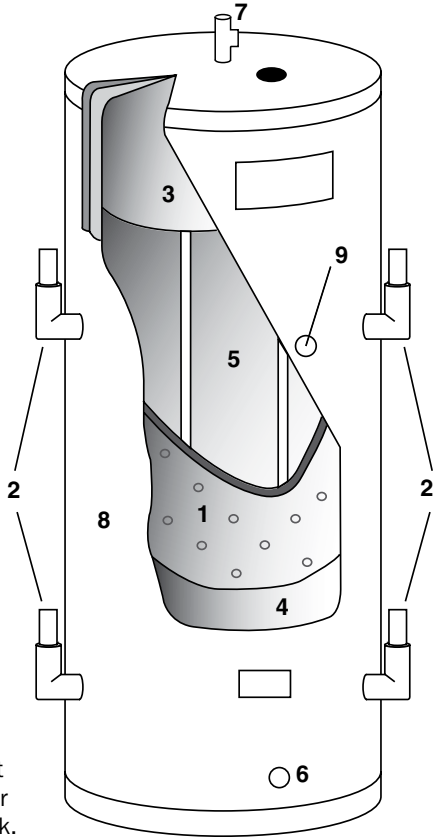


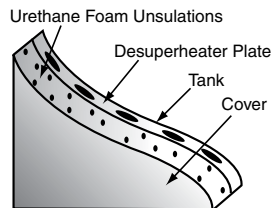
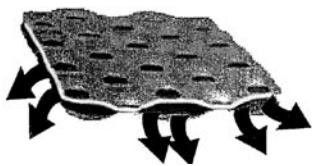


# Therma-Stor III-2

## Heat Recovery Systems and Specification Information



Therma-Stor plate design, with rapid, free-flowing paths for refrigerant gas, promotes excellent waste heat transfer throughout the tank.



### Construction Specifications

1. Vertical dual circuit desuperheater plate is welded and expanded for internal refrigerant passage.
2. 1-1/8" O.D. refrigerant inlets and outlets.
3. Industrial glass lined hot water storage tank.
4. 1-3/4" foam-in-place urethane insulation.
5. Dual anode protection against corrosion for extended tank life.
6. 1-1/4" female NPT water inlet and high-temperature outlet.
7. 150 psi and 210°F pressure/temperature relief valve.
8. 6000 watt (240 volt) medium density electric heating element.
9. Attractive enameled galvanized external wrapper.
10. Water temperature control connection 3/4" NPT.

### Operation

Therma-Stor III-2 is a cost-efficient alternative for producing and storing hot water. It transfers the waste heat from any existing refrigeration system to cold water. At the same time, it improves the system's efficiency. Hot water production depends on the evaporator load run time of the compressor, and water usage.

The Therma-Stor III-2 unit includes a 6000 watt electric element which will maintain water at the desired temperature (110°F-170°F) as necessary when demand for hot water exceeds the production capacity of the Therma-Stor III-2 or during compressor off time.

### Application Specification

Therma-Stor III-2 can accommodate evaporating loads of up to 20 tons total when utilizing R-22, 14 tons with R-404/507, and 10 tons with R-12. The individual circuits (split 50/50) can be joined to proportional individual compressors or ganged in multiples for larger tonnages. Considering the limited condensing capacity, Therma-Stor units are not intended to substitute the need for air or water-cooled condensers. Discharge line mufflers must be installed on all systems incorporating semi-hermetic or open-type compressors. Size these mufflers according to the refrigeration tonnage being supplied to the Therma-Stor unit.

### Water Temperature Control

The Therma-Stor III-2 includes a water bleen valve (shipped loose) for controlling the Therma-Stor water temperature. A similar valve, obtained locally, can be used as a refrigerant hot gas bypass for the control of Therma-Stor water temperatures. Further details are available in the installation instructions.

Using capillary tube systems with the Therma-Stor is not normally recommended. For special considerations, please contact the factory.

### Other Features and Specifications

- Diameter: 28", Height: 65", Weight: 450 lbs
- 119 gallon nominal water capacity
- Rated for 450 psi refrigerant operating pressure
- 150 psi maximum operating water pressure
- Double wall protection between refrigerant and water
- UL Listed
- Approved for Canada

*Specifications subject to change without notice.*

## How Much Hot Water Do You Use?

The chart on the right shows the water temperature you can expect at any of the given compressor outputs and water usages.

**First**, determine your hot water usage in gallons/hour.

**Second**, determine your compressor(s) output (in tons).

**Third**, extend the compressor output until it intersects the water usage line on the water heating chart.

**Fourth**, estimate the water temperature rise from the chart at the point of intersection.

**Fifth**, to find the additional temperature rise from the heating element, simply extend the water usage line downward to intersect the "heating element scale" below the chart.

**Sixth**, to determine the high-temperature water output you can expect from the Therma-Stor III with this system, add the temperature of the cold water supply to the total of the low temperatures determined on the chart (steps 4 & 5).

### Example:

#### Given:

- 7 ton compressor(s) output
- 70 gallon/hour water usage
- 65°F cold water supply temperature

**Then** 65°F cold water supply temp.

**Adding** +65°F estimated water temp. rise (refer to A on chart)  
 +26°F water temp. rise from heating element (refer to B on chart)

**Equals** 156°F total high temperature water output

As you can see, with those given conditions, one Therma-Stor III can heat 70 gallons of 65°F water to 156°F. If hotter water is desired, recalculate using two Therma-Stor II's (this doubles the heating plate area and heating element temperatures rises).

