000  
A-1,400 750



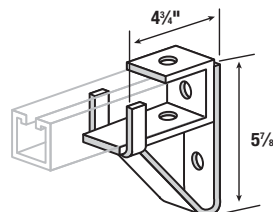
**S226**  
Design Uniform Load/lbs.  
A-1,200 1,000  
A-1,400 750



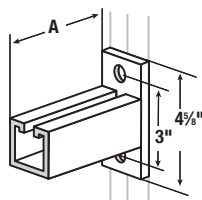
**S236**  
Design Uniform Load/lbs.  
A-1,200 800  
A-1,400 650



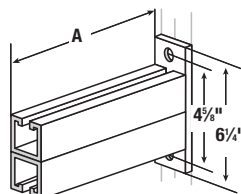
**S248**  
Design Moment  
(channel upright as shown)  
When supported by  
A-1,200 10,800 inch lbs.  
A-1,400 7,550 inch lbs.  
Applies to fitting only, not to the arm.  
For  
A-1,200  
A-1,400



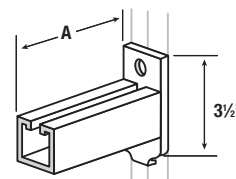
**S247**  
Design Moment  
(channel upright as shown)  
When supported by  
A-1,200 5,250 inch lbs.  
A-1,400 3,650 inch lbs.  
Applies to fitting only, not to the arm.  
For  
A-1,200 B-1,202  
A-1,400 B-1,402



**S-250**  
May be installed inverted with no change in load ratings. Strut section made from half slot channel.  
Sizes: 6", 12", 18" & 24"



**S-251**  
Strut section made from half slot channel.  
Sizes: 12", 18", 24", 30" & 36"



**S-256**  
When installed in inverted position reduce load rating 40%. Strut section made from half slot channel.  
Sizes: 6", 12", 18" & 24"

CAT. NO.	A (IN.)	DESIGN LOAD LBS.	STD. CTN.
<b>S250 6</b>	6	1,500	1
<b>S-250-12</b>	12	800	1
<b>S-250-18</b>	18	550	1
<b>S-250-24</b>	24	400	1

CAT. NO.	A (IN.)	DESIGN LOAD LBS.	STD. CTN.
<b>S-251-12</b>	12	1,650	1
<b>S-251-18</b>	18	1,050	1
<b>S-251-24</b>	24	800	1
<b>S-251-30</b>	30	650	1
<b>S-251-36</b>	36	500	1

CAT. NO.	A (IN.)	DESIGN LOAD LBS.	STD. CTN.
<b>S256 6</b>	6	1,000	1
<b>S-256-12</b>	12	500	1
<b>S-256-18</b>	18	300	1
<b>S-256-24</b>	24	250	1

Standard Finish GoldGalv®, unless otherwise stated.

**Corporate Office**  
Tel: 901.252.8000  
800.816.7809  
Fax: 901.252.1354

**Customer Service**  
Tel: 800.816.7809  
Fax: 800.816.7810

**Technical Services**  
Tel: 888.862.3289  
Fax: 901.252.1321

**Tool Services**  
Tel: 800.284.8665

**Thomas & Betts**  
www.tnb.com

# Highland Park Middle School

## Electrical Equipment Submittals

Date Submitted: 03/04/2020

IES Submittal # 03

(Sect 26 05 33) Raceway and Boxes for Electrical Systems

IES Commercial  
16135 SW 74th Ave  
Tigard, OR 97224

Ph: (503) 648-1900

Project Manager - xxx



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Item	Description
1.	Emt conduit, elbows, fittings
2.	Rigid conduit, elbows, fittings
3.	PVC conduit, elbows, fittings
4.	Steel Flex conduit, fittings
5.	Wireway
6.	Steel boxes
7.	Enclosures



**CRESCENT**  
ELECTRIC  
SUPPLY COMPANY

**EMT CONDUIT, ELBOWS & FITTINGS**

**Submittals Prepared by IES  
and Crescent Electric Supply**



# ALLIED E-Z PULL® EMT

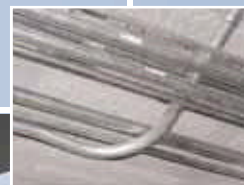
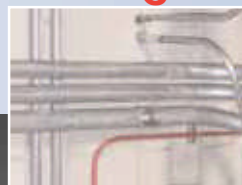
## Quality Electrical Metallic Tubing... With the E-Z Pull® interior coating!

Allied E-Z Pull® EMT has a special low friction ID coating that greatly improves the slip properties between conduit and wire. E-Z Pull® EMT, wire pulls through the conduit smoothly and easily.

Allied E-Z Pull® EMT combines strength with ductility, resulting in faster and easier installations. It provides easy bending, cutting and joining while resisting flattening, kinking and splitting, creating smooth, continuous raceways for fast wire pulling.



- E-Z Pull® special low friction ID coating
- Patented Flo-Coat® triple layer OD protection
- High grade durable & ductile steel for long life
- U.L. listed & meets all applicable standards
- Available in size 1/2 to 4



## If you require kwik installations... Get Kwik-Fit® EMT & Compression EMT!

*Innovations from the conduit leaders at Allied.*

**Kwik-Fit® EMT** has an integral steel set-screw coupling formed on one end of each length of EMT. Trade sizes 2-4

**Kwik-Fit® Compression EMT** has an integral steel compression fitting formed on one end of each length of EMT. Trade sizes 2 1/2-4

Kwik products are U.L. listed which ensures an all steel system Both conduit and coupling for excellent strength and ground return, as well as economy. Contact Allied for details.



Contact your local Allied Tube & Conduit electrical distributor, or visit [www.alliedeg.com](http://www.alliedeg.com).

# ALLIED E-Z PULL<sup>®</sup> EMT



## E-Z Pull<sup>®</sup> EMT Specifications

### Manufactured for Long Life

Allied EMT is precision manufactured from high grade mild strip steel for exceptional durability and long-lasting life. Allied EMT is hot galvanized using Allied's patented in-line Flo-Coat<sup>®</sup> process. This process combines zinc, a conversion coating, and a clear organic polymer top-coat to form a triple layer of protection against corrosion and abrasion.

### EMI SHIELDING

Allied EMT greatly reduces electromagnetic fields, effectively shielding computers and sensitive electronic equipment from the electromagnetic interference caused by power distribution systems.

### FULL CODES & STANDARDS COMPLIANCE

Allied EMT is listed to Underwriters Laboratories Safety Standard UL 797 and meets ANSI C80.3, which have been adopted as federal specifications in lieu of WWC 563. EMT is recognized as an equipment grounding conductor by NEC Section 250-118. Documentation for compliance with NEC Article 250 is also available in the GEMI (Grounding and Electro-Magnetic Interference) analysis software and related research studies found at the [www.alliedeg.com](http://www.alliedeg.com) website.

Installation of EMT shall be in accordance with the National Electrical Code and the UL listing information. Allied EMT is listed in category FJMX. Master bundles conform to NEMA Standard RN2.

### SPECIFICATION DATA

To specify Allied EMT, include the following: Electrical Metallic Tubing shall be equal to that manufactured by Allied Tube & Conduit Corporation. EMT shall be hot galvanized steel O.D. with an organic corrosion resistant I.D. coating and shall be produced in accordance with U.L. Safety Standard #797 and ANSI C80.3 and shall be listed by a nationally recognized testing laboratory with follow-up service.

Where Kwik-Fit<sup>®</sup> EMT is used it shall also meet U.L. Safety Standard #514-B. Note that these U.L. and ANSI standards have been adopted by the federal government and separate military specifications no longer exist.

• Allied Tube & Conduit - Electrical  
16100 S. Lathrop Avenue, Harvey, IL 60426  
Tel. 800-882-5543 Fax 708-339-0615



### Weights and Dimensions for Electrical Metallic Tubing

Trade Size Designator		Approx. Wt. Per 100 Ft. (30.5M)		Nominal Outside Diameter <sup>1</sup>		Nominal Wall Thickness		Quantity In Master Bundle	
U.S.	Metric	lb.	kg.	in.	mm	in.	mm	ft.	m
1/2	16	30	13.6	0.706	17.9	0.042	1.07	7000	2135.0
3/4	21	46	20.9	0.922	23.4	0.049	1.25	5000	1525.0
1	27	67	30.4	1.163	29.5	0.057	1.45	3000	915.0
1-1/4	35	101	45.8	1.510	38.4	0.065	1.65	2000	610.0
1-1/2	41	116	52.6	1.740	44.2	0.065	1.65	1500	457.5
2	53	148	67.1	2.197	55.8	0.065	1.65	1200	366.0
2-1/2	63	216	98.0	2.875	73.0	0.072	1.83	610	186.1
3	78	263	119.3	3.500	88.9	0.072	1.83	510	155.6
3-1/2	91	249	158.3	4.000	101.6	0.083	2.11	370	112.9
4	103	393	178.2	4.500	114.3	0.083	2.11	300	91.5

<sup>1</sup>Outside diameter tolerances:

+/- .005 in. (.13mm) for trade sizes 1/2 (16mm) through 2 (53mm);  
+/- .010 in. (.25mm) for trade sizes 2-1/2 (63mm);  
+/- .015 in. (.38mm) for trade size 3 (78mm);  
+/- .020 in. (.51mm) for trade sizes 3-1/2 (91mm) and 4 (103mm).

NOTE: Length = 10 ft. (3.05m) with a tolerance of ± .25 in. (6.35 mm)

### Weights and Dimensions for Kwik-Fit EMT

Trade Size Designator		Approx. Wt. Per 100 Ft. (30.5M)		Nominal Outside Diameter <sup>1</sup>		Nominal Wall Thickness		Quantity In Master Bundle	
U.S.	Metric	lb.	kg.	in.	mm	in.	mm	ft.	m
2	53	148	67.1	2.197	55.8	0.065	1.65	500	152.4
2-1/2	63	216	98.0	2.875	73.0	0.072	1.83	350	106.8
3	78	263	119.3	3.500	88.9	0.072	1.83	300	91.5
3-1/2	91	349	158.3	4.000	101.6	0.083	2.11	250	76.3
4	103	393	178.2	4.500	114.3	0.083	2.11	250	76.3

<sup>1</sup>Outside diameter tolerances:

+/- .005 in. (.13mm) for trade size 2 (53mm);  
+/- .010 in. (.25mm) for trade size 2-1/2 (63mm);  
+/- .015 in. (.38mm) for trade size 3 (78mm);  
+/- .020 in. (.51mm) for trade sizes 3-1/2 (91mm) and 4 (103mm).

NOTE: Length = 10 ft. (3.05m) with a tolerance of ± .25 in. (6.35 mm)

For more information, contact Allied at (800) 882-5543,  
or visit our website at [www.alliedeg.com](http://www.alliedeg.com)

### ALLIED ELECTRICAL™ Group

• Allied Tube & Conduit • AFC Cable Systems<sup>®</sup> • Power-Strut<sup>®</sup> Metal & Fiberglass Framing • Cope<sup>®</sup> Cable Tray

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# RepublicConduit

## Electrunite® Electrical Metallic Tubing

### *Simplify Installation, Save Time, Spend Less*

Republic Conduit's Electrunite® Electrical Metallic Tubing (EMT) is the easiest electrical conduit to bend currently available in the marketplace. It is the thinnest and lightest of all of our products. Republic's EMT is manufactured from high quality, flat rolled steel and is produced using Republic Conduit's exclusive Electrogalvanizing process, which provides a protective surface coating of satin-smooth, corrosion-resistant zinc to the tube. A secondary treatment, following the zinc coating, extends the surface protection of Republic Conduit's EMT.

The finished Republic EMT is uniform in outside diameter (OD), wall thickness and ductility. Its structural strength ensures system integrity, as it doesn't sag or become brittle under extreme temperature, nor does it burn or decompose, producing harmful smoke or gases.

Large sizes of Republic's EMT offer an advantage for jobs where weight is a key factor in designing an electrical wiring system. Because of its thinner walls, large size EMT weighs approximately 40% less than Galvite® Electrical Rigid Metal Conduit-Steel (Galvite® ERM-C-S). This, in turn, allows Republic Conduit's customers to save on shipping and overall installation costs. And because the walls of this product are thinner, there is approximately 22% more space on the inside of the conduit as compared to identically sized Galvite® ERM-C-S.

Republic Conduit is committed to implementing effective quality management systems and processes. Our Georgia facility has maintained an ISO certification since 1995 and has been recertified in 2008. Also in 2008, the Kentucky facility has achieved its initial certification by successfully meeting the requirements for ISO 9001:2000.



### Features and Benefits

**Consistent Quality** – Republic Conduit's entire production process is solely focused on manufacturing quality products made to our customers' specifications. Our products are also manufactured to the highest criteria of the American National Standards Institute (ANSI) and Underwriters Laboratories (UL). Because of its ductility and tight tolerances, our EMT promotes wrinkle-free bends, reduces kinking and minimizes splitting from repeated bending and straightening.

**Cost-Effective Installations** – Republic's EMT is a thin wall product with more inside wiring space, which means that less product is necessary to purchase.

- Easier wire pulling and pushing – diamond-shaped ID pattern\* and protective, slick, inside coating (Silerslick®), reduce friction when pulling / pushing the wires. The Silerslick finish stays hard and smooth in various climate conditions, protecting your conduit and your investment.
- Accurate, time-efficient bending – Because 1/2", 3/4" and 1" sizes of Republic Conduit's EMT are Inch-Marked® and Guide-Lined®, the product is easier to cut and bend properly right away,\*\* further reducing waste.
- Lower life-cycle costs – steel conduit is impact and fire resistant, chemically compatible with concrete and resists cracking, flaking and damage from severe bending. Its physical and mechanical properties ensure that the pipe has an extended shelf life, great for usage and storage without degradation in quality.

\*Applies to 1/2", 3/4" and 1" EMT sizes.

\*\*When using an EMT bender.

RepublicConduit

INCH-MARKED®

SILERSLICK®

GUIDE-LINED®

INCH-MARKED®



**System Grounding and Electromagnetic Interference Shielding** – Republic Conduit’s EMT not only protects people from the harmful effects of faulty wiring, but also protects any nearby electric / electronic equipment from damage by the electromagnetic field.

**Trade sizes range from 1/2" to 4".**

**Conduit is manufactured in the U.S.**

## Available Sizes

To easily identify the right size pipe for the job, simply look at our EMT’s color coded ends (1/2" sizes use black tape, 3/4" sizes use red and 1" sizes use blue).

Inventories of our products are maintained by leading electrical distributors throughout North America. Contact our Agent in your area today or visit [www.republicconduit.com](http://www.republicconduit.com) for more information.

## Weights and Dimensions\*

Trade Size Designator		Outside Diameter (OD)		Nominal Inside Diameter (ID)		Nominal Wall Thickness		Nominal Weight per 100 Feet		Feet per Bundle	Standard Lifts				Color Code	Method
US	Metric	IN	mm	IN	mm	IN	mm	LBS	kg		Length		Weight			
										FEET	m	LBS	kg			
1/2	16	0.706	17.93	0.622	15.80	0.042	1.07	30	13.6	100	7000	2135	2100	952.4	Black	Tape
3/4	21	0.922	23.42	0.824	21.00	0.049	1.25	46	20.9	100	5000	1525	2300	1043.1	Red	Tape
1	27	1.163	29.54	1.049	26.60	0.057	1.45	67	30.4	100	3000	915	2010	911.6	Blue	Tape
1 1/4	35	1.510	38.35	1.380	35.05	0.065	1.65	101	45.8	50	2000	610	2020	916.1	Red	Tape
1 1/2	41	1.740	44.20	1.610	40.89	0.065	1.65	116	52.6	50	1500	457.5	1740	789.1	Black	Tape
2	53	2.197	55.80	2.067	52.50	0.065	1.65	148	67.1	30	1200	366	1776	805.4	Blue	Tape
2 1/2	63	2.875	73.03	2.731	69.36	0.072	1.83	216	98.0		610	186.1	1318	597.7	Black	Tape
3	78	3.500	88.90	3.356	85.24	0.072	1.83	263	119.3		510	155.6	1341	608.2	Blue	Tape
3 1/2	91	4.000	101.6	3.834	97.38	0.083	2.11	349	158.3		370	112.9	1291	585.5	Black	Tape
4	103	4.500	114.3	4.334	110.08	0.083	2.11	393	178.2		300	91.5	1179	534.7	Blue	Tape

### Outside Diameter

For trade size through 2"	±0.005	±0.13 mm
For trade size 2 1/2"	±0.010	±0.25 mm
For trade size 3"	±0.015	±0.38 mm
For trade sizes 3 1/2" and 4"	±0.020	±0.51 mm

- The values in feet / pound units are standard. The metric equivalents may be approximate. Conduit is always identified by its English or Metric Trade Size Designator.
- 1/2", 3/4", and 1" sizes of Republic's EMT are furnished bearing the Inch-Marked® and Guide-Lined® trademarks and with diamond knurled inside finish for easier wire pull / push.

- All sizes furnished in 10' lengths.
- Applicable length tolerance = ±1/4" (±6.35mm) without a coupling.
- 2 1/2", 3", 3 1/2", and 4" OD sizes are the same as corresponding trade sizes of Galvite ERM-C-S.

## Specifications

Architects desiring to specify Republic Conduit EMT should include the following description:

Electrical conductors shall be enclosed in Electrunite EMT in accordance with the National Electrical Code (NEC). Electrical metallic tubing shall be mild steel, electrically-welded, galvanized and produced to the following specifications:

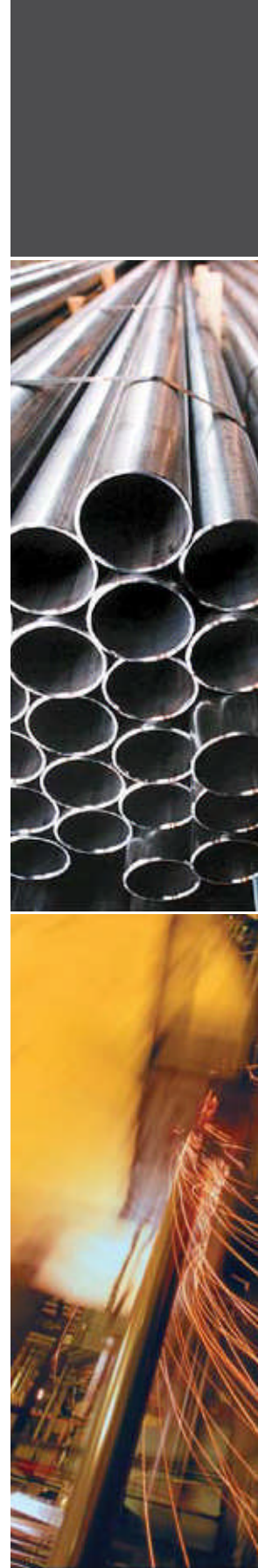
- ANSI – American National Standard for Steel Electrical Metallic Tubing, (EMT) ANSI, C80.3
- National Electric Code, 2002 Article 358 (1999 NEC, Article 348)
- UL Standard for Electrical Metallic tubing – Steel, UL797, File # E7465
- Federal Specification WW-C-563

The above Federal Specification WW-C-563 may still be referenced; however, the federal government has canceled it and has adopted the Underwriters Laboratories 797 and American National Standards Institute C80.3 standards.

*\*All orders are subject to Republic Conduit's Terms and Conditions, a copy of which is available upon request.*

[www.republicconduit.com](http://www.republicconduit.com)

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# WESTERN TUBE & CONDUIT CORPORATION

## EMT (ELECTRICAL METALLIC TUBING)

Including COLOR EMT & CONDUIT KIT

Western Tube EMT is made from strip steel, high frequency (ERW) welded. A continuous hot galvanizing process is employed to coat the exterior surfaces evenly and smoothly. A special transparent secondary coating provides further protection against corrosion. Manufactured in accordance with Underwriters Laboratories specification UL-797, American National Standards Institute (ANSI) specification C80.3, and CSA C22.2 No. 83.1. Also conforms to Federal Specifications WW-C-563A, which has been superseded by the UL document. Approved by the National Electric Code article 358, for open, concealed and concrete slab installations.

Quality controlled each step of the way - regular tests for weld strength, bendability, plating thickness, all dimensions, and uniform smoothness of interior coating provide you with conduit of the highest quality. Western Tube EMT provides perfect bends and offsets that can be made quickly and easily.

Western Tube EMT uses a special polymer ID coating that has low friction so that feeding wires is simple and quick, providing extra ease in wire installation.

No chipping, cracking, peeling - outside surfaces are galvanized with zinc coating for superior corrosion resistance and long-lasting, dependable service. A special protective coating is then applied.

- Compatible with all types of building materials
- Provides a lifetime of safe electrical installations
- Low in cost - strong, durable

A **Conduit Kit** consists of a pre-assembled section of EMT with a coupling, as is traditional with Rigid and IMC. It provides a labor-saving and time-saving alternative when assembling long runs of EMT on site. Unlike other integrated coupling products, our steel set-screw and compression coupling Conduit Kits come with the distinct advantage that they allow you to take apart leftover pieces and re-use them as needed. You get both **savings and flexibility** with every kit. All the components used in our Conduit Kits are UL listed (the couplings are listed to UL 514B), as is the assembly itself (to UL 183). Our conduit products are extremely corrosion resistant and meet all federal and state code requirements.

**Color EMT** is constructed in the same way and meets the same requirements as our standard EMT, and also carries the UL listing and certification. In addition to our standard red, white, blue, green, yellow, orange and black EMT, we are also able to provide custom colors.

### HOT ZINC COATED CONDUIT SPECIFICATIONS

To specify Western Tube Hot Zinc Coated EMT include the following: Electrical Conductors shall be enclosed in Western Tube Hot Zinc Coated EMT in accordance with the National Electrical Code. Electric Metallic Tubing shall be steel, electrically welded, hot zinc galvanized and produced to ANSI Specifications C80.3 and to Underwriters Laboratories specification UL-797, and shall carry the Underwriters Laboratories label, as manufactured by Western Tube and Conduit Corporation.

Trade Size	Metric Designator	Nominal O.D.	Nominal I.D.	Nominal Wall Thickness	Nominal Wt. per Foot	Feet In Sub-Bundle	Qty. in Master Bundle	Feet in Master Bundle	Nom. Wt. Per Master Bundle	Color Designator
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Standard EMT and Color EMT Weights and Specifications

in.	mm	in.	in.	in.	lbs.	ft.	qty.	ft.	lbs.	
1/2	16	0.706	0.622	0.042	0.30	100	700	7000	2100	Black
3/4	21	0.922	0.824	0.049	0.46	100	500	5000	2300	Red
1	27	1.163	1.049	0.057	0.67	100	300	3000	2010	Blue
1 1/4	35	1.510	1.380	0.065	1.01	50	200	2000	2020	Red
1 1/2	41	1.740	1.610	0.065	1.16	50	150	1500	1740	Black
2	53	2.197	2.067	0.065	1.48	50	120	1200	1776	Blue
2 1/2	63	2.875	2.731	0.072	2.16	-	61	610	1318	Black
3	78	3.500	3.356	0.072	2.63	-	51	510	1341	Blue
3 1/2	91	4.000	3.834	0.083	3.49	-	37	370	1291	Black
4	103	4.500	4.334	0.083	3.93	-	30	300	1179	Blue

Conduit Kit Weights and Specifications

2	53	2.197	2.067	0.065	1.53	-	52	520	800	
2 1/2	63	2.875	2.731	0.072	2.30	-	33	330	760	
3	78	3.500	3.356	0.072	2.82	-	33	330	930	
4	91	4.500	4.334	0.083	4.18	-	27	270	1130	

# Conduit Tubing

**Electrical Metallic Tubing (EMT)**

**Intermediate Metal Conduit (IMC)**

**Hot-Dip Galvanized Steel Rigid Metal Conduit (RMC)**



**Wheatland** *Tube*

JMC STEEL GROUP

Includes 2011 National Electrical Code Reference



# From Start To Finish, You Get 100% Wheatland Quality

Wheatland controls the manufacture of its hot-dip galvanized steel Rigid Metal Conduit (RMC), Electrical Metallic Tubing (EMT) and Intermediate Metal Conduit (IMC) every step of the way. We fabricate our own tubing from flat steel coils, weld it and do our own galvanizing. Then to be sure you get the same quality throughout the raceway system, we make our own nipples, elbows, and couplings to match. In fact, we're the only conduit manufacturer who does.

It's not surprising that Wheatland, of all conduit suppliers, has the expertise and resources to do the complete job. For Wheatland, as a major manufacturer of steel pipe, has developed the processes and techniques necessary to the production of quality tubular products.

Wheatland steel Rigid Metal Conduit, EMT and IMC meet all applicable provisions of the Underwriters Laboratories, the National Electrical Code, and the American National Standards Institute and Federal Specifications. This conformance to specifications is covered in detail on pages 3 to 12 and may be used as reference in submitting bids.

## Specialists In Steel Pipe

Wheatland Tube Company and affiliated companies manufacture steel tubular goods exclusively. Wheatland steel Rigid Metal Conduit, Electrical Metallic Tubing and Intermediate Metal Conduit are produced on the most modern equipment in the world. The smallest detail is given careful attention to assure you the highest standards of product quality.

Wheatland steel Rigid Metal Conduit is widely known for the finest hot-dip galvanizing and hot-zinc-coated threads in the industry. A specially formulated coating inhibits oxidation. The galvanized coating is uniform and flake-proof. The conduit cuts, threads, and bends easily because of Wheatland's controlled processing.

Wheatland Electrical Metallic Tubing and Intermediate Metal Conduit are manufactured on modern electric resistance weld mills, galvanized in line, and sprayed with special coatings for ease of pulling wires and to inhibit white rust and storage stain.

# General Information

## Authority Having Jurisdiction (AHJ)

All jurisdictions responsible for electrical installations neither automatically adopt the current edition of the National Electrical Code® nor do they implement it uniformly. Therefore, it is good practice to check with the authority having jurisdiction for local interpretations of the rules and approval of equipment and materials before beginning installation.

## Other Articles and Sections of the National Electrical Code

The three NEC® 2011 Articles contained in this brochure specifically address the installation of electrical steel raceways produced by Wheatland. They represent only a small segment of the code which may be amended by other Articles or Sections, depending on the installation. The safe installations of these raceways require that all applicable Articles and Sections of the code be observed.

The National Electrical Code® is published every three years. The next edition is due in 2014.

## Federal Specifications

The Federal government, in an effort to reduce costs, has undertaken a process of identifying non-government and industry-wide practices that have been accepted previously by the Department of Defense under the Single Process Initiative (SPI) for use in lieu of a specific military or Federal Specification or standard. This process reduces the burden of the government to produce and maintain a separate standard.

Federal agencies accept UL 6 where applicable to steel Rigid Metal Conduit and UL1242 where applicable to Intermediate Metal Conduit in lieu of WW-C-581.

Federal agencies accept American National Standards Institute ANSI C80.3 and UL 797 where applicable to Electrical Metallic Tubing in lieu of WW-C-563.



# Electrical Metallic Tubing (EMT)

## Weights and Dimensions

Trade Size	Metric Designator	Weight		Outside Diameter(1)		Inside Diameter(2)		Wall Thickness(2)	
		10 Unit Lengths							
		lb	kg	in.	mm	in.	mm	in.	mm
½	16	30	13.6	0.706	17.93	0.622	15.80	.042	1.07
¾	21	46	20.9	0.922	23.42	0.824	20.93	.049	1.24
1	27	67	30.4	1.163	29.54	1.049	26.64	.057	1.45
1¼	35	101	45.8	1.510	38.35	1.380	35.05	.065	1.65
1½	41	116	52.6	1.740	44.20	1.610	40.89	.065	1.65
2	53	148	67.1	2.197	55.80	2.067	52.50	.065	1.65
2½	63	216	98.0	2.875	73.03	2.731	69.37	.072	1.83
3	78	263	119.3	3.500	88.90	3.356	85.24	.072	1.83
3½	91	349	158.3	4.000	101.60	3.834	97.38	.083	2.11
4	103	393	178.3	4.500	114.30	4.334	110.08	.083	2.11

Notes : Applicable tolerances Length: 10 Ft. (3.05 m) +/- 1/4 in. (+/- 6.35 mm)

(1) Outside Diameter: 1/2 - 2 +/- 0.005 in. (16 - 53 +/- 0.13mm), 2-1/2 +/- 0.010 in. (63 +/- 0.25 mm), 3 +/- 0.015 in. (78 +/- 0.38 mm) , 3-1/2 - 4 +/- 0.020 in. (91 - 103 +/- 0.51 mm).

(2) For information only, not a UL 797 requirement.

## Packaging

Trade Size	Metric Designator	Threads Protectors Color	Quantity Per Bundle		Quantity Per Lift				Weight Per Lift		Volume Per Lift	
			Feet	Meters	Pieces	Bundles	Feet	Meters	Pounds	Kilograms	Cu. Feet	Cu. m
½	16	Black	100	30.5	---	70	7000	2134	2100	952.5	31.7	0.9
¾	21	Red	100	30.5	---	50	5000	1524	2300	1043.3	36.1	1.0
1	27	Blue	100	30.5	---	30	3000	914	2010	911.7	36.5	1.0
1¼	35	Red	50	15.2	---	40	2000	610	2020	916.3	38.2	1.1
1½	41	Black	50	15.2	---	30	1500	457	1740	789.3	37.9	1.1
2	53	---	---	---	120	---	1200	366	1776	805.6	46.7	1.3
2½	63	---	---	---	61	---	610	186	1318	597.8	41.5	1.2
3	78	---	---	---	51	---	510	155	1341	608.3	48.9	1.4
3½	91	---	---	---	37	---	370	113	1291	585.6	48.6	1.4
4	103	---	---	---	30	---	300	91	1179	534.8	50.0	1.4

The quantity per Lift conforms to the National Electrical Manufacturers Association Standards Publication RN-2 Packaging of Master Bundles for Steel Rigid Conduit, Intermediate Metal Conduit (IMC), and Electrical Metallic Tubing.

## Use of Wheatland Electrical Metallic Tubing in Conformance to the 2011 National Electrical Code®

### Article 358

#### Electrical Metallic Tubing: Type EMT

#### I. General

**358.1 Scope.** This article covers the use, installation, and construction specifications for electrical metallic

tubing (EMT) and associated fittings.

#### 358.2 Definition.

**Electrical Metallic Tubing (EMT).** An unthreaded thinwall raceway of circular cross section designed for the physical protection and routing of conductors and cables and for use as an equipment grounding conductor when installed utilizing appropriate fittings. EMT is generally made of steel (ferrous) with protective coatings or aluminum (nonferrous).

**358.6 Listing Requirements.** EMT, factory elbows, and associated fittings shall be listed.

## II. Installation

### 358.10 Uses Permitted.

**(A) Exposed and Concealed.** The use of EMT shall be permitted for both exposed and concealed work.

**(B) Corrosion Protection.** Ferrous or nonferrous EMT, elbows, couplings, and fittings shall be permitted to be installed in concrete, in direct contact with the earth, or in areas subject to severe corrosive influences where protected by corrosion protection and approved as suitable for the condition.

**(C) Wet Locations.** All supports, bolts, straps, screws, and so forth shall be of corrosion-resistant materials or protected against corrosion by corrosion-resistant materials. FPN: See 300.6 for protection against corrosion.

FPN: See 300.6 for protection against corrosion.

**358.12 Uses Not Permitted.** EMT shall not be used under the following conditions:

(1) Where, during installation or afterward, it will be subject to severe physical damage

(2) Where protected from corrosion solely by enamel

(3) In cinder concrete or cinder fill where subject to permanent moisture unless protected on all sides by a layer of noncinder concrete at least 50 mm (2 in.) thick or unless the tubing is at least 450 mm (18 in.) under the fill

(4) In any hazardous (classified) location except as permitted by other articles in this Code

(5) For the support of luminaries or other equipment except conduit bodies no larger than the largest trade size of the tubing

(6) Where practicable, dissimilar metals in contact anywhere in the system shall be avoided to eliminate the possibility of galvanic action

*Exception: Aluminum fittings and enclosures shall be permitted to be used with steel EMT where not subject to severe corrosive influences.*

### 358.20 Size.

**(A) Minimum.** EMT smaller than metric designator 16 (trade size ½) shall not be used.

*Exception: For enclosing the leads of motors as permitted in 430.245 (B).*

**(B) Maximum.** The maximum size of EMT shall be metric designator 103 (trade size 4).

FPN: See 300.1(C) for the metric designators and trade sizes. These are for identification purposes only and do not relate to actual dimensions. (See page 7)

**358.22 Number of Conductors.** The number of conductors shall not exceed that permitted by the percentage fill specified in Table 1, Chapter 9. (See page 7)

Cables shall be permitted to be installed where such use is not prohibited by the respective cable articles. The number of cables shall not exceed the allowable percentage fill specified in Table 1, Chapter 9. (See page 7)

**358.24 Bends - How Made.** Bends shall be made so that the tubing is not damaged and the internal diameter of the tubing is not effectively reduced. The radius of the curve of any field bend to the centerline of the tubing shall not be less than shown in Table 2, Chapter 9 for oneshot and full shoe benders. (See page 10)

**358.26 Bends - Number in One Run.** There shall not be more than the equivalent of four quarter bends (360 degrees total) between pull points, for example, conduit bodies and boxes.

### 358.28 Reaming and Threading.

**(A) Reaming.** All cut ends of EMT shall be reamed or otherwise finished to remove rough edges.

**(B) Threading.** EMT shall not be threaded.

*Exception: EMT with factory threaded integral couplings complying with 358.100.*

**358.30 Securing and Supporting.** EMT shall be installed as a complete system in accordance with 300.18 and shall be securely fastened in place and supported in accordance with 358.30 (A) and (B).

**(A) Securely Fastened.** EMT shall be securely fastened in place at least every 3 m (10 ft). In addition, each EMT run between termination points shall be securely fastened within 900 mm (3 ft) of each outlet box, junction box, device box, cabinet, conduit body, or other tubing terminations.

*Exception No. 1: Fastening of unbroken lengths shall be permitted to be increased to a distance of 1.5 m (5 ft) where structural members do not readily permit fastening within 900 mm (3 ft).*

*Exception No. 2: For concealed work in finished buildings or prefinished wall panels where such securing is impracticable, unbroken lengths (without coupling) of EMT shall be permitted to be fished.*

**(B) Supports.** Horizontal runs of EMT supported by openings through framing members at intervals not

greater than 3 m (10 ft) and securely fastened within 900 mm (3 ft) of termination points shall be permitted

**358.42 Couplings and Connectors.** Couplings and connectors used with EMT shall be made up tight. Where buried in masonry or concrete, they shall be concretetight type. Where installed in wet locations, they shall comply with 314.15.

**358.56 Splices and Taps.** Splices and taps shall be made in accordance with 300.15.

**358.60 Grounding.** EMT shall be permitted as equipment grounding conductor.

### III. Construction Specifications

**358.100 Construction.** Factory-threaded integral couplings shall be permitted. Where EMT with a threaded integral coupling is used, threads for both the tubing and coupling shall be factory-made. The coupling and EMT threads shall be designed so as to prevent bending of the tubing at any part of the thread.

**358.120 Marking.** EMT shall be clearly and durably marked at least every 3 m (10 ft) as required in the first sentence of 110.21.

## Intermediate Metal Conduit - Steel (IMC)

### Weights and Dimensions

Trade Size	Metric Designator	Threads Per Inch	Acceptable Length of Finished Conduit without Coupling			Weight 10 Unit Lengths with Couplings		Nominal Outside Diameter <sup>1</sup>		Nominal Inside Diameter <sup>2</sup>		Nominal Wall Thickness <sup>1</sup>	
			ft.	(+/- 1/4 in.) in.	(+/- 6mm) mm	lb	kg	in.	mm	in.	mm	in.	mm
½	16	14	9	11¼	3030	62	28.12	0.815	20.70	0.660	16.76	.078	1.97
¾	21	14	9	11¼	3030	84	38.10	1.029	26.14	0.869	22.07	.083	2.10
1	27	11½	9	11	3025	119	53.98	1.290	32.77	1.105	28.07	.093	2.35
1¼	35	11½	9	11	3025	158	71.67	1.638	41.59	1.448	36.77	.095	2.41
1½	41	11½	9	11	3025	194	88.00	1.883	47.82	1.683	42.74	.100	2.54
2	53	11½	9	11	3025	256	116.12	2.360	59.93	2.150	54.60	.105	2.67
2½	63	8	9	10½	3010	411	200.04	2.857	72.57	2.557	64.95	.150	3.81
3	78	8	9	10½	3010	543	246.30	3.476	88.29	3.176	80.67	.150	3.81
3½	91	8	9	10¼	3005	629	285.31	3.971	100.86	3.671	93.24	.150	3.81
4	103	8	9	10¼	3005	700	317.52	4.466	113.44	4.166	105.82	.150	3.81

NOTES: (1) Figures are the average of the maximum and minimum dimensions as given in UL 1242.

(2) Calculated from nominal outside diameter and nominal wall thickness.

Steel Intermediate Metal Conduit is manufactured to the lengths shown above, so when the coupling is attached a 10 foot (3.05m) length is produced.

### Packaging

Trade Size	Metric Designator	Threads Protectors Color	Quantity Per Bundle		Quantity Per Lift				Weight Per Lift		Volume Per Lift	
			Feet	Meters	Pieces	Bundles	Feet	Meters	Pounds	Kilograms	Cu. Feet	Cu. m
½	16	Yellow	100	30.5	---	35	3500	1067	2170	984.3	26.4	0.7
¾	21	Green	50	15.2	---	50	2500	762	2100	952.5	33.5	0.9
1	27	Orange	50	15.2	---	34	1700	518	2023	917.6	32.1	0.9
1¼	35	Green	---	---	135	---	1350	411	2133	967.5	34.7	1.0
1½	41	Yellow	---	---	110	---	1100	335	2134	968.0	35.0	1.0
2	53	Orange	---	---	80	---	800	244	2048	929.0	30.9	0.9
2½	63	Yellow	---	---	37	---	370	113	1632	740.3	33.5	0.9
3	78	Orange	---	---	30	---	300	91	1629	738.9	38.3	1.1
3½	91	Yellow	---	---	24	---	240	73	1510	684.8	41.7	1.2
4	103	Orange	---	---	24	---	240	73	1680	762.0	48.6	1.4

The quantity per Lift conforms to the National Electrical Manufacturers Association Standards Publication RN-2 Packaging of Master Bundles for Steel Rigid Conduit, Intermediate Metal Conduit (IMC), and Electrical Metallic Tubing.

# Use of Intermediate Metal Conduit In Conformance To The 2011 National Electrical Code®

## Article 342 Intermediate Metal Conduit: Type IMC

### I. General

**342.1 Scope.** This article covers the use, installation, and construction specifications for intermediate metal conduit (IMC) and associated fittings.

#### 342.2 Definition.

**Intermediate Metal Conduit (IMC).** A steel threadable raceway of circular cross section designed for the physical protection and routing of conductors and cables and for use as an equipment grounding conductor when installed with its integral or associated couplings and appropriate fittings.

**342.6 Listing Requirements.** IMC, factory elbows and couplings, and associated fittings shall be listed.

### II. Installation

#### 342.10 Used Permitted.

**(A) All Atmospheric Conditions and Occupancies.** Use of IMC shall be permitted under all atmospheric conditions and occupancies.

**(B) Corrosion Environments.** IMC, elbows, couplings, and fittings shall be permitted to be installed in concrete, in direct contact with the earth, or in areas subject to severe corrosive influences where protected by corrosion protection and judged suitable for the condition.

**(C) Cinder Fill.** IMC shall be permitted to be installed in or under cinder fill where subject to permanent moisture where protected on all sides by a layer of noncinder concrete not less than 50 mm (2 in.) thick; where the conduit is not less than 450 mm (18 in.) under the fill; or where protected by corrosion protection and judged suitable for the condition.

**(D) Wet Locations.** All supports, bolts, straps, screws, and so forth, shall be of corrosion-resistant materials or protected against corrosion by corrosion-resistant materials.

FPN: See 300.6 for protection against corrosion.

**342.14 Dissimilar Metals.** Where practicable, dissimilar metals in contact anywhere in the system

shall be avoided to eliminate the possibility of galvanic action.

Aluminum fittings and enclosures shall be permitted to be used with IMC.

#### 342.20 Size.

**(A) Minimum.** IMC smaller than metric designator 16 (trade size ½) shall not be used.

**(B) Maximum.** IMC larger than metric designator 103 (trade size 4) shall not be used.

FPN: See 300.1(C) for the metric designator and trade sizes. These are for identification purposes only and do not relate to actual dimensions. (See page 7)

**342.22 Number of Conductors.** The number of conductors shall not exceed that permitted by the percentage fill specified in Table 1, Chapter 9. (See page 7)

Cables shall be permitted to be installed where such use is not prohibited by the respective cable articles. The number of cables shall not exceed the allowable percentage fill specified in Table 1, Chapter 9. (See page 7)

**342.24 Bends - How Made.** Bends of IMC shall be so made that the conduit will not be damaged and the internal diameter of the conduit will not be effectively reduced. The radius of the curve of any field bend to the centerline of the conduit shall not be less than indicated in Table 2, Chapter 9. (See page 10)

**342.26 Bends - Number in One Run.** There shall not be more than the equivalent of four quarter bends (360 degrees total) between pull points, for example, conduit bodies and boxes.

**342.28 Reaming and Threading.** All cut ends shall be reamed or otherwise finished to remove rough edges. Where conduit is threaded in the field, a standard cutting die with a 1 in 16 (¾ in. taper per foot) shall be used.

FPN: See ANSI/ASME B.1.20.1- 1983, *Standard for Pipe Threads, General Purpose (Inch)*.

**342.30 Securing and Supporting.** IMC shall be installed as a complete system in accordance with 300.18 and shall be securely fastened in place and supported in accordance with 342.30(A) and (B).

**(A) Securely Fastened.** IMC shall be secured in accordance with one of the following:  
(1) IMC shall be securely fastened within 900 mm (3 ft) of each outlet box, junction box, device box, cabinet, conduit body, or other conduit termination.  
(2) Where structural members do not readily permit

fastening within 900 mm (3 ft) fastings shall be permitted to be increased to a distance of 1.5 m (5 ft).

(3) Where approved, conduit shall not be required to be securely fastened within 900 mm (3 ft) of the service head for above-theroof termination of a mast.

**(B) Supports.** IMC shall be supported in accordance with one of the following:

(1) Conduit shall be supported at intervals not exceeding 3 m (10 ft).

(2) The distance between supports for straight runs of conduit shall be permitted in accordance with Table 344.30(B)(2), provided the conduit is made up with threaded couplings and such supports prevent transmission of stresses to termination where conduit is deflected between supports.

(3) Exposed vertical risers from industrial machinery or fixed equipment shall be permitted to be supported at intervals not exceeding 6 m (20 ft) if the conduit is made up with threaded couplings, the conduit is supported and securely fastened at the top and bottom of the riser, and no other means of intermediate support is readily available.

(4) Horizontal runs of IMC supported by openings through framing members at intervals not exceeding 3 m (10 ft) and securely fastened within 900 mm (3 ft) of termination points shall be permitted.

**342.42 Couplings and Connectors.**

**(A) Threadless.** Threadless couplings and connectors used with conduit shall be made tight. Where buried in masonry or concrete, they shall be the concretetight type. Where installed in wet locations, they shall comply with 314.15. Threadless couplings and connectors shall not be used on threaded conduit ends unless listed for the purpose.

**(B) Running Threads.** Running threads shall not be used on conduit for connection at couplings.

**342.46 Bushings.** Where a conduit enters a box, fitting, or other enclosure, a bushing shall be provided to protect the wires from abrasion unless the box, fitting, or enclosure is designed to protect such protection.

FPN: See 300.4(G) for the protection of conductors 4 AWG and larger at bushings.

**342.56 Splices and Taps.** Splices and taps shall be made in accordance with 300.15.

**342.60 Grounding.** IMC shall be permitted as an equipment grounding conductor.

**III. Construction Specifications**

**342.120 Marking.** Each length shall be clearly and durably marked at least every 1.5 m (5 ft) with the

letters IMC. Each length shall be marked as required in 110.21.

**342.130 Standard Lengths.** The standard length of IMC shall be 3.05 m (10 ft), including an attached coupling, and each end shall be threaded. Longer or shorter lengths with or without coupling and threaded or unthreaded shall be permitted.

**Chapter 9 Tables**

**Table 1 Percent of Cross Section of Conduit and Tubing for Conductors**

Number of Conductors	All Conductor Types
1	53
2	31
Over 2	40

**From Article 300 Wiring Methods**

**Table 300.1(C) Metric Designator and Trade Sizes**

Metric Designator	Trade Size
12	3/8
16	1/2
21	3/4
27	1
35	1 1/4
41	1 1/2
53	2
63	2 1/2
78	3
91	3 1/2
103	4
129	5
155	6

Note: The metric designators and trade sizes are for identification purposes only and are not actual dimensions.

**Need 20 Foot Lengths of Rigid or EMT? Contact Wheatland Electrical sales department E-mail: [info@wheatland.com](mailto:info@wheatland.com), Phone : 800-257-8182, or Fax: 724-346-7052**

**Grounding Study on Steel EMT, IMC, and Rigid Conduit**

After Article 250 was revised in the 1990 NEC®, the steel conduit producers initiated a program to evaluate the performance of steel EMT, IMC, and Rigid Metal Conduit during faults in secondary distribution systems.



Georgia Institute of Technology, Atlanta, GA undertook the research and in 1994 published their findings in a report that updated the grounding data developed by Eustace Soares, some 40 years earlier, and answered the questions of compliance with NEC® Article 250.

- “Modeling and Testing of Steel EMT, IMC, and Rigid (GRC) Conduit” Study, Part I.

- Part II, Contains Appendices of Test Results.

You can download or view the study at, [www.steelconduit.org](http://www.steelconduit.org)

## Hot-Dip Galvanized Rigid Metal Conduit - Steel (RMC)

### Weights and Dimensions

Trade Size	Metric Designator	Threads Per Inch	Acceptable Length of Finished Conduit without Coupling			Weight 10 Unit Lengths with Couplings		Nominal Outside Diameter*		Nominal Inside Diameter*		Nominal Wall Thickness*	
			ft.	(+/- 1/4 in.) in.	(+/- 6 mm) mm	lb	kg	in.	mm	in.	mm	in.	mm
½	16	14	9	11¼	3030	82	37.20	0.840	21.34	0.632	16.05	.104	2.64
¾	21	14	9	11¼	3030	109	49.44	1.050	26.67	0.836	21.23	.107	2.72
1	27	11½	9	11	3025	161	73.03	1.315	33.40	1.063	27.00	.126	3.20
1¼	35	11½	9	11	3025	218	98.88	1.660	42.16	1.394	35.41	.133	3.38
1½	41	11½	9	11	3025	263	119.30	1.900	48.26	1.624	41.25	.138	3.51
2	53	11½	9	11	3025	350	158.76	2.375	60.33	2.083	52.91	.146	3.71
2½	63	8	9	10½	3010	559	253.56	2.875	73.03	2.489	63.22	.193	4.90
3	78	8	9	10½	3010	727	329.77	3.500	88.90	3.090	78.49	.205	5.21
3½	91	8	9	10¼	3005	880	399.17	4.000	101.60	3.570	90.68	.215	5.46
4	103	8	9	10¼	3005	1030	467.21	4.500	114.30	4.050	102.87	.225	5.72
5	129	8	9	10	2995	1400	635.04	5.563	141.30	5.073	128.85	.245	6.22
6	155	8	9	10	2995	1840	834.62	6.625	168.28	6.093	154.76	.266	6.76

\*For information only, not a UL 6 requirement.

Rigid Steel Conduit is manufactured to the lengths shown above, so when a straight-tapped coupling Wheatland trade sizes 3 through 6 are UL Listed for use with directional boring equipment.

### Packaging

Trade Size	Metric Designator	Threads Protectors Color	Quantity Per Bundle		Quantity Per Lift				Weight Per Lift		Volume Per Lift	
			Feet	Meters	Pieces	Bundles	Feet	Meters	Pounds	Kilograms	Cu. Feet	Cu. m
½	16	Black	100	30.5	---	25	2,500	762	2050	929.9	19.4	0.6
¾	21	Red	50	15.2	---	40	2,000	610	2180	988.8	26.7	0.8
1	27	Blue	50	15.2	---	25	1,250	381	2013	913.1	22.2	0.6
1¼	35	Red	---	---	90	---	900	274	1962	889.9	28.3	0.8
1½	41	Black	---	---	80	---	800	244	2104	954.4	27.2	0.8
2	53	Blue	---	---	60	---	600	183	2100	952.6	36.1	1.0
2½	63	Black	---	---	37	---	370	113	2068	938.0	35.0	1.0
3	78	Blue	---	---	30	---	300	91	2181	989.3	41.5	1.2
3½	91	Black	---	---	25	---	250	76	2200	997.9	43.3	1.2
4	103	Blue	---	---	20	---	200	61	2060	934.4	48.6	1.4
5	129	Blue	---	---	15	---	150	46	2100	952.5	52.1	1.5
6	155	Blue	---	---	10	---	100	30	1840	834.6	43.8	1.2

The quantity per Lift conforms to the National Electrical Manufacturers Association Standards Publication RN-2 Packaging of Master Bundles for Steel Rigid Conduit, Intermediate Metal Conduit (IMC), and Electrical Metallic Tubing.

# Use of Wheatland Rigid Metal Conduit - Steel in Conformance to the 2011 National Electrical Code®

## Article 344 Rigid Metal Conduit: Type RMC

### I. General

**344.1 Scope.** This article covers the use, installation, and construction specifications for rigid metal conduit (RMC) and associated fittings.

### 344.2 Definition.

**Rigid Metal Conduit (RMC).** A threadable raceway of circular cross section designed for the physical protection and routing of conductors and cables and for use as an equipment grounding conductor when installed with its integral or associated coupling and associated fittings. RMC is generally made of steel (ferrous) with protective coatings or aluminum (nonferrous). Special use types are red brass and stainless steel.

**344.6 Listing Requirements.** RMC, factory elbows and couplings, and associated fittings shall be listed.

### II. Installation

### 344.10 Uses Permitted.

#### (A) All Atmospheric Conditions and Occupancies.

**(1) Galvanized steel and Stainless Steel RMC.** Galvanized steel and stainless steel RMC shall be permitted under all atmospheric conditions and occupancies.

**(2) Red Brass RMC.** Red brass RMC shall be permitted to be installed for direct burial and swimming pool applications.

**(3) Aluminum RMC.** Aluminum RMC shall be permitted to be installed where judged suitable for the environment. Rigid aluminum conduit encased in concrete or in direct contact with the earth shall be provided with approved supplementary corrosion protection.

**(4) Ferrous Raceways and Fittings.** Ferrous raceways and fittings protected from corrosion solely by enamel shall be permitted only indoors and in occupancies not subject to severe corrosive influences.

#### (B) Corrosive Environments.

**(1) Galvanized Steel, Stainless Steel, and Red Brass RMC, Elbows, Couplings, and Fittings.** RMC, elbows, couplings, and fittings shall be permitted to be installed in concrete, in direct contact with the earth, or in areas subject to severe corrosive influences where protected by corrosion protection and judged suitable for the condition.

**(2) Supplementary Protection of Aluminum RMC.** Aluminum RMC shall be provided with approved supplementary corrosion protection where encased in concrete or in direct contact with the earth.

**(C) Cinder Fill.** Galvanized steel, stainless steel, and red brass RMC shall be permitted to be installed in or under cinder fill where subject to permanent moisture where protected on all sides by a layer of noncinder concrete not less than 50 mm (2 in.) thick; where the conduit is not less than 450 mm (18 in.) under the fill; or where protected by corrosion protection and judged suitable for the condition.

**(D) Wet Locations.** All supports, bolts, straps, screws, and so forth, shall be of corrosion-resistant materials or protected against corrosion by corrosion-resistant materials.

FPN: See 300.6 for protection against corrosion.

**344.14 Dissimilar Metals.** Where practicable, dissimilar metals in contact anywhere in the system shall be avoided to eliminate the possibility of galvanic action. Aluminum fittings and enclosures shall be permitted to be used with steel RMC, and steel fittings and enclosures shall be permitted to be used with aluminum RMC where not subject to severe corrosive influences.

### 344.20 Size.

**(A) Minimum.** RMC smaller than metric designator 16 (trade size ½) shall not be used.

*Exception: For enclosing the leads of motors as permitted in Section 430.245 (B).*

**(B) Maximum.** RMC larger than metric designator 155 (trade size 6) shall not be used.

FPN: See 300.1(C) for the metric designators and trade sizes. These are for identification purposes only and do not relate to actual dimensions. (See page 7)

**344.22 Number of Conductors.** The number of conductors shall not exceed that permitted by the percentage fill specified in Table 1, Chapter 9. (See page 7)



Cables shall be permitted to be installed where such use is not prohibited by the respective cable articles. The number of cables shall not exceed that allowable percentage fill specified in Table 1, Chapter 9. (See page 7)

**344.24 Bends - How Made.** Bends of RMC shall be so made that the conduit will not be damaged and so that the internal diameter of the conduit will not be effectively reduced. The radius of the curve of any field bend to the centerline of the conduit shall not be less than indicated in Table 2, Chapter 9. (See page 10)

**344.26 Bends - Number in One Run.** There shall not be more than the equivalent of four quarter bends (360 degrees total) between pull points, for example, conduit bodies and boxes.

**344.28 Reaming and Threading.** All cut ends shall be reamed or otherwise finished to remove rough edges. Where conduit is threaded in the field, a standard cutting die with a 1 in 16 taper ( $\frac{3}{4}$ -in. taper per foot) shall be used.

FPN: See ANSI/ASME B.1.20.1-1983, *Standard for Pipe Threads, General Purpose (Inch)*.

**344.30 Securing and Supporting.** RMC shall be installed as a complete system in accordance with 300.18 and shall be securely fastened in place and supported in accordance with 344.30(A) and (B).

**(A) Securely Fastened.** RMC shall be securely fastened within 900 mm (3 ft) of each outlet box, junction box, device box, cabinet, conduit body, or other conduit termination. Fastening shall be permitted to be increased to a distance of 1.5 m (5 ft) where structural members do not readily permit fastening within 900 mm (3 ft). Where approved, conduit shall not be required to be securely fastened within 900 mm (3 ft) of the service head for above-the-roof termination of a mast.

**(B) Supports.** RMC shall be supported in accordance with one of the following:

- (1) Conduit shall be supported at intervals not exceeding 3 m (10 ft)
- (2) The distance between supports for straight runs of conduit shall be permitted in accordance with Table 344.30(B)(2), provided the conduit is made up with threaded couplings and such supports prevent transmission of stresses to termination where conduit is deflected between supports.
- (3) Exposed vertical risers from industrial machinery or fixed equipment shall be permitted to be supported at intervals not exceeding 6 m (20 ft) if the conduit is made up with threaded couplings, the conduit is supported and securely fastened at the top and bottom of the riser, and no other means of intermediate support is readily available.

**Table 344.30(B)(2) Supports for Rigid Metal Conduit**

Conduit Size		Maximum Distance Between Conduit Supports	
Metric Designator	Trade Size	m	ft
16 - 21	$\frac{1}{2}$ - $\frac{3}{4}$	3.0	10
27	1	3.7	12
35 - 41	$1\frac{1}{4}$ - $1\frac{1}{2}$	4.3	14
53 - 63	2 - $2\frac{1}{2}$	4.9	16
78 and larger	3 and larger	6.1	20

(4) Horizontal runs of RMC supported by openings through framing members at intervals not exceeding 3 m (10 ft) and securely fastened within 900 mm (3 ft) of termination points shall be permitted.

### 344.42 Couplings and Connectors.

**(A) Threadless.** Threadless couplings and connectors used with conduit shall be made tight. Where buried in masonry or concrete, they shall be the concretetight type. Where installed in wet locations, they shall comply with 314.15(A). Threadless couplings and connectors shall not be used on threaded conduit ends unless listed for the purpose.

**(B) Running Threads.** Running threads shall not be used on conduit for connection at couplings.

**344.46 Bushings.** Where a conduit enters a box, fitting, or other enclosure, a bushing shall be provided to protect the wires from abrasion unless the box, fitting, or enclosure is designed to provide such protection.

FPN: See 300.4(F) for the protection of conductors sizes 4 AWG and larger at bushings.

**344.56 Splices and Taps.** Splices and taps shall be made in accordance with 300.15.

**344.60 Grounding.** RMC shall be permitted as an equipment grounding conductor.

## III. Construction Specifications

**344.120 Marking.** Each length shall be clearly and durably identified in every 3 m (10 ft) as required in the first sentence of 110.21. Nonferrous conduit of corrosion resistant material shall have suitable markings.

**344.130 Standard Lengths.** The standard length of RMC shall be 3.05 m (10 ft), including an attached coupling, and each end shall be threaded. Longer or shorter lengths with or without coupling and threaded or unthreaded shall be permitted.

## Chapter 9 Tables

**Table 2 Radius of Conduit and Tubing Bends**

Conduit or Tubing Size		One Shot and Full Shoe Benders		Other Bends	
Metric Designator	Trade Size	mm	in.	mm	in.
16	1/2	101.6	4	101.6	4
21	3/4	114.3	4 1/2	127	5
27	1	146.05	5 3/4	152.4	6
35	1 1/4	184.15	7 1/2	203.2	8
41	1 1/2	209.55	8 1/4	254	10
53	2	241.3	9 1/2	304.8	12
63	2 1/2	266.7	10 1/2	381	15
78	3	330.2	13	457.2	18
91	3 1/2	381	15	533.4	21
103	4	406.4	16	609.6	24
129	5	609.6	24	762	30
155	6	762	30	914.4	36

## Steel Conduit For EMI Solutions

Steel conduit will provide many benefits in your electrical distribution system. Steel conduit can dramatically reduce electromagnetic fields, thus reducing electromagnetic interference created by typical power frequency electrical wiring. Steel conduit systems can be designed for the best grounding. And steel conduit provides the well-known benefits of physical protection for conductors and fire safety.

### All New Grounding and ElectroMagnetic Interference (GEMI) Analysis Software

Developed specifically to assist architects, electrical engineers, electrical contractors, building and facility operation professionals with issues involving:

- Electromagnetic interference in electrical distribution systems Steel Conduit For EMI Solutions
- Most effective conduit for electromagnetic field reduction
- Harmonics in electrical systems
- Design of distribution feeder and branch circuits for safety and economics
- Equipment grounding
- Easy and accurate calculation of conduit runs for effective grounding path
- Analysis of existing circuits

**GEMI** was researched, designed and written at the School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA.

The **GEMI** software program, which can be used to address the effects of EMI on commonly used

electronic equipment, has been validated with actual measurements of EMF and the most exhaustive studies of impedance and permeability of steel conduit in 40 years.

**GEMI** permits flexibility in the design of a new system, comparison with other type systems designed to the equipment grounding requirements of the NEC, and analysis of existing systems to determine any upgrading necessary for safe ground fault interruption or reduced electromagnetic fields.

To obtain a copy of the **GEMI** software contact Wheatland's Marketing Department at [info@wheatland.com](mailto:info@wheatland.com). The software is free to qualified users.

### Wheatland Nipples, Elbows, and Couplings

Wheatland has a complete line of nipples, elbows, and couplings for Rigid steel and aluminum conduit, and elbows for steel IMC and EMT.

### Nipple, Elbow and Coupling Standards

The material standards that cover Wheatland's standard length conduit and tubing cover our tubular fittings as well. As a convenience to our customers Wheatland inventories aluminum tubular fittings to ship with our steel fittings. Aluminum nipples, elbows and couplings conform to UL 6A, Federal Specification WW-C-540, and American National Standards Institute C80.5.

For complete information on weights, dimensions, and packaging ask for our product bulletins. Hot-dip Galvanized Rigid Conduit nipples, elbows and couplings are covered in one publication and Aluminum and IMC products in another.

## Electrical Metallic Tubing For Use Over 600 Volts

Underwriters Laboratories report *UL Report on Electrical Metallic Tubing For Use Over 600 Volts*, January 19, 1996 "identified Electrical Metallic Tubing (EMT) as suitable for use where the voltage between circuit conductors or between conductors and ground is over 600 volts." For a copy of the UL report contact Wheatland's Marketing Department at [info@wheatland.com](mailto:info@wheatland.com).

## Applicable EMT Material Standards

Though the National Electrical Code® deals primarily with proper field application, it presumes that the tubing meets the standards necessary to perform properly under approved conditions. Wheatland Electrical Metallic Tubing is made to provide all the qualities required for proper installation as specified in the NEC®.

Wheatland Electrical Metallic Tubing is manufactured in conformance to standards established by the American National Standards Institute, the Underwriters Laboratories and the Federal Specification. In preparing bids, it may be stated that Wheatland EMT Conforms to:

- Underwriters Laboratories Standard UL 797
- Federal Specification WW-C-563
- American National Standard Institute C80.3
- NEC® 2011 Section 250.118(4) recognizes EMT as an equipment grounding conductor.

## Applicable IMC Material Standards

Though the National Electrical Code® deals primarily with proper field application, it presumes that the conduit meets the standards necessary to perform properly under approved conditions. Wheatland Intermediate Metal Conduit is made to provide all the qualities required for proper installation as specified in the NEC®.

Wheatland Intermediate Metal Conduit is manufactured in conformance to standards established by the American National Standards Institute, the Underwriters Laboratories and the Federal Specification. In preparing bids, it may be stated that Wheatland Intermediate Metal Conduit Conforms to:

- Underwriters Laboratories Standard UL 1242
- Federal Specification WW-C-581
- American National Standard Institute C80.6
- NEC® 2011 Section 250.118(3) recognizes IMC as an equipment grounding conductor.

## Applicable Rigid Metal Conduit - Steel Material Standards

Though the National Electrical Code® deals primarily with proper field application, it presumes that the conduit meets the standards necessary to perform properly under approved conditions. Wheatland galvanized steel Rigid Metal Conduit is made to provide all the qualities required for proper installation as specified in the NEC®.

Wheatland Galvanized steel Rigid Metal Conduit is manufactured in conformance to standards established by the American National Standards Institute, the Underwriters Laboratories and the Federal Specification. In preparing bids, it may be stated that Wheatland Galvanized steel Rigid Metal Conduit Conforms to:

- Underwriters Laboratories Standard UL 6
- Federal Specification WW-C-581
- American National Standard Institute C80.1
- NEC® 2011 Section 250.118(2) recognizes RMC as an equipment grounding conductor.



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Wheatland produces a full line of listed electrical conduit, EMT and tubular fittings. We supply Steel and Aluminum Rigid Metal Conduit (RMC), Steel Intermediate Metal Conduit (IMC) and Steel Electrical Metallic Tubing (EMT). We also manufacture a full line of complementary tubular fittings made from the same materials as our raceways — nipples, elbows, couplings and running thread. (See Wheatland's individual product literature for specific product details.)

All Wheatland manufacturing locations' quality management systems are certified to the ISO 9001:2008 requirements.

For more information contact Wheatland's Electrical Sales Department at 800-257-8182, email: [info@wheatland.com](mailto:info@wheatland.com) or visit our website at [www.wheatland.com](http://www.wheatland.com).



Made in U.S.A.

## EMT Elbows 90°

Trade Size	Min. UL Radius (in.)	Offset	Weight lbs.**		Std. Carton Qty.
			Per 100	Per Ctn.	
1/2	4	6 1/4	26	13	50
3/4	4 1/2	7 1/16	46	23	50
1	5 3/4	9 1/4	92	23	25
1 1/4	7 1/4	10 1/2	135	27	20
1 1/2	8 1/4	12 5/8	200	30	15
2	9 1/2	14 1/4	280	28	10
2 1/2*	10 1/2	18 7/8	500	250	50
3*	13	20	750	375	50
3 1/2*	15	23 3/4	1014	355	35
4*	16	26 1/8	1300	455	35

\*Trade sizes 2 1/2 and larger shipped in palletized cartons or bulk.

\*\*Weights for Standard 90° elbows shown above are approximate. To estimate weight for 60°, deduct 10%; for 45°, deduct 15%; for 30°, deduct 20%.

Underwriters Laboratories, Inc. UL 797, American National Standards Institute, C80.3.

## Rigid/IMC Couplings - Galvanized Steel

Trade Size	Outside Diameter	Length* (in.)	Weight lbs.		Std. Carton Qty.
			Per 100	Per Ctn.	
1/2	1.010	1 5/8	12	12	100
3/4	1.250	1 41/64	18	9	50
1	1.525	1 31/32	30	9	30
1 1/4	1.869	2 1/32	37	9	25
1 1/2	2.155	2 1/16	52	13	25
2	2.650	2 1/8	72	15	20
2 1/2	3.250	3 3/16	170	41	24
3	3.870	3 5/16	210	34	16
3 1/2	4.500	3 13/32	340	41	12
4	4.875	3 33/64	300	30	10
5	6.000	3 61/64	475	Bulk	Bulk
6	7.200	4 1/4	765	Bulk	Bulk

Manufactured to UL Specifications.

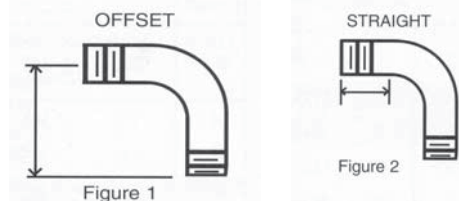
\*Minimum dimensions per UL 6.

## Rigid Steel Conduit Running Thread Pipe

Trade Size	Feet Per Carton	Weight lbs.	
		Per 100 Ft.	Per Ctn.
1/8	102'	18	19
1/4	102'	29	30
3/8	102'	42	43
1/2	60'	62	37
3/4	75'	85	64
1	60'	103	62
1 1/4	36'	141	51
1 1/2	30'	180	54
2	24'	249	60
2 1/2	12'	383	46
3	9'	496	45
3 1/2	6'	631	38
4	6'	722	43

**3 Foot Lengths:** TYPE "C" Galvanized, Electro Plated Threads.

## Rigid Steel Conduit-Galvanized Elbows 90°



Trade Size	Min. UL Radius (in.)	Offset Fig. 1	Straight Fig. 2	Weight lbs.**		Std. Carton Qty.
				Per 100	Per Ctn.	
1/2	4	6 3/8	1 3/4	70	35	50
3/4	4 1/2	7 7/16	2 1/4	112	56	50
1	5 3/4	9 1/2	2 1/4	192	48	25
1 1/4	7 1/4	11 3/8	3	320	64	20
1 1/2	8 1/4	12 13/16	3 1/2	413	62	15
2	9 1/2	15 1/2	4	670	67	10
2 1/2*	10 1/2	19 1/4	4 3/4	1200	600	50
3*	13	21 1/2	6	1900	665	35
3 1/2*	15	24 1/2	5 1/2	2800	700	25
4*	16	25 1/2	5 3/4	3100	775	25
5*	24	37 1/16	8 1/8	6800	Bulk	Bulk
6*	30	49 1/2	13 1/4	11400	Bulk	Bulk

\*Sizes 2 1/2 and larger shipped in palletized cartons or bulk. Palletized and Bulk elbows supplied with a thread protector on each end and UL label affixed.

\*\*Weights for Standard 90° elbows shown above are approximate. To estimate weight for 60°, deduct 10%; for 45°, deduct 15%; for 30°, deduct 20%.

## Rigid Steel Conduit Nipples - Galvanized

### WEIGHTS AND PACKAGING

Length	CLOSE			1½"		2"		2½"		3"		3½"	
Trade Size	Length* (in.)	Standard Carton Quantity	Weight Per 100 lbs.	Standard Carton Quantity	Weight Per 100 lbs.	Standard Carton Quantity	Weight Per 100 lbs.	Standard Carton Quantity	Weight Per 100 lbs.	Standard Carton Quantity	Weight Per 100 lbs.	Standard Carton Quantity	Weight Per 100 lbs.
½	1⅛	25	6	25	8	25	12	25	15	25	19	25	22
¾	1⅜	25	9	25	9	25	14	25	19	25	24	25	28
1	1½	25	16	--	--	25	22	25	28	25	36	25	43
1¼	1⅝	25	22	--	--	25	28	25	37	25	47	25	55
1½	1¾	25	28	--	--	25	34	25	44	25	56	25	68
2	2	25	44	--	--	--	--	25	59	25	72	25	88
2½	2¾	B	84	--	--	--	--	--	--	B	100	B	120
3	2⅝	B	118	--	--	--	--	--	--	B	130	B	157
3½	2¾	B	160	--	--	--	--	--	--	--	--	--	--
4	2⅞	B	180	--	--	--	--	--	--	--	--	--	--
5	3	B	240	--	--	--	--	--	--	--	--	--	--
6	3⅛	B	350	--	--	--	--	--	--	--	--	--	--

\*Length reference is for Close Nipples only.

## Rigid Steel Conduit Nipples - Galvanized

### WEIGHTS AND PACKAGING

Length	4"		5"		6"		8"		10"		12"	
Trade Size	Standard Carton Quantity	Weight Per 100 lbs.	Standard Carton Quantity	Weight Per 100 lbs.	Standard Carton Quantity	Weight Per 100 lbs.	Standard Carton Quantity	Weight Per 100 lbs.	Standard Carton Quantity	Weight Per 100 lbs.	Standard Carton Quantity	Weight Per 100 lbs.
½	25	26	25	33	25	40	25	54	25	68	25	82
¾	25	34	25	43	25	52	25	73	25	89	25	109
1	25	49	25	64	25	78	25	109	25	138	25	166
1¼	25	66	25	84	25	100	25	136	25	176	25	216
1½	25	80	25	103	25	122	25	170	25	216	12	260
2	25	103	25	132	25	160	12	220	12	285	12	335
2½	B	150	B	197	B	240	B	329	B	422	B	505
3	B	200	B	260	B	300	B	411	B	528	B	630
3½	B	240	B	320	B	373	B	510	B	655	B	785
4	B	285	B	380	B	440	B	600	B	775	B	925
5	--	--	B	480	B	600	B	825	B	1055	B	1260
6	--	--	B	660	B	820	B	1125	B	1440	B	1720

Prices are available upon request for nipples in lengths longer than 12" or with special threading requirements.



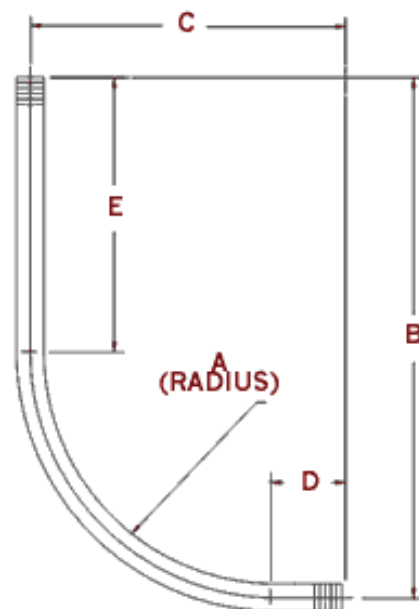
## Rigid Steel Conduit Elbows - Galvanized Special Large Radius 90°

Trade Size	12" Radius	15" Radius	18" Radius	24" Radius	30" Radius	36" Radius	42" Radius	48" Radius
Weight Each In Lbs.								
1	4	6	5	6	9	9	12	13
1¼	6	7	7	9	12	13	16	18
1½	8	9	10	11	15	16	19	21
2	10	10	11	14	20	22	24	26
2½	15	19	18	23	27	32	39	44
3	--	25	23	32	37	45	52	57
3½	--	Standard Radius	31	35	42	54	62	69
4	--	--	38	45	54	64	73	81
5	--	--	--	Standard Radius	85	94	100	120
6	--	--	--	Standard Radius	Standard Radius	131	140	160

\*Weights for Special Large Radius 90° elbows shown above are approximate. To estimate weight for 60°, deduct 10%; for 45°, deduct 15%; for 30°, deduct 20%. Underwriters Laboratories, Inc. No. UL6, American National Standards Institute, C80.1.

## Yard-Light Elbows Galvanized

Trade Size	Pieces Per Carton	Weight	
		Per 100 Pcs.	Per Ctn.
½	25	150	38
¾	25	202	51
1	25	316	79
1¼	10	477	48
1½	5	609	30
2	Bulk	911	--
2½	Bulk	1530	--
3	Bulk	2279	--
3½	Bulk	3082	--
4	Bulk	3799	--



## Dimensions of Yard-Light Elbows - Galvanized

Trade Size	1/2	3/4	1	1¼	1½	2	2½	3	3½	4
A	4	4½	5¾	7¼	8¼	9½	10½	13	15	16
B	18	18	18	19¼	20½	21½	22½	25	27	28
C	6¾ <sub>16</sub>	6¾	8 <sup>5</sup> / <sub>8</sub>	10¼	11 <sup>5</sup> / <sub>8</sub>	14½	16	19¼	22¾	24
D	2¾ <sub>16</sub>	2¼	2 <sup>7</sup> / <sub>8</sub>	3¼	3 <sup>3</sup> / <sub>8</sub>	5	5½	6¼	7¾	8
E	14	13½	12¼	12¼	12¼	12	12	12	12	12



## EMT Elbows 90°

Trade Size	Min. UL Radius (in.)	Offset	Weight lbs.**		Std. Carton Qty.
			Per 100	Per Ctn.	
1/2	4	6 1/4	26	13	50
3/4	4 1/2	7 1/16	46	23	50
1	5 3/4	9 1/4	92	23	25
1 1/4	7 1/4	10 1/2	135	27	20
1 1/2	8 1/4	12 5/8	200	30	15
2	9 1/2	14 1/4	280	28	10
2 1/2*	10 1/2	18 7/8	500	250	50
3*	13	20	750	375	50
3 1/2*	15	23 3/4	1014	355	35
4*	16	26 1/8	1300	455	35

\*Trade sizes 2 1/2 and larger shipped in palletized cartons or bulk.

\*\*Weights for Standard 90° elbows shown above are approximate. To estimate weight for 60°, deduct 10%; for 45°, deduct 15%; for 30°, deduct 20%.

Underwriters Laboratories, Inc. UL 797, American National Standards Institute, C80.3.

## Rigid/IMC Couplings - Galvanized Steel

Trade Size	Outside Diameter	Length* (in.)	Weight lbs.		Std. Carton Qty.
			Per 100	Per Ctn.	
1/2	1.010	1 5/8	12	12	100
3/4	1.250	1 41/64	18	9	50
1	1.525	1 31/32	30	9	30
1 1/4	1.869	2 1/32	37	9	25
1 1/2	2.155	2 1/16	52	13	25
2	2.650	2 1/8	72	15	20
2 1/2	3.250	3 3/16	170	41	24
3	3.870	3 5/16	210	34	16
3 1/2	4.500	3 13/32	340	41	12
4	4.875	3 33/64	300	30	10
5	6.000	3 61/64	475	Bulk	Bulk
6	7.200	4 1/4	765	Bulk	Bulk

Manufactured to UL Specifications.

\*Minimum dimensions per UL 6.

## Rigid Steel Conduit Running Thread Pipe

Trade Size	Feet Per Carton	Weight lbs.	
		Per 100 Ft.	Per Ctn.
1/8	102'	18	19
1/4	102'	29	30
3/8	102'	42	43
1/2	60'	62	37
3/4	75'	85	64
1	60'	103	62
1 1/4	36'	141	51
1 1/2	30'	180	54
2	24'	249	60
2 1/2	12'	383	46
3	9'	496	45
3 1/2	6'	631	38
4	6'	722	43

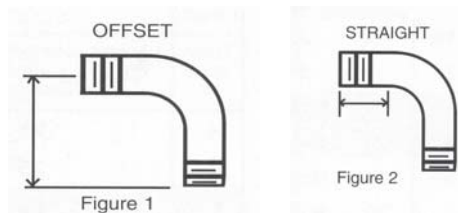
**3 Foot Lengths:** TYPE "C" Galvanized, Electro Plated Threads.

## Rigid Steel Conduit-Galvanized Elbows 90°

Trade Size	Min. UL Radius (in.)	Offset Fig. 1	Straight Fig. 2	Weight lbs.**		Std. Carton Qty.
				Per 100	Per Ctn.	
1/2	4	6 3/8	1 3/4	70	35	50
3/4	4 1/2	7 7/16	2 1/4	112	56	50
1	5 3/4	9 1/2	2 3/4	192	48	25
1 1/4	7 1/4	11 3/8	3	320	64	20
1 1/2	8 1/4	12 13/16	3 1/2	413	62	15
2	9 1/2	15 1/2	4	670	67	10
2 1/2*	10 1/2	19 1/4	4 3/4	1200	600	50
3*	13	21 1/2	6	1900	665	35
3 1/2*	15	24 1/2	5 1/2	2800	700	25
4*	16	25 1/2	5 3/4	3100	775	25
5*	24	37 1/16	8 1/8	6800	Bulk	Bulk
6*	30	49 1/2	13 1/4	11400	Bulk	Bulk

\*Sizes 2 1/2 and larger shipped in palletized cartons or bulk. Palletized and Bulk elbows supplied with a thread protector on each end and UL label affixed.

\*\*Weights for Standard 90° elbows shown above are approximate. To estimate weight for 60°, deduct 10%; for 45°, deduct 15%; for 30°, deduct 20%.



## EMT

### Steel Set Screw Connectors for Steel Conduit

#### Features

- Pre-set & staked tri-head screws 1/2" thru 2"
- Hex head screws 2-1/2" thru 4"
- Male hub threads - NPSM
- Steel locknuts
- Heavy steel walls
- Concrete tight when taped
- UL listed for Steel EMT Conduit
- RoHS compliant

#### Standard Materials

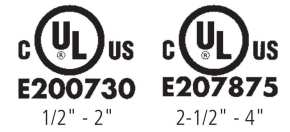
Nylon  
Steel

#### Standard Finish

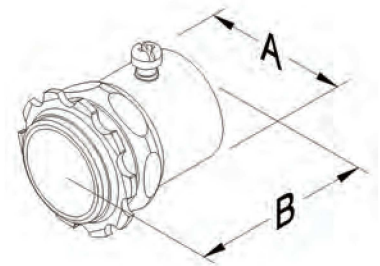
Zinc plated

#### Applicable Third Party Standards

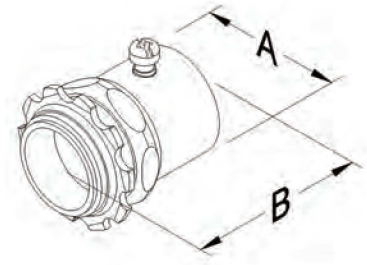
- UL Standard: 514B
- Fed. Spec. W-F-408E
- NEMA: FB-1
- UL Listed File # E200730
- UL & c UL us Listed for EMT, IMC & Rigid conduit, UL Listed File #E200730 1/2" - 2" UL Listed File # E207875 for sizes 2-1/2" - 4"



Non-Insulated



Insulated



CATALOG NUMBER	TRADE SIZE	DIM A	DIM B	INNER PACK	MASTER PACK	WEIGHT PER C
Steel Setscrew Connectors						
SC50RKON	1/2"	0.880	1.500	50	500	8.6
SC75RKON	3/4"	1.130	1.560	25	250	12.8
SC100RKON	1"	1.380	1.810	20	200	20.2
SC125RKON*	1-1/4"	1.380	2.310	10	100	35.6
SC150RKON*	1-1/2"	2.750	2.250	10	100	45.1
SC200RKON*	2"	2.000	2.380	5	50	63.6
SC250RKON*^	2-1/2"	3.440	3.190	—	8	130.0
SC300RKON*^	3"	3.130	3.810	—	6	140.0
SC350RKON*^	3-1/2"	4.750	4.310	—	4	180.0
SC400RKON*^	4"	4.250	4.880	—	4	225.0
With Insulated Throat						
SC50-ICRKON	1/2"	0.880	1.500	50	500	8.7
SC75-ICRKON	3/4"	1.130	1.560	25	250	12.9
SC100-ICRKON	1"	1.380	1.810	20	200	20.4
SC125-ICRKON*	1-1/4"	1.750	2.250	10	100	36.0
SC150-ICRKON*	1-1/2"	2.000	2.310	10	100	45.6
SC200-ICRKON*	2"	2.438	2.375	5	50	64.2
SC250-ICRKON*^	2-1/2"	3.125	3.188	—	8	131.3
SC300-ICRKON*^	3"	3.750	3.183	—	6	141.4
SC350-ICRKON*^	3-1/2"	4.250	3.313	—	4	181.8
SC400-ICRKON*^	4"	4.750	4.875	—	4	227.3

\* Furnished with two set screws

^ UL & c UL us Listed for EMT, IMC & Rigid conduit

**EMT****Steel Set Screw Couplings for Steel Conduit****Features**

- Pre-set & staked tri-head screws 1/2" thru 2"
- Hex head screws 2-1/2" thru 4"
- Heavy steel walls
- Concrete tight when taped
- UL listed for Steel EMT Conduit
- RoHS compliant

**Standard Materials**

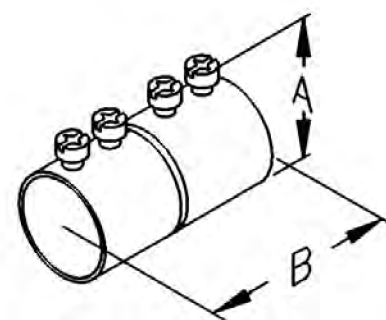
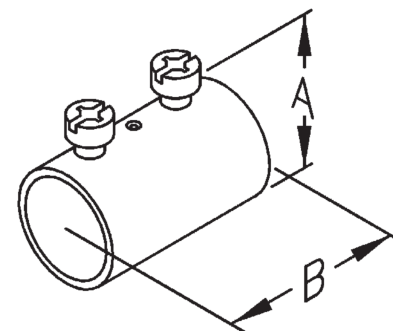
Steel

**Standard Finish**

Zinc plated

**Applicable Third Party Standards**

- UL Standard: 514B
- Fed. Spec. W-F-408E
- NEMA: FB-1
- UL Listed File # E200730 sizes 1/2" - 2"
- UL Listed File # E207875 sizes 2-1/2" - 4"



CATALOG NUMBER	TRADE SIZE	DIM A	DIM B	INNER PACK	MASTER PACK	WEIGHT PER C
<b>Steel Setscrew Couplings</b>						
SK50RKON	1/2"	0.875	1.625	50	500	7.8
SK75RKON	3/4"	1.130	1.875	25	250	12.7
SK100RKON	1"	1.190	2.313	20	200	19.6
SK125RKON*	1-1/4"	1.750	2.064	10	100	40.2
SK150RKON*	1-1/2"	2.000	3.000	10	100	57.5
SK200RKON*	2"	2.440	3.250	5	50	64.6
SK250RKON*^	2-1/2"	3.130	4.000	—	8	13.0
SK300RKON*^	3"	3.750	4.250	—	6	140.0
SK350RKON*^	3-1/2"	4.250	4.500	—	4	216.6
SK400RKON*^	4"	4.750	4.750	—	4	250.0

\* Furnished with four set screws

^ Indicates UL &amp; CUL. Listed for EMT, IMC and Rigid conduit

## EMT

### Steel Compression Connectors for Steel Conduit

#### Features

- Male hub threads - NPSM
- Steel locknuts
- Heavy steel walls
- Concrete tight
- UL listed for Steel & Aluminum EMT Conduit
- RoHS compliant

#### Standard Materials

Nylon  
Steel

#### Standard Finish

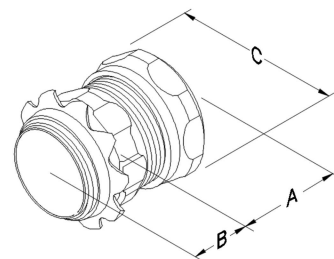
Zinc plated

#### Applicable Third Party Standards

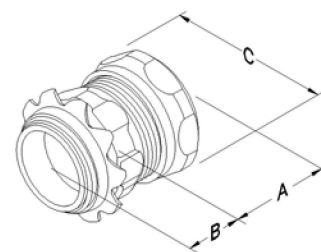
- UL Standard: 514B
- Fed. Spec. W-F-408E
- NEMA: FB-1
- UL Listed File # E200730



Non-Insulated



Insulated



CATALOG NUMBER	TRADE SIZE	DIM A	DIM B	DIM C	INNER PACK	MASTER PACK	WEIGHT PER C
Steel Compression Connectors							
CC50RKON	1/2"	0.625	0.500	1.125	50	500	10.6
CC75RKON	3/4"	0.688	0.500	1.375	25	250	17.0
CC100RKON	1"	0.688	0.563	1.688	20	200	22.7
CC125RKON	1-1/4"	0.938	0.688	2.063	10	100	40.6
CC150RKON	1-1/2"	1.063	0.688	2.250	10	100	49.9
CC200RKON	2"	1.125	0.750	2.750	5	50	66.8
CC250RKON	2-1/2"	1.688	0.813	3.625	—	8	176.8
CC300RKON	3"	1.688	0.938	4.250	—	6	234.3
CC350RKON	3-1/2"	1.813	1.000	4.688	—	4	287.3
CC400RKON	4"	1.813	1.000	5.188	—	4	342.6

With Insulated Throat							
CC50-ICRKON	1/2"	0.625	0.500	1.125	50	500	8.7
CC75-ICRKON	3/4"	0.688	0.500	1.375	25	250	12.9
CC100-ICRKON	1"	0.688	0.563	1.688	20	200	20.4
CC125-ICRKON	1-1/4"	0.938	0.688	2.063	10	100	36.0
CC150-ICRKON	1-1/2"	1.063	0.688	2.250	10	100	45.6
CC200-ICRKON	2"	1.125	0.750	2.750	5	50	64.2
CC250-ICRKON	2-1/2"	1.688	0.813	3.625	—	8	131.3
CC300-ICRKON	3"	1.688	0.938	4.250	—	6	141.4
CC350-ICRKON	3-1/2"	1.813	1.000	4.688	—	4	181.8
CC400-ICRKON	4"	1.813	1.000	5.188	—	4	227.3



## EMT Steel Compression Couplings

### Features

- Heavy steel walls
- Concrete tight
- UL Listed for Steel & Aluminum EMT Conduit
- RoHS compliant

### Standard Materials

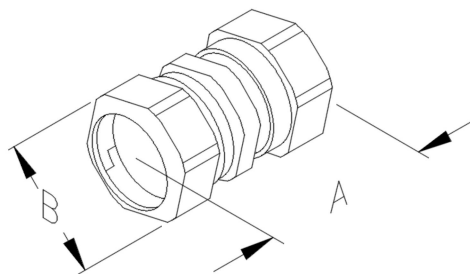
Steel

### Standard Finish

Zinc plated

### Applicable Third Party Standards

- UL Standard: 514B
- Fed. Spec. W-F-408E
- NEMA: FB-1
- UL Listed File # E200730



CATALOG NUMBER	TRADE SIZE	DIM A	DIM B	INNER PACK	MASTER PACK	WEIGHT PER C
CK50RKON	1/2"	1.625	1.125	50	500	14.0
CK75RKON	3/4"	1.750	1.375	25	250	21.3
CK100RKON	1"	1.875	1.688	20	200	28.0
CK125RKON	1-1/4"	2.250	2.063	10	100	48.5
CK150RKON	1-1/2"	2.250	2.250	10	100	59.5
CK200RKON	2"	2.375	2.750	5	50	78.9
CK250RKON	2-1/2"	3.875	3.625	—	8	205.5
CK300RKON	3"	4.000	4.250	—	6	263.0
CK350RKON	3-1/2"	4.063	4.688	—	4	309.4
CK400RKON	4"	4.938	5.188	—	4	393.4



**EMT****Raintight Compression Connectors****Features**

- Male hub threads - NPSM
- Steel locknuts
- Heavy steel walls
- Raintight - Wet locations
- Concrete tight
- Blue nut eases identification
- Suitable for use outdoor
- RoHS compliant

**Standard Materials**

Steel

Neoprene rubber

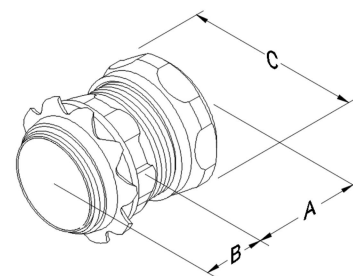
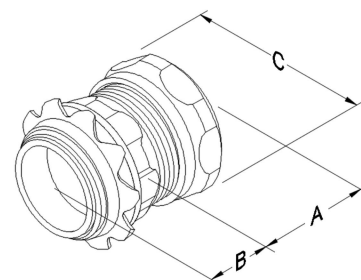
Nylon compression ring

**Standard Finish**

Zinc plated

**Applicable Third Party Standards**

- UL Standard: 514B
- Fed. Spec. W-F-408E
- NEMA: FB-1
- UL Listed File # E200730

**U.S. Patent No. 8.129.633****Non-Insulated****Insulated**

CATALOG NUMBER	TRADE SIZE	DIM A	DIM B	DIM C	INNER PACK	MASTER PACK	WEIGHT PER C
Raintight Compression Fittings							
CCR-50KON	1/2"	0.625	0.438	1.125	50	500	10.6
CCR-75KON	3/4"	0.688	0.438	1.375	25	250	17.0
CCR-100KON	1"	0.688	0.500	1.688	20	200	22.7
CCR-125KON	1-1/4"	0.938	0.625	2.063	10	100	40.6
CCR-150KON	1-1/2"	1.063	0.625	2.250	10	100	49.9
CCR-200KON	2"	1.125	0.688	2.750	5	50	66.8
CCR-250KON	2-1/2"	1.688	0.750	3.625	—	8	176.8
CCR-300KON	3"	1.688	0.875	4.250	—	6	234.3
CCR-350KON	3-1/2"	1.813	0.938	4.688	—	4	287.3
CCR-400KON	4"	1.813	0.938	5.188	—	4	342.6
With Insulated Throat							
CCR50-ICKON	1/2"	0.625	0.500	1.125	50	500	10.7
CCR75-ICKON	3/4"	0.813	0.500	1.375	25	250	17.1
CCR100-ICKON	1"	0.813	0.563	1.688	20	200	22.9
CCR125-ICKON	1-1/4"	0.938	0.688	2.063	10	100	41.0
CCR150-ICKON	1-1/2"	1.688	0.688	2.250	10	100	50.4
CCR200-ICKON	2"	1.125	0.750	2.750	5	50	67.4
CCR250-ICKON	2-1/2"	1.688	0.813	3.625	—	8	178.1
CCR300-ICKON	3"	1.688	0.938	4.250	—	6	235.7
CCR350-ICKON	3-1/2"	1.813	1.000	4.688	—	4	289.1
CCR400-ICKON	4"	1.813	1.000	5.188	—	4	344.9

## EMT

### Raintight Compression Couplings



#### Features

- Steel locknuts
- Heavy steel walls
- Raintight - Wet locations
- Concrete tight
- Blue nut eases identification
- Suitable for use outdoor
- RoHS compliant

#### Standard Materials

Steel

Nylon compression ring

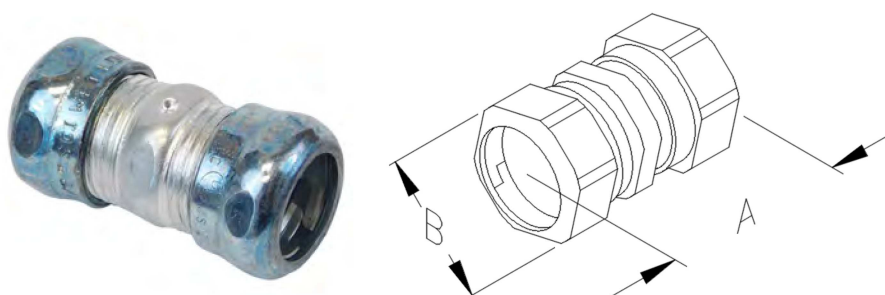
#### Standard Finish

Zinc plated

#### Applicable Third Party Standards

- UL Standard: 514B
- Fed. Spec. W-F-408E
- NEMA: FB-1
- UL Listed File # E200730

U.S. Patent No. 8.129.633



Raintight Compression Coupling

CATALOG NUMBER	TRADE SIZE	DIM A	DIM B	INNER PACK	MASTER PACK	WEIGHT PER C
CKR-50KON	1/2"	1.625	1.125	50	500	14.0
CKR-75KON	3/4"	1.750	1.375	25	250	21.3
CKR-100KON	1"	1.875	1.688	20	200	28.0
CKR-125KON	1-1/4"	2.250	2.063	10	100	48.5
CKR-150KON	1-1/2"	2.250	2.250	10	100	59.5
CKR-200KON	2"	2.750	2.750	5	50	78.9
CKR-250KON	2-1/2"	3.875	3.625	—	8	205.5
CKR-300KON	3"	4.000	4.250	—	6	263.0
CKR-350KON	3-1/2"	4.688	4.688	—	4	309.4
CKR-400KON	4"	1.938	5.188	—	4	393.4

# EMT Fittings

## One Hole EMT Straps



Malleable



Steel

To support EMT to mounting surface.

UL File No. E161206: 907 thru 910; 921 thru 925

UL File No. E161206: 907-S thru 910-S; 924-S thru 925-S

SP File No. LR39354: 907 thru 910; 907-S thru 910-S; 920-S thru 925-S

### Malleable Iron

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
920	1/2"	100	1000	907	2 1/2"	---	25
921	3/4"	50	500	908	3"	---	10
922	1"	50	500	909	3 1/2"	---	10
923	1 1/4"	---	100	910	4"	---	10
924	1 1/2"	---	100				
925	2"	---	50				

### Zinc Plated Steel

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
920-S	1/2"	100	1000	907-S	2 1/2"	---	25
921-S	3/4"	100	500	908-S	3"	---	25
922-S	1"	50	500	909-S	3 1/2"	---	10
923-S	1 1/4"	---	100	910-S	4"	---	10
924-S	1 1/2"	---	100				
925-S	2"	---	50				

## EMT Nail Straps

Nail type strap to support EMT to mounting surface.



### Zinc Plated Steel

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
920-NS	1/2"	100	1000
921-NS	3/4"	100	1000
922-NS	1"	100	1000

## Clamp Backs



Provides space between conduit and mounting surface.  
For use with malleable straps.

UL<sub>us</sub> File No. E161206

## Malleable Iron

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
941	1/2"	50	250	946	2"	5	50
942	3/4"	50	250	947	2 1/2"	2	10
943	1"	25	100	948	3"	2	10
944	1 1/4"	20	100	949	3 1/2"	---	5
945	1 1/2"	10	100	950	4"	---	5

## → Two Hole EMT Pipe Straps



To support EMT to mounting surface.

UL<sub>us</sub> File No. E161206: 1907 thru 1910

SP File No. LR39354: 1920 thru 1925

## Zinc Plated Steel

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
1907	2 1/2"	25	100	1920	1/2"	250	2500
1908	3"	20	80	1921	3/4"	200	2000
1909	3 1/2"	15	60	1922	1"	100	1000
1910	4"	10	40	1923	1 1/4"	50	500
				1924	1 1/2"	50	500
				1925	2"	25	250

# Rigid and IMC Conduit Fittings

## Pull Caps



Used for capping EMT, rigid and most bushings.

## Polyethylene

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
341	1/2"	100	1000	344	1 1/4"	50	250
342	3/4"	100	1000	345	1 1/2"	25	100
343	1"	100	1000	346	2"	25	100

## Bushings



Used with locknut to protect conductors inside threaded rigid or IMC conduit entering a box. Rounded surface of bushing prevents damage to wire insulation.

UL File No. E9391: 321 thru 332

UL File No. E11259: 321-B thru 330-B

SP File No. LR39354

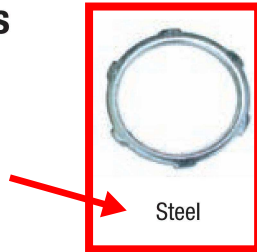
## Plastic - 105°C

## Plastic - 150°C

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
321	1/2"	100	1000	321-B	1/2"	100	1000
322	3/4"	100	1000	322-B	3/4"	100	1000
323	1"	50	500	323-B	1"	50	500
324	1 1/4"	---	100	324-B	1 1/4"	---	100
325	1 1/2"	---	100	325-B	1 1/2"	---	100
326	2"	---	50	326-B	2"	---	50
327	2 1/2"	---	25	327-B	2 1/2"	---	25
328	3"	---	25	328-B	3"	---	25
329	3 1/2"	---	25	329-B	3 1/2"	---	25
330	4"	---	20	330-B	4"	---	20
331	5"	---	5				
332	6"	---	5				

# Rigid and IMC Conduit Fittings

## Locknuts



Steel



Zinc

Used to fasten threaded conduit to opening in a box or enclosure.



File No. E9391: 101-S thru 112-S; 101-DC thru 106-DC



File No. LR39354: 101-S thru 112-S

### Zinc Plated Steel - Conduit Locknut

### Zinc Die Cast - Fitting Locknut

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
100	3/8"	200	2000	101-DC	1/2"	100	1000
101-S	1/2"	100	1000	102-DC	3/4"	100	1000
102-S	3/4"	100	1000	103-DC	1"	100	500
103-S	1"	100	500	104-DC	1 1/4"	---	100
104-S	1 1/4"	---	100	105-DC	1 1/2"	---	100
105-S	1 1/2"	---	100	106-DC	2"	---	50
106-S	2"	---	50	107-DC	2 1/2"	---	25
107-S	2 1/2"	---	25	108-DC	3"	---	25
108-S	3"	---	25	109-DC	3 1/2"	---	25
109-S	3 1/2"	---	25	110-DC	4"	---	25
110-S	4"	---	25				
111-S	5"	---	5				
112-S	6"	---	5				



# Rigid and IMC Conduit Bodies

## → Type C



Threaded bodies for rigid conduit or IMC allow access for inspection, pulling and maintenance.

cULus File No. E11077

SP File No. 702847 (C-41CG thru C-46CG)

Aluminum				Aluminum with Cover and Gasket			
Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
C-41	1/2"	10	60	C-41CG	1/2"	10	60
C-42	3/4"	10	60	C-42CG	3/4"	10	60
C-43	1"	5	30	C-43CG	1"	5	30
C-44	1 1/4"	2	10	C-44CG	1 1/4"	2	10
C-45	1 1/2"	2	10	C-45CG	1 1/2"	2	10
C-46	2"	1	6	C-46CG	2"	1	6
C-47	2 1/2"	---	1	C-47CG	2 1/2"	---	1
C-48	3"	---	1	C-48CG	3"	---	1
C-49	3 1/2"	---	1	C-49CG	3 1/2"	---	1
C-50	4"	---	1	C-50CG	4"	---	1

### Malleable Iron

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
C-61	1/2"	5	50
C-62	3/4"	5	50
C-63	1"	2	20
C-64	1 1/4"	2	10
C-65	1 1/2"	2	10
C-66	2"	1	6
C-67	2 1/2"	---	1
C-68	3"	---	1
C-69	3 1/2"	---	1
C-70	4"	---	1

# Rigid and IMC Conduit Bodies

## → Type LB



Threaded bodies for rigid conduit or IMC allow access for inspection, pulling and maintenance.

cULus File No. E11077

SP File No. 702847 (LB-41CG thru LB-50CG)

### Aluminum

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
LB-41	1/2"	10	60
LB-42	3/4"	10	60
LB-43	1"	5	30
LB-44	1 1/4"	2	10
LB-45	1 1/2"	2	10
LB-46	2"	1	6
LB-47	2 1/2"	---	1
LB-48	3"	---	1
LB-49	3 1/2"	---	1
LB-50	4"	---	1

### Aluminum with Cover and Gasket

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
LB-41CG	1/2"	10	60
LB-42CG	3/4"	10	60
LB-43CG	1"	5	30
LB-44CG	1 1/4"	2	10
LB-45CG	1 1/2"	2	10
LB-46CG	2"	1	6
LB-47CG	2 1/2"	---	1
LB-48CG	3"	---	1
LB-49CG	3 1/2"	---	1
LB-50CG	4"	---	1

### Malleable Iron

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
LB-61	1/2"	5	50
LB-62	3/4"	5	50
LB-63	1"	2	20
LB-64	1 1/4"	2	10
LB-65	1 1/2"	2	10
LB-66	2"	1	6
LB-67	2 1/2"	---	1
LB-68	3"	---	1
LB-69	3 1/2"	---	1
LB-70	4"	---	1

### Malleable Iron with Cover and Gasket

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
LB-61CG	1/2"	5	50
LB-62CG	3/4"	5	50
LB-63CG	1"	2	20
LB-64CG	1 1/4"	2	10
LB-65CG	1 1/2"	2	10
LB-66CG	2"	1	6
LB-67CG	2 1/2"	---	1
LB-68CG	3"	---	1
LB-69CG	3 1/2"	---	1
LB-70CG	4"	---	1



# Rigid and IMC Conduit Bodies

## → Type LL



Threaded bodies for rigid conduit or IMC allow access for inspection, pulling and maintenance.

c(UL)us File No. E11077

(SP) File No. 702847 (LL-41CG thru LL-50CG)

Aluminum				Aluminum with Cover and Gasket			
Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
LL-41	1/2"	10	60	LL-41CG	1/2"	10	60
LL-42	3/4"	10	60	LL-42CG	3/4"	10	60
LL-43	1"	5	30	LL-43CG	1"	5	30
LL-44	1 1/4"	2	10	LL-44CG	1 1/4"	2	10
LL-45	1 1/2"	2	10	LL-45CG	1 1/2"	2	10
LL-46	2"	1	6	LL-46CG	2"	1	6
LL-47	2 1/2"	---	1	LL-47CG	2 1/2"	---	1
LL-48	3"	---	1	LL-48CG	3"	---	1
LL-49	3 1/2"	---	1	LL-49CG	3 1/2"	---	1
LL-50	4"	---	1	LL-50CG	4"	---	1

### Malleable Iron

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
LL-61	1/2"	5	50
LL-62	3/4"	5	50
LL-63	1"	2	20
LL-64	1 1/4"	2	10
LL-65	1 1/2"	2	10
LL-66	2"	1	6
LL-67	2 1/2"	---	1
LL-68	3"	---	1
LL-69	3 1/2"	---	1
LL-70	4"	---	1

# Rigid and IMC Conduit Bodies

## → Type LR



Threaded bodies for rigid conduit or IMC allow access for inspection, pulling and maintenance.

cULus File No. E11077

SP File No. 702847 (LR-41CG thru LR-50CG)

Aluminum				Aluminum with Cover and Gasket			
Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
LR-41	1/2"	10	60	LR-41CG	1/2"	10	60
LR-42	3/4"	10	60	LR-42CG	3/4"	10	60
LR-43	1"	5	30	LR-43CG	1"	5	30
LR-44	1 1/4"	2	10	LR-44CG	1 1/4"	2	10
LR-45	1 1/2"	2	10	LR-45CG	1 1/2"	2	10
LR-46	2"	1	6	LR-46CG	2"	1	6
LR-47	2 1/2"	---	1	LR-47CG	2 1/2"	---	10
LR-48	3"	---	1	LR-48CG	3"	---	10
LR-49	3 1/2"	---	1	LR-49CG	3 1/2"	---	10
LR-50	4"	---	1	LR-50CG	4"	---	10

### Malleable Iron


Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
LR-61	1/2"	5	50
LR-62	3/4"	5	50
LR-63	1"	2	20
LR-64	1 1/4"	2	10
LR-65	1 1/2"	2	10
LR-66	2"	1	6
LR-67	2 1/2"	---	1
LR-68	3"	---	1
LR-69	3 1/2"	---	1
LR-70	4"	---	1


# Rigid and IMC Conduit Bodies

## → Type T



Threaded bodies for rigid conduit or IMC allow access for inspection, pulling and maintenance.

 File No. E11077

 File No. 702847 (T-41CG thru T-50CG)

### Aluminum

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
T-41	1/2"	10	60
T-42	3/4"	10	60
T-43	1"	5	30
T-44	1 1/4"	2	10
T-45	1 1/2"	2	10
T-46	2"	1	6
T-47	2 1/2"	---	1
T-48	3"	---	1
T-49	3 1/2"	---	1
T-50	4"	---	1

### Aluminum with Cover and Gasket

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
T-41CG	1/2"	10	60
T-42CG	3/4"	10	60
T-43CG	1"	5	30
T-44CG	1 1/4"	2	10
T-45CG	1 1/2"	2	10
T-46CG	2"	1	6
T-47CG	2 1/2"	---	1
T-48CG	3"	---	1
T-49CG	3 1/2"	---	1
T-50CG	4"	---	1

### Malleable Iron

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
T-61	1/2"	5	50
T-62	3/4"	5	50
T-63	1"	2	20
T-64	1 1/4"	2	10
T-65	1 1/2"	2	10
T-66	2"	1	6
T-67	2 1/2"	----	1
T-68	3"	----	1
T-69	3 1/2"	----	1
T-70	4"	----	1

# Rigid and IMC Conduit Bodies

## ➔ Mogul Conduit Bodies





MLB-44 thru MLB-46



MLB-47 thru MLB-50

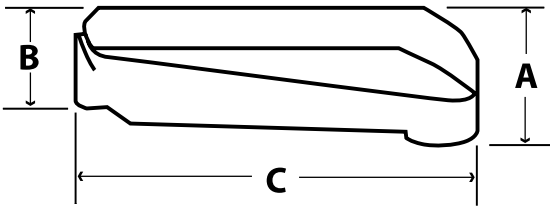
Allows larger access to the inside of a raceway for wire pulling.  
Raintight.

 File No. E11077

c <sub>us</sub> File No. E11077 (MLB-47 thru MLB-50)

### Aluminum

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Dim A	Dim B	Dim C
MLB-44	1 1/4"	---	5	3 1/2"	3"	9 1/2"
MLB-45	1 1/2"	---	2	5 1/8"	4"	14 1/2"
MLB-46	2"	---	2	5 1/8"	4"	14 1/2"
MLB-47	2 1/2"	---	1	10 1/2"	8 11/16"	22 3/4"
MLB-48	3"	---	1	10 1/2"	8 11/16"	22 3/4"
MLB-49	3 1/2"	---	1	12"	10"	29 1/8"
MLB-50	4"	---	1	12"	10"	29 1/8"





# Rigid and IMC Conduit Bodies

## Conduit Body Covers



Encloses conduit body; supplied with screws.

 File No. E11077 Aluminum Only (SC-41 thru SC-49)

### Aluminum

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
SC-41	1/2"	25	100
SC-42	3/4"	25	100
SC-43	1"	25	10
SC-44	1 1/4"-1 1/2"	10	100
SC-46	2"	---	25
SC-47	2 1/2"-3"	---	20
SC-49	3 1/2"-4"	---	5

### Steel

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
SC-61	1/2"	25	100
SC-62	3/4"	25	100
SC-63	1"	25	100
SC-64	1 1/4"-1 1/2"	10	100
SC-66	2"	---	25
SC-67	2 1/2"-3"	---	20
SC-69	3 1/2"-4"	---	5

## Conduit Body Gaskets



SG series provides dust-tight seal between conduit body and cover.

SGN series provides both dust and rain-tight protection.

SGN gaskets are impervious to most liquids and oil.

### Cellulose

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
SG-61	1/2"	100	1000
SG-62	3/4"	100	1000
SG-63	1"	50	500
SG-64	1 1/4"-1 1/2"	---	100
SG-66	2"	---	100
SG-67	2 1/2"-3"	---	100
SG-69	3 1/2"-4"	---	25

### Neoprene

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
SGN-61	1/2"	100	1000
SGN-62	3/4"	100	1000
SGN-63	1"	50	500
SGN-64	1 1/4"-1 1/2"	---	100
SGN-66	2"	---	100
SGN-67	2 1/2"-3"	---	100
SGN-69	3 1/2"-4"	---	25



**CRESCENT**  
ELECTRIC  
SUPPLY COMPANY

**GRC CONDUIT, ELBOWS & FITTINGS**

**Submittals Prepared by IES  
and Crescent Electric Supply**

## Galvanized Rigid Metal Conduit (GRC) and Kwik-Couple™ GRC

### Rigid Steel Conduit (GRC)

- Hot-dip galvanized for excellent corrosion resistance
- High strength ductile steel for long life and easy bending
- Smooth, continuous raceways for fast wire-pulling
- UL listed to UL 6, manufactured in accordance with ANSI C80.1
- True Color GRC special orders available
- Available in trade sizes 1/2 thru 6

### Quality, Long Lasting Heavy Duty Steel Conduit



### Kwik-Couple (GRC) Rigid Steel Conduit & Elbows

- Factory-installed Kwik-Couple couplings are available in GRC rigid conduits and elbows

**Just line up the ends, spin the coupling forward onto the next piece and wrench tighten. It's that easy!**

- No separate couplings to purchase, store, carry or install
- Kwik-Release End Cap · Requires no tools
- True Color GRC special orders available
- All the benefits of GRC Conduit
- Patented\*
- Available in Trade sizes 1/2 thru 4

### For Faster Installations Use the Kwik-Couple GRC Connection



\* U.S. Patent Numbers 4258936, 4547004.

### Galvanized Rigid Steel Conduit Weights and Dimensions

Trade Size	Metric Designator	Approx. Wt. Per 100 Ft. (30.5M)		Outside Diameter <sup>1</sup>		Nominal Wall Thickness <sup>2</sup>		Quantity In Master Bundle*	
		lb.	kg.	in.	mm.	in.	mm.	ft.	m.
1/2	16	82	37.2	0.840	21.3	0.104	2.60	2500	762.5
3/4	21	109	49.4	1.050	26.7	0.107	2.70	2000	610.0
1	27	161	73.0	1.315	33.4	0.126	3.20	1250	381.3
1-1/4	35	218	98.9	1.660	42.2	0.133	3.40	900	274.5
1-1/2	41	263	119.3	1.900	48.3	0.138	3.50	800	244.0
2	53	350	158.7	2.375	60.3	0.146	3.70	600	183.0
2-1/2	63	559	253.5	2.875	73.0	0.193	4.90	370	112.9
3	78	727	329.7	3.500	88.9	0.205	5.20	300	91.5
3-1/2	91	880	399.1	4.000	101.6	0.215	5.50	250	76.3
4	103	1030	467.1	4.500	114.3	0.225	5.70	200	61.0
5	129	1400	634.9	5.563	141.3	0.245	6.20	150	45.8
6	155	1840	834.5	6.625	168.3	0.266	6.80	100	30.5

<sup>1</sup> Tolerances: Trade Size 1/2 to 1-1/2: ±0.015" (0.38mm); Trade Size 2-6: ± 1% Length equals 10 ft. (3.05m) with a tolerance of +/- .25 in. (6.35mm)

<sup>2</sup> For information only. Not a requirement of the UL standard.

# Galvanized Rigid Metal Conduit (GRC) and Kwik-Couple™ GRC

## FEATURES & SPECIFICATIONS

### Full Electrical System Protection

Manufactured from mild steel, Allied's Rigid Steel Conduit is highly resistant to damage from impact per NEC article 344 yet ductile to facilitate bending.

The 3/4" taper NPT threads (ANSI B1.20.1) are full cut and hot galvanized after cutting. Color-coded end-cap thread protectors keep the threads clean, sharp and also provide instant trade size recognition. Trade sizes are color-coded blue, 1/2 trade sizes black, and 1/4 trade sizes red.

### Coatings

Hot-dip galvanized inside and out to provide galvanic corrosion protection, it is also top-coated with a compatible organic layer to protect against white rust. The inside surface is evenly coated for wire-pulling ease, even through multiple 90° bends.

### EMI Shielding

Allied RIGID is very effective in reducing the effects of electromagnetic field levels for encased power distribution circuits, shielding computers and other sensitive electronic equipment from the effects of electromagnetic interference.

Visit [www.alliedeg.com](http://www.alliedeg.com) to obtain the **GEMI** (Grounding and Electro-Magnetic Interference) software analysis program.

### Codes & Standards Compliance

Allied Rigid Steel Conduit is precision manufactured for dependable, long-lasting value and ultimate protection for electrical conductors. Covered by article 344 of the National

Electrical Code™ (NEC), rigid steel conduit is highly resistant to damage from impact. It can be installed in all occupancies and locations, including Class I Division 1 hazardous locations. Rigid steel conduit is recognized as an equipment grounding conductor in Section 250.118 of the NEC. It is listed to Underwriters Laboratories Safety Standard UL 6, and is manufactured to ANSI C80.1, both of which have been adopted as Federal Specifications in lieu of WWC 581.

Installation of Rigid Metal Conduit shall be in accordance with the National Electrical Code and UL General Information card #DYIX. Master bundles conform to NEMA standard RN2.

### Specification Data

Rigid Steel Conduit shall be hot-dip galvanized and manufactured by Allied Tube & Conduit. Threads shall be hot galvanized after cutting. Rigid steel conduit shall be listed to UL Safety Standard 6 by a nationally-recognized testing laboratory with follow up service. It shall be manufactured in accordance with ANSI C80.1.

Kwik-Couple Rigid steel conduit shall be listed to UL 6 and UL 514B and manufactured in accordance with ANSI C80.1.



Note: Federal specification WW-C-581, Class 1, Type A has been superseded by UL Standard 6, which has been adopted by the federal government.

## Kwik-Couple GRC Conduit Weights and Dimensions

Trade Size	Metric Designator	Approx. Wt. Per 100 Ft. (30.5M)		Outside Diameter <sup>1</sup>		Nominal Wall Thickness <sup>2</sup>		Quantity In Master Bundle	
		lb.	kg.	in.	mm.	in.	mm.	ft.	m.
2-1/2	63	559	253.5	2.875	73.0	0.193	4.90	400	122.0
3	78	727	329.7	3.500	88.9	0.205	5.20	300	91.5
3-1/2	91	880	399.1	4.000	101.6	0.215	5.50	250	76.3
4	103	1030	467.1	4.500	114.3	0.225	5.70	200	61.0

<sup>1</sup> Tolerances: Trade Size 2-5: ± 1%

NOTE: Special orders are non-cancelable, non-returnable and non-refundable.

# RepublicConduit

## Galvite® Electrical Rigid Metal Conduit-Steel

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### *Simplify Installation, Save Time, Spend Less*

Republic Conduit's Galvite® Electrical Rigid Metal Conduit-Steel (Galvite® ERM-C-S) means superior protection, strength, safety and ductility for your wiring jobs. It is manufactured from high quality, flat rolled steel and is produced by an Electric Resistance Welding process. Its welds are strong and smooth, and its tightly adhering finish is free of burnt or hard spots.

This product is Hot-Dip Galvanized inside and out, and is ideal for jobs where severe bending may be required. Republic Conduit's Galvite ERM-C-S is suitable for the most demanding industrial and commercial building and construction jobs, both indoors and outdoors, and is produced to American National Standards Institute (ANSI) specification C80.1 and UL standard 6.

Our products are manufactured to the highest criteria of the American National Standards Institute (ANSI) and Underwriters Laboratories (UL).

Republic Conduit is committed to implementing effective quality management systems and processes. Our Georgia facility has maintained an ISO certification since 1995 and has been recertified in 2008. Also in 2008, the Kentucky facility has achieved its initial certification by successfully meeting the requirements for ISO 9001:2000.



### **Features and Benefits**

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**Consistent Quality** – for 80 years, Republic Conduit's products have been and are today manufactured to all of the required specifications and customer needs. Because Republic Conduit's Galvite ERM-C-S is manufactured for long life, it is durable, strong, and suitable for the harshest environmental conditions, providing complete mechanical and physical protection to any electrical wiring project. The metal is welded to ensure quality standards are met and exceeded. The inside surface of the pipe is obstruction-free and extra smooth, making wire pulling and pushing easy.

**Lower Life-Cycle Costs** – Republic's conduit is impact and fire resistant, chemically compatible with concrete, and resists cracking, flaking, peeling and damage from severe bending. Its physical and mechanical properties ensure that the pipe has an extended shelf life, great for usage or storage without degradation in quality. The product is easy to cut, form and join.

**System Grounding and Electromagnetic Interference Shielding** – wires encased in Republic Conduit's Galvite ERM-C-S protect electric / electronic equipment from being damaged by the electromagnetic field.

**Trade sizes range from 1/2" to 6".**

**Conduit is manufactured in the U.S.**

A close-up photograph of a RepublicConduit pipe. The pipe is silver-colored with a blue and red wire visible inside. The 'RepublicConduit' logo is printed in black on the side of the pipe.

RepublicConduit

Available Sizes

Republic’s Galvite® ERM-C-S is provided with a color coded thread protector on one end and a coupling on the other, for easier identification and thread protection.

Inventories of our products are maintained by leading electrical distributors throughout North America. Contact our Agent in your area today or visit [www.republicconduit.com](http://www.republicconduit.com) for more information.

Weights and Dimensions\*

Trade Size Designator		Outside Diameter (OD)		Nominal Inside Diameter (ID)		Nominal Weight per 100 Feet		Feet per Bundle	Standard Lifts				Treads per Inch	Color Code	Method
									Length		Weight				
US	Metric	IN	mm	IN	mm	LBS	kg		FEET	m	LBS	kg			
1/2	16	0.840	21.34	0.622	15.8	82	37.2	100	2500	762.5	2050	929.7	14	Black	End Caps
3/4	21	1.050	26.67	0.824	20.93	109	49.4	50	2000	610	2180	988.7	14	Red	End Caps
1	27	1.315	33.4	1.049	26.64	161	73	50	1250	381.3	2013	912.9	11.5	Blue	End Caps
1 1/4	35	1.660	42.16	1.38	35.05	218	98.9		900	274.5	1962	889.8	11.5	Red	End Caps
1 1/2	41	1.900	48.26	1.61	40.89	263	119.3		800	244	2104	954.2	11.5	Black	End Caps
2	53	2.375	60.33	2.067	52.5	350	158.7		600	183	2100	952.4	11.5	Blue	End Caps
2 1/2	63	2.875	73.03	2.469	62.71	559	253.5		370	112.9	2068	937.9	8	Black	End Caps
3	78	3.500	88.9	3.068	77.93	727	329.7		300	91.5	2181	989.1	8	Blue	End Caps
3 1/2	91	4.000	101.6	3.548	90.12	880	399.1		250	76.3	2200	997.7	8	Black	End Caps
4	103	4.500	114.3	4.026	102.26	1030	467.1		200	61	2050	934.2	8	Blue	End Caps
5	129	5.563	141.3	5.047	128.19	1400	634.9		150	45.8	2100	952.4	8	Blue	End Caps
6	155	6.625	168.28	6.065	154.05	1840	834.5		100	30.5	1840	834.5	8	Blue	End Caps

- Outside Diameter**

For trade sizes through 2" ±0.015 ±0.38 mm

For trade size 2 1/2" through 4" ±0.025 ±0.64 mm

For trade sizes 5" through 6" ±1%
- The values in feet / pound units are standard. The metric equivalents may be approximate. Conduit is always identified by its English or Metric Trade Size Designator.
  - Republic's Galvite® ERM-C-S is provided with a color coded thread protector on one end and a coupling on the other.
- All sizes furnished in 10' lengths.
  - Applicable length tolerance = ±1/4" (±6.35 mm) without a coupling.
  - All dimensions and weights shown above are nominal.

Specifications

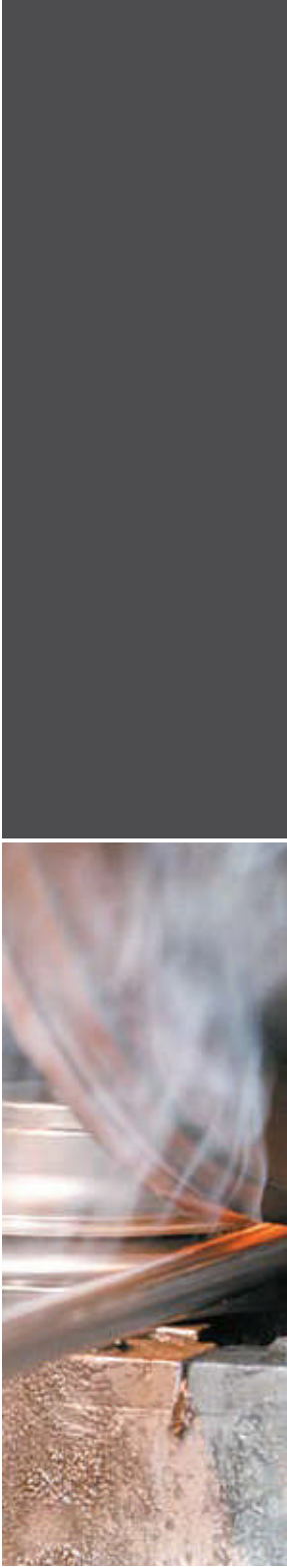
Architects desiring to specify Galvite ERM-C-S from Republic Conduit should include the following description:

Electrical conductors shall be enclosed in Galvite ERM-C-S in accordance with the National Electrical Code. Rigid steel conduit shall be mild steel, manufactured, Hot-Dip Galvanized and produced to the following specifications:

- ANSI – American National Standard for Electrical Rigid Steel Conduit (ERSC) ANSI, C80.1
  - UL Standard for Electrical Rigid Metal Conduit – Steel, UL 6, File # E104582
- National Electric Code, 2002 Article 344 (1999 NEC, Article 346)
  - Federal Specification WW-C-581 (Class 1 Type A)

The above Federal Specification WW-C-581 may still be referenced; however, the federal government has canceled it and has adopted the UL 6 standard.

For more information, visit [www.republicconduit.com](http://www.republicconduit.com).







# WESTERN TUBE & CONDUIT CORPORATION

## RIGID (RMC — RIGID METAL CONDUIT)

**Western Tube Rigid** is manufactured as heavy gage tubing which is galvanized inside and out. Western Tube RIGID is precision-rolled, producing a clean homogeneous weld structure and a smooth, burr-free interior surface. Will not split or crack at the weld. Used for exposed or concealed installations. Manufactured in accordance with Underwriters Laboratories (UL) specification UL-6 and with American National Standards Institute (ANSI) C80.1. Also approved by the National Electric Code (NEC) article 344, and conforms to Federal Specification WWC-581, which has been superseded by the UL document. Western Tube RIGID conforms to Canadian Standards Association (CSA) C22.2 No. 45.1.

Quality controlled each step of the way. Regular tests for weld strength, plating thickness, threadability, all dimensions, and uniform smoothness of the interior and exterior coatings. Simultaneous threading of both ends insure straight runs and provide you with RIGID of the highest quality. Easy to bend, cut and thread on the job, yet is strong enough to withstand mechanical abuse.

Western Tube RIGID provides superior mechanical protection for the conductors and can be installed indoor and outdoor, in dry or wet locations as allowed by the National Electrical Code, including Class 1 Division 1 hazardous locations per NEC article 344.

### HOT DIPPED ZINC COATED RIGID SPECIFICATIONS

To Specify Western Tube RIGID include the following:

Electrical conductors shall be enclosed in Western Tube hot dipped Galvanized Rigid Steel Conduit, in accordance with the National Electric Code. Galvanized Rigid Conduit shall be steel. Hot dipped zinc coated, produced to ANSI Specification C-80.1, CSA C22.2 No. 45.1, and meeting all requirements of UL-6. Also shall be manufactured in accordance with the specifications of the National Electrical Code covering such conduit, and listed by Underwriters Laboratories as manufactured by Western Tube & Conduit Corporation.

Trade Size	Metric Designator	Nominal O.D.	Nominal I.D.	Nominal Wall Thickness	Nominal Wt. per Foot with coupling	Feet In Sub-Bundle	Qty. in Master Bundle	Feet in Master Bundle	Nom. Wt. Per Master Bundle	Color Designator
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**RIGID Weights and Specifications**

in.	mm	in.	in.	in.	lbs.	ft.	qty.	ft.	lbs.	
1/2	16	0.840	0.632	0.104	0.82	100	250	2500	2050	Black
3/4	21	1.050	0.836	0.107	1.09	50	200	2000	2180	Red
1	27	1.315	1.063	0.126	1.61	50	125	1250	2013	Blue
1 1/4	35	1.660	1.394	0.133	2.18	-	90	900	1962	Red
1 1/2	41	1.900	1.624	0.138	2.63	-	80	800	2104	Black
2	53	2.375	2.083	0.146	3.50	-	60	600	2100	Blue
2 1/2	63	2.875	2.489	0.193	5.59	-	37	370	2068	Black
3	78	3.500	3.090	0.205	7.27	-	30	300	2181	Blue
3 1/2	91	4.000	3.570	0.215	8.80	-	25	250	2200	Black
4	103	4.500	4.050	0.225	10.30	-	20	200	2060	Blue
5	129	5.563	5.073	0.245	14.00	-	15	150	2100	Blue
6	155	6.625	6.093	0.266	18.40	-	10	100	1840	Blue

MADE AND  
MELTED IN **AMERICA**

# DuraGuard™ Rigid Metal Conduit



## DuraGuard™ Rigid Metal Conduit:

# The ultimate protection

DuraGuard rigid metal conduit provides the best circuit protection for conductors and cables installed in compliance with the National Electric Code (NEC). Its thick walls guard against physical abuse, and its hot-dip galvanized OD and ID provide the durability to withstand the most corrosive environments.

10' and 20' lengths

Couplings produced  
in-house

Conduit threaded  
on both ends

Coupling supplied on  
one end, color-coded  
thread protector on  
other end

Accurate circular  
cross section with  
uniform wall thickness

Interior surface free  
from defects injurious  
to conductors

Hot-dip galvanized  
OD and ID

Contains recycled steel

### Designed for Quality and Efficiency

At Wheatland Tube, we hot-form the most common sizes of DuraGuard, creating a continuous weld and uniform grain for ensured strength. These characteristics also allow for easy threading, bending and cutting, saving time on the job. Our quality control programs ensure an accurate circular cross section, uniform wall thickness and defect-free interior surface on every product.

### Green and Sustainable

DuraGuard contains recycled steel content of various amounts, depending on the steel manufacturing process, and provides decades of reliable service if properly maintained. Conductors may be easily removed and new conductors or cables inserted. Future circuits may be added in the same conduit, as permitted by the code. At the end of its life, the steel may be fully recycled.

### Tested and Certified for Safety

DuraGuard is Listed to UL Standard for Safety for Electrical Rigid Metal Conduit—Steel, UL-6. It is manufactured in accordance with ANSI® C80.1, UL-6 and federal specifications WW-C-581. The pitch of the threads conforms to



the American National Standard for Pipe Threads, General Purpose (Inch), ANSI/ASME B1.20.1. The taper of threads is  $\frac{3}{4}$  inch per foot (1 in 16). DuraGuard provides protection from severe physical damage, the highest level recognized by the code, for cables and conductors. The conduit reduces exposure to electromagnetic fields, shields against harmful electromagnetic interference and is recognized as an equipment-grounding conductor by NFPA 70: National Electrical Code 250.118 (2). Email [info@wheatland.com](mailto:info@wheatland.com) for a copy of Georgia Tech's Grounding and ElectroMagnetic Interference (GEMI) Analysis software.

For more information, call **800.257.8182** or visit **wheatland.com**

## DURAGUARD WEIGHTS AND DIMENSIONS (10' LENGTHS)

TRADE SIZE	METRIC DESIGNATOR	THREADS/ INCH	WEIGHT PER 100 FT.		NOMINAL OUTSIDE DIAMETER		NOMINAL INSIDE DIAMETER*	
			lbs.	kg	in.	mm	in.	mm
½	16	14	82	37.2	0.840	21.34	0.632	16.05
¾	21	14	109	49.4	1.050	26.67	0.836	21.23
1	27	11½	161	73.0	1.315	33.40	1.063	27.00
1¼	35	11½	218	98.9	1.660	42.16	1.394	35.41
1½	41	11½	263	119.3	1.900	48.26	1.624	41.25
2	53	11½	350	158.8	2.375	60.33	2.083	52.91
2½	63	8	559	253.6	2.875	73.03	2.489	63.22
3	78	8	727	329.8	3.500	88.90	3.090	78.49
3½	91	8	880	399.2	4.000	101.60	3.570	90.68
4	103	8	1030	467.2	4.500	114.30	4.050	102.87
5	129	8	1400	635.0	5.563	141.30	5.073	128.85
6	155	8	1840	834.6	6.625	168.28	6.093	154.76

Applicable tolerances: Outside Diameter ½-1½: ±0.015" (16-41: ±0.38 mm), 2-6: (53-155) ± 1%.

## PACKAGING (10' LENGTHS)

TRADE SIZE	METRIC DESIGNATOR	THREAD PROTECTOR COLOR	QUANTITY/ BUNDLE		QUANTITY/LIFT*				WEIGHT/LIFT		VOLUME/LIFT	
			ft.	m	Pieces	Bundles	ft.	m	lbs.	kg	cu. ft.	cu. m
½	16	Black	100	30.5	—	25	2500	762	2050	929.9	19.4	0.6
¾	21	Red	50	15.2	—	40	2000	610	2180	988.8	26.7	0.8
1	27	Blue	50	15.2	—	25	1250	381	2013	913.1	22.2	0.6
1¼	35	Red	—	—	90	—	900	274	1962	889.9	28.3	0.8
1½	41	Black	—	—	80	—	800	244	2104	954.4	27.2	0.8
2	53	Blue	—	—	60	—	600	183	2100	952.5	36.1	1.0
2½	63	Black	—	—	37	—	370	113	2068	938.0	35.0	1.0
3	78	Blue	—	—	30	—	300	91	2181	989.3	41.5	1.2
3½	91	Black	—	—	25	—	250	76	2200	997.9	43.3	1.2
4	103	Blue	—	—	20	—	200	61	2060	934.4	48.6	1.4
5	129	Blue	—	—	15	—	150	46	2100	952.5	52.1	1.5
6	155	Blue	—	—	10	—	100	30	1840	834.6	43.8	1.2

\* The quantity per lift conforms to the National Electrical Manufacturers Association Standards Publication RN-2 Packaging of Master Bundles for Steel Rigid Metal Conduit, Intermediate Metal Conduit (IMC) and Electrical Metallic Tubing (EMT).  
Pack quantities for Canadian distribution does not comply with NEMA RN-2.

## PACKAGING (20' LENGTHS)

TRADE SIZE	METRIC DESIGNATOR	THREAD PROTECTOR COLOR	QUANTITY/LIFT			WEIGHT/LIFT		VOLUME/LIFT	
			Pieces	ft.	m	lbs.	kg	cu. ft.	cu. m
½	16	Black	125	2500	762	2050	929.9	13.9	0.4
¾	21	Red	100	2000	610	2180	988.8	20.0	0.6
1	27	Blue	60	1200	366	1932	876.4	17.5	0.5
1¼	35	Red	45	900	274	1962	890.0	19.4	0.5
1½	41	Black	40	800	244	2104	954.4	18.7	0.5
2	53	Blue	30	600	183	2100	952.6	29.6	0.8
2½	63	Black	18	360	110	2012	912.6	23.4	0.7
3	78	Blue	15	300	91	2181	989.3	28.0	0.8
3½	91	Black	12	240	73	2112	958.0	32.2	0.9
4	103	Blue	10	200	61	2060	934.4	30.8	0.9
5	129	Blue	7	140	43	1960	889.1	35.0	1.0
6	155	Blue	5	100	30	1840	834.6	34.3	1.0

The length is nominal and subject to the tolerance of UL Standard for Safety for Electrical Rigid Metal Conduit—Steel, UL-6.



700 South Dock Street  
Sharon, PA 16146

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info@wheatland.com  
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**Corporate Office**

227 West Monroe Street  
26th Floor  
Chicago, IL 60606

312.275.1600  
info@jmcsteel.com  
jmcsteel.com

### About Wheatland Tube Electrical Conduit and Fittings

Wheatland Tube produces a broad spectrum of steel electrical conduit, including intermediate metal conduit (IMC), electrical metallic tubing (EMT) and DuraGuard™ hot-dip galvanized steel rigid metal conduit. We also supply a full line of steel and aluminum elbows and nipples, steel couplings, and rigid aluminum conduit and couplings.

For more information, contact Wheatland Tube at:

**800.257.8182** or **info@wheatland.com**

Or, visit our website at [wheatland.com](http://wheatland.com)



# Elbows, Couplings & Nipples

## Electrical Metallic Tubing—Steel

### ELBOWS 90°/45°

TRADE SIZE	MIN. RADIUS	90° ELBOWS			45° ELBOWS		
	in.	STANDARD CARTON QTY.	lbs. per ctn.	WEIGHT PER 100	STANDARD CARTON QTY.	lbs. per ctn.	WEIGHT PER 100
½	4	50	13	26	50	12	24
¾	4½	50	23	46	50	20	40
1	5¾	25	23	92	25	18	72
1¼	7¼	20	27	135	20	20	100
1½	8¼	15	30	200	15	22	147
2	9¼	10	28	280	10	21	210
2½*	10½	Bulk	—	500	Bulk	—	358
3*	13	Bulk	—	750	Bulk	—	700
3½*	15	Bulk	—	1014	Bulk	—	850
4*	16	Bulk	—	1300	Bulk	—	1000

\* Trade sizes 2½ and larger shipped in palletized carton or bulk.  
Standard radius elbows also available in 60, 30, 22½, 15 and 11¼.  
Weights are approximate.  
To estimate weights for 60, deduct 10%; for 45, deduct 15%; for 30, deduct 20%.

### SPECIAL LARGE-RADIUS 90° ELBOWS†

TRADE SIZE	12" RADIUS	15" RADIUS	18" RADIUS	24" RADIUS	30" RADIUS	36" RADIUS	42" RADIUS	48" RADIUS
½	—	—	—	—	—	—	—	—
¾	—	—	—	—	—	—	—	—
1	—	—	—	—	—	—	—	—
1¼	—	—	—	5	—	—	—	—
1½	—	4	4	5	—	7	—	9
2	—	—	6	7	9	9	—	9
2½	—	—	—	11	—	13	—	—
3	—	—	—	15	15	16	—	21
3½	—	—	—	—	20	25	—	22
4	—	—	—	19	21	24	28	31

† Lbs. per piece



#### Tested and Listed for Safety

Our galvanized steel rigid elbows comply with the following standards: ANSI C80.1, federal specification WW-C-581 class 1 type A and UL-797, to which it is Listed.

## Galvanized Rigid Conduit/IMC\*

### COUPLINGS

TRADE SIZE	OUTSIDE DIAMETER	UL MIN. LENGTH**	WEIGHT LBS.		STD. CTN. QTY.
	in.	in.	Per 100	Per ctn.	
½	1.010	1⅝	12	12	100
¾	1.250	1⅞	18	9	50
1	1.525	2⅜	30	9	30
1¼	1.869	2⅞	37	9	25
1½	2.155	3⅛	52	13	25
2	2.650	3⅝	72	15	20
2½	3.250	4⅜	170	41	24
3*	3.870	5⅜	210	34	16
3½	4.500	6⅜	340	41	12
4	4.875	7⅜	300	30	10
5	6.000	9⅜	475	Bulk	Bulk
6	7.200	11⅜	765	Bulk	Bulk

\* Also for use with intermediate metal conduit (IMC).

\*\* Maximum dimension per UL-6.

### SPECIAL LARGE-RADIUS 90° ELBOWS†

TRADE SIZE	12" RADIUS	15" RADIUS	18" RADIUS	24" RADIUS	30" RADIUS	36" RADIUS	42" RADIUS	48" RADIUS	60" RADIUS
1	4	6	5	6	9	9	12	13	—
1¼	6	7	7	9	12	13	16	18	—
1½	8	9	10	11	15	16	19	21	—
2	10	10	11	14	20	22	24	26	—
2½	15	19	18	23	27	32	39	44	—
3	—	25	28	32	37	45	52	57	—
3½	—	Standard Radius	31	35	42	54	62	69	—
4	—	—	38	45	54	64	73	81	90
5	—	—	—	Standard Radius	85	94	100	120	136
6	—	—	—	—	Standard Radius	131	140	160	182

† Lbs. per piece



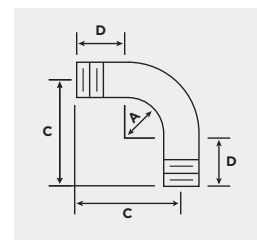
#### Tested and Listed for Safety

Our steel rigid elbows comply with the following standards: ANSI C80.1 and federal specification WW-C-581 class 1 type A and UL-6, to which it is Listed.

\* Also for use with intermediate metal conduit (IMC).

### DIMENSIONS OF SPECIAL LARGE-RADIUS 90° ELBOWS

TRADE SIZE	1-2½	1-3	1-4	1-4	1-5	1-6	1-6	1-6
When Radius "A" is	12"	15"	18"	24"	30"	36"	42"	48"
Offset "C" is	1'9"	2'0"	2'4"	2'11"	3'5"	3'11"	4'6"	5'0"
Straight End "D" is	9"	9"	10"	11"	11"	11"	12"	12"
Length Unbent is	3'0"	3'6"	4'0"	4'11"	5'9"	6'6"	7'6"	8'4"





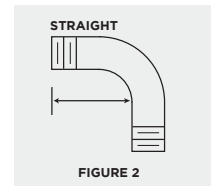
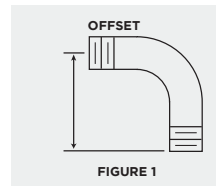
# Galvanized Rigid Conduit

## ELBOWS 90°



### Tested and Listed for Safety

Our galvanized steel rigid elbows, couplings and nipples comply with the following standards: ANSI C80.1, federal specification WW-C-581 class 1 type A and UL-6, to which it is Listed.



\* Trade sizes 2½ and larger shipped in palletized cartons or bulk. Palletized and bulk elbows supplied with a thread protector on each end and UL label affixed.

\*\* Minimum dimension per UL-6.

TRADE SIZE	MIN. RADIUS in.	OFFSET FIG. 1	STRAIGHT FIG. 2	WEIGHT** LBS. Per 100 ft.	STANDARD CARTON QTY.
½	4	6 ⅜	1 ¾	70	50
¾	4 ½	7 7/16	2 ¼	112	50
1	5 ¾	9 ½	2 ¾	192	25
1¼	7 ¼	11 ⅝	3	320	20
1½	8 ¼	12 13/16	3 ¼	413	15
2	9 ½	15 ½	4	670	10
2½*	10 ½	19 ¼	4 ¾	1200	Bulk
3*	13	21 ½	6	1900	Bulk
3½*	15	24 ½	5 ½	2800	Bulk
4*	16	25 ½	5 ¾	3100	Bulk
5*	24	37 1/16	8 ⅝	6800	Bulk
6*	30	49 ½	13 ¼	11400	Bulk

## NIPPLES

LENGTH		CLOSE		1½"		2"		2½"		3"		3½"	
TRADE SIZE	LENGTH* (IN.)	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.
½	1⅝	25	6	25	8	25	12	25	15	25	19	25	22
¾	1⅞	25	9	25	9	25	14	25	19	25	24	25	28
1	1½	25	16	—	—	25	22	25	28	25	36	25	43
1¼	1⅝	25	22	—	—	25	28	25	37	25	47	25	55
1½	1¾	25	28	—	—	25	34	25	44	25	56	25	68
2	2	25	44	—	—	—	—	25	59	25	72	25	88
2½	2½	12	84	—	—	—	—	—	—	10	100	10	120
3	2⅝	12	118	—	—	—	—	—	—	10	130	10	157
3½	2¾	12	160	—	—	—	—	—	—	—	—	—	—
4	2⅞	12	180	—	—	—	—	—	—	—	—	—	—
5	3	Bulk	240	—	—	—	—	—	—	—	—	—	—
6	3⅝	Bulk	350	—	—	—	—	—	—	—	—	—	—

LENGTH		4"		5"		6"		8"		10"		12"	
TRADE SIZE	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.	STANDARD CARTON QTY.	WEIGHT PER 100 LBS.	
½	25	26	25	33	25	40	25	54	25	68	25	82	
¾	25	34	25	43	25	52	25	73	25	89	25	109	
1	25	49	25	64	25	78	25	109	25	138	25	166	
1¼	25	66	25	84	25	100	12	136	12	176	12	216	
1½	25	80	25	103	25	122	12	170	12	216	12	260	
2	25	103	25	132	25	160	12	220	12	285	12	335	
2½	10	150	12	197	12	240	5	329	5	422	5	505	
3	10	200	10	260	10	300	5	411	5	528	5	630	
3½	10	240	10	320	5	373	5	510	5	655	5	785	
4	10	285	10	380	5	440	5	600	5	775	5	925	
5	—	—	Bulk	480	Bulk	600	Bulk	825	Bulk	1055	Bulk	1260	
6	—	—	Bulk	660	Bulk	820	Bulk	1125	Bulk	1440	Bulk	1720	

\* Length reference is for close nipples only. Prices are available upon request for nipples in lengths longer than 12" or with special threading requirements.

## North America's Best-in-Class Electrical Elbows, Couplings & Nipples

# for more than 135 years.

*Established in 1877, Wheatland Tube is the longest-running producer of steel conduit and the only conduit manufacturer that also produces its own elbows, couplings and nipples. We've been a key figure in the heritage of American manufacturing—and it shows. Today you can find Wheatland's American-made products everywhere you look, across the country and beyond.*

### Buy American with Confidence

Wheatland's steel EC&N can satisfy the American Made, Made in America and Buy American legislation. Offering superior physical protection for electrical conductors, Wheatland is your single source for all EC&N in North America.

### The Best People, Tooling and Equipment

At Wheatland, our people are our greatest asset. Our facility in Cambridge, Ohio, is staffed by a strong team of operating and engineering professionals, and leverages the latest technology to deliver superior products to every customer, every time.

As we continue to grow, we continue to invest in our facilities, systems and people, and focus on developing innovative solutions that keep our customers' jobs moving forward.

### Quality in Every Piece

Getting it right time and time again is no accident—it's in our DNA. Wheatland elbows and nipples are produced in-house with our specialized hot-dip and in-line galvanizing processes, and our couplings are electroplated. Our

products set the quality benchmark for the industry.

Our aluminum EC&N are produced in the same Cambridge, Ohio, facility, to ensure they measure up to the same quality standards our steel products are known for across North America.

### Faster, More Flexible Connections

SpeedCouple, Wheatland Tube's pre-installed swivel coupling, is available on 10' and 20' DuraGuard™ rigid, IMC and elbows. The coupling connects in as little as half the time of conventional couplings. SpeedCouple is UL Listed and manufactured in accordance with ANSI® C80.1.

### Strength. Innovation. Service.

We take great pride in serving our customers' needs. No job is too big for us to handle—and delivering on time is standard practice, whether it's standard EC&N or special (C&D) items. And we continually look for opportunities to bring greater value to every customer relationship through product and process innovations.



Wheatland products are listed to Underwriters Laboratories and Canadian Standards Association.

For more information, call **800.257.8182** or visit **wheatland.com**

# Elbows, Couplings & Nipples

## Electrical Metallic Tubing — Steel

### 90°/45° ELBOWS

TRADE SIZE	MIN. RADIUS	90° ELBOWS			45° ELBOWS		
		STANDARD CARTON QTY.	Lbs. per ctn.	WEIGHT PER 100	STANDARD CARTON QTY.	Lbs. per ctn.	WEIGHT PER 100
	in.						
½	4	50	13	26	50	12	24
¾	4½	50	23	46	50	20	40
1	5¾	25	23	92	25	18	72
1¼	7¼	20	27	135	20	20	100
1½	8¼	15	30	200	15	22	147
2	9¼	10	28	280	10	21	210
2½*	10½	Bulk	—	500	Bulk	—	358
3*	13	Bulk	—	750	Bulk	—	700
3½*	15	Bulk	—	1014	Bulk	—	850
4*	16	Bulk	—	1300	Bulk	—	1000

\* Trade sizes 2½ and larger shipped in palletized carton or bulk.  
Standard radius elbows also available in 60°, 30°, 22½°, 15° and 11¼°. Weights are approximate.  
90° and 60° weights are the same. To estimate weights for 45°, 30°, 22½°, 15° and 11¼° deduct 25%.

### SPECIAL LARGE-RADIUS 90° ELBOWS

TRADE SIZE	12" RADIUS	15" RADIUS	18" RADIUS	24" RADIUS	30" RADIUS	36" RADIUS	42" RADIUS	48" RADIUS
1¼	—	—	—	5	—	—	—	—
1½	—	4	4	5	—	7	—	9
2	—	—	6	7	9	9	—	9
2½	—	—	—	11	—	13	—	—
3	—	—	—	15	15	16	—	21
3½	—	—	—	—	—	25	—	22
4	—	—	—	19	21	24	28	31

Numbers in table above represent weight in pounds of elbows we offer.



#### Tested and Certified for Safety

Our EMT elbows comply with the following standard: CSA C22.2 No. 83.1-07, to which it is Certified.



#### Tested and Listed for Safety

Our EMT elbows comply with the following standards: ANSI C80.3, federal specification WW-C-563 and UL-797, to which it is Listed.

## Galvanized Rigid Conduit/IMC\*

### COUPLINGS

TRADE SIZE	OUTSIDE DIAMETER	UL MIN. LENGTH**	WEIGHT LBS.		STD. CTN. QTY.
			Per 100	Per ctn.	
	in.	in.			
½	1.010	1½	12	12	100
¾	1.250	1¼¼	18	9	50
1	1.525	1¾½	30	9	30
1¼	1.869	2¼½	37	9	25
1½	2.155	2¼½	52	13	25
2	2.650	2½	72	15	20
2½	3.250	3¾½	170	41	24
3*	3.870	3¾½	210	34	16
3½	4.500	3¾½	340	41	12
4	4.875	3¾¾	300	30	10
5	6.000	3¾¾	475	Bulk	Bulk
6	7.200	4¼	765	Bulk	Bulk

\* Also for use with intermediate metal conduit (IMC).

\*\* Minimum dimension per UL-6.

### SPECIAL LARGE-RADIUS 90° ELBOWS

TRADE SIZE	12" RADIUS	15" RADIUS	18" RADIUS	24" RADIUS	30" RADIUS	36" RADIUS	42" RADIUS	48" RADIUS	60" RADIUS
1	4	6	5	6	9	9	12	13	—
1¼	6	7	7	9	12	13	16	18	—
1½	8	9	10	11	15	16	19	21	—
2	10	10	11	14	20	22	24	26	—
2½	—	19	18	23	27	32	39	44	—
3	—	25	28	32	37	45	52	57	—
3½	—	Standard Radius	31	35	42	54	62	69	—
4	—	—	38	45	54	64	73	81	90
5	—	—	—	Standard Radius	85	94	100	120	136
6	—	—	—	—	Standard Radius	131	140	160	182

Numbers in table above represent weight in pounds of special radius elbows we offer.

\* Also for use with intermediate metal conduit (IMC).

\*\* Minimum dimension per UL-6.



#### Tested and Certified for Safety

Our galvanized steel rigid elbows, couplings and nipples comply with the following standards: CSA C22.2 No. 45.1-07, to which it is Certified.



#### Tested and Listed for Safety

Our galvanized steel rigid elbows comply with the following standards: ANSI C80.1, federal specification WW-C-581 class 1 type A and UL-6, to which it is Listed.

# Galvanized Rigid Conduit

## 90° ELBOWS

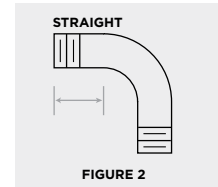
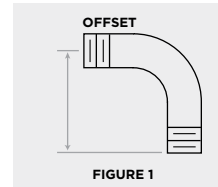
TRADE SIZE	MIN. RADIUS**	OFFSET FIG. 1	STRAIGHT FIG. 2	WEIGHT LBS.	STANDARD CARTON QTY.
	in.			Per 100 pcs.	
½	4	6 ¾	1 ¾	70	50
¾	4 ½	7 ¼	2 ¼	112	50
1	5 ¾	9 ½	2 ¾	192	25
1 ¼	7 ¼	11 ¾	3	320	20
1 ½	8 ¼	12 13/16	3 ¼	413	15
2	9 ½	15 ½	4	670	10
2 ½*	10 ½	19 ¼	4 ¾	1200	Bulk
3*	13	21 ½	6	1900	Bulk
3 ½*	15	24 ½	5 ½	2800	Bulk
4*	16	25 ½	5 ¾	3100	Bulk
5*	24	37 1/16	8 ¾	6800	Bulk
6*	30	49 ½	13 ¼	11400	Bulk



**Tested and Certified for Safety**  
Our galvanized steel rigid elbows, couplings and nipples comply with the following standard: CSA C22.2 No. 45.1-07, to which it is Certified.



**Tested and Listed for Safety**  
Our galvanized steel rigid elbows, couplings and nipples comply with the following standards: ANSI C80.1, federal specification WW-C-581 class 1 type A and UL-6, to which it is Listed.



\* Trade sizes 2 ½ and larger shipped in palletized cartons or bulk. Palletized and bulk elbows supplied with a thread protector on each end and UL and CSA label affixed.

\*\* Minimum radius per UL-6.

## NIPPLES

LENGTH		CLOSE		1 ½"		2"		2 ½"		3"		3 ½"	
TRADE SIZE	LENGTH* (IN.)	STD. CARTON	WEIGHT PER 100 LBS.	STD. CARTON	WEIGHT PER 100 LBS.	STD. CARTON	WEIGHT PER 100 LBS.	STD. CARTON	WEIGHT PER 100 LBS.	STD. CARTON	WEIGHT PER 100 LBS.	STD. CARTON	WEIGHT PER 100 LBS.
½	1 ⅝	25	6	25	8	25	12	25	15	25	19	25	22
¾	1 ¾	25	9	25	9	25	14	25	19	25	24	25	28
1	1 ½	25	16	—	—	25	22	25	28	25	36	25	43
1 ¼	1 ⅝	25	22	—	—	25	28	25	37	25	47	25	55
1 ½	1 ¾	25	28	—	—	25	34	25	44	25	56	25	68
2	2	25	44	—	—	—	—	25	59	25	72	25	88
2 ½	2 ½	12	84	—	—	—	—	—	—	10	100	10	120
3*	2 ⅝	12	118	—	—	—	—	—	—	10	130	10	157
3 ½	2 ¾	12	160	—	—	—	—	—	—	—	—	—	—
4	2 ⅞	12	180	—	—	—	—	—	—	—	—	—	—
5	3	Bulk	240	—	—	—	—	—	—	—	—	—	—
6	3 ⅞	Bulk	350	—	—	—	—	—	—	—	—	—	—

LENGTH		4"		5"		6"		8"		10"		12"	
TRADE SIZE	STD. CARTON	WEIGHT PER 100 LBS.	STD. CARTON	WEIGHT PER 100 LBS.	STD. CARTON	WEIGHT PER 100 LBS.	STD. CARTON	WEIGHT PER 100 LBS.	STD. CARTON	WEIGHT PER 100 LBS.	STD. CARTON	WEIGHT PER 100 LBS.	
½	25	26	25	33	25	40	25	54	25	68	25	82	
¾	25	34	25	43	25	52	25	73	25	89	25	109	
1	25	49	25	64	25	78	25	109	25	138	25	166	
1 ¼	25	66	25	84	25	100	12	136	12	176	12	216	
1 ½	25	80	25	103	25	122	12	170	12	216	12	260	
2	25	103	25	132	25	160	12	220	12	285	12	335	
2 ½	10	150	12	197	12	240	5	329	5	422	5	505	
3*	10	200	10	260	10	300	5	411	5	528	5	630	
3 ½	10	240	10	320	5	373	5	510	5	655	5	785	
4	10	285	10	380	5	440	5	600	5	775	5	925	
5	—	—	Bulk	480	Bulk	600	Bulk	825	Bulk	1055	Bulk	1260	
6	—	—	Bulk	660	Bulk	820	Bulk	1125	Bulk	1440	Bulk	1720	

\* Length reference is for close nipples only. Prices are available upon request for nipples in lengths longer than 12" or with special threading requirements.

# Rigid and IMC Conduit Fittings

## One Hole Pipe Straps

To support rigid conduit and IMC to mounting surface.



Malleable/Aluminum

cULus File No. E161206: 901 thru 913

SP File No. LR39354: 900 thru 912

### Malleable Iron

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
900	3/8"	100	1000	906	2"	---	25
901	1/2"	100	1000	907	2 1/2"	---	25
902	3/4"	---	100	908	3"	---	10
903	1"	---	100	909	3 1/2"	---	10
904	1 1/4"	---	50	910	4"	---	10
905	1 1/2"	---	50	912	5"	---	5
				913	6"	---	5

### Aluminum

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
901-AL	1/2"	100	1000	904-AL	1 1/4"	---	50
902-AL	3/4"	---	100	905-AL	1 1/2"	---	50
903-AL	1"	---	100	906-AL	2"	---	25

## One Hole Pipe Straps

To support rigid conduit and IMC to mounting surface.



Steel

cULus File No. E161206: 904-S thru 908-S and 910-S

SP File No. LR39354

### Zinc Plated Steel

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
901-S	1/2"	50	500	906-S	2"	---	25
902-S	3/4"	50	500	907-S	2 1/2"	---	25
903-S	1"	50	200	908-S	3"	---	25
904-S	1 1/4"	25	100	909-S	3 1/2"	---	10
905-S	1 1/2"	25	100	910-S	4"	---	10

# Rigid and IMC Conduit Fittings

## Two Hole Pipe Straps

Used to secure rigid conduit or IMC.

UL File No. E161206: 1907 thru 1910

SP File No. LR39354



### Zinc Plated Steel

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
1901	1/2"	250	2500	1906	2"	25	250
1902	3/4"	150	1500	1907	2 1/2"	25	100
1903	1"	100	1000	1908	3"	20	80
1904	1 1/4"	50	500	1909	3 1/2"	15	60
1905	1 1/2"	50	500	1910	4"	10	40

## Rigid Nail Straps



Used to secure rigid conduit and IMC to wood.

### Zinc Plated Steel

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
901-NS	1/2"	100	1000
902-NS	3/4"	100	1000
903-NS	1"	100	1000



# Rigid and IMC Conduit Fittings

## Pull Caps



Used for capping EMT, rigid and most bushings.

## Polyethylene

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
341	1/2"	100	1000	344	1 1/4"	50	250
342	3/4"	100	1000	345	1 1/2"	25	100
343	1"	100	1000	346	2"	25	100

## Bushings



Used with locknut to protect conductors inside threaded rigid or IMC conduit entering a box. Rounded surface of bushing prevents damage to wire insulation.

UL File No. E9391: 321 thru 332

UL File No. E11259: 321-B thru 330-B

SP File No. LR39354

### Plastic - 105°C

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
321	1/2"	100	1000
322	3/4"	100	1000
323	1"	50	500
324	1 1/4"	---	100
325	1 1/2"	---	100
326	2"	---	50
327	2 1/2"	---	25
328	3"	---	25
329	3 1/2"	---	25
330	4"	---	20
331	5"	---	5
332	6"	---	5

### Plastic - 150°C

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
321-B	1/2"	100	1000
322-B	3/4"	100	1000
323-B	1"	50	500
324-B	1 1/4"	---	100
325-B	1 1/2"	---	100
326-B	2"	---	50
327-B	2 1/2"	---	25
328-B	3"	---	25
329-B	3 1/2"	---	25
330-B	4"	---	20

# Rigid and IMC Conduit Fittings

## Locknuts



Steel



Zinc

Used to fasten threaded conduit to opening in a box or enclosure.



File No. E9391: 101-S thru 112-S; 101-DC thru 106-DC



File No. LR39354: 101-S thru 112-S

### Zinc Plated Steel - Conduit Locknut

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
100	3/8"	200	2000
101-S	1/2"	100	1000
102-S	3/4"	100	1000
103-S	1"	100	500
104-S	1 1/4"	---	100
105-S	1 1/2"	---	100
106-S	2"	---	50
107-S	2 1/2"	---	25
108-S	3"	---	25
109-S	3 1/2"	---	25
110-S	4"	---	25
111-S	5"	---	5
112-S	6"	---	5

### Zinc Die Cast - Fitting Locknut


Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
101-DC	1/2"	100	1000
102-DC	3/4"	100	1000
103-DC	1"	100	500
104-DC	1 1/4"	---	100
105-DC	1 1/2"	---	100
106-DC	2"	---	50
107-DC	2 1/2"	---	25
108-DC	3"	---	25
109-DC	3 1/2"	---	25
110-DC	4"	---	25


## Rigid and IMC Conduit

### Insulated Bushings



Used with locknut to protect conductors inside threaded rigid or IMC conduit entering a box. Plastic liner prevents damage to wire insulation.

 File No. E9391: 361 thru 370

 File No. E9391 (361-DC thru 370-DC)

### Malleable Iron / Plastic Metaliner - 150°C

Catalog Number	Trade Size	Unit Qty.	Std. Pkg. Qty.
361	1/2"	100	1000
362	3/4"	100	1000
363	1"	50	500
364	1 1/4"	10	100
365	1 1/2"	10	100
366	2"	10	100
367	2 1/2"	2	10
368	3"	2	10
369	3 1/2"	---	5
370	4"	---	5
371	5"	---	5
372	6"	---	5


### Zinc Die Cast / Plastic Metaliner - 150°C

Catalog Number	Trade Size	Unit Qty.	Std. Pkg. Qty.
361-DC	1/2"	100	1000
362-DC	3/4"	100	1000
363-DC	1"	50	500
364-DC	1 1/4"	10	100
365-DC	1 1/2"	10	100
366-DC	2"	10	100
367-DC	2 1/2"	2	10
368-DC	3"	2	10
369-DC	3 1/2"	---	5
370-DC	4"	---	5

### Insulated Grounding Bushings



Used with locknut to terminate service conduit to cabinet. Aluminum alloy lug provided for bonding jumper to neutral busbar. Plastic liner prevents damage to wire insulation.

 File No. E20412

### Malleable Iron / Plastic Metaliner - 105°C

Catalog Number	Grounding Lug Wire Capacity		Trade Size	Unit Qty.	Std. Pkg. Qty.
	Min. Solid	Max. Strand			
391	#6 - #250	MCM	5"	---	5
392	#6 - #250	MCM	6"	---	5

### Malleable Iron / Plastic Metaliner - 150°C

Catalog Number	Grounding Lug Wire Capacity		Trade Size	Unit Qty.	Std. Pkg. Qty.
	Min. Solid	Max. Strand			
381	#14 - #4		1/2"	50	500
382	#14 - #4		3/4"	50	500
383	#14 - #4		1"	25	250
384	#14 - #1/0		1 1/4"	20	200
384-14	#14 - #4		1 1/4"	20	200
385	#14 - #1/0		1 1/2"	20	200
385-14	#14 - #4		1 1/2"	20	200
386	#14 - #1/0		2"	10	100
386-14	#14 - #4		2"	10	100
387	#14 - #1/0		2 1/2"	---	25
387-40	#6 - #250	MCM	2 1/2"	---	25
388	#14 - #1/0		3"	---	25
388-40	#6 - #250	MCM	3"	---	25
389	#14 - #1/0		3 1/2"	---	25
389-40	#6 - #250	MCM	3 1/2"	---	25
390	#14 - #1/0		4"	---	20
390-40	#6 - #250	MCM	4"	---	20

# Rigid/Intermediate Grade Conduit Fittings

## Grounding Bushings

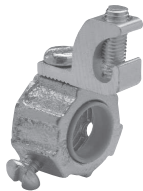
### INSULATED THROAT GROUNDING BUSHINGS - MALLEABLE IRON

#### Applications:

- For use on threaded rigid/IMC conduit to provide a means of grounding conduit through an insulated bushing

### 105°C Rated Plastic Throat Liner Aluminum Lug – For Copper Or Aluminum Grounding Conductors – Threaded

UL File No. E-6225



lazybug

### 105°C Rated Plastic Throat Liner Copper Lug – For Copper Grounding Conductors – Threaded

UL File No. E-6225



lazybug

CP

Cat. #	Trade Size	Lug Size	Unit Qty.	Wt. Lbs. Per 100
GLL1	1/2"	#4 – #14	50	5
GLL2	3/4"	#4 – #14	50	9
GLL3	1"	#4 – #14	50	12
GLL4	1 1/4"	#4 – #14	25	19
GLL4 10	1 1/4"	#1/0 – #8	25	23
GLL5	1 1/2"	#4 – #14	10	24
GLL5 10	1 1/2"	#1/0 – #8	10	28
GLL6	2"	#4 – #14	10	26
GLL6 10	2"	#1/0 – #8	10	32
GLL7	2 1/2"	#1/0 – #8	10	53
GLL7 30	2 1/2"	#3/0 – #6	10	60
GLL7 250	2 1/2"	250MCM – #6	10	67
GLL8	3"	#1/0 – #8	5	70
GLL8 30	3"	#3/0 – #6	5	72
GLL8 250	3"	250MCM – #6	5	76
GLL9	3 1/2"	#3/0 – #6	1	100
GLL9 250	3 1/2"	250MCM – #6	1	100
GLL10	4"	#3/0 – #6	1	110
GLL10 250	4"	250MCM – #6	1	120
GLL11	5"	#3/0 – #6	1	140
GLL11 250	5"	250MCM – #6	1	143
GLL12	6"	#3/0 – #6	1	160
GLL12 250	6"	250MCM – #6	1	163

Cat. #	Trade Size	Lug Size	Unit Qty.	Wt. Lbs. Per 100
GLL1C	1/2"	#4 – #14	50	8
GLL2C	3/4"	#4 – #14	50	12
GLL3C	1"	#4 – #14	50	14
GLL4 10C	1 1/4"	#4 – #14	25	19
GLL4C	1 1/4"	#1/0 – #8	25	30
GLL5 10C	1 1/2"	#4 – #14	10	21
GLL5C	1 1/2"	#1/0 – #8	10	32
GLL6C	2"	#4 – #14	10	29
GLL6 10C	2"	#1/0 – #8	10	40
GLL7C	2 1/2"	#1/0 – #8	10	65
GLL7 30C	2 1/2"	#3/0 – #6	10	88
GLL7 250C	2 1/2"	250MCM – #6	10	97
GLL8C	3"	#1/0 – #8	5	77
GLL8 30C	3"	#3/0 – #6	5	100
GLL8 250C	3"	250MCM – #6	5	109
GLL9C	3 1/2"	#3/0 – #6	1	125
GLL9 250C	3 1/2"	250MCM – #6	1	134
GLL10C	4"	#3/0 – #6	1	145
GLL10 250C	4"	250MCM – #6	1	154
GLL11C	5"	#3/0 – #6	1	165
GLL11 250C	5"	250MCM – #6	1	174
GLL12C	6"	#3/0 – #6	1	195
GLL12 250C	6"	250MCM – #6	1	204

# Rigid and IMC Conduit Fittings

## Reducing Bushings

Used to reduce the size of internal female threads.



 File No. LR39354: Steel

### Zinc Plated Steel

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
1160	1/2" - 3/8"	100	500	1168	1 1/2" - 3/4"	10	50
1161	3/4" - 1/2"	100	500	1169	1 1/2" - 1"	10	50
1162	1" - 1/2"	50	250	1170	1 1/2" - 1 1/4"	10	50
1163	1" - 3/4"	50	250	1171	2" - 1/2"	10	50
1164	1 1/4" - 1/2"	20	100	1172	2" - 3/4"	10	50
1165	1 1/4" - 3/4"	20	100	1173	2" - 1"	10	50
1166	1 1/4" - 1"	25	100	1174	2" - 1 1/4"	10	50
1167	1 1/2" - 1/2"	10	50	1175	2" - 1 1/2"	10	50



### Malleable Iron

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
1176	2 1/2" - 2"	---	5	1182	3 1/2" - 3"	---	5
1179	3" - 2 1/2"	---	5	1185	4" - 3 1/2"	---	5

## Offset Nipples

Used to offset the axis of raceway  
3/4" between enclosure runs.



 File No. E9391  File No. LR39354: 1520 thru 1525-DC

### Zinc Die Cast

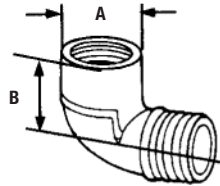
Catalog Number	Trade Size	Unit Qty.	Std. Pkg.	Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
1520-DC	1/2"	20	200	1523-DC	1 1/4"	10	40
1521-DC	3/4"	10	100	1524-DC	1 1/2"	10	40
1522-DC	1"	5	50	1525-DC	2"	5	30

### Cast Zinc

Catalog Number	Trade Size	Unit Qty.	Std. Pkg.
1526-DC	2 1/2"	2	10
1527-DC	3"	2	10

## Rigid/Intermediate Grade Conduit Fittings

### 90° Short Radius Elbows — Die Cast Zinc



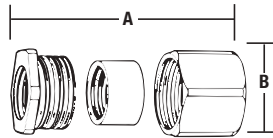
CAT. NO.	SIZE (IN.)	DIMENSIONS (IN.)		SHF. CTF./SHIP QTY.
		A	B	
HL-202-SC	¾	1.17	1.04	25/250

**USE:** To join rigid or IMC conduit at right angles where lack of room prevents using a standard sweep elbow, or to terminate a run of rigid or IMC conduit at a box.

UL Listing E37148.

### Three-Piece Couplings

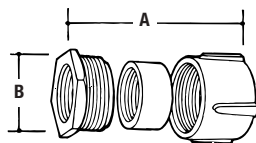
½"–2½" — Steel  
2½"–6" — Malleable iron  
Zinc plated



CAT. NO.	CONDUIT SIZE (IN.)	DIMENSIONS (IN.)		STD. CTN.
		A (ASSEMBLED)	B	
EK 401	½	1 1/16	1 1/8	100
EK 402	¾	1 1/8	1 1/32	50
EK 403	1	1 3/4	1 1/4	25
EK 404	1 1/4	1 7/8	2 1/32	25
EK 405	1 1/2	1 7/8	2 3/32	25
EK 406	2	2	3 3/64	20
EK 407	2 1/2	2 1/2	3 3/64	10
EK 408	3	3 3/8	4 3/32	6
EK 409	3 1/2	3 3/8	5 1/32	5
EK 410	4	3 7/8	5 3/32	5
EK 411	5	4 5/8	7	1

UL File No. E-23018 ½"–4".

### Rigid Couplings — Three Piece Type — Die Cast Zinc



CAT. NO.	TRADE SIZE (IN.)	DIMENSIONS (IN.)		STD. CTN.
		A (ASSEMBLED)	B	
EK 201	½	1.39	1.31	100
EK-202	¾	1.53	1.58	50

### The T&B Hub — Zinc Die Cast with Insulated Throat\*



H050-SC Series Hub

The T&B Hub with patent-pending sealing ring that will not fall out

Provides superior sealing for exceptional watertight performance

Color blue is a registered trademark of Thomas & Betts Corporation

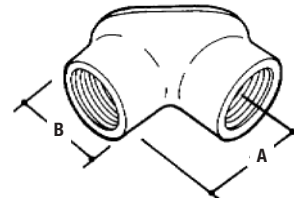
CAT. NO.	HUB SIZE (IN.)	STD. CTN.
H050-SC	½	100
H075-SC	¾	100
H100-SC	1	25
H125-SC	1 1/4	25
H150-SC	1 1/2	10
H200-SC	2	5
H250-SC	2 1/2	5
H300-SC	3	2
H350-SC	3 1/2	2
H400-SC	4	1
H500-SC	5	1
H600-SC	6	1

\*Available in nickel-chrome plating or with PVC coating.

Consult customer service for price and delivery.

UL File No. E-23018.

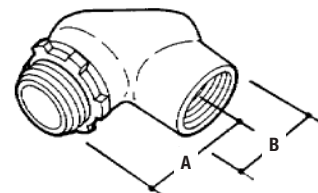
### Pull Corner Elbows — Die Cast Zinc



CAT. NO.	CONDUIT SIZE (IN.)	DIMENSIONS (IN.)		STD. CTN.
		A	B	
HL-601	½	1.31	1.10	100
HL-602	¾	1.60	1.24	50
HL-603	1	1.95	1.59	25
HL-604	1 1/4	2.26	1.97	30

UL File No. E-23018.

### Rigid to Box with Gasket — Die Cast Zinc



CAT. NO.	CONDUIT SIZE (IN.)	DIMENSIONS (IN.)		STD. CTN.
		A	B	
HL-611	½	1.31	1.09	100
HL-612	¾	1.47	1.29	50

UL File No. E-23018.



## Rigid and Intermediate Metal Conduit Fittings

### T&B Hub



Never before has a single hub fit like this one. Designed for unequalled performance. The innovative engineering of the T&B® Hub will, quite simply, raise your performance expectations for threaded hubs. Look for the distinctive blue color to ensure the quality of a Thomas & Betts fitting.

- 1 Sealing Ring and Groove with innovative profile outperforms standard O-ring design. Sealing ring is captivated in place before installation and resists buckling or slipping during installation. The seal groove is designed for optimum compression of the sealing ring. The sealing ring is designed to provide a complete 360° seal, even when the conduit is not perpendicular with the enclosure. (See **Figure 1**)
- 2 Locknut Design with peripheral slots and a hexagonal/angled spline spaced every 30° enables easy application of torque with wrench or hammer and screwdriver. (See **Figures 2 & 3**)
- 3 Sharper and Deeper Teeth on locknut and body designed for a more penetrating bite for improved bonding to the enclosure.
- 4 Hexagonal/Splined Body Design for fast, easy installation with wrench or hammer and screwdriver.
- 5 Precision Machined Tapered Threads designed to create watertight union.
- 6 Insulated Throat molded from 105° C rated thermoplastic with a flammability rating of 94 V-O.

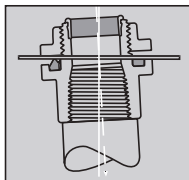


Fig. 1

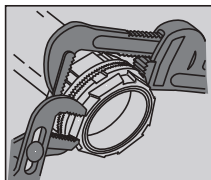


Fig. 2

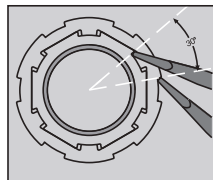
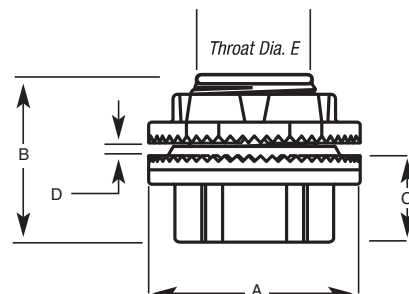
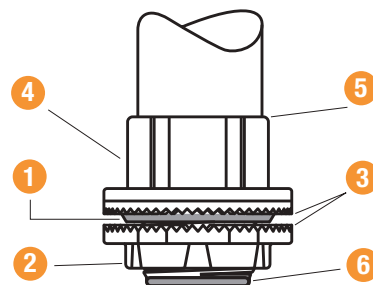


Fig. 3



CAT. NO.	TRADE SIZE					
		A	B	C	D	E
		DIA.			MAX. PANEL THICKNESS	THROAT DIA.
H050-TB	1/2	1 1/8	1 1/8	7/8	3/16	1 1/32
H075-TB	3/4	1 1/8	1 13/32	29/32	3/16	25/32
H100-TB	1	2	1 13/16	1 1/8	1/4	1
H125-TB	1 1/4	2 3/8	1 7/8	1 1/8	1/4	1 1/8
H150-TB	1 1/2	2 3/4	1 7/8	1 1/8	1/4	1 17/32
H200-TB	2	3 1/4	1 5/8	1 1/2	1/4	1 31/32
H250-TB	2 1/2	3 3/4	2 1/8	1 1/8	1/4	2 13/32
H300-TB	3	4 1/8	2 1/4	1 13/32	1/4	2 31/32
H350-TB	3 1/2	5	2 23/32	1 1/2	1/4	3 13/32
H400-TB	4	5 1/2	2 23/32	1 5/8	1/4	3 3/8
H500-TB	5	6 1/4	3 1/2	1 5/8	1/4	4 15/16
H600-TB	6	7 1/8	3 3/4	2	3/8	6

Material – Hub and Locknut: zinc or copper-free aluminum

Insulating Throat: thermoplastic temp. rating – 105° C

Flammability Rating – 94V-0

Sealing Ring: Nitrile (BUNA "N")

For Aluminum Hubs add suffix A (i.e., H050A). For Chrome-Plated Hubs add suffix CP (i.e., H050CP). For 316 Stainless Steel Hubs add suffix GRST (i.e., H050GRST). (1/2" through 2" only.) Meets NEMA sealing requirements for NEMA 3R, 4 & 13 enclosures.

UL Listed and CSA Certified. CSA Certified for hazardous locations Class II Groups E, F, G, Class III (NEC 501.10B).

UL File No. E-23018

CSA File No. 4484

Chrome-Plated Hubs (suffix-"CP") are rated NEMA 4X.

## Rigid/Intermediate Grade Conduit Fittings

### Threadless Compression Connectors

Malleable iron/zinc plated



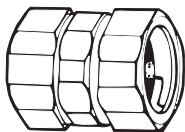
CAT. NO.	CONDUIT (IN.)	STD. CTN.
HC-401	1/2	300
HC-402	3/4	150
HC-403	1	90
HC-404	1 1/4	60
HC-405	1 1/2	30
HC-406	2	12
HC-407	2 1/2	12
HC-408	3	6
HC-409	3 1/2	6
HC-410	4	6

Suggested use — rigid conduit only.

UL File No. E-23018 1/2"–1 1/4".

### Threadless Compression Couplings

Malleable iron/zinc plated



CAT. NO.	CONDUIT (IN.)	STD. CTN.
HK-401	1/2	300
HK-402	3/4	150
HK-403	1	90
HK-404	1 1/4	60
HK-405	1 1/2	30
HK-406	2	6
HK-407	2 1/2	6
HK-408	3	4
HK-409	3 1/2	4
HK-410	4	4

Suggested use — rigid conduit only.

UL File No. E-23018 1/2"–1 1/4".

### Set Screw Connectors

Steel concrete tight when taped

Zinc plated



CAT. NO.	CONDUIT SIZE (IN.)	DIMENSIONS (IN.)		STD. CTN.
		A	B	
HC-101	1/2	1 1/8	1 1/8	100
HC-102	3/4	1 3/8	1 1/2	50
HC-103	1	1 5/8	1 3/4	50
HC-104	1 1/4	2	2	25
HC-105	1 1/2	2 1/4	2 1/4	25
HC-106	2	2 3/4	2 3/4	20
HC-107	2 1/2	3 1/4	3 1/4	10
HC-108	3	4 1/4	3 3/4	5
HC-109	3 1/2	4 3/4	3 3/4	5
HC-110	4	5 1/4	4 3/4	5

One set screw or two. Two set screws starting at 2" trade size.

Suggested use — rigid conduit only.

UL File No. E-23018 1/2"–1 1/4".

### Set Screw Couplings

Steel (concrete tight) when taped

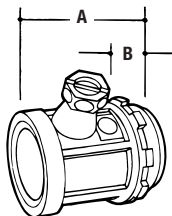
Zinc plated



CAT. NO.	CONDUIT SIZE (IN.)	DIMENSIONS (IN.)		STD. CTN.
		A	B	
HK-101	1/2	1 1/8	2 1/4	100
HK-102	3/4	1 3/8	2 1/2	50
HK-103	1	1 5/8	2 3/4	25
HK-104	1 1/4	2	2 3/4	25
HK-105	1 1/2	2 1/4	3 1/4	25

Two set screws starting at 2".

UL File No. E-23018.

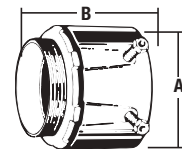
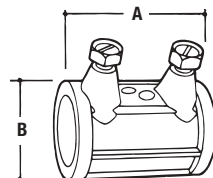


### Rigid Connectors — Set Screw Type — Die Cast Zinc

CAT. NO.	TRADE SIZE (IN.)	DIMENSIONS (IN.)		STD. CTN.
		A	B	
HC-203	1	1.54	0.49	100
HC-802	3/4	1.44	0.45	250
HC-803	1	1.54	0.49	100

### Rigid Couplings — Set Screw Type — Die Cast Zinc

CAT. NO.	TRADE SIZE (IN.)	DIMENSIONS (IN.)		STD. CTN.
		A	B	
HK-201	1/2	1.77	1.09	250
HK-203	1	2.29	1.61	100



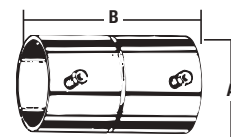
### Insulated

CAT. NO.	CONDUIT SIZE (IN.)	DIMENSIONS (IN.)		STD. CTN.
		A	B	
HC-701	1/2	1 1/8	1 1/8	100
HC-702	3/4	1 3/8	1 1/2	50
HC-703	1	1 5/8	1 3/4	25
HC-704	1 1/4	2	2	25
HC-705	1 1/2	2 1/4	2 1/4	25
HC-706	2	2 3/4	2 3/4	20
HC-707	2 1/2	3 1/4	3 1/4	10
HC-708	3	4 1/4	3 3/4	5
HC-709	3 1/2	4 3/4	4 3/4	5
HC-710	4	5 1/4	4 3/4	5

One set screw or two. Two set screws starting at 2" trade size.

Suggested use — rigid conduit only.

UL File No. E-23018 1/2"–1 1/4".



# Condulet® Conduit Bodies - Cast Iron or Aluminum

Gasket and Covers see page 8

## Applications:

Conduit outlet bodies are installed in conduit systems to:

- Act as pull outlets for conductors being installed
- Provide openings for making splices and taps in conductors
- Connect conduit sections
- Provide taps for branch conduit runs
- Make 90° bends in conduit runs
- Provide for access to conductors for maintenance and future system changes

## Features:

### Conduit Outlet Bodies

- Form 7 Condulet outlet bodies approach conduit in size for neat, compact installations
- Form 8 and Mark 9 bodies provide more room for heavier conductors
- Many shapes and sizes are available for rigid threaded conduit – for complete listings see pages 6–12
- Conduit hubs have tapered threads and feature integral bushings for protection of wire insulation
- Form 7 has exclusive snaptight and wedgenut cover attachment to provide clear, unobstructed cover opening
- Built-in rollers on all Form 5 1¼" to 4" C and LB bodies to facilitate wire pulling
- Series 5 bodies available in optional configuration with set screws on hubs for EMT conduit (add suffix -MT to catalog number)

### Gaskets

Solid gaskets:

- Are used with blank covers
- For Mark 9 and Form 5, can be converted to open type gaskets by tearing out center section along scored lines – ½" to 2" sizes
- For Form 7 are used with all covers

Open gaskets:

- For Form 8 – ½" to 4" sizes
- For Mark 9 – 2½" to 4" sizes

### Blank Covers

Stainless steel cover screws are standard on Form 7, Form 8, Mark 9, Series 5 and Form 5 covers.

#### • Form 7

Wedge nut design facilitates installation and removal. Nuts are held captive in cover. Covers can be used with or without gaskets. SNAP TIGHT™ Form 7 Covers with integral sealing gaskets are installed without the use of screws, reducing installation time and costs. Covers are reusable.

#### • Form 8

Two cover screws provided on all sizes to provide tight cover and gasket assembly. *Feraloy* iron alloy covers have dome shapes for added strength and extra wiring room.

#### • Mark 9

Self-retaining cover screws.

## Certifications and Compliances:

Outlet Bodies –

- UL Standard: 514B
- Fed. Spec.: W-C-586D
- CSA Standard 22.2 No. 18
- NEMA 3R Raintight (when installed with cover and gasket)

## Standard Materials:

- Form 7, Form 8 outlet bodies – *Feraloy* iron alloy
- Mark 9 outlet bodies – copper-free aluminum
- Form 5 – malleable iron
- Series 5 – die cast aluminum

## Standard Finishes:

- Form 7, Form 8 outlet bodies – electrogalvanized with aluminum acrylic paint
- Mark 9 outlet bodies – natural
- Form 5 – electrogalvanized with aluminum acrylic paint
- Series 5 – aluminum acrylic paint

## Options:

### Description

### Suffix

Form 7 body and cover only:

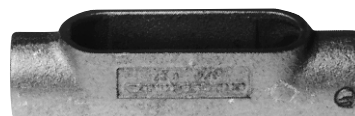
Copper-free aluminum ..... **SA**

*Corro-free*™ epoxy powder coat - external body only ..... **S752**

*Corro-free*™ epoxy powder coat - internal and external ..... **S753**

Series 5 in an EMT version with set screws on all hubs ..... **MT**

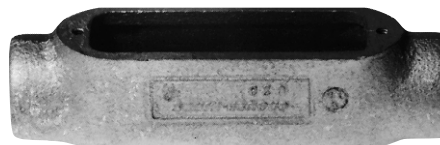
Series 5 pre-packaged with neoprene gasket and cover ..... **CGN**



Form 7



Mark 9



Form 8



Mogul




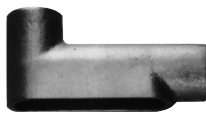


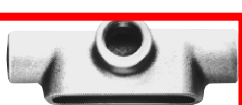
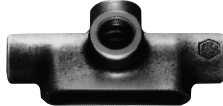

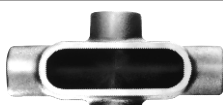
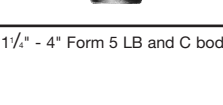
# Condulet® Conduit Bodies - Cast Iron or Aluminum

1F

Dimensions Pgs. see pages 10–12 (Dimensions for Form 5 – see Section CP)

1F

## Threaded Rigid Bodies

Shape	Style	Hub Size									
		1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
	<b>C</b>										
	Form 7	C17	C27	C37	C47	C57	C67	C77	C87		
	Form 8	C18	C28	C38	C448	C58	C68	C78	C88		
	Mark 9	C19	C29	C39	C49	C59	C69	C789	C889	C989	C1089
	Form 5	C50M	C75M	C100M	C125M*	C150M*	C200M*	C250M*	C300M*	C350M*	C400M*
	<b>E</b>										
	Form 7	E17	E27	E37							
	<b>L</b>										
	Form 7	L17	L27	L37	L47	L57	L67				
Double faced – may be used as LL or LR – has 2 openings, one of which is furnished with a blank sheet steel cover											
	<b>LB</b>										
	Form 7	LB17	LB27	LB37	LB47	LB57	LB67	LB777	LB87	LB97	LB107
	Form 8	LB18	LB28	LB38	LB448	LB58	LB68	LB78	LB888	LB98	LB108
	Mark 9	LB19	LB29	LB39	LB49	LB59	LB69	LB789	LB889	LB989	LB1089
	Form 5	LB50M	LB75M	LB100M	LB125M*	LB150M*	LB200M*	LB250M*	LB300M*	LB350M*	LB400M*
	<b>LL</b>										
	Form 7	LL17	LL27	LL37	LL47	LL57	LL67	LL777	LL87	LL97	LL107
	Form 8	LL18	LL28	LL38	LL448	LL58	LL68	LL78	LL888		
	Mark 9	LL19	LL29	LL39	LL49	LL59	LL69	LL789	LL889	LL989	LL1089
	Form 5	LL50M	LL75M	LL100M	LL125M	LL150M	LL200M	LL250M	LL300M	LL350M	LL400M
	<b>LR</b>										
	Form 7	LR17	LR27	LR37	LR47	LR57	LR67	LR777	LR87	LR97	LR107
	Form 8	LR18	LR28	LR38	LR448	LR58	LR68	LR78	LR888		
	Mark 9	LR19	LR29	LR39	LR49	LR59	LR69	LR789	LR889	LR989	LR1089
	Form 5	LR50M	LR75M	LR100M	LR125M	LR150M	LR200M	LR250M	LR300M	LR350M	LR400M
	<b>T</b>										
	Form 7	T17	T27	T37	T47	T57	T67	T77	T87	T97	T107
	Form 8	T18	T28	T38	T448	T58	T68	T78	T88		
	Mark 9	T19	T29	T39	T49	T59	T69	T789	T889	T989	T1089
	Form 5	T50M	T75M	T100M	T125M	T150M	T200M	T250M	T300M	T350M	T400M
	<b>TA</b>										
	Form 7	TA17	TA27	TA37	TA47	TA57	TA67				
	<b>TB</b>										
	Form 7	TB17	TB27	TB37	TB47	TB57	TB67				
	Form 8	TB18	TB28	TB38	TB448	TB58	TB68				
	Mark 9	TB19	TB29	TB39	TB49	TB59	TB69				
	Form 5	TB15	TB25	TB35	TB45	TB55	TB65				
	<b>X</b>										
	Form 7	X17	X27	X37	X47	X57	X67				
	Form 8	X18	X28	X38	X448	X58	X68				
	Mark 9	X19	X29	X39							
	Form 5	X15	X25	X35	X45	X55	X65				
	<b>X</b>										
	Form 5	X50M	X75M	X100M	X125M	X150M	X200M				

\* 1 1/2" - 4" Form 5 LB and C bodies are supplied with built-in rollers to facilitate wire pulling.



## Covers and Gaskets

Dimensions Pgs. see pages 10–12 (Dimensions for Form 5 – see Section CP)

## Blank Covers



Sheet Steel

Size	Form 7 Wedgenut Cat. #	Form 7 Snaptight™ Covers‡ Cat. #	Form 7 Wedgenut w/Integral Gasket Cat. #	Form 8§ Cat. #	Form 8 w/Integral Gasket Cat. #	Form 5 w/Integral Gasket** Cat. #
1/2	170	170SG	170G	180	180G	K50SG
3/4	270	270SG	270G	280	280G	K75SG
1	370	370SG	370G	380	380G	K100SG
1 1/4	470	470SG	470G	480	480G	K125SG
1 1/2	570	570SG	570G	580	580G	K125SG
2	670	670SG	670G	680	680G	K200SG
2 1/2	870	870G		880		K250SG
3	870			880		K250SG
3 1/2	970	970G		980		K350SG
4	970			980		K350SG

‡Form 7 Snaptight covers with integral sealing gasket are installed without the use of screws.

§Two cover screws on 1/2" to 2" Form 8 covers and four cover screws on 2 1/2" and larger Form 8 covers.

\*\*For cover without integral gasket, remove G from catalog number.



Sheet Aluminum



Feraloy® Iron Alloy



Cast Aluminum

Size	Mark 9 Cat. #	Mark 9 w/Integral Gasket Cat. #	Form 7 Cat. #	Form 7 w/Integral Gasket Cat. #	Series 5 w/Integral Gasket** Cat. #	Form 7 Wedgenut Cat. #	Form 7 Wedgenut w/Integral Gasket Cat. #	Form 8§ Cat. #	Form 5‡ Cat. #	Form 7 Wedgenut Cat. #
1/2	190	190G	170 SA	170G SA	150 G	170F	170FG	180F	K50CM	170F SA
3/4	290	290G	270 SA	270G SA	250 G	270F	270FG	280F	K75CM	270F SA
1	390	390G	370 SA	370G SA	350 G	370F	370FG	380F	K100CM	370F SA
1 1/4	490	490G	470 SA	470G SA	450 G	470F	470FG	480F	K125CM	470F SA
1 1/2	590	590G	570 SA	570G SA	450 G	570F	570FG	580F	K125CM	570F SA
2	690	690G	670 SA	670G SA	650 G	670F	670FG	680F	K200CM	670F SA
2 1/2	889		870 SA		850 G	870F		880F	K250CM	870F SA
3	889		870 SA		850 G	870F		880F	K250CM	870F SA
3 1/2	989		970 SA		950 G	970F		980F	K350CM	970F SA
4	989		970 SA		950 G	970F		980F	K350CM	970F SA

‡Malleable iron covers.

§Two cover screws on 1/2" to 2" Form 8 covers and four cover screws on 2 1/2" and larger Form 8 covers.

\*\*For cover without integral gasket, remove G from catalog number.

## Solid Gaskets - Neoprene



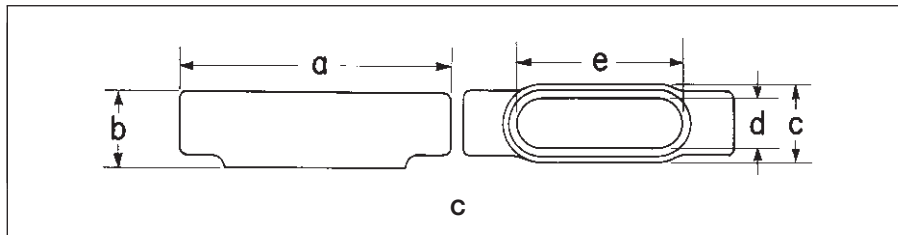
Size	Form 7 Cat. #	Form 8* Cat. #	Mark 9‡ Cat. #	Form 5 Cat. #	Series 5 Cat. #
1/2	GASK571	GASK851N	GASK1941	GK50N	GASK015N
3/4	GASK572	GASK852N	GASK1942	GK75N	GASK025N
1	GASK573	GASK853N	GASK1943	GK100N	GASK035N
1 1/4	GASK574	GASK854N	GASK1944	GK125N	GASK045N
1 1/2	GASK575	GASK805N	GASK1945	GK125N	GASK045N
2	GASK576	GASK806N	GASK1946	GK200N	GASK065N
2 1/2	GASK578	GASK808N	GASK808N	GK250N	GASK085N
3	GASK578	GASK808N	GASK808N	GK250N	GASK085N
3 1/2	GASK579	GASK809N	GASK809N	GK350N	GASK095N
4	GASK579	GASK809N	GASK809N	GK350N	GASK095N

\*1/2 – 1 1/4 are solid gaskets; 1 1/2 – 4 are open gaskets.

‡1/2 – 2 are solid gaskets; 2 1/2 – 4 are open gaskets.

# Condulet® Conduit Bodies - Cast Iron or Aluminum

Dimensions (In Inches)



## Form 7 C

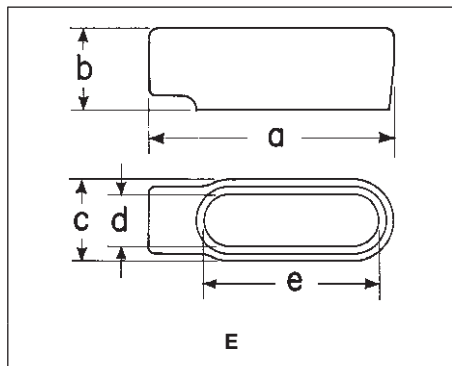
Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
a	5 3/8	6	7	7 7/16	8 3/16	9 9/16	12	11 3/4
b	1 3/8	1 5/8	1 7/8	2 9/16	2 9/16	3 9/16	3 9/16	4 3/8
c	1 3/8	1 9/16	1 3/4	2 3/16	2 7/16	3	4 1/4	4 1/4
d	1 5/16	1 1/8	1 3/8	1 3/4	1 15/16	2 7/16	3 9/16	3 9/16
e	3 3/16	3 13/16	4 1/2	5	5 7/16	6 3/8	8 3/8	8 3/8

## Form 8 C

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
a	5 11/16	6 9/32	7 5/16	8 1/2	10 3/8	12 1/4	15 5/8	15 5/8
b	1 7/16	1 11/16	1 15/16	2 3/8	2 25/32	3 9/16	4 7/16	4 13/16
c	1 3/8	1 3/16	1 3/4	2 3/16	2 3/4	3 3/4	5	5
d	1	1 3/16	1 3/8	1 3/4	2 1/8	3	4 1/4	4 1/4
e	3 5/16	3 15/16	4 9/16	5 5/16	6 1/2	8 9/16	10 7/8	10 7/8

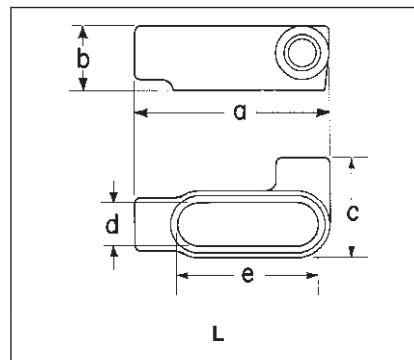
## Mark 9 C

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	5	5 11/16	6 13/32	7 1/2	8 1/4	10 1/2	15 5/8	15 5/8	18 3/4	18 3/4
b	1 3/8	1 5/8	1 7/8	2 1/2	2 3/4	3 7/16	4 7/16	4 13/16	5 11/16	5 15/16
c	1 3/8	1 9/16	1 3/4	2 3/16	2 1/2	3 3/16	5	5	6 1/4	6 1/4
d	1 3/16	1 3/8	1 1/2	1 15/16	2 1/4	2 7/8	4 1/4	4 1/4	5 7/16	5 7/16
e	3 5/16	3 15/16	4 9/16	5 5/16	6	8 7/16	10 7/8	10 7/8	13 7/16	13 7/16



## Form 7 E

Size	1/2	3/4	1
a	4 9/16	5 3/16	6
b	1 3/8	1 5/8	1 7/8
c	1 3/8	1 9/16	1 3/4
d	1 5/16	1 1/8	1 3/8
e	3 3/16	3 13/16	4 1/2



## Form 7 L

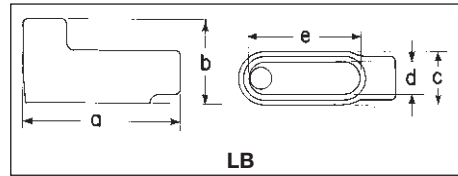
Size	1/2	3/4	1	1 1/4	1 1/2	2
a	4 9/16	5 3/16	6	6 1/2	7 1/8	3 3/8
b	1 3/8	1 5/8	1 7/8	2 3/16	2 9/16	3 3/8
c	2 1/4	2 7/16	2 3/4	3 3/16	3 9/16	4 1/8
d	1 5/16	1 1/8	1 3/8	1 3/4	1 15/16	2 7/16
e	3 3/16	3 13/16	4 1/2	5	5 7/16	6 3/8



# Condulet® Conduit Bodies - Cast Iron or Aluminum

1F

## Dimensions (In Inches)



### Form 7 LB

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	4 <sup>9</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	6	6 1/2	7 1/8	8 3/8	10 1/2	10 1/2	12 11/16	12 11/16
b	2 1/4	2 1/2	2 7/8	3 5/16	3 11/16	4 1/4	5 1/8	5 7/8	6 9/16	7 1/16
c	1 3/8	1 9/16	1 3/4	2 3/16	2 7/16	3	4 1/4	4 1/4	5 1/4	5 1/4
d	1 5/16	1 1/8	1 3/8	1 3/4	1 15/16	2 7/16	3 9/16	3 9/16	4 1/2	4 1/2
e	3 3/16	3 13/16	4 1/2	5	5 7/16	6 3/8	8 3/8	8 3/8	10 1/4	10 1/4

### Form 8 LB

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	4 15/16	5 9/16	6 15/32	7 17/32	9 1/8	11	13 15/16	13 15/16	16 7/8	16 7/8
b	2 1/32	2 7/16	2 13/16	3 11/32	4 1/32	4 13/16	6 1/8	6 1/2	7 9/16	7 13/16
c	1 3/8	1 9/16	1 3/4	2 3/16	2 3/4	3 3/4	5	5	6 1/4	6 1/4
d	1	1 3/16	1 3/8	1 3/4	2 1/8	3	4 1/4	4 1/4	5 7/16	5 7/16
e	3 5/16	3 5/16	4 9/16	5 5/16	6 1/2	8 9/16	10 7/8	10 7/8	13 7/16	13 7/16

### Mark 9 LB

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	4 19/32	5 1/4	6 3/32	7 1/32	7 3/4	10 1/32	13 15/16	13 15/16	16 7/8	16 7/8
b	2 1/8	2 13/32	2 27/32	3 15/32	3 3/4	4 15/32	6 1/8	6 1/2	7 9/16	7 13/16
c	1 3/8	1 9/16	1 3/4	2 3/16	2 1/2	3 3/16	5	5	6 1/4	6 1/4
d	1 3/16	1 3/8	1 1/2	1 15/16	2 1/4	2 7/8	4 1/4	4 1/4	5 7/16	5 7/16
e	3 3/16	3 13/16	4 9/16	5 5/16	6	8 1/16	10 7/8	10 7/8	13 7/16	13 7/16



### Form 7 LL & LR

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	4 <sup>9</sup> / <sub>16</sub>	5 <sup>3</sup> / <sub>16</sub>	6	6 1/2	7 1/8	8 3/8	10 1/2	10 1/2	12 11/16	12 11/16
b	1 3/8	1 5/8	1 7/8	2 5/16	2 9/16	3 3/8	3 5/8	4 3/8	4 7/8	5 3/8
c	2 1/4	2 7/16	2 3/4	3 3/16	3 9/16	4 1/8	5 3/4	5 3/4	6 9/16	6 15/16
d	1 5/16	1 1/8	1 3/8	1 3/4	1 15/16	2 7/16	3 9/16	3 9/16	4 1/2	4 1/2
e	3 3/16	3 13/16	4 1/2	5	5 7/16	6 3/8	8 3/8	8 3/8	10 1/4	10 1/4

### Form 8 LL & LR

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
a	4 15/16	5 9/16	6 15/32	7 17/32	9 1/8	11	13 15/16	13 15/16
b	1 7/16	1 11/16	1 15/16	2 3/8	2 25/32	3 3/16	4 7/16	4 13/16
c	2 5/32	2 9/16	2 5/8	3 3/32	4	5	6 11/16	6 11/16
d	1	1 3/16	1 3/8	1 3/4	2 1/8	3	4 1/4	4 1/4
e	3 5/16	3 15/16	4 9/16	5 5/16	6 1/2	8 9/16	10 7/8	10 7/8

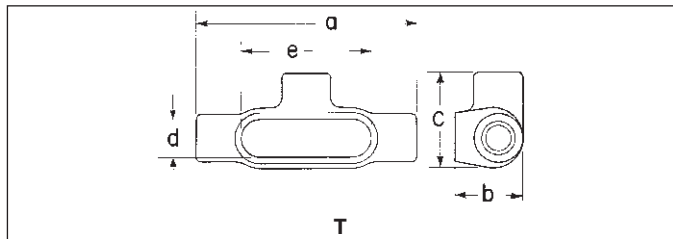
### Mark 9 LL & LR

Size	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	3 1/2	4
a	4 19/32	5 1/4	6 3/32	7 1/32	7 3/4	10 1/32	13 15/16	13 15/16	16 7/8	16 7/8
b	1 3/8	1 5/8	1 7/8	2 1/2	2 3/4	3 7/16	4 7/16	4 7/16	5 15/16	5 15/16
c	2 1/8	2 3/8	2 5/8	3 3/32	3 7/16	4 1/8	6 11/16	6 11/16	8 7/8	8 7/8
d	1 3/16	1 3/8	1 1/2	1 15/16	2 1/4	2 7/8	4 1/4	4 1/4	5 7/16	5 7/16
e	3 5/16	3 15/16	4 9/16	5 5/16	6	8 1/16	10 7/8	10 7/8	13 7/16	13 7/16

# Condulet® Conduit Bodies - Cast Iron or Aluminum

## Dimensions (In Inches)

1F



### Form 7T

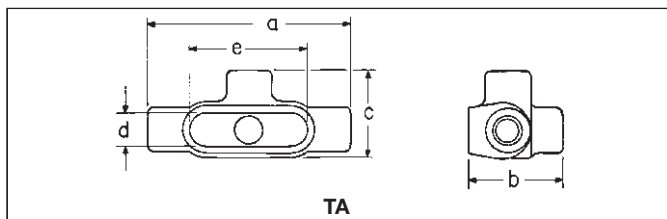
Size	a	b	c	d	e
1/2	5 5/8	1 3/4	2 7/16	1 5/16	3 3/16
3/4	6 1/4	2	2 5/8	1 1/8	3 13/16
1	7 1/4	2 1/4	3	1 3/8	4 1/2
1 1/4	7 7/16	2 5/16	3 3/16	1 3/4	5
1 1/2	8 3/16	2 9/16	3 9/16	1 15/16	5 7/16
2	9 3/16	3 1/8	4 1/8	2 7/16	6 3/8
2 1/2	12	3 3/8	5 3/4	3 9/16	8 3/8
3	12 1/16	4 3/8	5 3/4	3 9/16	8 3/8
3 1/2	14 5/16	4 7/8	6 15/16	4 1/2	10 1/4
4	14 5/16	5 3/8	6 15/16	4 1/2	10 1/4

### Form 8T

1/2	5 11/16	1 3/4	2 5/32	1	3 5/16
3/4	6 9/32	2	2 5/16	1 3/16	3 15/16
1	7 5/16	2 1/4	2 5/8	1 3/8	4 9/16
1 1/4	8 1/2	2 5/8	3 3/32	1 3/4	5 5/16
1 1/2	10 3/8	2 29/32	4	2 1/8	6 1/2
2	12 1/4	3 9/16	5	3	8 9/16
2 1/2	15 5/8	4 7/16	6 11/16	4 1/4	10 7/8
3	15 5/8	4 13/16	6 11/16	4 1/4	10 7/8

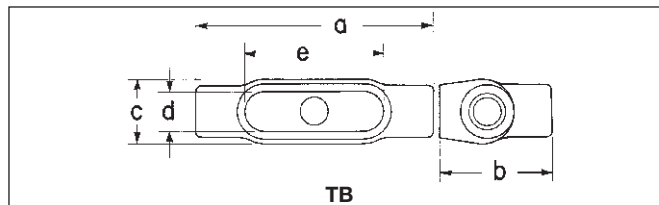
### Mark 9T

1/2	5	1 3/8	2 1/8	1 3/16	3 5/16
3/4	5 11/16	1 5/8	2 3/8	1 3/8	3 15/16
1	6 19/32	1 7/8	2 5/8	1 1/2	4 9/16
1 1/4	7 1/2	2 1/2	3 3/32	1 15/16	5 5/16
1 1/2	8 1/4	2 3/4	3 7/16	2 1/4	6
2	10 1/2	3 7/16	4 1/8	2 7/8	8 1/16
2 1/2	15 5/8	4 7/16	6 11/16	4 1/4	10 7/8
3	15 5/8	4 13/16	6 11/16	4 1/4	10 7/8
3 1/2	18 3/4	5 11/16	8 1/8	5 7/16	13 7/16
4	18 3/4	5 15/16	8 1/8	5 7/16	13 7/16



### Form 7TA

Size	a	b	c	d	e
1/2	5 5/8	2 5/8	2 7/16	1 5/16	3 3/16
3/4	6 1/4	2 7/8	2 5/8	1 1/8	3 13/16
1	7 1/4	3 1/4	3	1 3/8	4 1/2
1 1/4	7 7/16	3 5/16	3 3/16	1 3/4	5
1 1/2	8 3/16	3 11/16	3 9/16	1 15/16	5 7/16
2	9 3/16	4 1/4	4 1/8	2 7/16	6 3/8



### Form 7TB

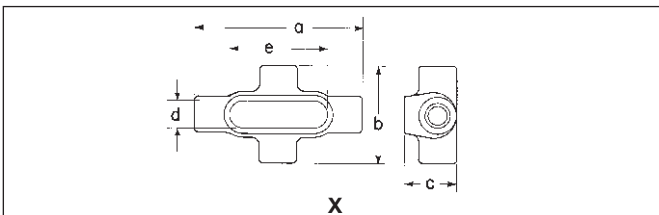
Size	a	b	c	d	e
1/2	5 5/8	2 5/8	1 9/16	1 5/16	3 3/16
3/4	6 1/4	2 7/8	1 3/4	1 1/8	3 13/16
1	7 1/4	3 1/4	2	1 3/8	4 1/2
1 1/4	7 7/16	3 5/16	2 3/16	1 3/4	5
1 1/2	8 3/16	5	2 7/16	1 15/16	5 7/16
2	9 3/16	6 1/8	3	2 7/16	6 3/8

### Form 8TB

1/2	5 11/16	2 17/32	1 3/8	1	3 5/16
3/4	6 9/32	2 3/4	1 9/16	1 3/16	3 15/16
1	7 5/16	3 1/8	1 3/4	1 3/8	4 9/16
1 1/4	8 1/2	3 11/32	2 3/16	1 3/4	5 5/16
1 1/2	10 3/8	4 1/32	2 3/4	2 1/8	6 1/2
2	12 1/4	4 13/16	3 3/4	3	8 9/16

### Mark 9TB

1/2	5	2 1/8	1 3/8	1 3/16	3 5/16
3/4	5 11/16	2 13/32	1 9/16	1 3/8	3 15/16
1	6 19/32	2 27/32	1 3/4	1 1/2	4 9/16
1 1/4	7 1/2	3 15/32	2 3/16	1 15/16	5 5/16
1 1/2	8 11/32	3 7/8	2 1/2	2 5/32	5 7/8
2	10 5/8	4 19/32	3 7/32	2 13/16	8 3/32



### Form 7X

Size	a	b	c	d	e
1/2	5 5/8	3 5/16	1 3/4	1 5/16	3 3/16
3/4	6 1/4	3 1/2	2	1 1/8	3 13/16
1	7 1/4	4	2 1/4	1 3/8	4 1/2
1 1/4	7 7/16	4 1/8	2 5/16	1 3/4	5
1 1/2	8 3/16	4 5/8	2 9/16	1 15/16	5 7/16
2	9 3/16	5 3/16	3 1/8	2 7/16	6 3/8

### Form 8X

1/2	5 11/16	2 29/32	1 3/4	1	3 5/16
3/4	6 9/32	3 1/16	2	1 3/16	3 15/16
1	7 5/16	3 1/2	2 1/4	1 3/8	4 9/16
1 1/4	8 1/2	4 1/8	2 5/8	1 3/4	5 5/16
1 1/2	10 3/8	5 1/4	2 15/32	2 1/8	6 1/2
2	12 1/4	6 1/4	3 9/16	3	8 9/16

### Mark 9X

1/2	5 11/16	2 29/32	1 3/4	1	3 5/16
3/4	6 9/32	3 1/16	2	1 3/16	3 15/16
1	7 5/16	3 1/2	2 1/4	1 3/8	4 9/16

# Chico® A and Chico® A-P Sealing Compound

## Chico® X Fiber

## Chico® SpeedSeal™

### For Sealing Fittings and Hubs

6F

6F

#### Applications:

*Chico X fiber:*

- Forms a dam between the integral bushing of the sealing fitting and the end of the conduit and around the electrical conductors entering the hub

*Chico A sealing compound:*

- Forms a seal around each electrical conductor and between them and inside of the sealing fitting to restrict the passage of gases, vapors or flames through the sealing fitting at atmospheric pressure and at normal ambient temperatures

*Chico® SpeedSeal™ Compound:*

- Designed to separate and form an explosionproof seal around each electrical conductor in Eaton's Crouse-Hinds EYS and EYD sealing fittings
- Restricts the passage of gases, vapors or flames through the sealing fitting
- Creates a seal for Class I, Division 1, Groups C, D and Class II, Division 1, Groups E, F, G hazardous areas

#### Features:

*Chico A sealing compound:*

- A water soluble powder that can be easily mixed and poured. The compound, unusually dense, expands slightly when hardening and bonds to inner walls of sealing fittings. Compound hardens in 60–70 minutes
- Chico A cure time is 8 hours for Class I, Group C and D applications and 72 hours for Class I, Group A and B applications.
- Chico A has a 1 year shelf life from date of manufacture.
- Chico A ambient temperature range (after curing) is –40°F to +165°F.

*Chico A-P Intrapak®:*

- Packaged in two-compartment plastic pouch with precise amount of water for mixing. No mixing or measuring implements required.
- A hard squeeze of the water compartment forces the water into the compartment containing the Chico compound. Mixing is completed by kneading the pouch for one minute.
- The mixed sealing compound is poured directly into the sealing fitting – no funnel required. The package label indicates the size and quantity of sealing fittings each pouch will properly fill. Compound hardens in 60–70 minutes.

*Chico X fiber:*

- A mineral wool that packs easily, forming around each conductor

*Chico® SpeedSeal™ Compound:*

- Installs a reliable seal in five minutes - *every time*
- Hardens to a dense, strong mass that is suitable for Class I, Division 1, Groups C, D and Class II, Division 1, Groups E, F, G hazardous applications.
- UL and cUL Listed for use with 1/2" to 2" Eaton's Crouse-Hinds sealing fittings only.
- Packaged in a 2 oz. or 6 oz. pre-measured cartridge, eliminating the need for measuring before mixing.
- Packaged with a screw-on nozzle for accurate dispensing.
- Expands four times its original size in the sealing fitting, eliminating the need to separate the individual conductors with Chico X fiber.
- Chico X fiber dams are not required in horizontal applications, reducing installation times.
- Completely hardens in 20 minutes, simplifying use for OEMs.
- Suitable for cold temperature environments without the costly need to build a temporary shelter around sealing fittings. All ice crystals must be removed from inside the conduit seal before dispensing Chico SpeedSeal compound. The Chico SpeedSeal compound should be kept above 10°C (50°F) and below 85°F (29°C) prior to mixing. The sealing fitting must be kept at or above 4°C (40°F) during the 4 to 10 minute expansion/gel time of the compound.
- 18 months shelf-life.
- Patent pending.

#### Size Ranges:

- *Chico A* compound – 1 lb. to 5 lbs. (provides 23–115 cubic inches of compound)
- *Chico X* fiber – 2 oz. to 1 lb.
- *Chico A-P* (5 pouches per carton) – provides 25 and 55 cubic inches of compound
- *Chico SpeedSeal* – 2 oz. or 6 oz. cartridge

Eaton's Crouse-Hinds sealing fittings are approved for use in hazardous locations only when *Chico X* fiber and *Chico A* Sealing Compound or *Chico SpeedSeal* are used to make the seal.

#### Ordering Information - Chico A



Net Weight	Vol. Cu. In.†	Cat. #
1 lb.	23	<b>Chico A3</b>
1 lb.‡	23	<b>Chico A4</b>
5 lb.	115	<b>Chico A05</b>

#### Ordering Information - Chico A-P Intrapak®



Cu. In. Fill per Pouch†	No. of Pouches per Carton	Cat. #
5	5	<b>Chico A19 PX*</b>
11	5	<b>Chico A39 PX*</b>

\*A sixth pouch, containing an appropriate quantity of Chico X fiber, is included in these cartons.

†Number of cubic inches this amount will fill when set. See internal volume requirements for EYS, EZS, EYD, EZD and EYSR sealing fittings and ES sealing hubs (see pages 140–149).

‡Includes 1 oz. Chico X fiber.

#### Crouse-Hinds

by **E•T•N**

www.crouse-hinds.com US: 1-866-764-5454 CAN: 1-800-265-0502 Copyright© 2013 Eaton's Crouse-Hinds Business

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**Ordering Information - Chico X Fiber**

Net Weight	Cat. #
2 oz.	<b>Chico X4</b>
8 oz.	<b>Chico X6</b>
1 lb.	<b>Chico X7</b>

**Chart for Approximate Amount of Fiber Per Hub**

Hub Size	Ozs. Required
1/2	1/32
3/4	1/16
1	1/8
1 1/4	1/4
1 1/2	1/2
2	1
2 1/2	1 1/2
3	2
3 1/2	3
4	4 1/2
5	7
6	10

**Ordering Information - Chico SpeedSeal**

Class I, Div. 1, Groups C &amp; D and Class II, Div. 1, Groups E, F and G



Sealing Fitting Cat. #	Amount of SpeedSeal Material Needed (in Ounces) per Fitting	Suggested SpeedSeal Cat. #	Required Cartridge Quantity
EYS1, EYS16; EYS11, EYS116 EYD1, EYD16, EYD11, EYD116 EYS2, EYS26, EYS21, EYS216 EYD2, EYD26, EYD21, EYD216 EYSX11, EYDX11	1	<b>CHICO SS2</b> (2 oz. Cartridge)	1
EYS3, EYS36, EYS31, EYS316 EYD3, EYD36, EYD31, EYD316 EYSX21, EYDX21	2	<b>CHICO SS2</b> (2 oz. Cartridge)	1
EYS41, EYS416, EYS4, EYS46 EYD4, EYD46, EYD41, EYD416 EYSX31, EYDX31	3	<b>CHICO SS6</b> (6 oz. Cartridge)	1
EYSX41, EYDX41 EYD5, EYD56, EYD51, EYD516 EYS51, EYS516, EYS5, EYS56 EYSX51, EYDX51 EYD6, EYD66, EYD61, EYD616 EYS61, EYS616, EYS6, EYS66	6	<b>CHICO SS6</b> (6 oz. Cartridge)	1

MSDS sheets are available at [www.crouse-hinds.com](http://www.crouse-hinds.com)

## Conduit Sealing Fittings

**Chico Sealing Compound  
and Fiber see pages 155–156**

Cl. I, Div. 1 & 2, Groups A, B, C, D Explosionproof  
Cl. II, Div. 1, Groups E, F, G Dust-Ignitionproof  
Cl. II, Div. 2, Groups F, G  
Cl. III

### Applications:

EYS and EZS sealing fittings:

- Restrict the passage of gases, vapors or flames from one portion of the electrical installation to another at atmospheric pressure and normal ambient temperatures

- Limit explosions to the sealed off enclosure

- Limit precompression or pressure "piling" in conduit systems

Sealing fittings are required:

- At each entrance to an enclosure housing an arcing or sparking device when used in Class I, Division 1 and 2 hazardous locations. To be located as close as practicable and, in no case, more than 18" from such enclosures
- At each conduit entrance of 2" size or larger to an enclosure or fitting housing terminals, splices or taps when used in Class I, Division 1 hazardous locations. To be located as close as practicable and, in no case, more than 18" from such enclosures
- In conduit systems when leaving Class I, Division 1 or Division 2 hazardous locations
- In cable systems when the cables either do not have a gas/vaportight continuous sheath or are capable of transmitting gases or vapors through the cable core when those cables leave the Class I, Division 1 or Division 2 hazardous locations

### Features:

EYS and EZS sealing fittings include:

- Minimum turning radius
- Large openings with threaded closures to provide easy access to conduit hubs for making dams
- Integral bushings in conduit hubs to protect conductor insulation from damage
- Taper-tapped hubs to ensure ground continuity

EYS sealing fittings are available for installation in either vertical only or in both horizontal or vertical positions.

EZS sealing fittings for installation at any angle; the covers with opening for sealing compound can be properly positioned to accept the compound.

### Certifications and Compliances:

- NEC/CEC:

**EYS1-3, 11-31, 16-36, 116-316**

Class I, Division 1 & 2, Groups A, B, C, D

Class II, Division 1, Groups E, F, G

Class II, Division 2, Groups F, G

Class III

**EYS41-101, 416-1016**

Class I, Division 1 & 2, Groups B, C, D

Class II, Division 1, Groups E, F, G

Class II, Division 2, Groups F, G

Class III

**EYS29, 4-014, 46-0146**

**EZS1-8, 16-86**

Class I, Division 1 & 2, Groups C, D

Class II, Division 1, Groups F, G

Class II, Division 2, Groups F, G

Class III

- UL Standard: 1203

- CSA Standard: C22.2

Sealing fittings are approved for use in hazardous locations only when *Chico*® X fiber and *Chico A* sealing compound or Chico SpeedSeal are used to make the seal.

### Standard Materials:

- Bodies – *Feraloy*® iron alloy and/or ductile iron
- Plugs – *Feraloy* iron alloy and/or steel
- Removable nipples – steel

### Standard Finishes:

- *Feraloy* iron alloy and ductile iron – electrogalvanized and aluminum acrylic paint
- Steel – electrogalvanized

### Options:

#### Description

Copper-free aluminum bodies, nipples and enclosures

Suffix  
SA

### Size Ranges:

- ½" – 6"

### Ordering Information - EYS



Vertical  
female



Vertical  
male &  
female



Vertical or  
horizontal  
female



Vertical or  
horizontal  
male & female

### For Sealing in Vertical Positions Only

Hub Size	Female Hub Cat. #	Male & Female Hub Cat. #	Approximate Internal Volume in Cubic Inches
½	EYS1*	EYS16*	1
¾	EYS2*	EYS26*	2
1	EYS3*	EYS36*	3¾

### For Sealing in Vertical or Horizontal Positions

Hub Size	Female Hub Cat. #	Male & Female Hub Cat. #	Approximate Internal Volume in Cubic Inches	
			Vertical	Horizontal
½	EYS11*	EYS116*	1	1
¾	EYS21*	EYS216*	2	2
1	EYS31*	EYS316*	3	3¾
1¼	EYS41	EYS416	6	8
1½	EYS51	EYS516	10¾	12¼
2	EYS61	EYS616	19	22¾
2½	EYS71	EYS716	25½	30
3	EYS81	EYS816	56	64½
3½	EYS91	EYS916	72	82
4	EYS101	EYS1016	95	110

\*Available in copper-free aluminum – to order, add suffix SA to Cat. No.

### Dimensions (In Inches)

#### EYS 16 Series

Size	a	b	Turning Radius
½	3 <sup>9</sup> / <sub>32</sub>	1¼	1 <sup>5</sup> / <sub>8</sub>
¾	3 <sup>12</sup> / <sub>16</sub>	1½	1 <sup>29</sup> / <sub>32</sub>
1	4 <sup>5</sup> / <sub>16</sub>	1¾	2 <sup>3</sup> / <sub>8</sub>

#### EYS 46 Series

Size	a	b	Turning Radius
1¼	5 <sup>1</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	1 <sup>23</sup> / <sub>32</sub>
1½	5½	2 <sup>7</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>16</sub>
2	6¼	3	2 <sup>5</sup> / <sub>16</sub>
2½	7½	3½	2 <sup>11</sup> / <sub>16</sub>
3	8½	4¼	3 <sup>5</sup> / <sub>16</sub>
3½	9 <sup>9</sup> / <sub>16</sub>	4¾	3 <sup>7</sup> / <sub>16</sub> ‡
4	9¾	5¼	3 <sup>11</sup> / <sub>16</sub> ‡
5	11 <sup>1</sup> / <sub>16</sub>	6½	4 <sup>19</sup> / <sub>32</sub> ‡
6	12 <sup>1</sup> / <sub>8</sub>	7 <sup>5</sup> / <sub>8</sub>	5 <sup>11</sup> / <sub>32</sub> ‡

‡With cover removed.

#### EYS 116 Series

a	b	Turning Radius
3 <sup>11</sup> / <sub>16</sub>	1¼	1 <sup>23</sup> / <sub>32</sub>
3 <sup>11</sup> / <sub>16</sub>	1½	1¼
4 <sup>5</sup> / <sub>16</sub>	1¾	1 <sup>5</sup> / <sub>8</sub>

#### EYS 116 Series

a	b	Turning Radius
5 <sup>1</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	1 <sup>23</sup> / <sub>32</sub>
5½	2 <sup>7</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>16</sub>
6¼	3	2 <sup>5</sup> / <sub>16</sub>
7½	3½	2 <sup>11</sup> / <sub>16</sub>
8½	4¼	3 <sup>5</sup> / <sub>16</sub>
9 <sup>9</sup> / <sub>16</sub>	4¾	3 <sup>7</sup> / <sub>16</sub> ‡
9¾	5¼	3 <sup>11</sup> / <sub>16</sub> ‡

**Crouse-Hinds**  
by **E.T.N**

# Conduit Sealing Fittings

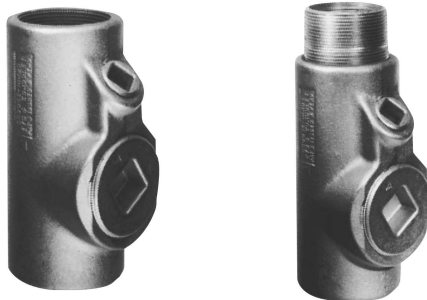
Chico Sealing Compound  
and Fiber see pages 155–156

Cl. I, Div. 1 & 2, Groups C, D  
Cl. II, Div. 1, Groups E, F, G  
Cl. II, Div. 2, Groups F, G  
Cl. III

Explosionproof  
Dust-Ignitionproof

6F

## Ordering Information - EYS



Vertical or horizontal male & female

## Ordering Information - EZS



Male & female hub

### For Sealing in Vertical or Horizontal Positions

Hub Size	Female Hub Cat. #	Male & Female Hub Cat. #	Approximate Internal Volume in Cubic Inches	
			Vert.	Horiz.
1¼	EYS4*	EYS46*	6	8
1½	EYS5*	EYS56*	10¾	12¼
2	EYS6*	EYS66*	19	22¾
2½	EYS7*	EYS76*	25½	30
3	EYS8*	EYS86*	56	64½
3½	EYS9*	EYS96*	72	82
4	EYS10*	EYS106*	95	110
5	EYS012	EYS0126	200	222
6	EYS014	EYS0146	290	315

\*Available in copper-free aluminum – to order, add suffix SA to Cat. No.

### For Sealing at Any Angle

Hub Size	Female Hub Cat. #	Male & Female Hub Cat. #	Approximate Internal Volume in Cubic Inches	
			Vert.	Horiz.
½	EZS1	EZS16	6¼	6¼
¾	EZS2	EZS26	6½	6½
1	EZS3	EZS36	10¼	10¼
1¼	EZS4	EZS46	12½	12½
1½	EZS5	EZS56	14½	14½
2	EZS6	EZS66	46	46
2½	EZS7	EZS76	55	55
3	EZS8	EZS86	90	90

## EYS



Elbow seal

### For Sealing in Vertical Positions

Hub Size	Cat. #	Approximate Internal Volume in Cubic Inches
¾	EYS29	1¾

## Dimensions In Inches

EYS 16 Series	EYS 46 and EYS 116 Series	EYS Elbow Seal	EZS Series

### EYS Elbow Seal

Size	a	b	Turning Radius (Vertical)
¾	3 11/16	1¾	1 7/8

### EZS Series

Size	a	b	c	Turning Radius†
½	4 9/16	3 5/8	2 ½	1 7/8
¾	4 3/16	3 5/8	2 ½	1 7/8
1	4 15/16	3 31/32	3	2 1/8
1¼	5 1/16	4 13/32	3	2 9/16
1½	5 3/16	4 9/16	3 ¼	2 11/32
2	7 1/16	5 13/32	5 3/16	3 9/32
2½	7 15/16	5 27/32	5 3/16	3 7/8
3	8 5/8	6 ½	5 7/8	3 7/8

†With cover removed.

## Crouse-Hinds

by E.T.N

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**CRESCENT**  
ELECTRIC  
SUPPLY COMPANY

**PVC CONDUIT, ELBOWS & FITTINGS**

**Submittals Prepared by IES  
and Crescent Electric Supply**

November 10, 2010

Heritage Plastics created the long bell for ease and efficiency. In compliance with the industry standards, Heritage Plastics PVC Electrical Conduit is manufactured from virgin PVC compounds complying with the UL651 standards as described in the standards specifications for rigid PVC compounds ASTM D 1784-81. Our PVC Electrical Conduits are subject to in-process quality control to assure compliance with appropriate manufacturing and performance standards.

- UL 651
- RUS Listed
- NEMA TC-2
- NEMA TC-3
- UL Standard 514 B (Accessories)
- General Service Administration (GSA) WC 1094A
- National Electric Code - Article 352
- Sunlight and Weather resistant
- Reduced emissions of smoke & HCL
- Listed for 90° C conductors or cable and direct sunlight
- Rigid nonmetallic raceway for wires and cables in accordance with the NEC
- Superior weathering characteristics

<b>Schedule 40 Electrical Conduit</b>							
<b>10' Part #</b>	<b>20' Part #</b>	<b>Nominal Size</b>	<b>Weight 100'</b>	<b>Pack Qty 10'</b>	<b>O.D.</b>	<b>I.D.</b>	<b>Wall</b>
51051	51052	½"	16.4	6,000'	.840	.622	.109
51071	51072	¾"	21.8	4,400'	1.050	.824	.113
51101	51102	1"	32.1	3,600'	1.315	1.049	.133
51131	51132	1 ¼"	43.4	3,300'	1.660	1.380	.140
51151	51152	1 ½"	51.8	2,250'	1.900	1.610	.145
51201	51202	2"	69.5	1,400'	2.375	2.067	.154
51251	51252	2 ½"	109.6	930'	2.875	2.469	.203
51301	51302	3"	143.5	880'	3.500	3.068	.216
51351	51352	3 ½"	169.1	630'	4.000	3.548	.226
51401	51402	4"	204.3	570'	4.500	4.026	.237
51501	51502	5"	277.6	380'	5.563	5.047	.258
51601	51602	6"	360.0	260'	6.625	6.065	.280

# ELECTRICAL CONDUIT



## SUBMITTAL AND DATA SHEET

### SCHEDULE 40 AND SCHEDULE 80 CONDUIT NSF NRTL\* ANSI/UL 651 AND NEMA TC-2

RIGID NON-METALLIC CONDUIT FOR USE IN BOTH ABOVE GROUND AND UNDERGROUND INSTALLATIONS

#### SCHEDULE 40 CONDUIT

Rated for 90°C Conductors

SIZE	AVERAGE O.D.	NOM. I.D.	MIN. T.	APPROX. WT/100 FT
1/2	0.840	0.622	0.109	18
3/4	1.050	0.824	0.113	24
1	1.315	1.049	0.133	33
1-1/4	1.660	1.380	0.140	45
1-1/2	1.900	1.610	0.145	56
2	2.375	2.067	0.154	76
2-1/2	2.875	2.469	0.203	126
3	3.500	3.068	0.216	163
3-1/2	4.000	3.548	0.226	197
4	4.500	4.026	0.237	234
5	5.563	5.047	0.258	319
6	6.625	6.065	0.280	411
8 ::	8.625	7.942	0.322	622

Schedule 40 is furnished in standard 10' lengths with one bell end.

20' lengths are available upon request.

:: Non-UL or -NSF listed

#### SCHEDULE 80 CONDUIT

Rated for 90°C Conductors

SIZE	AVERAGE O.D.	NOM. I.D.	MIN. T.	APPROX. WT/100 FT
1/2	0.840	0.546	0.147	22
3/4	1.050	0.742	0.154	30
1	1.315	0.957	0.179	42
1-1/4	1.660	1.278	0.191	60
1-1/2	1.900	1.500	0.200	72
2	2.375	1.939	0.218	98
2-1/2	2.875	2.323	0.276	160
3	3.500	2.900	0.300	213
3 1/2	4.000	3.364	0.318	256
4	4.500	3.826	0.337	310
5	5.563	4.813	0.375	430
6	6.625	5.761	0.432	590

Schedule 80 is furnished in standard 10' lengths with one bell end.

20' lengths are available upon request.

\* NATIONAL RECOGNIZED TESTING LABORATORY (NRTL) BY OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (OHSA)

# ELECTRICAL CONDUIT

## SUBMITTAL AND DATA SHEET

### POWER AND COMMUNICATION DUCT FOR CONCRETE ENCASEMENT

#### TYPE EB20\* : : <sup>1</sup>

Rated for 90°C Cable

SIZE	AVERAGE O.D.	NOM. I.D.	*MIN. T.	APPROX. WT/100 FT
2	2.375	2.255	0.060	36
3	3.500	3.378	0.061	56
4	4.500	4.336	0.082	91
5	5.563	5.357	0.103	141
6	6.625	6.375	0.125	198

<sup>1</sup> Type EB20 also complies with ANSI/UL 651 A

#### TYPE EB35\* : :

Rated for 90°C Cable

SIZE	AVERAGE O.D.	NOM. I.D.	*MIN. T.	APPROX. WT/100 FT
3	3.500	3.348	0.076	68
4	4.500	4.300	0.100	109
5	5.563	5.311	0.126	168
6	6.625	6.321	0.152	235

\* Based on 500,000 psi Modulus

: : Conduit furnished with one bell end per 20-foot length.

: : JM Eagle™ Type EB duct is designed for concrete encasement installations and complies with NEMA TC-6 & TC-8 and ASTM F512.

I.D. : Inside Diameter

O.D. : Outside Diameter

T. : Wall Thickness

# ELECTRICAL CONDUIT

## SUBMITTAL AND DATA SHEET

### POWER AND COMMUNICATION DUCT FOR DIRECT BURIAL

#### TC-6 & TC-8 TYPE DB60\* ::

Rated for 90°C Cable

SIZE	AVERAGE O.D.	NOM. I.D.	*MIN. T.	APPROX. WT/100 FT
2	2.375	2.255	0.060	36
3	3.500	3.316	0.092	79
4	4.500	4.258	0.121	129
5	5.563	5.259	0.152	197
6	6.625	6.261	0.182	279

\* Based on 500,000 psi Modulus

#### TC-6 & TC-8 TYPE DB100\* ::

Rated for 90°C Cable

SIZE	AVERAGE O.D.	NOM. I.D.	*MIN. T.	APPROX. WT/100 FT
3	3.500	3.276	0.112	91
3 1/2	4.000	3.744	0.128	120
4	4.500	4.212	0.145	152
5	5.563	5.207	0.179	231
6	6.625	6.201	0.213	328

\* Based on 500,000 psi Modulus

#### TC-6 & TC-8 TYPE DB120\* ::

Rated for 90°C Cable

SIZE	AVERAGE O.D.	NOM. I.D.	*MIN. T.	APPROX. WT/100 FT
1	1.315	1.195	0.060	20
1-1/2	1.900	1.780	0.060	29
2	2.375	2.221	0.077	44
3	3.500	3.264	0.118	97
4	4.500	4.192	0.154	160
5	5.563	5.181	0.191	245
6	6.625	6.171	0.227	347

\* Based on 500,000 psi Modulus

:: Conduit furnished with one (1) bell end per 20' length.

:: JM Eagle™ Type DB duct is designed for direct burial installations and complies with NEMA TC-6 & 8 and ASTM F512.

400,000 psi Modulus available upon request.

# ELECTRICAL CONDUIT

## SUBMITTAL AND DATA SHEET

### TELEPHONE DUCT

CAO 8546 TYPE C\* ::

Rated for 90°C Cable

SIZE	AVERAGE O.D.	NOM. I.D.	*MIN. T.	APPROX. WT/100 FT
4	4.350	4.044	0.149	147

\* Based on 500,000 psi Modulus

400,000 psi Modulus available upon request.

:: GTS - 8342 and HDPE Tele Duct available upon request

:: JM Eagle™ Type C PVC duct is designed for direct burial installations of telephone cables and complies with CAO 8546.

I.D. : Inside Diameter

O.D. : Outside Diameter

T. : Wall Thickness



# ELECTRICAL CONDUIT

## SUBMITTAL AND DATA SHEET

### RIGID UTILITY CONDUIT

#### SCHEDULE 40 UTILITY

NORM. PIPE SIZ (IN)	O.D. (IN)	NOM. I.D. (IN)	*MIN. T. (IN)	APPROX. WEIGHT (WT/100FT)
2	2.375	2.05	0.154	82
3	3.500	3.04	0.216	174
4	4.500	4.00	0.237	242
5	5.563	5.02	0.258	336
6	6.625	6.03	0.280	462

Pipe color is gray. Other colors may be available on request.

Pipe is produced with integral solvent weld bells. Plain end conduit may be available on request.

Available in 20 foot lengths. 10 foot lengths may be available.

For direct earth burial and concrete encasement.

Specifically designed for power utility specifications.

Non UL or NSF Listed.

# ELECTRICAL CONDUIT

## SUBMITTAL AND DATA SHEET

### “GAS SLEEVE” PIPE

#### SCHEDULE 40

NOM. PIPE SIZE (IN)	O.D. (IN)	NOM. I.D. (IN)	MIN. T. (IN)	APPROX. WEIGHT (LBS/FT)
1	1.315	1.03	0.133	0.35
1 - 1/2	1.900	1.59	0.145	0.57
2	2.375	2.05	0.154	0.77
3	3.500	3.04	0.216	1.59
4	4.500	4.00	0.237	2.27
6	6.625	6.03	0.280	3.99
8	8.625	7.94	0.322	6.01
10	10.750	9.98	0.365	8.51
12	12.750	11.89	0.406	11.26

#### SCHEDULE 26

NOM. PIPE SIZE (IN)	O.D. (IN)	NOM. I.D. (IN)	MIN. T. (IN)	APPROX. WEIGHT (LBS/FT)
1 - 1/4	1.660	1.52	0.064	0.23
1 - 1/2	1.900	1.75	0.073	0.30
2	2.375	2.18	0.091	0.47
3	3.500	3.21	0.135	1.02
4	4.500	4.13	0.173	1.68
6	6.625	6.08	0.255	3.65
8	8.625	7.92	0.332	6.18
10	10.750	9.87	0.413	9.59
12	12.750	11.71	0.490	13.49

Pipe color is yellow.

Pipe is produced with integral solvent weld bells.

Available in 20 foot lengths. 10 foot lengths may be available.

The function of the pipe is a sleeve pipe. No pressure rating implied.

The PVC “Gas Sleeve” pipe shall not be used for transmission of natural gas.

This data sheet does not purport to address all the safety problems associated with its use.

It is the responsibility of whoever uses the gas sleeve to consult and establish safety and health practices and to determine the applicability of regulatory limitations prior to use.



## PVC Rigid Electrical Conduit

# Schedule 40 Conduit



Tested and Certified by NSF International  
to **UL 651**

Conduit is manufactured to be in conformance with NEMA TC 2 and UL 651.

Designed and produced for use in both above ground and below ground applications.

Product manufactured with one integral solvent-weld bell standard per length.

Part Number		Size	Dimensions (inches)		Minimum Wall (inches)	Approximate Weight per 100'	Standard Crate Quantity	
10'	20'		OD (Avg)	ID (Approx)			10'	20'
4005010	4005020	½"	0.840	0.60	0.109	16	6,000	12,000
4007510	4007520	¾"	1.050	0.80	0.113	21	4,400	8,800
4010010	4010020	1"	1.315	1.03	0.133	31	3,600	7,200
4012510	4012520	1 ¼"	1.660	1.36	0.140	42	3,300	6,600
4015010	4015020	1 ½"	1.900	1.59	0.145	51	2,250	4,500
4020010	4020020	2"	2.375	2.04	0.154	71	1,400	2,800
4025010	4025020	2 ½"	2.875	2.44	0.203	113	930	1,860
4030010	4030020	3"	3.500	3.03	0.216	164	880	1,760
4035010	4035020	3 ½"	4.000	3.51	0.226	197	630	1,260
4040010	4040020	4"	4.500	3.99	0.237	233	570	1,140
4050010	4050020	5"	5.563	5.01	0.258	316	380	760
4060010	4060020	6"	6.625	6.02	0.280	411	260	520

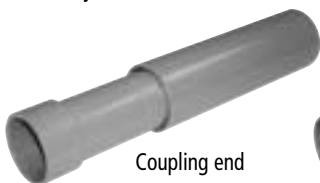
# Rigid Nonmetallic Conduit – Couplings

## Expansion Fittings

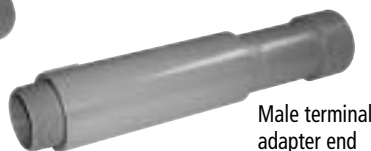
(For Use with Schedule 40 & 80 Conduit)

E945 series expansion fittings are designed to compensate for length changes due to temperature variations in exposed conduit runs.

- EXCLUSIVE Molded in Mid-point indicator on the piston.
- EXCLUSIVE 2" Expansion Fitting with an 8" travel distance.
- Two-piece molded design with lubricated seals for easier movement for the life of the product.
- Ridges on the fitting for easier installation (Sizes 2" through 6" only).
- Male terminal Adapter End design (1/2" – 2" NPT Threads, and 2 1/2" – 6" NPSC Threads).
- Two O-Rings to prevent leakage.
- Can be installed vertically or horizontally.



Coupling end



Male terminal adapter end

Coupling End Part No.	Male Terminal Adapter End Part No.	Size	Std. Ctn. Qty.	Travel Length (in.)
E945D	E945DX	1/2	20	4"
E945E	E945EX	3/4	15	4"
E945F	E945FX	1	10	4"
E945G	E945GX	1 1/4	5	4"
E945H	E945HX	1 1/2	5	4"
E945J	E945JX	2	15	8"
E945K	E945KX	2 1/2	10	8"
E945L	E945LX	3	10	8"
E945M	E945MX	3 1/2	5	8"
E945N	E945NX	4	5	8"
E945P	E945PX	5	1	8"
E945R	E945RX	6	1	8"



## Couplings

### Standard Couplings

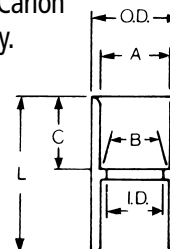


Except where noted by ►

All socket fittings should be attached Using Carlon solvent cement. Using Carlon fittings with Carlon nonmetallic conduit insures system integrity.



Socket type for joining nonmetallic conduit.



Part No.	Size	Std. Ctn. Qty.	A Typical	B Typical	I.D.	O.D.	C Typical	L Typical
E940D	1/2	150	.852	.836	.728	17/64	11/16	1 1/2
E940E	3/4	100	1.064	1.046	.840	15/16	3/4	1 5/8
E940F	1	50	1.330	1.310	1.210	15/8	15/16	2
E940G	1 1/4	30	1.677	1.655	1.535	163/64	1	2 1/8
E940H	1 1/2	25	1.918	1.894	1.755	215/64	1 1/8	2 3/8
E940J	2	30	2.393	2.369	2.190	247/64	13/16	2 1/2
E940K	2 1/2	20	2.890	2.868	2.688	35/16	133/64	3 3/16
E940K-CAR	2 1/2	4	2.890	2.868	2.688	35/16	133/64	3 3/16
E940L	3	25	3.515	3.492	3.375	331/32	13/4	3 13/32
E940L-CAR	3	5	3.515	3.492	3.375	331/32	13/4	3 13/32
E940M	3 1/2	20	4.015	3.992	3.780	49/16	13/4	3 5/8
E940N	4	15	4.515	4.491	4.265	53/32	125/32	3 3/4
E940N-CAR	4	5	4.515	4.491	4.265	53/32	125/32	3 3/4
E940P	5	8	5.593	5.553	5.097	61/4	15/16	4 1/16
E940R	6	5	6.658	6.614	6.115	71/2	23/16	4 5/8

## Special Long Line Couplings



Long Line Couplings

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E941H	1 1/2	40	9
E941J	2	25	8
E941K	2 1/2	15	8
E941L	3	15	14
E941N	4	10	15
E941PF	5	4	12
► E941RF	6	5	21

## Short Expansion Couplings

(Expands to a maximum of 2")



Part No.	Size	Std. Ctn. Qty.
E955D	1/2	40
E955E	3/4	40
E955F	1	25
E955G	1 1/4	15
E955H	1 1/2	10
E955J	2	6



## Fabricated Expansion Couplings



Part No.	Size	Std. Ctn. Qty.	Travel Length (in.)
E945KXL	2 1/2	10	12

## Couplings

### Special Long Line Couplings – Sleeve Couplings



Sleeve Coupling (For Repair Work)  
No Internal Stop

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
► E948H	1½	25	6
► E948J	2	25	5
► E948K	2½	25	16
► E948L	3	25	13
► E948N	4	10	8
► E948P	5	14	33
► E948R	6	6	16
► E948JR	2" (6" long)	15	8
► E948JS	2" (Sch. 40 Split Duct)	25	6
► E948L12	3" (12" long)	1	1
► E948L6	3" (6" long)	15	15
► E948LS	3" (Sch. 40 Split Duct)	25	17
► E948N12	4" (12" long)	10	28
► E948N7	4" (7" long)	15	25
► E948NS	4" (Sch. 40 Split Duct)	10	15
► E948PS	5" (Sch. 40 Split Duct)	1	2
► E948R10	6" (10" long)	6	25
► E948R12	6" (12" long)	6	25
► E948RS	6" (Sch. 40 Split Duct)	1	2

## Adapters

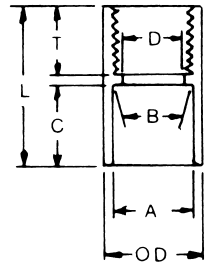
### Female Adapters



For adapting nonmetallic conduits to threaded fittings, metallic systems. Female threads on one end, socket end on other.



Except where noted by ►



Part No.	Size	Std. Ctn. Qty.	A Typical	B Typical	Min. D	Max. OD	C	T Typical	L
E942D	1/2	150	.852	.836	.620	17/64	11/16	3/4	19/16
E942E	3/4	100	1.064	1.046	.822	15/16	13/16	3/4	15/8
E942F	1	50	1.330	1.310	1.046	15/8	15/16	7/8	115/16
E942G	1¼	30	1.677	1.655	1.377	163/64	1	7/8	2
E942H	1½	25	1.918	1.894	1.607	25/32	11/8	7/8	27/32
E942J	2	30	2.393	2.369	2.064	247/64	13/16	1	25/16
E942K	2½	20	2.890	2.868	2.450	311/32	15/8	11/8	215/16
E942K-CAR	2½	4	2.890	2.868	2.450	311/32	15/8	11/8	215/16
E942L	3	25	3.515	3.492	3.000	331/32	13/4	11/8	31/16
E942L-CAR	3	3	3.515	3.492	3.000	331/32	13/4	11/8	31/16
E942M	3½	20	4.015	3.992	3.500	41/2	17/8	11/8	31/4
E942N	4	15	4.515	4.491	4.000	51/64	2	11/8	313/64
E942N-CAR	4	7	4.515	4.491	4.000	51/64	2	11/8	313/64
E942NX9*	4	15	(Call for information)						
E942P	5	8	5.593	5.553	5.047	61/4	115/16	11/16	33/16
E942R	6	6	6.658	6.614	6.055	71/4	21/8	11/16	33/8
E942RX*	6	6	(Call for information)						

\* Long Line Adapter

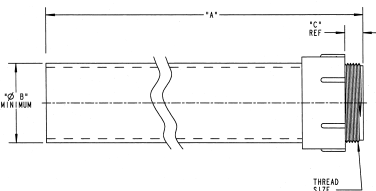
## Special Schedule 40 Swedge Couplings

\*Consult factory for additional sizes



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
► E442K	2½	20	13
► E442R	6	6	27
► E442T	8	2	17

## Risers Schedule 40

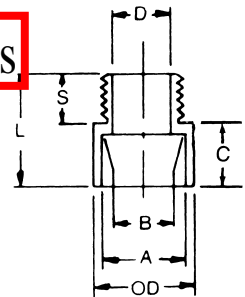


Part No.	Size	A (Length)	B (Min.)	C	Thread Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E954HX	1½	80.00	1.567	.950	1½" NPT	1	3.8
E954J	2	60.00	2.024	.825	2" NPT	1	3.7
E954JX	2	80.00	2.024	.825	2" NPT	1	5.0
E954K	2½	60.00	2.418	.812	2½" NPSC	1	6.0
E954KX	2½	80.00	2.418	.812	2½" NPSC	1	8.4
E954L	3	60.00	3.012	.798	3" NPSC	1	8.7
E954LX	3	80.00	3.012	.798	3" NPSC	1	11.0

## Male Terminal Adapters



For adapting nonmetallic conduits to boxes, threaded fittings, metallic systems. Male threads on one end, socket end on other.



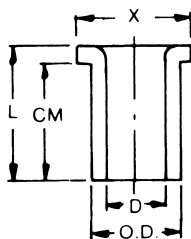
Part No.	Size	Std. Ctn. Qty.	A Typical	B Typical	Min. D	Max. OD	C	S Typical	L
E943D	1/2	150	.852	.836	.597	11/8	5/8	9/16	15/16
E943E	3/4	125	1.064	1.046	.800	111/32	3/4	9/16	13/8
E943F	1	50	1.330	1.310	1.018	15/8	1	11/16	125/32
E943G	1¼	50	1.677	1.655	1.332	21/32	1	3/4	115/16
E943H	1½	25	1.918	1.894	1.566	25/32	13/16	3/4	21/16
E943J	2	50	2.393	2.369	2.000	221/32	13/16	3/4	21/8
E943K	2½	25	2.890	2.868	2.376	35/16	13/4	7/8	27/8
E943K-CAR	2½	5	2.890	2.868	2.376	35/16	13/4	7/8	27/8
E943L	3	45	3.515	3.492	2.954	4	115/16	7/8	31/16
E943L-CAR	3	5	3.515	3.492	2.954	4	115/16	7/8	31/16
E943M	3½	30	4.015	3.992	3.440	41/2	27/16	17/8	37/16
E943N	4	20	4.515	4.491	3.940	53/32	23/8	7/8	31/2
E943N-CAR	4	20	4.515	4.491	3.940	53/32	23/8	7/8	31/2
E943P	5	5	5.593	5.553	4.815	61/4	21/3	1	315/16
E943R	6	10	6.658	6.614	5.860	71/2	23/8	1	33/8

## Adapters

### Box Adapters for Enclosures



Adapts nonmetallic conduit to all electrical enclosures by inserting adapter through knockout and cementing into Carlon couplings.



Part No.	Size	Std. Ctn. Qty.	Min D	OD Typical	Max X	CM Typical	L
E996D	1/2	100	.662	.840	17/64	23/32	27/32
E996E	3/4	100	.824	1.050	1 21/64	25/32	29/32
E996F	1	100	1.049	1.315	1 5/8	61/64	1 3/32
E996G	1 1/4	50	1.380	1.660	1 31/32	1 1/16	1 1/4
E996H	1 1/2	50	1.610	1.900	2 13/64	1 3/16	1 3/8
E996J	2	25	2.067	2.375	2 29/32	1 1/4	1 7/16
E996K-CAR	2 1/2	10	2.469	2.875	3 7/16	1 7/8	1 15/16
E996L	3	20	3.068	3.500	4 1/8	2	2 1/16
E996L-CAR	3	5	3.068	3.500	4 1/8	2	2 1/16
E996N	4	10	4.026	4.500	5 1/8	2 1/2	2 1/4

### Threaded Adapters



Part No.	Size	Std. Ctn. Qty.
E9842D <sup>1</sup>	1/2	25
E9842E <sup>2</sup>	3/4	25

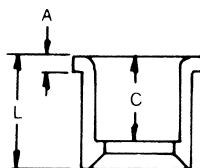
<sup>1</sup> Fits 3/4" sockets    <sup>2</sup> Fits 1" sockets

## Reducers

### Reducer Bushings



For connecting different sizes of conduit. Bell x Spigot.



Part No.	Size	Std. Ctn. Qty.	L Typical	A Typical	C Typical
E950ED	3/4" x 1/2"	100	15/32	13/64	11/32
E950FD-CAR	1" x 1/2"	25	1 11/32	3/16	57/64
E950FE	1" x 3/4"	100	1 11/32	3/16	11/64
E950GE-CAR	1 1/4" x 3/4"	10	1 15/32	3/16	11/64
E950GF	1 1/4" x 1"	50	1 15/32	3/16	19/64
E950HF-CAR	1 1/2" x 1"	10	1 19/32	3/16	19/64
E950HG-CAR	1 1/2" x 1 1/4"	10	1 19/32	3/16	117/64
E950JG-CAR	2" x 1 1/4"	10	1 3/4	7/32	117/64
E950JH-CAR	2" x 1 1/2"	10	1 3/4	7/32	125/64
E950KJ-CAR	2 1/2" x 2"	10	2 5/32	3/8	127/64
E950LJ-CAR	3" x 2"	10	2 1/8	1/4	17/8
► E950LK	3" x 2 1/2"	25	1 15/16	1/4	1 11/16
E950NL	4" x 3"	25	2 3/4	5/16	1 15/16

## Reducers

### Fabricated Reducers



Fabricated Reducers  
(Male x Male)

Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
► E952KJ	2 1/2" x 2"	48	28
► E952LJ	3" x 2"	36	21
► E952LK	3" x 2 1/2"	36	31
► E952NL	4" x 3"	15	23
► E952NM	4" x 3 1/2"	15	25
► E952PN	5" x 4"	12	26
► E952RP	6" x 5"	10	31

## Plugs

### Reducer Plugs



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
► E971C	3/4" x 1/2"	100	2
► E971D	1" x 3/4"	100	3

### Plugs (Polyethylene)



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
► P258H	1 1/2"	50	2
► P258K	2 1/2"	25	1.5

### Plugs with Pull Tabs (Polyethylene)



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
► P258JT	2	60	3
► P258LT	3	30	3
► P258NT	4	48	8
► P258PT	5	30	6
► P258RT	6	30	9

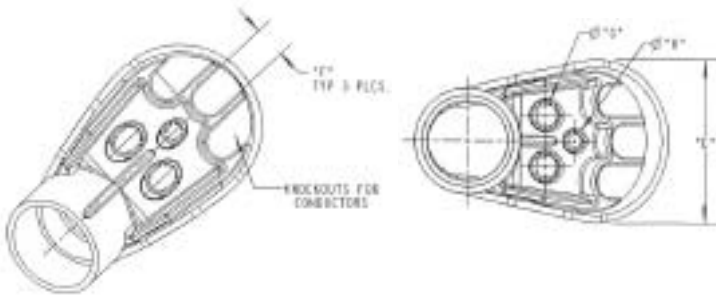


## Caps

### Service Entrance Caps



Part No.	Size	Std. Ctn. Qty.	Dimensions (in.)		
			F	G	H
E998D	1/2	5	.45	.45	—
E998E	3/4	20	.45	.45	—
E998E-CAR	3/4	5	.45	.45	—
E998F	1	15	.59	.58	—
E998F-CAR	1	5	.59	.58	—
E998G-CAR	1 1/4	5	.74	.71	.50
E998H-CAR	1 1/2	5	.74	.71	.50
E998J-CAR	2	5	.83	.78	.56
E998K-UPC	2 1/2	2	1.70	1.31	1.00
E998L	3	2	1.70	1.31	1.00
E998N	4	2	2.25	1.88	1.31



### End Caps



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
► E958D	1/2	100	3
► E958E	3/4	100	4
► E958F	1	75	5
► E958G	1 1/4	40	4
► E958H	1 1/2	30	4
► E958J	2	25	5
► E958K	2 1/2	10	4
► E958L	3	10	5
► E958N	4	5	17
► E958P	5	5	11
► E958R	6	5	13

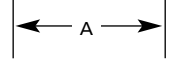
### PVC Riser Caps



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
► E935J	2	25	9
► E935L	3	25	18
► E935N	4	25	18
► E935P	5	25	35
► E935R	6	10	13

## Offsets

### Meter Offset



Part No.	Size	Std. Ctn. Qty.	Offset	A
► E995G	1 1/4	15	0.758	4.230
E995G-CTN	1 1/4	6	0.758	4.230
► E995J	2	8	0.684	4.270

### Offset



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
► E994DR-CAR	1/2	25	3
► E994ER-CAR	3/4	15	2
► E994F	1	50	12

## End Bells

### End Bells



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
► E997F	1	50	1
► E997F-CAR	1	15	1
► E997G	1 1/4	35	1
► E997G-CAR	1 1/4	15	1
► E997H	1 1/2	30	1
► E997H-CAR	1 1/2	10	1
► E997J	2	40	1
► E997J-CAR	2	10	1
► E997K	2 1/2	30	2
► E997K-CAR	2 1/2	10	2
► E997L	3	50	2
► E997L-CAR	3	10	2
► E997M	3 1/2	40	10
► E997N	4	30	11
► E997P	5	15	10
► E997R	6	10	7.4
► E997T	8	3	14.55

### Fabricated End Bells Schedule 40



Part No.	Size	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
E949J5	2" x 5"	50	10
E949J6	2" x 6"	25	12
E949JN	2" x 4"	25	7
E949JX	2" x 8"	12	7
E949LR	3" x 6"	20	21
E949N5	4" x 5"	20	2
E949NR	4" x 6"	15	21
E949R5	6" x 5"	12	27
E949RX	6" x 8"	6	17

## Washers

### Flat Sealing Washer

Where a waterproof termination is required into any enclosure (metallic or nonmetallic), install the neoprene washer over the threads of a terminal adapter before inserting into the enclosure. Use a standard locknut or threaded bushing to secure the assembly.



Part No.	Size	Std. Ctn. Qty.
▶ E943DW	1/2	125
▶ E943EW	3/4	125
▶ E943FW	1	100
▶ E943GW	1 1/4	50
▶ E943HW	1 1/2	50
▶ E943JW	2	25

## Lock Nuts



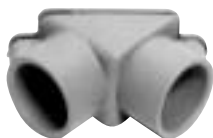
### PVC Lock Nut



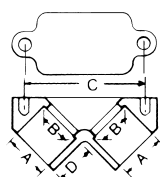
Part No.	Size	Std. Ctn. Qty.
▶ LT9LD	1/2	1200
▶ LT9LE	3/4	700
▶ LT9LF	1	600

## Pull Elbows

### Access Pull Elbows



Gasket included.



Part No.	Size	Std. Ctn. Qty.	A Typical	B Typical	C Typical	D Typical
E990D	1/2	75	.852	.836	2.187	.718
E990DR-CAR	1/2	25	.852	.836	2.187	.718
E990E	3/4	50	1.064	1.046	2.531	.781
E990ER-CAR	3/4	20	1.064	1.046	2.531	.781

## Sleeves

### HOLFORM™ Concrete Sleeves

HOLFORM nonmetallic concrete sleeve forms are the easy way to form holes in concrete. They install in seconds with nails, screws or staples and are easily removed. Concrete will not adhere to them. HOLFORMS are adjustable to any slab thickness.



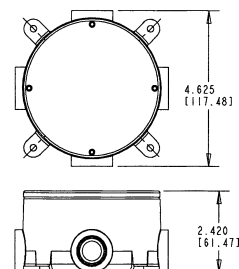
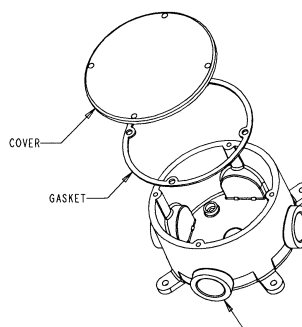
Except where noted by ▶

Part No.	Min. O.D. A	B	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)
▶ E92CSH	1 1/2	1 3/4	20	3
▶ E92CSJ	2	2 13/32	25	6
▶ E92CSL	3	3 13/32	25	8
▶ E92CSN	4	4 13/32	18	8
▶ E92CSP	5	5 13/32	15	8
▶ E92CSR	6	6 13/32	12	8

## Conduit Bodies

### Type X with Cover

Four knock-out type socket openings, 90° spacing. Available with 1/2" or 3/4" socket outlets. Includes cover and gasket.



Part No.	Size	Vol. Cu. In.	Std. Ctn. Qty.
E970CD	1/2	15.16	15
E970CE	3/4	15.16	15

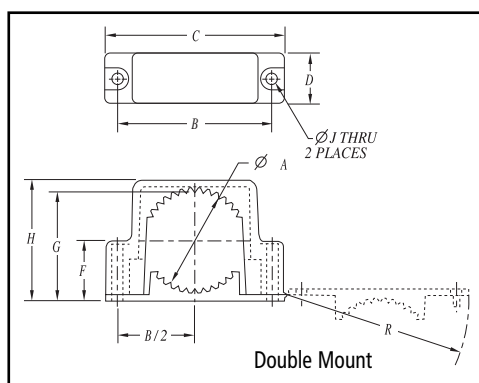
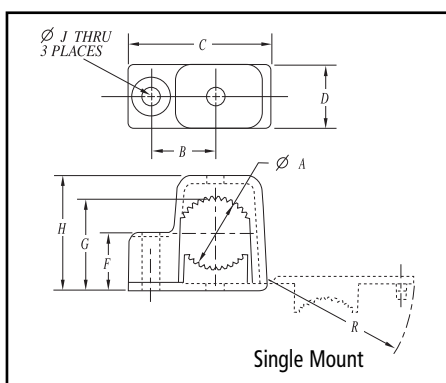
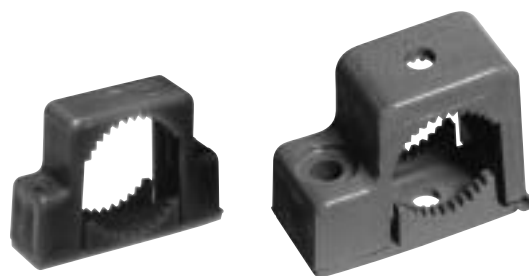
Supplied with 4 stainless steel cover screws. Diameter 4 1/8", Thickness 1/4".  
\*Not designed for use with wiring devices or light fixtures.

## Snap Strap® Conduit Support Straps

Carlon's Snap Strap® offers a unique support strap designed especially for the installation of PVC conduit. Also usable for installations of rigid steel. This high strength, nonmetallic clamp allows conduit to expand and contract freely, eliminating the bowing commonly seen from the expansion and contraction of conduit caused by varying temperature changes. Finished installations have a neat, attractive appearance on exposed applications.

To be used in accordance with conduit spacing requirements per the NEC, Section 352.30. This part is not supplied with screws.

- UV inhibited for use in direct sunlight



### Single Mount

Part No.	Size: inches (mm)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	A	B	C	D	F	G	H	J	R
E978DC-CAR	1/2" (16)	40	1	0.80 (20.3)	.75 (1.90)	1.63 (41.4)	0.75 (19.1)	.59 (14.9)	.99 (25.1)	1.36 (34.5)	.21 (5.33)	1.67 (42.4)
E978EC-CAR	3/4" (21)	40	3	1.00 (25.4)	.88 (22.4)	1.92 (48.7)	0.75 (19.1)	.70 (17.8)	1.20 (30.4)	1.57 (39.9)	.21 (5.33)	1.96 (49.8)
E978FC-CAR	1" (27)	30	4	1.20 (30.5)	1.02 (25.9)	2.17 (55.1)	0.75 (19.1)	.83 (21.1)	1.43 (36.3)	1.84 (46.7)	.21 (5.33)	2.22 (56.3)

### Double Mount

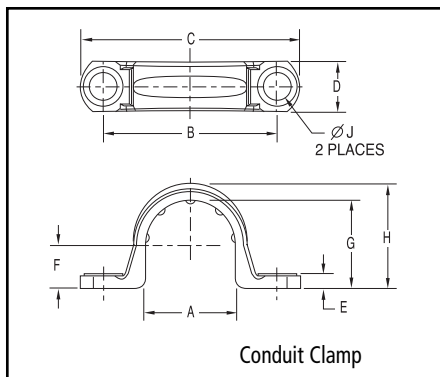
Part No.	Size: inches (mm)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	A	B	C	D	F	G	H	J	R
E978GC-CAR	1 1/4" (35)	15	4	1.66 (42.16)	2.75 (69.9)	3.23 (82.0)	1.00 (25.4)	.95 (24.1)	1.78 (45.2)	2.15 (54.61)	.218 (5.54)	3.28 (83.3)
E978HC-CAR	1 1/2" (41)	15	5	1.92 (48.77)	3.05 (77.5)	3.53 (89.7)	1.00 (25.4)	1.08 (27.4)	2.04 (51.8)	2.40 (60.96)	.218 (5.54)	3.58 (90.9)
E978JC-CAR	2" (53)	10	5	2.34 (59.44)	3.50 (88.9)	4.00 (101.6)	1.00 (25.4)	1.31 (33.3)	2.48 (63.0)	2.86 (72.64)	.218 (5.54)	4.06 (103.1)

## Nonmetallic Clamps

Nonmetallic clamps offer the same chemical resistance as Carlon nonmetallic conduits for a complete, corrosion resistant system.

To be used in accordance with conduit spacing requirements per the NEC, Section 352.30.

- UV inhibited for use in direct sunlight



## Conduit Clamps

Part No.	Size: inches (mm)	Std. Ctn. Qty.	Std. Ctn. Wt. (lbs.)	A	B	C	D	E	F	G	H	J
E977DC	1/2" (16)	100	1.2	0.892 (22.6)	1.71 (43.4)	2.16 (54.8)	0.50 (12.7)	.14 (3.5)	.42 (10.6)	.866 (21.9)	1.04 (26.4)	.260 (6.6)
E977EC	3/4" (21)	100	1.4	1.102 (27.9)	1.97 (50.0)	2.40 (60.9)	0.50 (12.7)	.14 (3.5)	.525 (13.3)	1.076 (27.3)	1.255 (31.8)	.260 (6.6)
E977FC	1" (27)	100	2	1.39 (35.3)	2.25 (57.1)	2.81 (71.3)	0.594 (15.0)	.14 (3.5)	.658 (16.7)	1.342 (34.0)	1.574 (39.9)	.260 (6.6)
E977GC	1 1/4" (35)	50	5	1.714 (43.5)	2.68 (68.0)	3.28 (83.3)	.64 (16.2)	.15 (3.8)	.83 (21.0)	1.687 (42.8)	1.89 (48.0)	.320 (8.1)
E977HC	1 1/2" (41)	50	6	1.92 (48.7)	2.82 (71.6)	3.44 (87.3)	.70 (17.7)	.15 (3.8)	.97 (24.6)	1.93 (49.0)	2.12 (53.8)	.312 (7.9)
E977JC	2" (53)	25	4.5	2.54 (64.5)	3.54 (89.9)	4.18 (106.1)	.76 (19.3)	.16 (4.0)	1.05 (26.6)	2.29 (58.1)	2.49 (63.2)	.315 (8.0)
E977KC-CAR	2 1/2" (63)	25	1.4	2.86 (72.6)	4.50 (114.3)	5.46 (138.7)	1.00 (25.4)	.20 (5.08)	1.43 (36.3)	2.86 (72.6)	3.12 (79.2)	.36 (9.14)
E977LC-CAR	3" (78)	20	1.4	3.47 (88.2)	5.00 (127.0)	6.00 (152.4)	1.00 (25.4)	.20 (5.08)	1.74 (44.3)	3.48 (88.4)	3.70 (94.0)	.36 (9.14)
E977NC-CAR	4" (103)	15	12.2	4.366 (110.9)	6.15 (156.2)	7.20 (182.9)	1.00 (25.4)	.20 (5.08)	2.32 (58.8)	4.50 (114.3)	4.70 (119.4)	.36 (9.14)

\*Note: Some clamp applications require 2 screws, 2 nuts and 2 washers.

## Expansion and Contraction

### Temperature Considerations for Rigid Nonmetallic Conduit Compensation for Linear Expansion

Like all construction materials, PVC will expand or contract with variations in temperatures. The coefficient of linear expansion in PVC conduit is  $3.38 \times 10^{-5}$  in./in./°F as compared to  $1.2 \times 10^{-5}$  for aluminum and  $0.6 \times 10^{-5}$  for steel. An expansion coupling is needed whenever the change in length due to temperature variation will exceed 1/2 in.

Add 30°F to the estimated temperature range when conduit is installed in direct sunlight to allow for radiant heating.

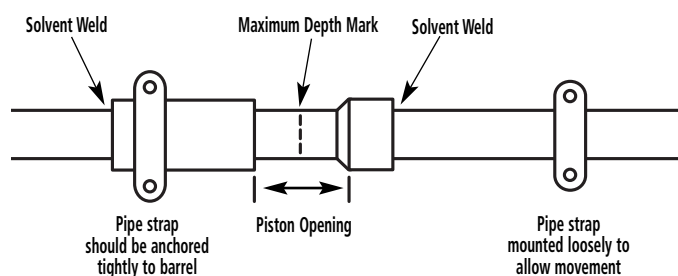
An expansion coupling consists of two sections of conduit, one telescoping inside another. When installing expansion couplings, alignment of piston and barrel is important. Be sure to mount expansion joint level for best performance.

For a vertical run, the expansion coupling must be installed close to the top of the run with the barrel jointing down, in order that rain water does not run into the opening. The lower end of the conduit run must be secured at the bottom so that any length change due to temperature variation will result in an upward movement.

#### Expansion Characteristics of PVC Rigid Nonmetallic Conduit

Coefficient of Thermal Expansion =  $3.38 \times 10^{-5}$  in./in./°F

Temperature Change in Degrees F	Length Change in inches per 100 Ft. of PVC Conduit	Temperature Change in Degrees F	Length Change in inches per 100 Ft. of PVC Conduit	Temperature Change in Degrees F	Length Change in inches per 100 Ft. of PVC Conduit	Temperature Change in Degrees F	Length Change in inches per 100 Ft. of PVC Conduit
5	0.2	55	2.2	105	4.2	155	6.3
10	0.4	60	2.4	110	4.5	160	6.5
15	0.6	65	2.6	115	4.7	165	6.7
20	0.8	70	2.8	120	4.9	170	6.9
25	1.0	75	3.0	125	5.1	175	7.1
30	1.2	80	3.2	130	5.3	180	7.3
35	1.4	85	3.4	135	5.5	185	7.5
40	1.6	90	3.6	140	5.7	190	7.7
45	1.8	95	3.8	145	5.9	195	7.9
50	2.0	100	4.1	150	6.1	200	8.1



### Determine the Piston Opening

The expansion joint must be installed to allow both expansion and contraction of the conduit run. The correct piston opening for any installation condition should use the following formula:

$$O = \left[ \frac{T_{\text{max}} - T_{\text{installed}}}{\Delta T} \right] E$$

Where:

- O = Piston opening (in.)
- T max = Maximum anticipated temperature of conduit (°F)
- T inst. = Temperature of conduit at time of installation (°F)
- Δ T = Total change in temperature of conduit (°F)
- E = Expansion allowance built into each expansion coupling (in.)

### Example

380 ft. of conduit is to be installed on the outside of a building exposed to the sun in a single straight run. It is expected that the conduit will vary in temperature from 0°F in the winter to 140°F in the summer (this includes the 30°F for radiant heating from the sun.) The installation is to be made at a conduit temperature of 90°F. From the table, a 140°F temperature change will cause a 5.7 in. length change in 100 ft. of conduit. The total change for this example is  $5.7 \times 3.8 = 21.67$ " which should be rounded to 22". The number of expansion couplings will be  $22 \times$  coupling range (4" for Carlon trade sizes 1/2" through 1-1/2", and 8" for sizes 2" through 6"). If the E945D coupling is used, the number will be  $22 \times 4 = 5.50$  which should be rounded to 6. The coupling should be placed at 62 ft. intervals ( $380 \times 6$ ). the proper piston setting at the time of installation is calculated as explained above.

$$O = \left[ \frac{140 - 90}{140} \right] 4.0 = 1.4 \text{ in.}$$

Insert the piston into the barrel to the maximum depth. Place a mark on the piston at the end of the barrel. To properly set the piston, pull the piston out of the barrel to correspond to the 2.1 in. calculated above. See drawing at lower left.

### Summary

1. Anticipate expansion and contraction of PVC conduit in aboveground, exposed installation.
2. Use an expansion coupling when length change due to temperature variation will exceed 1/2".
3. PVC conduit expands 4.1" for each 100 feet of run and a 100°F temperature change.
4. Align expansion coupling with the conduit run to prevent binding.
5. Follow the instructions to set the piston opening.
6. Rigidly fix the outer barrel of the expansion coupling so it cannot move. Mount the conduit connected to the piston loosely enough to allow the conduit to move as the temperature changes.

## Corrosion Resistance of Carlon Schedule 40 and Schedule 80 PVC Conduit and Fittings

Carlon Schedule 40 and Schedule 80 are generally acceptable for use in environments containing the chemicals below. These environmental resistance ratings are based upon tests where the specimens were placed in complete submergence in the reagent listed. Schedule 40 and Schedule 80 can be used in many process areas where

chemicals not on this list are manufactured or used because worker safety requirements dictate that any air presence or splashing be at a very low level.

**If there are any questions for specific suitability in a given environment, prototype samples should be tested under actual conditions.**

Acetic Acid 0-20%	Butyl Alcohol	Fluorine Gas – Wet	Mercurous Nitrate	Sodium Arsenite
Acetic Acid 20-30%	Butyl Phenol	Fluorine Gas – Dry	Mercury	Sodium Benzoate
Acetic Acid 30-60%	Butylene	Fluoroboric Acid	Methyl Sulfate	Sodium Bicarbonate
Acetic Acid 80%	Butyric Acid	Fluorosilicic Acid	Methylene Chloride	Sodium Bisulfate
Acetic Acid – Glacial	Calcium Bisulfite	Formaldehyde	Mineral Oils	Sodium Bisulfite
Acetic Acid Vapors	Calcium Carbonate	Formic Acid	Naphthalene	Sodium Bromide
Acetylene	Calcium Chlorate	Fructose	Nickel Chloride	Sodium Chlorate
Adipic Acid	Calcium Chloride	Gallic Acid	Nickel Nitrate	Sodium Chloride
Alum	Calcium Hydroxide	Gas – Coke Oven	Nitric Acid, Anhydrous	Sodium Cyanide
Aluminum Chloride	Calcium Hypochlorite	Gas – Natural (Dry)	Nitric Acid 20%	Sodium Dichromate
Aluminum Fluoride	Calcium Nitrate	Gas – Natural (Wet)	Nitric Acid 40%	Sodium Ferricyanide
Aluminum Hydroxide	Calcium Sulfate	Gasoline – Sour	Nitric Acid 60%	Sodium Ferrocyanide
Aluminum Oxychloride	Carbonic Acid	Gasoline – Refined	Nitrobenzene	Sodium Fluoride
Aluminum Nitrate	Carbon Dioxide Gas – Wet	Glucose	Nitrous Oxide	Sodium Hydroxide
Aluminum Sulfate	Carbon Dioxide – Aqueous Solution	Glycerine (Glycerol)	Oils and Fats	Sodium Hypochlorite
Ammonia-Dry Gas	Carbon Monoxide	Glycol	Oils – Petroleum – (See Type)	Sodium Nitrate
Ammonium Bifluoride	Caustic Potash	Glycolic Acid	Oleic Acid	Sodium Nitrite
Ammonium Carbonate	Caustic Soda	Green Liquor (Paper Industry)	Oxalic Acid	Sodium Sulfate
Ammonium Chloride	Chloracetic Acid	Heptane	Palmitic Acid 10%	Sodium Sulfide
Ammonium Hydroxide 28%	Chloral Hydrate	Hexanol, Tertiary	Perchloric Acid 10%	Sodium Sulfite
Ammonium Metaphosphate	Chlorine Gas (Dry)	Hydrobromic Acid 20%	Phenylhydrazine Hydrochloride	Sodium Thiosulfate (Hypo)
Ammonium Nitrate	Chlorine Gas (Moist)	Hydrochloric Acid 0% - 25%	Phosgene, Gas	Stannic Chloride
Ammonium Persulfate	Chlorine Water	Hydrochloric Acid 25% - 40%	Phosphoric Acid – 0-25%	Stannous Chloride
Ammonium Phosphate – Neutral	Chlorosulfonic Acid	Hydrocyanic Acid or	Phosphoric Acid – 25-50%	Stearic Acid
Ammonium Sulfate	Chromic Acid 10%	Hydrogen Cyanide	Phosphoric Acid – 50-85%	Sulfur
Ammonium Sulfide	Chromic Acid 30%	Hydrofluoric Acid 10%	Photographic Chemicals	Sulfur Dioxide – Gas Dry
Ammonium Thiocyanate	Chromic Acid 40%	Hydrofluorosilicic Acid	Plating Solutions	Sulfur Trioxide
Amyl Alcohol	Chromic Acid 50%	Hydrogen Phosphide	Potassium Bicarbonate	Sulfuric Acid – 0-10%
Anthraquinone	Citric Acid	Hydrogen Sulfide – Dry	Potassium Bichromate	Sulfuric Acid – 10-75%
Anthraquinonesulfonic Acid	Copper Chloride	Hydrogen Sulfide – Aqueous Solution	Potassium Borate	Sulfuric Acid – 75-90%
Antimony Trichloride	Copper Cyanide	Hydroquinone	Potassium Bromide	Sulfurous Acid
Aqua Regia	Copper Fluoride	Hydroxylamine Sulfate	Potassium Carbonate	Tannic Acid
Arsenic Acid 80%	Copper Nitrate	Iodine	Potassium Chloride	Tanning Liquors
Arylsulfonic Acid	Copper Sulfate	Kerosene	Potassium Chromate	Tartaric Acid
Barium Carbonate	Cottonseed Oil	Lactic Acid 28%	Potassium Cyanide	Titanium Tetrachloride
Barium Chloride	Cresylic Acid 50%	Lauric Acid	Potassium Dichromate	Triethanolamine
Barium Hydroxide	Crude Oil – Sour	Lauryl Chloride	Potassium Ferricyanide	Trimethyl Propane
Barium Sulfate	Crude Oil – Sweet	Lauryl Sulfate	Potassium Ferrocyanide	Trisodium Phosphate
Barium Sulfide	Demineralized Water	Lead Acetate	Potassium Fluoride	Turpentine
Beet – Sugar Liquor	Dextrin	Lime Sulfur	Potassium Hydroxide	Urea
Benzene Sulfonic Acid 10%	Dextrose	Linoleic Acid	Potassium Nitrate	Vinegar
Benzoic Acid	Diglycolic Acid	Linseed Oil	Potassium Perborate	Whiskey
Bismuth Carbonate	Disodium Phosphate	Lubricating Oils	Potassium Perchlorite	White Liquor (Paper Industry)
Black Liquor (Paper Industry)	Ethyl Alcohol	Magnesium Carbonate	Potassium Permanganate 10%	Wines
Bleach – 12.5% Active CL <sub>2</sub>	Ethylene Glycol	Magnesium Chloride	Potassium Persulfate	Zinc Chloride
Borax	Fatty Acids	Magnesium Hydroxide	Potassium Sulfate	Zinc Chromate
Boric Acid	Ferric Chloride	Magnesium Nitrate	Propene	Zinc Cyanide
Brine	Ferric Nitrate	Magnesium Sulfate	Propyl Alcohol	Zinc Nitrate
Breeder Pellets – Dane. Fish	Ferric Sulfate	Maleic Acid	Silicic Acid	Zinc Sulfate
Bromic Acid	Ferrous Chloride	Malic Acid	Silver Cyanide	
Bromine – Water	Ferrous Sulfate	Mercuric Chloride	Silver Nitrate	
Butane		Mercuric Cyanide	Silver Plating Solutions	
Butadiene			Sodium Acetate	



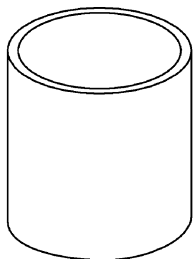
## Suggested Format for Specifying Carlon Nonmetallic Conduit, Conduit Fittings and Junction Boxes

- A.** The Carlon rigid nonmetallic conduit system shall be installed as indicated on the drawings and as specified herein.
- B.** All wiring shall be installed in Carlon rigid nonmetallic conduit. All conduit shall be secured by means of proper fittings. All fittings shall be Carlon.
- C.** Carlon outlet boxes, fittings and junction boxes shall be used for all outlets, pull boxes and junction points. (Lighting fixtures shall not be supported or hung from PVC junction boxes but be supported in position by other means.)
- D.** Exposed conduits shall be mounted securely by suitable hangers or straps with the maximum spacing of points of supports not greater than indicated by Section 352.30 of the NEC.
- E.** Except where embedded in concrete or direct buried, Carlon conduit shall be supported to permit adequate lineal movement to allow for expansion and contraction of conduit due to temperature change.
- F.** For aboveground installations where temperature change in excess of 14°C (25°F) is anticipated, expansion joints shall be installed. See Table 352.44(A) NEC for expansion characteristics.
- G.** Proper care shall be taken when field bending is employed to maintain the internal diameter and wall thickness of the conduit.



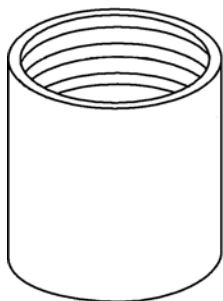
### CLASS A FITTINGS

#### COUPLINGS



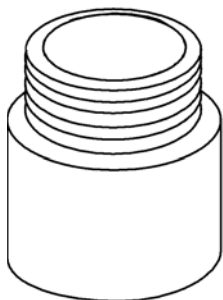
Size	Part #	Package Qty	Weight (lbs)	UPC - A 694061
1/2"	59601	200	7	59601 5
3/4"	59602	125	6	59602 2
1"	59603	70	4	59603 9
1 1/4"	59604	40	3	59604 6
1 1/2"	59605	30	3	59605 3
2"	59606	40	9	59606 0
2 1/2"	59607	20	6	59607 7
3"	59608	40	18	59608 4
3 1/2"	59609	30	16	59609 1
4"	59610	20	13	59610 7
5"	59611	10	7	59611 4
6"	59612	8	6	59612 1
8"	59613	6	31	59613 8

#### FEMALE ADAPTERS



Size	Part #	Package Qty	Weight (lbs)	UPC - A 694061
1/2"	59630	200	7	59630 5
3/4"	59631	125	6	59631 2
1"	59632	70	4	59632 9
1 1/4"	59633	40	3	59633 6
1 1/2"	59634	30	4	59634 3
2"	59635	40	9	59635 0
2 1/2"	59636	20	6	59636 7
3"	59637	40	13	59637 4
3 1/2"	59638	30	13	59638 1
4"	59639	20	13	59639 8
5"	59640	10	11	59640 4
6"	59641	8	9	59641 1
8"	59642	2	9	59642 8

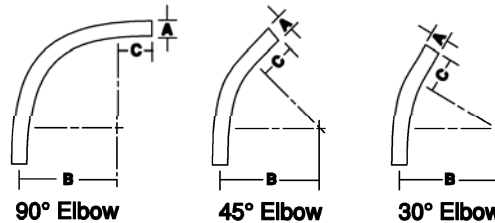
#### TERMINAL ADAPTERS



Size	Part #	Package Qty	Weight (lbs)	UPC - A 694061
1/2"	59615	200	5	59615 2
3/4"	59616	125	5	59616 9
1"	59617	70	3	59617 6
1 1/4"	59618	40	6	59618 3
1 1/2"	59619	30	5	59619 0
2"	59620	40	12	59620 6
2 1/2"	59621	20	11	59621 3
3"	59622	40	10	59622 0
3 1/2"	59623	30	21	59623 7
4"	59624	20	18	59624 4
5"	59625	10	16	59625 1
6"	59626	8	20	59626 8
8"	59627	2	9	59627 5

### CLASS B FITTINGS

### Schedule 40-Plain End



#### 90, 45, 30 degree Standard Radius Elbow Dimensions

Size	A	B (min)	C (min)
1/2"	.840	4"	1 1/2"
3/4"	1.050	4 1/2"	1 1/2"
1"	1.315	5 3/4"	1 7/8"
1 1/4"	1.660	7 1/4"	2"
1 1/2"	1.900	8 1/4"	2"
2"	2.375	9 1/2"	2"
2 1/2"	2.875	10 1/2"	3"
3"	3.500	13"	3 1/8"
3 1/2"	4.000	15"	3 1/4"
4"	4.500	16"	3 3/8"
5"	5.563	24"	3 5/8"
6"	6.625	30"	3 3/4"

#### 90 Degree Elbows-Schedule 40

Size	Part #	Package Qty	UPC - A 694061
1/2"	59588	50	59588 9
3/4"	59589	25	59589 6
1"	59590	25	59590 2
1 1/4"	59591	20	59591 9
1 1/2"	59592	25	59592 6
2"	59593	20	59593 3
2 1/2"	59594	10	59594 0
3"	59595	1	59595 7
3 1/2"	59596	1	59596 4
4"	59597	1	59597 1
5"	59598	1	59598 8
6"	59599	1	59599 5

#### 30 Degree Elbows-Schedule

Size	Part #	Package Qty	UPC - A 694061
1/2"	59561	50	59561 2
3/4"	59562	25	59562 9
1"	59563	25	59563 6
1 1/4"	59564	20	59564 3
1 1/2"	59565	25	59565 0
2"	59566	20	59566 7
2 1/2"	59567	10	59567 4
3"	59568	1	59568 1
3 1/2"	59569	1	59569 8
4"	59570	1	59570 4
5"	59571	1	59571 1
6"	59572	1	59572 8

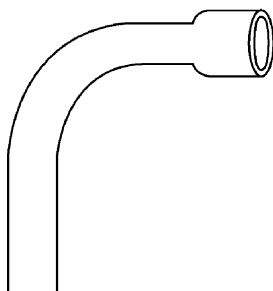
#### 45 Degree Elbows-Schedule 40

Size	Part #	Package Qty	UPC - A 694061
1/2"	59575	50	59575 9
3/4"	59576	25	59576 6
1"	59577	20	59577 3
1 1/4"	59578	20	59578 0
1 1/2"	59579	20	59579 7
2"	59580	20	59580 3
2 1/2"	59581	25	59581 0
3"	59582	1	59582 7
3 1/2"	59583	1	59583 4
4"	59584	1	59584 1
5"	59585	1	59585 8
6"	59586	1	59586 5

22 1/2 degree standard radius  
elbows available upon request.

### CLASS B FITTINGS

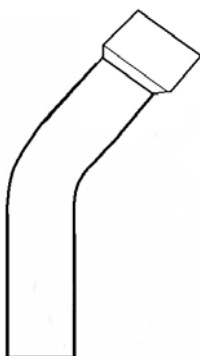
#### 90 Degree Elbows-Bell End



#### Schedule 40-Bell End

Size	Part #	Package Qty	Weight (lbs)
1/2"	59372	50	7
3/4"	59373	25	5
1"	59374	20	11
1 1/4"	59375	20	13
1 1/2"	59376	25	21
2"	59377	20	20
2 1/2"	59378	10	25
3"	59379	1	4
3 1/2"	59380	1	5
4"	59381	1	6
5"	59382	1	13
6"	59383	1	22

#### 45 Degree Elbows-Bell End



Size	Part #	Package Qty	Weight (lbs)
1/2"	59384	50	5
3/4"	59385	25	4
1"	59386	20	7
1 1/4"	59387	20	9
1 1/2"	59388	20	11
2"	59389	20	18
2 1/2"	59390	10	16
3"	59391	1	3
3 1/2"	59392	1	3.5
4"	59393	1	4
5"	59394	1	10
6"	59395	1	13

#### 30 Degree Elbows-Bell End

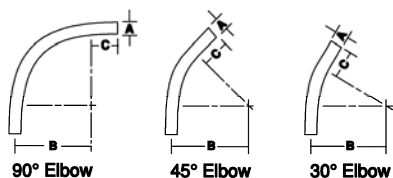


Size	Part #	Package Qty	Weight (lbs)
1/2"	59366	50	3
3/4"	60215	25	2
1"	59367	20	4
1 1/4"	60217	20	6
1 1/2"	59368	20	7
2"	60249	20	12
2 1/2"	59369	10	10
3"	60250	1	1.9
3 1/2"	59370	1	2.5
4"	59398	1	3.2
5"	60251	1	5.3
6"	60252	1	8.3



### CLASS B FITTINGS

#### 90 Degree Elbows-Sch. 80 PE

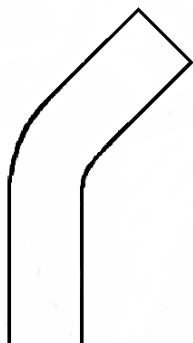


See Page 4 for Dimensional information

#### Schedule 80-Plain End

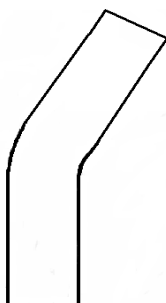
Size	Part #	Package Qty	Weight (lbs)
1/2"	59012	50	10
3/4"	59013	25	7
1"	59014	25	11
1 1/4"	59015	20	15
1 1/2"	59016	25	26
2"	59017	20	32
2 1/2"	59018	10	27
3"	59019	1	4.5
3 1/2"	59020	1	6.0
4"	59021	1	7.5
5"	59022	1	15
6"	59023	1	25

#### 45 Degree Elbows-Sch. 80 PE



Size	Part #	Package Qty	Weight (lbs)
1/2"	59000	50	7
3/4"	59001	25	5
1"	59002	20	7
1 1/4"	59003	20	7
1 1/2"	59004	20	15
2"	59005	20	25
2 1/2"	59006	10	20
3"	59007	1	5
4"	59009	1	6
5"	59010	1	15
6"	59011	1	22

#### 30 Degree Elbows-Sch. 80 PE



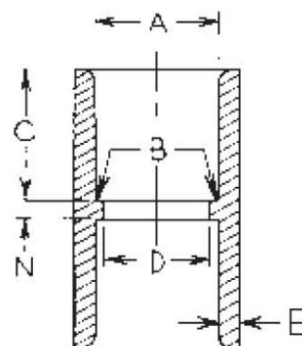
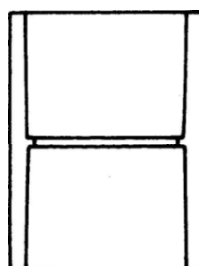
Size	Part #	Package Qty	Weight (lbs)
1/2"	59064	50	3
3/4"	59065	25	2
1"	59066	25	6
1 1/4"	59067	20	7
1 1/2"	59068	25	12
2"	59069	20	10
2 1/2"	59070	10	2
3"	59071	1	2.5
4"	59072	1	3
5"	59073	1	5
6"	59074	1	8

## PVC Electrical Conduit Fittings & Accessories

# UL Couplings



All sizes conform to  
UL 514B and NEMA TC 3



Part Number	Size	Dimensions (inches)					
		Average A	Average B	Minimum C	N	Minimum D	Minimum E
CP05	½"	0.852	0.836	0.652	3/32	0.630	0.095
CP07	¾"	1.064	1.046	0.719	3/32	0.834	0.095
CP10	1"	1.330	1.310	0.875	3/32	1.059	0.100
CP12	1 ¼"	1.677	1.655	0.938	3/32	1.392	0.120
CP15	1 ½"	1.918	1.894	1.062	3/32	1.622	0.120
CP20	2"	2.393	2.369	1.125	3/32	2.079	0.130
CP25	2 ½"	2.890	2.868	1.469	3/16	2.484	0.165
CP30	3"	3.515	3.492	1.594	3/16	3.083	0.216
CP35	3 ½"	4.015	3.992	1.687	3/16	3.598	0.226
CP40	4"	4.515	4.491	1.750	3/16	4.076	0.237
CP50	5"	5.593	5.553	1.937	3/16	5.097	0.258
CP60	6"	6.658	6.614	2.125	1/4	6.115	0.280

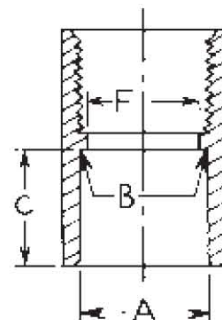
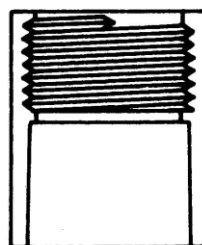


## PVC Electrical Conduit Fittings & Accessories

# Female Adapters



All sizes conform to  
UL 514B and NEMA TC 3



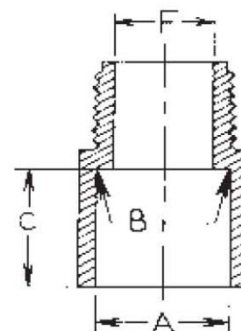
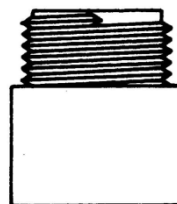
Part Number	Size	Dimensions (inches)				
		Average A	Average B	Minimum C	Minimum F	Maximum F
FA05	½"	0.852	0.836	0.652	0.591	0.622
FA07	¾"	1.064	1.046	0.719	0.783	0.824
FA10	1"	1.330	1.310	0.875	0.997	1.049
FA12	1 ¼"	1.677	1.655	0.938	1.311	1.380
FA15	1 ½"	1.918	1.894	1.062	1.529	1.610
FA20	2"	2.393	2.369	1.125	1.964	2.067
FA25	2 ½"	2.890	2.868	1.469	2.346	2.469
FA30	3"	3.515	3.492	1.594	2.915	3.068
FA35	3 ½"	4.015	3.992	1.687	3.371	3.548
FA40	4"	4.515	4.491	1.750	3.825	4.026
FA50	5"	5.593	5.553	1.937	4.795	5.047
FA60	6"	6.658	6.614	2.125	5.762	6.065

## PVC Electrical Conduit Fittings & Accessories

# Terminal Adapters



All sizes conform to  
UL 514B and NEMA TC 3



Part Number	Size	Dimensions (inches)				
		Average A	Average B	Minimum C	Minimum F	Maximum F
TA05	½"	0.852	0.836	0.652	0.591	0.622
TA07	¾"	1.064	1.046	0.719	0.783	0.824
TA10	1"	1.330	1.310	0.875	0.997	1.049
TA12	1 ¼"	1.677	1.655	0.938	1.311	1.380
TA15	1 ½"	1.918	1.894	1.062	1.529	1.610
TA20	2"	2.393	2.369	1.125	1.964	2.067
TA25	2 ½"	2.890	2.868	1.469	2.346	2.469
TA30	3"	3.515	3.492	1.594	2.915	3.068
TA35	3 ½"	4.015	3.992	1.687	3.371	3.548
TA40	4"	4.515	4.491	1.750	3.825	4.026
TA50	5"	5.593	5.553	1.937	4.795	5.047
TA60	6"	6.658	6.614	2.125	5.762	6.065



**CRESCENT**  
ELECTRIC  
SUPPLY COMPANY

**STEEL FLEX AND FITTINGS**

**Submittals Prepared by IES  
and Crescent Electric Supply**

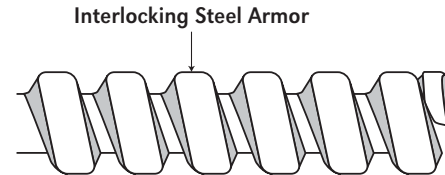
## Reduced Wall Flexible Steel Conduit Type RW FSC

### Description

- Reduced Wall Flexible Steel Conduit
- High grade hot dipped zinc galvanized low carbon steel
- Interlocking design
- Corrosion resistant

### Applications

- Flexible metal raceway for electrical power, control and communication cables
- Motor leads
- Listed assemblies
- Listed wire fixtures
- Manufactured wiring systems



### References & Ratings

- UL 1, UL 1479, File Reference E11831, CSA File Number 15035, CSA C22.2 No. 56 (trade size 3/8 only)
- Federal Specification WW-C-566C, (now superseded by UL 1)
- NEC® 250.118(5), 300.22(C), 348, 430.223, 501.10(B)(2), 645.5
- Cable Tray installations per NEC®
- Environmental Air-Handling space installation NEC® 300.22(C)
- UL Classified 1, 2 and 3-hour Through-Penetration Fire Systems UL File R14141

### Ordering Information

### Product Dimensions/ Bend Radius

Product Code	Trade Size (inches)	Trade Size (mm)	Coil Length (feet)	Reel Length (feet)	Approx. Weight/ 100 feet (pounds)	Internal Diameter (min/max) inches	External Diameter (min/max) inches	Bend Radius (inches)
5501-22-00+	3/8	12	25'	—	17	0.375/0.393	0.560/0.610	2
5501-24-00+	3/8	12	50'	—	17	0.375/0.393	0.560/0.610	2
5501-30-00+	3/8	12	100'	—	17	0.375/0.393	0.560/0.610	2
5501-42-00+	3/8	12	250'	—	17	0.375/0.393	0.560/0.610	2
5501-45-00+	3/8	12	—	500'	17	0.375/0.393	0.560/0.610	2
5501-60-00+	3/8	12	—	1000'	17	0.375/0.393	0.560/0.610	2
5502-22-00	1/2	16	25'	—	27	0.625/0.645	0.860/0.920	3
5502-24-00	1/2	16	50'	—	27	0.625/0.645	0.860/0.920	3
5502-30-00	1/2	16	100'	—	27	0.625/0.645	0.860/0.920	3
5502-45-00	1/2	16	—	500'	27	0.625/0.645	0.860/0.920	3
5502-60-00	1/2	16	—	1000'	27	0.625/0.645	0.860/0.920	3
5503-22-00	3/4	21	25'	—	35	0.812/0.835	1.045/1.105	4
5503-24-00	3/4	21	50'	—	35	0.812/0.835	1.045/1.105	4
5503-30-00	3/4	21	100'	—	35	0.812/0.835	1.045/1.105	4
5503-45-00	3/4	21	—	500'	35	0.812/0.835	1.045/1.105	4
5503-60-00	3/4	21	—	1000'	35	0.812/0.835	1.045/1.105	4
5504-24-00	1	27	50'	—	51	1.000/1.040	1.300/1.380	5
5504-80-00	1	27	—	300'	51	1.000/1.040	1.300/1.380	5
5505-24-00	1¼	35	50'	—	63	1.250/1.300	1.550/1.630	6.25
5505-40-00	1¼	35	—	200'	63	1.250/1.300	1.550/1.630	6.25
5506-22-00	1½	41	25'	—	76	1.500/1.575	1.850/1.950	7.50
5507-22-00	2	53	25'	—	100	2.000/2.080	2.350/2.450	10
5508-22-00	2½	63	25'	—	165	2.500/—	2.860/3.060	12.50
5509-22-00	3	78	25'	—	197	3.000/—	3.360/3.560	15
5510-22-00	3½	91	25'	—	230	3.500/—	3.860/4.060	17.50
5511-22-00	4	103	25'	—	263	4.000/—	4.360/4.560	20

NOTE: All dimensions and weights are subject to normal manufacturing tolerances.

\*CSA certified

Review NEC® 348.60 and 250.118(5) for grounding requirements.



# Galflex®

## Type RWS Reduced Wall Steel Flexible Metal Conduit



Steel Flexible Metal Conduit. High Strength Steel Strip. UL Recognized Component in 5/16". UL Listed in 3/8" through 3". CSA Certified for Trade Sizes 5/16" and 3/8" Available Upon Request.

### APPLICATIONS

Galflex® Type RWS (Reduced Wall Steel) Flexible Metal Conduit is suitable for the following installations:

- Environmental air-handling spaces per NEC® 300.22(C)
- Power and lighting branch circuit conductors and cables for connecting receptacles, luminaires, equipment, office partitions, etc.
- Metal raceway for wires and cables per NEC® (ANSI/NFPA-70) Article 348
- Motor feeder, branch, and control circuit conductors and cables
- Class 1, Class 2, Class 3 Remote-control, signaling, and power-limited circuit conductors and cables
- Fire alarm system conductors and cables of power-limited or non-power-limited fire alarm circuits
- Voice, data, communications and video cables including CATV and optical fiber cables
- Concealed or exposed installations per NEC® Article 348 and the applicable NEC® provisions
- Elevators, hoistways, and escalators per NEC® 620.21
- As a grounding conductor for lengths up to 6 feet (20A max) as per 2011 NEC® 250.118(5)
- Electric signs and outline lighting per NEC® 600.7, 600.31 (1000 volts or less), and 600.32 (>1000 volts)
- Hazardous location, Class 1, Div. 2, for flexible connectors only per 2011 NEC® 501.10(B)(2) & 501.30(B)
- UL 1, 2, & 3 Hour Through-Penetration Firestop Systems: C-AJ-1462, C-AJ-1463, C-AJ-1464, W-L-1308, and W-L-1309

### STANDARDS & REFERENCES

- UL Listed per UL 1, Standard for Safety for Flexible Metal Conduit, ANSI/UL-1 for 3/8" through 3"
- CSA Certified per CSA 22.2 No. 56 per Canadian Electrical Code C22.1 Section 12-1000 for 5/16" and 3/8" trade sizes only
- Meets federal specification WW-C-566c
- NEC Type Designation - Article 348, Type FMC (flexible metal conduit)

### CONSTRUCTION

Galflex® Type RWS is manufactured with a galvanized, corrosion resistant, high strength steel alloy. The metal strip is helically formed into a continuously interlocked flexible metal conduit that can withstand impact and crushing forces.



The Power of Connections.™



**Southwire®**

TRADE SIZE (INCHES)	STOCK NUMBER			DIAMETER (INCHES)		WEIGHT (LBS/100')	MINIMUM BEND RADIUS (INCHES)
				INNER (MIN/MAX)	OUTER (MIN/MAX)		
5/16	55-28-32-02 (100')	55-28-32-03 (1000')		.312/.337	.470/.510	13	
3/8	55-08-17-02 (100')	55-08-17-04 (250')	55-08-17-03 (1000')	.375/.393	.56/.61	19	2
1/2	55-08-18-02 (100')	55-08-18-01 (500')	55-08-18-03 (1000')	.625/.645	.86/.92	27	3
3/4	55-08-19-02 (100')	55-08-19-03 (500')	55-08-19-06 (1000')	.812/.835	1.045/1.105	35	4
1	55-09-16-01 (50')	55-09-16-02 (400')		1/1.04	1.3/1.38	57	5
1-1/4	55-09-17-01 (50')	55-09-17-06 (250')	55-09-17-02 (400')	1.25/1.3	1.55/1.63	65	6.25
1-1/2	55-09-18-01 (25')	55-09-18-03 (150')	55-09-18-02 (300')	1.5/1.575	1.85/1.95	78	7.5
2	55-09-19-01 (25')	55-09-19-04 (100')	55-09-19-02 (150')	2/2.08	2.35/2.45	133	10
2-1/2	55-09-20-01 (25')	55-09-20-03 (100')	55-09-20-05 (150')	2.5	2.86/3.06	15	12.5
3	55-09-22-01 (25')	55-09-22-03 (100')		3	3.36/3.56	190	15
3-1/2	55-09-23-01 (25')	55-09-23-03 (100')		3.5	3.86/4.06	220	17
4	55-09-24-01 (25')	55-09-24-02 (100')		4	4.36/4.56	270	20
<p>* Trade size 5/16" is provided as UL Recognized construction.  ** Trade sizes 3-1/2" and 4" are non-UL.  Note: Trade Sizes 3" and smaller are UL Listed.  Minimum bend radius based on NEC Chapter 9 (other bends).</p>							

## FEATURES

- Provides mechanical protection for conductors and cable
- For use with listed connectors intended for NEC Type FMC (Flexible Metal Conduit)
- Smooth interior for easy wire pulling
- High strength steel construction
- Hot-dipped, heavy zinc coating for rust/corrosion resistance
- Superior crush proof qualities
- Built in flexibility for simplified positioning

## ADDITIONAL APPLICATIONS

- Listed wired fixtures per NEC 410.77(C)
- Raised floors for connection of information technology per NEC 645.5(D)(2) and 645.5(D)
- Places of assembly and theaters per NEC Articles 518 and 520
- Cranes and hoists per NEC 610.11(C)

The Power of Connections.™



**Southwire®**



## ONLINE CERTIFICATIONS & TOOLS

- [UL Online Certifications Directory \( www.ul.com \)](http://www.ul.com)
- [CSA Online Certifications Directory \( www.csa.ca \)](http://www.csa.ca)
- [UL Guide Information - Flexible Metal Conduit \(DXUZ\)](#)
- [CSA Product Information - Flexible Metal Conduit \(1811-01\)](#)

Galflex™ is a trademark of Southwire Company.

# Flexible Metal Conduit Fittings

## Screw-In Connectors



For connecting flexible metal conduit to box or enclosure.

**UL** File No. E9391

520-DC2 and 520-DCI2 are also UL Listed for use with XRWFMC.

**SP** File No. LR39354: 519 thru 521 -DC2 & -DCI2

### Zinc Die Cast

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
519-DC2	1/2"	3/8"	100	1000
520-DC2	1/2"	1/2"	100	1000
521-DC2	3/4"	3/4"	50	500
522-DC2	1"	1"	25	250
523-DC2	1 1/4"	1 1/4"	10	100
524-DC2	1 1/2"	1 1/2"	5	50
525-DC2	2"	2"	3	30

### Zinc Die Cast / Insulated Throat - 105°C

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
519-DCI2	1/2"	3/8"	100	1000
520-DCI2	1/2"	1/2"	100	1000
521-DCI2	3/4"	3/4"	50	500
522-DCI2	1"	1"	25	250
523-DCI2	1 1/4"	1 1/4"	10	100
524-DCI2	1 1/2"	1 1/2"	5	50
525-DCI2	2"	2"	3	30

# Flexible Metal Conduit Fittings

## Whipper-Snap® Screw-in Connectors



For connecting flexible metal conduit to box or enclosure.  
Screw connector into conduit and snap into electrical box.  
Patented Whipper-Snap design.

c  us File No. E20534

### Zinc Die Cast

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
GF38SP	1/2"	3/8"	100	1000
GF50SP	1/2"	1/2"	100	1000



## Screw-In Couplings



Used to join two lengths of flexible metal conduit.

 File No. E9391

530-DC also UL Listed for use with XRWFMC.

### Zinc Die Cast

Catalog Number	Flex Trade Size	Unit Qty.	Std. Pkg.
530-DC	1/2"	50	500
531-DC	3/4"	50	500
532-DC	1"	10	100
533-DC	1 1/4"	10	100
534-DC	1 1/2"	5	50
535-DC	2"	3	30

# Flexible Metal Conduit Fittings

## Squeeze Connectors



403-I



403 thru 412



414 thru 418



419 and 420

To connect flexible metal conduit to box or enclosure.

cULus File No. E9391: All except 403-I

cULus File No. E20534: 403-I

SP File No. LR39354: 407 thru 420; 407-I thru 420-I

## Malleable Iron

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
403	1/2"	3/8"	50	500
407	1/2"	1/2"	50	200
408	3/4"	3/4"	25	100
410	1"	1"	---	25
412	1 1/4"	1 1/4"	---	25
414	1 1/2"	1 1/2"	---	10
416	2"	2"	---	10
417	2 1/2"	2 1/2"	---	5
418	3"	3"	---	5
419	3 1/2"	3 1/2"	---	5
420	4"	4"	---	5

## Malleable Iron / Insulated Throat - 105°C

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
403-I	1/2"	3/8"	50	500
407-I	1/2"	1/2"	50	200
408-I	3/4"	3/4"	25	100
410-I	1"	1"	5	25
412-I	1 1/4"	1 1/4"	5	25
414-I	1 1/2"	1 1/2"	2	10
416-I	2"	2"	2	10
417-I	2 1/2"	2 1/2"	1	5
418-I	3"	3"	1	5
419-I	3 1/2"	3 1/2"	1	5
420-I	4"	4"	1	5

# Flexible Metal Conduit Fittings

## Squeeze Connectors



403-DC2





1/2" thru 2"




2 1/2" thru 4"

To connect flexible metal conduit to box or enclosure.

 File No. E9391: 407-DC2, 407-DCI2, 408-DC2, 408-DCI2 and 417-DC2 thru 420-DC2

 File No. LR39354: 408-DC2

 File No. E9391: 403-DC2, 410-DC2, 410-DCI2, 412-DC2, 412-DCI2, 414-DC2, 414-DCI2, 416-DC2 and 416-DCI2

### Zinc Die Cast

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
403-DC2	1/2"	3/8"	50	500
407-DC2	1/2"	1/2"	50	200
408-DC2	3/4"	3/4"	25	100
410-DC2	1"	1"	10	100
412-DC2	1 1/4"	1 1/4"	10	100
414-DC2	1 1/2"	1 1/2"	5	50
416-DC2	2"	2"	---	10
417-DC2	2 1/2"	2 1/2"	---	5
418-DC2	3"	3"	---	5
419-DC2	3 1/2"	3 1/2"	---	5
420-DC2	4"	4"	---	5

### Zinc Die Cast / Insulated Throat - 105°C

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
407-DCI2	1/2"	1/2"	50	200
408-DCI2	3/4"	3/4"	25	100
410-DCI2	1"	1"	10	100
412-DCI2	1 1/4"	1 1/4"	10	100
414-DCI2	1 1/2"	1 1/2"	5	50
416-DCI2	2"	2"	---	10

# Flexible Metal Conduit Fittings

## 45° Connectors



Zinc Die Cast



Malleable Iron

45° fitting for connecting flexible metal conduit to box or enclosure.

 File No. E9391

### Zinc Die Cast

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
800-DC2	1/2"	3/8"	25	100
803-DC2	1/2"	1/2"	25	100

### Malleable Iron

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
800	1/2"	3/8"	25	100
803	1/2"	1/2"	10	100

## 90° Connectors



90° fitting with cover used for connecting flexible metal conduit to box or enclosure.

 File No. E9391  File No. LR39354

### Malleable Iron

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
801	1/2"	3/8"	50	200
804	1/2"	1/2"	25	100
806	3/4"	3/4"	10	50

### Malleable Iron / Insulated Throat - 105°C

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
801-I	1/2"	3/8"	50	200
804-I	1/2"	1/2"	25	100
806-I	3/4"	3/4"	10	50



# Flexible Metal Conduit Fittings

## 90° Connectors



90° fitting with cover used for connecting flexible metal conduit to box or enclosure.

cULus File No. E9391

SP File No. LR39354: 807 thru 811; 807-I thru 811-I

### Malleable Iron

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
807	1"	1"	5	25
808	1 1/4"	1 1/4"	---	10
809	1 1/2"	1 1/2"	---	5
810	2"	2"	---	5
811	2 1/2"	2 1/2"	---	5
812	3"	3"	---	5
813	3 1/2"	3 1/2"	---	1
814	4"	4"	---	1

### Malleable Iron / Insulated Throat - 105°C

Catalog Number	K.O. Size	Flex Trade Size	Unit Qty.	Std. Pkg.
807-I	1"	1"	5	25
808-I	1 1/4"	1 1/4"	2	10
809-I	1 1/2"	1 1/2"	1	5
810-I	2"	2"	1	5
811-I	2 1/2"	2 1/2"	1	5
812-I	3"	3"	1	5
813-I	3 1/2"	3 1/2"	---	1
814-I	4"	4"	---	1

# Flexible Metal Conduit Fittings


## 90° Connectors





3/8" thru 2"

Over 2"

90° fitting with cover used for connecting flexible metal conduit to box or enclosure. Also see AC/MC section for additional listings.

 File No. E9391: 801-, 809-, 810-DC2 & DCI2

 File No. E20534: 804-, 806-, 807-, 808-DC2 & DCI2

 File No. LR39354

### Zinc Die Cast

Catalog Number	K.O. Size	Flex Trade Size	Cable Range		Unit Qty.	Std. Pkg.
			Min.	Max.		
801-DC2	1/2"	3/8"	---	---	25	250
804-DC2	1/2"	1/2"	.750"	.875"	25	100
806-DC2	3/4"	3/4"	.875"	1.000"	10	50
807-DC2	1"	1"	1.187"	1.312"	---	25
808-DC2	1 1/4"	1 1/4"	1.500"	1.625"	---	25
809-DC2	1 1/2"	1 1/2"	---	---	---	5
810-DC2	2"	2"	---	---	---	5
811-DC2	2 1/2"	2 1/2"	---	---	---	5
812-DC2	3"	3"	---	---	---	5
813-DC2	3 1/2"	3 1/2"	---	---	---	1
814-DC2	4"	4"	---	---	---	1

### Zinc Die Cast / Insulated Throat - 105°C

Catalog Number	K.O. Size	Flex Trade Size	Cable Range		Unit Qty.	Std. Pkg.
			Min.	Max.		
801-DCI2	1/2"	3/8"	---	---	25	250
804-DCI2	1/2"	1/2"	.750"	.875"	25	100
806-DCI2	3/4"	3/4"	.875"	1.000"	10	50
807-DCI2	1"	1"	1.187"	1.312"	---	25
808-DCI2	1 1/4"	1 1/4"	1.500"	1.625"	---	25
809-DCI2	1 1/2"	1 1/2"	---	---	---	5
810-DCI2	2"	2"	---	---	---	5



## **WIREWAY**

**Submittals Prepared by IES  
and Crescent Electric Supply**

# Wireway

## Type 1 Quick-Connect Hinge Cover Wireway Data Sheet



### Application

- Houses runs of control and power cable
- Used for cable and wire junction, distribution and termination

### Standards

- UL 870 listed, Type 1
- CSA C22.2 No. 26 certified, Type 1
- Conforms to NEMA standard for Type 1
- IEC 60529, IP30

### Finish

- Wash and phosphate undercoat
- ANSI 61 gray acrylic electrocoat finish

### Accessories

- Touch-up paint
- See Accessories section

### Construction

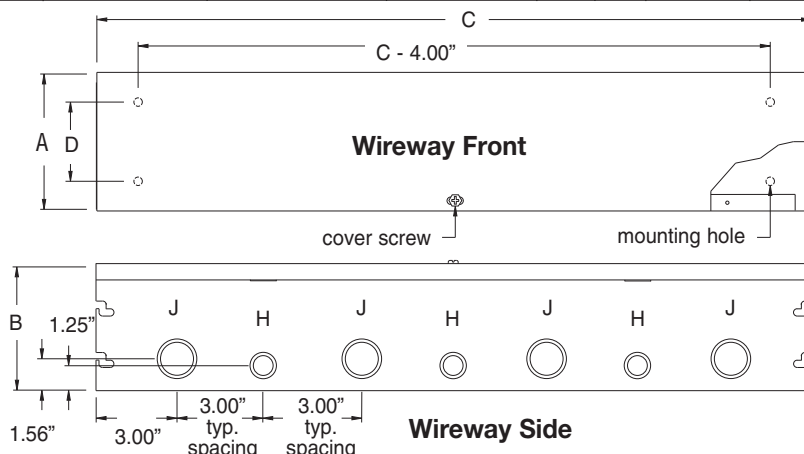
- Wireway body and cover are fabricated from code gauge steel, (see table)
- Wireway body has mounting holes on the back
- Wireway is available with or without knockouts on the top and bottom sides
- Wireway fittings have no knockouts, ends are available with or without knockouts
- Wireway exceeding 72 inches in length has two overlapping covers
- Variety of fittings allow runs which can change directions, junction and terminate
- Wireway connectors (sold separately) have a unique gate feature which can swing completely open allowing for lay-in of wire and cable
- Universal style connectors are also available for adapting to other manufacturer's wireway, (see table, page 22)
- Except for wireway ends, completely interchangeable with Type 1 screw cover wireway and fittings through use of the adapter style connector, (see page 22)

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7,762,042

**Notes:** Cooper B-Line can provide special sizes, finishes and other modifications. Consult the factory for your special requirements.

**Catalog Number**

Wireway Catalog Number		Wireway Size Height x Depth x Length		D			Knockout Quantity	
KO	No KO	A x B x C		in.	mm	Gauge	Top	Bottom
		in.	mm					
2212 HS	2212 HS NK	2.50x2.50x12.00	63x63x305	1.25	32	16	3	3
2224 HS	2224 HS NK	2.50x2.50x24.00	63x63x610	1.25	32	16	7	7
2236 HS	2236 HS NK	2.50x2.50x36.00	63x63x914	1.25	32	16	11	11
2248 HS	2248 HS NK	2.50x2.50x48.00	63x63x1219	1.25	32	16	15	15
2260 HS	2260 HS NK	2.50x2.50x60.00	63x63x1524	1.25	32	16	19	19
2272 HS	2272 HS NK	2.50x2.50x72.00	63x63x1829	1.25	32	16	23	23
22120 HS	22120 HS NK	2.50x2.50x120.00	63x63x3048	1.25	32	16	39	39
4412 HS	4412 HS NK	4.00x4.00x12.00	102x102x305	2.75	70	16	3	3
4424 HS	4424 HS NK	4.00x4.00x24.00	102x102x610	2.75	70	16	7	7
4436 HS	4436 HS NK	4.00x4.00x36.00	102x102x914	2.75	70	16	11	11
4448 HS	4448 HS NK	4.00x4.00x48.00	102x102x1219	2.75	70	16	15	15
4460 HS	4460 HS NK	4.00x4.00x60.00	102x102x1524	2.75	70	16	19	19
4472 HS	4472 HS NK	4.00x4.00x72.00	102x102x1829	2.75	70	16	23	23
44120 HS	44120 HS NK	4.00x4.00x120.00	102x102x3048	2.75	70	16	39	39
6612 HS	6612 HS NK	6.00x6.00x12.00	152x152x305	4.25	108	16	3	3
6624 HS	6624 HS NK	6.00x6.00x24.00	152x152x610	4.25	108	16	7	7
6636 HS	6636 HS NK	6.00x6.00x36.00	152x152x914	4.25	108	16	11	11
6648 HS	6648 HS NK	6.00x6.00x48.00	152x152x1219	4.25	108	16	15	15
6660 HS	6660 HS NK	6.00x6.00x60.00	152x152x1524	4.25	108	16	19	19
6672 HS	6672 HS NK	6.00x6.00x72.00	152x152x1829	4.25	108	16	23	23
66120 HS	66120 HS NK	6.00x6.00x120.00	152x152x3048	4.25	108	16	39	39
8812 HS	8812 HS NK	8.00x8.00x12.00	203x203x305	6.00	152	14	3	3
8824 HS	8824 HS NK	8.00x8.00x24.00	203x203x610	6.00	152	14	7	7
8836 HS	8836 HS NK	8.00x8.00x36.00	203x203x914	6.00	152	14	11	11
8848 HS	8848 HS NK	8.00x8.00x48.00	203x203x1219	6.00	152	14	15	15
8860 HS	8860 HS NK	8.00x8.00x60.00	203x203x1524	6.00	152	14	19	19
8872 HS	8872 HS NK	8.00x8.00x72.00	203x203x1829	6.00	152	14	23	23
88120 HS	88120 HS NK	8.00x8.00x120.00	203x203x3048	6.00	152	14	39	39
101012 HS	101012 HS NK	10.00x10.00x12.00	254x254x305	8.00	203	14	3	3
101024 HS	101024 HS NK	10.00x10.00x24.00	254x254x610	8.00	203	14	7	7
101036 HS	101036 HS NK	10.00x10.00x36.00	254x254x914	8.00	203	14	11	11
101048 HS	101048 HS NK	10.00x10.00x48.00	254x254x1219	8.00	203	14	15	15
101060 HS	101060 HS NK	10.00x10.00x60.00	254x254x1524	8.00	203	14	19	19
1010120 HS	1010120 HS NK	10.00x10.00x120.00	254x254x3048	8.00	203	14	39	39
121212 HS	121212 HS NK	12.00x12.00x12.00	305x305x305	10.00	254	14	3	3
121224 HS	121224 HS NK	12.00x12.00x24.00	305x305x610	10.00	254	14	7	7
121236 HS	121236 HS NK	12.00x12.00x36.00	305x305x914	10.00	254	14	11	11
121248 HS	121248 HS NK	12.00x12.00x48.00	305x305x1219	10.00	254	14	15	15
121260 HS	121260 HS NK	12.00x12.00x60.00	305x305x1524	10.00	254	14	19	19
1212120 HS	1212120 HS NK	12.00x12.00x120.00	305x305x3048	10.00	254	14	39	39



Knockout sizes:  
H = 3/4" or 1/2" conduit  
J = 1 1/4" or 1" conduit

**Notes:** Additional mounting holes are furnished when C dimension is over 60.00" (1524 mm).  
Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

## Type 1 Quick-Connect Hinge Cover Wireway

### Catalog Number

Telescopic Fitting											
Catalog Number		A		B1		B2		C			
		in.	mm	in.	mm	in.	mm	in.	mm		
22 FTF		2.75	70	1.75	44	1.12	28	12.00	305		
33FTF		3.25	83	2.25	57	1.12	28	12.00	305		
44 FTF		4.25	108	3.25	83	1.12	28	12.00	305		
66 FTF		6.25	159	5.25	133	1.12	28	12.00	305		
88 FTF		8.25	210	7.25	184	1.12	28	12.00	305		
1010 FTF		10.25	260	9.25	235	1.12	28	12.00	305		
1212 FTF		12.25	311	11.25	286	1.12	28	12.00	305		
Reducer											
Catalog Number		A1		B1		A2		B2		C	
		in.	mm	in.	mm	in.	mm	in.	mm	in.	
2233 FR *		2.50	63	2.50	63	3.00	76	3.00	76	6.00	152
3344 FR *		3.00	76	3.00	76	4.00	102	4.00	102	8.00	203
4466 FR *		4.00	102	4.00	102	6.00	152	6.00	152	10.00	254
6688 FR *		6.00	152	6.00	152	8.00	203	8.00	203	12.00	305
881010 FR *		8.00	203	8.00	203	10.00	254	10.00	254	12.00	305
10101212 FR *		10.00	254	10.00	254	12.00	305	12.00	305	16.00	406
Connector											
Catalog Number						A		B			
Connector Style	Adapter Style	Universal Style				in.	mm	in.	mm		
22 HSC	22 HSCA	22 HSCU				2.50	63	2.50	63		
44 HSC	44 HSCA	44 HSCU				4.00	102	4.00	102		
66 HSC	66 HSCA	66 HSCU				6.00	152	6.00	152		
88 HSC	88 HSCA	88 HSCU				8.00	203	8.00	203		
1010 HSC	1010 HSCA	1010 HSCU				10.00	254	10.00	254		
1212 HSC	1212 HSCA	1212 HSCU				12.00	305	12.00	305		
End											
Catalog Number		A		B		KO					
KO	No KO	in.	mm	in.	mm	in.	mm				
22 HSE	22 HSE NK	2.50	63	2.50	63	1.50	38				
44 HSE	44 HSE NK	4.00	102	4.00	102	1.50	38				
66 HSE	66 HSE NK	6.00	152	6.00	152	1.50	38				
88 HSE	88 HSE NK	8.00	203	8.00	203	1.50	38				
1010 HSE	1010 HSE NK	10.00	254	10.00	254	3.00	76				
1212 HSE	1212 HSE NK	12.00	305	12.00	305	3.00	76				
Wireway End Flange											
Catalog Number		A		B		E		F			
		in.	mm	in.	mm	in.	mm	in.	mm		
22 HSF		2.50	63	2.50	63	4.00	102	4.00	102		
44 HSF		4.00	102	4.00	102	5.50	140	5.50	140		
66 HSF		6.00	152	6.00	152	7.50	191	7.50	191		
88 HSF		8.00	203	8.00	203	9.50	241	9.50	241		
1010 HSF		10.00	254	10.00	254	11.50	292	11.50	292		
1212 HSF		12.00	305	12.00	305	13.50	343	13.50	343		
Wireway Hanger											
Catalog Number		G		H		J		K			
		in.	mm	in.	mm	in.	mm	in.	mm		
22 FH		8.50	216	8.50	216	6.50	165	2.87	73		
44 FH		12.50	318	10.50	267	10.37	263	4.87	121		
66 FH		16.50	419	14.50	394	13.50	340	5.87	146		
88 FH		20.50	521	18.50	495	16.75	425	6.87	171		
1010 FH **		24.50	622	22.50	571	17.25	438	7.87	200		
1212 FH **		28.50	724	26.50	673	20.25	514	8.87	225		

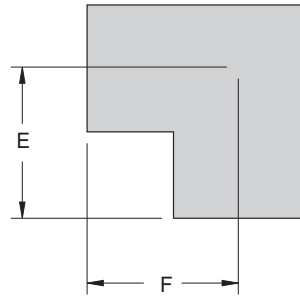
\* Requires use of HSCA Adapter Style Connector.

\*\*Hangers are shipped welded in the top cover assembly position.

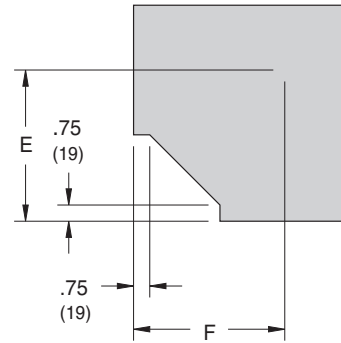
**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

90° Elbow									
Catalog Number	A		B		E		F		
	in.	mm	in.	mm	in.	mm	in.	mm	
22 HSL IN	2.50	63	2.50	63	5.38	136	5.38	136	
44 HSL IN	4.00	102	4.00	102	6.00	152	6.00	152	
66 HSL IN	6.00	152	6.00	152	7.00	178	7.00	178	
88 HSL IN	8.00	203	8.00	203	8.00	203	8.00	203	
1010 HSL IN	10.00	254	10.00	254	9.00	229	9.00	229	
1212 HSL IN	12.00	305	12.00	305	10.00	254	10.00	254	
22 HSL OUT	2.50	63	2.50	63	5.38	136	5.38	136	
44 HSL OUT	4.00	102	4.00	102	6.00	152	6.00	152	
66 HSL OUT	6.00	152	6.00	152	7.00	178	7.00	178	
88 HSL OUT	8.00	203	8.00	203	8.00	203	8.00	203	
1010 HSL OUT	10.00	254	10.00	254	9.00	229	9.00	229	
1212 HSL OUT	12.00	305	12.00	305	10.00	254	10.00	254	
22 HSL SIDE	2.50	63	2.50	63	5.38	136	5.38	136	
44 HSL SIDE	4.00	102	4.00	102	6.00	152	6.00	152	
66 HSL SIDE	6.00	152	6.00	152	7.00	178	7.00	178	
88 HSL SIDE	8.00	203	8.00	203	8.00	203	8.00	203	
1010 HSL SIDE	10.00	254	10.00	254	9.00	229	9.00	229	
1212 HSL SIDE	12.00	305	12.00	305	10.00	254	10.00	254	
45° Elbow									
Catalog Number	A		B		E		F		
	in.	mm	in.	mm	in.	mm	in.	mm	
2245 HSL COMBO	2.50	63	2.50	63	1.72	43	1.72	43	
4445 HSL COMBO	4.00	102	4.00	102	2.75	70	2.75	70	
6645 HSL COMBO	6.00	152	6.00	152	3.18	81	3.18	81	
8845 HSL COMBO	8.00	203	8.00	203	3.62	92	3.62	92	
101045 HSL COMBO	10.00	254	10.00	254	4.06	103	4.06	103	
121245 HSL COMBO	12.00	305	12.00	305	4.50	114	4.50	114	
2245 HSL SIDE	2.50	63	2.50	63	1.72	43	1.72	43	
4445 HSL SIDE	4.00	102	4.00	102	2.75	70	2.75	70	
6645 HSL SIDE	6.00	152	6.00	152	3.18	81	3.18	81	
8845 HSL SIDE	8.00	203	8.00	203	3.62	92	3.62	92	
101045 HSL SIDE	10.00	254	10.00	254	4.06	103	4.06	103	
121245 HSL SIDE	12.00	305	12.00	254	4.50	114	4.50	114	
Tee									
Catalog Number	A		B		E		F		
	in.	mm	in.	mm	in.	mm	in.	mm	
22 HST	2.50	63	2.50	63	4.25	108	4.25	108	
44 HST	4.00	102	4.00	102	6.00	152	6.00	152	
66 HST	6.00	152	6.00	152	7.00	178	7.00	178	
88 HST	8.00	203	8.00	203	8.00	203	8.00	203	
1010 HST	10.00	254	10.00	254	9.00	229	9.00	229	
1212 HST	12.00	305	12.00	305	10.00	254	10.00	254	
Cross									
Catalog Number	A		B		E		F		
	in.	mm	in.	mm	in.	mm	in.	mm	
22 HSX	2.50	63	2.50	63	4.25	108	4.25	108	
44 HSX	4.00	102	4.00	102	6.12	155	6.12	155	
66 HSX	6.00	152	6.00	152	7.12	181	7.12	181	
88 HSX	8.00	203	8.00	203	8.12	206	8.12	206	
1010 HSX	10.00	254	10.00	254	9.12	232	9.12	232	
1212 HSX	12.00	305	12.00	305	10.12	257	10.12	257	

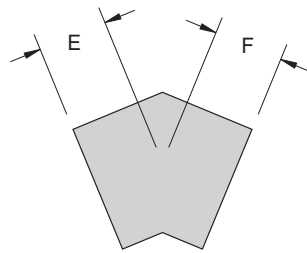
## Type 1 Quick-Connect Hinge Cover Wireway Illustration Sheet



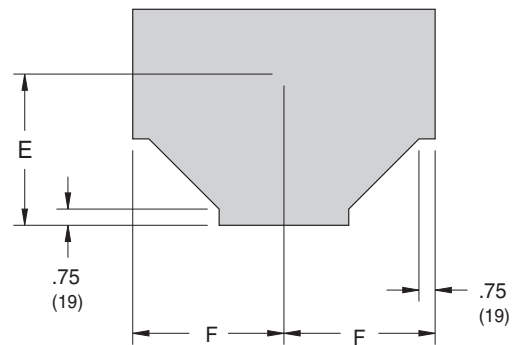
**90° Elbow**  
(outside opening)



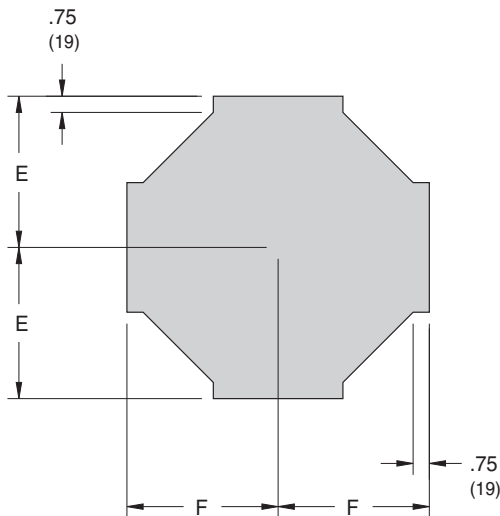
**90° Elbow**  
(inside and side opening)



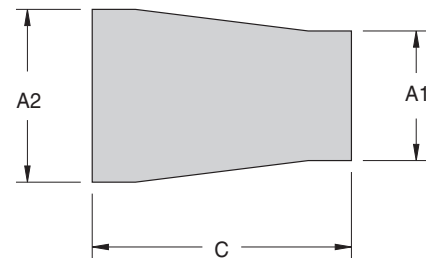
**45° Elbow**



**Tee**



**Cross**

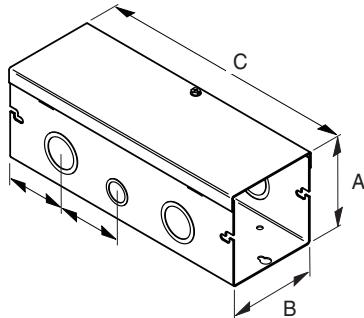


**Reducer Fitting**

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.



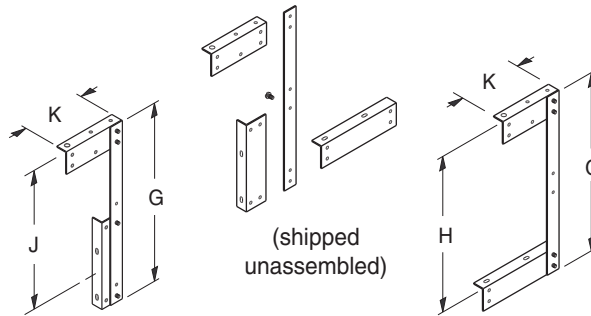
## Type 1 Quick-Connect Hinge Cover Wireway Illustration Sheet



### Wireway Section

Lengths from 12.00" (305 mm) to 120.00" (305 mm). Wireway exceeding 60.00" (1524 mm) has two covers. Shown with KO's, also available without.

### Wireway Hangers

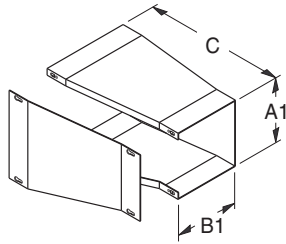


### Side Cover Assembly

For those installations where the wireway cover must be hinged at the side.

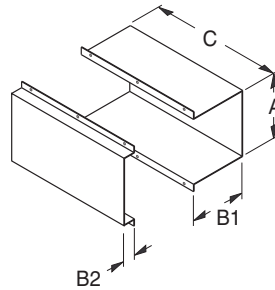
### Top Cover Assembly

For those installations where the wireway cover must be hinged at the top.



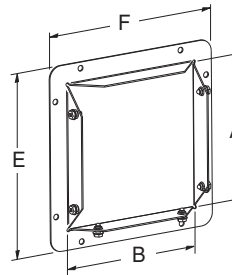
### Reducer

A2 and B2 dimensions (see catalog table), correspond to the large end opening. Used to reduce or enlarge wireway runs. Removable cover is secured with screws.



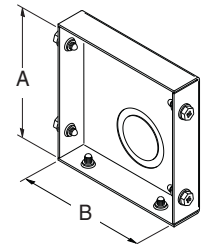
### Telescopic Fitting

Adjustable length up to 10.00" (254 mm). Wraps around the two near joining wireway lengths to achieve a continuous run.



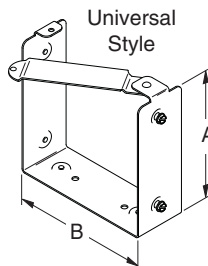
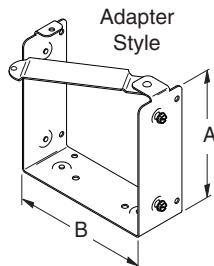
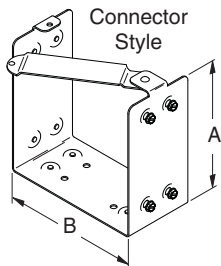
### Wireway End Flange

Allows for a secure connection of wireway to an adjoining enclosure or wall.



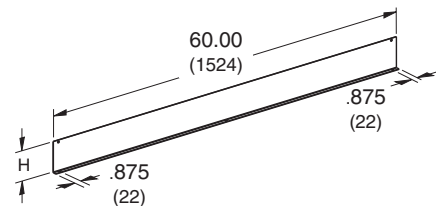
### End

Used to terminate wireway or fitting. Shown with KO, also available without.



### Connector

Swing gate allows for continuous runs of wire and cable.



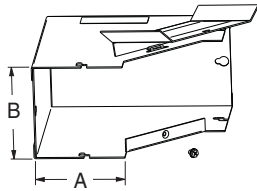
### Barrier, Bolt-On

For those installations that require separated wiring compartments. See Type 1 Screw Cover Wireway for part number, page 16.

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

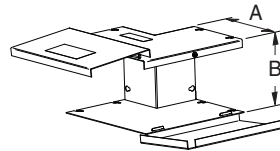
## Type 1 Quick-Connect Hinge Cover Wireway Illustration Sheet

### Wireway 90° Elbows



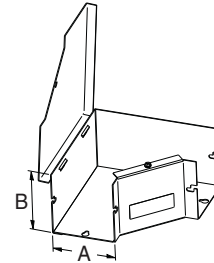
#### Inside Opening

Specifically designed to have only the inside cover hinge open to allow a continuous run with 90° turns.



#### Outside Opening

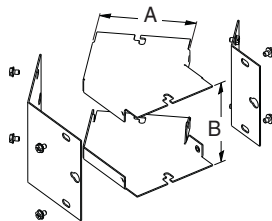
Specifically designed to have the outside covers hinge open to allow a continuous run with 90° turns.



#### Side Opening

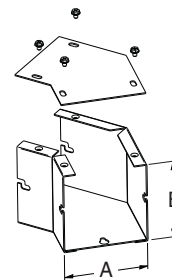
Side cover is hinged to allow a continuous run on designs with 90° sweeping turns.

### Wireway 45° Elbows



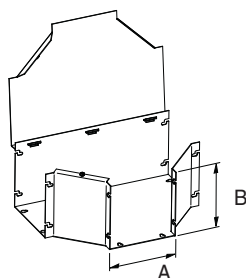
#### Combo Opening

Designed to achieve a 45° turn. Inside and outside removable covers are secured with screws.



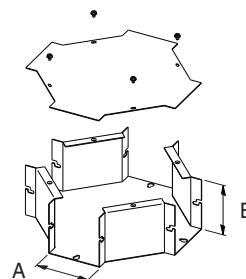
#### Side Opening

Designed to achieve a 45° turn and have the cover removed from the side. Excellent for combining two to make a gradual 90° sweep.



#### Tee

Side hinge cover design for applications where a "T" junction is necessary.

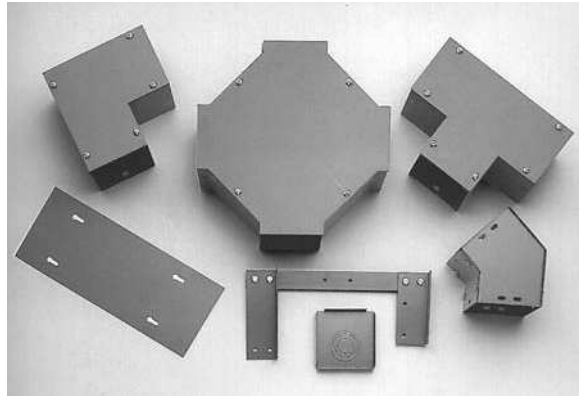


#### Cross

Side cover and broad body design to junction cable run in four directions. Removable cover is secured with screws.

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

## Type 1 Screw Cover Wireway - Painted & Galvanized Data Sheet



### Application

- Houses runs of control and power cable
- Used for cable and wire junction, distribution and termination

### Standards

- UL 870 listed, Type 1
- CSA C22.2 No. 26 certified, Type 1
- Conforms to NEMA standard for Type 1
- IEC 60529, IP30

### Finish

- Wash and phosphate undercoat or galvanized steel
- ANSI 61 gray acrylic electrocoat finish

### Accessories

- Sealing devices
- Touch-up paint
- See Accessories section

### Construction

- Wireway body and cover are fabricated from code gauge steel or galvanized steel, (see table)
- Wireway body has mounting holes on the back
- Wireway is available with or without knockouts on the top and bottom sides
- Wireway fittings have no knockouts, ends are available with or without knockouts
- Cover is secured to the body with plated screws
- Keyhole slots are furnished on the wireway cover which allow easy access to the inside without removing the screws
- Flush and surface wireway covers are available
- Wireway exceeding 72 inches in length has two overlapping covers
- Variety of fittings allow runs which can change direction, junction and terminate
- Standard wireway connectors (sold separately) have a unique gate feature which can swing completely open allowing for continuous runs of wire and cable
- Universal connectors are also available for adapting to other manufacturer's wireway, (see table, page 16)
- Completely interchangeable with Type 1 Hinge Cover Wireway and Fittings

**Notes:** Cooper B-Line can provide special sizes, finishes and other modifications. Consult the factory for your special requirements.

# Type 1 Screw Cover Wireway - Painted & Galvanized

Catalog Number

Wireway Catalog Number				Wireway Size							Knockout Quantity	
Painted		Galvanized										
KO	No KO	KO	No KO	in.	mm	in.	mm	Gauge	Top	Bottom		
2212 G	2212 G NK	2212 GGV	2212 GGV NK	2.50x2.50x12.00	64x64x305	1.25	32	16	3	3		
2218 G	2218 G NK	2218 GGV	2218 GGV NK	2.50x2.50x18.00	64x64x457	1.25	32	16	5	5		
2224 G	2224 G NK	2224 GGV	2224 GGV NK	2.50x2.50x24.00	64x64x610	1.25	32	16	7	7		
2236 G	2236 G NK	2236 GGV	2236 GGV NK	2.50x2.50x36.00	64x64x914	1.25	32	16	11	11		
2248 G	2248 G NK	2248 GGV	2248 GGV NK	2.50x2.50x48.00	64x64x1219	1.25	32	16	15	15		
2260 G	2260 G NK	2260 GGV	2260 GGV NK	2.50x2.50x60.00	64x64x1524	1.25	32	16	19	19		
2272 G	2272 G NK	2272 GGV	2272 GGV NK	2.50x2.50x72.00	64x64x1829	1.25	32	16	23	23		
22120 G	22120 G NK	22120 GGV	22120 GGV NK	2.50x2.50x120.00	64x64x3048	1.25	32	16	39	39		
3312 G	3312 G NK	3312 GGV	3312 GGV NK	3.00x3.00x12.00	76x76x305	1.50	38	16	3	3		
3318 G	3318 G NK	3318 GGV	3318 GGV NK	3.00x3.00x18.00	76x76x457	1.50	38	16	5	5		
3324 G	3324 G NK	3324 GGV	3324 GGV NK	3.00x3.00x24.00	76x76x610	1.50	38	16	7	7		
3336 G	3336 G NK	3336 GGV	3336 GGV NK	3.00x3.00x36.00	76x76x914	1.50	38	16	11	11		
3348 G	3348 G NK	3348 GGV	3348 GGV NK	3.00x3.00x48.00	76x76x1219	1.50	38	16	15	15		
3360 G	3360 G NK	3360 GGV	3360 GGV NK	3.00x3.00x60.00	76x76x1524	1.50	38	16	19	19		
3372 G	3372 G NK	3372 GGV	3372 GGV NK	3.00x3.00x72.00	76x76x1829	1.50	38	16	23	23		
33120 G	33120 G NK	33120 GGV	33120 GGV NK	3.00x3.00x120.00	76x76x3048	1.50	38	16	39	39		
4412 G	4412 G NK	4412 GGV	4412 GGV NK	4.00x4.00x12.00	102x102x305	2.75	70	16	3	3		
4418 G	4418 G NK	4418 GGV	4418 GGV NK	4.00x4.00x18.00	102x102x457	2.75	70	16	5	5		
4424 G	4424 G NK	4424 GGV	4424 GGV NK	4.00x4.00x24.00	102x102x610	2.75	70	16	7	7		
4436 G	4436 G NK	4436 GGV	4436 GGV NK	4.00x4.00x36.00	102x102x914	2.75	70	16	11	11		
4448 G	4448 G NK	4448 GGV	4448 GGV NK	4.00x4.00x48.00	102x102x1219	2.75	70	16	15	15		
4460 G	4460 G NK	4460 GGV	4460 GGV NK	4.00x4.00x60.00	102x102x1524	2.75	70	16	19	19		
4472 G	4472 G NK	4472 GGV	4472 GGV NK	4.00x4.00x72.00	102x102x1829	2.75	70	16	23	23		
44120 G	44120 G NK	44120 GGV	44120 GGV NK	4.00x4.00x120.00	102x102x3048	2.75	70	16	39	39		
6412 G	6412 G NK	6412 GGV	6412 GGV NK	6.00x4.00x12.00	152x102x305	4.25	108	16	3	3		
6418 G	6418 G NK	6418 GGV	6418 GGV NK	6.00x4.00x18.00	152x102x457	4.25	108	16	5	5		
6424 G	6424 G NK	6424 GGV	6424 GGV NK	6.00x4.00x24.00	152x102x610	4.25	108	16	7	7		
6436 G	6436 G NK	6436 GGV	6436 GGV NK	6.00x4.00x36.00	152x102x914	4.25	108	16	11	11		
6448 G	6448 G NK	6448 GGV	6448 GGV NK	6.00x4.00x48.00	152x102x1219	4.25	108	16	15	15		
6460 G	6460 G NK	6460 GGV	6460 GGV NK	6.00x4.00x60.00	152x102x1524	4.25	108	16	19	19		
6472 G	6472 G NK	6472 GGV	6472 GGV NK	6.00x4.00x72.00	152x102x1829	4.25	108	16	23	23		
64120 G	64120 G NK	64120 GGV	64120 GGV NK	6.00x4.00x120.00	152x102x3048	4.25	108	16	39	39		
6612 G	6612 G NK	6612 GGV	6612 GGV NK	6.00x6.00x12.00	152x152x305	4.25	108	16	3	3		
6618 G	6618 G NK	6618 GGV	6618 GGV NK	6.00x6.00x18.00	152x152x457	4.25	108	16	5	5		
6624 G	6624 G NK	6624 GGV	6624 GGV NK	6.00x6.00x24.00	152x152x610	4.25	108	16	7	7		
6636 G	6636 G NK	6636 GGV	6636 GGV NK	6.00x6.00x36.00	152x152x914	4.25	108	16	11	11		
6648 G	6648 G NK	6648 GGV	6648 GGV NK	6.00x6.00x48.00	152x152x1219	4.25	108	16	15	15		
6660 G	6660 G NK	6660 GGV	6660 GGV NK	6.00x6.00x60.00	152x152x1524	4.25	108	16	19	19		
6672 G	6672 G NK	6672 GGV	6672 GGV NK	6.00x6.00x72.00	152x152x1829	4.25	108	16	23	23		
66120 G	66120 G NK	66120 GGV	66120 GGV NK	6.00x6.00x120.00	152x152x3048	4.25	108	16	39	39		

See page 14 for 8"x8" through 12"x12" wireway.

Notes: Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

## Type 1 Screw Cover Wireway - Painted & Galvanized

### Catalog Number

Wireway Catalog Number				Wireway Size		D			Knockout Quantity	
Painted		Galvanized								
KO	No KO	KO	No KO	in.	mm	in.	mm	Gauge	Top	Bottom
8812 G	8812 G NK	8812 GGV	8812 GGV NK	8.00x8.00x12.00	203x203x305	6.00	152	14	3	3
8818 G	8818 G NK	8818 GGV	8818 GGV NK	8.00x8.00x18.00	203x203x457	6.00	152	14	5	5
8824 G	8824 G NK	8824 GGV	8824 GGV NK	8.00x8.00x24.00	203x203x610	6.00	152	14	7	7
8836 G	8836 G NK	8836 GGV	8836 GGV NK	8.00x8.00x36.00	203x203x914	6.00	152	14	11	11
8848 G	8848 G NK	8848 GGV	8848 GGV NK	8.00x8.00x48.00	203x203x1219	6.00	152	14	15	15
8860 G	8860 G NK	8860 GGV	8860 GGV NK	8.00x8.00x60.00	203x203x1524	6.00	152	14	19	19
8872 G	8872 G NK	8872 GGV	8872 GGV NK	8.00x8.00x72.00	203x203x1829	6.00	152	14	23	23
88120 G	88120 G NK	88120 GGV	88120 GGV NK	8.00x8.00x120.00	203x203x3048	6.00	152	14	39	39
101012 G	101012 G NK	101012 GGV	101012 GGV NK	10.00x10.00x12.00	254x254x305	8.00	203	14	3	3
101024 G	101024 G NK	101024 GGV	101024 GGV NK	10.00x10.00x24.00	254x254x610	8.00	203	14	7	7
101036 G	101036 G NK	101036 GGV	101036 GGV NK	10.00x10.00x36.00	24x254x914	8.00	203	14	11	11
101048 G	101048 G NK	101048 GGV	101048 GGV NK	10.00x10.00x48.00	254x254x1219	8.00	203	14	15	15
101060 G	101060 G NK	101060 GGV	101060 GGV NK	10.00x10.00x60.00	254x254x1524	8.00	203	14	19	19
101072 G	101072 G NK	101072 GGV	101072 GGV NK	10.00x10.00x72.00	254x254x1829	8.00	203	14	23	23
1010120 G	1010120 G NK	1010120 GGV	1010120 GGV NK	10.00x10.00x120.00	254x254x3048	8.00	203	14	39	39
121212 G	121212 G NK	121212 GGV	121212 GGV NK	12.00x12.00x12.00	305x305x305	10.00	254	14	3	3
121224 G	121224 G NK	121224 GGV	121224 GGV NK	12.00x12.00x24.00	305x305x610	10.00	254	14	7	7
121236 G	121236 G NK	121236 GGV	121236 GGV NK	12.00x12.00x36.00	305x305x914	10.00	254	14	11	11
121248 G	121248 G NK	121248 GGV	121248 GGV NK	12.00x12.00x48.00	305x305x1219	10.00	254	14	15	15
121260 G	121260 G NK	121260 GGV	121260 GGV NK	12.00x12.00x60.00	305x305x1524	10.00	254	14	19	19
121272 G	121272 G NK	121272 GGV	121272 GGV NK	12.00x12.00x72.00	305x305x1829	10.00	254	14	23	23
1212120 G	1212120 G NK	1212120 GGV	1212120 GGV NK	12.00x12.00x120.00	305x305x3048	10.00	254	14	39	39

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

# Type 1 Screw Cover Wireway Fittings - Painted & Galvanized

## Catalog Number

Connector											
Catalog Number		A		B							
		in.	mm	in.	mm						
22 C		2.50	64	2.50	64						
33 C		3.00	76	3.00	76						
44 C		4.00	102	4.00	102						
64 C		6.00	152	4.00	102						
66 C		6.00	152	6.00	152						
88 C		8.00	203	8.00	203						
1010 C		10.00	254	10.00	254						
1212 C		12.00	305	12.00	305						
Reducer											
Catalog Number		A1		B1		A2		B2		C	
Painted	Galvanized	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
2233 FR	2233 FRGV	2.50	64	2.50	64	3.00	76	3.00	76	6.00	152
3344 FR	3344 FRGV	3.00	76	3.00	76	4.00	102	4.00	102	8.00	203
4466 FR	4466 FRGV	4.00	102	4.00	102	6.00	152	6.00	152	10.00	254
6688 FR	6688 FRGV	6.00	152	6.00	152	8.00	203	8.00	203	12.00	305
881010 FR	881010 FRGV	8.00	203	8.00	203	10.00	254	10.00	254	12.00	305
10101212 FR	10101212 FRGV	10.00	254	10.00	254	12.00	305	12.00	305	16.00	406
Wireway End Flange											
Catalog Number		A		B		E		F			
Painted	Galvanized	in.	mm	in.	mm	in.	mm	in.	mm		
22 GF	22 GFGV	2.50	64	2.50	64	4.00	102	4.00	102		
33 GF	33 GFGV	3.00	76	3.00	76	4.50	114	4.50	114		
44 GF	44 GFGV	4.00	102	4.00	102	5.50	140	5.50	140		
64 GF	64 GFGV	6.00	152	4.00	102	7.50	191	5.50	140		
66 GF	66 GFGV	6.00	152	6.00	152	7.50	191	7.50	191		
88 GF	88 GFGV	8.00	203	8.00	203	9.50	241	9.50	241		
1010 GF	1010 GFGV	10.00	254	10.00	254	11.50	292	11.50	292		
1212 GF	1212 GFGV	12.00	305	12.00	305	13.50	343	13.50	343		
90° Elbow											
Catalog Number		A		B		C		E		F	
Painted	Galvanized	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
22 L COMBO	22 L COMBOGV	2.50	64	2.50	64	5.59	142	4.28	109	4.28	109
33 L COMBO	33 L COMBOGV	3.00	76	3.00	76	6.09	155	4.50	114	4.50	114
44 L COMBO	44 L COMBOGV	4.00	102	4.00	102	7.09	180	5.00	127	5.00	127
64 L COMBO	64 L COMBOGV	4.00	102	6.00	152	10.09	256	5.00	127	5.00	127
66 L COMBO	66 L COMBOGV	6.00	152	6.00	152	10.09	256	7.00	178	7.00	178
88 L COMBO	88 L COMBOGV	8.00	203	8.00	203	12.09	307	8.00	203	8.00	203
1010 L COMBO	1010 L COMBOGV	10.00	254	10.00	254	14.09	358	9.00	229	9.00	229
1212 L COMBO	1212 L COMBOGV	12.00	305	12.00	305	16.09	409	10.00	254	10.00	254
22 L SIDE	22 L SIDEV	2.50	64	2.50	64	5.59	142	4.28	109	4.28	109
33 L SIDE	33 L SIDEV	3.00	76	3.00	76	6.09	155	4.50	114	4.50	114
44 L SIDE	44 L SIDEV	4.00	102	4.00	102	7.09	180	5.00	127	5.00	127
64 L SIDE	64 L SIDEV	6.00	152	4.00	102	10.09	256	7.00	178	7.00	178
66 L SIDE	66 L SIDEV	6.00	152	6.00	152	10.09	256	7.00	178	7.00	178
88 L SIDE	88 L SIDEV	8.00	203	8.00	203	12.09	307	8.00	203	8.00	203
1010 L SIDE	1010 L SIDEV	10.00	254	10.00	254	14.09	358	10.00	254	9.00	229
1212 L SIDE	1212 L SIDEV	12.00	305	12.00	305	16.09	409	10.00	254	10.00	254
22 L SWEEP	22 L SWEEPGV	2.50	64	2.50	64	5.63	143	4.25	108	4.25	108
33 L SWEEP	33 L SWEEPGV	3.00	76	3.00	76	8.41	214	6.84	174	6.84	174
44 L SWEEP	44 L SWEEPGV	4.00	102	4.00	102	9.41	239	7.34	186	7.34	186
64 L SWEEP	64 L SWEEPGV	6.00	152	4.00	102	11.41	290	8.34	212	8.34	212
66 L SWEEP	66 L SWEEPGV	6.00	152	6.00	152	11.41	290	8.34	212	8.34	212
88 L SWEEP	88 L SWEEPGV	8.00	203	8.00	203	13.41	341	9.34	237	9.34	237
1010 L SWEEP	1010 L SWEEPGV	10.00	254	10.00	254	15.41	391	10.34	263	10.34	263
1212 L SWEEP	1212 L SWEEPGV	12.00	305	12.00	305	17.41	442	11.34	288	11.34	288

Telescopic Fitting									
Catalog Number		A		B1		B2		C	
Painted	Galvanized	in.	mm	in.	mm	in.	mm	in.	mm
22 FTF	22 FTFGV	2.75	70	1.75	44	1.12	28	12.00	305
33 FTF	33 FTFGV	3.25	83	2.25	57	1.12	28	12.00	305
44 FTF	44 FTFGV	4.25	108	3.25	83	1.12	28	12.00	305
64 FTF	64 FTFGV	6.25	159	3.25	83	1.12	28	12.00	305
66 FTF	66 FTFGV	6.25	159	5.25	133	1.12	28	12.00	305
88 FTF	88 FTFGV	8.25	210	7.25	184	1.12	28	12.00	305
1010 FTF	1010 FTFGV	10.25	260	9.25	235	1.12	28	12.00	305
1212 FTF	1212 FTFGV	12.25	311	11.25	286	1.12	28	12.00	305

End									
Catalog Number				A		B			
KO	No KO	KO	No KO	in.	mm	in.	mm		
Painted	Galvanized	Painted	Galvanized						
22 E	22 E NK	22 EGV	22 EGV NK	2.50	64	2.50	64		
33 E	33 E NK	33 EGV	33 EGV NK	3.00	76	3.00	76		
44 E	44 E NK	44 EGV	44 EGV NK	4.00	102	4.00	102		
64 E	64 E NK	64 EGV	64 EGV NK	6.00	152	4.00	102		
66 E	66 E NK	66 EGV	66 EGV NK	6.00	152	6.00	152		
88 E	88 E NK	88 EGV	88 EGV NK	8.00	203	8.00	203		
1010 E	1010 E NK	1010 EGV	1010 EGV NK	10.00	254	10.00	254		
1212 E	1212 E NK	1212 EGV	1212 EGV NK	12.00	305	12.00	305		

See drawing for KO sizes.

Wireway Hanger									
Catalog Number		G		H		J		K	
Painted	Galvanized	in.	mm	in.	mm	in.	mm	in.	mm
22 FH	22 FHGV	8.50	216	6.50	165	6.50	165	2.87	73
33 FH	33 FHGV	10.50	267	8.50	216	9.00	229	3.87	98
44 FH	44 FHGV	12.50	318	10.50	267	10.37	263	4.87	124
66 FH	66 FHGV	16.50	419	14.50	368	13.50	343	5.87	149
88 FH	88 FHGV	20.50	521	18.50	470	16.75	425	6.87	174
1010 FH*	1010 FHGV*	24.50	622	22.50	572	19.75	502	7.87	200
1212 FH*	1212 FHGV*	28.50	724	26.50	673	22.75	578	8.87	225

\*Hangers are shipped welded in the top cover assembly position.

90° Elbow - Tee - Cross									
Catalog Number		A		B		C			
Painted	Galvanized	in.	mm	in.	mm	in.	mm		
22 LTX	22 LTXGV	2.50	64	2.50	64	4.50	114		
33 LTX	33 LTXGV	3.00	76	3.00	76	5.00	127		
44 LTX	44 LTXGV	4.00	102	4.00	102	6.00	152		
64 LTX	64 LTXGV	6.00	152	4.00	102	8.00	203		
66 LTX	66 LTXGV	6.00	152	6.00	152	8.00	203		
88 LTX	88 LTXGV	8.00	203	8.00	203	10.00	254		
1010 LTX	1010 LTXGV	10.00	254	10.00	254	12.00	305		
1212 LTX	1212 LTXGV	12.00	305	12.00	305	14.00	356		

Notes: Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

## Type 1 Screw Cover Wireway Fittings - Painted & Galvanized

### Catalog Number

45° Elbow									
Catalog Number		A		B		E		F	
Painted	Galvanized	in.	mm	in.	mm	in.	mm	in.	mm
2245 L COMBO	2245 L COMBOGV	2.50	64	2.50	64	1.72	44	1.72	44
3345 L COMBO	3345 L COMBOGV	3.00	76	3.00	76	2.56	65	2.56	65
4445 L COMBO	4445 L COMBOGV	4.00	102	4.00	102	2.75	70	2.75	70
6445 L COMBO	6445 L COMBOGV	4.00	102	6.00	153	2.75	70	2.75	70
6645 L COMBO	6645 L COMBOGV	6.00	153	6.00	153	3.18	81	3.18	81
8845 L COMBO	8845 L COMBOGV	8.00	203	8.00	203	3.62	92	3.62	92
101045 L COMBO	101045 L COMBOGV	10.00	254	10.00	254	4.06	103	4.06	103
121245 L COMBO	121245 L COMBOGV	12.00	305	12.00	305	4.50	114	4.50	114
2245 L SIDE	2245 L SIDEV	2.50	64	2.50	64	1.97	50	1.97	50
3345 L SIDE	3345 L SIDEV	3.00	76	3.00	76	2.56	65	2.56	65
4445 L SIDE	4445 L SIDEV	4.00	102	4.00	102	2.75	70	2.75	70
6445 L SIDE	6445 L SIDEV	6.00	153	4.00	102	3.18	81	3.18	81
6645 L SIDE	6645 L SIDEV	6.00	153	6.00	153	3.18	81	3.18	81
8845 L SIDE	8845 L SIDEV	8.00	203	8.00	203	3.62	92	3.62	92
101045 L SIDE	101045 L SIDEV	10.00	254	10.00	254	4.06	103	4.06	103
121245 L SIDE	121245 L SIDEV	12.00	305	12.00	305	4.50	114	4.50	114

Tee									
Catalog Number		A		B		E		F	
Painted	Galvanized	in.	mm	in.	mm	in.	mm	in.	mm
22 T	22 TGV	2.50	64	2.50	64	4.25	108	4.25	108
33 T	33 TGV	3.00	76	3.00	76	4.50	114	4.50	114
44 T	44 TGV	4.00	102	4.00	102	5.00	127	5.00	127
64 T	64 TGV	6.00	153	4.00	102	7.00	178	7.00	178
66 T	66 TGV	6.00	153	6.00	153	7.00	178	7.00	178
88 T	88 TGV	8.00	203	8.00	203	8.00	203	8.00	203
1010 T	1010 TGV	10.00	254	10.00	254	9.00	229	9.00	229
1212 T	1212 TGV	12.00	305	12.00	305	10.00	254	10.00	254

Cross									
Catalog Number		A		B		E		F	
Painted	Galvanized	in.	mm	in.	mm	in.	mm	in.	mm
22 X	22 XGV	2.50	64	2.50	64	4.25	108	4.25	108
33 X	33 XGV	3.00	76	3.00	76	5.62	143	5.62	143
44 X	44 XGV	4.00	102	4.00	102	6.12	155	6.12	155
64 X	64 XGV	6.00	152	4.00	152	7.12	181	7.12	181
66 X	66 XGV	6.00	152	6.00	152	7.12	181	7.12	181
88 X	88 XGV	8.00	203	8.00	203	8.12	206	8.12	206
1010 X	1010 XGV	10.00	254	10.00	254	9.12	232	9.12	232
1212 X	1212 XGV	12.00	305	12.00	305	10.12	257	10.12	257

Barrier Kit, 60" Bolt-On									
Catalog Number		Size		Length		H			
		in.	mm	in.	mm	in.	mm		
22-12BK*		2.50x2.50	64x64	60.00	1524	1.88	48		
33-12BK*		3.00x3.00	76x76	60.00	1524	2.25	57		
44-12BK*		4.00x4.00	102x102	60.00	1524	3.00	76		
66-12BK*		6.00x6.00	152x152	60.00	1524	4.50	114		
88-12BK*		8.00x8.00	203x203	60.00	1524	6.00	152		
1010-12BK*		10.00x10.00	254x254	60.00	1524	8.00	203		
1212-12BK*		12.00x12.00	305x305	60.00	1524	10.50	267		

\*Not UL or CSA listed fitting.

Type 1 Wireway Competitor Adapters							
Wireway Size		Hoffman <sup>®1</sup>	Wiegmann <sup>®2</sup>	Square D <sup>®3</sup>	Unity <sup>®4</sup>	Electrical Box and Enclosures <sup>®5</sup>	Austin <sup>®6</sup>
in.	mm						
2.5x2.5	64x64	22 CA	22 CA	22 CA	22 CA	-	22 ACA
4x4	102x102	44 CA	44 CA	44 CA	44 CA	44 CA	44 ACA
6x6	152x152	66 CA	66 CA	66 CA	66 CA	66 CA	66 ACA
8x8	203x203	88 CA	88 CA	88 SCA	88 CA	88 CA	88 ACA
10x10	254x254	1010 CA	1010 CA	1010 SCA	1010 CA	1010 CA	1010 ACA
12x12	305x305	1212 CA	1212 CA	1212 SCA	1212 CA	1212 CA	1212 ACA

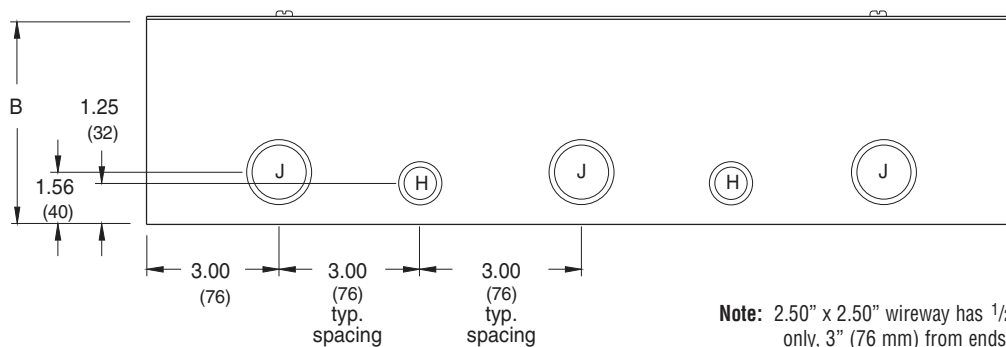
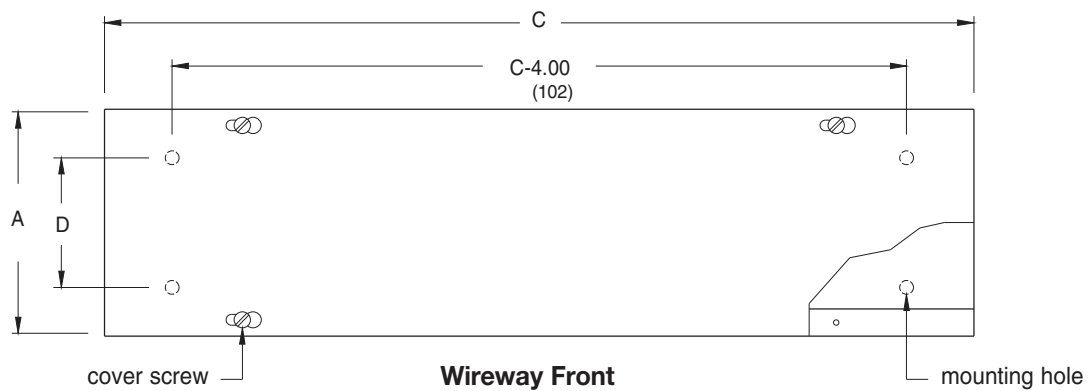
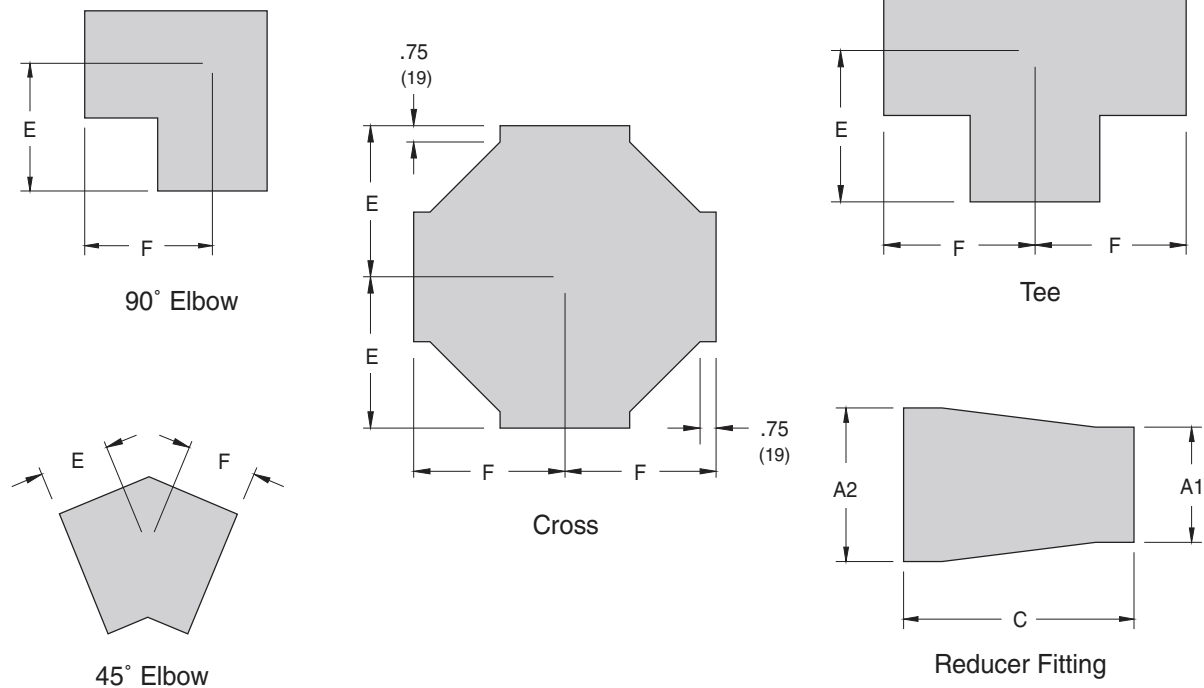
1. HOFFMAN<sup>®</sup> is the registered trademark of Hoffman Engineering Company, Anoka, Minnesota.
2. WIEGMANN<sup>®</sup> is the registered trademark of Hubbell Incorporated, Orange, Connecticut.
3. SQUARE D<sup>®</sup> is the registered trademark of Square D Company, Palatine, Illinois.
4. UNITY<sup>®</sup> is the registered trademark of Unity Manufacturing, Garland, Texas.
5. ELECTRICAL BOX AND ENCLOSURES<sup>®</sup> is the registered trademark of Electrical Box and Enclosures, Alabaster, Alabama.
6. AUSTIN<sup>®</sup> is the registered trademark of The Austin Co., Yadkinville, North Carolina.

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.



## Type 1 Screw Cover Wireway - Painted & Galvanized

### Illustration Sheet

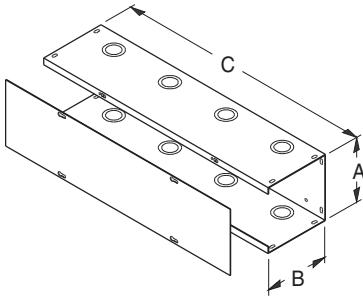


Knockout sizes:  
H = 3/4" or 1/2" conduit  
J = 1 1/4" or 1" conduit

**Note:** 2.50" x 2.50" wireway has 1/2" and 3/4" 2-way knockouts (H) only, 3" (76 mm) from ends and 3" (76 mm) on center. Additional mounting holes are furnished when C dimension is over 60.00" (1524 mm).

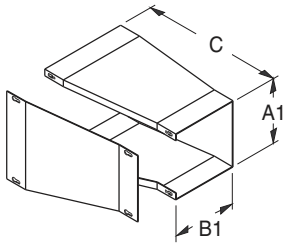
**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

## Type 1 Screw Cover Wireway - Painted & Galvanized Illustration Sheet



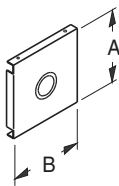
### Wireway Section

Lengths from 12.00" (305 mm) to 120.00" (3048 mm). Wireway exceeding 72.00" (1829 mm) has two covers. Shown with KO's also available without.



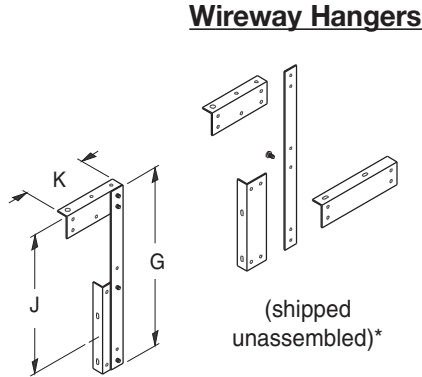
### Reducer

A2 and B2 dimensions (see catalog table), correspond to the large end opening. Used to reduce or enlarge wireway runs.



### End

Used to terminate wireway or fitting. 2.50"x2.50" (64 mm x 64 mm) through 8.00"x8.00" (203 mm x 203 mm) ends have a 1.50"-1.25" concentric 2-way KO. 10.00" x 10.00" (254 mm x 254 mm) ends and larger have a 3.00"-2.50" concentric 2-way KO for terminating on pipe or conduit. Also available without KO.

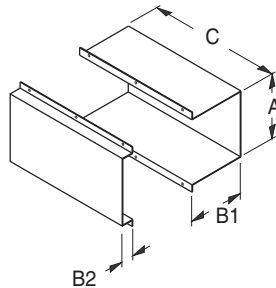


### Wireway Hangers

(shipped unassembled)\*

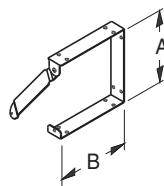
### Side Cover Assembly

For those installations where the wireway cover must be removed from the side. \*1010 FH & 1212 FH are shipped welded in the top cover assembly position.



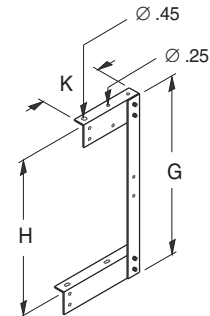
### Telescopic Fitting

Adjustable length up to 10.00" (254 mm). Wraps around the two near joining wireway lengths to achieve a continuous run.



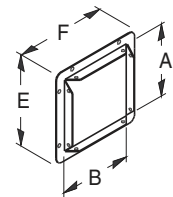
### Connector

Swing gate allows for continuous runs of wire and cable.



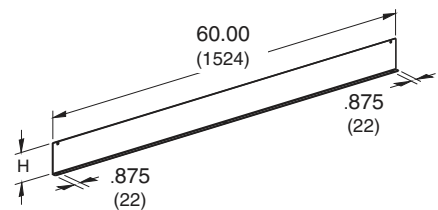
### Top Cover Assembly

For those installations where the wireway cover must be removed from the top. \*1010 FH & 1212 FH are shipped welded in the top cover assembly position.



### Wireway End Flange

Allows for a secure connection of wireway to an adjoining enclosure or wall.



### Barrier, Bolt-On

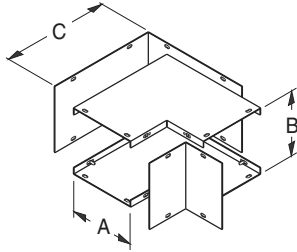
For those installations that require separated wiring compartments.

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

## Type 1 Screw Cover Wireway - Painted & Galvanized

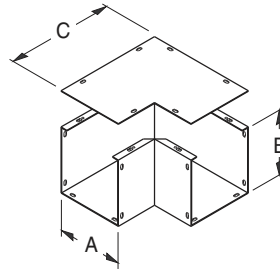
### Illustration Sheet

#### Wireway 90° Elbows



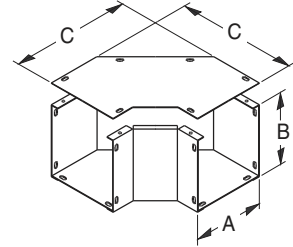
##### Combo Opening

Specially designed for removing either the inside or outside cover to allow a continuous run with 90° turns.



##### Side Opening

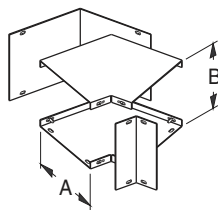
Side cover is removable to allow a continuous run on designs with 90° turns.



##### Sweep Elbow

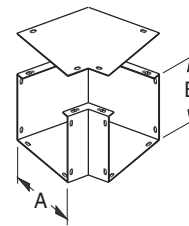
Side cover design with a larger radius for 90° sweeping turns.

#### Wireway 45° Elbows



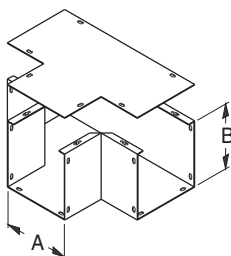
##### Combo Opening

Similar to the 90° elbow design except a 45° turn. Both inside and outside covers removable.



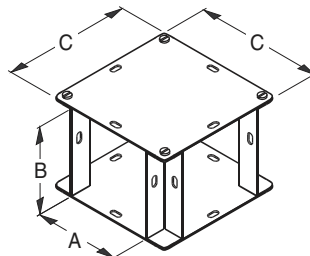
##### Side Opening

Similar to the 90° side opening design except for a 45° turn. Excellent for combining two to make a gradual sweeping 90° turn.



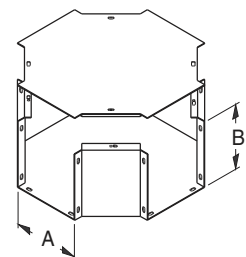
##### Tee

Side cover design where a "T" junction is necessary.



##### 90° Elbow-Tee-Cross

Designed for left or right 90° turns or as a tee or cross by removing closure plates. Includes two (2) closure plates and hardware.



##### Cross

Side cover and broad body design to junction cable run in four directions.

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

## Type 3R Screw Cover Wireway Data Sheet



### Application

- Houses runs of control and power cable
- Used for cable and wire junction, distribution and termination

### Standards

- UL 870 listed, Type 3R
- CSA C22.2 No. 26 certified, Type 3R
- Conforms to NEMA standard for Type 3R
- IEC 60529, IP32

### Construction

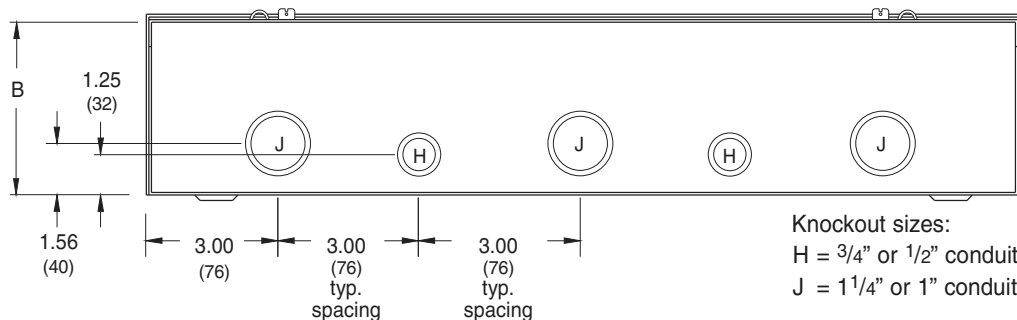
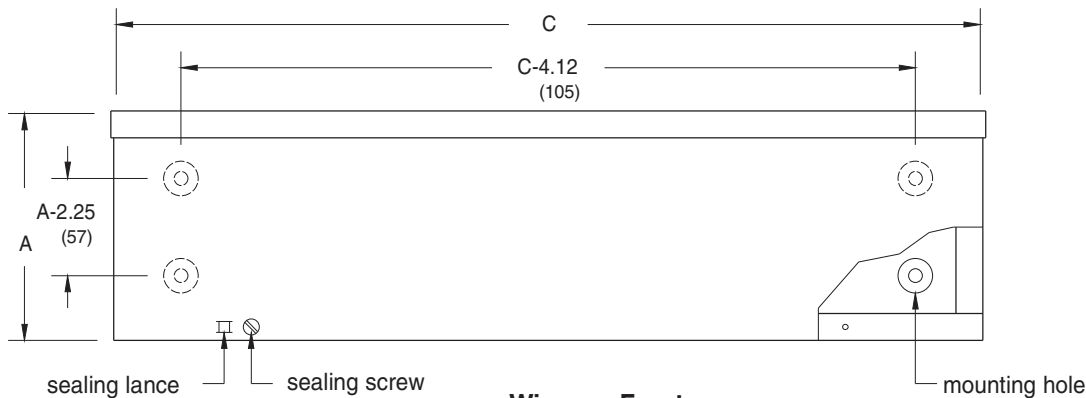
- Wireway body and cover are fabricated from (16) gauge galvaneal steel for painted or galvanized steel
- Wireway body has embossed mounting holes on the back
- Wireway is available with or without knockouts on the bottom end only, (see table)
- Cover is held secure by sliding it under the top end flange and fastening it with plated screws on the bottom end flange
- Sealing screws and lances are located at each end of the wireway cover
- Wireway exceeding 72 inches in length has two covers, a removable center channel and body supports

### Finish

- Wash and phosphate undercoat or galvanized steel
- ANSI 61 gray acrylic electrocoat finish

### Accessories

- Sealing devices
- Touch-up paint
- See Accessories section



**Notes:** Cooper B-Line can provide special sizes, finishes and other modifications. Consult the factory for your special requirements.

# Type 3R Screw Cover Wireway

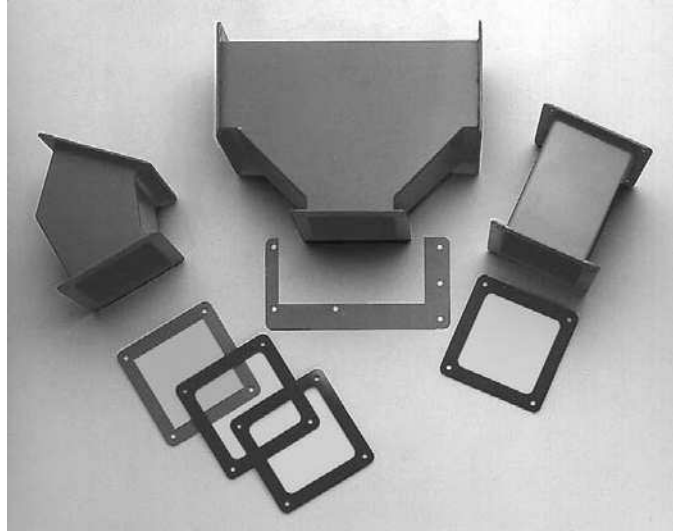
## Catalog Number

Wireway Catalog Number				Wireway Size		Knockout Quantity
Painted		Galvanized				
KO	No KO	KO	No KO	A x B x C		
				in.	mm	
4412 GRT	4412 GRT NK	4412 GRTGV	4412 GRTGV NK	4.00x4.00x12.00	102x102x305	3
4418 GRT	4418 GRT NK	4418 GRTGV	4418 GRTGV NK	4.00x4.00x18.00	102x102x457	5
4424 GRT	4424 GRT NK	4424 GRTGV	4424 GRTGV NK	4.00x4.00x24.00	102x102x610	7
4436 GRT	4436 GRT NK	4436 GRTGV	4436 GRTGV NK	4.00x4.00x36.00	102x102x914	11
4448 GRT	4448 GRT NK	4448 GRTGV	4448 GRTGV NK	4.00x4.00x48.00	102x102x1219	15
4460 GRT	4460 GRT NK	4460 GRTGV	4460 GRTGV NK	4.00x4.00x60.00	102x102x1524	19
4472 GRT	4472 GRT NK	4472 GRTGV	4472 GRTGV NK	4.00x4.00x72.00	102x102x1829	23
4496 GRT	4496 GRT NK	4496 GRTGV	4496 GRTGV NK	4.00x4.00x96.00	102x102x2438	31
44120 GRT	44120 GRT NK	44120 GRTGV	44120 GRTGV NK	4.00x4.00x120.00	102x102x3048	35
6412 GRT	6412 GRT NK	6412 GRTGV	6412 GRTGV NK	6.00x4.00x12.00	152x102x305	3
6418 GRT	6418 GRT NK	6418 GRTGV	6418 GRTGV NK	6.00x4.00x18.00	152x102x457	5
6424 GRT	6424 GRT NK	6424 GRTGV	6424 GRTGV NK	6.00x4.00x24.00	152x102x610	7
6436 GRT	6436 GRT NK	6436 GRTGV	6436 GRTGV NK	6.00x4.00x36.00	152x102x914	11
6448 GRT	6448 GRT NK	6448 GRTGV	6448 GRTGV NK	6.00x4.00x48.00	152x102x1219	15
6460 GRT	6460 GRT NK	6460 GRTGV	6460 GRTGV NK	6.00x4.00x60.00	152x102x1524	19
6472 GRT	6472 GRT NK	6472 GRTGV	6472 GRTGV NK	6.00x4.00x72.00	152x102x1829	23
6612 GRT	6612 GRT NK	6612 GRTGV	6612 GRTGV NK	6.00x6.00x12.00	152x152x305	3
6618 GRT	6618 GRT NK	6618 GRTGV	6618 GRTGV NK	6.00x6.00x18.00	152x152x457	5
6624 GRT	6624 GRT NK	6624 GRTGV	6624 GRTGV NK	6.00x6.00x24.00	152x152x610	7
6636 GRT	6636 GRT NK	6636 GRTGV	6636 GRTGV NK	6.00x6.00x36.00	152x152x914	11
6648 GRT	6648 GRT NK	6648 GRTGV	6648 GRTGV NK	6.00x6.00x48.00	152x152x1219	15
6660 GRT	6660 GRT NK	6660 GRTGV	6660 GRTGV NK	6.00x6.00x60.00	152x152x1524	19
6672 GRT	6672 GRT NK	6672 GRTGV	6672 GRTGV NK	6.00x6.00x72.00	152x152x1829	23
6696 GRT	6696 GRT NK	6696 GRTGV	6696 GRTGV NK	6.00x6.00x96.00	152x152x2438	31
66120 GRT	66120 GRT NK	66120 GRTGV	66120 GRTGV NK	6.00x6.00x120.00	152x152x3048	35
8812 GRT	8812 GRT NK	8812 GRTGV	8812 GRTGV NK	8.00x8.00x12.00	203x203x305	3
8818 GRT	8818 GRT NK	8818 GRTGV	8818 GRTGV NK	8.00x8.00x18.00	203x203x457	5
8824 GRT	8824 GRT NK	8824 GRTGV	8824 GRTGV NK	8.00x8.00x24.00	203x203x610	7
8836 GRT	8836 GRT NK	8836 GRTGV	8836 GRTGV NK	8.00x8.00x36.00	203x203x914	11
8848 GRT	8848 GRT NK	8848 GRTGV	8848 GRTGV NK	8.00x8.00x48.00	203x203x1219	15
8860 GRT	8860 GRT NK	8860 GRTGV	8860 GRTGV NK	8.00x8.00x60.00	203x203x1524	19
8872 GRT	8872 GRT NK	8872 GRTGV	8872 GRTGV NK	8.00x8.00x72.00	203x203x1829	23
-	8896 GRT NK	-	8896 GRTGV NK	8.00x8.00x96.00	203x203x2438	-
-	88120 GRT NK	-	88120 GRTGV NK	8.00x8.00x120.00	203x203x3048	-
-	101024 GRT NK	-	101024 GRTGV NK	10.00x10.00x24.00	254x254x610	-
-	101036 GRT NK	-	101036 GRTGV NK	10.00x10.00x36.00	254x254x914	-
-	101048 GRT NK	-	101048 GRTGV NK	10.00x10.00x48.00	254x254x1219	-
-	101060 GRT NK	-	101060 GRTGV NK	10.00x10.00x60.00	254x254x1524	-
-	101072 GRT NK	-	101072 GRTGV NK	10.00x10.00x72.00	254x254x1829	-
-	101096 GRT NK	-	101096 GRTGV NK	10.00x10.00x96.00	254x254x2438	-
-	1010120 GRT NK	-	1010120 GRTGV NK	10.00x10.00x120.00	254x254x3048	-
-	121224 GRT NK	-	121224 GRTGV NK	12.00x12.00x24.00	305x305x610	-
-	121236 GRT NK	-	121236 GRTGV NK	12.00x12.00x36.00	305x305x914	-
-	121248 GRT NK	-	121248 GRTGV NK	12.00x12.00x48.00	305x305x1219	-
-	121260 GRT NK	-	121260 GRTGV NK	12.00x12.00x60.00	305x305x1524	-
-	121272 GRT NK	-	121272 GRTGV NK	12.00x12.00x72.00	305x305x1829	-
-	121296 GRT NK	-	121296 GRTGV NK	12.00x12.00x96.00	305x305x2438	-
-	1212120 GRT NK	-	1212120 GRTGV NK	12.00x12.00x120.00	305x305x3048	-

Notes: Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

# Wireway

## NEMA 12 Feed-Through Wireway Data Sheet



### Application

- Houses runs of control and power cable
- Protects against circulating dust, falling dirt and dripping noncorrosive liquids

### Standards

- UL 870 listed, unless noted, (see table)
- CSA C22.2 No. 26 certified, unless noted, (see table)
- Conforms to NEMA standard for Type 12
- Conforms to JIC standard EGP-1-1967
- IEC 60529, IP54

### Finish

- Wash and phosphate undercoat
- ANSI 61 gray polyester powder finish
- Hardware and latches are zinc plated with a yellow chromate finish

### Construction

- Wireway body and cover are fabricated from (14) gauge steel
- Flanges are (10) gauge steel
- All continuous welded seams are finished smooth
- External and internal edges are rounded to prevent injury or damage to cable
- Covers are secured to the wireway body with heavy-duty hinges on one side and easy-to-operate screw clamps mounted to the opposite side
- Continuous flanged ends assure rigid connections of wireway and fittings
- Covers have a fixed, oil-resistant gasket
- An oil-resistant gasket is provided for installation between flanges

### Accessories

- Touch-up paint
- See Accessories section

**Notes:** Cooper B-Line Systems can provide special sizes, finishes and other modifications. Consult the factory for your special requirements.

Description	Catalog Number		
	4.00 x 4.00 (102 x 102)	6.00 x 6.00 (152 x 152)	8.00 x 8.00 (203 x 203)
12" Wireway Section	4412-12FW	6612-12FW	8812-12FW
24" Wireway Section	4424-12FW	6624-12FW	8824-12FW
36" Wireway Section	4436-12FW	6636-12FW	8836-12FW
48" Wireway Section	4448-12FW	6648-12FW	8848-12FW
60" Wireway Section	4460-12FW	6660-12FW	8860-12FW
120" Wireway Section	44120-12FW	66120-12FW	88120-12FW
Telescopic Fitting	44-12FTF*	66-12FTF*	88-12FTF*
Cut-Off Fitting	44-12FCF	66-12FCF	88-12FCF
1" Nipple	44-12FN1	66-12FN1	88-12FN1
2" Nipple	44-12FN2	66-12FN2	88-12FN2
3" Nipple	44-12FN3	66-12FN3	88-12FN3
6" Nipple	44-12FN6	66-12FN6	88-12FN6
90° Elbow	44-12FE9	66-12FE9	88-12FE9
45° Elbow	44-12FE45	66-12FE45	88-12FE45
Tee	44-12FT	66-12FT	88-12FT
Cross	44-12FC	66-12FC	88-12FC
Flexible Fitting	44-12FFF *	66-12FFF *	88-12FFF *
Reducer Center 6x6 - 4x4	-	6644-12FRC	-
Reducer Edge 6x6 - 4x4	-	6644-12FRE	-
Reducer Center 8x8 - 6x6	-	-	8866-12FRC
Reducer Edge 8x8 - 6x6	-	-	8866-12FRE
Gasket Kit	44-12FGK	66-12FGK	88-12FGK
Box Connector	44-12FBC	66-12FBC	88-12FBC
Closure Plate	44-12FCP	66-12FCP	88-12FCP
Hanger, Drop	44-12DH	66-12DH	88-12DH
Hanger, Bracket	44-12BH	66-12BH	88-12BH
Barrier Kit, 60" Bolt-On	44-12BK*	66-12BK*	88-12BK*

\* Not UL or CSA listed fitting

Dimensions											
A		B		C				D		E	
in.	mm	in.	mm	in. mm				in.	mm	in.	mm
4.00	102	4.00	102	12,24,36,48,60,120	305,610,914,1219,1524,3048	5.50	140	5.50	140	12.00	305
6.00	152	6.00	152	12,24,36,48,60,120	305,610,914,1219,1524,3048	7.75	197	7.75	197	14.00	356
8.00	203	8.00	203	12,24,36,48,60,120	305,610,914,1219,1524,3048	9.75	248	9.75	248	16.00	406

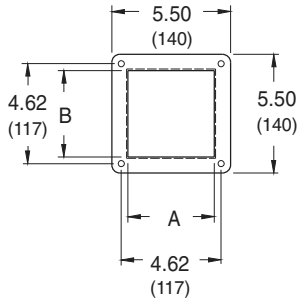
Dimensions											
J		K		M		N		P		R	
in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
2.50	64	6.00	152	-	-	-	-	6.25	159	3.62	92
2.93	74	7.00	178	4.00	102	4.00	102	8.50	216	3.62	92
3.31	84	8.00	203	6.00	152	6.00	152	10.50	267	3.62	92

**Note:** H, J & K dimensions are from intersections of center lines. All dimensions are to inside surfaces.  
Allow .12" (3 mm) for flange gasket when joining pieces. Flange holes are .28" (7 mm) D.  
Flange radii are .37" (9 mm) R.

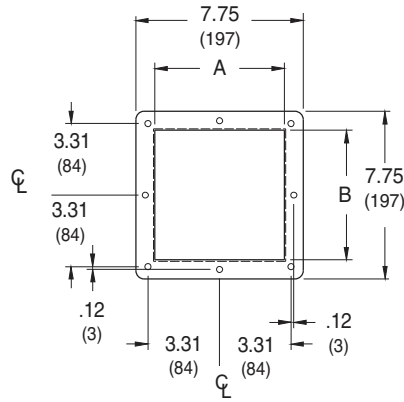
**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.



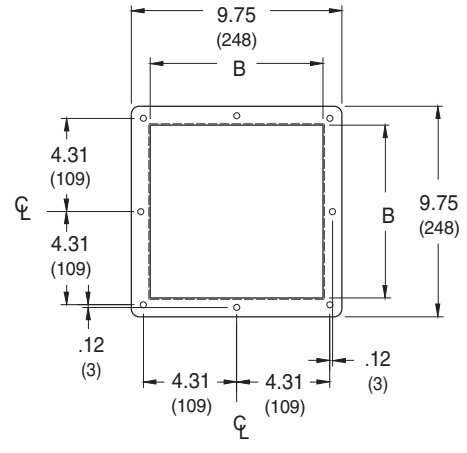
## NEMA 12 Feed-Through Wireway Illustration Sheet



**4.00 x 4.00**

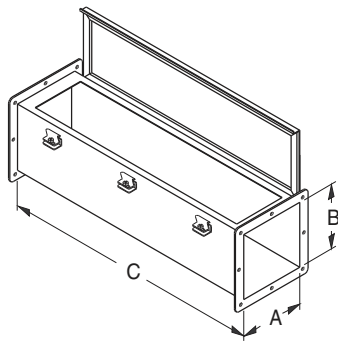


**6.00 x 6.00**



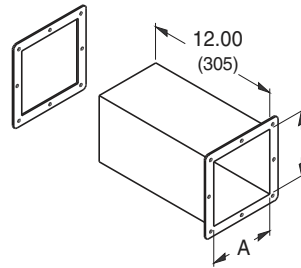
**8.00 x 8.00**

### Flange Detail



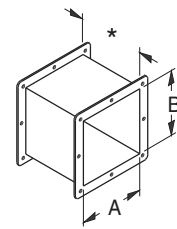
#### Wireway Section

- lengths from 12.00" (305 mm) to 120.00" (3048 mm)



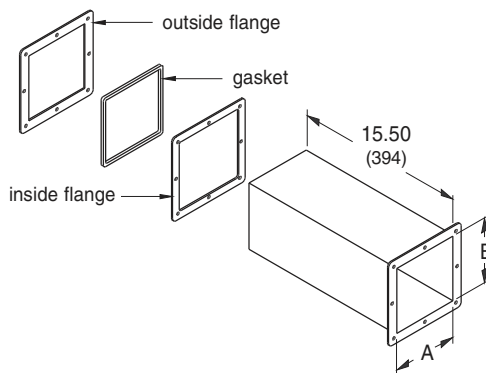
#### Cut-Off Fitting

- length up to 12.00" (305 mm)
- shorten to desired length and weld on flange



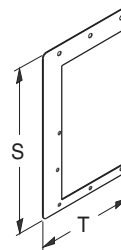
#### Nipple

- \* lengths from 1.00" (25 mm) to 6.00" (152 mm)

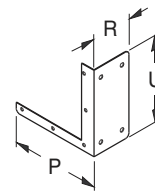


#### Telescopic Fitting

- adjustable lengths from 1.50" (38 mm) to 13.50" (343 mm)
- no cutting or welding required



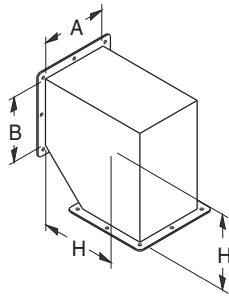
#### Drop



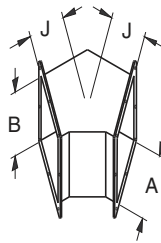
#### Bracket

### Wireway Hangers

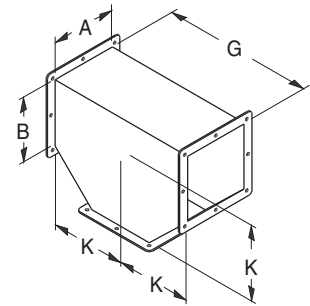
**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.



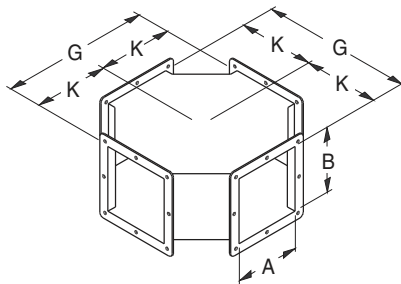
**90° Elbow**



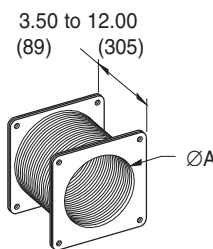
**45° Elbow**



**Tee**

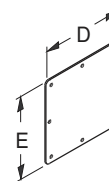


**Cross**

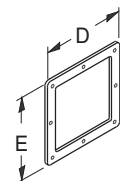


**Flexible Fitting**

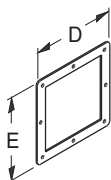
- isolates wireway from shock or vibration and compensates for misalignment. 90° maximum angle. Hypalon bellow with steel flanges.



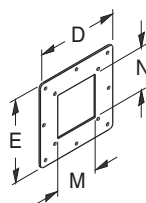
**Closure Plate**



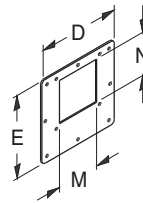
**Box Connector**



**Gasket**

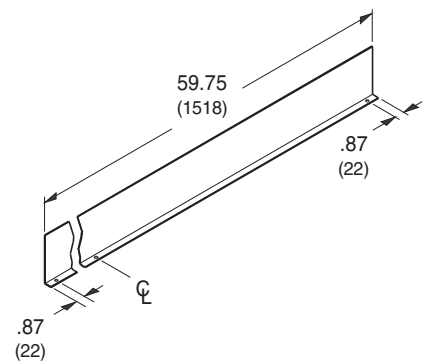


**Center**



**Edge**

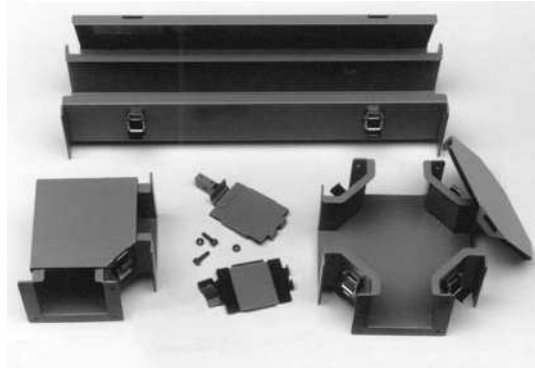
**Reducers**



**Barrier, Bolt-On**

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

## NEMA 12 Lay-In Wireway Data Sheet



### Application

- Houses runs of control and power cable
- Protects against circulating dust, falling dirt and dripping noncorrosive liquids

### Standards

- UL 870 listed, unless noted (see table)
- CSA C22.2 No. 26 certified, unless noted (see table)
- Conforms to NEMA standard for Type 12
- Conforms to JIC standard EGP-1-1967
- IEC 60529, IP54

### Accessories

- Touch-up paint
- See Accessories section

### Construction

- Wireway body and cover are fabricated from (14) gauge steel
- Flanges are (10) gauge steel
- All continuous welded seams are finished smooth
- External and internal edges are rounded to prevent injury or damage to cable
- Covers are secured to the wireway and fitting body with heavy duty butt hinges and quick-release latches
- Covers have a fixed, oil-resistant gasket
- An oil-resistant gasket is provided for installation between flanges
- All covers and sealing plates can be hinged completely open or removed to allow for continuous "lay-in" cable feed
- All straight sections and fittings are furnished with sealing plate kits (see pages 33-37)

### Finish

- Wash and phosphate undercoat
- ANSI 61 gray polyester powder finish
- Hardware and latches are zinc plated with a yellow chromate finish

**Notes:** Cooper B-Line Systems can provide special sizes, finishes and other modifications. Consult the factory for your special requirements.

NEMA 12 Lay-In Wireway  
Catalog Number

Description	B-Line Catalog Number				
	2.50 x 2.50 (64 x 64)	4.00 x 4.00 (102 x 102)	6.00 x 6.00 (152 x 152)	8.00 x 8.00 (203 x 203)	12.00 x 6.00 (305 x 152)
4.00" Straight Section	2204-12LW	4404-12LW	6604-12LW	8804-12LW	12604-12LW
6.00" Straight Section	2206-12LW	4406-12LW	6606-12LW	8806-12LW	12606-12LW
12.00" Straight Section	2212-12LW	4412-12LW	6612-12LW	8812-12LW	12612-12LW
24.00" Straight Section	2224-12LW	4424-12LW	6624-12LW	8824-12LW	12624-12LW
36.00" Straight Section	2236-12LW	4436-12LW	6636-12LW	8836-12LW	12636-12LW
48.00" Straight Section	2248-12LW	4448-12LW	6648-12LW	8848-12LW	12648-12LW
60.00" Straight Section	2260-12LW	4460-12LW	6660-12LW	8860-12LW	12660-12LW
120.00" Straight Section	22120-12LW	44120-12LW	66120-12LW	88120-12LW	126120-12LW
12" Transposition Wireway, CW	22-12LTS	44-12LTS	66-12LTS	88-12LTS	-
12" Transposition Wireway, CCW	22-12LTS	44-12LTS	66-12LTS	88-12LTS	-
Telescopic Fitting, Lay-In	22-12LTF*	44-12LTF*	66-12LTF*	88-12LTF*	126-12LTF*
Cut-Off Fitting, Lay-In	22-12LCF	44-12LCF	66-12LCF	88-12LCF	126-12LCF
1" Nipple	22-12LN1	44-12LN1	66-12LN1	88-12LN1	126-12LN1
2" Nipple	22-12LN2	44-12LN2	66-12LN2	88-12LN2	126-12LN2
3" Nipple	22-12LN3	44-12LN3	66-12LN3	88-12LN3	126-12LN3
90° Elbow, Top Open	22-12LE9A	44-12LE9A	66-12LE9A	88-12LE9A	126-12LE9A
90° Elbow, Inside Open	22-12LE9B	44-12LE9B	66-12LE9B	88-12LE9B	126-12LE9B
90° Elbow, Outside Open	22-12LE9C	44-12LE9C	66-12LE9C	88-12LE9C	126-12LE9C
90° Elbow, Outside-Top Open	22-12LE9AC	44-12LE9AC	66-12LE9AC	88-12LE9AC	-
90° Transposition Elbow, CW	22-12LE9TC	44-12LE9TC	66-12LE9TC	88-12LE9TC	-
90° Transposition Elbow, CCW	22-12LE9TCC	44-12LE9TCC	66-12LE9TCC	88-12LE9TCC	-
45° Elbow, Top Open	22-12LE45A	44-12LE45A	66-12LE45A	88-12LE45A	126-12LE45A
45° Elbow, Inside Open	22-12LE45B	44-12LE45B	66-12LE45B	88-12LE45B	126-12LE45B
45° Elbow, Outside Open	22-12LE45C	44-12LE45C	66-12LE45C	88-12LE45C	126-12LE45C
15° Elbow, Top Open	22-12LE15A	44-12LE15A	66-12LE15A	88-12LE15A	126-12LE15A
Tee, Top Open	22-12LTA	44-12LTA	66-12LTA	88-12LTA	126-12LTA
Tee, Outside Open	22-12LTC	44-12LTC	66-12LTC	88-12LTC	-
Cross, Top Open	22-12LC	44-12LC	66-12LC	88-12LC	126-12LC
Reducer 4x4 - 2.5x2.5	-	4422-12LR	-	-	-
Reducer 6x6 - 4x4	-	-	6644-12LR	-	-
Reducer 8x8 - 6x6	-	-	-	8866-12LR	-
Reducer 12x6 - 4x4	-	-	-	-	12644-12LR
Reducer 12x6 - 6x6	-	-	-	-	12666-12LR
Sealing Plate	22-12LSP	44-12LSP	66-12LSP	88-12LSP	126-12LSP
Box Connector	22-12LBC	44-12LBC	66-12LBC	88-12LBC	126-12LBC
Closure Plate	22-12LCP	44-12LCP	66-12LCP	88-12LCP	126-12LCP
Hanger, Drop	22-12LDH	44-12LDH	66-12LDH	88-12LDH	-
Hanger, Bracket	22-12LBH	44-12LBH	66-12LBH	88-12LBH	-
Junction Box	22-12LJB	44-12LJB	66-12LJB	88-12LJB	-
Barrier Kit, 60" Bolt-On	22-12BK*	44-12BK*	66-12BK*	88-12BK*	66-12BK*
Adapter, Lay-In to Feed Through	-	44-12LAFW	66-12LAFW	88-12LAFW	-
Adapter, for Hoffman® <sup>1</sup> or Wiegmann® <sup>2</sup>	22-12LAHW	44-12LAHW	66-12LAHW	88-12LAHW	126-12LAHW
Adapter, for Square D® <sup>3</sup>	22-12LASD	44-12LASD	66-12LASD	88-12LASD	1212-12LASD
Adapter, for Robroy® <sup>4</sup> or Rittal® <sup>5</sup>	22-12LARR	44-12LARR	66-12LARR	88-12LARR	126-12LARR
Adapter, for Hammond Mfg.™ <sup>6</sup>	22-12LAHM	44-12LAHM	66-12LAHM	88-12LAHM	126-12LAHM

\* Not UL or CSA listed fitting.

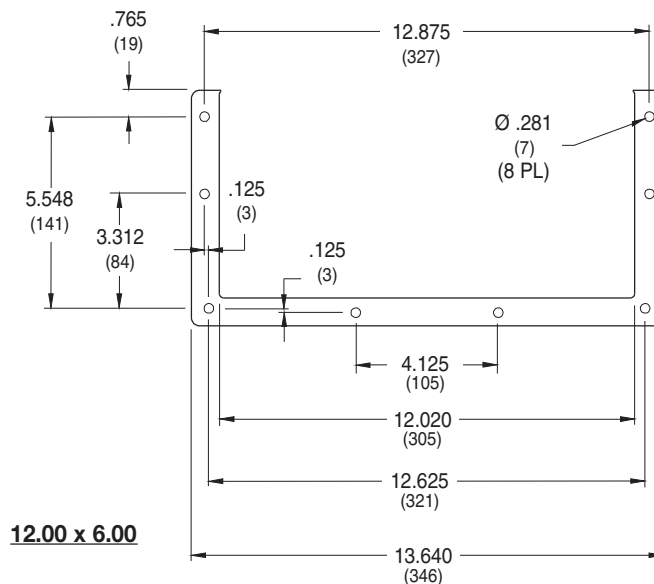
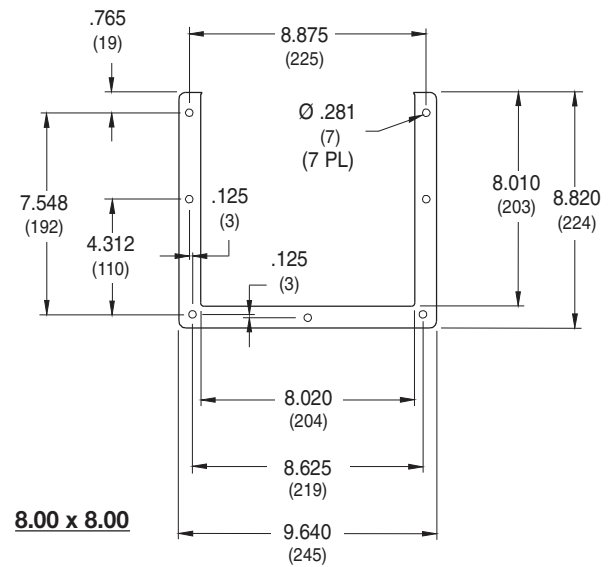
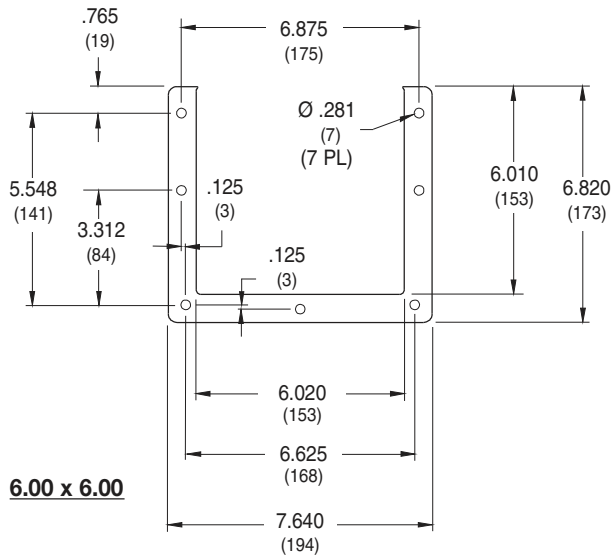
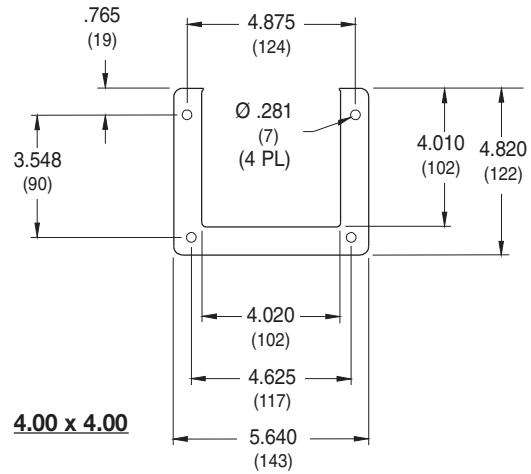
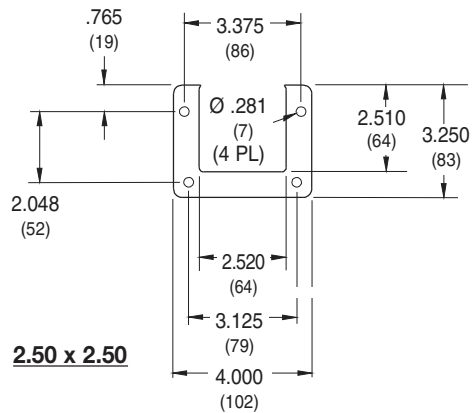
All dimensions are in inches.

1. HOFFMAN® is the registered trademark of Hoffman Engineering Company, Anoka, Minnesota.
2. WIEGMANN® is the registered trademark of Hubbell Incorporated, Orange, Connecticut.
3. SQUARE D® is the registered trademark of Square D Company, Palatine, Illinois.
4. ROBROY® is the registered trademark of Robroy Industries, Verona, Pennsylvania.
5. RITTAL® is the registered trademark of Rittal Corporation, Springfield, Ohio.
6. HAMMOND MANUFACTURING™ is the trademark of Hammond Manufacturing Company, Limited, Guelph, Ontario Canada.

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

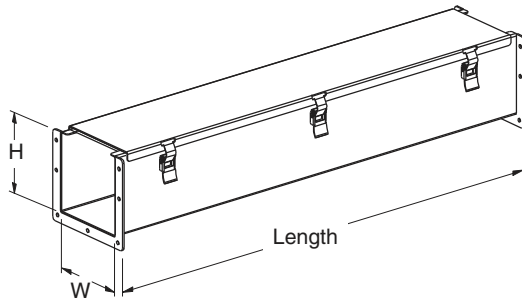
DISCONTINUED PARTS	REPLACEMENT PARTS
Cut-Off Fitting, Non Lay-In	Cut-Off Fitting, Lay-In
6" Nipple	6" Straight Section
Sealing Plate, 90° Angle	Sealing Plate

## NEMA 12 Lay-In Wireway Illustration Sheet



### Flange Details

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.



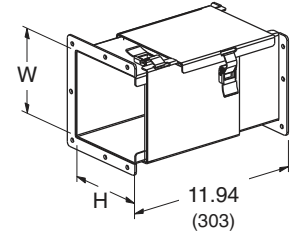
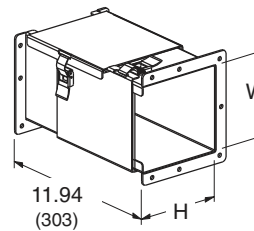
### Straight Section

- includes (1) sealing plate kit

Catalog Number	Size	H		W	
		in.	mm	in.	mm
22(*)-12LW	2.5x2.5	2.50	64	2.50	64
44(*)-12LW	4x4	4.00	102	4.00	102
66(*)-12LW	6x6	6.00	152	6.00	152
88(*)-12LW	8x8	8.00	203	8.00	203
126(*)-12LW	12x6	6.00	152	12.00	305

(\*) Insert for length **04**=3.94", **06**=5.94", **12**=11.94", **24**=23.94", **36**=35.94", **48**=47.94", **60**=59.94", **120**=119.94".

Length	
in.	mm
3.94	100
5.94	151
11.94	303
23.94	608
35.94	913
47.94	1218
59.94	1522
119.94	3046



### Transposition Wireway Sections

#### Clockwise (C)

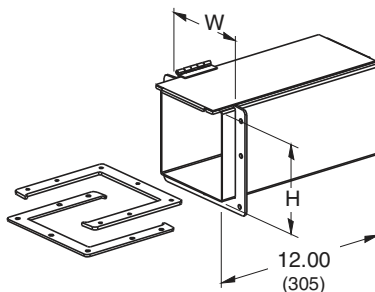
- includes (1) sealing plate kit

#### Counterclockwise (CC)

- includes (1) sealing plate kit

Catalog Number	Size	H		W	
		in.	mm	in.	mm
22-12LTS(*)	2.5x2.5	2.50	64	2.50	64
44-12LTS(*)	4x4	4.00	102	4.00	102
66-12LTS(*)	6x6	6.00	152	6.00	152
88-12LTS(*)	8x8	8.00	203	8.00	203

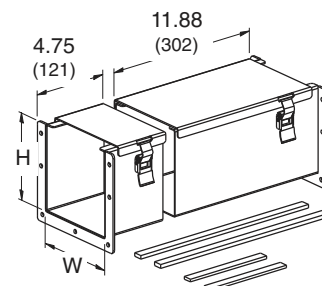
(\*) Insert **C** for Clockwise  
Insert **CC** for Counterclockwise



### Telescopic Fitting, Lay-In

- adjustable length from 1" to 7"
- includes hardware
- no cutting or welding required

Catalog Number	Size	H		W	
		in.	mm	in.	mm
22-12LTF	2.5x2.5	2.32	59	2.32	59
44-12LTF	4x4	3.82	97	3.82	97
66-12LTF	6x6	5.82	148	5.82	148
88-12LTF	8x8	7.82	199	7.82	199
126-12LTF	12x6	5.82	148	11.82	300



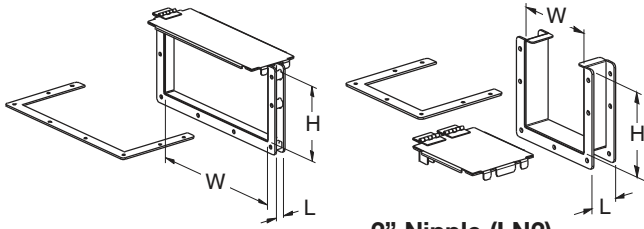
### Cut-Off Fitting, Lay-In

- includes (1) sealing plate kit
- shorten body and cover to desired length and weld together, 9.50" minimum length

Catalog Number	Size	H		W	
		in.	mm	in.	mm
22-12LCF	2.5x2.5	2.50	64	2.50	64
44-12LCF	4x4	4.00	102	4.00	102
66-12LCF	6x6	6.00	152	6.00	152
88-12LCF	8x8	8.00	203	8.00	203
126-12LCF	12x6	6.00	152	12.00	305

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

## NEMA 12 Lay-In Wireway Illustration Sheet

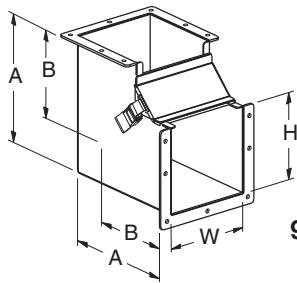


**1" Nipple (LN1)**  
• includes hardware

**2" Nipple (LN2)**  
**3" Nipple (LN3)**  
• includes hardware

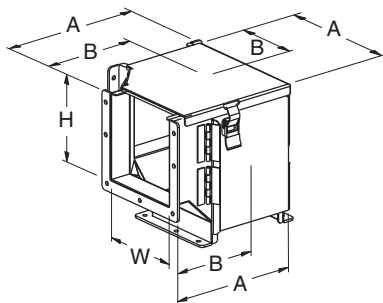
Catalog Number	Size	H		W	
		in.	mm	in.	mm
22-12LN(*)	2.5x2.5	2.50	64	2.50	64
44-12LN(*)	4x4	4.00	102	4.00	102
66-12LN(*)	6x6	6.00	152	6.00	152
88-12LN(*)	8x8	8.00	203	8.00	203
126-12LN(*)	12x6	6.00	152	12.00	305

(\*) Insert 1 for 1" nipple (L=.938")  
Insert 2 for 2" nipple (L=1.938")  
Insert 3 for 3" nipple (L=2.938")



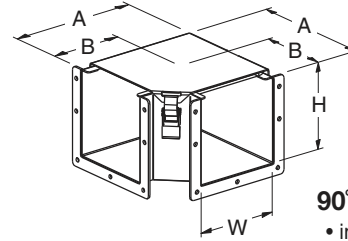
**90° Elbow, Inside Opening**  
• includes (1) sealing plate kit

Catalog Number	Size	H		W		A		B	
		in.	mm	in.	mm	in.	mm	in.	mm
22-12LE9B	2.5x2.5	2.50	64	2.50	64	5.94	151	4.69	119
44-12LE9B	4x4	4.00	102	4.00	102	7.44	189	5.44	138
66-12LE9B	6x6	6.00	152	6.00	152	9.44	240	6.44	164
88-12LE9B	8x8	8.00	203	8.00	203	11.44	291	7.44	189
126-12LE9B	12x6	6.00	152	12.00	305	9.44	240	6.44	164



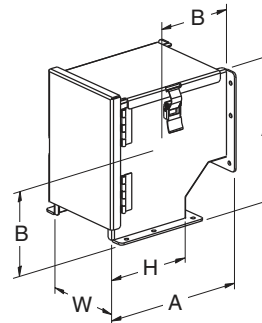
**90° Elbow, Outside-Top Opening**  
• includes (2) sealing plate kits

Catalog Number	Size	H		W		A		B	
		in.	mm	in.	mm	in.	mm	in.	mm
22-12LE9AC	2.5x2.5	2.50	64	2.50	64	5.94	151	4.69	119
44-12LE9AC	4x4	4.00	102	4.00	102	7.44	189	5.44	138
66-12LE9AC	6x6	6.00	152	6.00	152	9.44	240	6.44	164
88-12LE9AC	8x8	8.00	203	8.00	203	11.44	291	7.44	189



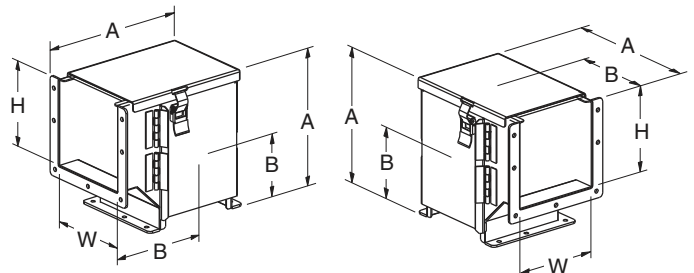
**90° Elbow, Top Opening**  
• includes (1) sealing plate kit

Catalog Number	Size	H		W		A		B	
		in.	mm	in.	mm	in.	mm	in.	mm
22-12LE9A	2.5x2.5	2.50	64	2.50	64	5.25	133	4.00	102
44-12LE9A	4x4	4.00	102	4.00	102	6.75	171	4.75	121
66-12LE9A	6x6	6.00	152	6.00	152	8.75	222	5.75	146
88-12LE9A	8x8	8.00	203	8.00	203	10.75	273	6.75	171
126-12LE9A	12x6	6.00	152	12.00	305	14.75	375	8.75	222



**90° Elbow, Outside Opening**  
• includes (1) sealing plate kit

Catalog Number	Size	H		W		A		B	
		in.	mm	in.	mm	in.	mm	in.	mm
22-12LE9C	2.5x2.5	2.50	64	2.50	64	5.94	151	4.69	119
44-12LE9C	4x4	4.00	102	4.00	102	7.44	189	5.44	138
66-12LE9C	6x6	6.00	152	6.00	152	9.44	240	6.44	164
88-12LE9C	8x8	8.00	203	8.00	203	11.44	291	7.44	189
126-12LE9C	12x6	6.00	152	12.00	305	9.44	240	6.44	164



### 90° Transposition Elbows

#### Clockwise (C)

• includes (1) sealing plate

#### Counterclockwise (CC)

• includes (1) sealing plate kit

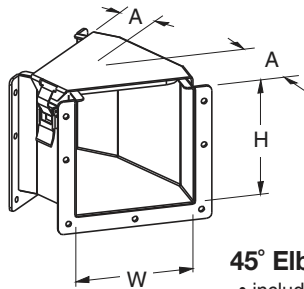
Catalog Number	Size	H		W		A		B	
		in.	mm	in.	mm	in.	mm	in.	mm
22-12LE9T(*)	2.5x2.5	2.50	64	2.50	64	5.94	151	4.69	119
44-12LE9T(*)	4x4	4.00	102	4.00	102	7.44	189	5.44	138
66-12LE9T(*)	6x6	6.00	152	6.00	152	9.44	240	6.44	164
88-12LE9T(*)	8x8	8.00	203	8.00	203	11.44	291	7.44	189

(\*) Insert **C** for Clockwise, Insert **CC** for Counterclockwise

**Notes:** B-Line Systems can provide special sizes, finishes and other modifications. Consult the factory for your special requirements.

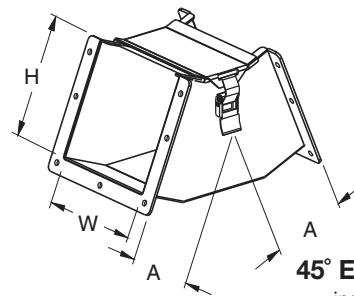


## NEMA 12 Lay-In Wireway Illustration Sheet



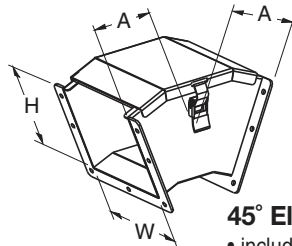
**45° Elbow, Top Opening**  
• includes (1) sealing plate kit

Catalog Number	Size	H		W		A	
		in.	mm	in.	mm	in.	mm
22-12LE45A	2.5x2.5	2.50	64	2.50	64	3.12	79
44-12LE45A	4x4	4.00	102	4.00	102	3.70	94
66-12LE45A	6x6	6.00	152	6.00	152	4.46	113
88-12LE45A	8x8	8.00	203	8.00	203	5.23	133
126-12LE45A	12x6	6.00	152	12.00	305	6.76	172



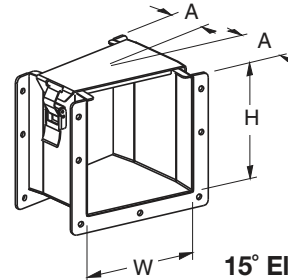
**45° Elbow, Inside Opening**  
• includes (1) sealing plate kit

Catalog Number	Size	H		W		A	
		in.	mm	in.	mm	in.	mm
22-12LE45B	2.5x2.5	2.50	64	2.50	64	3.70	94
44-12LE45B	4x4	4.00	102	4.00	102	4.28	109
66-12LE45B	6x6	6.00	152	6.00	152	5.04	128
88-12LE45B	8x8	8.00	203	8.00	203	5.81	148
126-12LE45B	12x6	6.00	152	12.00	305	5.04	128



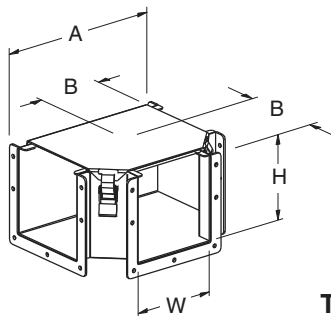
**45° Elbow, Outside Opening**  
• includes (1) sealing plate kit

Catalog Number	Size	H		W		A	
		in.	mm	in.	mm	in.	mm
22-12LE45C	2.5x2.5	2.50	64	2.50	64	2.65	67
44-12LE45C	4x4	4.00	102	4.00	102	3.51	89
66-12LE45C	6x6	6.00	152	6.00	152	3.91	99
88-12LE45C	8x8	8.00	203	8.00	203	4.24	108
126-12LE45C	12x6	6.00	152	12.00	305	3.91	89



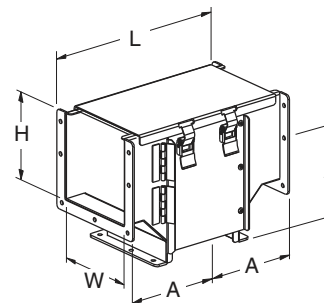
**15° Elbow, Top Opening**  
• includes (1) sealing plate kit

Catalog Number	Size	H		W		A	
		in.	mm	in.	mm	in.	mm
22-12LE15A	2.5x2.5	2.50	64	2.50	64	2.57	65
44-12LE15A	4x4	4.00	102	4.00	102	2.77	70
66-12LE15A	6x6	6.00	152	6.00	152	3.03	77
88-12LE15A	8x8	8.00	203	8.00	203	3.29	84
126-12LE15A	12x6	6.00	152	12.00	305	3.81	97



**Tee, Top Opening**  
• includes (2) sealing plate kits

Catalog Number	Size	H		W		A		B	
		in.	mm	in.	mm	in.	mm	in.	mm
22-12LTA	2.5x2.5	2.50	64	2.50	64	8.00	203	4.00	102
44-12LTA	4x4	4.00	102	4.00	102	9.50	241	4.75	121
66-12LTA	6x6	6.00	152	6.00	152	11.50	292	5.75	146
88-12LTA	8x8	8.00	203	8.00	203	13.50	343	6.75	171
126-12LTA	12x6	6.00	152	12.00	305	17.50	445	8.75	222

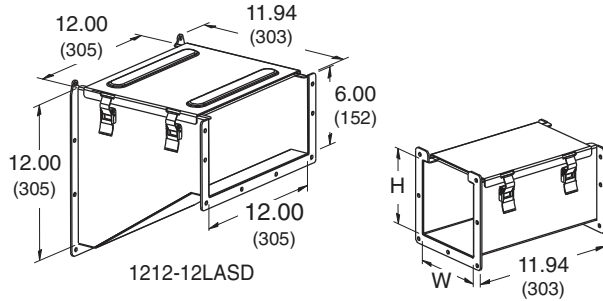


**Tee, Outside Opening**  
• includes (2) sealing plate kits

Catalog Number	Size	H		W		A		L	
		in.	mm	in.	mm	in.	mm	in.	mm
22-12LTC	2.5x2.5	2.50	64	2.50	64	4.69	119	9.38	238
44-12LTC	4x4	4.00	102	4.00	102	5.44	138	10.88	264
66-12LTC	6x6	6.00	152	6.00	152	6.44	164	12.88	314
88-12LTC	8x8	8.00	203	8.00	203	7.44	189	14.88	365

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

## NEMA 12 Lay-In Wireway Illustration Sheet

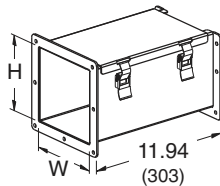


1212-12LASD

### Adapters

- includes (2) sealing plate

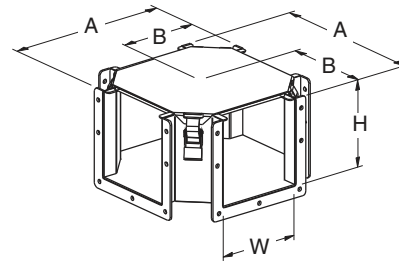
Catalog Number	Size	Competitor	H		W	
			in.	mm	in.	mm
22-12LAHW	2.5x2.5	Hoffman <sup>®1</sup> or Wiegmann <sup>®2</sup>	2.50	64	2.50	64
44-12LAHW	4x4		4.00	102	4.00	102
66-12LAHW	6x6		6.00	152	6.00	152
88-12LAHW	8x8		8.00	203	8.00	203
126-12LAHW	12x6		6.00	152	12.00	305
22-12LASD	2.5x2.5	Square D <sup>®3</sup>	2.50	64	2.50	64
44-12LASD	4x4		4.00	102	4.00	102
66-12LASD	6x6		6.00	152	6.00	152
88-12LASD	8x8		8.00	203	8.00	203
1212-12LASD	12x12-12x6		---	---	---	---
22-12LARR	2.5x2.5	Robroy <sup>®4</sup> or Rittal <sup>®5</sup>	2.50	64	2.50	64
44-12LARR	4x4		4.00	102	4.00	102
66-12LARR	6x6		6.00	152	6.00	152
88-12LARR	8x8		8.00	203	8.00	203
126-12LARR	12x6		6.00	152	12.00	305
22-12LAHM	2.5x2.5	Hammond Mfg. <sup>TM6</sup>	2.50	64	2.50	64
44-12LAHM	4x4		4.00	102	4.00	102
66-12LAHM	6x6		6.00	152	6.00	152
88-12LAHM	8x8		8.00	203	8.00	203
126-12LAHM	12x6		6.00	152	12.00	305



### Lay-In to Feed Through Adapter

- includes (1) sealing plate kit and (1) gasket kit

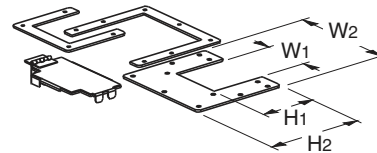
Catalog Number	Size	H		W	
		in.	mm	in.	mm
44-12LAFW	4X4	4.00	102	4.00	102
66-12LAFW	6X6	6.00	152	6.00	152
88-12LAFW	8X8	8.00	203	8.00	203



### Cross, Top Opening

- includes (3) sealing plate kits

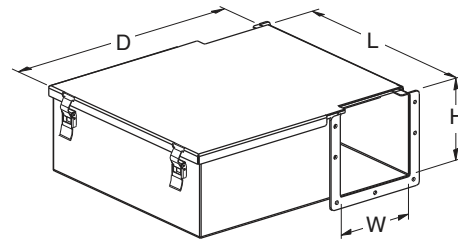
Catalog Number	Size	H		W		A		B	
		in.	mm	in.	mm	in.	mm	in.	mm
22-12LC	2.5x2.5	2.50	64	2.50	64	8.00	203	4.00	102
44-12LC	4x4	4.00	102	4.00	102	9.50	241	4.75	121
66-12LC	6x6	6.00	152	6.00	152	11.50	292	5.75	146
88-12LC	8x8	8.00	203	8.00	203	13.50	343	6.75	171
126-12LC	12x6	6.00	152	12.00	152	17.50	445	8.75	222



### Reducer

- includes hard-

Catalog Number	Size	H <sub>1</sub>		H <sub>2</sub>		W <sub>1</sub>		W <sub>2</sub>	
		in.	mm	in.	mm	in.	mm	in.	mm
4422-12LR	4x4 to 2.5x2.5	2.44	62	4.82	122	2.38	60	5.64	143
6644-12LR	6x6 to 4x4	3.94	100	6.82	173	3.88	99	7.64	194
8866-12LR	8x8 to 6x6	5.94	151	8.82	224	5.88	149	9.64	245
12644-12LR	12x6 to 4x4	3.94	100	6.82	173	3.88	99	13.64	346
12666-12LR	12x6 to 6x6	5.94	151	6.82	173	5.88	149	13.64	346



### Junction Box

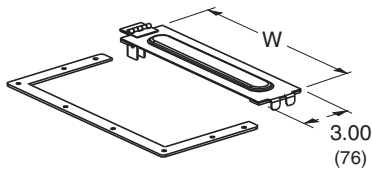
- includes (1) junction box sealing plate kit and (1) of the following removable panels:  
22-12LJB = AW108P  
44LJB = AW1210P  
66LJB = AW1412P  
88LJB = AW1614P

Catalog Number	Size	H		W		L		D	
		in.	mm	in.	mm	in.	mm	in.	mm
22-12LJB	2.5x2.5	2.50	64	2.50	64	11.59	294	10.25	260
44-12LJB	4x4	4.00	102	4.00	102	13.59	345	14.00	356
66-12LJB	6x6	6.00	152	6.00	152	15.59	396	18.00	457
88-12LJB	8x8	8.00	203	8.00	203	17.59	447	22.00	559

1. HOFFMAN<sup>®</sup> is the registered trademark of Hoffman Engineering Company, Anoka, Minnesota.  
2. WIEGMANN<sup>®</sup> is the registered trademark of Hubbell Incorporated, Orange, Connecticut.  
3. SQUARE D<sup>®</sup> is the registered trademark of Square D Company, Palatine, Illinois.  
4. ROBROY<sup>®</sup> is the registered trademark of Robroy Industries, Verona, Pennsylvania.  
5. RITTAL<sup>®</sup> is the registered trademark of Rittal Corporation, Springfield, Ohio.  
6. HAMMOND MANUFACTURING<sup>TM</sup> is the trademark of Hammond Manufacturing Company, Limited, Guelph, Ontario Canada.

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

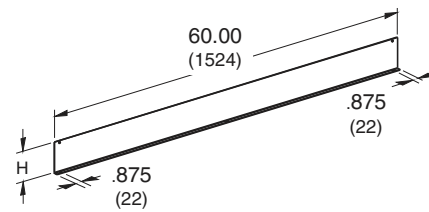
## NEMA 12 Lay-In Wireway Illustration Sheet



**Sealing Plate, Flat**

• includes hardware

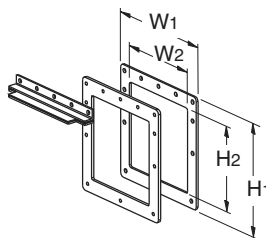
Catalog Number	Size	W in. mm
22-12LSP	2.5x2.5	2.50 64
44-12LSP	4x4	4.00 102
66-12LSP	6x6	6.00 152
88-12LSP	8x8	8.00 203
126-12LSP	12x6	12.00 305



**Barrier, Bolt-On**

• includes hardware

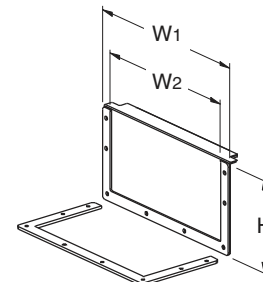
Catalog Number	Size	H in. mm
22-12BK	2.5x2.5	1.88 48
44-12BK	4x4	3.00 76
66-12BK	6x6	4.50 114
88-12BK	8x8	6.00 152
66-12BK	12x6	4.50 114



**Box Connector**

• includes hardware

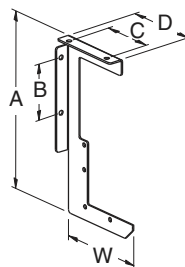
Catalog Number	Size	H1 in. mm	H2 in. mm	W1 in. mm	W2 in. mm
22-12LBC	2.5x2.5	4.10 104	2.35 60	4.10 104	2.35 60
44-12LBC	4x4	5.74 146	3.85 72	5.74 146	3.85 72
66-12LBC	6x6	7.74 197	5.85 123	7.74 197	5.85 123
88-12LBC	8x8	9.74 247	7.85 174	9.74 247	7.85 174
126-12LBC	12x6	7.74 197	5.85 123	13.74 197	11.85 301



**Closure Plate**

• includes hardware

Catalog Number	Size	H in. mm	W1 in. mm	W2 in. mm
22-12LCP	2.5x2.5	2.50 64	4.00 102	2.50 64
44-12LCP	4x4	4.00 102	5.64 143	4.00 102
66-12LCP	6x6	6.00 152	7.64 194	6.00 152
88-12LCP	8x8	8.00 203	9.64 245	8.00 203
126-12LCP	12x6	6.00 152	13.64 346	12.00 305

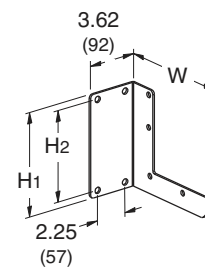


**Drop**

**Wireway Hangers**

- includes wireway to bracket mounting hardware
- anchors not included

Catalog Number	Size	W in. mm	A in. mm	B in. mm	C in. mm	D in. mm
22-12LDH	2.5x2.5	4.50 114	8.75 222	1.50 38	1.50 38	3.50 89
44-12LDH	4x4	6.00 152	11.75 298	3.00 76	3.00 76	5.00 127
66-12LDH	6x6	8.50 216	16.00 406	5.00 127	5.00 127	7.00 178
88-12LDH	8x8	10.50 267	20.00 508	7.00 178	7.00 178	9.00 229



**Bracket**

Catalog Number	Size	H1 in. mm	H2 in. mm	W in. mm
22-12LBH	2.5x2.5	3.38 86	2.50 64	4.38 111
44-12LBH	4x4	4.88 124	4.00 102	5.88 149
66-12LBH	6x6	7.13 181	6.25 159	8.13 207
88-12LBH	8x8	9.13 232	8.25 210	10.13 257

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.



**CRESCENT**  
ELECTRIC  
SUPPLY COMPANY

**STEEL BOXES**

**Submittals Prepared by IES  
and Crescent Electric Supply**



# ***RACO® STEEL BOXES, COVERS AND ACCESSORIES***

A





## GENERAL INFORMATION

## STANDARDS, 2014 NATIONAL ELECTRICAL CODES®

**Applications: Steel Boxes**

RACO® high-quality steel boxes:

- Are used in branch circuit wiring
- Accommodate wiring devices, such as switches and receptacles
- Most may also serve as fixture supports
- Provide excellent protection for wiring system or devices
- Must be closed with a cover, light fixture canopy or wallplate
- Permit access to conductors for maintenance
- Allow for branch circuit runs
- Provide two-hour fire rating for 4x4 or smaller wall opening

**Product Features: Outlet Boxes for Fixture or Fan Support**

These high-quality boxes:

- Are listed to support lighting fixture canopies or fans
- Feature oversized #10 screws to provide strength and rigidity

**Product Features: TKO® Knockouts**

- TKO® knockouts offer greater flexibility with RACO® combination 1/2" and 3/4" knockout
- Stock just one product instead of two or three
- One product for the installer to carry

**TKO® Provides Reliable Grounding Path**

- Independent tests conducted by UL prove that the TKO passes the same high-current fault test used to test grounding bushings and ground lugs
- RACO® TKO knockout is UL Listed, providing bonding without the use of bonding jumpers
- Suitable for bonding without any additional bonding means around concentric (or eccentric, TKO) knockouts where used in circuits above or below 250V
- This knockout does not impair the electrical connection to ground

**Most RACO® Boxes Have At Least One Tapped #10-32 Grounding Hole**

- The products that do not have a grounding screw hole are: plenum boxes catalog numbers 226 and 239

**Product Features: Combination Screw Heads**

- Cover and clamp screws have combination slotted/Phillips heads
- Self-tapping screws provide for 100% thread engagement

**Metallic Boxes: Fire Resistance Rating Wall Penetrations\***

Listed single- and double-gang metallic outlet and switch boxes with metallic or nonmetallic cover plates, also 4x4 and octagon boxes may be used in bearing and non-bearing wood stud and steel stud walls with ratings not exceeding two hours.

The surface area of individual metallic outlet or switch boxes shall not exceed 16 square inches through a fire rated wall. The aggregate surface area of the boxes shall not exceed 100 square inches per 100 square feet. Boxes located on opposite sides of walls or partitions shall be separated by a horizontal distance of 24 inches.

The metallic outlet or switch boxes shall be securely fastened to the studs, and the opening in the wallboard facing shall be cut so that the clearance between the box and the wallboard does not exceed 1/8 inch.

\* Reference: UL Fire Resistance Directory (Orange Book)

**Standard Material: Steel Covers, Outlet And Switch Boxes**

- Steel boxes and covers are made of .0625 inch thick pre-galvanized sheet steel
- Handy Box covers are made of .030 inch thick galvanized sheet steel

**Compliances**

RACO® steel boxes and covers generally carry the following compliance ratings. Check specific catalog pages for individual compliances.

- UL Listed – Standard 514-A, file E195978 ("QCIT" Category)
- Boxes and covers are listed for their Electrical Applications (electrical codes), UL Electrical Construction Equipment Online Directory (electrical codes).
- Boxes are listed for Fire Resistance Directory, including the Two-Hour Fire Rating, (building codes) UL Orange Book
- UL Classified Standard – UL263 file R16536, CEYY, QBWY
- CSA Certified – C22.2 #18, CSA File LR-1082
- ANSI/NEMA OS1
- Federal Manufacturer's number 28488



For installation guidelines and to learn more about RACO® products, visit the NEMA website at <http://www.nema.org>.

The National Electrical Manufacturers Association (NEMA) website is a valuable electrical resource providing the information you need - quickly.

**RACO® UL Guide Cards**

You can download and print out any or all UL Guide Cards issued to RACO®. Just go to the RACO website at [www.hubbell-raco.com](http://www.hubbell-raco.com) and click on the UL symbol. Every RACO UL guide card is listed by product category. Click on the live link (right hand column in blue type) and the UL Guide Card will appear. Save to your computer or print it out.

**UL Guide Information Pages**

UL publishes the most frequently asked questions concerning product ratings, configurations, installations, uses allowed or not allowed, grounding and bonding, and much more. Each UL category has a unique Guide Information Page. Live links to each UL Guide Information Page appears just below the RACO UL guide card for each product category.

## STANDARDS, 2014 NATIONAL ELECTRICAL CODE®

**Wiring Capacity: Steel Outlet and Switch Boxes; Cubic Inches****Maximum Number of Conductors or Minimum Size Box Required – National Electrical Code Article 314.16 (A and B) also table 314.16(A)**

The purpose of NEC® Article 314.16 is to determine the maximum conductor count or the minimum box size required for an application. It also may be used to determine how many other conductors may be added without exceeding the Code-prescribed limit. Most applications have determined the number of conductors. The question that then remains is the smallest (minimum) size box that is permitted. The rules of Article 314.16 are to be used to determine the Code-recognized limit.

Selection of an outlet or junction box for use in an electrical circuit work must take into consideration the maximum number of wires permitted in the box. Safe electrical practice demands that wires not be jammed into boxes because of the possibility of nicks, abrasions or other damage to the insulating material, creating the potential for ground faults or short circuits.

**Article 314 – Boxes and Fittings****NEC® 314.16 (A and B) also table 314.16(A). Number of Conductors in Outlet, Device, and Junction Boxes, and Conduit Bodies.**

Boxes shall be of sufficient size to provide free space for all enclosed conductors. In no case shall the volume of the box, as calculated in (a) below, be less than the fill calculation as calculated in (b) below. The minimum volume for conduit bodies shall be as calculated in (c) below.

The provisions of this section shall not apply to terminal housings supplied with motors. See Section 430.12.

Boxes and conduit bodies enclosing conductors, size #4 or larger, shall also comply with the provisions of Section 314-28.

**(a) Box Volume Calculations.** The volume of a wiring enclosure (box) shall be the total volume of the assembled sections, and, where used,

the space provided by plaster rings, domed covers, extension rings, etc., that are marked with their volume in cubic inches or are made from boxes the dimensions of which are listed in Table 314.16(A).

**(1) Standard Boxes.** The volume of standard boxes that are not marked with a cubic inch capacity shall be as given in \*Table 314.16(A).

**(2) Other Boxes.** Boxes 100 cubic inches (1,640 cu. cm3.) or less, other than those described in table, and nonmetallic boxes shall be durably and legibly marked by the manufacturer with their cubic inch capacity. Boxes described in table that have a larger cubic inch capacity than is designated in the table shall be permitted to have their cubic inch capacity marked as required by this section.

**(b) Box Fill Calculations.** The volumes in paragraphs (1) through (5) below, as applicable, shall be added together. No allowance shall be required for small fittings such as locknuts and bushings.

**(1) Conductor Fill.** Each conductor that originates outside the box and terminates or is spliced within the box shall be counted once, and each conductor that passes through the box without splice or termination shall be counted once. The conductor fill, in cubic inches, shall be computed using Table 314.16(B)(1). A conductor, no part of which leaves the box, shall not be counted.

*Exception: Where an equipment grounding conductor or not over four fixture wires smaller than #14, or both, enter a box, from a domed fixture or similar canopy and terminate within that box, it shall be permitted to omit these conductors from the calculations.*

**(2) Clamp Fill.** Where one or more internal cable clamps, whether factory or field supplied, are present in the box, a single volume allowance in accordance with NEC® 314.16(B)(2) shall be made based on the largest conductor present in the box. No allowance shall be required for a cable connector with this clamping mechanism outside the box.

**(3) Support Fittings Fill.** Where one or more fixture studs or hickey are present in the box,

a single volume allowance in accordance with NEC® 314.16(B)(3) shall be made for each type of fitting based on the largest conductor present in the box.

**(4) Device or Equipment Fill.** For each yoke or strap containing one or more devices or equipment, a double volume allowance in accordance with NEC® 314.16(B)(4) shall be made for each yoke or strap based on the largest conductor connected to a device(s) or equipment supported by that yoke or strap.

**(5) Equipment Grounding Conductor Fill.** Where one or more equipment grounding conductor(s) enter(s) a box, a single volume allowance in accordance with Table 314.16B shall be made based on the largest equipment grounding conductor present in the box. Where an additional set of equipment grounding conductors, as permitted by NEC® 314.16(B)(5) are present in the box, an additional volume allowance shall be made based on the largest equipment grounding conductor in the additional set.



## GENERAL INFORMATION

RACO

## STANDARDS, 2014 NATIONAL ELECTRICAL CODES®

MOST OFTEN REQUESTED SECTIONS OF THE NATIONAL ELECTRICAL CODE®	HOW RACO® PRODUCTS HELP COMPLETE THE INSTALLATION
<p><b>250.97 Method of Bonding Service Equipment — Bonding Jumpers.</b> Bonding jumpers are <u>not</u> required for concentric and eccentric knockouts <u>if</u> they are listed for the purpose.</p>	<p>This Section is used to ensure that there is ground continuity when a concentric or eccentric knockout incorporated in a box. A bonding jumper is not required when using any of the RACO® patented TKO® knockout boxes, Catalog Numbers 189, 232, etc.</p>
<p><b>314.27 (A) Boxes at Lighting Fixture Outlets.</b> Boxes to support light fixtures must be listed for fixture support.</p>	<p>Device boxes use #6-32 screws to secure devices such as snap-switches and receptacles. They are not suitable for support of other than very lightweight lighting fixtures, such as some wall-bracket types.</p>
<p><b>314.27 (B) Floor Boxes.</b> Boxes listed specifically for this application shall be used for receptacles located in the floor. Exception: Boxes located in elevated floors of show windows and similar locations where the authority having jurisdiction judges them free from physical damage, moisture and dirt.</p>	<p>Only boxes that are UL Listed for the application may be fastened into the floor. RACO® floor boxes are in Section A of this catalog.</p>
<p><b>314.27 (C) Boxes at Fan Outlets.</b> Boxes that support ceiling fans must be listed for that purpose.</p>	<p>For any ceiling outlet that is intended to have a ceiling (paddle) fan installed, a UL Listed outlet box rated for ceiling fan support must be installed. RACO® offers a complete line of products designed for various applications and mounting needs.</p>
<p><b>314.16 (A)(3) Space for Conductors.</b> Canopies and outlet boxes taken together shall provide adequate space so that fixture conductors and their connecting devices can be properly installed.</p>	<p>When calculating the minimum cubic inch requirements for an outlet box, the canopy may be included in the calculation at the discretion of the Authority Having Jurisdiction. If the canopy of the fixture/fan is marked with the cubic inch capacity, then the additional volume must be accepted by the Authority Having Jurisdiction.</p>
<p><b>314.27 (B) Maximum Luminaire Weight.</b> Fixtures greater than 50 pounds cannot be supported by a fixture box unless additional independent support is provided.</p>	<p>All outlet boxes that are intended to be used with fixtures are tested in accordance with UL Standard 514A.</p>
<p><b>250.146 (A) Surface-Mounted Box.</b> Where the box is mounted on the surface, direct metal-to-metal contact between the device yoke and the box or a contact yoke or device that complies with 250.146(B) shall be permitted to ground the receptacle to the box.</p>	<p>This new method provides better bonding for the cover. RACO flat corner covers and mud rings comply.</p>

## STANDARDS, 2014 NATIONAL ELECTRICAL CODES®

MOST OFTEN REQUESTED ARTICLES OF THE 2014 NATIONAL ELECTRICAL CODE®	HOW RACO® PRODUCTS HELP COMPLETE THE INSTALLATION
<p><b>800.133 Exception (A)(1)(d) Installation of Communications Wires, Cables and Equipment – Electric Light or Power Circuits.</b> Communications conductors shall not be placed in any raceway, compartment, outlet box, junction box, or similar fitting with conductors or electric light or power circuits or Class 1 circuits.</p>	<p>When power and voice/data are brought to one enclosure, a means of dividing the wiring is required. Voltage barriers are available on the following box types: 4" and 4-11/16" square boxes, three- and four-gang switch boxes, masonry boxes, and gang boxes.</p>
<p><b>406.12, 406.13, 406.14 Tamper-resistant Receptacles in Dwelling Units, Guest Rooms and Child Care Facilities.</b> In all areas specified in 210.52, all 125 volt, 15 and 20 amp receptacles shall be listed tamper-resistant receptacles.</p>	<p>This is to prevent shocks of small children that like to insert keys, paper clips, etc. into the receptacle slots.</p>
<p><b>314.24 (B) Depth of Boxes.</b> Minimum depth of boxes for outlets, devices, and utilization equipment.</p>	<p>Boxes must be a minimum depth depending on their use and/or are required to have a minimum clearance behind the device or equipment of per 314.24 (B).</p>

## BOX SELECTION

### CALCULATE THE MINIMUM SIZE BOX

NEC® 314.16 (A) and (B) describes the detailed way of counting wires, as well as clamps, fittings or devices (i.e., switches, receptacles, combination devices) – by establishing an equivalent conductor value for each. Those values are added together to get a total number of conductors. The minimum size box is the smallest one in Table 314.16(A) that can accommodate that number of conductors.

1. No matter how many ground wires come into a box, they only count as one conductor within the box.
2. Any wire running unbroken through the box counts as one wire.
3. Each wire coming into a splice device (crimp or twist-on type) is counted as one wire.
4. Each wire coming into the box and connecting to a device counts as one wire of that size.

5. Fixture studs, cable clamps and hickey are to be counted as one regardless of how many there may be. If a box contains two cable clamps, the total is only to be increased by one.

6. Where devices are mounted in the box, the total conductor count must be increased by two for each mounting strap.

**Example #1: – Conduit Boxes:** Supply power to a switch that will control a remote light with #14 conductors. Metal conduit and fittings will be used as the wire way. You must provide space for four conductors and one switch, totaling 6. Read across the line “Allowances” in the **Box Fill** table to column 6, then read down to the minimum cubic inches required for #14 conductor. This example requires a minimum of 12.0 cubic inches.


**Example #2: – Cable Boxes:**

This example will illustrate how the minimum size is determined for a box with cable clamps fed by two #12-2 nonmetallic sheathed cables and supplying a 15A duplex receptacle. After supplying the receptacle, the conductors are extended to other outlets.

Circuit conductors.....	4
Ground conductors .....	1
Cable clamps .....	1
Device (receptacle).....	2
<b>Total.....</b>	<b>8</b>

Using the **Box Fill** table from the next page, read across the line “Allowances” to column 8, then down to the minimum cubic inches required for #12 conductor. This example requires a minimum of 18.0 cubic inches.







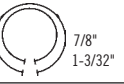

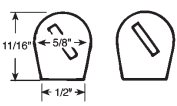
### STEEL BOX SELECTION CHART


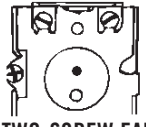
CUBIC INCHES:	42.0	30.3	29.5	21.5	21.0	18.0
						
<b>CONDUIT STEEL BOXES</b>	<b>4-11/16\"</b> 2-1/8\" Deep (inside)	<b>4\"</b> 2-1/8\" (Depth Inside)	<b>4-11/16\"</b> 1-1/2\" (Depth Inside)	<b>4\" Oct.</b> 2-1/8\" (Depth Inside)	<b>4\"</b> 1-1/2\" (Depth Inside)	<b>Switch</b> 3-1/2\" (Depth Inside)

CUBIC INCHES:	30.3	21.5	21.0	18.0
				
<b>MC/BX AND NONMETALLIC CABLE STEEL BOXES</b>	<b>4\"</b> 2-1/8\" (Depth Inside)	<b>4\" Oct.</b> 2-1/8\" (Depth Inside)	<b>4\"</b> 1-1/2\" (Depth Inside)	<b>Switch</b> 3-1/2\" (Depth Outside)

### CLAMP TYPES



KNOCKOUTS AND PRIOUTS			
			
<b>7/8\"</b>	<b>1/2\" CONDUIT KO</b>	<b>1-3/8\"</b>	<b>1\" CONDUIT KO</b>
			
<b>1-3/32\"</b>	<b>3/4\" CONDUIT KO</b>	<b>TKO\" CONDUIT KO</b> 7/8\" 1-3/32\"	<b>CABLE PRIOUTS</b> Always in pairs.
			
		<b>FLAT-BOTTOMED CABLE PRIOUTS</b> Eliminate chance of cable being cut.	

PLASTER EARS	
	
<b>ONE-SCREW EAR</b>	<b>TWO-SCREW EAR</b>
Adjustable plaster ears are included on many switch boxes and one octagon box. They are set forward 1/32\"	

BOX FILL

Conductor Size (AWG)	Volume Per Conductor cm <sup>3</sup> in. <sup>3</sup>		ALLOWANCES								
			6	7	8	9	10	11	12	13	14
#18	24.6	1.50	9.00	10.50	12.00	13.50	15.00	16.50	18.00	19.50	21.00
#16	28.7	1.75	10.50	12.25	14.00	15.75	17.50	19.25	21.00	22.75	24.50
#14	32.8	2.00	12.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00
#12	36.9	2.25	13.50	15.75	18.00	20.25	22.50	24.75	27.00	29.25	31.50
#10	41.0	2.50	15.00	17.50	20.00	22.50	25.00	27.50	30.00	32.50	35.00
#8	49.2	3.00	18.00	21.00	24.00	27.00	30.00	33.00	36.00	39.00	42.00
#6	81.9	5.00	30.00	35.00	40.00	45.00	50.00	55.00	60.00	65.00	70.00

16.5



**Handy**

2-1/8" (Depth Inside)

15.5



**4" Oct.**

1-1/2" (Depth Inside)

14.0



**Switch**

2-3/4" (Depth Outside)

13.0



**Handy**

1-7/8" (Depth Outside)

12.5



**Switch**

2-1/2" (Depth Outside)

6.0



**4" Rnd. Pan**

1/2" (Depth Inside)



15.8



**Switch**

2-9/64" (Depth Outside)

15.5



**4" Oct.**

1-1/2" (Depth Inside)

14.0



**Switch**

2-3/4" (Depth Outside)

12.5



**Switch**

2-1/2" (Depth Outside)

4.0



**3-1/2" Pan**

1/2" (Depth Inside)



CLAMP TECHNICAL DATA

CLAMP TYPE	RACEWAY TYPE					
	ARMORED CABLE (BX)		METAL CLAD CABLE INTERLOCKING (MCI)		NONMETALLIC SHEATHED CABLE	FLEXIBLE METAL CONDUIT
	STEEL	ALUMINUM	STEEL	ALUMINUM		
"L" TYPE	—	—	—	—	#14-2 to #10-3 w/ground	—
"X" TYPE	#14-2 (.444 in outer diam.) to largest size to fit in clamp	#14-2 (.444 in outer diam.) to largest size to fit in clamp	.425 TO .600 outer diam.	.400 to .495 outer diam.	—	3/8" trade size
"#9" OR "AOL" TYPE	—	—	—	—	#14-2 w/ground	—
"Q" TYPE	—	—	—	—	#14-2 to #10-3 w/ground	—
"BN" TYPE	—	—	—	—	#14-2 w/ground or #12-2 w/ground	—



BOX SELECTION

BRACKET TECHNICAL DATA

BRACKET TYPE	"A"	"B"	"D"	"FH"	"FM"	"FS"	"J"	"LB"	"MS"	"TS"	"W"	"H" or "M"
LENGTH (In.)	6-7/16"	1-61/64"	6-1/4"	7-3/8"	6-7/8"	7"	2-3/8"	1-31/32"	4-1/2"	7"	6-25/32"	4-15/16"
WIDTH	5/8"	2"	21/32"	1-9/16"	1-9/16"	1-9/16"	2-23/32"	3-3/64"	1-1/2"	1-1/16"	1-1/16"	7/8"
OFFSET				3/8"	3/8"	3/8"	1/4"			17/64"	1-5/16"	3/8"
FOR METAL	✓		✓		✓	✓			✓	✓	✓	✓
FOR WOOD	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓



**"A" Bracket**  
Positions handy box against face and side of stud.

**"FH" Bracket**  
Side-mount bracket with hooks that drive into face of stud.



**"D" Bracket**  
Mounts on flat side of stud.



**BOX-LOC® "MS" Bracket**

Positions box on either side of stud. BOX-LOC® (MS) Bracket Box is a snap to install. Place the bracket on the open side of the stud first. Slots in the bracket engage the lip of the stud and actually crimp it as you press the bracket on the stud. Barbed hooks dig into the flat side of the stud, quickly locking it into place.



**"J" Bracket**  
Spurs, slotted holes for toe-nailing. Gauging notches at 3/8" and 1/2".

**"UBS" Support**  
Universal Back Side support to provide bracing on back of box for wall cavities 2-1/2" - 6" thick.



**"W" Bracket**  
Positions box away from side of stud to clear the trim molding of a door frame.



**"B" Bracket**  
Face mounts on front edge of wood stud. Use when space between studs is limited.

**"FM" Bracket**  
Mounts on flat side of stud.

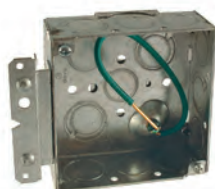
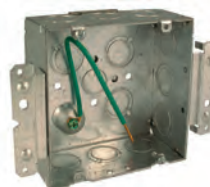


**"LB" Bracket**  
Face mounts on front edge of wood stud. Use when space between studs is limited. 5/8" offset to clear narrow door molding.



**"TS" Bracket**  
Side-mount bracket for octagon, square, switch and handy boxes. Gauging tabs and recessed nailing spurs.

**"M" Bracket**  
Brackets on both/opposite sides of box



**"H" Bracket**  
Narrow bracket allows side-by-side mounting on stud. Positioning tabs locate box perfect distance from stud. V notch centers box. Dimples protect flush drywall installation.



**"FS" Bracket**  
Mounts on flat side of stud. Gauging tabs and recessed nailing spurs.



## 4" SQUARE BOXES – DRAWN WITH CONDUIT KO'S



185



190, 8190



191, 8191



192, 8192



192SM



204

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
4" Square Box, 1-1/4" Deep – Drawn with Conduit KO's						
185	—	18.0 (295.0)	(10) 1/2"	(5) 1/2"	50	
4" Square Box, 1-1/2" Deep – Drawn with Conduit KO's						
190	Raised Ground	21.0 (344.1)	(12) 1/2"	(4) 1/2"	50	—
8190	Raised Ground	21.0 (344.1)	(12) 1/2"	(4) 1/2"	50	
191	Raised Ground	21.0 (344.1)	(8) 3/4"	(1) 1/2", (3) 3/4"	50	—
8191	Raised Ground	21.0 (344.1)	(8) 3/4"	(1) 1/2", (3) 3/4"	25	
192	Raised Ground	21.0 (344.1)	(8) 1/2", (4) 3/4"	(2) 1/2", (2) 3/4"	50	—
8192	Raised Ground	21.0 (344.1)	(8) 1/2", (4) 3/4"	(2) 1/2", (2) 3/4"	50	
192SM	Raised Ground, 10" #12 Stranded Copper Pigtail	21.0 (344.1)	(8) 1/2" (4) 3/4"	(2) 1/2" (2) 3/4"	50	
4" Square Thru-the-Wall Box, 1-1/2" Deep – Drawn with Conduit KO's						
204	—	22.5 (368.7)	(8) 1/2", (4) 3/4"	—	50	—

## APPLICATIONS

- RACO® Boxes are installed in walls or ceilings for lighting fixtures, switches or receptacles
- Square boxes are used where multiple conductor runs are split into two or more directions to bring power to a number of electrical devices
- Drawn boxes are ideal for exposed work applications

## PRODUCT FEATURES

- Combination screw heads provide for faster installation
- Thru-the-wall box is designed for shallow wall applications and allows for attachment of wall plate to both faces of box

## COMPLIANCE

- File E195978
- All RACO single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)



SQUARE BOXES & COVERS

4" SQUARE BOXES – WELDED WITH CONDUIT KO'S



181



189, 8189



189RAC



189SM



911-9

APPLICATIONS

- RACO® Boxes are installed in walls or ceilings for lighting fixtures, switches or receptacles
- Square boxes are used where multiple conductor runs are split into two or more directions to bring power to a number of electrical devices

PRODUCT FEATURES

- Combination screw heads provide for faster installation
- TKO® Knockouts allow for design and installation flexibility.
- Red boxes, covers and extensions for dedicated life safety alarm circuits

COMPLIANCE

- File E195978
- All RACO single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)
- 600V Per U.L. 514-A, suitable for use without a bonding jumper in circuits up to 600 volts

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
4" Square Box, 1-1/2" Deep – Welded with Conduit KO's						
181	—	21.0 (344.1)	(8) 3/4"	(1) 1/2", (4) 3/4"	50	—
189	600V, Raised Ground	21.0 (344.1)	(8) 1/2", (4) TKO®	(2) 1/2", (2) TKO®	50	—
8189	600V, Raised Ground	21.0 (344.1)	(8) 1/2", (4) TKO®	(2) 1/2", (2) TKO®	50	
189RAC	600V	21.0 (344.1)	(8) 1/2", (4) TKO®	(2) 1/2", (2) TKO®	50	—
189SM	600V, Raised Ground, 10" #12 Stranded Copper Pigtail	21.0 (344.1)	(8) 1/2" (4) TKO®	(2) 1/2" (2) TKO®	50	
	911-9 600V, Raised Ground, Painted Red	21.0 (344.1)	(8) 1/2" (4) TKO®	(2) 1/2" (2) TKO®	50	—

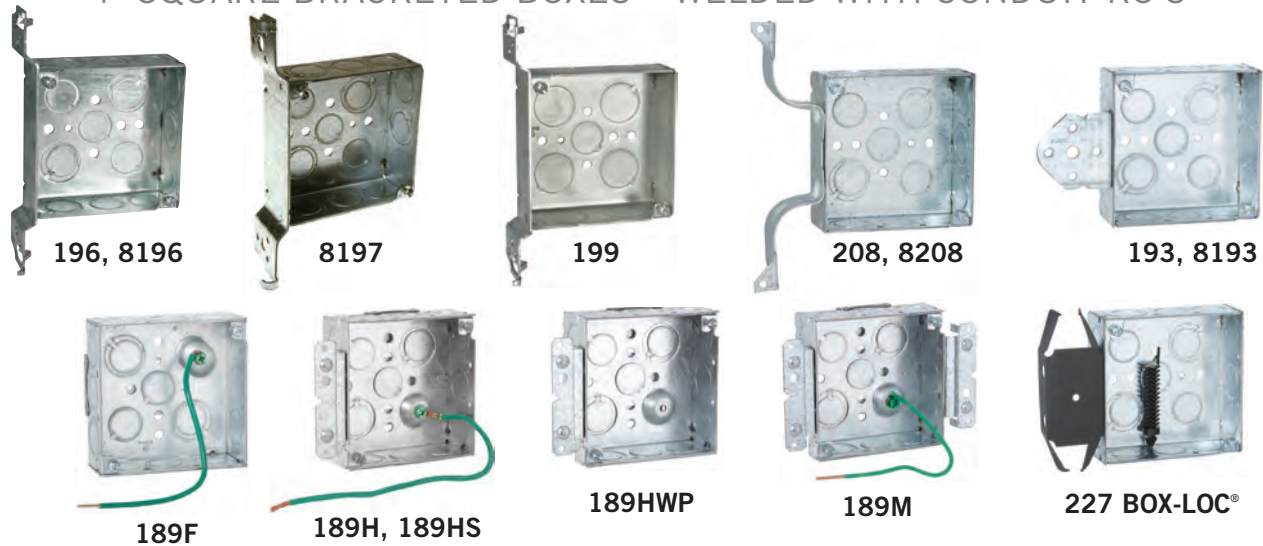
SEE END OF SECTION (PG A67) FOR DETAILED DRAWINGS >>







## 4" SQUARE BRACKETED BOXES – WELDED WITH CONDUIT KO'S



CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
4" Square Bracketed Boxes, 1-1/2" Deep – Welded with Conduit KO's						
196	600V, FS, Flush	21.0 (344.1)	(6) 1/2" (3) TKO®	(3) 1/2" (2) TKO®	25	—
8196	600V, FS, Flush	21.0 (344.1)	(6) 1/2" (3) TKO®	(3) 1/2" (2) TKO®	25	
8197	600V, FH, Flush	21.0 (344.1)	(6) 1/2" (3) TKO®	(3) 1/2" (2) TKO®	25	
199	600V, FS, Flush	21.0 (344.1)	(6) 3/4"	(1) 1/2" (4) 3/4"	25	—
208	600V, W, Flush	21.0 (344.1)	(6) 1/2" (3) TKO®	(3) 1/2" (2) TKO®	25	—
8208	W, Flush	21.0 (344.1)	(6) 1/2" (3) TKO®	(3) 1/2" (2) TKO®	25	
193	600V, B, Flush	21.0 (344.1)	(6) 1/2" (3) TKO®	(3) 1/2" (2) TKO®	25	—
8193	600V, B, Flush	21.0 (344.1)	(6) 1/2" (3) TKO®	(3) 1/2" (2) TKO®	10	
189F	600V, Raised Ground, 8" #12 Solid Copper Pigtail, UBS Farside Support	21.0 (344.1)	(8) 1/2" (4) TKO®	(2) 1/2" (2) TKO®	50	—
189H	600V, Raised Ground, 8" #12 Solid Copper Pigtail, UBS, HM	21.0 (344.1)	(6) 1/2" (3) TKO®	(2) 1/2" (2) TKO®	20	—
189HS	Raised Ground, 10" #12 Stranded Copper Pigtail, UBS, HM	21.0 (344.1)	(6) 1/2" (3) TKO®	(2) 1/2" (2) TKO®	20	—
189HWP	600V, Raised Ground, UBS, HM	21.0 (344.1)	(6) 1/2" (3) TKO®	(2) 1/2" (2) TKO®	20	—
189M	600V, Raised Ground, 8" #12 Solid Copper Pigtail, UBS, HM	21.0 (344.1)	(4) 1/2" (2) TKO®	(2) 1/2" (2) TKO®	20	—
227	600V, MS, Flush, BOX-LOC®, Provided with Far-side support (part #978)	21.0 (344.1)	(6) 1/2" (3) TKO®	(3) 1/2" (2) TKO®	25	

## APPLICATIONS

- RACO® Boxes are installed in walls or ceilings for lighting fixtures, switches or receptacles
- Square boxes are used where multiple conductor runs are split into two or more directions to bring power to a number of electrical devices

## PRODUCT FEATURES

- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- BOX-LOC® (MS) Bracket Box is a snap to install. Place the bracket on the open side of the stud first. Slots in the bracket engage the lip of the stud and actually crimp it as you press the bracket on the stud, quickly locking it in place
- TKO® Knockouts allow for design and installation flexibility
- UBS Support - Welded to box, preset bend points to work with wall thickness 2-1/2" to 6"

## COMPLIANCE

- File E195978
- All RACO single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)
- 600V Per U.L. 514-A, suitable for use without a bonding jumper in circuits up to 600 volts

SEE END OF SECTION (PG A67) FOR DETAILED DRAWINGS &gt;&gt;



## 4" SQUARE EXTENSION RINGS



201, 8201



202



203, 8203



911-6



187



207

## APPLICATIONS

- RACO® Extension rings provide a means for adding cubic capacity or as an outlet box for surface conduit

## PRODUCT FEATURES

- Combination screw heads provide for faster installation
- Red boxes, covers and extensions for dedicated life safety alarm circuits
- RACO® 187 can be positioned to accommodate one or two switch boxes

## COMPLIANCE

- File E195978

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
4" Square Extension Rings, 1-1/2" Deep – Drawn with Conduit KO's						
201	—	22.5 (368.7)	(12) 1/2"	—	50	—
8201	—	22.5 (368.7)	(12) 1/2"	—	25	
202	—	22.5 (368.7)	(8) 3/4"	—	50	—
203	—	22.5 (368.7)	(8) 1/2", (4) 3/4"	—	50	—
8203	—	22.5 (368.7)	(8) 1/2", (4) 3/4"	—	25	
911-6	Painted Red	22.5 (368.7)	(8) 1/2", (4) 3/4"	—	50	—
187	Attaches to Switch Boxes	22.5 (368.7)	(8) 1/2", (4) 3/4"	—	25	
4" Square Extension Rings, 2-1/8" Deep – Welded with Conduit KO's						
207	—	30.3 (496.5)	(6) 1/2", (6) 3/4"	—	25	—



## 4" SQUARE BOXES – WELDED WITH CONDUIT KO'S



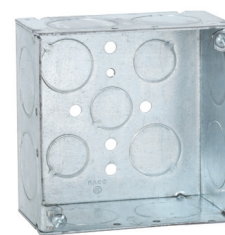
232, 8232



232RAC



231, 8231



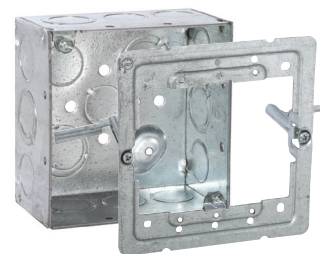
233, 8233



232SM



911-3



232-OW

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
4" Square Box, 2-1/8" Deep – Welded with Conduit KO's						
232	600V, Raised Ground	30.3 (496.5)	(8) 1/2", (4) TKO®	(2) 1/2", (2) TKO®	25	—
8232	600V, Raised Ground	30.3 (496.5)	(8) 1/2", (4) TKO®	(2) 1/2", (2) TKO®	25	
232RAC	600V	30.3 (496.5)	(8) 1/2", (4) TKO®	(3) 1/2", (2) TKO®	25	—
231	—	30.3 (496.5)	(8) 3/4"	(1) 1/2", (4) 3/4"	25	—
8231	—	30.3 (496.5)	(8) 3/4"	(1) 1/2", (4) 3/4"	25	
233	—	30.3 (496.5)	(8) 1"	(3) 1/2", (2) 3/4"	25	—
8233	—	30.3 (496.5)	(8) 1"	(3) 1/2", (2) 3/4"	25	
232SM	600V, Raised Ground, 10" #12 Stranded Copper Pigtail	30.3 (496.5)	(8) 1/2", (4) TKO®	(2) 1/2", (2) TKO®	25	
911-3	600V, Painted Red	30.3 (496.5)	(8) 1/2", (4) TKO®	(2) 1/2", (2) TKO®	25	
232-OW	600V, Raised Ground, Old Work, 4" Sq. Box Mounting of One or Two Device Applications	30.3 (496.5)	(8) 1/2", (4) TKO®	(2) 1/2", (2) TKO®	25	

### APPLICATIONS

- RACO® Boxes are installed in walls or ceilings for lighting fixtures, switches or receptacles
- Square boxes are used where multiple conductor runs are split into two or more directions to bring power to a number of electrical devices

### PRODUCT FEATURES

- Combination screw heads provide for faster installation
- TKO® knockouts offer greater flexibility with RACO patented combination 1/2" and 3/4" knockout
- Red boxes, covers and extensions for dedicated life safety alarm circuits

### COMPLIANCE

- File E195978
- All RACO single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)
- **600V** Per U.L. 514-A, suitable for use without a bonding jumper in circuits up to 600 volts

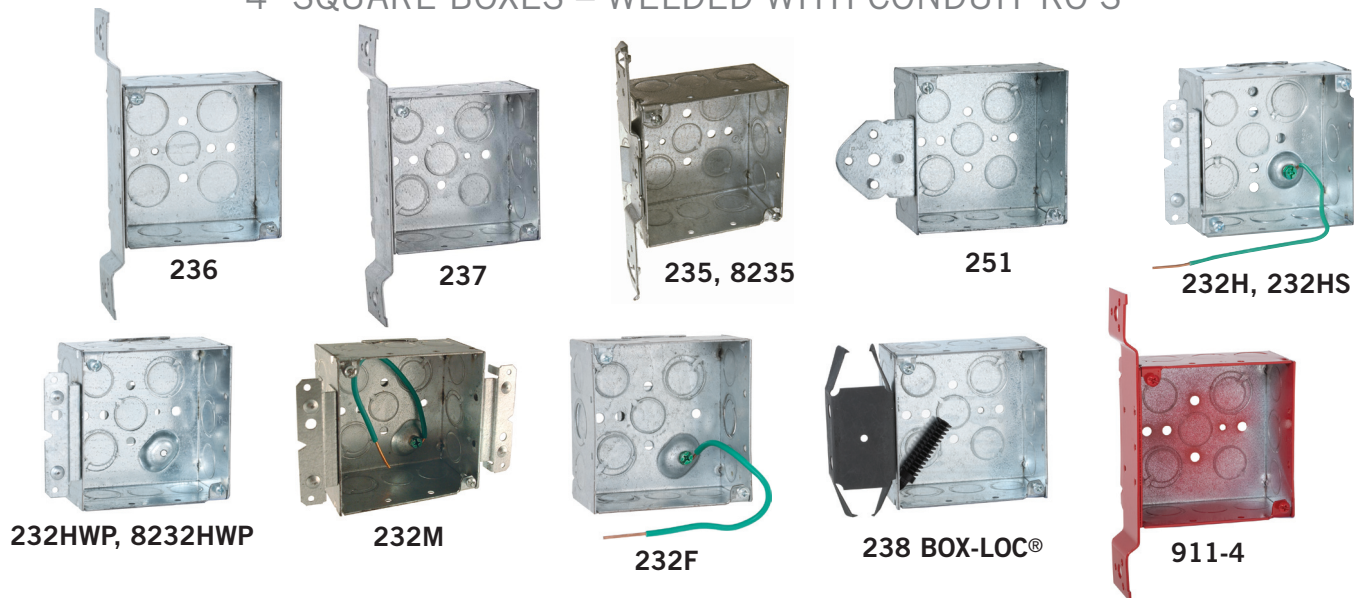
U.S. Patent 7,300,025, B2 (232-OW)





SQUARE BOXES & COVERS

4" SQUARE BOXES – WELDED WITH CONDUIT KO'S



APPLICATIONS

- RACO® Boxes are installed in walls or ceilings for lighting fixtures, switches or receptacles
- Square boxes are used where multiple conductor runs are split into two or more directions to bring power to a number of electrical devices

PRODUCT FEATURES

- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- BOX-LOC® (MS) Bracket Box is a snap to install. Place the bracket on the open side of the stud first. Slots in the bracket engage the lip of the stud and actually crimp it as you press the bracket on the stud, quickly locking it in place
- Combination screw heads provide for faster installation
- TKO® knockouts offer greater flexibility with RACO® patented combination 1/2" and 3/4" knockout
- UBS Support - Welded to box, preset bend points to work with wall thickness 2-1/2" to 6"
- Red boxes, covers and extensions for dedicated life safety alarm circuits

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
4" Square Box, 2-1/8" Deep – Welded with Conduit KO's						
236	600V, FM, Flush	30.3 (496.5)	(6) 3/4"	(1) 1/2", (4) 3/4"	25	
237	600V, FM, Flush	30.3 (496.5)	(6) 1/2", (3) TKO®	(3) 1/2", (2) TKO®	25	
235	600V, TS, Flush	30.3 (496.5)	(6) 1/2", (3) TKO®	(3) 1/2", (2) TKO®	25	—
8235	TS, Flush,	30.3 (496.5)	(6) 1/2", (3) TKO®	(3) 1/2", (2) TKO®	25	
251	B Flush	30.3 (496.5)	(6) 1/2", (3) TKO®	(3) 1/2", (2) TKO®	25	—
232H	Raised Ground, 8" #12 Solid Copper Pigtail, UBS, HM	30.3 (496.5)	(8) 1/2" (4) TKO®	(2) 1/2" (2) TKO®	25	—
232HS	Raised Ground, 10" #12 Stranded Copper Pigtail, UBS, HM	30.3 (496.5)	(8) 1/2" (4) TKO®	(2) 1/2" (2) TKO®	25	—
232HWP	Raised Ground, UBS, HM	30.3 (496.5)	(8) 1/2", (4) TKO®	(2) 1/2", (2) TKO®	25	—
8232HWP	Raised Ground, UBS, HM	30.3 (496.5)	(8) 1/2", (4) TKO®	(2) 1/2", (2) TKO®	25	
232M	600V, Raised Ground, 8" #12 Solid Copper Pigtail, UBS, HM	30.3 (496.5)	(8) 1/2" (4) TKO®	(2) 1/2" (2) TKO®	25	—
232F	600V, Raised Ground 8" #12 Solid Copper Pigtail, UBS	30.3 (496.5)	(8) 1/2" (4) TKO®	(2) 1/2" (2) TKO®	25	—
238	BOX-LOC®, MS, Flush, Provided with Far-side support (part #978)	30.3 (496.5)	(6) 1/2" (3) TKO®	(3) 1/2" (2) TKO®	25	
911-4	FM Bracket, Painted Red	30.3 (496.5)	(6) 1/2", (3) TKO®	(3) 1/2", (2) TKO®	25	—

COMPLIANCE

- File E195978
- All RACO single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)
- 600V Per U.L. 514-A, suitable for use without a bonding jumper in circuits up to 600 volts



## 4" SQUARE PLENUM BOXES &amp; COVER



226



239



762

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
4" Square Plenum Boxes and Cover – Drawn with Conduit KO's						
226	1-1/2" Depth	22.5 (368.7)	(8) 1/2", (4) 3/4"	(3) 1/2", (2) 3/4"	50	
239	2-1/8" Depth	30.3 (496.5)	(8) 1/2", (4) 3/4"	(3) 1/2", (2) 3/4"	25	
762	Gasketed cover for 4" square boxes	—	—	—	50	

## APPLICATIONS

- RACO® Plenum boxes are used in above-ceiling applications where air-tight enclosures are required

## PRODUCT FEATURES

- To maintain plenum seal, both RACO 226 and 239 do not provide ground screw holes
- Cover gasket is PVC foam material

## COMPLIANCE

-  File E195978



## SQUARE BOXES & COVERS

### 3-3/4" SQUARE BOXES – WELDED WITH CONDUIT KO'S



256



911-2



255



911-1

#### APPLICATIONS

- RACO® Red boxes and covers allow inspector or building owner to immediately identify alarm/fire or life safety systems

#### PRODUCT FEATURES

- 3-3/4" opening in wall allows for margin of error when using a 4" square cover
- Accepts all 4" square covers and mudrings
- Red boxes, covers and extensions for dedicated life safety alarm circuits

#### COMPLIANCE

- File E195978

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
3-3/4" Square Large Capacity Boxes, 3-1/2" Deep – Welded with Conduit KO's						
256		45.0 (737.4)	(12) 1/2"-3/4" Concentric	(4) 1/2"-3/4" Concentric	25	
911-2	Painted Red	45.0 (737.4)	(12) 1/2"-3/4" Concentric	(4) 1/2"-3/4" Concentric	25	—
3-3/4" Square Large Capacity Bracketed Boxes, 3-1/2" Deep – Welded with Conduit KO's						
255	FM Bracket	45.0 (737.4)	(10) 1/2"-3/4" Concentric	(4) 1/2"-3/4" Concentric	10	
911-1	FM Bracket, Painted Red	45.0 (737.4)	(10) 1/2"-3/4" Concentric	(4) 1/2"-3/4" Concentric	10	—

SEE END OF SECTION (PG A67) FOR DETAILED DRAWINGS >>

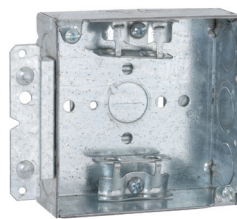




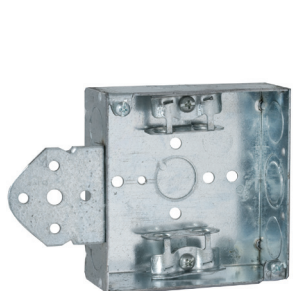
## 4" SQUARE BOXES – WELDED WITH ARMORED CABLE / METAL CLAD / FLEX CLAMPS



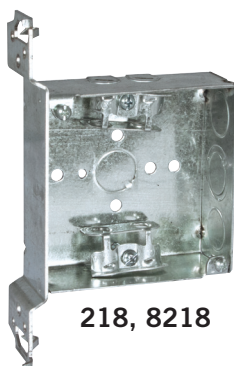
213, 8213



213HWP



224



218, 8218



229 BOX-LOC®

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS			STD. PKG.	BAR CODE
			CABLE PRIOUTS	SIDES CONDUIT	BOTTOM CONDUIT		
4" Square Box, 1-1/2" Deep – Welded with Armored Cable/Metal Clad/Flex Clamps							
213	600V	21.0 (344.1)	4	(4) 1/2", (2) TKO®	(1) 1/2"	50	—
8213	600V	21.0 (344.1)	4	(4) 1/2", (2) TKO®	(1) 1/2"	50	
4" Square Bracketed Box, 1-1/2" Deep – Welded with Armored Cable/Metal Clad/Flex Clamps							
213HWP	600V, HM, UBS	21.0 (344.1)	4	(4) 1/2" (2) TKO®	(1) 1/2"	20	—
224	600V, B, Flush	21.0 (344.1)	4	(2) 1/2" (1) TKO®	(1) 1/2"	25	—
218	600V, FS, Flush	21.0 (344.1)	4	(2) 1/2" (1) TKO®	(1) 1/2"	25	—
8218	600V, FS, Flush	21.0 (344.1)	4	(2) 1/2" (1) TKO®	(1) 1/2"	25	
229	600V, BOX-LOC®, (MS) Flush, Provided with Far-side support (part #978)	21.0 (344.1)	4	(2) 1/2"	(1) 1/2"	25	

## APPLICATIONS

- RACO® Boxes are installed in walls or ceilings for lighting fixtures, switches or receptacles
- Square boxes are used where multiple conductor runs are split into two or more directions to bring power to a number of electrical devices

## PRODUCT FEATURES

- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- BOX-LOC® (MS) Bracket Box is a snap to install. Place the bracket on the open side of the stud first. Slots in the bracket engage the lip of the stud and actually crimp it as you press the bracket on the stud, quickly locking it in place
- UBS Support - Welded to box, preset bend points to work with wall thickness 2-1/2" to 6"
- Combination screw heads provide for faster installation
- TKO® Knockouts offer greater flexibility with RACO patented combination 1/2" and 3/4" knockout

## COMPLIANCE

- File E195978
- All RACO single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)
- 600V Per U.L. 514-A, suitable for use without a bonding jumper in circuits up to 600 volts

SEE END OF SECTION (PG A67) FOR DETAILED DRAWINGS &gt;&gt;





## SQUARE BOXES & COVERS

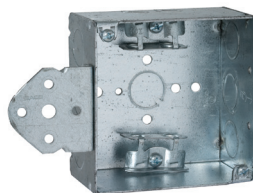
### 4" SQUARE BOXES – WELDED WITH ARMORED CABLE / METAL CLAD / FLEX CLAMPS



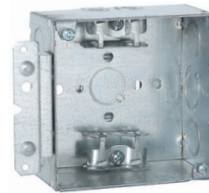
248



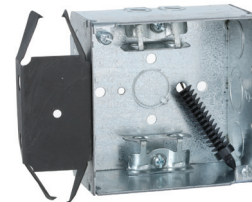
241, 8241



249



248HWP



243 BOX-LOC®



#### APPLICATIONS

- RACO® Boxes are installed in walls or ceilings for lighting fixtures, switches or receptacles
- Square boxes are used where multiple conductor runs are split into two or more directions to bring power to a number of electrical devices

#### PRODUCT FEATURES

- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- BOX-LOC® (MS) Bracket Box is a snap to install. Place the bracket on the open side of the stud first. Slots in the bracket engage the lip of the stud and actually crimp it as you press the bracket on the stud, quickly locking it in place
- Combination screw heads provide for faster installation
- TKO® knockouts offer greater flexibility with RACO patented combination 1/2" and 3/4" knockout

#### COMPLIANCE

-  File E195978
-  All RACO single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)
- **600V** Per U.L. 514-A, suitable for use without a bonding jumper in circuits up to 600 volts

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS			STD. PKG.	BAR CODE
			CABLE PRIOUTS	SIDES CONDUIT	BOTTOM CONDUIT		
4" Square Box, 2-1/8" Deep – Welded with Armored Cable/Metal Clad/Flex Clamps							
248	600V	30.3 (496.5)	4	(4) 1/2", (2) TKO®	(1) 1/2"	25	
4" Square Bracketed Box, 2-1/8" Deep – Welded with Armored Cable/Metal Clad/Flex Clamps							
241	600V TS, Flush	30.3 (496.5)	4	(2) 1/2", (1) TKO®	(1) 1/2"	25	—
8241	600V TS, Flush	30.3 (496.5)	4	(2) 1/2", (1) TKO®	(1) 1/2"	25	
249	600V B, Flush	30.3 (496.5)	4	(2) 1/2", (1) TKO®	(1) 1/2"	25	—
248HWP	600V HM Bracket, UBS	30.3 (496.5)	4	(2) 1/2", (1) TKO®	(1) 1/2"	25	
243	600V BOX-LOC®, (MS)	30.3 (496.5)	4	(2) 1/2", (1) TKO®	(1) 1/2"	25	
	Flush, Provided with Far-side support (part #978)						

SEE END OF SECTION (PG A67) FOR DETAILED DRAWINGS >>





## 4" SQUARE BOXES – WELDED WITH NONMETALLIC SHEATHED CABLE CLAMPS



CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS			STD. PKG.	BAR CODE
			CABLE PRIOUTS	SIDES CONDUIT	BOTTOM CONDUIT		
4" Square Box, 1-1/2" Deep – Welded with Nonmetallic Sheathed Cable Clamps							
211	600V	21.0 (344.1)	4	(4) 1/2", (2) TKO	(1) 1/2"	50	—
8211	600V	21.0 (344.1)	4	(4) 1/2", (2) TKO	(1) 1/2"	50	
223	600V FS, Flush	21.0 (344.1)	4	(2) 1/2", (1) TKO	(1) 1/2"	25	
225	600V B, Flush	21.0 (344.1)	4	(2) 1/2", (1) TKO	(1) 1/2"	25	—
228	600V, BOX-LOC®, (MS) Flush, Provided with Far-side support (part #978)	21.0 (344.1)	4	(2) 1/2" (1) TKO	(1) 1/2"	25	
4" Square Box, 2-1/8" Deep – Welded with Nonmetallic Sheathed Cable Clamps							
242	600V	30.3 (496.5)	4	(4) 1/2", (2) TKO	(1) 1/2"	25	—
240	600V TS, Flush	30.3 (496.5)	4	(2) 1/2", (1) TKO	(1) 1/2"	25	—
8240	600V TS, Flush	30.3 (496.5)	4	(2) 1/2", (1) TKO	(1) 1/2"	25	

## APPLICATIONS

- RACO® Boxes are installed in walls or ceilings for lighting fixtures, switches or receptacles
- Square boxes are used where multiple conductor runs are split into two or more directions to bring power to a number of electrical devices

## PRODUCT FEATURES

- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- BOX-LOC® (MS) Bracket Box is a snap to install. Place the bracket on the open side of the stud first. Slots in the bracket engage the lip of the stud and actually crimp it as you press the bracket on the stud, quickly locking it in place
- Combination screw heads provide for faster installation
- TKO® knockouts offer greater flexibility with RACO patented combination 1/2" and 3/4" knockout

## COMPLIANCE

- File E195978
- All RACO single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)
- 600V Per U.L. 514-A, suitable for use without a bonding jumper in circuits up to 600 volts

## SQUARE BOXES &amp; COVERS

## 4" SQUARE COVERS

752, 8752,  
8752-5753, 8753,  
8753-5

911-8



787

774, 775, 8775  
782771, 8771, 772, 8772  
773, 8773, 768, 8768

785, 786

## APPLICATIONS

- RACO® covers are used to close an outlet box
- Raised device covers are used for mounting switches or receptacles

## PRODUCT FEATURES

- Red boxes, covers and extensions for dedicated life safety alarm circuits
- Angled mounting slots compensate up to 12° for box misalignment

## COMPLIANCES

- File E195978
- File LR-1082

CATALOG #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	STD. PKG.	BARCODE
<b>4" Square Flat Covers</b>				
752	Flat, Blank	—	50	—
8752	Flat, Blank	—	50	
8752-5*	Flat, Blank	—	50	
753	Flat, 1/2" KO in Center	—	50	—
8753	Flat, 1/2" KO in Center	—	50	
8753-5*	Flat, 1/2" KO in Center	—	50	
911-8	Flat, Blank, Painted Red	—	50	
<b>4" Square Single Device Covers</b>				
787	Flat	—	25	
771	Raised 1/4"	1.5 (24.6)	100	—
8771	Raised 1/4"	1.5 (24.6)	25	
782	Raised 1/2" Tile	3.5 (57.3)	25	
772	Raised 1/2" Drawn	3.5 (57.3)	100	—
8772	Raised 1/2" Drawn	3.5 (57.3)	50	
768	Raised 5/8"	4.5 (73.7)	50	—
8768	Raised 5/8"	4.5 (73.7)	25	
773	Raised 3/4"	5.5 (90.1)	50	—
8773	Raised 3/4"	5.5 (90.1)	25	
774	Raised 1"	7.5 (122.9)	25	
775	Raised 1-1/4"	9.5 (115.6)	25	—
8775	Raised 1-1/4"	9.5 (115.6)	25	
785	Raised 1-1/2"	11.3 (185.2)	25	—
786	Raised 2"	14.5 (237.6)	25	—

\*5 Bundles of 10 – sold in carton quantities only

## SQUARE BOXES &amp; COVERS

## 4" SQUARE COVERS



791



777, 8777-0



778, 8778



769, 8769



779, 8779



780



781, 8781



795, 796

CATALOG #	DESCRIPTION	CUBIC INCHES (CM3)	STD. PKG.	BARCODE
<b>4" Square Two Device and Tile Covers</b>				
791	Flat	—	25	
777	Raised, 1/4", Drawn	3.0 (49.2)	50	—
8777-0	Raised, 1/4", Drawn	3.0 (49.2)	10	
778	Raised, 1/2", Drawn	5.5 (90.1)	50	—
8778	Raised, 1/2", Drawn	5.5 (90.1)	25	
769	Raised, 5/8", Drawn	7.3 (119.6)	50	—
8769	Raised, 5/8", Drawn	7.3 (119.6)	25	
779	Raised, 3/4", Drawn	8.8 (144.2)	50	—
8779	Raised, 3/4", Drawn	8.8 (144.2)	25	
780	Raised, 1", Drawn	12.0 (196.6)	25	
781	Raised, 1-1/4", Drawn	15.0 (245.8)	25	—
8781	Raised, 1-1/4", Drawn	15.0 (245.8)	25	
795	Raised, 1-1/2", Welded	15.5 (253.9)	25	—
796	Raised, 2", Welded	20.5 (335.9)	25	—

## APPLICATIONS

- Raised device covers are used for mounting switches or receptacles
- Low voltage partitions may be added to conduit-type boxes to divide power from voice/data

## PRODUCT FEATURES

- Angled mounting slots compensate up to 12° for box misalignment

## COMPLIANCE

- File E195978
- File LR-1082



## SQUARE BOXES &amp; COVERS

## 4" SQUARE PARTITIONS

## APPLICATIONS

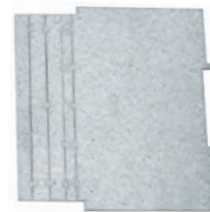
- Low voltage partitions may be added to conduit-type boxes to divide power from voice/data
- Must be used with raised covers

## PRODUCT FEATURES

- Partition divides 4" square boxes into two compartments
- Use with two-device covers which have a slot for the partition
- Partition is scored so it can be broken at the proper depth of box and cover combination
- Helpful hint: Assemble the box with the partition in place before breaking off at the scored tab. This will prevent you from breaking off more tab than needed



706RAC, 707RAC



708, 709

CAT. #	DESCRIPTION	STD. PKG.	BARCODE
<b>Low Voltage Partitions* for 1-1/2" Depth Boxes and 2-Device Covers</b>			
<b>706RAC</b>	Fits 1/4", 1/2", 3/4" or 1" Cover Depth (#777, 778, 8778, 779, 8779, 780)	25	—
<b>708</b>	Fits 1-1/4", 1-1/2" or 2" Cover Depth (#781, 8781, 795, 796)	25	—
<b>Low Voltage Partitions* for 2-1/8" Depth Boxes and 2-Device Covers</b>			
<b>707RAC</b>	Fits 1/4", 1/2", 3/4" or 1" Cover Depth (#777, 778, 8778, 779, 8779, 780)	25	—
<b>709</b>	Fits 1-1/4", 1-1/2" or 2" Cover Depth (#781, 8781, 795, 796)	25	—

\*Low voltage partitions are not UL Listed

Boxes, covers, and partitions must be ordered separately.

For 1-1/2" deep box with 5/8" cover, partition not available. For 2-1/8" deep box with 5/8" cover, use #708 partition.

Partitions are usable but not UL listed for 4-11/16" sq. box.

## COMPLIANCES

- File E195978
- File LR-1082

## 4" SQUARE FIXTURE COVERS

756-759, 767,  
8756, 8767

896



897KH

## APPLICATIONS

- Raised fixture covers are used where fixtures will be installed

## PRODUCT FEATURES

- Angled mounting slots compensate up to 12° for box misalignment
- Swivel covers restricted to 20° swing from vertical
- KWIK-HANG® 897KH allows easy installation of high bay lighting fixtures. Fixture rests in position while wiring is completed

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	RECOMMENDED MAX. LOADS		STD. PKG.	BAR CODE
			CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.		
4" Square Fixture Covers						
767	Raised, 1/2" Open, Ears 2-3/4" O.C.	3.0 (49.2)	No	50	25	—
8767	Raised, 1/2" Open, Ears 2-3/4" O.C.	3.0 (49.2)	No	50	25	
756	Raised, 5/8" Open, Ears 2-3/4" O.C.	4.0 (65.5)	No	50	100	—
8756	Raised, 5/8" Open, Ears 2-3/4" O.C.	4.0 (65.5)	No	50	25	
759	Raised, 3/4" Open, Ears 2-3/4" O.C.	5.0 (81.9)	No	50	25	
757	Raised, 1" Open, Ears 2-3/4" O.C.	6.8 (111.4)	No	50	25	
758	Raised, 1-1/4" Open, Ears 2-3/4" O.C.	8.5 (139.3)	No	50	25	—
4" Square Swivel Fixture Covers						
896	For 4" Sq. Boxes, 1/2" or 3/4" Pipe	—	No	50	25	—
NEW 897KH	KWIK-HANG® for 4" Sq. Boxes, 1/2" or 3/4" Pipe	—	No	50	25	—

## COMPLIANCES

- File E195978
- File LR-1082

Patent Pending (897KH)

## SQUARE BOXES &amp; COVERS

## 4" SQUARE EXPOSED WORK COVERS



800C



801C



803C



804C



805C



806C



807C



808C



809C



810C



811C



812C



813C



814C



815C



816C



817C



830C



831C



902C



906C



907C



915C

CATALOG #	DESCRIPTION	CUBIC IN. (CM <sup>3</sup> )	STD. PKG.	BARCODE
<b>4" Square, Crushed Corner Covers – Raised 1/2"</b>				
800C	1 Toggle Switch	6.5 (106.5)	10	
801C	1 Receptacle 1.406" Dia.	6.5 (106.5)	10	
803C	2 Toggle Switches	6.5 (106.5)	10	
804C	Blank, No Holes	6.5 (106.5)	10	
805C	1 Toggle Switch and 1 Receptacle 1.406" Dia.	6.5 (106.5)	10	
806C	1 Duplex and 1 Receptacle 1.406" Dia.	6.5 (106.5)	10	
807C	2 Receptacles 1.406" Dia.	6.5 (106.5)	10	
808C	1 GFCI	6.5 (106.5)	10	
809C	2 GFCI	6.5 (106.5)	10	
810C	30-50A Receptacle 2.141" Dia.	6.5 (106.5)	10	
811C	30A Locking 1.719" Dia.	6.5 (106.5)	10	
812C	20A Receptacle 1.620" Dia.	6.5 (106.5)	10	
813C	30-60A Receptacle 2.625" Dia.	6.5 (106.5)	10	
814C	1 GFCI and 1 Toggle Switch	6.5 (106.5)	10	
815C	1 Receptacle 2.165" Dia., Offset	6.5 (106.5)	10	
816C	1 Receptacle 2.480" Dia.	6.5 (106.5)	10	
817C	1 Receptacle 2.275" Dia., Offset	6.5 (106.5)	10	
830C	1 Receptacle 2.255" Dia.	6.5 (106.5)	10	
831C	1 Duplex, 1 20A Twist Lock® 1.620" Dia.	6.5 (106.5)	10	
902C	1 Duplex Receptacle	6.5 (106.5)	10	
906C	1 Duplex Receptacle and 1 Toggle Switch	6.5 (106.5)	10	
907C	2 Duplex Receptacles	6.5 (106.5)	10	
915C	1 GFCI and 1 Duplex Receptacle	6.5 (106.5)	10	

## APPLICATIONS

- RACO® surface covers are used to support switches or receptacles in areas where the box is surface mounted or positioned in exposed work applications

## PRODUCT FEATURES

- RACO® exposed work covers include required hardware for mounting the receptacle(s)
- RACO® Exposed work covers meet the requirements of the 2014 NEC Article 250.146 (A). No bonding jumper is required for covers with:
  - (1) Crushed corners
  - (2) Two or more device attachment screws
  - (3) A lockwasher or equivalent
- Hardware and cover are packed in a poly-bag with printed catalog number, compliances and installation instructions

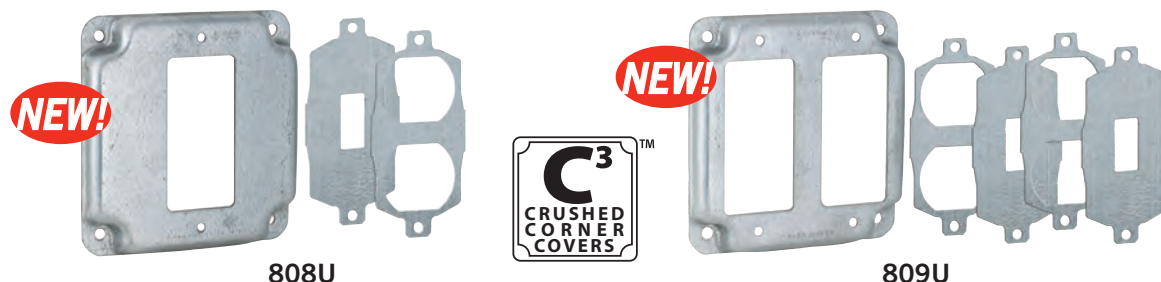
## COMPLIANCES

- File E195978



## SQUARE BOXES &amp; COVERS

## 4" SQUARE EXPOSED WORK COVERS



808U

809U



808



809



814



915

## APPLICATIONS

- RACO® surface covers are used to support switches or receptacles in areas where the box is surface mounted or positioned in exposed work applications

## PRODUCT FEATURES

- RACO® exposed work covers include required hardware for mounting the receptacle(s)
- RACO® Exposed work covers meet the requirements of the 2014 NEC Article 250.146 (A). No bonding jumper is required for covers with:
  - (1) Crushed corners
  - (2) Two or more device attachment screws
  - (3) A lockwasher or equivalent
- Hardware and cover are packed in a poly-bag with printed catalog number, compliances and installation instructions
- Non-crushed corner covers allow for additional wiring capacity for GFCI's and dimmers

## COMPLIANCES

-  File E195978

Patent Pending (808U and 809U)

CATALOG #	DESCRIPTION	CUBIC IN. (CM <sup>3</sup> )	STD. PKG.	BARCODE
<b>4" Square Crushed Corner Covers – Raised 1/2"</b>				
<b>NEW</b> 808U	Universal for 1 Device: 1 GFCI, 1 Duplex or 1 Toggle (Insert Plates)	6.5 (106.5)	10	
<b>NEW</b> 809U	Universal for 2 Device: 2 GFCI, 2 Duplex or 2 Toggle (Insert Plates)	6.5 (106.5)	10	
<b>4" Square Extra-Capacity Non-Crushed Corner Covers – Raised 1/2"</b>				
808	1 GFCI	7.3 (119.6)	10	
809	2 GFCI	7.3 (119.6)	10	
814	1 GFCI and 1 Toggle Switch	7.3 (119.6)	10	
915	1 GFCI and 1 Duplex Receptacle	7.3 (119.6)	10	



## 4-11/16" SQUARE BOXES AND EXTENSION RINGS – DRAWN WITH CONDUIT KO'S



245



246



247



250



262

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
4-11/16" Square Boxes, 1-1/2" Deep – Drawn with Conduit KO's						
245	—	29.5 (483.4)	(12) 1/2"	(3) 1/2", (2) 3/4"	25	—
246	—	29.5 (483.4)	(10) 3/4"	(3) 1/2", (2) 3/4"	25	—
247	—	29.5 (483.4)	(8) 1/2", (4) 3/4"	(3) 1/2", (2) 3/4"	25	—
4-11/16" Square Extension Rings – Drawn with Conduit KO's						
250	1-1/2" Depth	29.5 (483.4)	(8) 1/2", (4) 3/4"	—	25	
262	2-1/8" Depth	43.0 (704.6)	(8) 1/2", (4) 3/4"	—	25	

## APPLICATIONS

- RACO® 4-11/16" Boxes are used for a wide variety of industrial applications where larger sized conductors or wiring devices are needed and more volume is required
- Drawn boxes are ideal for exposed work applications (surface mounted wiring)
- RACO® Extension rings provide a means for adding cubic capacity or as an outlet box for surface conduit

## PRODUCT FEATURES

- Combination screw heads provide for faster installation

## COMPLIANCE

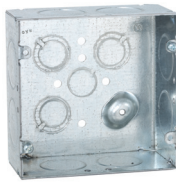
- File E195978



## SQUARE BOXES &amp; COVERS

RACO

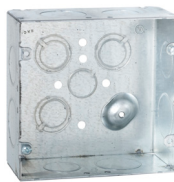
## 4-11/16" SQUARE BOXES – WELDED WITH CONDUIT KO'S

257, 8257,  
8257SP

258



259

265, 8265,  
8265SP

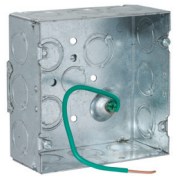
911-12



257SM



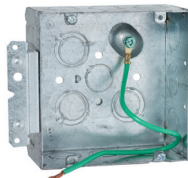
258SM



257F



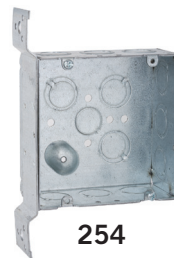
257HWP



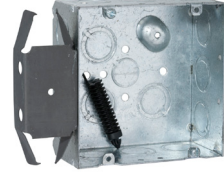
257H, 257HS



257M



254



266 BOX-LOC®

## APPLICATIONS

- RACO® 4-11/16" Boxes are used for a wide variety of industrial applications where larger sized conductors or wiring devices are needed and more volume is required

## PRODUCT FEATURES

- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- BOX-LOC® (MS) Bracket Box is a snap to install. Place the bracket on the open side of the stud first. Slots in the bracket engage the lip of the stud and actually crimp it as you press the bracket on the stud, quickly locking it in place
- Combination screw heads provide for faster installation
- TKO® knockouts allow for design and installation flexibility
- UBS Support - Welded to box, preset bend points to work with wall thickness 2-1/2" to 6"
- Red boxes, covers and extensions for dedicated life safety alarm circuits

## COMPLIANCE

- File E195978
- **600V** Per U.L. 514-A, suitable for use without a bonding jumper in circuits up to 600 volts

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
4-11/16" Square Boxes, 2-1/8" Deep – Welded with Conduit KO's						
257	600V, Raised Ground	42.0 (688.2)	(12) TKO®	(1) 1/2", (3) TKO®	25	—
8257	600V, Raised Ground	42.0 (688.2)	(12) TKO®	(1) 1/2", (3) TKO®	25	
8257SP	600V, Raised Ground	42.0 (688.2)	(12) TKO®	(1) 1/2", (3) TKO®	20	
258	600V, Raised Ground	42.0 (688.2)	(8) 1"	(1) 1/2", (3) TKO®	25	—
259*	600V, Raised Ground	42.0 (688.2)	(6) 1-1/4"	(1) 1/2", (3) TKO®	25	—
265	600V, Raised Ground	42.0 (688.2)	(4) 3/4", (4) 1"	(1) 1/2", (3) TKO®	25	—
8265	600V, Raised Ground	42.0 (688.2)	(4) 3/4", (4) 1"	(1) 1/2", (3) TKO®	25	
8265SP	600V, Raised Ground	42.0 (688.2)	(4) 3/4", (4) 1"	(1) 1/2", (3) TKO®	20	
911-12	600V, Raised Ground, Painted Red	42.0 (688.2)	(12) TKO®	(1) 1/2", (3) TKO®	25	—
257SM	600V, Raised Ground, 10" #12 Stranded Copper Pigtail	42.0 (688.2)	(12) TKO®	(1) 1/2" (3) TKO®	25	
258SM	600V, Raised Ground, 10" #12 Stranded Copper Pigtail	42.0 (688.2)	(8) 1"	(1) 1/2" (3) TKO®	25	
257F	600V, Raised Ground, 8" #12 Solid Copper Pigtail, UBS	42.0 (688.2)	(12) TKO®	(1) 1/2" (3) TKO®	20	—
4-11/16" Square Bracketed Boxes, 2-1/8" Deep – Welded with Conduit KO's						
257H	600V, Raised Ground, 8" #12 Solid Copper Pigtail, UBS, HM	42.0 (688.2)	(12) TKO®	(1) 1/2" (3) TKO®	20	—
257HS	600V, Raised Ground, 10" #12 Stranded Copper Pigtail, UBS, HM	42.0 (688.2)	(12) TKO®	(1) 1/2" (3) TKO®	20	—
257HWP	Raised Ground, UBS, HM	42.0 (688.2)	(12) TKO®	(1) 1/2", (3) TKO®	20	—
257M	600V, Raised Ground, 8" #12 Solid Copper Pigtail, UBS, HM	42.0 (688.2)	(12) TKO®	(1) 1/2" (3) TKO®	20	—
254	600V, Raised Ground, FM	42.0 (688.2)	(9) TKO®	(1) 1/2", (3) TKO®	25	
266	600V, Raised Ground, BOX-LOC®, MS Flush, Provided with Far-side support (part #978)	42.0 (688.2)	(9) TKO®	(1) 1/2" (3) TKO®	25	

\* Not UL Rated

SEE END OF SECTION (PG A68) FOR DETAILED DRAWINGS &gt;&gt;



## SQUARE BOXES &amp; COVERS

## 4-11/16" SQUARE COVERS



832



833, 8833-5



911-11



837, 8837



843



838



839



842



898



899

CATALOG #	DESCRIPTION	STD. PKG.	BARCODE
<b>4-11/16" Square Flat Covers</b>			
832	Flat, Blank	50	
833	Flat, 1/2" KO, Centered	50	
8833-5*	Flat, 1/2" KO, Centered	50	
911-11	Flat, Blank, Painted Red	50	—

\*5 Bundles of 10 – sold in carton quantities only

CATALOG #	DESCRIPTION	CUBIC IN. (CM <sup>3</sup> )	STD. PKG.	BARCODE
<b>4-11/16" Square Single Device and Tile Covers</b>				
837	Raised 1/2"	3.5 (57.3)	25	—
8837	Raised 1/2"	3.5 (57.3)	25	
843	Raised 5/8"	4.5 (73.7)	25	
838	Raised 3/4"	5.5 (90.1)	25	—
839	Raised 1"	7.5 (122.9)	25	—
842	Raised 1-1/4"	9.5 (155.6)	25	—
898	Raised 1-1/2"	11.0 (180.2)	20	—
899	Raised 2"	16.0 (126.1)	20	—

## APPLICATIONS

- Covers are used to close an outlet box
- Raised device covers are used for mounting switches or receptacles

## PRODUCT FEATURES

- Red boxes, covers and extensions for dedicated life safety alarm circuits

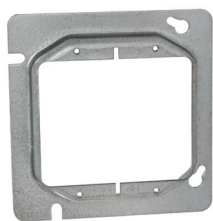
## COMPLIANCE

- File E195978
- File LR-1082



## SQUARE BOXES &amp; COVERS

## 4-11/16" SQUARE COVERS AND PARTITIONS



841



818



840



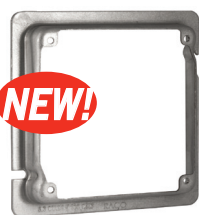
819



820



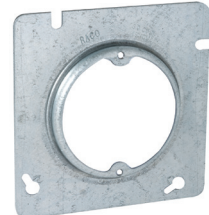
885



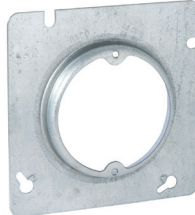
855, 859



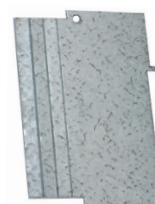
911-16, 911-17



829



835



706RAC, 707RAC



708, 709

## APPLICATIONS

- RACO® 4-11/16" raised device covers are for mounting switches or receptacles
- Raised fixture covers are used where fixtures will be installed
- Low voltage partitions may be added to conduit-type boxes to divide power from voice/data
- Partitions must be used with raised covers

## PRODUCT FEATURES

- Red boxes, covers and extensions for dedicated life safety alarm circuits
- Partition divides 4" square boxes into two compartments
- Use partitions with two-device covers which have a slot for the partition
- Partition is scored so it can be broken at the proper depth of box and cover combination
- Helpful hint: Assemble the box with the partition in place before breaking off at the scored tab. This will prevent you from breaking off more tab than needed

## COMPLIANCE

- File E195978
- File LR-1082

CATALOG #	DESCRIPTION	CUBIC IN. (CM <sup>3</sup> )	STD. PKG.	BARCODE
<b>4-11/16" Square Two Device and Tile Covers</b>				
841	Raised 1/2"	5.5 (90.3)	25	
818	Raised 5/8"	7.3 (119.6)	25	—
840	Raised 3/4"	8.8 (144.2)	25	—
819	Raised 1"	12.0 (196.6)	25	—
820	Raised 1-1/4"	15.0 (245.8)	25	—
885	Raised 1-1/2"	15.5 (254.0)	20	—
<b>NEW</b> 855	Raised 5/8", For Life Safety Appliances & Emergency Exit Signs	8.3 (136.0)	25	—
<b>NEW</b> 859	Raised 1-1/4", For Life Safety Appliances & Emergency Exit Signs	16.0 (262.0)	12	—
<b>NEW</b> 911-16	Raised 5/8", For Life Safety Appliances & Emergency Exit Signs, Painted Red	8.3 (136.0)	25	—
<b>NEW</b> 911-17	Raised 1-1/4", For Life Safety Appliances & Emergency Exit Signs, Painted Red	16.0 (262.0)	12	—

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	RECOMMENDED MAX. LOADS CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.	STD. PKG.	BAR CODE
<b>4-11/16" Square Fixture Covers</b>						
829	Raised 1/2", Open, Ears 2-3/4" O.C.	3.0 (49.6)	No	50	25	
835	Raised 5/8", Open, Ears 2-3/4" O.C.	4.0 (65.5)	No	50	25	—

CAT. #	DESCRIPTION	STD. PKG.	BARCODE
<b>Low Voltage Partitions* for 1-1/2" Depth Boxes and 2-Device Covers</b>			
706RAC	Fits 1/4", 1/2", 3/4" or 1" Cover Depth (#777, 778, 8778, 779, 8779, 780)	25	—
708	Fits 1-1/4", 1-1/2" or 2" Cover Depth (#781, 8781, 795, 796)	25	—
<b>Low Voltage Partitions* for 2-1/8" Depth Boxes and 2-Device Covers</b>			
707RAC	Fits 1/4", 1/2", 3/4" or 1" Cover Depth (#777, 778, 8778, 779, 8779, 780)	25	—
709	Fits 1-1/4", 1-1/2" or 2" Cover Depth (#781, 8781, 795, 796)	25	—

\*Low voltage partitions are not UL Listed

Boxes, covers, and partitions must be ordered separately.

For 1-1/2" deep box with 5/8" cover, partition not available. For 2-1/8" deep box with 5/8" cover, use #708 partition.

Partitions are usable but not UL listed for 4-11/16" sq. box.

## SQUARE BOXES &amp; COVERS

## 4-11/16" SQUARE EXPOSED WORK COVERS



856



857



858



870RAC



878



887



888



959



972



979



881RAC



876

CATALOG #	DESCRIPTION	CUBIC IN. (CM <sup>3</sup> )	STD. PKG.	BARCODE
<b>4-11/16" Exposed Work Covers</b>				
856	1 Decorator device or GFCI	10.3 (168.7)	10	
857	2 Decorator devices or GFCI	10.3 (168.7)	10	
858	1 Toggle Switch and 1 GFCI	10.3 (168.7)	10	
870RAC	1 Toggle Switch	10.3 (168.7)	10	
878	30-50A Receptacle 2.141" Dia.	10.3 (168.7)	10	
887	20A Receptacle 1.594" Dia.	10.3 (168.7)	10	
888	30-60A Receptacle 2.625" Dia.	10.3 (168.7)	10	
959	1 Duplex and 1 GFCI	10.3 (168.7)	10	
972	1 Duplex Receptacle	10.3 (168.7)	10	
979	2 Duplex Receptacles	10.3 (168.7)	10	
881RAC	2 Toggle Switches	10.3 (168.7)	10	
876	1 Toggle Switch and 1 Duplex Receptacle	10.3 (168.7)	10	

## APPLICATIONS

- RACO® surface covers are used to support switches or receptacles in areas where the box is surface mounted or positioned in exposed work applications

## PRODUCT FEATURES

- RACO® exposed work covers include required hardware for mounting the receptacle(s)
- RACO® Exposed work covers meet the requirements of the 2014 NEC Article 250.146 (A). No bonding jumper is required for covers with:
  - (1) Crushed corners
  - (2) Two or more device attachment screws
  - (3) A lockwasher or equivalent
- Hardware and cover are packed in a poly-bag with printed catalog number, compliances and installation instructions

## COMPLIANCES

-  File E195978





SQUARE BOXES & COVERS

RACO

LIFE SAFETY SUPPORT PRODUCTS - IMMEDIATE IDENTIFICATION



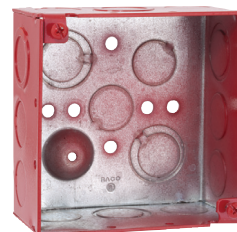
911-9



911-6



911-12



911-3



911-4

**NEW!**



911-15



911-2



911-1

APPLICATIONS

- RACO® Red boxes and covers allow inspector or building owner to immediately identify alarm/fire or life safety systems

PRODUCT FEATURES

- 911-2, 911-1 boxes have 3-3/4" opening in wall that allows for a margin of error when using a standard 4" square cover
- 911-15 accepts all 4-11/16" square covers and mudrings
- Red boxes, covers and extensions for dedicated life safety alarm circuits

COMPLIANCES

- cUL<sup>us</sup> LISTED  
LISTED - UL E195978

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
Life Safety Steel Wall Boxes and Extension Rings – Painted Red						
911-9	1-1/2" Depth, Welded, 4" Square	21.0 (344.1)	(8) 1/2", (4) TKO®	(2) 1/2", 2 TKO®	50	—
911-6	1-1/2" Depth, 4" Square, Drawn Extension Ring	22.5 (368.7)	(8) 1/2", (4) 3/4"	—	50	—
911-12	2-1/8" Depth, Welded, 4-11/16" Square	42.0 (688.2)	(12) TKO®	(1) 1/2", (3) TKO®	25	—
911-3	2-1/8" Depth, Welded, 4" Square	30.3 (496.5)	(8) 1/2", (4) TKO®	(3) 1/2", 2 TKO®	25	—
911-4	2-1/8" Depth, Welded, 4" Square, FM Bracket	30.3 (496.5)	(6) 1/2", (3) TKO®	(3) 1/2", 2 TKO®	25	—
911-15	3-1/4" Depth Back Box, Welded, 4-11/16" Square	66.7 (1093.0)	(2) 1/2" - 3/4" TKO, (2) 1" - 1-1/4"TKO, (2) 1" - 2" Conc. KO	(2) 3/4"- 1" TKO, (2) 1/2" KO	10	—
911-2	3-1/2" Depth, Welded, 3-3/4" Square	45.0 (737.4)	(12) 1/2"-3/4" Concentric	(4) 1/2"-3/4" Concentric	25	—
911-1	3-1/2" Depth, Welded, 3-3/4" Square, FM Bracket	45.0 (737.4)	(10) 1/2"-3/4" Concentric	(4) 1/2"-3/4" Concentric	10	—

SEE END OF SECTION (PG A67 AND A68) FOR DETAILED DRAWINGS >>



## SQUARE BOXES &amp; COVERS

## LIFE SAFETY SUPPORT PRODUCTS - IMMEDIATE IDENTIFICATION



911-16, 911-17



855, 859



911-8



911-11

## APPLICATIONS

- RACO® Red boxes and covers allow inspector or building owner to immediately identify alarm/fire or life safety systems

## PRODUCT FEATURES

- Red boxes, covers and extensions for dedicated life safety alarm circuits

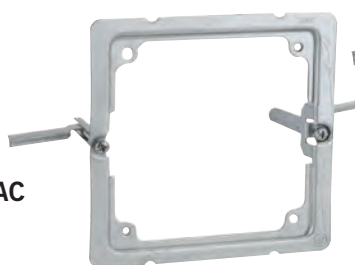
## COMPLIANCES

- cUL<sup>us</sup> LISTED  
LISTED - UL E195978

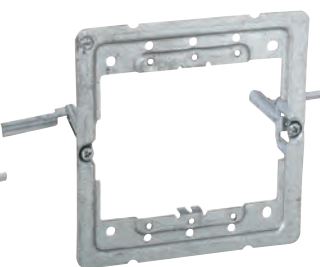
CATALOG #	DESCRIPTION	CUBIC IN. (CM <sup>3</sup> )	STD. PKG.	BARCODE
<b>Life Safety Steel Wall Boxes Covers</b>				
<b>NEW</b> 911-16	4-11/16" Sq. x 4" Sq. Adapter, 5/8" Raised, Painted Red	8.3 (136.0)	25	—
911-17	4-11/16" Sq. x 4" Sq. Adapter, 1-1/4" Raised, Painted Red	16.0 (262.0)	12	—
<b>NEW</b> 855	4-11/16" Sq. x 4" Sq. Adapter, 5/8" Raised	8.3 (136.0)	25	—
<b>NEW</b> 859	4-11/16" Sq. x 4" Sq. Adapter, 1-1/4" Raised	16.0 (262.0)	12	—
911-8	4" Sq., Flat Blank Cover, Painted Red	—	50	—
911-11	4-11/16" Sq., Flat Blank Cover, Painted Red	—	50	—



706RAC, 707RAC



205RAC



206RAC, 8206RAC

## APPLICATIONS

- Low voltage partitions may be added to conduit-type boxes to divide power from voice/data
- Partitions must be used with raised covers
- RACO® RETRO-RING® is used to position any depth, 4" square steel junction box in a sheet rock covered wall cavity
- Use 205RAC is used in old work life safety appliance installations
- 206RAC is used in old work installations where one or two devices are required

## PRODUCT FEATURES

- RACO® RETRO-RING® works in 3/8" to 1-1/2" thick wall or ceiling applications
- Small footprint is covered by most popular life safety devices
- Steel old work wings allow for secure mounting of box and devices to wall
- Includes one wall template per carton
- 206RAC allows for installation of steel low voltage partition for power/data applications. One or two devices mount directly to 206RAC

## COMPLIANCE

- UL<sup>File</sup> E195973

U.S. Patent 7,300,025,B2 (205RAC, 206RAC, 8206RAC)

*\*Low voltage partitions are not UL Listed  
Boxes, covers, and partitions must be ordered separately.  
Partitions are usable but not UL listed for 4-11/16" sq. box.*



## LARGE CAPACITY BOXES

## BOXES FOR AUDIO, VIDEO, POWER AND DATA

**NEW!**

260

**NEW!**

263



256



255

## APPLICATIONS

- RACO® Large capacity boxes are used for audio, video, data and power applications providing ample space for Cat 6A and fiber optic cable bends

## 260 PRODUCT FEATURES

- Large capacity design measures 4-11/16" H x 4-11/16" W x 3-1/4" D
- Accepts standard 4-11/16" square device and flat covers
- Ground screws provided

## 263 PRODUCT FEATURES

- Large capacity design measures 4-11/16" H x 7-3/4" W x 3-1/4" D
- Accepts standard 4" square device and flat covers or 792, 793, 794 3-gang device covers
- Built-in tabs allow for spanner bars
- Includes 1/2" thru 2" knockouts
- Accepts 981 voltage partition (UL Listed)
- Ground screws provided

## 255 AND 256 PRODUCT FEATURES

- Large capacity design measures 3-3/4" H x 3-3/4" W x 3-1/2" D
- Accepts standard 4" square device and flat covers

## COMPLIANCE

- cUL<sub>us</sub> LISTED, Outlet Box, 731A

Patent Pending (263)

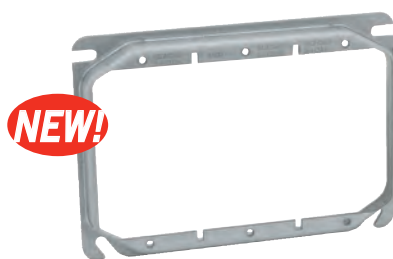
CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
4-11/16" Large Capacity Steel Wall Boxes, 3-1/4" Deep – Welded with Conduit KO's						
NEW 260	Raised Ground	66.7 (1093)	(2) 1/2" - 3/4" TKO, (2) 1" - 1-1/4" TKO, (2) 1" - 2" Conc. KO	(2) 3/4"- 1" TKO, (2) 1/2" KO	10	—
NEW 263	Raised Ground	113.3 (1856.6)	(6) 1/2"- 3/4" TKO, (2) 3/4" - 1" TKO, (2) 1" - 1-1/4"TKO, (2) 1" - 2" Conc. KO	(2) 1/2"-3/4" TKO, (2) 3/4"- 1" TKO, (2) 1"- 1-1/4" TKO	6	—
3-3/4" Square Large Capacity Steel Wall Boxes, 3-1/2" Deep – Welded with Conduit KO's						
256	—	45.0 (737.4)	(12) 1/2"-3/4" Concentric	(4) 1/2"-3/4" Concentric	25	
255	FM Bracket	45.0 (737.4)	(10) 1/2"-3/4" Concentric	(4) 1/2"-3/4" Concentric	10	

SEE END OF SECTION (PG A68) FOR DETAILED DRAWINGS &gt;&gt;



## LARGE CAPACITY BOXES

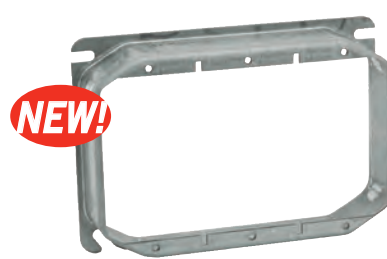
## COVERS AND PARTITIONS



792



793



794



855, 859



981

CAT. #	DESCRIPTION	CUBIC IN. (CM <sup>3</sup> )	FITS CAT. #	STD. PKG.	BARCODE
<b>3-Gang Raised Device Covers – For 263 Box</b>					
<b>NEW</b> 792	5/8" Raised	10.3 (168.8)	263	10	—
<b>NEW</b> 793	3/4" Raised	12.7 (208.1)	263	10	—
<b>NEW</b> 794	1-1/4" Raised	24.2 (396.6)	263	5	—
<b>2-Gang Raised Device Cover – For 4-11/16" Box</b>					
<b>NEW</b> 855	5/8" Raised, For Life Safety Appliances & Emergency Exit Signs	8.3 (136.0)	260 and 911-15	25	—
<b>NEW</b> 859	1-1/4" Raised, For Life Safety Appliances & Emergency Exit Signs	16.0 (262.0)	260 and 911-15	12	—
<b>Voltage Partition</b>					
<b>NEW</b> 981	For 5/8", 3/4", 1-1/4" covers for 260 and 263 boxes	—	260 and 263	25	—

## APPLICATIONS

- RACO® Large capacity boxes are used for audio, video, data and power applications providing ample space for Cat 6A and fiber optic cable bends
- 792, 793 and 794 covers are solely for RACO® 263 data box. The 3-gang raised covers are 5/8", 3/4" and 1-1/4" raised respectively
- 855 is designed to reduce 4-11/16" square box to 4" sq. box openings

## PRODUCT FEATURES

- Use with standard 4" square single or double mudrings or 3 gangs special covers (263)
- 855 provides flush mounting of lighting controllers, exit signs and life safety appliances
- Accepts UL Listed Voltage Partition, Cat. No. 981

## COMPLIANCE

- cUL<sup>us</sup> LISTED, Outlet Box, 731A



CEILING BOXES AND COVERS

RACO

CEILING FAN AND FIXTURE SUPPORT PRODUCTS

APPLICATIONS

- RACO® Ceiling Support Boxes are specifically designed for ceiling fan and ceiling or wall light fixture support

PRODUCT FEATURES

- 1/2" side knockouts (294, 294-1, 296, 296-1 and 299)
- No protruding ground screw or fan mounting screws allows easy installation
- #10-32, 1" long ceiling fan screws provided and provision for #8-32 fixture mounting screw (291-1, 294-1, 294, 296-1, 296 and 299)
- Setback tab allows for easy box installation of different wall thickness (294-1, 294)
- Metal protection plate eliminates debris or damage to wiring
- Easy to follow instructions and mounting hardware included
- Graduated markings for 1/2" to 1-1/4" thick sheetrock (Cat. No. 291-1)

GORILLA RING® CONCRETE RING APPLICATION

- Concrete rings are used with poured deck (floor) in high-rise construction
- GORILLA RING features mounting screws that allow for safe and secure mounting of any chandeliers, or lighting fixtures 70 lbs. or less
- Double row of KO's allow greater installation flexibility with a minimum of bends or offsets for working around reinforcing rods

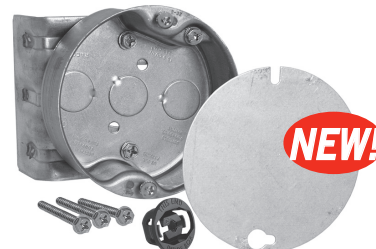
COMPLIANCE

-  File E195978

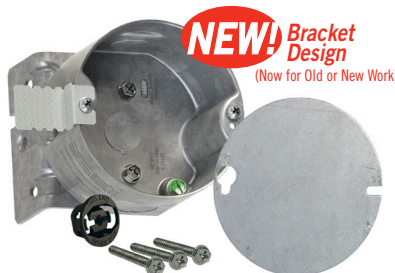
U.S. Patents 7,148,420, 7,211,744



295-1, 295



291-1



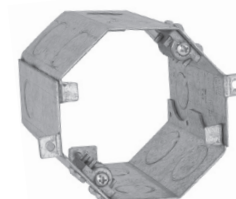
294-1, 294



296-1,  
296



299



GORILLA-RING® 284

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS			RECOMMENDED MAX. LOADS		STD. PKG.	BAR CODE
			CABLE PRIOUTS	SIDES CONDUIT	BOTTOM CONDUIT	CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.		
4" Round Ceiling Fan Pan — Drawn with Conduit KO's									
295-1	1/2" Depth	6.0 (98.3)	INSIDER	—	(5) 1/2"	70	150	10	—
295*	1/2" Depth	6.0 (98.3)	INSIDER	—	(5) 1/2"	70	150	10	
4" Round Ceiling Box — Drawn with Conduit KO's									
291-1	1-1/2" Depth	15.8 (258.9)	INSIDER	—	(3) 1/2"	70	150	20	—
294-1	2-1/8" Depth, Old and New Work	22.3 (365.4)	INSIDER	(2) 1/2"	(1) 1/2"	70	70/150**	10	—
294*	2-1/8" Depth, Old and New Work	22.3 (365.4)	INSIDER	(2) 1/2"	(1) 1/2"	70	70/150**	10	
296-1	1-1/2" Depth	15.8 (258.9)	INSIDER	(2) 1/2"	(3) 1/2"	70	150	20	—
296*	1-1/2" Depth	15.8 (258.9)	INSIDER	(2) 1/2"	(3) 1/2"	70	150	8	
299*	2-1/8" Depth	22.4 (367.1)	INSIDER	(2) 1/2"	(3) 1/2"	70	150	6	
GORILLA-RING® — Concrete Ring for Ceiling Fan Support									
284	4" Deep, Double Row Side Knockouts	49.3 (807.9)	—	(4) 3/4" (6) 1/2"	—	35	70	6	—

\* Packaged in a stackable, individual chipboard display cartons. Sold in master carton quantities only.  
Hubbell® RACO® does not break carton quantities on these items.  
4714, THE INSIDER® will secure nonmetallic sheathed cable in 1/2" KO (See pg. B75).

\*\* New work applications rated at 150 lbs. Old work applications rated at 70 lbs.



SEE END OF SECTION (PG A68) FOR DETAILED DRAWINGS >>

CEILING BOXES AND COVERS

CEILING FAN AND FIXTURE SUPPORT PRODUCTS



926, 926-1



936



937

APPLICATIONS

- RACO® RETRO-BRACE® is intended for installations of heavy lighting fixtures or ceiling paddle fans in old work or new work applications
- RACO® KWIK-BRACE® is a heavy-duty ceiling fan brace designed for new or existing construction where joists are accessible

FEATURES

- KWIK-BRACE®
  - Slides apart to accommodate joist spacing from 16" to 24", screws provided
  - #10-32 ceiling fan screws provided and #8-32 ceiling fixture mounting provisions
  - Metal protection plate included
  - Nail spurs for easy brace positioning
  - Easy installation, up front ground screws
  - Easy to follow instructions and mounting hardware included
- RETRO-BRACE®
  - Adjustable for joist spacing from 16" to 24"
  - Simple "tool free" expansion of brace
  - Easy installation, up front ground screw
  - #10-32 ceiling fan screws provided and #8-32 ceiling fixture mounting provisions
  - Easy to follow instructions and mounting hardware included

COMPLIANCE

-  File E195978

U.S. Patents 7,148,420, 6,595,479, 7,191,994



CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS			RECOMMENDED MAX. LOADS				STD. PKG.	BAR CODE
			CABLE PRIOUTS	SIDES CONDUIT	BOTTOM CONDUIT	CEILING FAN (DYNAMIC) LBS.		FIXTURE (STATIC) LBS.			
						16" JOIST SPAN	24" JOIST SPAN	16" JOIST SPAN	24" JOIST SPAN		
KWIK-BRACE® with Box – New Construction Braces for Lighting Fixtures or Ceiling Fans											
926-1	1-1/2" Depth	15.8 (258.9)	INSIDER	—	(3) 1/2"	70	70	210	90	12	
926*	1-1/2" Depth	15.8 (258.9)	INSIDER	—	(3) 1/2"	70	70	210	90	6	
RETRO-BRACE® with Box – Remodeling Kits for Lighting Fixtures or Ceiling Fans											
936*	1-1/2" Depth	15.8 (258.9)	INSIDER	—	(3) 1/2"	70	35	110	50	6	
937*	2-1/8" Depth	22.4 (367.1)	INSIDER	—	(3) 1/2"	70	35	110	50	4	

\* Packaged in a stackable, individual chipboard display cartons. Sold in master carton quantities only. Hubbell® RACO® does not break carton quantities on these items. 4714, THE INSIDER® will secure nonmetallic sheathed cable in 1/2" KO (See pg. B75).



# CEILING BOXES AND COVERS

# RACO

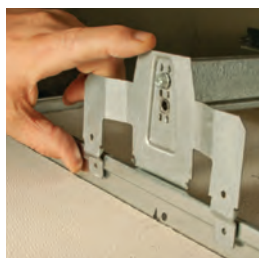
## CEILING FAN AND FIXTURE SUPPORT PRODUCTS

### APPLICATION

- GRID-BRACE™ ceiling support assembly is specifically designed for ceiling fan or fixture support for suspended ceilings

### PRODUCT FEATURES

- Heavy-duty GRID-BRACE™ for 24" spans
- Turnbuckle and 4' chain section provided
- Yoke provided for threaded rod installation
- Mount box anywhere on sliding bracket
- Spacers provided for decorative ceiling tiles that are below the depth of metal grid for flush mounting of box →
- #10-32 grade 5, 1" ceiling fan screws included
- Easy to follow instructions included



### COMPLIANCE

- File E195978
- U.S. Patents 7,148,420, U.S. Patent Pending

CAT. #	DESCRIPTION	CUBIC INCHES (CM³)	KNOCKOUTS		RECOMMENDED MAX. LOADS		STD. PKG.	BAR CODE
			SIDES	BOTTOM CONDUIT	CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.		
GRID-BRACE™ For Suspended Ceilings, 2-1/8" Deep								
931	Ceiling Fan Support for Suspended Ceilings	22.3 (365.4)	(2) 1/2"	(2) Conc. 1/2" & 3/4"	70	70	4	

## CEILING PANS

### APPLICATION

- RACO® Ceiling Pans are used in the installation of ceiling or wall lighting fixtures

### PRODUCT FEATURES

- Combination screw heads provide for faster installation

### COMPLIANCE

- File E195978

U.S. Patent 7,148,420, 4,892,211  
Canada 1,324,360 Mexico 166,125



292, 8292



287



293, 8293

CAT. #	DESCRIPTION	CUBIC INCHES (CM³)	KNOCKOUTS			RECOMMENDED MAX. LOADS		STD. PKG.	BAR CODE
			CABLE PRIOUTS	SIDES CONDUIT	BOTTOM CONDUIT	CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.		
3-1/2" Round Ceiling Pan – Drawn with Nonmetallic Sheathed Cable Clamps									
292	1/2" Depth	4.0 (65.5)	4	—	(1) 1/2"	No	50	50	—
8292	1/2" Depth	4.0 (65.5)	4	—	(1) 1/2"	No	50	25	
287	3/4" Depth	5.0 (81.9)	4	—	(1) 1/2"	No	50	50	—
4" Round Ceiling Pan – Drawn with Conduit KO's									
293	1/2" Depth	6.0 (98.3)	—	—	(5) 1/2"	No	50	50	—
8293	1/2" Depth	6.0 (98.3)	—	—	(5) 1/2"	No	50	50	

SEE END OF SECTION (PG A68) FOR DETAILED DRAWINGS >>





### 3-1/2" OCTAGON BOXES – DRAWN



112



119

#### APPLICATIONS

- RACO® Octagon Boxes are used in the installation of ceiling or wall lighting fixtures

#### PRODUCT FEATURES

- Combination screw heads provide for faster installation
- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features

#### COMPLIANCE

- File E195978

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS			RECOMMENDED MAX. LOADS		STD. PKG.	BAR CODE
			CABLE PRIOUTS	SIDES CONDUIT	BOTTOM CONDUIT	CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.		
112	—	11.8 (193.4)	4	(2) 1/2"	(1) 1/2"	No	50	25	
119	TS Bracket, 1/2"	11.8 (193.4)	4	(1) 1/2"	(1) 1/2"	No	50	25	

3-1/2" Octagon Box, 1-1/2" Deep – Drawn with Nonmetallic Sheathed Cable Clamps

### CEILING BOXES AND COVERS



110



111

#### APPLICATIONS

- RACO® Octagon Boxes are used in the installation of ceiling or wall lighting fixtures
- Extension rings provide a means for adding additional cubic capacity or as an outlet box for surface conduit

#### PRODUCT FEATURES

- Combination screw heads provide for faster installation
- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features

#### COMPLIANCE

- File E195978

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS			RECOMMENDED MAX. LOADS		STD. PKG.	BAR CODE
			CABLE PRIOUTS	SIDES CONDUIT	BOTTOM CONDUIT	CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.		
110	—	11.8 (193.4)	—	(4) 1/2"	(1) 1/2"	No	50	25	
111	—	11.8 (193.4)	—	(4) 1/2"	—	No	—	25	

3-1/2" Octagon Box, 1-1/2" Deep – Drawn with Conduit KO's

3-1/2" Octagon Extension Ring, 1-1/2" Deep – Drawn with Conduit KO's



## CEILING BOXES AND COVERS

RACO

## 4" OCTAGON BOXES AND EXTENSION RINGS – DRAWN WITH CONDUIT KO'S

## APPLICATIONS

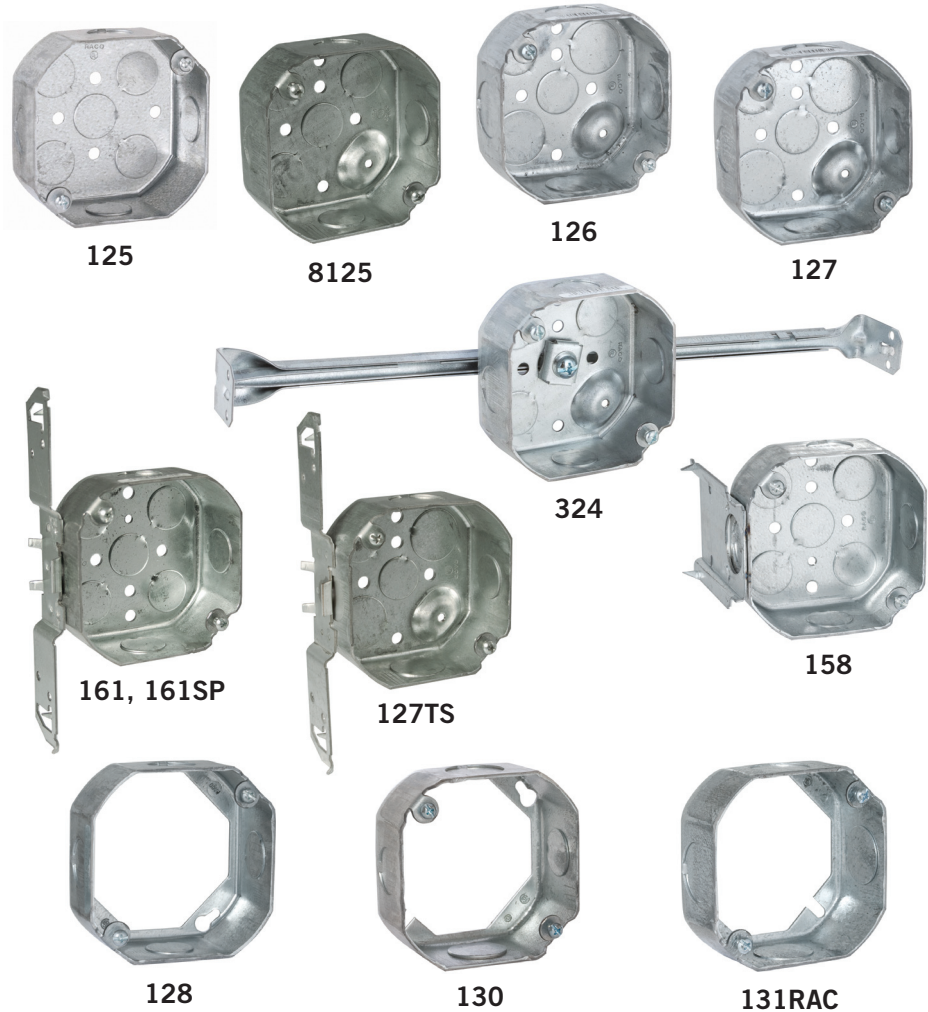
- RACO® Octagon Boxes are used in the installation of ceiling or wall lighting fixtures
- Extension rings provide a means for adding additional cubic capacity or as an outlet box for surface conduit

## PRODUCT FEATURES

- Combination screw heads provide for faster installation
- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- Fixture bar hanger allows box to be located anywhere along length of bar

## COMPLIANCE

- File E195978
- File LR-1082 (128, 130, 131RAC)



CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		RECOMMENDED MAX. LOADS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT	CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.		
4" Octagon Box, 1-1/2" Deep – Drawn with Conduit KO's								
125	—	15.5 (254.0)	(4) 1/2"	(5) 1/2"	No	50	50	—
8125	Raised Ground	15.5 (254.0)	(4) 1/2"	(4) 1/2"	No	50	50	
126	Raised Ground	15.5 (254.0)	(4) 3/4"	(2) 1/2", (2) 3/4"	No	50	50	
127	Raised Ground	15.5 (254.0)	(2) 1/2", (2) 3/4"	(2) 1/2", (2) 3/4"	No	50	25	
127TS	Raised Ground, TS Bracket, 1/2" Setback	15.5 (254.0)	(1) 1/2", (2) 3/4"	(2) 1/2", (2) 3/4"	No	50	25	
158	J Bracket, 3/8" or 1/2" Setback	15.5 (254.0)	(4) 1/2"	(5) 1/2"	No	50	50	
161	TS Bracket, 1/2" Setback	15.5 (254.0)	(3) 1/2"	(5) 1/2"	No	50	25	
161SP	TS Bracket, 1/2" Setback	15.5 (254.0)	(3) 1/2"	(5) 1/2"	No	50	12	
324	Raised Ground, Box with 14-1/4" to 22-1/2" Bar Hanger	15.5 (254.0)	(4) 1/2"	(3) 1/2"	No	10*	25	
4" Octagon Extension Rings, 1-1/2" Deep – Drawn with Conduit KO's								
128	—	15.5 (254.0)	(4) 1/2"	—	No	50	25	
130	—	15.5 (254.0)	(2) 1/2", (2) 3/4"	—	No	50	25	
131RAC	—	15.5 (254.0)	(4) 3/4"	—	No	50	25	

\* 10 lbs max. load recommended. UL Rated for 50 lbs on 16" centers.

SEE END OF SECTION (PG A69) FOR DETAILED DRAWINGS >>





## 4" OCTAGON DEEP BOXES – DRAWN WITH CONDUIT KO'S



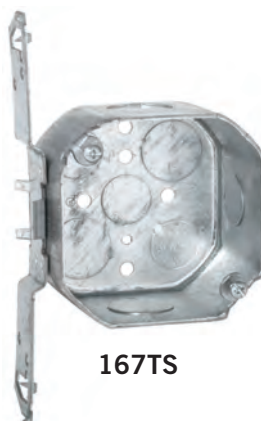
165



166



167



167TS

## APPLICATIONS

- RACO® Octagon Boxes are used in the installation of ceiling or wall lighting fixtures
- Combination screw heads provide for faster installation

## COMPLIANCE

- File E195978

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		RECOMMENDED MAX. LOADS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT	CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.		
4" Octagon Box, 2-1/8" Deep – Drawn with Conduit KO's								
165	—	21.5 (352.3)	(4) 1/2"	(5) 1/2"	No	50	50	
166	—	21.5 (352.3)	(4) 3/4"	(3) 1/2", (2) 3/4"	No	50	50	—
167	—	21.5 (352.3)	(2) 1/2", (2) 3/4"	(3) 1/2", (2) 3/4"	No	50	25	—
167TS	TS Bracket, 1/2" Setback	21.5 (352.3)	(1) 1/2", (2) 3/4"	(3) 1/2", (2) 3/4"	No	50	25	—

SEE END OF SECTION (PG A69) FOR DETAILED DRAWINGS &gt;&gt;





# CEILING BOXES AND COVERS

# RACO

## 4" OCTAGON BOXES – DRAWN WITH ARMORED CABLE / METAL CLAD / FLEX CLAMPS

### APPLICATIONS

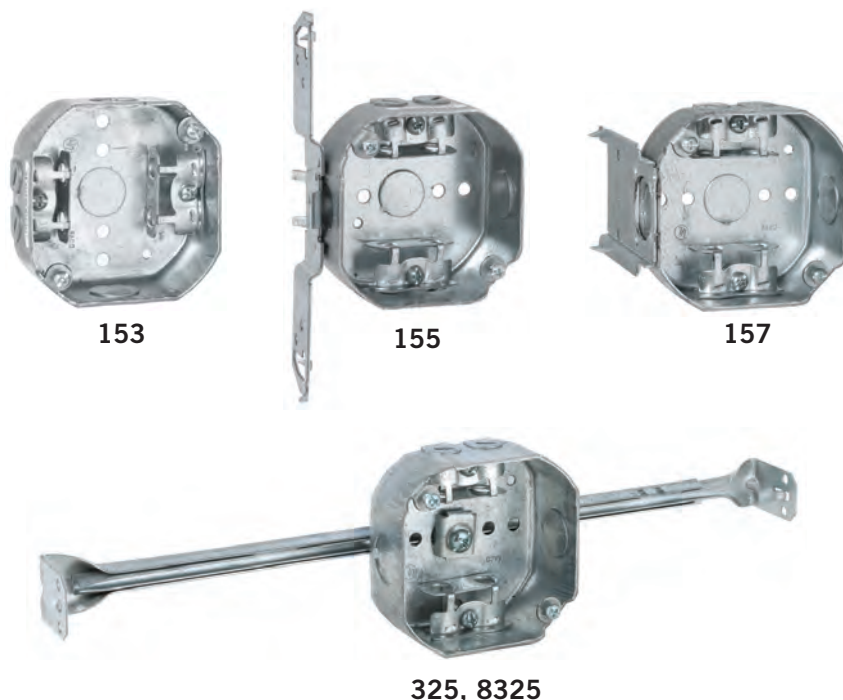
- RACO® Octagon Boxes are used in the installation of ceiling or wall lighting fixtures

### PRODUCT FEATURES

- RACO® offers a variety of labor saving mounting brackets that allow for easy positioning of box along studs or joists
- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- Fixture bar hanger allows box to be located anywhere along length of bar

### COMPLIANCE

-  File E195978

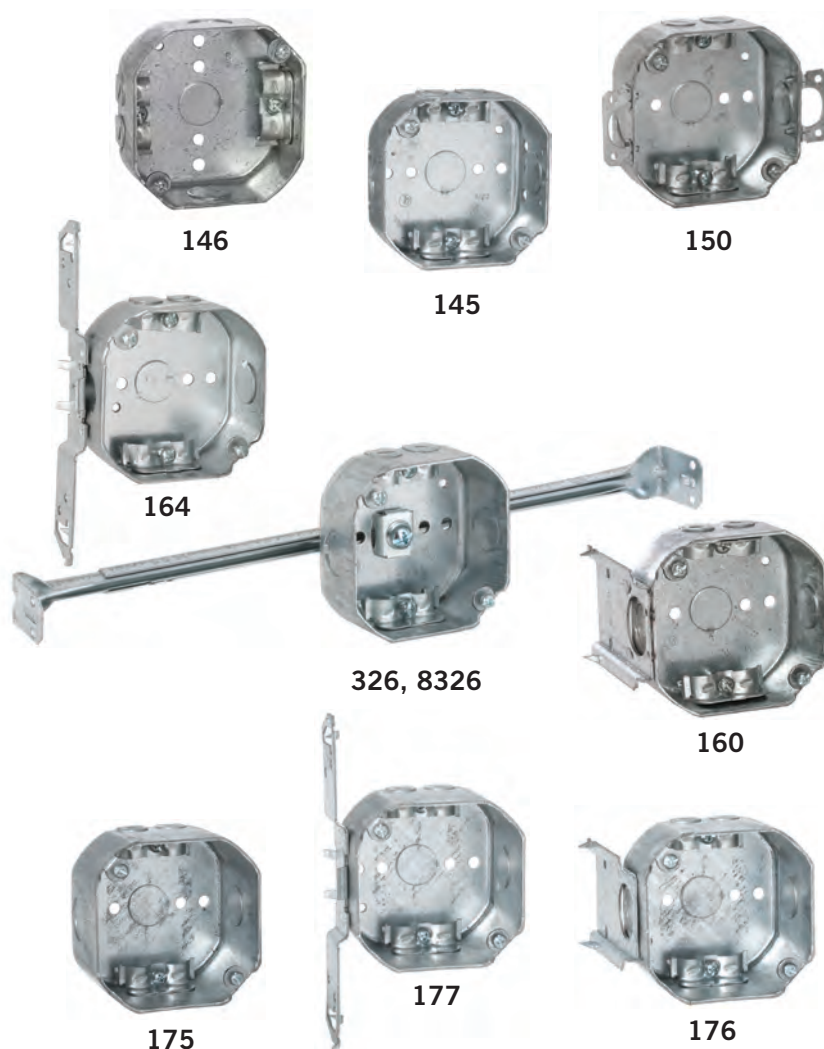


CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS			RECOMMENDED MAX. LOADS		STD. PKG.	BAR CODE
			CABLE PRIOUTS	SIDES CONDUIT	BOTTOM CONDUIT	CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.		
4" Octagon Box, 1-1/2" Deep – Drawn with Armored Cable/Metal Clad/Flex Clamps									
153	—	15.5 (254.0)	4	(2) 1/2"	(1) 1/2"	No	50	25	
155	TS Bracket, 1/2" Setback	15.5 (254.0)	4	(1) 1/2"	(1) 1/2"	No	50	50	
157	J Bracket, 3/8" or 1/2" Setback	15.5 (254.0)	4	(2) 1/2"	(1) 1/2"	No	50	50	
325	Box with 14-1/4" to 22-1/2" bar hanger	15.5 (254.0)	4	(2) 1/2"	—	No	10*	25	—
8325	Box with 14-1/4" to 22-1/2" bar hanger	15.5 (254.0)	4	(2) 1/2"	—	No	10*	25	

\* 10 lbs max. load recommended. UL Rated for 50 lbs on 16" centers.



## 4" OCTAGON BOXES – DRAWN WITH NONMETALLIC SHEATHED CABLE CLAMPS



## APPLICATIONS

- RACO® Octagon Boxes are used in the installation of ceiling or wall lighting fixtures

## PRODUCT FEATURES

- RACO® offers a variety of labor saving mounting brackets that allow for easy positioning of box along studs or joists
- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- Fixture bar hanger allows box to be located anywhere along length of bar
- Combination screw heads provide for faster installation

## COMPLIANCE

- File E195978

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS			RECOMMENDED MAX. LOADS		STD. PKG.	BAR CODE
			CABLE PRIOUTS	SIDES CONDUIT	BOTTOM CONDUIT	CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.		
4" Octagon Box, 1-1/2" Deep – Drawn with Nonmetallic Sheathed Cable Clamps									
146	—	15.5 (254.0)	4	(2) 1/2"	(1) 1/2"	No	50	25	
145	Side holes, 1/8" and 1/4"	15.5 (254.0)	4	(2) 1/2"	(1) 1/2"	No	50	50	—
150	Plaster Ears	15.5 (254.0)	4	(2) 1/2"	(1) 1/2"	No	50	25	
160	J Bracket, 3/8" or 1/2" Setback	15.5 (254.0)	4	(2) 1/2"	(1) 1/2"	No	50	25	
164	TS Bracket, 1/2" Setback	15.5 (254.0)	4	(1) 1/2"	(1) 1/2"	No	50	25	
326	Box with 14-1/4" to 22-1/2" bar hanger	15.5 (254.0)	4	(2) 1/2"	—	No	10*	25	—
8326	Box with 14-1/4" to 22-1/2" bar hanger	15.5 (254.0)	4	(2) 1/2"	—	No	10*	25	
4" Octagon Box, 2-1/8" Deep – Drawn with Nonmetallic Sheathed Cable Clamps									
175	—	21.5 (352.3)	4	(2) 1/2"	(1) 1/2"	No	50	25	
176	J Bracket, 5/8" Setback	21.5 (352.3)	4	(2) 1/2"	(1) 1/2"	No	50	25	
177	TS Bracket, 1/2" Setback	21.5 (352.3)	4	(1) 1/2"	(1) 1/2"	No	50	25	—

\* 10 lbs max. load recommended. UL Rated for 50 lbs on 16" centers.

SEE END OF SECTION (PG A69) FOR DETAILED DRAWINGS >>



## CEILING BOXES AND COVERS

## ROUND COVERS FOR 3-1/2" AND 4" OCTAGON BOXES



703, 8703-5



895



894KH



727, 732, 737

## APPLICATION

- Covers are used to close an outlet box
- Raised covers are used for mounting lighting fixtures

## PRODUCT FEATURES

- Combination screw heads provide for faster installation
- Swivel cover restricted to 20° swing from vertical
- KWIK-HANG® allows easy installation of high bay lighting fixtures. Fixture rests in position while wiring is completed

## COMPLIANCE

- UL File E195978
- SP File LR-1082 (722, 729, 731)

U.S. Patent 7,148,420, 7,211,744

Patent Pending (894KH)

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	RECOMMENDED MAX. LOADS		STD. PKG.	BAR CODE
			CEILING FAN (DYNAMIC) LBS.	FIXTURE (STATIC) LBS.		
3-1/2" Round Cover						
703	Flat, 1/2" KO In Center	—	No	—	25	
8703-5*	Flat, 1/2" KO In Center	—	No	—	50	
3-1/2" or 4" Swivel Fixture, Support Covers						
895	For 3-1/2" or 4" Octagon Boxes, 1/2" or 3/4" Conduit	—	No	50	25	
894KH	Kwik-Hang®, For 3-1/2" or 4" Octagon Boxes, 1/2" or 3/4" Conduit	—	No	50	25	
4" Round Raised Cover						
737	Raised 1/2", Open, Ears 2-3/4" O.C.	3.3 (54.1)	No	50	25	
727	Raised 5/8", Open, Ears 2-3/4" O.C.	3.8 (62.2)	No	50	25	
732	Raised 1", Open, Ears 2-3/4" O.C.	6.5 (106.5)	No	50	25	—

\*5 Bundles of 10 – sold in carton quantities only

## CEILING BOXES AND COVERS

## OCTAGON AND ROUND COVERS



722, 8722-5



724, 8724-5



729



731, 8731-5



5652-1



5653-1



5654-1

CATALOG #	DESCRIPTION	PKG. TYPE	STD. PKG.	BARCODE
<b>4" Octagon and Round Covers</b>				
722	Flat, blank	—	50	
8722-5*	Flat, blank	—	50	
724	Flat, 1/2" KO	—	50	
8724-5*	Flat, 1/2" KO	—	50	
729	Flat, toggle switch	—	50	
731	Flat, duplex receptacle	—	25	
8731-5*	Flat, duplex receptacle	—	50	
<b>5" Round Steel Closure Plates</b>				
5652-1	Off-white, screw and universal mount strap	Shrink	10	—
5653-1	Off-white, (2) 8-32 screws, direct mount to fixture outlet box	Shrink	10	—
5654-1	Off-white, fixture stud and universal mount strap	Shrink	10	—

\*5 Bundles of 10 – sold in carton quantities only

## APPLICATIONS

- Covers are used to close an outlet box
- Switches or receptacles may be installed into octagon boxes by using covers 729 or 731

## PRODUCT FEATURES

- 5" round covers feature state-of-the-art powder coat paint finish which provides a light texture finish and scratch resistance

## COMPLIANCE

- UL File E195978
- SP File LR-1082 (722, 729, 731)



## HANDY BOXES

RACO

## SINGLE DEVICE HANDY BOXES AND EXTENSION RINGS



## APPLICATIONS

- RACO® Handy boxes, also called utility boxes, are used for convenience outlets, switch boxes or small junction boxes
- They are popular for exposed work applications (surface mounted wiring)
- The NEC requires that surface-mounted wiring be enclosed with a protective covering such as EMT conduit

## PRODUCT FEATURES

- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features

## COMPLIANCES

- File E195978
- File LR-1082 (611 and 650CSA only)
- All RACO® Handy Box, U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)

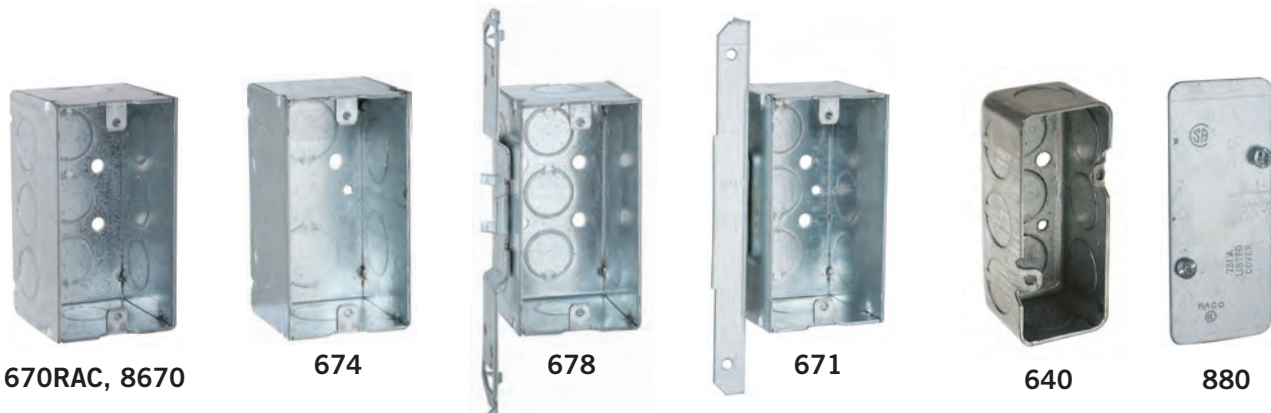
CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS			STD. PKG.	BAR CODE
			SIDES CONDUIT	ENDS CONDUIT	BOTTOM CONDUIT		
4" x 2" Handy Boxes, 1-1/2" Deep – Welded with Conduit KO's							
650	—	11.5 (188.5)	(6) 1/2"	(2) 1/2"	(3) 1/2"	50	—
8650	—	11.5 (188.5)	(6) 1/2"	(2) 1/2"	(3) 1/2"	25	
650CSA	With Ground Screw Driven	11.5 (188.5)	(6) 1/2"	(2) 1/2"	(3) 1/2"	50	—
655	B Bracket, 1/4" Setback	11.5 (188.5)	(3) 1/2"	(2) 1/2"	(3) 1/2"	50	—
4" x 2" Handy Box Extension Rings, 1-1/2" Deep – Welded with Conduit KO's							
653	—	11.5 (188.5)	(6) 1/2"	(2) 1/2"	—	25	
4" x 2" Handy Boxes, 1-7/8" Deep – Drawn with Conduit KO's							
660	Raised Ground	13.0 (213.0)	(6) 1/2"	(2) 1/2"	(2) 1/2"	50	—
8660	Raised Ground	13.0 (213.0)	(6) 1/2"	(2) 1/2"	(2) 1/2"	50	
611	Raised Ground, With Ground Screw Driven	13.0 (213.0)	(6) 1/2"	(2) 1/2"	(2) 1/2"	50	—
660SM	10" #12 Stranded Copper Pigtail, Raised Ground	13.0 (213.0)	(6) 1/2"	(2) 1/2"	(2) 1/2"	50	
661	Raised Ground, A Bracket, 5/8" Setback	13.0 (213.0)	(3) 1/2"	(2) 1/2"	(3) 1/2"	25	
661SP	Raised Ground, A Bracket, 5/8" Setback	13.0 (213.0)	(3) 1/2"	(2) 1/2"	(3) 1/2"	18	
662	Raised Ground, TS Bracket, 1/2" Setback	13.0 (213.0)	(3) 1/2"	(2) 1/2"	(3) 1/2"	25	
662SP	Raised Ground, TS Bracket, 1/2" Setback	13.0 (213.0)	(3) 1/2"	(2) 1/2"	(3) 1/2"	18	
663	Raised Ground	13.0 (213.0)	(4) 3/4"	(2) 3/4"	(1) 3/4"	50	—
8663	Raised Ground, 1-7/8" Depth (inside),	13.0 (213.0)	(4) 3/4"	(2) 3/4"	(1) 3/4"	25	
663SM	10" #12 Stranded Copper Pigtail, Raised Ground	13.0 (213.0)	(4) 3/4"	(2) 3/4"	(1) 3/4"	50	
666	Raised Ground	13.0 (213.0)	(6) 1/2"	(1) 1/2" (1) 3/4"	—	50	—
4" x 2" Handy Box Extension Rings, 1-7/8" Deep – Drawn with Conduit KO's							
665	—	13.0 (213.0)	(6) 1/2"	(2) 1/2"	—	25	

SEE END OF SECTION (PG A70) FOR DETAILED DRAWINGS &gt;&gt;





## SINGLE DEVICE HANDY BOXES AND COVERS



CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS			STD. PKG.	BAR CODE
			SIDES CONDUIT	ENDS CONDUIT	BOTTOM CONDUIT		
4" x 2" Handy Boxes, 2-1/8" Deep – Welded with Conduit KO's							
670RAC	—	16.5 (270.4)	(6) 1/2"	(2) 1/2"	(3) 1/2"	50	—
8670	—	16.5 (270.4)	(6) 1/2"	(2) 1/2"	(3) 1/2"	25	
674	—	16.5 (270.4)	(4) 3/4"	(2) 3/4"	(2) 3/4"	50	
678	TS Bracket, 1/2" Setback	16.5 (270.4)	(3) 1/2"	(2) 1/2"	(3) 1/2"	25	
671	A Bracket, 5/8" Setback	16.5 (270.4)	(3) 1/2"	(2) 1/2"	(3) 1/2"	50	
3-3/4" x 1-9/16" Industrial Handy Box and Cover – Drawn with Conduit KO's							
640	1-1/2" Depth	7.3 (119.6)	(6) 1/2"	(2) 1/2"	(3) 1/2"	50	—
880	Blank Cover with Captive Screws	—	—	—	—	50	—

CATALOG #	DESCRIPTION	STD. PKG.	BARCODE
<b>4" x 2" Handy Box Covers – 2-5/16" Wide x 4-3/16" Length</b>			
860	Blank	25	
861	1/2" KO, Centered	25	
862	GFCI	25	
865	Toggle Switch	25	
864	Duplex Receptacle	25	
863	Single Receptacle, 1.406" Dia.	25	
867	20A Receptacle, 1.594" Dia.	25	

### APPLICATIONS

- RACO® Handy boxes, also called utility boxes, are used for convenience outlets, switch boxes or small junction boxes
- They are popular for exposed work applications (surface mounted wiring)
- The NEC requires that surface-mounted wiring be enclosed with a protective covering such as EMT conduit
- RACO® Handy Box covers are used to close a Handy Box
- Covers also may be used as single gang wall plates

### PRODUCT FEATURES

- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- RACO® Handy Box covers are designed to match the contours of the box
- Cover corners are rounded
- All covers have captive screws

### COMPLIANCE

- File E195978
- File LR-1082 (Covers only)





## TWO DEVICE HANDY / SWITCH BOXES AND COVERS

### APPLICATIONS

- Installers can save time and cut installation costs with two gang switch boxes
- Larger capacity boxes are ideal for today's designs where there is a need to install two devices at one location
- Drawn boxes are ideal for exposed work applications (surface mounted wiring)

### PRODUCT FEATURES

- 681, 685 bracketed boxes are set back 1/2" eliminating the need for a plaster ring
- Reference the Box Selection section in the front of this catalog for complete description of bracket and clamp types and features
- 871, 872 and 873 covers are unpainted and manufactured from pre-galvanized steel

### COMPLIANCES

- File E195978
- All RACO® single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)



680



681, 681SP



683, 683SP



685, 685SP



871



872



873

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS		STD. PKG.	BAR CODE
			SIDES CONDUIT	BOTTOM CONDUIT		
4" Square Two Device Switch Boxes, 2-1/8" Deep – Drawn with Conduit KO's						
680	—	30.3 (496.5)	(12) 1/2"	(5) 1/2"	25	
683	—	30.3 (496.5)	(8) 1/2", (4) 3/4"	(3) 1/2", (2) 3/4"	25	
NEW 683SP	—	30.3 (496.5)	(8) 1/2", (4) 3/4"	(3) 1/2", (2) 3/4"	10	
681	TS Bracket, 1/2" Setback	30.3 (496.5)	(9) 1/2"	(5) 1/2"	25	
NEW 681SP	TS Bracket, 1/2" Setback	30.3 (496.5)	(9) 1/2"	(5) 1/2"	8	
685	TS Bracket, 1/2" Setback	30.3 (496.5)	(6) 3/4"	(3) 1/2", (2) 3/4"	25	
NEW 685SP	TS Bracket, 1/2" Setback	30.3 (496.5)	(6) 3/4"	(3) 1/2", (2) 3/4"	8	
4" Square – Two Device Wall Plates						
871	2 Toggle Switches, 1/4" Raised from Surface	—	—	—	25	
872	1 Duplex and 1 Toggle Switch, 1/4" Raised from Surface	—	—	—	25	
873	2 Duplex Receptacles, 1/4" Raised from Surface	—	—	—	25	

SEE END OF SECTION (PG A70) FOR DETAILED DRAWINGS >>





## 3" x 2" SWITCH BOXES – WITH CONDUIT KO'S



400



420



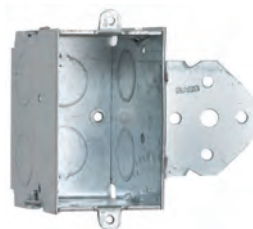
500, 8500



501



503



502



504, 8504



505



506



509



508

### APPLICATIONS

- RACO® Switch boxes are used to house wiring devices such as switches or outlets

### PRODUCT FEATURES

- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- Gangable switch boxes offer the option of constructing a box to hold two or more devices
- Plaster ears allow box to be used in "old work" applications

### COMPLIANCES

- File E195978
- All RACO® single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)

CAT. #	DESCRIPTION	CUBIC INCHES (CM³)	KNOCKOUTS				STD. PKG.	BAR CODE
			SIDES CONDUIT	ENDS CABLE	ENDS CONDUIT	BOTTOM CONDUIT		
1-1/2" Deep Switch Box – Gangable with Conduit KO's								
400	Plaster Ears	7.5 (122.9)	—	—	(2) 1/2"	(1) 1/2"	20	
2" Deep Switch Box – Gangable with Conduit KO's								
420	Plaster Ears	10.0 (163.9)	(4) 1/2"	—	(2) 1/2"	(2) 1/2"	25	
2-1/2" Deep Switch Box – Gangable with Conduit KO's								
500	Plaster Ears	12.5 (204.8)	(4) 1/2"	—	(2) 1/2"	(2) 1/2"	50	—
8500	Plaster Ears	12.5 (204.8)	(4) 1/2"	—	(2) 1/2"	(2) 1/2"	25	
501	No Plaster Ears	12.5 (204.8)	(4) 1/2"	—	(2) 1/2"	(2) 1/2"	50	—
503	Plaster Ears	12.5 (204.8)	(4) 1/2"	—	(2) 3/4"	(2) 1/2"	50	—
502	B Bracket, 5/8" Setback	12.5 (204.8)	(4) 1/2"	—	(2) 1/2"	(2) 1/2"	10	
504	TS Bracket, 1/2" Setback	12.5 (204.8)	(2) 1/2"	—	(2) 1/2"	(2) 1/2"	50	—
8504	TS Bracket, 1/2" Setback	12.5 (204.8)	(2) 1/2"	—	(2) 1/2"	(2) 1/2"	20	
505	TS Bracket, 1/2" Setback	12.5 (204.8)	(2) 1/2"	—	(2) 3/4"	(2) 1/2"	50	—
506	Old Work TIGERGRIP® Plaster Ears	12.5 (204.8)	—	—	(2) 1/2"	(2) 1/2"	20	
509	Old Work, Plaster Ears	12.5 (204.8)	—	—	(2) 1/2"	(2) 1/2"	20	
508	Old Work, 3/4" Sheet Rock Max.. Plaster Ears	12.5 (204.8)	—	—	(2) 1/2"	—	20	

SEE END OF SECTION (PG A70) FOR DETAILED DRAWINGS >>





# SWITCH BOXES

# RACO

## 3" x 2" SWITCH BOXES – WITH CONDUIT KO'S

### APPLICATIONS

- RACO® Switch boxes are used to house wiring devices such as switches or outlets

### PRODUCT FEATURES

- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- Gangable switch boxes offer the option of constructing a box to hold two or more devices
- Plaster ears allow box to be used in “old work” applications

### COMPLIANCES

- File E195978
- All RACO® single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. “Fire Resistance Directory” or the U.L. website at [www.ul.com](http://www.ul.com)



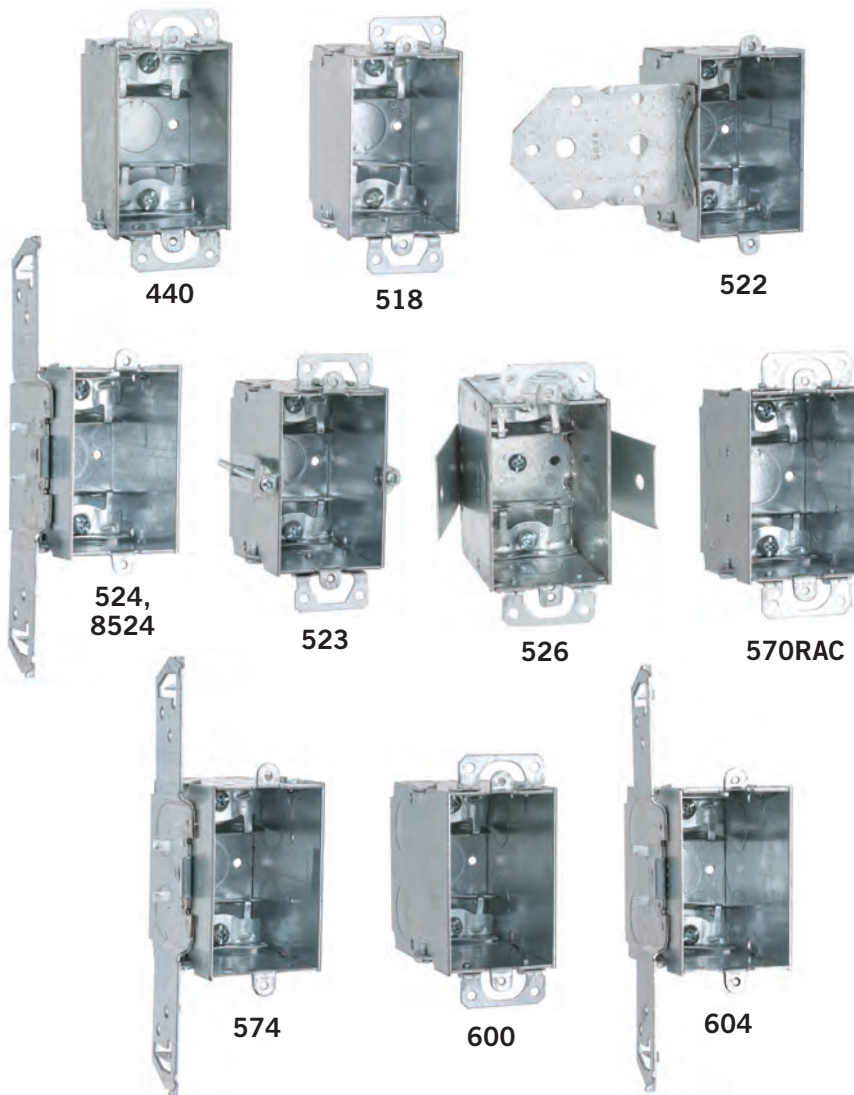
CAT. #	DESCRIPTION	CUBIC INCHES (CM³)	KNOCKOUTS				STD. PKG.	BAR CODE
			SIDES CONDUIT	ENDS CABLE	ENDS CONDUIT	BOTTOM CONDUIT		
2-3/4" Deep Switch Box – Gangable with Conduit KO's								
560	Plaster Ears	14.0 (229.4)	(4) 1/2"	—	(2) 1/2"	(2) 1/2"	25	
565	Plaster Ears	14.0 (229.4)	(4) 3/4"	—	(2) 3/4"	(2) 1/2"	50	—
561	No Plaster Ears	14.0 (229.4)	(4) 1/2"	—	(2) 1/2"	(2) 1/2"	50	—
562	TS Bracket, 1/2" Setback	14.0 (229.4)	(2) 1/2"	—	(2) 1/2"	(2) 1/2"	50	—
3-1/2" Deep Switch Box – Gangable with Conduit KO's								
590	Plaster Ears	18.0 (295.0)	(4) 1/2"	—	(4) 1/2"	(1) 1/2"	50	—
8590	Plaster Ears	18.0 (295.0)	(4) 1/2"	—	(4) 1/2"	(1) 1/2"	25	
591	Plaster Ears	18.0 (295.0)	(4) 3/4"	—	(4) 3/4"	(1) 1/2"	50	
592	No Plaster Ears	18.0 (295.0)	(4) 1/2"	—	(4) 1/2"	(1) 1/2"	50	—

SEE END OF SECTION (PG A70) FOR DETAILED DRAWINGS >>





# 3" x 2" SWITCH BOXES – WITH ARMORED CABLE / METAL CLAD / FLEX CLAMPS



## APPLICATIONS

- RACO® Switch boxes are used to house wiring devices such as switches or outlets

## PRODUCT FEATURES

- Gangable switch boxes offer the option of constructing a box to hold two or more devices
- Plaster ears allow box to be used in "old work" applications
- Reference the Box Selection section in the front of this catalog for complete description of clamp types and features

## COMPLIANCES

- File E195978
- All RACO® single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS				STD. PKG.	BAR CODE
			SIDES CONDUIT	ENDS CABLE	ENDS CONDUIT	BOTTOM CONDUIT		
2" Deep Switch Box – Gangable with Armored Cable/Metal Clad/Flex Clamps								
440	Plaster Ears	10.0 (163.9)	—	4	—	(1) 1/2"	50	—
2-1/2" Deep Switch Box – Gangable with Armored Cable/Metal Clad/Flex Clamps								
518	Plaster Ears	12.5 (204.8)	—	4	—	(1) 1/2"	25	
524	TS Bracket, 1/2" Setback	12.5 (204.8)	—	4	(2) 1/2"	(1) 1/2"	50	—
8524	TS Bracket, 1/2" Setback	12.5 (204.8)	—	4	(2) 1/2"	(1) 1/2"	50	
522	LB Bracket, 5/8" Setback	12.5 (204.8)	—	4	(2) 1/2"	(1) 1/2"	25	
523	Plaster Ears, Old Work, GRIPTITE®	12.5 (204.8)	—	4	—	(1) 1/2"	25	
526	Plaster Ears, Old Work, 3/4" Sheet Rock Max.	12.5 (204.8)	—	4	—	—	20	
2-3/4" Deep Switch Box – Gangable with Armored Cable/Metal Clad/Flex Clamps								
570RAC	2-3/4" Depth, Plaster Ears	14.0 (229.4)	(4) 1/2"	4	(2) 1/2"	(1) 1/2"	50	—
574	2-3/4" Depth, TS Bracket, 1/2" Setback	14.0 (229.4)	(2) 1/2"	4	(2) 1/2"	(1) 1/2"	25	
3-1/2" Deep Switch Box – Gangable with Armored Cable/Metal Clad/Flex Clamps								
600	Plaster Ears	18.0 (295.0)	(4) 1/2"	4	(2) 1/2"	(1) 1/2"	25	—
604	TS Bracket, 1/2" Setback	18.0 (295.0)	(4) 1/2"	4	(2) 1/2"	(1) 1/2"	25	

SEE END OF SECTION (PG A71) FOR DETAILED DRAWINGS &gt;&gt;



## SWITCH BOXES

### 3" X 2" SWITCH BOXES – WITH NONMETALLIC SHEATHED CABLE CLAMPS



#### APPLICATIONS

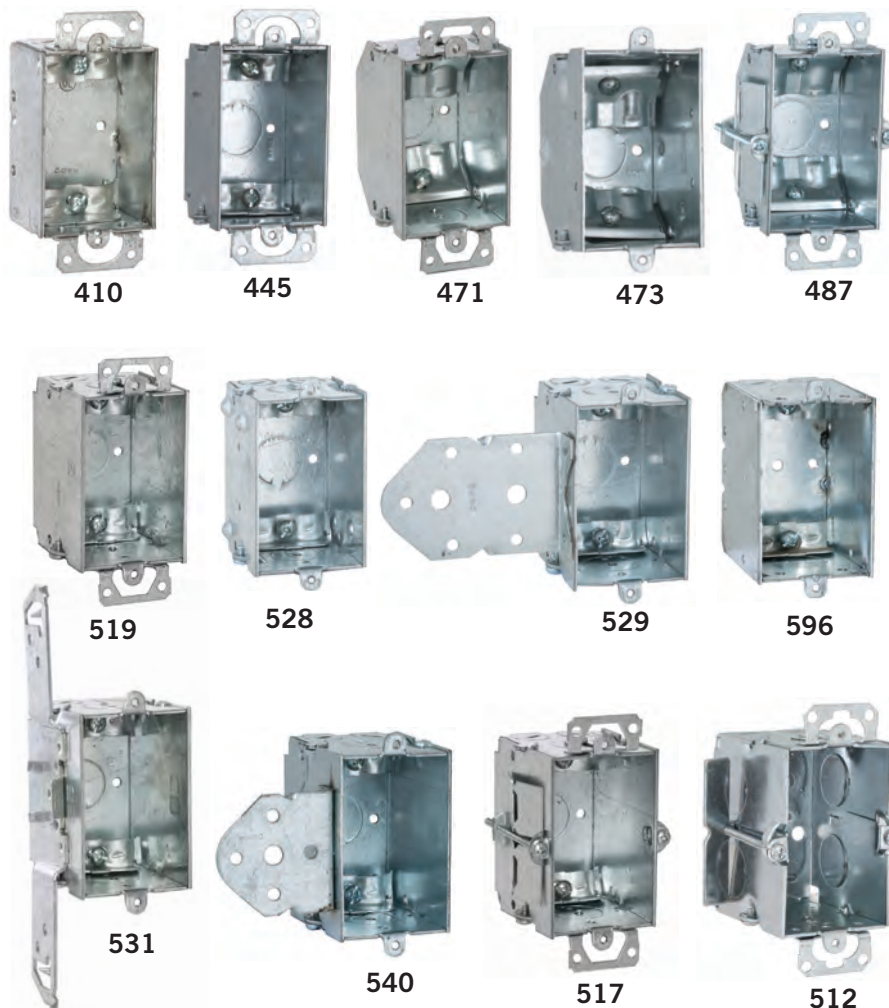
- RACO® Switch boxes are used to house wiring devices such as switches or outlets

#### PRODUCT FEATURES

- Beveled corner boxes are designed to prevent the clamp screws from protruding into back wall
- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- Gangable switch boxes offer the option of constructing a box to hold two or more devices
- Plaster ears allow box to be used in "old work" applications

#### COMPLIANCES

-  File E195978
-  All RACO® single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)



CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS				STD. PKG.	BAR CODE
			SIDES CONDUIT	ENDS CABLE	ENDS CONDUIT	BOTTOM CONDUIT		
1-1/2" Deep Switch Box – Gangable with Nonmetallic Sheathed Cable Clamps								
410	Plaster Ears	7.5 (122.9)	—	4	—	—	25	
2" Deep Switch Box – Gangable with Nonmetallic Sheathed Cable Clamps								
445	Plaster Ears	10.0 (163.9)	—	4	—	(1) 1/2"	50	—
2-1/4" Deep Switch Box – Gangable with Nonmetallic Sheathed Cable Clamps								
471	One Screw, Plaster Ears	10.5 (172.1)	—	4	—	(1) 1/2"	25	
473	Level Bumps	10.5 (172.1)	—	4	(2) 1/2"	(1) 1/2"	20	
487	Old Work, TIGERGRIP®	10.5 (172.1)	—	4	—	(1) 1/2"	20	
2-1/2" Deep Switch Box – Gangable with Nonmetallic Sheathed Cable Clamps								
519	Plaster Ears	12.5 (204.8)	—	4	—	(1) 1/2"	25	
528	Level Bumps	12.5 (204.8)	—	4	(2) 1/2"	(1) 1/2"	25	
529	LB Bracket, 5/8" Setback	12.5 (204.8)	—	4	(2) 1/2"	(1) 1/2"	20	
596	No Plaster Ears	12.5 (204.8)	—	4	(2) 1/2"	—	50	—
545	Plaster Ears, Old Work, 3/4" Sheet Rock Max.	12.5 (204.8)	—	4	(2) 1/2"	—	20	
531	TS Bracket, 1/2" Setback	12.5 (204.8)	—	4	(2) 1/2"	(1) 1/2"	25	
540	B Bracket, 1/4" Setback	12.5 (204.8)	—	4	(2) 1/2"	(1) 1/2"	50	—
517	Plaster Ears, Old Work, TIGERGRIP	12.5 (204.8)	—	4	—	(1) 1/2"	20	
512	Plaster Ears, Old Work	12.5 (204.8)	—	4	—	(1) 1/2"	20	

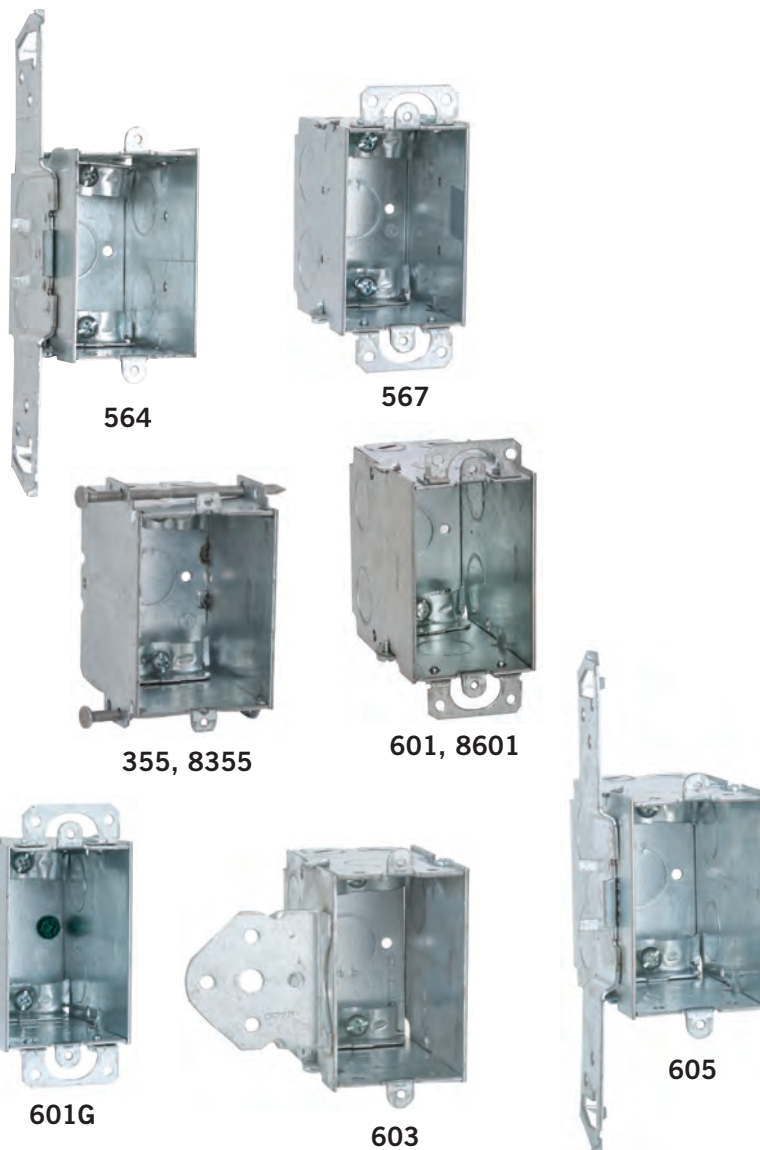
SEE END OF SECTION (PG A71) FOR DETAILED DRAWINGS >>







## 3" X 2" SWITCH BOXES – WITH NONMETALLIC SHEATHED CABLE CLAMPS



### APPLICATIONS

- RACO® Switch boxes are used to house wiring devices such as switches or outlets

### PRODUCT FEATURES

- RACO® 355 and 8355 are extra wide for ease of GFCI installation
- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- Gangable switch boxes offer the option of constructing a box to hold two or more devices
- Plaster ears allow box to be used in "old work" applications

### COMPLIANCES

- File E195978
- File LR-1082 (601G CSA only)
- All RACO® single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS				STD. PKG.	BAR CODE
			SIDES CONDUIT	ENDS CABLE	ENDS CONDUIT	BOTTOM CONDUIT		
2-3/4" Deep Switch Box – Gangable with Nonmetallic Sheathed Cable Clamps								
567	Plaster Ears	14.0 (229.4)	(4) 1/2"	4	(2) 1/2"	(1) 1/2"	25	
564	TS Bracket, 1/2" Setback	14.0 (229.4)	(2) 1/2"	4	(2) 1/2"	(1) 1/2"	25	
2-27/32" Deep Switch Box – Gangable with Nonmetallic Sheathed Cable Clamps								
355	S Bracket, Nails	15.8 (258.9)	—	4	—	(1) 1/2"	50	—
8355	S Bracket, Nails	15.8 (258.9)	—	4	—	(1) 1/2"	20	
3-1/2" Deep Switch Box – Gangable with Nonmetallic Sheathed Cable Clamps								
601	Plaster Ears	18.0 (295.0)	(4) 1/2"	4	(2) 1/2"	(1) 1/2"	25	—
8601	Plaster Ears	18.0 (295.0)	(4) 1/2"	4	(2) 1/2"	(1) 1/2"	25	
601G	Plaster Ears, With Ground Screw Driven	18.0 (295.0)	(4) 1/2"	4	(2) 1/2"	(1) 1/2"	25	—
605	TS Bracket, 1/2" Setback	18.0 (295.0)	(4) 1/2"	4	(2) 1/2"	(1) 1/2"	25	
603	B Bracket, 5/8" Setback	18.0 (295.0)	(4) 1/2"	4	(2) 1/2"	(1) 1/2"	25	—

SEE END OF SECTION (PG A71) FOR DETAILED DRAWINGS &gt;&gt;



## SWITCH BOXES

RACO

## SHALLOW SWITCH BOXES – WITH NONMETALLIC SHEATHED CABLE CLAMPS

## APPLICATIONS

- RACO® Shallow switch boxes are made for use with furring strips and 1/4" paneling
- Switch boxes are used to house wiring devices such as switches or outlets

## PRODUCT FEATURES

- RACO® "D" bracket is pre-scored and can be broken off if needed
- Reference the Box Selection section in the front of this catalog for complete description of bracket types and features
- 418 will accept 4" square mudring or flat cover

## COMPLIANCES

- File E195978  
(Cat. #404, #404SP and #405 not UL listed)
- All RACO® single gang, two gang, 4" square, and single gang gangable U.L. listed steel boxes are acceptable for use in 2-hour fire rated walls. For additional information, consult U.L. "Fire Resistance Directory" or the U.L. website at [www.ul.com](http://www.ul.com)



404, 404SP



405



418

CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS				STD. PKG.	BAR CODE
			SIDES CONDUIT	ENDS CABLE	ENDS CONDUIT	BOTTOM CONDUIT		
3-3/4" x 2" Switch Boxes, 1" Deep – Nongangable with Nonmetallic Sheathed Cable Clamps								
404	Q Clamp, 1/4" Setback	6.5 (106.5)	—	2	(1) 1/2"	—	25	
NEW 404SP	Q Clamp, 1/4" Setback	6.5 (106.5)	—	2	(1) 1/2"	—	6	
405	Q Clamp, 1/4" Setback	6.5 (106.5)	—	4	—	—	25	
4" x 4" Switch Box, 1" Deep – Nongangable with Nonmetallic Sheathed Cable Clamps								
418	(2) Q Clamp, 1/4" Setback	14.8 (242.5)	—	4	(2) 1/2"	—	25	



## MULTI-DEVICE LARGE CAPACITY SWITCH BOXES &amp; PARTITIONS

## APPLICATIONS

- Installers can save time and cut installation costs with multi-gang switch boxes
- Larger capacity boxes are ideal for today's designs where there is a need to install two devices at one location

## PRODUCT FEATURES

- Reference the Box Selection section in the front of this catalog for complete description of bracket and clamp types and features

## COMPLIANCES

- File E195978 (Cat. #971 not UL Listed)



686



687



971

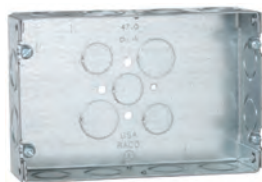
CAT. #	DESCRIPTION	CUBIC INCHES (CM <sup>3</sup> )	KNOCKOUTS				STD. PKG.	BAR CODE
			SIDES CONDUIT	ENDS CABLE	ENDS CONDUIT	BOTTOM CONDUIT		
Multi-Device Switch Boxes, 2-1/2" Deep – Welded with Conduit KO's								
686	3-Gang, 1/2" Setback	47.8 (783.3)	(6) 1/2", (6) 3/4"	—	(2) 1/2", (2) 3/4"	(3) 1/2", (3) 3/4"	10	
687	4-Gang, 1/2" Setback	63.5 (1040.6)	(8) 1/2", (8) 3/4"	—	(2) 1/2", (2) 3/4"	(4) 1/2", (4) 3/4"	10	
Low-Voltage Partition								
971	For 686 and 687 Boxes	—	—	—	—	—	25	—

SEE END OF SECTION (PG A71) FOR DETAILED DRAWINGS &gt;&gt;

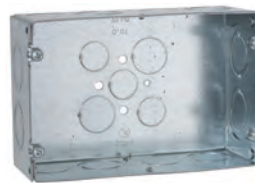


**MULTI-GANG BOXES**

RACO



951 through 958



941 through 945

**APPLICATIONS**

- RACO® Gang boxes are used where a number of wiring devices are to be centrally located

**PRODUCT FEATURES**

- Gang boxes save time in installation, no need to gang boxes together
- Have 1/2" and 3/4" concentric KO's for use with a wide variety of wiring methods
- Bottom KO pattern, 3-1/2" and 2-3/4" at either end of box
- Accept two styles of covers, flat and 3/4" raised device cover
- Use low voltage partitions #947 or #949

**COMPLIANCES**

-  Listed 731A

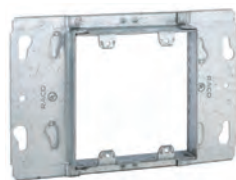
CAT. #	DESCRIPTION	CUBIC INCHES (CM3)	KNOCKOUTS			STD. PKG.	BAR CODE
			TOP & BOTTOM	SIDES	BACK		
Gang Boxes, 1-5/8" Deep — Welded with Conduit KO's							
951	2 Gang	47.0 (770.1)	8 Conc. 1/2" & 3/4"	4 Conc. 1/2" & 3/4"	(3) 1/2" (2) 3/4"	5	—
952	3 Gang	60.0 (983.2)	10 Conc. 1/2" & 3/4"	4 Conc. 1/2" & 3/4"	(6) 1/2" (4) 3/4"	5	
953	4 Gang	72.8 (1192.9)	12 Conc. 1/2" & 3/4"	4 Conc. 1/2" & 3/4"	(6) 1/2" (4) 3/4"	5	
954	5 Gang	85.8 (1406.0)	14 Conc. 1/2" & 3/4"	4 Conc. 1/2" & 3/4"	(6) 1/2" (4) 3/4"	5	—
955	6 Gang	98.5 (1614.1)	16 Conc. 1/2" & 3/4"	4 Conc. 1/2" & 3/4"	(6) 1/2" (4) 3/4"	1	—
956	7 Gang	111.5 (1827.1)	18 Conc. 1/2" & 3/4"	4 Conc. 1/2" & 3/4"	(6) 1/2" (4) 3/4"	1	—
957	8 Gang	124.5 (2040.1)	20 Conc. 1/2" & 3/4"	4 Conc. 1/2" & 3/4"	(6) 1/2" (4) 3/4"	1	—
958	9 Gang	137.3 (2249.9)	22 Conc. 1/2" & 3/4"	4 Conc. 1/2" & 3/4"	(6) 1/2", (2) 3/4"	1	—
Gang Boxes, 2-1/2" Deep — Welded with Conduit KO's							
941	2 Gang	70.0 (1147.0)	(4) 3/4" 4 Conc. 3/4" & 1"	4 Conc. 3/4" & 1"	(3) 1/2" (2) 3/4"	5	
942	3 Gang	90.0 (1474.8)	(8) 3/4" 2 Conc. 3/4" & 1"	4 Conc. 3/4" & 1"	(6) 1/2" (4) 3/4"	5	
943	4 Gang	110.0 (1802.5)	(4) 3/4" 4 Conc. 3/4" & 1"	4 Conc. 3/4" & 1"	(6) 1/2" (4) 3/4"	5	
944	5 Gang	130.0 (2130.3)	(6) 3/4" 4 Conc. 3/4" & 1"	4 Conc. 3/4" & 1"	(6) 1/2" (4) 3/4"	5	
945	6 Gang	150.0 (2458.0)	(6) 3/4" 6 Conc. 3/4" & 1"	4 Conc. 3/4" & 1"	(6) 1/2" (4) 3/4"	1	

SEE END OF SECTION (PG A71) FOR DETAILED DRAWINGS >>



## MULTI-GANG BOXES

## COVERS AND PARTITIONS



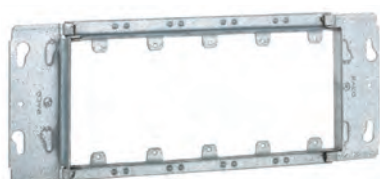
821



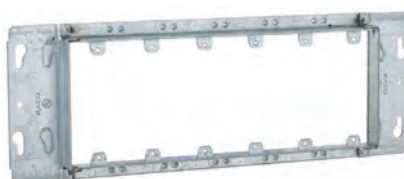
822



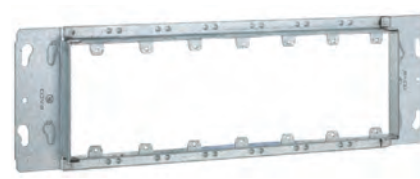
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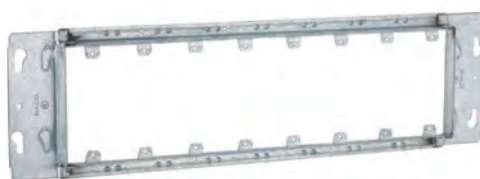
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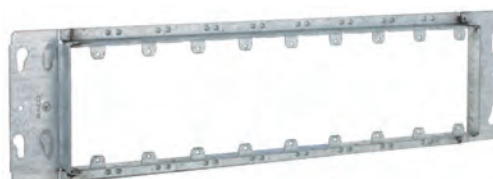
825



826



827



828

**NEW!**

834, 836



974



949

CAT. #	DESCRIPTION	FOR GANG BOXES	CU. IN. CAP. (CM <sup>3</sup> )	STD. PKG.	UPC BAR CODE
<b>Device Covers for Gang Boxes - Raised 3/4"</b>					
821	2 Gang, 7-1/16" Width	951 or 941	10.0 (163.8)	5	—
822	3 Gang, 8-7/8" Width	952 or 942	15.3 (250.7)	5	
823	4 Gang, 10-11/16" Width	953 or 943	20.3 (332.6)	5	
824	5 Gang, 12-1/2" Width	954 or 944	25.5 (417.8)	5	—
825	6 Gang, 14-5/16" Width	955 or 945	30.5 (499.8)	1	—
826	7 Gang, 16-1/8" Width	956	35.5 (581.7)	1	—
827	8 Gang, 17-15/16" Width	957	40.8 (668.5)	1	—
828	9 Gang, 19-3/4" Width	958	45.8 (750.5)	1	—
<b>Device Covers for Gang Boxes</b>					
<b>NEW</b> 834	3 Gang, 8-7/8" Width, 2" Raised	952 or 942	40.8 (668.5)	15	—
836	3 Gang, 8-7/8" Width, 1-1/2" Raised	952 or 942	30.6 (501.4)	20	—
<b>Low Voltage Partitions for Gang Boxes</b>					
974	For 1-5/8" Deep	—	—	25	—
949	For 2-1/2" Deep	—	—	25	—

## APPLICATIONS

- RACO® Gang box covers permit the mounting of devices
- Low voltage partitions may be added to boxes to divide power from voice/data
- RACO® 834 and 836 covers are ideal for nurse call stations

## PRODUCT FEATURES

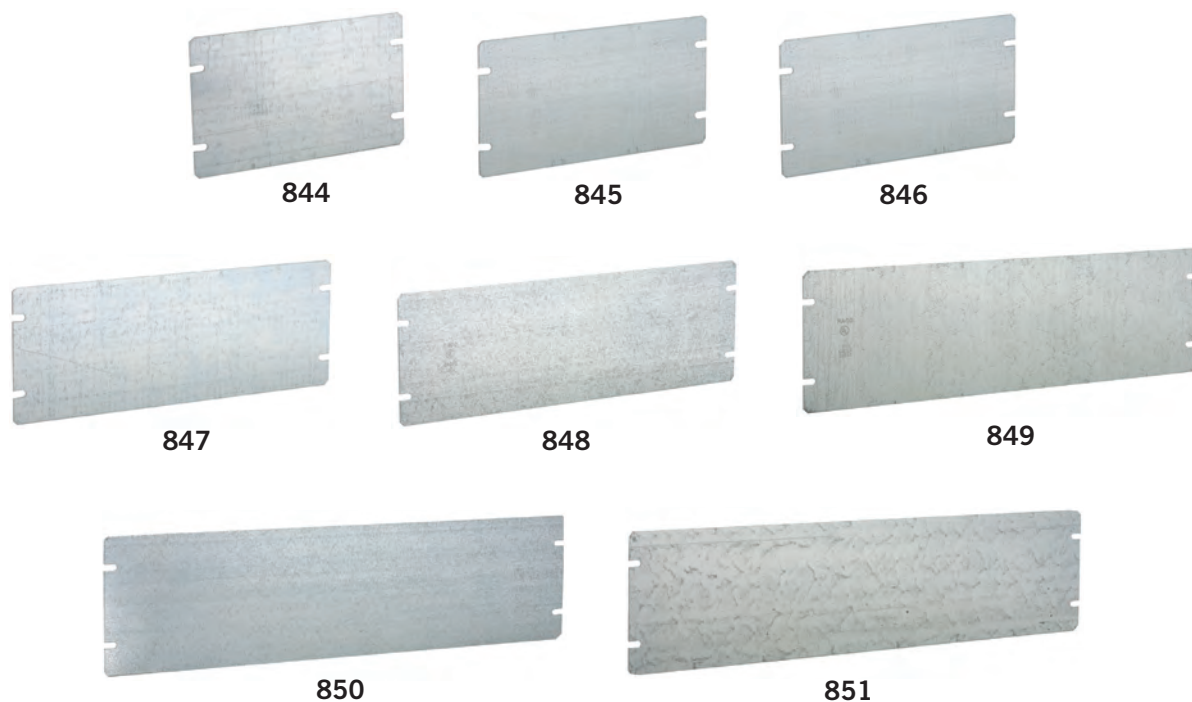
- RACO® Device covers also fit next smaller box, i.e. three gang cover fits two or three gang box
- Partition divides boxes into compartments

## COMPLIANCE

- Listed 731A (Cat. #974 and #949 not UL Listed)

## MULTI-GANG BOXES

## BLANK COVERS



## APPLICATIONS

- Covers are used to close a multi-gang box

CAT. #	DESCRIPTION	FOR GANG BOXES	STD. PKG.	UPC BAR CODE
<b>Flat, Blank Covers for Gang Boxes</b>				
844	2 Gang, 7-1/16" Width	951 or 941	5	—
845	3 Gang, 8-7/8" Width	952 or 942	5	—
846	4 Gang, 10-11/16" Width	953 or 943	5	—
847	5 Gang, 12-1/2" Width	954 or 944	1	—
848	6 Gang, 14-5/16" Width	955 or 945	1	—
849	7 Gang, 16-1/8" Width	956	1	—
850	8 Gang, 17-15/16" Width	957	1	—
851	9 Gang, 19-3/4" Width	958	1	—



**CRESCENT**  
ELECTRIC  
SUPPLY COMPANY

## **ENCLOSURES**

**Submittals Prepared by IES  
and Crescent Electric Supply**

# Type 1 Enclosures

## Type 1 Screw Cover Enclosures - Painted & Galvanized Data Sheet

Type 1 Enclosures



### Application

- Used as wiring boxes, junction and pull boxes
- Protects against contact with enclosed equipment

### Construction

- Enclosure and cover are fabricated from code gauge steel or galvanized steel, (see table)
- Enclosure body has mounting holes on the back
- Enclosures are available with or without knockouts on the sides, top and bottom ends
- Cover is secured to the body with plated screws
- Keyhole slots provided in the cover allow easy access to the inside without removing the screws
- #10-32 tapped hole provision for optional ground lug kit

### Finish

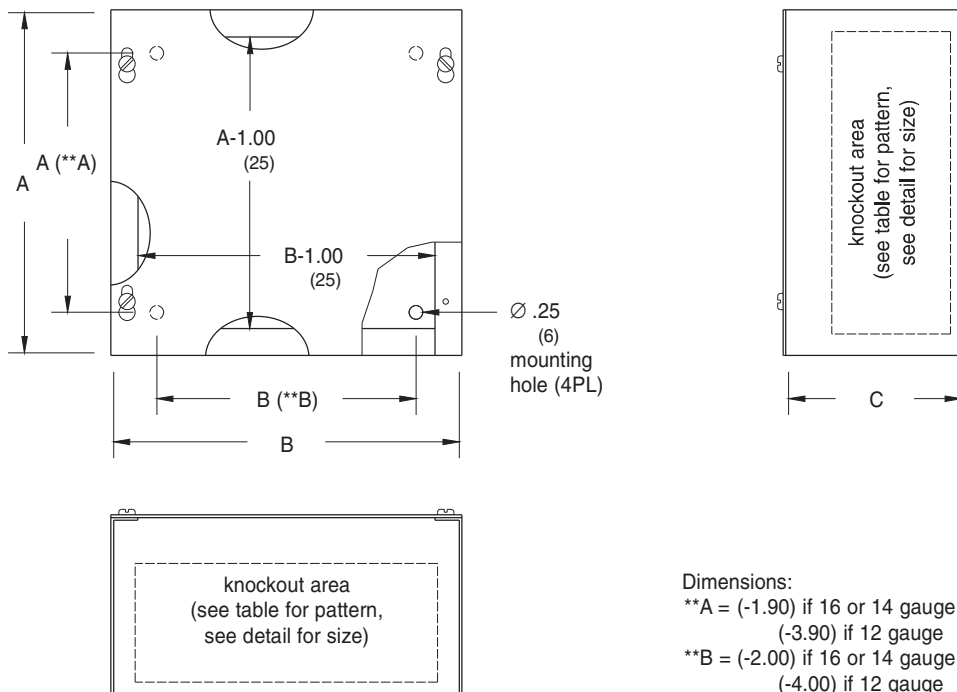
- Wash and phosphate undercoat or galvanized steel
- ANSI 61 gray acrylic electrocoat finish

### Standards

- UL 50 listed, Type 1
- CSA C22.2 No. 40 certified, Type 1
- Conforms to NEMA standard for Type 1
- IEC 60529, IP30

### Accessories

- Ground lug kit
- Touch-up paint
- See Accessories section



Dimensions:

- \*\*A = (-1.90) if 16 or 14 gauge  
(-3.90) if 12 gauge
- \*\*B = (-2.00) if 16 or 14 gauge  
(-4.00) if 12 gauge

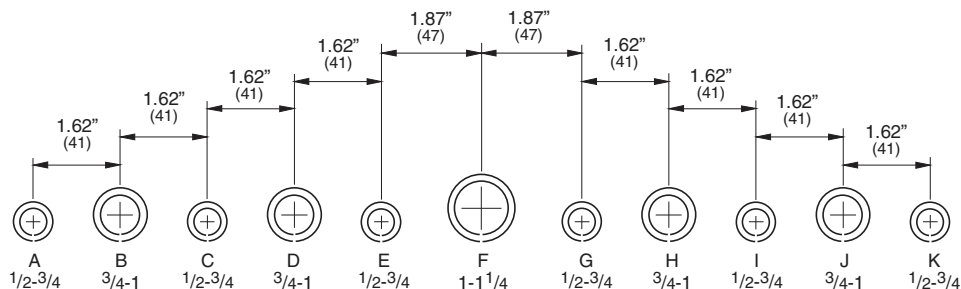
**Notes:** Cooper B-Line can provide special sizes, finishes and other modifications. Consult the factory for your special requirements.

# Type 1 Enclosures

## Type 1 Screw Cover Enclosures - Painted & Galvanized

Catalog Number

Enclosure Catalog Number				Enclosure Size		Gauge	Knockout Pattern	Knockout Pattern
Painted		Galvanized						
KO	No KO	KO	No KO	in.	mm		Each Side	Top & Bottom
663 SC	663 SC NK	663 SCGV	663 SCGV NK	6.00x6.00x3.00	152x152x76	16	CDE	CDE
444 SC	444 SC NK	444 SCGV	444 SCGV NK	4.00x4.00x4.00	102x102x102	16	CD	CD
644 SC	644 SC NK	644 SCGV	644 SCGV NK	6.00x4.00x4.00	152x102x102	16	CDE	CD
664 SC	664 SC NK	664 SCGV	664 SCGV NK	6.00x6.00x4.00	152x152x102	16	CDE	CDE
864 SC	864 SC NK	864 SCGV	864 SCGV NK	8.00x6.00x4.00	203x152x102	16	GHIJ	CDE
884 SC	884 SC NK	884 SCGV	884 SCGV NK	8.00x8.00x4.00	203x203x102	16	GHIJ	GHIJ
1084 SC	1084 SC NK	1084 SCGV	1084 SCGV NK	10.00x8.00x4.00	254x203x102	16	GHIJ	GHIJ
10104 SC	10104 SC NK	10104 SCGV	10104 SCGV NK	10.00x10.00x4.00	254x254x102	16	GHIJ	GHIJ
1264 SC	1264 SC NK	1264 SCGV	1264 SCGV NK	12.00x6.00x4.00	305x152x102	16	DEFGH	CDE
1284 SC	1284 SC NK	1284 SCGV	1284 SCGV NK	12.00x8.00x4.00	305x203x102	16	DEFGH	GHIJ
12104 SC	12104 SC NK	12104 SCGV	12104 SCGV NK	12.00x10.00x4.00	305x254x102	16	DEFGH	DEFGH
12124 SC	12124 SC NK	12124 SCGV	12124 SCGV NK	12.00x12.00x4.00	305x305x102	16	DEFGH	DEFGH
15124 SC	15124 SC NK	15124 SCGV	15124 SCGV NK	15.00x12.00x4.00	381x305x102	16	CDEFGHI	DEFGH
15154 SC	15154 SC NK	15154 SCGV	15154 SCGV NK	15.00x15.00x4.00	381x381x102	16	CDEFGHI	CDEFGHI
16124 SC	16124 SC NK	16124 SCGV	16124 SCGV NK	16.00x12.00x4.00	406x305x102	16	CDEFGHI	DEFGH
16164 SC	16164 SC NK	16164 SCGV	16164 SCGV NK	16.00x16.00x4.00	406x406x102	16	CDEFGHI	CDEFGHI
18124 SC	18124 SC NK	18124 SCGV	18124 SCGV NK	18.00x12.00x4.00	457x305x102	16	BCDEFGHIJ	DEFGH
18154 SC	18154 SC NK	18154 SCGV	18154 SCGV NK	18.00x15.00x4.00	457x381x102	16	BCDEFGHIJ	BCDEFGHIJ
18184 SC	18184 SC NK	18184 SCGV	18184 SCGV NK	18.00x18.00x4.00	457x457x102	16	BCDEFGHIJ	BCDEFGHIJ
24124 SC	24124 SC NK	24124 SCGV	24124 SCGV NK	24.00x12.00x4.00	610x305x102	16	BCDEFGHIJ	DEFGH
24184 SC	24184 SC NK	24184 SCGV	24184 SCGV NK	24.00x18.00x4.00	610x457x102	16	BCDEFGHIJ	BCDEFGHIJ
24244 SC	24244 SC NK	24244 SCGV	24244 SCGV NK	24.00x24.00x4.00	610x610x102	14	BCDEFGHIJ	BCDEFGHIJ
30184 SC	30184 SC NK	30184 SCGV	30184 SCGV NK	30.00x18.00x4.00	762x457x102	16	BCDEFGHIJ	BCDEFGHIJ
30244 SC	30244 SC NK	30244 SCGV	30244 SCGV NK	30.00x24.00x4.00	762x610x102	14	BCDEFGHIJ	BCDEFGHIJ
36244 SC	36244 SC NK	36244 SCGV	36244 SCGV NK	36.00x24.00x4.00	914x762x102	14	BCDEFGHIJ	BCDEFGHIJ
-	30304 SC NK	-	30304 SCGV NK	30.00x30.00x4.00	762x762x102	12	-	-
-	36304 SC NK	-	36304 SCGV NK	36.00x30.00x4.00	914x762x102	12	-	-
-	36364 SC NK	-	36364 SCGV NK	36.00x36.00x4.00	914x914x102	12	-	-
-	48364 SC NK	-	48364 SCGV NK	48.00x36.00x4.00	1219x914x102	12	-	-
-	48484 SC NK	-	48484 SCGV NK	48.00x48.00x4.00	1219x1219x102	10	-	-



### Conduit Sizes

### Knockout Detail

Note: See table for applicable knockout pattern.

Notes: Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.



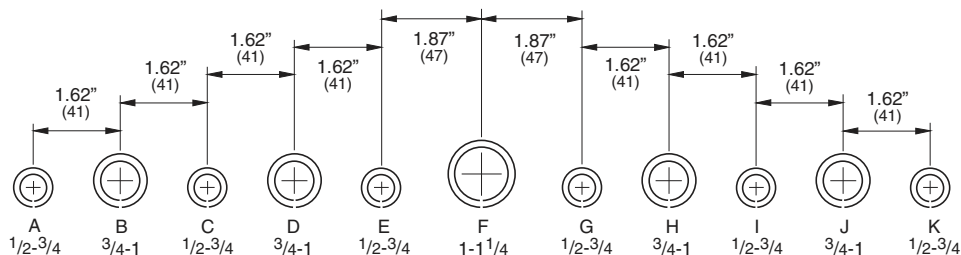
# Type 1 Enclosures

## Type 1 Screw Cover Enclosures - Painted & Galvanized

### Catalog Number

Type 1 Enclosures

Enclosure Catalog Number				Enclosure Size Height x Width x Depth A x B x C		Gauge	Knockout Pattern	Knockout Pattern
Painted		Galvanized						
KO	No KO	KO	No KO	in.	mm		Each Side	Top & Bottom
666 SC	666 SC NK	666 SCGV	666 SCGV NK	6.00x6.00x6.00	152x152x152	16	CDE	CDE
866 SC	866 SC NK	866 SCGV	866 SCGV NK	8.00x6.00x6.00	203x152x152	16	GHIJ	CDE
886 SC	886 SC NK	886 SCGV	886 SCGV NK	8.00x8.00x6.00	203x203x152	16	GHIJ	GHIJ
1086 SC	1086 SC NK	1086 SCGV	1086 SCGV NK	10.00x8.00x6.00	254x203x152	16	DEFGH	GHIJ
10106 SC	10106 SC NK	10106 SCGV	10106 SCGV NK	10.00x10.00x6.00	254x254x152	16	DEFGH	DEFGH
1266 SC	1266 SC NK	1266 SCGV	1266 SCGV NK	12.00x6.00x6.00	305x152x152	16	DEFGH	CDE
1286 SC	1286 SC NK	1286 SCGV	1286 SCGV NK	12.00x8.00x6.00	305x203x152	16	DEFGH	GHIJ
12106 SC	12106 SC NK	12106 SCGV	12106 SCGV NK	12.00x10.00x6.00	305x254x152	16	DEFGH	DEFGH
12126 SC	12126 SC NK	12126 SCGV	12126 SCGV NK	12.00x12.00x6.00	305x305x152	16	DEFGH	DEFGH
15126 SC	15126 SC NK	15126 SCGV	15126 SCGV NK	15.00x12.00x6.00	381x305x152	16	CDEFGHI	DEFGH
15156 SC	15156 SC NK	15156 SCGV	15156 SCGV NK	15.00x15.00x6.00	381x381x152	16	CDEFGHI	CDEFGHI
16126 SC	16126 SC NK	16126 SCGV	16126 SCGV NK	16.00x12.00x6.00	406x305x152	16	CDEFGHI	DEFGH
16166 SC	16166 SC NK	16166 SCGV	16166 SCGV NK	16.00x16.00x6.00	406x406x152	16	CDEFGHI	BCDEFGHIJ
18126 SC	18126 SC NK	18126 SCGV	18126 SCGV NK	18.00x12.00x6.00	457x305x152	16	BCDEFGHIJ	DEFGH
18156 SC	18156 SC NK	18156 SCGV	18156 SCGV NK	18.00x15.00x6.00	457x381x152	16	BCDEFGHIJ	CDEFGHI
18186 SC	18186 SC NK	18186 SCGV	18186 SCGV NK	18.00x18.00x6.00	457x457x152	16	BCDEFGHIJ	BCDEFGHIJ
24126 SC	24126 SC NK	24126 SCGV	24126 SCGV NK	24.00x12.00x6.00	610x305x152	16	BCDEFGHIJ	DEFGH
24186 SC	24186 SC NK	24186 SCGV	24186 SCGV NK	24.00x18.00x6.00	610x457x152	16	BCDEFGHIJ	BCDEFGHIJ
24246 SC	24246 SC NK	24246 SCGV	24246 SCGV NK	24.00x24.00x6.00	610x610x152	14	BCDEFGHIJ	BCDEFGHIJ
30186 SC	30186 SC NK	30186 SCGV	30186 SCGV NK	30.00x18.00x6.00	762x457x152	16	BCDEFGHIJ	BCDEFGHIJ
30246 SC	30246 SC NK	30246 SCGV	30246 SCGV NK	30.00x24.00x6.00	762x610x152	14	BCDEFGHIJ	BCDEFGHIJ
-	30306 SC NK	-	30306 SCGV NK	30.00x30.00x6.00	762x762x152	12	-	-
36246 SC	36246 SC NK	36246 SCGV	36246 SCGV NK	36.00x24.00x6.00	914x310x152	14	BCDEFGHIJ	BCDEFGHIJ
-	36306 SC NK	-	36306 SCGV NK	36.00x30.00x6.00	914x762x152	12	-	-
-	36366 SC NK	-	36366 SCGV NK	36.00x36.00x6.00	914x914x152	12	-	-
-	48366 SC NK	-	48366 SCGV NK	48.00x36.00x6.00	1219x914x152	12	-	-
-	48486 SC NK	-	48486 SCGV NK	48.00x48.00x6.00	1219x1219x152	12	-	-
888 SC	888 SC NK	888 SCGV	888 SCGV NK	8.00x8.00x8.00	203x203x203	16	GHIJ	GHIJ
12128 SC	12128 SC NK	12128 SCGV	12128 SCGV NK	12.00x12.00x8.00	305x305x203	16	DEFGH	DEFGH
16128 SC	16128 SC NK	16128 SCGV	16128 SCGV NK	16.00x12.00x8.00	406x305x203	16	CDEFGHI	DEFGH
18128 SC	18128 SC NK	18128 SCGV	18128 SCGV NK	18.00x12.00x8.00	457x305x203	16	BCDEFGHIJ	DEFGH
18188 SC	18188 SC NK	18188 SCGV	18188 SCGV NK	18.00x18.00x8.00	457x457x203	16	BCDEFGHIJ	BCDEFGHIJ
24128 SC	24128 SC NK	24128 SCGV	24128 SCGV NK	24.00x12.00x8.00	610x305x203	16	BCDEFGHIJ	DEFGH
24188 SC	24188 SC NK	24188 SCGV	24188 SCGV NK	24.00x18.00x8.00	610x457x203	16	BCDEFGHIJ	BCDEFGHIJ
24248 SC	24248 SC NK	24248 SCGV	24248 SCGV NK	24.00x24.00x8.00	610x610x203	14	BCDEFGHIJ	BCDEFGHIJ
30248 SC	30248 SC NK	30248 SCGV	30248 SCGV NK	30.00x24.00x8.00	762x610x203	14	BCDEFGHIJ	BCDEFGHIJ
-	30308 SC NK	-	30308 SCGV NK	30.00x30.00x8.00	762x762x203	12	-	-
36248 SC	36248 SC NK	36248 SCGV	36248 SCGV NK	36.00x24.00x8.00	914x610x203	14	BCDEFGHIJ	BCDEFGHIJ



### Conduit Sizes

### Knockout Detail

**Note:** See table for applicable knockout pattern.

**Notes:** Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

# Type 1 Enclosures

## Type 1 Screw Cover Enclosures - Painted & Galvanized

Catalog Number

Enclosure Catalog Number				Enclosure Size Height x Width x Depth A x B x C		Gauge	Knockout Pattern	Knockout Pattern
Painted		Galvanized						
KO	No KO	KO	No KO	in.	mm		Each Side	Top & Bottom
121210 SC	121210 SC NK	121210 SCGV	121210 SCGV NK	12.00x12.00x10.00	305x305x254	16	(DEFGH)	(DEFGH)
181210 SC	181210 SC NK	181210 SCGV	181210 SCGV NK	18.00x12.00x10.00	457x305x254	16	(BCDEFGHIJ)	(DEFGH)
181810 SC	181810 SC NK	181810 SCGV	181810 SCGV NK	18.00x18.00x10.00	457x457x254	16	(BCDEFGHIJ)	(BCDEFGHIJ)
241210 SC	241210 SC NK	241210 SCGV	241210 SCGV NK	24.00x12.00x10.00	610x305x254	16	(BCDEFGHIJ)	(DEFGH)
241810 SC	241810 SC NK	241810 SCGV	241810 SCGV NK	24.00x18.00x10.00	610x457x254	16	(BCDEFGHIJ)	(BCDEFGHIJ)
242410 SC	242410 SC NK	242410 SCGV	242410 SCGV NK	24.00x24.00x10.00	610x610x254	14	(BCDEFGHIJ)	(BCDEFGHIJ)
302410 SC	302410 SC NK	302410 SCGV	302410 SCGV NK	30.00x24.00x10.00	762x610x254	14	(BCDEFGHIJ)	(BCDEFGHIJ)
-	303010 SC NK	-	303010 SCGV NK	30.00x30.00x10.00	762x762x254	12	-	-
362410 SC	362410 SC NK	362410 SCGV	362410 SCGV NK	36.00x24.00x10.00	914x610x254	14	(BCDEFGHIJ)	(BCDEFGHIJ)
181812 SC	181812 SC NK	181812 SCGV	181812 SCGV NK	18.00x18.00x12.00	457x457x305	16	(BCDEFGHIJ)	(BCDEFGHIJ)
241212 SC	241212 SC NK	241212 SCGV	241212 SCGV NK	24.00x12.00x12.00	610x305x305	16	(BCDEFGHIJ)	(DEFGH)
241812 SC	241812 SC NK	241812 SCGV	241812 SCGV NK	24.00x18.00x12.00	610x457x305	16	(BCDEFGHIJ)	(BCDEFGHIJ)
242412 SC	242412 SC NK	242412 SCGV	242412 SCGV NK	24.00x24.00x12.00	610x610x305	14	(BCDEFGHIJ)	(BCDEFGHIJ)
302412 SC	302412 SC NK	302412 SCGV	302412 SCGV NK	30.00x24.00x12.00	762x610x305	14	(BCDEFGHIJ)	(BCDEFGHIJ)
-	303012 SC NK	-	303012 SCGV NK	30.00x30.00x12.00	762x762x305	12	-	-
362412 SC	362412 SC NK	362412 SCGV	362412 SCGV NK	36.00x24.00x12.00	914x610x305	14	(BCDEFGHIJ)	(BCDEFGHIJ)
-	363612 SC NK	-	363612 SCGV NK	36.00x36.00x12.00	914x914x305	12	-	-

Type 1 Enclosures

## Type 1 Flush & Surface Covers - Painted & Galvanized

Catalog Number

Optional Flush Covers		Flush Cover Size		Fits Enclosure		Gauge	Replacement Surface Covers		Surface Cover Size		Fits Enclosure		Gauge
Catalog Number		in.	mm	A x B			Catalog Number		in.	mm	A x B		
Painted	Galvanized			in.	mm		Painted	Galvanized			in.	mm	
44 SCF	44 SCFGV	5.50x5.50	140x140	4.00x400	102x102	16	44 SCS	44 SCSGV	4.09x4.09	104x104	4.00x4.00	102x102	16
64 SCF	64 SCFGV	7.50x5.50	191x140	6.00x4.00	152x102	16	64 SCS	64 SCSGV	6.09x4.09	155x104	6.00x4.00	152x102	16
66 SCF	66 SCFGV	7.50x7.50	191x191	6.00x6.00	152x152	16	66 SCS	66 SCSGV	6.09x6.09	155x155	6.00x6.00	152x152	16
86 SCF	86 SCFGV	9.50x7.50	241x191	8.00x6.00	203x152	16	86 SCS	86 SCSGV	8.09x6.09	205x155	8.00x6.00	203x152	16
88 SCF	88 SCFGV	9.50x9.50	241x241	8.00x8.00	203x203	16	88 SCS	88 SCSGV	8.09x8.09	205x205	8.00x8.00	203x203	16
108 SCF	108 SCFGV	11.50x9.50	292x241	10.00x8.00	254x203	16	108 SCS	108 SCSGV	10.09x8.09	256x205	10.00x8.00	254x203	16
1010 SCF	1010 SCFGV	11.50x11.50	292x292	10.00x10.00	254x254	16	1010 SCS	1010 SCSGV	10.09x10.09	256x256	10.00x10.00	254x254	16
126 SCF	126 SCFGV	13.50x7.50	343x191	12.00x6.00	305x152	16	126 SCS	126 SCSGV	12.09x6.09	307x155	12.00x6.00	305x152	16
128 SCF	128 SCFGV	13.50x11.50	343x241	12.00x8.00	305x203	16	128 SCS	128 SCSGV	12.09x8.09	307x205	12.00x8.00	305x203	16
1210 SCF	1210 SCFGV	13.50x11.50	343x292	12.00x10.00	305x254	16	1210 SCS	1210 SCSGV	12.09x10.09	307x256	12.00x10.00	305x254	16
1212 SCF	1212 SCFGV	13.50x13.50	343x343	12.00x12.00	305x305	16	1212 SCS	1212 SCSGV	12.09x12.09	307x307	12.00x12.00	305x305	16
1612 SCF	1612 SCFGV	17.50x13.50	445x343	16.00x12.00	406x305	14	1612 SCS	1612 SCSGV	16.09x12.09	409x307	16.00x12.00	406x305	16
1616 SCF	1616 SCFGV	17.50x17.50	445x445	16.00x16.00	406x406	14	1616 SCS	1616 SCSGV	16.09x16.09	409x409	16.00x16.00	406x406	16
1812 SCF	1812 SCFGV	19.50x13.50	495x343	18.00x12.00	457x305	14	1812 SCS	1812 SCSGV	18.09x12.09	459x307	18.00x12.00	457x305	16
1815 SCF	1815 SCFGV	19.50x16.50	495x419	18.00x15.00	457x381	14	1815 SCS	1815 SCSGV	18.09x15.09	459x383	18.00x15.00	457x381	16
1818 SCF	1818 SCFGV	19.50x19.50	495x495	18.00x18.00	457x457	14	1818 SCS	1818 SCSGV	18.09x18.09	459x459	18.00x18.00	457x457	16
2412 SCF	2412 SCFGV	25.50x13.50	648x343	24.00x12.00	610x305	14	2412 SCS	2412 SCSGV	24.09x12.09	612x307	24.00x12.00	610x305	16
2418 SCF	2418 SCFGV	25.50x19.50	648x495	24.00x18.00	610x457	12	2418 SCS	2418 SCSGV	24.09x18.09	612x459	24.00x18.00	610x457	14
2424 SCF	2424 SCFGV	25.50x24.50	648x622	24.00x24.00	610x610	12	2424 SCS	2424 SCSGV	24.09x24.09	612x612	24.00x24.00	610x610	14

Notes: Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

# Type 3 / 3R Enclosures

## Type 3R Screw Cover Enclosures - Painted & Galvanized Data Sheet

Type 3/3R Enclosures



### Construction

- Enclosure and cover are fabricated from code gauge galvanneal steel for painted or galvanized steel, (see table)
- Enclosure body has embossed mounting holes on the back
- Available with or without knockouts on the bottom end of enclosures less than 30 inches wide
- Cover is held secure by sliding it under the top end flange and fastening it with plated screws on the bottom end flange, (larger sizes use two studs and wing nuts)
- #10-32 tapped hole provision for optional ground lug kit

### Finish

- Wash and phosphate undercoat
- ANSI 61 gray acrylic electrocoat finish

### Accessories

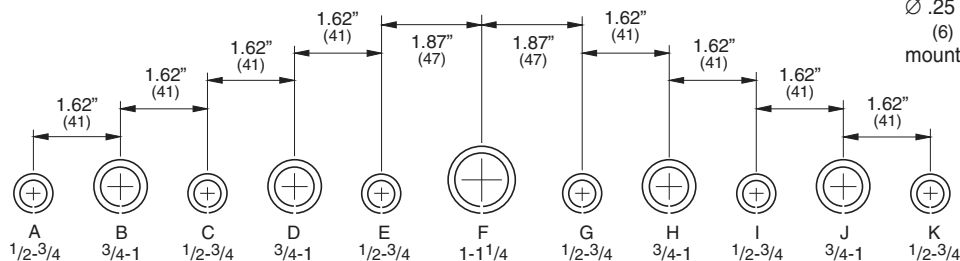
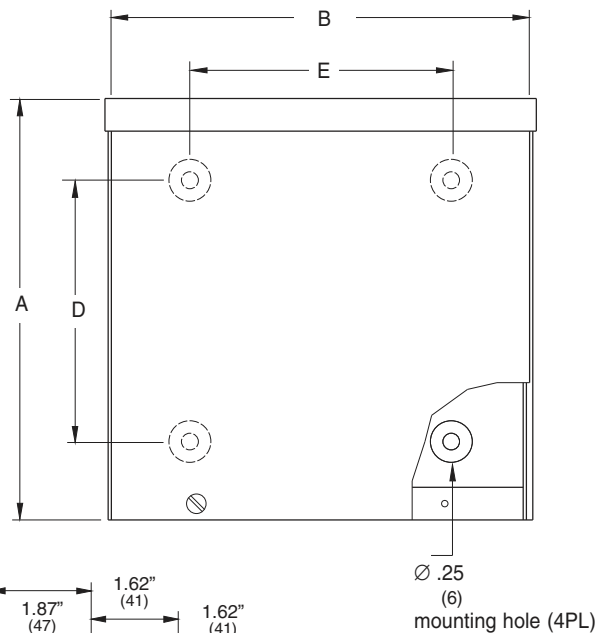
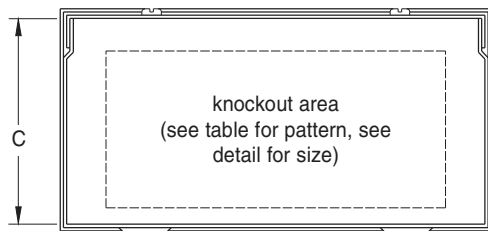
- Ground lug kit
- Touch-up paint
- See Accessories section

### Application

- Used as wiring boxes, junction and pull boxes
- Protects against falling rain, sleet and external ice formation

### Standards

- UL 50 listed, Type 3R
- CSA C22.2 No. 40 certified, Type 3R
- Conforms to NEMA standard for Type 3R
- IEC 60529, IP32



### Conduit Sizes

### Knockout Detail

**Note:** See table for applicable knockout pattern.

**Notes:** Cooper B-Line can provide special sizes, finishes and other modifications. Consult the factory for your special requirements.

# Type 3/3R Enclosures

## Type 3R Screw Cover Enclosures - Painted & Galvanized Catalog Number

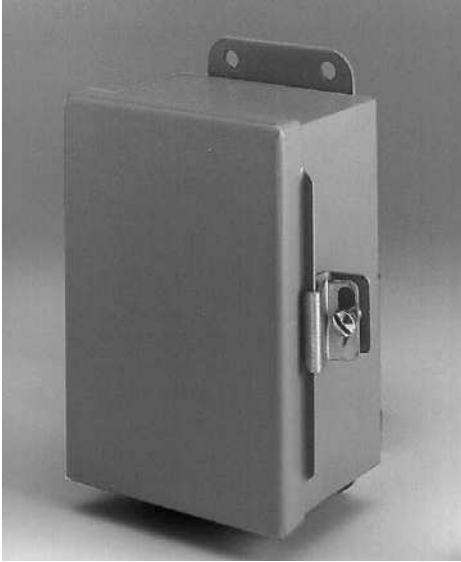
Type 3/3R Enclosures

Enclosure Catalog Number				Enclosure Size Height x Width x Depth							Knockout Pattern
Painted		Galvanized		A x B x C		D		E		Gauge	Bottom
KO	No KO	KO	No KO	in.	mm	in.	mm	in.	mm		
444 RTSC	444 RTSC NK	444 RTSCGV	444 RTSCGV NK	4.00x4.00x4.00	102x102x102	1.50	38	1.81	46	16	(C D)
644 RTSC	644 RTSC NK	644 RTSCGV	644 RTSCGV NK	6.00x4.00x4.00	152x102x102	3.50	89	1.81	46	16	(C D)
664 RTSC	664 RTSC NK	664 RTSCGV	664 RTSCGV NK	6.00x6.00x4.00	152x152x102	3.50	89	3.81	97	16	(C D E)
864 RTSC	864 RTSC NK	864 RTSCGV	864 RTSCGV NK	8.00x6.00x4.00	203x152x102	5.50	140	3.81	97	16	(C D E)
884 RTSC	884 RTSC NK	884 RTSCGV	884 RTSCGV NK	8.00x8.00x4.00	203x203x102	5.50	140	5.81	148	16	(G H I J)
1084 RTSC	1084 RTSC NK	1084 RTSCGV	1084 RTSCGV NK	10.00x8.00x4.00	254x203x102	7.50	191	5.81	148	16	(G H I J)
10104 RTSC	10104 RTSC NK	10104 RTSCGV	10104 RTSCGV NK	10.00x10.00x4.00	254x254x102	7.50	191	7.81	198	16	(D E F G H)
1284 RTSC	1284 RTSC NK	1284 RTSCGV	1284 RTSCGV NK	12.00x8.00x4.00	305x203x102	9.50	241	5.81	148	16	(G H I J)
12104 RTSC	12104 RTSC NK	12104 RTSCGV	12104 RTSCGV NK	12.00x10.00x4.00	305x254x102	9.50	241	7.81	198	16	(D E F G H)
12124 RTSC	12124 RTSC NK	12124 RTSCGV	12124 RTSCGV NK	12.00x12.00x4.00	305x305x102	9.50	241	9.81	249	16	(D E F G H)
15124 RTSC	15124 RTSC NK	15124 RTSCGV	15124 RTSCGV NK	15.00x12.00x4.00	381x305x102	12.50	318	9.81	249	16	(D E F G H)
16124 RTSC	16124 RTSC NK	16124 RTSCGV	16124 RTSCGV NK	16.00x12.00x4.00	406x305x102	13.50	343	9.81	249	16	(D E F G H)
16164 RTSC	16164 RTSC NK	16164 RTSCGV	16164 RTSCGV NK	16.00x16.00x4.00	406x406x102	13.50	343	13.81	351	16	(C D E F G H I)
18124 RTSC	18124 RTSC NK	18124 RTSCGV	18124 RTSCGV NK	18.00x12.00x4.00	457x305x102	15.50	394	9.81	249	16	(D E F G H)
18184 RTSC	18184 RTSC NK	18184 RTSCGV	18184 RTSCGV NK	18.00x18.00x4.00	457x457x102	15.50	394	15.81	402	16	(B C D E F G H I J)
24244 RTSC	24244 RTSC NK	24244 RTSCGV	24244 RTSCGV NK	24.00x24.00x4.00	610x610x102	21.50	546	21.56	548	14	(B C D E F G H I J)
666 RTSC	666 RTSC NK	666 RTSCGV	666 RTSCGV NK	6.00x6.00x6.00	152x152x152	3.50	89	3.81	97	16	(C D E)
866 RTSC	866 RTSC NK	866 RTSCGV	866 RTSCGV NK	8.00x6.00x6.00	203x152x152	5.50	140	3.81	97	16	(C D E)
886 RTSC	886 RTSC NK	886 RTSCGV	886 RTSCGV NK	8.00x8.00x6.00	203x203x152	5.50	140	5.81	148	16	(G H I J)
1086 RTSC	1086 RTSC NK	1086 RTSCGV	1086 RTSCGV NK	10.00x8.00x6.00	254x203x152	7.50	191	5.81	148	16	(G H I J)
10106 RTSC	10106 RTSC NK	10106 RTSCGV	10106 RTSCGV NK	10.00x10.00x6.00	254x254x152	7.50	191	7.81	198	16	(D E F G H)
1286 RTSC	1286 RTSC NK	1286 RTSCGV	1286 RTSCGV NK	12.00x8.00x6.00	305x203x152	9.50	241	5.81	148	16	(G H I J)
12106 RTSC	12106 RTSC NK	12106 RTSCGV	12106 RTSCGV NK	12.00x10.00x6.00	305x254x152	9.50	241	7.81	198	16	(D E F G H)
12126 RTSC	12126 RTSC NK	12126 RTSCGV	12126 RTSCGV NK	12.00x12.00x6.00	305x305x152	9.50	241	9.81	249	16	(D E F G H)
16126 RTSC	16126 RTSC NK	16126 RTSCGV	16126 RTSCGV NK	16.00x12.00x6.00	406x305x152	13.50	343	9.81	249	16	(D E F G H)
16166 RTSC	16166 RTSC NK	16166 RTSCGV	16166 RTSCGV NK	16.00x16.00x6.00	406x406x152	13.50	343	13.81	351	16	(C D E F G H I)
18126 RTSC	18126 RTSC NK	18126 RTSCGV	18126 RTSCGV NK	18.00x12.00x6.00	457x305x152	15.50	394	9.81	249	16	(D E F G H)
18186 RTSC	18186 RTSC NK	18186 RTSCGV	18186 RTSCGV NK	18.00x18.00x6.00	457x457x152	15.50	394	15.81	402	16	(B C D E F G H I J)
24126 RTSC	24126 RTSC NK	24126 RTSCGV	24126 RTSCGV NK	24.00x12.00x6.00	610x305x152	21.50	546	9.81	249	16	(D E F G H)
24186 RTSC	24186 RTSC NK	24186 RTSCGV	24186 RTSCGV NK	24.00x18.00x6.00	610x457x152	21.50	546	15.81	402	16	(B C D E F G H I J)
24246 RTSC	24246 RTSC NK	24246 RTSCGV	24246 RTSCGV NK	24.00x24.00x6.00	610x610x152	21.50	546	21.56	548	14	(B C D E F G H I J)
10108 RTSC	10108 RTSC NK	10108 RTSCGV	10108 RTSCGV NK	10.00x10.00x8.00	254x254x203	7.50	191	7.81	198	16	(D E F G H)
12128 RTSC	12128 RTSC NK	12128 RTSCGV	12128 RTSCGV NK	12.00x12.00x8.00	305x305x203	9.50	241	9.81	249	16	(D E F G H)
18128 RTSC	18128 RTSC NK	18128 RTSCGV	18128 RTSCGV NK	18.00x12.00x8.00	457x305x203	15.50	394	9.81	249	16	(D E F G H)
18188 RTSC	18188 RTSC NK	18188 RTSCGV	18188 RTSCGV NK	18.00x18.00x8.00	457x457x203	15.50	394	15.81	402	16	(B C D E F G H I J)
24168 RTSC	24168 RTSC NK	24168 RTSCGV	24168 RTSCGV NK	24.00x16.00x8.00	610x406x203	21.50	546	13.81	351	16	(C D E F G H I)
24188 RTSC	24188 RTSC NK	24188 RTSCGV	24188 RTSCGV NK	24.00x18.00x8.00	610x457x203	21.50	546	15.81	402	16	(B C D E F G H I J)
24248 RTSC	24248 RTSC NK	24248 RTSCGV	24248 RTSCGV NK	24.00x24.00x8.00	610x610x203	21.50	546	21.56	548	14	(B C D E F G H I J)
121210 RTSC	121210 RTSC NK	121210 RTSCGV	121210 RTSCGV NK	12.00x12.00x10.00	305x305x254	9.50	241	9.81	249	16	(D E F G H)
181210 RTSC	181210 RTSC NK	181210 RTSCGV	181210 RTSCGV NK	18.00x12.00x10.00	457x305x254	15.50	394	9.81	249	16	(D E F G H)
181810 RTSC	181810 RTSC NK	181810 RTSCGV	181810 RTSCGV NK	18.00x18.00x10.00	457x457x254	15.50	394	15.81	402	16	(B C D E F G H I J)
241810 RTSC	241810 RTSC NK	241810 RTSCGV	241810 RTSCGV NK	24.00x18.00x10.00	610x457x254	21.50	546	15.81	402	16	(B C D E F G H I J)
242410 RTSC	242410 RTSC NK	242410 RTSCGV	242410 RTSCGV NK	24.00x24.00x10.00	610x610x254	21.50	546	21.56	548	14	(B C D E F G H I J)
302410 RTSC	302410 RTSC NK	302410 RTSCGV	302410 RTSCGV NK	30.00x24.00x10.00	762x610x254	27.50	699	21.56	548	14	(B C D E F G H I J)
-	303010 RTSC NK	-	303010 RTSCGV NK	30.00x30.00x10.00	762x762x254	27.50	699	27.56	700	12	-
242412 RTSC	242412 RTSC NK	242412 RTSCGV	242412 RTSCGV NK	24.00x24.00x12.00	610x610x305	21.50	546	21.56	548	14	(B C D E F G H I J)
-	303012 RTSC NK	-	303012 RTSCGV NK	30.00x30.00x12.00	762x762x305	27.50	699	27.56	700	14	-
362412 RTSC	362412 RTSC NK	362412 RTSCGV	362412 RTSCGV NK	36.00x24.00x12.00	914x610x305	33.50	851	21.56	548	14	(B C D E F G H I J)
-	363012 RTSC NK	-	363012 RTSCGV NK	36.00x30.00x12.00	914x762x305	33.50	851	27.56	700	12	-
-	363612 RTSC NK	-	363612 RTSCGV NK	36.00x36.00x12.00	914x914x305	33.50	851	33.56	852	12	-

Notes: Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

# Type 12/13 Enclosures

## Type 12 JIC Continuous Hinge Cover Enclosures Data Sheet



Type 12/13 Encl.

### Application

- Houses electrical controls and instruments
- Protects against circulating dust, falling dirt and dripping noncorrosive liquids

### Standards

- UL 508 listed, Type 13 and Type 12
- CSA C22.2 No.94 certified, Type 13 and Type 12
- Conforms to NEMA standard for Type 13 and Type 12
- Conforms to JIC standard EGP-1-1967
- IEC 60529, IP65

### Construction

- Enclosure and cover are fabricated from (16) gauge steel
- All continuous welded seams are finished smooth
- Cover is secured to the body with a continuous hinge on one side and easy-to-operate screw clamps mounted to the opposite side
- Cover has a fixed, oil-resistant gasket
- Ground stud provided on cover
- #10-32 weldnuts are provided for mounting optional panel on 6H x 4W and larger enclosures
- External mounting feet are provided for secure wall mounting

### Finish

- Wash and phosphate undercoat
- ANSI 61 gray polyester powder finish
- Hardware and clamps are zinc plated with a yellow chromate finish

### Accessories

- Panels
- JIC terminal strap kit
- JIC terminal strip kit
- Terminal blocks
- Touch-up paint
- See Accessories section
- #8-32 self tapping screw (10168)

**Notes:** Cooper B-Line can provide special sizes, finishes and other modifications. Consult the factory for your special requirements.

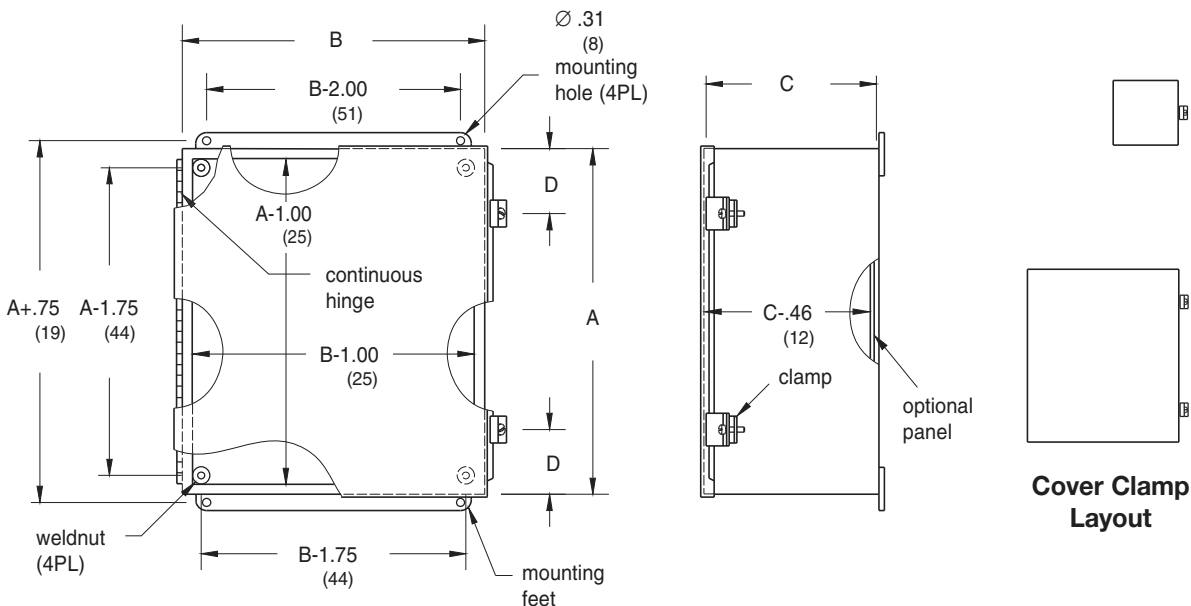


# Type 12/13 Enclosures

## Type 12 JIC Continuous Hinge Cover Enclosures Catalog Number

Enclosure Catalog Number	Enclosure Size Height x Width x Depth A x B x C		D		Panel Catalog Number		Panel Size Height x Width	
	in.	mm	in.	mm	Solid	Perforated	in.	mm
443-12CHC	4.00x4.00x3.00	102x102x76	2.00	51	-	-	-	-
643-12CHC	6.00x4.00x3.00	152x102x76	3.00	76	AW64P	AW64PP	4.87x2.87	124x73
863.5-12CHC	8.00x6.00x3.50	203x152x89	4.00	102	AW86P	AW86PP	6.87x4.87	174x124
444-12CHC	4.00x4.00x4.00	102x102x102	2.00	51	-	-	-	-
644-12CHC	6.00x4.00x4.00	152x102x102	3.00	76	AW64P	AW64PP	4.87x2.87	124x76
664-12CHC	6.00x6.00x4.00	152x152x102	3.00	76	AW66P	AW66PP	4.87x4.87	124x124
884-12CHC	8.00x8.00x4.00	203x203x102	4.00	102	AW88P	AW88PP	6.87x6.87	174x174
1084-12CHC	10.00x8.00x4.00	254x203x102	2.00	51	AW108P	AW108PP	8.87x6.87	225x174
1084-12CHCS	10.00x8.00x4.00	254x203x102	2.00	51	AW108P	AW108PP	8.87x6.87	225x174
1264-12CHC	12.00x6.00x4.00	305x152x102	3.00	76	AW126P	AW126PP	10.87x4.87	272x124
12105-12CHC	12.00x10.00x5.00	305x254x127	3.00	76	AW1210P	AW1210PP	10.87x8.87	272x225
12105-12CHCS	12.00x10.00x5.00	305x254x127	3.00	76	AW1210P	AW1210PP	10.87x8.87	272x225
866-12CHC	8.00x6.00x6.00	203x152x152	4.00	102	AW86P	AW86PP	6.87x4.87	174x124
886-12CHC	8.00x8.00x6.00	203x203x152	4.00	102	AW88P	AW88PP	6.87x6.87	174x174
1086-12CHC	10.00x8.00x6.00	254x203x152	2.00	51	AW108P	AW108PP	8.87x6.87	225x174
10106-12CHC	10.00x10.00x6.00	254x254x152	2.00	51	AW1010P	AW1010PP	8.87x8.87	225x225
12106-12CHC	12.00x10.00x6.00	305x254x152	3.00	76	AW1210P	AW1210PP	10.87x8.87	272x225
12126-12CHC	12.00x12.00x6.00	305x305x152	3.00	76	AW1212P	AW1212PP	10.87x10.87	272x272
1486-12CHC	14.00x8.00x6.00	356x203x152	3.00	76	AW148P	AW148PP	12.87x6.87	327x174
14126-12CHC	14.00x12.00x6.00	356x305x152	3.00	76	AW1412P	AW1412PP	12.87x10.87	327x272
14126-12CHCS	14.00x12.00x6.00	356x305x152	3.00	76	AW1412P	AW1412PP	12.87x10.87	327x272
16106-12CHC	16.00x10.00x6.00	406x254x152	3.00	76	AW1610P	AW1610PP	14.87x8.87	378x225
16146-12CHC	16.00x14.00x6.00	406x356x152	3.00	76	AW1614P	AW1614PP	14.87x12.87	378x327
16146-12CHCS	16.00x14.00x6.00	406x356x152	3.00	76	AW1614P	AW1614PP	14.87x12.87	378x327
10108-12CHC	10.00x10.00x8.00	254x254x203	2.00	51	AW1010P	AW1010PP	8.87x8.87	225x225
12108-12CHC	12.00x10.00x8.00	305x254x203	3.00	76	AW1210P	AW1210PP	10.87x8.87	272x225
14128-12CHC	14.00x12.00x8.00	356x305x203	3.00	76	AW1412P	AW1412PP	12.87x10.87	327x272
16148-12CHC	16.00x14.00x8.00	406x356x203	3.00	76	AW1614P	AW1614PP	14.87x12.87	378x327
161410-12CHC	16.00x14.00x10.00	406x356x254	3.00	76	AW1614P	AW1614PP	14.87x12.87	378x327

Note: Catalog numbers ending in -12 CHCS are hinged on the short side.



Notes: Dimensions are in inches. Millimeters shown are for reference only. Data subject to change without notice.

Type 12/13 Encl.

443-12CHC  
643-12CHC  
444-12CHC  
644-12CHC  
664-12CHC  
863.5-12CHC  
884-12CHC  
866-12CHC  
886-12CHC

1084-12CHC  
1264-12CHC  
12105-12CHC  
1086-12CHC  
10106-12CHC  
12106-12CHC  
12126-12CHC  
1486-12CHC  
14126-12CHC  
16106-12CHC  
10108-12CHC  
16146-12CHC  
12108-12CHC  
14128-12CHC  
16148-12CHC  
161410-12CHC



# Highland Park Middle School

## Electrical Equipment Submittals

Date Submitted: 03/04/2020

IES Submittal # 04

(Sect 26 05 53) Identification for Electrical Systems

IES Commercial  
16135 SW 74th Ave  
Tigard, OR 97224

Ph: (503) 648-1900

Project Manager - xxx



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**EZCODE®**

**Thomas & Betts**

United States  
Tel: 901.252.8000  
800.816.7809  
Fax: 901.252.1354

Technical Services  
Tel: 888.862.3289

[www.tnb.com](http://www.tnb.com)



# EZCODE®

## Overview

Trust E-Z-Code® products to identify, secure and alert!

### Perfect for the following applications:

- Industrial Construction
- In-Plant Operations
- Telecommunications
- Computer Installations
- Power Facilities
- Transportation
- Panel Equipment

Wherever electrical and electronic components and systems are used to connect, fasten, insulate, and identify wire and conduits, you'll find a Thomas & Betts quality product performing to industry-wide standards of excellence. For more than 100 years, Thomas & Betts has developed the products you need, with the quality you demand and at the right price.

E-Z-Code® Identification Products are marketed nationally through an exclusive network of authorized stocking distributors, where emphasis is placed on customer service, experience, and product knowledge. Staffed by trained professionals with a background in federal, state, and local codes and regulations, your local T&B distributor can provide you with quotation service, up-to-date pricing, shipping costs, and competitive product line evaluations when needed.



### Automated Wire Markers & Accessories

The new E-Z-Code® EZL-100® Wire Marker Printer is one of the most innovative portable wire marker printers in the industry. It's a simple, easy-to-use, and reliable tool that'll have you marking wires almost as soon as you pull it from the box.

E-Z-Code® Labeling Software is a full-featured labeling system for creating custom labels tailored to your cabling and wire marking needs.



**Thomas & Betts**

[www.tnb.com](http://www.tnb.com)

#### United States

Tel: 901.252.8000

800.816.7809

Fax: 901.252.1354

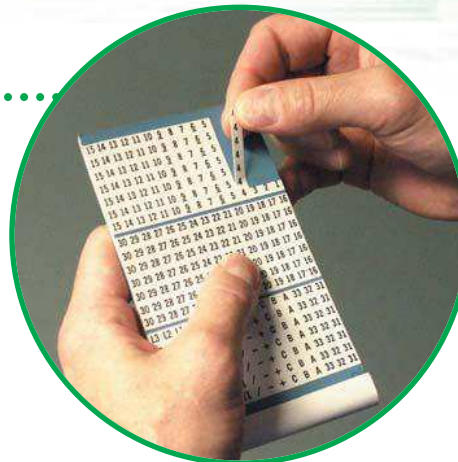
#### Technical Services

Tel: 888.862.3289

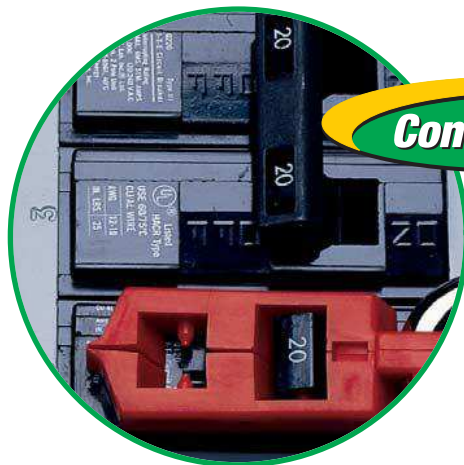


### Wire Marker Book, Cards, and Labels

Pocket pack wire marker books are easy to carry and easy to use. Wire marking is simple, clean, and fast...just pull tape out, tear, and wrap. The compact size fits in your pocket!



EZCODE®



**Coming Soon!**

### Lockout/Tagout

Thomas & Betts offers an inclusive product line to supply the general requirements of the OSHA Lockout/Tagout standard. From comprehensive training videos to circuit breaker locking devices, E-Z-Code® Lockout/Tagout products help ensure that general industry workers will be protected from accidents during maintenance and servicing of equipment.

#### Coming Soon – All New E-Z-Code® Lockout/Tagout Products!

Thomas & Betts is currently revamping its complete line of E-Z-Code® lockout/tagout devices, which will be included in our next catalog. In the meantime, please contact Technical Services for product information.

**T&B Technical Services**  
888-862-3289

### Identification Tapes

Bright colors are not the only advantages of these Barricade and Burial Tapes. T&B's attention-getting tapes are also inexpensive and easy to handle. Protect-A-Line™ tape is ideal for marking hazardous or off-limit barricade areas. A large assortment of Buried Utility Tape and Foil-Backed Detectable Buried Utility Tapes help prevent potential accidents during excavations and underground installations.



### Electrical Hazard Safety Signs

T&B provides a large assortment of necessary Electrical Hazard Safety Signs to complete your construction and maintenance projects. Choose from either aluminum, plastic, or self-sticking material to suit your environments. Or create your own sign to your specifications by ordering from our **Specials Form** on **page I-31**.



# EZCODE®

## EZL-100 Thermal Label Printer

EZ as 1-2-3...press, type, and print!

### EZL-100® Thermal Label Printer

- One-touch hotkeys create labels instantly for wire wrapping, terminal blocks, device covers, patch panels, and labels in a series
- Symbols for common electrical and datacom applications, including ohm, ground, phone, data, and fax
- Five print sizes including XS, S, M, L, and XL
- Horizontal and vertical print orientation
- Automatically underlines the number 9 to prevent confusion on wire and cable
- Memory stores up to eight custom labels and automatically recalls last label
- Auto-shutoff saves battery life by turning printer off after five minutes (if idle)
- Backlit display can be turned on or off for use in low lighting conditions
- Multiple line printing of up to four lines per label
- Barcode printing of two of the most commonly used barcodes — Code-39 and Code-128
- Durable/non-smearing thermal transfer technology
- Multiple power sources uses six "AA" batteries or AC adapter (not included)
- Large display with 2-line x 15-character views (30 total)

1 Press



2 Type



3 Print



...and that's it!



Large, Backlit Display

One-Touch Hot Keys

Electrical and Datacom Symbols

Rugged Printer Construction with Rubber Boot Included

At last, a label printer designed for electricians and the way they work! T&B's new EZL-100 Label Printer packs everything you need to make wire marking fast and simple.

T&B's EZL-100 printer features handy "Hot Keys," a one-touch method to make labels for wire wrapping, patch panels, labels in a series, terminal blocks, and more. There are also common electrical and datacom symbols at your touch. And its rugged design ensures years of use.

Best of all, our permanent-adhesive labels won't smear. You'll wrap up your job with attractive, easy-to read wire labels that'll make your work easier and safer. All for a price that's easy on your wallet.

#### Specifications

- Dimensions: 4.5" (114mm) W x 8.3" (212mm) H x 2.8" (70mm) D
- Weight: 2.0 lbs. (890 grams)
- Power: 9V DC, using 6 "AA" batteries or AC adapter

CAT. NO.	DESCRIPTION
EZL-100	Printer (includes (1) ¼" white nylon, quick-load cassette tape, quick start card, and user manual). AC power adapter not included
EZL-100-KIT	Kit (includes EZL-Case, EZL-100 Printer (1), EZ-MP34 (1) and EZ-WN34, (1) tape, EZL-ADP adapter, and batteries
EZL-100-CASE	Hard Case for EZL-100 Printer
EZL-ADP	Adapter for EZL-100 Printer 9V, 1.5A

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Tel: 888.862.3289

## EZL-75 Thermal Label Printer and EZL Printer Labels



Quick and cost-effective labeling solution!

### EZL-75 Thermal Label Printer

If your labeling needs don't quite justify all the high-end features of T&B's EZL-100 printer, now there's a lower cost solution for simple labeling. The EZL-75 thermal label printer is just as easy to use as the EZL-100 printer. Simply type and print. Or don't even bother typing. Instead, use hot keys to choose among the EZL-75 printer's built-in library of symbols and more than 150 commonly used words for security, location and voice/data/video labeling.



- Hot keys provide one-touch flagging for wires and cables and fixed-length labels for faceplates and security panels
- Incremental alpha and numeric printing makes printing distribution panel labels fast and simple
- 13-character backlit display enhances readability
- Multiple line printing supports up to 2 lines per label
- Durable bumper safeguards against damage in the tool box
- Uses the same label cassettes (up to 1/2" width) as the EZL-100 printer

#### Specifications

- Dimensions: 4.5" (114mm) W x 7.5" (191mm) H x 2.1" (53mm) D
- Power: 9V DC, using 6 "AA" (not included) batteries or AC adapter
- Weight: 0.8 lbs. (363 grams)

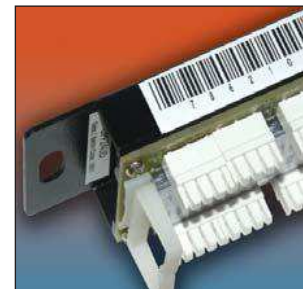
CAT. NO.	DESCRIPTION
<b>EZL-75</b>	Printer (includes (1) 1/2" white nylon quick-load cassette tape, quick start card, and user manual. AC power adapter not included)
<b>EZL-ADP</b>	Adapter for EZL-75 Printer 9V, 1.5A

Surface Applications		Vinyl and Flex Nylon	Perm. Polyester	Heat Shrink
Wire		•		•
Cable		•		•
Curved		•		
Smooth		•	•	
Flat		•	•	
Textured		•	•	
Highly Textured		•		
Length		11.5'	18.0'	5.0"
Width		1/4", 3/8"	3/8", 1/2"	1/4", 3/8"
		3/4"	3/4"	1/2", 3/4"

High-performance labels that last!

### Wire Marker Labels for EZL Printers

- Perfect for wire and cable
- Print heat-shrink sleeves on the spot!
- Clear, non-smudging lettering
- Chemical/solvent resistant
- Available in yellow, white, and metallic markers
- Flame retardant, Polyolefin material, 3:1 shrink ratio
- Easy-to-peel, split-back design



Easy barcode printing!

CAT. NO.	LABEL SIZE (IN.)	RECOMMENDED WIRE SIZE (AWG)	LENGTH
<b>Clear Polyester</b>			
<b>EZ-CP12</b>	1/2"	Flat Applications Only	18'
<b>EZ-CP34*</b>	3/4"	Flat Applications Only	18'
<b>Red Vinyl</b>			
<b>EZ-RV34*</b>	3/4"	Any	18'
<b>White Permanent Polyester</b>			
<b>EZ-WP38</b>	3/8"	Flat Applications Only	18'
<b>EZ-WP12</b>	1/2"	Flat Applications Only	18'
<b>EZ-WP34*</b>	3/4"	Flat Applications Only	18'
<b>Metallic Permanent Polyester</b>			
<b>EZ-MP38</b>	3/8"	Flat Applications Only	18'
<b>EZ-MP12</b>	1/2"	Flat Applications Only	18'
<b>EZ-MP34*</b>	3/4"	Flat Applications Only	18'
<b>White Flexible Nylon</b>			
<b>EZ-WN12</b>	1/2"	Any	12.5'
<b>EZ-WN34*</b>	3/4"	Any	12.5'
<b>Yellow Flexible Nylon</b>			
<b>EZ-YN12</b>	1/2"	Any	12.5'
<b>EZ-YN34*</b>	3/4"	Any	12.5'

#### Heat-Shrink White Polyolefin Labels

<b>EZ-WHS14</b>	1/4"	10 - 16	5'
<b>EZ-WHS38</b>	3/8"	6 - 14	5'
<b>EZ-WHS12</b>	1/2"	4 - 6	5'
<b>EZ-WHS34*</b>	3/4"	2 - 4	5'

#### Heat-Shrink Yellow Polyolefin Labels

<b>EZ-YHS14</b>	1/4"	10 - 16	5'
<b>EZ-YHS38</b>	3/8"	6 - 14	5'
<b>EZ-YHS12</b>	1/2"	4 - 6	5'
<b>EZ-YHS34*</b>	3/4"	2 - 4	5'

Order in multiples of 5 cassettes.

\* Labels fit EZL-100 printer only.



# EZCODE®

## Printable Markers

Print your own markers  
to *your* requirements!

### Laser Printable



- Self-laminating markers have a clear overlay of polyester that protects the legend against oils, grease, water, chemicals, and foreign matter
- Markers feature a strong adhesive for maximum adhesion to the wire and are available in a variety of sizes, both as standard and specials
- 1 Mil Polyester (same material as WPR rolls)
- Test template included with each 25 pack
- Sizes to suit most applications

CAT. NO.	SHEET SIZE	MARKERS PER SHEET	MARKER SIZE	PRINT AREA W x L	MAX. WIRE DIA.
WLP-1112	8½" x 11"	48	1" x 1½"	½" x 1"	5/16"
WLP-1214	8½" x 11"	32	1" x 2¼"	1" x ¾"	15/32"
WLP-12112	8½" x 11"	96	¾" x 1½"	½" x ½"	5/16"
WLP-12214	8½" x 11"	64	¾" x 2¼"	½" x ¾"	15/32"
WLP-12300	8½" x 11"	48	½" x 3"	½" x 1"	7/8"
WLP-1300	8½" x 11"	24	1" x 3"	1" x 1"	7/8"
WLP-1500	8½" x 11"	16	1" x 5"	1" x 1"	1¼"
WLP-2112	8½" x 11"	24	2" x 1½"	2½" x 2"	5/16"
WLP-2214	8½" x 11"	16	2" x 2¼"	2" x ¾"	15/32"
WLP-2300	8½" x 11"	12	2" x 3"	2" x 1"	7/8"
WLP-2500	8½" x 11"	8	2" x 5"	2" x 1"	1¼"

Order multiple 25 sheets.

Add suffix **A** for 500 sheets, **B** for 1,000 sheets.

WLP labels may be used on any standard laser printer.

### PC Label Software

- Create, maintain and print custom labels
- Wire and cable marking
- Control panel and component marking
- Voice and data equipment marking
- Alphanumeric serialization



CAT. NO.	DESCRIPTION	STD. PKG. QTY.
EZ-CODE 1.0	E-Z-Code® PC Label Software	1

### Dot-Matrix Printer Labels

CAT. NO.	SHEET SIZE	MARKERS PER SHEET	MARKER SIZE W x L	PRINT AREA W x L	MAX WIRE DIA.
WES-12112	9½" x 8"	64	½" x 1½"	½" x ½"	5/16"
WES-1112	9½" x 8"	32	1" x 1½"	1" x ½"	5/16"
WES-2112	9½" x 8"	16	2" x 1½"	2" x ½"	5/16"
WES-12214	9½" x 9"	48	½" x 2¼"	½" x ¾"	15/32"
WES-1214	9½" x 9"	24	1" x 2¼"	1" x ¾"	15/32"
WES-2214	9½" x 9"	12	2" x 2¼"	2" x ¾"	15/32"
WES-12334	9½" x 9"	32	½" x 3¾"	½" x 1"	7/8"
WES-1334	9½" x 9"	16	1" x 3¾"	1" x 1"	7/8"
WES-2334	9½" x 9"	8	2" x 3¾"	2" x 1"	7/8"
WES-2512	9½" x 12"	8	2" x 5½"	2" x 1"	1½"
WES-2128	9½" x 9"	3	2½" x 8½"	2½" x 2"	2"

Order multiple 25 sheets.

WES labels may be used on any standard dot matrix printer.

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Markers that withstand oil, water and humidity!

### Vinyl Cloth, Standard Books

- Choose the numbers or letters you need
- Wide selection of sizes and legends
- Size 3" x 5" (76 mm x 146 mm)
- Material: vinyl cloth
- Cover keeps markers clean
- Books are 3" x 5½" pocket size
- 10 pages per book



Pocket pack wire marker books are easy to carry, and easy to use. The material is an all-purpose vinyl coated cloth tape exclusively designed to resist abrasion, oil, water, and dirt.

From Thomas & Betts you get the one-piece wire marker and terminal marker. A slight die-cut enables you to easily remove the terminal marker if you need it or leave it in place for a longer marker.



CAT. NO.	NUMBER OF MARKERS AND LEGENDS
<b>WM-0 THRU 9</b>	40 Markers each: 0 thru 9; 10 Markers each: T1, T2, T3, L1, L2, L3
<b>WM-0-9M</b>	46 Markers each page; full page of 1, full page of 2, etc.
<b>WM-0-45</b>	10 Markers each: 0 thru 45
<b>WM-46-90</b>	10 Markers each: 46 thru 90
<b>WM-A-Z</b>	10 Markers each: A thru Z, +, -, and 0 thru 15
<b>WM-123</b>	150 Markers each: 1, 2, 3
<b>WM-ABC</b>	150 Markers each: A, B, C
<b>WM-A-33</b>	10 Markers each: 1 thru 33, A, B, C, +, -, T1, T2, T3, L1, L2, L3
<b>WM-A-90</b>	6 Markers each: 0 thru 15; 4 Markers each: 1
<b>WM-0 THRU WM-9</b>	6 thru 90: 2 Markers each; A thru Z 460 Markers each of any number 0 thru 9
<b>WM-A, -B, -C, -D, -E, -F, -G, -L, -N, -P, -R, -S, -T, OR X</b>	460 Markers each of any letter: -A, -B, -C, -D, -E, -F, -G, -L, -N, -P, -R, -S, -T or X
<b>WM-GRD</b>	120 Markers: ⅞" x 2½" or 240 Markers ⅞" x 1¼" with "GRD" legend
<b>WMLC-1</b>	24 Legends, 2 legends each per page, 480 Markers per book for house wiring and circuit breakers; ⅝" x 1⅜" (16mm x 10mm)

Order multiple 10 books

CAT. NO.	NUMBER OF MARKERS AND LEGENDS
<b>WM-T3</b>	10 Pages T <sub>1</sub> , T <sub>2</sub> , T <sub>3</sub> ; 140 Markers ea.; total 420
<b>WM-L3</b>	10 Pages L <sub>1</sub> , L <sub>2</sub> , L <sub>3</sub> ; 140 Markers ea.; total 420
<b>WM-9T</b>	3 Pages 1, 2, 3; 42 Markers ea.; 3 Pages A, B, C; 42 Markers ea.; 2 Pages T <sub>1</sub> , T <sub>2</sub> , T <sub>3</sub> ; 28 Markers ea.; 2 Pages L <sub>1</sub> , L <sub>2</sub> , L <sub>3</sub> ; 28 Markers ea.; total 140
<b>WM-1-30</b>	10 Pages 1-30; 14 Markers ea.; total 140
<b>WM-12</b>	A-Z 8½ Pages, 14 Markers ea.; Blank Write Ons 1 Page, 22 Markers ea.; Plus & Minus ⅙ Page, 7 Markers ea.; total 393
<b>WM-13</b>	Plus & Minus, AC, DC, 1 Page ea., 46 Markers ea.; Pos. Neg. Gnd. 1 Page ea., 28 Markers ea.; Spare, Neut. 1 Page ea., 22 Markers ea.; Blank Write-Ons 1 Page ea., 22 Markers ea.; total 256
<b>WM-0-90</b>	5 Pages ea. 0-45; 5 Markers ea.; 5 Pages ea. 46-90; 5 Markers ea.; total 455

# EZCODE®

## Wire Marker Books



A handy solution for your identification needs!

### E-Z-Code® Compact Wire Marker Books

- Compact books are easier to carry
- Bold letters/numbers, easy to apply and read
- Convenient alphanumeric and loadcenter legends
- E-Z-Snap feature removes the entire sheet more easily from the booklet
- Vinyl coated cloth

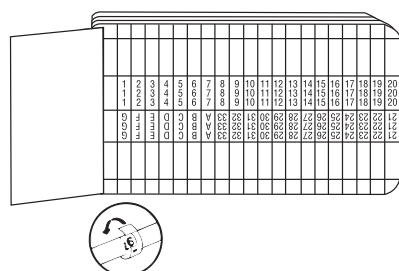
CAT. NO.	NUMBER OF MARKERS AND LEGENDS
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**WCMB-0-9** 128 markers 0-9, ABC, +, -, marker size ¼" x 1½"

**WCMB-LC** 176 markers Loadcenter Labels; marker size 1½" x ¾"

Order multiple 20 books.

Identify and protect all in one!



### Vinyl Self Laminating Books

- Convenient Alphanumeric Legends
- Lamination keeps markers protected

CAT. NO.	NUMBER OF MARKERS AND LEGENDS
----------	-------------------------------

**WMSL 1-33, A-G** 400 Markers: ¼" x 1¼" – printed area ¾"; 10 markers each: 1 thru 33 and A thru G

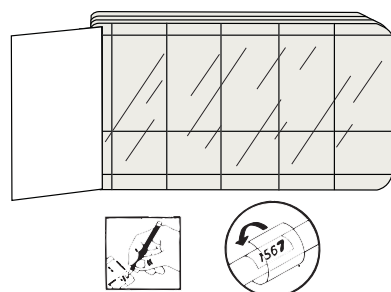
**WMSL-0-9** 40 Markers each 0 thru 9; 10 Markers each: T1, T2, T3, L1, L2, L3

**WMSL-0-45** 10 Markers each 0 thru 45

**WMSL-46-90** 10 Markers each 46 thru 90

**WMSL-A-Z** 10 Markers each: A thru Z; +, -, and 0 thru 15

**WMSL-A-90** 6 Markers each: 0 thru 15; 4 markers each 16 thru 90; 2 markers each A thru Z



### Vinyl Self Laminating, Blank Write-on Books

- Choose from a variety of marking area sizes
- Clear area covers print legend for extra protection
- Lamination keeps markers protected

CAT. NO.	NUMBER OF MARKERS AND LEGENDS
----------	-------------------------------

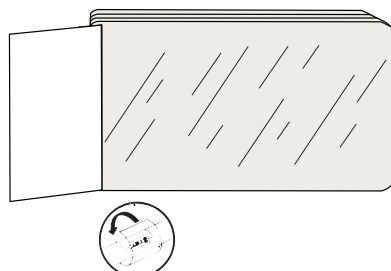
**WM-BW3** 30 markers 1" x 6" blank write-on self-laminating markers; marking area: 1" x 1"

**WM-BW5** 60 markers 1" x 3" blank write-on, self laminating markers; marking area: 1" x ¾"

**WM-BW12** 200 markers ½" x 1¼" blank write-on, self laminating markers; marking area: ½" x ¾"

**WM-BW14** 400 markers ¼" x 1¼" blank write-on, self-laminating markers; marking area: ¼" x ¾"

**WM-BW34** 120 markers ¾" x 1¼" blank write-on, self-laminating markers; marking area: ¾" x ½"



### Vinyl Self Laminating, Standard Laminator Book

- Protect labels or apply over non-sticking markers
- 50, 3½" x 5" clear cable laminators

CAT. NO.	NUMBER OF MARKERS AND LEGENDS
----------	-------------------------------

**WM-LAM** 50, 3½" x 5" Clear Cable Laminators

**Thomas & Betts**

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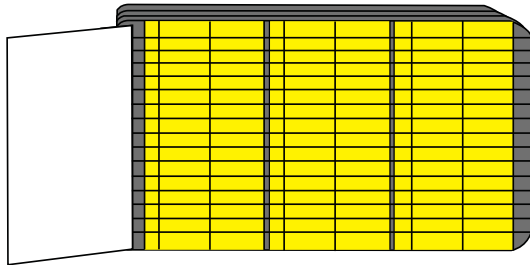
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Fax: 901.252.1354

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Tel: 888.862.3289





### Vinyl, Color Coding Standard Books



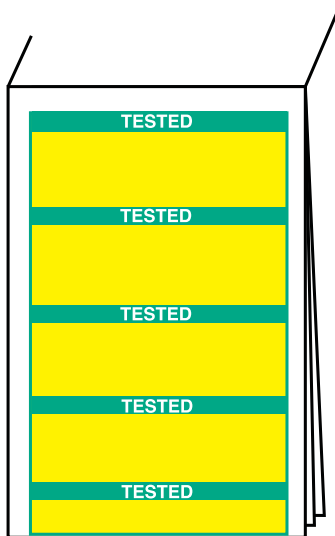
- Available in two sizes
- Color your wires for coding and other applications

CAT. NO.	NUMBER OF MARKERS AND LEGENDS
WM-COL14	460 Markers each: 1/4" x 1 1/4" 1 page yellow and blue; 2 pages red, white, green, and black
WM-COL1	50 Markers each: 1" x 2 1/4" 1 page yellow and blue; 2 pages red, white, green, and black

### Stay ready for quality control!

#### Polyolefin E-Z-Code® Pocket Pack Markers

- Easy to carry — marker books fit in shirt pocket
- Easy to use — just peel the marker from the page
- Clean and convenient — markers are tabbed so fingers never touch the adhesive



CAT. NO.	LEGENDS 240 IDENTICAL PER BOOK
WTMP-1B	CALIBRATED (black)
WTMP-2B	CERTIFICATION (black)
WTMP-3B	MAINTENANCE (blue)
WTMP-4B	REJECTED (red)
WTMP-5B	ACCEPTED (green)
WTMP-6B	HOLD (red)
WTMP-7B	RETURN TO VENDOR (orange)
WTMP-8B	REWORK (black)
WTMP-9B	HOLD FOR INSPECTION (blue)
WTMP-11B	CAUTION (black)
WTMP-16B	DATE INSTALLED (black)
WTMP-18B	DUE FOR INSPECTION (orange)
WTMP-19B	DO NOT USE AFTER (red)
WTMP-20B	INSPECTED (black)
WTMP-21B	BLANK HEADING
WTMP-22B	REPAIRED BY (orange)
WTMP-24B	SCRAPPED (orange)
WTMP-25B	TESTED (green)
WTMP-26B	CALIBRATION (green)
WTMP-52B	PROPERTY TAG (black)
WTMP-53B	SERIAL NO. (black)
WTMP-55B	TOOL NO. (blue)

15 pages per book, 16 markers per page. Each label is 1 1/2" x 5/8".  
Each book contains 240 identical labels.

# EZCODE®

## Wire Marker Cards — Vinyl Cloth

Marker Cards repel oil, water, and humidity!

- Select from a variety of number and letter combinations and sizes
- Material — vinyl cloth
- Standard length 1½"
- Available in ¾" length

### Catalog Numbering System

Example:

**WC** **100** **S** = Wire Marker Card,  
Legend 100,  
1½" Size

**Y** Replace Y with length

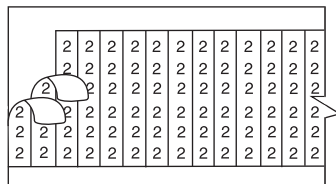
S = 1½"

D = ¾"

**X** Replace X with legend  
Single character = 1, 2, 3 etc.  
Sequence = 1 thru 33

**W( )** Replace ( ) with card type  
C = Wire Marker Card  
S = Vinyl Self-laminating

### Solid Numbers

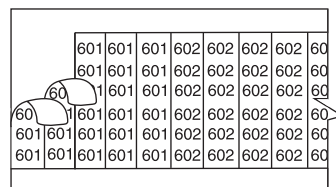


CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WCZEROS	0	36	72
WC1S, WC2S THRU WC99S	1,2,...99	36	72
WC101S, WC102S THRU WC600S	101, 102...600	25	50

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last S in the part number with a D.

### Numbers in Sequence

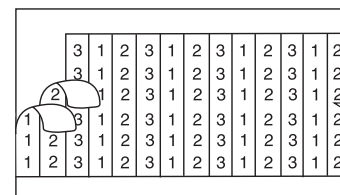


CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WC1-THRU-33S	1-33	33	66
WC34-THRU-66S	34-66	33	66
WC67-THRU-99S	67-99	33	66
WC100-THRU-124S	100-124	25	50
WC125-THRU-149S	125-149	25	50
WC974-THRU-999S	974-999		

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last S in the part number with a D, e.g., WC1S would become WC1D.

### Numbers in Sequence Repeated



CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WC1-THRU-3S	1-3	36	72
WC1-THRU-4S	1-4	36	72
WC1-THRU-5S	1-5	35	70
WC0-THRU-10S	0-10	33	66
WC1-THRU-12S	1-12	36	72
WC1-THRU-18S	1-18	36	72
WC19-THRU-36S	19-36	36	72

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last S in the part number with a D, e.g., WC1S would become WC1D.

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## Wire Marker Cards — Vinyl Cloth



### Paired Numbers in Sequence

1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	2	3	4	5	6	7	8	9	10	11	12	13	14

CAT. NO.	LEGEND	PAIRS OF MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WC1 THRU 16PS	1-16	16	32
WC17 THRU 32PS	17-32	16	32
WC33 THRU 48PS	33-48	16	32

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

### Suffix Numbers

- Use to extend numbers or to make alpha-numeric codes (i.e. adding suffix 05 to ABC=ABC05)

05	05	05	05	05	05	05	05	05	05	05	05	05	05
05	05	05	05	05	05	05	05	05	05	05	05	05	05
05	05	05	05	05	05	05	05	05	05	05	05	05	05
05	05	05	05	05	05	05	05	05	05	05	05	05	05
05	05	05	05	05	05	05	05	05	05	05	05	05	05

CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WC00S	00	36	72
WC01S, WC02S THRU WC09S	01, 02-09	36	72
WC0009S	00-09	30	60

Catalog No. WC0009S has three sequences of 00...09 on a card. WC0009D has six sequences of 00...09 on a card.

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

### Solid Numbers on a Colored Background

- Blue, green, red, black and brown markers have white legends; orange and yellow markers have black legends.

2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2	2	2	2	2	2	2

CAT. NO.	LEGEND	BACKGROUND COLOR	MARKERS PER CARD	
			1½" (38 MM)	¾" (19 MM)*
WCBLZEROS	0	Blue	36	72
WCBL1S...WCBL50S	1...50	Blue	36	72
WCGRZEROS	0	Green	36	72
WCGR1S...WCGR50S	1...50	Green	36	72
WCORZEROS	0	Orange	36	72
WCOR1S...WCOR50S	1...50	Orange	36	72
WCRDZEROS	0	Red	36	72
WCRD1S...WCRD50S	1...50	Red	36	72
WCYLZEROS	0	Yellow	36	72
WCYL1S...WCYL50S	1...50	Yellow	36	72

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

### Numbers in Sequence on a Colored Background

3	4	5	6	7	8	9	10	11	12	13	14
3	4	5	6	7	8	9	10	11	12	13	14
3	4	5	6	7	8	9	10	11	12	13	14
3	4	5	6	7	8	9	10	11	12	13	14
3	4	5	6	7	8	9	10	11	12	13	14

CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
<i>On Black, White Characters</i>			
WCBK1-33S	1-33	33	66
WCBK34-66S	34-66	33	66
WCBK67-99S	67-99	33	66
WCBK100-124S	100-124	25	50

#### On Blue, White Characters

WCBL1-33S	1-33	33	66
WCBL34-66S	34-66	33	66
WCBL67-99S	67-99	33	66
WCBL100-124S	100-124	25	50

#### On Brown, White Characters

WCBR1-33S	1-33	33	66
WCBR34-66S	34-66	33	66
WCBR67-99S	67-99	33	66
WCBR100-124S	100-124	25	50

#### On Green, White Characters

WCGR1-33S	1-33	33	66
WCGR34-66S	34-66	33	66
WCGR67-99S	67-99	33	66
WCGR100-124S	100-124	25	50

#### On Red, White Characters

WCRD1-33S	1-33	33	66
WCRD34-66S	34-66	33	66
WCRD67-99S	67-99	33	66
WCRD100-124S	100-124	25	50

#### On Orange, Black Characters

WCOR1-33S	1-33	33	66
WCOR34-66S	34-66	33	66
WCOR67-99S	67-99	33	66
WCOR100-124S	100-124	25	50

#### On Yellow, Black Characters

WCYL1-33S	1-33	33	66
WCYL34-66S	34-66	33	66
WCYL67-99S	67-99	33	66
WCYL100-124S	100-124	25	50

Order multiple 25 cards.

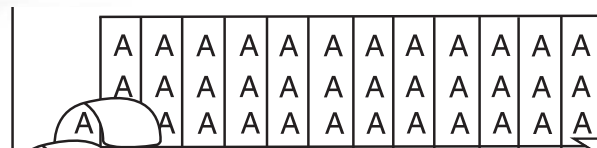
\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.



# EZCODE®

## Wire Marker Cards — Vinyl Cloth

### Solid Letters

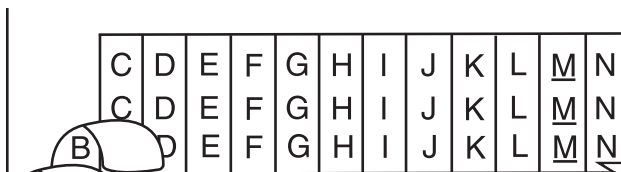


CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WCAS	A	36	72
WCB5S...WCZS	B...Z	36	72
WCLAS	a	36	72
WCLBS...WCLZS	b...z	36	72

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

### Letters in Sequence

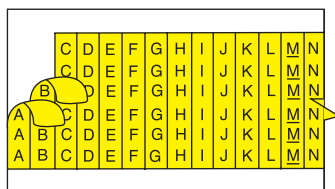


CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WCAZAJ5	A thru Z plus A thru J	36	72
WCAZ09S	A thru Z plus O thru 9	36	72
WCLAZAJ5	a thru z plus a thru j	36	72

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

### Letters in Sequence on a Colored Background

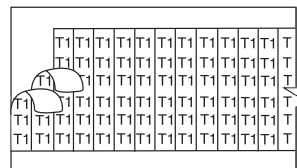


CAT. NO.	LEGEND A-Z AND A-J	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WCBKA-ZS	Black (White legend)	36	72
WCBLA-ZS	Dark Blue (White legend)	36	72
WCBRA-ZS	Brown (White legend)	36	72
WCGRA-ZS	Dark Green (White legend)	36	72
WCRDA-ZS	Red (White legend)	36	72
WCORA-ZS	Orange (Black legend)	36	72
WCYLA-ZS	Yellow (Black legend)	36	72

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

### Solid Letters and Numbers

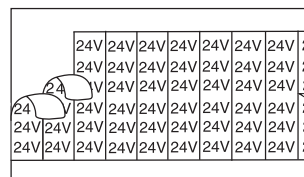


CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WCA1S...WCA5S	A1...A5	36	72
WCB1S...WCB5S	B1...B5	36	72
WCC1S...WCC5S	C1...C5	36	72
WCD1S...WCD5S	D1...D5	36	72
WCE1S...WCE5S	E1...E5	36	72
WCF1S...WCF4S	F1...F4	36	72
WCG1S...WCG4S	G1...G4	36	72
WCH1S...WCH5S	H1...H5	36	72
WCJ1S...WCJ4S	J1...J4	36	72
WCK1S...WCK4S	K1...K4	36	72
WCL1S...WCL5S	L1...L5	36	72
WCM1S...WCM5S	M1...M5	36	72
WCP1S...WCP4S	P1...P4	36	72
WCR1S...WCR5S	R1...R5	36	72
WCS1S...WCS5S	S1...S5	36	72
WCT0S...WCT9S	T0...T9	36	72
WCT10S...WCT15S	T10...T15	26	72
WCU1S...WCU2S	U1...U2	36	72
WCV1S...WCV2S	V1...V2	36	72
WCW1S...WCW2S	W1...W2	36	72
WCX1S...WCX4S	X1...X4	36	72
WCY1S...WCY4S	Y1...Y4	36	72
WCZ1S...WCZ4S	Z1...Z4	36	72

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

### Voltage Markers



CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WC3VS	3V	36	72
WC6VS	6V	36	72
WC12VS	12V	25	50
WC24VS	24V	25	50
WC110VS	110V	22	44
WC115VS	115V	22	44
WC120VS	120V	22	44
WC125VS	125V	22	44
WC180VS	180V	22	44
WC220VS	220V	22	44
WC230VS	230V	22	44
WC240VS	240V	22	44
WC270VS	270V	22	44
WC280VS	280V	22	44
WC440VS	440V	22	44
WC460VS	460V	22	44
WC480VS	480V	22	44

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

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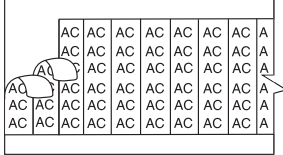
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## Wire Marker Cards — Vinyl Cloth



### Solid Symbols — Miscellaneous Electrical Symbols

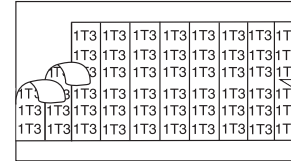


CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WCPLSS	+	36	72
WCMIINS	-	36	72
WCAPLSS	A+	25	50
WCAMINS	A-	25	50
WCBPLSS	B+	25	50
WCBMINS	B-	25	50
WCPSSS	POS	25	50
WCNEGS	NEG	25	50
WCPHS	Phase	18	36
WCPHAS	Phase A	18	36
WCPHBS	Phase B	18	36
WCPHCS	Phase C	18	36
WC1PHS	1 Phase	18	36
WC2PHS	2 Phase	18	36
WC3PHS	3 Phase	18	36
WCINS	IN	36	72
WCOUTS	OUT	25	50
WCHOTS	HOT	25	50
WGRDS	GRD	25	50
WCNEUTS	NEUT	22	44
WCLINES	LINE	22	44
WCLPLS	L+	25	50
WCLMIS	L-	25	50
WCLOADS	LOAD	22	44
WCPUS	PU	36	72
WGRCS	—	36	72
WGENS	GEN	25	50
WCACS	AC	36	72
WCDCS	DC	36	72
WCCOMS	COM	25	50
WCBATS	BAT	25	50
WCBBS	BB	36	72
WCCBS	CB	36	72
WCCTS	CT	36	72
WCIGNS	IGN	25	50
WCSIGS	SIG	25	50
WCSECS	SEC	25	50
WCPSS	PS	36	72
WCPRI	PRI	25	50
WCPLS	PL	36	72
WCTBS	TB	36	72
WCSSS	SS	36	72
WCSPARES	SPARE	18	36
WCYSS	~	36	72
WGRSS	—	36	72
WCPE	PE	36	72
WCPENS	PEN	25	50
WC1US	1U	36	72
WC2US	2U	36	72
WC1VS	1V	36	72
WC2VS	2V	36	72
WC1WS	1W	36	72
WC2WS	2W	36	72

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

### Solid Machine Tool Markers

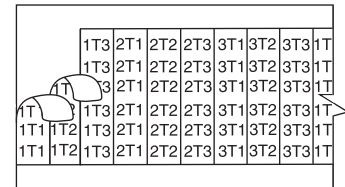


CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WC1L1S	1L1	25	50
WC1L2S	1L2	25	50
WC1L3S	1L3	25	50
WC2L1S	2L1	25	50
WC2L2S	2L2	25	50
WC2L3S...WC6L1S	2L3...6L1	25	50
WC6L2S	6L2	25	50
WC6L3S	6L3	25	50
WC1T1S	1T1	25	50
WC1T2S	1T2	25	50
WC1T3S	1T3	25	50
WC2T1S	2T1	25	50
WC2T2S	2T2	25	50
WC2T3S...WC7T1S	2T3...7T1	25	50
WC7T2S	7T2	25	50
WC7T3S	7T3	25	50
WC1L1S	LL1	25	50
WC1L2S	LL2	25	50
WC1L3S	LL3	25	50

Order multiple 25 cards.

\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

### Machine Tool Markers in Sequence



CAT. NO.	LEGEND	MARKERS PER CARD	
		1½" (38 MM)	¾" (19 MM)*
WC1T1-3T3S	1T1, 1T2, 1T3 2T1, 2T2, 2T3 3T1, 3T2, 3T3	27	54
WC4T1-6T3S	4T1, 4T2, 4T3 5T1, 5T2, 5T3 6T1, 6T2, 6T3	27	54
WC7T1-9T3S	7T1, 7T2, 7T3 8T1, 8T2, 8T3 9T1, 9T2, 9T3	27	54
WC1L1-LL3S	LL1, LL2, LL3	27	54
WCA1-S2S	A1, A2, F1 F2, S1, S2	36	72

Order multiple 25 cards.

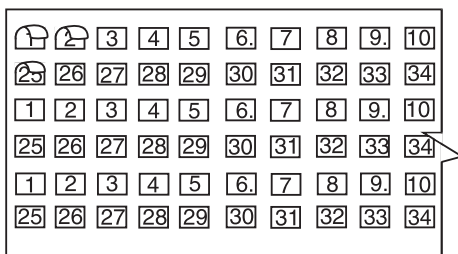
\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

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## Wire Marker Cards — Vinyl Cloth

Mini Markers are used to identify smaller items such as terminal blocks and small wires.

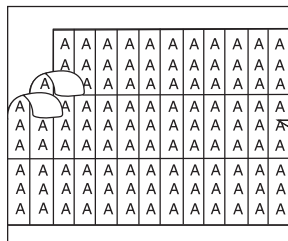
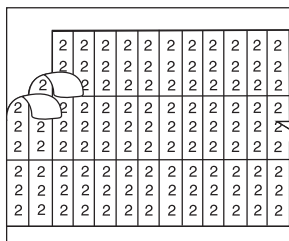
### Terminal Block — Mini Markers



CAT. NO.	LEGEND	MARKERS PER CARD MARKER SIZE 5/16" x 3/16"
WC1-48TM	1, 2 thru 48	144
WC49-96TM	49, 50 thru 96	144
WCA-ZTM	A, B thru Z	144

Order multiple 25 cards  
A thru Z legend does not include "I" or "O"

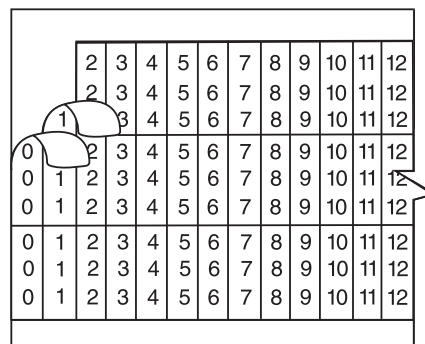
### Solid Numbers & Solid Letters — Mini Markers



CAT. NO.	LEGEND	MARKERS PER CARD 1/2" (13 MM)
<b>Solid Numbers</b>		
WCZEROMIN...WC99MIN	0, 1,...99	150
WC100MIN...WC250MIN	100, 101...250	99
<b>Solid Letters</b>		
WCAMIN	A	150
WCBMIN...WCZMIN	A,C... Z	150

Order multiple 25 cards

### Numbers in Sequence — Mini Markers

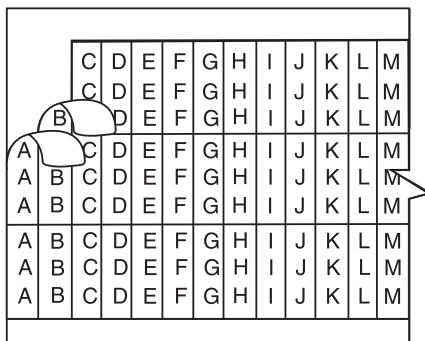


CAT. NO.	LEGEND	MARKERS PER CARD 1/2" (13 MM)
WC0-49MIN	0, 1... 49	150
WC50-99MIN	50, 51...99	150
WC100-132MIN	100, 101...132	99
WC133-165MIN	133, 134...495	99

THRU WC463-495MIN

Order multiple 25 cards  
Quantity of each number per card — 3

### Letters in Sequence — Mini Markers



CAT. NO.	LEGEND	MARKERS PER CARD 1/2" (13 MM)
WCAZMIN	A, B...Z	156

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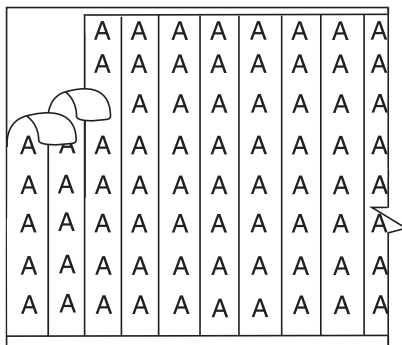
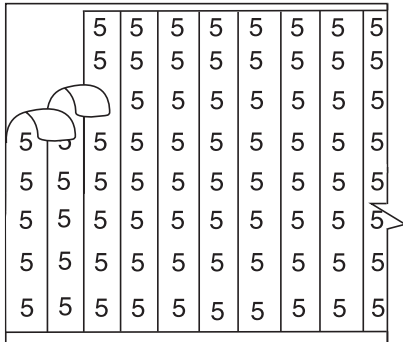
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## Wire Marker Cards — Vinyl Cloth



Cable markers are used to identify large conductors, electrical cables and tubing for hydraulic systems!

### Solid Numbers & Solid Letters — Cable Markers

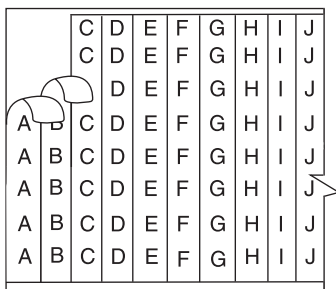


CAT. NO.	LEGEND	MARKERS PER CARD	
		3½" (89 MM)	1¾" (45 MM)*
<b><i>Solid Letters</i></b>			
WCCMAS	A	18	36
WCCMBS	B	18	36
WCCMCS	C	18	36
WCCMDS	D	18	36
WCCMES	E	18	36
WCCMFS	F	18	36
WCCMNS	N	18	36
<b><i>Solid Numbers</i></b>			
WCCM0S	0	18	36
WCCM1S, WCCM2S...WCCM9S	1, 2...9	18	36

Order multiple 25 cards

\* When 1 1/4" length cable markers are required, substitute the last **S** in the part number with a **D**. e.g., WCCM1S would become WCCM1D.

### Numbers or Letters in Sequence — Cable Markers



CAT. NO.	LEGEND	MARKERS PER CARD	
		3 1/2" (89 MM)	1 1/4" (45 MM)*
WCCM01-09S	01 thru 09	2	4
WCCM1-9S	1 thru 9	2	4
WCCM1-18S	1 thru 18	1	2
WCCM19-36S	19 thru 36	1	2
WCCM37-54S	37 thru 54	1	2
WCCM55-72S	55 thru 72	1	2
WCCM73-90S	73 thru 90	1	2
WCCM91-99S	91 thru 99	2	4
WCCMA-IS	A thru I	2	4
WCCMJ-RS	J thru R	2	4
WCCMS-ZS	S thru Z	2	4

Order multiple 25 cards

\* When 1 1/4" length cable markers are required, substitute the last **S** in the part number with a **D**. e.g., WCCM1S would become WCCM1D.



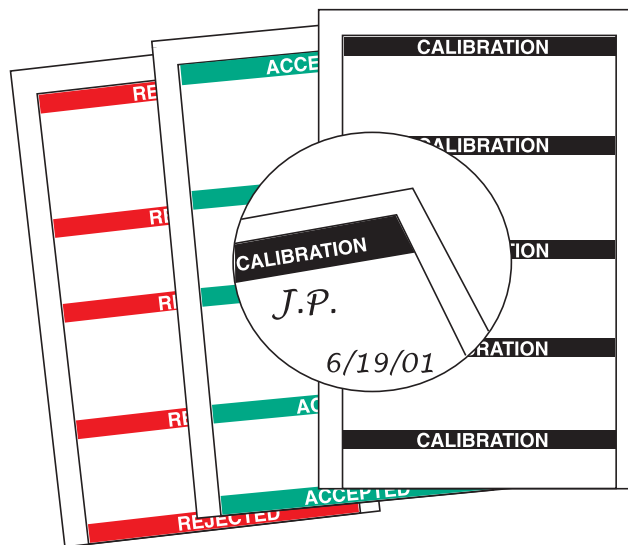
# EZCODE®

## Wire Marker Cards — Vinyl Cloth

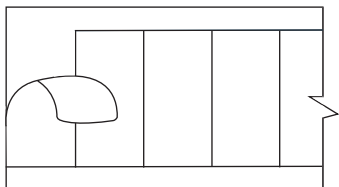
### Maintenance and Production Label Cards

CAT. NO.	WORDING	COLORS WHITE BACKGROUND	LABELS PER CARD	LABEL SIZE W x L
WCMP5	Accepted	Green	14	1½" x ¾"
WCMP1	Calibrated	Black	14	1½" x ¾"
WCMP26	Calibration	Green	14	1½" x ¾"
WCMP2	Certification	Black	14	1½" x ¾"
WCMP18	Due For Inspection	Orange	14	1½" x ¾"
WCMP4	Rejected	Red	14	1½" x ¾"
WCMP25	Tested	Green	14	1½" x ¾"
WCMP75	Calibration	Green	9	2¾" x 1"

Order multiple 25 cards



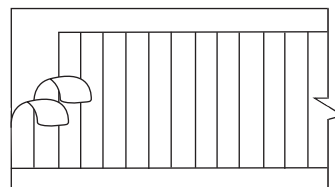
### Blank Write-On Markers



CAT. NO.	MARKER SIZE	MARKERS PER CARD
WCBW14X34D	¼" x ¾"	72
WCBW14X112S	¼" x 1½"	36
WCBW1132X112S	1½" x 1½"	26
WCBW12X12D	½" x ½"	54
WCBW12X112S	½" x 1½"	18
WCBW58X112S	⅝" x 1½"	14
WCBW34X12D	¾" x ½"	36
WCBW34X214S	¾" x 2¼"	12
WCBW1X112S	1" x 1½"	9
WCBW112X112S	1½" x 1½"	6

Order multiple 25 cards

### Solid NEMA Color Markers



CAT. NO.	COLOR	MARKERS PER LEGEND	
		1½" (38 MM)	¾" (19 MM)*
WCBLKS	Black	36	72
WCBLDS	Blue — Dark	36	72
WCBLLS	Blue — Light	36	72
WCBRNS	Brown	36	72
WCGRYS	Gray	36	72
WCDGRS	Green — Dark	36	72
WCGRLS	Green — Light	36	72
WCMARS	Maroon	36	72
WCOLIS	Olive	36	72
WCORAS	Orange	36	72
WCPINS	Pink	36	72
WCPURS	Purple	36	72
WCREDS	Red	36	72
WCTANS	Tan	36	72
WCWHIS	White	36	72
WCYELS	Yellow	36	72

Order multiple 25 cards

\*When ¾" length markers are required, substitute the last **S** in the part number with a **D**, e.g., WC1S would become WC1D.

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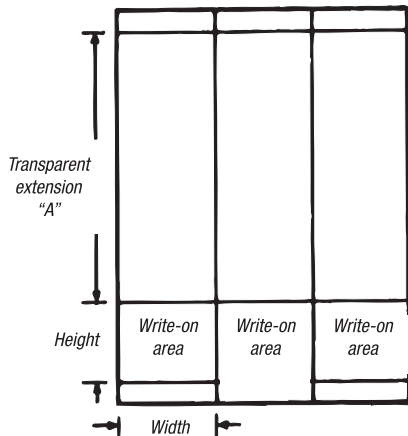
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## Wire Marker Cards — Vinyl Self-Laminating

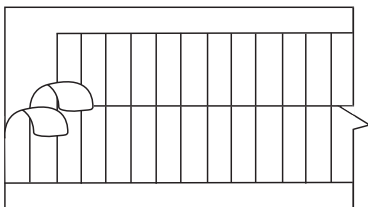


### Write-On Cable Markers



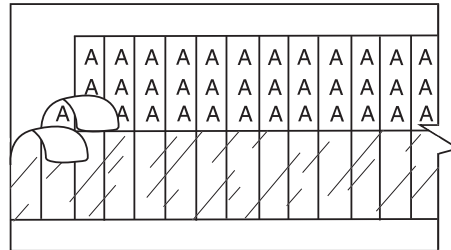
CAT. NO.	OVERALL MARKER SIZE	WIDTH HEIGHT WRITE-ON AREA	MARKERS PER CARD
WSLM33	1" x 2 1/4"	1" x 3/4"	3
WSLM35	1" x 5"	1" x 1"	3
WSLM123	1 1/2" x 3"	1 1/2" x 3/4"	2
WSLM23	2" x 3"	2" x 3/4"	2
WSLM125	1 1/2" x 5"	1 1/2" x 1"	2
WSLM25	2" x 5"	2" x 1"	2
WSLM48	2" x 8"	2" x 3 3/4"	2
WSLM95	2 1/4" x 2 1/4"	2 1/2" x 2 1/4"	2
WSLM410	2" x 10"	2" x 4 1/2"	2
WSLM415	2" x 15"	2" x 7"	2

### Blank Write-On Markers



CAT. NO.	WRITE ON AREA (W X D)	MARKERS PER CARD 1 1/2" (38 MM)
WSBW14X112S	1/4" x 1 1/2"	36
WSBW38X112S	3/8" x 1 1/2"	26
WSBW12X112S	1/2" x 1 1/2"	18
WSBW34X112S	3/4" x 1 1/2"	12
WSBW1X112S	1" x 1 1/2"	9
WSBW112X112S	1 1/2" x 1 1/2"	6

### Solid Letters

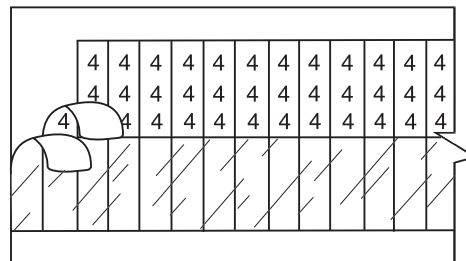


CAT. NO.	LEGEND	MARKERS PER CARD	
		1 1/2" (38 MM)	3/4" (19 MM)*
WSAS	A	36	72
WSBS...WSZS	B, C...Z	36	72

Order multiple 25 cards

\* When 1 1/4" length cable markers are required, substitute the last S in the part number with a D. e.g., WCCM1S would become WCCM1D.

### Solid Numbers



CAT. NO.	LEGEND	MARKERS PER CARD	
		1 1/2" (38 MM)	3/4" (19 MM)*
WSZEROS	0	36	72
WS1S...WS99S	1, 2...99	36	72
WS100S	100	25	50
WS101S...WS600S	101, 102...600	25	—

Order multiple 25 cards

When 3/4" length markers are required, substitute the last S in the part number with a D. e.g., WC1S would become WC1D.



# EZCODE®

## Conduit & Voltage Marker Cards

Identify electrical systems, including load centers, circuit breakers, switches or any other vital electrical equipment!

### Vinyl Conduit and Voltage Markers

- Helps prevent mistakes and trial and error searching during electrical service work
- Manufactured of rugged Self-Sticking Vinyl with high-contrast black printing on safety orange background
- OSHA compliant



STYLE A: 2¼" x 9"  
(1 marker per card) Character Height 1¼"



STYLE B: 1¼" x 4½"  
(4 markers per card) Character Height 7⁄8"



STYLE C: 2¼" x 1¼"  
(18 markers per card) Character Height 5⁄16"

STYLE A 2¼" x 9"	STYLE B 1¼" x 4½"	STYLE C 2¼" x 1¼"	LEGEND
WJT-5010	WDT-5010	WAT-5010	110 volts
WJT-5011	WDT-5011	WAT-5011	115 volts
WJT-5012	WDT-5012	WAT-5012	120 volts
WJT-5045	WDT-5045	WAT-5045	120/208 volts
WJT-5013	WDT-5013	WAT-5013	208 volts
WJT-5014	WDT-5014	WAT-5014	220 volts
WJT-5015	WDT-5015	WAT-5015	230 volts
WJT-5016	WDT-5016	WAT-5016	240 volts
WJT-5017	WDT-5017	WAT-5017	250 volts
WJT-5018	WDT-5018	WAT-5018	277 volts
WJT-5046	WDT-5046	WAT-5046	277/480 volts
WJT-5057	WDT-5057	WAT-5057	380 volts
WJT-5044	WDT-5044	WAT-5044	415 volts
WJT-5019	WDT-5019	WAT-5019	440 volts
WJT-5020	WDT-5020	WAT-5020	460 volts
WJT-5021	WDT-5021	WAT-5021	480 volts
WJT-5022	WDT-5022	WAT-5022	550 volts
WJT-5023	WDT-5023	WAT-5023	600 volts
WJT-5024	WDT-5024	WAT-5024	2200 volts
WJT-5025	WDT-5025	WAT-5025	2300 volts
WJT-5026	WDT-5026	WAT-5026	2400 volts
WJT-5027	WDT-5027	WAT-5027	4160 volts
WJT-5028	WDT-5028	WAT-5028	4800 volts
WJT-5058	WDT-5058	WAT-5058	5000 volts
WJT-5029	WDT-5029	WAT-5029	6900 volts

Order multiple 25 cards

STYLE A 2¼" x 9"	STYLE B 1¼" x 4½"	STYLE C 2¼" x 1¼"	LEGEND
WJT-5030	WDT-5030	WAT-5030	7200 volts
WJT-5059	WDT-5059	WAT-5059	12,000 volts
WJT-5060	WDT-5060	WAT-5060	13,000 volts
WJT-5047	WDT-5047	WAT-5047	13,200 volts
WJT-5031	WDT-5031	WAT-5031	13,800 volts
WJT-5032	WDT-5032	WAT-5032	AC
WJT-5043	WDT-5043	WAT-5043	Air Conditioning
WJT-5052	WDT-5052	WAT-5052	Circuit Breaker
WJT-5051	WDT-5051	WAT-5051	Circuit #___
WJT-5038	WDT-5038	WAT-5038	DC
WJT-5050	WDT-5050	WAT-5050	Electric Out of Service
WJT-5033	WDT-5033	WAT-5033	Emergency Service
WJT-5039	WDT-5039	WAT-5039	Exit Lights
WJT-5040	WDT-5040	WAT-5040	Fire Alarm
WJT-5053	WDT-5053	WAT-5053	Fuse Box
WJT-5041	WDT-5041	WAT-5041	Heating Circuit
WJT-5037	WDT-5037	WAT-5037	Lights
WJT-5042	WDT-5042	WAT-5042	Light & Power
WJT-5048	WDT-5048	WAT-5048	On/Off
WJT-5036	WDT-5036	WAT-5036	Power
WJT-5034	WDT-5034	WAT-5034	Single Phase
WJT-5055	WDT-5055	WAT-5055	Spare
WJT-5056	WDT-5056	WAT-5056	Telephone
WJT-5035	WDT-5035	WAT-5035	Three Phase
WJT-5054	WDT-5054	WAT-5054	___ volts

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Easy-to-read and available in a variety of configurations!

### Vinyl Cloth Industrial Markers

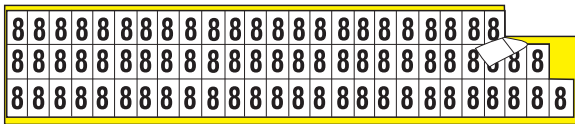
- High-contrast self-sticking markers make numbering and coding jobs quick and easy
- Select character heights ranging from  $\frac{5}{16}$ " to  $\frac{3}{4}$ "



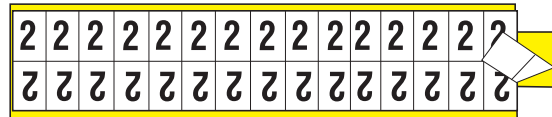
Series-200  
10 markers per card  
Marker Size:  $\frac{1}{8}$ " x  $2\frac{1}{4}$ "  
Character Height: 2"



Series-100  
10 markers per card  
Marker Size:  $\frac{1}{8}$ " x  $1\frac{1}{2}$ "  
Character Height: 1"



Series-003  
78 markers per card  
Marker Size:  $\frac{3}{8}$ " x  $\frac{1}{2}$ "  
Character Height:  $\frac{5}{16}$ "



Series-063  
32 markers per card  
Marker Size:  $\frac{5}{16}$ " x  $\frac{3}{4}$ "  
Character Height:  $\frac{5}{16}$ "

DESCRIPTION	LEGEND	CAT. NO. SERIES 003	CAT. NO. SERIES 063	CAT. NO. SERIES 100	CAT. NO. SERIES 200
LETTERS	A thru Z	WCNL003A...WCNL003Z	WCNL063A...WCNL063Z	WCNL100A...WCNL100Z	WCNL200A...WCNL200Z
NUMBERS	0	WCNL003ZERO	WCNL063ZERO	WCNL100ZERO	WCNL200ZERO
NUMBERS	1 thru 9	WCNL0031...WCNL0039	WCNL0631...WCNL0639	WCNL1001...WCNL1009	WCNL2001...WCNL2009
LETTERS IN SEQUENCE	A thru Z	WCNL003AZ	WCNL063AZ	N/A	N/A
LETTERS IN SEQUENCE	A thru J	N/A	N/A	WCNL100AJ	WCNL200AJ
LETTERS IN SEQUENCE	K thru T	N/A	N/A	WCNL100KT	WCNL200KT
LETTERS IN SEQUENCE	U thru z	N/A	N/A	WCNL100UZ	WCNL200UZ
NUMBERS IN SEQUENCE	0 thru 9	WCNL00309	WCNL06309	WCNL10009	WCNL20009

Order multiple 5 cards

### Reflective Industrial Markers

CAT. NO.	SIZE	CHARACTER HEIGHT	MARKER SIZE
WRSUM*	Small	1 $\frac{1}{2}$ "	1 $\frac{3}{8}$ " x 1 $\frac{1}{8}$ "
WRUM*	Standard	2 $\frac{1}{2}$ "	1 $\frac{3}{4}$ " x 2 $\frac{1}{8}$ "
WRLUM*	Large	3 $\frac{3}{4}$ "	2 $\frac{1}{2}$ " x 4 $\frac{5}{16}$ "

\* Add Letter (A–Z) or Number (0–9) desired in place of asterisk to complete CAT. NO.  
Example WRSUM1, WRSUM2, WRSUMA, etc.

Order multiple 25 cards





# EZCODE®

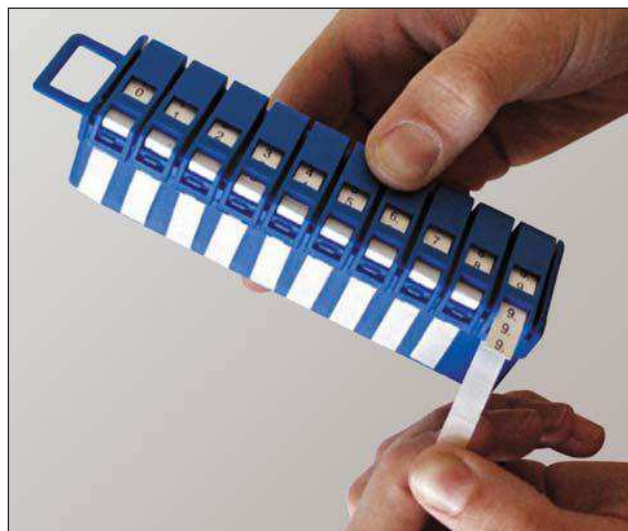
## Wire Marker Dispenser

Make identification clean and fast...just pull tape out, tear and wrap!

### Wire Marker Dispenser

- Compact size fits in your pocket or hangs from work belt
- Unique design enables easy access to all legends during use or when refilling
- Lifetime guarantee on T&B pack dispenser

CAT. NO.	DESCRIPTION
WDFPR-0-9	Loaded Dispenser with Legends 0 thru 9
WDFPR-NEMA	Loaded Dispenser with 10 NEMA colors
WDFPR	Empty Dispenser



### Refills — Polyester Tape

CAT. NO.	LEGEND	LABEL COLOR	ROLLS PER LEGEND
WDFPR-0	0	WHITE	10
WDFPR-1...WDFPR-9	1, 2...9	WHITE	10
WDFPR-0-9	0...9	WHITE	1
WDFPR-10-19	10...19	WHITE	1
WDFPR-A...WDFPR-Z	A, B...Z	WHITE	10
WDFPR-L1	L1	WHITE	10
WDFPR-L2	L2	WHITE	10
WDFPR-L3	L3	WHITE	10
WDFPR-T1	T1	WHITE	10

CAT. NO.	LEGEND	LABEL COLOR	ROLLS PER LEGEND
WDFPR-T2	T2	WHITE	10
WDFPR-T3	T3	WHITE	10
WDFPR-MIN	—	WHITE	10
WDFPR-PLS	+	WHITE	10
WDFPR-YEL	BLANK	YELLOW	10
WDFPR-WHT	BLANK	WHITE	10
WDFPR-BLK	BLANK	BLACK	10
WDFPR-BRN	BLANK	BROWN	10
WDFPR-BLU	BLANK	BLUE	10
WDFPR-GRN	BLANK	GREEN	10
WDFPR-RED	BLANK	RED	10

Thomas & Betts

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Tel: 888.862.3289

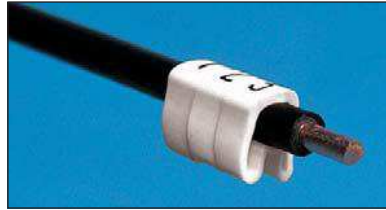
## Vinyl Sleeve & Clip-On Markers



Permanently identify wires, cables, leads and more!

### Sleeve Markers

- Facilitates the installation, repair and servicing of equipment during production or maintenance
- Available in a variety of sizes and materials to meet all your needs
- Resistant to most chemicals, oils, solvents and fungus
- Performs well in low and high temperatures



CAT. NO.	RECOMMENDED WIRE DIAMETER	AWG	STD. PKG. QTY.
SMS118*	.051-.118	22-16	10 strips of 25 markers/bag
SMS196*	.098-.196	16-10	10 strips of 25 markers/bag
SMS394*	.157-.394	10-4	10 strips of 25 markers/bag
SMS630*	.315-.630	6-00	20/Bag Loose

\*To Order: Add letter, number, or symbol desired in place of asterisk to complete each Cat. No.  
 Symbols: SLA = /; PLS = +; GRD = -; MIN = -; Blank = No Legend  
 Other colors are available upon request. Contact tech service for availability.

### Sleeve Markers — 1,000 Continuous Markers on a Reel



CAT. NO.	RECOMMENDED WIRE DIAMETER	AWG	STD. PKG. QTY.
SMR118*	.051-.118	22-16	1
SMR196*	.098-.196	16-10	1
SMD-894*	.157-.394	10-4	1

\*To Order: Add letter, number, or symbol desired in place of asterisk to complete each Cat. No.  
 Symbols: SLA = /; PLS = +; GRD = -; MIN = -; Blank = No Legend

### Clip-On Markers



CAT. NO.	RECOMMENDED WIRE DIAMETER	AWG	STD. PKG. QTY.
SMC118*	.094-.118	18-16	200/bag attached
SMC157*	.118-.157	16-14	200/bag attached
SMC197*	.157-.197	12-10	200/bag attached
SMC244*	.197-.244	8-6	200/bag attached

\*To Order: Add letter, number, or symbol desired in place of asterisk to complete each Cat. No.

### Magazine Dispenser Feeds Left or Right



CAT. NO.	RECOMMENDED WIRE DIAMETER	AWG	STD. PKG. QTY.
SMPP196A	.098-.196	16-10	20 Strips of 25 Markers/dispenser
SMPT196A	.098-.196	16-10	20 Strips of 25 Markers with tool/dispenser

Legend is 0-9 for magazine dispenser

### Sleeve Marker Application Tool



CAT. NO.	RECOMMENDED WIRE DIAMETER	AWG	STD. PKG. QTY.
SMAT118	.051-.118	22-16	5/bag
SMAT196	.098-.196	16-10	5/bag



# EZCODE®

## Stainless Steel I.D. Tag Products

Identify your cable bundles with permanent, Type 304 stainless steel imprinted tags applied with stainless steel cable ties.

EZCODE®



### I.D. Tagging System

- After imprinting the tags, merely slip a tie through slots in the tag and fasten with the installation tool
- Works with ¼" wide ties

CAT. NO.	WIDTH		LENGTH		WEIGHT	
	IN.	MM	IN.	MM	LBS.	KG
SSID100	.75	19.05	2.0	51	0.5	.22
SSID101	1.50	38.10	2.5	63	1.2	.55
SSID102	.75	19.05	3.5	89	0.8	.36

304 Stainless Steel

Packaging Quantity: 100/box

.015" (.254mm) Thickness

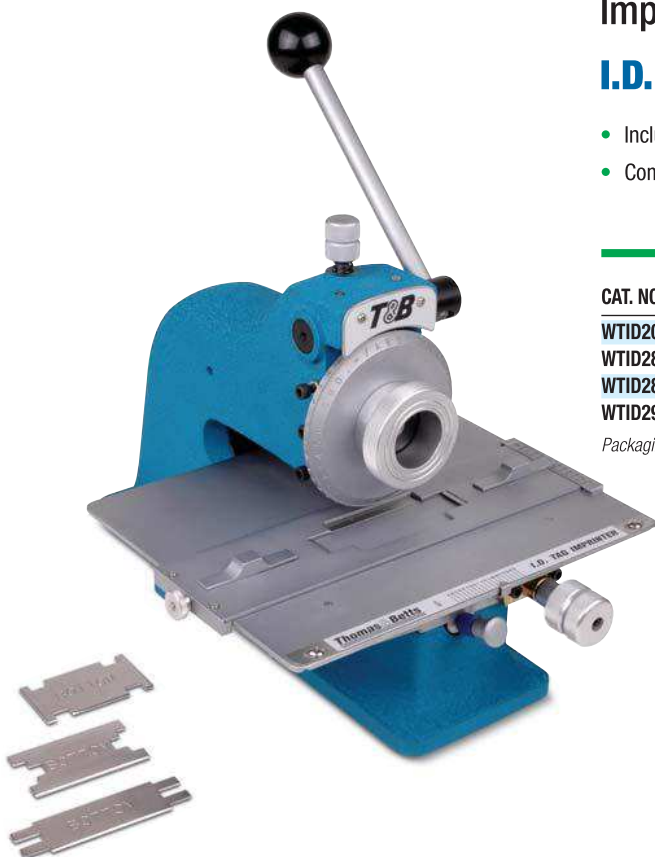
NOTE: Customized pre-embossed tags are available. Please consult Customer Service for details.

Add suffix (316) for 316 Stainless Steel.

Imprints Thomas & Betts stainless steel I.D. tags.

### I.D. Tag Imprinter

- Includes special tag holder that provides quick, accurate positioning of tag
- Comes with a ⅜" character imprinting wheel



CAT. NO.	DESCRIPTION	WEIGHT	
		LBS.	KG
WTID200	I.D. Tag Imprinter	29.5	13.41
WTID281	⅜" Character Imprinting Wheel	—	—
WTID283	⅝" Character Imprinting Wheel	—	—
WTID290	¾" Character Imprinting Wheel	—	—

Packaging Quantity: 1/box

**Thomas & Betts**

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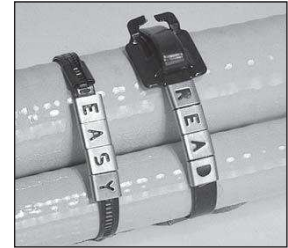
## Stainless Steel I.D. Tag Products



A complete range of individual letters, numbers and symbols!

### Thomas & Betts Stainless Steel I.D. Tag

- Slip them over carriers or strips (shown **below**) and attach to your cable or hose with a variety of Thomas & Betts Stainless Steel Cable Ties



EZCODE®

CAT. NO.	DESCRIPTION	LENGTH	WIDTH	STD. PKG.	WT. PER 100
ER010	A	.445"	.375"	100	.31
ER011	B	.445"	.375"	100	.31
ER012	C	.445"	.375"	100	.31
ER013	D	.445"	.375"	100	.31
ER014	E	.445"	.375"	100	.31
ER015	F	.445"	.375"	100	.31
ER016	G	.445"	.375"	100	.31
ER017	H	.445"	.375"	100	.31
ER018	I	.445"	.375"	100	.31
ER019	J	.445"	.375"	100	.31
ER020	K	.445"	.375"	100	.31
ER021	L	.445"	.375"	100	.31
ER022	M	.445"	.375"	100	.31
ER023	N	.445"	.375"	100	.31
ER024	O	.445"	.375"	100	.31
ER025	P	.445"	.375"	100	.31
ER026	Q	.445"	.375"	100	.31
ER027	R	.445"	.375"	100	.31
ER028	S	.445"	.375"	100	.31
ER029	T	.445"	.375"	100	.31
ER030	U	.445"	.375"	100	.31

CAT. NO.	DESCRIPTION	LENGTH	WIDTH	STD. PKG.	WT. PER 100
ER031	V	.445"	.375"	100	.31
ER032	W	.445"	.375"	100	.31
ER033	Y	.445"	.375"	100	.31
ER034	Z	.445"	.375"	100	.31
ER018	1	.445"	.375"	100	.31
ER037	2	.445"	.375"	100	.31
ER038	3	.445"	.375"	100	.31
ER039	4	.445"	.375"	100	.31
ER040	5	.445"	.375"	100	.31
ER041	6	.445"	.375"	100	.31
ER021	7	.445"	.375"	100	.31
ER042	8	.445"	.375"	100	.31
ER041	9	.445"	.375"	100	.31
ER024	0	.445"	.375"	100	.31
ER035	Minus/Hyphen	.445"	.375"	100	.31
ER036	Blank	.445"	.375"	100	.31
ER046	Plus +	.445"	.375"	100	.31
ER047	Earth	.445"	.375"	100	.31
ER048	Sine	.445"	.375"	100	.31
ER049	Slash /	.445"	.375"	100	.31

Character size .218"  
Material .025 316 stainless steel

Convenient and easy identification!

### Thomas & Betts Stainless Steel I.D. Tag Carriers/Strips

- Select from carriers and strips
- Tag kit contains 50 of each letter, number, symbol, carrier and strip in a handy carrying case



CAT. NO.	DESCRIPTION	LENGTH	WIDTH	STD. PKG.	WT. PER 100
ER043	6 Character Carrier	3.64"	.38"	100	.73
ER044	10 Character Carrier	5.14"	.38"	100	1.25
ER045	16 Character Carrier	7.39"	.38"	100	1.47
ER050	Short Strip	4.25"	.38"	100	.98

CAT. NO.	DESCRIPTION	LENGTH	WIDTH	STD. PKG.	WT. PER 100
ER051	Medium Strip	5.75"	.38"	100	1.33
ER052	Long Strip	8.0"	.38"	100	1.85
ER060	I.D. Tag Kit	—	—	1	—

I.D. Tag Kit contains 50 of each letter, number, symbol, carrier, and strip in a handy carrying case.

# EZCODE®

## Color-Coded I.D. Tapes

Save time and money over painting!

### Color-Coded Vinyl I.D. Tape

- Effectively warns or identifies equipment, traffic and housekeeping items
- Choose from different widths
- Many colors available



1" WIDE CAT. NO.	2" WIDE CAT. NO.	3" WIDE CAT. NO.	4" WIDE CAT. NO.	COLOR
AA-1121	BA-1121	CA-1121	NA-1121	Silver
AA-1122	BA-1122	CA-1122	NA-1122	Black
AA-1123	BA-1123	CA-1123	NA-1123	Blue
AA-1124	BA-1124	CA-1124	NA-1124	Brown
AA-1125	BA-1125	CA-1125	NA-1125	Green
AA-1126	BA-1126	CA-1126	NA-1126	Orange
AA-1127	BA-1127	CA-1127	NA-1127	Purple
AA-1128	BA-1128	CA-1128	NA-1128	Red
AA-1129	BA-1129	CA-1129	NA-1129	White
AA-1130	BA-1130	CA-1130	NA-1130	Yellow
AA-1131	BA-1131	CA-1131	NA-1131	Clear

60 yards per roll

### Reflective Roll Tape



2" WIDE CAT. NO.	3" WIDE CAT. NO.	4" WIDE CAT. NO.	COLOR
AZ-3108	BZ-3108	CZ-3108	Black & Yellow Stripe
AZ-3110	BZ-3110	CZ-3110	Red & White Stripe

5 yards per roll

### Self-Sticking Vinyl Cloth Tape



2" WIDE CAT. NO.	3" WIDE CAT. NO.	4" WIDE CAT. NO.	COLOR
AZ-1100	BZ-1100	CZ-1100	Black & Yellow Stripe
AZ-1102	BZ-1102	CZ-1102	Red & White Stripe
AZ-1303	BZ-1303	CZ-1303	Magenta & Yellow Stripe & Radiation Symbol

30 yards per roll

### Laminated Vinyl Tape



2" WIDE CAT. NO.	3" WIDE CAT. NO.	4" WIDE CAT. NO.	COLOR
AZ-2104	BZ-2104	CZ-2104	Black & Yellow Stripe
AZ-2106	BZ-2106	CZ-2106	Red & White Stripe

18 yards per roll

### 2 Sided Foam Mounting Tape

CAT. NO.	DESCRIPTION
NA-0365	2-Sided Foam Mounting Tape

9 yards per roll

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Tel: 888.862.3289

## Barricade & Utility Warning Tapes



Mark off hazardous or off-limit areas quickly and easily!

### Protect-A-Line™ Barricade and Burial Tapes

EZCODE®



#### Barricade Tape

- Inexpensive and easy to handle
- Convenient and reusable
- For indoor and outdoor use



#### Buried Utility Tape

- Protect against costly dig-ins
- Place 1 to 1½ feet below the ground surface directly above the pipeline or cable below
- Bright, fade-resistant colors warn equipment operators that a vital pipeline or cable is buried below, before damage occurs
- Black text on a bright background



#### Foil Backed Detectable Buried Utility Tape

- Features a metallic backing designed to be detectable under normal earthen surfaces up to 18" with common metal detectors
- Simple and fast method for relocating lines, cables and conduit for future renovation
- Black text on a bright background

CAT. NO.	LEGEND	COLOR
<b>Surveyors Tape 1½" x 1,000'</b>		
NA-0200	No Legend, No Printing	Yellow
NA-0201	No Legend, No Printing	Red
NA-0202	No Legend, No Printing	Green
NA-0203	No Legend, No Printing	Blue
NA-0204	No Legend, No Printing	Orange
<b>Barricade Tape 3" x 1,000'</b>		
NA-0250	Caution	Yellow
NA-0253	Caution Construction Area	Yellow
NA-0254	Caution Do Not Enter	Yellow
NA-0256	Caution Hard Hat Area	Yellow
NA-0257	Caution High Voltage	Yellow
NA-0258	Caution Men Working	Yellow
NA-0261	Caution Open Trench	Yellow
NA-0267	Danger, on Stripes	Red & White
<b>Buried Utility Tape 3" x 1,000'</b>		
NA-0600	Electric Line	Red
NA-0608	Electric Line	Yellow
NA-0601	Water Line	Blue
NA-0602	Telephone Line	Orange
NA-0603	Gas Line	Yellow
NA-0605	Sewer Line	Green
NA-0606	High Voltage Line	Red
NA-0609	Fiber Optic Cable	Orange

**NOTE:** All barricade and utility tapes are 4 MIL polyethylene and are not self sticking. All legends are printed in black. Standard package is 1 roll.

CAT. NO.	LEGEND	COLOR
<b>Buried Utility Tape 6" x 1,000'</b>		
NA-0700	Electric Line	Red
NA-0708	Electric Line	Yellow
NA-0701	Water Line	Blue
NA-0702	Telephone Line	Orange
NA-0703	Gas Line	Yellow
NA-0706	High Voltage Line	Red
NA-0709	Fiber Optic Cable	Orange
<b>Foil-Backed Detectable Buried Utility Tape 3" x 1,000'</b>		
NAF-0600	Electric Line	Red
NAF-0608	Electric Line	Yellow
NAF-0601	Water Line	Blue
NAF-0602	Telephone Line	Orange
NAF-0603	Gas Line	Yellow
NAF-0604	Oil Line	Yellow
NAF-0605	Sewer Line	Green
NAF-0606	High Voltage Line	Red
NAF-0607	Cable TV Line	Orange
NAF-0609	Fiber Optic Cable	Orange
<b>Foil-Backed Detectable Buried Utility Tape 6" x 1,000'</b>		
NAF-0700	Electric Line	Red
NAF-0708	Electric Line	Yellow
NAF-0701	Water Line	Blue
NAF-0702	Telephone Line	Orange
NAF-0703	Gas Line	Yellow
NAF-0704	Oil Line	Yellow
NAF-0705	Sewer Line	Green
NAF-0706	High Voltage Line	Red
NAF-0707	Cable TV Line	Orange
NAF-0709	Fiber Optic Cable	Orange



## Accident Prevention Tags

### Tags

#### Durable Lockout Tags

OSHA requirements for Lockout Tags are very specific, and E-Z-Code® Lockout Tags have been designed to comply with every performance standard. Tags are available in two sturdy materials: reusable dura-tag and economical vinyl. All tags have a reinforcing brass grommet with  $\frac{3}{8}$ " diameter to accept most padlocks. All tag surfaces allow employees to easily personalize tags with their name, department and estimated completion information as required by regulations.

#### Reusable Dura-Tag

Dura-Tags are encapsulated in matte polyester laminate. Tags withstand 80-lb. pullout force. These tags are designed for harsh plant environments and are chemically resistant. Supplied with heavy-duty  $\frac{3}{8}$ " ID brass grommet and nylon ties.

#### Economy Polyester

Rigid polyester surface is easy to write on and stays legible longer. Wipes clean easily, ready to use again and again. Exceeds OSHA 50-lb pullout requirement. Supplied with  $\frac{3}{8}$ " diameter brass grommet and nylon ties.

#### Reverse Side Options



Reverse Side #1



Reverse Side #2

DESCRIPTION	SIZE	GROMMET	QTY.
Reusable Dura-Tag	5½" x 3"	$\frac{3}{8}$ " Brass	25/pkg.
Economy Polyester	5¼" x 3"	$\frac{3}{8}$ " Brass	25/pkg.



#### Reusable Dura-Tag

TG65502 — Rev. Side #1

TG65503 — Rev. Side #1

TG65504 — Rev. Side #1

TG65505 — Rev. Side #1

TG65670 — Rev. Side #2

#### Economy Polyester

TG66050 — Rev. Side #1

TG66053 — Rev. Side #1

TG66055 — Rev. Side #1

TG66057 — Rev. Side #1

TG66052 — Rev. Side #2

Order multiple 25 tags.



#### Reusable Dura-Tag

TG65506 — Rev. Side #1

TG65515 — Rev. Side #1

TG65520 — Rev. Side #1

TG65526 — Rev. Side #1

TG65671 — Rev. Side #2

#### Economy Polyester

TG66059 — Rev. Side #1

TG66061 — Rev. Side #1

TG66063 — Rev. Side #1

TG66066 — Rev. Side #1

TG66065 — Rev. Side #2

Order multiple 25 tags.

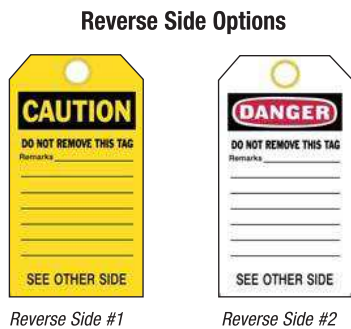
## Accident Prevention Tags



### Tags

#### Reusable Dura-Tag

Dura-Tags are encapsulated in matte polyester laminate. Tags withstand 80-lb. pullout force. These tags are designed for harsh plant environments and are chemically resistant. Supplied with heavy-duty 3/16" ID brass grommet and nylon ties.



DESCRIPTION	SIZE	GROMMET	QTY.
Reusable Dura-Tag	5 3/4" x 3"	3/16"	25/pkg.
Economy Polyester	5 3/4" x 3"	3/16"	25/pkg.
Card Stock Tags	5 3/4" x 3"	3/16"	25/pkg.

#### Economy Polyester

Rigid polyester surface is easy to write on and stays legible longer. Wipes clean easily, ready to use again and again. Exceeds OSHA 50-lb pullout requirement. Supplied with 3/16" diameter brass grommet and nylon ties.

#### Cardstock

Economical, yet durable cardstock. These disposable tags come with a 3/16" diameter brass grommet and a string fastener. Material accepts pen, pencil or marker writing.



#### Reusable Dura-Tag

TG86425 — Rev. Side 1

TG86424 — Rev. Side 1

TG86414 — Rev. Side 2

#### Economy Polyester

TG86544 — Rev. Side 1

TG86543 — Rev. Side 1

TG86533 — Rev. Side 2

#### Cardstock Tags

TG86654 — Rev. Side 1

TG86653 — Rev. Side 1

TG86643 — Rev. Side 2

Order multiple 25 tags.



#### Reusable Dura-Tag

TG86418 — Rev. Side 2

TG86442 — Same Back

TG86454 — Same Back

TG86438 — Same Back

TG86416 — Same Back

TG86417 — Same Back

#### Economy Polyester

TG86537 — Rev. Side 2

TG86556 — Same Back

TG86574 — Same Back

TG86565 — Same Back

TG86535 — Same Back

TG86536 — Same Back

#### Cardstock Tags

TG86647 — Rev. Side 2

TG86666 — Same Back

TG86684 — Same Back

TG86675 — Same Back

TG86645 — Same Back

TG86646 — Same Back

Order multiple 25 tags.



### “Mr. Ouch” NEMA Safety Labels

Fig. 1

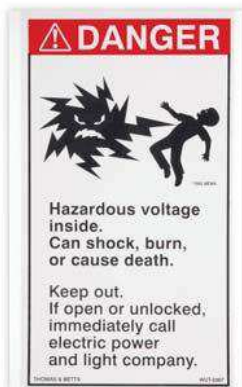


Fig. 2

- NEMA recommends use of “Mr. Ouch” labels on transformers located in public areas
- Meets NEMA and UL standards
- Made of tamper-resistant film to prevent defacing and vandalism
- Permanent pressure-sensitive adhesive makes removal virtually impossible



Fig. 3

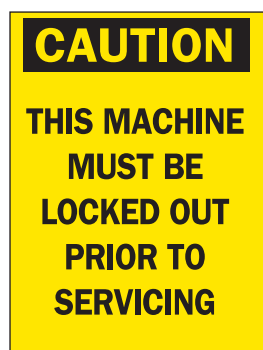


Fig. 4

CAT. NO.	LEGEND	FIG.	NEMA LABEL SIZE
WUT-0367	DANGER	1	4 1/2" x 8"
WUT-0366	WARNING	2	4 1/2" x 8"
WUT-0369	DANGER (Bilingual)	3	4 1/2" x 10 3/4"
WUT-0368	WARNING (Bilingual)	4	4 1/2" x 10 3/4"

Order multiple 5 labels.

## Magnetic Signs



CAT. NO.	SIGN SIZE
MG66002	5" x 3 1/2"
MG66003	5" x 3 1/2"

Order multiple 10 signs.

CAT. NO.	SIGN SIZE
MG66004	5" x 3 1/2"
MG66005	5" x 3 1/2"

CAT. NO.	SIGN SIZE
MG66006	7" x 5"
MG66007	7" x 5"

CAT. NO.	SIGN SIZE
MG66008	7" x 5"
MG66009	7" x 5"



### Self-Sticking Polyester Safety Labels

EZCODE®



CAT. NO.	SIGN SIZE
WJA-1100	2¼" x 9"
WQA-1100	5" x 14"



CAT. NO.	SIGN SIZE
WJA-0076	2¼" x 9"
WQA-0076	5" x 14"



CAT. NO.	SIGN SIZE
WHF-0076	2¼" x 4½"

*\*2 per Card*



CAT. NO.	SIGN SIZE
LB86871	3½" x 5"



CAT. NO.	SIGN SIZE
LB86860	3½" x 5"



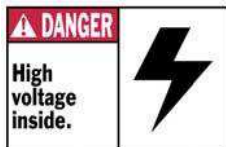
CAT. NO.	SIGN SIZE
LB86235	3½" x 5"



CAT. NO.	SIGN SIZE
LB86234	3½" x 5"



CAT. NO.	SIGN SIZE
LB86877	3½" x 5"



CAT. NO.	SIGN SIZE
LB86861	3½" x 5"



CAT. NO.	SIGN SIZE
LB86204	3½" x 5"



CAT. NO.	SIGN SIZE
LB86245	3½" x 5"



CAT. NO.	SIGN SIZE
LB86248	3½" x 5"



CAT. NO.	SIGN SIZE
LB86250	3½" x 5"



CAT. NO.	SIGN SIZE
LB94913	3½" x 10"
LB94914	5" x 7"

Order multiple 5 cards.

# EZCODE®

## Safety Signs

Avoid potential catastrophes by clearly marking hazard areas!

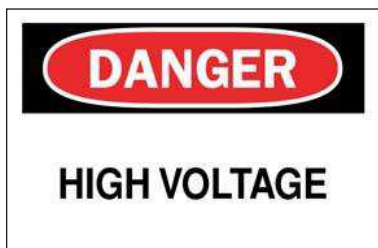
### Electrical Hazard Safety Signs

AL — Aluminum: 5- to 8-year durability

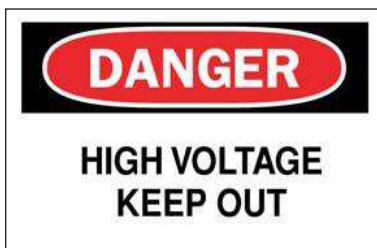
PL — Plastic: 1- to 2-year durability

SS — Self Sticking: 5- to 8-year durability

E-Z-Code®



CAT NO.	MAT.	SIZE
BP43109	AL	7 x 10
BP43110	AL	10 x 14
BP25532	PL	7 x 10
BP25533	PL	10 x 14
BP84876	SS	7 x 10
BP84877	SS	10 x 14



CAT NO.	MAT.	SIZE
BP40667	AL	7 x 10
BP40668	AL	10 x 14
BP22103	PL	7 x 10
BP22104	PL	10 x 14
BP84083	SS	7 x 10
BP84084	SS	10 x 14



CAT NO.	MAT.	SIZE
BP40997	AL	7 x 10
BP40998	AL	10 x 14
BP22433	PL	7 x 10
BP22434	PL	10 x 14
BP84571	SS	7 x 10
BP84572	SS	10 x 14



CAT NO.	MAT.	SIZE
BP43477	AL	10 x 14
BP25900	PL	10 x 14



CAT NO.	MAT.	SIZE
BP42584	AL	7 x 10
BP42585	AL	10 x 14
BP23061	PL	7 x 10
BP23062	PL	10 x 14
BP88217	SS	7 x 10
BP88218	SS	10 x 14

NEC® compliant signs warn of arc fault danger.

### Vinyl Pressure-Sensitive Accident Prevention Signs

New 2002 National Electrical Code Requirement: 110.16 Flash Protection

The new requirement is intended to reduce the occurrence of serious injury or death due to arcing faults to workers who work on or near energized electrical equipment. The warning label should remind a qualified worker who intends to open the equipment for analysis or work that a serious hazard exists and that the worker should follow appropriate work practices and wear appropriate personal protection equipment (PPE) for the specific hazard.



CAT. NO.	LEGEND	COLOR	SIZE
LB94915	WARNING ARC FLASH AND SHOCK	Orange and black on white	7" x 10"
LB94916	WARNING ARC FLASH AND SHOCK	Orange and black on white	10" x 14"

Order by cards. 5 identical cards per standard package poly bag.

Thomas & Betts

United States  
Tel: 901.252.8000  
800.816.7809  
Fax: 901.252.1354

Technical Services  
Tel: 888.862.3289



# Custom Sign Express Order Form

This Custom Sign Order Form is for the convenience of you and your authorized Thomas & Betts Distributor. To help expedite your order, please copy the order form and use a separate form to order signs that require different legends, different sizes, different headers, or different materials.

**Fax your order to: 901-252-1321**

## Materials and Available Sizes:

*Please check appropriate box for material and size.*











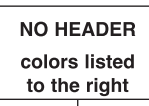
Material	Available Sizes					
<input type="checkbox"/> Aluminum	<input type="checkbox"/> 7 x 10	<input type="checkbox"/> 10 x 14				
<input type="checkbox"/> Plastic	<input type="checkbox"/> 7 x 10	<input type="checkbox"/> 10 x 14				
<input type="checkbox"/> Self-Sticking	<input type="checkbox"/> 3 x 5	<input type="checkbox"/> 5 x 7	<input type="checkbox"/> 7 x 10	<input type="checkbox"/> 9 x 12	<input type="checkbox"/> 10 x 14	

**Quantity:**

No minimum order. Orders for 50+ signs are welcome. Call for delivery and additional volume discounts.

## Header/Color:

*Please check one of the options below for Spanish or English language.*

<input type="checkbox"/> 	<input type="checkbox"/> 	<input type="checkbox"/> 	<input type="checkbox"/> 	<input type="checkbox"/> 
<input type="checkbox"/> 	<input type="checkbox"/> 	<input type="checkbox"/> 	<input type="checkbox"/> 	<input type="checkbox"/> 
<input type="checkbox"/> Red & Black Header on White	<input type="checkbox"/> Blue Header on White	<input type="checkbox"/> Black Header on Yellow	<input type="checkbox"/> Green Header on White	<input type="checkbox"/> Black Header on Orange
<input type="checkbox"/> 	<input type="checkbox"/> Black on White	<input type="checkbox"/> Black on Yellow	<input type="checkbox"/> Red on White	<input type="checkbox"/> Magenta on Yellow
	<input type="checkbox"/> Black on Orange	<input type="checkbox"/> Green on White	<input type="checkbox"/> Blue on White	

## Legend:

*Please print your message clearly in the box below*

☐ Lay out best way ☐ Lay out exactly as shown below

## Pictograms:

A pictogram can be included on your custom sign, in black, at no additional charge.

*Please indicate pictogram number below.*

					
1 Ear Protection	2 Eye Protection	3 Head Protection	4 Slip	5 Respirator	6 Confined Space
					
7 Lockout/Tagout	8 Pinch	9 Cut/Sever	10 Electrical	11 Electrical	12 Flammable
					
13 Eye Wash Station	14 Stop	15 No Parking	16 Keep Out	17 No Smoking	18 Fire Extinguisher

## Distributor Billing Location:

Distributor Name: \_\_\_\_\_

Distributor Address: \_\_\_\_\_

P.O. Number: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Phone Number: \_\_\_\_\_

Fax Number: \_\_\_\_\_

## Shipping Location:

Your Name/Title: \_\_\_\_\_

Company Name: \_\_\_\_\_

Attn: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Phone/Fax Number: \_\_\_\_\_

P.O. Number: \_\_\_\_\_

E-Z-Code

# EZCODE®

## Tool Services

### Count on Thomas & Betts for the Right Tools for the Right Job!

Since the 1930s, Thomas & Betts has been supplying tools, dies and connectors. Today, with more than 75 years experience in tools, dies and connectors, Thomas & Betts still sets the standard for innovation, quality and performance for application tooling. Rely on Thomas & Betts tools for labor-saving features, user comfort and convenience, long service life and extraordinary value.

#### Application Tooling Support — At Your Service

For more than 40 years, Thomas & Betts' highly trained, experienced and dedicated Tool Services staff has been supporting customers in every aspect of their tooling needs. With 100-plus years of combined experience, T&B application tool specialists are ready to assist you with:

- Tool recommendations based on your application and workload
- Demonstrations
- Rental and leasing programs
- On-site installation
- On-site training
- Technical support
- Calibration and certification (factory or on-site)
- Repair (both warranty and non-warranty)
- Loaners for temporary use during repairs
- Supplying components and technical documentation for customer-performed repairs

#### Tool Repair

Thomas & Betts Tool Services repairs all Thomas & Betts tools, from simple hand tools to hydraulic pumps and crimping heads. Tool Services performs all warranty repairs and can supply you with a temporary loaner tool when necessary. Tool Services can also perform non-warranty repairs, or, if you wish to repair your own tools, contact Tool Services to obtain any needed components, technical documentation and support.

#### Tool Rental Program

For short-term installation projects, sometimes it makes more sense to rent than buy power tools. Thomas & Betts Tool Services understands this and has created a Tool Rental Program, geared specifically for contractors and projects, to meet the need. Renting T&B tools is easy. A rental agreement is available on our web site, and you can pay the rental fee by credit card. Call Tool Services at **1-800-284-TOOL (8665)** for more details, including a list of Thomas & Betts tools available for rental.



#### Tool Leasing Program

For longer term use, many OEMs find that leasing high-end tools may be more financially attractive than purchasing. Call Tool Services at **1-800-284-TOOL (8665)** for more information and a list of Thomas & Betts tools available for lease.

#### Thomas & Betts Tool Warranty

You can choose Thomas & Betts tools with confidence, because we stand behind them with our warranty. The chart below shows the standard length of warranty for different types of tools. See below for additional warranty details.

##### 1 Year

- Cable Tie Installation Tools
- Printers
- Cable Cutters & Strippers
- Dies

##### 2 Years

- Mechanical Hand Tools with Shure-Stake® Mechanism
- Pneumatic Tools
- Hydraulic Pumps
- Battery-Operated Tools

##### 5 Years

- Mechanical Hand Tools without Shure-Stake® Mechanism
- Hydraulic Tools (self-contained and remote heads)

**Call Toll-Free 1-800-284-TOOL (8665)**

**For more information about Thomas & Betts Tool Services:**

**E-Mail us at [toolservice@tnb.com](mailto:toolservice@tnb.com)**

#### Limited Warranty for Tools

Thomas & Betts sells tools with the understanding that the user will perform all necessary tests to determine the suitability of each tool for the user's intended application. Thomas & Betts warrants that its tools will be free from defects in materials and workmanship for the period of time specified above. Upon prompt notification of any warranted defect, Thomas & Betts will, at its option, repair or replace the defective product or refund the purchase price. Proof of purchase is required. Misuse or unauthorized modification of the product voids all warranties.

#### Limitations and Exclusions

The warranty above is the sole warranty concerning this product, and is in lieu of all other warranties express or implied, including but not limited to any implied warranty of merchantability or fitness for a particular purpose, which are specifically disclaimed. Liability for breach of the above warranty is limited to cost of repair or replacement of the product, and under no circumstances will Thomas & Betts be liable for any indirect, special, incidental or consequential damages.

Direct all warranty inquiries to: Thomas & Betts Tool Services **1-800-284-TOOL (8665)**.

**Thomas & Betts**

[www.tnb.com](http://www.tnb.com)

#### United States

Tel: 901.252.8000

800.816.7809

Fax: 901.252.1354

#### Technical Services

Tel: 888.862.3289



# Highland Park Middle School

## Electrical Equipment Submittals

Date Submitted: 03/04/2020

IES Submittal # 05

(Sect 26 24 16) Panelboards

(Sect 26 28 00) Circuit Protective Devices  
Breakers  
Disconnect  
Fuses

IES Commercial  
16135 SW 74th Ave  
Tigard, OR 97224

Ph: (503) 648-1900

Project Manager - xxx





## Transmittal of Submittal

**Job:** Highland Park Middle School Add  
**Date:** 2/13/2020  
**Submittal Title:** Distribution Equipment Submittals  
**Customer:** IES Commercial

---

We are transmitting the following Submittal(s) for your review.

**Breakers**

**Safety Switches**

**Fuses**

**Panelboards**



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## TABLE OF CONTENTS

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<b><u>CONTENT:</u></b>	<b><u>CAT. #</u></b>	<b><u>MANUFACTURER</u></b>
<b><u>Breakers</u></b>		
MDP	JXD63B400	Siemens
4SDP	FXD63B225	Siemens
<b><u>Safety Switches</u></b>		
CHILLER DISCONNECT	HF365RA	Siemens
<b><u>Fuses</u></b>		
CHILLER DISCONNECT	FRS-R-400	Bussmann
<b><u>Panelboards</u></b>		
PANEL 4CG	P1E42ML250CTST	Siemens

## ***MOLDED CASE CIRCUIT BREAKERS***

Molded Case Circuit Breakers

# JD-Frame Sentron™ Series Circuit Breaker

2 & 3-Pole; 200-400 Amperes



## Ratings & Markings (UL 489 AIR Interrupting Ratings)

Breaker Type	RMS Symmetrical Amperes (kA)						Frame Only - Interchangeable Trip		
	Volts AC (50/60Hz)			Volts DC					
	240	480	600	250	500		Breaker Type	Frame (2-Pole)	Frame (3-Pole)
JXD2-A	65	—	—	30 (2-P)	—	—	—	—	—
JXD6-A, JD6-A	65	35	25	30 (2-P)	25 (3-P)	JD6	JD62F400	JD63F400	
HJD6-A, HJXD6-A	100	65	35	30 (2-P)	35 (3-P)	HJD6	HJD62F400	HJD63F400	
HHJD6, HHJXD6	200	100	50	—	—	HHJD6	HHJD62F400	HHJD63F400	
CJD6-A	200	150	100	30 (2-P)	50 (3-P)	—	—	—	—

## Dimensions

Breaker Type	Length	Width	Depth	D-1 (to handle)
JXD2-A, JXD6-A, JD6-A, HJD6-A, HJXD6-A, HHJD6, HJD6, HJXD6, HHJXD6, JXD6-ETI, SJD6, SHJD6	11 in.	7.5 in.	4 in.	5.44 in.
CJD6, CJD6-ETI, SCJD6	17.86 in.	7.5 in.	4 in.	5.44 in.

## Frames

Trip Amperage	Poles	Breaker Type - Non-Interchangeable					Breaker-Type Interchangeable			Trip Unit Only
		JXD2-A	JXD6-A	HJXD6	HHJXD6	CJD6-A	JD6-A	HJD6-A	HHJD6	
200	2	JXD22B200	JXD62B200	HJXD62B200	—	—	JD62B200	HJD62B200	HHJD62B200	JD62T200
225	2	JXD22B225	JXD62B225	HJXD62B225	—	—	JD62B225	HJD62B225	HHJD62B225	JD62T225
250	2	JXD22B250	JXD62B250	HJXD62B250	—	—	JD62B250	HJD62B250	HHJD62B250	JD62T250
300	2	JXD22B300	JXD62B300	HJXD62B300	—	—	JD62B300	HJD62B300	HHJD62B300	JD62T300
350	2	JXD22B350	JXD62B350	HJXD62B350	—	—	JD62B350	HJD62B350	HHJD62B350	JD62T350
400	2	JXD22B400	JXD62B400	HJXD62B400	—	—	JD62B400	HJD62B400	HHJD62B400	JD62T400
200	3	JXD23B200	JXD63B200	HJXD63B200	HHJXD62B200	CJD63B200	JD63B200	HJD63B200	HHJD62B200	JD63T200
225	3	JXD23B225	JXD63B225	HJXD63B225	HHJXD62B225	CJD63B225	JD63B225	HJD63B225	HHJD62B225	JD63T225
250	3	JXD23B250	JXD63B250	HJXD63B250	HHJXD62B250	CJD63B250	JD63B250	HJD63B250	HHJD62B250	JD63T250
300	3	JXD23B300	JXD63B300	HJXD63B300	HHJXD62B300	CJD63B300	JD63B300	HJD63B300	HHJD62B300	JD63T300
350	3	JXD23B350	JXD63B350	HJXD63B350	HHJXD62B350	CJD63B350	JD63B350	HJD63B350	HHJD62B350	JD63T350
400	3	JXD23B400	JXD63B400	HJXD63B400	HHJXD62B400	CJD63B400	JD63B400	HJD63B400	HHJD62B400	JD63T400

## Frames - Magnetic Trip Only - ETI Motor Circuit Protector

Ampere Rating	Minimum	Maximum	Breaker Type	2-pole	3-pole
400	1250	2500	JXD6	—	JXD63L400
400	2000	4000	JXD6	JXD62H400	JXD63H400
400	1250	2500	CJD6	—	CJD63L400
400	2000	4000	CJD6	—	CJD63H400

## Frames - Molded Case Switch - Circuit Disconnect

Ampere Rating	Poles	JXD2	JXD6	HJXD6	CJD6
400	2	JXD22S400A	—	—	—
400	3	JXD23S400A	JXD63S400A	HJXD63S600A	CJD63S400A



## Lugs For 75°C Wire

Catalog Number	Cables Per Lug	Wire Range
TA2J6500	1, 2	#3/0-500 kcmil Cu
	2	#4/0-500 kcmil Al
TA1L6750	1	500-750 kcmil Al
	1	500-600 kcmil Cu
TC1J6600	1	#3/0-600 kcmil Cu
TC2J6500	1, 2	#3/0-500 kcmil Cu
<b>Compression Lug</b>		
CCL600	1	500 kcmil Cu/Al

## Shunt Trip Combinations

Control Voltage		1 Shunt Trip	1 Shunt Trip and 1 Auxiliary Switch
AC	DC	Catalog Number	Catalog Number
24	—	S17JLD6	—
48	—	S18JLD6	—
120	—	S01JLD6	S01JLD62A
240	—	S03JLD6	S03JLD62A
277	—	S15JLD6	S15JLD64A
480	—	S04JLD6	—
—	12	S16JLD6	S16JLD62A
—	24	S07JLD6	S07JLD62A
—	48	S09JLD6	S09JLD62A
—	125	S11JLD6	S11JLD62A
—	250	S13JLD6	S13JLD62A

## Auxiliary Switch Combinations

Maximum Voltage		1 Form C	2 Form C
AC	DC	Catalog Number	Catalog Number
480	250	A01JLD64	A02JLD64
—	12	A01JLDLV	A02JLDLV

## Alarm Switch Combinations

Maximum Voltage		1 Alarm Switch	1 Alarm Switch and 1 Auxiliary Switch	1 Alarm Switch and 2 Auxiliary Switches
AC	DC	Catalog Number	Catalog Number	Catalog Number
480	250	B01JLD64	A01JLD64B	A02JLD64B

## Undervoltage Trip Combinations

Control Voltage		1 Undervoltage Trip	1 Undervoltage Trip and 1 Auxiliary Switch	1 Undervoltage Trip and 2 Auxiliary Switches
AC	DC	Catalog Number	Catalog Number	Catalog Number
120	—	U01JLD6	U01JLD62A	U01JLD62AA
208	—	U02JLD6	U02JLD62A	U02JLD62AA
240	—	U03JLD6	U03JLD62A	U03JLD62AA
480	—	U06JLD6	U06JLD64A	U06JLD64AA
—	24	U13JLD6	U13JLD62A	U13JLD62AA
—	48	U14JLD6	U14JLD62A	U14JLD62AA
—	125	U10JLD6	U10JLD62A	U10JLD62AA
—	250	U12JLD6	U12JLD62A	U12JLD62AA

Siemens Industry, Inc.  
5400 Triangle Parkway  
Norcross, GA 30092

1-800-241-4453  
info.us@siemens.com

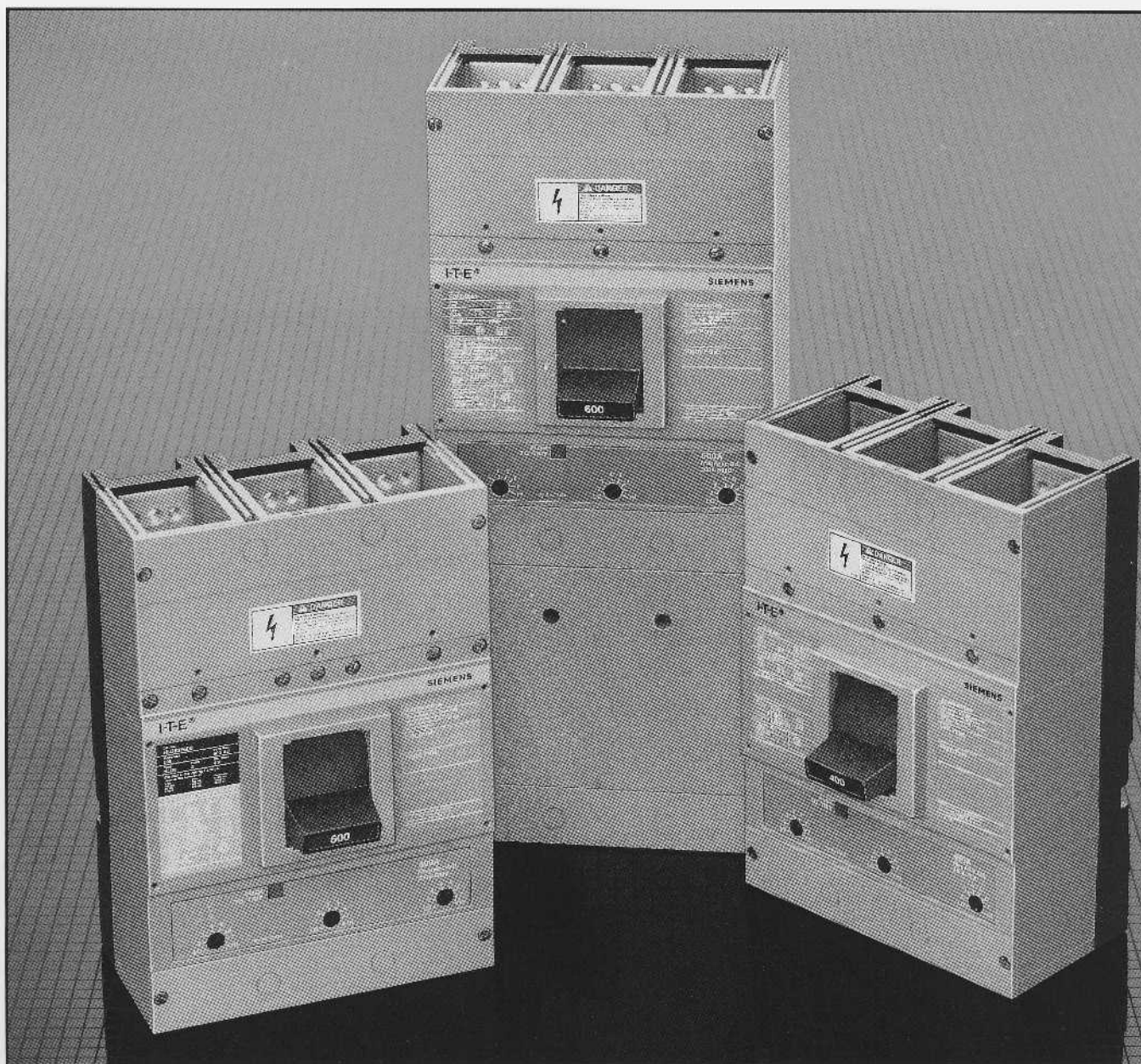
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usa.siemens.com/circuitbreakers

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# SIEMENS

## Molded Case Circuit Breakers

JD & LD Frame  
Information and  
Instruction Guide



# Information and Instructions

## General Information

### General

JD and LD-Frame Sentron™ Series Circuit breakers, as shown on pages 5 and 6, are for use in individual enclosures, switchboards and panelboards. They are available as thermal magnetic with interchangeable trip units (types JD6(-A), HJD6(-A), HHJD6, LD6(-A), HLD6(-A), HHLD6), thermal magnetic with non-interchangeable trip units (types JXD2(-A), JXD6(-A), HJXD6(-A), HHJXD6, LXD6(-A), HLXD6(-A), HHLXD6), current limiting with non-interchangeable trip units (types CJD6 and CLD6) instantaneous magnetic trip only (motor circuit protectors – types JXD6-ETI, LXD6-ETI, CJD6-ETI, CLD6-ETI) and molded case switches (types JXD2, JXD6, LXD6, CJD6, CLD6). For 100 percent applications see pages 46 thru 50.

CJD6 and CLD6 circuit breakers combine thermal magnetic construction for overload protection and an additional set of "blow-apart" contacts in conjunction with the Sentron Series standard "blow-apart" contacts. This arrangement provides for current limiting protection under high fault interrupting conditions as outlined in the National Electric Code, Article 240-11<sup>①</sup> and UL 489<sup>②</sup> standards. CJD6 and CLD6 circuit breakers are fuseless and therefore require no blown fuses to be located and replaced should a high current fault occur. The common trip feature of the circuit breaker is completely retained so that all poles of the circuit breaker open when caused to trip due to an overload or short circuit.

Pressure wire connectors, suitable for use with aluminum or copper wire, are available for all JD and LD-Frame circuit breakers. Rear connection studs or plug-in connector assemblies are also available (2 and 3-pole). The latter mounting arrangement permits removal of the circuit breaker from a circuit without removing wiring leads. Special features such as a shunt trip, auxiliary and alarm switches and undervoltage trip devices are available for field adaptation. The installation and removal of these devices is to be accomplished by qualified personnel only. These devices are mounted internally and Underwriters Laboratories listed, page 53. Information concerning these special devices is found on pages 26-29 and 51.

### Thermal Magnetic

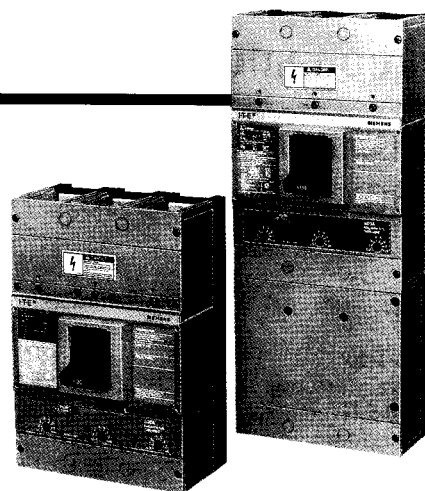
JXD2(-A), JD6(-A), JXD6(-A), HJD6(-A), HJXD6(-A), HHJD6, HHJXD6, CJD6, LD6(-A), LXD6(-A), HLD6(-A), HLXD6(-A), HHLD6, HHLXD6, CLD6 type circuit breakers provide complete overload and short circuit protection when applied within their design parameters. Overload and short circuit tripout is accomplished by time-delay thermal trip elements and instantaneous magnetic trip devices. Nominal instantaneous trip values are externally adjustable with eight trip points as shown at the top of the next column.

<sup>①</sup> National Electric Code (240-11)

"A current limiting overcurrent protective device, which, when interrupting currents in its current limiting range, will reduce the current flowing in the faulted circuit to a magnitude substantially less than that obtainable in the same circuit, if the device were replaced with a solid conductor having comparable impedance."

<sup>②</sup> Underwriters Laboratories (UL 489, Par. 2.5)

"A circuit breaker that does not employ a fusible element and that when operating within its current limiting range, limits the let-through  $I^2t$  to a value less than the  $I^2t$  of a 1/2 cycle wave of the symmetrical prospective current."



Breaker Ampere Rating	Nominal Instantaneous Values							
	Low	2	3	4	5	6	7	High
200-300	1250	1430	1610	1790	1960	2140	2320	2500
350-450	2000	2290	2570	2860	3140	3430	3710	4000
500-600	3000	3430	3860	4290	4710	5140	5570	6000

Circuit breakers are calibrated at the factory, under controlled temperature conditions for applications at 40°C (104°F) ambient to meet requirements as outlined in UL 489 Standard for molded case circuit breakers. The cover on the trip unit is sealed to prevent access to the trip elements. Alterations of the calibration of these elements should not be attempted. Removal of the special sealed line cover voids the Underwriters Laboratories, Inc. listing for that specific circuit breaker. Catalog information is located on pages 46-50.

### Molded Case Switch

A molded case switch is available in the JXD2, JXD6, LXD6, CJD6, CLD6 type circuit breakers. This device employs the same operating mechanism as the thermal magnetic and magnetic only units. A preset instantaneous function is factory installed to allow the switch to trip and protect itself at a high fault condition. No overload or low fault current protection is provided. This protection must be supplied by separate overcurrent devices. Catalog information is located on pages 46-50.

### Interrupting Ratings—Symmetrical RMS Amperes (kA) Based on UL 489 Standards

The interrupting ratings of the JD and LD-Frame circuit breakers are based on circuits adjusted to the rated short circuit (at specified voltage) before the insertion of the circuit breaker.

Breaker Type	RMS Symmetrical Amperes (kA)									
	UL A.I.R. kA					IEC A.I.R. kA				
	Volts AC			Volts DC		Volts AC (50/60 Hz)				
	240	480	600	250	500	220/240 (lcs)	380/415 (lcs)	500 (lcs)	500 (lcs)	500 (lcs)
JXD2(-A)	65	—	—	30(2-P)	—	—	—	—	—	—
JD6(-A), JXD6(-A) LD6(-A), LXD6(-A)	65	35	25	30(2-P)	25(3-P)	65	33	40	20	30
HJD6(-A) HLD6(-A) HJXD6(-A) HLXD6(-A)	100	65	35	30(2-P)	35(3-P)	100	50	65	33	42
HHJD6, HHLD6	200	100	50	—	—	200	100	100	50	65
CJD6 CLD6	200	150	100	30(2-P)	50(3-P)	200*	150*	—	—	—

\*Meets IEC 157-P1 Interruption levels

# Information and Instructions

## Operation and Maintenance

### Instantaneous Trip

ETI motor circuit interrupters, types JXD6-ETI, LXD6-ETI, CJD6-ETI, CLD6-ETI (adjustable instantaneous magnetic trip only) are designed for use in welding circuits, motor circuits and combination starters where short circuit protection only is required. When used in combination starters, they serve in conjunction with motor protective relays to offer complete protection. The relays guard against motor overloads and the circuit breaker provides short circuit protection. Catalog information is located on page 50.

### Instantaneous Trip Adjustments

Motor Full Load Amperes	ETI Trip Setting <sup>①</sup>		Ampere Rating
	Adjustment	Amperes	
95-110	Low	1250	400 Low JXD62L400 JXD63L400 CJD62L400 CJD63L400
110-124	2	1430	
124-138	3	1610	
138-151	4	1790	
151-165	5	1960	
165-178	6	2140	
178-192	7	2320	
192-227	High	2500	400 Standard JXD62H400 JXD63H400 CJD62H400 CJD63H400
154-176	Low	2000	
176-198	2	2290	
198-220	3	2570	
220-242	4	2860	
242-264	5	3140	
264-285	6	3430	
285-308	7	3710	600 Low LXD62L600 LXD63L600 CLD62L600 CLD63L600
308-326	High	4000	
155-176	Low	2000	
176-198	2	2290	
198-220	3	2570	
220-242	4	2860	
242-264	5	3140	
264-285	6	3430	600 Standard LXD62H600 LXD63H600 CLD62H600 CLD63H600
285-308	7	3710	
308-326	High	4000	
231-264	Low	3000	
264-292	2	3430	
292-330	3	3800	
330-362	4	4290	
362-395	5	4710	
395-428	6	5140	
428-462	7	5570	
462-490	High	6000	

① All values calibrated within guidelines of UL 489.

The instantaneous settings indicated are based on 11 times full load motor current – use of this table must take into consideration that any setting should be done in accordance with applicable sections of the NEC to assure proper short circuit protection as well as the ability to allow the motor to start without nuisance tripping.

### Circuit Breaker Operation

With the mechanism latched and the contacts open, the operating handle will be in the OFF position. Moving the handle to the ON position closes the contacts and establishes a circuit through the breaker. Under overload or short circuit conditions sufficient to automatically trip or open the breaker, the operating handle moves to a position between ON and OFF. To relatch the circuit breaker after automatic operation, move the operating handle to the extreme OFF position. The circuit breaker is now ready for reclosing.

The overcenter toggle mechanism is trip free of the operating handle. The circuit breaker, therefore, cannot be held closed by means of the handle should a tripping condition exist. After automatic operation, the handle assumes an intermediate position between ON and OFF, displaying a clear indication of tripping.

### Maintenance

Experience has shown that properly applied molded case circuit breakers normally do not require maintenance. However, some industrial users may choose to establish an inspection and maintenance procedure to be carried out on a regular basis. For detailed information, consult applicable NEMA publications or your local Siemens sales office.

#### SPECIAL NOTE:

JXD2(-A), JXD6(-A), HJXD6(-A), LXD6(-A), HLXD6(-A), CJD6, CLD6 circuit breakers are not UL listed as interchangeable trips – DO NOT REMOVE TRIP UNIT and replace with another. Removal of trip unit voids UL listing.

JXD2(-A), JXD6(-A), HJXD6(-A), LXD6(-A), HLXD6(-A), type circuit breakers are UL listed for reverse connection applications.

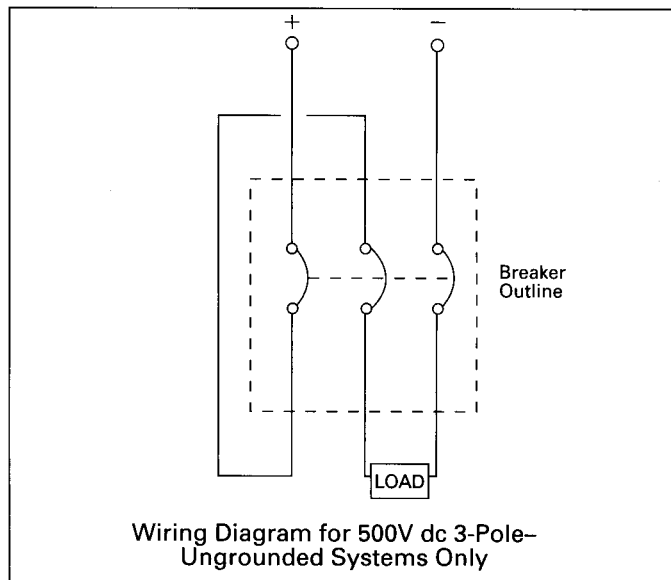


Figure 1

Types JXD2(-A), JD6(-A), JXD6(-A), HJD6(-A), HJXD6(-A), HHJD6, HHJXD6, LD6(-A), LXD6(-A), HLD6(-A), HLXD6(-A), HHLD6, HHLXD6, JXD6-ETI, LXD6-ETI



Operation	JD-Frame (lb.)	LD-Frame (lb.)
OFF to ON	44	44
ON to OFF	50	44
TRIPPED to RESET	60	60

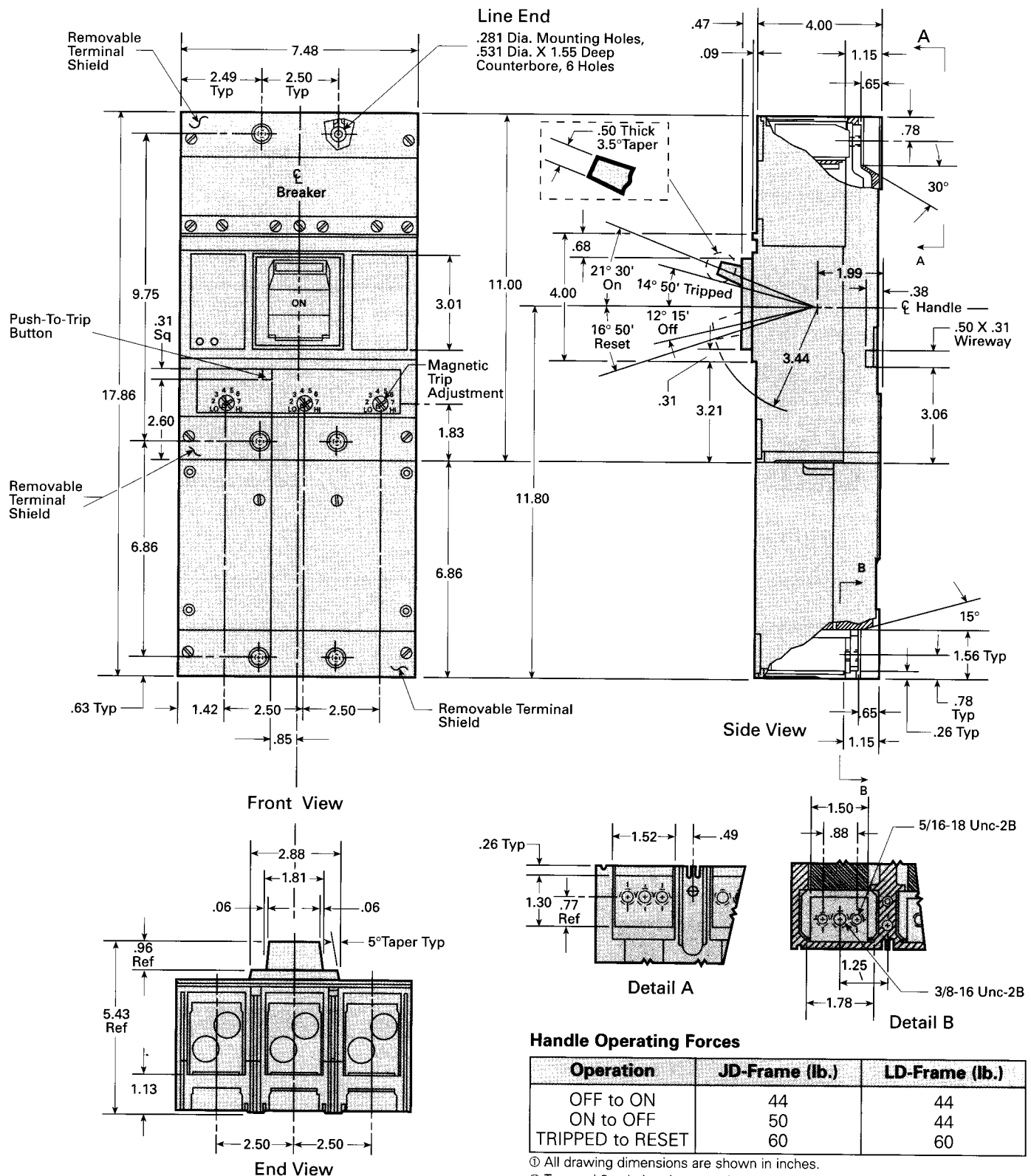
① All drawing dimensions are shown in inches.

② Two and 3-pole breakers are the same physical size. Current carrying parts are omitted from the center in 2-pole breakers.



# JD and LD-Frame Outline Drawings<sup>①</sup>—2 and 3 Pole<sup>②</sup>

Types CJD6, CLD6, CJD6-ETI, CLD6-ETI



# Pressure Wire Connectors



## **⚠ DANGER**

**Hazardous Voltage.**  
**Will cause death or severe injury.**

**Turn power off supplying switchboard or panel before installing.**



## **Safety Instructions**

### **General**

Each connector kit contains a solderless connector and associated hardware for making one line or load connection.

### **Installation**

**NOTE: Trip unit must be installed in circuit breaker prior to mounting load end connector.**

- A. Tighten mounting screws **(1)** to securely attach connector. See table for torque values.
- B. Tighten set screws **(2)** securely to prevent overheating of conductor and connector. See table for torque values.

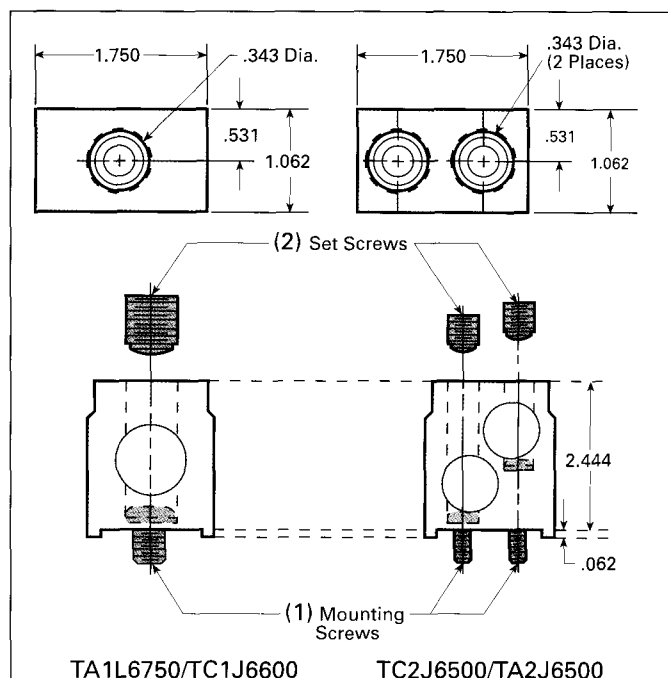

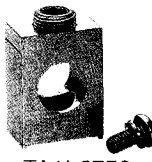
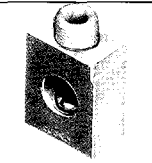
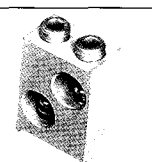
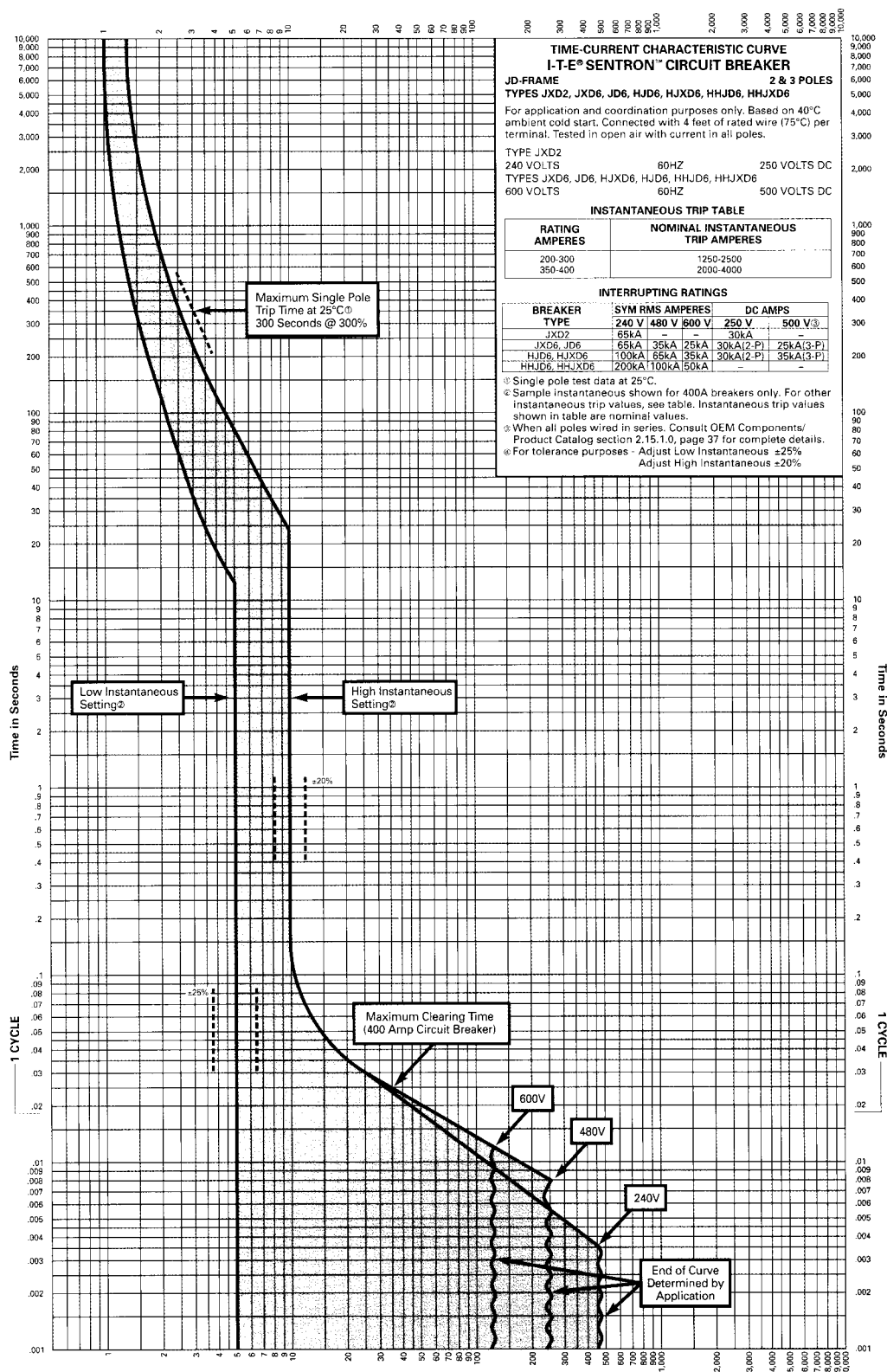


Figure 1

Connector Catalog Numbers	Circuit Breaker Ampere Rating	Connector Wire Range	Set Screw Torque (in-lbs.)	Mounting Screw Torque (in-lbs.)	For Use With Frames
 TA2J6500	200-600	(1-2) #3/0-500 kcmil (Cu) (1-2) #4/0-500 kcmil (Al)	300 300	132	JD-LD
 TA1L6750	250-600	(1) #500-750 kcmil (Al) (1) #500-600 kcmil (Cu)	500 500	228	JD-LD
 TC1J6600	200-600	(1) #3/0-600 kcmil (Cu)	500	228	JD-LD
 TC2J6500	200-600	(1-2) #3/0-500 kcmil (Cu)	300	132	JD-LD

# JD-Frame Time Current Curve

Types JXD2(-A), JD6(-A), JXD6(-A), HJD6(-A), HJXD6(-A), HHJD6, HHJXD6

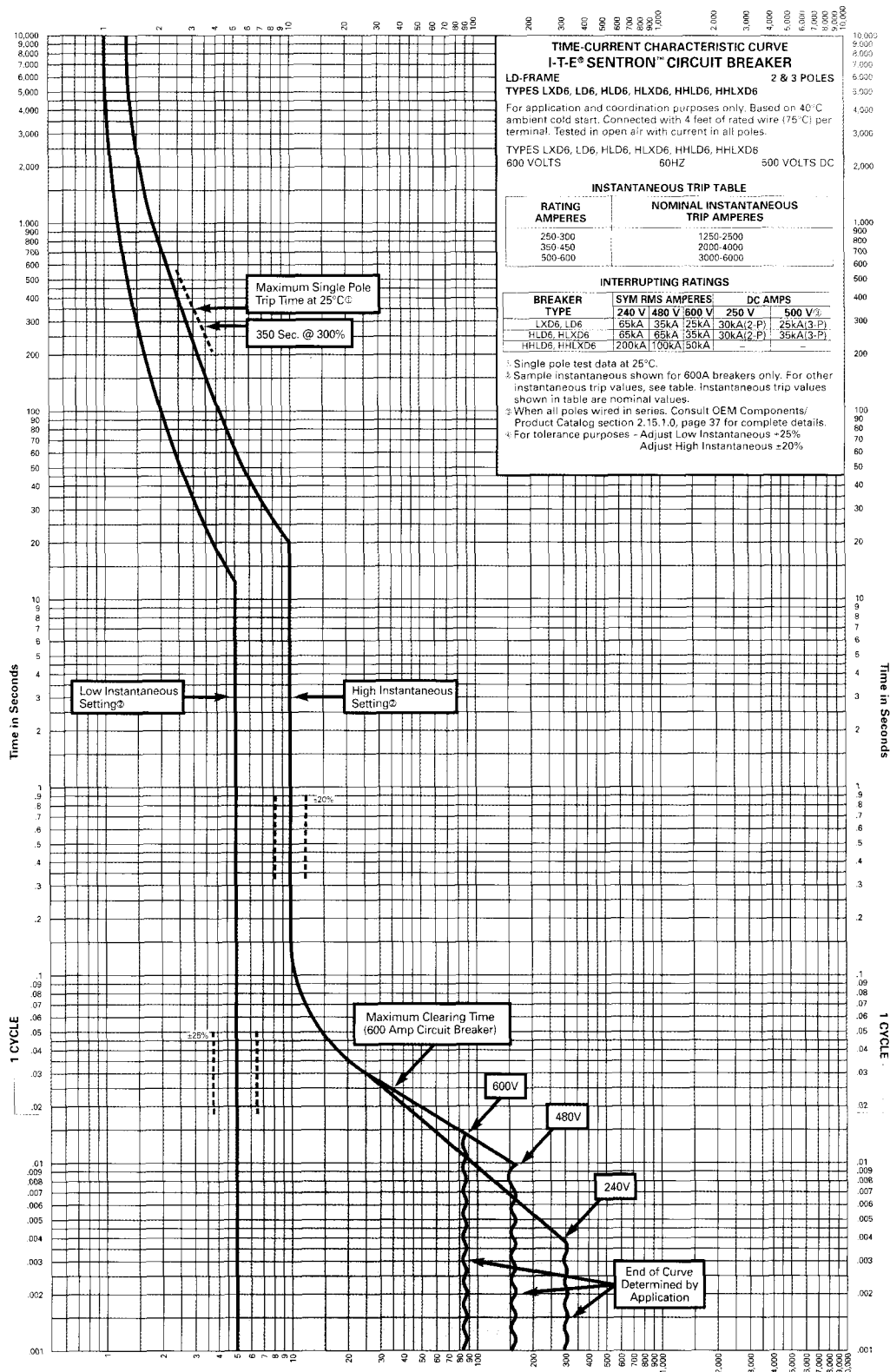


TD-7104

Multiples of Circuit Breaker Continuous Current Rating

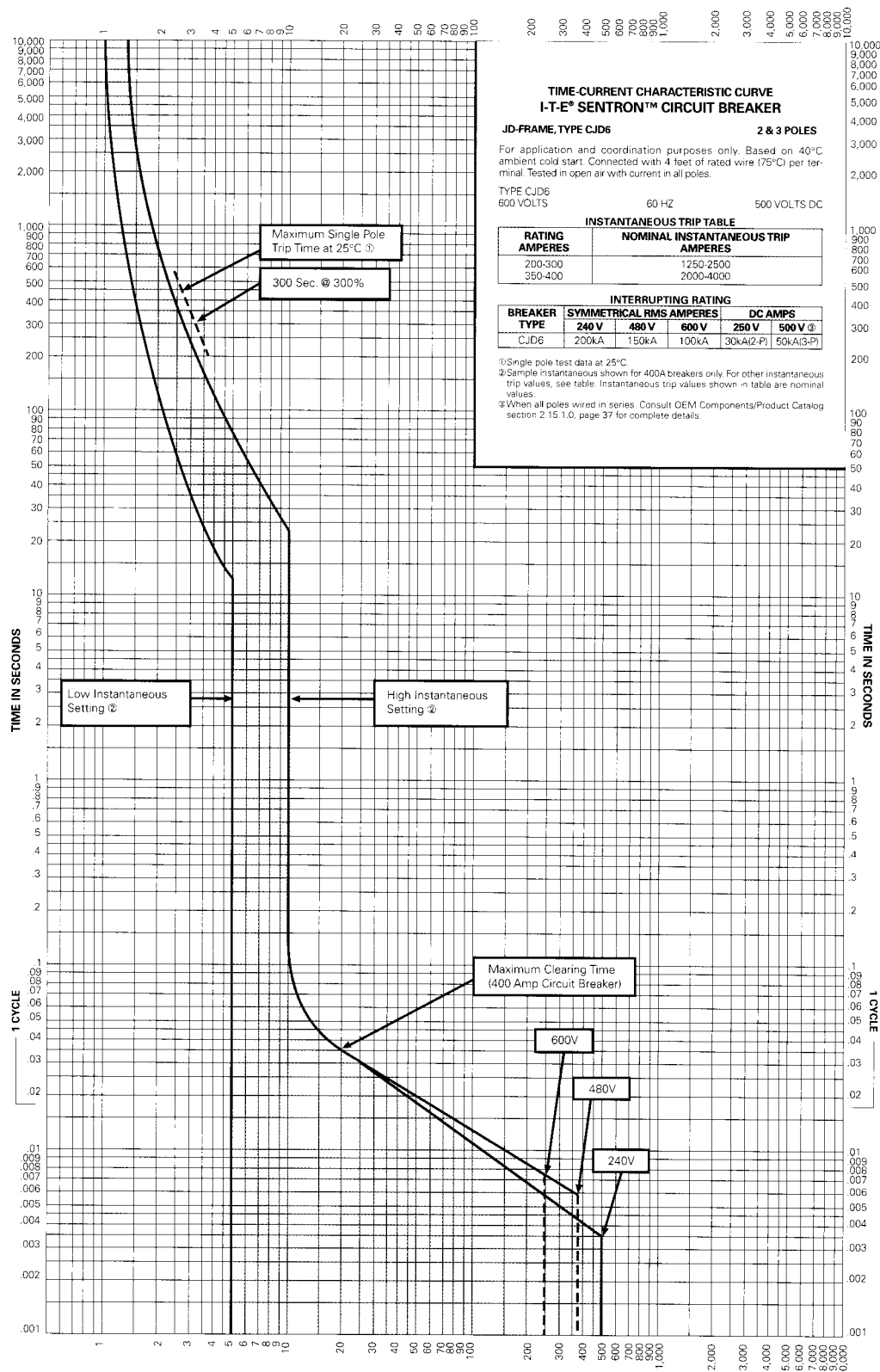
# LD-Frame Time Current Curve

Types LXD6(-A), LD6(-A), HLXD6(-A), HLD6(-A), HHLD6, HHLXD6



# JD-Frame Time Current Curve

## Type CJD6



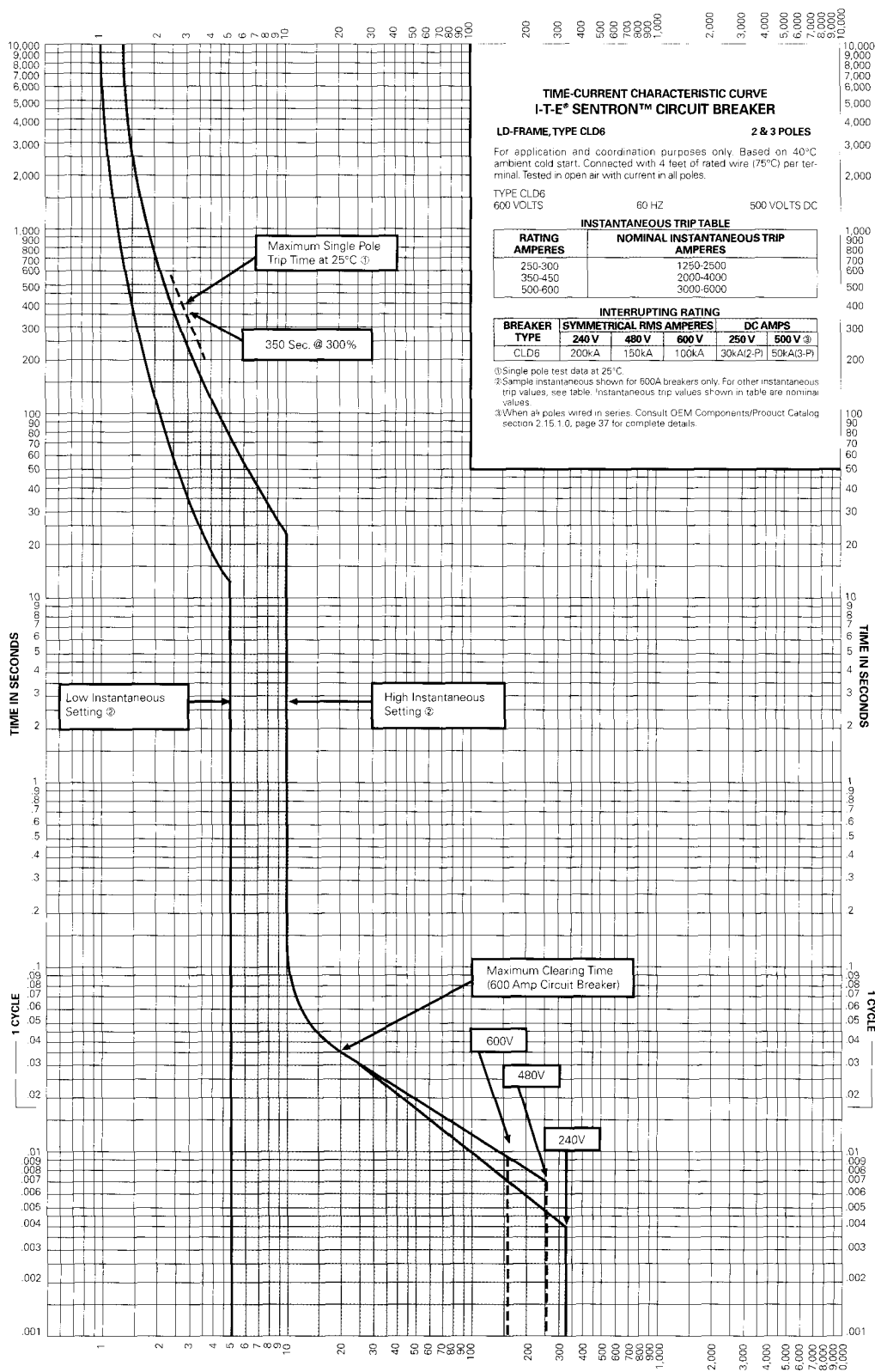
TD-7105

Multiples of Circuit Breaker Continuous Current Rating



# LD-Frame Time Current Curve

## Type CLD6



TD-7107

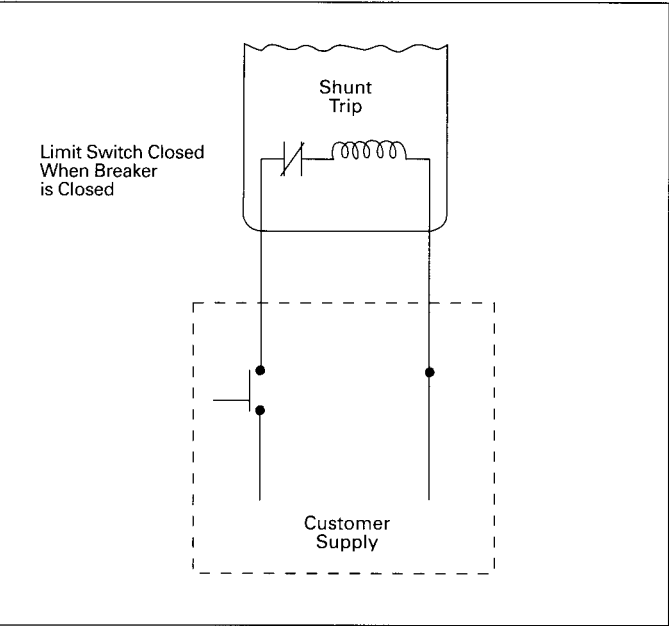
Multiples of Circuit Breaker Continuous Current Rating

# Shunt Trip and Undervoltage Trip

## Electrical Check

### Shunt Trip

- A. Reset and turn circuit breaker ON.
- B. Attach test circuit to accessory leads. When the test voltage reaches 55 percent or more of the rated coil voltage, the circuit breaker should trip.
- C. With breaker TRIPPED or OFF, check to make sure coil circuit has opened.

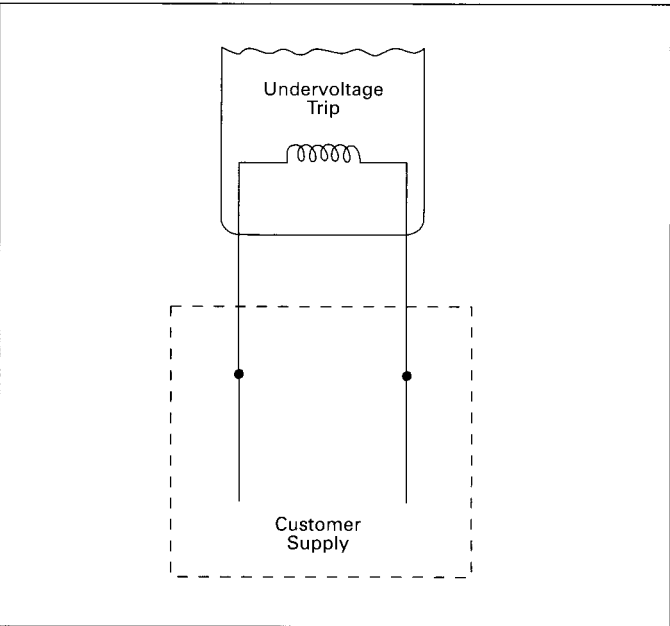


### Electrical Data For Shunt Trip

Coil Voltage	Inrush Current At Rated Voltage (Amperes)	Catalog Number
60 Cycles AC		
12	Consult Sales Office	S19JLD6
24		S17JLD6
48		S18JLD6
120		S01JLD6
208		S02JLD6
240		S03JLD6
277		S15JLD6
480		S04JLD6
600		S06JLD6
DC		
12	Consult Sales Office	S16JLD6
24		S07JLD6
48		S09JLD6
125		S11JLD6
250		S13JLD6

### Undervoltage Trip

- A. With breaker in TRIPPED position, connect test circuit to accessory leads. Energize undervoltage trip device at 85 percent of the marked rated voltage of the coil. Reset and turn breaker handle ON.
- B. Reduce voltage to 35 percent of rated coil voltage. Circuit breaker must trip.



### Electrical Data For Undervoltage (UV) Trip<sup>① ②</sup>

Coil Voltage	Sealed-In Current At Rated Voltage (Amperes)	Catalog Number	
		1 UV Trip Plus 1 Aux. Sw.	1 UV Trip Only
60 Cycles AC			
120	Consult Sales Office	U01JLD62A	U01JLD6
208		U02JLD62A	U02JLD6
240		U03JLD62A	U03JLD6
277		U16JLD64A	U16JLD6
480		U06JLD64A	U06JLD6
600③		N/A	U08JLD6
DC			
24	Consult Sales Office	U13JLD62A	U13JLD6
48		U14JLD62A	U14JLD6
125		U10JLD62A	U10JLD6
250④		U12JLD62A	U12JLD6

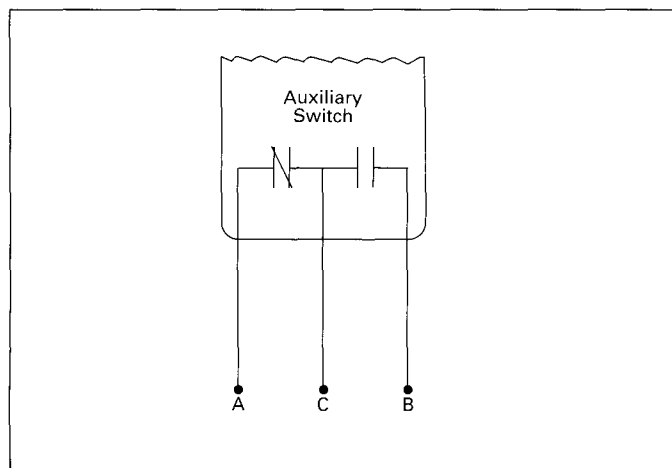
- <sup>①</sup> Resistor to be mounted externally of circuit breaker and connected by installer.
- <sup>②</sup> All auxiliary switch ratings are the same as auxiliary switch kit A01FD64.
- <sup>③</sup> Kit includes a 30k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).
- <sup>④</sup> Kit includes a 2.5k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).

# Auxiliary Switch and Bell Alarm Switch

## Electrical Check

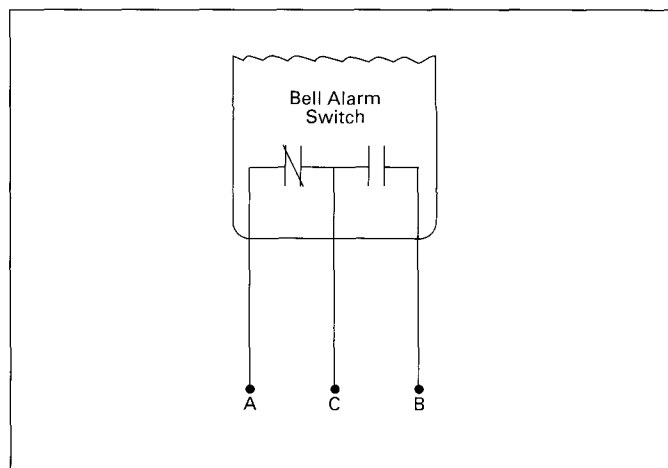
### Auxiliary Switch Kits

Catalog Number	Number of Switches	Ampere Rating of Switch				
		Volts AC			Volts DC	
		120	240	480	125	250
A01JLD64	1	10	10	10	0.5	0.25
A02JLD64	2	10	10	10	0.5	0.25



### Bell Alarm Switch Kits

Catalog Number	Number of Auxiliary Switches	Ampere Rating of Switch				
		Volts AC			Volts DC	
		125	240	480	125	250
B01JLD64	0	10	10	10	.5	.25
A01JLD64B	1	10	10	10	.5	.25
A02JLD64B	2	10	10	10	.5	.25



### Switch Identification (All With Three Leads)

Wire Markings	Wire Color	Switch Terminals or Contacts
C or C1	White	C - Common terminal
A or A1	Black	N.O. - Contact open when breaker is open, closed when breaker is closed.
B or B1	Red	N.C. - Contact closed when breaker is open, open when breaker is closed.

Accessory units that employ a combination will have the same wiring colors or identifiers. A double auxiliary switch combination will use wiring markings A-A1, B-B1 and C-C1.

#### Auxiliary Switch ①

- Use a buzzer or light indicator attached to switch leads A and C. With breaker in ON position, a light or buzzing noise should be observed.
- Move handle to OFF position. Indicator light or buzzer should turn off.
- Attach test to leads B and C. Light or buzzer should turn on.
- Repeat Steps A through C using leads A1, B1 and C1.
- Move handle to ON position. Indicator light or buzzer should turn off.

### Bell Alarm Identification (All With Three Leads)

Wire Markings	Wire Color	Switch Terminals or Contacts
C	White	C - Common terminal
A	Yellow	N.C. - Normally closed contact (Closed when circuit breaker is tripped.)
B	Brown	N.O. - Normally open contact (Open when circuit breaker is tripped.)

#### Bell Alarm Switch ①

- Use a buzzer or light indicator attached to switch leads A and C. With breaker in ON position, trip breaker by depressing red trip button. Indicator light or buzzer should operate.
- Reset breaker to OFF. Indicator light or buzzer should turn off.
- Move breaker handle to ON. Indicator light or buzzer should remain off.

① Should the indicator not function properly during "check" procedure, check for incorrect installation or wiring.

Siemens Energy & Automation, Inc.  
Power Distribution & Controls Division  
3333 Old Milton Parkway  
Alpharetta, GA 30005

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**1-800-964-4114 or 800-241-4453**  
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For Product Information  
[www.sea.siemens.com/power/](http://www.sea.siemens.com/power/)

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# Information and Instructions

## General Information

### General

JD and LD-Frame Sentron™ Series Circuit breakers, as shown on pages 5 and 6, are for use in individual enclosures, switchboards and panelboards. They are available as thermal magnetic with interchangeable trip units (types JD6(-A), HJD6(-A), HHJD6, LD6(-A), HLD6(-A), HHL6), thermal magnetic with non-interchangeable trip units (types JXD2(-A), JXD6(-A), HJXD6(-A), HHJXD6, LXD6(-A), HLXD6(-A), HHLXD6), current limiting with non-interchangeable trip units (types CJD6 and CLD6) instantaneous magnetic trip only (motor circuit protectors – types JXD6-ETI, LXD6-ETI, CJD6-ETI, CLD6-ETI) and molded case switches (types JXD2, JXD6, LXD6, CJD6, CLD6). For 100 percent applications see pages 46 thru 50.

CJD6 and CLD6 circuit breakers combine thermal magnetic construction for overload protection and an additional set of "blow-apart" contacts in conjunction with the Sentron Series standard "blow-apart" contacts. This arrangement provides for current limiting protection under high fault interrupting conditions as outlined in the National Electric Code, Article 240-11① and UL 489② standards. CJD6 and CLD6 circuit breakers are fuseless and therefore require no blown fuses to be located and replaced should a high current fault occur. The common trip feature of the circuit breaker is completely retained so that all poles of the circuit breaker open when caused to trip due to an overload or short circuit.

Pressure wire connectors, suitable for use with aluminum or copper wire, are available for all JD and LD-Frame circuit breakers. Rear connection studs or plug-in connector assemblies are also available (2 and 3-pole). The latter mounting arrangement permits removal of the circuit breaker from a circuit without removing wiring leads. Special features such as a shunt trip, auxiliary and alarm switches and undervoltage trip devices are available for field adaptation. The installation and removal of these devices is to be accomplished by qualified personnel only. These devices are mounted internally and Underwriters Laboratories listed, page 53. Information concerning these special devices is found on pages 26-29 and 51.

### Thermal Magnetic

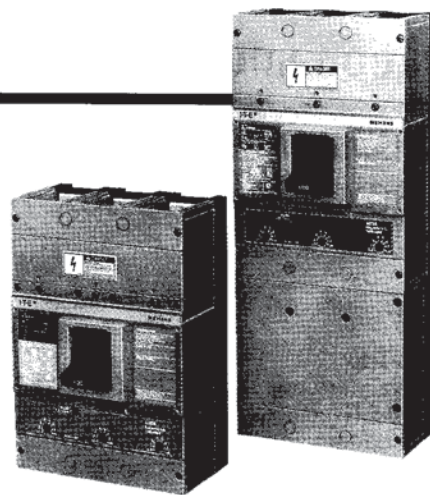
JXD2(-A), JD6(-A), JXD6(-A), HJD6(-A), HJXD6(-A), HHJD6, HHJXD6, CJD6, LD6(-A), LXD6(-A), HLD6(-A), HLXD6(-A), HHL6, HHLXD6, CLD6 type circuit breakers provide complete overload and short circuit protection when applied within their design parameters. Overload and short circuit tripout is accomplished by time-delay thermal trip elements and instantaneous magnetic trip devices. Nominal instantaneous trip values are externally adjustable with eight trip points as shown at the top of the next column.

① National Electric Code (240-11)

"A current limiting overcurrent protective device, which, when interrupting currents in its current limiting range, will reduce the current flowing in the faulted circuit to a magnitude substantially less than that obtainable in the same circuit, if the device were replaced with a solid conductor having comparable impedance."

② Underwriters Laboratories (UL 489, Par. 2.5)

"A circuit breaker that does not employ a fusible element and that when operating within its current limiting range, limits the let-through  $I^2t$  to a value less than the  $I^2t$  of a 1/2 cycle wave of the symmetrical prospective current."



Breaker Ampere Rating	Nominal Instantaneous Values							
	Low	2	3	4	5	6	7	High
200-300	1250	1430	1610	1790	1960	2140	2320	2500
350-450	2000	2290	2570	2860	3140	3430	3710	4000
500-600	3000	3430	3860	4290	4710	5140	5570	6000

Circuit breakers are calibrated at the factory, under controlled temperature conditions for applications at 40°C (104°F) ambient to meet requirements as outlined in UL 489 Standard for molded case circuit breakers. The cover on the trip unit is sealed to prevent access to the trip elements. Alterations of the calibration of these elements should not be attempted. Removal of the special sealed line cover voids the Underwriters Laboratories, Inc. listing for that specific circuit breaker. Catalog information is located on pages 46-50.

### Molded Case Switch

A molded case switch is available in the JXD2, JXD6, LXD6, CJD6, CLD6 type circuit breakers. This device employs the same operating mechanism as the thermal magnetic and magnetic only units. A preset instantaneous function is factory installed to allow the switch to trip and protect itself at a high fault condition. No overload or low fault current protection is provided. This protection must be supplied by separate overcurrent devices. Catalog information is located on pages 46-50.

### Interrupting Ratings—Symmetrical RMS Amperes (kA) Based on UL 489 Standards

The interrupting ratings of the JD and LD-Frame circuit breakers are based on circuits adjusted to the rated short circuit (at specified voltage) before the insertion of the circuit breaker.

Breaker Type	RMS Symmetrical Amperes (kA)									
	UL A.I.R. kA					IEC A.I.R. kA				
	Volts AC			Volts DC		Volts AC (50/60 Hz)				
	240	480	600	250	500	220/240 (lcs)	380/415 (lcs)	500 (lcs)	500 (lcs)	500 (lcs)
JXD2(-A)	65	—	—	30(2-P)	—	—	—	—	—	—
JD6(-A), JXD6(-A) LD6(-A), LXD6(-A)	65	35	25	30(2-P)	25(3-P)	65	33	40	20	30 15
HJD6(-A) HLD6(-A) HJXD6(-A) HLXD6(-A)	100	65	35	30(2-P)	35(3-P)	100	50	65	33	42 21
HHJD6, HHL6	200	100	50	—	—	200	100	100	50	65 33
CJD6(-A) CLD6(-A)	200	150	100	30(2-P)	50(3-P)	200*	150*	—	—	—

\*Meets IEC 157-P1 Interruption levels



# Information and Instructions

## Operation and Maintenance

### Instantaneous Trip

ETI motor circuit interrupters, types JXD6-ETI, LXD6-ETI, CJD6-ETI, CLD6-ETI (adjustable instantaneous magnetic trip only) are designed for use in welding circuits, motor circuits and combination starters where short circuit protection only is required. When used in combination starters, they serve in conjunction with motor protective relays to offer complete protection. The relays guard against motor overloads and the circuit breaker provides short circuit protection. Catalog information is located on page 50.

### Instantaneous Trip Adjustments

Motor Full Load Amperes	ETI Trip Setting <sup>①</sup>		Ampere Rating
	Adjustment	Amperes	
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110-124	2	1430	
124-138	3	1610	
138-151	4	1790	
151-165	5	1960	
165-178	6	2140	
178-192	7	2320	
192-227	High	2500	400 Standard JXD62H400 JXD63H400 CJD62H400 CJD63H400
154-176	Low	2000	
176-198	2	2290	
198-220	3	2570	
220-242	4	2860	
242-264	5	3140	
264-285	6	3430	
285-308	7	3710	
308-326	High	4000	600 Low LXD62L600 LXD63L600 CLD62L600 CLD63L600
155-176	Low	2000	
176-198	2	2290	
198-220	3	2570	
220-242	4	2860	
242-264	5	3140	
264-285	6	3430	
285-308	7	3710	
308-326	High	4000	600 Standard LXD62H600 LXD63H600 CLD62H600 CLD63H600
231-264	Low	3000	
264-292	2	3430	
292-330	3	3800	
330-362	4	4290	
362-395	5	4710	
395-428	6	5140	
428-462	7	5570	
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① All values calibrated within guidelines of UL 489.

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With the mechanism latched and the contacts open, the operating handle will be in the OFF position. Moving the handle to the ON position closes the contacts and establishes a circuit through the breaker. Under overload or short circuit conditions sufficient to automatically trip or open the breaker, the operating handle moves to a position between ON and OFF. To relatch the circuit breaker after automatic operation, move the operating handle to the extreme OFF position. The circuit breaker is now ready for reclosing.

The overcenter toggle mechanism is trip free of the operating handle. The circuit breaker, therefore, cannot be held closed by means of the handle should a tripping condition exist. After automatic operation, the handle assumes an intermediate position between ON and OFF, displaying a clear indication of tripping.

### Maintenance

Experience has shown that properly applied molded case circuit breakers normally do not require maintenance. However, some industrial users may choose to establish an inspection and maintenance procedure to be carried out on a regular basis. For detailed information, consult applicable NEMA publications or your local Siemens sales office.

### SPECIAL NOTE:

JXD2(-A), JXD6(-A), HJXD6(-A), LXD6(-A), HLXD6(-A), CJD6, CLD6 circuit breakers are not UL listed as interchangeable trips—DO NOT REMOVE TRIP UNIT and replace with another. Removal of trip unit voids UL listing.

JXD2(-A), JXD6(-A), HJXD6(-A), LXD6(-A), HLXD6(-A), type circuit breakers are UL listed for reverse connection applications.

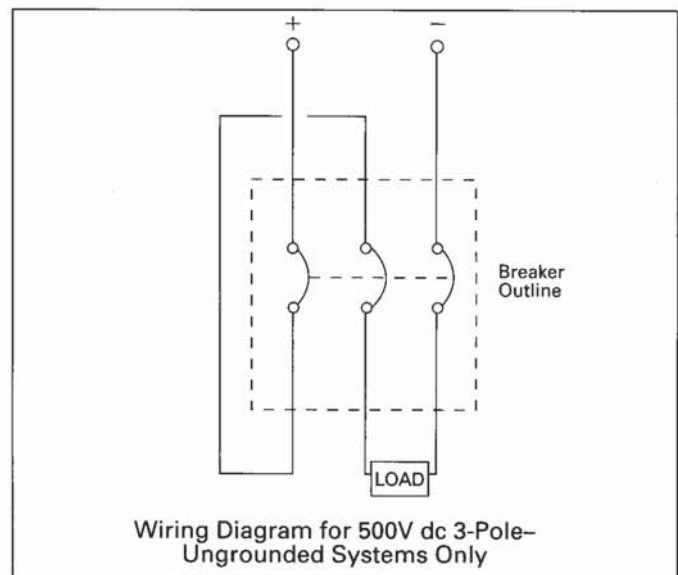
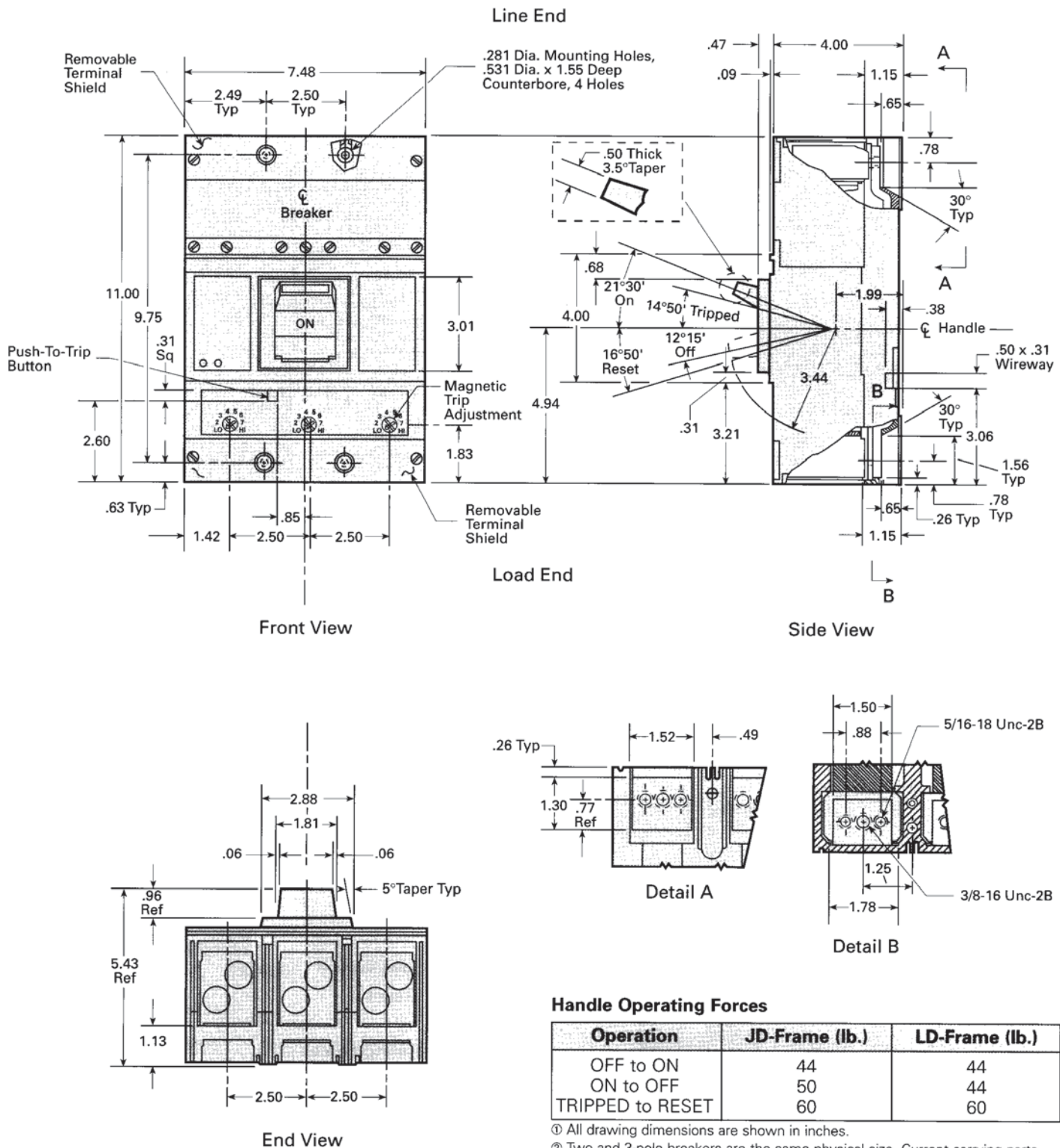


Figure 1

# JD and LD-Frame Outline Drawings<sup>①</sup>—2 and 3 Pole<sup>②</sup>

Types JXD2(-A), JD6(-A), JXD6(-A), HJD6(-A), HJXD6(-A), HHJD6, HHJXD6, LD6(-A), LXD6(-A), HLD6(-A), HLXD6(-A), HHLD6, HHLXD6, JXD6-ETI, LXD6-ETI



## Handle Operating Forces

Operation	JD-Frame (lb.)	LD-Frame (lb.)
OFF to ON	44	44
ON to OFF	50	44
TRIPPED to RESET	60	60

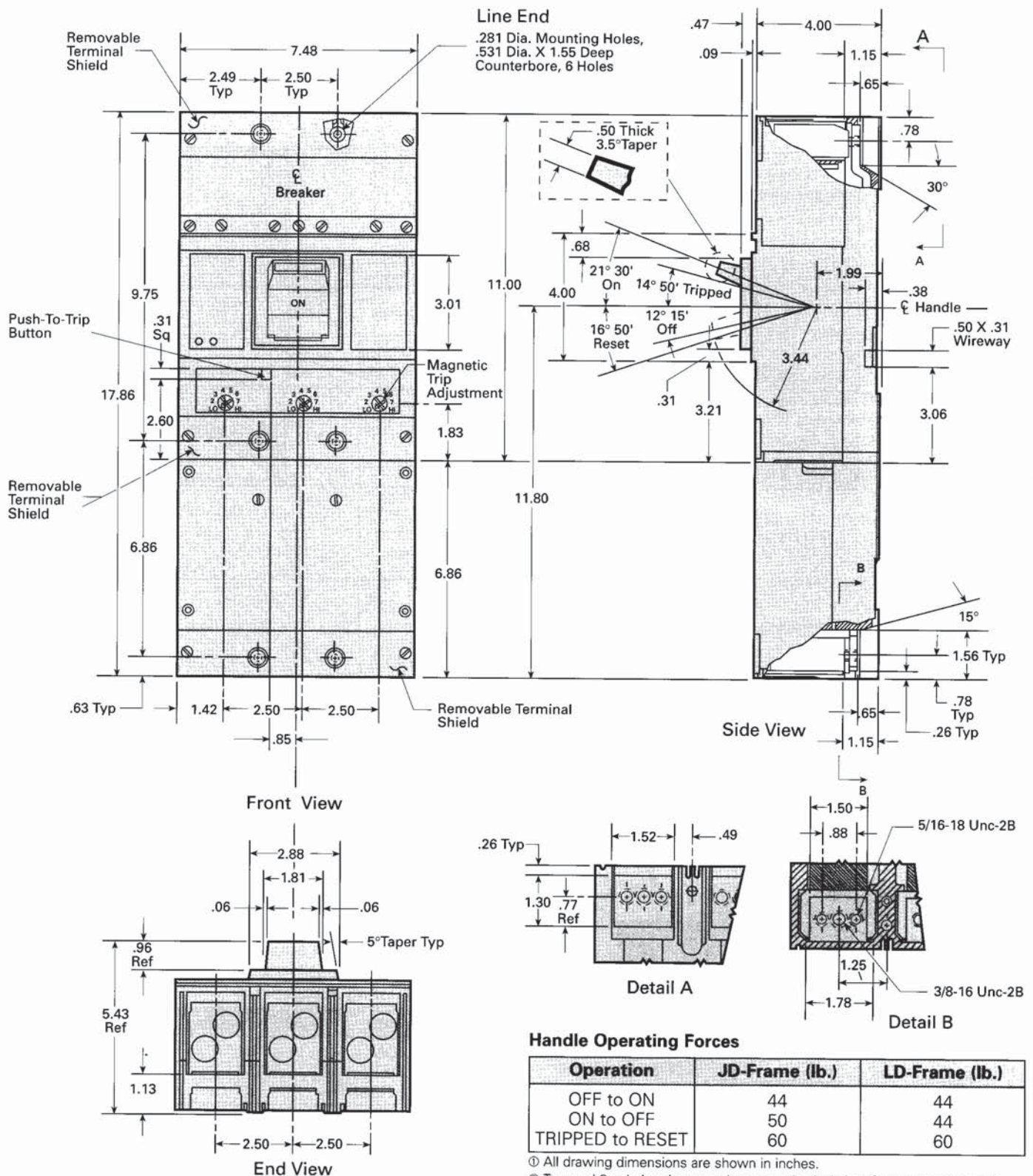
① All drawing dimensions are shown in inches.

② Two and 3-pole breakers are the same physical size. Current carrying parts are omitted from the center in 2-pole breakers.



# JD and LD-Frame Outline Drawings<sup>①</sup>—2 and 3 Pole<sup>②</sup>

Types CJD6(-A), CLD6(-A), CJD6-ETI, CLD6-ETI



# Pressure Wire Connectors



## DANGER

**Hazardous Voltage.**  
Will cause death or severe injury.

**Turn power off supplying switchboard or panel before installing.**



## Safety Instructions

### General

Each connector kit contains a solderless connector and associated hardware for making one line or load connection.

### Installation

**NOTE: Trip unit must be installed in circuit breaker prior to mounting load end connector.**

- A. Tighten mounting screws **(1)** to securely attach connector. See table for torque values.
- B. Tighten set screws **(2)** securely to prevent overheating of conductor and connector. See table for torque values.

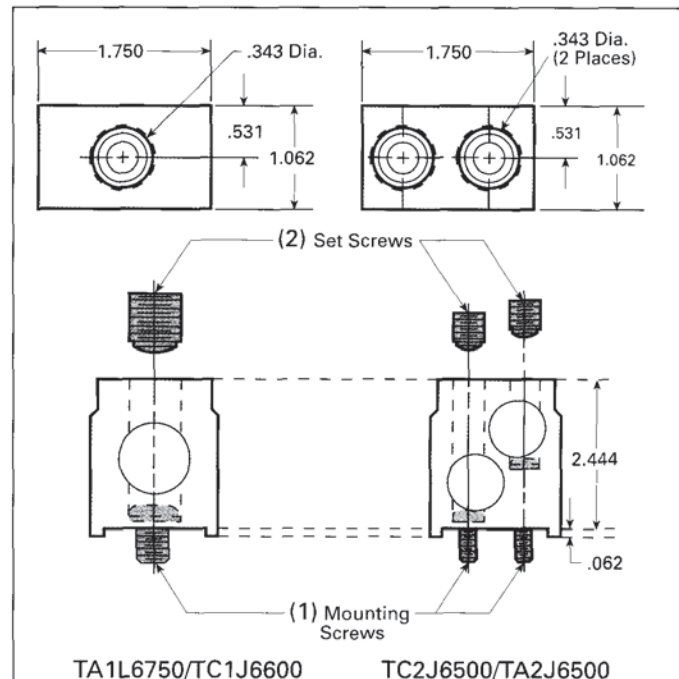




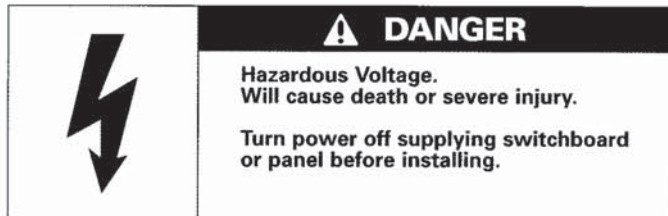


Figure 1

Connector Catalog Numbers	Circuit Breaker Ampere Rating	Connector Wire Range	Set Screw Torque (in-lbs.)	Mounting Screw Torque (in-lbs.)	For Use With Frames
 TA2J6500	200-600	(1-2) #3/0-500 kcmil (Cu) (1-2) #4/0-500 kcmil (Al)	300 300	132	JD-LD
 TA1L6750	250-600	(1) #500-750 kcmil (Al) (1) #500-600 kcmil (Cu)	500 500	228	JD-LD
 TC1J6600	200-600	(1) #3/0-600 kcmil (Cu)	500	228	JD-LD
 TC2J6500	200-600	(1-2) #3/0-500 kcmil (Cu)	300	132	JD-LD



# Compression Connector (CCL600)



## Safety Instructions

### General

**NOTE:** This instruction sheet outlines the recommended installation procedure. Use of these lugs in some installations may result in less wire bending space than is specified in the National Electric Code.

### Installation of Compression Connector

- Turn off power supplying device before installation of compression lugs.
- Remove any existing wire connectors from circuit breaker.
- Install circuit breaker.
- Preform cables to final configuration and strip insulation back 1-1/16" on each conductor. Use an appropriate insulation stripping tool to avoid damaging the conductor. (See Figure 1.)

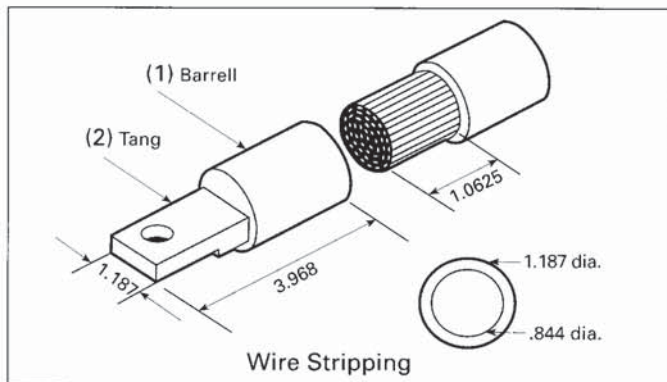


Figure 1

- Clean aluminum conductor surfaces thoroughly with a wire brush or other suitable means, to remove oxides and other contaminants from the conductor.

**NOTE:** Copper wires and the compression connector should not be cleaned abrasively.

- Remove cap from compression connector and insert cable fully into barrel (1) (Figure 1) of connector.
- Insure that connector tang(s) (2) (Figure 1) are in their proper orientation prior to crimping. This helps avoid twisting of cables during installation.

- Select an appropriate tool and die combination from Table 1 and make the required number of crimps within the boundaries stamped on the connector barrel. Refer to Figure 2 for sequence of multiple crimps.

**Table 1—Compression Tool and Die Chart For Copper and Aluminum Conductors**

Wire Size	Tool Mfr.	Tool No.	Die No.	No. of Crimps
500 kcmil	Homac	UT-15	94, 96	2
500 kcmil	Burndy	Y 35	655, 321 316	3 3
500 kcmil	Kearny	WH-2	1-1/8-2 1-1/8-1	2 2
1/0-500 kcmil	Square D	VC-6	—	2

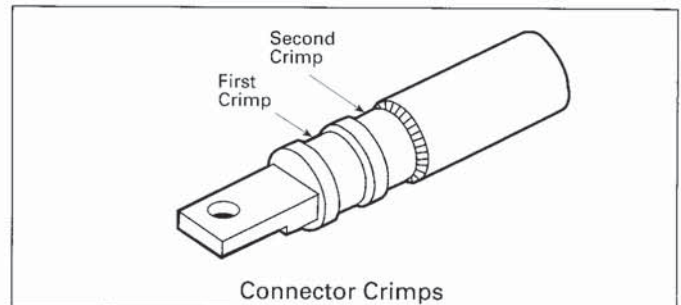


Figure 2

- Remove any inhibitor compound expelled during the crimping operation from the connector body and the cable insulation.
- Slip insulating cover over connector tang and then over connector barrel so that only the connector tang is exposed (Figure 3).

**Warning:** Short spacings will result if Step J is not followed.

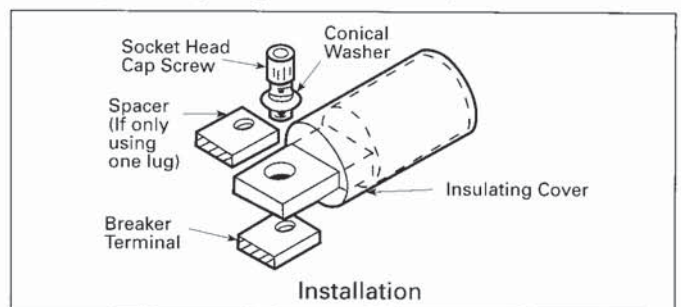


Figure 3

- Position connector tang on top of the circuit breaker terminal pad and secure with 3/8-16 x 1-1/2" socket head cap screw and conical spring washer. Conical spring washer is to be installed with convex side of washer toward underside of screw head (Figure 3). Torque screw to 228 in-lbs.

**NOTE:** If only using one lug for proper ampacity, insert spacer supplied with kit between spring washer and compression lug.



# Handle Locking Devices

## Attaching Handle Blocking Device (JD6HBL)

### To Block Handle ON

Turn Breaker ON. Assemble blocking device to breaker by positioning over handle as shown, with handle opening of blocking device toward the line end. Insert tab **A** into slot **A1**. Push toward handle and downward in area shown (Figure 1) until tab **B** drops into slot **B1** (Figure 2).

### To Block Handle OFF

Turn Breaker OFF. Reverse handle blocking device so that handle opening of blocking device is toward the load end. Insert tab **A** into slot **B1**. Push toward handle and downward in area shown until tab **B** seats in slot **A1** (Figure 3).

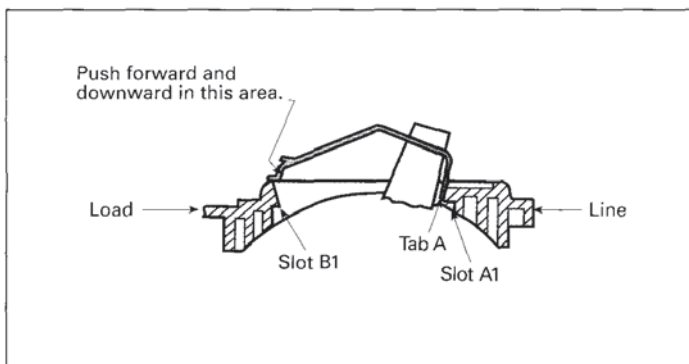


Figure 1

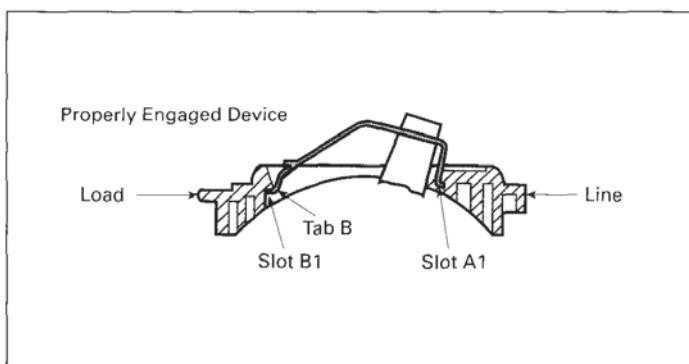


Figure 2

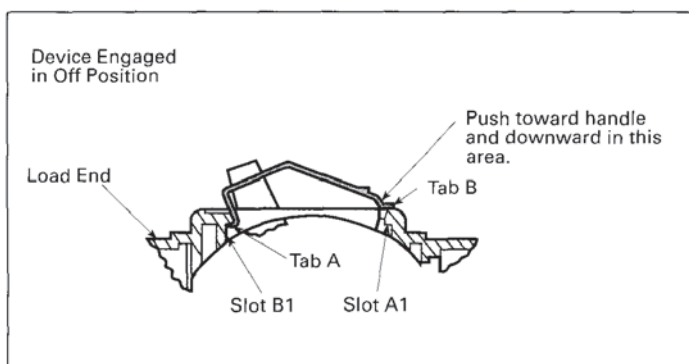


Figure 3

## Attaching Padlocking Device (JD6HPL)

With breaker in TRIPPED position, assemble padlocking device to breaker by positioning over handle as shown. Insert tab **A** into slot **A1**. Pivot tab **B** into slot **B1** until surface **D** is resting on surface **C** (Figure 4). Install #6-32 x .188 non-removable screws (2 places).

### To Lock Handle OFF

To padlock handle in OFF position, move breaker handle to OFF and move slider to the right until .375" dia. holes line up, allowing padlock to be installed (Figure 5).

### To Lock Handle ON

To padlock circuit breaker in ON position, enlarge 12" dia. hole of slider to .375" dia. before assembly to breaker. File away burrs after drilling. Assemble padlocking device to breaker as explained above, then turn breaker ON and install padlock.

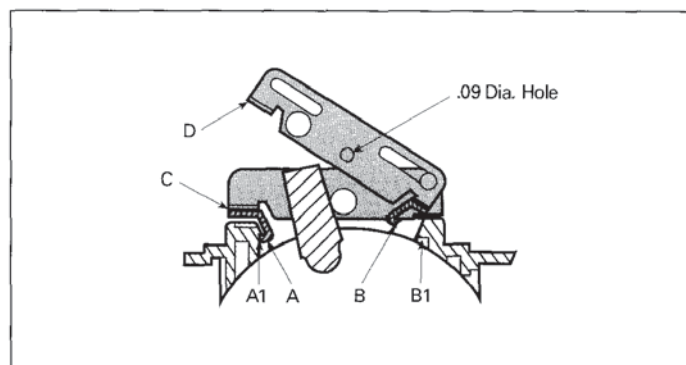


Figure 4

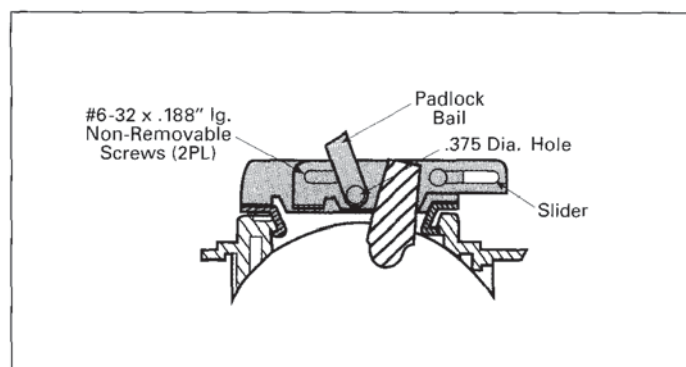
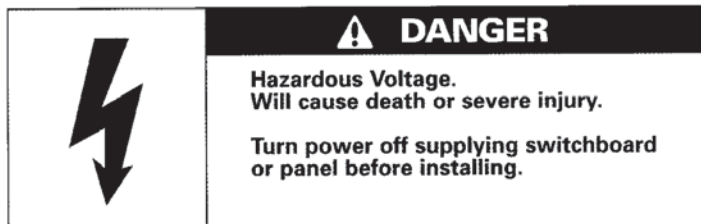


Figure 5



## Safety Instructions

### General

The JD6 trip units are available in 200, 225, 250, 300, 350 and 400 ampere ratings. The LD6 trip units are available in 450, 500 and 600 ampere ratings.

These devices have adjustable magnetic trip settings. The 200 through 300 ampere trip units have a magnetic adjustment range from 1250 to 2500 amperes. The 350 through 450 ampere trip units have a magnetic adjustment range from 2000 to 4000 amperes. The 500 and 600 ampere trip units have a range from 3000 to 6000 amperes. Ranges for dc operation are 15 percent higher.

See breaker frame label or consult Siemens Energy and Automation, Inc. sales office for complete catalog number information. Trip unit catalog number information is also located on pages 47.

### Add Trip Unit to Breaker Frame

- A. Remove terminal screws **(1)** and terminal shield **(2)** from load side of breaker frame.
- B. Remove cover attachment screws **(3)** and access cover **(4)**. **NOTE: If breaker frame is mounted, load-end breaker mounting screws must also be removed before cover can be removed.**
- C. Remove operating handle **(5)**.
- D. Lower trip unit assembly **(6)** into base. Make sure trip unit latch pin engages slots in mechanism frame.

- E. Tighten three trip unit captive screws **(7)**. (Recommended torque 140 in-lbs.)
- F. Add the load lugs and fasten per instructions furnished with connector kits.
- G. Apply rating label **(8)** supplied with trip unit, to recessed area on top of operating handle **(3)**. **NOTE: Make sure rating label agrees with amperage rating of trip unit installed.**
- H. Replace operating handle **(5)**. Operating handle must be installed with word ON toward trip unit. **NOTE: Make sure operating handle is seated squarely on metal handle arm.**
- I. Replace access cover **(4)** and cover attachment screws **(3)**. (Recommended torque A 18-20 in-lbs., B 30-32 in-lbs.) Replace terminal shield **(2)** and terminal screws **(1)**. Replace load-side breaker mounting screws if applicable.
- J. Move operating handle **(5)** to extreme OFF position (reset).

### Replace Trip Unit in Breaker Frame

**Caution:** Circuit breaker must be in the TRIPPED position and breaker terminals must be disengaged from any source of power before removing cover.

- A. Remove terminal screws **(1)** and terminal shield **(2)** from load side of breaker frame.
- B. Remove cover attachment screws **(3)** and cover **(4)**. **NOTE: If circuit breaker is mounted, load-end breaker mounting screws must also be removed before cover can be removed.**
- C. Remove operating handle **(5)**.
- D. Remove three trip unit attachment screws **(7)**. **NOTE: Attachment screws will remain captive to trip unit assembly.**
- E. Remove load-end cable connector mounting screws and connectors if applicable.
- F. Lift trip unit assembly **(6)** from circuit breaker.
- G. Add new trip unit as outlined under Steps D to J of "Add Trip Unit to Breaker Frame" instructions.

# Installation Diagram

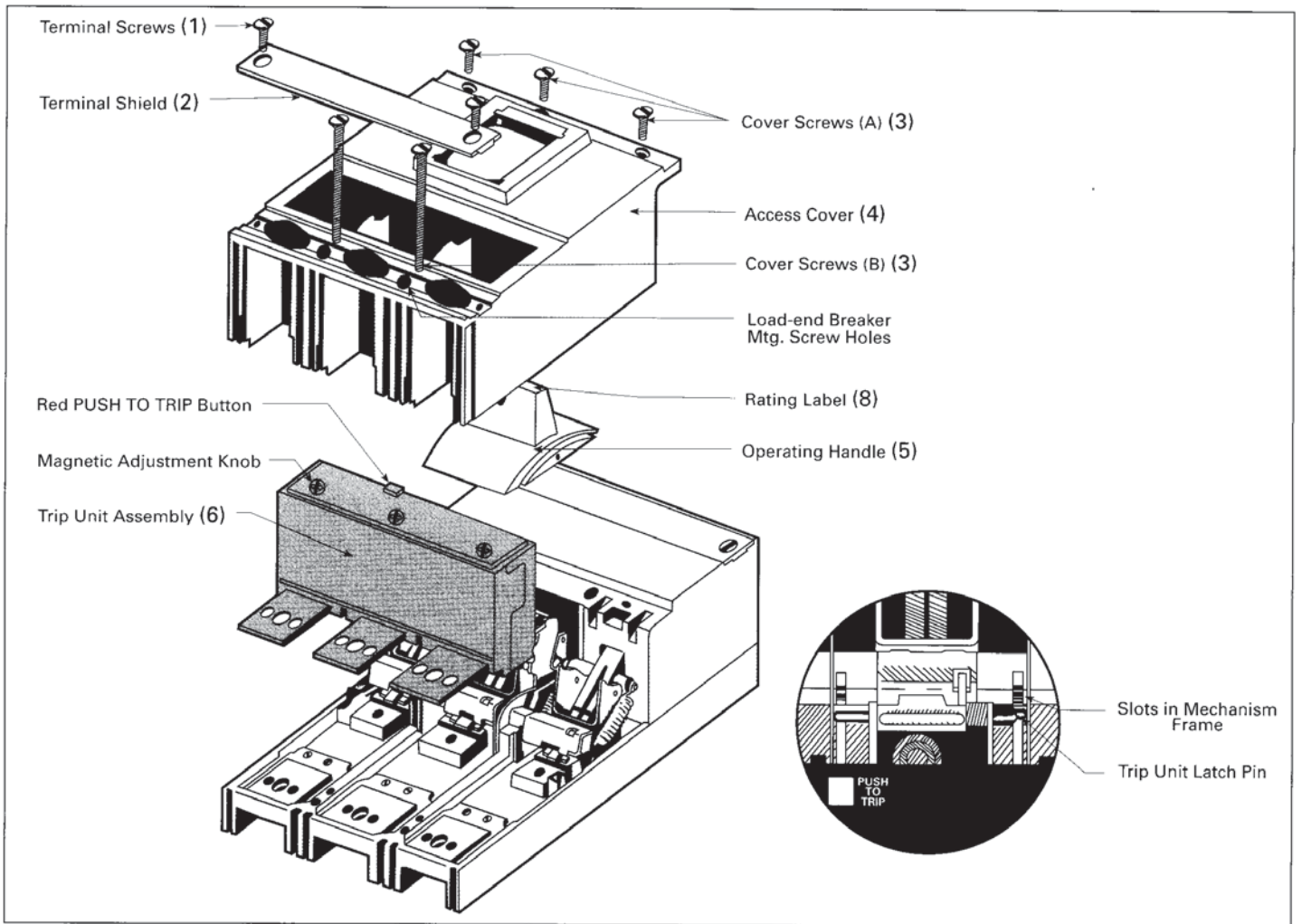
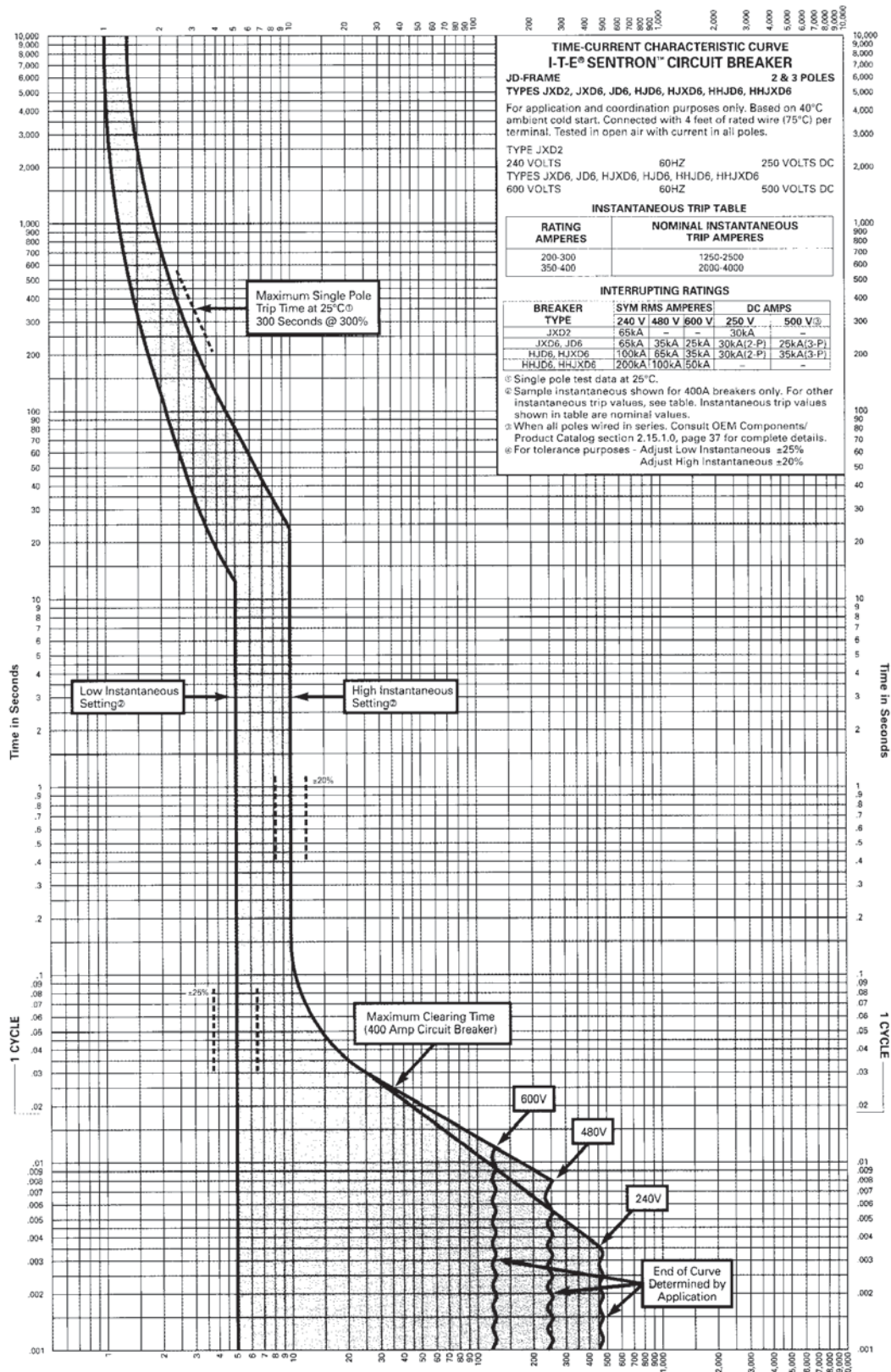


Figure 1

# JD-Frame Time Current Curve

Types JXD2(-A), JD6(-A), JXD6(-A), HJD6(-A), HJXD6(-A), HHJD6, HHJXD6



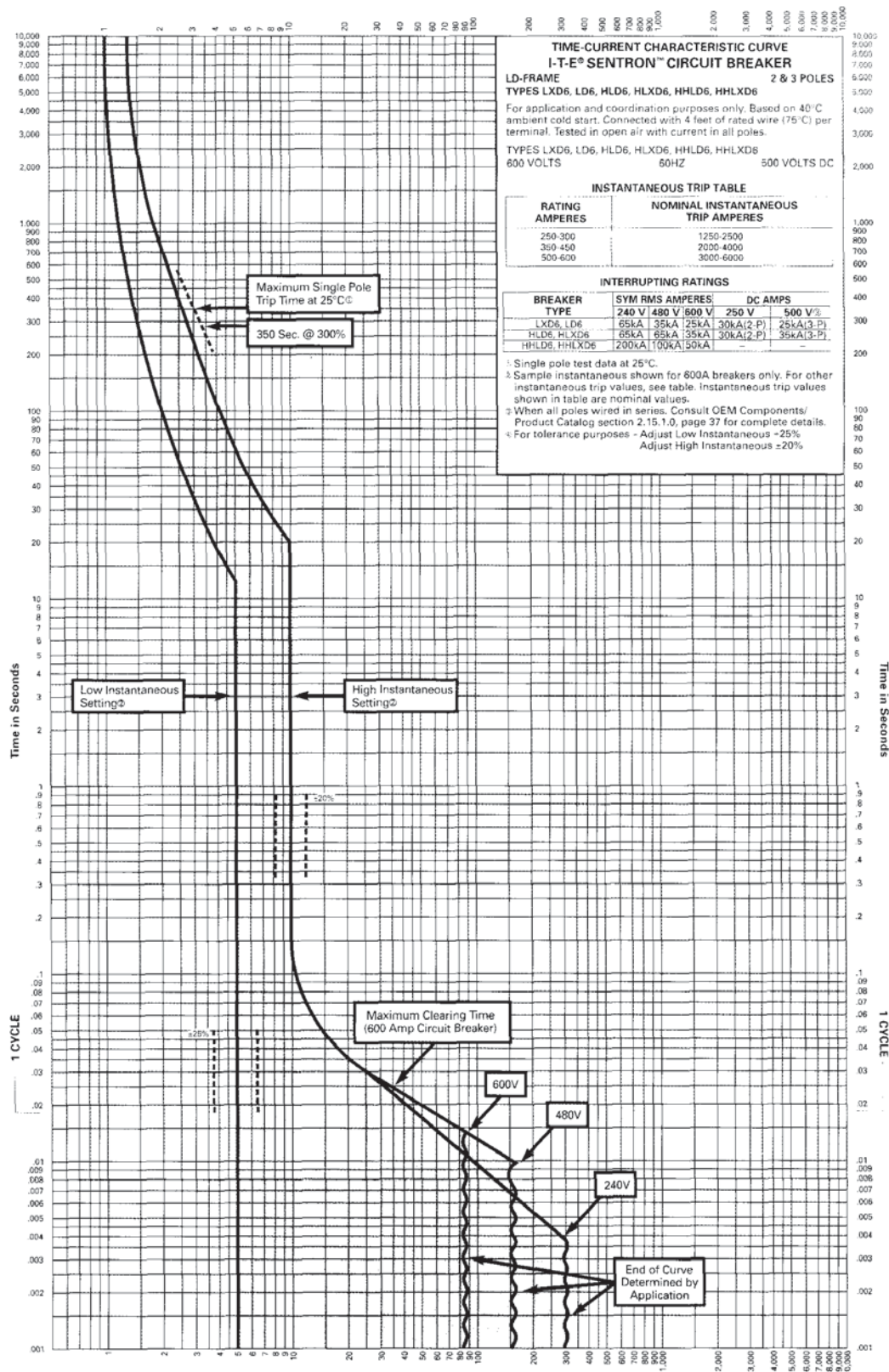
TD-7104

Multiples of Circuit Breaker Continuous Current Rating



# LD-Frame Time Current Curve

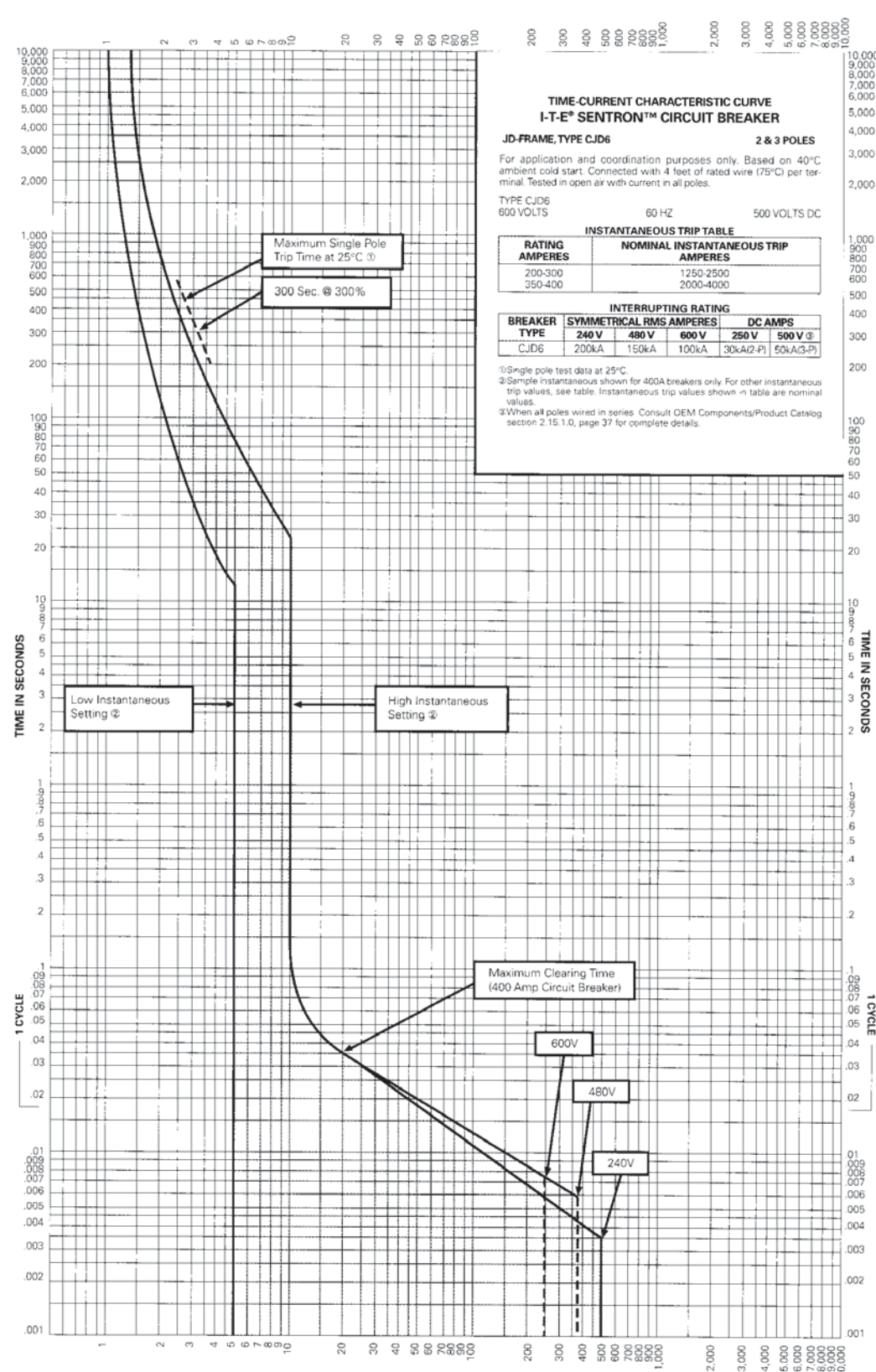
Types LXD6(-A), LD6(-A), HLXD6(-A), HLD6(-A), HHLD6, HHLXD6





# JD-Frame Time Current Curve

## TYPE CJD6(-A)

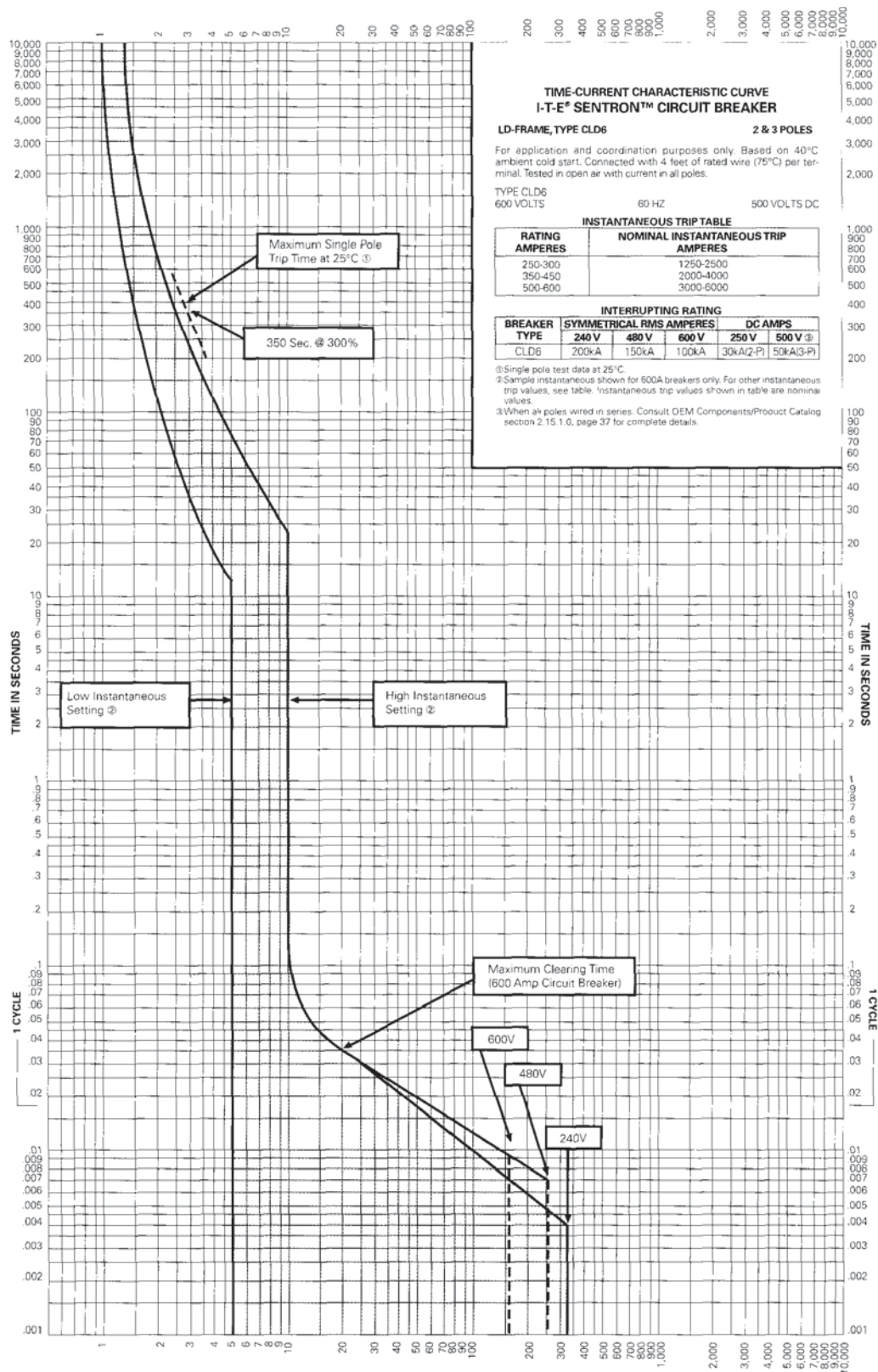


TD-7105

Multiples of Circuit Breaker Continuous Current Rating

# LD-Frame Time Current Curve

## TYPE CLD6(-A)



# Internal Accessories



## **⚠ DANGER**

**Hazardous Voltage.**  
Will cause death or severe injury.

**Turn power off supplying switchboard or panel before installing.**



## **Safety Instructions**

### **Circuit Breaker Preparation**

- A. Depress trip button (Figure 1) to trip circuit breaker prior to removing cover. Before attaching accessory unit, circuit breaker must be in tripped position.
- B. Remove two terminal shield screws on load end cover (1), load end cover screws (5 or 9) (2) and, if breaker is mounted, also remove mounting screws (not shown). Remove load end cover only (3). Accessory units can be mounted in either right or left poles of the circuit breaker, except types with an "FP" prefix or an "S" suffix, which can only be mounted in the right pole.

### **Accessory Mounting Instructions**

- A. Feed accessory leads down and through 5/16 x 1/2" elongated opening (4) to bring leads out of bottom of circuit breaker (Figure 3). **NOTE: Leads must be brought out in the same order as they exit wire retainer of accessory case.**
- B. Accessory is located in circuit breaker by groove (5), bottom side of accessory. Remove protective label from top of trip unit and guide actuator (9) into opening (10).

**NOTE: On shunt trip, undervoltage trip and auxiliary switch accessories, transfer link is in top opening and transfer link slides into top opening of trip unit. Transfer link is in bottom opening of Bell Alarm switch and slides into bottom opening of the trip unit.**

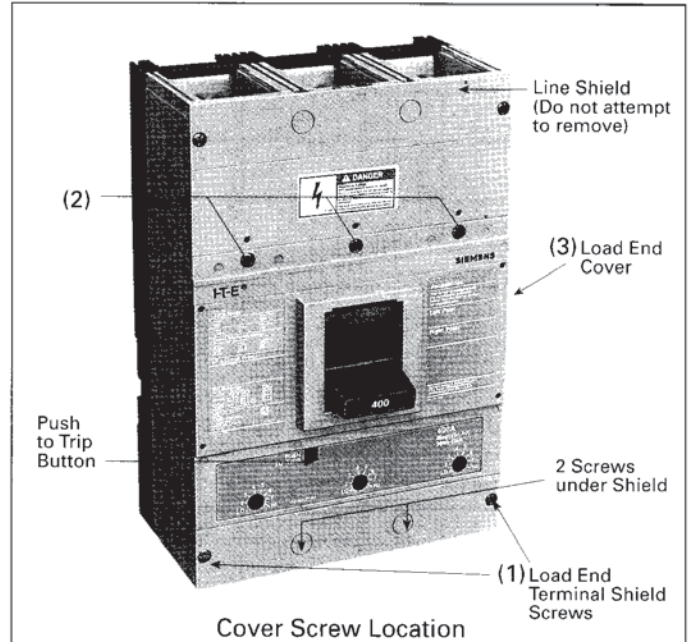


Figure 1

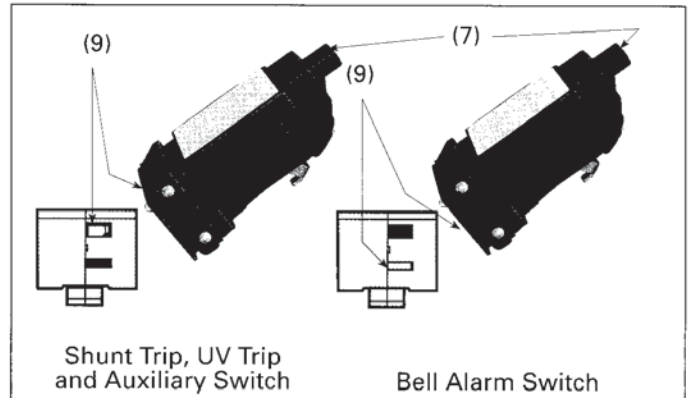


Figure 2

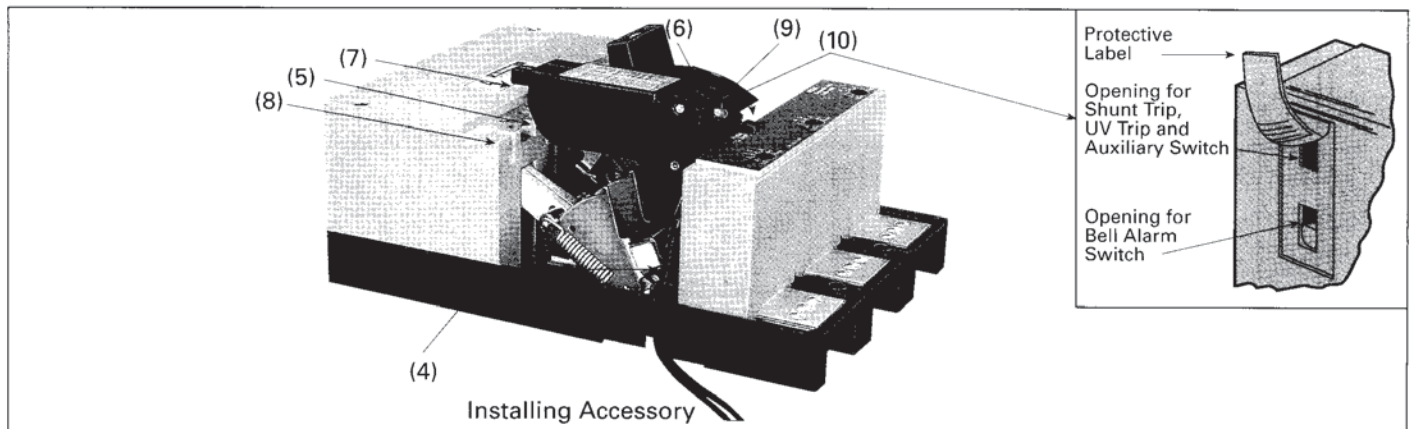


Figure 3



# Installation

## Recommended Combinations

- C. Slide accessory down to reset on pad (6) trip unit. When accessory is installed correctly, front of accessory (7) will rest on pad (8) of line cover. Pull gently and evenly on accessory wire leads (2 to 6 wires) while lowering accessory into base. Make sure *all the slack* is removed from leads inside breaker.
- D. Replace load end cover (3) cover screws (2) and four mounting screws if mounted. Replace terminal shield with screws (1).
- E. Add two labels to circuit breaker. Attach identification label (11) to appropriate space in label on top of circuit breaker on right hand side. Attach accessory information label (12) on side of circuit breaker base (Figure 5).
- F. Refer to Electrical Check, page 22 and 23.

### Maximum Installable Accessory Combinations ②

Shunt Trip①	Undervoltage Trip	Auxiliary Switch	Bell Alarm Switch
1	1	3	0
1	0	3	0
1	0	3	1
0	1	4	0
0	1	4	1
0	0	4	1
0	0	4	0

① Shunt trip units include a coil clearing switch.

② When mechanical interlock M15413 is employed accessories are limited to left pole only.

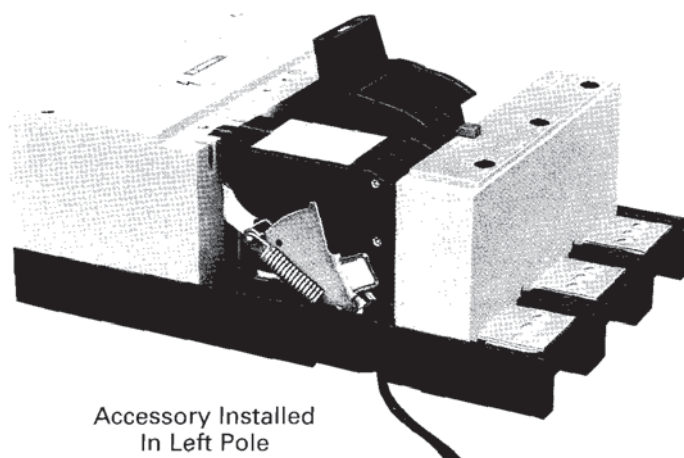


Figure 4

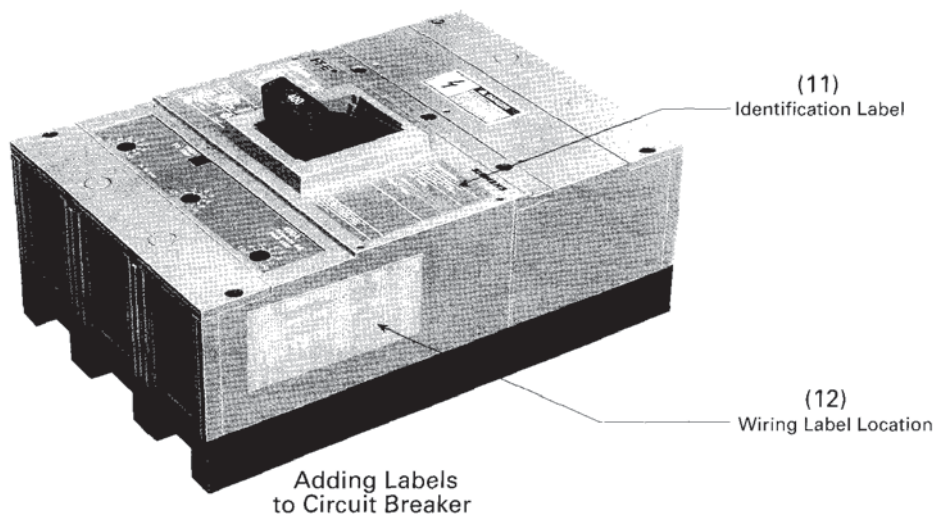


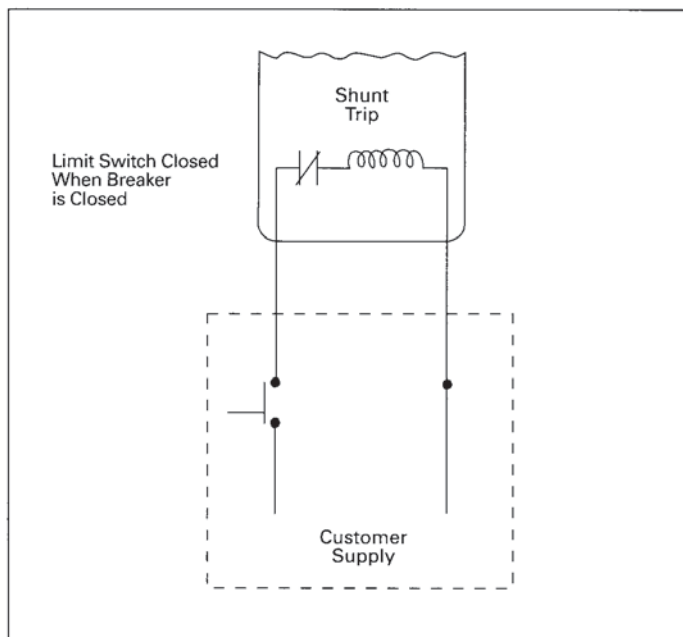
Figure 5

# Shunt Trip and Undervoltage Trip

## Electrical Check

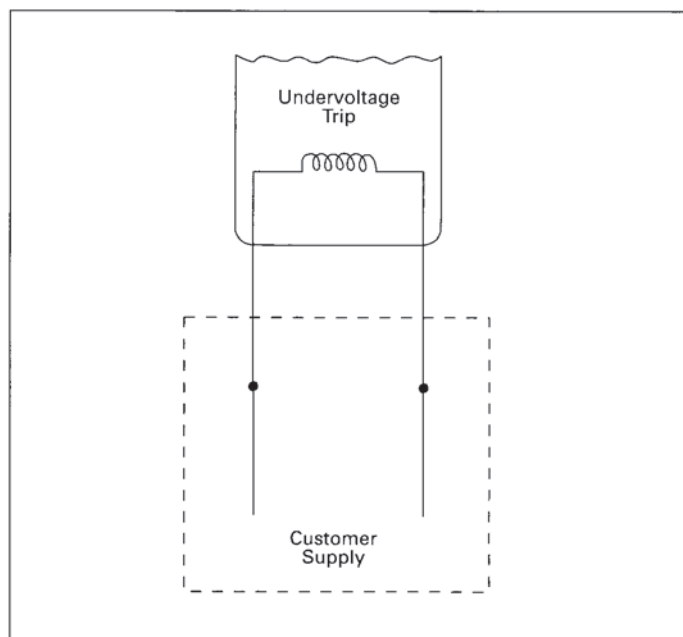
### Shunt Trip

- Reset and turn circuit breaker ON.
- Attach test circuit to accessory leads. When the test voltage reaches 55 percent or more of the rated coil voltage, the circuit breaker should trip.
- With breaker TRIPPED or OFF, check to make sure coil circuit has opened.



### Undervoltage Trip

- With breaker in TRIPPED position, connect test circuit to accessory leads. Energize undervoltage trip device at 85 percent of the marked rated voltage of the coil. Reset and turn breaker handle ON.
- Reduce voltage to 35 percent of rated coil voltage. Circuit breaker must trip.



### Electrical Data For Shunt Trip

Coil Voltage	Inrush Current At Rated Voltage (Amperes)	Catalog Number
60 Cycles AC		
12	Consult Sales Office	S19JLD6
24		S17JLD6
48		S18JLD6
120		S01JLD6
208		S02JLD6
240		S03JLD6
277		S15JLD6
480		S04JLD6
600		S06JLD6
DC		
12	Consult Sales Office	S16JLD6
24		S07JLD6
48		S09JLD6
125		S11JLD6
250		S13JLD6

### Electrical Data For Undervoltage (UV) Trip<sup>① ②</sup>

Coil Voltage	Sealed-In Current At Rated Voltage (Amperes)	Catalog Number	
		1 UV Trip Plus 1 Aux. Sw.	1 UV Trip Only
60 Cycles AC			
120	Consult Sales Office	U01JLD62A	U01JLD6
208		U02JLD62A	U02JLD6
240		U03JLD62A	U03JLD6
277		U16JLD64A	U16JLD6
480		U06JLD64A	U06JLD6
600③		N/A	U08JLD6
DC			
24	Consult Sales Office	U13JLD62A	U13JLD6
48		U14JLD62A	U14JLD6
125		U10JLD62A	U10JLD6
250④		U12JLD62A	U12JLD6

<sup>①</sup> Resistor to be mounted externally of circuit breaker and connected by installer.

<sup>②</sup> All auxiliary switch ratings are the same as auxiliary switch kit A01FD64.

<sup>③</sup> Kit includes a 30k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).

<sup>④</sup> Kit includes a 2.5k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).

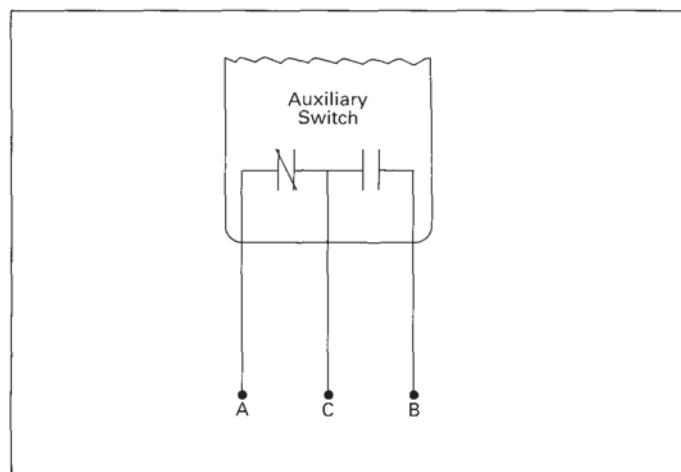


# Auxiliary Switch and Bell Alarm Switch

## Electrical Check

### Auxiliary Switch Kits

Catalog Number	Number of Switches	Ampere Rating of Switch				
		Volts AC			Volts DC	
		120	240	480	125	250
A01JLD64	1	10	10	10	0.5	0.25
A02JLD64	2	10	10	10	0.5	0.25



### Switch Identification (All With Three Leads)

Wire Markings	Wire Color	Switch Terminals or Contacts
C or C1	White	C - Common terminal
A or A1	Black	N.O. - Contact open when breaker is open, closed when breaker is closed.
B or B1	Red	N.C. - Contact closed when breaker is open, open when breaker is closed.

Accessory units that employ a combination will have the same wiring colors or identifiers. A double auxiliary switch combination will use wiring markings A-A1, B-B1 and C-C1.

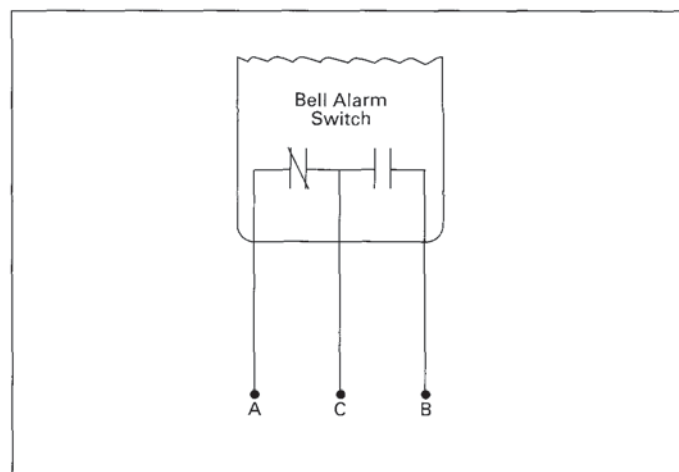
#### Auxiliary Switch ①

- Use a buzzer or light indicator attached to switch leads A and C. With breaker in ON position, a light or buzzing noise should be observed.
- Move handle to OFF position. Indicator light or buzzer should turn off.
- Attach test to leads B and C. Light or buzzer should turn on.
- Repeat Steps A through C using leads A1, B1 and C1.
- Move handle to ON position. Indicator light or buzzer should turn off.

① Should the indicator not function properly during "check" procedure, check for incorrect installation or wiring.

### Bell Alarm Switch Kits

Catalog Number	Number of Auxiliary Switches	Ampere Rating of Switch				
		Volts AC			Volts DC	
		125	240	480	125	250
B01JLD64	0	10	10	10	.5	.25
A01JLD64B	1	10	10	10	.5	.25
A02JLD64B	2	10	10	10	.5	.25



### Bell Alarm Identification (All With Three Leads)

Wire Markings	Wire Color	Switch Terminals or Contacts
C	White	C - Common terminal
A	Yellow	N.C. - Normally closed contact (Closed when circuit breaker is tripped.)
B	Brown	N.O. - Normally open contact (Open when circuit breaker is tripped.)

#### Bell Alarm Switch ①

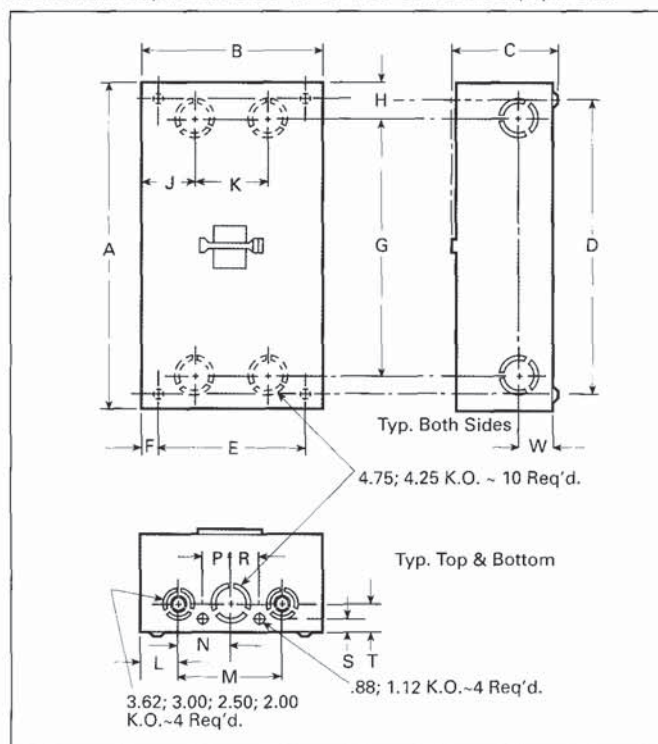
- Use a buzzer or light indicator attached to switch leads A and C. With breaker in ON position, trip breaker by depressing red trip button. Indicator light or buzzer should operate.
- Reset breaker to OFF. Indicator light or buzzer should turn off.
- Move breaker handle to ON. Indicator light or buzzer should remain off.

# Enclosures

## Types 1, 3R

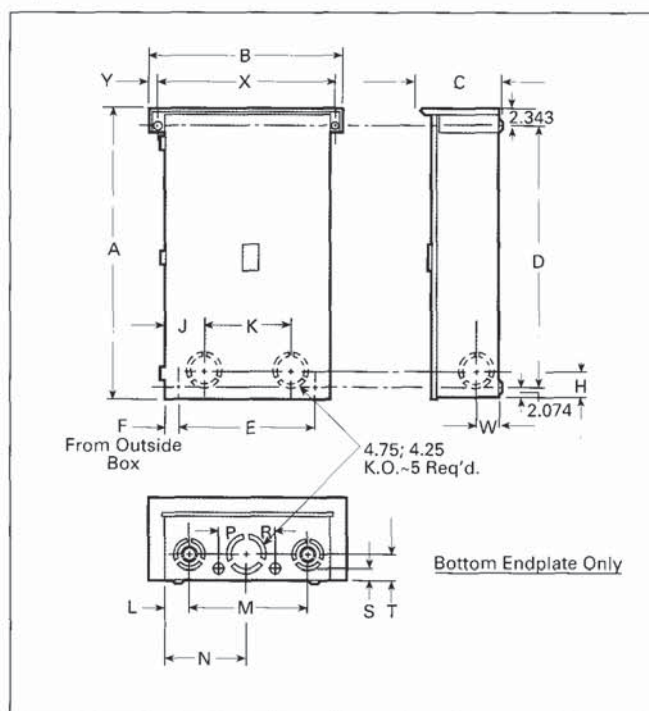
### Type 1 – J6N1, LD6N1

General purpose indoor, sheet-steel enclosure for use in normal atmosphere, listed as service-entrance equipment.



### Type 3R – J6N3R, LD6N3R

An outdoor, sheet-steel enclosure providing protection against driving rain, sleet or snow. Listed as service-entrance equipment.



### Dimensions (In Inches)

Catalog Number	Reference																			
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	W	X	Y
J6N1	40.2	22.4	10.7	36.0	18.25	2.09	32.5	2.8	6.2	5.0	4.5	13.5	11.2	3.4	3.4	1.5	3.5	3.3	-	-
LD6N1	45.2	22.4	10.7	41.0	18.25	2.09	37.5	2.8	6.2	5.0	4.5	13.5	11.2	3.4	3.4	1.5	3.5	3.3	-	-
J6N3R	41.2	26.8	11.7	36.5	18.25	2.12	-	3.8	6.1	10.0	4.5	13.5	11.2	3.4	3.4	1.5	3.5	3.3	24.15	1.12
LD6N3R	45.2	26.8	11.7	41.5	18.25	2.12	-	3.8	6.1	10.0	4.5	13.5	11.2	3.4	3.4	1.5	3.5	3.3	24.25	1.12

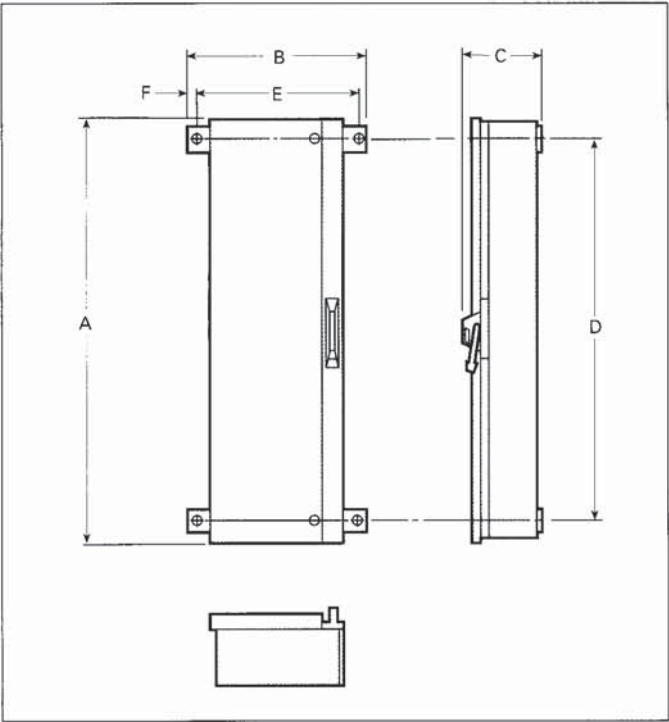
Neutral Kits: JD6 Enclosures – W60992, LD6 Enclosures – W60993 (ordered as separate items – not included in enclosures)

# Enclosures

## Types 12, 4 and 4x

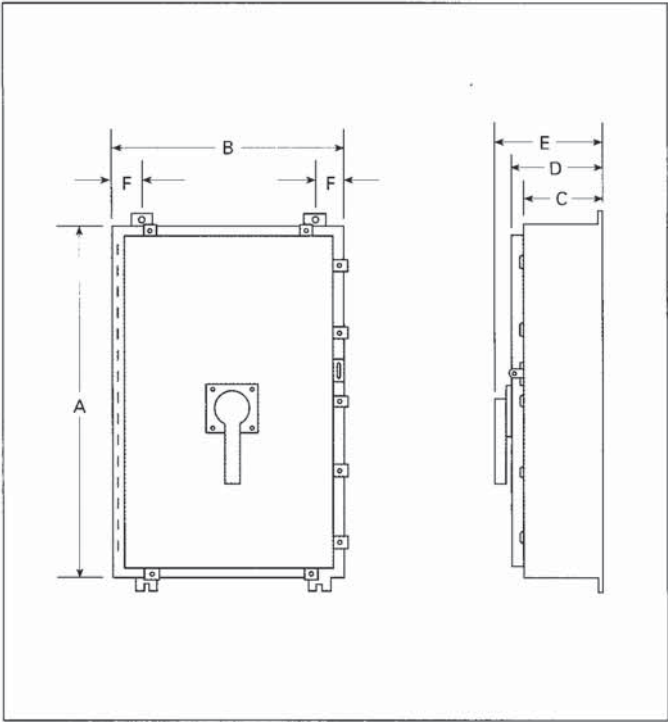
### Type 12 – J6N12, LD6N12

A special-industry, sheet-steel enclosure for indoor use in atmosphere containing particles of lint, dirt, sawdust and other foreign matter.



### Type 4, 4x – LD6SS4

Type 304 stainless steel – an indoor or outdoor enclosure providing protection against corrosion, wind blown dust, rain, splashing water and hose directed water.



### Dimensions (In Inches)

Catalog Number	Reference					
	A	B	C	D	E	F
J6N12	41.15	21.63	11.62	37.15	20.38	.62
LD6N12	46.15	21.63	11.62	42.15	20.38	.62
LD6SS4	42.0	30.0	10.0	11.16	13.75	3.0

Neutral Kits: JD6 Enclosures – W60992, LD6 Enclosures – W60993  
(ordered as separate items – not included in enclosures)

# Ordering Information

## Circuit Breaker Catalog Numbers

### JXD2(-A) Non-interchangeable Trip

Ampere Rating	Instantaneous Trip Range		Complete 2-Pole <sup>①</sup> Breaker Unenclosed	Complete 3-Pole Breaker Unenclosed	UL Interrupting Ratings (kA) <sup>④</sup> (RMS) Symmetrical Amperes				
	Min.	Max.	Catalog Number <sup>②⑦</sup>	Catalog Number <sup>②⑦</sup>	240Vac	480Vac	600Vac	250Vdc <sup>⑤</sup>	500Vdc <sup>⑥</sup>
200	1250	2500	JXD22B200	JXD23B200	65	N/A	N/A	30	N/A
225	1250	2500	JXD22B225	JXD23B225	65	N/A	N/A	30	N/A
250	1250	2500	JXD22B250	JXD23B250	65	N/A	N/A	30	N/A
300	1250	2500	JXD22B300	JXD23B300	65	N/A	N/A	30	N/A
350	2000	4000	JXD22B350	JXD23B350	65	N/A	N/A	30	N/A
400	2000	4000	JXD22B400	JXD23B400	65	N/A	N/A	30	N/A
400	Molded Case Switch <sup>③</sup>		JXD22S400A	JXD23S400A	65	N/A	N/A	30	N/A
SHIPPING:			17.5 lb.	19.5 lb.					

### JXD6(-A) Non-interchangeable Trip

200	1250	2500	JXD62B200	JXD63B200	65	35	25	30	25
225	1250	2500	JXD62B225	JXD63B225	65	35	25	30	25
250	1250	2500	JXD62B250	JXD63B250	65	35	25	30	25
300	1250	2500	JXD62B300	JXD63B300	65	35	25	30	25
350	2000	4000	JXD62B350	JXD63B350	65	35	25	30	25
400	2000	4000	JXD62B400	JXD63B400	65	35	25	30	25
400	Molded Case Switch③		JXD62S400A	JXD63S400A	65	35	25	30	N/A
SHIPPING:			17.5 lb.	19.5 lb.					

### HJXD6(-A) Non-interchangeable Trip

200	1250	2500	—	HJXD63B200	100	65	35	N/A	35
225	1250	2500	—	HJXD63B225	100	65	35	N/A	35
250	1250	2500	—	HJXD63B250	100	65	35	N/A	35
300	1250	2500	—	HJXD63B300	100	65	35	N/A	35
350	2000	4000	—	HJXD63B350	100	65	35	N/A	35
400	2000	4000	—	HJXD63B400	100	65	35	N/A	35

### LXD6(-A) Non-interchangeable Trip

450	2000	4000	LXD62B450	LXD63B450	65	35	25	30	25
500	3000	6000	LXD62B500	LXD63B500	65	35	25	30	25
600	3000	6000	LXD62B600	LXD63B600	65	35	25	30	25
600	Molded Case Switch③		LXD62S600A	LXD63S600A	65	35	25	30	25
SHIPPING:			17.5 lb.	19.5 lb.					

### HLXD6(-A) Non-interchangeable Trip

450	2000	4000	—	HLXD63B450	100	65	35	N/A	35
500	3000	6000	—	HLXD63B500	100	65	35	N/A	35
600	3000	6000	—	HLXD63B600	100	65	35	N/A	35

① Two-Pole available in 3-Pole width only.

② For 50°C application replace "B" letter in catalog number with the letter "M" for ordering purposes.

③ Includes self protecting instantaneous element.

④ IEC interrupting ratings are listed on page 50.

⑤ D.C. interruption rating for 2-pole construction only.

⑥ D.C. interruption rating for 3-pole construction when properly wired as shown on page 4.

⑦ For 100% application, order Non-Interchangeable Trip Breaker catalog number and add a "H" suffix letter, i.e. (HJXD63B400H) – use copper only terminal connectors.



# Ordering Information

## Circuit Breaker Catalog Numbers

### JD6(-A) Interchangeable Trip 2-Pole<sup>①</sup>

Ampere Rating	Instantaneous Trip Range		Complete Breaker Unenclosed <sup>②</sup>	Frame Only	Trip Unit Only <sup>③</sup>	UL Interrupting Ratings (kA) (RMS) Symmetrical Amperes				
	Min.	Max.	Catalog Number	Catalog Number	Catalog Number	240Vac	480Vac	600Vac	250Vdc <sup>④</sup>	500Vdc
200	1250	2500	JD62B200	JD62F400	JD62T200	65	35	25	30	N/A
225	1250	2500	JD62B225	JD62F400	JD62T225	65	35	25	30	N/A
250	1250	2500	JD62B250	JD62F400	JD62T250	65	35	25	30	N/A
300	1250	2500	JD62B300	JD62F400	JD62T300	65	35	25	30	N/A
350	2000	4000	JD62B350	JD62F400	JD62T350	65	35	25	30	N/A
400	2000	4000	JD62B400	JD62F400	JD62T400	65	35	25	30	N/A
SHIPPING:			17.5 lb.	14 lb.	3.5 lb.					

### 3-Pole

200	1250	2500	JD63B200	JD63F400	JD63T200	65	35	25	N/A	25
225	1250	2500	JD63B225	JD63F400	JD63T225	65	35	25	N/A	25
250	1250	2500	JD63B250	JD63F400	JD63T250	65	35	25	N/A	25
300	1250	2500	JD63B300	JD63F400	JD63T300	65	35	25	N/A	25
350	2000	4000	JD63B350	JD63F400	JD63T350	65	35	25	N/A	25
400	2000	4000	JD63B400	JD63F400	JD63T400	65	35	25	N/A	25
SHIPPING:			19.5 lb.	15.5 lb.	4 lb.					

### HJD6(-A) Interchangeable Trip<sup>②</sup> 2-Pole<sup>①</sup>

200	1250	2500	HJD62B200	HJD62F400	JD62T200	100	65	35	30	N/A
225	1250	2500	HJD62B225	HJD62F400	JD62T225	100	65	35	30	N/A
250	1250	2500	HJD62B250	HJD62F400	JD62T250	100	65	35	30	N/A
300	1250	2500	HJD62B300	HJD62F400	JD62T300	100	65	35	30	N/A
350	2000	4000	HJD62B350	HJD62F400	JD62T350	100	65	35	30	N/A
400	2000	4000	HJD62B400	HJD62F400	JD62T400	100	65	35	30	N/A
SHIPPING:			17.5 lb.	14 lb.	3.5 lb.					

### 3-Pole

200	1250	2500	HJD63B200	HJD63F400	JD63T200	100	65	35	N/A	35
225	1250	2500	HJD63B225	HJD63F400	JD63T225	100	65	35	N/A	35
250	1250	2500	HJD63B250	HJD63F400	JD63T250	100	65	35	N/A	35
300	1250	2500	HJD63B300	HJD63F400	JD63T300	100	65	35	N/A	35
350	2000	4000	HJD63B350	HJD63F400	JD63T350	100	65	35	N/A	35
400	2000	4000	HJD63B400	HJD63F400	JD63T400	100	65	35	N/A	35
SHIPPING:			19.5 lb.	15.5 lb.	4 lb.					

① Two-Pole available in 3-Pole width only.

② For 50°C application replace "B" letter in catalog number with the letter "M" for ordering purposes.

③ If trip unit is required, replace the letter "T" with the letter "W" for ordering purposes.

④ D.C. interruption rating for 2-pole construction only.



# Ordering Information

## Circuit Breaker Catalog Numbers

### LD6(-A) Interchangeable Trip

#### 2-Pole<sup>①</sup>

Ampere Rating	Instantaneous Trip Range		Complete Breaker Unenclosed	Frame Only	Trip Unit Only	UL Interrupting Ratings (kA) (RMS) Symmetrical Amperes				
	Min.	Max.	Catalog Number <sup>②</sup>	Catalog Number	Catalog Number <sup>③</sup>	240Vac	480Vac	600Vac	250Vdc <sup>④</sup>	500Vdc
250	1250	2500	LD62B250	LD62F600	JD62T250	65	35	25	30	N/A
300	1250	2500	LD62B300	LD62F600	JD62T300	65	35	25	30	N/A
350	2000	4000	LD62B350	LD62F600	JD62T350	65	35	25	30	N/A
400	2000	4000	LD62B400	LD62F600	JD62T400	65	35	25	30	N/A
450	2000	4000	LD62B450	LD62F600	LD62T450	65	35	25	30	N/A
500	3000	6000	LD62B500	LD62F600	LD62T500	65	35	25	30	N/A
600	3000	6000	LD62B600	LD62F600	LD62T600	65	35	25	30	N/A
SHIPPING:			17.5 lb.	14 lb.	3.5 lb.					

#### 3-Pole

250	1250	2500	LD63B250	LD63F600	JD63T250	65	35	25	N/A	25
300	1250	2500	LD63B300	LD63F600	JD63T300	65	35	25	N/A	25
350	2000	4000	LD63B350	LD63F600	JD63T350	65	35	25	N/A	25
400	2000	4000	LD63B400	LD63F600	JD63T400	65	35	25	N/A	25
450	2000	4000	LD63B450	LD63F600	LD63T450	65	35	25	N/A	25
500	3000	6000	LD63B500	LD63F600	LD63T500	65	35	25	N/A	25
600	3000	6000	LD63B600	LD63F600	LD63T600	65	35	25	N/A	25
SHIPPING:			19.5 lb.	15.5 lb.	4 lb.					

### HLD6(-A) Interchangeable Trip<sup>②④</sup>

#### 2-Pole<sup>①</sup>

250	1250	2500	HLD62B250	HLD62F600	JD62T250	100	65	35	30	N/A
300	1250	2500	HLD62B300	HLD62F600	JD62T300	100	65	35	30	N/A
350	2000	4000	HLD62B350	HLD62F600	JD62T350	100	65	35	30	N/A
400	2000	4000	HLD62B400	HLD62F600	JD62T400	100	65	35	30	N/A
450	2000	4000	HLD62B450	HLD62F600	LD62T450	100	65	35	30	N/A
500	3000	6000	HLD62B500	HLD62F600	LD62T500	100	65	35	30	N/A
600	3000	6000	HLD62B600	HLD62F600	LD62T600	100	65	35	30	N/A
SHIPPING:			17.5 lb.	14 lb.	3.5 lb.					

#### 3-Pole

250	1250	2500	HLD63B250	HLD63F600	JD63T250	100	65	35	N/A	35
300	1250	2500	HLD63B300	HLD63F600	JD63T300	100	65	35	N/A	35
350	2000	4000	HLD63B350	HLD63F600	JD63T350	100	65	35	N/A	35
400	2000	4000	HLD63B400	HLD63F600	JD63T400	100	65	35	N/A	35
450	2000	4000	HLD63B450	HLD63F600	LD63T450	100	65	35	N/A	35
500	3000	6000	HLD63B500	HLD63F600	LD63T500	100	65	35	N/A	35
600	3000	6000	HLD63B600	HLD63F600	LD63T600	100	65	35	N/A	35
SHIPPING:			19.5 lb.	15.5 lb.	4 lb.					

① Two-Pole available in 3-Pole width only.

② For 50°C application replace "B" letter in catalog number with the letter "M" for ordering purposes.

③ If trip unit is required, replace the letter "T" with the letter "W" for ordering purposes.

④ D.C. interruption rating for 2-pole construction only.

# Ordering Information

## Circuit Breaker Catalog Numbers

### HHJD6 Interchangeable Trip 2-Pole<sup>①</sup>

Ampere Rating	Instantaneous Trip Range		Complete Breaker Unenclosed	Frame Only	Trip Unit Only	UL Interrupting Ratings (kA) (RMS) Symmetrical Amperes				
	Min.	Max.	Catalog Number <sup>②</sup>	Catalog Number	Catalog Number <sup>③</sup>	240Vac	480Vac	600Vac	250Vdc	500Vdc
200	1250	2500	HHJD62B200	HHJD62F400	JD62T200	200	100	50	N/A	N/A
225	1250	2500	HHJD62B225	HHJD62F400	JD62T225	200	100	50	N/A	N/A
250	1250	2500	HHJD62B250	HHJD62F400	JD62T250	200	100	50	N/A	N/A
300	1250	2500	HHJD62B300	HHJD62F400	JD62T300	200	100	50	N/A	N/A
350	2000	4000	HHJD62B350	HHJD62F400	JD62T350	200	100	50	N/A	N/A
400	2000	4000	HHJD62B400	HHJD62F400	JD62T400	200	100	50	N/A	N/A
SHIPPING:			17.5 lb.	14 lb.	3.5 lb.					

### 3-Pole

200	1250	2500	HHJD63B200	HHJD63F400	JD63T200	200	100	50	N/A	N/A
225	1250	2500	HHJD63B225	HHJD63F400	JD63T225	200	100	50	N/A	N/A
250	1250	2500	HHJD63B250	HHJD63F400	JD63T250	200	100	50	N/A	N/A
300	1250	2500	HHJD63B300	HHJD63F400	JD63T300	200	100	50	N/A	N/A
350	2000	4000	HHJD63B350	HHJD63F400	JD63T350	200	100	50	N/A	N/A
400	2000	4000	HHJD63B400	HHJD63F400	JD63T400	200	100	50	N/A	N/A
SHIPPING:			19.5 lb.	15.5 lb.	4 lb.					

### HHLD6 Interchangeable Trip 2-Pole<sup>①</sup>

250	1250	2500	HHLD62B250	HHLD62F600	JD62T250	200	100	50	N/A	N/A
300	1250	2500	HHLD62B300	HHLD62F600	JD62T300	200	100	50	N/A	N/A
350	2000	4000	HHLD62B350	HHLD62F600	JD62T350	200	100	50	N/A	N/A
400	2000	4000	HHLD62B400	HHLD62F600	JD62T400	200	100	50	N/A	N/A
450	2000	4000	HHLD62B450	HHLD62F600	HHLD62T450	200	100	50	N/A	N/A
500	3000	6000	HHLD62B500	HHLD62F600	HHLD62T500	200	100	50	N/A	N/A
600	3000	6000	HHLD62B600	HHLD62F600	HHLD62T600	200	100	50	N/A	N/A
SHIPPING:			17.5 lb.	14 lb.	3.5 lb.					

### HHLD6 Interchangeable Trip 3-Pole

250	1250	2500	HHLD63B250	HHLD63F600	JD63T250	200	100	40	N/A	N/A
300	1250	2500	HHLD63B300	HHLD63F600	JD63T300	200	100	50	N/A	N/A
350	2000	4000	HHLD63B350	HHLD63F600	JD63T350	200	100	50	N/A	N/A
400	2000	4000	HHLD63B400	HHLD63F600	JD63T400	200	100	50	N/A	N/A
450	2000	4000	HHLD63B450	HHLD63F600	HHLD63T450	200	100	50	N/A	N/A
500	3000	6000	HHLD63B500	HHLD63F600	HHLD63T500	200	100	50	N/A	N/A
600	3000	6000	HHLD63B600	HHLD63F600	HHLD63T600	200	100	50	N/A	N/A
SHIPPING:			19.5 lb.	15.5 lb.	4 lb.					

① Two-Pole available in 3-Pole width only.

② For 50°C application replace "B" letter in catalog number with the letter "M" for ordering purposes.

③ If trip unit is required, replace the letter "T" with the letter "W" for ordering purposes.

# Ordering Information

## Circuit Breaker Catalog Numbers

### CJD6 Non-interchangeable Trip<sup>⑤</sup>

Ampere Rating	Instantaneous Trip Range		Complete 2-Pole <sup>①</sup> Breaker Unenclosed	Complete 3-Pole <sup>①</sup> Breaker Unenclosed	UL Interrupting Ratings (kA) (RMS) Symmetrical Amperes				
	Min.	Max.	Catalog Number <sup>②</sup>	Catalog Number <sup>②</sup>	240Vac	480Vac	600Vac	250Vdc	500Vdc
200	1250	2500	CJD62B200	CJD63B200	200	150	100	30	N/A
225	1250	2500	CJD62B225	CJD63B225	200	150	100	30	N/A
250	1250	2500	CJD62B250	CJD63B250	200	150	100	30	N/A
300	1250	2500	CJD62B300	CJD63B300	200	150	100	30	N/A
350	2000	4000	CJD62B350	CJD63B350	200	150	100	30	N/A
400	2000	4000	CJD62B400	CJD63B400	200	150	100	30	N/A
400	Molded Case Switch <sup>③</sup>		CJD62S400A	CJD63S400A	200	150	100	30	N/A
SHIPPING:			29.5 lb.	31.5 lb.					

### CLD6 Non-interchangeable Trip<sup>⑤</sup>

450	2000	4000	CLD62B250	CLD63B450	200	150	100	30	N/A
500	3000	6000	CLD62B500	CLD63B500	200	150	100	30	N/A
600	3000	6000	CLD62B600	CLD63B600	200	150	100	30	N/A
600	Molded Case Switch③		CLD62S600A	CLD63S600A	200	150	100	30	N/A
SHIPPING:			29.5 lb.	31.5 lb.					

### Instantaneous Trip (Motor Circuit Protectors)

Ampere Rating	Complete Breaker Unenclosed				Instantaneous Trip Range	
	Catalog Number				Minimum	Minimum
	JXD6-ETI, 2-Pole <sup>①</sup>	JXD6-ETI, 3-Pole	CJD6-ETI, 2-Pole <sup>①</sup>	CJD6-ETI, 3-Pole	Minimum	Minimum
400, Low	JXD62L400	JXD63L400	CJD62L400	CJD63L400	1250	2500
400, High	JXD62H400	JXD63H400	CJD62H400	CJD63H400	2000	4000
SHIPPING:			16 lb.	20 lb.	29.5 lb.	31.5 lb.

Amperes	LXD6-ETI, 2-Pole <sup>①</sup>	LXD6-ETI, 3-Pole	CLD6-ETI, 2-Pole <sup>①</sup>	CLD6-ETI, 3-Pole	Minimum	Minimum
600, Low	LXD62L600	LXD63L600	CLD62L600	CLD63L600	2000	4000
600, High	LXD62H600	LXD63H600	CLD62H600	CLD63H600	3000	6000
SHIPPING:			16 lb.	20 lb.	29.5 lb.	31.5 lb.

### IEC 947-2 Interrupting Ratings (kA)

Ampere Rating	Breaker Frame	Breaker Type	220/240 Volts (Icu)	220/240 Volts (Ics)	380/415 Volts (Icu)	380/415 Volts (Ics)	500 Volts (Icu)	500 Volts (Ics)
400	JD	JXD2(A)	—	—	—	—	—	—
		JXD6(A)	65	33	40	20	30	15
		JD6(A)	65	33	40	20	30	15
		HJD6(A)	100	50	65	33	42	21
		HJXD6(A)	100	50	65	33	42	21
		HHJD6	200	100	100	50	65	33
		HHJXD6	200	100	100	50	65	33
		CJD6 <sup>④</sup>	200	—	150	—	—	—
600	LD	LXD6(A)	65	33	40	20	30	15
		LD6(A)	65	33	40	20	30	15
		HLD6(A)	100	50	65	33	42	21
		HLXD6(A)	100	50	65	33	42	21
		HHLD6(A)	200	100	100	50	65	33
		HHLXD6	200	100	100	50	65	33
		CLD6 <sup>④</sup>	200	—	150	—	—	—

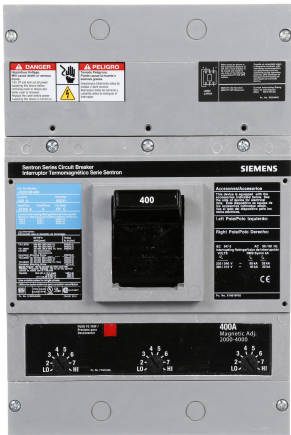
① Two-Pole available in 3-pole width only.

② For 50°C application replace "B" letter in catalog number with the letter "M" for ordering purposes.

③ Includes self protecting instantaneous element.

④ Meets and Marked IEC 157-1 P1.





Documents



Others 1



Cut Sheets 2

Adjustable Parameters

Adjustable pick-up value current / of instantaneous short-circuit trip unit / Full-scale value	4000 A
Adjustable pick-up value current / of instantaneous short-circuit trip unit / initial value	2000 A

Certificates

Certificate of suitability	UL489 / IEC 60947-2
----------------------------	---------------------

Connections

Type of electrical connection / for main current circuit	VARIED CONNECTION ACCESSORIES
--	-------------------------------

Electricity

Continuous current / rated value	400 A
----------------------------------	-------

Environmental Conditions

Ambient temperature / during operation / maximum	75 degC
Ambient temperature / during operation / minimum	-25 degC

General Technical Data

Operating voltage / rated value / maximum	600 V
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Mechanical Design

Width [in]	7.5 in
Height [in]	11 in
Size of the circuit-breaker	JD (400A)
Depth [in]	4 in

Model

Number of poles	3
Protective function of the overcurrent release	LI

Product sub brand name	SETRON
Product designation	MOLDED CASE CIRCUIT BREAKER
Product brand name	SIEMENS
Suitability for use	OVERLOAD AND SHORT CIRCUIT LINE PROTECTION
Design of the product	JD
Design of the overcurrent release	THERMAL - MAGNETIC



Speed Fax Sections 3

### Switching Capacity According To UI 489

Trip class	STANDARD
Maximum short-circuit current breaking capacity (Icu) / at 240 V / acc. to NEMA / rated value	65 kA
Maximum short-circuit current breaking capacity (Icu) / at 480 V / acc. to NEMA / rated value	35 kA
Maximum short-circuit current breaking capacity (Icu) / at 600 V / acc. to NEMA / rated value	25 kA



Application and Selection Guide  
4

### Delivery Information

Export Control Class	AL : N / ECCN : EAR99
Net Weight	10.8
Product_Dimensions (LxWxH)	40.0X40.0X40.0

### Additional Product Information

Country of Origin	, MX, US
Commodity Code	, 8536200020
RoHS Compliance	*DQ



Cut Sheets 5



# SIEMENS

## I-T-E<sup>®</sup> Molded Case Circuit Breakers

FD-Frame  
Information and  
Instruction Guide



# Information and Instruction Guide

## General Information

### General

FD-Frame Sentron™ Series circuit breakers, as shown on pages 5 and 6 are for use in individual enclosures, switchboards and panelboards. They are available as thermal magnetic with interchangeable trip unit (types FD6-A, HFD6), thermal magnetic with non-interchangeable trip unit (type FXD6-A), suitable for reverse feed applications, current limiting (type CFD6) instantaneous magnetic only (motor circuit protectors—types FXD6-ETI, CFD6-ETI) and molded case switches (types FXD6, CFD6).

HHFD6 and HHFXD6 type circuit breakers have been designed to extend the interruption capabilities without the use of a second set of contacts as used in the current limiting CFD6 design. HFD6, HFXD6, HHFXD6 and HHFD6 type circuit breakers meet current limiting criteria at 240 and 480 VAC.

CFD6 circuit breakers combine thermal magnetic construction for overload protection and an additional set of "blow-apart" contacts in conjunction with the FD-Frame's standard "blow-apart" contacts. This arrangement provides for current limiting protection under high fault interrupting conditions as outlined in the National Electric Code, Article 240-11<sup>①</sup> and UL 489<sup>②</sup> standards. CFD6 circuit breakers are fuseless and therefore require no blown fuses to be located and replace should a high current fault occur. The common trip feature of the circuit breakers is completely retained so that all poles of the circuit breaker are open when caused to trip due to and overload or short circuit.

Pressure wire connectors, suitable for use with aluminum or copper wire, are available for all FD-Frame circuit breakers. Rear connection studs or plug-in connector assemblies are also available (2 and 3-pole). The latter mounting arrangement permits removal of the circuit breaker from a circuit without removing wiring leads. Special features such as a shunt trip, auxiliary and alarm switches and undervoltage trip devices are available for field adaptation. The installation and removal of these devices are mounted internally and Underwriters Laboratories listed, page 54. Information concerning these special devices is found on pages 18-23 and 53.

### Thermal Magnetic

FXD6-A, FD6-A, HFD6, HFXD6, HHFD6, HHFXD6, CFD6 type circuit breakers provide complete overload and short circuit protection when applied within their design parameters. Overload and short circuit tripout is accomplished by time-delay thermal trip elements and instantaneous magnetic trip devices. Nominal instantaneous trip values are externally adjustable with eight trip points as shown below.

Breaker Ampere Rating	Nominal Instantaneous Values <sup>③</sup>							
	Low	2	3	4	5	6	7	High
70 - 90	600	640	690	730	770	810	850	900
100 - 110	700	770	840	920	990	1060	1140	1200
125 - 150	800	800	1000	1100	1200	1300	1400	1500
175 - 200	900	1060	1210	1370	1520	1780	1930	2000
225 - 250	1100	1100	1500	1700	1900	2100	2300	2500

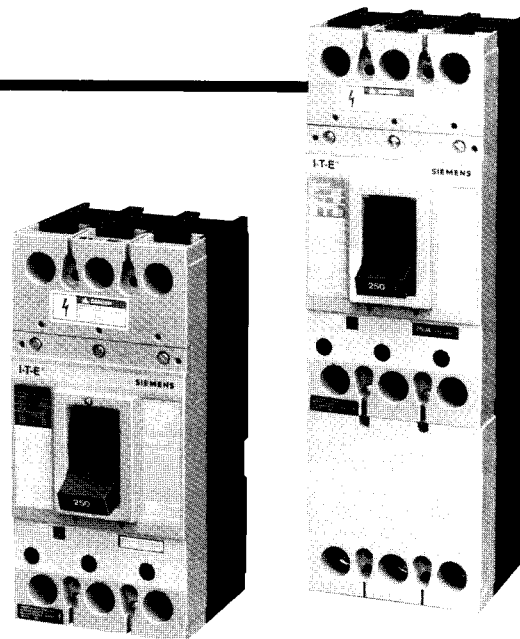
① National Electric Code (240-11)

"A current limiting overcurrent protective device, which when interrupting currents in its current limiting range, will reduce the current flowing in the faulted circuit to a magnitude substantially less than that obtainable in the same circuit, if the device were replaced with a solid conductor having comparable impedance."

② Underwriters Laboratories (UL 489, Par. 2.5)

"A circuit breaker that does not employ a fusible element and that when operating within its current limiting range, limits the let-through <sup>1</sup>t to a value less than the <sup>1</sup>t of a 1/2 cycle wave of the symmetrical prospective current."

③ All values based on tolerance levels covered by UL 489 standards.



Circuit breakers are calibrated at the factory, under controlled temperature conditions for application at 40°C (104°F) ambient to meet requirements as outlined in UL 489 Standard for molded case circuit breakers. The cover on the trip unit is sealed to prevent access to the trip elements. Alterations of the calibration of these elements should not be attempted. Removal of the special sealed line cover voids the Underwriters Laboratories, Inc. listing for that specific circuit breaker. Catalog information is found on pages 50-52.

### Molded Case Switch

A molded case switch is available in the FXD6 and CFD6 type circuit breakers. This device employs the same operating mechanism as the thermal magnetic and magnetic only units. A preset instantaneous function is factory installed to allow the switch to trip and protect itself at a high fault condition. No overload or low fault current protection is provided. This protection must be supplied by separate overcurrent devices. Catalog Information is located on pages 50 and 51.

### Interrupting Ratings—Symmetrical RMS Amperes (kA) Based on UL 489 Standards, UL File #E10848

Breaker Type	RMS Symmetrical Amperes (kA)				
	UL A.I.R.				
	AC			DC	
	240	480	600	250	500 <sup>②</sup>
FXD6-A, FD6-A	65	35	22	30 (2-P)	18 (3-P)
HFD6, HFXD6	100	65	25	30 (2-P)	25 (3-P)
HHFD6, HHFXD6	200	100	25	—	—
CFD6	200	200	100	30 (2-P)	50 (3-P)

Breaker Type	RMS Symmetrical Amperes (kA)					
	IEC A.I.R. <sup>①</sup>					
	Volts AC (50/60 Hz)					
	220/240		380/415		500	
	(lcs)	(lcs)	(lcs)	(lcs)	(lcs)	(lcs)
FXD6-A, FD6-A	65	33	35	18	20	10
HFD6, HFXD6	100	50	65	33	42	21
HHFD6, HHFXD6	200	100	100	50	65	33
CFD6	—	—	—	—	—	—

① Meets requirements of IEC 947-2.

② For 500 V dc application the customer's power supply and load must be wired as shown in Figure 1 on page 4. Interrupting ratings only apply to breakers used in UPS systems.

# Information and Instructions

## Operation and Maintenance

### Instantaneous Trip

ETI motor circuit interrupters, types FXD6-ETI, CFD6-ETI (adjustable instantaneous magnetic trip only) are designed for use in welding circuits, motor circuits and combination starters where short circuit protection only is required. When used in combination starters, they serve in conjunction with motor protective relays to offer complete protection. The relays guard against motor overloads and the circuit breaker provides short circuit protection. Catalog information is located on page 53.

### Instantaneous Trip Adjustments

Motor Full Load Amperes	ETI Trip Setting <sup>①</sup>		Ampere Rating
	Adjustment	Amperes	
30.76- 35.37	Low	400	150 Low
35.38- 39.99	2	460	
40.00- 44.60	3	520	
44.51- 49.23	4	580	
49.23- 53.83	5	640	
53.84- 58.45	6	700	
58.46- 63.06	7	760	
63.07- 74.50	High	820	150 Standard
61.53- 69.22	Low	800	
69.23- 76.91	2	900	
76.92- 84.60	3	1000	
84.61- 92.99	4	1100	
92.30- 99.99	5	1200	
100.00- 108	6	1300	
108- 115	7	1400	250 Standard
115- 136	High	1500	
85- 100	Low	1100	
100- 115	2	1300	
115- 130	3	1500	
131- 146	4	1700	
146- 162	5	1900	
162- 177	6	2100	250 Standard
177- 192	7	2300	
192- 227	High	2500	

<sup>①</sup> All values calibrated within guidelines of UL 489.

Low setting: -20%, +30%

High setting: -20%, +30%

### Circuit Breaker Operation

With the mechanism latched and the contacts open, the operating handle will be in the OFF position. Moving the handle to the ON position closes the contacts and establishes a circuit through the breaker. Under overload or short circuit conditions sufficient to automatically trip or open the breaker, the operating handle moves to a position between ON and OFF. To relatch the circuit breaker after automatic operation, move the operating handle to the extreme OFF position. The circuit breaker is now ready for reclosing.

The overcenter toggle mechanism is trip free of the operating handle. The circuit breaker, therefore, cannot be held closed by means of the handle should a tripping condition exist. After automatic operation, the handle assumes an intermediate position between ON and OFF, displaying a clear indication of tripping.

### Maintenance

Experience has shown that properly applied molded case circuit breakers normally do not require maintenance. However, some industrial users may choose to establish an inspection and maintenance procedure to be carried out on a regular basis. For detailed information, consult applicable NEMA publications or your local Siemens sales office.

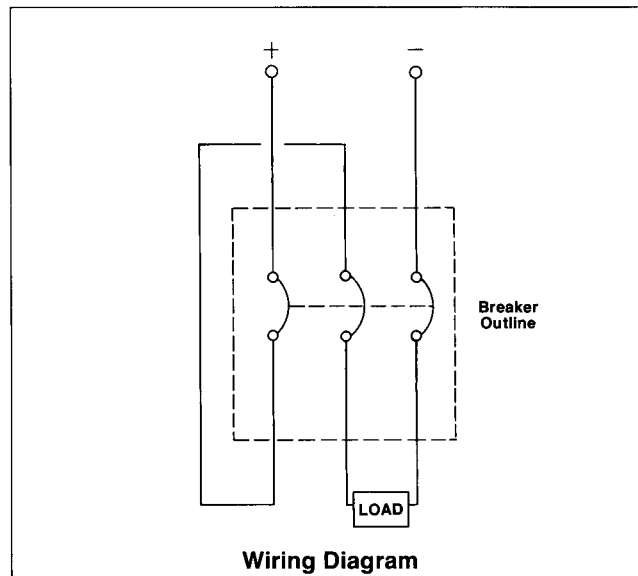


Figure 1

### SPECIAL NOTE:

FXD6-A, HFXD6, HHFXD6, AND CFD6 circuit breakers are not UL listed as interchangeable trips—DO NOT REMOVE TRIP UNIT and replace with another. Removal of trip unit voids UL listing.

FXD6-A, HFXD6, and HHFXD6 circuit breakers are also UL listed for reverse feed applications.

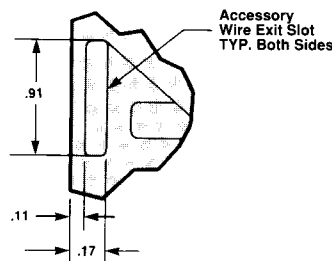
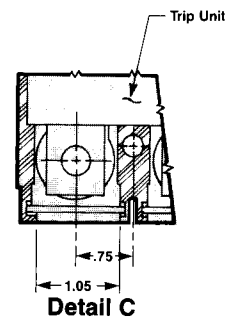
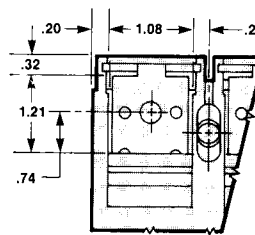
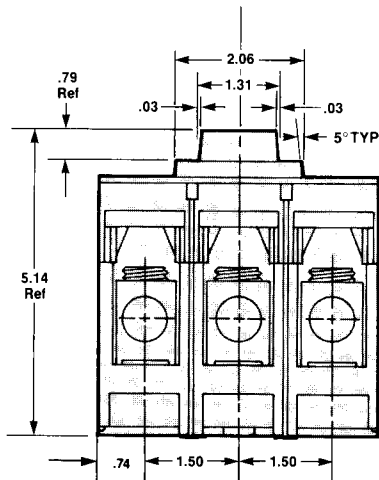
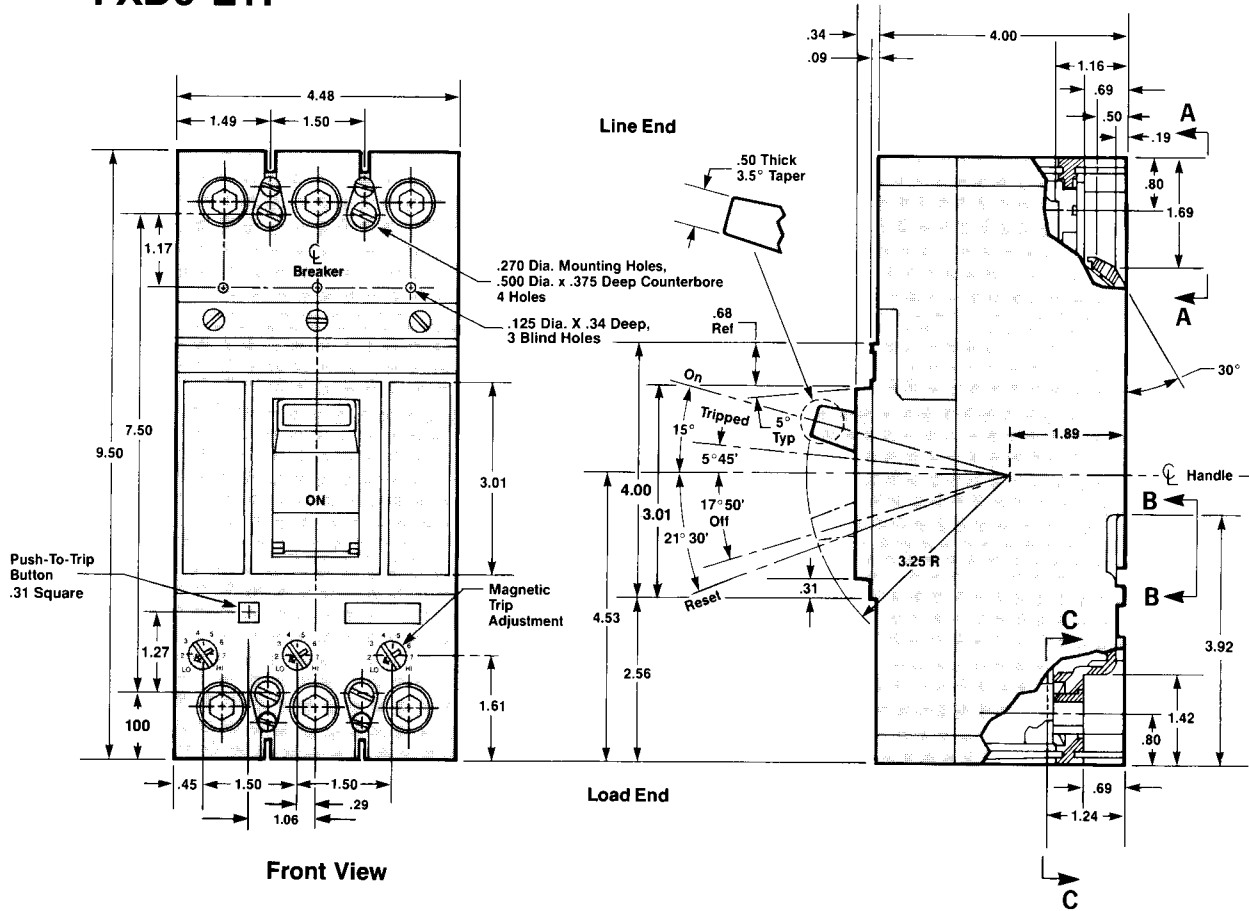
**Note:** Molded case circuit breakers are designed and tested to be applied in accordance to applicable portions of the National Electric code. For example, all molded case thermal magnetic circuit breakers are rated for 80% duty at 40°C unless marked otherwise.

Molded case circuit breakers are to be connected with 60°C or 70°C wire for circuit breakers having a rated ampacity of 125 amperes or less. Circuit breakers having a rated ampacity greater than 125 amperes shall only be cabled with 75°C cable.

Exceptions to this rule are outlined in article 110, section 110-14C (1) and (2) of the National Electric Code.

# I-T-E FD-Frame Outline Drawings<sup>①</sup>—2 and 3-Pole<sup>②</sup>

Types FXD6, FD6, FXD6A, FD6A, HFD6, HFXD6, HHFD6, HHFXD6, FXD6-ETI



## Handle Operating Forces

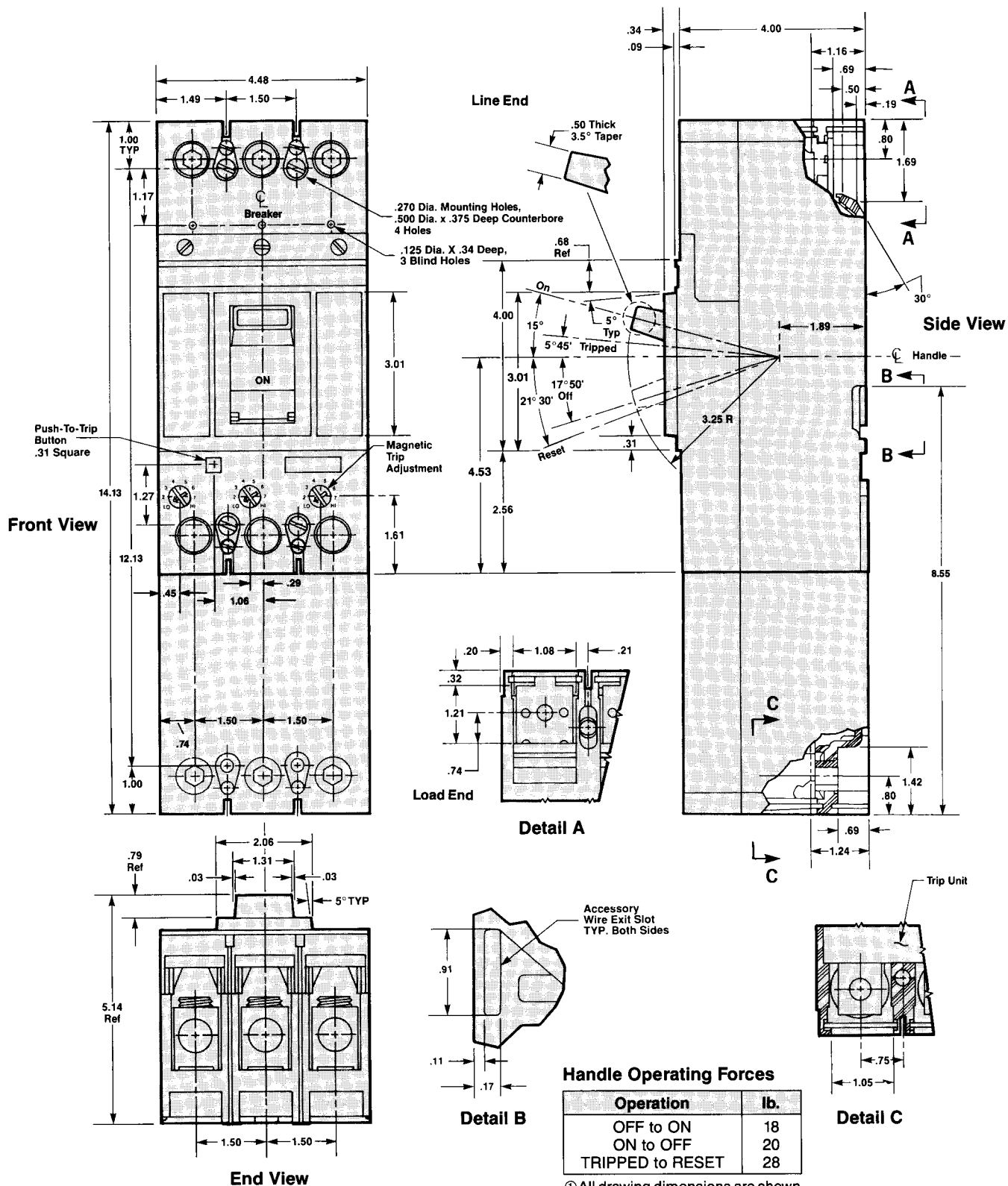
Operation	lb.
OFF to ON	18
ON to OFF	20
TRIPPED to RESET	28

① All drawing dimensions are shown in inches.

② Two and 3-pole breakers are the same physical size. Current carrying parts are omitted from the center pole in 2-pole breakers.

# I-T-E FD-Frame Outline Drawings<sup>①</sup>—2 and 3-Pole<sup>②</sup>

## Types CFD6, CFD6-ETI

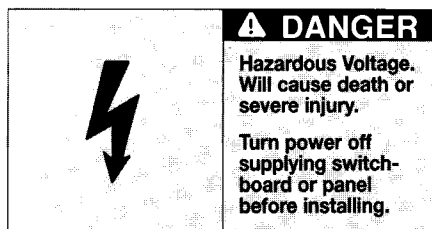


① All drawing dimensions are shown in inches.

② Two and 3-pole breakers are the same physical size. Current carrying parts are omitted from the center pole in 2-pole breakers.



# I-T-E Pressure Wire Connectors



## ⚠ SAFETY INSTRUCTIONS

- Place terminal connector body (1) (Figure 1) into terminal cavities (2) (Figure 2).
- Torque terminal mounting screw (3) to specified torque value.
- Place cable set screw (4) into threaded body opening. After cable has been inserted into cable cavity, torque cable set screw to specified value.

### Solderless Connector Torque Values

Catalog Number	Terminal Screw Torque	Cable Screw Torque	Cable Range
TA1F 350	175 in. lb.	375 in. lb.	#6-350 kcmil Cu #4-350 kcmil Al
TC1F 350	175 in. lb.	375 in. lb.	#6-350 kcmil Cu
TA1FD 350	①	①	#6-350 kcmil Cu #4-350 kcmil Al
TC1FD 350	①	①	#6-350 kcmil Cu

① Consult instructions supplied with connector body.

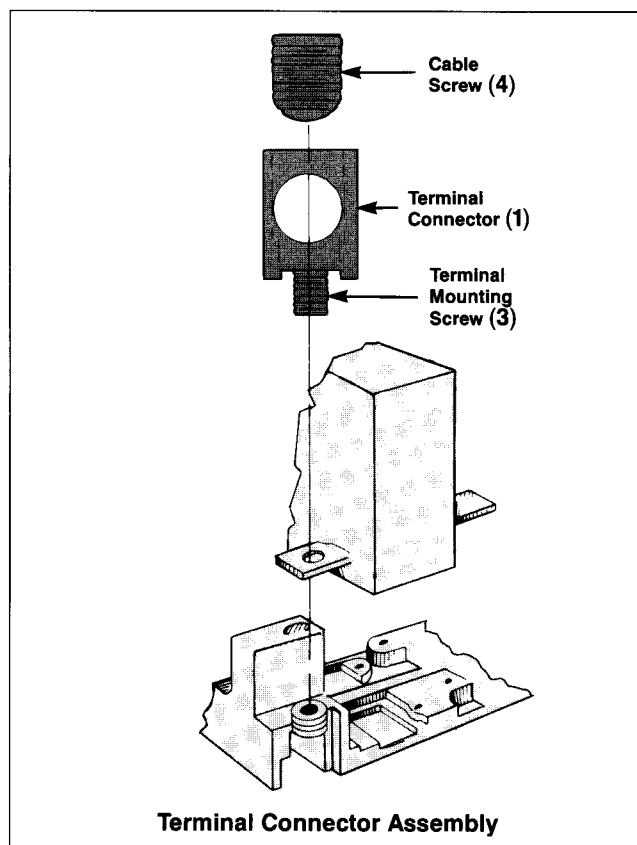


Figure 1

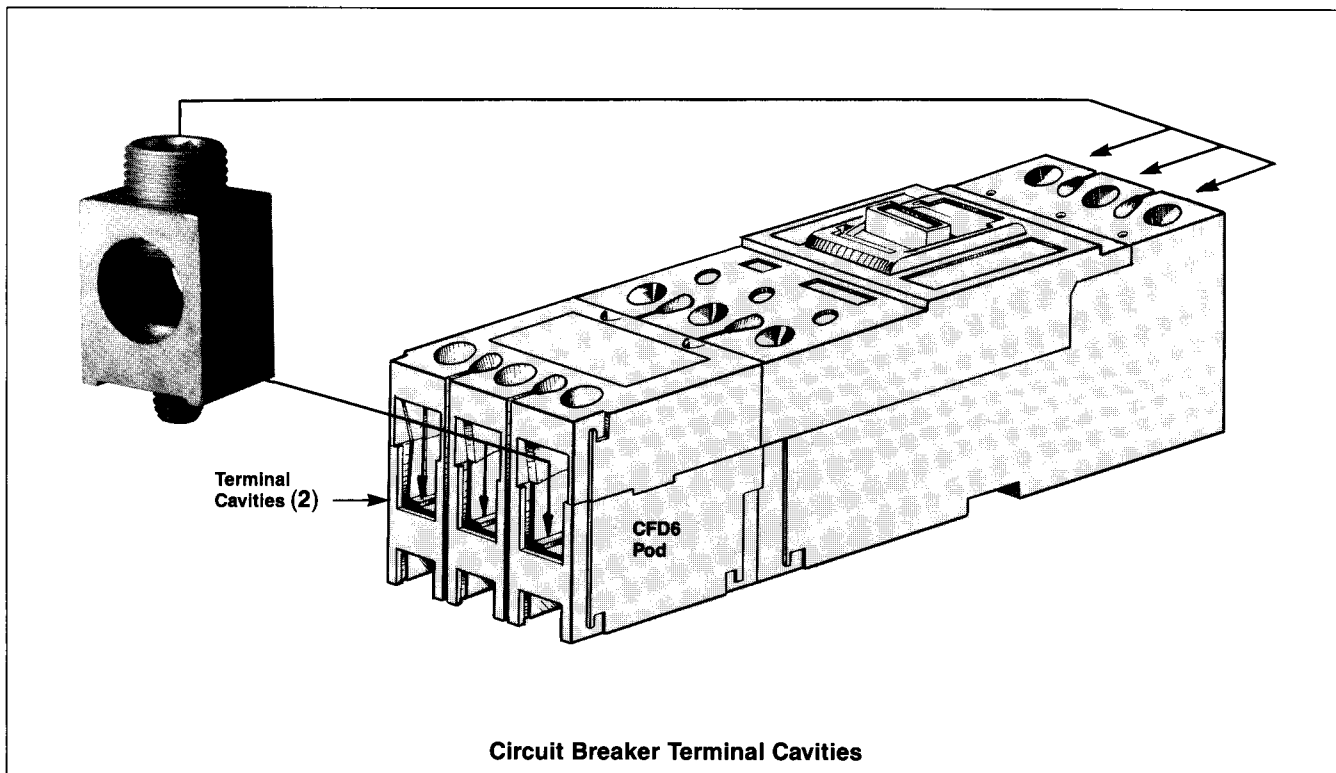


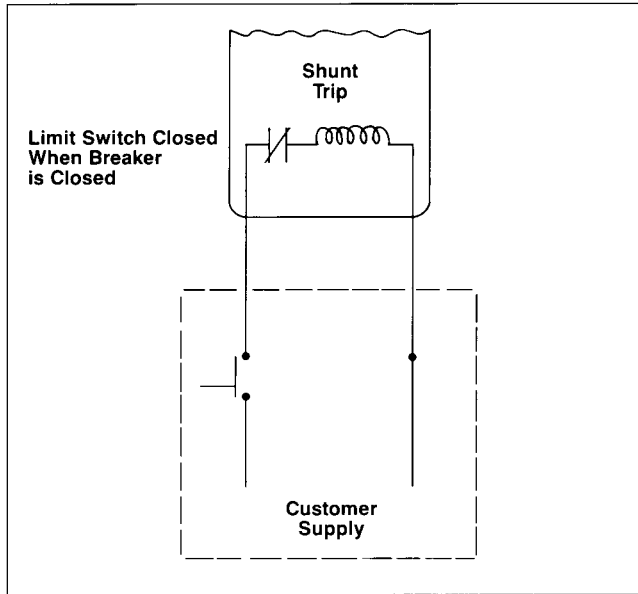
Figure 2

# I-T-E Shunt Trip and Undervoltage Trip

## Electrical Check

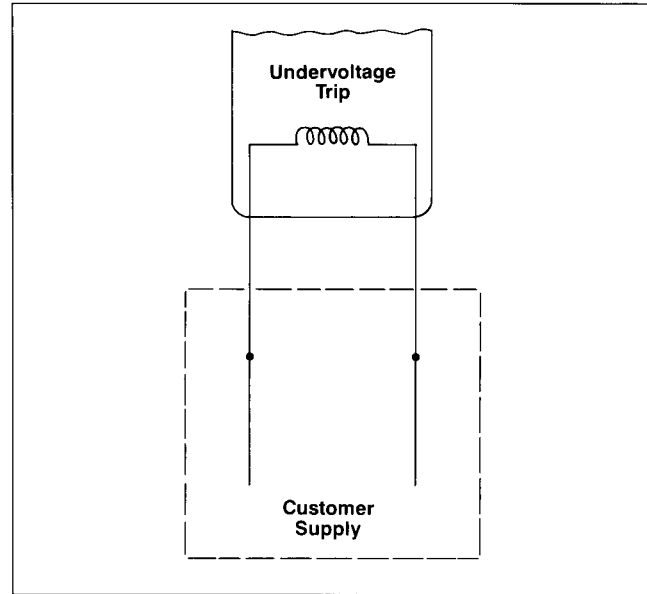
### Shunt Trip

- Reset and turn circuit breaker ON.
- Attach test circuit to accessory leads. When the test voltage reaches 55 percent or more of the rated coil voltage, the circuit breaker should trip.
- With breaker TRIPPED or OFF, check to make sure coil circuit has opened.



### Undervoltage Trip

- With breaker in TRIPPED position, connect test circuit to accessory leads. Energize undervoltage trip device at 85 percent of the marked rated voltage of the coil. Reset and turn breaker handle ON.
- Reduce voltage to 35 percent of rated coil voltage. Circuit breaker must trip. (Undervoltage device must trip between 70 and 35 percent of rated voltage.)



### Electrical Data For Shunt Trip

Coil Voltage	Inrush Current At Rated Voltage (Amperes)		Catalog Number
	UL (60 Hz)	IEC 947-2 (50 Hz)	
60 Cycles AC			
12	3.9	4.6	S19FD60
24	1.2	2.0	S17FD60
48	.8	1.0	S18FD60
120	0.395	.462/.577	S01FD60
208	0.265	—	S02FD60
240	0.165	.206/.237	S03FD60
277	0.190	—	S15FD60
480	0.145	.123/.187	S04FD60
600	0.080	—	S06FD60
DC			
12	—	4.3	S16FD60
24	2.2	2.2	S07FD60
48	1.2	1.2	S09FD60
125	0.5	.57/.66	S11FD60
250	0.35	.39/.45	S13FD60

### Electrical Data For Undervoltage (UV) Trip<sup>① ②</sup>

Coil Voltage	Sealed-In Current At Rated Voltage (Amperes)	Catalog Number	
		1 UV Trip Plus 1 Aux. Sw.	1 UV Trip Only
60 Cycles AC			
120	.03	W01FD64	U01FD60
208	.018	W02FD64	U02FD60
240	.016	W03FD64	U03FD60
277	.013	W16FD64	U16FD60
480	.008	W06FD64	U06FD60
600③	.008	W08FD64	U08FD60
DC			
24	.11	W13FD64	U13FD60
48	.06	W14FD64	U14FD60
125	.027	W10FD64	U10FD60
250④	.02	W12FD64	U12FD60

① Resistor to be mounted externally and connected by installer in series with undervoltage supply circuit.

② All auxiliary switch ratings are the same as auxiliary switch kit A01FD64.

③ Kit includes a 30k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).

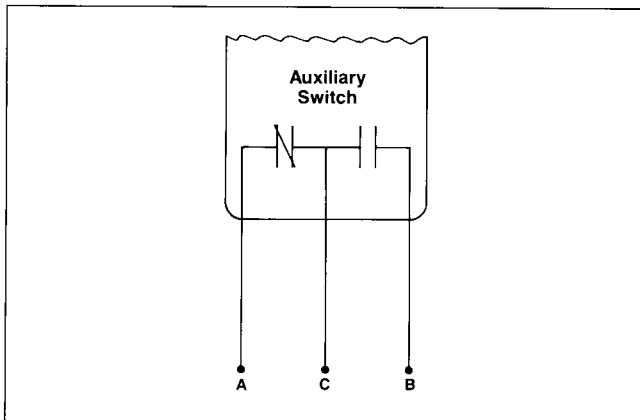
④ Kit includes a 2.5k ohm, 25 watt resistor (Clarostat Cat. No. VP-25-K or equivalent).

# I-T-E Auxiliary Switch and Bell Alarm

## Electrical Check

### Auxiliary Switch Kits

Catalog Number	Number of Switches	Ampere Rating of Switch				
		Volts AC			Volts DC	
		120	240	480	125	250
A01FD62	1	7.2	7.2	—	0.5	0.25
A02FD62	2	7.2	7.2	—	0.5	0.25
A01FD64	1	7.2	7.2	7.2	0.5	0.25
A02FD64	2	7.2	7.2	7.2	0.5	0.25



### Switch Identification (All With Three Leads)

Wire Markings	Wire Color	Switch Terminals or Contacts
C or C1	White	C - Common terminal
A or A1	Black	N.O. - Contact open when breaker is open, closed when breaker is closed.
B or B1	Red	N.C. - Contact closed when breaker is open, open when breaker is closed.

Accessory units that employ a combination will have the same wiring colors or identifiers. A double auxiliary switch combination will use wiring markings A-A1, B-B1 and C-C1.

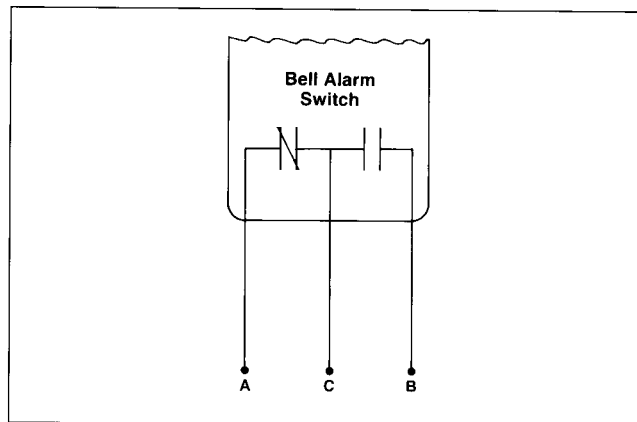
#### Auxiliary Switch<sup>①</sup>

- Use a buzzer or light indicator attached to switch leads A and C. With breaker in ON position, indicator light or buzzer should operate.
- Move handle to OFF position. Indicator light or buzzer should turn off.
- Attach test to leads B and C. Light or buzzer should turn on.
- Repeat steps A through C using leads A1, B1 and C1.
- Move handle to ON position. Indicator light or buzzer should turn off.

<sup>①</sup>Should the indicator not function properly during "check" procedure, check for incorrect installation or wiring.

### Bell Alarm Switch Kits

Catalog Number	Number Of Auxiliary Switches	Ampere Rating of Switch				
		Volts AC			Volts DC	
		125	250	480	125	250
B00FD64	0	7.2	7.2	7.2	0.50	0.25
C01FD64	1	7.2	7.2	7.2	0.50	0.25



### Bell Alarm Identification (All With Three Leads)

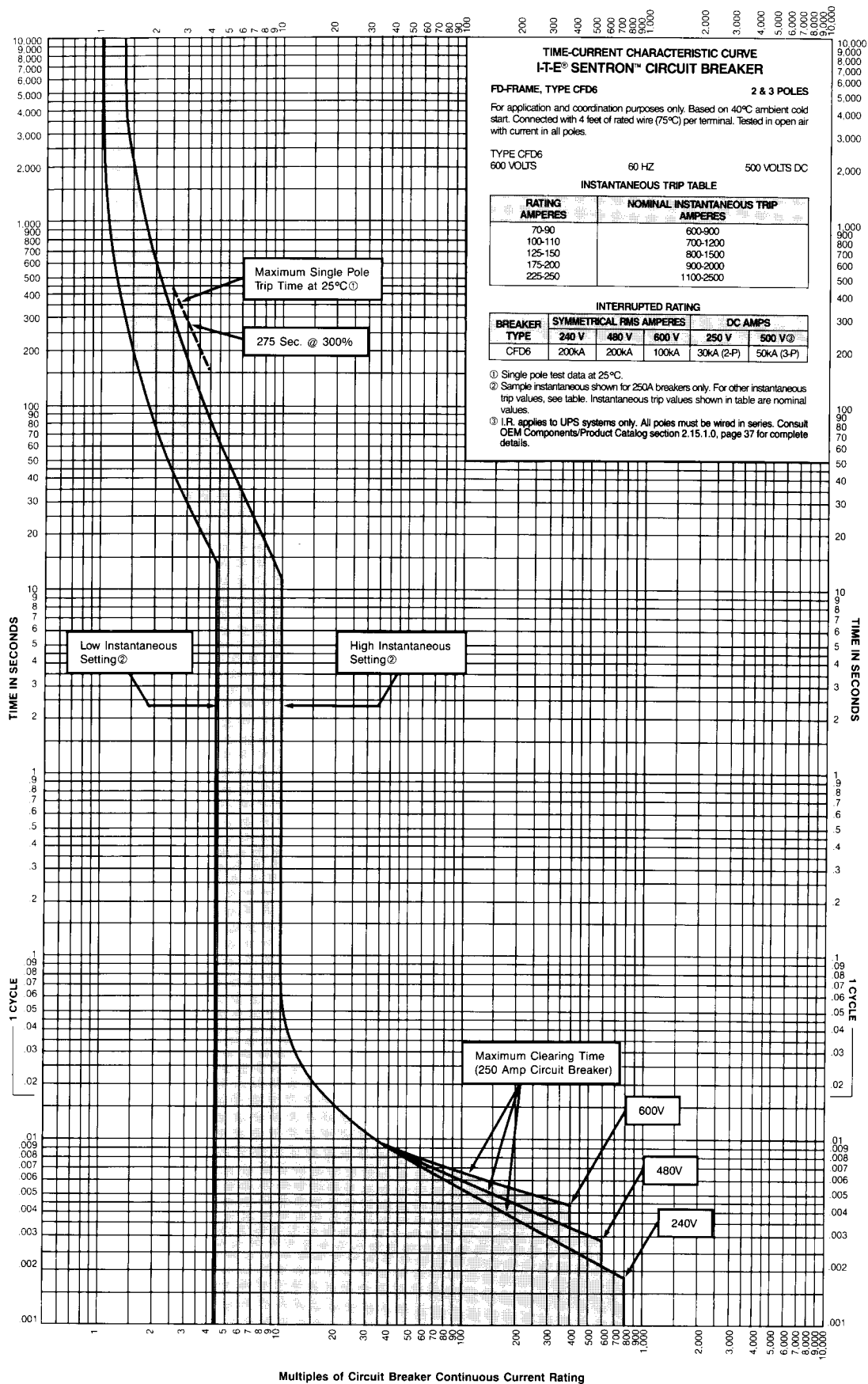
Wire Markings	Wire Color	Switch Terminals or Contacts
C	White	C - Common terminal
A	Yellow	N.C. - Normally closed contact (Closed when circuit breaker is tripped.)
B	Brown	N.O. - Normally open contact (Open when circuit breaker is tripped.)

#### Bell Alarm Switch<sup>①</sup>

- Use a buzzer or light indicator attached to switch leads A and C. With breaker in ON position, trip breaker by depressing red PUSH TO TRIP button. Indicator light or buzzer should operate.
- Reset breaker to OFF. Indicator light or buzzer should turn off.
- Move breaker handle to ON. Indicator light or buzzer should remain off.

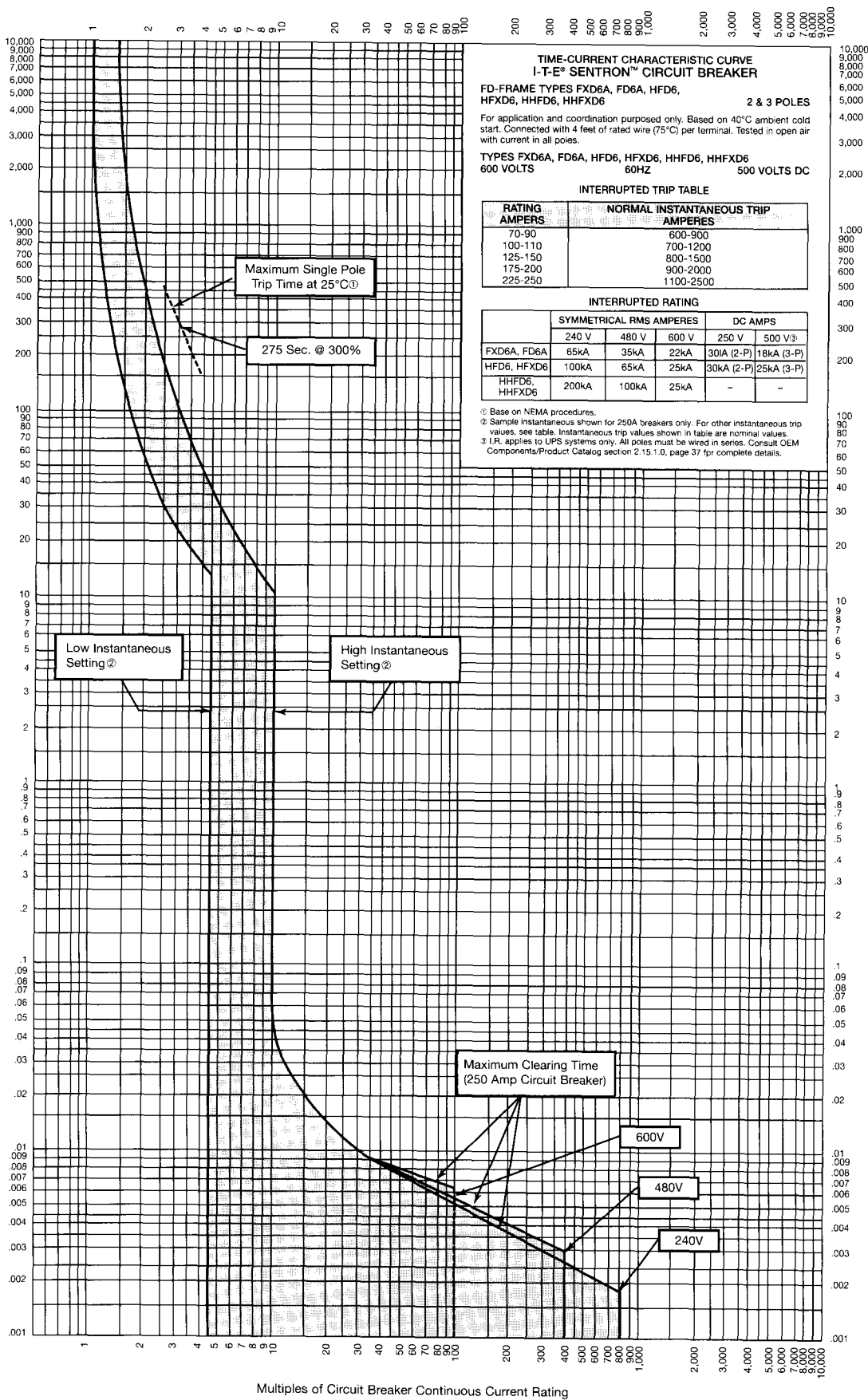
# FD-Frame Time Current Curve

## Type CFD6



# FD-Frame Time Current Curve

## Types FXD6A, FD6A, HFXD6, HFD6, HHFD6, HHFXD6A





Molded Case Circuit Breakers

# FD-Frame Sentron™ Series Circuit Breaker

2 & 3-Pole; 70-250 Amperes



## Ratings & Markings (UL 489 AIR Interrupting Ratings)

Breaker Type	RMS Symmetrical Amperes (kA)						Frame Only - Interchangeable Trip		
	Volts AC (50/60Hz)			Volts DC			Breaker Type	Frame (2-Pole)	Frame (3-Pole)
	240	480	600	250	500				
FD6-A, FXD6-A	65	35	22	30 (2-Pole)	18 (3-Pole)		FD6-A	FD62F250	FD63F250
HFD6, HFXD6	100	65	25	30 (2-Pole)	25 (3-Pole)		HFD6	HFD62F250	HFD63F250
HHFD6, HHFXD6	200	100	25	—	—		HHFD6	—	HHFD63F250
CFD6	200	200	100	30 (2-Pole)	50 (3-Pole)		—	—	—

## Dimensions

Breaker Type	Length	Width	Depth	D-1 (to handle)
FD6-A, FXD6-A, HFD6, HFXD6 HHFD6, HHFXD6	9.50 in	4.50 in	4.0 in	5.25 in
CFD6	14.25 in	4.50 in	4.0 in	5.25 in

## Frames

Trip Amperage	Poles	Non-interchangeable Trip Assembled with no lugs				Interchangeable Trip Not assembled - shipped with CU/AL lugs			Trip Unit Only
		FXD6-A	HFXD6	HHFXD6	CFD6	FD6-A	HFD6	HHFD6	
70	2	FXD62B070	—	—	—	FD62B070	HFD62B070	—	FD62T070
80	2	FXD62B080	—	—	—	FD62B080	HFD62B080	—	FD62T080
90	2	FXD62B090	—	—	—	FD62B090	HFD62B090	—	FD62T090
100	2	FXD62B100	—	—	—	FD62B100	HFD62B100	—	FD62T100
110	2	FXD62B110	—	—	—	FD62B110	HFD62B110	—	FD62T110
125	2	FXD62B125	—	—	—	FD62B125	HFD62B125	—	FD62T125
150	2	FXD62B150	—	—	—	FD62B150	HFD62B150	—	FD62T150
175	2	FXD62B175	—	—	—	FD62B175	HFD62B175	—	FD62T175
200	2	FXD62B200	—	—	—	FD62B200	HFD62B200	—	FD62T200
225	2	FXD62B225	—	—	—	FD62B225	HFD62B225	—	FD62T225
250	2	FXD62B250	—	—	—	FD62B250	HFD62B250	—	FD62T250
70	3	FXD63B070	HFXD63B070	HHFXD63B070	CFD63B070	FD63B070	HFD63B070	HHFD63B070	FD63T070
80	3	FXD63B080	HFXD63B080	HHFXD63B080	CFD63B080	FD63B080	HFD63B080	HHFD63B080	FD63T080
90	3	FXD63B090	HFXD63B090	HHFXD63B090	CFD63B090	FD63B090	HFD63B090	HHFD63B090	FD63T090
100	3	FXD63B100	HFXD63B100	HHFXD63B100	CFD63B100	FD63B100	HFD63B100	HHFD63B100	FD63T100
110	3	FXD63B110	HFXD63B110	HHFXD63B110	CFD63B110	FD63B110	HFD63B110	HHFD63B110	FD63T110
125	3	FXD63B125	HFXD63B125	HHFXD63B125	CFD63B125	FD63B125	HFD63B125	HHFD63B125	FD63T125
150	3	FXD63B150	HFXD63B150	HHFXD63B150	CFD63B150	FD63B150	HFD63B150	HHFD63B150	FD63T150
175	3	FXD63B175	HFXD63B175	HHFXD63B175	CFD63B175	FD63B175	HFD63B175	HHFD63B175	FD63T175
200	3	FXD63B200	HFXD63B200	HHFXD63B200	CFD63B200	FD63B200	HFD63B200	HHFD63B200	FD63T200
225	3	FXD63B225	HFXD63B225	HHFXD63B225	CFD63B225	FD63B225	HFD63B225	HHFD63B225	FD63T225
250	3	FXD63B250	HFXD63B250	HHFXD63B250	CFD63B250	FD63B250	HFD63B250	HHFD63B250	FD63T250

## Frames - Magnetic Trip Only - ETI Motor Circuit Protector

Ampere Rating	Poles	Minimum	Maximum	FXD6	CFD6
150	3	400	800	FXD63L150	CFD63L150
150	3	800	1500	FXD63A150	CFD63A150
150	3	1100	2500	FXD63H150	CFD63H150
250	3	1100	2500	FXD63A250	CFD63A250

## Frames - Molded Case Switch - Circuit Disconnect

Ampere Rating	Poles	FXD6	HFXD6	CFD6
250	2	FXD62S250A	HFXD62S250A	—
250	3	FXD63S250A	HFXD63S250A	CFD63S250A

## Terminals / Wire Ranges (Lug Information)

Lugs For 75°C Wire	
Catalog Number	Wire Range
TA1FD350A	#6—350 kcmil Cu #4—350 kcmil Al
TC1FD350	#6—350 kcmil Cu
Compression Lug	
CCF250	350 kcmil Cu/Al

## Shunt Trip Combinations

Control Voltage		1 Shunt Trip
AC	DC	Catalog Number
24	—	S17FD60
120	—	S01FD60
240	—	S03FD60
277	—	S15FD60
480	—	S04FD60
600	—	S06FD60
—	12	S16FD60
—	24	S07FD60
—	48	S09FD60
—	125	S11FD60
—	250	S13FD60

## Auxiliary Switch Combinations / Alarm Switch Combinations

Maximum Voltage		Combinations	Catalog Number
AC	DC		
240	—	1 Auxillary Switch	A01FD62
240	—	2 Auxillary Switches	A02FD62
480	—	1 Auxillary Switch	A01FD64
480	—	2 Auxillary Switches	A02FD64
—	12	2 Aux Switches- Gold Plated Contacts - For PLC Use	A01FDLV
480	250	1 Alarm Switch	B00FD64
480	250	1 Alarm Switch & 1 Auxillary Switch	C01FD64

## Undervoltage Trip Combinations

Control Voltage		1 Undervoltage Trip	1 Undervoltage Trip and 1 Auxillary Switch
AC	DC	Catalog Number	Catalog Number
120	—	U01FD60	W01FD64
208	—	U02FD60	W02FD64
240	—	U03FD60	W03FD64
277	—	U16FD60	W16FD64
480	—	U06FD60	W06FD64
600	—	U08FD60	—
—	24	U13FD60	W13FD64
—	48	U14FD60	W14FD64
—	125	U10FD60	W10FD64
—	250	U12FD60	W12FD64

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## FD-Frame Sentron™ Series Circuit Breakers

Type FD, HFD, & HHFD; 70-250 A: Thermal Magnetic Trip Unit

Molded Case Circuit Breakers

### Product Number Structure

**FD6 3 B 225**

Family	Poles	Specific Application Type	Max Continuous Current (Amps)		
FD6	2 - 2 Pole	B - Thermal Magnetic Breaker (40°C)	70	110	200
FXD6	3 - 3 Pole	F - Frame Only	80	125	225
HFD6		T - Trip Unit Only	90	150	250
HFXD6			100	175	

### Lugs

Catalog Number	Wire Range
TA1FD350A	#6—350 kcmil Cu #4—350 kcmil Al
TC1FD350	#6—350 kcmil Cu
<b>Compression Lugs</b>	
CCF250	350 kcmil Cu/Al

### FD6

Amp Rating	Poles	Interrupt Ratings				
		Volts AC			Volts DC	
		240	480	600	250	500
70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250	2	65	35	22	30	-
	3	65	35	22	-	18

### FXD6

Amp Rating	Poles	Interrupt Ratings				
		Volts AC			Volts DC	
		240	480	600	250	500
70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250	2	65	35	22	30	-
	3	65	35	22	-	18

### HFD6

Amp Rating	Poles	Interrupt Ratings				
		Volts AC			Volts DC	
		240	480	600	250	500
70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250	2	100	65	25	30	-
	3	100	65	25	-	25

### HFXD6

Amp Rating	Poles	Interrupt Ratings				
		Volts AC			Volts DC	
		240	480	600	250	500
70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250	2	100	65	25	30	-
	3	100	65	25	-	25

### HHFD6

Amp Rating	Poles	Interrupt Ratings				
		Volts AC			Volts DC	
		240	480	600	250	500
70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250	2	200	100	25	-	-
	3	200	100	25	-	-

### HHFD6

Amp Rating	Poles	Interrupt Ratings				
		Volts AC			Volts DC	
		240	480	600	250	500
70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250	2	200	100	25	-	-
	3	200	100	25	-	-

### CFD6

Amp Rating	Poles	Interrupt Ratings				
		Volts AC			Volts DC	
		240	480	600	250	500
70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250	2	200	200	100	30	-
	3	200	200	100	-	50



Documents



Speed Fax Sections 1



Speed Fax Sections 2

Adjustable Parameters

Adjustable pick-up value current / of instantaneous short-circuit trip unit / Full-scale value	2500 A
Adjustable pick-up value current / of instantaneous short-circuit trip unit / initial value	1100 A

Certificates

Certificate of suitability	UL489 / IEC 60947-2
----------------------------	---------------------

Connections

Type of electrical connection / for main current circuit	VARIED CONNECTION ACCESSORIES
--	-------------------------------

Electricity

Continuous current / rated value	225 A
----------------------------------	-------

Environmental Conditions

Ambient temperature / during operation / maximum	75 degC
Ambient temperature / during operation / minimum	-25 degC

General Technical Data

Operating voltage / rated value / maximum	600 V
---	-------

Mechanical Design

Width [in]	4.5 in
Size of the circuit-breaker	FD (250A)
Height [in]	9.5 in
Depth [in]	4 in

Model

Protective function of the overcurrent release	LI
Product brand name	SIEMENS

Design of the overcurrent release	THERMAL - MAGNETIC
Suitability for use	OVERLOAD AND SHORT CIRCUIT LINE PROTECTION
Product designation	MOLDED CASE CIRCUIT BREAKER
Product sub brand name	SENTRON
Number of poles	3
Design of the product	FD



Speed Fax Sections 3

### Switching Capacity According To UI 489

Maximum short-circuit current breaking capacity (Icu) / at 600 V / acc. to NEMA / rated value	22 kA
Trip class	STANDARD
Maximum short-circuit current breaking capacity (Icu) / at 480 V / acc. to NEMA / rated value	35 kA
Maximum short-circuit current breaking capacity (Icu) / at 240 V / acc. to NEMA / rated value	65 kA



Cut Sheets 4

### Delivery Information

Export Control Class	AL : N / ECCN : EAR99
Net Weight	8.55
Product_Dimensions (LxWxH)	40.0X40.0X40.0

### Additional Product Information

Country of Origin	MX, US
Commodity Code	8536200020
RoHS Compliance	*DQ



Others 5

### Product Selector Information

AC Interrupt Rating @ (kA)	System Voltage = 240V and Interrupt rating = 65   System Voltage = 480V and Interrupt rating = 35   System Voltage = 600V and Interrupt rating = 22
Frame Amps	250
DC Interrupt Rating @ (kA)	System Voltage = 500V and Interrupt rating = 18



Trip Amps	225
Poles	3
% Rated	80
Trip Type	Thermal Magnetic



Speed Fax Sections 6



Cut Sheets 7



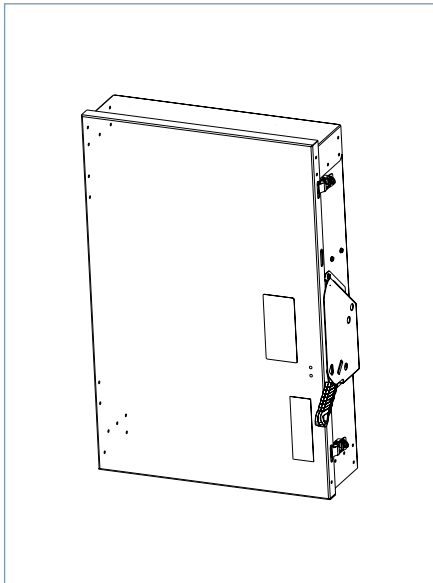
Speed Fax Sections 8

## ***SAFETY SWITCHES***

## Heavy Duty Safety Switch

400A 600V, Type 3R

### Data Sheet



#### Standards and Ratings

- UL listed under file #E4776
- CSA listed under file #154852
- Meets NEMA Standard KS-1 for enclosed switches
- Meets NEC wire bending space requirements
- Rated 10,000 AIC as standard or 200,000 when protected by Class R, T or J fuses rated 400 amp maximum
- I<sup>2</sup>t rated (Amps<sup>2</sup> x Seconds = 6,000,000)
- 12X overload current rating exceeds 10X industry standard
- Suitable for use as service entrance equipment

#### Features

- Quick-make and break switching action
- Visible blade design
- Highly visible ON/OFF indication
- Modular design allows quick and easy replacement of parts
- Defeatable dual cover interlock
- Compact one piece light weight construction enables easier installation
- Can utilize either one large or two small wires
- Spring loaded heat sink fuse clip
- One piece line and load base for consistent phase-to-phase alignment
- Extra ground lug on neutral
- Tangential knock out
- Lay in Lugs for easy wiring
- Window permits viewing of visible blade

# Product Specifications

## Heavy Duty 400A 600V, Type 3R

General Information		
Catalog Number	Description	Shipping Weight
HF365RA	Heavy Duty Fused 3 Pole 600V 400A Type 3R, Outdoor	93
HF365NRA	Heavy Duty Fused 3 Pole 600V 400A Neutral Type 3R, Outdoor	94.6
HNF365RA	Heavy Duty Non-Fused 3 Pole 600V 400A Type 3R, Outdoor	75
HFC365NRA	CSA Heavy Duty Fused 3 Pole 600V 400A Neutral Type 3R, Outdoor	94.6

Maximum Horsepower Ratings								
Catalog Number	1 Phase, 240V AC	3 Phase, 240V AC	1 Phase, 480V AC	3 Phase, 480V AC	1 Phase, 600V AC	3 Phase, 600V AC	250V DC	600V DC
HF365RA	—	125	—	250	—	350	50	50
HF365NRA	—	125	—	250	—	350	50	50
HNF365RA	—	125	—	250	—	350	50	50
HFC365NRA	—	125	—	250	—	350	50	50

Accessories & Hub Kits	
Catalog Number	Description
HA161234	Aux. Switch (1NO - 1NC)
HA261234	Aux. Switch (2NO - 2NC)
HA361234	Low Voltage Aux. SW. (1NO - 1NC)
HN656A	Neutral
HN656A	200% Neutral
HG656A	Ground Lug
HG2656A	Isolated Ground
HR65A	R Fuse (400A)
HT65A	T Fuse (400A, 600V)
HCU65A	Copper Lug (400A, fused)
HCM65A	Field Replacement Kit (400A, fused)
HVGK	Hub Gasket Kit
HV250	2.50" Type "HV" Outdoor Hub
HV300	3.00" Type "HV" Outdoor Hub
HV350	3.50" Type "HV" Outdoor Hub
HCU656A	Copper Lug Kit ①
HV400	4.00" Type "HV" Outdoor Hub

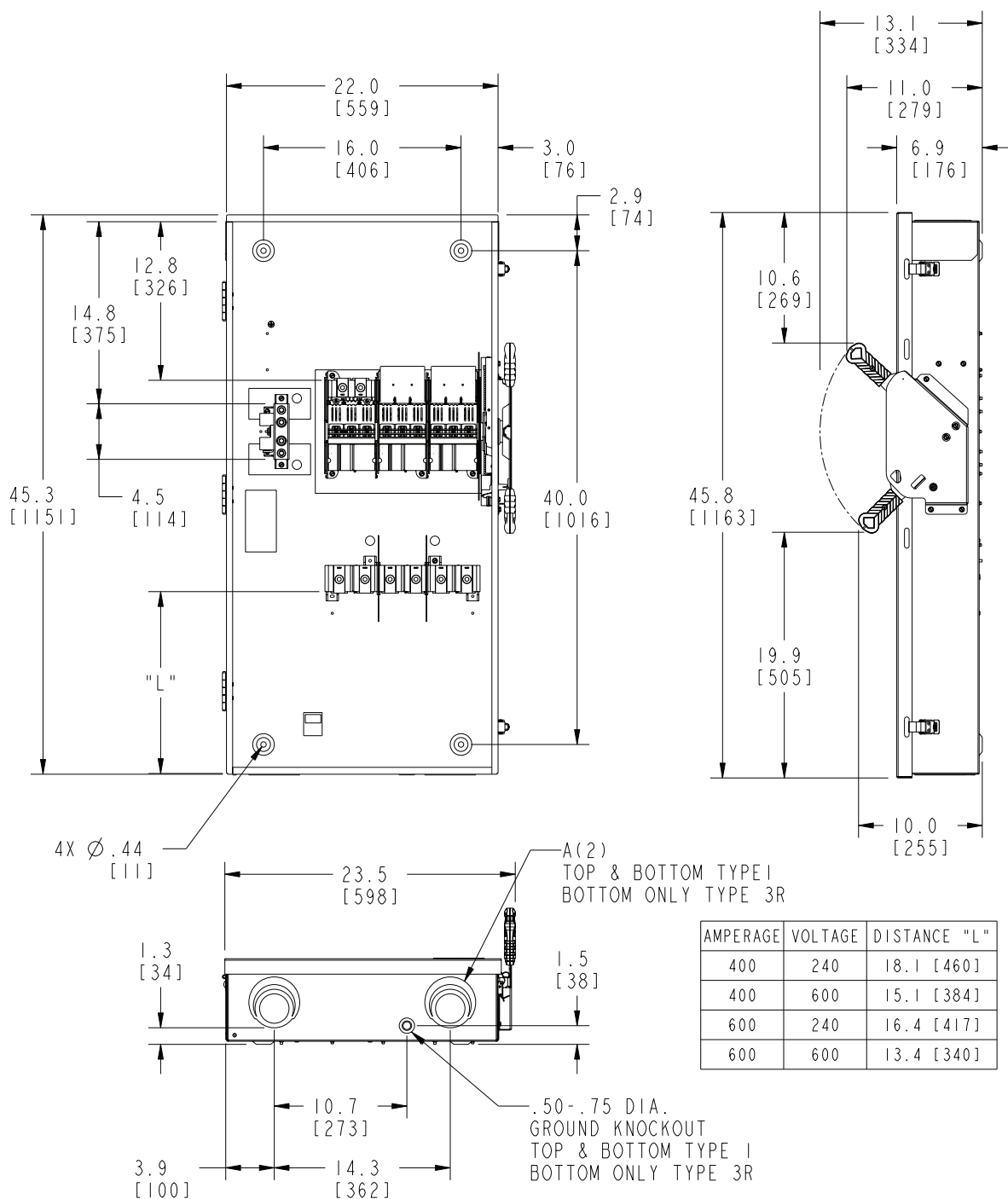
Replacement Parts	
Catalog Number	Description
HFB65A	Line Base Fused 400A
HBB65A	Load Base Fused 400A
HL656A	Lug Cap Kit (AL) 400-600A
HM656A	Mechanism 400A-600A
HH656A	Handle/Handle Guard 400A-600A
Catalog Number + "DOOR"	Door

Mechanical Lug Wire Ranges	
Description	Wire Range
Line, Load, & Main Neutral (Fusible)	(1) 1/0 AWG - 600 kcmil or (2) 1/0 AWG - 500 kcmil
100% Neutral	(2) 1/0 - 600 Kcmil or (2) 6 - 300 Kcmil
200% Neutral	(2) 1/0 - 600 Kcmil or (2) 6 - 300 Kcmil
Equipment Ground	(2) 14 - 2/0 AWG

① Purchase field replacement kit along with lugs. (See Speedfax pg. 4-20)

# Dimension Drawings

## Heavy Duty 400A 600V, Type 3R (Fusible)



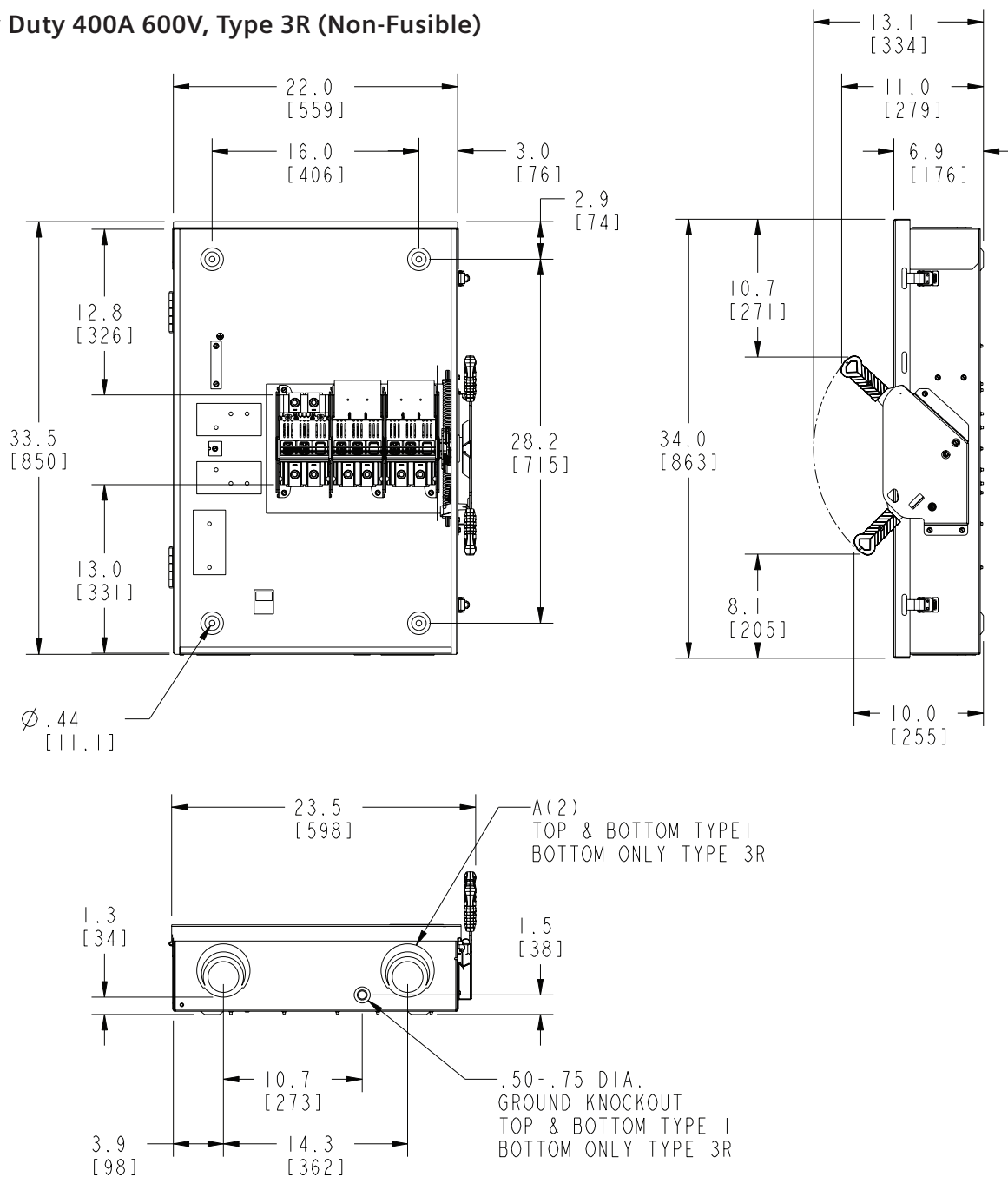
Dimensions shown in inches  
and millimeters [ ].  
Dimensions shown accurate to  $\pm 1/8$  inch.

KNOCKOUT CODE	CONDUIT SIZE			
A (Tangential)	2.00	2.50	3.00	3.50

Enclosure:  
Cold Rolled Steel Type I  
Galvanized Steel Type 3R  
.060 thick (16 gauge)  
Finish: ANSI Grey #61 Paint



## Heavy Duty 400A 600V, Type 3R (Non-Fusible)



Dimensions shown in inches  
and millimeters [ ].  
Dimensions shown accurate to  $\pm 1/8$  inch.

KNOCKOUT CODE	CONDUIT SIZE
A (Tangential)	2.00 2.50 3.00 3.50

Enclosure:  
Cold Rolled Steel Type I  
Galvanized Steel Type 3R  
.060 thick (16 gauge)  
Finish: ANSI Grey #61 Paint

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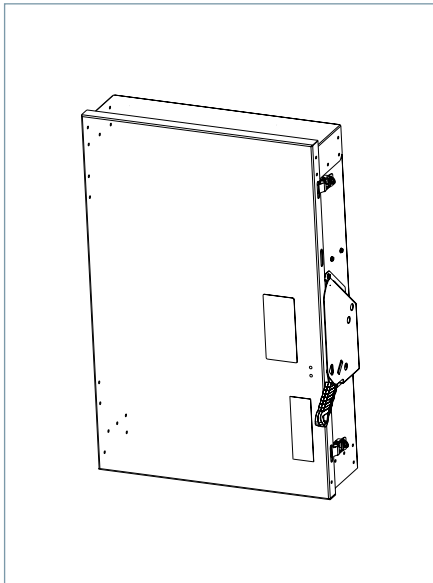
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## Heavy Duty Safety Switch

400A 600V, Type 3R

### Data Sheet



#### Standards and Ratings

- UL listed under file #E4776
- CSA listed under file #154852
- Meets NEMA Standard KS-1 for enclosed switches
- Meets NEC wire bending space requirements
- Rated 10,000 AIC as standard or 200,000 when protected by Class R, T or J fuses rated 400 amp maximum
- I<sup>2</sup>t rated (Amps<sup>2</sup> x Seconds = 6,000,000)
- 12X overload current rating exceeds 10X industry standard
- Suitable for use as service entrance equipment

#### Features

- Quick-make and break switching action
- Visible blade design
- Highly visible ON/OFF indication
- Modular design allows quick and easy replacement of parts
- Defeatable dual cover interlock
- Compact one piece light weight construction enables easier installation
- Can utilize either one large or two small wires
- Spring loaded heat sink fuse clip
- One piece line and load base for consistent phase-to-phase alignment
- Extra ground lug on neutral
- Tangential knock out
- Lay in Lugs for easy wiring
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# Product Specifications

## Heavy Duty 400A 600V, Type 3R

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Catalog Number	Description	Shipping Weight
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HF365NRA	Heavy Duty Fused 3 Pole 600V 400A Neutral Type 3R, Outdoor	94.6
HNF365RA	Heavy Duty Non-Fused 3 Pole 600V 400A Type 3R, Outdoor	75
HFC365NRA	CSA Heavy Duty Fused 3 Pole 600V 400A Neutral Type 3R, Outdoor	94.6

Maximum Horsepower Ratings								
Catalog Number	1 Phase, 240V AC	3 Phase, 240V AC	1 Phase, 480V AC	3 Phase, 480V AC	1 Phase, 600V AC	3 Phase, 600V AC	250V DC	600V DC
HF365RA	—	125	—	250	—	350	50	50
HF365NRA	—	125	—	250	—	350	50	50
HNF365RA	—	125	—	250	—	350	50	50
HFC365NRA	—	125	—	250	—	350	50	50

Accessories & Hub Kits	
Catalog Number	Description
HA161234	Aux. Switch (1NO - 1NC)
HA261234	Aux. Switch (2NO - 2NC)
HA361234	Low Voltage Aux. SW. (1NO - 1NC)
HN656A	Neutral
HN656A	200% Neutral
HG656A	Ground Lug
HG2656A	Isolated Ground
HR65A	R Fuse (400A)
HT65A	T Fuse (400A, 600V)
HCM65A	Field Replacement Kit (400A, fused)
HVGK	Hub Gasket Kit
ECHV250	2.50" Type "HV" Outdoor Hub
ECHV300	3.00" Type "HV" Outdoor Hub
ECHV350	3.50" Type "HV" Outdoor Hub
HCU656A	Copper Lug Kit ①
ECHV400	4.00" Type "HV" Outdoor Hub

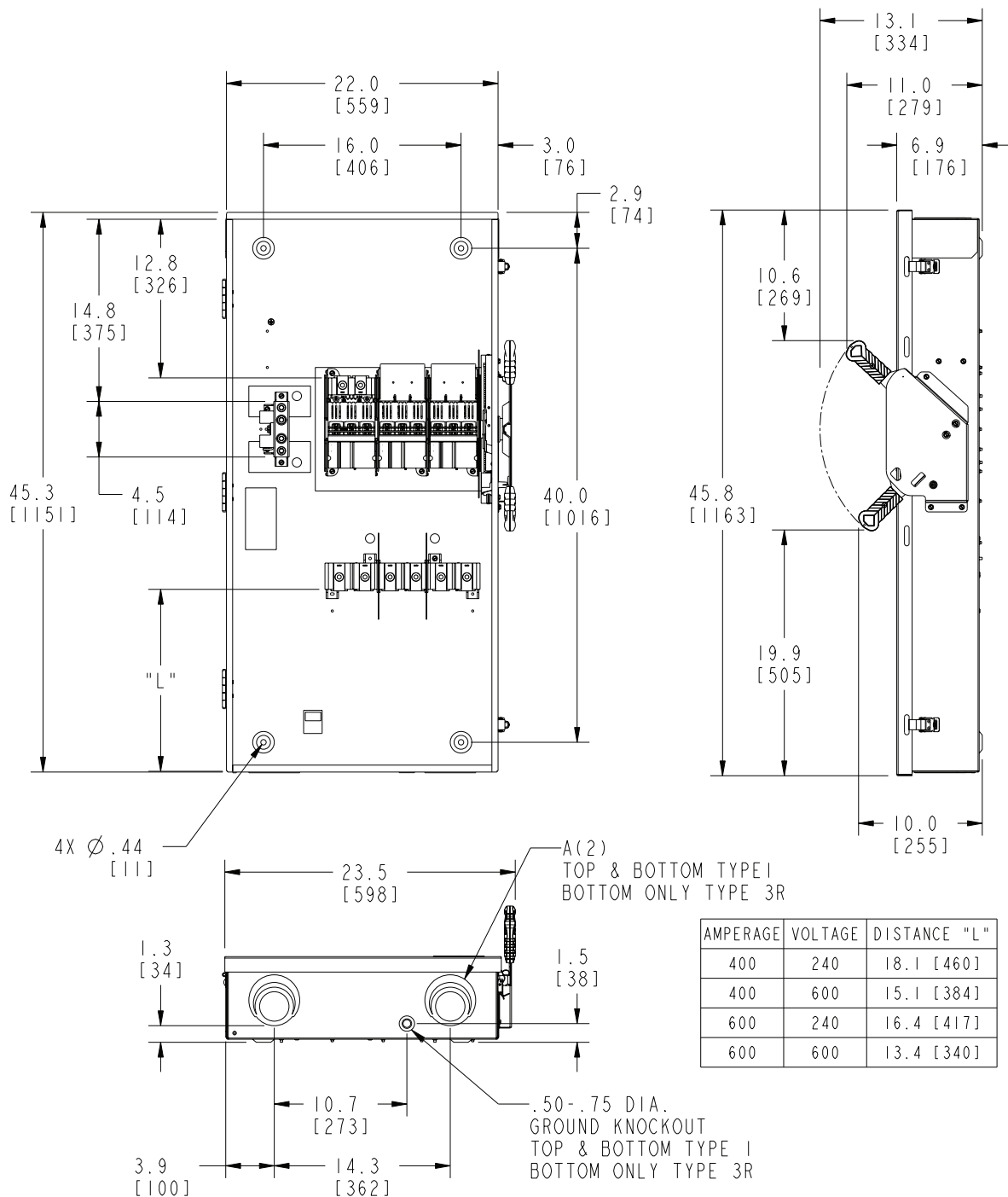
Replacement Parts	
Catalog Number	Description
HFB65A	Line Base Fused 400A
HBB65A	Load Base Fused 400A
HL656A	Lug Cap Kit (AL) 400-600A
HM656A	Mechanism 400A-600A
HH656A	Handle/Handle Guard 400A-600A
Catalog Number + "DOOR"	Door

Mechanical Lug Wire Ranges	
Description	Wire Range
Line, Load, & Main Neutral (Fusible)	(1) 1/0 AWG - 600 kcmil or (2) 1/0 AWG - 500 kcmil
100% Neutral	(2) 1/0 - 600 Kcmil or (2) 6 - 300 Kcmil
200% Neutral	(2) 1/0 - 600 Kcmil or (2) 6 - 300 Kcmil
Equipment Ground	(2) 14 - 2/0 AWG

① Purchase field replacement kit along with lugs. (See Speedfax pg. 4-20)

# Dimension Drawings

## Heavy Duty 400A 600V, Type 3R (Fusible)

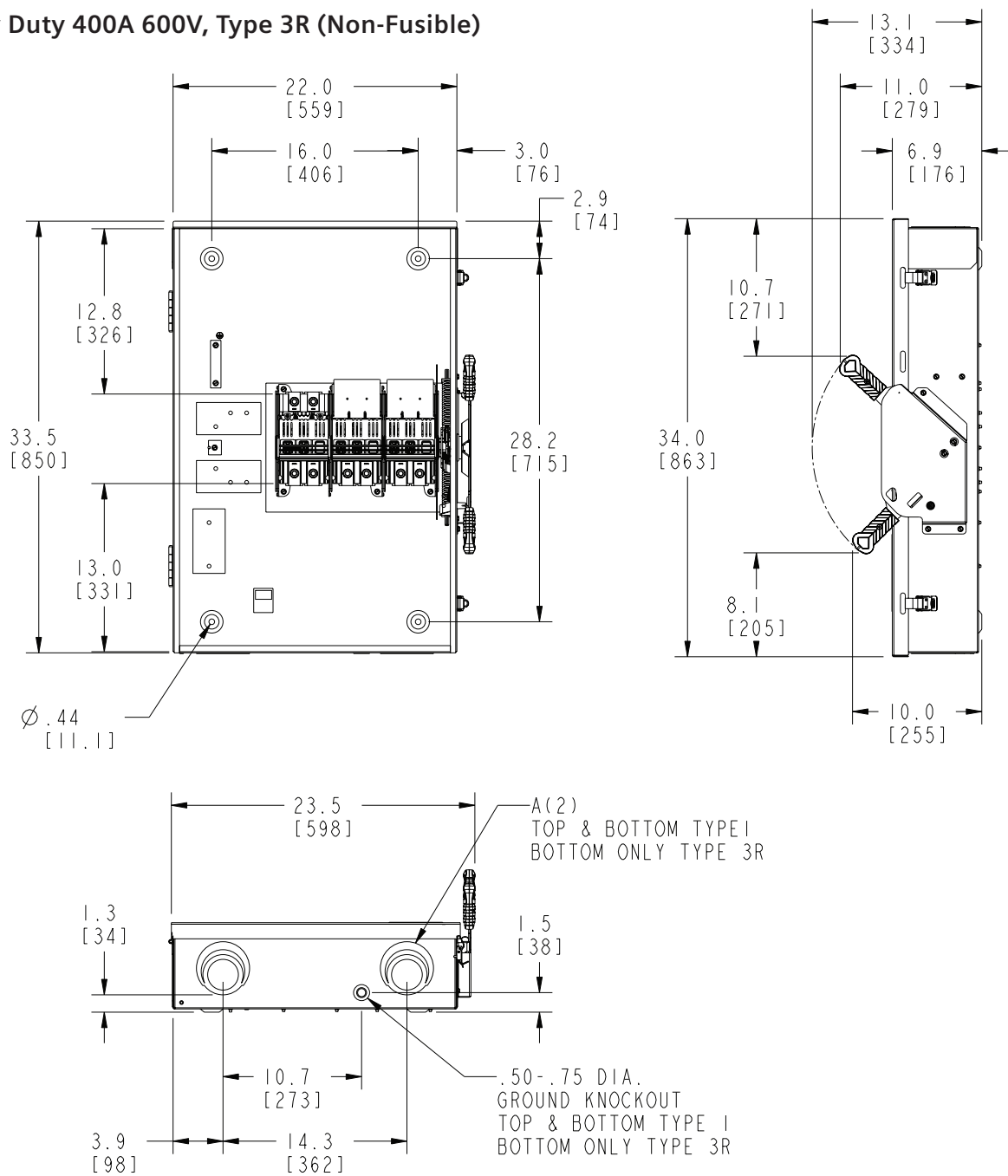


Dimensions shown in inches  
and millimeters [ ].  
Dimensions shown accurate to  $\pm 1/8$  inch.

KNOCKOUT CODE	CONDUIT SIZE			
A (Tangential)	2.00	2.50	3.00	3.50

Enclosure:  
Cold Rolled Steel Type I  
Galvanized Steel Type 3R  
.060 thick (16 gauge)  
Finish: ANSI Grey #61 Paint

## Heavy Duty 400A 600V, Type 3R (Non-Fusible)



Dimensions shown in inches  
and millimeters [ ].  
Dimensions shown accurate to  $\pm 1/8$  inch.

KNOCKOUT CODE	CONDUIT SIZE			
A (Tangential)	2.00	2.50	3.00	3.50

Enclosure:  
Cold Rolled Steel Type I  
Galvanized Steel Type 3R  
.060 thick (16 gauge)  
Finish: ANSI Grey #61 Paint

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## Documents



## Cut Sheets 1



## Cut Sheets 2

## Certificates

Certificate of suitability UL98

# Electricity

Supply voltage frequency / rated value	1
/ 50/60 Hz	
Ampacity	400 A

## Environmental Conditions

Ambient temperature / during operation / minimum	-29 degC
Ambient temperature / during operation / maximum	85 degC

## General Technical Data

Number of poles	3
Mechanical service life (switching cycles) / typical	6000
Suitability for operation	DISCONNECTING MEAN FOR SERVICE ENTRANCE / LOADS
Mounting type	SURFACE

# Mechanical Design

Design of the operating mechanism	SINGLE THROW
Material	STEEL
Design of the housing	NEMA 3R

## Model

Product sub brand name	VBII
Product type designation	HEAVY DUTY SWITCH
Type of electrical connection	MECHANICAL LUGS
Product brand name	SIEMENS

*FUSES*

# Fusetron™ 600V Class RK5

## FRS-R — 600 Vac/300 Vdc, 65-600 A, dual element, time-delay fuses

**Catalog symbol:**

- FRS-R-(amp)

**Description:**

Advanced protection, energy efficient Class RK5 dual element, current-limiting, time-delay fuses. Time-delay – 10 seconds (minimum) at 500% of rated current.

**Specifications:****Ratings**

- Volts — 600Vac, 300Vdc
- Amps — 65-600A
- Interrupting rating
  - 200 kA Vac RMS Sym
  - 20 kA Vdc

**Agency information**

- UL® Listed, Std. 248-12, Class RK5, Guide JDDZ, File E4273
- CSA® Certified, C22.2 No. 248.12, Class 1422-02, File 53787
- CE

**Catalog numbers (amps)**

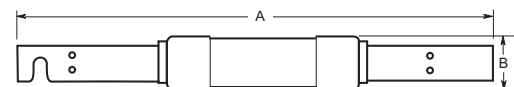
FRS-R-65	FRS-R-125	FRS-R-350
FRS-R-70	FRS-R-150	<b>FRS-R-400</b>
FRS-R-75	FRS-R-175	FRS-R-450
FRS-R-80	FRS-R-200	FRS-R-500
FRS-R-90	FRS-R-225	FRS-R-600
FRS-R-100	FRS-R-250	
FRS-R-110	FRS-R-300	

**Carton quantity**

Amp ratings	Carton Qty.
65-100	1
101-200	1
201-400	1
401-600	1

**Features:**

- Provides motor overload, ground fault and short-circuit protection. When used in circuits subject to surge currents such as those caused by motors, transformers and other inductive components, these fuses can be sized close to full-load amps to give maximum overcurrent protection
- The time-delay feature makes it possible to use fuse amp ratings which are much smaller than those of non-time delay fuses. Considerable cost saving occurs by permitting the use of smaller size switches, panels and fuses themselves
- Provides a good degree of short-circuit protection (greater current-limitation) to help protect downstream components from high fault currents
- Gives motor running back-up protection to motors without extra cost
- Helps protect motors against burnout from overloads and single-phasing when sized properly
- Simplifies and improves blackout prevention (selective coordination ratios)
- Dual-element fuses can be applied in circuits subject to temporary motor overloads and surge currents to provide both high-performance, short-circuit and overload protection

**Dimensions - in:**

Amp ratings	A	B
65-100	7.88	1.11
110-200	9.63	1.61
225-400	11.63	2.34
450-600	13.38	2.88

Recommended fuse blocks

Fuse amps	1-Pole	2-Pole	3-Pole
70-100	RM60100-1CR	RM60100-2CR	RM60100-3CR
110-200	RM60200-1CR	RM60200-2CR	RM60200-3CR
225-400	RM60400-1CR	RM60400-2CR	RM60400-3CR
450-600	RM60600-1CR	RM60600-2CR	RM60100-3CR

For additional information on the RM600 volt fuse blocks, see data sheet No. 10489.

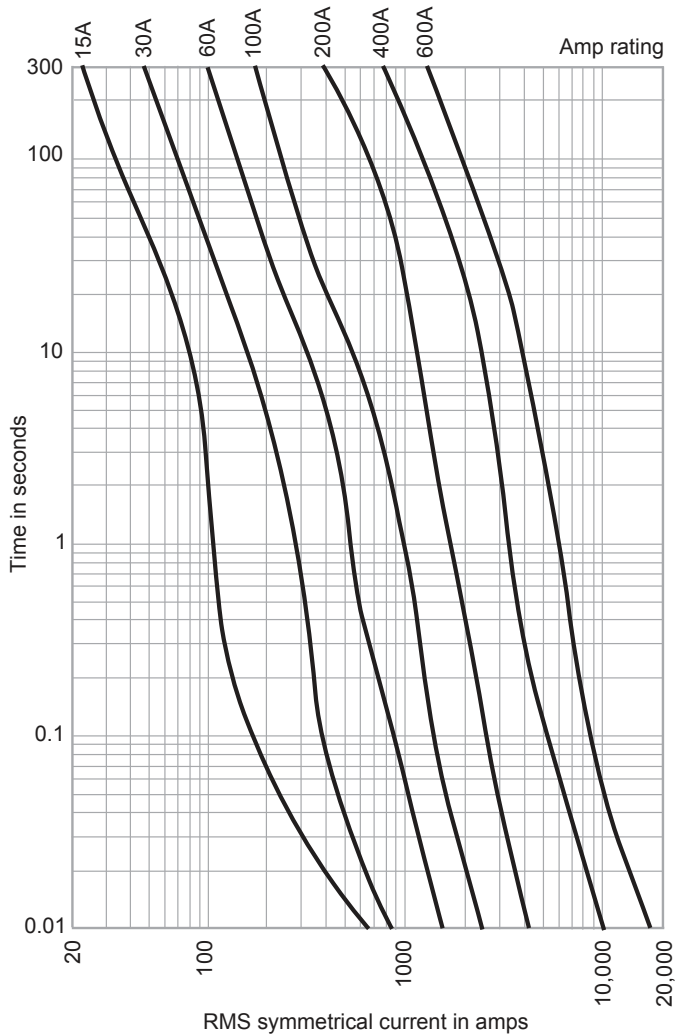
Fuse reducers for class R fuses

Equipment fuse clips	Desired fuse (case) size	Catalog numbers (pairs) 600 V
200 A	100 A	NO.2621-R
400 A	100 A	NO.2641-R
	200 A	NO.642-R
	100 A	NO.2661-R
600 A	200 A	NO.2662-R
	400 A	NO.2664-R†

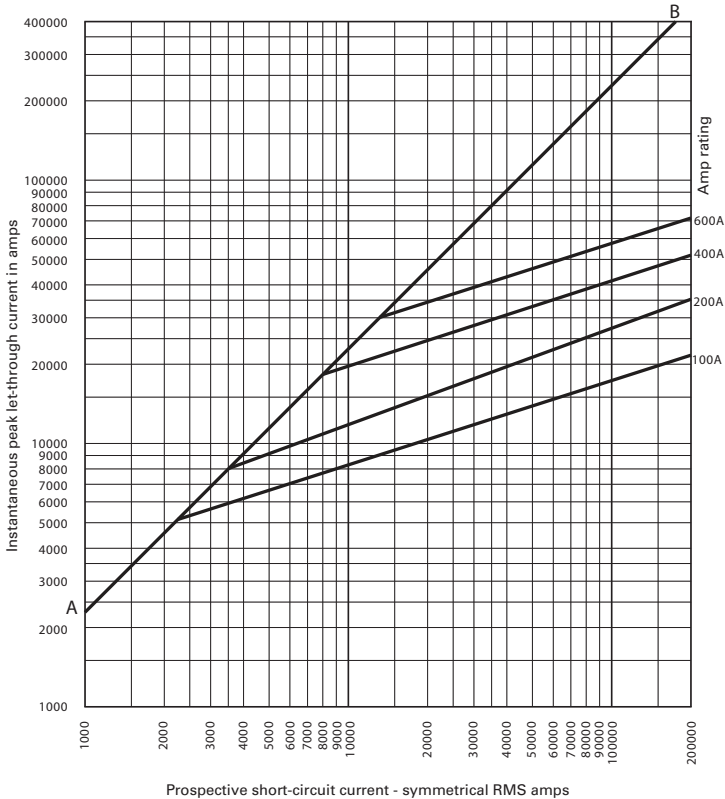
† Single reducer only (pair not required).

For additional information on Class R fuse reducers, see data sheet No. 1118.

Time-current curves - average melt



Current-Limitation curves



Current-limiting effects

Prosp. S.C.C.	Let-through current (apparent RMS symmetrical vs. fuse rating)			
	100A	200A	400A	600A
5000	3000	4000	5000	5000
10,000	4000	5000	9000	10,000
15,000	4000	6000	10,000	14,000
20,000	5000	7000	11,000	15,000
25,000	5000	7000	12,000	17,000
30,000	5000	8000	13,000	18,000
35,000	5000	8000	13,000	18,000
40,000	6000	9000	14,000	19,000
50,000	6000	9000	14,000	20,000
60,000	6000	10,000	15,000	22,000
70,000	7000	11,000	17,000	23,000
80,000	7000	12,000	17,000	23,000
90,000	7000	12,000	17,000	24,000
100,000	8000	13,000	18,000	25,000
150,000	9000	14,000	21,000	27,000
200,000	9000	16,000	23,000	32,000

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*PANELBOARD*

# P1 Panelboards

The P1 Panelboards are available in both Feed-thru (FT) and Non-Feed-thru (NFT) variations. There is a savings of 6" of box height when a NFT version is selected which eliminates the sub-feed space. The Sub-Feed Space is where the Feed-thru Lugs, sub-feed breaker or a Surge Protection Device (SPD) is installed. The interior part number will end with a "T" for FT panels and will end with an "N" for NFT panels.

The P1 Panelboards also have Extended Circuit variations with 54 circuits and 66 circuits available.

Feed-thru (FT) panels are pre-engineered to accept the most common modifications without increasing box height. The enclosure size is determined by the number of circuits as shown in the Main Lug Table P1-5 or the Main Circuit Breaker Table P1-3.

All P1 FT main lug or main breaker panelboards have space built-in to accept either feed-thru lugs equal to the panel rating (or) one subfeed circuit breaker up to 250 amperes (or) a surge suppressor (SPD) without increasing box height. **(When ordered with sub-feed space the interior part # will end with a "T").**

Non-Feed-thru (NFT) panels do not have a sub-feed space and cannot accept feed-thru lugs (or) sub-feed Breakers (or) SPD/TVSS devices. **(NFT panel interior part # will end in "N").**

**Note the following features, all found in the innovative P1 lighting panelboards:**

- Symmetrical 250A FT Interiors – To change from top to bottom-feed (or vice-versa), simply invert the interior. The deadfront labeling is always legible, even on the NFT panels when inverted. - 400A are not symmetrical, but they are invertable.
- First in the Industry Ratings of 125 through 400A main lug and main breaker. Field convertible from main lug to main breaker and vice versa – with no increase in enclosure height.
- Field adaptability of feed-thru lugs (or) sub-feed circuit breaker without increasing enclosure size. **(FT panels only)**
- Neutral system is field upgradeable to 200% capacity – another industry first. (also 2/0 neutrals are available as a field install kit)
- Extended circuit panels are now available – up to 66 circuits.
  - 18, 30, 42, 54 and 66 circuits for 250A **(FT & NFT)**
  - 26", 32", 38", 44", 50" and 56" standard Enclosures are used.

- 30, 42 and 54 circuits for 400A (FT & NFT), also 66 circuit NFT - 56", 62", 68" and 74" standard Enclosures are used.

- Suitable for use as service entrance given compliance with NEC.
- Bonding provisions are shipped with each panel.
- 240V and 480Y / 277V versions utilize identical boxes & fronts

**Enclosure** – Standard Type 1 enclosure is 20" wide x 5.75" deep. Box Height is determined only by the number of circuits and FT or NFT selection, not by main lug or main circuit breaker. See charts P1-3 and P1-5 for box height.

**Voltage** – 480Y/277 Vac max. (Limited options for 600Y / 347V)

**Amperage** – 400 amp max.

**Short Circuit Rating** – 200 KAIC max. symmetrical or equal to the lowest rated device installed unless a series rating is indicated. Panels with subfeed or feed-thru lugs without a main device, circuit breaker or fusible unit, are limited to a three-cycle rating. The three-cycle rating for the P1 panel is limited to 22 KAIC. Note that the main device may be mounted remote from the panel.

**Bussing** – The P1 panel meets the majority of the markets bussing requirements. The standard bussing is temperature rated aluminum. The rating is per the requirements of UL 67– the standard for panelboards. All aluminum bussing is tin-plated. Optional bussing for the P1 panel is temperature rated copper. The copper bus option for this panel is tin-plated.

**Weight** – Approximate  
Total panelboard weight when filled with a normal quantity of breakers and accessories is about 3 lbs. (1.36 kg) per inch (54g per mm) of box height.

**Table P1-1 – Box Material Gauge**

Width	Height (inches)	Gauge Steel
20" (250A)	26, 32, 38, 44, 50, 56	#16 (#17 for endwalls)
(400A)	56, 62, 68, 74	#16 (#17 for endwalls)

**Table P1-2 – Trim Material Gauge**

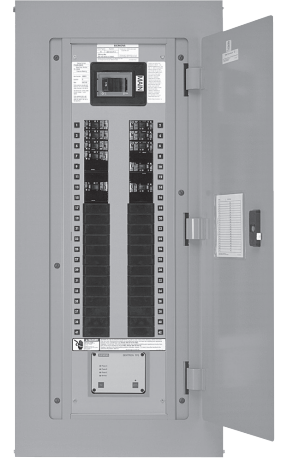
20" (250A)	26, 32, 38, 44, 50, 56	#14
(400A)	56, 62, 68, 74	#14

# Application

## Type P1 Panelboards

Table P1-3 – Main Breaker Panel Size Selector – P1

Max Ampere rating	Main Breaker Types	Connections suitable for Cu or Al	Max # Poles FT ①	Max # Poles NFT	Dimensions in inches (mm)			Weight in Lbs. (kg)
					Unit Space		Box Height B	
100	BL®, BLH®, HBL®, BQD®	#8-#6 AWG Cu or Al #8-6 AWG Cu or #8-4 AWG Al #8-#1 AWG Cu or #6-#1/0 AWG Al			FT A	NFT A		
			18	30	9	15	26 (661)	90 (41)
			30	42	15	21	32 (813)	105 (48)
			42	54	21	27	38 (965)	120 (55)
			54	66	27	33	44 (1118)	135 (61)
125	NGB®, HGB®, LGB®  ED4  ED6, HED4	15-30 amp: #14-#6 Cu or #12-#6 Al 35-125 amp: #6-1/0 Cu #4-2/0 Al	18	30	9	15	26 (661)	95 (43)
			30	42	15	21	32 (813)	110 (50)
			42	54	21	27	38 (965)	125 (57)
			54	66	27	33	44 (1118)	140 (64)
			66	—	33	—	50 (1270)	155 (71)
225	QJ2, QJH2, QJ2H, QR2, QRH2, HQR2, HQR2H	#6 AWG-300 Kcmil (Cu) or #4 AWG-300 Kcmil (Al)	18	30	9	15	26 (661)	95 (43)
			30	42	15	21	32 (813)	110 (50)
			42	54	21	27	38 (965)	125 (57)
			54	66	27	33	44 (1118)	140 (64)
			66	—	33	—	50 (1270)	155 (71)
250	FXD6, FD6, HFD6, HFxD6	#6 AWG-350 Kcmil (Cu) or #4 AWG-350 Kcmil (Al)	42	54	21	27	44 (1118)	140 (64)
			54	66	27	33	50 (1270)	155 (71)
			66	—	33	—	56 (1423)	170 (78)
			—	30	—	15	56 (1423)	172 (78)
			30	42	15	21	62 (1575)	190 (86)
400	JD6, JXD6, HJD6, HJXD6	3/0-500 Kcmil (Cu) or 4/0-500 Kcmil (Al)	42	54	21	27	68 (1728)	208 (95)
			54	66	27	33	74 (1880)	226 (104)



**Note:** Main breakers use breaker connectors. For sizes, see breaker connector chart. 400A MLO Panels have wire bend space for 600kcmil CU & AL wire when using standard lugs. With optional 750kcmil AL/CU connectors, wire bend space is available for up to 750kcmil AL wire, but is still limited to 600kcmil CU wire.

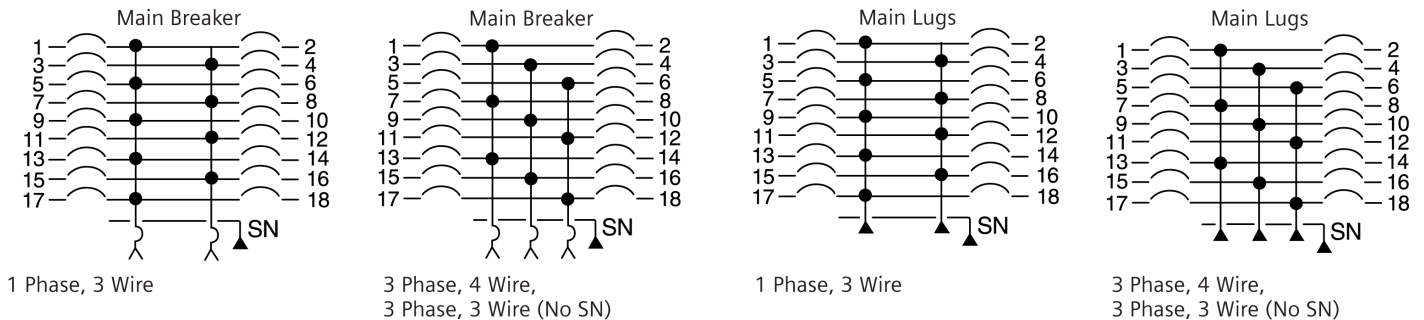
① 400A 66 circuit only available with non-feed thru versions.

② BL, BLH, HBL, BQD, and xGB mount in unit space and count in max. # of poles.

Table P1-5 - Main Lug Panel Size Selector - P1

Maximum Ampere rating	Max # Poles FT	Max # Poles NFT	Dimensions in inches (mm)			Weight in Lbs. (kg)	MLO Connectors Suitable for
			Unit Space		Box Height B"		
125 (or) 250		18	—	9	26 (661)	90 (41)	(1) #6 AWG - 350 kcmil (Cu or AL)
		30	9	15	32 (813)	105 (48)	
		42	15	21	38 (965)	120 (55)	
		54	21	27	44 (1118)	135 (61)	
		66	27	33	50 (1270)	150 (67)	
		—	33	—	56 (1423)	165 (73)	
400		30	—	15	56 (1423)	120 (55)	AL (2) 1/0 - 250 kcmil or (1) #2 AWG - 600 kcmil CU (2) 1/0 - 4/0 or (1) #2 AWG - 600 kcmil
		42	15	21	62 (1575)	135 (61)	
		54	21	27	68 (1728)	150 (68)	
		66	27	33	74 (1880)	165 (75)	

### Typical Panelboard Wiring Diagrams



# Application

## Type P1 Panelboards

Table P1-6 – Branch Circuit Breakers

Max. Amp Rating	Breaker Type	Number of Poles	Max. Interrupting Rating (kA)					Available Trip Values	Connections Suitable for Cu or Al
			120V	120/240V	240V	277V	480/277V		
100	BL	1	10	–	–	–	–	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70	15-20A #14-#10 AWG Cu #12-#10 AWG Al 25-35A #8-#6 AWG Cu #8-#6 AWG Al 40-50A #8-#6 AWG Cu #8-#4 AWG Al 55-70A #8-#4 AWG Cu #8-#2 AWG Al 80-100A #4-#1/0 AWG Cu #2-#1/0 AWG Al
		2	–	10	–	–	–	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
		3	–	–	10	–	–	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
	BLR	2	–	–	10	–	–	15, 20, 30, 40, 50, 60, 70, 90, 100	
	BL, HID	1	10	–	–	–	–	15, 20, 30	
		2	–	10	–	–	–	15, 20, 30	
	BLH	1	–	22	–	–	–	15, 20, 30, 40, 50, 55, 60, 70	
		2	–	22	–	–	–	15, 20, 30, 40, 50, 60, 70, 90, 100	
		3	–	–	22	–	–	15, 20, 30, 40, 50, 60, 70, 80, 90, 100	
	HBL	1	–	65	–	–	–	15, 20, 30, 40, 50	
		2	–	65	–	–	–	15, 20, 30, 40, 50, 60, 70	
		3	–	–	65	–	–	15, 20, 30, 40, 50, 60, 70, 80, 90, 100	
	BLF2	1	10	–	–	–	–	15, 20, 30	
	BLFB	2	–	10	–	–	–	15, 20, 30, 40, 50, 60	
	BLHF2	1	22	–	–	–	–	15, 20, 30	
	BLHFB	2	–	22	–	–	–	15, 20, 30, 40, 50, 60	
	HBLF2	1	65	–	–	–	–	15, 20, 30	
	BG ①	2	10	–	–	–	–	15, 20, 30	
		3	–	10	–	–	–	15, 20, 30	
	BLE	1	10	–	–	–	–	15, 20, 30	
		2	–	10	–	–	–	15, 20, 30, 40, 50, 60	
	BLEH	1	22	–	–	–	–	15, 20, 30	
		2	–	22	–	–	–	15, 20, 30, 40, 50, 60	
125	BAF	1	10	–	–	–	–	15, 20	15-40A #14-#6 AWG Cu #12-#6 AWG Al 45-100A #8-#1 AWG Cu #6-#1/0 AWG Al
	BAFH	1	22	–	–	–	–	15, 20	
	BQD	1	–	65	–	14	–	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
		2	–	65	–	–	14	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
		3	–	–	65	–	14	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100	
	NGB ②③	1	100	–	–	25	–	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 125 ③	
		2	–	100	100	–	25	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 125 ③	
		3	–	100	100	–	25	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 125 ③	
	HGB ②③	1	100	–	–	35	–	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 125 ③	
		2	–	100	100	–	35	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 125 ③	
		3	–	100	100	–	35	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 125 ③	
	LGB ②③	1	100	–	–	65	–	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 125 ③	15-30A #14-#6 Cu #12-#6 Al 35-125 #6-1/0 Cu #4-2/0 Al
		2	–	100	100	–	65	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 125 ③	
		3	–	100	100	–	65	15, 20, 25, 30, 35, 40, 50, 60, 70, 80, 90, 100, 125 ③	

① Two-pole breaker is one phase and neutral. Three-pole is two phases and neutral.

② P1 panel with NGB/HGB/LGB branch devices will not accept BL or BQD frames in the same panel as branch devices.

③ The New Revised P1 (18 circuit 250A only) is limited to 100A per connection (200A per pair) when installing Branch Breakers across from one another. All other configurations allow 125A per connection max. (250A per pair max.)

**Note:** BL, HBL and BQD breakers are mounted in common mountings in 3" or (6) pole increments.

# Application

## Type P1 Panelboards

Table P1-7 – Subfeed Breakers

Breaker Type	Number of Poles	Max. Interrupting Rating (kA)		Available Trip Values
		240V	480Y/277V	
QJ2	2, 3	10	–	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
QJH2	2, 3	22	–	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
QJ2H	2, 3	42	–	60, 70, 80, 90, 100, 110, 125, 150, 175, 200, 225
QR2	2, 3	10	–	100, 110, 125, 150, 175, 200, 225
QRH2	2, 3	25	–	100, 110, 125, 150, 175, 200, 225
HQR2	2, 3	65	–	100, 110, 125, 150, 175, 200, 225
HQR2H	2, 3	100	–	100, 110, 125, 150, 175, 200, 225
ED4	2, 3	65	18	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 110, 125
ED6	2, 3	65	25	15, 20, 25, 30, 35, 40 50, 60, 70, 80, 90, 100, 110, 125
HED4	2, 3	100	42	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 110, 125
HHED6	2, 3	100	65	15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 110, 125
FXD6	2, 3	65	35	70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250
FD6	2, 3	65	35	70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250
HFD6	2, 3	100	65	70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250
HFXD6	2, 3	100	65	70, 80, 90, 100, 110, 125, 150, 175, 200, 225, 250

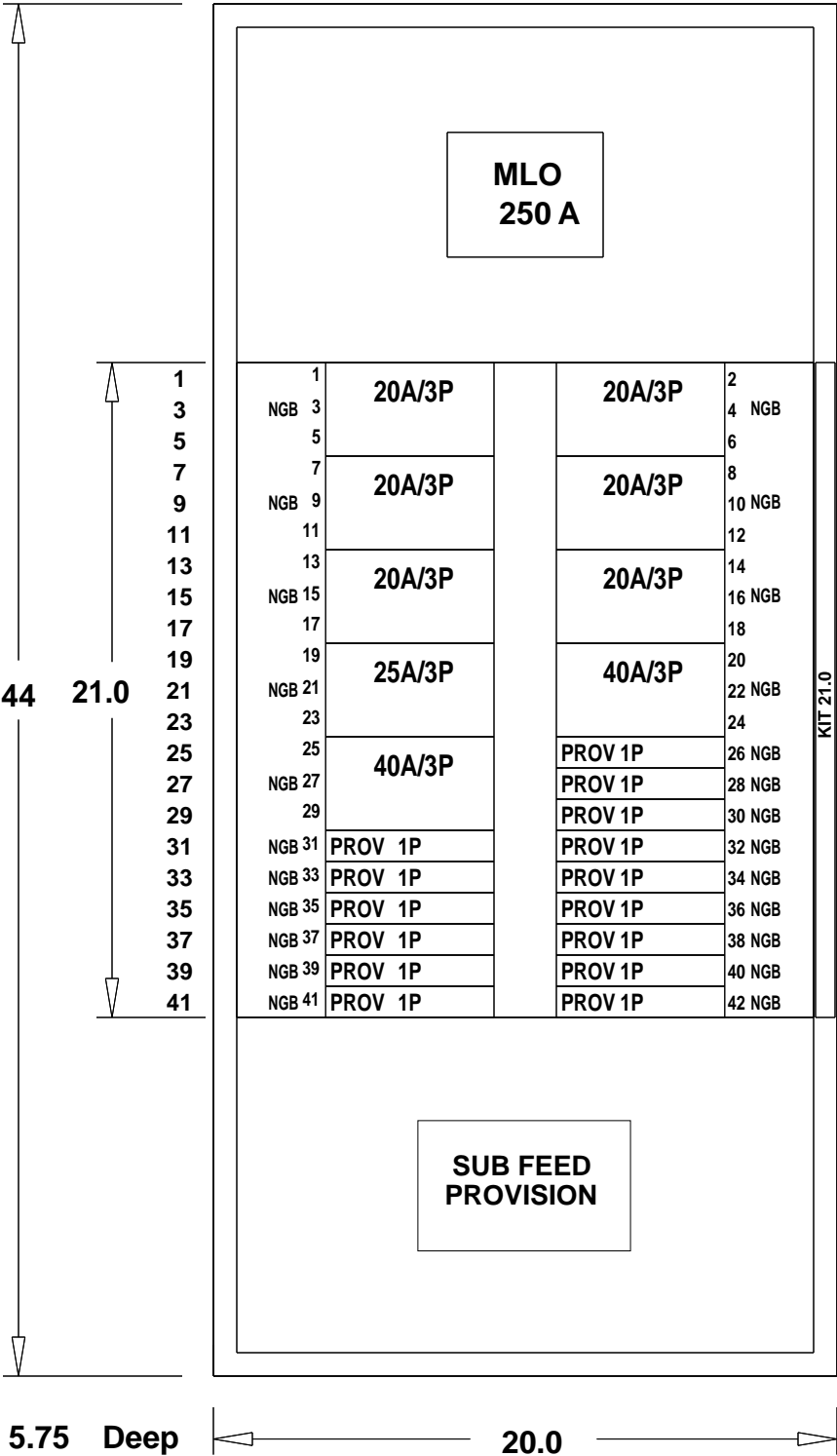
400 amp kit is for main—only, not allowed for subfeed breaker.



SECTION :1 OF 1  
PANEL TYPE :P1  
CATALOG NUMBER :P1E42ML250CTST  
ENCLOSURE :1 Indoor  
SYSTEM VOLTAGE :480Y/277 3Ø 4W Wye AC  
IR RATING :25 K AIC  
MAIN BUS :250 A  
BUS MATERIAL :Tin Plated Copper  
FEED :Top  
MOUNTING :Surface  
SE LABEL :No  
SERIES RATED :No  
CONDUIT AREA :N/A  
\*INDICATES POSITIONING NUMBERS TO HELP WITH THE MANUAL PLACEMENT OF BREAKERS ON THE MECHANICAL VIEW

PANELBOARD COMPONENTS

Main :  
1 - 250A MAIN LUG  
1-(1)#6-350Kcmil  
Branches :  
6 - 20A /3P-NGB  
1 - 25A /3P-NGB  
2 - 40A /3P-NGB  
15 - 1P-NGB - PROV  
Options :  
1-Subfeed/Feedthru Provision  
1-Master NP Secured -Adhesive  
1-Special Front Hinged to Box  
1-Card Holder-Std Plastic Sleeve  
1-NP Location - Trim  
1-250A 42 CIR Cu Brch Connector (Lead Time Adder)  
1-Certification - UL  
1-Std Al/Cu Gnd Connector



				JOB Highland Park Middle School Add				
				P.O. =		CUST. CRESCENT ELECTRIC SUPPLY COMPANY		
				CONTR =		CONSULT =		
				TIE =		BY peppbr	ENG. LOC. =	DESIGNATION PANEL 4CG
				S.O. =		DATE 2-12-2020		
						DWG. NO. peppbr000_02122000_00_00_M00-20000-1		
1	0	peppbr	2-12-2020	Siemens Industry, Inc.				
NO.	REVISIONS	DRAWN BY	DATE					
				Norcross, Georgia		APP. =	MFG. LOC. =	REV. 1
						APP. =	DWG. FILE =	SHEET 1 OF 1

# Highland Park Middle School

## Electrical Equipment Submittals

Date Submitted: 03/04/2020

IES Submittal # 06

(Sect 26 27 26) - Wiring devices

**SPECIFY COLOR OF DEVICES & PLATES**

IES Commercial  
16135 SW 74th Ave  
Tigard, OR 97224

Ph: (503) 648-1900

Project Manager - xxx





UPC Code : 078477088845

Country Of Origin : Please Contact Customer Service.

## 80701-W

1-Gang Toggle Device Switch Wallplate, Standard Size, Thermoplastic Nylon, Device Mount, - White

Familiar and functional, Leviton Traditional Wallplates are designed for use with Traditional Leviton devices. They represent styles and form factors that have stood the test of time. Their clean lines work in virtually any location, whether in new or retrofit construction, and they install quickly and easily. Leviton offers Traditional Wallplates in a vast array of colors and configurations.

### Technical Information

#### Product Features

**Color :** White

**Gang :** 1

**Material :** Nylon

**Mount :** Device

**Standards and Certifications :** UL/CSA

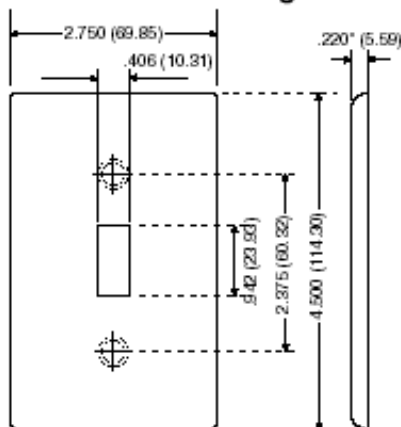
**Type :** Standard Size

**Warranty :** 10-Year Limited

### Features and Benefits

- Molded nylon for maximum resistance to impact, abrasion, grease, oils, acids, moisture, fading and discoloration
- Resistant to mechanical stress associated with high abuse applications
- Includes metal mounting screws that match plate color
- Commercial grade devices backed by a Limited 10-Year Warranty

### Dimensional Diagram



### SPECIFICATION SUBMITTAL

JOB NAME:	CATALOG NUMBERS:	
<input type="text"/>	<input type="text"/>	<input type="text"/>
JOB NUMBER:	<input type="text"/>	<input type="text"/>

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## 80709-W

2-Gang Toggle Device Switch Wallplate, Standard Size, Thermoplastic Nylon, Device Mount, White

Familiar and functional, Leviton Traditional Wallplates are designed for use with Traditional Leviton devices. They represent styles and form factors that have stood the test of time. Their clean lines work in virtually any location, whether in new or retrofit construction, and they install quickly and easily. Leviton offers Traditional Wallplates in a vast array of colors and configurations.

### Technical Information

#### Product Features

**Color :** White

**Gang :** 2

**Material :** Nylon

**Mount :** Device

**Standards and Certifications :** UL/CSA

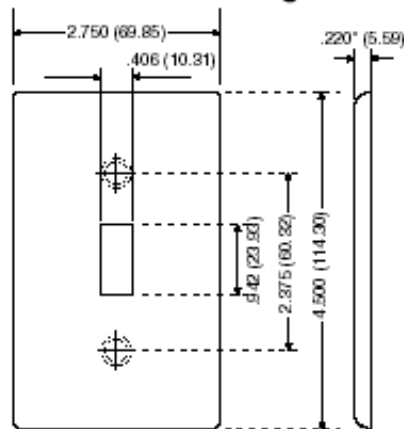
**Type :** Standard Size

**Warranty :** 10-Year Limited

**UPC Code :** 078477493649

**Country Of Origin :** Please Contact Customer Service.

### Dimensional Diagram



2-GANG Width = 4.56" (115.9mm)

### SPECIFICATION SUBMITTAL

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JOB NUMBER:	<input type="text"/>	<input type="text"/>



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## 80703-W

1-Gang Duplex Device Receptacle Wallplate, Standard Size, Thermoplastic Nylon, Device Mount, - White

Familiar and functional, Leviton Traditional Wallplates are designed for use with Traditional Leviton devices. They represent styles and form factors that have stood the test of time. Their clean lines work in virtually any location, whether in new or retrofit construction, and they install quickly and easily. Leviton offers Traditional Wallplates in a vast array of colors and configurations.

### Technical Information

#### Product Features

**Color :** White

**Gang :** 1

**Material :** Nylon

**Mount :** Device

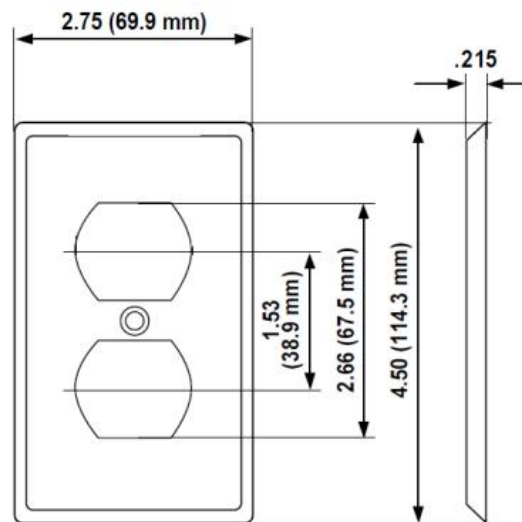
**Standards and Certifications :** UL/CSA

**Type :** Standard Size

**Warranty :** 10-Year Limited

**UPC Code :** 078477493243

**Country Of Origin :** Please Contact Customer Service.



### SPECIFICATION SUBMITTAL

JOB NAME:	CATALOG NUMBERS:	
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JOB NUMBER:	<input type="text"/>	<input type="text"/>

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## 80716-W

2-Gang, 2-Duplex, Receptacle Wallplate, Standard Size, Thermoplastic Nylon, Device Mount. White

Familiar and functional, Leviton Traditional Wallplates are designed for use with Traditional Leviton devices. They represent styles and form factors that have stood the test of time. Their clean lines work in virtually any location, whether in new or retrofit construction, and they install quickly and easily. Leviton offers Traditional Wallplates in a vast array of colors and configurations.

### Technical Information

#### Product Features

**Color :** White

**Gang :** 2

**Material :** Nylon

**Mount :** Device

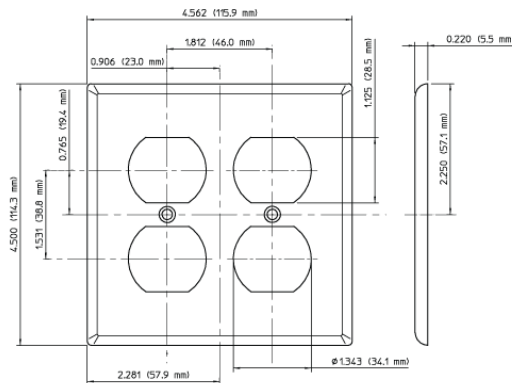
**Standards and Certifications :** UL/CSA

**Type :** Standard Size

**Warranty :** 10-Year Limited

**UPC Code :** 078477494042

**Country Of Origin :** Please Contact Customer Service.



### SPECIFICATION SUBMITTAL

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UPC Code : 078477493403

Country Of Origin : Please Contact Customer Service.

## 80704-W

1-Gang Single 1.406 Inch Hole Device Receptacle Wallplate, Standard Size, Thermoplastic Nylon, Device Mount, - White

Familiar and functional, Leviton Traditional Wallplates are designed for use with Traditional Leviton devices. They represent styles and form factors that have stood the test of time. Their clean lines work in virtually any location, whether in new or retrofit construction, and they install quickly and easily. Leviton offers Traditional Wallplates in a vast array of colors and configurations.

### Technical Information

#### Product Features

**Color :** White

**Gang :** 1

**Material :** Nylon

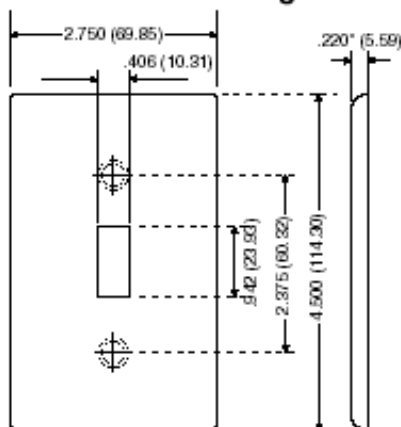
**Mount :** Device

**Standards and Certifications :** UL/CSA

**Type :** Standard Size

**Warranty :** 10-Year Limited

### Dimensional Diagram



### SPECIFICATION SUBMITTAL

JOB NAME:	CATALOG NUMBERS:	
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JOB NUMBER:	<input type="text"/>	<input type="text"/>

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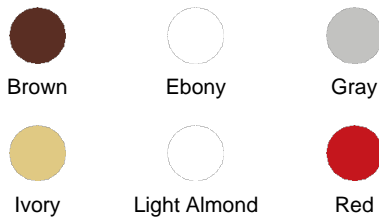




UPC Code : 078477239902

Country Of Origin : United States

**Available Colors :**



## 1221-2W

20 Amp, 120/277 Volt, Toggle Single-Pole AC Quiet Switch, Extra Heavy Duty Spec Grade, Self Grounding, Back & Side Wired - WHITE

Leviton's Industrial Grade AC toggle switches for extra heavy-duty applications represent top-of-the-line quality and peak performance. Leviton uses the finest materials available and the highest production standards to produce industrial switches of unmatched versatility and reliability.

### Technical Information

#### AC Horsepower Ratings

**HP Rating :** 1HP-120V 2HP-240V-277V

#### Electrical Specifications

**Amperage :** 20 A

**Dielectric Voltage :** Withstands 1500V for 1 minute

**Endurance :** 50,000 cycles minimum

**Grounding :** Self-Grounding

**Overload UL20 Test :** 100 cycles of OL at 4.8 times rated current

**Temperature Rise :** Maximum 30 degrees C rise

**Voltage :** 120/277 VAC

#### Environmental Specifications

**Flammability :** Rated V-2 per UL 94

**Operating Temperature :** -40°C to 65°C

#### Material Specifications

**Base Material :** Thermoplastic

**Color :** White

**Contact Material :** Silver Alloy

**Cover Material :** Thermoplastic

**Ground Clips :** Brass

**Grounding Screw :** Brass 8-32

**Strap Material :** Steel

**Terminal Screws :** Brass 8-32

**Toggle :** Polycarbonate

#### Mechanical Specifications

**Product ID :** Ratings are permanently marked on device

**Terminal Accom. :** 14-#10 AWG back wired; #14-#12 AWG side wired

**Terminal ID :** Brass-Hot Black-Hot White-Neutral Green-Gnd

**Termination :** Back or Side Wire

**Torque Range :** 12-14 inch pounds

#### Product Features

**Body Material :** Thermoplastic

**Color :** White

**Device Type :** Toggle Switch

**Function :** Single-Pole

**Grade :** Extra Heavy-Duty Industrial Specification Grade

**Grounding :** Self-Grounding

**HP Rating :** 1HP-120V 2HP-240V-277V

**Strap Material :** Steel

**Voltage :** 120/277 VAC

#### Standards and Certifications

**ANSI :** C-73

**CSA C22.2 No. 111 :** File #152105

**NEMA :** WD-1 & WD-6

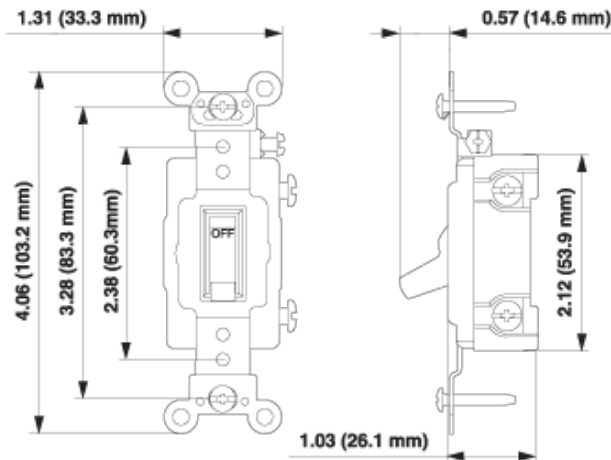
**NOM :** 057

**RoHS :** Compliant

**UL Fed Spec WS896E :** File #E7458

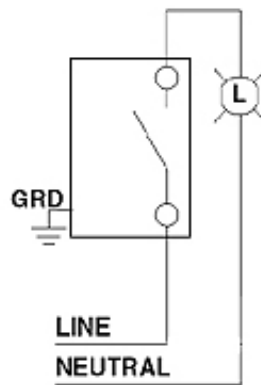
**UL Standard :** UL 20

**Warranty :** 10-Year Limited



## SINGLE-POLE

### Wiring Diagram Single Pole



### SPECIFICATION SUBMITTAL

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JOB NUMBER:		

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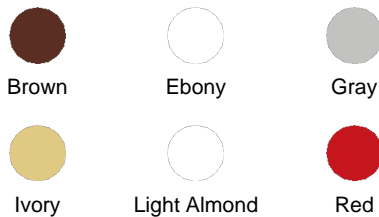




UPC Code : 078477241905

Country Of Origin : United States

**Available Colors :**



## 1222-2W

20 Amp, 120/277 Volt, Toggle Double-Pole AC Quiet Switch, Extra Heavy Duty Spec Grade, Self Grounding, Back & Side Wired - WHITE

Leviton's Industrial Grade AC toggle switches for extra heavy-duty applications represent top-of-the-line quality and peak performance. Leviton uses the finest materials available and the highest production standards to produce industrial switches of unmatched versatility and reliability.

### Technical Information

#### AC Horsepower Ratings

**HP Rating :** 1HP-120V 2HP-240V-277V

#### Electrical Specifications

**Amperage :** 20 A

**Dielectric Voltage :** Withstands 1500V for 1 minute

**Endurance :** 50,000 cycles minimum

**Grounding :** Self-Grounding

**Overload UL20 Test :** 100 cycles of OL at 4.8 times rated current

**Temperature Rise :** Maximum 30 degrees C rise

**Voltage :** 120/277 VAC

#### Environmental Specifications

**Flammability :** Rated V-2 per UL 94

**Operating Temperature :** -40°C to 65°C

#### Material Specifications

**Base Material :** Thermoplastic

**Color :** White

**Contact Material :** Silver Alloy

**Cover Material :** Thermoplastic

**Ground Clips :** Brass

**Grounding Screw :** Brass 8-32

**Strap Material :** Steel

**Terminal Screws :** Brass 8-32

**Toggle :** Polycarbonate

#### Mechanical Specifications

**Product ID :** Ratings are permanently marked on device

**Terminal Accom. :** 14-#10 AWG back wired; #14-#12 AWG side wired

**Terminal ID :** Brass-Hot Black-Hot White-Neutral Green-Gnd

**Termination :** Back or Side Wire

**Torque Range :** 12-14 inch pounds

#### Product Features

**Body Material :** Thermoplastic

**Color :** White

**Device Type :** Toggle Switch

**Function :** Double-Pole

**Grade :** Extra Heavy-Duty Industrial Specification Grade

**Grounding :** Self-Grounding

**HP Rating :** 1HP-120V 2HP-240V-277V

**Strap Material :** Steel

**Voltage :** 120/277 VAC

#### Standards and Certifications

**ANSI :** C-73

**CSA C22.2 No. 111 :** File #152105

**NEMA :** WD-1 & WD-6

**NOM :** 057

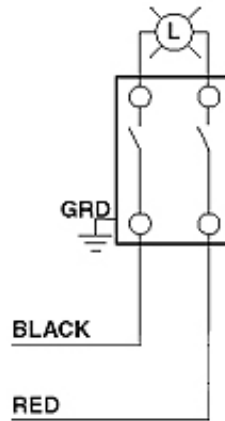
**RoHS :** Compliant

**UL Fed Spec WS896E :** File #E7458

**UL Standard :** UL 20

**Warranty :** 10-Year Limited

### Wiring Diagram Double Pole



### SPECIFICATION SUBMITTAL

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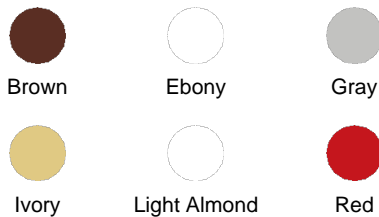




UPC Code : 078477223482

Country Of Origin : United States

#### Available Colors :



## 1223-2W

20 Amp, 120/277 Volt, Toggle 3-Way AC Quiet Switch, Extra Heavy Duty Spec Grade, Self Grounding, Back & Side Wired - WHITE

Leviton's Industrial Grade AC toggle switches for extra heavy-duty applications represent top-of-the-line quality and peak performance. Leviton uses the finest materials available and the highest production standards to produce industrial switches of unmatched versatility and reliability.

#### Technical Information

##### AC Horsepower Ratings

**HP Rating :** 1HP-120V 2HP-240V-277V

**Max. Amperage :** 16 Amp

##### Electrical Specifications

**Amperage :** 20 A

**Dielectric Voltage :** Withstands 1500V for 1 minute

**Endurance :** 50,000 cycles minimum

**Grounding :** Self-Grounding

**Overload UL20 Test :** 100 cycles of OL at 4.8 times rated current

**Temperature Rise :** Maximum 30 degrees C rise

**Voltage :** 120/277 VAC

##### Environmental Specifications

**Flammability :** Rated V-2 per UL 94

**Operating Temperature :** -40°C to 65°C

##### Material Specifications

**Base Material :** Thermoplastic

**Color :** White

**Contact Material :** Silver Alloy

**Cover Material :** Thermoplastic

**Ground Clips :** Brass

**Grounding Screw :** Brass 8-32

**Strap Material :** Steel

**Terminal Screws :** Brass 8-32

**Toggle :** Polycarbonate

##### Mechanical Specifications

**Product ID :** Ratings are permanently marked on device

**Terminal Accom. :** 14-#10 AWG back wired; #14-#12 AWG side wired

**Terminal ID :** Brass-Hot Black-Hot White-Neutral Green-Gnd

**Termination :** Back or Side Wire

**Torque Range :** 12-14 inch pounds

##### Product Features

**Body Material :** Thermoplastic

**Color :** White

**Device Type :** Toggle Switch

**Function :** 3-Way

**Grade :** Extra Heavy-Duty Industrial Specification Grade

**Grounding :** Self-Grounding

**HP Rating :** 1HP-120V 2HP-240V-277V

**Strap Material :** Steel

**Voltage :** 120/277 VAC

##### Standards and Certifications

**ANSI :** C-73

**CSA C22.2 No. 111 :** File #152105

**NEMA :** WD-1 & WD-6

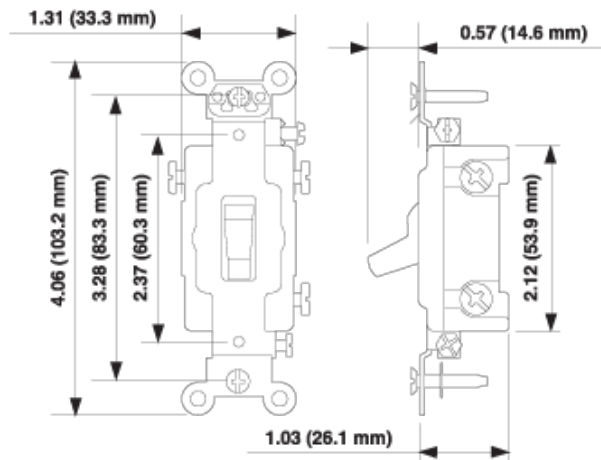
**NOM :** 057

**RoHS :** Compliant

**UL Fed Spec WS896E :** File #E7458

**UL Standard :** UL 20

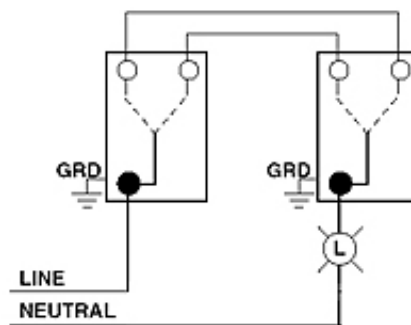
**Warranty :** 10-Year Limited



## 3-WAY

### Wiring Diagram

#### 3-Way to 3-Way



### SPECIFICATION SUBMITTAL

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JOB NUMBER:		

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UPC Code : 078477358030

Country Of Origin : Please Contact Customer Service.

**Available Colors :**



## 1221-2GL

20 Amp, 120/277 Volt, Toggle Locking Single-Pole AC Quiet Switch, Industrial Grade, Self Grounding, Back & Side Wired, - Gray

Leviton's Industrial Grade AC toggle switches for extra heavy-duty applications represent top-of-the-line quality and peak performance. Leviton uses the finest materials available and the highest production standards to produce industrial switches of unmatched versatility and reliability.

### Technical Information

#### AC Horsepower Ratings

**HP Rating :** 1HP-120V 2HP-240V-277V

**Max. Amperage :** 16 Amp

#### Electrical Specifications

**Amperage :** 20 A

**Dielectric Voltage :** Withstands 1500V for 1 minute

**Endurance :** 50,000 cycles minimum

**Grounding :** Self-Grounding

**Overload UL20 Test :** 100 cycles of OL at 4.8 times rated current

**Temperature Rise :** Maximum 30 degrees C rise

**Voltage :** 120/277 VAC

#### Environmental Specifications

**Flammability :** Rated V-2 per UL 94

**Operating Temperature :** -40°C to 65°C

#### Material Specifications

**Base Material :** Thermoplastic

**Color :** Gray

**Contact Material :** Silver Alloy

**Cover Material :** Thermoplastic

**Ground Clips :** Brass

**Grounding Screw :** Brass 8-32

**Strap Material :** Steel

**Terminal Screws :** Brass 8-32

**Toggle :** Polycarbonate

#### Mechanical Specifications

**Product ID :** Ratings are permanently marked on device

**Terminal Accom. :** 14-#10 AWG back wired; #14-#12 AWG side wired

**Terminal ID :** Brass-Hot Black-Hot White-Neutral Green-Gnd

**Termination :** Back or Side Wire

**Torque Range :** 12-14 inch pounds

#### Product Features

**Actuator Material :** Thermoplastic Nylon

**Body Material :** Thermoplastic

**Color :** Gray

**Device Type :** Tamper-Resistant Toggle Switch

**Function :** Single-Pole

**Grade :** Extra Heavy-Duty Industrial Specification Grade

**Grounding :** Self-Grounding

**HP Rating :** 1HP-120V 2HP-240V-277V

**Strap Material :** Steel

**Voltage :** 120/277 VAC

#### Standards and Certifications

**ANSI :** C-73

**CSA C22.2 No. 111 :** File #152105

**NEMA :** WD-1 & WD-6

**NOM :** 057

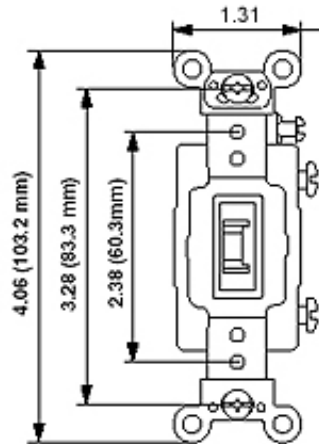
**RoHS :** Compliant

**UL Fed Spec WS896E :** File #E7458

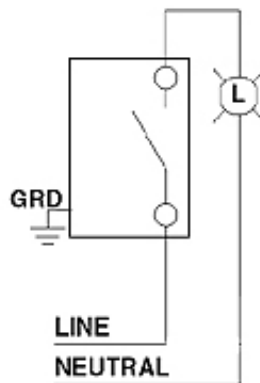
**UL Standard :** UL 20

**Warranty :** 10-Year Limited

## Dimensional Diagram



## Wiring Diagram Single Pole



## SPECIFICATION SUBMITTAL

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JOB NUMBER:	<input type="text"/>	<input type="text"/>

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## 5361-W

Single Receptacle Outlet, Heavy-Duty Industrial Specification Grade, Smooth Face, 20 Amp, 125 Volt, Back or Side Wire, NEMA 5-20R, 2-Pole, 3-Wire, Self-Grounding - White

Leviton's line of Extra Heavy-Duty Industrial Grade receptacles are designed and manufactured to withstand the harsh conditions typically associated with industrial environments. Available in a wide variety of configurations, including isolated ground, tamper-resistant, hospital grade, etc., these Industrial Grade devices are the electrical contractor's choice for use in factories, schools, hospitals and commercial office buildings.



Color :  White

UPC Code : 078477498798

Country Of Origin : Please Contact Customer Service.

NEMA :  5-20R

### Available Colors :



Black



Brown



Gray



Ivory



Light Almond



Red

### Technical Information

#### AC Horsepower Ratings

**At Rated Voltage :** 1 HP

#### Electrical Specifications

**Amperage :** 20 A

**Current Limiting :** Full Rated Current

**Dielectric Voltage :** Withstands 2000V per UL498

**Grounding :** Self-Grounding

**Pole :** 2

**Temperature Rise :** Max 30C after 250 cycles OL at 200 percent rated current

**Voltage :** 125 VAC

**Wire :** 3

#### Environmental Specifications

**Flammability :** Rated V-2 per UL 94

**Operating Temperature :** -40°C to 60°C

#### Material Specifications

**Body Material :** Thermoplastic Nylon

**Clamp Nuts :** Galvanized Steel

**Color :** White

**Face Material :** Thermoplastic Nylon

**Ground Clips :** Brass

**Grounding Screw :** Plated Steel

**Line Contacts :** Brass Triple-Wipe

**Strap Material :** Zinc-Plated Steel

**Terminal Screws :** Plated Brass

#### Mechanical Specifications

**Product ID :** Ratings are permanently marked on device

**Terminal Accom. :** 14-10 AWG

**Terminal ID :** Brass-Hot, Green-Ground, Silver-Neutral

**Termination :** Back or Side Wire

**Torque Range :** 14-16 inch pounds

#### Product Features

**Body Material :** Thermoplastic Nylon

**Color :** White

**Device Type :** Single Receptacle Outlet

**Face Material :** Thermoplastic Nylon

**Feature 4 :** Smooth Face

**Grade :** Heavy-Duty Industrial Specification Grade

**Grounding :** Self-Grounding

**NEMA :** 5-20R

#### Standards and Certifications

**ANSI :** C-73

**CSA C22.2 No. 42 :** File 152105

**NEMA :** WD 1 & WD 6

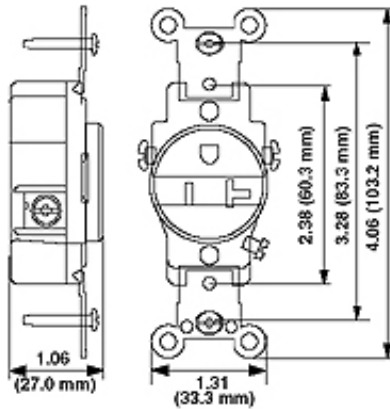
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**UL Fed Spec WC-596 :** File E13399

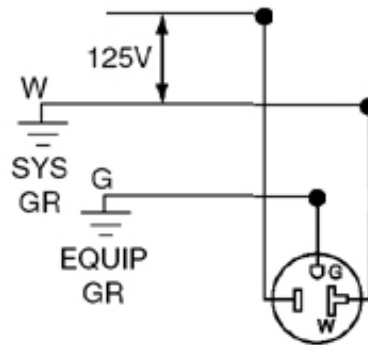
**UL498 :** File E13399

**Warranty :** 10-Year Limited

## Dimensional Diagram



## Wiring Diagram



5-20R

## SPECIFICATION SUBMITTAL

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JOB NUMBER:	<input type="text"/>	<input type="text"/>

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**Color :**  White

**UPC Code :** 078477139523

**Country Of Origin :** Please Contact Customer Service.

**NEMA :**  5-20R

**Available Colors :**



Black



Brown



Gray



Ivory



Red

## 5362-W

Duplex Receptacle Outlet, Extra Heavy-Duty Industrial Specification Grade, Smooth Face, 20 Amp, 125 Volt, Back or Side Wire, NEMA 5-20R, 2-Pole, 3-Wire, Self-Grounding - White

Leviton's line of Extra Heavy-Duty Industrial Grade receptacles are designed and manufactured to withstand the harsh conditions typically associated with industrial environments. Available in a wide variety of configurations, including isolated ground, tamper-resistant, hospital grade, etc., these Industrial Grade devices are the electrical contractor's choice for use in factories, schools, hospitals and commercial office buildings.

### Technical Information

AC Horsepower Ratings

**At Rated Voltage :** 1 HP

Electrical Specifications

**Amperage :** 20 A

**Current Limiting :** Full Rated Current

**Dielectric Voltage :** Withstands 2000V per UL498

**Grounding :** Self-Grounding

**Pole :** 2

**Temperature Rise :** Max 30C after 250 cycles OL at 200 percent rated current

**Voltage :** 125 VAC

**Wire :** 3

Environmental Specifications

**Flammability :** Rated V-2 per UL 94

**Operating Temperature :** -40°C to 60°C

Material Specifications

**Body Material :** Thermoplastic Nylon

**Clamp Nuts :** Zinc-Plated Steel

**Color :** White

**Face Material :** Thermoplastic Nylon

**Ground Clips :** Brass-Plated

**Grounding Screw :** Brass 8-32

**Line Contacts :** Brass Triple-Wipe

**Strap Material :** Brass

**Terminal Screws :** Brass 10-32

Mechanical Specifications

**Product ID :** Ratings are permanently marked on device

**Terminal Accom. :** 14-10 AWG

**Terminal ID :** Brass-Hot, Green-Ground, Silver-Neutral

**Termination :** Back and Side Wire

Product Features

**Color :** White

**Device Type :** Duplex Receptacle Outlet

**Feature :** Smooth Face

**Grade :** Extra Heavy-Duty Industrial Specification Grade

**NEMA :** 5-20R

Standards and Certifications

**ANSI :** C-73

**CSA C22.2 No. 42 :** File 152105

**NEMA :** WD-1 & WD-6

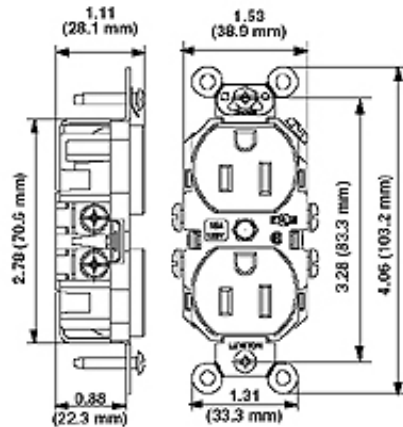
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**UL Fed Spec WC-596 :** File E13399

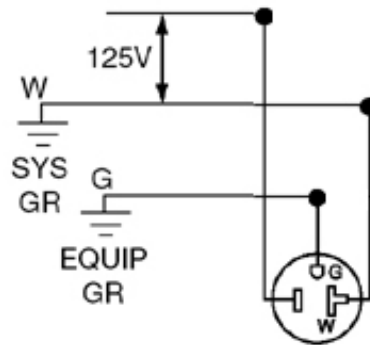
**UL498 :** File E13399

**Warranty :** 10-Year Limited

## Dimensional Diagram



## Wiring Diagram



5-20R

## SPECIFICATION SUBMITTAL

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JOB NUMBER:	<input type="text"/>	<input type="text"/>

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## TBR20-W

Duplex Receptacle Outlet, Commercial Specification Grade, Tamper-Resistant, Smooth Face, 20 Amp, 125 Volt, Back and Side Wire, NEMA 5-20R, 2-Pole, 3-Wire, Self-Grounding - White



Color :  White

UPC Code : 078477381816

Country Of Origin : Mexico

NEMA :  5-20R

Available Colors :



Black



Brown



Gray



Ivory



Light Almond

### Technical Information

AC Horsepower Ratings

At Rated Voltage : 1 HP

Electrical Specifications

Amperage : 20 A

Current Limiting : Full Rated Current

Dielectric Voltage : Withstands 2000V per UL498

Grounding : Self-Grounding

Pole : 2

Temperature Rise : Max 30C after 100 cycles OL at 150 percent rated current

Voltage : 125 VAC

Wire : 3

Environmental Specifications

Operating Temperature : -40°C to 60°C

Material Specifications

Body Material : Thermoplastic

Color : White

Face Material : Thermoplastic

Ground Clips : Brass

Grounding Screw : Plated Steel

Line Contacts : Brass .031 Thick

Shutter Mechanism : Acetal

Strap Material : Zinc-Plated Steel

Terminal Screws : Plated Steel

Mechanical Specifications

Product ID : Ratings permanently marked on device

Terminal Accom. : 14-10 AWG

Terminal ID : Brass-Hot, Green-Ground, Silver-Neutral

Termination : Back and Side Wire

Product Features

Color : White

Device Type : Duplex Receptacle Outlet

Feature : Two Outlets Marked Controlled, Tamper-Resistant, Smooth Face

Grade : Commercial Specification Grade

NEMA : 5-20R

Standards and Certifications

ANSI : C-73

CSA C22.2 No. 42 : File 152105

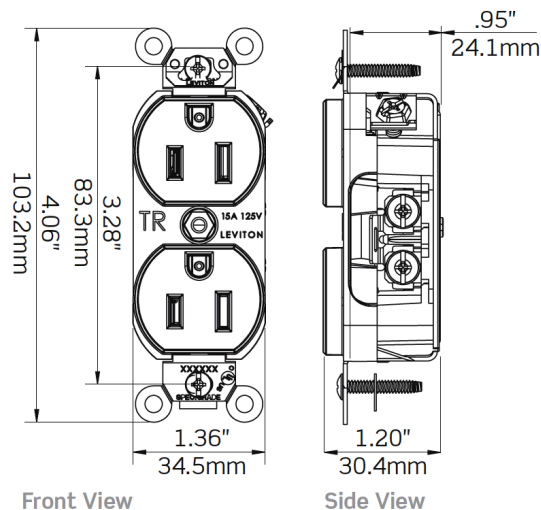
NEMA : WD-1 WD-6

NOM : 057

UL 498 : File E13399

Warranty : 10-Year Limited

Typical for Commercial Spec Grade TR Receptacles



## SPECIFICATION SUBMITTAL

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UPC Code : 078477119181

Country Of Origin : Please Contact Customer Service.

## 84001

1-Gang Toggle Device Switch Wallplate, Standard Size, 430 Stainless Steel, Device Mount, - Stainless Steel

Leviton Combination Wallplates come in a variety of configurations and gangs, and are available in a broad selection of materials including, aluminum, brass, stainless steel and plastic, and in an assortment of colors. If you have a unique application, Leviton can also customize a wallplate for a specific job.

### Technical Information

#### Product Features

**Color :** Stainless Steel

**Gang :** 1

**Material :** 430 Stainless Steel

**Mount :** Device

**Standards and Certifications :** UL/CSA

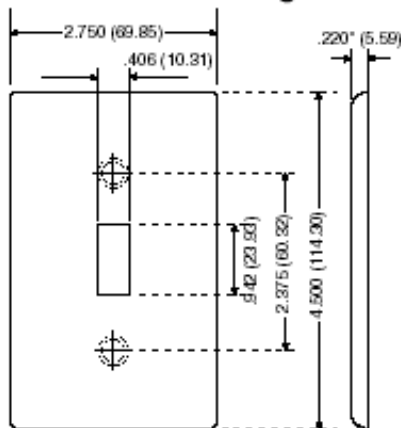
**Type :** Standard Size

**Warranty :** 10-Year Limited

### Features and Benefits

- Round on edges to prevent injury and wall damage
- Resistant to corrosive effects of sunlight and moisture
- Deluxe stainless steel is non-magnetic Type 302, .032" thick
- Standard Stainless Steel is Type 430, .032" thick
- Brass is 70/30 alloy 260, .042" thick
- Aluminum is 3004 alloy, .040" thick
- Includes metal mounting screws that match plate color

### Dimensional Diagram



### SPECIFICATION SUBMITTAL

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## 84009

2-Gang Toggle Device Switch Wallplate, Standard Size, 430 Stainless Steel, Device Mount, - Stainless Steel

### Technical Information

#### Product Features

**Color :** Stainless Steel

**Gang :** 2

**Material :** 430 Stainless Steel

**Mount :** Device

**Standards and Certifications :** UL/CSA

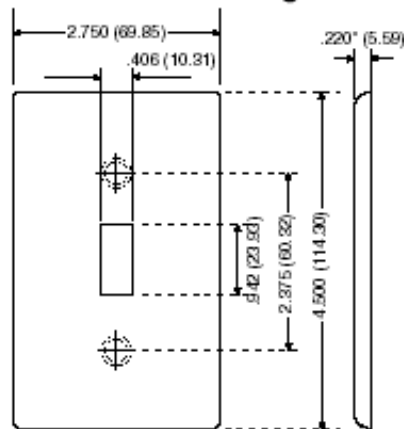
**Type :** Standard Size

**Warranty :** 10-Year Limited

**UPC Code :** 078477429105

**Country Of Origin :** Please Contact Customer Service.

### Dimensional Diagram



### SPECIFICATION SUBMITTAL

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## 84003

1-Gang Duplex Device Receptacle Wallplate, Standard Size, 430 Stainless Steel, Device Mount, - Stainless Steel

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### Technical Information

#### Product Features

**Color :** Stainless Steel

**Construction :** Metal

**Gang :** 1

**Material :** 430 Stainless Steel

**Mount :** Device

**Standards and Certifications :** UL/CSA

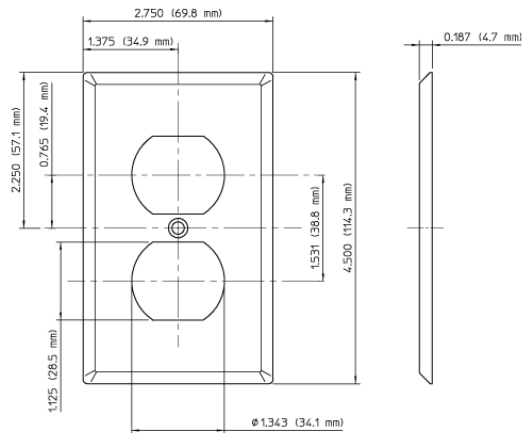
**Type :** Standard Size

**Warranty :** 10-Year Limited



**UPC Code :** 078477781890

**Country Of Origin :** Please Contact Customer Service.



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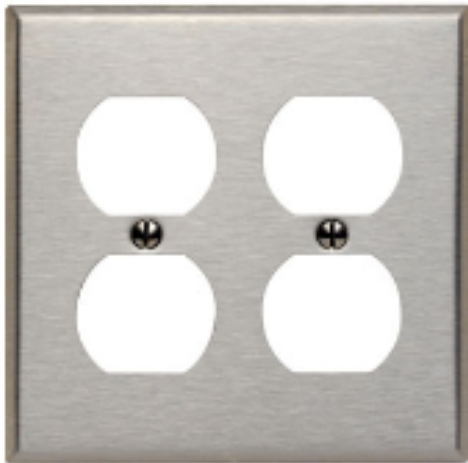
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## 84016

2-Gang Duplex Device Receptacle Wallplate, Standard Size, 430 Stainless Steel, Device Mount, - Stainless Steel

### Technical Information

#### Product Features

**Color :** Stainless Steel

**Construction :** Metal

**Gang :** 2

**Material :** 430 Stainless Steel

**Mount :** Device

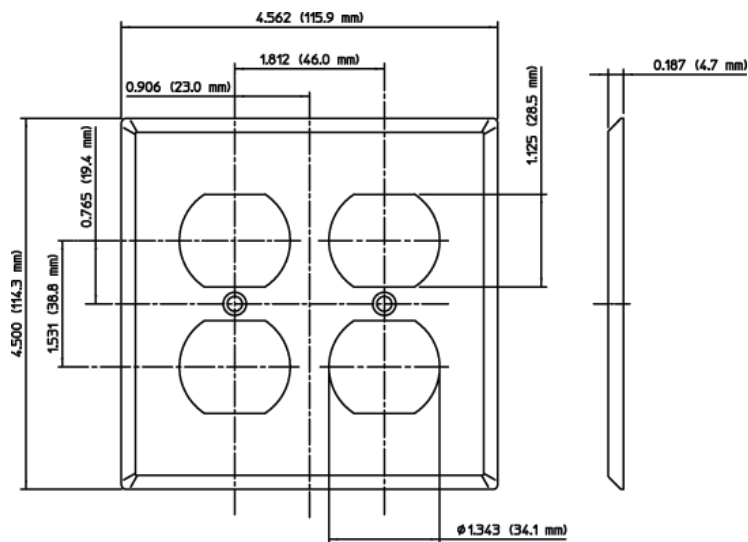
**Standards and Certifications :** UL/CSA

**Type :** Standard Size

**Warranty :** 10-Year Limited

**UPC Code :** 078477430408

**Country Of Origin :** Please Contact Customer Service.



### SPECIFICATION SUBMITTAL

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## 84004-40

1-Gang Single 1.406 Inch Hole Device Receptacle Wallplate, Standard Size, 302 Stainless Steel, Device Mount, - Stainless Steel

Familiar and functional, Leviton Traditional Wallplates are designed for use with Traditional Leviton devices. They represent styles and form factors that have stood the test of time. Their clean lines work in virtually any location, whether in new or retrofit construction, and they install quickly and easily. Leviton offers Traditional Wallplates in a vast array of colors and configurations.

### Technical Information

#### Product Features

**Color :** Stainless Steel

**Construction :** Metal

**Gang :** 1

**Material :** 302 Stainless Steel

**Mount :** Device

**Standards and Certifications :** UL/CSA

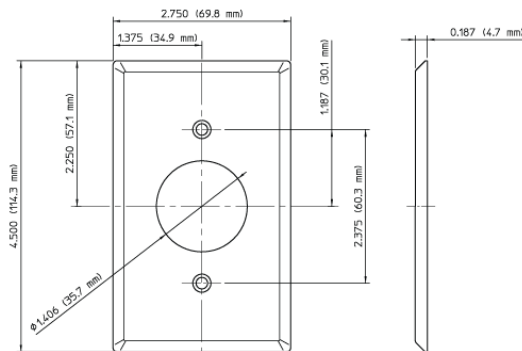
**Type :** Standard Size

**Warranty :** 10-Year Limited



**UPC Code :** 078477428603

**Country Of Origin :** Please Contact Customer Service.



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