THE AIR NOZZLE PEOPLE

01273 400092
www.airnozzle.co.uk
info@airnozzle.co.uk

Quick Guide

Vortex Tubes

WHAT ARE THEY?

The vortex tube was invented in 1931 by French physicist George J Ranque. Despite being around for a long time they are an often overlooked piece of cooling technology that has many handy features for the modern production environment.

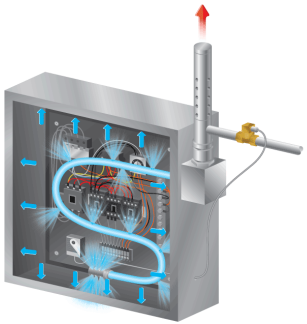
The vortex tube uses the expansion of a compressed air supply to set it spinning in a generator chamber. This rapidly rotating air then separates into a cold and hot steam travelling in different directions. No actual heat is generated or lost in the process but the localised hot and cold air streams are extremely useful for a variety of cooing systems.

ADVANTAGES

1. They are very simple devices with no moving parts meaning they are **almost maintenance free**.
2. Vortex tubes have a **very low cost** when compared to other types of cooler. Typically, they are less expensive than air conditioning units.
3. If used to cool cabinets they help keep the enclosure a slightly positive pressure which can **help with dust contamination** problems
4. Vortex tubes are small when compared to other cooling systems. This makes them **easier to retrofit** into a cramped factory environment.
5. The compressed air used in a vortex tube is typically very dry, meaning they can h**elp reduce the risk of condensation** forming in humid environments.
6. Vortex tubes represent a handy way to **deliver dry tool cooling** on CNC machines. This can be advantageous over liquid coolants in many situations.
7. The cold air stream is generated almost instaneously. This means that a vortex tube can be cycled on and off rapidly via a solenoid valve resulting in a **highly responsive** cooling system.

APPLICATIONS

With all these features vortex tubes are commonly used in tool cooling, spot cooling, cabinet cooling, panel cooling and anywhere in a factory or machine shop where the installation of traditional chillers may be difficult or constrained by concerns over maintenance or space.



Call The Air Nozzle People today to discuss your project requirements.