

ENGINEERING GUIDE

Single Package Vertical Air Conditioners and Heat Pumps



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INTRODUCTION

Single Package Vertical Air Conditioners and Heat Pumps by Johnson Controls offer the ultimate in HVAC design flexibility.

The Single Package Vertical Unit (VP-Series) is a compact through-the-wall packaged system, capable of providing total heating and cooling functions for a single zone or multiple rooms. Unlike conventional horizontal equipment, each Single Package Vertical Unit has been designed with sufficient air-handling capacity for ducted installations. The Single Package Vertical Units are ideally suited for the perimeter zones of buildings such as:

- Hotels and Motels
- High-Rise Apartments / Condominiums
- Hospitals / Nursing Homes
- Dormitories
- Renovated Office Space

The VP-Series unit is installed in a closet having an exterior wall. Wall mounting sleeves for various wall thicknesses are available for installation during building construction. Final installation is reduced to sliding the unit onto the mounting sleeve, and connecting the electrical supply. The result is a low-cost installation, and allows delivery of the units to be deferred until just before occupancy.

LISTINGS / CERTIFICATIONS:



PRODUCT OVERVIEW

Refrigerant

R-410A

Sizes

0.75 - 3 Tons (2.6 – 10.6 kW)

Models Available

- Air-to-Air Heat Pump with Electric Heat (VPP)
- Air Conditioner with Electric Heat (VPC)
- Air Conditioner with Hydronic Heat (VPH)

Product Features

Mechanical

- Cabinet constructed of heavy gauge corrosion-resistant galvanized steel
- Streamlined installation using factory-provided wall sleeve*
- Fully insulated with 1/2" thick, high-density acoustic fiberglass insulation
- Convenient indoor access to all parts and service needs*
- Standard units come with provisions for outside air intake*
- Sound minimizing design*
- Forward curved double-width double-inlet (DWDI) direct-drive centrifugal blowers are utilized
- High refrigerant pressure safety switch (manual reset) will shut down the unit if pressure exceeds 610 psig
- Service gauge ports (low and high side Schrader valves for maintenance and diagnosis)
- Each refrigeration circuit is thoroughly evacuated, and fully charged with refrigerant prior to shipment
- Exterior grilles - available in five standard colors or custom match*
- Integral duct-collar*
- Electric heating available from 2KW to 10KW
- Hydronic heating available with 2 - 3 row coils
- Filters are accessible from front of unit

Electrical

- PSC motors*
- Standard non-fused electrical disconnect provided for service convenience and maintenance
- Controlled by mechanical or electronic heat-pump thermostat
- Factory wired with all necessary control functions*
 - Anti-short cycle compressor protection
 - Random start delay
 - Positive compressor lockout in the event of high pressure/low temperature cutout
 - Low suction temperature thermostat

* See Product Details section for more information

PRODUCT OVERVIEW

Product Details

Standard Units Come with Provisions for Outside Air Intake

- A mechanical fresh air intake, with adjustable damper, is provided to meet code requirements for fresh air introduction. This ventilation air minimizes infiltration by pressurization of the conditioned space.

Sound Minimizing Design

- Like the rest of the cabinet, the compressor enclosure is insulated with sound attenuating 1/2 inch thick, 2-pound density insulation. Compressors are mounted on rubber isolators to minimize sound and vibration transmission. Large diameter blower wheels are employed to provide required airflow performance at minimum sound levels.

Exterior Grilles - Available in Five Standard Colors or Custom Match

- The factory provides standard powder painted exterior grilles in Beige, Sand, Medium Brown, Slate, and White. Custom color match grilles can also be provided. See the back cover for standard grille colors.

Integral Duct-Collar

- An integral duct-collar is provided on the indoor blower discharge opening. See Dimensional Data for dimensions for the duct connection.

PSC Motors

- Fan motors are PSC types, with minimum three (Hi-Med- Low) speeds on indoor fan and one speed on outdoor fan. The PSC motors feature permanently lubricated bearings and are provided with internal thermal overload protection.

Factory Wired With All Necessary Control Functions

- All units are factory wired with a 24-volt control circuit to allow for connection to a factory or field provided mechanical or electronic heat-pump thermostat. Both cooling and heat pump models feature an ambient outdoor temperature sensor to lockout compressor operation below 40°F. The factory also provides a low suction temperature thermostat to prevent evaporator icing during cooling demands with low outdoor air temperature.

Streamlined Installation Using Factory-Provided Wall Sleeve

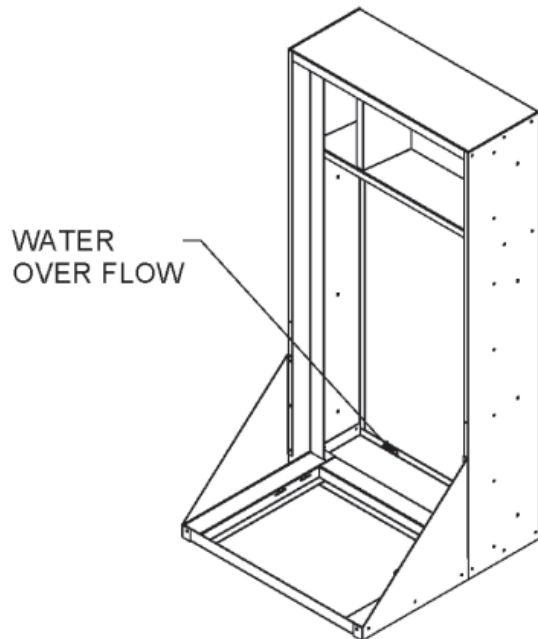
- A factory-made wall sleeve is required to finish the wall opening. The sleeve can be installed during building construction, and the unit cabinet does not have to be installed until late in the construction cycle. Unit installation is reduced to simply inserting the cabinet into the wall sleeve and making duct and electrical connections. Wall sleeves are available in depths from 5" to 15". A condensate drain connection is available via a female pipe thread fitting located on the bottom of the wall sleeve. See sleeve diagrams on page 5.

Convenient Indoor Access to All Parts and Service Needs

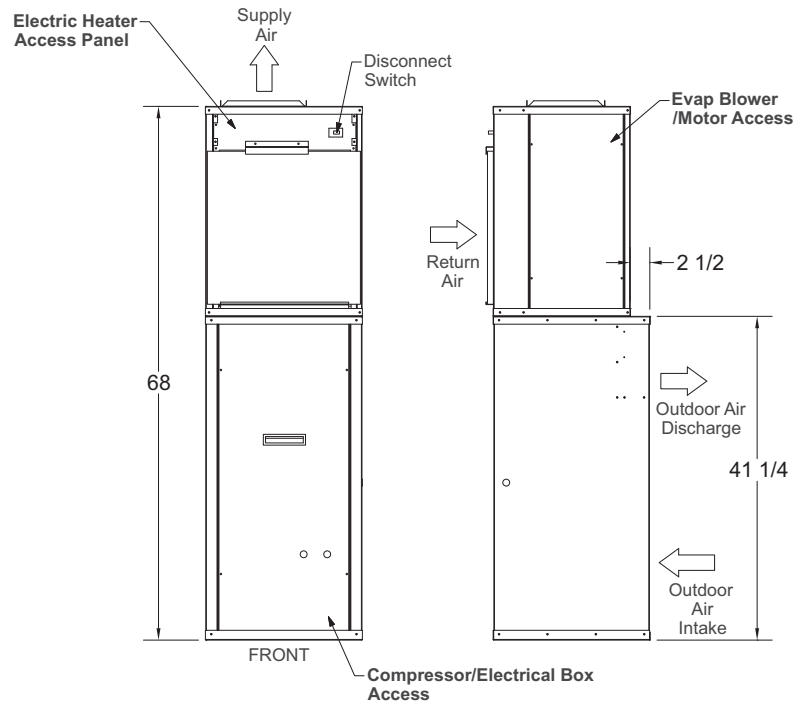
- Units allow for service access to the thermal expansion valve, electric heater, condenser blower/motor, compressor, and electrical components. Access is included for all important refrigeration circuit components, also including the liquid line filter drier and service gauge ports. Filters can be changed easily with front-side access to the filter rack. A standard non-fused electrical disconnect is provided to easily disconnect power before servicing the unit. See unit diagrams on page 5 for service locations.

PRODUCT OVERVIEW

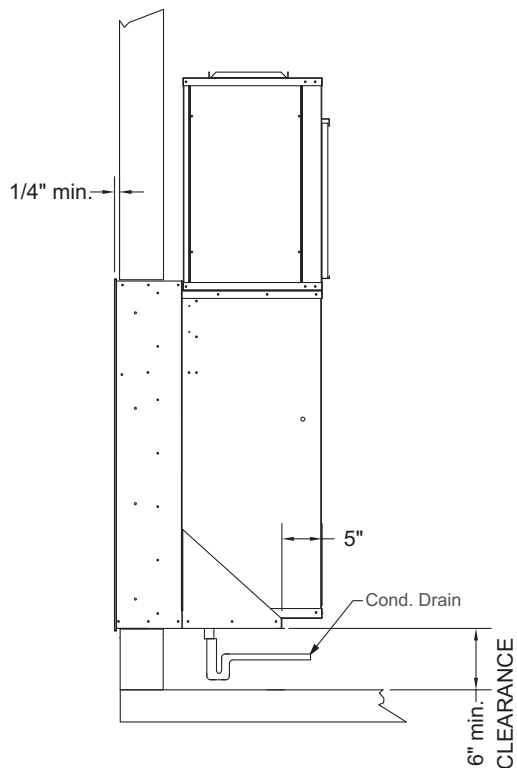
WALL SLEEVE



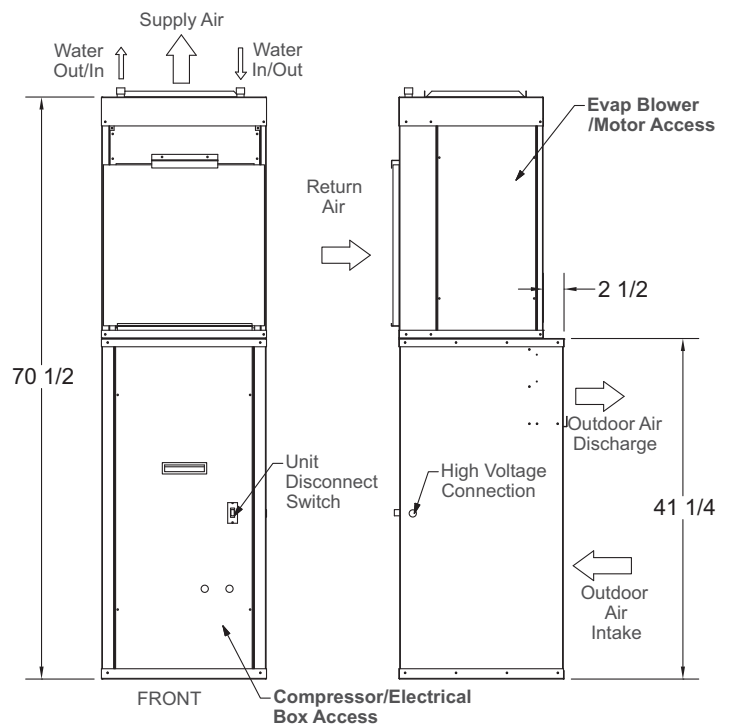
VPC, VPP UNIT



UNIT INSTALLED IN SLEEVE



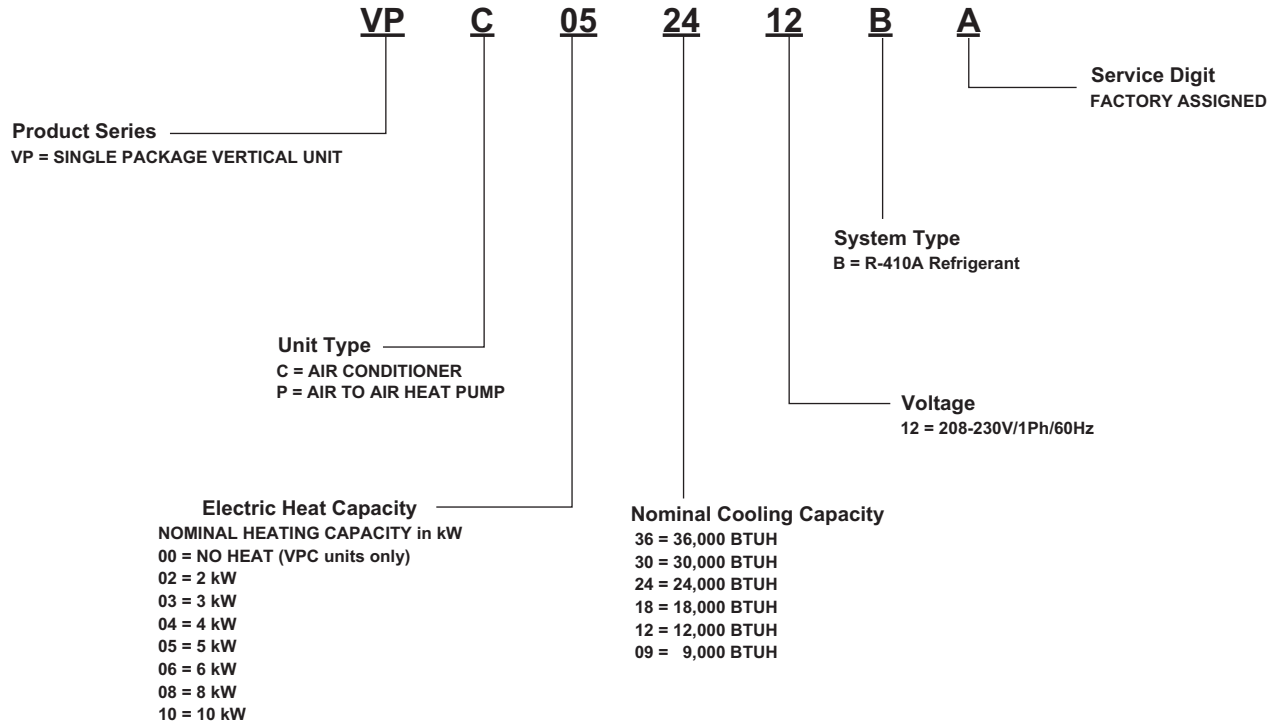
VPH UNIT



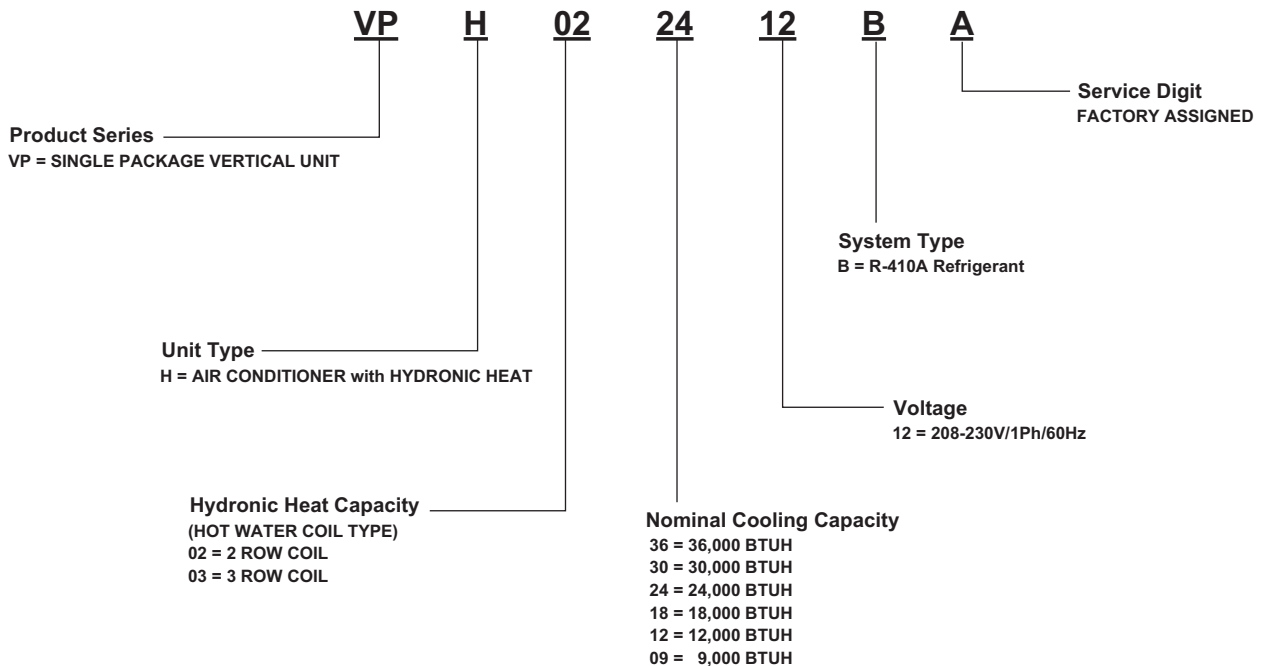
NOMENCLATURE

SINGLE PACKAGE VERTICAL UNIT

VPC & VPP NOMENCLATURE



VPH NOMENCLATURE



PHYSICAL DATA

AIR CONDITIONER WITH OPTIONAL ELECTRIC HEAT

Model	VPC*0912B	VPC*1212B	VPC*1812B	VPC*2412B	VPC*3012B	VPC*3612B	
Nominal Cooling(Ton)	0.75	1	1.5	2	2.5	3	
Refrigerant	R410A	R410A	R410A	R410A	R410A	R410A	
Net Cooling Performance (Btu/hr) - Standard CFM							
80°F db/67°F wb* (EAT Indoor Coil)	Total	9,400	11,800	18,900	24,000	29,800	35,900
	Sensible	7,300	9,100	1,500	19,600	23,600	27,500
	EER	10.6	10.8	10.8	10.4	9.8	9.5
Electric Heat Data***							
Available Electric Heat Outputs							
Nominal Kw @ 240V	0 2 3 4	0 2 3 4 5	0 2 3 4 5 6 8 10	0 3 4 5 6 8 10	0 3 4 5 6 8 10	0 3 4 5 6 8 10	
Indoor Blower Data - Centrifugal Blower, Direct Drive							
Design CFM	300	380	625	850	1000	1150	
Diameter x Width (in)	9 x 4	9 x 6	9 x 6	9 x 6	9 x 7	9 x 7	
Motor (HP) / Speed	0.1/4	0.1/4	0.13/3	0.25/3	0.25/3	0.33/3	
Indoor Coil-Copper Tubes, Aluminum Fins							
Face Area(sq ft)	2.01	2.01	2.01	2.19	2.88	2.88	
Rows/FPI	2/16	3/10	3/16	3/16	4/12	4/11	
Compressor-Type/Qty							
	Rotary/1	Rotary/1	Scroll/1	Scroll/1	Scroll/1	Scroll/1	
Outdoor Blower Data - Centrifugal Blower, Direct Drive							
Design CFM	575	900	1000	1100	1500	1650	
Diameter x Width (in)	9 x 4	9 x 6	9 x 7	9 x 7	10 x 8	11 x 7T	
Motor (HP) / Speed	0.1/1	0.13/1	0.17/1	0.25/1	0.5/1	0.5/1	
Outdoor Coil-Copper Tubes, Aluminum Fins							
Face Area(sq ft)	3.44	3.44	3.44	3.44	4.48	4.48	
Rows/FPI	2/16	3/16	4/16	4/16	4/16	4/16	
Filters - Qty/Size (in)	1/20x20x1	1/20x20x1	1/20x20x1	1/20x20x1	1/25x20x1	1/25x20x1	
Shipping Weight (lb)	255	260	270	275	270	275	

* Rated in accordance with ARI Standard 390-01 at 95°F Outdoor air

***Electric Heat Data

Nominal Output @ 240V [kW]	Output @ 208V [kW]	Capacity @ 240V [Btuh]	Capacity @ 208V [Btuh]	Total Heating AMPS @240V	Total Heating AMPS @208V
2	1.50	6,800	5,100	8.3	7.2
3	2.25	10,200	7,700	12.5	10.8
4	3.00	13,600	10,200	16.7	14.4
5	3.75	17,000	12,800	20.8	18.0
6	4.50	20,500	15,350	25.0	21.6
8	6.00	27,300	20,500	33.3	28.8
10	7.50	34,100	25,600	41.7	36.1

PHYSICAL DATA

AIR-TO-AIR HEAT PUMP WITH ELECTRIC HEAT

Model	VPP*0912B	VPP*1212B	VPP*1812B	VPP*2412B	VPP*3012B	VPP*3612B	
Nominal Cooling(Ton)	0.75	1	1.5	2	2.5	3	
Refrigerant	R410A	R410A	R410A	R410A	R410A	R410A	
Net Cooling Performance (Btu/hr) - Standard CFM							
80°F db/67°F wb* (EAT Indoor Coil)	Total	9,300	11,700	18,800	23,900	29,700	35,600
	Sensible	7,300	9,100	14,900	19,600	24,200	27,200
	EER	10.6	10.8	10.7	10.3	9.6	9.2
Heating Performance (Btu/hr) - Standard CFM							
47°F db/43°F wb** (EAT Outdoor Coil)	Total	9,400	11,700	18,900	24,000	31,800	39,600
	COP	3.5	3.4	3.5	3.4	3.2	3.2
Electric Heat Data***							
	Available Electric Heat Selection						
Nominal Kw @ 240V	2 3 4	2 3 4 5	2 3 4 5 6 8 10	3 4 5 6 8 10	3 4 5 6 8 10	3 4 5 6 8 10	
Indoor Blower Data - Centrifugal Blower, Direct Drive							
Design CFM	300	380	625	850	1000	1150	
Diameter x Width (in)	9 x 4	9 x 6	9 x 6	9 x 6	9 x 7	9 x 7	
Motor (HP) / Speed	0.1/4	0.1/4	0.13/3	0.25/3	0.25/3	0.33/3	
Indoor Coil-Copper Tubes, Aluminum Fins							
Face Area(sq ft)	2.01	2.01	2.01	2.19	2.88	2.88	
Rows/FPI	2/16	3/10	3/16	3/16	4/12	4/11	
Compressor-Type/Qty							
	Rotary/1	Rotary/1	Scroll/1	Scroll/1	Scroll/1	Scroll/1	
Outdoor Blower Data - Centrifugal Blower, Direct Drive							
Design CFM	575	900	1000	1100	1500	1650	
Diameter x Width (in)	9 x 4	9 x 6	9 x 7	9 x 7	10 x 8	11 x 7T	
Motor (HP) / Speed	0.1/1	0.13/1	0.17/1	0.25/1	0.5/1	0.5/1	
Outdoor Coil-Copper Tubes, Aluminum Fins							
Face Area(sq ft)	3.44	3.44	3.44	3.44	4.48	4.48	
Rows/FPI	2/16	3/16	4/16	4/16	4/16	4/16	
Filters - Qty/Size (in)	1/20x20x1	1/20x20x1	1/20x20x1	1/20x20x1	1/25x20x1	1/25x20x1	
Shipping Weight (lb)	255	260	270	275	335	345	

* Rated in accordance with ARI Standard 390-03 at 95°F Outdoor air

** Rated in accordance with ARI Standard 390-03 at 70°F Indoor entering air

*****Electric Heat Data**

Nominal Output @ 240V [kW]	Output @ 208V [kW]	Capacity @ 240V [Btuh]	Capacity @ 208V [Btuh]	Total Heating AMPS @240V	Total Heating AMPS @208V
2	1.50	6,800	5,100	8.3	7.2
3	2.25	10,200	7,700	12.5	10.8
4	3.00	13,600	10,200	16.7	14.4
5	3.75	17,000	12,800	20.8	18.0
6	4.50	20,500	15,350	25.0	21.6
8	6.00	27,300	20,500	33.3	28.8
10	7.50	34,100	25,600	41.7	36.1

PHYSICAL DATA

AIR CONDITIONER WITH HYDRONIC HEAT

Model	VPH*0912B	VPH*1212B	VPH*1812B	VPH*2412B	VPH*3012B	VPH*3612B	
Nominal Cooling(Ton)	0.75	1	1.5	2	2.5	3	
Refrigerant	R410A	R410A	R410A	R410A	R410A	R410A	
Net Cooling Performance (Btu/hr) - Standard CFM							
80°F db/67°F wb* (EAT Indoor Coil)	Total	9,400	11,800	18,900	24,000	29,800	35,900
	Sensible	7,300	9,100	1,500	19,600	23,600	27,500
	EER	10.6	10.8	10.8	10.4	9.8	9.5
Hot Water Coil Options	2 ROW	2 ROW	2 or 3 ROW	2 or 3 ROW	2 or 3 ROW	2 or 3 ROW	
Indoor Blower Data - Centrifugal Blower, Direct Drive							
Design CFM	300	380	625	850	1000	1150	
Diameter x Width (in)	9 x 4	9 x 6	9 x 6	9 x 6	9 x 7	10 x 7T	
Motor (HP) / Speed	0.1/4	0.1/4	0.13/3	0.25/3	0.25/3	0.33/3	
Indoor Coil-Copper Tubes, Aluminum Fins							
Face Area(sq ft)	2.01	2.01	2.01	2.19	2.88	2.88	
Rows/FPI	2/16	3/10	3/16	3/16	4/12	4/11	
Compressor-Type/Qty	Rotary/1	Rotary/1	Scroll/1	Scroll/1	Scroll/1	Scroll/1	
Outdoor Blower Data - Centrifugal Blower, Direct Drive							
Design CFM	575	900	1000	1100	1500	1650	
Diameter x Width (in)	9 x 4	9 x 6	9 x 7	9 x 7	10 x 8	11 x 7T	
Motor (HP) / Speed	0.1/1	0.13/1	0.17/1	0.25/1	0.5/1	0.5/1	
Outdoor Coil-Copper Tubes, Aluminum Fins							
Face Area(sq ft)	3.44	3.44	3.44	3.44	4.48	4.48	
Rows/FPI	2/16	3/16	4/16	4/16	4/16	4/16	
Filters - Qty/Size (in)	1/20x20x1	1/20x20x1	1/20x20x1	1/20x20x1	1/25x20x1	1/25x20x1	
Shipping Weight (lb)	255	260	270	275	335	345	

* Rated in accordance with ARI Standard 390-01 at 95°F Outdoor air

Hot Water Data

Model #	60°F Entering Air Temperature					
	Airflow CFM	Water GPM	Water P.D. PSI	120° F EWT	140° F EWT	180° F EWT
				Capacity MBH	Capacity MBH	Capacity MBH
VPH020912B 2 ROW	310	2	0.37	10.6	14.3	21.6
		3	0.74	11.2	15.0	22.7
		4	1.22	11.5	15.4	23.2
VPH021212B 2 ROW	425	2	0.37	12.4	16.7	25.3
		3	0.74	13.3	17.9	27.1
		4	1.22	13.8	18.5	28.0
VPH021812B 2 ROW	665	2	0.37	14.8	20.0	30.5
		3	0.74	16.1	21.6	32.8
		4	1.22	16.8	22.6	34.2
VPH031812B 3 ROW	640	2	0.56	18.6	25.0	38.0
		3	1.14	20.5	27.5	41.6
		4	1.87	21.5	28.9	43.7
VPH022412B 2 ROW	900	2	0.37	17.1	23.1	35.3
		3	0.74	18.8	25.4	38.6
		4	1.22	19.9	26.7	40.6
VPH032412B 3 ROW	880	2	0.56	22.2	29.9	45.5
		3	1.14	24.6	33.1	50.3
		4	1.87	26.0	35.0	52.0
VPH023012B 2 ROW	1000	3	1.17	20.1	27.0	41.1
		4	1.99	21.2	28.6	43.3
		5	2.99	22.0	29.6	44.8
VPH033012B 3 ROW	950	3	1.77	26.1	35.1	53.2
		4	3.00	27.9	37.4	56.7
		5	4.50	29.0	38.9	58.9
VPH023612B 2 ROW	1150	3	1.17	21.0	28.3	43.1
		4	1.99	22.3	30.0	45.6
		5	2.99	23.2	31.2	47.3
VPH033612B 3 ROW	1120	3	1.77	27.5	37.0	56.1
		4	3.00	29.5	39.6	60.0
		5	4.50	30.8	41.3	62.5

INDOOR BLOWER CFM

VPC/VPP MODELS

Model #	Motor Speed	EXTERNAL STATIC PRESSURE							
		0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40
VPC/VPP**09	HIGH	445	435	425	415	400	385	370	355
	MED	350	340	330	320	310	300	285	270
	LOW	280	275	270	265	255	245	235	220
VPC/VPP**12	HIGH	620	618	616	614	612	610	590	570
	MED	465	460	455	450	445	440	425	415
	LOW	380	378	376	374	372	370	360	350
VPC/VPP**18	HIGH	780	770	760	750	740	720	700	675
	MED	640	640	635	630	625	625	610	595
	LOW	555	556	557	558	559	560	550	530
VPC/VPP**24	HIGH	940	915	890	865	840	815	795	765
	MED	855	845	835	825	815	800	785	765
	LOW	770	765	760	755	750	740	730	715
VPC/VPP**30	HIGH	1230	1205	1180	1155	1130	1105	1075	1045
	MED	1050	1040	1030	1020	1005	985	965	945
	LOW	925	920	915	910	905	900	890	875
VPC/VPP**36	HIGH	1320	1300	1275	1250	1220	1190	1160	1125
	MED	1140	1130	1115	1100	1080	1060	1035	1010
	LOW	-	940	935	930	925	920	905	885

VPH MODELS

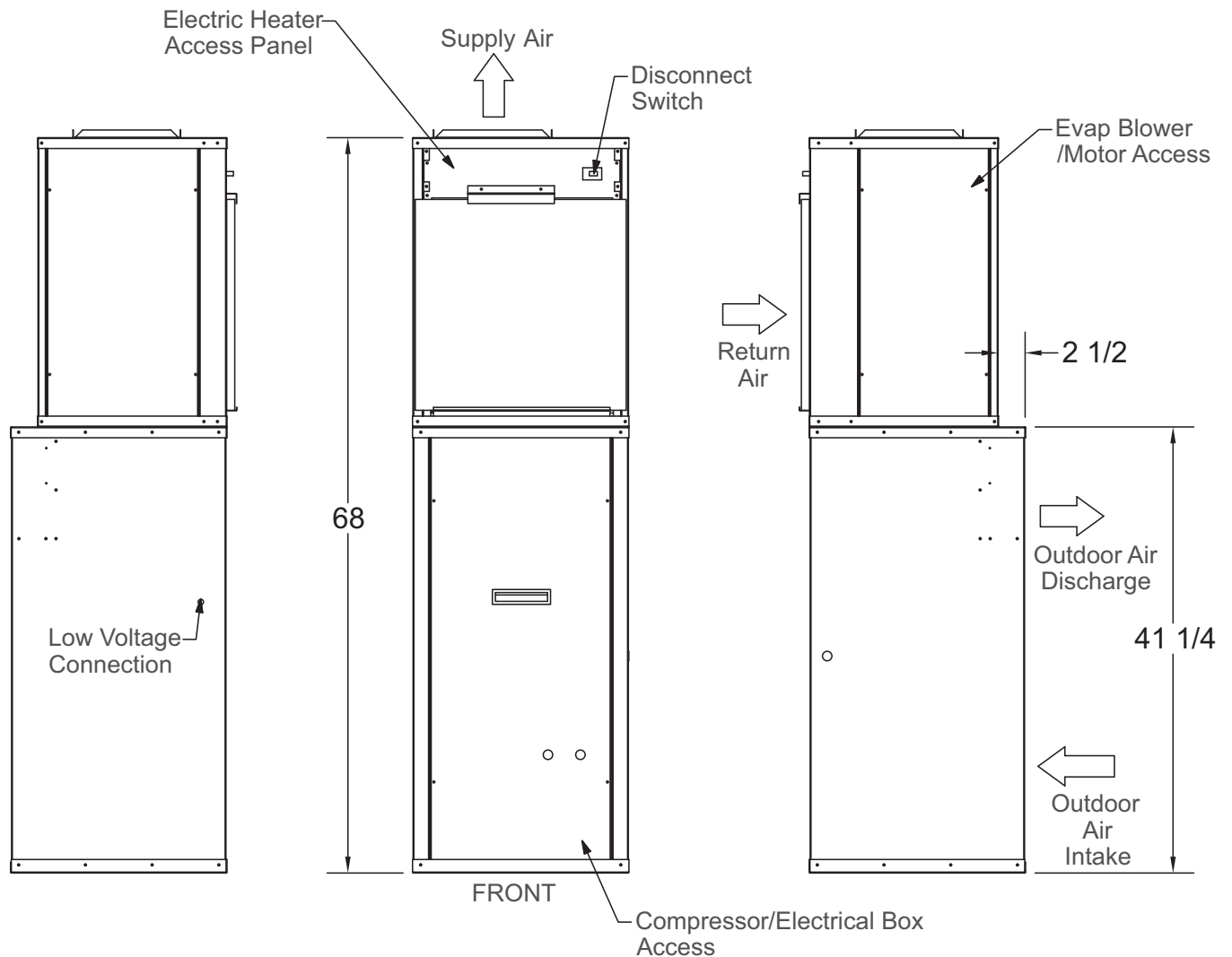
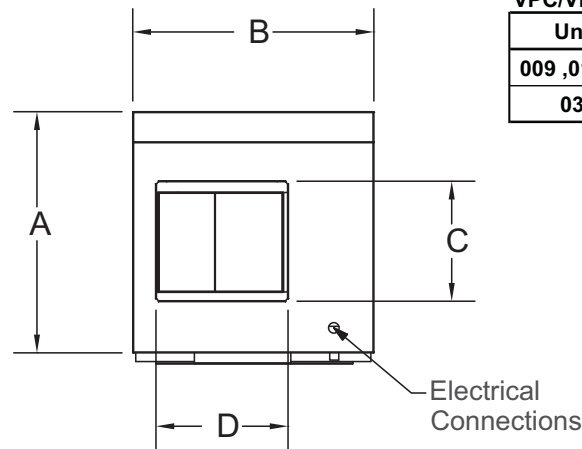
Model #	Motor Speed	EXTERNAL STATIC PRESSURE							
		0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40
VPH0209 2 ROW H/W COIL	HIGH	435	425	415	400	385	370	355	335
	MED	340	330	320	310	300	285	270	255
	LOW	275	270	265	255	245	235	220	205
VPH0212 2 ROW H/W COIL	HIGH	610	608	606	604	600	595	575	550
	MED	455	450	445	440	430	440	410	400
	LOW	375	373	370	368	366	360	350	340
VPH0218 2 ROW H/W COIL	HIGH	740	735	710	690	685	660	635	605
	MED	620	620	605	600	590	585	570	550
	LOW	550	551	552	553	554	555	545	525
VPH0318 3 ROW H/W COIL	HIGH	705	690	675	665	650	625	600	570
	MED	610	605	595	585	575	570	550	535
	LOW	545	546	547	548	549	545	520	505
VPH0224 2 ROW H/W COIL	HIGH	820	800	780	755	730	705	690	660
	MED	815	785	765	735	705	675	645	615
	LOW	755	750	740	725	695	665	635	600
VPH0324 3 ROW H/W COIL	HIGH	780	760	740	720	690	665	650	620
	MED	765	740	715	690	665	640	615	585
	LOW	740	725	710	680	660	635	610	580
VPH0230 2 ROW H/W COIL	HIGH	1120	1100	1075	1050	1020	990	960	930
	MED	990	975	955	935	910	885	860	835
	LOW	920	905	890	875	855	835	815	790
VPH0330 3 ROW H/W COIL	HIGH	1070	1045	1020	995	970	945	920	890
	MED	980	965	945	925	900	875	850	825
	LOW	910	895	880	865	845	825	805	780
VPH0236 2 ROW H/W COIL	HIGH	1185	1165	1140	1115	1090	1065	1035	1005
	MED	1075	1055	1035	1015	995	970	945	920
	LOW	940	925	910	895	880	860	840	820
VPH0336 3 ROW H/W COIL	HIGH	1145	1125	1100	1075	1050	1025	995	965
	MED	1050	1030	1010	990	970	945	920	895
	LOW	930	915	900	885	870	850	830	810

DIMENSIONAL DATA

3/4 TO 3 TON VPC & VPP

VPC/VPP UNIT DIMENSIONS

Unit Model	A	B	C	D
009 ,012, 018, 024	20	20	9.94	10.94
030 & 036	24	25	11	11

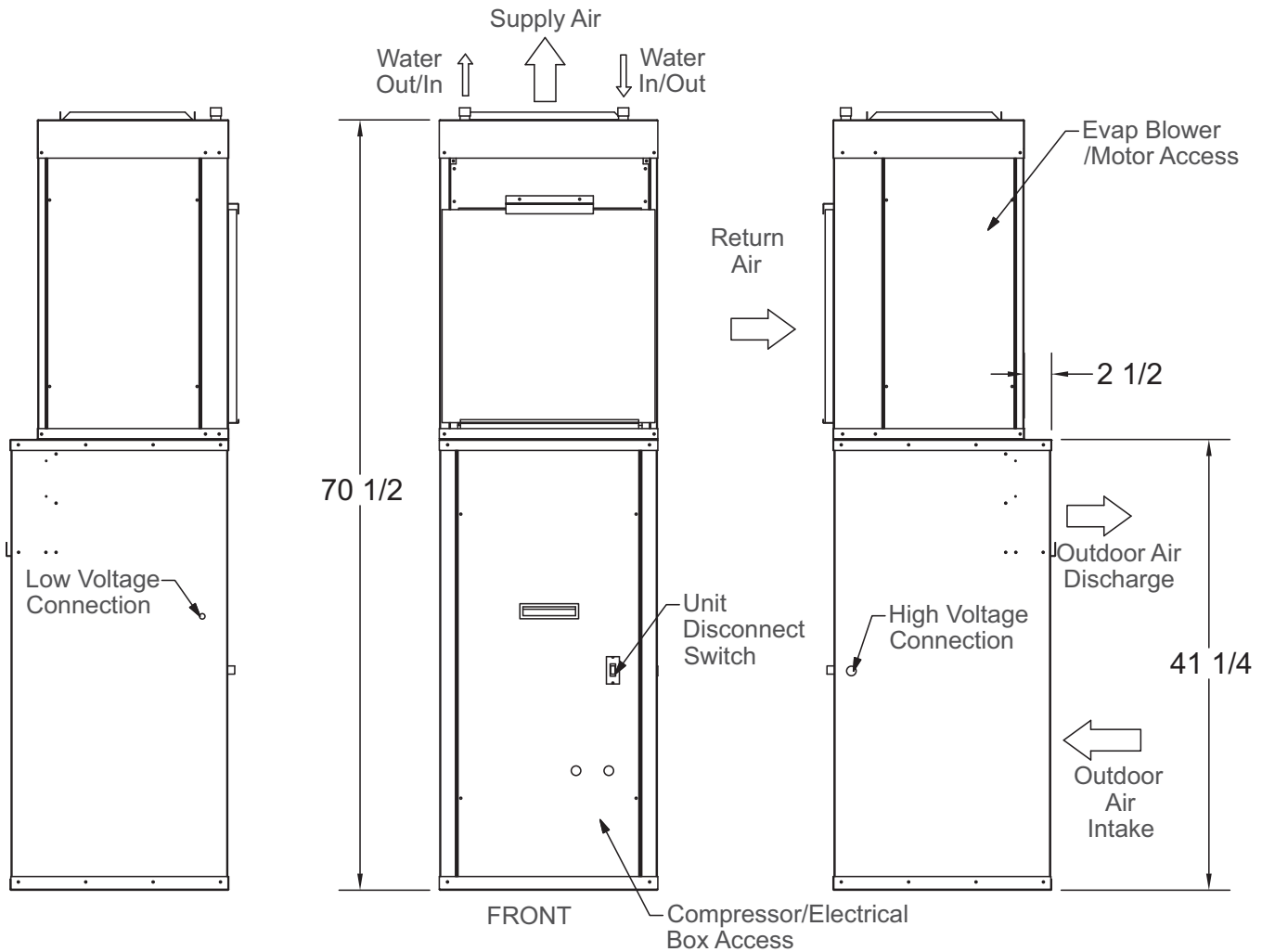
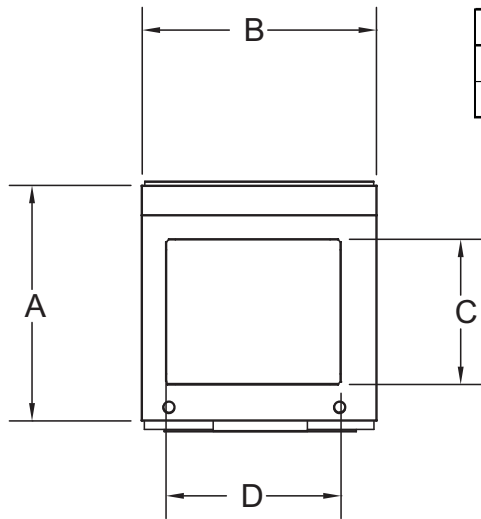


DIMENSIONAL DATA

3/4 TO 3 TON VPH

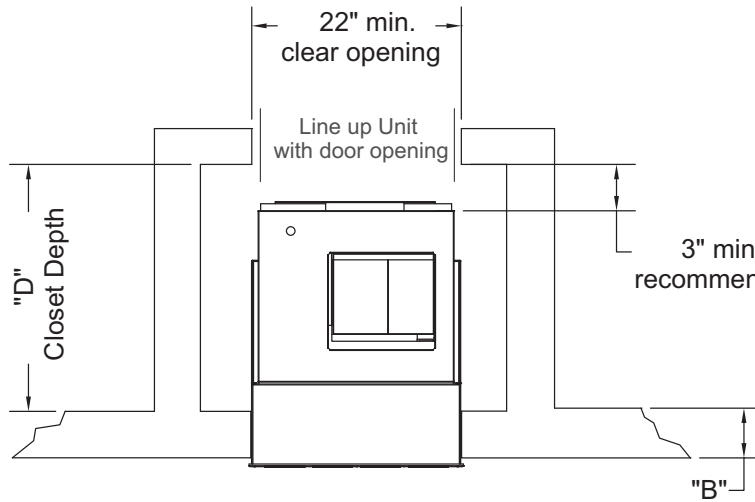
VPH UNIT DIMENSIONS

Unit Model	A	B	C	D
009, 012, 018, 024	20	20	12.38	14.88
030 & 036	24	25	12.38	17.38



INSTALLATION DETAILS

3/4 TO 3 TON ALL MODELS

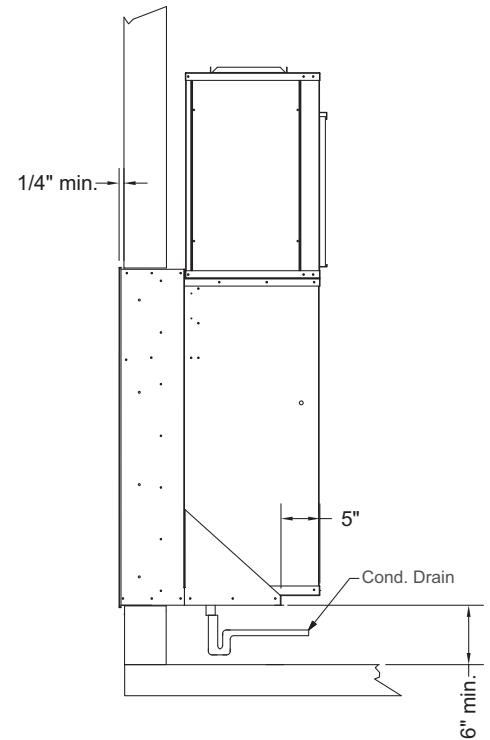


009, 012, 018, 024 UNITS INSTALLATION DETAILS

- Outside Wall Thickness 5" - 8"
D = 29" - B
- Outside Wall Thickness 8" - 12"
D = 33" - B
- Outside Wall Thickness 12" - 15"
D = 36" - B

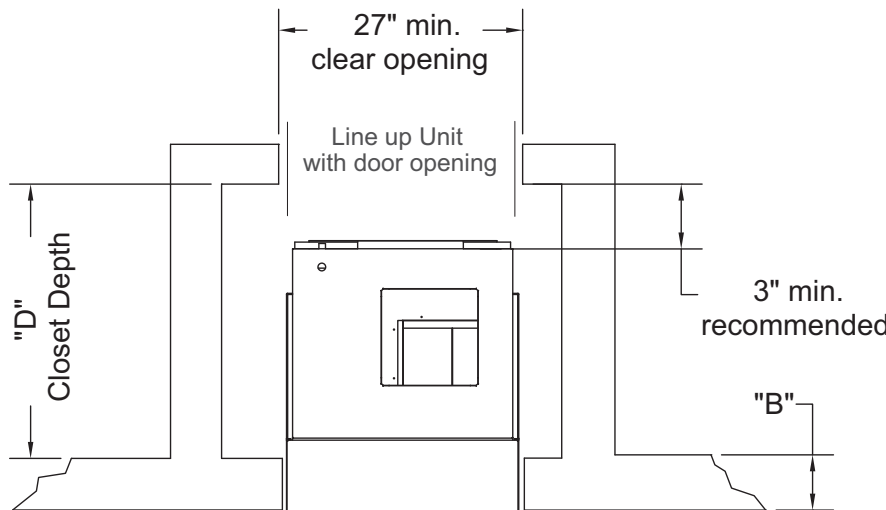
WALL OPENING
ROUGH IN DIMENSION:

- 009, 012, 018, 024 UNITS
44" x 21 3/4"
- 030, 036 UNITS
44" x 26 3/4"



030 & 036 UNITS INSTALLATION DETAILS

- Outside Wall Thickness 5" - 8"
D = 33" - B
- Outside Wall Thickness 8" - 12"
D = 37" - B
- Outside Wall Thickness 12" - 15"
D = 40" - B



ELECTRICAL DATA**VPC/PP MODELS**

MODEL #	COMPRESSOR			INDOOR FAN		OUTDOOR FAN		HEATER KW			MCA			MAX FUSE / CCT. BKR. AMP		
	QTY	RLA	LRA	HP	FLA	HP	FLA	208V	230V	240V	208V	230V	240V	208V	230V	240V
VPC/PP0209	1	@ 3.6	22.2	0.10	0.80	0.10	0.60	1.50	1.84	2.00	10.03	10.98	11.42	15	15	15
VPC/PP0309	1	@ 3.6	22.2	0.10	0.80	0.10	0.60	2.25	2.76	3.00	14.54	15.97	16.63	15	20	20
VPC/PP0409	1	@ 3.6	22.2	0.10	0.80	0.10	0.60	3.00	3.67	4.00	19.06	20.97	21.83	20	25	25
VPC/PP0212	1	@ 4.6	27.9	0.10	0.80	0.13	0.80	1.50	1.84	2.00	10.03	10.98	11.42	15	15	15
VPC/PP0312	1	@ 4.6	27.9	0.10	0.80	0.13	0.80	2.25	2.76	3.00	14.54	15.97	16.63	15	20	20
VPC/PP0412	1	@ 4.6	27.9	0.10	0.80	0.13	0.80	3.00	3.67	4.00	19.06	20.97	21.83	20	25	25
VPC/PP0512	1	@ 4.6	27.9	0.10	0.80	0.13	0.80	3.76	4.59	5.00	23.57	25.96	27.04	25	30	30
VPC/PP0218	1	@ 9.0	48.0	0.13	0.75	0.17	1.10	1.50	1.84	2.00	13.10	13.10	13.10	20	20	20
VPC/PP0318	1	@ 9.0	48.0	0.13	0.75	0.17	1.10	2.25	2.76	3.00	14.48	15.91	16.56	20	20	20
VPC/PP0418	1	@ 9.0	48.0	0.13	0.75	0.17	1.10	3.00	3.67	4.00	18.99	20.90	21.77	20	25	25
VPC/PP0518	1	@ 9.0	48.0	0.13	0.75	0.17	1.10	3.76	4.59	5.00	23.51	25.89	26.98	25	30	30
VPC/PP0618	1	@ 9.0	48.0	0.13	0.75	0.17	1.10	4.51	5.51	6.00	28.02	30.89	32.19	30	35	35
VPC/PP0818	1	@ 9.0	48.0	0.13	0.75	0.17	1.10	6.01	7.35	8.00	37.05	40.87	42.60	40	45	45
VPC/PP1018	1	@ 9.0	48.0	0.13	0.75	0.17	1.10	7.51	9.18	10.00	46.08	50.85	53.02	50	60	60
VPC/PP0324	1	@ 13.5	58.3	0.25	1.50	0.25	1.50	2.25	2.76	3.00	19.88	19.88	19.88	30	30	30
VPC/PP0424	1	@ 13.5	58.3	0.25	1.50	0.25	1.50	3.00	3.67	4.00	19.93	21.84	22.71	30	30	30
VPC/PP0524	1	@ 13.5	58.3	0.25	1.50	0.25	1.50	3.76	4.59	5.00	24.44	26.83	27.92	30	30	30
VPC/PP0624	1	@ 13.5	58.3	0.25	1.50	0.25	1.50	4.51	5.51	6.00	28.96	31.82	33.13	30	35	35
VPC/PP0824	1	@ 13.5	58.3	0.25	1.50	0.25	1.50	6.01	7.35	8.00	37.99	41.81	43.54	40	45	45
VPC/PP1024	1	@ 13.5	58.3	0.25	1.50	0.25	1.50	7.51	9.18	10.00	47.01	51.79	53.96	50	60	60
VPC/PP0530	1	@ 14.1	73.0	0.25	1.50	0.50	3.60	3.76	4.59	5.00	24.44	26.83	27.92	35	35	35
VPC/PP0630	1	@ 14.1	73.0	0.25	1.50	0.50	3.60	4.51	5.51	6.00	28.96	31.82	33.13	35	35	35
VPC/PP0830	1	@ 14.1	73.0	0.25	1.50	0.50	3.60	6.01	7.35	8.00	37.99	41.81	43.54	40	45	45
VPC/PP1030	1	@ 14.1	73.0	0.25	1.50	0.50	3.60	7.51	9.18	10.00	47.01	51.79	53.96	50	60	60
VPC/PP0636	1	@ 16.7	79.0	0.33	2.60	0.50	3.60	4.51	5.51	6.00	30.33	33.20	34.50	40	40	40
VPC/PP0836	1	@ 16.7	79.0	0.33	2.60	0.50	3.60	6.01	7.35	8.00	39.36	43.18	44.92	40	45	45
VPC/PP1036	1	@ 16.7	79.0	0.33	2.60	0.50	3.60	7.51	9.18	10.00	48.39	53.16	55.33	50	60	60

VPH/VPC MODELS

MODEL #	COMPRESSOR			INDOOR FAN		OUTDOOR FAN		MCA	MAX FUSE / CCT. BKR. AMP
	QTY	RLA	LRA	HP	FLA	HP	FLA		
VPH**09 / VPC0009	1	@ 3.6	22.2	0.10	0.80	0.10	0.6	5.90	15
VPH**12 / VPC0012	1	@ 4.6	27.9	0.10	0.80	0.13	0.8	7.35	15
VPH**18 / VPC0018	1	@ 9.0	48.0	0.13	0.75	0.17	1.1	13.10	20
VPH**24 / VPC0024	1	@ 13.5	58.3	0.25	1.50	0.25	1.5	19.88	30
VPH**30 / VPC0030	1	@ 14.1	73.0	0.25	1.50	0.50	2.8	21.93	35
VPH**36 / VPC0036	1	@ 16.7	79.0	0.33	2.60	0.50	2.8	26.28	40

GUIDE SPECIFICATIONS

INSTRUCTIONS

Text denoted in italics with square brackets [...] indicates there is a choice to be made between one or more variables. (i.e. A possible scenario for the following "... connection to a [single] [multi] stage [cool] [heat and cool] thermostat.", is "connection to a single stage cool thermostat.")

1. Packaged Air-to-Air, thru-the-wall, Air Conditioner and Heat Pump

- a. Unit is a Johnson Controls Single Package Vertical Unit, indoor self-contained, thru-the-wall [heat pump and air conditioner] [air conditioner], fully charged with R-410A refrigerant, and utilizing a high efficiency scroll or rotary compressor for [cooling and in reverse cycle for heating] [cooling].
- b. Condenser air is to be discharged through outdoor louver via wall sleeve opening.

1.1 Codes and Certifications

- a. Unit shall be rated in accordance with ARI standard 390-01.
- b. Unit shall meet or exceed ASHRAE 90.1 requirements.

1.2 General

- a. The cabinet shall be constructed of corrosion resistant galvanized steel.
- b. Interior cabinet insulation shall be ½" thick high density insulation, attached with a non-flammable and moisture resistant adhesive.
- c. The base of the unit shall have a baked-on polyester coating for corrosion resistance.
- d. Unit shall include a ¾" condensate drain that is to be isolated from the air stream and located at the bottom.
- e. Unit shall be supplied with an integral duct collar at the indoor blower discharge.
- f. Unit shall be designed for mounting in a wall sleeve.
- g. Unit shall include a built in adjustable fresh air damper. Fresh air intake shall be integral to the sleeve and separated from condenser air stream. Damper shall include a washable mesh filter.
- h. A 1-inch thick throwaway return air filter shall be provided with all models and accessible from the front of the unit.

- i. All operating components of the mechanical systems shall be completely enclosed in the cabinet.
- j. All components, wiring and inspection areas shall be completely accessible through removable front panels.
- k. Shall include weather-resistant gasket with adhesive backing to mate wall sleeve with unit.
- l. Shall be factory wired to a low voltage terminal strip for connection to a [single] [two] stage [cool] [heat and cool] thermostat.

1.3 Refrigeration System

- a. Units shall have a high efficiency scroll or rotary type compressor mounted on rubber isolators.
- b. Refrigeration circuit shall be evacuated and fully charged with R-410A refrigerant.
- c. Compressor shall have built-in overload protection. Circuit shall include a solid state time delay relay for random-start and anti-short cycle protection.
- d. Refrigeration circuit shall have an adjustable bi-flow thermal expansion valve with an external equalizer, bi-flow liquid line filter drier, and service gauge ports.
- e. A low suction temperature thermostat shall be included to prevent evaporator icing during low outdoor ambient conditions.
- f. Units shall have a manual-reset high refrigerant pressure switch to guard against excessively high system pressures.

1.4 Heat Pump

- a. Unit shall utilize reversing valve for first stage heating down to 40°F.
- b. Unit shall have an ambient temperature sensor to lock out compressor operation below 40°F.
- c. Reversing valve solenoid shall be energized in cooling mode only.

1.4 Heat Pump with Electric Heat

- a. Unit shall utilize reversing valve for first stage heating down to 40°F.
- b. Unit shall have an ambient temperature sensor to lock out compressor operation below 40°F.
- c. Reversing valve solenoid shall be energized in cooling mode only.

GUIDE SPECIFICATIONS

- d. An electric coil shall provide second stage heating for outdoor temperature below 40°F. Coil shall have an auto reset limit control and relays shall bring the heating elements on and off, in sequence and in equal increments, with a time delay between each element.

1.4 Hydronic Heat

- a. Unit shall utilize a two (2) or three (3) row hot water coil for heating.
- b. Minimum entering water temperature is to be 120°F and a maximum of 200°F.

1.4 Cooling Only Refrigeration System

- a. Unit shall have no provision for heating.
- b. Unit shall have an ambient temperature sensor to lock out compressor operation below 40°F.

1.5 Indoor Outdoor Fans

- a. Evaporator and condenser fans shall be forward curved, double inlet and double width, direct-drive centrifugal blowers.

- b. Condenser fan to be single-speed, direct drive centrifugal type.
- c. Evaporator motor shall be PSC type and have a minimum of three (3) speeds.
- d. Fan motors shall have internal thermal overload protection.
- e. Blower wheels shall be galvanized and housings painted for corrosion resistance.

1.6 Accessories/Options

- a. Wall sleeve with integral base platform.
- b. Corrosion resistant outdoor louver (primed or powder coated).

1.7 Installation

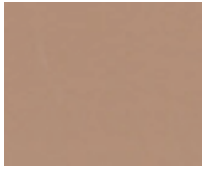
- a. Install unit as shown on drawings and in accordance with manufacture's installation instructions.
- b. Start-up sheet shall be completed and a copy shall be supplied to the owner and manufacturer.

NOTES

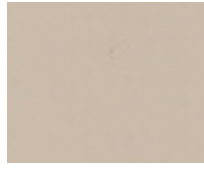
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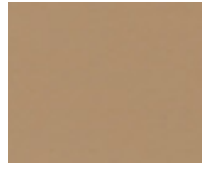
STANDARD GRILLE COLORS



BEIGE #1



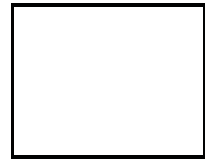
SAND #2



MED. BROWN #3



SLATE #4



WHITE