

# Personal Air Conditioners



## Personal Worker Comfort in Extreme Temperatures

Personal Air Conditioners (PAC's) use filtered compressed air and vortex tube technology to keep workers comfortable in extremely hot or cold areas. With no moving parts, the vortex tube forces a simple heat exchange to separate compressed air into hot and cold airstreams. The small vortex tube, worn on a supplied belt, is connected to our Diffuse-Air Vest which delivers continuous cooled or heated air through its perforated, inner lining. Temperature is easily adjusted to  $\pm 60^{\circ}\text{F}$  above or below the inlet temperature.

ITW Vortec PAC's provide effective cooling or heating, and are especially popular for workers in confined spaces or operating in or near:

- Foundries
- Steel Mills
- Power Plants
- Casting Shops
- Boiler Rooms
- Glass Plants
- Forging Shops
- Welding Operations
- Sand Blasting
- Powder Coating
- Asbestos Abatement
- Smelters
- Paint Baking Operations
- Refrigerated Lockers
- Hazardous Waste Removal
- Mines

Unlike "ice pack" type vests, the PAC offers consistent, continuous and controllable cooling to minimize heat stress and increase worker productivity in hot surroundings. The durable, plasticized PVC vest allows full range of motion with no airflow restrictions and can be worn under welding leathers or protective clothing. Both large and extra-large vests are available, each featuring a collar that can be unfolded to deliver tempered air flow to the neck and face.

### ***Improve worker safety and increase productivity in challenging environments***

- No moving parts – exceptionally reliable
- Vest can be worn under protective outer clothing
- Easy temperature adjustment even with gloved hands
- Provides continuous cooled/heated air delivery
- Cooling models available in 15, 25 and 35 SCFM
- Vest collar unfolds to deliver tempered air flow to neck and face
- Vest allows full range of motion with no airflow restrictions

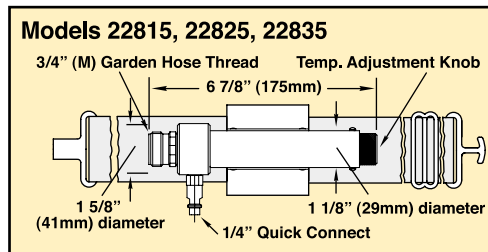
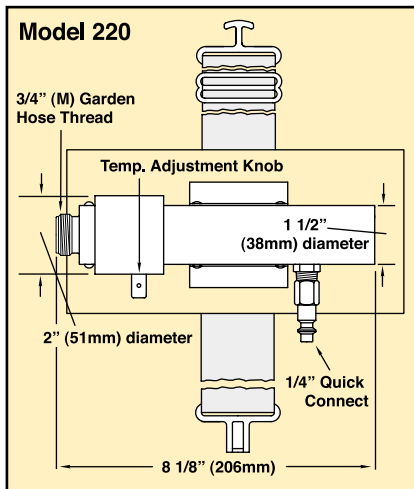


**ITW Vortec**  
Innovative Compressed Air Technologies

MODEL	DESCRIPTION	COMPRESSED AIR CONSUMPTION		TEMPERATURE	
		100 PSIG (SCFM)	6.9 BAR (SLPM)	DROP F°/C°	RISE F°/C°
22815	Vortex Air Conditioner with belt 900 BTUH	15	425	60/33	—
22825	Vortex Air Conditioner with belt 1500 BTUH	25	708	60/33	—
22835	Vortex Air Conditioner with belt 2500 BTUH	35	991	60/33	—
220	Hot/Cold Air Conditioner with belt 1500 BTUH	25	708	60/33	60/33
855	Diffuse Air Vest w/unfolding lapels, L size - Fits workers up to 6'2", 210 pounds				
857	Diffuse Air Vest w/unfolding lapels, XL size - Fits workers up to 6'4" 250 pounds				

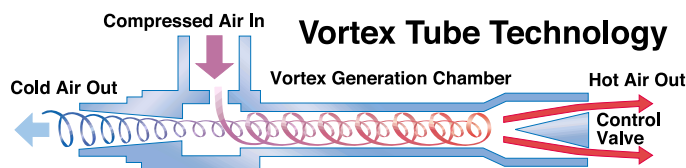
Personal Air Conditioners have 1/4" compressed air Quick Connects and 3/4" garden hose thread for discharge of air flows to vest.

Exposure rating: 200°F with protective outer clothing 130°F no protective outer clothing  
Not intended to provide protection from hazardous conditions



**The only vest that offers consistent, continuous, and controllable temperatures**

### How PAC's Deliver Cooled/Heated Air



**A vortex tube spins compressed air to produce hot and cold air streams, generating temperatures down to 100°F below inlet temperature**

Fluid (air) that rotates around an axis (like a tornado) is called a vortex. A Vortex Tube creates cold air and hot air by forcing compressed air through a generation chamber, which spins the air at a high rate of speed (1,000,000 RPM) into a vortex. The high-speed air heats up as it spins along the inner walls of the Tube toward the control valve. A percentage of the hot, high speed air is permitted to exit at the valve. The remainder of the (now slower) air stream is forced to counterflow up through the center of the high-speed air stream in a second vortex. The slower moving air gives up energy in the form of heat and becomes cooled as it spins up the tube. The chilled air passes through the center of the generation chamber finally exiting through the opposite end as extremely cold air. Vortex tubes generate temperatures down to 100°F below inlet air temperature. The control valve located in the hot exhaust end can be used to adjust the temperature drop and rise for all Vortex Tubes.



10125 Carver Road  
Cincinnati, OH 45242

513-891-7474 or 800-441-7475  
Fax: 513-891-4092

Website: [www.itwvortec.com](http://www.itwvortec.com)  
e-mail: [techsupport@vortec.com](mailto:techsupport@vortec.com)

Reference the Product Guide catalog and/or ITW Vortec invoice **Conditions of Sale** for complete information and warranty terms. Due to a policy of continuous development we reserve the right to change specifications without notice.