Installation Guidelines

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In an “Open Tower” system the pump will pump through the heat load and then into the “Open Tower”, as the water leaves the tower it must drain back to the pump inlet. It is common to elevate the tower to assist the draining back to the pump inlet.
Customer Supplied Interconnecting Piping

Piping should be sized for a maximum fluid velocity of 5 to 10 feet per second.

This will give you a minimal and reasonable pressure drop through the piping.

Consult an Ingersoll-Rand “Cameron Hydraulic Data” book for fluid velocities and pressure drop through various sizes of pipe.
**Venting Air from the Cooling System**

The most common problem in starting up a new cooling system is the venting of air from the system.

The compressor and cooler holds large amount of air. When the cooling system is filled with liquid the air has to have some way to escape the system.

Vents must be installed at high points in the piping to help to rid the system of air.

The following diagram shows a typical air trap:

![Typical Air Trap Diagram](image)

Water will **NOT** push air down a pipe.
All piping like this **MUST** be vented.

Remember, water **WILL NOT** push air down a pipe. All piping conditions like the one shown must be vented or the air will not be removed from the system and the cooling system will not operate properly.
Vents may be manual or automatic. At initial start-up large quantities of air must be removed. A small ball valve works well for this purpose, or a large capacity automatic air vent will also do a good job of removing air. The following shows some examples of automatic air vents.

**Automatic Air Vents**

No. 87, 67 and 7 Automatic Air Vents are designed to vent the accumulation of troublesome air wherever it can be trapped. These non-ferrous automatic air vents are 4-3/4" x 2-1/4", 3-3/16" x 1-1/2" and 4-1/16" x 2-3/16" (height and width), respectively, and are rated for a maximum operating temperature of 240°F at pressures of 150, 35 and 75 PSI, respectively. The No. 87 has a combination of 1/2" FPT/3/4" MPT connection, whereas No.’s 67 and 7 have 1/8" MPT, and FPT connections, respectively.

**Model No. 107A High Capacity Air Vent** A rugged High Capacity Air Vent designed to purge free air from liquid systems at operating pressures up to 150 psig. The Model 107A Air Vent has a cast iron body and bonnet, with stainless steel, brass and EPDM internal components and is suitable for a maximum operating temperature of 250°F. The Air Vent has a 3/4" NPT inlet and 3/8" NPT outlet.