

Vortex Tubes

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Sub-Zero spot cooling from compressed air for a wide variety of industrial spot and process cooling needs

Vortex Tubes are an effective, low cost solution to a wide variety of industrial spot and process cooling needs. With no moving parts, a vortex tube spins compressed air to separate the air into cold and hot air streams. While French physicist Georges Ranque is credited with inventing the vortex tube in 1930, ITW Vortec was the first company to develop and apply this phenomenon into practical and effective cooling solutions for industrial use.

Applications

Vortex Tubes have a very wide range of application for industrial spot cooling on machines, assembly lines and processes.

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 centrifugally along the inner walls of the Tube at a high rate of speed (1,000,000 RPM) toward the control valve. A percentage of the hot, high-speed air is permitted to exit at the control valve. The remainder of the (now slower) air stream is forced to counterflow up through the center of the high-speed air stream, giving up heat, 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. A control valve located in the hot exhaust end can be used to adjust the temperature drop and rise for all Vortex Tubes.

Features and Benefits

- Uses only compressed air - no electricity or refrigerants
- Maintenance free - no moving parts
- Exceptionally reliable
- Compact and lightweight
- Cycle repeatability within $\pm 1^\circ$
- Drops inlet temperature by up to 100°F

Uses

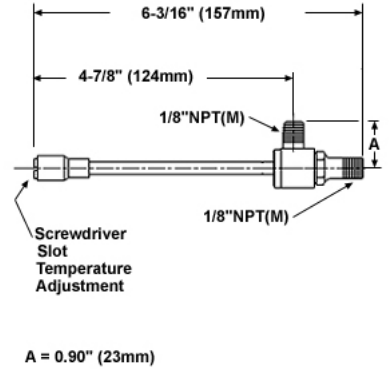
- Cool machining operations
- Set solders and adhesives
- Cool plastic injection molds
- Dry ink on labels and bottles
- Dehumidify gas samples
- Cool heat seal operations
- Thermal test sensors and choke units
- Cool cutter blades
- Temperature cycle parts

Vortex Tubes (from 30 Watts to 1760 Watts)

Use filtered compressed air to produce cooling capacities ranging from 30 Watts to 1760 Watts without the use of Freon, ammonia or other refrigerants.

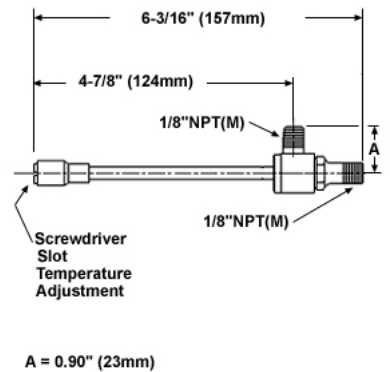
106BSP-2H: Vortex Tube (40 Watts)

Power: 135 BTU/h (40 Watts, 34 kCal/h)
Test pressure: 100 psig (6.9 bars)
Airflow: 2 scfm (57 l/min)
BSP(M): 1/8 " (3.2 mm.)



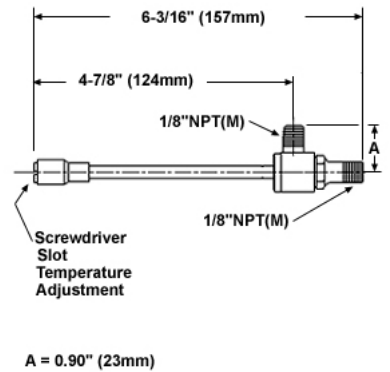
106BSP-4H: Vortex Tube (81 Watts)

Power: 275 BTU/h (81 Watts, 69 kCal/h)
Test pressure: 100 psig (6.9 bars)
Airflow: 4 scfm (113 l/min)
BSP(M): 1/8 " (3.2 mm.)



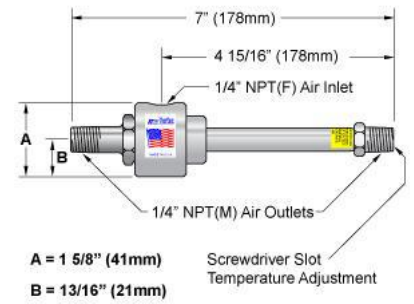
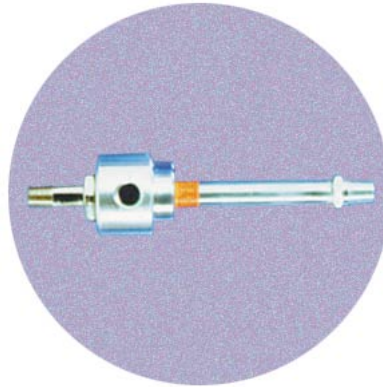
106BSP-8H: Vortex Tube (161 Watts)

Power: 550 BTU/h (161 Watts, 139 kCal/h)
Test pressure: 100 psig (6.9 bars)
Airflow: 8 scfm (227 l/min)
BSP(M): 1/8 " (3.2 mm.)



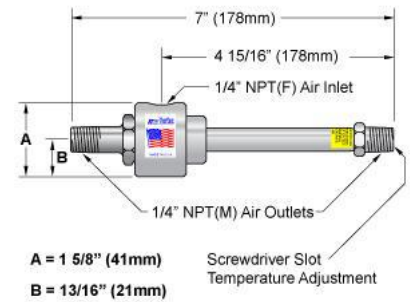
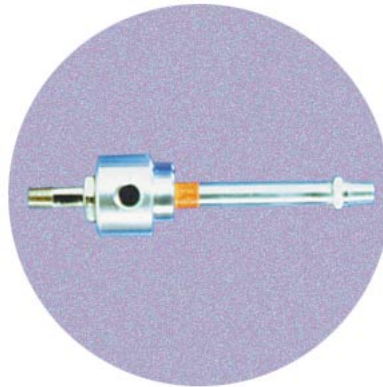
208BSP-11H: Vortex Tube (188 Watts)

Power: 640 BTU/h (188 Watts, 161
kCal/h)
Test pressure: 100 psig (6.9 bars)
Airflow: 11 scfm (311 l/min)
BSP(F): 1/4 " (6.4 mm.)



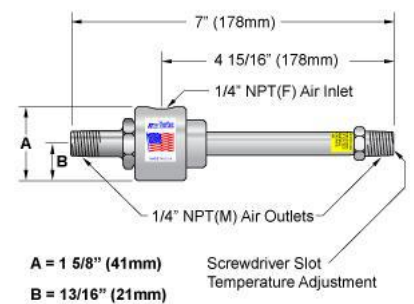
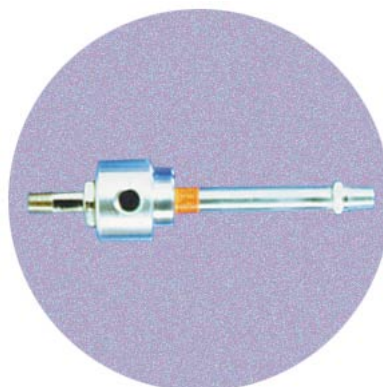
208BSP-15H: Vortex Tube (293 Watts)

Power: 1000 BTU/h (293 Watts, 252
kCal/h)
Test pressure: 100 psig (6.9 bars)
Airflow: 15 scfm (420 l/min)
BSP(F): 1/4 " (6.4 mm.)



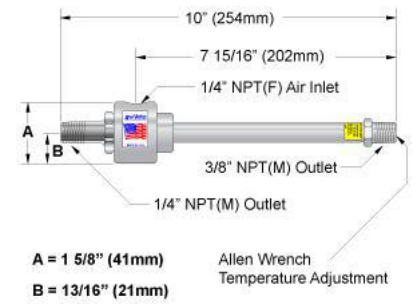
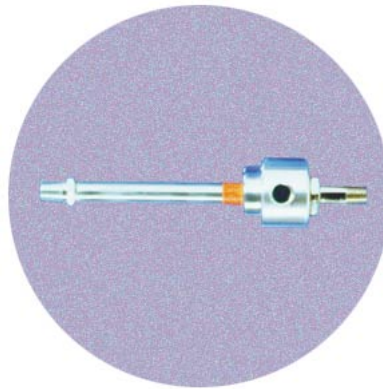
208BSP-25H: Vortex Tube (500 Watts)

Power: 1700 BTU/h (500 Watts, 430
kCal/h)
Test pressure: 100 psig (6.9 bars)
Airflow: 25 scfm (710 l/min)
BSP(F): 1/4 " (6.4 mm.)



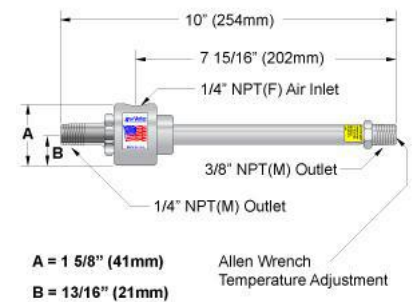
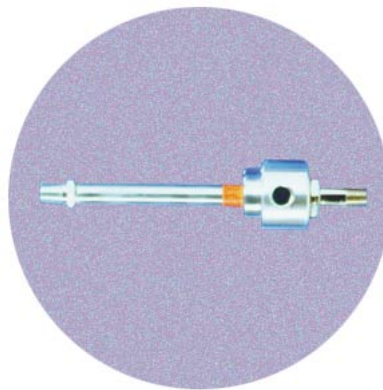
308BSP-25-H: Vortex Tube (590 Watts)

Power: 2000 BTU/h (590 Watts, 500 kCal/h)
 Test pressure: 100 psig (6.9 bars)
 Airflow: 25 scfm (710 l/min)
 BSP(F): 1/4 " (6.4 mm.)



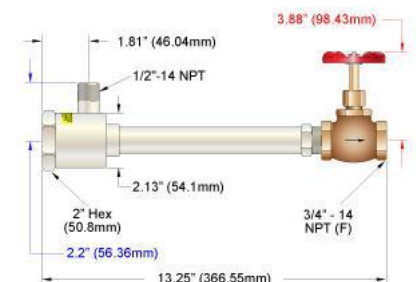
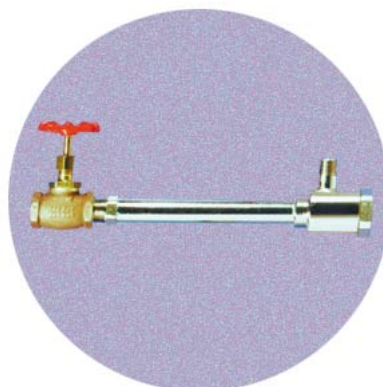
308BSP-35H: Vortex Tube (730 Watts)

Power: 2500 BTU/h (730 Watts, 630 kCal/h)
 Test pressure: 100 psig (6.9 bars)
 Airflow: 35 scfm (990 l/min)
 BSP(F): 1/4 " (6.4 mm.)



328BSP-50H: Vortex Tube (1000 Watts)

Power: 3400 BTU/h (1000 Watts, 860 kCal/h)
 Test pressure: 100 psig (6.9 bars)
 Airflow: 50 scfm (1420 l/min)
 BSP(M): 1/2 " (12.7 mm.)



328BSP-75H: Vortex Tube (1490 Watts)

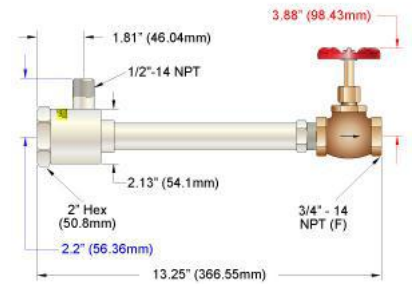
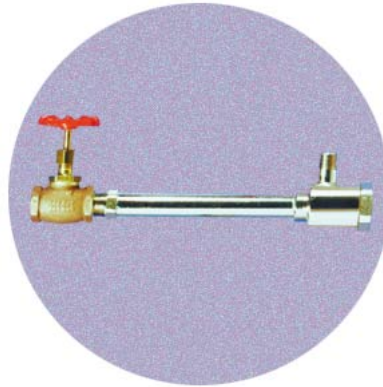
Power: 5100 BTU/h (1490 Watts, 1290

kCal/h)

Test pressure: 100 psig (6.9 bars)

Airflow: 75 scfm (2120 l/min)

BSP(M): 1/2 " (12.7 mm.)



328BSP-100H: Vortex Tube (1990 Watts)

Power: 6800 BTU/h (1990 Watts, 1710

kCal/h)

Test pressure: 100 psig (6.9 bars)

Airflow: 100 scfm (2830 l/min)

BSP(M): 1/2 " (12.7 mm.)

