Personal Air Conditioner / Vest Assembly

More Innovative Products from VORTEC

Cold Air Gun™
Adjustable Spot Cooling for Many Uses
Increases dry machining rates and prolongs tool life

Vortex A/C™
Quiet, No-Maintenance Enclosure Cooling
Avoid downtime with the new alternative to costly air conditioners

Vortex Coolers™
Thermal Protection for Control Cabinets
Compact, affordable solution to overheated electrical panels

Vortex Tubes
Sub-Zero Temperatures From Compressed Air
Versatile spot cooling device for numerous applications

PowerDry™ System
Replaces Costly Compressed Air Blow-Offs
Complete packaged drying system offers energy savings

For more information, visit www.itw-air.com.

Personal Air Conditioners
Models 22815, 22825, 22835
Diffuse Air Vest
Models 855, 857

Includes all BSP versions of models listed above
(where applicable)

Operation & Safety Instructions

IMPORTANT
Please read all instructions BEFORE attempting to operate this product.

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Toll Free: 800-441-7475
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General Safety Considerations

**Warning – Compressed Air Could Cause Death, Blindness or Injury**
1. Do not operate a Personal Air conditioner at compressed air pressures above 150 PSIG (10.3 Bar).
2. Do not operate a Vortex Tube at line temperatures above 110°F (43°C).
3. Avoid direct contact with compressed air.
4. Do not direct compressed air at any person.
5. When using compressed air, wear safety glasses with side shields.

Introduction

The Vortex Personal Air Conditioner and Air Diffuse Vest are designed to be used in conjunction to provide worker comfort in extreme temperatures. The vortex tube technology utilized in the Personal Air Conditioner uses filtered, compressed air to concentrate chilled air on the workers torso through the Air Diffuse Vest. With no moving parts, and under reasonable care, the Personal Air Conditioner and Air Diffuse Vest will provide years of trouble-free operation.

Compressed Air Supply

The compressed air supply must be filtered (5 micron maximum) to remove water and dirt (Vortex model 701S-36A). If oil is present in the compressed air supply, remove the oil using a .01 micron (maximum) coalescing filter (Vortex model 701S-48). Change filter elements as needed. For assistance in selecting a compressed air line size, refer to Appendix 1 or contact your local authorized distributor or Vortex.

Operation

**Personal Air Conditioners:**
The Vortex Personal Air Conditioner utilizes a standard 1/4” industrial interchange quick connect fitting to allow for easy installation to existing filtered compressed air lines. The temperature adjustment knob can be turned to increase or decrease output temperature (turning the knob CCW reduces the temperature and flow of cold air). The temperature adjustment knob may be hot. It is important to use gloves or another form of hand protection when adjusting the knob.

**Diffuse Air Vest:**
Upon receipt, inspect the vest and contact your Vortex representative immediately if you suspect damage of any kind to the vest. Once the vest is placed into service, it may not be returned under any circumstances. Put the vest on and secure at the front using the Velcro closure fasteners. Be sure to leave enough room to comfortably move in the vest. Securely attach the flexible hose on the back of the vest to a Vortex Personal Air Conditioner. Adjust the belt supplied with the Vortex Personal Air Conditioner to fit securely around the outside of the vest, and still allow comfortable movement to the wearer.

To ensure efficient operation, keep the Velcro neck flaps closed if using model 22815. If using a 22825, or 22835, the neck flaps may be opened to provide cooling to the head and neck of the wearer.

Appendix 1 Determining Compressed Air Line Size

1. Calculate total product compressed air consumption, (SCFM, SLPM).
2. Determine length of compressed air line required for connection to main supply.
3. Locate pipe length in left column and read to the right to find compressed air requirements.
4. Locate pipe size at top of column.

<table>
<thead>
<tr>
<th>Pipe Length Feet</th>
<th>Maximum Airflow (SCFM) Through Pipe/ 5 PSIG Pressure Drop (100 PSIG and 70°F) Pipe Size (Nominal) - Schedule 40</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td></td>
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<tr>
<td>10</td>
<td>29                                                             65                                                           120                                                          254                                                          480                                                          978                                                          1483                                                         2863                                                         4536</td>
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<td>20</td>
<td>21                                                             46                                                           85                                                           180                                                          340                                                          692                                                          1049                                                        2024                                                        3208</td>
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<td>17                                                             37                                                           70                                                           147                                                          277                                                          565                                                          856                                                         1653                                                        2619</td>
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<td>9                                                              21                                                           38                                                           80                                                           152                                                          309                                                          469                                                         905                                                         1435</td>
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<thead>
<tr>
<th>Pipe Length Meter</th>
<th>Maximum Airflow (SLPM) Through Pipe/ 0.3 Bar Pressure Drop (6.9 Bar and 38°C) Pipe Size (Nominal) - Schedule 40</th>
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<td>255                                                           594                                             1075                                                          2264                                                        4302                                                        8745                                                        13273                                                       25612                                                       40611</td>
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</tbody>
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Rubber hose maximum airflow rating: 1/2” I.D. rubber hose = 3/8” pipe; 3/4” I.D. rubber hose = 1/2” pipe

The Personal Air Conditioner and Diffuse Air Vest may be used under welding leathers, coveralls, and other protective garments, but the warm air exhausted from the Personal Air Conditioners must be vented outside the garment.

Maintenance

Vortex Personal Air Conditioners have no moving parts and may be disassembled for cleaning. When replacing the cold cap on the Personal Air Conditioner it is important to torque the cold cap to 100 inch pounds. For best results, use only clean filtered air.

Limited Warranty

Vortex compressed air products manufactured by ITW Air Management will be replaced or repaired if found to be defective due to manufacture defect within ten years from the date of invoice. Refer to our website itvwortex.com for full warranty details and limitations. ITW Air Management makes no specific warranty of merchantability or warrant of fitness for a particular purpose.

Troubleshooting

Insufficient airflow may be caused by the following:
1. Undersized compressed air supply line
2. Compressed air pressure too low
3. Insufficient compressed air volume (SCFM, SLPM)
4. Partial or complete blockage of internal compressed air path due to dirt
5. Loose cold cap (if disassembled for cleaning)
6. Compressed air line temperature too high

If trouble persists, contact your local Vortex representative or Vortex (to review the Limited Warranty details and limitations refer to www.itvwortex.com).