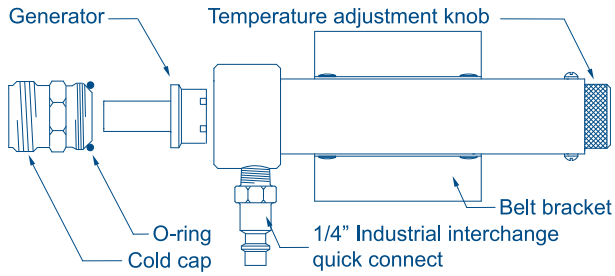
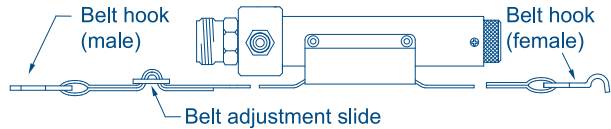


## Personal Air Conditioner / Vest Assembly

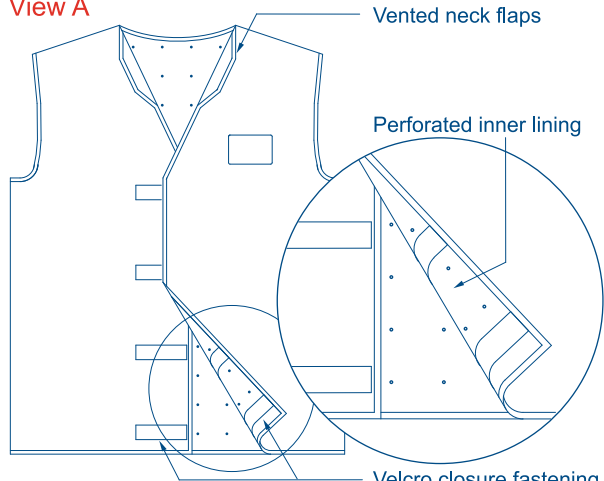
View A



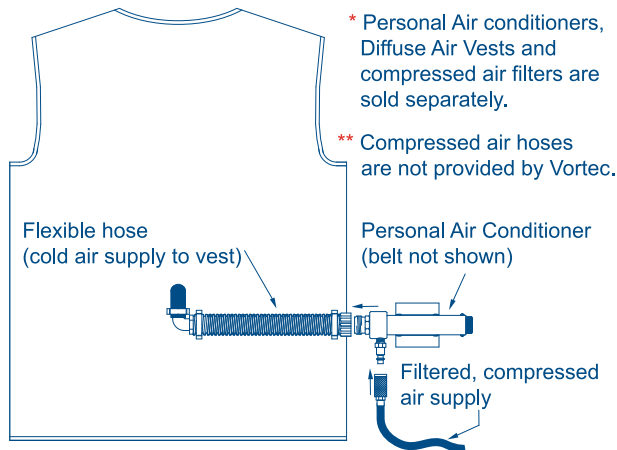
View B



View A



View B



More Innovative Products from **ITW Air Management**

# VORTEC



### Cold Air Gun™

*Adjustable Spot Cooling for Many Uses*  
Increases dry machining rates and prolongs tool life

### Vortex AIC™

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Avoid downtime with the new alternative to costly air conditioners



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Compact, affordable solution to overheated electrical panels

### Vortex Tubes

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



# PAXTON PRODUCTS

### PowerDry™ System

*Replaces Costly Compressed Air Blow-Offs*  
Complete packaged drying system offers energy savings



# VORTEC

## 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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For more information, visit [www.itw-air.com](http://www.itw-air.com).

## 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 Vortec 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 worker's 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 (Vortec model 701S-36A). If oil is present in the compressed air supply, remove the oil using a .01 micron (maximum) coalescing filter (Vortec 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 Vortec.

## Operation

### Personal Air Conditioners:

The Vortec 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 Vortec 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 Vortec Personal Air Conditioner. Adjust the belt supplied with the Vortec 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.

Pipe Length Feet	Maximum Airflow (SCFM) Through Pipe/ 5 PSIG Pressure Drop (100 PSIG and 70°F) Pipe Size (Nominal) - Schedule 40								
	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
10	29	65	120	254	480	978	1483	2863	4536
20	21	46	85	180	340	692	1049	2024	3208
30	17	37	70	147	277	565	856	1653	2619
40	15	32	60	127	240	489	792	1431	2268
50	13	29	54	114	215	437	663	1280	2029
60	12	26	49	104	196	399	606	1169	1852
70	11	25	46	96	181	370	561	1082	1715
80	10	23	43	90	170	346	524	1012	1604
90	10	22	40	85	160	326	494	954	1512
100	9	21	38	80	152	309	469	905	1435

Pipe Length Meter	Maximum Airflow (SLPM) Through Pipe/ 0.3 Bar Pressure Drop (6.9 Bar and 38°C) Pipe Size (Nominal) - Schedule 40								
	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
3	821	1840	3396	7188	13584	27677	42117	81023	128369
6	594	1302	2406	5094	9622	19584	29687	57279	90786
9	481	1047	1981	4160	7839	15990	24225	46780	74188
12	425	906	1698	3594	6792	13839	20999	40497	64184
15	368	821	1528	3226	6085	12367	18763	36224	57421
18	340	736	1387	2943	5547	11292	17150	33083	52412
21	311	708	1302	2717	5122	10471	15877	30621	48535
24	283	651	1217	2547	4811	9792	14829	28640	45393
27	269	623	1132	2406	4528	9226	13980	26998	42790
31	255	594	1075	2264	4302	8745	13273	25612	40611

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

Vortec 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

Vortec 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 [itwvortec.com](http://itwvortec.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 Vortec representative or Vortec (to review the Limited Warranty details and limitations refer to [www.itwvortec.com](http://www.itwvortec.com)).