
Vortex Tubes

Contents

1	Vortex Tubes	2
1.1	Overview	2
1.2	Features	2
1.3	Benefits	3
1.4	Applications	3
1.5	Uses	3
2	Models	4
2.1	Vortex Tubes (from 100 BTU/h to 6000 BTU/h)	4
3	Technical data	10

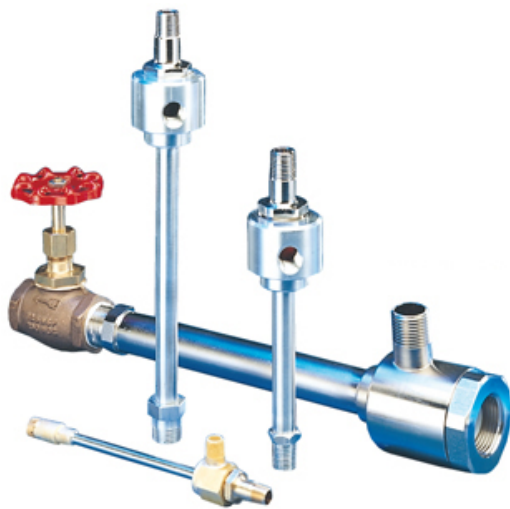
1 Vortex Tubes

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

1.1 Overview

Vortex tubes produce up to 6000 BTU/hr of refrigeration and temperatures as low as -40 deg 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 tube performance is easily adjustable by changing the inlet air pressure, 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.



1.2 Features

- Maintenance free, with no moving parts
- Cycle repeatability within +/- 1 deg
- Drops compressed air inlet temperature by up to 100 deg F
- No electricity required at the cooling site
- Cools without refrigerants, as low as -40 deg
- Compact and lightweight, highly transportable

- Adjustable for varying cooling needs
- Available heating capacity using the same tube, up to 200 deg F
- Available in both aluminum (208 and 308) and stainless steel (208SS) models
- Replacement generators available for modification of cooling or upon contamination

1.3 Benefits

- Cools instantaneously
- Lowest cost per unit of refrigeration of any cooling technique
- Fully adjustable cooling, easily moved from site to site as needed
- Fits to provide cooling in the most confined areas
- Lowest maintenance requirements of any refrigeration technique
- Environmentally friendly, with no refrigerants or chemicals needed
- Easy to install, just connect compressed air and go

1.4 Applications

Vortex tube technology was invented by French physicist Georges Ranque in 1930, and first developed for industrial use by Vortec in the 1960s. Since then, vortex tubes have been applied for a wide range of cooling applications on machines, assembly lines, in processes and for testing and measurements.

1.5 Uses

- Cool machine operations
- Dry ink on labels and bottles
- Temperature cycle parts
- Keep electronics cool
- Set solders and adhesives
- Condense gas samples
- Cool cutter blades
- Thermal test sensors
- Cool heat seal operations
- Cool plastic injection molds

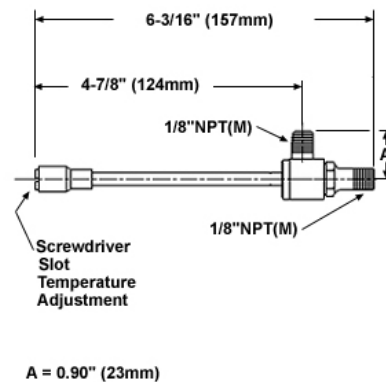
2 Models

2.1 Vortex Tubes (from 100 BTU/h to 6000 BTU/h)

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.

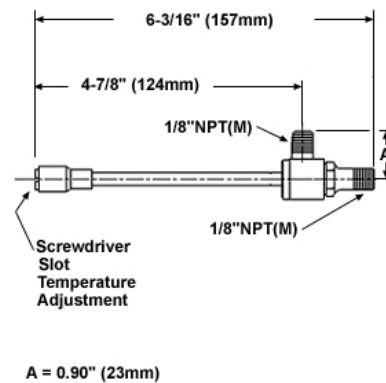
106BSP-2H: Vortex Tube (100 BTU/h)

Model	106BSP-2H
Cooling Capacity (BTU/hr)	100
Inlet, inch	1/8 F BSP (GAS)
Air Consumption @ 100 psig (l/min)	57



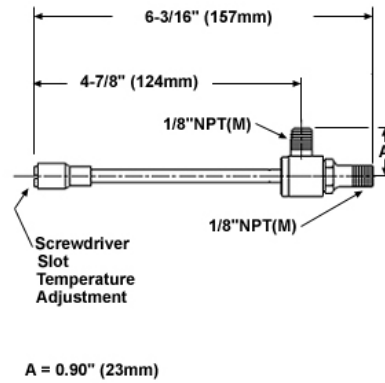
106BSP-4H: Vortex Tube (200 BTU/h)

Model	106BSP-4H
Cooling Capacity (BTU/hr)	200
Inlet, inch	1/8 F BSP (GAS)
Air Consumption @ 100 psig (l/min)	113



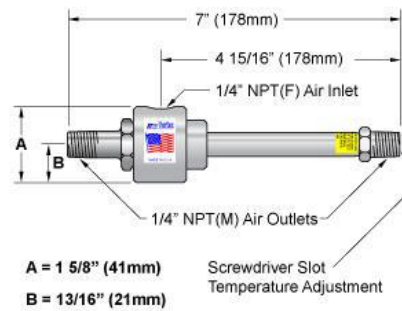
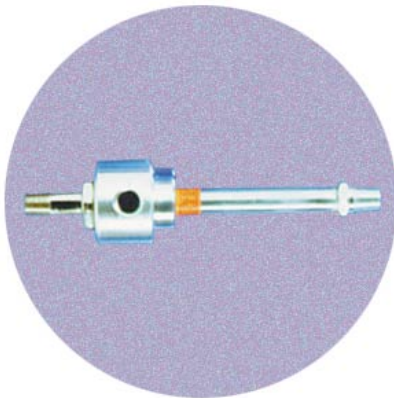
106BSP-8H: Vortex Tube (400 BTU/h)

Model	106BSP-8H
Cooling Capacity (BTU/hr)	400
Inlet, inch	1/8 F BSP (GAS)
Air Consumption @ 100 psig (l/min)	226



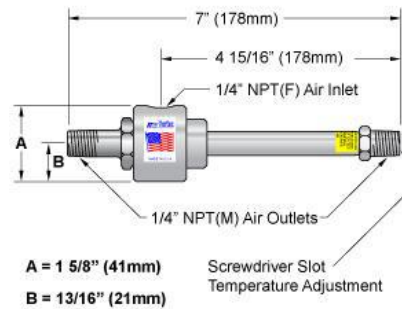
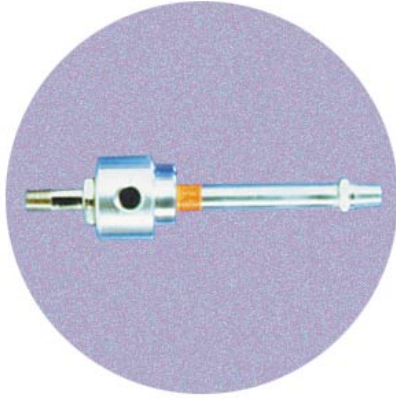
208BSP-11H: Vortex Tube (640 BTU/h)

Model	208BSP-11H
Cooling Capacity (BTU/hr)	640
Inlet, inch	1/4 F BSP (GAS)
Air Consumption @ 100 psig (l/min)	311

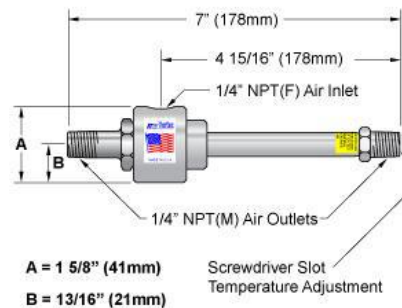
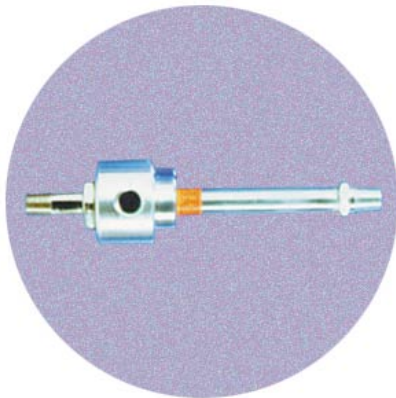


208BSP-15H: Vortex Tube (900 BTU/h)

Model	208BSP-15H
Cooling Capacity (BTU/hr)	900
Inlet, inch	1/4 F BSP (GAS)
Air Consumption @ 100 psig (l/min)	425

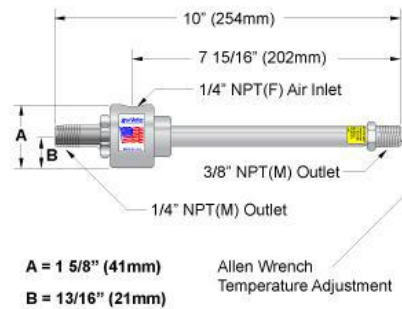
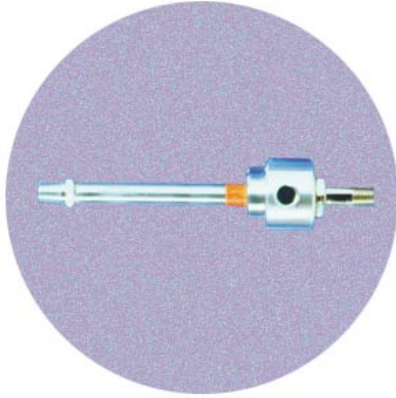
**208BSP-25H: Vortex Tube (1500 BTU/h)**

Model	208BSP-25H
Cooling Capacity (BTU/hr)	1500
Inlet, inch, BSP	1/4 F BSP (GAS)
Air Consumption @ 100 psig (l/min)	708

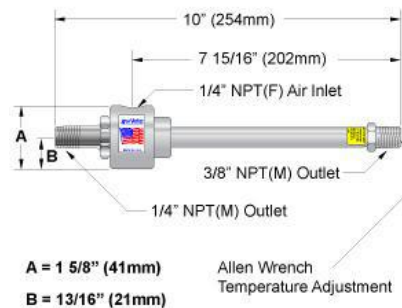
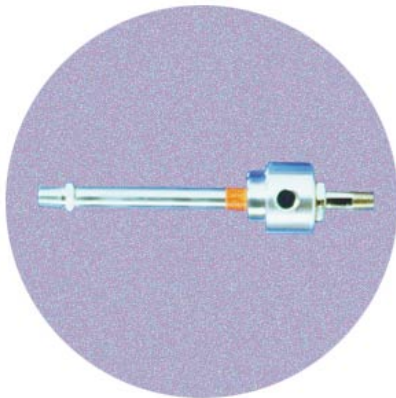


308BSP-25H: Vortex Tube (2000 BTU/h)

Model	308BSP-25H
Cooling Capacity (BTU/hr)	2000
Inlet, inch	1/4 F BSP (GAS)
Air Consumption @ 100 psig (l/min)	708

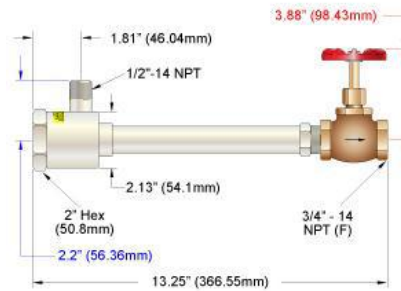
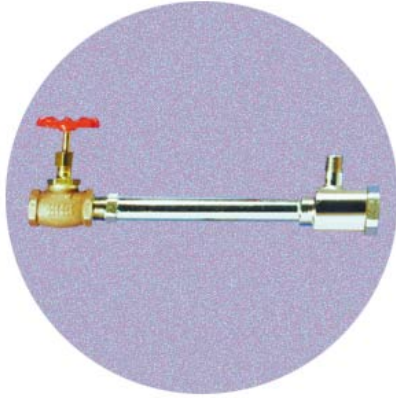
**308BSP-35H: Vortex Tube (2650 BTU/h)**

Model	308BSP-35H
Cooling Capacity (BTU/hr)	2650
Inlet, inch	1/4 F BSP (GAS)
Air Consumption @ 100 psig (l/min)	990

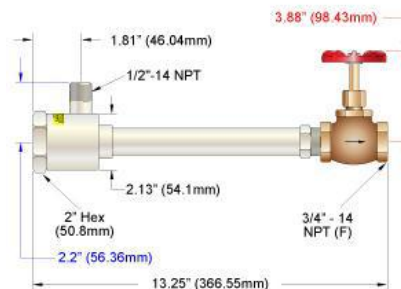
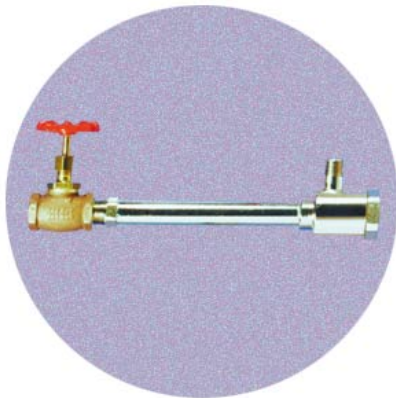


328BSP-50H: Vortex Tube (3000 BTU/h)

Model	328BSP-50H
Cooling Capacity (BTU/hr)	3000
Inlet, inch	1/2 M BSP (GAS)
Air Consumption @ 100 psig (l/min)	1415

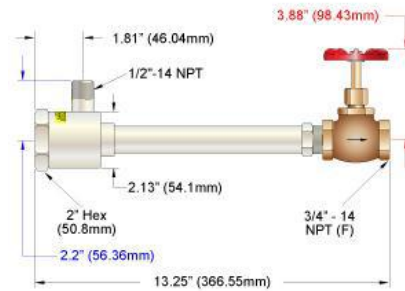
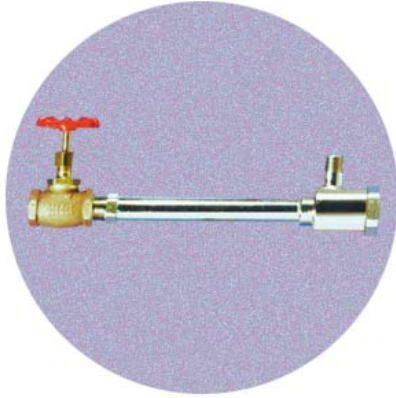
**328BSP-75H: Vortex Tube (4500 BTU/h)**

Model	328BSP-75H
Cooling Capacity (BTU/hr)	4500
Inlet, inch	1/2 M BSP (GAS)
Air Consumption @ 100 psig (l/min)	2123



328BSP-100H: Vortex Tube (6000 BTU/h)

Model	328BSP-100H
Cooling Capacity (BTU/hr)	6000
Inlet, inch	1/2 M BSP (GAS)
Air Consumption @ 100 psig (l/min)	2830



3 Technical data

Vortex Tubes (from 100 BTU/h to 6000 BTU/h)

Model	Cooling Capacity (BTU/hr)	Inlet, inch	Air Consumption @ 100 psig (l/min)
106BSP-2H	100	1/8 F BSP (GAS)	57
106BSP-4H	200	1/8 F BSP (GAS)	113
106BSP-8H	400	1/8 F BSP (GAS)	226
208BSP-11H	640	1/4 F BSP (GAS)	311
208BSP-15H	900	1/4 F BSP (GAS)	425
208BSP-25H	1500	1/4 F BSP (GAS)	708
308BSP-25H	2000	1/4 F BSP (GAS)	708
308BSP-35H	2650	1/4 F BSP (GAS)	990
328BSP-50H	3000	1/2 M BSP (GAS)	1415
328BSP-75H	4500	1/2 M BSP (GAS)	2123
328BSP-100H	6000	1/2 M BSP (GAS)	2830