



Vortex Hazardous Enclosure Cooling

These are some of the necessary modifications if an ITW Vortex Cooler or Vortex A/C is to be used in a hazardous (Class 1, Div 1 or 2; or a Class 2, Groups E, F or G) location:

1. The Vortex Cooler must be used in conjunction with a purge system. The purge system must be specially prepared for use with the Vortex Cooler.
2. If intending to use one of ITW Vortec's electrical thermostatically controlled models, our standard solenoid valve and thermostat must be located *inside* the protected enclosure. (See Page 2) If the thermostat and solenoid valve cannot be located inside the protected enclosure, then they cannot be used in a hazardous area. If an explosion-proof (NEMA type 7 & 9) solenoid valve is used, then the valve may be located outside of the protected enclosure. (See Page 3)
3. Several modifications to the Vortex Cooler itself are necessary: the vent air ports must be plugged and the cold outlet must be closed off when not cooling (either with a solenoid activated on/off valve or a check valve or whatever alternate means). These modifications are necessary to prevent an incendiary particle from escaping the protected enclosure through passages in the Cooler and into the hazardous area.
4. The cooling air from the Vortex Cooler and the purge air from the purge system must be vented out of the protected enclosure through a spark arresting enclosure vent, available from the purge system manufacturer. This vent must be properly sized by the purge system manufacturer to prevent over-pressurization of the enclosure. Cold air flows for the various Vortex A/C and Vortex Cooler models are listed on the attached files.
5. The installed Vortex Cooler / Purge System must be tested and certified by a third party to assure it's effectiveness and safety. Because portions of the Vortex Cooler (and the solenoid valve) can get very hot, the system must be evaluated and a T class (temperature class) assigned, depending on the environment it is going into. There are several factors that will determine the T class of the system: the compressed air supply temperature, the operating pressure of the Vortex Cooler, the heat load in the enclosure, etc. Generally the T class of a Vortex Cooler or Vortex A/C will be T6 under normal operating conditions.

If using any one of ITW Vortec's enclosure cooler models that have a mechanical thermostat (the Vortex A/C models or any of the 701/770 models) then notes #1,3,4 and 5 above still apply to the installation. (See Page 4 for modifications necessary to Vortex A/C models.)

ITW Vortec sells only Vortex Coolers rated for NEMA 12, 4 and 4X environments. We do not manufacture or sell Coolers rated for hazardous areas. We do not advocate the use of Vortex Coolers in hazardous areas unless the entire enclosure system is tested and certified by the appropriate authorities.

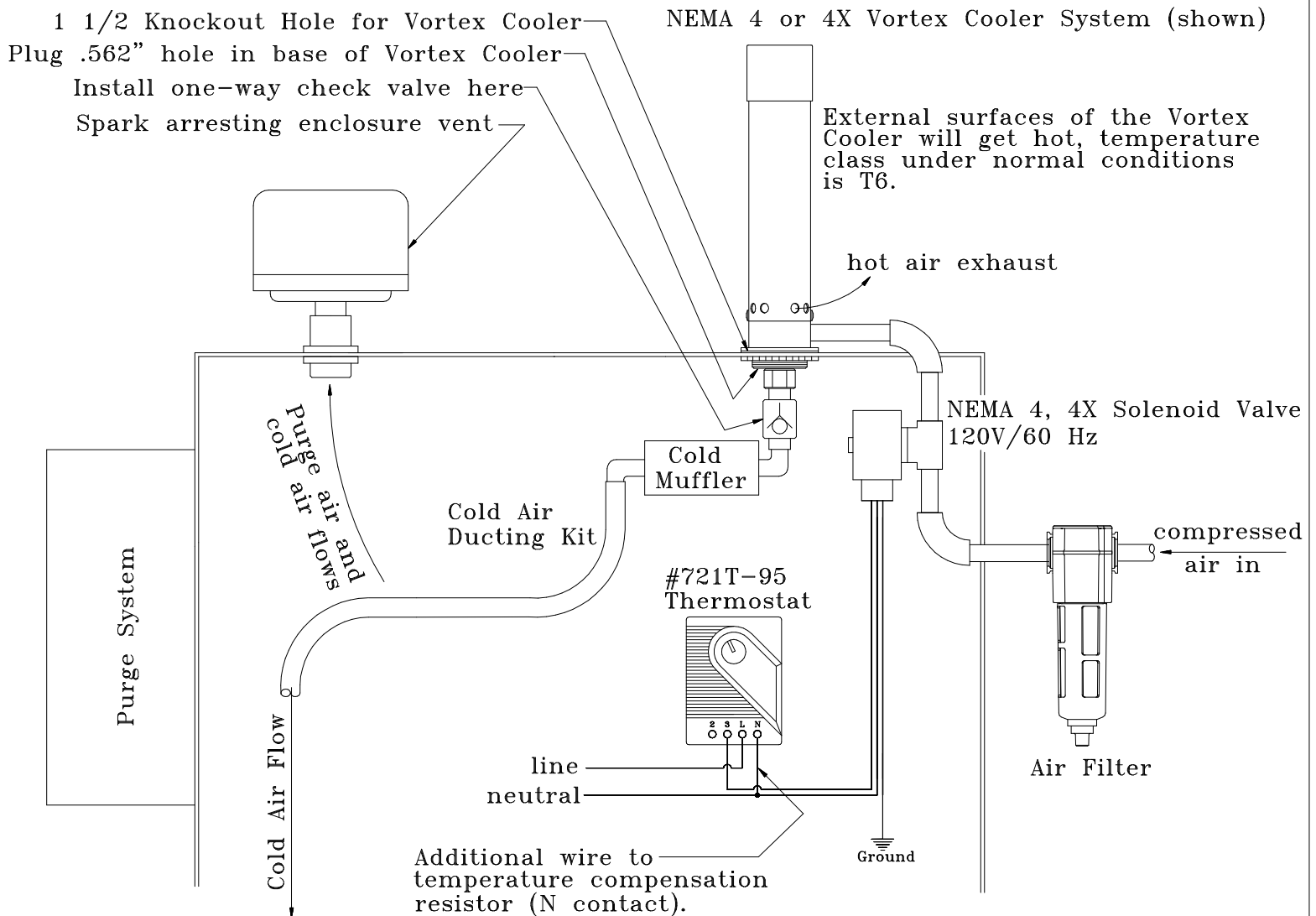
Modifications are necessary if a Vortex Cooler is to be used in a hazardous location:

Vortex Cooler Model No.	Cold Air Flow*
727-15H, 727SS-15H, 737, 737SS, 747, 747SS	10.5 scfm
727, 727SS, 787, 787SS, 797, 797SS	17.5 scfm
727-35H, 727SS-35H, 787-35H, 787SS-35H, 797-35H, 797SS-35H	24.5 scfm
7875, 7875SS, 7975, 7975SS	50.0 scfm

The spark arresting vent must be sized for the cold air flow of the Vortex Cooler plus the air flow of the purge system so as not to overpressurize the enclosure.

* (Cold air flow with 100 psig to the Vortex Cooler.)

If the standard solenoid valve is to be used, it must be mounted inside the protected enclosure (as shown) and the piping into and out of the enclosure must be sealed airtight with the proper explosionproof fittings (not shown).



Mount thermostat to inside panel of enclosure on supplied section of DIN rail. Thermostat should be placed near top of enclosure.

ITW Air Management's Vortex Cooler and Vortex A/C products are rated either UL Type 12, 4 or 4X. ITW Air Management does not advocate the use of its products in hazardous locations unless the entire enclosure system is tested and certified by the appropriate authorities.

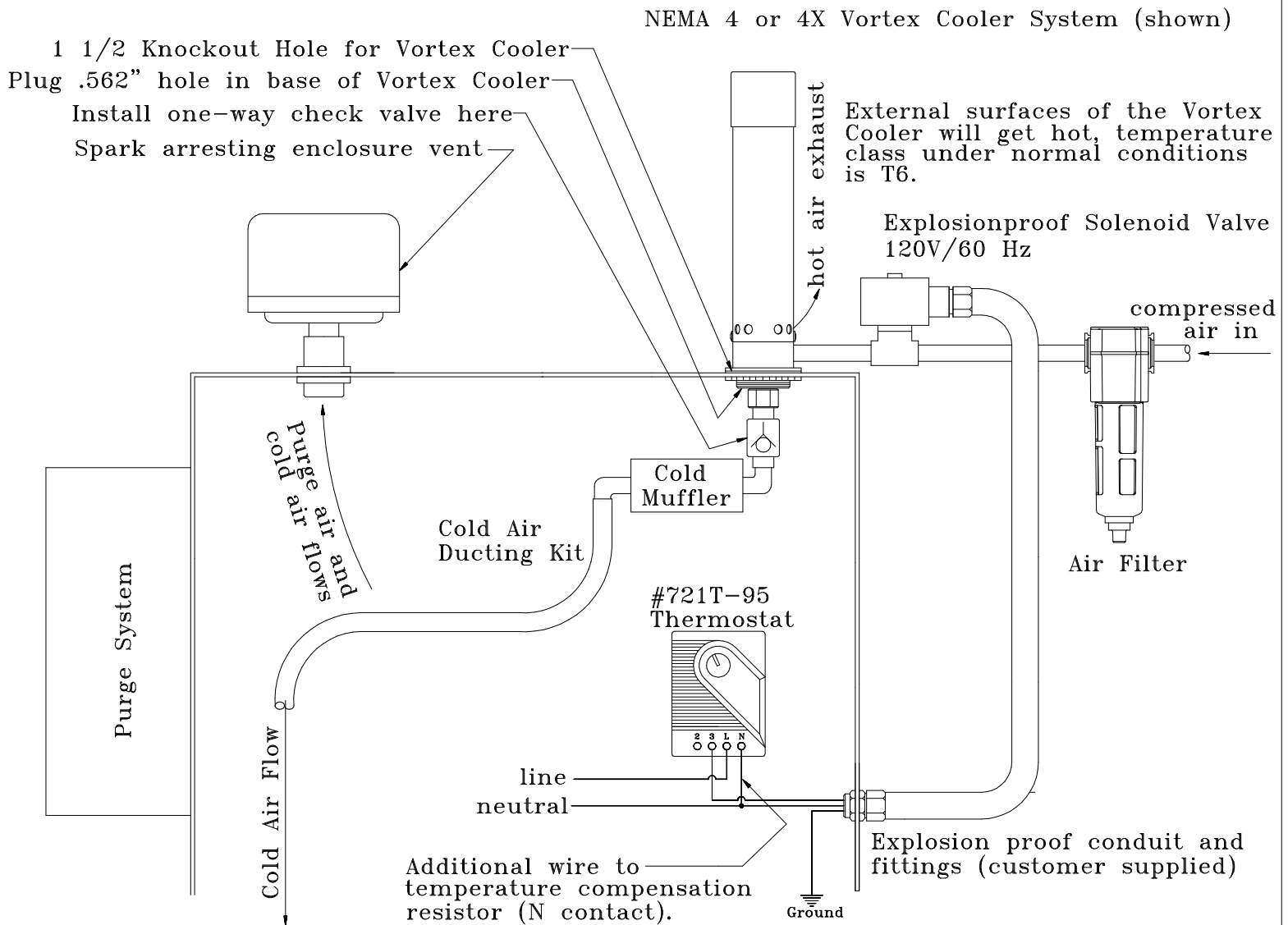
Modifications are necessary if a Vortex Cooler is to be used in a hazardous location:

Vortex Cooler Model No.	Cold Air Flow*
727-15H, 727SS-15H, 737, 737SS, 747, 747SS	10.5 scfm
727, 727SS, 787, 787SS, 797, 797SS	17.5 scfm
727-35H, 727SS-35H, 787-35H, 787SS-35H, 797-35H, 797SS-35H	24.5 scfm
7875, 7875SS, 7975, 7975SS	50.0 scfm

The spark arresting vent must be sized for the cold air flow of the Vortex Cooler plus the air flow of the purge system so as not to overpressurize the enclosure.

* (Cold air flow with 100 psig to the Vortex Cooler.)

An explosionproof solenoid valve (not supplied by Vortec) must be used if the system is configured as shown here. (With the solenoid valve installed outside of the protected enclosure.)



Mount thermostat to inside panel of enclosure on supplied section of DIN rail. Thermostat should be placed near top of enclosure.

ITW Air Management's Vortex Cooler and Vortex A/C products are rated either UL Type 12, 4 or 4X. ITW Air Management does not advocate the use of its products in hazardous locations unless the entire enclosure system is tested and certified by the appropriate authorities.

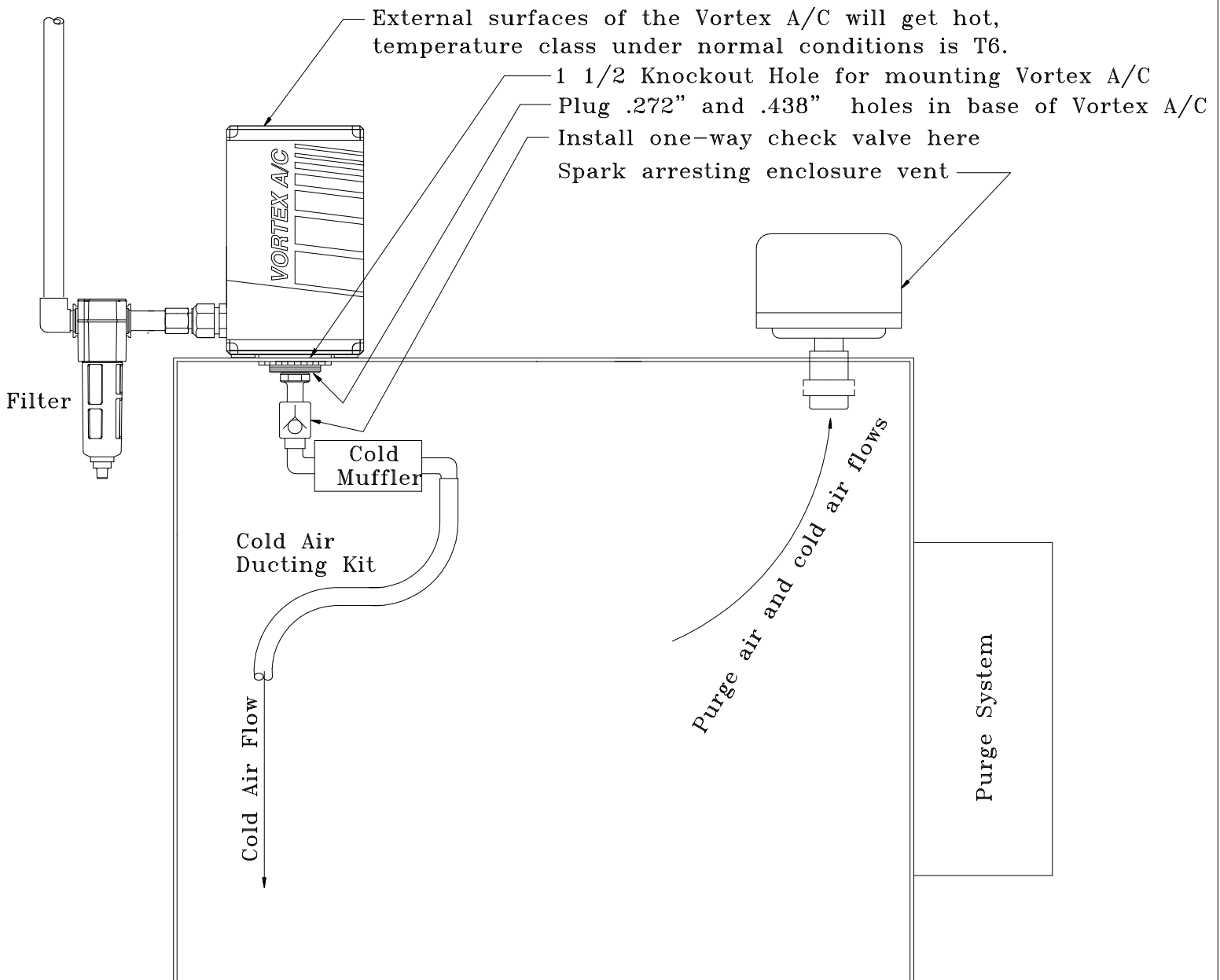
Modifications are necessary if a Vortex A/C is to be used in a hazardous location:

Vortex A/C Model No.	Cold Air Flow*
7015, 7115, 7615, 7715	10.5 scfm
7025, 7125, 7625, 7725	17.5 scfm
7035, 7135, 7635, 7735	24.5 scfm
7070, 7170, 7670, 7770	50.0 scfm

The spark arresting vent must be sized for the cold air flow of the Vortex A/C plus the air flow of the purge system so as not to overpressurize the enclosure.

* (Cold air flow with 100 psig to the Vortex A/C.)

NEMA 4/4X Vortex A/C System (shown)



ITW Air Management's Vortex A/C and Vortex Cooler products are rated either UL Type 12, 4 or 4X. ITW Air Management does not advocate the use of its products in hazardous locations unless the entire enclosure system is tested and certified by the appropriate authorities.