# **VORTEX COOLER INSTALLATION & MAINTENANCE**

#### **Compressed Air Supply Lines**

To obtain maximum performance from the Vortex Cooler, measurements of pressure (psig) and volume (scfm) of air must be obtained. Pressure drops in the compressed air lines should be held at a minimum. Quick connects can "starve" the Vortex Cooler by causing excessive line pressure drops. Do not use plastic tubing. The chart below suggests line sizes for pipes and hoses.



Your Enclosure Source ®

Line Sizes for	10 Ft (3m)		10 - 50 Ft (3 - 15m)		50 - 100 Ft (15 - 31m)	
Runs Up To:	Pipe	Hose	Pipe	Hose	Pipe	Hose
All models	1/4″	3/8″	3/8″	1/2″	1/2″	5/8″

#### **Compressed Air Supply**

Air lines are plagued with condensed water vapor, oil or oil vapor in the air lines. This condensation leads to rust and debris in the air lines. Small orifices in the Vortex Cooler may become clogged with rust, dirt, and water droplets from these unfiltered air supplies. A 5-micron filter is required to separate harmful foreign matter from the air supply, allowing virtually maintenance free operation. The use of an oil filter with an effective filtration of 0.01 ppm will remove the oil droplets for an even cleaner air supply. Keep in mind that the current line or air hose might contain dirt or oil and should be blown out before installation. Also, pipe thread sealant or tape must be carefully applied to avoid clogging product orifices.



#### Using the Vortex Cooler

The vortex generator determines the volume of air through the Vortex Cooler. The vortex generator is an internal plastic part already installed in the Vortex Cooler. Vortex Coolers have replaceable generators available in 8, 10, 15, 25, & 35 CFM. This allows you to make changes to the output of your vortex cooler without having to purchase another cooler. See the figure on the left for assembly details.

#### Installation

For use on a flat surface of a UL Type 12, 4, 4X enclosure. The vortex cooler mounts in a standard 3/4" electrical knockout and is secured with the supplied machine nut torqued about 20 lbs. Supply air connection is 1/4 NPT.

#### Ducting

The 7' of plastic hose connects to the cold end of the Vortex Cooler once it is mounted to the enclosure. This allows more efficient use of the cold air by routing the cold air to hot spots in the enclosure. Punch holes in the tube at each of the hot spots. The open end of the tube should be placed at or near the bottom of the enclosure, so that cold air enters at the bottom, forcing the warm air at the top of the enclosure out through the warm air baffle in the cold end fitting.

#### Maintenance

The Vortex Cooler has no moving parts. Clean compressed air moving through the unit will not cause any wear. Dirt or moisture will cause problems and will affect the efficiency of the unit. If this happens simply disassemble the unit, clean the parts and reassemble them, making sure to properly seat the o-ring and generator. See the figure on the left for assembly details.

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Troubleshooting					
Vortex Cooler Performance Issues	Action				
Inadequate Air Flow	Measure the inlet air pressure immediately upstream of the Vortex Cooler. If the pressure is less than 80 psig, then there is inadequate pressure to produce the flow rate for which the Vortex Cooler is rated. There are many potential causes for inadequate supply pressure, including but not limited to pressure drops from undersized pipe, valves or hose, excessive upstream com-pressed air demand to other end users, blockages in the system, and inadequate compressor sizing. If the inlet pressure is adequate, performance may be hindered by accumulation of dirt, water and/or oil from the compressed air supply. If this happens, simply disassemble the Vortex Cooler, clean the parts, and reassemble the Vortex Cooler as shown in the figure.				
High Output Air Temperature	The Vortex Cooler reduces the temperature of the compressed air supply. The compressed air supply may be warmer than ambient if the supply piping is exposed to heat sources, such as direct sunlight, ovens, furnaces, etc. Reroute or insulate compressed air source to reduce upstream heating.				
Ice Formation	When the temperature of the air inside the Vortex Cooler reaches $32^{\circ}$ F. ( $0^{\circ}$ C.), the water vapor in the air will start to freeze. If this causes ice to clog the orifices of the generator inside the tube, an air dryer must be used to lower the dew point to keep out the water vapor. A dryer rated at $-35^{\circ}$ F will produce a dew point low enough to eliminate the water vapor freezing in the orifices of the generator.				

Part # SCEVTC5T25B					
SCFM	втин	Identification Color			
8	500 BTUH	White - Installed			
10	600 BTUH	Orange			
15	1000 BTUH	Red			
25	1800 BTUH	Blue			
35	2500 BTUH	Yellow			

### **VORTEX COOLER INSTALLATION & MAINTENANCE**

Part SCE-VTC5T25B comes with the white 8 SCFM generator installed. If you would like to change the SCFM of the cooler choose the generator that best fits your application and complete the steps below.

Instructions to change the Generator:

- 1. Unscrew (turn counterclockwise) the cold end fitting (see diagram above)
- 2. Remove the colored generator and o-rings
- 3. Install the new desired generator
- 4. Install the 2 o-rings making sure they are seated properly
- 5. Replace the cold end fitting and turn (clockwise) until tight around 5 lbs. torque











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