With over 50 years of industry expertise combined with the strong global foundation of ITW, Vortec is the preferred solution for compressed air applications around the world.

In 1961, Vortec became the first company to develop technology for converting the vortex tube phenomenon into practical, effective industrial cooling solutions.

Since then, Vortec has continued to refine and expand vortex tube applications, while also developing air amplification products for more efficient use of compressed air in blowing, cleaning and conveying applications. In 1990, Vortec was purchased by Illinois Tool Works, a Fortune 200 company; and is now part of the ITW Air Management business unit, which, in addition to Vortec products, offers the Paxton Product line of centrifugal blowers and air delivery products for drying and blow off.

The ITW Air Management team of design and technical application engineers have decades of experience and can help you to find a solution for your industrial and commercial applications. Vortec products are often incorporated into other machinery and equipment to maximize productivity and reliability.

Vortec’s line of products include:
- Vortec Enclosure Coolers..........pg 4
- Cold & Hot Air Guns .................pg 10
- Personal Air Conditioners ..........pg 14
- Vortec Tubes .......................pg 16
- Air Flow Amplifiers .................pg 18
- Air Knives .........................pg 20
- Air Nozzles .........................pg 22
- Air Jets ..........................pg 24
- Spray Nozzles .......................pg 26
- Dual-Force Vac Drum Pump ........pg 28
- Accessories & Parts .................pg 30

Applications

Cooling Solutions
ITW Vortec offers Vortex Tubes, Cold Air Guns, Enclosure Coolers, and Personal Air Conditioner products for process cooling, spot cooling, enclosure cooling, and personnel cooling applications. These products ensure your equipment and employees do not overheat resulting in an increase in productivity and reduced downtime.

Blow Off Solutions
ITW Vortec provides a full line of engineered nozzles, air knives, air amplifiers, and air jets for use in blow off, fume extraction and drying solutions designed to help conserve compressed air and ensure that products and work areas remain clean allowing the job to get done faster and more efficiently.

Conveying Solutions
Air Amplifier and Air Jet products are designed to help convey products by amplifying compressed air volumes up to 20x and 4x respectively. These amplifying products help move products from one area to another quickly and efficiently.

Maintenance Solutions
The Dual Force Vac Drum Pump provides a convenient and versatile solution for liquid material handling and spill cleanup. It can fill a 55-gallon drum in under two minutes and can discharge just as quickly with a ¼ turn of the knob. The Drum Pump can handle viscous liquids and particulates and has no moving parts, eliminating motor burn out.

All Compressed Air Products manufactured by Vortec, a business unit of ITW Air Management, are warranted for ten years after date of shipment from the Vortec factory against defects in materials or workmanship under normal use.
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With over 50 years of industry expertise combined with the strong global foundation of ITW, Vortec is the preferred solution for compressed air applications around the world.
Enclosure Coolers keep Electrical and Electronic Enclosures cool, clean and protected and are a low-cost alternative to expensive, high maintenance air conditioners. They also help extend the life of electronics by preventing enclosure contamination from dirty, humid air commonly caused by using fans.

Today’s small, compact multi-function electronic controls, variable speed drives, servos and programmable logic controllers are extremely sensitive to heat and contamination. Smaller cabinet sizes make temperature control difficult and prone to premature failures. Excessive heat will cause digital displays to misread, controls to drift, and breakers to trip below rated loads. The result is productivity lost due to machine or line shutdowns.

Vortec Enclosure Coolers maintain a slight pressure in the cabinet to keep electrical and electronic components clean and dry. Most are thermostatically controlled to maintain enclosure temperatures within a specified temperature range.

Vortec Advantage
- Easy to install
- Quiet, efficient, reliable
- No ambient, dirty or humid air enters the cabinet
- Can be used on all cabinets, even in tight spaces
- Operate in environments up to 175°F (80°C)
- Low cost, compared to Freon air conditioners
- Use no refrigerants
- Multiple cooling capacities available
- Optimize performance and operating cost
- NEMA 12, 4, 4X and hazardous location solutions
- Only UL Listed and CE compliant hazardous location enclosure cooler, with the HazLoc Vortex A/C.

Vortec Enclosure Coolers

How Enclosure Coolers Create Cold Air

Vortec Enclosure Coolers are powered by a vortex tube - a unique device that creates a vortex from compressed air and separates it into hot and cold air streams. Here’s how it works:

The vortex tube’s cylindrical generator causes the input compressed air to rotate at speeds up to 1,000,000 rpm, as it is forced down the inner walls of the hot (longer) end of the vortex tube.

At the end of the hot tube, a small portion of this air exits through a needle valve as hot air exhaust.

The remaining air is forced back through the center of the incoming air stream at a slower speed.

The heat in the slower moving air is transferred to the faster moving incoming air.

This super-cooled air flows through the center of the generator and exits through the cold air port into the enclosure.

Vortex Tube Technology

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

Vortec Enclosure Cooler Family

Vortec offers multiple types of enclosure coolers to meet your enclosure cooling needs, all available in a variety of cooling capacities and ratings (NEMA, IP, HazLoc).

<table>
<thead>
<tr>
<th>VORTEX A/C</th>
<th>HazLoc VORTEX A/C</th>
<th>Panel Guard</th>
<th>Panel Enclosure Coolers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintain temperature between 80°F-90°F</td>
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<tr>
<td>Mechanical Thermostat</td>
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<td>✔</td>
<td>✔</td>
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<tr>
<td>Electric Thermostat</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Small mounting footprint for confined areas</td>
<td>✔</td>
<td>✔</td>
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<tr>
<td>Top Mount</td>
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<tr>
<td>Side Mount</td>
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<tr>
<td>Front Mount</td>
<td>✔</td>
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<td>✔</td>
</tr>
<tr>
<td>Maintains slight pressurization in enclosure</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>UL Listed and CE compliant</td>
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<td>NEMA 4X Models</td>
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<tr>
<td>Quiet</td>
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<tr>
<td>Supplied with air filter and ducting kit</td>
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<td>✔</td>
<td>✔</td>
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<tr>
<td>10 Year Warranty</td>
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</tr>
</tbody>
</table>

*Class I Div 2, Class II Div 2 Groups F & G, Class III
*NEMA 12 models only

VOLEX A/C & HazLoc VORTEX A/C

The Vortex A/C coolers are 78% quieter than other Vortex coolers while offering fast, flexible installation.

Panel Guard

Panel Guard Enclosure Coolers enhance the benefits of Vortex coolers for enclosure cooling by adding a mechanical thermostat for optimum temperature control without the need for wiring.

Vortex Enclosure Coolers

Standard Vortex Enclosure Coolers are available NEMA 12, NEMA 4 and NEMA 4X versions, and can be purchased with an electric thermostat or without a thermostat (constant run).
Vorteck Enclosure Coolers

Enclosure Coolers keep Electrical and Electronic Enclosures cool, clean and protected and are a low-cost alternative to expensive, high maintenance air conditioners. They also help extend the life of electronics by preventing enclosure contamination from dirty, humid air commonly caused by using fans.

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- Multiple cooling capacities available
- Optimize performance and operating cost
- NEMA 12, 4, 4X and hazardous location solutions
- Only UL Classified Hazardous Location enclosure cooler, with the HazLoc Vortec A/C.

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<thead>
<tr>
<th>Vortec Enclosure A/C</th>
<th>Panel Guard</th>
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<tbody>
<tr>
<td>Maintain temperature between 80°F–90°F</td>
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<td>Small mounting footprint for confined areas</td>
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</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>Maintains slight pressurization in enclosure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UL Listed and CE compliant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class 1 Div 2 Class I Groups F &amp; G</td>
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</tr>
<tr>
<td>NEMA 12 Models</td>
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<td>NEMA 4 Models</td>
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<td>NEMA 4X Models</td>
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<td>Quiet</td>
<td></td>
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<tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>10 Year Warranty</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Class I Div 2, Class II Division 2 Groups F & G, Class III
NEMA 12 models only

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Vortex Tube Technology

The Vortex A/C coolers are 78% quieter than other Vortex coolers while offering fast, flexible installation.

Panel Guard Enclosure Coolers enhance the benefits of Vortex coolers for enclosure cooling by adding a mechanical thermostat for optimum temperature control without the need for wiring.

Vortex Enclosure Coolers

Standard Vortex Enclosure Coolers are available NEMA 12, NEMA 4 and NEMA 4X versions, and can be purchased with an electric thermostat or without a thermostat (constant run).
Panel Guard Enclosure Coolers enhance the benefits of Vortex coolers for enclosure cooling by adding a mechanical thermostat for optimum temperature control without the need for wiring.

- Mechanical thermostat, no wiring needed.
- Easy to install, requires only a 1-½” knockout hole.
- Available in three different cooling capacities
- NEMA 4 rated.

### Specifications

<table>
<thead>
<tr>
<th>Model #</th>
<th>Rating</th>
<th>Thermostat</th>
<th>Quiet or Standard System or Cooler</th>
<th>BTU/hr</th>
<th>Watts</th>
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<tbody>
<tr>
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</table>

Vortex Coolers

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<tr>
<th>Model #</th>
<th>Thermostat Option</th>
<th>Quiet or Standard System or Cooler</th>
<th>BTU/hr</th>
<th>Watts</th>
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### NEMA 4 Models

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<th>Watts</th>
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### NEMA 4X Models

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<td>2,500</td>
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</tr>
</tbody>
</table>

*All systems include a compressed air filter.
**Panel Guard Enclosure Coolers**

Panel Guard Enclosure Coolers enhance the benefits of Vortex coolers for enclosure cooling by adding a mechanical thermostat for optimum temperature control without the need for wiring.

- Mechanical thermostat, no wiring needed.
- Easy to install, requires only a 1-1/4" knockout hole.
- Available in three different cooling capacities.
- NEMA 4 rated.

**Specifications**

<table>
<thead>
<tr>
<th>Model #</th>
<th>Rating</th>
<th>Thermostat</th>
<th>Quiet or Standard</th>
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<th>BTU/hr</th>
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</table>

**Vortex Coolers**

Standard Vortex Enclosure Coolers are available in NEMA 12, NEMA 4 and NEMA 4X versions, and can be purchased with an electric thermostat or without a thermostat (constant run).

- Available in electric thermostat or non-thermostat models.
- Maintain enclosure temperatures within +/-3 deg F (1.6 deg C) with electric thermostat models.
- Cooling capacities ranging from 400 BTU/hr to 5000 BTU/hr (117 to 1465 watts).
- Available in NEMA 12, NEMA 4 and NEMA 4X models.

**Specifications**

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<thead>
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**NEMA 4X Models**

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* All systems include a compressed air filter

www.vortec.com - Innovative Compressed Air Technologies
Vortex Enclosure Coolers

VORTEX A/C Coolers are 78% quieter than other Vortex coolers while offering fast, flexible installation.

- Sleek, modern design
- Noise reduction of 78%, compared to other vortex enclosure coolers
- Energy use reduction through its integral mechanical thermostat
- Quick and easy installation in about 5 minutes
- Flexible installation: top, side or front (door) mount

The Vortex A/C is available in 4 different cooling capacities, and ratings of NEMA 12, NEMA 4 and NEMA 4X.

### Specifications

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<th>Model #</th>
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* All systems include a compressed air filter

### Hazardous Location VORTEX A/C

Hazardous Location (HazLoc) VORTEX A/C Coolers are designed specifically for purged* electrical enclosures in Class I Div 2, Class II Div 2, Groups F&G and Class III locations.

The HazLoc Vortex A/C incorporates the following features:

- Sleek, modern design
- Noise reduction of 78%, compared to other enclosure coolers
- Energy use reduction through its integral mechanical thermostat
- Quick and easy installation in about 5 minutes
- Flexible installation: top, side or front (door) mount
- Check valve to prevent loss of enclosure pressure when cooling is not required
- T4 Temperature Class rating

* Purge system not included with purchase

### Specifications

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* All systems include a compressed air filter

www.vortec.com  -  Innovative Compressed Air Technologies
VORTEX A/C Coolers are 78% quieter than other Vortex coolers while offering fast, flexible installation.

- Sleek, modern design
- Noise reduction of 78%, compared to other vortex enclosure coolers
- Energy use reduction through its integral mechanical thermostat
- Quick and easy installation in about 5 minutes
- Flexible installation: top, side or front (door) mount

The Vortex A/C is available in 4 different cooling capacities, and ratings of NEMA 12, NEMA 4 and NEMA 4X.

**Specifications**

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*All systems include a compressed air filter.

Hazardous Location VORTEX A/C Coolers are designed specifically for purged* electrical enclosures in Class I Div 2, Class II Div 2, Groups F&G and Class III locations.

The HazLoc Vortex A/C incorporates the following features:

- Sleek, modern design
- Noise reduction of 78%, compared to other enclosure coolers
- Energy use reduction through its integral mechanical thermostat
- Quick and easy installation in about 5 minutes
- Flexible installation: top, side or front (door) mount
- Check valve to prevent loss of enclosure pressure when cooling is not required
- T4 Temperature Class rating

*Purge system not included with purchase

**Specifications**

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*All systems include a compressed air filter.
Cold & Hot Air Guns

Cold Air Guns

Cold Air Guns use vortex tube technology and filtered compressed air to produce sub-freezing air as low as -30 deg F for numerous industrial spot cooling applications. With no moving parts to wear out, Cold Air Guns require no electricity at the target, just a compressed air source.

Cold Air Guns are most often used for cooling of metal parts, in the machining, cutting and repair of metals, plastics, wood, ceramics and other materials. Cold air machining outperforms mist coolants and substantially increases tool life and feed rates on dry machining operations. Cold Air Guns can also be used for cutting and machining of moisture sensitive materials such as paper products, fabrics and wood.

Vortec Advantage
- Increase dry machining speeds up to 36%
- Extend tool life by 50%
- Eliminates the mess, expense and safety concerns of using mist coolants
- Reduce waiting, repair or normalization time by cooling parts faster
- Eliminate the potential for burning and scorching
- Avoid secondary parts cleaning after machining
- Reduce grinding wheel loading caused by overheating
- Airflow clears sawdust, chips, shavings and dirt away from surface

Vortec Cold Air Guns use filtered compressed air and vortex tube technology to produce sub-zero air for industrial spot cooling applications. With no moving parts to wear out, the internal vortex tube converts compressed air into a cold air stream, producing temperatures down to -30 F (-34 C).

Benefits
- Increased dry machining speeds up to 36%
- Extend tool life by 50%
- Substantially increase feed rates
- Eliminate heat related part growth
- Hold tight part tolerance

Applications
- Metal working operations
- Surface grinding
- Drill and tool sharpening
- Plastic, composite and wood machining
- Any application where cooling is needed

Specifications

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<td>31 991 2,500 630</td>
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Vortec Cold Air Guns are available in different models:
- **Standard**
  - Eliminates the mess associated with condensation and frost arising from continuous use of a Cold Air Gun
- **Frost Free**
  - Allows for cooling both sides of a cutting tool or blade.
- **Mini Cold Air Gun**
  - The perfect solution for applications where the Cold Air Gun is too big or where lower flow rates are needed

www.vortec.com - Innovative Compressed Air Technologies
Cold & Hot Air Guns

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Applications

- Metal working operations
- Surface grinding
- Drill and tool sharpening
- Plastic, composite and wood machining
- Any application where cooling is needed

Vortec Specifications

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**Models come with 24 oz and magnetic base.**

For gun only, add 1 to the model number.
Cold & Hot Air Guns

Cold Air Pistol

The Vortec Cold Air Pistol offers an ergonomic, easy to use and more mobile, alternative to the Cold Air Gun for intermittent spot cooling. The lightweight pistol features an integral trigger mechanism for an on/off squeeze action that can be aimed at the target site; and provides cool air as low as 0 deg F at a flow rate of 9 cfm. The Cold Air Pistol cools parts quickly and with no liquid mess so that jobs can be started and completed faster.

Benefits
- Speed jobs by cooling parts and welds faster
- Move cooling to the target more easily
- Trigger cooling only when needed
- Airflow clears shavings away from area

Applications
- Cooling weld and solders
- Thermal testing of sensors
- Spot cooling parts and assemblies
- Cooling molds and molded pieces
- Electronics cooling
- Bearing repair and replacement

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
<th>SCFM</th>
<th>SLPM</th>
<th>BTU/hr</th>
<th>kCal/H</th>
</tr>
</thead>
<tbody>
<tr>
<td>615</td>
<td>Cold Air Pistol</td>
<td>15</td>
<td>425</td>
<td>900</td>
<td>227</td>
</tr>
</tbody>
</table>

Thread Guard Needle Cooler

The Vortec Thread Guard was designed specifically for industrial sewing applications. It keeps needles cool to reduce heat-related needle breakage and thread burning. The air stream is especially effective on difficult to sew surfaces such as belt loops and waist bands; or on tough materials like denim or canvas. Cold air temperature and flow rate are preset to 10°F and 4 scfm.

Benefits
- Virtually eliminates heat-related needle breakage
- Can save up to 11 man-hours per week per machine
- Eliminate the potential for burning and scorching
- Adapts to any machine
- Increases production speeds

Applications
- Industrial sewing
- Applications where needle cooling is needed
- Material applications where burning and scorching need to be prevented
- Other applications where the Cold Air Gun is too big or where lower flow rates are needed

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
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<th>SLPM</th>
<th>BTU/hr</th>
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</thead>
<tbody>
<tr>
<td>424</td>
<td>Thread Guard</td>
<td>R</td>
<td>227</td>
<td>-80</td>
<td>101</td>
</tr>
</tbody>
</table>

Hot Air Guns

The Vortec Hot Air Gun is used where milder heat is needed as compared to an electric heat gun.

With an output flow rate of 2-8 scfm it is ideal for pre-heating of parts, processes and solutions, and is also widely used for softening adhesives, rubber and vinyl, and accelerating drying. The Hot Air Gun requires no electricity at the target and uses only filtered compressed air to generate fully adjustable temperatures up to 200°F.

Vortec Advantage
- Hot air flows up to 200°F
- No electricity used at the target
- Portable magnetic base
- Exceptionally reliable—no moving parts
- No EMI / RFI interference
- Meets OSHA noise and pressure specifications

Applications
- Pre and post heating of urethane, epoxy & acrylic adhesives and substrates
- Parts drying after solvent cleaning
- Heating of parts and films
- Material softening to assist in forming

Specifications

<table>
<thead>
<tr>
<th>Model No.</th>
<th>Description</th>
<th>Air Consumption</th>
<th>Heating Capacity</th>
</tr>
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<tbody>
<tr>
<td>609</td>
<td>Hot Air Gun</td>
<td>8 SCFM</td>
<td>270 BTU/hr</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200ºF</td>
<td>227 BTU/hr</td>
</tr>
</tbody>
</table>

*Comes with air filter and magnetic base

** For gun only, add 1 to model number

www.vortec.com - Innovative Compressed Air Technologies
Cold & Hot Air Guns

**Cold Air Pistol**

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<td>15</td>
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</thead>
<tbody>
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<td>424</td>
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<td>227</td>
<td>630</td>
<td>101</td>
<td></td>
</tr>
</tbody>
</table>

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- Portable magnetic base
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- Pre and post heating of urethane, epoxy & acrylic adhesives and substrates
- Parts drying after solvent cleaning
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<th>Model No.</th>
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<th>W</th>
<th>kCal/H</th>
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</thead>
<tbody>
<tr>
<td>609</td>
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<td>425</td>
<td>900</td>
<td>237</td>
<td></td>
</tr>
</tbody>
</table>

*Comes with air filter and magnetic base
** For gun only, add -T to model number
Workers in extreme temperatures wear Personal Air Conditioners (PACs) to minimize heat stress, cold stress and fatigue and improve comfort and productivity. The Standard PAC provides adjustable cold air for cooling. The new Dual Action PAC switches quickly from cold to hot, to provide productivity. The Standard PAC provides adjustable cold stress and fatigue and improve comfort and productivity. Workers in extreme temperatures wear Personal PACs or heated vests or cooling only. A cooling/heating tube with belt that generates cold and/or hot air flow to the worker. A diffuse air vest through which the cold or hot air flows to cool or heat the worker’s torso and neck.

**Vortec Advantage**
- Eliminates incidence of worker heat stress or cold stress
- Maximizes worker productivity and comfort in extreme temperatures
- Eliminates the need to air condition large warehouse or shop areas
- Reduces frequency of non-productive cooling and warming breaks
- Provides continuous and consistent cooling or heating
- Improves worker safety
- Air is delivered at up to +/- 45-60°F from compressed air inlet temperature
- Can be worn under other protective clothing
- Cooling only version has easy temperature adjustment, even with gloved hands
- All PAC models include adjustable waist belt and quick connect
- The Dual Action PAC can be easily switched from cooling to heating

**Dual Action PAC**

The newest addition to the Personal Air Conditioner line provides the wearer with the flexibility to benefit from Cold or Warm air relief for safety and comfort in any environment. With its unique belt bracket, the Dual Action PAC can be easily switched from cooling to heating mode to provide year-round comfort and protection.

### Specifications

<table>
<thead>
<tr>
<th>Integrated PAC/Vest Model #</th>
<th>Dual Action PAC Model #</th>
<th>Vest Size</th>
<th>BTU/hr</th>
<th>kCal/hr</th>
<th>SCFM</th>
<th>SLPM</th>
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<td>708</td>
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<td>29635</td>
<td>XL</td>
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<td>307</td>
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<td>1,480</td>
<td>394</td>
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</table>

**Cooling Only PAC**

The original, cold-only PAC uses vortex tube technology to provide cold air relief and protection to workers in hot environments. It helps to minimize heat-related injuries and allows the worker to be cool and productive while eliminating the need for cooling breaks.

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<tr>
<th>Integrated PAC/Vest Model #</th>
<th>Dual Action PAC Model #</th>
<th>Vest Size</th>
<th>BTU/hr</th>
<th>kCal/hr</th>
<th>SCFM</th>
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</tr>
<tr>
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<td>XXL</td>
<td>2,500</td>
<td>630</td>
<td>35</td>
<td>990</td>
</tr>
</tbody>
</table>

**Diffuse Air Vest**

The diffuse air vest is available in three sizes and provides continuous cooled or heated air through its perforated inner lining. The durable plasticized PVC vest allows full range of motion with no airflow restrictions; and does not absorb sweat or other contaminants.

### Specifications

<table>
<thead>
<tr>
<th>Replacement Vest Model #</th>
<th>Vest Size</th>
<th>Inches</th>
<th>cm</th>
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</thead>
<tbody>
<tr>
<td>865</td>
<td>L</td>
<td>36 - 41</td>
<td>91 - 104</td>
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<tr>
<td>867</td>
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<tr>
<td>869</td>
<td>XXL</td>
<td>46 - 52</td>
<td>117 - 132</td>
</tr>
</tbody>
</table>
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![Diffuse Air Vest](image)

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<table>
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<tr>
<th>Integrated PAC/Vest Model #</th>
<th>Dual Action Vest PAC Model #</th>
<th>Vest Size</th>
<th>BTU/hr</th>
<th>kCal/hr</th>
<th>SCFM</th>
<th>SLPM</th>
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<td>25625</td>
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<td>900</td>
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<td>XXL</td>
<td>1,140</td>
<td>307</td>
<td>307</td>
<td>35</td>
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<table>
<thead>
<tr>
<th>Integrated PAC/Vest Model #</th>
<th>Cooling Only PAC Model #</th>
<th>Vest Size</th>
<th>BTU/hr</th>
<th>kCal/hr</th>
<th>SCFM</th>
<th>SLPM</th>
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<tr>
<td>22815</td>
<td>22815</td>
<td>L</td>
<td>900</td>
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<td>227</td>
<td>25</td>
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<tr>
<td>22825</td>
<td>22825</td>
<td>XL</td>
<td>1,500</td>
<td>410</td>
<td>410</td>
<td>41</td>
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<tr>
<td>22735</td>
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<td>630</td>
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<tr>
<td>22935</td>
<td>22935</td>
<td>XXL</td>
<td>2,500</td>
<td>630</td>
<td>630</td>
<td>63</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Replacement Vest Model #</th>
<th>Vest Size</th>
<th>Inches cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>885</td>
<td>L</td>
<td>91 - 104</td>
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<tr>
<td>887</td>
<td>XL</td>
<td>104 - 117</td>
</tr>
<tr>
<td>889</td>
<td>XXL</td>
<td>117 - 132</td>
</tr>
</tbody>
</table>
Vortex tubes produce up to 6000 BTU/hr of refrigeration and temperatures as low as -40°F to solve a variety of industrial spot cooling and process cooling needs.

With no moving parts, a vortex tube is highly reliable and inexpensive; and requires no electrical connection at the cooling site. Vortex tubes cool instantly, relying on compressed air spinning in the tube to separate the air into cold and hot air streams.

Vortex tubes are a compact source of refrigeration and cooling, with models ranging from 6 – 13 inches long and cooling capacities ranging from 100 – 6000 BTU/hour. Vortex tube performance is easily adjustable by changing the inlet air pressure, the ratio of cool air to exhaust or by changing the generator in the tube itself. And while normally used for cooling, vortex tubes can also be used for heating applications, merely by channeling the exhaust hot air to the application.

**Vortec Advantage**
- Cools without refrigerants, as low as -40°F (-40°C)
- Drops compressed air inlet temperature by up to 100°F (56°C)
- Lowest initial cost per unit of refrigeration of any cooling technique
- Cools instantaneously
- Environmentally friendly, with no refrigerants or chemicals needed
- Fits to provide cooling in the most confined areas
- Cycle repeatability within +/- 1°F
- Available heating, using the same tube, up to 250°F (121°C)
- Fully adjustable for varying cooling needs
- Maintenance-free with no moving parts

<table>
<thead>
<tr>
<th>Model</th>
<th>106   - Stainless Steel and Brass</th>
<th>208 - Aluminum</th>
<th>308 - Aluminum</th>
<th>208SS - Stainless Steel</th>
<th>328 - Nickel Plated Steel</th>
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<tbody>
<tr>
<td>Cooling Capacity (BTU/hr)</td>
<td>100</td>
<td>200</td>
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<tr>
<td>Air Consumption (CFM)</td>
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<td>6</td>
<td>10</td>
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<tr>
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<td>1/8”</td>
<td>1/8”</td>
<td>3/32”</td>
<td>1/4”</td>
<td>1/4”</td>
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<tr>
<td>Hot Air Outlet, PSI</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1/4”</td>
<td>1/4”</td>
</tr>
</tbody>
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Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Material of Construction</th>
<th>Inlet, NPT</th>
<th>Outlet, NPT</th>
<th>Outlet, PSI (inches)</th>
<th>Cooling Capacity (BTU/hr)</th>
<th>Air Consumption @ 100 psig (cubic feet)</th>
<th>Cold Air Outlet, °F</th>
<th>Hot Air Outlet, °F</th>
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<tr>
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<td>1/4&quot; (m)</td>
<td>1/8&quot; (f)</td>
<td>100</td>
<td>2.5</td>
<td>1/8&quot; (m)</td>
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<td>1/8&quot; (f)</td>
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<td>4.0</td>
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<td>10.0</td>
<td>3/8&quot; (f)</td>
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<td>328</td>
<td>Stainless Steel</td>
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<td>1/4&quot; (m)</td>
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<td>15.0</td>
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<td>75.0</td>
<td>1/4&quot; (m)</td>
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</table>
Air Flow Amplifiers deliver a large airflow for conveying, drying, cooling or ventilation. These high flow, bladeless blowers have no moving parts so they are inherently safe.

Air Flow Amplifiers amplify compressed air volumes by 5 - 20 fold in ducted applications and up to 60 fold in unducted applications. They are especially useful for removing metal chips and scrap, ventilating fumes or smoke, and conveying small parts, pellets, powders and dust.

As a vacuum or blow-off device, air amplifiers are more compact and less expensive than variable-speed blowers and fans, provide instant on/off performance, and operate at low noise levels to meet OSHA requirements. They are easily mounted and can be used in both ducted and unducted applications. They are available in several sizes, both aluminum and stainless steel and deliver flow rates from 32 to 2300 SCFM.

**Vortec Advantage**
- Amplify compressed air volumes by 5-20 fold in ducted applications and up to 60 fold in unducted applications
- Reduce compressed air usage vs open nozzles
- Easily adapts for smoke and fume control, vacuum, conveying or blow off
- Provides improved safety and eliminates shock hazards with no moving parts, electricity or motors.
- Available in stainless steel or aluminum

### Specifications

<table>
<thead>
<tr>
<th>Model #</th>
<th>Amplification</th>
<th>SCFM</th>
<th>SLPM</th>
<th>SCFM</th>
<th>SLPM</th>
<th>inch</th>
<th>mm</th>
<th>inch</th>
<th>mm</th>
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<tbody>
<tr>
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</table>

Air flows are at the standard factory setting and at 100 psig (6.9 bar) inlet pressure.  
*Throat diameter is the smallest inside diameter.

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**901XSS**

**902XSS**

**903XSS**

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**Vortec Advantage**

- Amplify compressed air volumes by 5-20 fold in ducted applications and up to 60 fold in unducted applications
- Reduce compressed air usage vs open nozzles
- Easily adapts for smoke and fume control, vacuum, conveying or blow off
- Provides improved safety and eliminates shock hazards with no moving parts, electricity or motors.
- Available in stainless steel or aluminum

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<th>SLPM</th>
<th>inch</th>
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Air flows are at the standard factory setting and at 100 psig (6.9 bar) inlet pressure.  
*Throat diameter is the smallest inside diameter.

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**901XSS**

**902XSS**

**903XSS**

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Air Flow Amplifiers deliver a large airflow for conveying, drying, cooling or ventilation. These high flow, bladeless blowers have no moving parts so they are inherently safe.

Air Flow Amplifiers amplify compressed air volumes by 5 - 20 fold in ducted applications and up to 60 fold in unducted applications. They are especially useful for removing metal chips and scrap, ventilating fumes or smoke, and conveying small parts, pellets, powders and dust.

As a vacuum or blow-off device, air amplifiers are more compact and less expensive than variable-speed blowers and fans, provide instant on/off performance, and operate at low noise levels to meet OSHA requirements. They are easily mounted and can be used in both ducted and unducted applications. They are available in several sizes, both aluminum and stainless steel and deliver flow rates from 32 to 2300 SCFM.

Vortec Advantage
- Amplify compressed air volumes by 5-20 fold in ducted applications and up to 60 fold in unducted applications
- Reduce compressed air usage vs open nozzles
- Easily adapts for smoke and fume control, vacuum, conveying or blow off
- Provides improved safety and eliminates shock hazards with no moving parts, electricity or motors.
- Available in stainless steel or aluminum

Specifications

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<th>Model #</th>
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<th>SLPM</th>
<th>SCFM</th>
<th>SLPM</th>
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Air flows are at the standard factory setting and at 100 psig (6.9 bar) inlet pressure.
- Throttle diameter is the smallest inside diameter.

Specifications

<table>
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<th>SLPM</th>
<th>SCFM</th>
<th>SLPM</th>
<th>inch</th>
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<td>1/4&quot;-18</td>
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<td>903XSS</td>
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<td>25</td>
<td>700</td>
<td>475</td>
<td>13,440</td>
<td>1.59</td>
<td>40</td>
<td>3/8&quot;-18</td>
</tr>
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All air flows are at the standard factory setting and at 100 psig (6.9 bar) inlet pressure.
- Flow is adjustable via throttle substitution.
- Throttle diameter is the smallest inside diameter.
Air Knives

Air Knives blow debris or liquids from surfaces to clean, dry or cool in a wide range of industrial applications. When static cling is an issue, a static neutralizing bar can be added to the air knife to neutralize static charges, releasing dust particles and contaminants to facilitate blow off.

Air Knives are air amplifiers, using a small amount of filtered compressed air to deliver a powerful, high velocity, laminar sheet of air over wide areas such as moving webs, film, sheets, strips, auto bodies and other large assemblies and objects. Vortec’s patented design produces increased thrust and velocity, reduced noise and excellent uniformity.

Ionizing Air Knives add a static neutralizing bar, to discharge static to clean surfaces of dust, shavings and debris more effectively. The static neutralizing bar generates positive and negative charged ions that are carried to the target in a uniform sheet of amplified air. Ionizing Air Knives kill the static build up that can attract dust and contaminants that ruin a painted or coated surface; and stop static discharges which can damage electronic equipment and shock personnel.

Vortec Advantage

- 25 times air amplification over compressed air input
- Costs significantly less than fans or blowers
- Reduced compressed air usage versus open nozzles
- Quiet – meets OSHA requirements
- More uniform blow off of large surfaces than nozzles or jets.

Specifications (US)

<table>
<thead>
<tr>
<th>Pressure Psig</th>
<th>3”</th>
<th>6”</th>
<th>12”</th>
<th>18”</th>
<th>24”</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
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<tr>
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<td>24</td>
<td>36</td>
<td>48</td>
<td>60</td>
<td>72</td>
<td>84</td>
<td>108</td>
<td>132</td>
<td>168</td>
<td>192</td>
<td>240</td>
<td>300</td>
</tr>
<tr>
<td>Velocity At Distance From Outlet (IPS)</td>
<td>300</td>
<td>600</td>
<td>900</td>
<td>1200</td>
<td>1500</td>
<td>1800</td>
<td>2100</td>
<td>2400</td>
<td>2700</td>
<td>3000</td>
<td>3300</td>
<td>3600</td>
<td>4000</td>
</tr>
<tr>
<td>Thrust (oz)</td>
<td>36</td>
<td>72</td>
<td>108</td>
<td>144</td>
<td>180</td>
<td>216</td>
<td>252</td>
<td>288</td>
<td>324</td>
<td>360</td>
<td>396</td>
<td>432</td>
<td>480</td>
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Specifications (Metric)

<table>
<thead>
<tr>
<th>Pressure kPa</th>
<th>7cm</th>
<th>15cm</th>
<th>31cm</th>
<th>61cm</th>
<th>91cm</th>
<th>152cm</th>
<th>228cm</th>
<th>305cm</th>
<th>406cm</th>
<th>508cm</th>
<th>610cm</th>
<th>762cm</th>
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<td>4.8</td>
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<td>6.2</td>
<td>6.9</td>
<td>2.1</td>
<td>2.8</td>
<td>3.5</td>
<td>4.1</td>
</tr>
<tr>
<td>Velocity At Distance From Outlet (m/s)</td>
<td>1.285</td>
<td>1.935</td>
<td>2.604</td>
<td>3.275</td>
<td>3.945</td>
<td>4.615</td>
<td>5.285</td>
<td>5.955</td>
<td>1.285</td>
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<td>3.275</td>
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<tr>
<td>Thrust (oz)</td>
<td>36</td>
<td>72</td>
<td>108</td>
<td>144</td>
<td>180</td>
<td>216</td>
<td>252</td>
<td>288</td>
<td>324</td>
<td>360</td>
<td>396</td>
<td>432</td>
</tr>
</tbody>
</table>

*Thrust measured at 12” from Air Knife outlet (e.g., a 12” Air Knife at 50 PSIG will produce 3.3 oz)

Air Knife

Power Supplies

Two power supplies are available:
- 2 inlet power supply (F167)
- 4 inlet power supply (D16/RY)

Ionizing Air Knife

Ionizing Air Knives (require a power supply) are available in the following lengths:
- 6, 12, 18, 24 inches

Specifications (US)

<table>
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<tr>
<th>Power Supply</th>
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<th>12”</th>
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<th>24”</th>
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<tbody>
<tr>
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<td>24</td>
<td>36</td>
<td>48</td>
<td>60</td>
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Specifications (Metric)

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<tr>
<th>Power Supply</th>
<th>7cm</th>
<th>15cm</th>
<th>31cm</th>
<th>61cm</th>
<th>91cm</th>
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<tr>
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<td>2.8</td>
<td>3.5</td>
<td>4.1</td>
<td>4.8</td>
</tr>
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</table>

Models

Air Knife

Power Supply

Ionizing Air Knife

www.vortec.com - Innovative Compressed Air Technologies
Air Knives

Air Knives blow debris or liquids from surfaces to clean, dry or cool in a wide range of industrial applications. When static cling is an issue, a static neutralizing bar can be added to the air knife to neutralize static charges, releasing dust particles and contaminants to facilitate blow off.

Air Knives are air amplifiers, using a small amount of filtered compressed air to deliver a powerful, high velocity, laminar sheet of air over wide areas such as moving webs, film, sheets, strips, auto bodies and other large assemblies and objects. Vortex’s patented design produces increased thrust and velocity, reduced noise and excellent uniformity.

Ionizing Air knives add a static neutralizing bar, to discharge static to clean surfaces of dust, shavings and debris more effectively. The static neutralizing bar generates positive and negative charged ions that are carried to the target in a uniform sheet of amplified air. Ionizing Air Knives kill the static buildup that can attract dust and contaminants that ruin a painted or coated surface; and stop static discharges which can damage electronic equipment and shock personnel.

**Vortex Advantage**
- 25 times air amplification over compressed air input
- Costs significantly less than fans or blowers
- Reduced compressed air usage versus open nozzles
- Quiet – meets OSHA requirements
- More uniform blow off of large surfaces than nozzles or jets.

**Specifications (US)**

<table>
<thead>
<tr>
<th>Pressure (Psig)</th>
<th>3&quot;</th>
<th>6&quot;</th>
<th>12&quot;</th>
<th>18&quot;</th>
<th>24&quot;</th>
<th>36&quot;</th>
<th>48&quot;</th>
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<td>9</td>
<td>17</td>
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<td>52</td>
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<tr>
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<table>
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<th>1&quot;</th>
<th>1-1/4&quot;</th>
<th>1-1/2&quot;</th>
<th>2&quot;</th>
<th>2-1/4&quot;</th>
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- Thrust measured at 12" from Air Knife outlet (e.g. a 12" Air Knife at 50 PSIG will produce 23.5 ft). 12 = 27.6 sq. in. of thrust

**Specifications (Metric)**

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<th>15cm</th>
<th>31cm</th>
<th>61cm</th>
<th>86cm</th>
<th>114cm</th>
<th>137cm</th>
<th>150cm</th>
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<td>21</td>
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<td>642</td>
<td>965</td>
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<td>1,640</td>
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<td>2,315</td>
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<td>20</td>
<td>161</td>
<td>321</td>
<td>639</td>
<td>959</td>
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<td>1,630</td>
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<td>2,420</td>
<td>3,160</td>
<td>3,506</td>
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<td>6.9</td>
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<td>900</td>
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<td>2,700</td>
<td>3,600</td>
<td>3,972</td>
<td>4,324</td>
<td>4,676</td>
</tr>
</tbody>
</table>

- Thrust measured at 15cm from Air Knife outlet.

**Models**

- **Air Knife**
  - Standard Air Knives are available in the following lengths:
    - 3, 6, 12, 18, 24 inches

- **Power Supplies**
  - Two power supplies are available:
    - 2 inlet power supply (F167)
    - 4 inlet power supply (D16/RY)

- **Ionizing Air Knife**
  - Ionizing Air Knives (require a power supply) are available in the following lengths:
    - 6, 12, 18, 24 inches

**Power Supplies**

- **Air Knife**
- **Power Supplies**
- **Ionizing Air Knife**

---

**Vortex** - Innovative Compressed Air Technologies

www.vortec.com
Air Nozzles

Vortec engineered blow off nozzles significantly reduce compressed air consumption and noise, compared to open nozzle jets.

Using proven amplification technology, Vortec nozzles entrain and accelerate free surrounding air, resulting in air flow volume up to 25 times more than the volume of compressed air, giving 25 times the blow off capacity at a significantly reduced energy usage and lower operating cost. And while reducing air consumption, Vortec nozzles also reduce noise levels by as much as 60%, compared to open pipes and non-engineered nozzles.

Vortec nozzles are available in a full range of designs, materials of construction, sizes and force/thrust levels compatible with most installations; capable of replacing open copper tubes, flex-line, drilled pipe and other nozzles that are not designed to save air. Worker safety standards are met as well, as Vortec safety air nozzles are compliant with OSHA 1910.242(b) dead-end pressure regulations.

Vortec Advantage
■ Save time with better blow off capability
■ Up to 25 times more air flow volume than the volume of compressed air
■ Reduce operating costs due to compressed air usage by up to 80%
■ Reduce noise levels by as much as 60% compared to non-amplifying nozzles
■ Reach tight spaces with effective blow off
■ Better positioning to target surfaces with flexible nozzles
■ Blow off multiple or changing locations with flexible nozzles

Specifications

<table>
<thead>
<tr>
<th>Model #</th>
<th>Description</th>
<th>oz</th>
<th>g</th>
<th>inches</th>
<th>mm</th>
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<tbody>
<tr>
<td>1200</td>
<td>Aluminum nozzle, adjustable</td>
<td>3-21</td>
<td>85-205</td>
<td>5/8</td>
<td>16</td>
</tr>
<tr>
<td>1200SS</td>
<td>Stainless Steel nozzle, adjustable</td>
<td>3-21</td>
<td>85-205</td>
<td>5/8</td>
<td>16</td>
</tr>
<tr>
<td>1201</td>
<td>Nozzle on bendable copper tubing</td>
<td>6</td>
<td>170</td>
<td>3/16</td>
<td>5</td>
</tr>
<tr>
<td>1201F-12</td>
<td>1201 nozzle on flexible hose</td>
<td>6</td>
<td>170</td>
<td>3/16</td>
<td>5</td>
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<tr>
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<td>Nozzle on bendable copper tubing</td>
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<td>9</td>
<td>1/4</td>
<td>6</td>
</tr>
<tr>
<td>1204</td>
<td>1203 nozzle on flexible hose</td>
<td>9</td>
<td>9</td>
<td>1/4</td>
<td>6</td>
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<tr>
<td>1205</td>
<td>High thrust version of 1203</td>
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<td>794</td>
<td>1/4</td>
<td>6</td>
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<tr>
<td>1206</td>
<td>1205 nozzle on flexible hose</td>
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<td>794</td>
<td>1/4</td>
<td>6</td>
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<td>1220</td>
<td>Ultra high-thrust fixed nozzle, aluminum</td>
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<td>25</td>
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<td>9401</td>
<td>Blow gun with 1200 nozzle</td>
<td>3-21</td>
<td>85-205</td>
<td>5/8</td>
<td>16</td>
</tr>
</tbody>
</table>
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**Specifications**

<table>
<thead>
<tr>
<th>Model #</th>
<th>Description</th>
<th>oz</th>
<th>in</th>
<th>Air Stream at Nozzle</th>
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<tr>
<td>1200</td>
<td>Aluminum nozzle, adjustable</td>
<td>3-21</td>
<td>5/8</td>
<td>16</td>
</tr>
<tr>
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<td>6</td>
<td>3/16</td>
<td>5</td>
</tr>
<tr>
<td>1201F-12</td>
<td>1201 nozzle on flexible hose</td>
<td>6</td>
<td>3/16</td>
<td>5</td>
</tr>
<tr>
<td>1202</td>
<td>High thrust version of 1201</td>
<td>20</td>
<td>3/16</td>
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<td>Nozzle on bendable copper tubing</td>
<td>9</td>
<td>1/4</td>
<td>6</td>
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<tr>
<td>1204</td>
<td>1205 nozzle on flexible hose</td>
<td>9</td>
<td>1/4</td>
<td>6</td>
</tr>
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<td>1205</td>
<td>High thrust version of 1205</td>
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</tr>
<tr>
<td>1206</td>
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<tr>
<td>1220</td>
<td>Ultra high thrust fixed nozzle, aluminum</td>
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<td>2.041</td>
<td>25</td>
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<td>Blow gun with 1200 nozzle</td>
<td>3-21</td>
<td>5/8</td>
<td>16</td>
</tr>
</tbody>
</table>
Air Jets

Jets are round-throated air amplifiers. One end provides a strong airflow while the other creates suction as free air is entrained.

Jets are designed to reduce compressed air consumption and noise drastically as compared to open jets, copper tubes and iron or steel pipes without an engineered nozzle. Perfect for all types of blow off, conveying, cooling and drying applications, jets are available in a variety of high and low thrust models. Since they output a more concentrated, targeted volume of air than nozzles, they are ideal for water, solvents or light oil stripping applications.

Additionally, because they deliver a precise air flow, jets are ideal for parts movement and ejection, with a focused air flow targeted directly on the parts being moved or ejected. Vortec Jets meet OSHA specifications for noise and dead-end pressure.

Vortec Advantage

- Convey small parts without motors or pumps
- Save time with better blow off and fume extraction capability
- Up to 4 times blow off power compared to compressed air alone
- Reduce operating costs due to compressed air usage by up to 75%
- Reduce noise levels by up to 70% compared to non-amplifying jets

Specifications

<table>
<thead>
<tr>
<th>Item #</th>
<th>Application</th>
<th>oz</th>
<th>g</th>
<th>Air Amplification</th>
</tr>
</thead>
<tbody>
<tr>
<td>901A</td>
<td>Blow Off &amp; Cooling</td>
<td>6</td>
<td>170</td>
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<tr>
<td>901BA</td>
<td>Conveying</td>
<td>6</td>
<td>170</td>
<td>4</td>
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<td>901DA</td>
<td>Blow Off, focused</td>
<td>14</td>
<td>397</td>
<td>4</td>
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<tr>
<td>901HA</td>
<td>Conveying</td>
<td>14</td>
<td>397</td>
<td>4</td>
</tr>
<tr>
<td>909A</td>
<td>Blow Off, adjustable</td>
<td>2-17</td>
<td>57-482</td>
<td>4</td>
</tr>
</tbody>
</table>

Applications

- Weigh sorting
- Parts drying
- Waste or trim removal
- Vacuum generation
- Blow off cleaning
- Cooling
- Conveying small parts or materials
- Ejection of parts or cut-outs
- Fume extraction systems
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<td>901BA</td>
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<td>6</td>
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</tr>
<tr>
<td>901DA</td>
<td>Blow Off, focused output</td>
<td>14</td>
<td>397</td>
<td>4</td>
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<tr>
<td>901HA</td>
<td>Conveying</td>
<td>14</td>
<td>397</td>
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<td>909A</td>
<td>Blow Off, adjustable</td>
<td>2-17</td>
<td>57482</td>
<td>4</td>
</tr>
</tbody>
</table>

Applications
- Weigh sorting
- Parts drying
- Waste or trim removal
- Vacuum generation
- Blow off cleaning
- Cooling
- Conveying small parts or materials
- Ejection of parts or cut-outs
- Fume extraction systems
Spray Nozzles

Spray Nozzles provide ultra-fine droplet-sized sprays for evaporative cooling, atomization, humidification and wetting.

Spray Nozzles produce spray patterns that can be widely diffused or directed.

The liquid stream is entrained by high velocity compressed air to create a range of micron-level spray droplets, resulting in greater surface coverage than conventional nozzles. With this more efficient use of the liquid, Spray Nozzles accelerate air-liquid interaction to give more effective cooling, humidifying, wetting and dust control.

Vortec Advantage

- More efficient use of liquid as it is entrained by the compressed air
- Consistent, effective cooling of surfaces reduces heat distortion of parts
- Eliminates damage to wood and other water sensitive surfaces due to low humidity
- Provides even coverage when applying coatings, rust inhibitors, lubricants, preservatives, etc. to parts, wood, rubber, plastic, food, and more
- Reduces noise levels
- Speeds testing for humidity effects due to varying humidity levels
- High pressure liquid flows are not required
- Precision adjustable flow rates minimize usage of expensive coatings, preservatives, rust inhibitors, etc.
- Droplet size and production is not dependent on liquid pressure
- Air and liquid mix externally to minimize clogging

Applications

- Evaporative Cooling
- Mist Cooling
- Moisturization
- Dust Suppression
- Static Neutralization
- Pressure Spray Cleaning
- Humidification
- Sanitizing or Deodorizing
- Wetting
- Lubrication
- Atomizing
- Spray Applications

Specifications

<table>
<thead>
<tr>
<th>Model #</th>
<th>Description</th>
<th>Min Liquid viscosity, cP</th>
<th>Max Liquid viscosity, cP</th>
<th>Spray pattern</th>
<th>Included Filter and Liquid Strainer</th>
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<tbody>
<tr>
<td>1723</td>
<td>Fogging Nozzle System</td>
<td>20 - 60</td>
<td>1,100</td>
<td>Narrow</td>
<td>Yes</td>
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<tr>
<td>1727</td>
<td>Humidifying Nozzle System</td>
<td>20 - 200</td>
<td>100</td>
<td>Wide to Narrow</td>
<td>Yes</td>
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<tr>
<td>1733</td>
<td>Atomizing Nozzle</td>
<td>20 - 60</td>
<td>1,100</td>
<td>Narrow</td>
<td>Yes</td>
</tr>
<tr>
<td>1703</td>
<td>Fogging Nozzle</td>
<td>20 - 200</td>
<td>100</td>
<td>Wide to Narrow</td>
<td>No</td>
</tr>
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<td>1707</td>
<td>Humidifying Nozzle</td>
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<td>1,100</td>
<td>Narrow</td>
<td>No</td>
</tr>
<tr>
<td>1713</td>
<td>Atomizing Nozzle</td>
<td>60 - 200</td>
<td>1,100</td>
<td>Narrow</td>
<td>No</td>
</tr>
</tbody>
</table>

Experimental Kit: Model # 1700

Contains a compressed air filter, liquid strainer, and one each of the following nozzles:

- Fogging Nozzle
- Humidifying Nozzle
- Atomizing Nozzle
Spray Nozzles

Spray Nozzles provide ultra-fine droplet-sized sprays for evaporative cooling, atomization, humidification and wetting.

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- Eliminates damage to wood and other water sensitive surfaces due to low humidity
- Provides even coverage when applying coatings, rust inhibitors, lubricants, preservatives, etc. to parts, wood, rubber, plastic, food, and more
- Reduces noise levels
- Speeds testing for humidity effects due to varying humidity levels
- High pressure liquid flows are not required
- Precision adjustable flow rates minimize usage of expensive coatings, preservatives, rust inhibitors, etc.
- Droplet size and production is not dependent on liquid pressure
- Air and liquid mix externally to minimize clogging

Applications
- Evaporative Cooling
- Mist Cooling
- Moisturization
- Dust Suppression
- Static Neutralization
- Pressure Spray Cleaning
- Humidification
- Sanitizing or Deodorizing
- Wetting
- Lubrication
- Atomizing
- Spray Applications

Specifications

<table>
<thead>
<tr>
<th>Model #</th>
<th>Description</th>
<th>Droplet Sizes (microns)</th>
<th>Max Liquid viscosity (cP)</th>
<th>Spray pattern</th>
<th>Includes Filter and Strainer</th>
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<tbody>
<tr>
<td>1723</td>
<td>Fogging Nozzle System</td>
<td>20 - 60</td>
<td>1,100</td>
<td>Narrow</td>
<td>Yes</td>
</tr>
<tr>
<td>1727</td>
<td>Humidifying Nozzle System</td>
<td>20 - 200</td>
<td>10</td>
<td>Wide to Narrow</td>
<td>Yes</td>
</tr>
<tr>
<td>1733</td>
<td>Atomizing Nozzle System</td>
<td>60 - 200</td>
<td>1,100</td>
<td>Narrow</td>
<td>Yes</td>
</tr>
<tr>
<td>1707</td>
<td>Fogging Nozzle</td>
<td>20 - 200</td>
<td>1,100</td>
<td>Narrow</td>
<td>No</td>
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<tr>
<td>1713</td>
<td>Humidifying Nozzle</td>
<td>60 - 200</td>
<td>1,100</td>
<td>Narrow</td>
<td>No</td>
</tr>
</tbody>
</table>

Experimental Kit - Model #: 1700
Contains a compressed air filter, liquid strainer, and one each of the following nozzles:
- Fogging Nozzle
- Humidifying Nozzle
- Atomizing Nozzle
Dual-Force Vac Drum Pump

The Dual Force Vac System is a convenient and versatile solution for liquid material handling and spill clean up.

Using powerful air amplification technology, the Dual Force Vac Drum Pump can either fill or discharge a 55-gallon drum in under two minutes. It switches easily -- with a 1/4 turn of a knob -- from fill to discharge mode. And the Dual Force Vac can handle viscous liquids and particulates.

Quiet and safe, the Dual Force Vac is air-powered with no moving parts, meaning no motor burn out and no shock hazard. It quickly installs on a 55-gallon drum and comes with a 10-foot hose and nozzle. An optional aluminum wand and squeegee are available to facilitate spill pick up.

Vortec Advantage
- Fast pick up or discharge, fills or empties a drum in less than 2 minutes
- Cleans machine sumps including chips and particulates
- Handles liquids up to 1500 cPs
- Handles particulates and swarf with ease
- Switches quickly from discharge to suction mode
- Low maintenance, with no motor or moving parts
- Automatic safety shut off valve prevents overflows
- Patented design

2109 Specifications

<table>
<thead>
<tr>
<th>Compressed Air Pressure</th>
<th>in</th>
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<tr>
<td>Vacuum</td>
<td>inch of Hg</td>
<td>6.7</td>
<td>9.5</td>
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<tr>
<td>Fill Rate</td>
<td>gal per min</td>
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</tr>
<tr>
<td>Empty Rate</td>
<td>gal per min</td>
<td>37</td>
<td>33</td>
</tr>
</tbody>
</table>

*Does not operate the Dual Force Vac Drum Pump at less than 10 psig (69.0 bar)
*Flow rates are based on a liquid viscosity of 0.8 cPs

Vortec Advantage
- Liquid transfers
- Coolant sumps, even with solids
- Sludge & waste water
- Spill pick up
- Containment aprons
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Vortec Advantage

- Fast pick up or discharge, fills or empties a drum in less than 2 minutes
- Cleans machine sumps including chips and particulates
- Handles liquids up to 1500 cPs
- Handles particulates and swarf with ease
- Switches quickly from discharge to suction mode
- Low maintenance, with no motor or moving parts
- Automatic safety shut off valve prevents overflows
- Patented design

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2109 Specifications

<table>
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<tr>
<th>Component</th>
<th>Air Pressure</th>
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<td>20</td>
</tr>
<tr>
<td>Vacuum</td>
<td>in Hg</td>
<td>6.7</td>
<td>9.5</td>
</tr>
<tr>
<td>Fill Rate</td>
<td>gal/min</td>
<td>28.5</td>
<td>33</td>
</tr>
<tr>
<td>Empty Rate</td>
<td>gal/min</td>
<td>37</td>
<td>33</td>
</tr>
<tr>
<td>Weight</td>
<td>lb</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

*Does not operate the Dual Force Vac Drum Pump at less than 10 psig (0.5 bar)
*Flow rates are based on a liquid viscosity of 0.8 cPs

---

Vortec Advantage

- Liquid transfers
- Coolant sumps, even with solids
- Sludge & waste water
- Spill pick up
- Containment aprons
Filters and Regulators

Thermostat Kits

7217-70 Solenoid valve and thermostat kit for 8, 15 and 25 scfm Vortex Coolers, 120 volt AC
7217-80 Solenoid valve and thermostat kit for 8, 15 and 25 scfm Vortex Coolers, 240 volt AC
7217-100 Solenoid valve and thermostat kit for 35 scfm Vortex Coolers, 120 volt AC
7217-110 Solenoid valve and thermostat kit for 35 scfm Vortex Coolers, 240 volt AC
7217-120 Solenoid valve and thermostat kit for 70 scfm Vortex Coolers, 120 volt AC
7217-130 Solenoid valve and thermostat kit for 70 scfm Vortex Coolers, 240 volt AC

Generators

110GK-3H 8 scfm generator and bushing kit, set of 5
110GK-4H 8 scfm generator and bushing kit, set of 5
110GK-6H 8 scfm generator and bushing kit, set of 5
200GK-11H 11 scfm generator kit, set of 5
200GK-15H 15 scfm generator kit, set of 5
230GK-20H 20 scfm generator kit, set of 5
230GK-35H 35 scfm generator kit, set of 5
320GK-50H 50 scfm generator and bushing
370GK-75H 75 scfm generator and bushing
320GK-100H 100 scfm generator and bushing

Flex Nozzles (Cold/Hot Air Gun)

402-30 Flex nozzle for Thread Guard, dual outlet
403-30 Flex nozzle for Mini Cold Air Gun, single outlet
606-FN Flex nozzle for Cold Air Gun, single outlet
610-30 Flex nozzle for Cold Air Gun, two outlet
611-FMO Flex flex nozzle upgrade for Cold Air Gun, single outlet

Spray Nozzle Tips

1702-1 Spray nozzle tip-FOGging
1707-1 Spray nozzle tip-Atomizing
1713-1 Spray nozzle tip-Atomizing
66727 Liquid Stinger

Mufflers

106HC Cold air muffler for 106 series vortex tubes
206HC Cold air muffler for 206 and 306 series vortex tubes
206HH Hot air muffler for 206 and 306 series vortex tubes
306HH Hot air muffler for 306 series vortex tubes
328H Cold or hot air muffler for 328 series vortex tubes

Accessories & Parts

Shims

15-003 002” thick shim for 904 air flow amplifier
901-003 002” thick shim for 901 series jets
901-001 003” thick shim for 901 series jets
901-002 002” thick shim for 902 air flow amplifier
902-002 002” thick shim for 902 series jets
902-001 003” thick shim for 902 series jets
902-003 003” thick shim for 903 air flow amplifier
903-003 003” thick shim for 903 series jets
903-002 002” thick shim for 902 series jets

All shims are made of aluminum

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Filters and Regulators

- 7015-24A: 5 micron compressed air filter with automatic condensate drain, 25 scfm
- 7015-36A: 5 micron compressed air filter with automatic condensate drain, 50 scfm
- 7015-40A: 5 micron compressed air filter with automatic condensate drain, 150 scfm
- 7015-48: 5 micron compressed air filter with automatic condensate drain, 250 scfm
- 7015-54: 0.1 micron oil-removal filter with automatic condensate drain, 75 scfm
- 402-20: Filter/pressure regulator combination, 8 scfm

Mufflers

- 1068KC: Cold air muffler for 106 series vortex tubes
- 2088MH: Hot air muffler for 106 and 308 series vortex tubes
- 3088MH: Hot air muffler for 308 series vortex tubes
- 324K: Cold or hot air muffler for 328 series vortex tubes

Shims

- 904-002: 0.022” thick shim for 904 air flow amplifier
- 904-003: 0.020” thick shim for 904A air flow amplifier
- 906-000: 0.007” thick shim for 906 series jets
- 907-1: 0.005” thick shim, 24° long, for air knifes
- 908-1: 0.002” thick shim, 24° long, for air knifes
- 909-1: 0.001” thick shim, 24° long, for air knifes
- 910-1: 0.0007” thick shim, 24° long, for air knifes

All shims are made of aluminum.

Thermostat Kits

- 7217-70: Solenoid valve and thermostat kit for 8, 15 and 25 scfm Vortex Coolers, 120 volt AC
- 7217-80: Solenoid valve and thermostat kit for 8, 15 and 25 scfm Vortex Coolers, 240 volt AC
- 7217-100: Solenoid valve and thermostat kit for 35 scfm Vortex Coolers, 120 volt AC
- 7217-110: Solenoid valve and thermostat kit for 35 scfm Vortex Coolers, 240 volt AC
- 7217-120: Solenoid valve and thermostat kit for 70 scfm Vortex Coolers, 120 volt AC
- 7217-130: Solenoid valve and thermostat kit for 70 scfm Vortex Coolers, 240 volt AC

Generators

- 1066GK-2H: 2 scfm generator and bushing kit, set of 5
- 1066GK-4H: 4 scfm generator and bushing kit, set of 5
- 1066GK-8H: 8 scfm generator and bushing kit, set of 5
- 206GGK-11H: 11 scfm generator kit, set of 5
- 2068GGK-15H: 15 scfm generator kit, set of 5
- 2068GGK-25H: 25 scfm generator kit, set of 5
- 3268GK-50H: 50 scfm generator and bushing
- 3268GK-75H: 75 scfm generator and bushing
- 3268GK-100H: 100 scfm generator and bushing

Flex Nozzles (Cold/Hot Air Gun)

- 424-30: Flex nozzle for Thread Guard, dual outlet
- 683-30: Flex nozzle for Mini Cold Air Gun, single outlet
- 606-FN: Flex nozzle for Cold Air Gun, two outlet
- 610-30: Flex nozzle for Cold Air Gun, two outlet
- 611-FRQ: Front flex-flex nozzle upgrade for Cold Air Gun, single outlet

Spray Nozzle Tips

- 1767-1: Spray nozzle tip-Fogging
- 1777-1: Spray nozzle tip-Atomizing
- 1773-1: Spray nozzle tip-Atomizing
- 69727: Liquid Stinger

All shims are made of aluminum.
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