

FEATURES

Design

High Efficiency Components

- There are two different Rotary models in the self-contained Vector Rotary Series - VRM and VRP. Both use a different control. For details, see specifications.
- High efficiency Tecumseh rotary compressors provide reduced amperage, quieter operation, lower weight and increased reliability.
- Condenser coils constructed of spiral, fluted cupronickel encased in a copper shell provide maximum heat transfer and high corrosion resistance to sea water flow.
- Evaporator coils utilizing raised lance fin design and rifled copper tubing provide maximum capacity.

Electrical Box

- Completely enclosed, water resistant box protects electrical components.
- 5' harness allows for a remote, accessible location.
- Internal field wiring connections meet CE Low Voltage directive.

Unit Design

- Full base pad decreases noise and vibration.
- Blowers are fully insulated and rotatable.

Quality Assurance

- This product has the most comprehensive warranty in the industry.
- Each unit is leak-tested, pre-charged and test run in all operating modes.
- Each unit is pre-charged, test run in all operating modes and leak checked.
- Charge Guard® protection provides sealed access ports, ensuring environmental protection and system integrity.
- All units meet or exceed applicable ABYC and U.S. Coast Guard regulations, CE Directives and general Air Conditioning and Refrigeration Industry (ARI) standards.



SPECIFICATIONS

Model	VR*7K	VR*9K	VR*12K	VR*16K	VH*24KI ⁽²⁾	VH*24KS ⁽³⁾
Capacity (BTU/H) ⁽¹⁾	7,000	9,000	12,000	16,000	24,000	24,000
Voltage(VAC)	115V 230V	115V 230V	115V 230V	115V 230V	230V	230V
Full Load Amps (FLA)						
Reverse Cycle	7.8 4.1	9.5 5.0	11.0 5.9	14.7 7.2	10.6	10.3
Straight Cool	6.8 3.6	8.3 4.4	10.0 5.1	12.7 6.2	9.3	8.4
Locked Rotor Amps (Comp)	36.2 17.7	39.2 23.0	48.3 27.0	67.0 29.0	60.0	56.0
K.V.A. (Kilo Volt-Amps)						
Reverse Cycle	0.9 0.9	1.1 1.2	1.3 1.4	1.7 1.7	2.4	2.4
Straight Cool	0.8 0.8	1.0 1.0	1.2 1.2	1.5 1.4	2.1	1.9
Max. Circuit Breaker (Amps)	20.0 10.0	25.0 15.0	30.0 15.0	40.0 20.0	40.0	35.0
Min. Circuit Ampacity (Amps)	14.0 7.0	16.0 11.0	20.0 11.0	26.0 14.0	24.0	22.0
Refrigerant R-22 (oz/g)	10/284	14/397	20/567	21/595	24/624	22/572
Net Weight (lbs/kg)	55/25.0	66/29.9	68/30.8	72/32.7	135/61.4	135/61.4
Ship Weight (lbs/kg)	64/29.0	75/34.0	77/34.9	81/36.7	143/65.0	143/65.0
Min. Duct Size Dia. (in/cm)	5/12.7	5/12.7	6/15.2	7/17.8	8/20.3	8/20.3

⁽¹⁾ 60Hz capacities given. 50Hz only, full-rated units available. At 50Hz operation, capacity is reduced by 17% on standard product.

⁽²⁾ Contains high efficiency reciprocating compressor. Also available with scroll compressor.

⁽³⁾ Contains high efficiency scroll compressor.

*P= Passport II Control, M= Mechanical Control Panel (MCP)

Installation Guidelines for Vector Rotary

When choosing the proper model **Vector Rotary** self-contained unit, primary consideration should be given to calculated BTU loads and available power supply. Special consideration should be given in determining the reverse cycle heating capacities under anticipated conditions. Reverse cycle operation is affected by the sea water temperature. As it decreases, the units heat transfer capacity also decreases and proportionately affects the output of warm air. It is not recommended that the unit be operated in the heat cycle with water temperatures below 40°F.

The location of the **Vector Rotary** self-contained unit should be dry and accessible for service. The only air access should be from the return air source - never from the bilges, engine room or other combustible vapor source. Avoid odoriferous air sources: i.e., heads, holding tanks, etc. Placement of the unit should be adjacent to a low return air access from the area to be conditioned. The unit should be installed with the proper fasteners and secured to a horizontal surface sufficient for the unit weight and torsional load from the vessel's movement. The remote electrical box may be fastened to a bulkhead using the hardware provided.

Grilles should be sized according to Marine Air design standards. Install the return air grilles low and the supply air grilles high. Return air grilles must have removable filters installed. Ducting should be sized according to unit specifications.

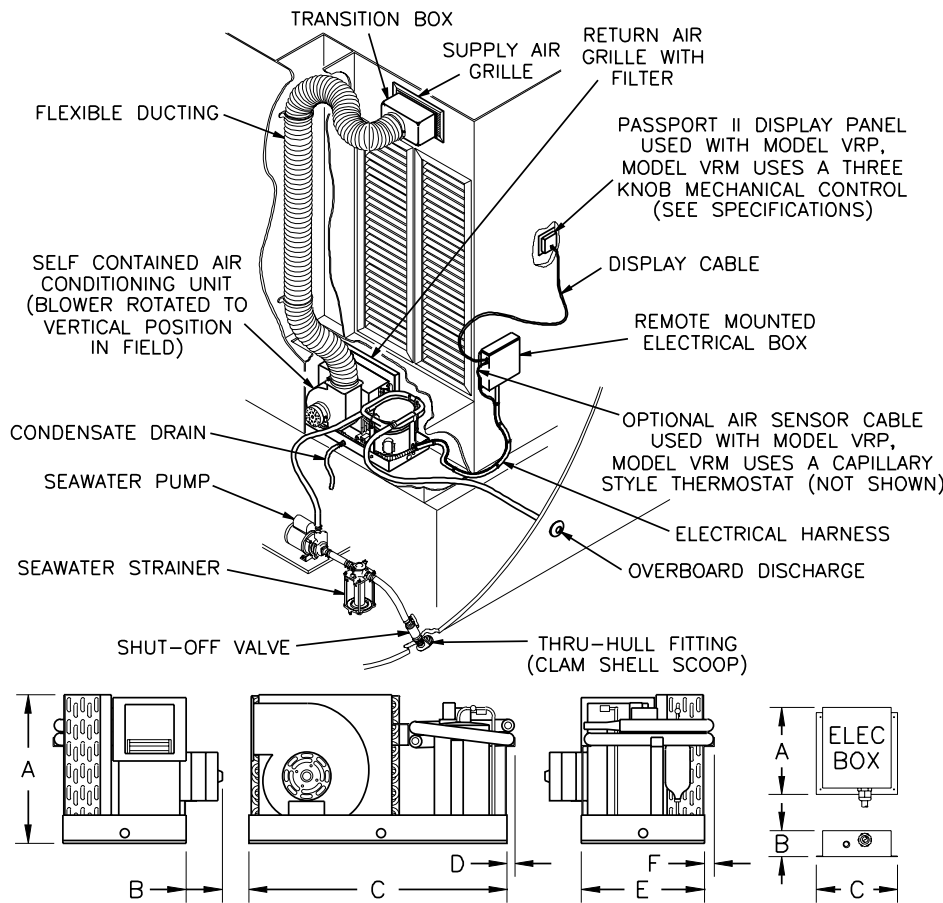
All ducting should be installed to be as smooth, straight and taut as possible, avoiding any unnecessary bends or loops. Once ducting runs are positioned properly they should be securely fastened to avoid shifting due to motion of the vessel. Trim excess ducting.

Plastic vacuum-formed and insulated aluminum transitions are available for proper air flow direction into any cabin or area. Ducting should be properly secured to these transitions to prevent air flow leakage. Built-in plenums or chases must be sized properly, completely sealed and insulated.

Reinforced marine grade hose should be used for the sea water circuit. All fittings must be double/reversed hose clamped. The hose should be routed upward from the thru-hull intake to the condensing unit to prevent air locks in the centrifugal sea water pump. Condensate drains must be routed downward, without any kinks or restrictions, to a sump or overboard discharge and must be securely fastened.

Circuit breakers and wire gauge must be sized according to marine design standards. Only stranded tinned copper wire should be used. All equipment should be properly grounded.

In keeping with regulations set forth by the EPA, only certified technicians should perform service on, or make adjustments to, the refrigerant circuit.



DIMS in/cm	
7,000	A 11.85/30.1
	B 1.35/3.4
	C 20.10/51.1
	D 0.25/0.6
	E 11.05/28.1
	F 0/0
9,000	A 13.10/33.3
	A* 11.60/29.5
	B 2.20/5.6
	C 23.50/59.7
	D 0.50/1.3
	E 11.20/28.5
12,000	A 13.38/34.0
	A* 12.50/31.8
	B 2.40/6.1
	C 23.50/59.7
	D 0.75/1.9
	E 11.20/28.5
16,000	A 13.83/35.1
	B 3.30/8.4
	C 23.50/59.7
	D 0.75/1.9
	E 11.20/28.5
	F 1.00/2.5
24,000	A 18.75/47.6
	A* 17.25/43.8
	B 2.00/5.1
	C 28.50/72.4
	D 1.00/2.5
	E 16.00/40.6
F 0/0	

A* = HEIGHT WITH BLOWER ROTATED DOWNWARD IN FIELD

ELEC BOX DIMS in/cm	
VRP7-16	VRM7-16
A 9.3/23.6	9.3/23.6
B 2.8/7.1	2.8/7.1
C 9.7/24.7	8.7/22.1
VHP24	VHM24
A 11.0/27.9	11.0/27.9
B 3.5/8.9	3.5/8.9
C 12.6/32.1	12.6/32.1

In the interest of product improvement, Marine Air Systems' specifications and design as outlined herein are subject to change without prior notice.

Sold and Serviced By:



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