



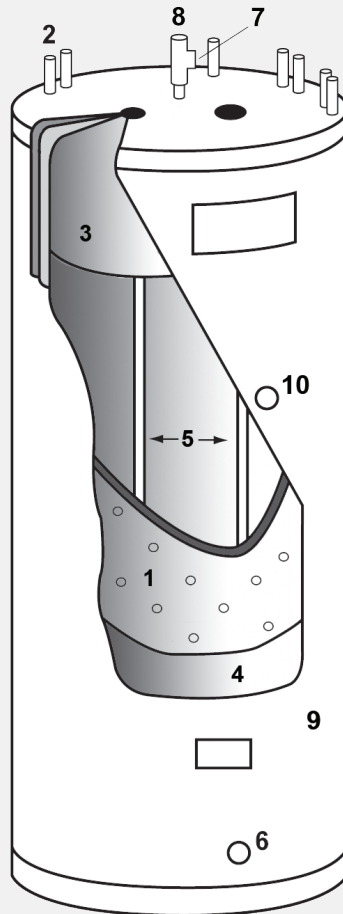
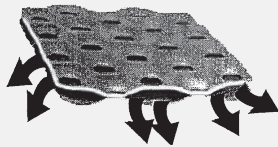
Therma-Stor II-6

TS-231A
Revised 6/11

Heat Recovery Water Heater 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. Six-circuit refrigerant heat exchange plate designed for maximum heat transfer with minimum pressure drop.
2. 3/4" O.D. refrigerant inlets and 5/8" O.D. outlets (6 sets, not all are shown).
3. Industrial glass lined 114-gallon hot water storage tank.
4. 2" foam-in-place urethane insulation (R-16).
5. Dual anode protection against corrosion for extended tank life.
6. 1-1/4" male NPT water inlet.
7. 1-1/4" male NPT water outlet.
8. 150 PSI and 210°F pressure/temperature relief valve.
9. Attractive enameled galvanized external wrapper.
10. Mid-tank 3/4" Male NPT connection for recirculating loop return or for aquastat (mid-port).

Overview

The Therma-Stor II-6 Heat Recovery Water Heater features six separate heat exchange circuits encompassing a 114-gallon water tank. Each circuit is compatible with refrigeration loads of up to 3.5 tons (refer to chart on the back). Piping arrangements for 3, 4 and 5 systems can be accommodated by combining multiple refrigeration circuits.

Operation

The Therma-Stor II-6 heats water by transferring refrigerant superheat to water. Hot gas from the compressors is piped through one or more of the six refrigeration circuits en route to the condensers. The II-6 is compatible with any typical refrigeration system within sizing guidelines (using capillary tube systems with the Therma-Stor is normally not recommended). Hot water production depends on the evaporator load (capacity), run time of the compressors and water usage (see the Therma-Stor Return On Investment Calculation Form available at www.HeatWaterForFree.com for more information).

Typical Applications

The Therma-Stor II-6 is ideally suited for heating water from several small refrigeration systems (3/4 to 4 tons). Common installations include:

- Restaurants
- Cafeterias
- Health care facilities
- Walk-in coolers/freezers

Unit Specifications

- Tank Dimensions
Diameter: 29 1/4", Height: 62 1/4"
- Unit Dimensions (with fittings)
Diameter: 31 1/2", Height: 67", Weight: 417 lbs
- 120 gallon nominal water capacity
- Rated for 450 psi refrigerant operating pressure
- 150 psi maximum operating water pressure
- Double wall vented protection between refrigerant and water
- Max heat exchange rating 80,000 BTU/Hr
- Triple leak tested, shipped with N₂ holding charge

Part No. 4017825

Specifications subject to change without notice.

Certifications

- UL/cUL® (SA5939)
- ASHRAE 90
- CRN's available upon request

Sizing Guidelines

The Therma-Stor II-6 can accommodate refrigeration loads of up to 3.5 tons per circuit depending on refrigerant and evaporator temperatures. The individual circuits can be piped together in parallel to accommodate larger loads (see diagrams below). Therma-Stor units are not intended as a substitute for air or water cooled condensers. These capacity ratings are based on approximately 15 lb. pressure drop at maximum capacity.

II-6		
Max. Recommended Capacity (in tons) for Typical Refrigeration Systems		
Refrigerant	Low Temperatures	Medium Temperatures
R-22	3	3.5
R-134A	2.5	3
R-404A, R-502, R-507	2	2.5

Water Temperature Control

Depending on water use and refrigeration capacity, provisions may need to be added to prevent water from overheating during periods of low/no water use and high refrigeration run-times. A water bleed valve is available for controlling the Therma-Stor II-6 water temperature for connected loads of up to 15 tons capacity. Provisions for hot gas bypass controls should be made for total loads beyond the 15 ton water valve bypass limit (refer to nearby diagrams). Either option is controlled by an aquastat that senses the temperature of the water in the II-6. An aquastat can be mounted on the mid-port or connected to the water outlet piping.



Condenser

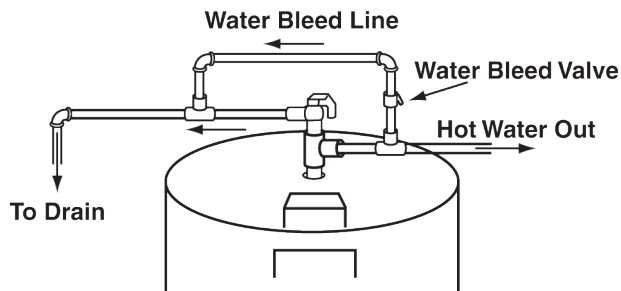


Compressor

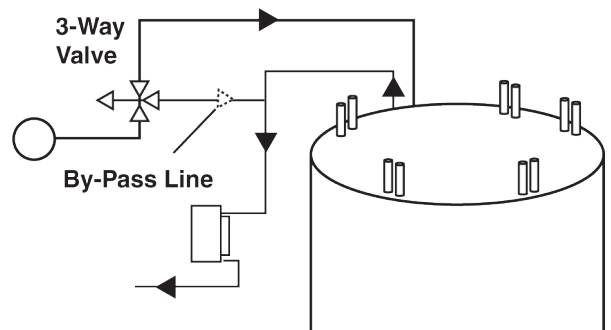
See installation instructions for further details.

Typical Water Temperature Control Piping

(Optional)
Water Bleed Valve Example



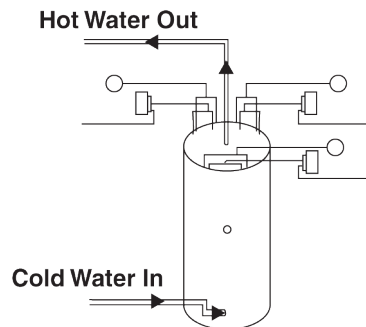
(Optional)
Hot Gas By-Pass Valve Example



Basic Therma-Stor Installations

Other multiple combinations up to the six compressor example can be found in the installation instructions.

3 Compressor Example



6 Compressor Example

