

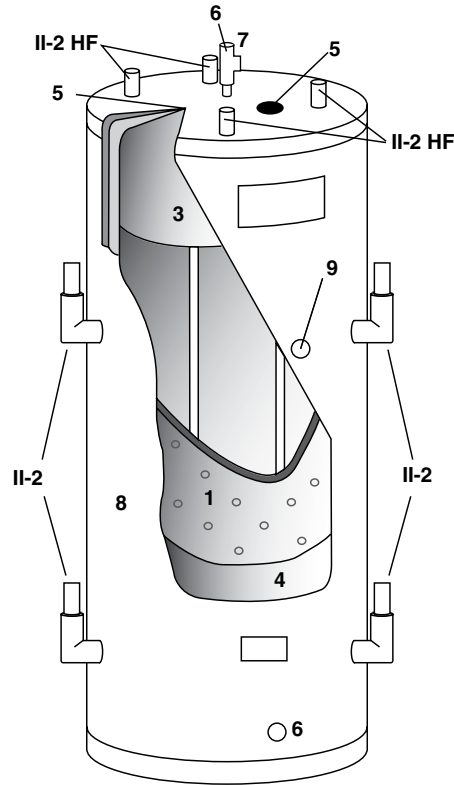
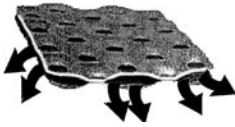


# Therma-Stor II-2 and II-2 HF

## 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. Dual circuit heat exchanger plate is welded and expanded for internal refrigerant passage.
2. II-2 has 1-1/8" O.D. refrigerant inlets and outlets. II-2 HF has 1-5/8" O.D. refrigerant inlets and outlets.
3. Industrial glass lined hot water storage tank.
4. 2" foam-in-place urethane insulation.
5. Dual anode protection against corrosion for extended tank life.
6. 1-1/4" male NPT water inlet and high-temperature outlet.
7. 150 psi and 195°F pressure/temperature relief valve.
8. Attractive enameled galvanized external wrapper
9. Mid tank 3/4" NPT (female) opening for recirculating loop return or for aquastat.

### Operation

Therma-Stor II-2 and II-2 HF heat and store hot water by transferring refrigeration waste heat to cold water. This cost-efficient alternative for producing hot water fits any existing refrigeration system and improves the system's efficiency at the same time. Hot water production depends on the evaporator load and temperatures, compressor, water usage, condensing temperatures, etc. A water heating chart is found on the back page.

### Application Specification

Therma-Stor II-2 HF can accommodate evaporating loads of up to 74\* tons per tank (37 tons/circuit) on an open drive (R-22) air conditioning system.

Capacities for more typical systems are listed on back.

You can connect each circuit of a therma-Stor II-2 or II-2 HF to an individual compressor or parallel circuits (or units) for larger tonnages. Therma-Stor models II-1 and I-1 are single circuit models with more refrigerant capacity (less pressure drop) than the II-2 or II-2 HF.

*\*These ratings assume approximate 15 lb. pressure drop at maximum capacities. For complete pressure drop information, contact the factory.*

### Other Features and Specifications

- II-2 HF: Diameter: 29", Height: 67", Weight: 465 lbs
- II-2: Diameter: 28", Height: 67", Weight: 427 lbs
- 119 gallon nominal water capacity
- Rated for 450 psi refrigerant operating pressure
- 150 psi maximum operating water pressure
- R-16 insulation
- UL Listed
- Meets ASHRAE 90 standards
- High refrigerant capacity
- Double wall protection between refrigerant and water
- Triple leak checked, shipped with N<sub>2</sub> holding charge
- Approved for Canada

Part No. 4018910 – II-2

Part No. 4021557 – II-2 HF

*Specifications subject to change without notice.*

# Water Heating Chart

## How Much Hot Water Do You Use?

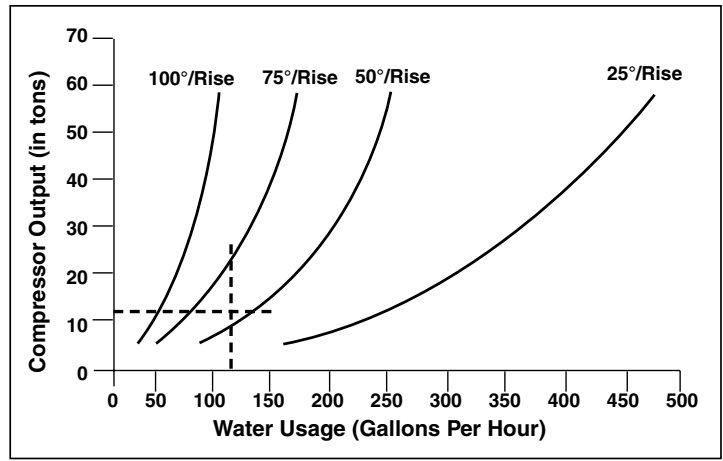
The chart on the right shows the water temperature you can expect at any of the given compressor outputs and water usages.

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 heating chart.

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



## Example:

Given:

- 13 ton compressor(s) output
- 120 gallon/hour water usage
- 60°F cold water supply temperature
- 51°F estimated water temperature rise

With these given conditions, one Therma-Stor II-2 or II-2 HF can heat 120 gallons/hour of 65° water to 116°F. If hotter water is desired, recalculate using two Therma-Stors (this doubles the heating plate area).

To convert to BTUs reclaimed: Multiply gallons per hour x 8.33 (the weight of one gallon of water) x \_\_\_\_\_°F rise = \_\_\_\_\_ BTUs per hour reclaimed.

**Example:** 120 gallons/hour x 8.33 lbs./gallon/x 51°F rise = 50,980 BTUs/hour reclaimed. Therma-Stor provides a worksheet (SP-149) which can assist you in assigning a dollar value to these BTU's. The form takes into account fuel source, efficiency, and fuel cost (Therma-Stor Return on Investment Calculation Form).

## Supermarket Applications

Typically, the Therma-Stor is piped in series with a conventional water heater. See diagram B.

In applications with "batch" cleaning, adding a storage tank is recommended. You can install the storage tank to accommodate thermal-syphoning (circulating without a pump). See diagram C.

If you install a Therma-Stor System in a circulating loop, pump the water as slowly as possible and return to the 3/4" NPT midport. Do not circulate directly between water heater and Therma-Stor unit unless heater has been deactivated so that it acts as storage only. You can also install Therma-Stor II-2 units in parallel to accommodate larger loads. See diagram D. **Do not pipe II-2 HF units in parallel.** Note: The model II-2 requires the outlets to be plumbed together at the bottom of the tank.

