Vortex CNC Coolers

■ Vortex Cabinet Coolers maintain NEMA 4, 4X and 12 integrity. All Cabinet Coolers are **RoHS** and CE Compliant!

■ SMVCC 20025M / 20325M Cooling Capacity

unit : BTU/h

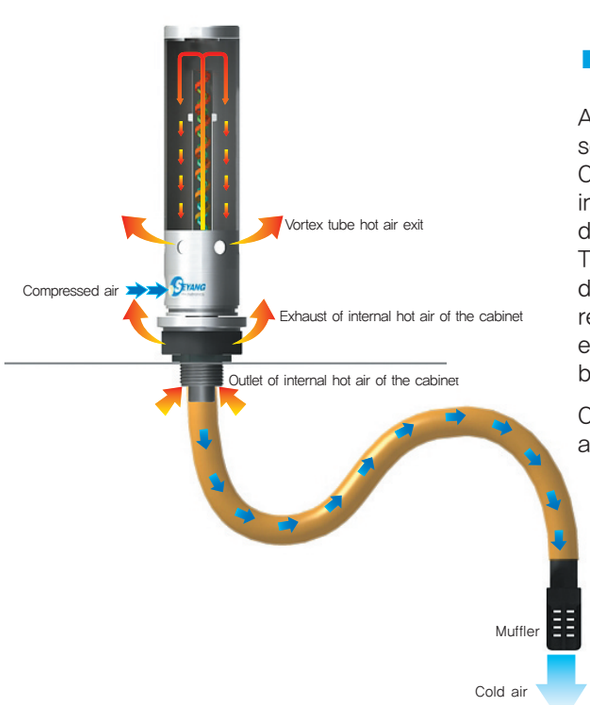
	40PSI (2.75 bar)	60PSI (4bar)	80PSI (5.5bar)	100 PSI (7bar)
10 CFM Generator	350	500	680	860
15 CFM Generator	500	750	1,000	1,300
25 CFM Generator	800	1,200	1,600	2,000
35 CFM Generator	1,200	1,800	2,400	3,000

Example) The cooling capacity of CNC Cooler is 2,000 BTU/h at the inlet air pressure of 100PSI(7bar) for 25CFM Generator. The cooling capacity of Vortex Tube SMVT10025M is 2,500 BTU/h at 100PSI.However, the cooling capacity of CNC Cooler SMVCC20025M is 2,000BTU/h at 100PSI, which is reduced by 20%.

CNC Cooler is adjustable within the range of the cooling capacity. Under the same conditions, if the inlet pressure is 60PSI(4bar), the cooling capacity is 1,200 BTU/h. For standard CNC cooler models, SMVCC20025M/20325M, the suitable generator is 25CFM.

SMVCC20325M model is always suitable for the temperature control system because it controls the compressed air supplied before the CNC cooler, with the thermostat and solenoid valve (2-Way Solenoid Valve) built in the product in order to save energy.

If the cooling capacity of 35 CFM is required for the CNC cooler, please contact the sales department of the head office.



■ Operating Principle

Air conditioning with only compressed air as a power source. There are no moving parts. The Vortex CNC Cooler uses a Vortex Tube to convert compressed air into two streams –one hot and one cold. The cold air is discharged into the control cabinet of your CNC Control. The air is filtered before it is cooled so that only clean, dry air is introduced to the sensitive controls. There are relief valves and seals built into the CNC Cooler to enable the unit to maintain the sealed nature of NEMA boxes.

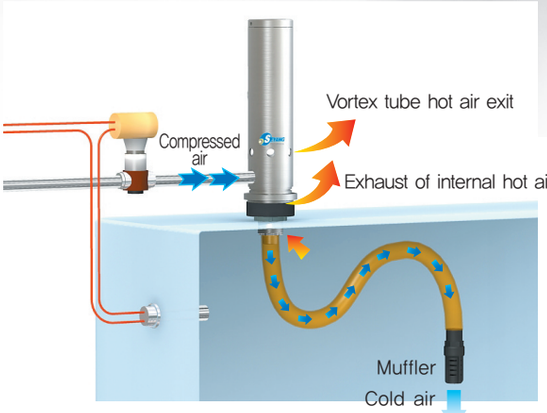
CNC Cooler Systems (25SCFM factory set) include 5 ㎛ air filter for the compressed air system, and a ducting kit for the cold air so you can direct the cold air to the heat source in your control cabinet. Systems include an adjustable electrically operated thermostat, and a solenoid valve to provide thermostatic control for your systems. All systems come complete with installation instructions. The CNC Cooler mounts into a standard 3/4" electrical knockout and the thermostat mounts into a standard 1/2" electrical knockout.

SEYANG® Mechatronics Co., Ltd.

Vortex CNC(Cabinet) Cooler Advantages

* No Freon
* No Electricity
* No Maintenance
* Quiet Operation
* No Fans and Filters
* Safety
* Environment(環境)
* Used in dusty, hot areas
* No moving parts
* Instant On and Off

Direction of compressed air



When compressed air is supplied to the inlet of the CNC Cooler, it comes into the CNC Cooler, and the upper part of the two airflows turns to hot air and the lower part turns to cold air.

Hot air at the top of the CNC Cooler is wrapped in the interior of the CNC Cooler and discharged to the outside completely. While, the cold air changes the elevated temperature inside the cabinet, and the hot air inside the cabinet is discharged to the outside as shown in the figure. The cold air discharged from the CNC Cooler makes the interior of the cabinet cool and comfortable.

As the inside of the cabinet is sealed, it blocks hot air from outside and prevents dust and foreign matters.

■ Uses

Easy to install at the workshop at a low cost with quality assurance of CNC coolers for NC / CNC controllers, PLC, motor controllers, industrial cameras and control boxes of industrial equipment. No need of repair of the product, it does not use Freon gas(CFC's), and requires no maintenance.

As the CNC Cooler is attached to the control panel, being sealed, it discharges the heat generated from the inside of the control panel equipment and it always keeps proper temperature, by which the interior of the CNC Cooler can be controlled cleanly and quietly.

■ Benefits

- Low cost
- Reliable
- Prevention of malfunction of the equipment
- Easy to install
- Maintenance-free after the operation of the product
- No vibration, quiet, noise within70 dBA
- No fans or filters inside the panel
- Prevention from dirt and dust inside the panel

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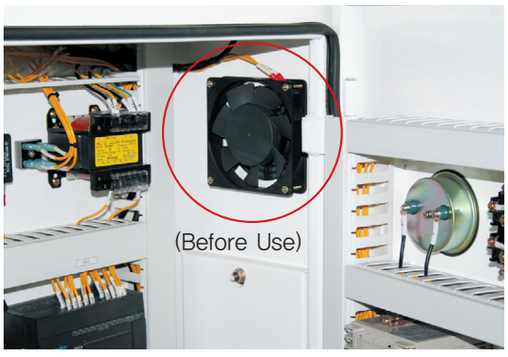
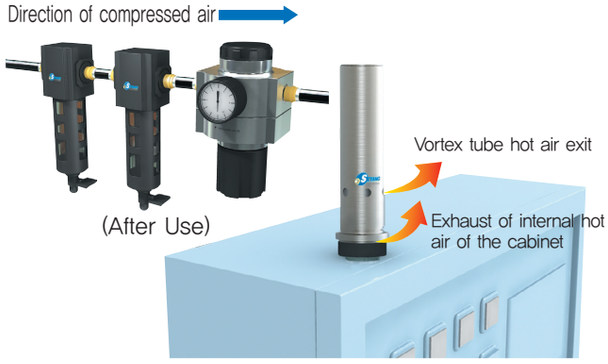
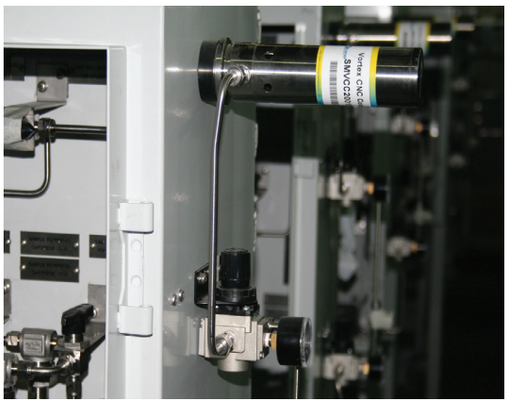
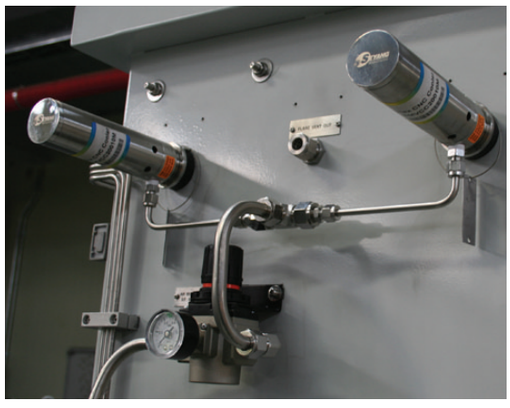
■ Example of Use





If you install a cabinet cooler which stabilizes the temperature in the control panel, a fan or a filter is not necessary and the control panel is safe because the cabinet cooler blocks dust and pollution inside the panel. The temperature inside the control panel is controlled by SMVCC20325M, a thermostat. Accordingly, it is quiet and you can feel that it works properly without vibration.





■ Reference Data

● Units and Conversion

1 BTU/hr = 0.293 watts
1 BTU/hr – 0.000393 horsepower(HP)
1 Watt = 3.415 BTU/hr
1 Horsepower = 2544 BTU/hr
1 Watt = 0.00134 horsepower(HP)
1 Square Foot = 0.0929 square meters(m2)
1 Square Meter = 10.76 square foot(ft)

● Capacity by Fan Type

4″ fan: 100 CFM (2,832 LPM)
6″ fan: 220 CFM (6,230 LPM)
8″ fan: 340 CFM (9,628 LPM)
10″ fan 550 CFM (15,574 LPM)
BTU/h (Fan cooling effect):1.08 x (temp. inside panel in˚F temp. outside panel in ˚F) x CFM

Watts (Fan cooling effect):0.16 x (temp. inside panel in ℃ temp. outside panel in ℃) x LPM