Submittal Data Sheet

06-Ton VRV-WIII Heat Pump Unit

RWEYQ72PTJU

FEATURES

- Compact lightweight casing (Height: 39-3/8â€, Weight: 330 lbs.) allows flexibility in system layout and installation
- Modular - can be installed in double-decker style if needed
- Larger single system capacity ensures wider application range for satisfying floor-by-floor loads of commercial buildings
- Modular and flexible - 7 combinations of condensing unit, up to 21-ton serving up to 32 indoor units
- Continuous operation allows for cold climate capability delivering comfortable heating performance with no defrost
- Operates with closed loop cooling tower, dry cooler, boiler, and geothermal solutions for optimum flexibility in system layout
- Standard Limited Warranty: 10-year warranty on compressor and all parts

BENEFITS

- Connects to the full suite of advanced Daikin Control Solutions including I-Touch Controller and I-Touch Manager for complete system control
- BMS flexibility with integration capabilities to Open Protocol Building Management Systems via the Daikin BACnet® and LonWorks® interfaces
- Flexible piping layout - up to 980 feet of pipe (390 feet max. linear liquid piping length) and 164 feet height difference
- Maximum system diversity with up to 130% connectivity of nominal capacity
- Flexibility with optimum water flow rates per module of 16 gpm or greater (operable range13.2 ~ 39.5 gpm).
- The advanced, self-diagnostic, auto-check function will detect a malfunction and immediately display the type and location so it can be resolved quickly and effectively.

Submittal Data Sheet

06-Ton VRV-WIII Heat Pump Unit

RWEYQ72PTJU

PERFORMANCE			
Outdoor Unit Model No.	RWEYQ72PTJU	Outdoor Unit Name:	06-Ton VRV-WIII Heat Pump Unit
Type:	Heat Pump	Unit Combination:	
Rated Cooling Capacity (Btu/hr):	69,000	Rated Cooling Conditions:	Indoor (°F DB/WB): 81 / 66 Ambient (°F DB/WB): 95 / 75
Nom Cooling Capacity (Btu/hr):		Rated Heating Conditions:	Indoor (°F DB/WB): 68 / 68 Ambient (°F DB/WB): 47 / 43
Cooling Input Power (kW):	4.20	Rated Piping Length(ft):	
Rated Heating Capacity (Btu/hr):	77,000	Rated Height Difference (ft):	0.00
Heating Input Power (kW):	4.00	IEER (Non-Ducted/Ducted):	24.10 / 24.10
Nom Heating Capacity (Btu/hr):		Heating COP 17F (Non-Ducted/Ducted):	/
		Heating COP (Non-Ducted/Ducted):	4.9 / 4.9

OUTDOOR UNIT DETAILS			
Power Supply (V/Hz/Ph):	208-230 / 60 / 3	Compressor Type	Inverter
Power Supply Connections:	L1, L2, L3 Ground	Gas Pipe Connection (in):	3/4
Min. Circuit Amps MCA (A):	22.40	Liquid Pipe Connection (in):	3/8
Max Overcurrent Protection (MOP) (A):	24.00	H/L Pressure Connection (in):	
Max Starting Current MSC(A):		H/L Equalizing Connection (in):	
Rated Load Amps RLA(A):	11.6	Water Inlet Connection (in):	1-1/4
Dimensions (HxWxD) (in):	39-3/8 x 30-3/4 x 21-11/16	Water Outlet Connection (in):	1-1/4
Net Weight (lb):	330	Condensate Drain Outlet (in):	1/2
Capacity Control Range (%):	23 - 100	Sound Pressure (H) (dBA):	50
Capacity Index Limit (Btu\hr):	36 - 94	Sound Power Level (dBA):	
Unit Heat Rejection (kW):	0.64	Max. No. of Indoor Units:	12

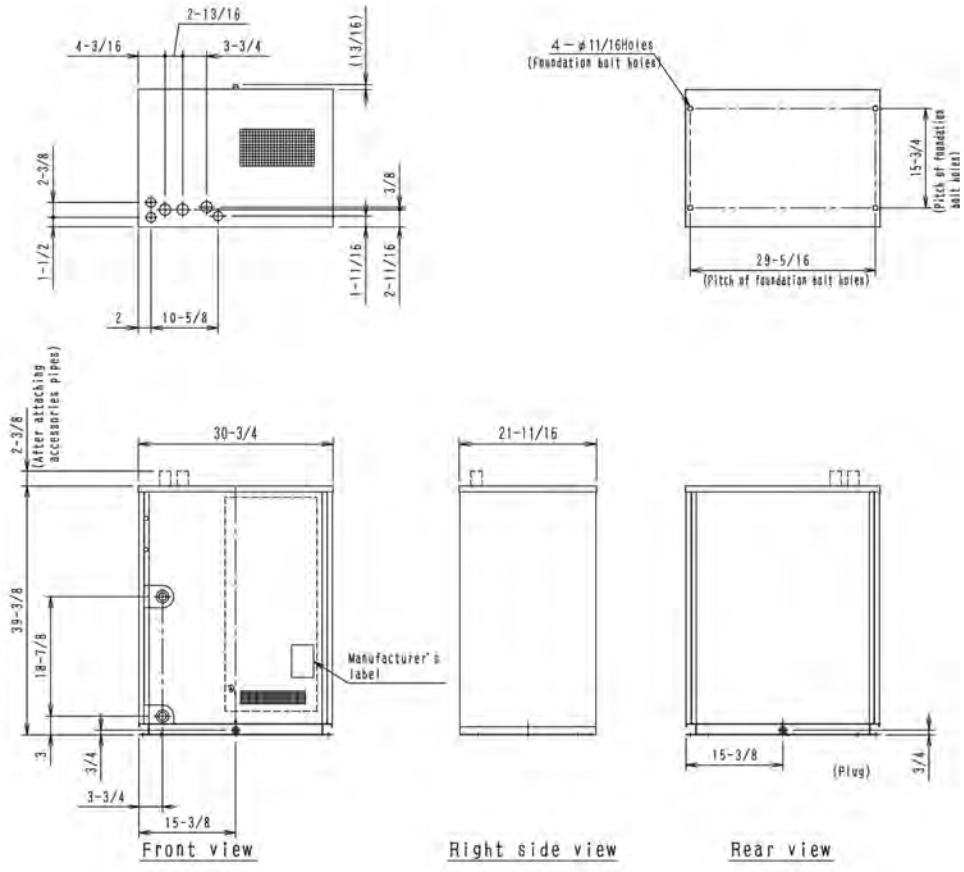
Submittal Data Sheet

06-Ton VRV-WIII Heat Pump Unit

RWEYQ72PTJU

SYSTEM DETAILS			
Refrigerant Type:	R-410A	Cooling Operation Range (°F DB):	35 - 104
Holding Refrigerant Charge (lbs):	9.9	Heating Operation Range (°F WB):	35 - 104
Additional Charge (lb/ft):		Max. Pipe Length (Vertical) (ft):	164
Pre-charge Piping (Length) (ft):		Cooling Inlet Water Temp (Standard) (°F DB):	59 / 113
Max. Pipe Length (Total) (ft):	390	Heating Inlet Water Temp (Standard) (°F WB):	50 / 113
Max Height Separation (Ind to Ind ft):	0	Cooling Inlet Water Temp (Geothermal) (°F DB):	/
Water Flow Range (GPM):	13 - 40	Heating Inlet Water Temp (Geothermal) (°F WB):	/

DIMENSIONAL DRAWING



Submittal Data Sheet

6-Ton VRV-IV Heat Pump Unit - 230V

RXYQ72TTJU

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 pump systems
- Same product structure for 230V and 460V simplifies ordering
- The rated seasonal cooling efficiency has been improved by an average of 11% compared to VRV III
- Improved efficiency with IEER values now up to 28
- Larger capacity single modules ranging up to 14 tons and systems up to 34 tons allow for a more flexible system design
- New configurator software designed to simplify the commissioning and maintenance of the system
- Larger capacity single modules allow for opportunity to reduce electrical connections, piping connections and outdoor unit mounting fixtures
- System wide auto-climate adjustment technology to increase the energy efficiency
- All inverter compressors to increase the efficiency and avoid starting current inrush
- Assembled in the US to increase flexibility and reduce lead times
- Standard Limited Warranty: 10-year warranty on compressor and all parts

BENEFITS

- 3 row 7mm heat exchanger coil improves efficiency
- Inverter control board cooled by refrigerant to avoid influence from abient temperatures
- Heat exchanger coil wraps around on all 4 sides of the unit to increase the surface area / efficiency
- Designed with reduced MOP to optimize installation cost
- Digital display on the unit for improved and faster configuration, commissioning, and trouble shooting.

Submittal Data Sheet

6-Ton VRV-IV Heat Pump Unit - 230V

RXYQ72TTJU

PERFORMANCE			
Outdoor Unit Model No.	RXYQ72TTJU	Outdoor Unit Name:	6-Ton VRV-IV Heat Pump Unit - 230V
Type:	Heat Pump	Unit Combination:	
Rated Cooling Conditions:	Indoor (°F DB/WB): 80 / 67 Ambient (°F DB/WB): 95 / 75	Rated Heating Conditions:	Indoor (°F DB/WB): 70 / 70 Ambient (°F DB/WB): 47 / 43
Rated Piping Length(ft):			
Rated Height Difference (ft):	0.00		
Rated Cooling Capacity (Btu/hr):	69,000	Rated Heating Capacity (Btu/hr):	77,000
Nom Cooling Capacity (Btu/hr):		Nom Heating Capacity (Btu/hr):	
Cooling Input Power (kW):	4.62	Heating Input Power (kW):	5.46
EER (Non-Ducted/Ducted):	15.00 / 13.50	Heating COP (Non-Ducted/Ducted):	4.2 / 3.6
IEER (Non-Ducted/Ducted):	26.50 / 22.80	Heating COP 17F (Non-Ducted/Ducted):	2.5 / 2.3

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 (%):	20 - 100
Min. Circuit Amps MCA (A):	27.6	Capacity Index Limit:	36.0 - 94.0
Max Overcurrent Protection (MOP) (A):	35.00	Airflow Rate (H) (CFM):	5,544
Max Starting Current MSC(A):		Gas Pipe Connection (inch):	3/4
Rated Load Amps RLA(A):	15.7	Liquid Pipe Connection (inch):	3/8
Dimensions (Height) (in):	66-11/16	H/L Pressure Connection (inch)	
Dimensions (Width) (in):	36-11/16	H/L Equalizing Connection (inch)	
Dimensions (Depth) (in):	30-3/16	Sound Pressure (H) (dBA):	58
Net Weight (lb):	435	Sound Power Level (dBA):	
		Max. No. of Indoor Units:	12

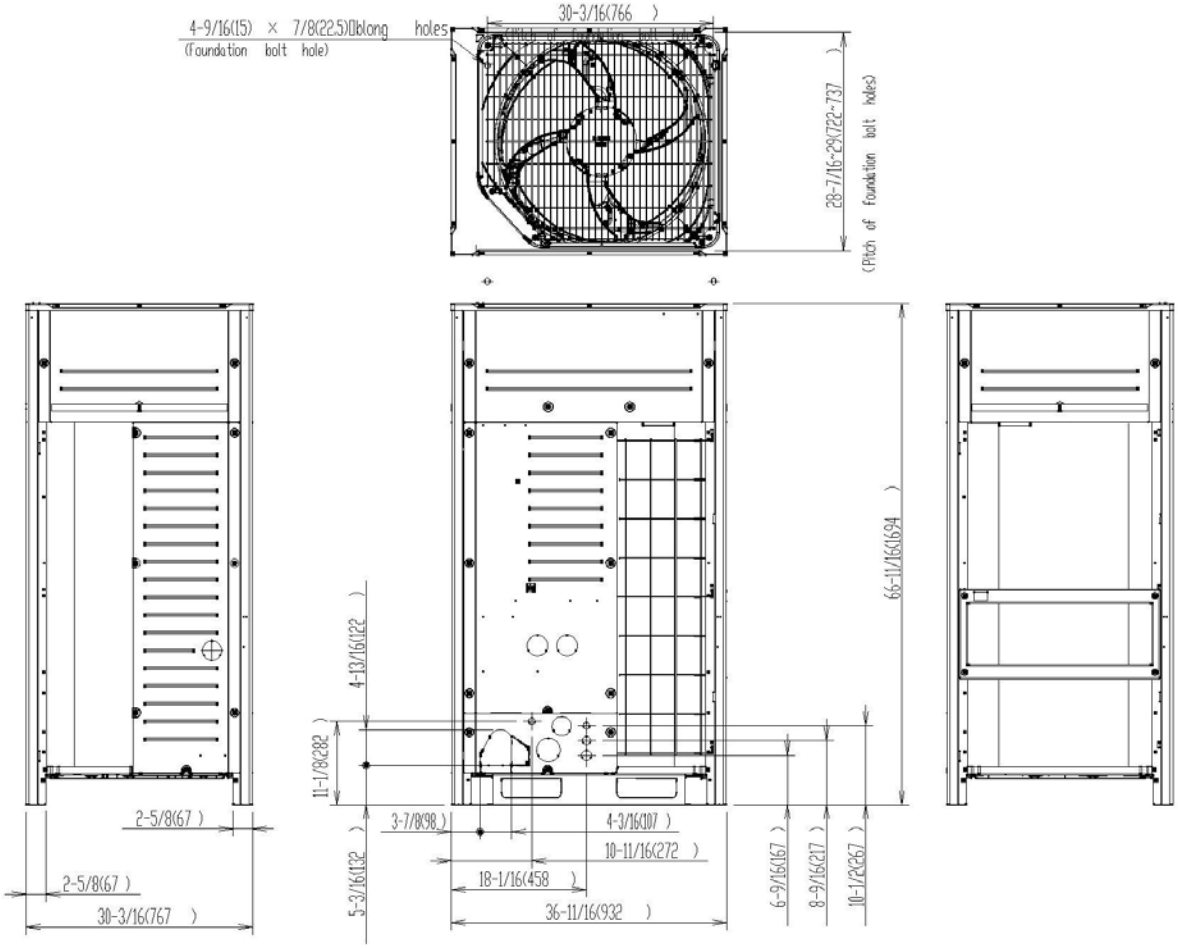
Submittal Data Sheet

6-Ton VRV-IV Heat Pump Unit - 230V

RXYQ72TTJU

SYSTEM DETAILS			
Refrigerant Type:	R-410A	Cooling Operation Range (°F DB):	23 - 122
Holding Refrigerant Charge (lbs):	13.0	Heating Operation Range (°F WB):	-4 - 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):	0		

DIMENSIONAL DRAWING



Quick Reference Guide

Water Source Heat Pump Axiom™ Vertical High Efficiency 0.75 to 6 Tons – EXVG Two Stage High Efficiency 2 to 6 Tons – DXVG

October 2021

WSHP-PRC030B-EN

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Table 1. List of options

Factory Installed Options	Field Installed Options
1-inch or 2-inch Ducted Filter Rack	2-inch or 4-inch Ducted Filter Rack
Air-Fi® Wireless Communications	Ducted Panel
Deluxe 24V, UC400B or ZN524 Controls	Hose Kits (or ship separate hoses and valves)
Factory-mounted Isolation Valve	Pump Module
Hot Gas Reheat	Pump Module Hose Kit
Low, Medium and High Electric Heat	Thermostats or Zone Sensors
Matte or Foil Face Insulation	Waterside Economizer
MERV 8 or 13 Filters	
Polymer or Stainless Steel IAQ Drain Pan	
Recessed Unit Mounted Disconnect Switch	
Standard or Deluxe Sound Package	

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Table 2. General data - Models EXVG009-030

Model EXVG	009	012	015	018	024	030
Unit Size width x depth x height (in.)	21.5 x 21.5 x 34	21.5 x 21.5 x 34	21.5 x 23 x 36	21.5 x 26 x 38	21.5 x 26 x 38	24 x 32.5 x 42
Compressor type	Rotary	Rotary	Rotary	Rotary	Scroll	Scroll
Net weight (lbs.)	152	152	188	222	236	280
Ship weight (lbs.)	207	207	246	282	296	343
Filter size nominal (in.)	16 X 19	16 X 19	17 X 20	18 X 23	18 X 23	20 X 30
Water in/out size (FPT)	0.50	0.50	0.75	0.75	0.75	1.00
Condensate size (NPTI)	0.75	0.75	0.75	0.75	0.75	0.75
Blower wheel Size (in.)	9 x 8	9 x 8	10 x 8	10 x 9	10 x 9	11 x 11

Table 3. General data - Models EXVG036-070

Model EXVG	036	042	048	060	070
Unit Size width x depth x height (in.)	24 x 32.5 x 42	25.4 x 32.5 x 49	25.4 x 32.5 x 49	25.4 x 32.5 x 55	25.4 x 32.5 x 55
Compressor type	Scroll	Scroll	Scroll	Scroll	Scroll
Net weight (lbs.)	281	329	345	367	432
Ship weight (lbs.)	344	394	410	436	501
Filter size nominal (in.)	20 X 30	27 X 30	27 X 30	30 X 33	30 X 33
Water in/out size (FPT)	1	1	1	1	1
Condensate size (NPTI)	0.75	0.75	0.75	0.75	0.75
Blower wheel Size (in.)	11 x 11	11 x 11	11 x 11	11 x 11	11 x 11

Table 4. General data - Models DXVG024-070

Model DXVG	024	036	048	060	070
Unit Size width x depth x height (in.)	21.5 x 26 x 38	24 x 32.5 x 42	25.4 x 32.5 x 49	25.4 x 32.5 x 55	25.4 x 32.5 x 55
Compressor type	Two-Stage Scroll	Two-Stage Scroll	Two-Stage Scroll	Two-Stage Scroll	Two-Stage Scroll
Net weight (lbs.)	236	279	354	371	437
Ship weight (lbs.)	296	342	419	440	506
Filter size nominal (in.)	18 x 23	23 x 30	27 x 30	30 x 33	30 x 33
Water in/out size (FPT)	0.75	1	1	1	1
Condensate size (NPTI)	0.75	0.75	0.75	0.75	0.75
Blower wheel Size (in.)	10 x 9	11 x 11	11 x 11	11 x 11	11 x 11

Table 5. ANSI/AHRI/ASHRAE/ISO13256-1 WLHP, GWHP and GLHP performance - 0.75 to 6 tons

Model	Rated GPM	Rated CFM	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
			Cooling 86°F		Heating 68°F		Cooling 59°F		Heating 50°F		Full Cool 77°F		Full Heat 32°F	
			Capacity Btuh	EER	Capacity Btuh	COP	Capacity Btuh	EER	Capacity Btuh	COP	Capacity Btuh	EER	Capacity Btuh	COP
EXVG009	2.25	285	7900	16.1	9900	5.6	8800	25.0	8200	4.8	8300	18.8	6100	3.7
EXVG012	3.00	380	11600	16.4	15200	5.8	13700	27.9	12300	5.0	12300	19.5	9300	4.0
EXVG015	3.75	475	15100	16.1	18700	5.3	17000	25.8	15300	4.6	15800	19.0	12100	3.8
EXVG018	4.50	570	18800	17.6	23600	5.7	21100	28.7	18800	4.9	19600	20.6	14600	4.1
EXVG024	6.00	760	24600	17.4	32100	5.7	27400	27.2	25900	5.0	25600	20.3	19500	3.9
EXVG030	7.50	950	31400	17.8	38400	5.8	35000	27.2	31000	5.0	32800	20.7	23600	4.1
EXVG036	9.00	1140	35500	17.6	43100	5.8	39400	26.5	35000	5.0	37100	20.4	27200	4.1
EXVG042	10.50	1330	38400	18.0	48000	6.4	43300	27.5	38500	5.5	40500	21.1	29400	4.3
EXVG048	12.00	1520	45400	17.7	55600	6.1	50400	26.4	44800	5.3	47100	20.3	34600	4.3
EXVG060	15.00	1900	55700	17.5	69000	5.9	60800	25.7	55900	5.1	57700	20.1	42900	4.1
EXVG070	17.50	2215	63800	17.3	82100	5.4	68900	24.9	66900	4.8	66100	19.8	52000	4.1

Note: Rated in accordance ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6°F DB/66.2°F WB EAT in cooling and 68°F DB/59°F WB EAT in heating. Entering liquid temperature in cooling is 86°F for Water Loop, 77°F for Ground Loop (full load), 68°F for Ground Loop (part load), and 59°F for Ground Water. Entering liquid temperature in heating is 68°F for Water Loop, 32°F for Ground Loop (full load), 41°F for Ground Loop (part load), and 50°F for Ground Water.

Table 6. ANSI/AHRI/ASHRAE/ISO13256-1 WLHP, GWHP and GLHP performance - 2 to 6 tons

Model	Load	Rated GPM	Rated CFM	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
				Cooling 86°F		Heating 68°F		Cooling 59°F		Heating 50°F		Full Cool 77°F		Full Heat 32°F	
				Capacity Btuh	EER	Capacity Btuh	COP	Capacity Btuh	EER	Capacity Btuh	COP	Capacity Btuh	EER	Capacity Btuh	COP
DXVG024	Full	6.0	760	24700	16.8	32100	5.5	27500	24.4	25700	4.9	25900	19.2	19400	3.9
DXVG024	Part	6.0	608	18500	17.7	24100	5.9	20500	28.3	18900	4.9	20000	24.5	16300	4.3
DXVG036	Full	9.0	1140	33000	17.3	40900	5.9	37100	25.1	32900	5.1	34500	19.7	25500	4.1
DXVG036	Part	9.0	912	24500	18.3	30500	6.3	27600	29.3	24300	5.2	26600	25.2	21100	4.5
DXVG048	Full	12.0	1520	45200	17.9	55200	6.1	50400	26.4	44400	5.3	46600	20.6	34500	4.3
DXVG048	Part	12.0	1216	32800	18.7	40000	6.6	36900	31.2	31900	5.3	35700	26.7	28000	4.7
DXVG060	Full	15.0	1900	52100	17.6	63900	6.0	56600	24.8	51700	5.2	53900	19.9	39800	4.2
DXVG060	Part	15.0	1520	38300	18.7	47300	6.6	42000	29.9	37800	5.4	41000	25.8	32400	4.6
DXVG070	Full	17.5	2215	64400	17.3	82700	5.4	69100	23.8	67400	4.8	66800	19.6	52900	4.0
DXVG070	Part	17.5	1772	47100	18.9	59700	6.0	51100	29.7	48000	5.0	50000	25.6	42000	4.4

Note: Performance data EXVG 0.5 Ton or 0.75 Ton Rated in accordance with ANSI/AHRI/ASHRAE/ISO13256-1. Certified conditions are 80.6°F DB/66.2°F WB EAT in cooling and 68°F DB/59°F WB EAT in heating. Entering liquid temperature in cooling is 86°F for Water Loop, 77°F for Ground Loop (full load), 68°F for Ground Loop (part load), and 59°F for Ground Water. Entering liquid temperature in heating is 68°F for Water Loop, 32°F for Ground Loop (full load), 41°F for Ground Loop (part load), and 50°F for Ground Water.

Table 7. Electrical data - 0.75 to 6 tons, EX*009-070

Model No.	Unit Volts	Blower Motor HP	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device
EXVG009	208-230/60/1	1/3	6/6	15/15
EXVG009	265/60/1	1/3	5	15
EXVG012	208-230/60/1	1/3	8/8	15/15
EXVG012	265/60/1	1/3	7	15
EXVG015	208-230/60/1	1/3	10/10	15/15
EXVG015	265/60/1	1/3	7	15
EXVG018	208-230/60/1	1/2	12/12	20/20
EXVG018	265/60/1	1/2	10	15
EXVG024	208-230/60/1	1/2	19/19	30/30
EXVG024	265/60/1	1/2	13	20
EXVG024	208-230/60/3	1/2	11/11	15/15
EXVG024	460/60/3	1/2	6	15
EXVG030	208-230/60/1	3/4	20/20	30/30
EXVG030	265/60/1	3/4	16	25
EXVG030	208-230/60/3	3/4	13/13	20/20
EXVG030	460/60/3	3/4	7	15

Table 7. Electrical data - 0.75 to 6 tons, EX*009-070 (continued)

Model No.	Unit Volts	Blower Motor HP	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device
EXVG036	208-230/60/1	3/4	23/23	35/35
EXVG036	265/60/1	3/4	17	25
EXVG036	208-230/60/3	3/4	15/15	20/20
EXVG036	460/60/3	1	7	15
EXVG042	208-230/60/1	3/4	25/25	40/40
EXVG042	208-230/60/3	3/4	17/17	25/25
EXVG042	460/60/3	1	9	15
EXVG048	208-230/60/1	1	25/25	40/40
EXVG048	208-230/60/3	1	20/20	30/30
EXVG048	460/60/3	1	9	15
EXVG060	208-230/60/1	1	31/31	50/50
EXVG060	208-230/60/3	1	22/22	35/35
EXVG060	460/60/3	1	10	15
EXVG070	208-230/60/1	1	39/39	60/60
EXVG070	208-230/60/3	1	26/26	40/40
EXVG070	460/60/3	1	13	20

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Table 8. Electrical data - 2 to 6 tons, DX*024-070

Model No.	Unit Volts	Blower Motor HP	Minimum Circuit Ampacity	Maximum Overcurrent Protective Device
DXVG024	208-230/60/1	1/2	17/17	25/25
DXVG024	265/60/1	1/2	13	20
DXVG024	208-230/60/3	1/2	10/10	15/15
DXVG024	460/60/3	1/2	6	15
DXVG036	208-230/60/1	3/4	19/19	30/30
DXVG036	265/60/1	3/4	15	20
DXVG036	208-230/60/3	3/4	13/13	20/20
DXVG036	460/60/3	1	7	15
DXVG048	208-230/60/1	1	25/25	40/40
DXVG048	208-230/60/3	1	21/21	30/30
DXVG048	460/60/3	1	10	15
DXVG060	208-230/60/1	1	31/31	50/50
DXVG060	208-230/60/3	1	22/22	35/35
DXVG060	460/60/3	1	10	15
DXVG070	208-230/60/1	1	39/39	60/60
DXVG070	208-230/60/3	1	26/26	40/40
DXVG070	460/60/3	1	12	15

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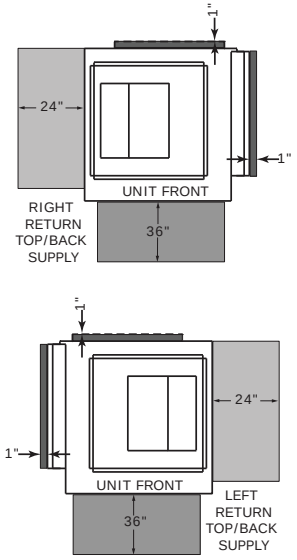
Figure 1. Clearance – EXVG/DXVG 0.75 to 6 tons



A 24-inch clearance from other mechanical and electrical equipment (where shown) is recommended for most unit configurations. This will enable panel removal from the unit for service/maintenance. The 24-inch side clearance on EXVG/DXVG 0.75-6T models is for optimal access only. Side clearance is not a requirement as most components can be accessed from the front of the unit. A 1-inch minimum clearance between the filter rack and any obstacle is required for units in a free return application to provide proper air flow to the air-to-refrigerant coil. A 12-inch minimum clearance between the filter rack and any obstacle should be provided to properly attached ductwork.The 1-inch dimension shown in the back of the unit represents the supply duct collar for the back supply option. This clearance is needed to clear these flanges.

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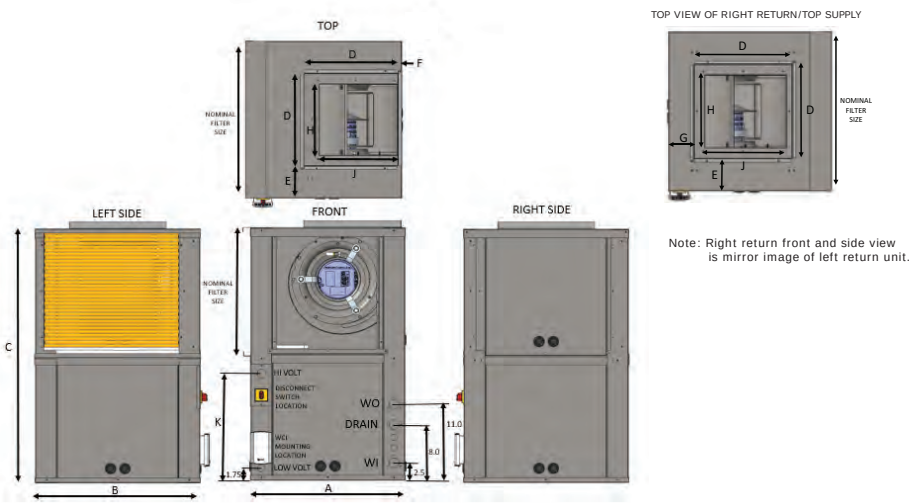
Figure 2. Left return and right return/top supply (EXVG/DXVG)



Note: Right return front and side view is mirror image of left return unit.

Table 9. Dimensional data left return and right return/top supply (EXVG/DXVG)

Unit	Cabinet			Duct Collar	Duct Collar Location			Blower Opening		Hi Volt	Nominal Filter Size	W.I. NPTI	W.O. NPTI	Drain NPTI
	Width	Depth	Height											
	A	B	C	D	E	F	G	H	J	K				
EXVG009-012	21.50	21.50	34.00	13.25	4.00	1.00	3.50	10.50	9.60	14.25	16 x 19	1/2	1/2	3/4
EXVG015	21.50	23.00	36.00	13.25	4.75	0.63	3.50	10.50	11.30	15.25	17 x 20	3/4	3/4	3/4
EXVG018, EXVG/DXVG024	21.50	26.00	38.00	13.25	6.25	0.63	3.50	11.80	11.30	16.25	18 x 23	3/4	3/4	3/4
EXVG030, EXVG/DXVG036	24.00	32.50	42.00	17.75	7.25	0.75	3.50	13.70	13.50	18.25	20 x 30	1	1	3/4
EXVG042, EXVG/DXVG048	25.40	32.50	49.00	17.75	7.25	0.75	3.50	13.70	13.50	18.25	27 x 30	1	1	3/4
EXVG/DXVG060-070	25.40	32.50	55.00	17.75	7.25	0.75	3.50	13.70	13.50	18.25	30 x 33	1	1	3/4

Trane - by Trane Technologies (NYSE: TT), a global climate innovator - creates comfortable, energy efficient indoor environments for commercial and residential applications. For more information, please visit trane.com or tranetechnologies.com.

Trane has a policy of continuous product and product data improvement and reserves the right to change design and specifications without notice. We are committed to using environmentally conscious print practices.

WSHP-PRC030B-EN 01 Oct 2021
Supersedes WSHP-PRC030A-EN (Jul 2021)

ER

MULTISTACK

Job Name		Job Number	
Location		Quote Number	QASTARK04112021-2
Engineer	Antares Group	Representative	Albert Stark
Contractor		Rep Office	New York City

Mechanical Modules: (2) MSH040XNHCGFAA--BACAC-BAI-CA-B
Accessory Modules: (4) VMEBACHDDADADA2 VMEs (4 front, 0 re)

Based on (2) MSH040XNHCGFAA--BACAC-BAI-CA-B operating

COOLING PERFORMANCE DATA

							EVAPORATOR			CONDENSER			
Load	Capacity (tons)	kW	THR (MBH)	kW/Ton	EER (Btu/Wh)	COP (kW/kW)	Flow Rate (GPM)	Leaving Temp. °F	ΔP (ft H2O)	Cond Flow (GPM)	Entering Temp. °F	Leaving Temp. °F	ΔP (ft
100%	82.79	61.21	1202	0.7393	16.23	4.760	198.6	44.00	11.83	258.6	85.00	94.30	15.69

Based on (2) MSH040XNHCGFAA--BACAC-BAI-CA-B operating

SIMULTANEOUS PERFORMANCE DATA

							EVAPORATOR			CONDENSER			
Load	Capacity (tons)	kW	THR (MBH)	kW/Ton	EER (Btu/Wh)	COP (kW/kW)	Flow Rate (GPM)	Leaving Temp. °F	ΔP (ft H2O)	Cond Flow (GPM)	Entering Temp. °F	Leaving Temp. °F	ΔP (ft H2O)
100%	66.11	84.91	1083	1.284	9.343	6.500	158.6	44.00	11.83	216.6	120.0	130.0	11.14

Based on (3) MSH040XNHCGFAA--BACAC-BAI-CA-B operating

HEATING PERFORMANCE DATA

							EVAPORATOR			CONDENSER			
Load	Capacity (tons)	kW	THR (MBH)	kW/Ton	EER (Btu/Wh)	COP (kW/kW)	Flow Rate (GPM)	Leaving Temp. °F	ΔP (ft H2O)	Cond Flow (GPM)	Entering Temp. °F	Leaving Temp. °F	ΔP (ft
100%	91.99	125.2	1531	1.361	8.818	3.580	220.5	40.00	15.69	306.2	120.0	130.0	11.14

Cooling COP	*Heating COP	*Heating and Cooling COP
4.760	3.580	6.500

COOLING DESIGN FLOW	(Based on Water)
Entering Temperature °F	54.00
Leaving Temperature °F	44.00
Design Flow (GPM)	199.0
Pressure Drop (Full Load)	5.123 PSI / 11.83 ft H2O
Chiller Minimum Flow (GPM)	99.30
Min. GPM For Sizing System Bypass	149.0

SINK DESIGN FLOW	(Based on Water)
Entering Temperature °F	85.00
Leaving Temperature °F	94.30
Design Flow (GPM)	259.0
Pressure Drop (Full Load)	6.790 PSI / 15.69 ft H2O
Chiller Minimum Flow (GPM)	129.3
Min. GPM For Sizing System Bypass	N/A

SIMULTANEOUS COOLING DESIGN FLOW	(Based on Water)
Entering Temperature °F	54.00
Leaving Temperature °F	44.00
Design Flow (GPM)	159.0
Pressure Drop (Full Load)	5.123 PSI / 11.83 ft H2O
Chiller Minimum Flow (GPM)	99.30
Min. GPM For Sizing System Bypass	149.0

SIMULTANEOUS HEATING DESIGN FLOW	(Based on Water)
Entering Temperature °F	120.0
Leaving Temperature °F	130.0
Design Flow (GPM)	217.0
Pressure Drop (Full Load)	4.821 PSI / 11.14 ft H2O
Chiller Minimum Flow (GPM)	108.3
Min. GPM For Sizing System Bypass	162.5

SOURCE DESIGN FLOW	(Based on Water)
Entering Temperature °F	50.00
Leaving Temperature °F	40.00
Design Flow (GPM)	220.0
Pressure Drop (Full Load)	6.790 PSI / 15.69 ft H2O
Chiller Minimum Flow (GPM)	129.3
Min. GPM For Sizing System Bypass	N/A

HEATING DESIGN FLOW	(Based on Water)
Entering Temperature °F	120.0
Leaving Temperature °F	130.0
Design Flow (GPM)	306.0
Pressure Drop (Full Load)	4.821 PSI / 11.14 ft H2O
Chiller Minimum Flow (GPM)	108.3
Min. GPM For Sizing System Bypass	162.5

Outside the scope of AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, but is rated in accordance with AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI).
Combined units or modular chiller array rating is outside of the scope of the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program. Individual unit ratings are subject to the governing documents of the AHRI Certification Program.

MEMBER AHRI AIR-CONDITIONING, HEATING, & REFRIGERATION INSTITUTE

EVAPORATOR HEAT EXCHANGER DETAIL	
Heat Exchanger Style	Brazed Plate
Fouling Factor (h-ft2-°F/Btu)	.000100
Header Connection Size (in.)	6
Header Connection Type	Grooved Coupling
Max Water Side Working ΔP (PSI)	150 PSI

CONDENSER HEAT EXCHANGER DETAIL	
Heat Exchanger Style	Brazed Plate
Fouling Factor (h-ft2-°F/Btu)	.000100
Header Connection Size (in.)	6
Header Connection Type	Grooved Coupling
Max Water Side Working ΔP (PSI)	150 PSI

PHYSICAL DATA	Section 1	Section 2
Length (in.)	See Multistack for Details	
Width (in.)	See Multistack for Details	
Height (in.)	See Multistack for Details	
Estimated Dry Weight (lbs.)	See Multistack for Details	
Estimated Operating Weight (lbs.)	See Multistack for Details	
Refrigerant Type	R-410A	
Refrig. Charge (lbs per circuit)	18	

ELECTRICAL DATA	1	2	3	4
(2) MSH040X	3	0	0	0
(4) VMEs	4	0	0	0
MCA	*239			
MOP	300			
Voltage	460/60/3			

CHILLER DATA	
Compressor Description	Scroll
Compressor RLA (per comp.)	37.5
Number of VME's	4
Amps per VME	1

*Parallel feeds not required (Assumes no larger than 300 MCM/kcmil wire)

MOUNTING/LIFTING FRAME	
Materials	Carbon Steel Painted
I-Beam Size	6"
Bolt together frame - # of pieces	1
End Type	Flush Ends - Both

Software Version #: 1.0.4435.29000

Performance Run Date: 4/16/2021 2:11:41 PM

Job Name		Job Number	
Location		Quote Number	QASTARK04112021-2
Engineer	Antares Group	Representative	Albert Stark
Contractor		Rep Office	New York City

Mechanical Modules: (1) MSH040XNHCGFAA--BACAC-BAI-CA-B
Accessory Modules: (2) VMEBACHDDADADA2 VMEs (4 front, 0 rear)

Based on one module operating

COOLING PERFORMANCE DATA													
							EVAPORATOR			CONDENSER			
Load	Capacity (Tons)	kW	THR (mbh)	kW/ton	EER	COP	Flow Rate (GPM)	Leaving °F	**ΔP (ft)**	Flow Rate (GPM)	Entering °F	Leaving °F	**ΔP (ft)**
100%	41.40	30.60	601.2	0.7393	16.23	4.760	99.30	44.00	11.83	129.3	85.00	94.30	15.69

Based on one module operating

SIMULTANEOUS PERFORMANCE DATA													
							EVAPORATOR			CONDENSER			
Load	Capacity (Tons)	kW	THR (mbh)	kW/ton	EER	COP	Flow Rate (GPM)	Leaving °F	**ΔP (ft)**	Flow Rate (GPM)	Entering °F	Leaving °F	**ΔP (ft)**
100%	33.05	42.45	541.5	1.284	9.343	6.500	79.30	44.00	11.83	108.3	120.0	130.0	11.14

Based on one module operating

HEATING PERFORMANCE DATA													
							EVAPORATOR			CONDENSER			
Load	Capacity (Tons)	kW	THR (mbh)	kW/ton	EER	COP	Flow Rate (GPM)	Leaving °F	**ΔP (ft)**	Flow Rate (GPM)	Entering °F	Leaving °F	**ΔP (ft)**
100%	30.66	41.73	510.4	1.361	8.818	3.580	73.50	40.00	15.69	102.1	120.0	130.0	11.14

Cooling COP	*Heating COP	*Heating and Cooling COP
4.760	3.580	6.500

Software Version #: 1.0.4435.29000

Performance Run Date: 4/16/2021 2:11:41 PM

Outside the scope of AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program, but is rated in accordance with AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI).
Combined units or modular chiller array rating is outside of the scope of the AHRI Water-Cooled Water-Chilling and Heat Pump Water-Heating Packages Certification Program. Individual unit ratings are subject to the governing documents of the AHRI Certification Program.

MULTISTACK®

Variable Flow Design Requirements

Chilled Water, Hot Water and Source/Sink Loops must be designed for the same solution and pressure

Chilled Water System (Evaporator)

Ensure a chiller DP transmitter (DP1) is incorporated into the piping design and set to: **5.12** **PSI**

DP1 to be installed directly after the chiller with no pressure adding devices between the chiller and DP1.

Ensure a system DP transmitter(s) (DP2) is incorporated into the piping design

Ensure a system bypass valve(s) (V1) is incorporated into the piping design

Design of system bypass (V1) must be a characterized ball or globe type valve and be pressure dependent

System bypass valve (V1) stroke time needs to be selected for less than 60 seconds

Chiller minimum flow is: **99.30** **GPM**

System bypass valve must be design for a minimum of: **149.0** **GPM**

Note: this is a minimum requirement for the chiller ONLY! Other system components such as pumps or air handling units may have higher minimum flow requirements and bypass sizing may be adjusted accordingly.

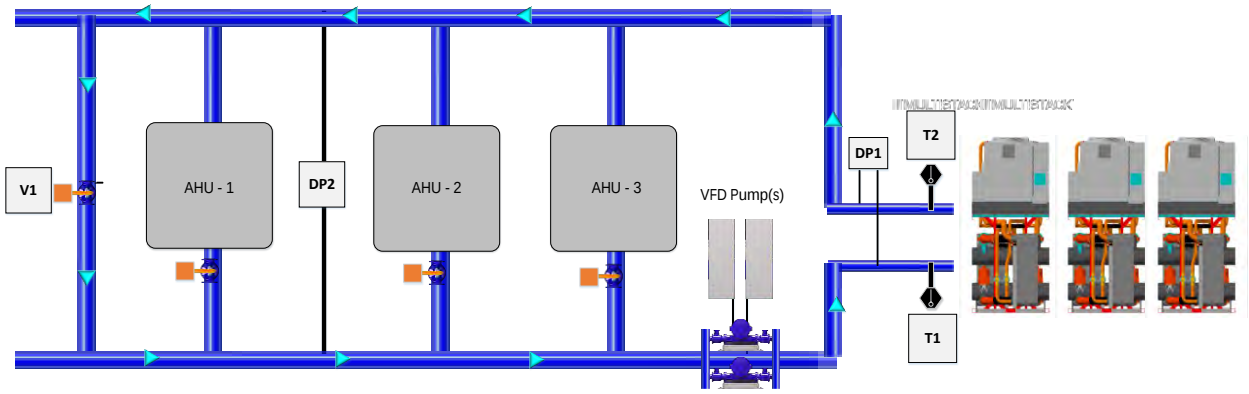
Bypass loop volume (Includes piping between V1 & chiller): **248.4** **Gallons**

Note: the bypass loop should be designed for a minimim of a 2 minute loop at all conditions. To obtain ensure the above volume is met.

Refer to Multistack Variable Flow Engineering Bulletin for more details

The pump or the bypass valve must control to maintain chiller DP setpoint, the opposite device (Pump or Bypass Valve) must maintain system DP setpoint.

When a pump module is supplied by Multistack it will be factory configured to control to DP across the chiller unless otherwise specified and noted on the chiller selection.



LEGEND

WIRED & CONTROLLED BY CONTROLS CONTRACTOR
V1 – SYSTEM BYPASS VALVE
DP1 – CHILLER DIFFERENTIAL PRESSURE
DP2 – SYSTEM DIFFERENTIAL PRESSURE
VFD Pump(s)

WIRED TO CHILLER MASTER CONTROLLER
T1 – CHW RETURN TEMP SENSOR
T2 – CHW SUPPLY TEMP SENSOR

SCHEMATIC ONLY – REFER TO JOB SPECIFIC DRAWING FOR CONSTRUCTION

MULTISTACK®

Variable Flow Design Requirements

Chilled Water, Hot Water and Source/Sink Loops must be designed for the same solution and pressure

Hot Water System (Condenser)

Ensure a chiller DP transmitter (DP1) is incorporated into the piping design and set to: **4.821 PSI**
DP1 to be installed directly after the chiller with no pressure adding devices between the chiller and DP1.

Ensure a system DP transmitter(s) (DP2) is incorporated into the piping design

Ensure a system bypass valve(s) (V1) is incorporated into the piping design

Design of system bypass (V1) must be a characterized ball or globe type valve and be pressure dependent

System bypass valve (V1) stroke time needs to be selected for less than 60 seconds

Chiller minimum flow is: **108.3 GPM**

System bypass valve must be design for a minimum of: **162.5 GPM**

Note: this is a minimum requirement for the chiller ONLY! Other system components such as pumps or air handling units may have higher minimum flow requirements and bypass sizing may be adjusted accordingly.

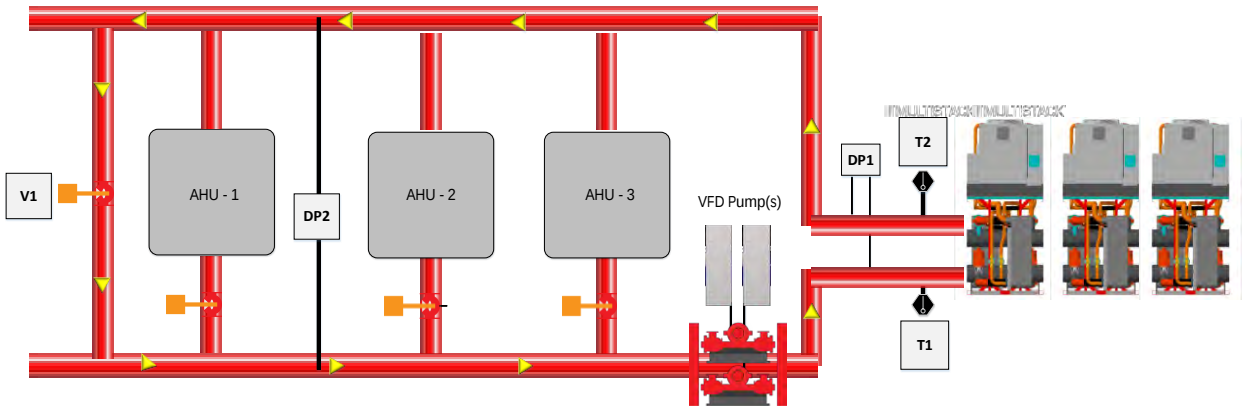
Bypass loop volume: (Includes piping between V1 & chiller) **306.2 Gallons**

Note: the bypass loop should be designed for a minimim of a 2 minute loop at all conditions. To obtain, ensure the above volume is met.

Refer to Multistack Variable Flow Engineering Bulletin for more details

The pump or the bypass valve must control to maintain chiller DP setpoint, the opposite device (Pump or Bypass Valve) must maintain system DP setpoint.

When a pump module is supplied by Multistack it will be factory configured to control to DP across the chiller unless otherwise specified and noted on the chiller selection.



LEGEND

WIRED & CONTROLLED BY CONTROLS CONTRACTOR
V1 – SYSTEM BYPASS VALVE
DP1 – CHILLER DIFFERENTIAL PRESSURE
DP2 – SYSTEM DIFFERENTIAL PRESSURE
VFD Pump(s)

WIRED TO CHILLER MASTER CONTROLLER
T1 – HW RETURN TEMP SENSOR
T2 – HW SUPPLY TEMP SENSOR

SCHEMATIC ONLY – REFER TO JOB SPECIFIC DRAWING FOR CONSTRUCTION

MULTISTACK®

Variable Flow Design Requirements

Chilled Water, Hot Water and Source/Sink Loops must be designed for the same solution and pressure

Source/Sink Water System

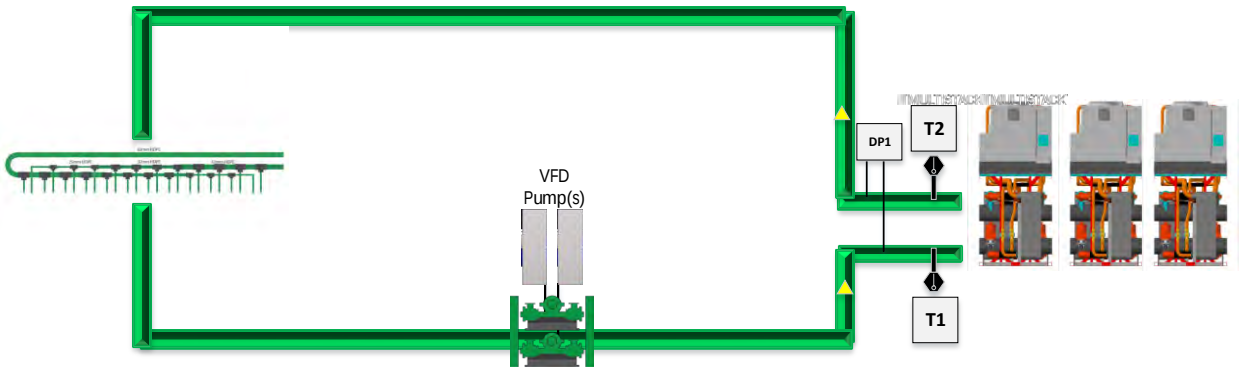
Ensure a chiller DP transmitter (DP1) is incorporated into the piping design and set to: **6.790** **PSI**

DP1 to be installed directly after the chiller with no pressure adding devices between the chiller and DP1.

Chiller minimum flow is: **129.3** **GPM**

Refer to Multistack Variable Flow Engineering Bulletin for more details

The source/sink side water valves may be left open at all times in a user seletable number of modules.
This would be to allow for the pump's, well field's, etc. minimum flow.
When a pump module is supplied by Multistack it will be factory configured to control to DP across the chiller unless otherwise specified and noted on the chiller selection.



LEGEND

WIRED & CONTROLLED BY CONTROLS CONTRACTOR
DP1 – CHILLER DIFFERENTIAL PRESSURE
VFD Pump(s)

WIRED TO CHILLER MASTER CONTROLLER
T1 – CHW RETURN TEMP SENSOR
T2 – CHW SUPPLY TEMP SENSOR

SCHEMATIC ONLY – REFER TO JOB SPECIFIC DRAWING FOR CONSTRUCTION

Job Name		**Job Number**	
Location		**Quote Number**	QASTARK04112021-2
Engineer	Antares Group	**Representative**	Albert Stark
Contractor		**Rep Office**	New York City

Accessory Detail

(4) VMEs - VMEBACHDDADADA2		
Load Side VME	Yes	
Source Side VME	Yes	
VME Valve Size (Evap)	6.000	in.
VME Value Size (Cond)	6.000	in.

Product Overview:

Model Description	Compressor Description
(2) MSH040XNHCGFAA--BACAC-BAI-CA-B	Scroll

Services & Special Features:

- Stainless steel evaporator and condenser
- Heat exchanger maximum working pressure (refrigerant 650 PSI)
- Lead compressor sequencing (24hrs)
- Automatic internal rescheduling if fault occurs
- Multiple, independent refrigeration systems
- Automatic logging of any fault condition
- Electronic chilled water control
- Quick interconnect modular design
- R-410A Refrigerant
- Modules fit through single width doors and into passenger elevators
- Total Access Design w/NEMA2 Var. Flow Actuator (Evap. & Cond.) (C-Steel Valves)
- Single Point Power Connection
- Acoustical Panels - indoor rated
- VME Controls
- 6 inch simplex cast iron basket strainer Cv = 800 (field installed)-Evap
- 6 inch simplex cast iron basket strainer Cv = 800 (field installed)-Cond
- 6 inch simplex cast iron basket strainer Cv =800 (field installed)-Source/Sink
- Chiller Waterside Maximum Working Pressure is 150 PSIG
- 5kA SCCR
- Electrical Connection Type - Junction Box
- Carbon Steel Painted Lifting Frame
- Warranty: Compressor (5 Year)
- Warranty: All Parts (1 Year)

Excluded By Multistack:

- Chilled Water, Hot Water and Source/Sink Loops must be designed for the same solution and pressure
- Multiflush™ (Debris Removal System) - Cond
- Interconnecting piping between sections if two sections exist.
- Multistack recommends a 2-3 minute minimum loop time. Contact Multistack if you have questions regarding system loop time design

MULTISTACK

There is no job specific drawing available for this configuration. Please contact Multistack for a detailed drawing.