Glacier™

OPTI-STOR

TS II-120-6

Heat Recovery Water Heater Specification Information

Construction Specifications

1. Six-circuit refrigerant heat exchange plate designed for maximum heat transfer with minimum pressure drop
2. 3/4 in. O.D. refrigerant inlets and 5/8 in. O.D. outlets (6 sets, not all are shown)
3. Industrial glass lined 114-gallon hot water storage tank
4. 2 in. foam-in-place urethane insulation (R-16)
5. Dual anode protection against corrosion for extended tank life
6. 1-1/4 in. male NPT water inlet
7. 1-1/4 in. 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 in. Male NPT connection for recirculating loop return or for aquastat (mid-port)

Overview

The Opti-Stor TS II-120-6 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 Opti-Stor TS II-120-6 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 TS II-120-6 is compatible with any typical refrigeration system within sizing guidelines (using capillary tube systems with the Opti-Stor is normally not recommended). Hot water production depends on the evaporator load (capacity), run time of the compressors and water usage.

Typical Applications

The Opti-Stor TS II-120-6 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

Part No. 4017825 – TS II-120-6

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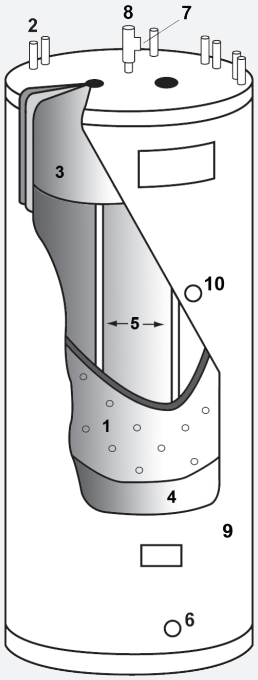

Opti-Stor plate design, with rapid free-flowing paths for refrigerant gas, promotes excellent waste heat transfer throughout the tank.

Unit Specifications

- Tank Dimensions — Diameter: 29-1/4 in., Height: 62-1/4 in.
- Unit Dimensions (with fittings) — Diameter: 31-1/2 in., Height: 67 in., Weight: 417 lbs.
- 120 gallon nominal water capacity
- Rated for 450 psi refrigerant operating pressure
- 150 psi max. operating water pressure
- Double wall vented protection between refrigerant and water
- Max. heat exchange rating 80,000 BTU/hr
- Triple leak checked, shipped with N_2 holding charge

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Specifications subject to change without notice.

Certifications

- UL/cUL® (SA5939)
- ASHRAE 90

TS II-120-6 | Heat Recovery Water Heater Tank Specification Information

Sizing Guidelines

The Opti-Stor TS II-120-6 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).

Opti-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.

TS II-120-6
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

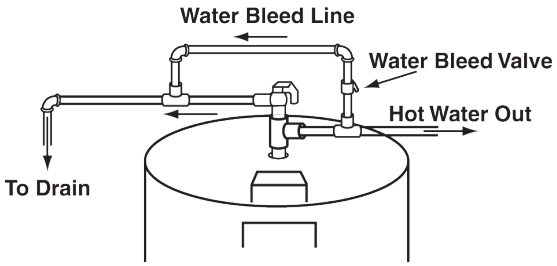
Water Temperature Control

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 Opti-Stor TS II-120-6 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 TS II-120-6. An aquastat can be mounted on the mid-port or connected to the water outlet piping.

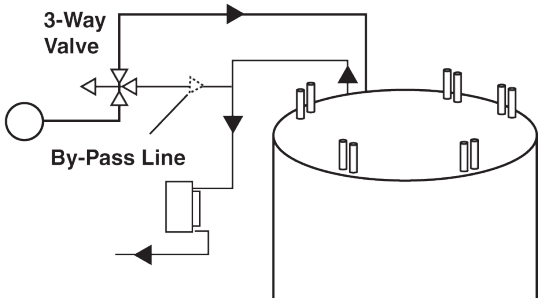
Condenser Compressor ***See installation instructions for further details.***

Typical Water Temperature Control Piping

(Optional)
Water Bleed Valve Example



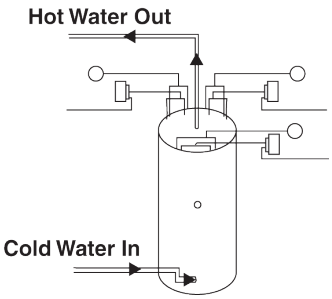
(Optional)
Hot Gas By-Pass Valve Example



Basic Opti-Stor Installations

Other multiple combinations up to the 2x compressor example can be found in the installation instructions.

3 Compressor Example



6 Compressor Example