

Personal Air Conditioners

Personal Worker Comfort in Extreme Temperatures

Simply put, Personal Air Conditioners with Diffuse-Air Vests are the most effective body cooling solutions on the market – and, they're very affordable. To minimize heat stress and fatigue and improve worker comfort and productivity in extreme temperatures, our vests deliver constant and adjustable cooling.

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.



Improve worker safety and increase productivity in challenging work environments

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**
- ◆ Mines**
- ◆ Hazardous Waste Removal**

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

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

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

APPLICATION

notes

A Texas company specializing in welding repairs inside large storage tanks has been using ITW Vortec Personal Air Conditioners for the last 10 years.

Unbearable summer heat in a metal plating and finishing facility prompted the owner to equip his workers with #22815 PAC's, and to reject the \$145,000 quote to install air conditioning in the shop area.

A forging plant reported more than a 30% increase in productivity using #22825 PAC's with vests, eliminating an average of four daily cool-down periods for their workers.

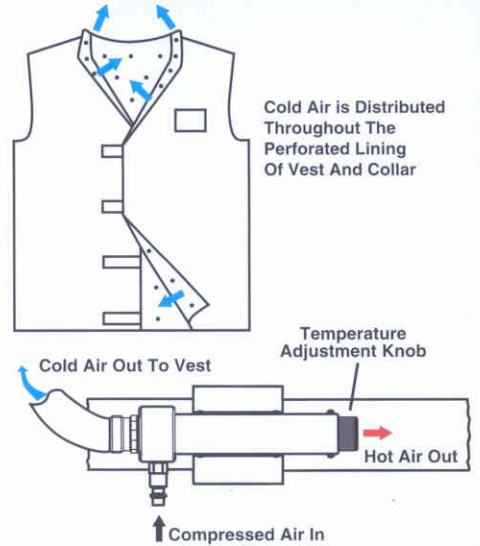
Workers stationed near an oven in a Southeast powder coating facility scrapped their "gel pack" type vests and opted for the adjustable cooling of PAC's.

Leading manufacturers of welding hoods, respirators and breathing apparatus incorporate ITW Vortec Personal Air Conditioners into their products as a cooling option.



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TECH notes



Inside the PAC, a Vortex Tube spins the supplied compressed air, separating it into hot and cold airstreams. (See Vortex Tubes for more detail) The cold airstream is delivered to the vest via a ducting tube, while the hot air exits out the side of the PAC unit. The low-pressure cold air flows into the Diffuse-Air Vest's perforated inner lining, which distributes the refrigerated air over the upper body. Unfolding the collars of the vest will reveal air holes to cool the neck and face. (Model 220 uses hot and cold air from both ends of the vortex tube to create a fully adjustable heating or cooling option.)



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.

