



FRIEDRICH

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VERT-I-PAK[®]

Single Package Heat Pump



THE EXPERTS IN ROOM AIR CONDITIONING

MODEL IDENTIFICATION GUIDE

MODEL NUMBER	V	H	A	09	K	34	RC	Q
Series V = Friedrich® Series								Marketing Revision
HA = Air-Source Heat Pump								RT = R410a Refrigerant RC = R32 Refrigerant
Nominal Capacity 09 = 9,000 Btu/hr 18 = 18,000 Btu/hr 12 = 12,000 Btu/hr 24 = 24,000 Btu/hr								Electric Heater Size <u>A Series</u> 25 = 2.5 kW 34 = 3.4 kW 50 = 5.0 kW 75 = 7.5 kW* 10 = 10.0 kW**
Voltage K = 208/230V-1Ph-60Hz R = 265V-1Ph-60Hz								* ONLY AVAILABLE ON THE 18 & 24 K/R MODELS **ONLY AVAILABLE ON THE 24 K/R MODELS

GENERAL SPECIFICATIONS

MODEL	VHA09K	VHA09R	VHA12K	VHA12R	VHA18K	VHA18R	VHA24K	VHA24R
COOLING DATA								
TOTAL COOLING CAP. (Btu/hr) @95°F	9,400	9,400	11,200	11,200	17,800	17,800	22,600	22,600
SENSIBLE COOLING CAP. (Btu/hr)	7,100	7,100	8,800	8,800	13,100	13,100	14,700	14,700
SEER2	12.3	12.3	12.3	12.3	12.1	12.1	12.1	11.9
EER2	10.6	10.6	10.6	10.6	10.6	10.6	10.6	10.6
POWER (W)	887	887	1057	1057	1679	1679	2132	2132
VOLTAGE	208/230	265	208/230	265	208/230	265	208/230	265
HEATING DATA								
HEAT PUMP CAP. (Btu/hr) @ 47°F	8,600	8,600	10,400	10,400	16,200	16,200	19,500	19,500
HEAT PUMP CAP. (Btu/hr) @ 17°F	4,900	4,900	6,000	6,000	9,800	9,800	12,700	12,700
HSPF2	6.3	6.3	6.3	6.3	6.7	6.7	6.7	6.7
HEATER SIZE (kW)	2.5/3.4/5.0	2.5/3.4/5.0	2.5/3.4/5.0	2.5/3.4/5.0	2.5/3.4/5.0/7.5	2.5/3.4/5.0/7.5	2.5/3.4/5.0/7.5/10.0	2.5/3.4/5.0/7.5/10.0
PHYSICAL								
DIMENSIONS (W X D X H)	23"x23"x32"	23"x23"x32"	23"x23"x32"	23"x23"x32"	23"x23"x47"	23"x23"x47"	23"x23"x52"	23"x23"x52"
REFRIGERANT	R32							
VOLUME (OZ)	26	26	28.7	28.7	40	40	44	44
AIRFLOW (CFM)	420		420		530		625	
VENTILATION AIR								
CFM	UPTO 60							

NOTE: Friedrich is a part of the Rheem® family of brands. In keeping with its policy of continuous progress & program improvement, Rheem reserves the right to make changes without notice.

ELECTRICAL DATA

Vert-I-Pak Family	Model Number	Total Refrigeration Amps	Total Electric Heat Amps	Electric Heat Watts	Electric Heat Amps	Compressor RLA LRA	Blower Motor FLA/HP	Condenser Motor FLA/HP	MCA	MOP/MOCP			
VHA09K (230v/208v)	25RCQ	5.6/5.3	11.5/10.4	2450/2000	10.7/9.6	4.1/3.8 20	0.8 1/8	0.7 1/4	14.4	15			
	34RCQ	5.6/5.3	15.4/14.0	3350/2740	14.6/13.2				19.3	20			
	50RCQ	5.6/5.3	22.5/20.5	5000/4090	21.7/19.7				28.2	30			
VHA09R (265v)	25RCQ	6.1	10	2450	9.2	4.6 20			0.8 1/8	0.7 1/4	12.5	15	
	34RCQ	6.1	13.4	3350	12.6						16.8	20	
	50RCQ	6.1	19.7	5000	18.9						24.7	25	
VHA12K (230v/208v)	25RCQ	6.4/6.0	11.5/10.4	2450/2000	10.7/9.6	4.1/3.8 20		0.8 1/8			0.9 1/4	14.4	15
	34RCQ	6.4/6.0	15.4/14.0	3350/2740	14.6/13.2							19.3	20
	50RCQ	6.4/6.0	22.5/20.5	5000/4090	21.7/19.7							28.2	30
VHA12R (265v)	25RCQ	5.8	10	2450	9.2	4.6 20			0.8 1/8	0.7 1/4	12.5	15	
	34RCQ	5.8	13.4	3350	12.6						16.8	20	
	50RCQ	5.8	19.7	5000	18.9						24.7	25	
VHA18K (230v/208v)	25RCQ	9.9/9.5	11.5/10.4	2450/2000	10.7/9.6	7.8/7.4 40	0.8 1/5	1.3 1/4		15	15		
	34RCQ	9.9/9.5	15.4/14.0	3350/2740	14.6/13.2					19.2	20		
	50RCQ	9.9/9.5	22.5/20.5	5000/4090	21.7/19.7					28.5	30		
	75RCQ	9.9/9.5	33.4/30.3	7500/6135	32.6/29.5				41.8	45			
VHA18R (265v)	25RCQ	9.1	10	2450	9.2	7.2 40	0.6 1/5		1.3 1/4	13.9	15		
	34RCQ	9.1	13.4	3350	12.6					16.9	20		
	50RCQ	9.1	19.7	5000	18.9					25.6	30		
	75RCQ	9.1	29.1	7500	28.3					36.4	40		
VHA24K (230v/208v)	25RCQ	12.1/11.2	11.5/10.4	2450/2000	10.7/9.6	9.4/8.5 43	0.8 1/5	1.9 1/4		17.1	20		
	34RCQ	12.1/11.2	15.4/14.0	3350/2740	14.6/13.2					20.3	25		
	50RCQ	12.1/11.2	22.5/20.5	5000/4090	21.7/19.7					30	30		
	75RCQ	12.1/11.2	33.4/30.3	7500/6135	32.6/29.5					41.8	45		
	10RCQ	12.1/11.2	44.3/40.1	10000/8180	43.5/39.3				55.4	60			
VHA24R (265v)	25RCQ	10.9	10	2450	9.2	8.5 43	0.6 1/5	1.8 1/4	15.5	20			
	34RCQ	10.9	13.4	3350	12.6				18.5	20			
	50RCQ	10.9	19.7	5000	18.9				27.3	30			
	75RCQ	10.9	29.1	7500	28.3				36.2	40			
	10RCQ	10.9	38.5	10000	37.7				47.9	50			

AIRFLOW DATA

INDOOR CFM & EXTERNAL STATIC PRESSURE

MODEL	VHA09		VHA12		VHA18		VHA24	
Fan Speed	Low	High	Low	High	Low	High	Low	High
ESP (")	SCFM							
0.0"	340	490	340	490	620	705	675	770
0.05"	315	475	315	475	580	675	635	745
0.10"	300	460	300	460	550	640	600	720
0.15"	285	450	285	450	510	610	560	710
0.20"	270	435	270	435	480	585	525	670
0.25"	255	425	255	425	450	560	490	650
0.30"	--	420*	--	420*	400*	530	440*	625
0.35"	--	--	--	--	--	500	--	580
0.40"	--	--	--	--	--	450*	--	520*

Note: *Maximum Allowable Static.

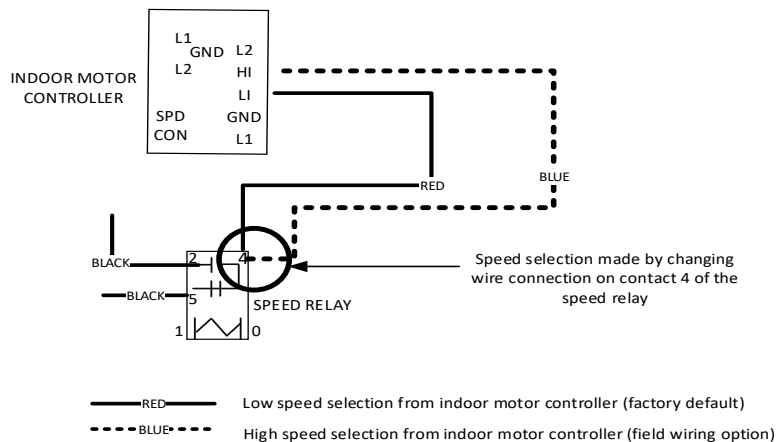
Note: Units rated at 0.3" ESP.

Indoor airflow may be determined by measuring the external static pressure (ESP) of the duct system using an inclined manometer or magnahelic gauge and consulting the above chart to derive actual air flow. Under no circumstances should the Vert-I-Pak be operated at an higher external static pressure than indicated above. Operation of the Vert-I-Pak over the recommended ESP will result in inadequate airflow, leading to poor performance and/or premature component failure.

Blower Control

All Vert-I-Paks, by default, will be configured to low speed blower operation. The speed setting can be changed to high speed by updating the speed tap settings on the fan control relay. **The blower fan speed setting cannot be changed at the thermostat.** Regardless of wiring GH and/or GL, the unit will continue to operate at the speed setting at the fan control relay.

Note: Any non-Friedrich thermostat or low voltage device being powered by the Vert-I-Pak will need to be reviewed and approved for use.



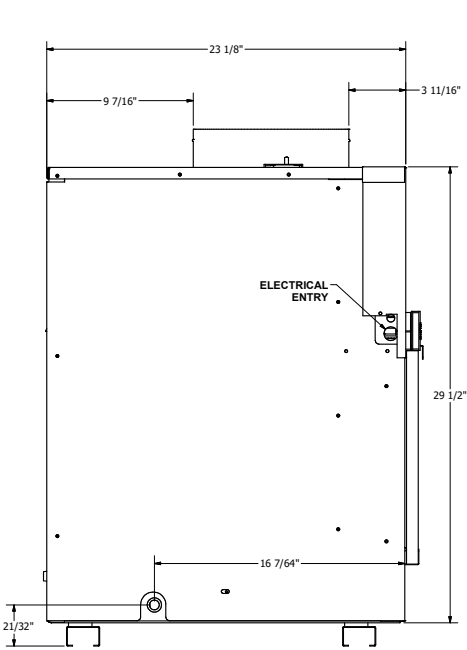
CONDENSER CFM & EXTERNAL STATIC PRESSURE

Vert-I-Pak is designed to install through an exterior wall with a plenum (VPAWP1-8, VPAWP1-14) and an external louver. If the default plenum and louver combinations are not used, the selections and design must be evaluated by us to ensure the total pressure drop does not exceed the maximum allowable limits.

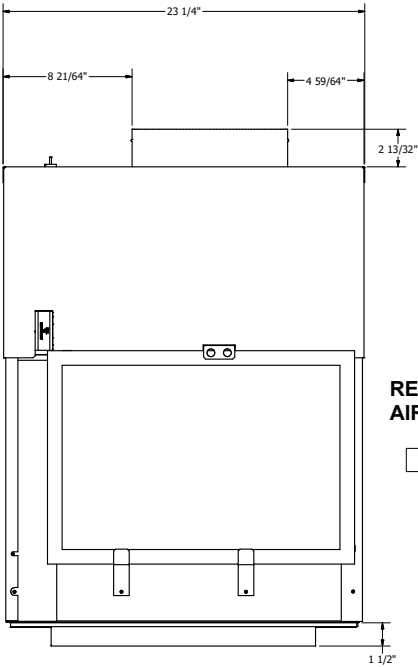
Condenser External Static Pressure			
Model	Design		Maximum
	CFM	ESP ("WC)	ESP ("WC)
VHA09	650	0.03	0.12
VHA12	650	0.03	0.12
VHA18	950	0.03	0.12
VHA24	980	0.03	0.12

UNIT DIMENSIONS - VHA09/12

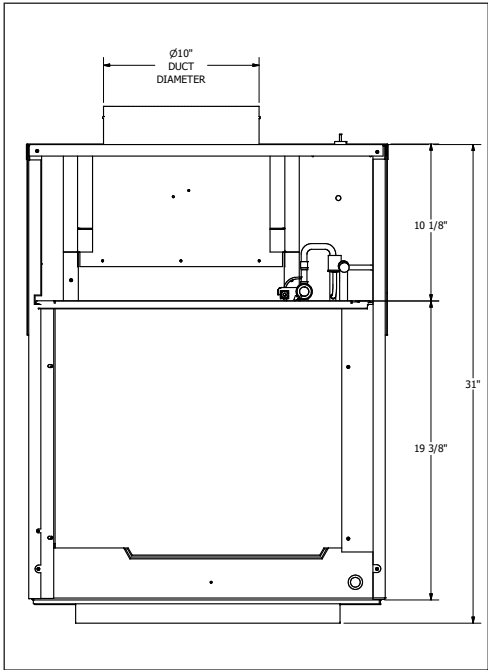
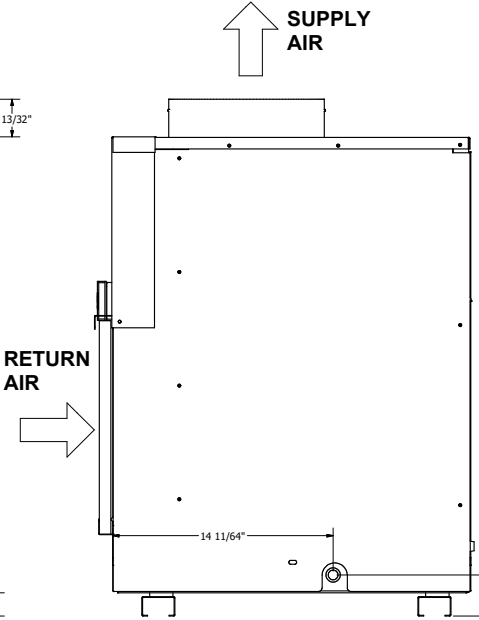
Side



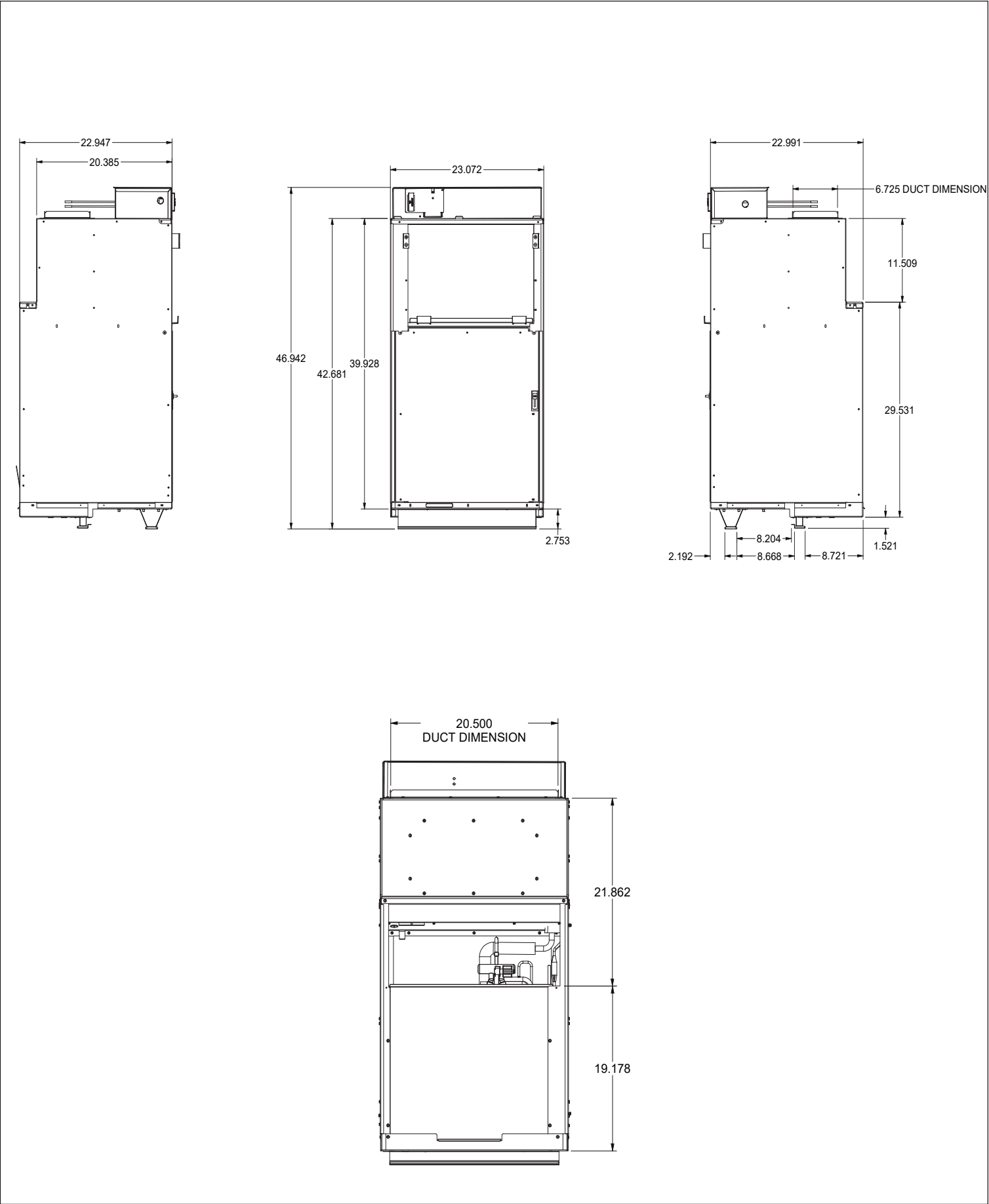
Front



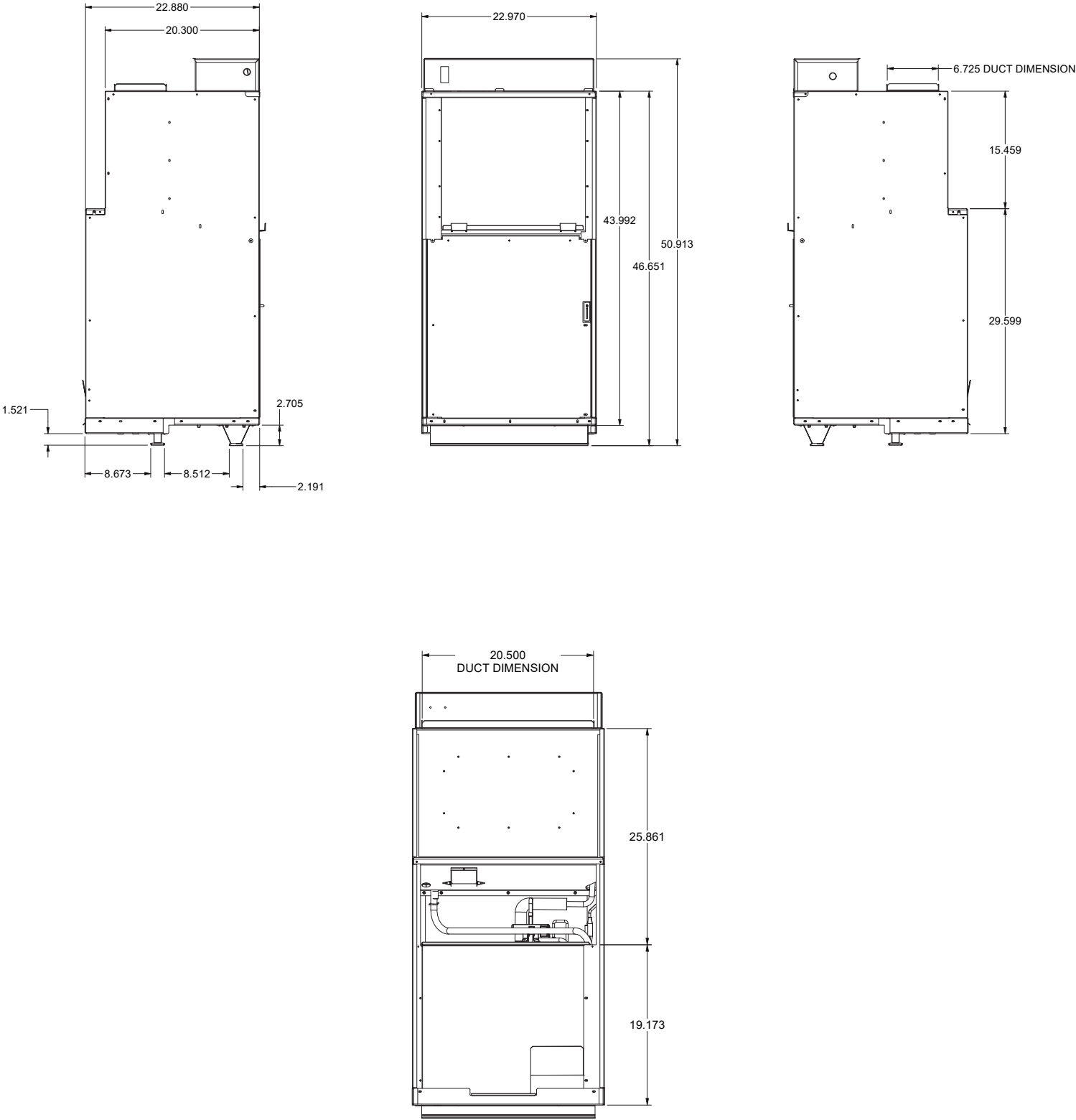
Side



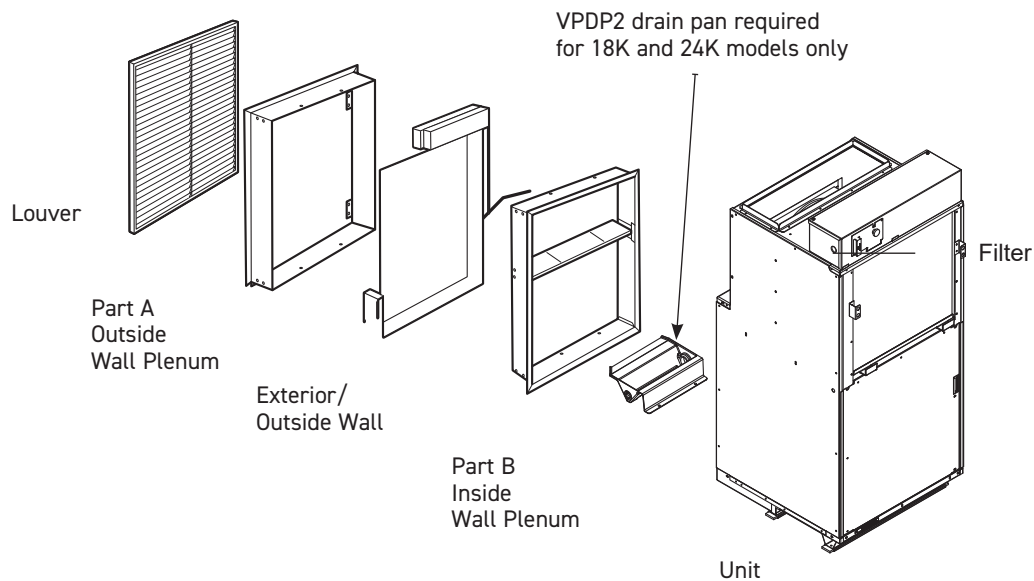
UNIT DIMENSIONS - VHA18



UNIT DIMENSIONS - VHA24



TYPICAL INSTALLATION FOR VERT-I-PAK



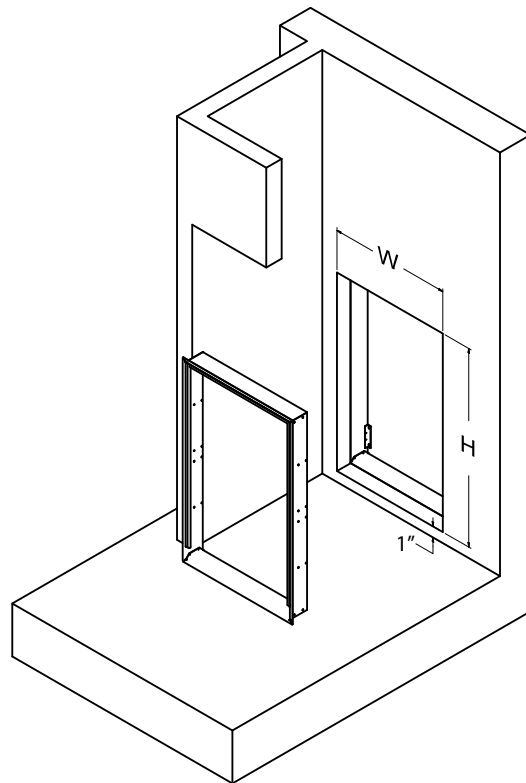
VPAWP1-8 = 4 1/2" - 8" D x 24 1/8" W x 30 3/8" H

VPAWP1-14 = 8" - 14" D x 24 1/8" W x 30 3/8" H

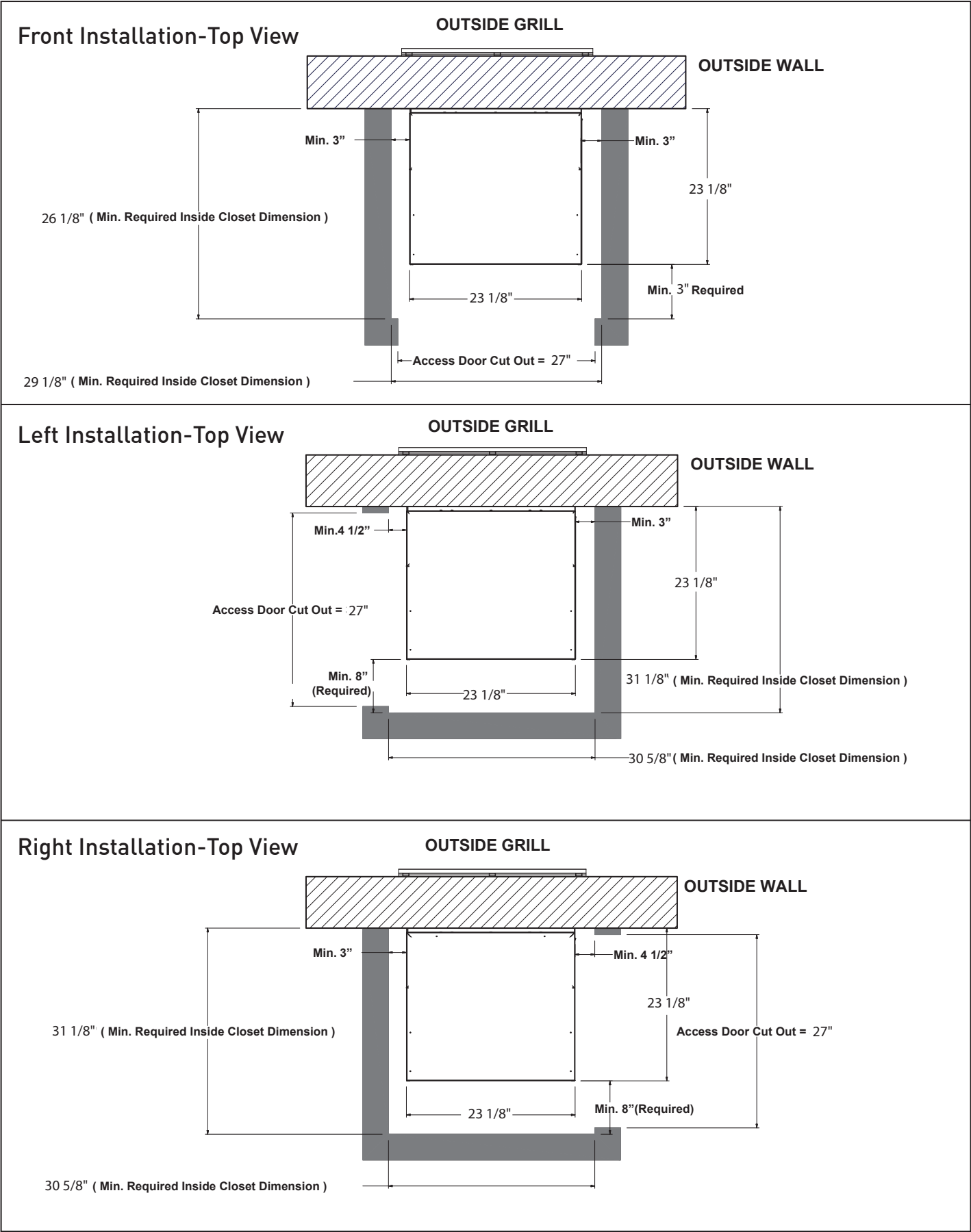
INSTALL DIMENSIONS

Dimensions (W x H):
24 5/8" x 30 7/8"

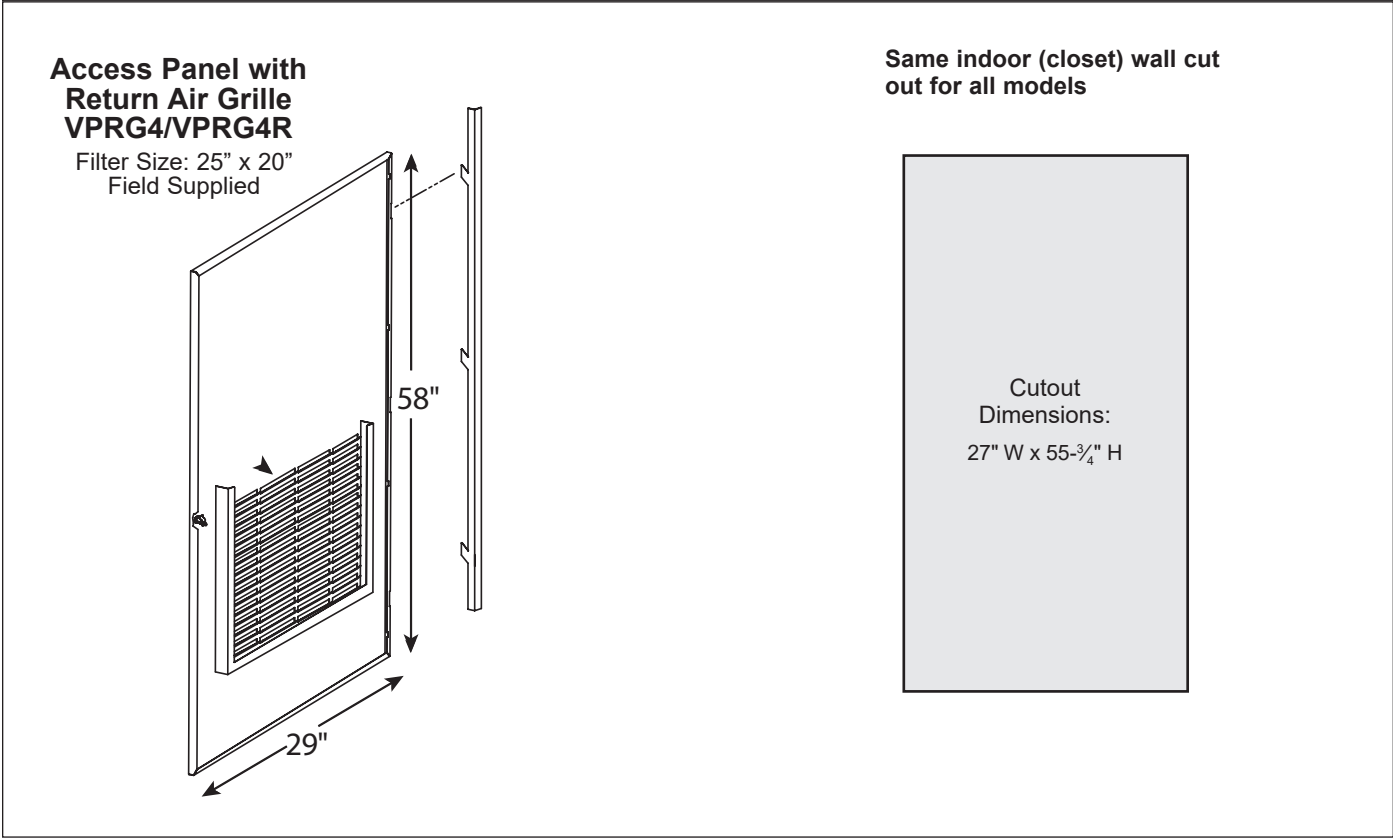
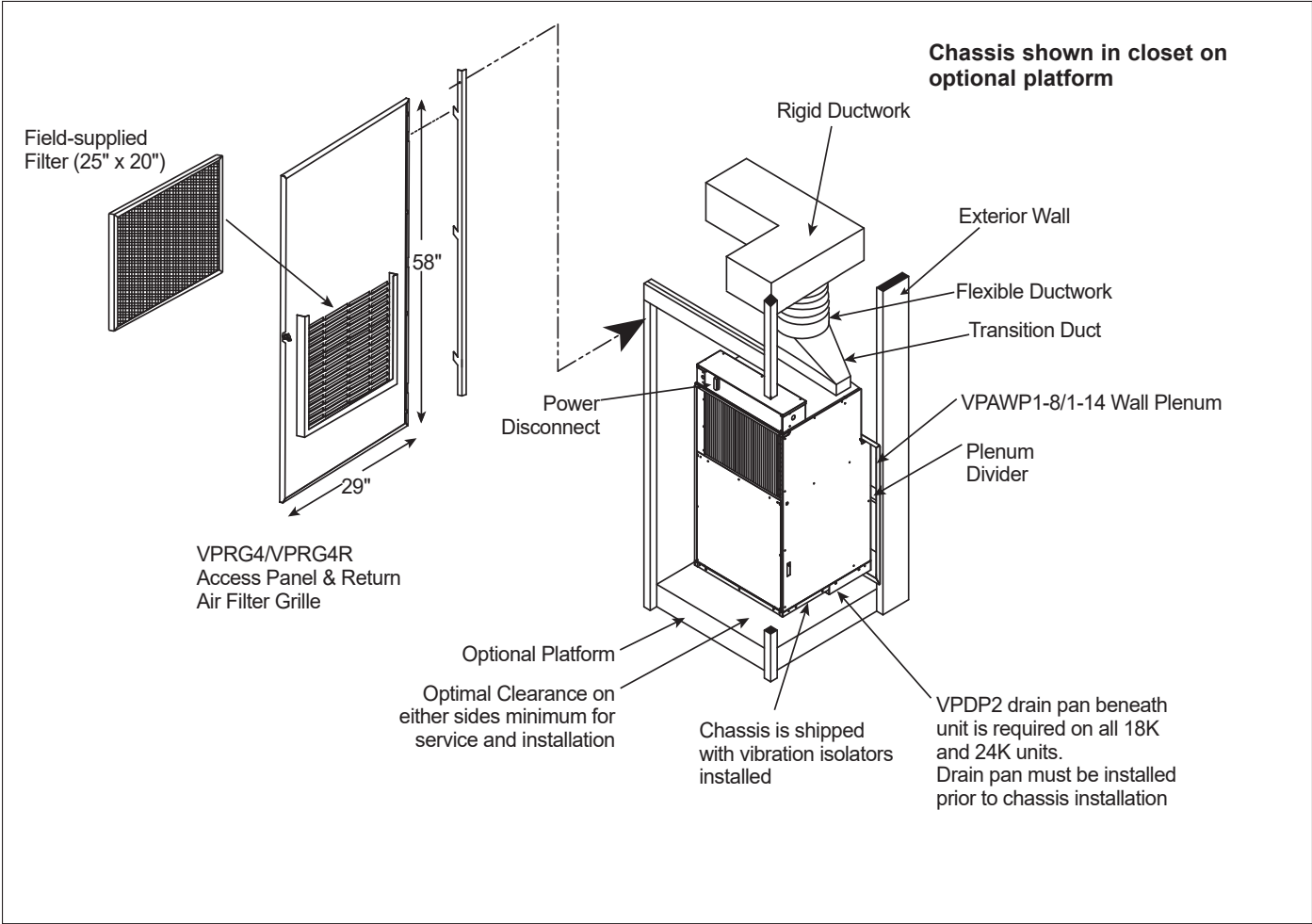
NOTE: The distance between the rough opening and the finished floor/platform must be 1".



INSTALLATION OVERVIEW
CLOSET ORIENTATIONS AND DIMENSIONS

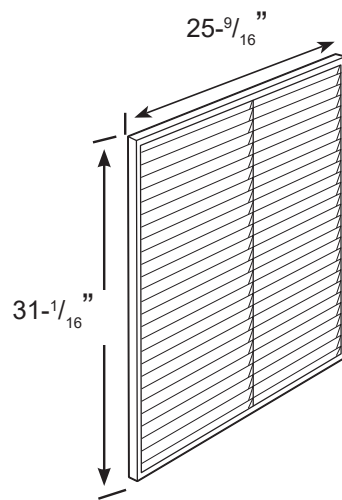


TYPICAL CLOSET FOR VERT-I-PAK



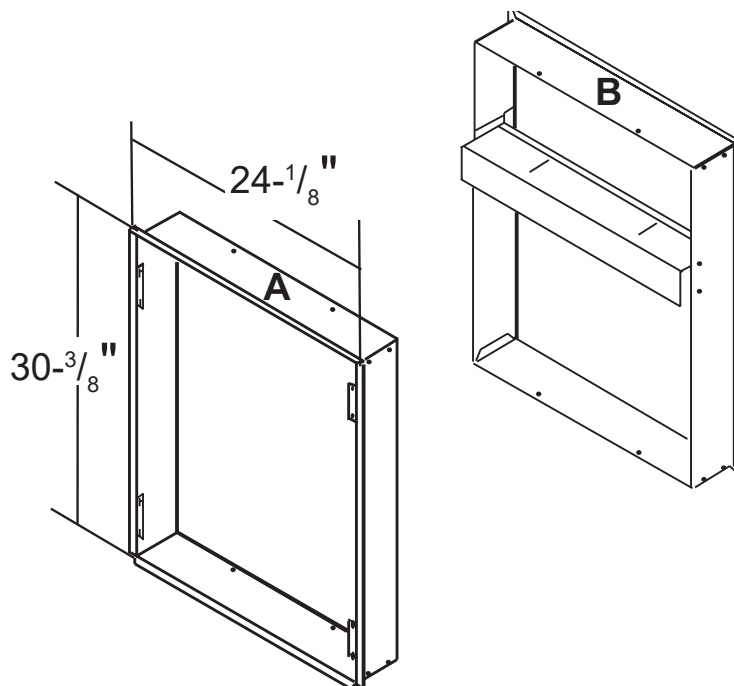
ACCESSORIES DIMENSIONS

Louver



Architectural Louver
VPAL2/-42/VPSC2/-42

Wall Plenum



Cutout
Dimensions:
 $24\frac{5}{8}$ " W x $30\frac{7}{8}$ " H

Wall Plenum
VPAWP1-8 - Wall width 4" to 8"
VPAWP1-14 - Wall width 8" to 14"

Application and Installation

LOW AMBIENT PERFORMANCE

- All models are equipped to function as a heat pump down to 10°F. The Primary call for heating is always heat pump and the electric heat comes on when thermostat energizes W2 (emergency heat). Electric heat is backup and not supplemental.
- All models are equipped with an integrated base pan heater that aids in the continuous operation of heat pump even at freezing temperatures
- All models are equipped to run a Defrost Cycle based on the outdoor coil temperature and ambient temperature. During this cycle, the unit runs in air-conditioning mode to remove frost from the outdoor coil. Electric heat is allowed to function along with the compressor (only during defrost) to continue conditioning the space (if required).

Base Heater [kW]	Heat O/P During Defrost [Btu/hr]
2.45	3,070
3.35	5,290
5	11,600
7.5	17,060
10	17,060

Installation Guidelines

- Chassis is to be installed against an exterior wall. Wall cutout dimensions will be 24 5/8" w x 30 7/8" h.
- Closet should allow for a minimum of three inches on three sides of the unit for return air (if front installed), drain connections and change outs.
- Minimum recommended access door rough-in measurements 27" wide by 55 3/4" high (for VPRG4/VPRG4R).
- It is recommended to use a platform between 24" and 36" above the floor, for ease of installation and serviceability.
- Duct outlet designed for external static pressures up to 0.3" on 9K and 12K Btu/hr models
- Duct outlet designed for external static pressures up to 0.4" on 18K and 24K Btu/hr models
- Wall plenum allows chassis to be inserted 2 3/8" into plenum, thereby minimizing closet dimensions.
- Quick connect drain coupling ships standard to make installation and removal easier.

Application and Accessories (All models)

- The use of a factory supplied wall plenum is required for installation. Plenum opening is 1" above the finished floor (VPAWP1-8 / VPAWP1-14).
- Return air is accommodated with a return air filter attached to the unit or through the use of a return air filter grille. (VPRG4/VPRG4R).
- Exterior louvers are available in anodized aluminum (VPAL2/VPAL2-42) or in custom painted colors (VPSC2/VPSC2-42).
- Unit is controlled by a remote wall-mounted thermostat. model WRT2 wireless digital thermostat, RT7 wired digital thermostat, RT7P wired programmable thermostat, or EMRT4 or EMWRT4 Energy Management thermostats.

Application and Accessories (18K & 24K Models)

- The VHA18 and VHA24 models require installation of the large chassis drain kit (VPDP2) or (VPDP2LA).
- The VPDP2LA (Low Ambient drain Pan) is recommended to prevent drainpan icing when extended heat pump operation can be expected below 32°F. Please reference the VPDP2LA installation manual for more detailed instructions.
- As an alternative to the low ambient drain kit, a thermostat equipped with an outdoor temperature sensor or a Wi-Fi thermostat may be used, provided it is configured to automatically switch the unit to electric heat when the outdoor temperature reaches 32°F, thereby helping to prevent drain pan icing.

HVAC Engineering Specifications

Single Packaged Heat Pumps

Cooling: 9,400 – 22,600 Btu/hr

Heating: 8,600 – 19,500 Btu/hr (Heat Pump)

8,500 – 34,130 Btu/hr (Back Up Electric Heat)

All units shall be factory assembled, piped, wired and fully charged with R32. All units shall be certified in accordance with AHRI Standard 210/240 under space constrained unitary small equipment. Units shall be ETL listed and carry a ETL label. All units shall be factory run-tested to check operation and be manufactured by Friedrich or equivalent.

The basic unit shall not exceed 23 1/8" wide x 23 1/8" deep. Overall height of the unit from the bottom of the isolators to the top of the duct collar shall not exceed 32 1/4" for models up to 12,000 Btu, 47 1/4" for 18,000 Btu models, and 51 1/4" for 24,000 Btu models. The unit shall be designed so that the unit will insert into a factory supplied wall plenum 2 3/8" to minimize room intrusion. Factory supplied wall plenums shall allow for installation through walls from 4 1/2" – 14" in thickness. Wall plenums will be adjustable to minimize installation clearances. Unit shall draw in ambient air through upper portion of an outside architectural louver measuring 25 9/16" wide x 31 1/16" high and shall exhaust heated air out through the lower portion of the louver. The unit shall be secured to the architectural louver by means of a two part, weather-resistant wall plenum. The unit shall be capable of left, right or straight-in installations into mechanical closet without field modifications.

REFRIGERATION SYSTEM – The refrigeration system shall be hermetically sealed and consist of a rotary compressor that is externally mounted on vibration isolators no smaller than 1 3/4" dia. x 1 1/2" high; condenser and evaporator coils constructed of copper tubes and aluminum plate fins; and capillaries as expansion devices. Unit shall have a fan slinger ring to increase efficiency and condensate disposal. A primary condensate removal system consisting of 3/4" FTP fittings on multiple locations shall exist. A secondary overflow from the primary drain pan shall expel water to the outside of the building through the wall plenum and louver in the event that the primary drain line clogs.

AIR HANDLING SECTION – All models shall utilize separate motors for both the indoor and outdoor air sections. Airflow shall be directed vertically up through a rectangular opening. The size of the opening is same for 9K and 12K units; and same for 18K and 24K units.

The chassis shall have a built-in damper capable of providing up to 60 CFM of fresh air into the conditioned area. A fine mesh screen shall filter the incoming fresh air. The damper can be controlled by a slide lever located on the front of the unit.

CONTROLS – The unit shall be factory equipped with terminal strip for connection to a standard 24-volt single-stage heat/cool thermostat. A transformer shall be included and factory wired to work with Friedrich branded or factory approved devices. Low voltage inputs will include: C (common), R (24V power), Y (cooling), G (fan), W (heat) and B (reversing valve). The unit shall be hard-wired and have a quick-disconnect to disable power for control box service.

GENERAL CONSTRUCTION – The unit shall be constructed of 18-gauge galvanized zinc-coated steel. The unit shall feature 1/2" foil backed insulation for sound and thermal efficiency.

The wall plenum (required factory accessory) shall be shipped separately and constructed of 20-gauge galvanized zinc-coated steel; pretreated with zinc-phosphate and sealed with a chromate rinse, then powder-coated for maximum coverage and protection. The plenum shall be black in color for minimal visibility of unit from exterior of building. The plenum shall be shipped with a protective weatherboard for use prior to final installation of the louver and chassis.

The architectural louver (required factory accessory) shall be shipped separately and fabricated from extruded anodized aluminum with louvers in the horizontal plane.

The unit shall include vibration isolators mounted under the chassis and a nonrigid plenum-to-chassis connection to isolate vibrations to the building.

The unit shall have a plastic fan, fan shroud and drain pan and aluminum outdoor coil endplates for corrosion protection and to help prevent rust on the side of the building below the outdoor louver.

The unit shall be shipped with return air filter brackets and a 14" x 20" or 18" x 20" filter affixed directly on to the unit chassis. Optional return air grilles and access panels shall be available as factory accessories for installation in the wall or door of the mechanical closet.

CORROSION PROTECTION – The unit shall feature corrosion-resistant materials and finish to help prevent deterioration.

The indoor and outdoor coils have Diamonblue advanced corrosion protection consisting of hydrophilic-coated fins to prolong the life of the coil in all applications including seacoast protection.

ACCESSORY ACCESS PANEL – An optional factory-supplied access panel shall be available to provide access to the unit and adequate return air. The panel shall feature a filter holder to accept a field supplied 25" x 20" x 1" filter. Kit shall contain a hinge bracket for mounting the door with the return air openings high or low on the door for optimal sound attenuation.

WARRANTY – The warranty is one year on all parts and labor and 5 years on the sealed system, parts and labor, including compressor, indoor and outdoor coils and refrigerant tubing.

Vert-I-Pak® Accessories

ARCHITECTURAL LOUVER (required)

Extruded aluminum grille that attaches to the outdoor section of the wall plenum; VPSC2 and VPSC2-42 can be ordered in custom colors.

VPAL2/VPAL-42 & VPSC2/VPSC2-42
Dimensions – 25 9/16" W x 31 1/16" H

HURRICANE LOUVER (optional)

Miami Dade rated VTAC louver to help secure projects along the coast in TAS 201 high velocity hurricane zones
VPAL2HD Miami Dade Architectural Anodized Aluminum Louver
VPSC2HD Miami Dade available in custom colors

WALL PLENUM (required)

Two-part telescoping sleeve that sits inside the exterior wall penetration.

VPAWP1-8 (telescopes from 4–8") & VPAWP1-14
(telescopes from 8–14")
Dimensions – 24 1/8" W x 30 3/8" H
24 5/8" W x 30 7/8" H (cutout)

RETURN AIR GRILLE/ACCESS PANEL/SOLID DOOR ACCESS PANEL (required)

Hinged panel allows access to unit and return air filter.
VPRG4 (default left-hinged), VPRG4R (right-hinged) & VPRG4SD (solid door)
Dimensions – 29" W x 58" H
27" W x 55 3/4" H (cutout)

NOTE: A field-supplied filter should be mounted on the inside grille; Panel can be mounted with return air opening/louvers on top for better sound attenuation with small chassis units.

FIRST COMPANY SLEEVE ADAPTER (optional)

Single-piece, welded adapter easily connects to Friedrich chassis and allows retrofit into existing First Company® SPXR-series single package unit wall sleeve and louver.

VPASA1

NOTE: Only compatible with Friedrich VHA09 and VHA12 units.

DRAIN PAN (required for VHA18 and VHA24 models)

Must be installed prior to chassis for easy installation/removal.
VPDP2/VPDP2LA
The VPDP2LA (Low Ambient drain Pan) is recommended to prevent drainpan icing when extended heatpump operation can be expected below 32°F.

TRANSITION KITS (optional)

Single piece allows retrofit into existing 10" round flexible ducts for any VTACs.

VPTRL (compatible with VHA18, VHA24)

NOTE: VHA09 and VHA12 (RCQ series) have 10" round supply take-off.



VPAL2



VPAWP1-8/14



VPRG4/VPRG4R



VPRG4SD



VPASA1



VPDP2/VPDP2LA

Vert-I-Pak® Accessories

Heat Pump Thermostats

RT7P

Wired, wall-mounted programmable thermostat with backlight

RT7

Wired, wall-mounted digital thermostat with backlight

WRT2

Wireless, wall-mounted programmable thermostat with backlight



RT7P



RT7



WRT2



Energy Management Thermostats

EMRTA4/EMWRTA4 - White

EMRTB4/EMWRTB4 - Black

Wired/wireless w/occupancy sensor

EMRAF4

Energy management system remote access fee. One fee per controller.

EMRDS4

Wireless door/window sensor

EMCWPA4/ EMCWPB4

Wall plate

EMOCT4

Online connection fee and kit for Energy Management. One fee per building

EMROS4

Remote occupancy sensor

EMRTS4

Remote temperature sensor

EMRWOS4

Wireless occupancy sensor

EMZBU4

Door Lock Integration Chip



EMRTA4/EMWRTA4 - White
EMRTB4/EMWRTB4 - Black

FreshAir® IAQ

Friedrich® FreshAir® IAQ are proven, easy-to-install accessories that improve the health and quality of indoor air.

FILTRATION (field-supplied filter)

FreshAir MERV 13 filtration is effective at capturing and removing microorganisms from the air.

FRESHAIR® MERV 13 FILTER BRACKET KITS

VPFK0912-2

2" MERV 13 filter bracket kit for VHA09, VHA12

VPFK0912U

2"-4" MERV 13 telescoping filter bracket kit for VHA09, VHA12

VPFK1824-2

2" MERV 13 filter bracket kit for VHA18, VHA24

VPFK1824U

2"-4" MERV 13 telescoping filter bracket kit for VHA18, VHA24



VPFK0912-2
VPFK1824-2



VPFK0912U
VPFK1824U

FRESHAIR® PURIFIER - APWR1

FreshAir® Purifier by iWaves is an optional accessory that kills mold, bacteria, and viruses—while effectively removing odors and VOCs.

OUTSIDE AIR VENTILATION

All Friedrich Vert-I-Pak units are manufactured featuring passive outside air ventilation. Up to 60 CFM of fresh outside air can be brought into the space during unit operation.



APWR1



Sustainability

At Rheem, sustainability isn't just a feature we add to our products — it's a foundation of who we are as a company. As an industry leader, we continue to innovate and reimagine air and water solutions that drive our customers' success and protect the environment we all share. Because doing good isn't enough — we're committed to A Greater Degree of Good™



Warranty Information

Current warranty information can be obtained by referring to https://www.friedrich.com/professional/support/product-resources?ac_type=&type=Warranty

The AHRI Certified® mark indicates our participation in the AHRI Certification program. For verification of individual certified products,

go to www.ahridirectory.org

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