

# Vortex Tube

Vortex tube technology was invented by French physicist Georges Ranque in 1930. Vortex Tubes are devices which generate cold air and hot air by forcing compressed air through a generator. Air enters the vortex tube and is literally split into two parts - cold air at one end, and hot air at the other all without any moving parts.

Vortex Tubes have an adjustable valve at the "hot" end which controls the volume of the air flow, and the temperature exiting at the cold end. By adjusting the valve, you control the "cold fraction" which is the percentage of total input compressed air that exits the cold end of the Vortex Tube. Our Vortex Tubes may also be supplied with a fixed preset "cold fraction" instead of an adjustable valve. Inside is the interchangeable brass "generator" which can alter the air used in the Vortex Tube, and control the temperature ranges you wish to have at the cold and hot ends. There are several ranges of generators for compressed air capacity.

A vortex tube can be made in several sizes the smallest operating with 2 to 8 SCFM and the medium size 10 to 40 SCFM and the large size 50 to 150 SCFM. Larger sizes have rare applications due to high energy consumption.

Vortex tubes generate temperatures as much as 100 deg F (56 deg C) below the inlet air temperature. These Vortex Tubes are used for different purposes and different applications

## Advantages of Airmasters Vortex Tube:

- No Plastic Products. Generator are made of Brass as compared to plastic Generators of the competitors
- No moving parts.
- Driven by air not electricity.
- Small and lightweight - portable.
- Low in cost compared to most others
- Superior design and performance
- Maintenance free operation
- Made of durable stainless steel and metal parts - no
- Adjustable temperature range
- Generators are interchangeable

## Accessories Related to Vortex Tube:

- Air Filter (recommended)
- Magnetic Base
- Generator
- Silencer Hot End
- Silencer Cold End
- Modular Hose



## Model Selection:

Model No.	SCFM	SLPM	BTU/Hr	Watts	Size
AIR-M2H	2 SCFM	57 SLPM	145 BTU/Hr.	42 W	Small
AIR-M4H	4 SCFM	113 SLPM	290 BTU/Hr.	85 W	Small
AIR-M8H	8 SCFM	227 SLPM	580 BTU/Hr.	170 W	Small
AIR-M10H	10 SCFM	283 SLPM	730 BTU/Hr.	214 W	Small
AIR-M15H	15 SCFM	425 SLPM	1100 BTU/Hr.	322 W	Medium
AIR-M25H	25 SCFM	708 SLPM	1800 BTU/Hr.	527 W	Medium
AIR-M30H	30 SCFM	850 SLPM	2100 BTU/Hr.	615 W	Medium
AIR-M40H	40 SCFM	1133 SLPM	2900 BTU/Hr.	849 W	Medium
AIR-M50H	50 SCFM	1370 SLPM	3500 BTU/Hr.	1025 W	Large
AIR-M75H	75 SCFM	2018 SLPM	5200 BTU/Hr.	1523 W	Large
AIR-M100H	100 SCFM	2700 SLPM	6900 BTU/Hr.	2022 W	Large
AIR-M150H	150 SCFM	4150 SLPM	10.300 BTU/Hr.	3018 W	Large

## Applications of Vortex Tubes

- Cooling components and tools
- Cooling at Welding Process and reduce the overheat
- Drying of Components
- Panel Cooling
- CNC System Cooling
- Set hot melt adhesives
- Cool welding horns on ultrasonic
- Cool moulded plastics
- Cool Electronic components
- Cool heat shrinks tubing
- Keep electronics free of condensation
- Programmable controllers
- System control cabinets
- Motor control centres
- Relay panels
- Environments where cooler panels are near Personnel
- Laser Housing Cooling

## Different Products Made from Vortex Tube

- Panel Cooler
- Tool Cooler
- Spot Cooler



## VORTEX TUBE AIR-M4H

Airmasters vortex tubes are made of durable stainless steel and the only vortex tubes with brass generators. No plastic pieces! 10 year warranty! Our Vortex Tube is usable in high temperatures environments as it comes. Vortex tubes are devices that work on a standard compressed air supply. Air enters the vortex tube and literally splits the air flow into two parts - cold air at one end, and hot air at the other, all without any moving parts. Airmasters Vortex tube have an adjustable valve at the "hot" end controls the volume of the air flow, and the temperature exiting at the cold end. By adjusting the valve, you control the "cold fraction" which is the percentage of total input compressed air the exits the cold end of the vortex tube. Three sizes available of vortex tubes small, medium and large. Also there are 24 different generators for compressed air capacity. Temperature range goes from -46°C to +130°C. The brass generators are interchangeable. There are also two types of generators H and C, the H types used produce maximum refrigeration while the C type it is used to produce maximum cold temperatures (90% of the applications require the H type). We advise to use inlet pressure at 7 Bars.



Cooling capacities [Btu/h] 290 Btu/h

Cooling capacities [Kcal/h] 70 Kcal/h

Cooling capacities [Watts] 85 Watt

Air consumption [l/min] 113 l/min

Sound level [dB(A)] 69dB(A)

Material Stainless Steel

Material Generator Brass

Dimensions 108 mm x Ø 19 mm

Connection type 1/8" male

Warranty 10 years

## VORTEX TUBE AIR-M8H

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Cooling capacities [Btu/h]

580 Btu/h

Cooling capacities [Kcal/h]

146 Kcal/h

Cooling capacities [Watts]

170 Watt

Air consumption [l/min]

227 l/min

Sound level [dB(A)]

74 dB(A)

Material

Stainless Steel

Material Generator

Brass

Dimensions

108 mm x Ø 19 mm

Connection type

1/8" male

Warranty

10 years

## VORTEX TUBE AIR-M10H

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Cooling capacities [Btu/h]	730 Btu/h
Cooling capacities [Kcal/h]	184 Kcal/h
Cooling capacities [Watts]	214 Watt
Air consumption [l/min]	283 l/min
Sound level [dB(A)]	79 dB(A)
Material	Stainless Steel
Material Generator	Brass
Dimensions	151 mm x Ø 28 mm
Connection type	1/4" male
Warranty	10 years

[www.air-masters.eu](http://www.air-masters.eu) [info@air-masters.eu](mailto:info@air-masters.eu) Tel. +44 8006893125

## VORTEX TUBE AIR-M15H

Airmasters vortex tubes are made of durable stainless steel and the only vortex tubes with brass generators. No plastic pieces! 10 year warranty! Our Vortex Tube is usable in high temperatures environments as it comes. Vortex tubes are devices that work on a standard compressed air supply. Air enters the vortex tube and literally splits the air flow into two parts - cold air at one end, and hot air at the other, all without any moving parts. Airmasters Vortex tube have an adjustable valve at the "hot" end controls the volume of the air flow, and the temperature exiting at the cold end. By adjusting the valve, you control the "cold fraction" which is the percentage of total input compressed air the exits the cold end of the vortex tube. Three sizes available of vortex tubes small, medium and large. Also there are 24 different generators for compressed air capacity. Temperature range goes from -46°C to +130°C. The brass generators are interchangeable. There are also two types of generators H and C, the H types used produce maximum refrigeration while the C type it is used to produce maximum cold temperatures (90% of the applications require the H type). We advise to use inlet pressure at 7 Bars.



Cooling capacities [Btu/h]	1100 Btu/h
Cooling capacities [Kcal/h]	277 Kcal/h
Cooling capacities [Watts]	322 Watt
Air consumption [l/min]	425 l/min
Sound level [dB(A)]	79 dB(A)
Material	Stainless Steel
Material Generator	Brass
Dimensions	151 mm x Ø 28 mm
Connection type	1/4" male
Warranty	10 years

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## VORTEX TUBE AIR-M25H

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Cooling capacities [Btu/h]	1800 Btu/h
Cooling capacities [Kcal/h]	453 Kcal/h
Cooling capacities [Watts]	527 Watt
Air consumption [l/min]	708 l/min
Sound level [dB(A)]	81 dB(A)
Material	Stainless Steel
Material Generator	Brass
Dimensions	151 mm x Ø 28 mm
Connection type	1/4" male
Warranty	10 years

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## VORTEX TUBE AIR-M30H

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Cooling capacities [Btu/h]	2100 Btu/h
Cooling capacities [Kcal/h]	529 Kcal/h
Cooling capacities [Watts]	615 Watt
Air consumption [l/min]	850 l/min
Sound level [dB(A)]	83 dB(A)
Material	Stainless Steel
Material Generator	Brass
Dimensions	151 mm x Ø 28 mm
Connection type	1/4" male
Warranty	10 years

## VORTEX TUBE AIR-M40H

Airmasters vortex tubes are made of durable stainless steel and the only vortex tubes with brass generators. No plastic pieces! 10 year warranty! Our Vortex Tube is usable in high temperatures environments as it comes. Vortex tubes are devices that work on a standard compressed air supply. Air enters the vortex tube and literally splits the air flow into two parts - cold air at one end, and hot air at the other, all without any moving parts. Airmasters Vortex tube have an adjustable valve at the "hot" end controls the volume of the air flow, and the temperature exiting at the cold end. By adjusting the valve, you control the "cold fraction" which is the percentage of total input compressed air the exits the cold end of the vortex tube. Three sizes available of vortex tubes small, medium and large. Also there are 24 different generators for compressed air capacity. Temperature range goes from -46°C to +130°C. The brass generators are interchangeable. There are also two types of generators H and C, the H types used produce maximum refrigeration while the C type it is used to produce maximum cold temperatures (90% of the applications require the H type). We advise to use inlet pressure at 7 Bars.



Cooling capacities [Btu/h]	2900 Btu/h
Cooling capacities [Kcal/h]	730 Kcal/h
Cooling capacities [Watts]	849 Watt
Air consumption [l/min]	1133 l/min
Sound level [dB(A)]	86 dB(A)
Material	Stainless Steel
Material Generator	Brass
Dimensions	151 mm x Ø 28 mm
Connection type	1/4" male
Warranty	10 years

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## VORTEX TUBE AIR-M50H

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Cooling capacities [Btu/h]	3500 Btu/h
Cooling capacities [Kcal/h]	881 Kcal/h
Cooling capacities [Watts]	1025 Watt
Air consumption [l/min]	1370 l/min
Sound level [dB(A)]	93 dB(A)
Material	Stainless Steel
Material Generator	Brass
Dimensions	278 mm x Ø 54 mm
Connection type	1/2" male
Warranty	10 years

## VORTEX TUBE AIR-M75H

Airmasters vortex tubes are made of durable stainless steel and the only vortex tubes with brass generators. No plastic pieces! 10 year warranty! Our Vortex Tube is usable in high temperatures environments as it comes. Vortex tubes are devices that work on a standard compressed air supply. Air enters the vortex tube and literally splits the air flow into two parts - cold air at one end, and hot air at the other, all without any moving parts. Airmasters Vortex tube have an adjustable valve at the "hot" end controls the volume of the air flow, and the temperature exiting at the cold end. By adjusting the valve, you control the "cold fraction" which is the percentage of total input compressed air the exits the cold end of the vortex tube. Three sizes available of vortex tubes small, medium and large. Also there are 24 different generators for compressed air capacity. Temperature range goes from -46°C to +130°C. The brass generators are interchangeable. There are also two types of generators H and C, the H types used produce maximum refrigeration while the C type it is used to produce maximum cold temperatures (90% of the applications require the H type). We advise to use inlet pressure at 7 Bars.



Cooling capacities [Btu/h]	5200 Btu/h
Cooling capacities [Kcal/h]	1310 Kcal/h
Cooling capacities [Watts]	1023 Watt
Air consumption [l/min]	2018 l/min
Sound level [dB(A)]	95 dB(A)
Material	Stainless Steel
Material Generator	Brass
Dimensions	278 mm x Ø 54 mm
Connection type	1/2" male
Warranty	10 years

## VORTEX TUBE AIR-M100H

Airmasters vortex tubes are made of durable stainless steel and the only vortex tubes with brass generators. No plastic pieces! 10 year warranty! Our Vortex Tube is usable in high temperatures environments as it comes. Vortex tubes are devices that work on a standard compressed air supply. Air enters the vortex tube and literally splits the air flow into two parts - cold air at one end, and hot air at the other, all without any moving parts. Airmasters Vortex tube have an adjustable valve at the "hot" end controls the volume of the air flow, and the temperature exiting at the cold end. By adjusting the valve, you control the "cold fraction" which is the percentage of total input compressed air the exits the cold end of the vortex tube. Three sizes available of vortex tubes small, medium and large. Also there are 24 different generators for compressed air capacity. Temperature range goes from -46°C to +130°C. The brass generators are interchangeable. There are also two types of generators H and C, the H types used produce maximum refrigeration while the C type it is used to produce maximum cold temperatures (90% of the applications require the H type). We advise to use inlet pressure at 7 Bars.



Cooling capacities [Btu/h]	6900 Btu/h
Cooling capacities [Kcal/h]	1738 Kcal/h
Cooling capacities [Watts]	2022 Watt
Air consumption [l/min]	2700 l/min
Sound level [dB(A)]	95 dB(A)
Material	Stainless Steel
Material Generator	Brass
Dimensions	278 mm x Ø 54 mm
Connection type	1/2" male
Warranty	10 years

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## VORTEX TUBE AIR-M150H

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Cooling capacities [Btu/h] 10.300 Btu/h

Cooling capacities [Kcal/h] 2600 Kcal/h

Cooling capacities [Watts] 3018 Watt

Air consumption [l/min] 4150 l/min

Sound level [dB(A)] 97 dB(A)

Material Stainless Steel

Material Generator Brass

Dimensions 278 mm x Ø 54 mm

Connection type 1/2" male

Warranty 10 years