



TEMPERATURE CONTROLLERS... PORTABLE CHILLERS... CENTRAL CHILLERS... PUMP TANK STATIONS... TOWER SYSTEMS...

**SUBJECT: SELECTING THE PROPER PUMP TANK FOR A CHILLER  
OR TOWER SYSTEM**

#5-C-260

1/08/2002  
updated 8/03

It is important to select the proper pump tank for your central cooling system whether it is a chiller or cooling tower system.

Considerations when selecting a pump tank for a cooling tower or chiller system:

• **OPERATING. Have enough water in the tank.**

- To prevent pump cavitation (air pulled into the pump along with water). Be sure that about 18" of water is above the pump suction.
- To allow for water/air separation (air is induced into the water in the cooling tower to promote evaporation, not as critical with a chiller system).
- To have thermal storage to smooth out demand spikes.

• **START-UP. Have enough water in the tank.**

- To fill the system and have enough operating volume remaining.

• **SHUT DOWN. Have enough water in the tank.**

- To contain the drain back from the tower or chiller without overflowing.
- To handle the drain back from the process piping (generally the water in the process piping is trapped so that most of the process water remains in the piping).

Which tank size is right for your application? From our experience, in most applications and installations, use the following guideline for selecting the proper tank.

**COOLING TONS x 6 = MINIMUM TANK VOLUME**

Or, for high flow systems (greater than 3 gpm/ton) select a tank size so that the water will reside in the tank for at least 1 minute.

Watch for these special circumstances that may require special tank sizing:

- Towers that hold a lot of water.
- Towers that are located a long way from the tank.
- Systems that don't keep the piping full at shutdown.
- High flow systems.
- Don't forget future expansion needs.

