



STREAMTEKTM PRODUCT CATALOG

CONTACT US

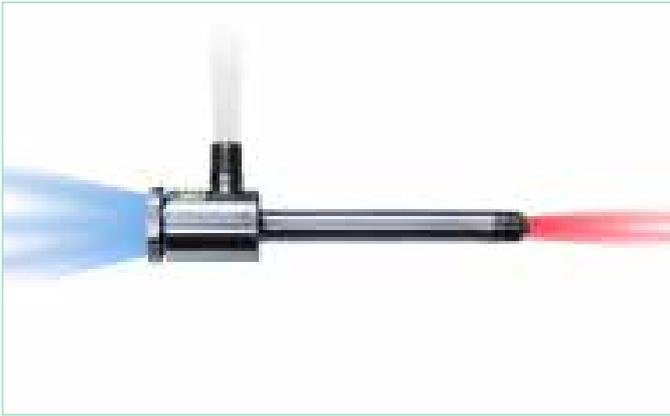


www.stream-tek.com

US & Canada: 1-888-218-6548

Worldwide: 1-705-770-4455

At Streamtek Corp. we strive to provide our clients with superior customer service and the best quality in compressed air products. We find that building long-term customer relationships based on trust and high service standards will help us better address your needs and concerns.



Vortex Tubes

Streamtek's Vortex Tube is an effective, low-cost solution to a wide variety of industrial spot cooling and process cooling needs.

Our Vortex Tubes use solid brass generators as their standard generating unit for a longer life expectancy. The Vortex Tube can decrease temperatures by ~115°F (46°C) and raise temperatures up by ~200°F (93°C) from the initial inlet air temperature. They are typically used to

cool electronic controls, cabinet enclosure chambers, gas samples, machining operations so much more.

Which Vortex Tube will best suit my needs?

1



Our Vortex Tubes are available in 3 sizes (**Small (1)**, **Medium (2)** and **Large**). Each Vortex Tube is constructed of stainless steel. The wear resistance of stainless steel

as well as its resistance to corrosion and oxidation assures that Streamtek Vortex Tubes will provide years of reliable, maintenance free-operation.

2



Vortex Tube Features

- Adjustable temperature
- Cools without costly electricity or refrigerants
- Maintenance free (No moving parts)
- Reliable, compact and lightweight
- Durable - made of Stainless Steel

How long has the Vortex Tube been around?

The vortex tube was invented in 1933 by French physicist Georges J. Ranque. German physicist Rudolf Hilsch improved the design and published a widely read paper in 1947 on the device, which

he called a Wirbelrohr (meaning whirl pipe).

In the past, the Vortex Tube has been known as the "Hilsch Tube", the "Ranque Vortex Tube", the "Maxwell's Demon", and the "Ranque-Hilsh Tube". It's a reliable, simple and low cost answer to various spot-cooling problems within industrial plants.

Can the Vortex Tube withstand back-pressure on the cold exhaust?

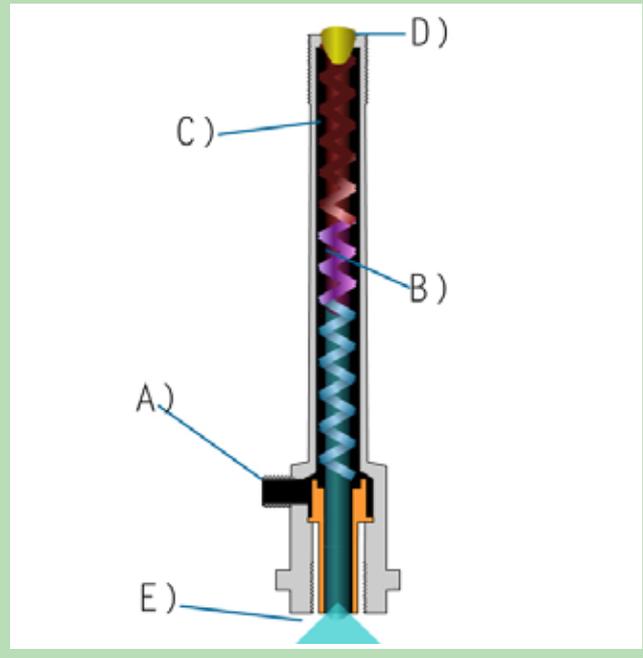
The performance is negatively impacted with back-pressure on the cold end exhaust. A back-pressure of 5 PSIG will change performance by approximately 5°F. A low pressure up to 2 PSIG will not affect performance.

Is there anything in the Vortex Tube that can wear out or need replacing?

No. There are no moving parts, it will never wear out. They may need cleaning from time to time if there is contamination within the air supply. The Vortex Tube is constructed of type 303 stainless steel, brass generators, and a brass control valve.

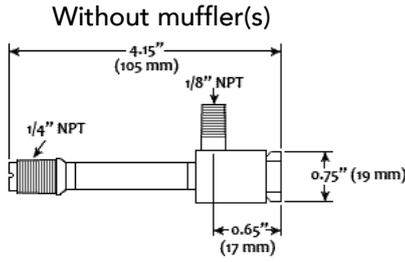
How do Vortex Tubes Work?

- A)** From 80 to 100 PSIG (5.5 - 6.9 BAR), compressed air enters the Vortex Tube through a standard NPTM inlet and tangentially through a generator into the vortex spin chamber.
- B)** This air stream spinning at up to 1,000,000 RPM travels in one direction along the small (hot end) tube and then is forced back through the center of this outer vortex.
- D)** The brass control valve on the hot end allows for quick n' easy adjustment of the "cold fraction".
- E)** As the center column travels towards the opposite end, it gives off kinetic energy in the form of heat to the outside stream of air and exits the vortex tube as cold air.

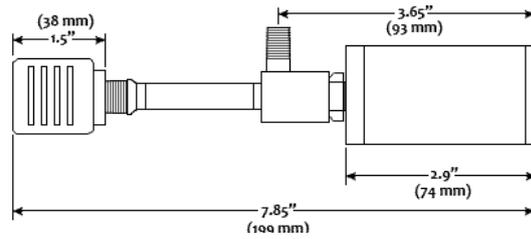


Vortex Tube Dimensions

SMALL

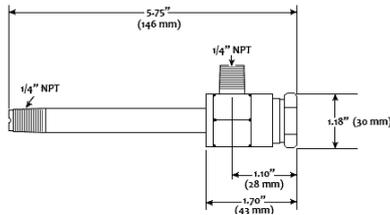


Assembled with muffer(s)

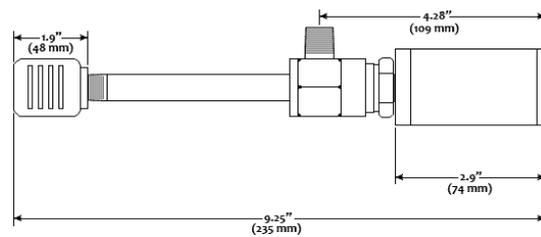


MEDIUM

Without muffer(s)

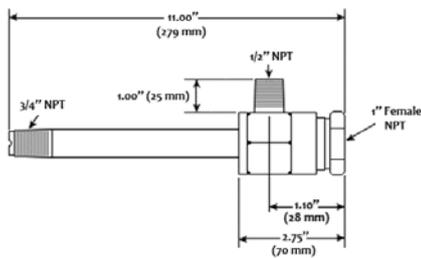


Assembled with muffer(s)

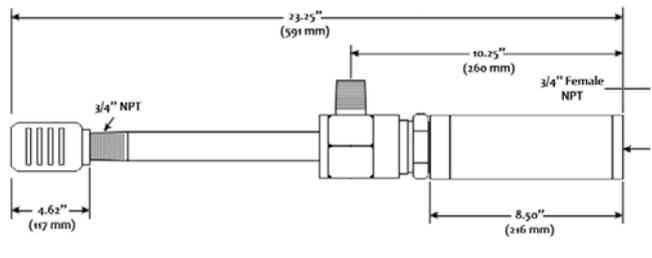


LARGE

Without muffer(s)



Assembled with muffer(s)



Vortex Tube Specifications

The 7500 series Vortex Tubes are used in most industrial applications such as: electrical control panel cooling, tool cooling, and parts cooling. These Vortex Tubes optimize airflow and temperature drop to produce maximum cooling power or Btu/hr. (Kcal/hr.).

The 7700 series Vortex Tubes are used in applications that require extreme cold temperatures such as circuit board testing, and lab sample cooling. These Vortex Tubes provide the lowest cold air temperatures, but at a low cold airflow.

Size	Model No.	Air Consumption	BTU/Hr. @ 100 PSIG	Kcal / Hr. @
Small	7502	2 SCFM (57 SLPM)	145 BTU/Hr.	37
Small	7504	4 SCFM (113 SLPM)	275 BTU/Hr.	69
Small	7508	8 SCFM (227 SLPM)	560 BTU/Hr.	141
Medium	7510	10 SCFM (283 SLPM)	700 BTU/Hr.	176
Medium	7515	15 SCFM (425 SLPM)	1100 BTU/Hr.	277
Medium	7525	25 SCFM (708 SLPM)	1800 BTU/Hr.	454
Medium	7530	30 SCFM (850 SLPM)	2060 BTU/Hr.	519
Medium	7540	40 SCFM (1133 SLPM)	2800 BTU/Hr.	706
Large	7550	50 SCFM (1416 SLPM)	3400 BTU/Hr.	857

Size	Model No.	Air Consumption	BTU/Hr. @ 100 PSIG	Kcal / Hr. @
Small	7702	2 SCFM (57 SLPM)	--	--
Small	7704	4 SCFM (113 SLPM)	--	--
Small	7708	8 SCFM (227 SLPM)	--	--
Medium	7710	10 SCFM (283 SLPM)	-	--
Medium	7715	15 SCFM (425 SLPM)	--	--
Medium	7725	25 SCFM (708 SLPM)	--	--
Medium	7730	30 SCFM (850 SLPM)	--	--
Medium	7740	40 SCFM (1133 SLPM)	--	--
Large	7550	50 SCFM (1416 SLPM)	--	--

7500 Series (10-15 SCFM) Medium Vortex Tube Performance

The cold fraction table below is ONLY for the STREAMTEK 7500 Series Generators, or as some competitors like to call ('H' Generators). The 7700 Series Vortex Tube ('C' Generators), produce very cold temperatures but with a lower

PSIG	Cold Fraction								
	10%	20%	30%	40%	50%	60%	70%	80%	90%
20	63F 35C	62F 34C	60F 33C	56F 31C	51F 28C	44F 24C	36F 20C	28F 15C	17F 9C
	7F 4C	15F 8C	25F 14C	36F 20C	50F 28C	64F 36C	83F 46C	107F 59C	148F 82C
40	91F 51C	88F 49C	85F 47C	80F 44C	73F 41C	63F 35C	52F 28C	38F 21C	26F 14C
	9F 5C	21F 11C	35F 19C	52F 29C	71F 39C	92F 51C	117F 65C	147F 82C	220F 122C
60	107F 59C	104F 58C	100F 56C	93F 52C	84F 47C	73F 41C	60F 33C	45F 25C	29F 16C
	10F 6C	24F 13C	40F 22C	59F 33C	80F 44C	104F 58C	132F 73C	168F 93C	236F 131C
80	19F 66C	115F 64C	110F 61C	102F 57C	92F 51C	80F 44C	66F 36C	49F 27C	31F 17C
	11F 7C	25F 14C	43F 24C	63F 35C	86F 48C	113F 63C	143F 79C	181F 101C	249F 138C
100	127F 71C	123F 68C	118F 66C	110F 61C	99F 55C	86F 48C	71F 39C	53F 29C	33F 18C
	12F 8C	26F 14C	45F 25C	67F 37C	91F 51C	119F 66C	151F 84C	192F 107C	252F 140C
120	133F 74C	129F 72C	124F 69C	116F 64C	104F 58C	91F 50C	74F 41C	55F 31C	34F 19C
	13F 8C	27F 14C	46F 26C	69F 38C	94F 52C	123F 68C	156F 87C	195F 108C	257F 142C

Pounds per Square Inch Gauge
 Percentage of cold air produced
 Drop in temperature
 Rise in temperature

Filtration

Filtration to maintain clean air is necessary at a rate of 25 microns or less. STREAMTEK™ filters contain a 5 micron element and are properly sized for airflow.

Noise/Muffling

Both Small and Medium Vortex Tubes can be quite noisy if un-ducted. STREAMTEK™ offers mufflers for both cold and hot air discharge. If the cold air is ducted, muffling is not usually required.

Inlet Air Temperature

The STREAMTEK™ Vortex Tube will provide a temperature drop from the temperature of the compressed air supply.

Back Pressure

Up to 2 PSIG (.1 BAR) of low back pressure will not affect the performance of the STREAMTEK™ Vortex Tube. Anything over this will have a performance degradation of ~ 5°F (2.8°C).

Vortex Tube Accessory

Flexible Hose Kits		
	Model #	Description
	TCOSHK	Single Point Flexible Hose Kit - Fits ALL Tool Coolers
	TCODHK	Dual Point Flexible Hose Kit - Fits ALL Tool Coolers

➤ More Vortex Tube accessories can be found on [page 33 & 34](#)

Vortex Tube Description

Vortex Tubes

7500 Series			
	Flow	Model #	Material
	2 SCFM (57 SLPM)	7502	Stainless 303
	4 SCFM (113 SLPM)	7504	Stainless 303
	8 SCFM (227 SLPM)	7508	Stainless 303
	10 SCFM (283 SLPM)	7510	Stainless 303
	15 SCFM (425 SLPM)	7515	Stainless 303
	25 SCFM (708 SLPM)	7525	Stainless 303
	30 SCFM (850 SLPM)	7530	Stainless 303
	40 SCFM (1133 SLPM)	7540	Stainless 303
	10 SCFM	7510-A	Aluminum
	15 SCFM	7515-A	Aluminum
	25 SCFM	7525-A	Aluminum
	30 SCFM	7530-A	Aluminum
	40 SCFM	7540-A	Aluminum

7700 Series			
	Flow	Model #	Material
	2 SCFM (57 SLPM)	7702	Stainless 303
	4 SCFM (113 SLPM)	7704	Stainless 303
	8 SCFM (227 SLPM)	7708	Stainless 303
	10 SCFM (283 SLPM)	7710	Stainless 303
	15 SCFM (425 SLPM)	7715	Stainless 303
	25 SCFM (708 SLPM)	7725	Stainless 303
	30 SCFM (850 SLPM)	7730	Stainless 303
	40 SCFM (1133 SLPM)	7740	Stainless 303
	10 SCFM	7710-A	Aluminum
	15 SCFM	7715-A	Aluminum
	25 SCFM	7725-A	Aluminum
	30 SCFM	7730-A	Aluminum
	40 SCFM	7740-A	Aluminum

Kits: Include Vortex Tube, ALL Generators, Cold End Muffler, and 1/4" NPT Auto Drain Filter		
	Model #	Description
	VTSM-KIT	Small Vortex Tube Kit
	VTMD-KIT	Medium Vortex Tube Kit

Silencing Mufflers		
	Model #	Description
	STM014	Stainless Steel Cold End Muffler for Small Vortex
	STM038	Stainless Steel Cold End Muffler for Medium
	MFHOT-02	Stainless Steel Hot End Muffler for Small & Me-

Why Choose Streamtek Corp?

- Customers come first
- Best production practices implemented
- A complete and realistic estimation
- A holistic approach towards every project



 Our team of professionals is always happy to answer any of your questions: +1-705-770-4455 or email support@stream-tek.com.

Can I use a Vortex Tube to cool my electrical enclosure instead of the Cabinet Panel Cooler?

Yes, however there are clear-cut advantages to using the Streamtek Cabinet Panel Cooler for this application.

1) Cabinet Panel Coolers have a pressure release valve to allow warm air from the electrical enclosure to escape the cabinet.

2) Cabinet Panel Coolers have been fine-tuned to achieve maximum refrigeration; this cannot be adjusted. Vortex Tubes on the other hand can be adjusted by the

user, leaving them open to poor operation and miss-adjustment.

3) Cabinet Panel Coolers have been engineered to reduce noise levels drastically from that of the sole Vortex Tube.

Vortex Tube Accessories

Flexible Hose Kits		
	Model #	Description
	TC0SHK	Single Point Flexible Hose Kit - Fits ALL Tool Coolers
		TC0DHK

Can I connect the cold end of a Vortex Tube to an Air Amplifier or Air Knife?

No. The Air Amplifier and Air Knife would both restrict the air flow of the Vortex Tube to the point where back-pressure would limit the cooling capacity of the Vortex Tube. The cold end of the Vortex Tube should not be subjected to a backpressure in excess of 5 PSIG.

Generators: 7700 Series		
	Model #	Material
	GN7702	2 SCFM Small Generator - Max. Cooling
	GN7704	4 SCFM Small Generator - Max. Cooling
	GN7706	6 SCFM Small Generator - Max. Cooling
	GN7708	8 SCFM Small Generator - Max. Cooling
	GN7710	10 SCFM Medium Generator - Max. Cooling
	GN7715	15 SCFM Medium Generator - Max. Cooling
	GN7725	25 SCFM Medium Generator - Max. Cooling
	GN7730	30 SCFM Medium Generator - Max. Cooling
	GN7740	40 SCFM Medium Generator - Max. Cooling
	GN7750	50 SCFM Large Generator - Max. Cooling
	GN7775	75 SCFM Large Generator - Max. Cooling
	GN77100	100 SCFM Large Generator - Max. Cooling
	GN77150	150 SCFM Large Generator - Max. Cooling

Generators: 7500 Series		
	Model #	Material
	GN7502	2 SCFM Small Generator - Max. Cooling
	GN7504	4 SCFM Small Generator - Max. Cooling
	GN7506	6 SCFM Small Generator - Max. Cooling
	GN7508	8 SCFM Small Generator - Max. Cooling
	GN7510	10 SCFM Medium Generator - Max. Cooling
	GN7515	15 SCFM Medium Generator - Max. Cooling
	GN7525	25 SCFM Medium Generator - Max. Cooling
	GN7530	30 SCFM Medium Generator - Max. Cooling
	GN7540	40 SCFM Medium Generator - Max. Cooling
	GN7550	50 SCFM Large Generator - Max. Cooling
	GN7575	75 SCFM Large Generator - Max. Cooling
	GN75100	100 SCFM Large Generator - Max. Cooling
	GN75150	150 SCFM Large Generator - Max. Cooling

We supply the food, agricultural, mining, pulp & paper, pharmaceutical, engineering, and chemical markets with problem-solving compressed air operated products. Our experience has proven that virtually anyone can benefit from our innovative, low-cost effective solutions.

How can I tell what Cold Fraction my Vortex Tube is set to?

There are two ways to find out:

(1) By using the Performance Data chart found on our website stream-tek.com/product/vortex-tubes/ (under "Specification" tab), you can measure the temperature of cold air exhausting and compare it to the chart. It's important to note that the air temperature should be taken immediately out of the Vortex Tube as the airflow will quickly warm as it mixes with ambient air.

(2) An air flow meter can also be used to measure the volume of air both coming out of the unit and going into Vortex Tube. Then use these values and compare the cold or hot flow of the unit. By comparing the cold or hot flow rate to the total will give you accurate hot or cold fraction.

