

# Vortex A/C Enclosure Coolers



**HOFFMAN**

## FREQUENTLY ASKED QUESTIONS

Question	Answer
<b>What parts come with the Vortex A/C Enclosure Cooler?</b>	The VA (Quiet) series is supplied with the air conditioner, 5-micron automatic drain compress air filter, cold ducting kit, and cold air muffler. The VHL (Hazardous Location) series is supplied with all items mentioned in addition to the check valve.
<b>Are replacement parts available?</b>	Yes. A complete list of replacement parts are listed on the spec sheet. Common replacement parts are stocked and priced for ordering.
<b>What are the advantages of the Vortex A/C models vs. the traditional tube Vortex Coolers?</b>	The Vortex A/C can be mounted on the front door of an enclosure, which the vortex cooler cannot, uses a mechanical thermostat vs. electric thermostat, and is 78% quieter than the traditional tube vortex coolers.
<b>Is the Hazardous Location models rated to ATEX or IEC?</b>	No. The Hazardous Location models are UL Classified for Class I, Div. 2 Groups A through D; Class II Div. 2, Groups F & G; and Class III locations.
<b>Does a purge system need to be used with the Hazardous Location models?</b>	Yes. The Hazardous Location models need to be used with an approved purge/pressurization system. See <a href="http://hoffmanonline.com">hoffmanonline.com</a> for available purge systems.
<b>My refrigerant-based enclosure air conditioner is located near an oven, and in the summer it "cuts out" when ambient temperatures get too high. Can I effectively use a Vortex Cooler or Vortex A/C here?</b>	Yes. Vortex Coolers or the Vortex A/C will operate trouble-free in extreme temperatures and in dirty inhospitable environments. As long as the compressed air supply is kept properly filtered and dried, a Vortex Cooler will lower the incoming compressed air supply by 40 to 50 degrees Fahrenheit or more. Of course, avoid running the compressed air supply line near the oven.
<b>I currently use a filter-fan to draw air into the enclosure. In the hotter summer months it cannot keep the controls cool enough. Can I install a Vortex Cooler or Vortex A/C and operate it with the fan during those hot months?</b>	No, not efficiently. The fan will continue to pull in warmer humid air. The humidity in the ambient air will condense on the much colder Vortex Cooler components causing unwanted water droplets to form. You must remove the fan and filter and seal up the openings in the enclosure to prevent ambient air from entering the enclosure. The fan can be located inside the enclosure, if desired, to circulate the cold air.
<b>How much inline pressure does a Vortex Cooler or Vortex A/C need?</b>	These panel coolers are designed to use a filtered, factory compressed air supply of 80 to 100 psig. Unless compressed air pressures fluctuate widely or run considerably higher than 110 psig, do not use a pressure regulator to reduce the inlet pressure. Pressures lower than 80 psig, limit inline airflow into the enclosure, thus reducing the BTU/hr cooling capacities of the coolers.
<b>What inlet line sizes do I install?</b>	A Vortex Cooler or Vortex A/C enclosure cooler with up to a 5,000 BTU/hr capacity can be supplied using 3/8" schedule 40 pipe that has a drop (distance from the main supply) less than 10'. A 3/4" schedule 40 pipe would be used for a distance up to 50'.  Rubber hose with a suitable pressure rating can be used to supply the coolers. A 1/2" hose is used in place of a 3/8" pipe; 3/4" hose used in place of a 1/2" pipe; and 1" hose is used in place of a 3/4" pipe. Only new rubber hose should be used to supply Vortex Coolers. A used rubber hose normally will have cuts on the inside wall (inside diameter) and be contaminated from inadequate filtration of particulate and oils. Select the compressed air line size appropriately and remember that lower inline pressures will produce a greater inline pressure drop and subsequent lower airflow and BTU/hr cooling capacity.

Question	Answer
<p><b>How do I remove moisture, dirt and oil from compressed air?</b></p>	<p>All compressed air systems will have condensed water, rust (scale) and dirt in the lines. To remove this contamination from the compressed air, a 5-micron filter separator with an automatic drain is provided with all Vortex A/C and Vortex Cooler systems. Properly maintained, these filters will ensure that only clean and dry, refrigerated air will enter the enclosure.</p> <p>A dryer usually is not required for proper operation, except when the normal relative humidity level is very high. A desiccant or refrigerated type dryer can be used in the inlet line to eliminate water vapor in the supply. The dryer should be rated to produce an atmospheric dew point lower than the output temperature of enclosure cooler.</p> <p>If upon start up of the compressor every day, large amounts of water are produced, a bulk water removal filter should be used upstream of the 5-micron filter.</p> <p>It is not necessary to supply lubricated air to a Vortex Cooler; in fact, excess oil and oil aerosols must be removed from the compressed air supply. Coalescing type filters are available for older compressors that have a lot of oil carryover.</p>
<p><b>Is maintenance required?</b></p>	<p>Because these cabinet cooling devices have no moving parts, they are reliable and require little maintenance. It is only necessary to change elements in the compressed air filter at regularly scheduled intervals. A minimum interval of six months is recommended; however, the cleanliness of the compressed air supply will determine the change frequency of the filter element.</p>
<p><b>What are the advantages of using a Vortex A/C or Vortex Cooler compared to a typical enclosure air conditioner?</b></p>	<p>Low purchase price, compact size, ease of installation, little to no maintenance, greater reliability, and ability to operate in harsh environment.</p>
<p><b>What if I just want to keep my enclosure at a slight positive pressure and it is not in a hazardous location?</b></p>	<p>If it is desired to cool the enclosure and maintain a slight pressure just to keep out infiltrating dust and dirt (and the enclosure is NOT in a hazardous location), then alternatives are available: One, the Vortex Cooler can be operated continuously without a thermostat, as long as the heat load remains fairly constant. Two, Vortex A/C models are equipped with a purge-air port that, when opened, will allow a small portion of low pressure air to "bleed off" into the enclosure to pressurize it, regardless of whether or not the unit is in the cooling mode or not. These models do not require an additional compressed air connection or mounting hole.</p>
<p><b>What is the power consumption of the solenoid valve in my Vortex Cooler System?</b></p>	<p>For all 120 volt and 230 volt AC systems, the power consumption does not exceed 15 watts (.13 amps maximum for 120 volt systems and .07 amps for 230 volt systems).</p>

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