# HOT & COLD AIR GUNS


## THE VORTEC ADVANTAGE

### BENEFITS

- Increase dry machining speeds up to 36%
- Extend tool life by 50%
- Eliminate the mess, expense and safety concerns of liquid coolant
- Reduce waiting or normalization time by cooling parts faster
- Eliminate the potential for burning and scorching
- Avoid secondary parts cleaning after machining

### FEATURES

- Creates cold air up to 100°F (56°C) below inlet air temperature
- Uses only compressed air – no Freon
- Adjustable temperature and flow rate
- Highly reliable with an industry leading 10 year warranty
- Quiet operation – meets OSHA noise specifications

# Frost-Free Cold Air Gun

Cold Air Guns use filtered compressed air and vortex tube technology to produce sub-zero air for industrial spot cooling applications.

The Frost Free Cold Air Gun eliminates the mess associated with condensation and frost arising from continuous use of a Cold Air Gun. A must have for sensitive applications such as fabrics, wood, cardboard and paper; as well as standard metalworking applications.


FROST FREE
COLD AIR GUN
**MODEL 611**

## **Original** Cold Air Gun

Cold Air Guns are most often used for cooling of metal parts, in the machining and repair of metals, plastics, wood, ceramics and other materials.

The effective cooling from a Cold Air Gun can eliminate heat-related parts growth while improving parts tolerance and surface finish quality.


ORIGINAL
COLD AIR GUN
**MODEL 620**

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## **Mini** Cold Air Gun

The Mini Cold Air Gun is the perfect solution for applications where the Cold Air Gun is too big or where lower flow rates are needed.

- Low flow rate minimizes air consumption
- Flexible narrow nozzle enables highly focused cooling


DUAL NOZZLE
MINI COLD AIR GUN
**MODEL 682**

MINI COLD AIR GUN
**MODEL 680**

## Specifications

Models shown come with air filter and magnetic base.
For gun only, add -1 to the model number.

| Part # | | | Air Consumption | | Cooling Capacity | |
|---|---|---|---|---|---|---|
| Frost Free | Original | Dual Nozzle | SCFM | SLPM | BTUh | kcal/h |
| – | 680 | 682 | 8 | 227 | 400 | 101 |
| 611 | 610 | 612 | 15 | 425 | 900 | 227 |
| 621 | 620 | 622 | 25 | 708 | 1500 | 378 |
| 631 | 630 | 632 | 35 | 991 | 2500 | 630 |

## Benefits

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


DUAL NOZZLE
COLD AIR GUN
**MODEL 612**

## Features

- Create cold air up to 100°F below inlet air temp
- Adjustable temperature and flow rate
- Eliminate the mess and expense of liquid coolant
- Avoid secondary parts cleaning after machining
- Highly reliable with no moving parts


## Applications

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

# Hot Air Gun

Hot Air Guns are used where milder heat is needed as compared to an electric heat gun. It is ideal for pre-heating of parts, processes and solutions, with an output flow rate of 2–8 scfm; 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.

HOT AIR GUN
**MODEL 609**

## Benefits

- **Softer heat than electric heat guns to prevent scorching**
- **No spark hazard at the target**
- **Instant on / instant off**

## Applications

- **Pre-heating of parts, processes and solutions**
- **Softening adhesives, rubber and vinyl**
- **Accelerating drying**

## Features

- **Hot air flows up to 200°F (93°C)**
- **No electricity used at the target**
- **Portable magnetic base**
- **Exceptionally reliable—no moving parts**
- **No EMI / RFI interference**
- **Meets OSHA noise and pressure specifications**

## Specifications

Models shown come with air filter and magnetic base. For gun only, add -1 to the model number.

| | | |
|---|---|---|
| **Model** | 609 | |
| **Description** | Hot Air Gun | |
| **Air consumption** | 15 SCFM | 425 SLPM |
| **Cooling capacity** | 900 BTUh | 400 kcal/h |

# Thread Guard Needle Cooler

The Vortec Thread Guard Needle Cooler 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 sewing 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.


THREAD GUARD
NEEDLE COOLER
**MODEL 424**

## 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**

## Features

- **Easy and quick installation**
- **Cool, clean air, no liquid mess**
- **Flexible nozzle for positioning**
- **Low flow rate minimizes air consumption**
- **Low pressure outlet air**

## Applications

- **Industrial sewing**
- **Applications where needle cooling is needed**
- **Material applications where burning and scorching need to be prevented**

## Specifications

Models shown come with air filter and magnetic base. For gun only, add -1 to the model number.

| | | |
|---|---|---|
| **Model** | 424 | |
| **Description** | Thread Guard | |
| **Air consumption** | 8 SCFM | 227 SLPM |
| **Cooling capacity** | 400 BTUh | 101 kcal/h |

# About Vortec

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, as well as develop air amplification products for more efficient use of compressed air in cleaning and conveying applications.

With over 60 years of industry experience combined with the strong global foundation of ITW, Vortec is the preferred solution for compressed air applications around the world.

## Accessories Available

**5 MICRON AIR FILTER**

| Model # | Max air flow rate |
|---|---|
| #701S-24A | 25 SCFM |
| #701S-36A | 50 SCFM |
| #701S-40A | 150 SCFM |

**OIL REMOVAL FILTER**

| Model # | Max air flow rate |
|---|---|
| #701S-48 | 25 SCFM |
| #701S-54 | 70 SCFM |

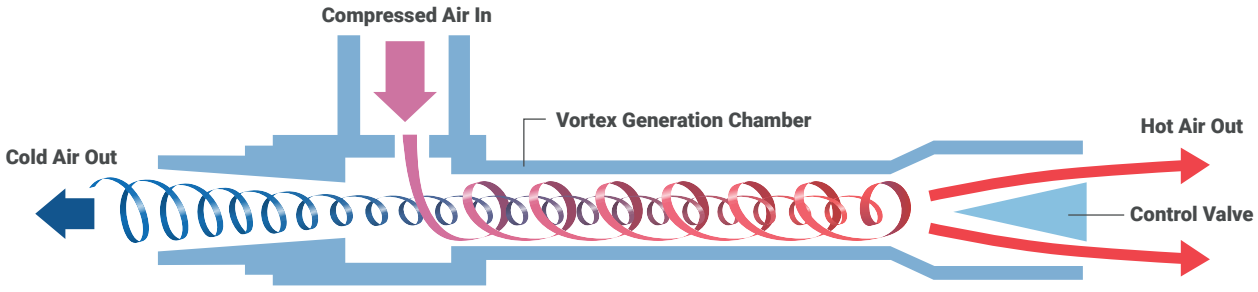
**MAGNETIC MOUNTING BASE**

| Model # |
|---|
| #620-26 |

**DUAL OUTLET FLEX NOZZLE**

| Model # |
|---|
| #610-30 |

## How Cold Air Guns Create Frigid Air




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

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 counter flow 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 inside counter flow vortex exits the opposite end as extremely cold air. Vortex tubes generate temperatures as much as 100°F (56°C) below the inlet air temperature. The fraction of hot air exhausted can be varied to change the outlet cold air temperature, with more exhaust resulting in a colder cold air stream (with lower flow rate), and less exhaust resulting in a warmer cold air stream (and higher flow rate).


VORTEC

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