

Submittal Form

ARCHITECT

ENGINEER

AHSC

(Project)

Submittal No. 001

Description: VRV Heat Recovery

Date: 07/17/17 Return By: 07/31/17

Division: 23

Section: 23 77 00

Andersen

Subcontract/Supplier:

The review by O'Neill Walsh Community Builders ("OWCB") of the above Submittal shall not relieve Subcontractor/Supplier from any of its obligations under the agreement with OWCB nor give rise to any claim in favor of the Subcontractor/Supplier or third parties against OWCB or Owner.

By: Logan Bright

O'Neill Walsh Community Builders

Notes:

Notes:

Notes:

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 his work with that of all other trades; and the satisfactory performance of his work.

MFIA, Inc. Consulting Engineers

By: Takako Baker, Date: 7/24/17

See attached for submittal review letter.



**"Your Green Heating & Cooling Professionals
Dedicated to Serving Your and Your Community"**

HVAC Submittals

**Asian Health & Service Center
9005 SE Foster Rd.
Portland, OR 97266**

**General Contractor
O'Neill / Walsh Community Builders
2905 SW First Avenue
Portland, OR 97201**

**Submitted By
Andersen Mechanical
16285 SW 85th Ave, Suite 410
Tigard, OR 97224**



23_77_00

VRV Heat Recovery

May 11, 2017

SUBMITTAL

Project: Asian Health & Service Center

Contractor: Andersen Mechanical
16285 SW 85th Ave
Tigard, Oregon 97224

Engineer: MFIA
2007 S.E Ash St.
Portland Oregon 97214

Section: VRV System



Manufacturer: Daikin AC

Model	Qty	Description
REYQ264TTJU	2	Heat recovery VRV-IV (208-230V)
BS4Q54TVJ	6	Branch selector unit
BS6Q54TVJ	2	Branch selector unit
FXAQ18PVJU	2	VRV A (P) - Wall Mounted Unit
FXAQ24PVJU	1	VRV A (P) - Wall Mounted Unit
FXFQ24TVJU	1	VRV F (T) - Round Flow Sensing Cassette
FXMQ15PBVJU	4	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ18PBVJU	2	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ24PBVJU	1	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ36PBVJU	0	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ48PBVJU	2	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXZQ07MVJU9	7	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
FXZQ12MVJU9	0	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
FXZQ15MVJU9	2	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
FXZQ18MVJU9	6	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
KHRP25M72TU9	1	Refnet branch piping kit
KHRP25M73TU9	5	Refnet branch piping kit
DCM601A71	1	intelligent Touch Manager (iTM)
KHFP26A100C	2	Branch Selector Closed Pipe Kit
BRC1E73	28	new Navigation Remote Controller
BYCQ125B-W1	1	Standard Decoration Panel
BYFQ60B3W1	15	Decoration panel - All FXZQ
BHFP26P100U	2	Condensing Unit Multi Connection Piping kit - VRVIV HR

Submitted

Steve Patnode

Produced on 5/11/2017 with Xpress Selection V7.3.2 - database Central_USA 9.9.3

Project name ASIAN HEALTH PERMIT SET
Project address United States
Reference Submittals 5-11-2017
Client name ANDERSEN MECH
Revision Submittals 5-11-2017

Selection parameters of the indoor units can be found under the chapter Indoor unit details
 Selection parameters of the outdoor units can be found under the chapter Outdoor unit details
 Only the data published in the data book are correct. This program uses close approximations of these data.

1. Material List

Model	Qty	Description
REYQ264TTJU	2	Heat recovery VRV-IV (208-230V)
BS4Q54TVJ	6	Branch selector unit
BS6Q54TVJ	2	Branch selector unit
FXAQ18PVJU	2	VRV A (P) - Wall Mounted Unit
FXAQ24PVJU	1	VRV A (P) - Wall Mounted Unit
FXFQ24TVJU	1	VRV F (T) - Round Flow Sensing Cassette
FXMQ15PBVJU	4	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ18PBVJU	3	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ24PBVJU	2	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ36PBVJU	2	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ48PBVJU	2	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXZQ07MVJU9	7	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
FXZQ12MVJU9	2	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
FXZQ15MVJU9	2	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
FXZQ18MVJU9	6	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
KHRP25M72TU9	1	Refnet branch piping kit
KHRP25M73TU9	5	Refnet branch piping kit
DCM601A71	1	intelligent Touch Manager (iTM)
KHFP26A100C	2	Branch Selector Closed Pipe Kit
BRC1E73	34	new Navigation Remote Controller
BYCQ125B-W1	1	Standard Decoration Panel
BYFQ60B3W1	17	Decoration panel - All FXZQ
BHFP26P100U	2	Condensing Unit Multi Connection Piping kit - VRVIV HR

Note: BOM shown on this page includes "Future" Fan coils

2. Indoor Unit Details

2.1. *Table of Abbreviations*

Name	Logical name of the device
FCU	Device model name
Tmp C	Indoor conditions in cooling (dry bulb temp. / wet bulb temp.)
Rq TC	Required total cooling capacity
Max TC	Available total cooling capacity
Rq SC	Required sensible cooling capacity
Max SC	Available sensible cooling capacity
Tevap	Evaporating temperature of indoor unit coil
Tdis C	Indoor unit discharge air temperature in cooling
Tmp H	Indoor temperature in heating
Rq HC	Required heating capacity
Max HC	Available heating capacity
Tdis H	Indoor unit discharge air temperature in heating
Airflow	Supplied airflow
Sound	Sound pressure low and high
PS	Power supply (voltage and phases)
MCA	Minimum Circuit Amps
Fuses	Fuses
WxHxD	WidthxHeightxD
Wght	Weight of the device



2.2. HP-1 - REYQ264TTJU

Capacity data at conditions and connection ratio (119%) as entered

Name	FCU	Tmp C	Rq TC	Max TC	Rq SC	Max SC	Tevap	Tdis C	Tmp H	Rq HC	Max HC	Tdis H	Airflow
		°F	BTU/h	BTU/h	BTU/h	BTU/h	°F	°F	°F	BTU/h	BTU/h	°F	cfm
FC-1	FXMQ18PBVJU	80.0 / 67.0	n/a	18000	n/a	15177	42.8	58.3	64.0	n/a	22337	83.0	635
FC-8	FXMQ48PBVJU	80.0 / 67.0	n/a	48012	n/a	34961	42.8	57.0	64.0	n/a	60324	87.4	1377
FC-9	FXMQ48PBVJU	80.0 / 67.0	n/a	48012	n/a	34961	42.8	57.0	64.0	n/a	60324	87.4	1377
CC-14	FXZQ07MVJU9	80.0 / 67.0	n/a	7501	n/a	5753	42.8	63.7	62.0	n/a	9300	79.6	320
CC-8	FXZQ07MVJU9	80.0 / 67.0	n/a	7501	n/a	5753	42.8	63.7	62.0	n/a	9300	79.6	320
CC-17	FXFQ24TVJU	80.0 / 67.0	n/a	23989	n/a	19412	42.8	57.3	62.0	n/a	31486	84.7	777
WU-1	FXAQ24PVJU	80.0 / 67.0	n/a	24004	n/a	17105	42.8	55.6	62.0	n/a	29199	89.4	635
Future FC-A4	FXMQ36PBVJU	80.0 / 67.0	n/a	36000	n/a	28079	42.8	57.5	64.0	n/a	44686	85.4	1130
Future FC-A3	FXMQ24PBVJU	80.0 / 67.0	n/a	24002	n/a	18340	42.8	55.8	64.0	n/a	30151	87.4	688
Future FC-A2	FXMQ18PBVJU	80.0 / 67.0	n/a	18000	n/a	15177	42.8	58.3	64.0	n/a	22337	83.0	635
Future CC-A2	FXZQ12MVJU9	80.0 / 67.0	n/a	12002	n/a	7841	42.8	58.8	64.0	n/a	14766	88.0	335
Future CC-A1	FXZQ12MVJU9	80.0 / 67.0	n/a	12002	n/a	7841	42.8	58.8	64.0	n/a	14766	88.0	335
Future FC-A1	FXMQ36PBVJU	80.0 / 67.0	n/a	36000	n/a	28079	42.8	57.5	64.0	n/a	44686	85.4	1130

"Future" Fan Coils - contractor to confirm prior to release. Yakima Valley Clinic TI

Name	Sound	PS	MCA	Fuses	WxHxD	Wght
	dBA		A		inch	lbs
FC-1	38-42	230V 1ph	1.6	15A	39.4x11.8x27.6	79
FC-8	40-44	230V 1ph	3.4	15A	55.1x11.8x27.6	101
FC-9	40-44	230V 1ph	3.4	15A	55.1x11.8x27.6	101
CC-14	29-31	230V 1ph	0.8	15A	22.6x11.3x22.6	42
CC-8	29-31	230V 1ph	0.8	15A	22.6x11.3x22.6	42
CC-17	28-36	230V 1ph	0.7	15 A	33.1x9.7x33.1	51
WU-1	41-47	230V 1ph	0.6	15A	41.4x11.4x9.3	31
Future FC-A4	39-43	230V 1ph	2.9	15A	55.1x11.8x27.6	101
Future FC-A3	38-42	230V 1ph	1.8	15A	39.4x11.8x27.6	79
Future FC-A2	38-42	230V 1ph	1.6	15A	39.4x11.8x27.6	79
Future CC-A2	29-33	230V 1ph	0.8	15A	22.6x11.3x22.6	42
Future CC-A1	29-33	230V 1ph	0.8	15A	22.6x11.3x22.6	42
Future FC-A1	39-43	230V 1ph	2.9	15A	55.1x11.8x27.6	101

The Xpress Selection Program is property of Daikin Europe NV. Daikin Europe NV cannot be held liable for any inaccuracy, reliability of the outcome of the Xpress Selection Program.

2.3. HP2 - REYQ264TTJU

Capacity data at conditions and connection ratio (119%) as entered

Name	FCU	Tmp C	Rq TC	Max TC	Rq SC	Max SC	Tevap	Tdis C	Tmp H	Rq HC	Max HC	Tdis H	Airflow
		°F	BTU/h	BTU/h	BTU/h	BTU/h	°F	°F	°F	BTU/h	BTU/h	°F	cfm
FC-2	FXMQ24PBVJU	80.0 / 67.0	n/a	24002	n/a	18340	42.8	55.8	64.0	n/a	30151	87.9	688
FC-3	FXMQ15PBVJU	80.0 / 67.0	n/a	15014	n/a	11704	42.8	61.0	64.0	n/a	18425	82.4	560
FC-4	FXMQ18PBVJU	80.0 / 67.0	n/a	18000	n/a	15177	42.8	58.3	64.0	n/a	22337	83.5	635
FC-5	FXMQ15PBVJU	80.0 / 67.0	n/a	15014	n/a	11704	42.8	61.0	64.0	n/a	18425	82.4	560
FC-6	FXMQ15PBVJU	80.0 / 67.0	n/a	15014	n/a	11704	42.8	61.0	64.0	n/a	18425	82.4	560
FC-7	FXMQ15PBVJU	80.0 / 67.0	n/a	15014	n/a	11704	42.8	61.0	64.0	n/a	18425	82.4	560
CC-1	FXZQ18MVJU9	80.0 / 67.0	n/a	18003	n/a	12710	42.8	56.7	64.0	n/a	22166	89.0	494
CC-2	FXZQ07MVJU9	80.0 / 67.0	n/a	7501	n/a	5753	42.8	63.7	64.0	n/a	9233	80.1	320
CC-3	FXZQ18MVJU9	80.0 / 67.0	n/a	18003	n/a	12710	42.8	56.7	64.0	n/a	22166	89.0	494
CC-4	FXZQ18MVJU9	80.0 / 67.0	n/a	18003	n/a	12710	42.8	56.7	64.0	n/a	22166	89.0	494
CC-5	FXZQ18MVJU9	80.0 / 67.0	n/a	18003	n/a	12710	42.8	56.7	64.0	n/a	22166	89.0	494
CC-6	FXZQ18MVJU9	80.0 / 67.0	n/a	18003	n/a	12710	42.8	56.7	64.0	n/a	22166	89.0	494
CC-7	FXZQ07MVJU9	80.0 / 67.0	n/a	7501	n/a	5753	42.8	63.7	64.0	n/a	9233	80.1	320
CC-9	FXZQ07MVJU9	80.0 / 67.0	n/a	7501	n/a	5753	42.8	63.7	64.0	n/a	9233	80.1	320
CC-10	FXZQ07MVJU9	80.0 / 67.0	n/a	7501	n/a	5753	42.8	63.7	64.0	n/a	9233	80.1	320
CC-11	FXZQ15MVJU9	80.0 / 67.0	n/a	15001	n/a	10656	42.8	55.1	64.0	n/a	19531	90.5	388
CC-12	FXZQ15MVJU9	80.0 / 67.0	n/a	15001	n/a	10656	42.8	55.1	64.0	n/a	19531	90.5	388
CC-13	FXZQ18MVJU9	80.0 / 67.0	n/a	18003	n/a	12710	42.8	56.7	64.0	n/a	22166	89.0	494
WU-2	FXAQ18PVJU	80.0 / 67.0	n/a	18003	n/a	13376	42.8	55.7	64.0	n/a	22166	88.7	500
WU-3	FXAQ18PVJU	80.0 / 67.0	n/a	18003	n/a	13376	42.8	55.7	64.0	n/a	22166	88.7	500
CC-15	FXZQ07MVJU9	80.0 / 67.0	n/a	7501	n/a	5753	42.8	63.7	64.0	n/a	9233	80.1	320

Name	Sound	PS	MCA	Fuses	WxHxD	Wght
	dBA		A		inch	lbs
FC-2	38-42	230V 1ph	1.8	15A	39.4x11.8x27.6	79
FC-3	37-40	230V 1ph	1.5	15A	39.4x11.8x27.6	79
FC-4	38-42	230V 1ph	1.6	15A	39.4x11.8x27.6	79
FC-5	37-40	230V 1ph	1.5	15A	39.4x11.8x27.6	79
FC-6	37-40	230V 1ph	1.5	15A	39.4x11.8x27.6	79
FC-7	37-40	230V 1ph	1.5	15A	39.4x11.8x27.6	79
CC-1	34-41	230V 1ph	0.9	15A	22.6x11.3x22.6	42

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Name	Sound	PS	MCA	Fuses	WxHxD	Wght
	dBA		A		inch	
CC-2	29-31	230V 1ph	0.8	15A	22.6x11.3x22.6	42
CC-3	34-41	230V 1ph	0.9	15A	22.6x11.3x22.6	42
CC-4	34-41	230V 1ph	0.9	15A	22.6x11.3x22.6	42
CC-5	34-41	230V 1ph	0.9	15A	22.6x11.3x22.6	42
CC-6	34-41	230V 1ph	0.9	15A	22.6x11.3x22.6	42
CC-7	29-31	230V 1ph	0.8	15A	22.6x11.3x22.6	42
CC-9	29-31	230V 1ph	0.8	15A	22.6x11.3x22.6	42
CC-10	29-31	230V 1ph	0.8	15A	22.6x11.3x22.6	42
CC-11	30-36	230V 1ph	0.8	15A	22.6x11.3x22.6	42
CC-12	30-36	230V 1ph	0.8	15A	22.6x11.3x22.6	42
CC-13	34-41	230V 1ph	0.9	15A	22.6x11.3x22.6	42
WU-2	37-43	230V 1ph	0.4	15A	41.3x11.4x9.3	31
WU-3	37-43	230V 1ph	0.4	15A	41.3x11.4x9.3	31
CC-15	29-31	230V 1ph	0.8	15A	22.6x11.3x22.6	42



Outdoor unit placed 50.0ft above the indoor units.
The minimum connection ratio for this height difference is 50%.

3. Outdoor Unit Details

3.1. Table of Abbreviations

Name	Logical name of the device
Model	Device model name
Tmp C	Outdoor temperature in cooling
CC	Available cooling capacity
Rq CC	Required cooling capacity
Tmp H	Outdoor conditions in heating (dry bulb temp. / wet bulb temp.)
HC	Available heating capacity (integrated heating capacity)
Rq HC	Required heating capacity
Piping	Largest distance from indoor unit to outdoor unit
Bse Refr	Standard factory refrigerant charge (5m actual piping length) excluding extra refrigerant charge For calculation of extra refrigerant charge refer to the databook
PS	Power supply (voltage and phases)
MCA	Minimum Circuit Amps
Fuses	Fuses
WxHxD	WidthxHeightxDepth
Wght	Weight of the device
EER	EER value at nominal conditions
IEER	IEER value at nominal conditions
COP 47°F	COP value at nominal conditions and ambient temperature of 47°F
COP 17°F	COP value at nominal conditions and ambient temperature of 17°F
SCHE	SCHE (Simultaneous Cooling and Heating Efficiency) value at nominal conditions

3.2. Outdoor Details

Name	Model	Comb %	Tmp C °F	CC BTU/h	Rq CC BTU/h	Tmp H °F	HC BTU/h	Rq HC BTU/h	
HP-1	REYQ264TTJU	119	95.0	273746	252020	23.0 / 20.0	235141	196831	
HP2	REYQ264TTJU	119	95.0	273464	250873	23.0 / 20.0	235001	233246	

Name	Model	Piping ft	Refrigerant Type	Bse Refr lbs	Ex Refr lbs
HP-1	REYQ264TTJU	50.0	R410A	51.6	n/a
HP2	REYQ264TTJU	50.0	R410A	51.6	n/a

Name	Model	PS	MCA A	Fuses	WxHxD inch	Wght lbs
HP-1	REYQ264TTJU	230V 3ph				
	* REYQ144TTJU		55	70A	48.9x66.7x30.2	780
	* REYQ120TTJU		43	50A	48.9x66.7x30.2	703
BS 1.3	BS4Q54TVJ	230V 1ph	0.4		14.6x11.7x18.9	49
BS 1.1	BS4Q54TVJ	230V 1ph	0.4		14.6x11.7x18.9	49
BS 6	BS6Q54TVJ	230V 1ph	0.6		22.8x11.7x18.9	68
HP2	REYQ264TTJU	230V 3ph				
	* REYQ144TTJU		55	70A	48.9x66.7x30.2	780
	* REYQ120TTJU		43	50A	48.9x66.7x30.2	703
BS 2.5	BS6Q54TVJ	230V 1ph	0.6		22.8x11.7x18.9	68
BS 2.1	BS4Q54TVJ	230V 1ph	0.4		14.6x11.7x18.9	49
BS 2.2	BS4Q54TVJ	230V 1ph	0.4		14.6x11.7x18.9	49
BS 2.4	BS4Q54TVJ	230V 1ph	0.4		14.6x11.7x18.9	49
BS 2.3	BS4Q54TVJ	230V 1ph	0.4		14.6x11.7x18.9	49

Sufficient distance should be respected between the modules according to the service & operation space rules as mentioned in the databook.

Name	Ducted					Non-ducted				
	EER	IEER	COP 47°F	COP 17°F	SCHE	EER	IEER	COP 47°F	COP 17°F	SCHE
HP-1	10.5	18.1	3.38	2.26	22	11.8	21.6	3.55	2.42	24.4
HP2	10.5	18.1	3.38	2.26	22	11.8	21.6	3.55	2.42	24.4

3.2.1. HP-1 - REYQ264TTJU

Model	Qty	Description
REYQ264TTJU	1	Heat recovery VRV-IV (208-230V)
BS4Q54TVJ	2	Branch selector unit
BS6Q54TVJ	1	Branch selector unit
FXAQ24PVJU	1	VRV A (P) - Wall Mounted Unit
FXFQ24TVJU	1	VRV F (T) - Round Flow Sensing Cassette
FXMQ18PBVJU	2	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ24PBVJU	1	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ36PBVJU	2	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ48PBVJU	2	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXZQ07MVJU9	2	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
FXZQ12MVJU9	2	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
KHRP25M73TU9	2	Refnet branch piping kit
KHFP26A100C	1	Branch Selector Closed Pipe Kit
BRC1E73	13	new Navigation Remote Controller
BYCQ125B-W1	1	Standard Decoration Panel
BYFQ60B3W1	4	Decoration panel - All FXZQ
BHFP26P100U	1	Condensing Unit Multi Connection Piping kit - VRVIV HR

Piping Limitations

Maximum total length	3280.8ft
Maximum longest actual length	541.3ft
Maximum longest equivalent length	623.4ft
Maximum equivalent length (size up of main pipe required if longer)	295.3ft
Maximum length first branch to last branch (size up of intermediate pipes required if longer)	131.2ft
Maximum length first branch to indoor units	295.3ft
Maximum length of indoor units to nearest branch	131.2ft
Maximum length difference between longest and shortest distance to indoor units	131.2ft
Maximum height difference, outdoor unit above indoor units	164.0ft
Maximum height difference between indoor units	98.4ft
Connection ratio range	50-200%

Pipe Capacities

Maximum Connection Index	Diameters
53.9	$\frac{3}{8}" \times \frac{5}{8}" \times \frac{1}{2}"$
71.9	$\frac{3}{8}" \times \frac{3}{4}" \times \frac{5}{8}"$
110.9	$\frac{3}{8}" \times \frac{7}{8}" \times \frac{3}{4}"$
161.9	$\frac{1}{2}" \times 1\frac{1}{8}" \times \frac{3}{4}"$
229.9	$\frac{5}{8}" \times 1\frac{1}{8}" \times 1\frac{1}{8}"$
> 229.9	$\frac{3}{4}" \times 1\frac{3}{8}" \times 1\frac{1}{8}"$
Main pipe size up	$\frac{7}{8}" \times 1\frac{3}{8}" \times 1\frac{1}{8}"$

3.2.2. HP2 - REYQ264TTJU

Model	Qty	Description
REYQ264TTJU	1	Heat recovery VRV-IV (208-230V)
BS4Q54TVJ	4	Branch selector unit
BS6Q54TVJ	1	Branch selector unit
FXAQ18PVJU	2	VRV A (P) - Wall Mounted Unit
FXMQ15PBVJU	4	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ18PBVJU	1	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXMQ24PBVJU	1	VRV M (PB) - Ceiling Mounted Ducted (Medium Static)
FXZQ07MVJU9	5	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
FXZQ15MVJU9	2	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
FXZQ18MVJU9	6	VRV Z - 4-Way Discharge Ceiling Mounted Cassette (2' x 2')
KHRP25M72TU9	1	Refnet branch piping kit
KHRP25M73TU9	3	Refnet branch piping kit
KHFP26A100C	1	Branch Selector Closed Pipe Kit
BRC1E73	21	new Navigation Remote Controller
BYFQ60B3W1	13	Decoration panel - All FXZQ
BHFP26P100U	1	Condensing Unit Multi Connection Piping kit - VRVIV HR

Piping Limitations

Maximum total length	3280.8ft
Maximum longest actual length	541.3ft
Maximum longest equivalent length	623.4ft
Maximum equivalent length (size up of main pipe required if longer)	295.3ft
Maximum length first branch to last branch (size up of intermediate pipes required if longer)	131.2ft
Maximum length first branch to indoor units	295.3ft
Maximum length of indoor units to nearest branch	131.2ft
Maximum length difference between longest and shortest distance to indoor units	131.2ft
Maximum height difference, outdoor unit above indoor units	164.0ft
Maximum height difference between indoor units	98.4ft
Connection ratio range	50-200%

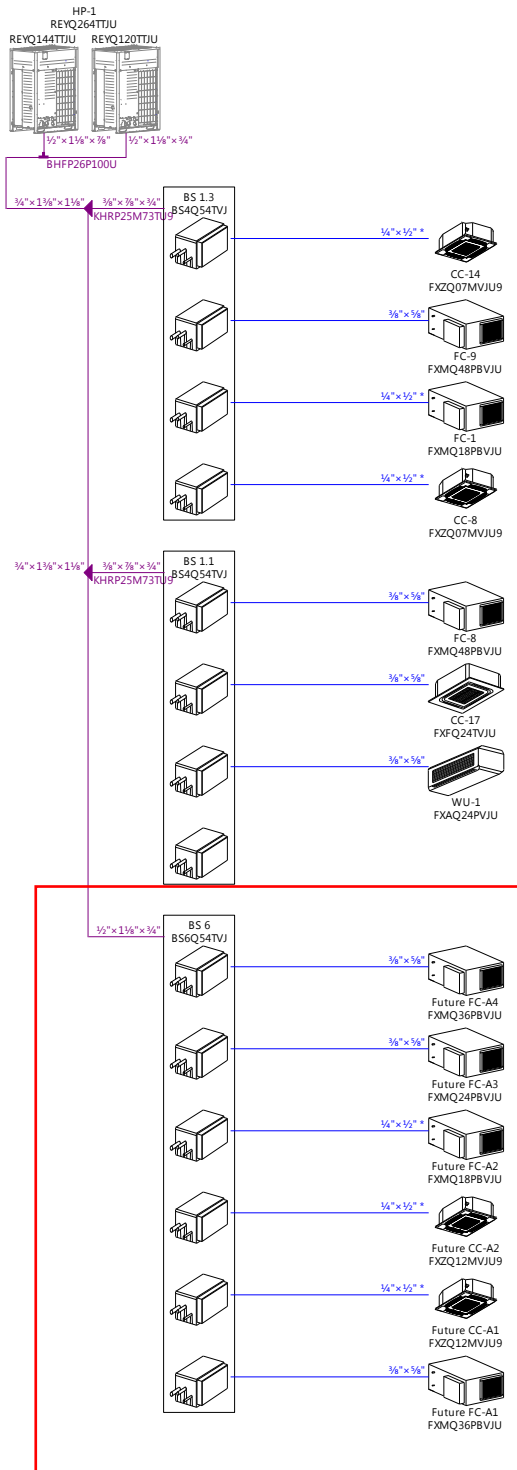
Pipe Capacities

Maximum Connection Index	Diameters
53.9	$\frac{3}{8}" \times \frac{5}{8}" \times \frac{1}{2}"$
71.9	$\frac{3}{8}" \times \frac{3}{4}" \times \frac{5}{8}"$
110.9	$\frac{3}{8}" \times \frac{7}{8}" \times \frac{3}{4}"$
161.9	$\frac{1}{2}" \times 1\frac{1}{8}" \times \frac{3}{4}"$
229.9	$\frac{5}{8}" \times 1\frac{1}{8}" \times 1\frac{1}{8}"$
> 229.9	$\frac{3}{4}" \times 1\frac{3}{8}" \times 1\frac{1}{8}"$
Main pipe size up	$\frac{7}{8}" \times 1\frac{3}{8}" \times 1\frac{1}{8}"$

4. Piping Diagrams

Pipes marked with * in the diagrams must be connected to the device with a reducing joint.

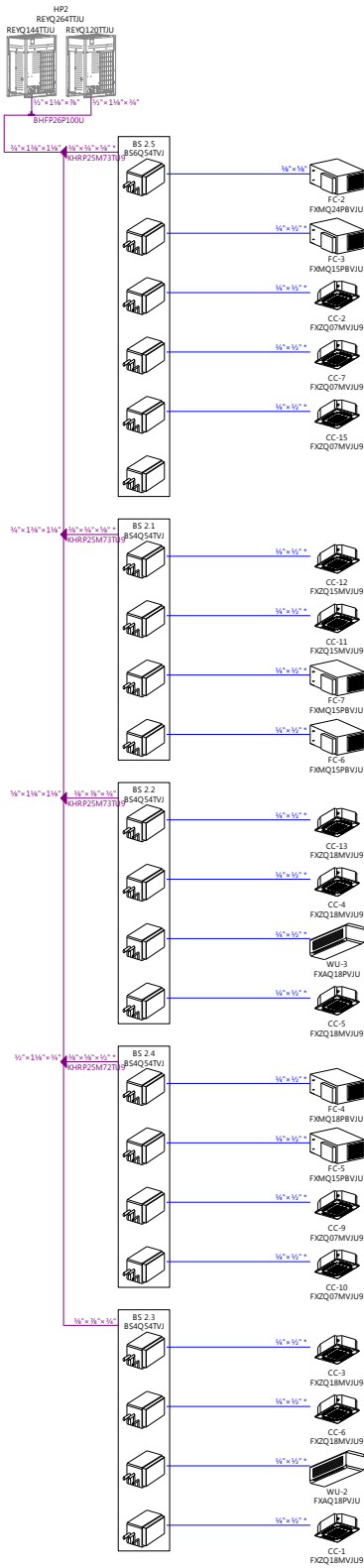
4.1. Piping HP-1



Contractor to confirm pipe routing and lengths with Air Reps prior to install.

Future BS and Fan Coils
- Yakima Valley Clinic TI

4.2. Piping HP2



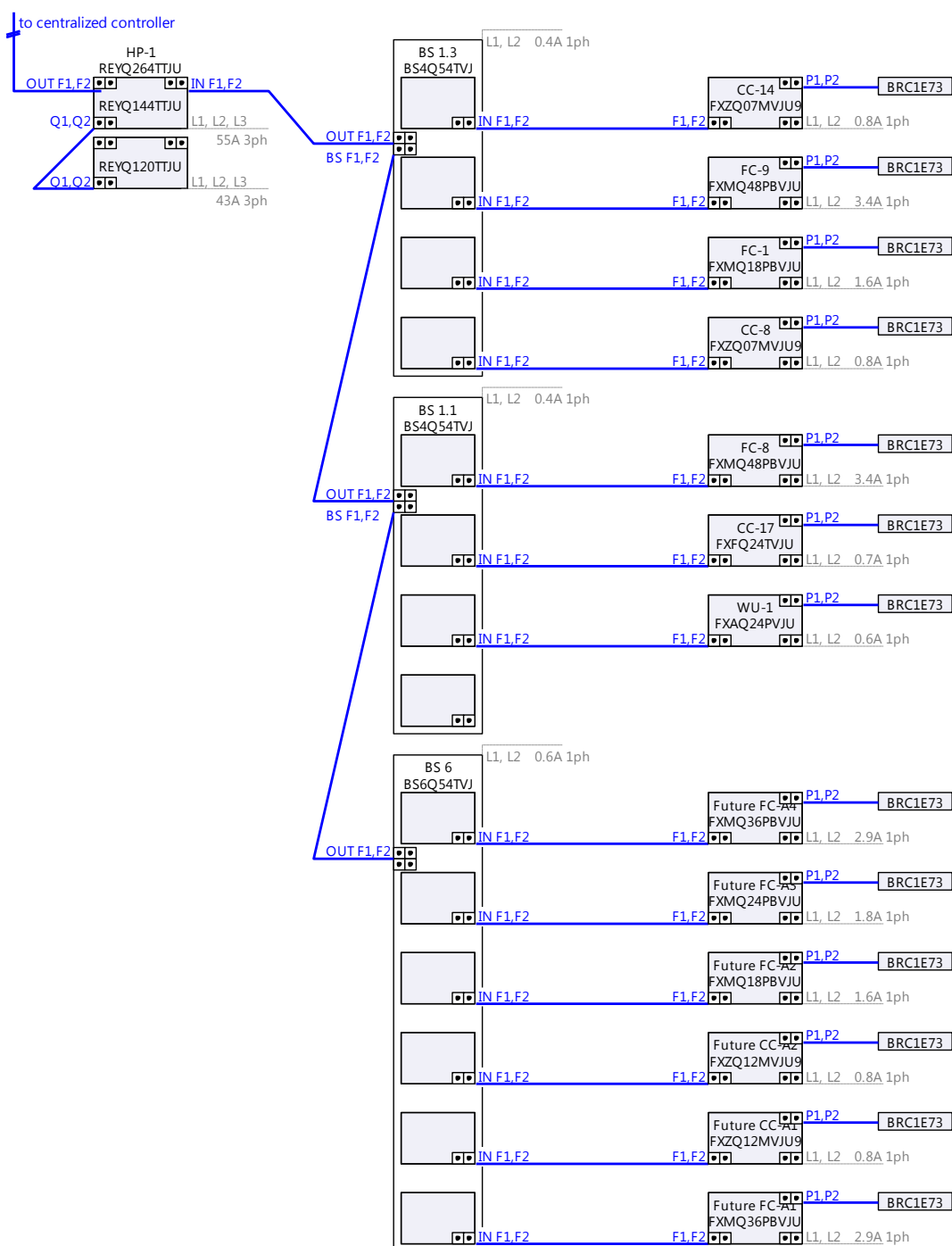
Contractor to confirm pipe routing and lengths with Air Reps prior to install.

5. Wiring Diagrams

P1P2 = Please select the cable type and size in accordance with the databook.

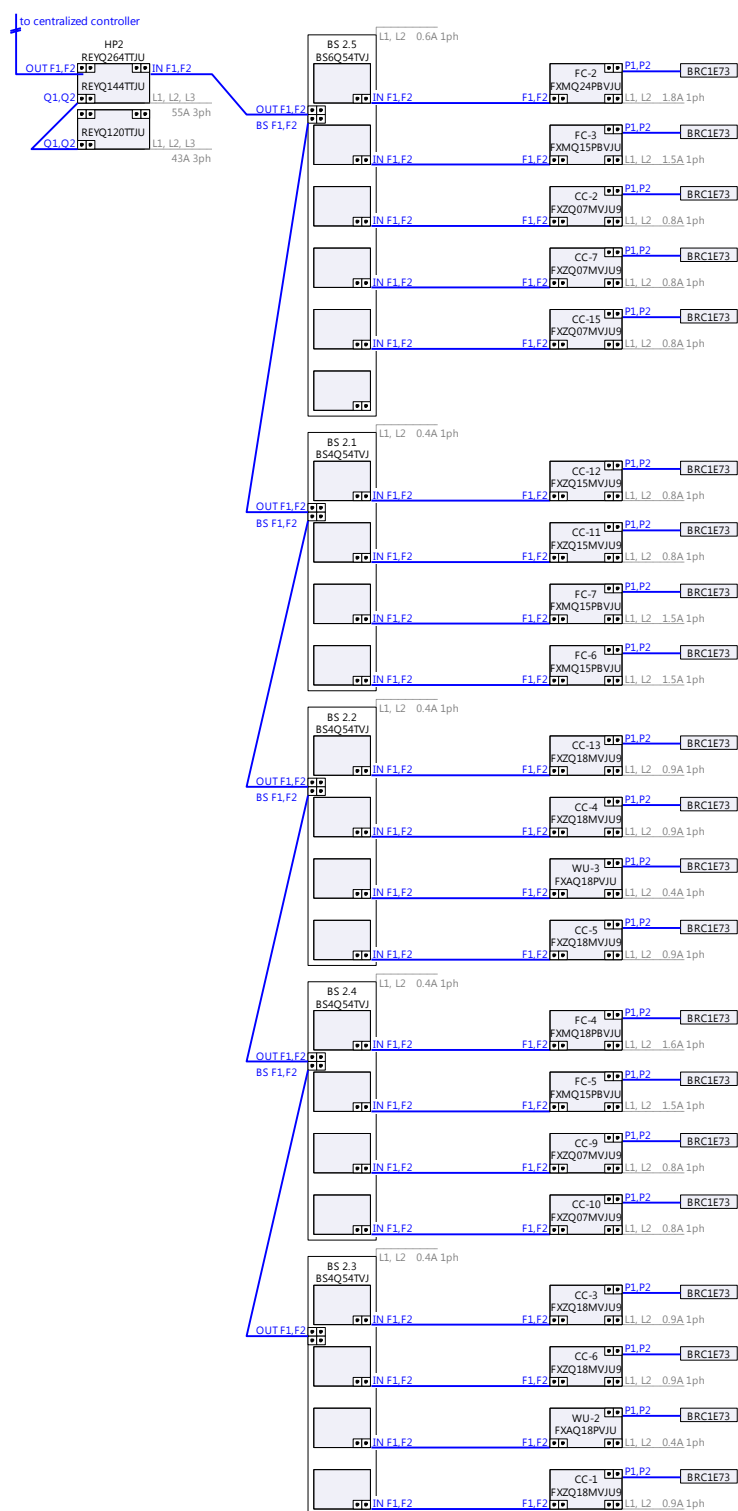
F1F2 = Please select the cable type and size in accordance with the databook.

5.1. Wiring HP-1



The Xpress Selection Program is property of Daikin Europe NV. Daikin Europe NV cannot be held liable for any inaccuracy, reliability of the outcome of the Xpress Selection Program.

5.2. Wiring HP2



6. Device Options

6.1. Outdoor Unit Options

Model	Description	Used by	
BHFP26P100U	Condensing Unit Multi Connection Piping kit - VRVIV HR	HP-1 [REYQ264TTJU]	HP2 [REYQ264TTJU]

6.2. BS-Box Options

Model	Description	Used by	
KHFP26A100C	Branch Selector Closed Pipe Kit	BS 2.5 [BS6Q54TVJ]	BS 1.1 [BS4Q54TVJ]

6.3. Indoor Unit Options

Model	Description	Used by		
BYFQ60B3W1	Decoration panel - All FXZQ	CC-6 [FXZQ18MVJU9]	Future CC-A2 [FXZQ12MVJU9]	CC-2 [FXZQ07MVJU9]
		CC-8 [FXZQ07MVJU9]	CC-12 [FXZQ15MVJU9]	CC-10 [FXZQ07MVJU9]
		CC-5 [FXZQ18MVJU9]	CC-1 [FXZQ18MVJU9]	CC-13 [FXZQ18MVJU9]
		CC-15 [FXZQ07MVJU9]	CC-9 [FXZQ07MVJU9]	CC-7 [FXZQ07MVJU9]
		CC-14 [FXZQ07MVJU9]	CC-11 [FXZQ15MVJU9]	CC-3 [FXZQ18MVJU9]
		CC-4 [FXZQ18MVJU9]	Future CC-A1 [FXZQ12MVJU9]	
BYCQ125B-W1	Standard Decoration Panel	CC-17 [FXFQ24TVJU]		

7. Centralized Controllers

7.1. Concept

Global Controller Models

Control Groups



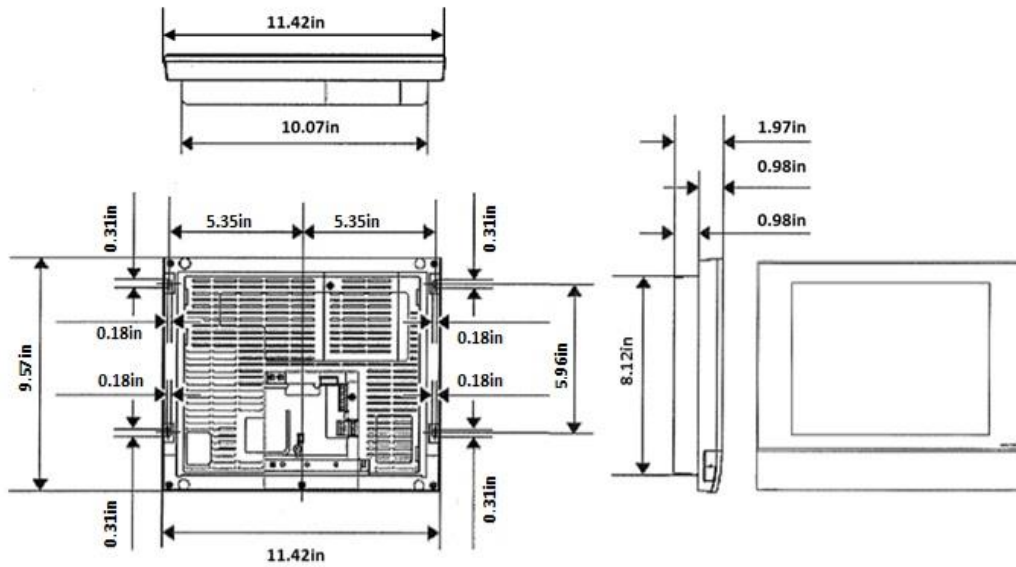
7.2. Control group 1



7.3. Dimensional Drawings

i-Touch Manager DCM601A71

DCM601A71





Submittal Data Sheet

22-Ton VRV-IV Heat Recovery Unit - 230V - REYQ264TTJU

Project: Asian Health 5-11-2017

Submitted by: Steve Patnode of AIR REPS LLC - OREGON on 5/11/2017

Submitted to: No Engineer Name Specified

Tags: HP-1, HP2

FEATURES

- Variable Refrigerant Temperature (VRT) control allows the VRV IV to deliver up to 28% of improvement in seasonal cooling efficiency compared to previous Daikin VRV heat recovery systems
- Improved efficiency with IEER values now up to 29.3
- Can provide heating down to -13°F WB as standard
- Larger capacity single modules ranging up to 14 tons and systems up to 38 tons allow for a more flexible system design, when compared to VRV III
- New configurator software designed to simplify the commissioning and maintenance of the system
- Standard Limited Warranty: 10-year warranty on compressor and all parts
- Larger capacity single modules allow for opportunity to reduce electrical connections, piping connections and outdoor unit mounting fixtures
- All inverter compressors to increase the efficiency and avoid starting current inrush
- Assembled in the US to increase flexibility and reduce lead times
- Factory standard coil guards

BENEFITS

- Can operate up to 45 indoor units on a single piping network
- Inverter control board cooled by refrigerant to avoid influence from ambient temperatures
- Integrated inverter technology deliver maximum efficiency during part load conditions and provide precise individual zone control
- Heat exchanger coil wraps around on all 4 sides of the unit to increase the surface area/efficiency
- Continuous heating during defrost and oil return allows constant comfort control
- Modular and lightweight - enables flexibility in system layout and installation
- Ultra gold fin coating with a salt spray test rating of 1000 hours provides superior corrosion resistance for applications near seacoasts and other corrosive environments
- Design flexibility with long piping lengths up to 3,280 ft. total and 100 ft. vertical separation between indoor units
- Designed with reduced MOP to optimize installation cost
- Digital display on the unit for improved and faster configuration, commissioning, and troubleshooting.



VRV IV

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Submittal Data Sheet

22-Ton VRV-IV Heat Recovery Unit - 230V - REYQ264TTJU

Project: Asian Health 5-11-2017

Submitted by: Steve Patnode of AIR REPS LLC - OREGON on 5/11/2017

Submitted to: No Engineer Name Specified

Tags: HP-1, HP2

PERFORMANCE

Outdoor Unit Model No.	REYQ264TTJU	Outdoor Unit Name:	22-Ton VRV-IV Heat Recovery Unit - 230V
Type:	Heat Recovery	Unit Combination:	REYQ120TTJU + REYQ144TTJU
Rated Cooling Conditions:	Indoor (°F DB/WB): 80 / 67 Ambient (°F DB/WB): 95 / 75	Rated Heating Conditions:	Indoor (°F DB/WB): 70 / 60 Ambient (°F DB/WB): 47 / 43
Rated Piping Length(ft):			
Rated Height Difference (ft):			
Rated Cooling Capacity (Btu/hr):	246,000	Rated Heating Capacity (Btu/hr):	276,000
Nom Cooling Capacity (Btu/hr):	264,000	Nom Heating Capacity (Btu/hr):	297,000
Cooling Input Power (kW):	21.10	Heating Input Power (kW):	21.80
EER (Non-Ducted/Ducted):	11.80 / 10.50	Heating COP (Non-Ducted/Ducted):	3.6 / 3.4
IEER (Non-Ducted/Ducted):	21.60 / 19.60	Heating COP 17F (Non-Ducted/Ducted):	2.4 / 2.3
		SCHE (Non-Ducted/Ducted):	24.40 / 22.00

OUTDOOR UNIT DETAILS

Power Supply (V/Hz/Ph):	208-230 / 60 / 3	Compressor Type	Inverter
Power Supply Connections:	L1, L2, L3 Ground	Capacity Control Range (%):	5 - 100
Min. Circuit Amps MCA (A):	43.0+55.0	Capacity Index Limit:	132.0 - 343.0
Max Overcurrent Protection (MOP) (A):	50+70	Airflow Rate (H) (CFM):	6286+8228
Max Starting Current MSC(A):		Gas Pipe Connection (inch):	1-3/8
Rated Load Amps RLA(A):	(15.0+15.0)+(16.2+22.6)	Liquid Pipe Connection (inch):	3/4
Dimensions (Height) (in):	66-11/16	H/L Pressure Connection (inch)	1-1/8
Dimensions (Width) (in):	48-7/8+48-7/8	H/L Equalizing Connection (inch)	
Dimensions (Depth) (in):	30-3/16	Sound Pressure (H) (dBA):	66
Net Weight (lb):	703+780	Sound Power Level (dBA):	87
		Max. No. of Indoor Units:	45



Submittal Data Sheet

22-Ton VRV-IV Heat Recovery Unit - 230V - REYQ264TTJU

Project: Asian Health 5-11-2017

Submitted by: Steve Patnode of AIR REPS LLC - OREGON on 5/11/2017

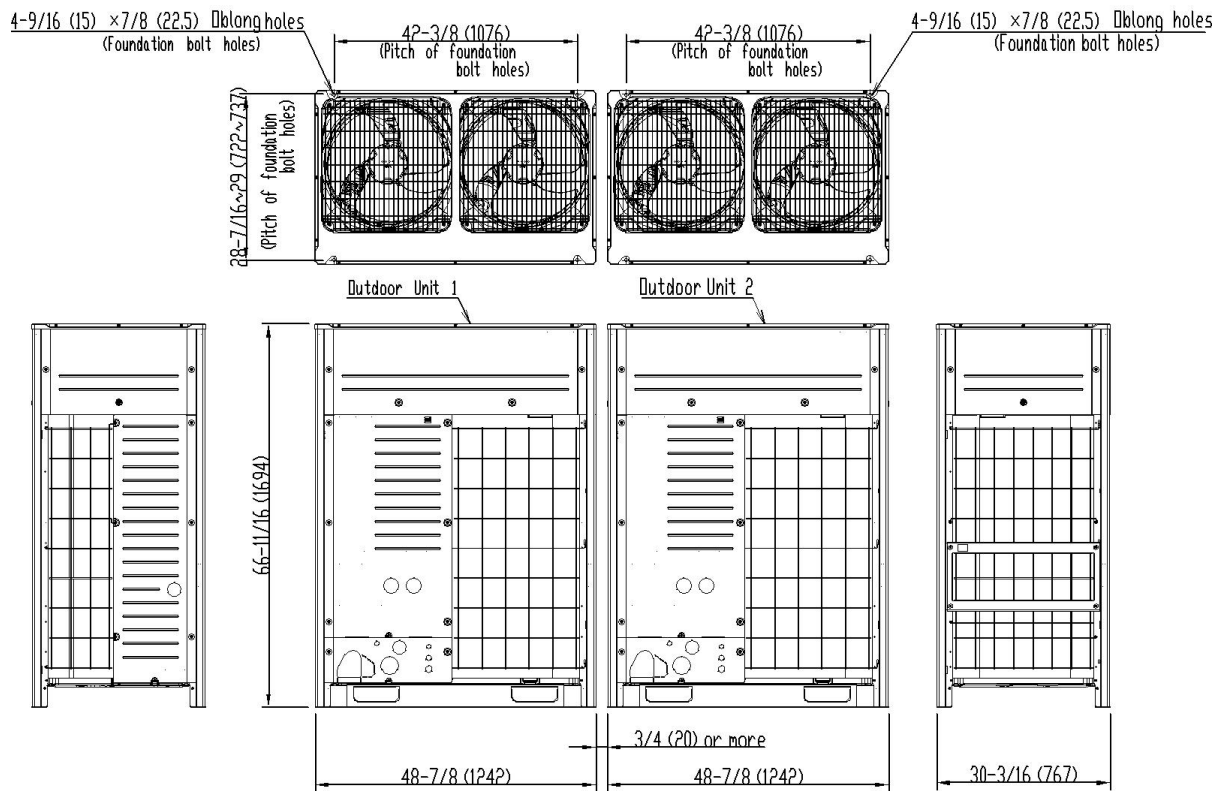
Submitted to: No Engineer Name Specified

Tags: HP-1, HP2

SYSTEM DETAILS

Refrigerant Type:	R-410A	Cooling Operation Range (°F DB):	23 - 122
Holding Refrigerant Charge (lbs):	25.8+25.8	Heating Operation Range (°F WB):	-13 - 60
Additional Charge (lb/ft):		Max. Pipe Length (Vertical) (ft):	295
Pre-charge Piping (Length) (ft):		Cooling Range w/Baffle (°F DB):	-
Max. Pipe Length (Total) (ft):	540	Heating Range w/Baffle (°F WB):	-
Max Height Separation (Ind to Ind ft):			

DIMENSIONAL DRAWING





Submittal Data Sheet

Branch Selector Box (4-Port) - BS4Q54TVJ

Project: Asian Health 5-11-2017

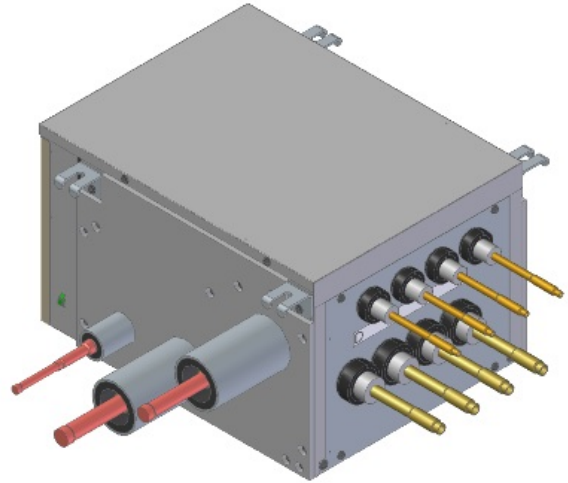
Submitted by: Steve Patnode of AIR REPS LLC - OREGON on 5/11/2017

Submitted to: No Engineer Name Specified

Tags: BS 1.3, BS 1.1, BS 2.1, BS 2.2, BS 2.4, BS 2.3

FEATURES

- Individual control and changeover with extended range of product offerings - 4, 6, 8, 10 and 12 port options.
- Up to 54 MBH capacity per port.
- Lower sound levels thanks to simplified mechanical design, when compared to VRV III models.
- Ultimate design flexibility - single and multi-port units can be combined in one system.
- Quick installation due to fewer brazing points and less wiring.
- Unlimited number of unused ports per box or system.
- Low built-in height.
- No drain piping needed.
- Standard Limited Warranty: 10-year warranty on all parts.





Submittal Data Sheet

Branch Selector Box (4-Port) - BS4Q54TVJ

Project: Asian Health 5-11-2017

Submitted by: Steve Patnode of AIR REPS LLC - OREGON on 5/11/2017

Submitted to: No Engineer Name Specified

Tags: BS 1.3, BS 1.1, BS 2.1, BS 2.2, BS 2.4, BS 2.3

PERFORMANCE			
Indoor Unit Model No.	BS4Q54TVJ	Indoor Unit Name:	Branch Selector Box (4-Port)
Type:	Heat Recovery	Rated Cooling Conditions:	Indoor (°F DB/WB): / Ambient (°F DB/WB): /
Rated Cooling Capacity (Btu/hr):	144,000	Rated Heating Conditions:	Indoor (°F DB/WB): / Ambient (°F DB/WB): /
Sensible Capacity (Btu/hr):		Rated Piping Length(ft):	
Cooling Input Power (kW):	0.040	Rated Height Separation (ft):	
Heating Input Power (kW):	0.04		
INDOOR UNIT DETAILS			
Power Supply (V/Hz/Ph):	208-230 / 60 / 1	Airflow Rate () (CFM):	
Power Supply Connections:	L1, L2, Ground	Moisture Removal (Gal/hr):	
Min. Circuit Amps MCA (A):	0.40	Gas Pipe Connection (inch):	7/8
Max Overcurrent Protection (MOP) (A):	15.00	Liquid Pipe Connection (inch):	3/8
Dimensions (HxWxD) (in):	11-3/4 x 14-9/16 x 18-15/16	Condensate Connection (inch):	
Panel (HxWxD) (in):		Sound Pressure (H) (dBA):	38
Net Weight (lb):	49	Sound Power Level (dBA):	
Panel Weight (lb):		Ext. Static Pressure (Rated/Max) (inWg):	/



Submittal Data Sheet

Branch Selector Box (4-Port) - BS4Q54TVJ

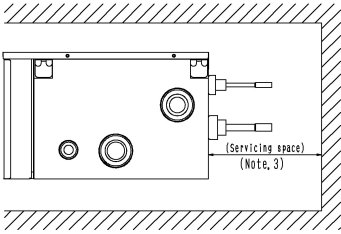
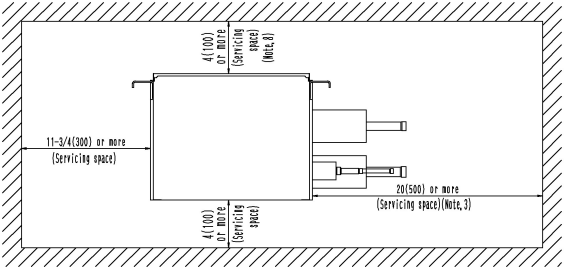
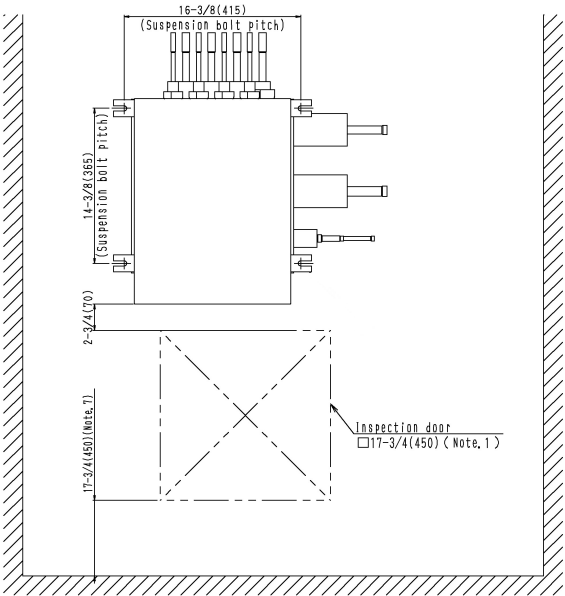
Project: Asian Health 5-11-2017

Submitted by: Steve Patnode of AIR REPS LLC - OREGON on 5/11/2017

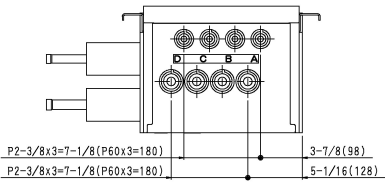
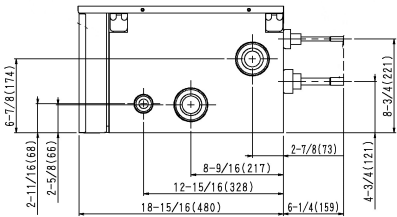
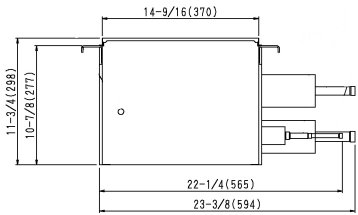
Submitted to: No Engineer Name Specified

Tags: BS 1.3, BS 1.1, BS 2.1, BS 2.2, BS 2.4, BS 2.3

DIMENSIONAL DRAWING



Servicing space





Submittal Data Sheet

Branch Selector Box (6-Port) - BS6Q54TVJ

Project: Asian Health 5-11-2017

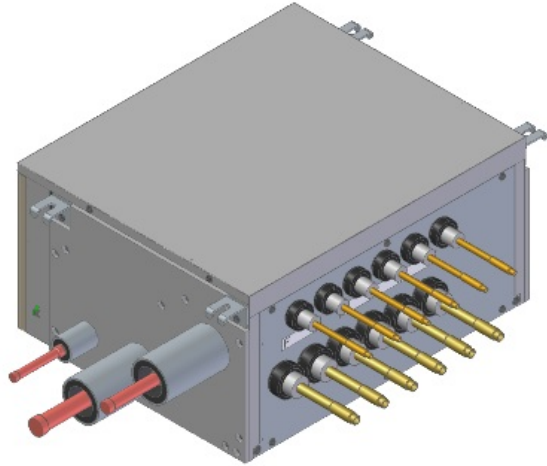
Submitted by: Steve Patnode of AIR REPS LLC - OREGON on 5/11/2017

Submitted to: No Engineer Name Specified

Tags: BS 6, BS 2.5

FEATURES

- Individual control and changeover with extended range of product offerings - 4, 6, 8, 10 and 12 port options.
- Up to 54 MBH capacity per port.
- Lower sound levels thanks to simplified mechanical design, when compared to VRV III models.
- Ultimate design flexibility - single and multi-port units can be combined in one system.
- Quick installation due to fewer brazing points and less wiring.
- Unlimited number of unused ports per box or system.
- Low built-in height.
- No drain piping needed.
- Standard Limited Warranty: 10-year warranty on all parts.





Submittal Data Sheet

Branch Selector Box (6-Port) - BS6Q54TVJ

Project: Asian Health 5-11-2017

Submitted by: Steve Patnode of AIR REPS LLC - OREGON on 5/11/2017

Submitted to: No Engineer Name Specified

Tags: BS 6, BS 2.5

PERFORMANCE

Indoor Unit Model No.	BS6Q54TVJ	Indoor Unit Name:	Branch Selector Box (6-Port)
Type:	Heat Recovery	Rated Cooling Conditions:	Indoor (°F DB/WB): / Ambient (°F DB/WB): /
Rated Cooling Capacity (Btu/hr):	216,000	Rated Heating Conditions:	Indoor (°F DB/WB): / Ambient (°F DB/WB): /
Sensible Capacity (Btu/hr):		Rated Piping Length(ft):	
Cooling Input Power (kW):	0.060	Rated Height Separation (ft):	
Heating Input Power (kW):	0.06		

INDOOR UNIT DETAILS

Power Supply (V/Hz/Ph):	208-230 / 60 / 1	Airflow Rate () (CFM):	
Power Supply Connections:	L1, L2, Ground	Moisture Removal (Gal/hr):	
Min. Circuit Amps MCA (A):	0.60	Gas Pipe Connection (inch):	1-1/8
Max Overcurrent Protection (MOP) (A):	15.00	Liquid Pipe Connection (inch):	1/2
Dimensions (HxWxD) (in):	11-3/4 x 22-13/16 x 18-15/16	Condensate Connection (inch):	
Panel (HxWxD) (in):		Sound Pressure (H) (dBA):	39
Net Weight (lb):	68	Sound Power Level (dBA):	
Panel Weight (lb):		Ext. Static Pressure (Rated/Max) (inWg):	/



Submittal Data Sheet

Branch Selector Box (6-Port) - BS6Q54TVJ

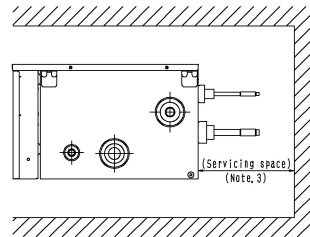
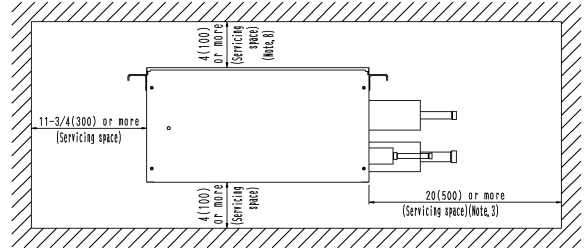
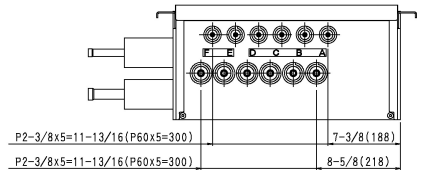
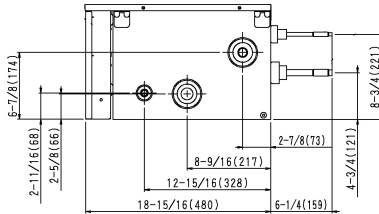
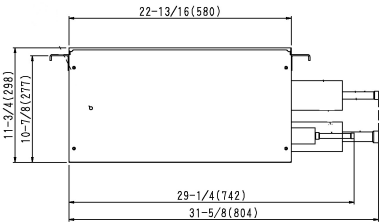
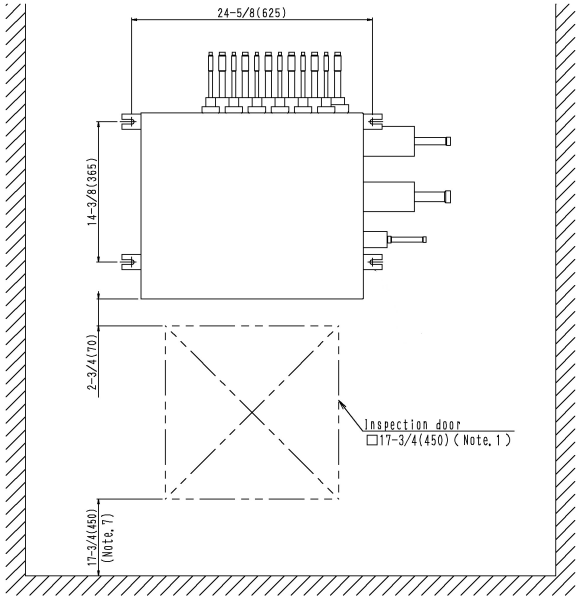
Project: Asian Health 5-11-2017

Submitted by: Steve Patnode of AIR REPS LLC - OREGON on 5/11/2017

Submitted to: No Engineer Name Specified

Tags: BS 6, BS 2.5

DIMENSIONAL DRAWING



Servicing space