# ThermoMaster

Indirect-fired Steam & Boiler Water Heaters

RECO Commercial Systems

a **nudyne** company

## WE ARE RECO COMMERCIAL SYSTEMS

### The Water Heater and Pressure Vessel Experts

We are  recognized as one of the country's leading suppliers of water heaters and pressure vessels for the commercial, institutional , industrial, pulp and paper, power generation and chemical industries. In fact, it is hard to find an industry, market, or application today that doesn't rely on the quality, safety, and convenience that RECO Commercial Systems brings to their  most critical services and processes.

# The RECO ThermoMaster

## High Recovery ASME Constructed and Stamped Factory Packaged

ThermoMaster water heating systems provide high recovery, tight temperature control and dependability. Forced circulation provides controlled, accurate hot water for high peak loads. By combining high recovery capacities with storage, the system makes effective use of the available energy source. The design also minimizes spatial requirements normally needed by conventional storage type heaters. Units are engineered for long dependable service and use steam, boiler water or HTHW as the heating medium.

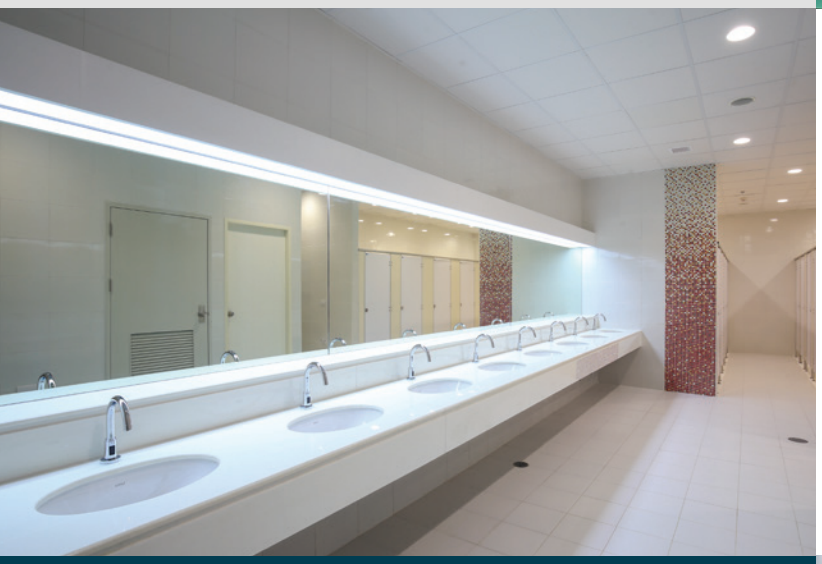
The ThermoMaster is a complete packaged system with components engineered to specific application requirements. The user simply needs to hook up water and utility connections in the field. RECO Commercial Systems selects the correctly sized and matched components for optimal performance.

By combining exact storage requirements for peak load demands with a forced circulation recovery section, the Thermomaster is excellent for commercial, industrial and institutional service. Integral recirculation assures a full supply of hot water on demand.

## Applications

### Commercial

The ThermoMaster is capable of meeting all the demands of facilities with large hot water needs, including hotels, apartment buildings, military buildings, and hospitals. ThermoMasters are typically found in facilities with a central energy source. This energy source is typically piped directly to the unit in the mechanical room or is transported to various sub mechanical rooms furnishing hot water to a specific building or application. Units may be piped in parallel to provide additional capacity or for emergency back up.

### Institutional

The ThermoMaster is excellent for facilities that tend to exhibit high demand periods at intervals throughout the day, including dormitories, schools and correctional complexes. High recovery capacities with storage handle the short cycle, high demand needs of these facilities. Energy requirements are maximized so excess capacity to meet critical periods is minimized.

### Industrial

The ThermoMaster is widely used for shower and cafeteria needs, providing controlled hot water for manufacturing processes, and for equipment washdown in all industries.

## Sizing Methods

Consult the latest ASHRAE or equivalent sizing methods or consult RECO ThermoMaster sizing guide to determine your actual requirements. This should include specific water usage requirements and intermittent loads. Required water temperatures,  type of building and available energy source are important factors.

Hot water requirements vary in total flow rate, peak load and temperatures required. These factors must be considered when sizing.

Hot water may be used for showers, cafeterias, or wash stations and should be sized according to demand and peak load factors. Hot water that is being used for a process application must be sized to handle a continuous and potential peak load to match production requirements. Many cases warrant the installation of twin systems to provide back up in the event of service or routine maintenance. For instance, hospital installations may require dual systems to provide adequate back up.

## Lining Options

### HydraStone™

1/2- to 5/8-inch potable water cement, compliant with NSF-61 standards.

### Pre-Krete®

Aluminous based cement lining for use of potable water and soft water applications.

## Heat Transfer Tubes

All tubes are seamless U-tube construction, typically used with a wrapped and baffled design. This sheathed design used with an integral pump allows for smaller surface area than immersion heaters. Copper tubes are standard with an option for 90/10 Copper-Nickel construction where high temperature and/or corrosive water conditions exist. Other customs materials are available to meet your unique needs and can be requested through your appointed sales representative.

### Single Wall

Copper or 90/10 Copper-Nickel.

### Double Wall with Leak Detection Port

Copper or 90/10 Copper-Nickel.

### CUSTOM MATERIALS

Ask a sales representative

## Control Valve Options

All RECO Commercial Systems supplied control valves are full modulating type and designed with fail safe shutdown. Modulating type valves (such as solenoid valves) not only control temperature better than full open/close type valves, but they also use less energy.

### Electric

Use with steam or boiler water, available in both 2-way or 3-way. It can be supplied with a RS-485 communication port or analog outputs for communication with building automation systems.

### Pneumatic

Use with steam or boiler water, available in both 2-way or 3-way design.

## Capacity

The heat exchanger section consists of a sheathed tube in shell configuration with copper, copper nickel or stainless steel tubes. ThermoMasters are available in single and double-wall construction, and can conform to all local code requirements. Each unit is computer selected to match project requirements and provide optimal heat transfer efficiency.

To provide and maintain peak delivery through all loads, ThermoMaster has a peak demand anticipator. This allows the control valve to respond promptly to load changes and meter the optimal amount of energy flow to the heat exchanger.

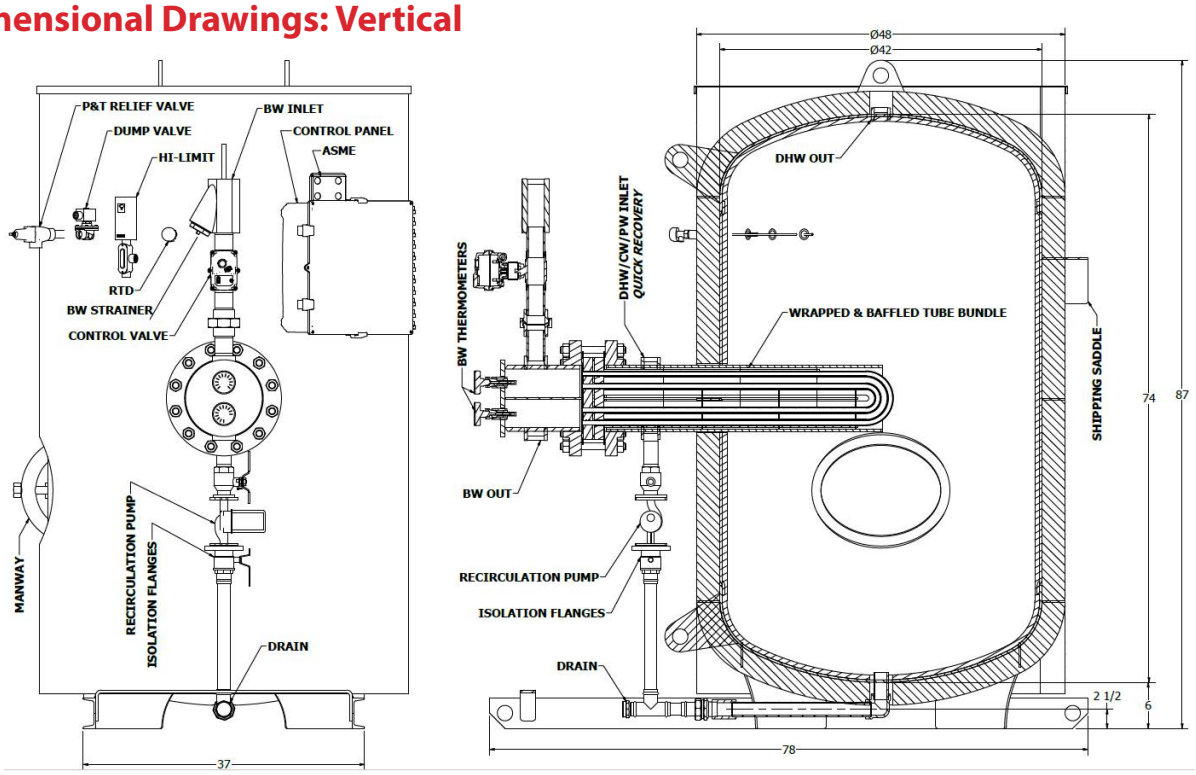
## Construction

RECO fabricates each ThermoMaster to the customer's specific needs. All materials are of the highest quality and must meet the stringent requirements of our Quality Control department. All ThermoMasters are constructed and stamped in accordance with the latest edition of the ASME Sect VIII Division I Code and bear the "U" stamp. Working pressures up to 300 psig are available.

RECO can provide you with the right materials for your specific needs, including carbon steel, copper nickel and stainless steel. Carbon steel vessels feature a selection of linings to provide optimal corrosion resistance and long vessel life. Each lining is approved for potable water use.

Horizontal or vertical configurations allow flexibility for installation in any equipment room.

# Dimensional Drawings: Vertical



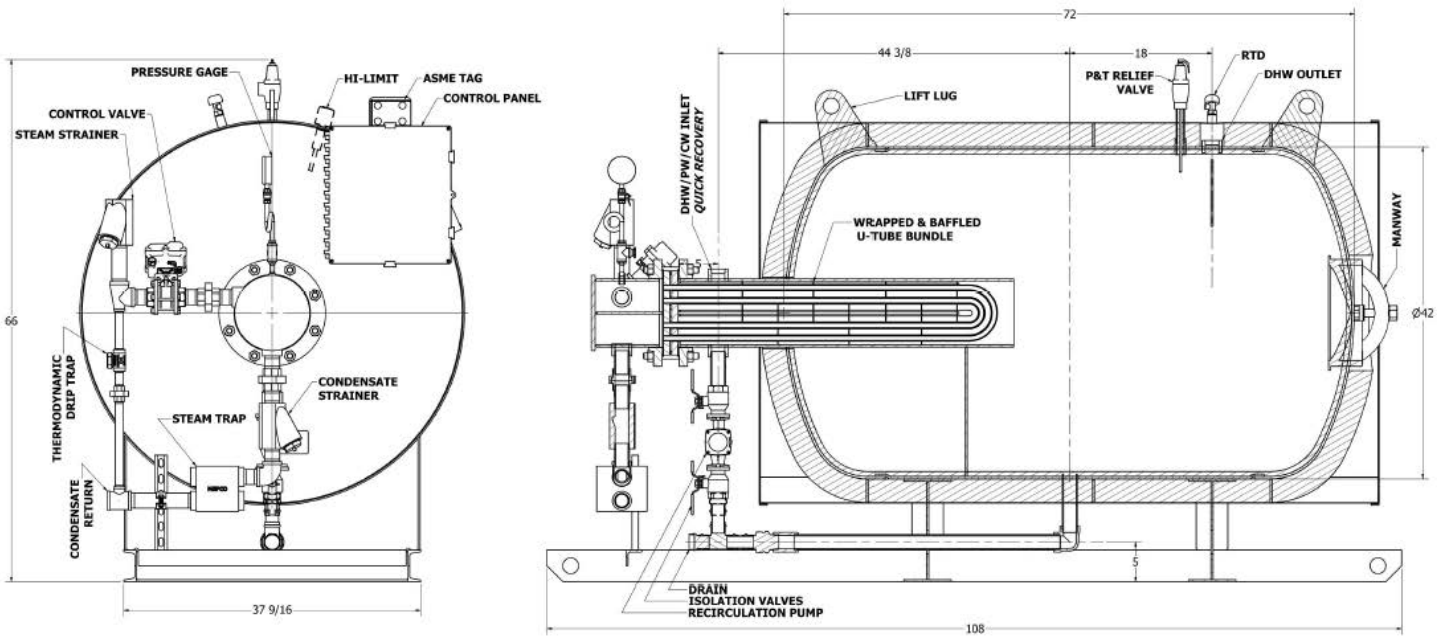

## Vertical Tank Dimensions (in inches)

**Additional sizes are available. Please contact your Sales Representative for information.**

| MODEL | TANK SIZE (GALLONS) | A | B | C/D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| TMV150-30048 | 130 | 30 | 48 | 1.5 | 1 | 1 | 22 | 31.5 | 34 | 68 |
| TMV150-30060 | 165 | 30 | 60 | 1.5 | 1 | 1 | 22 | 31.5 | 34 | 80 |
| TMV150-30072 | 205 | 30 | 72 | 1.5 | 1 | 1 | 22 | 31.5 | 34 | 92 |
| TMV150-30084 | 240 | 30 | 84 | 1.5 | 1 | 1 | 22 | 31.5 | 34 | 104 |
| TMV150-36072 | 285 | 36 | 72 | 1.5 | 1 | 1.5 | 22 | 33 | 40 | 92 |
| TMV150-36084 | 340 | 36 | 84 | 1.5 | 1 | 1.5 | 22 | 33 | 40 | 104 |
| TMV150-36096 | 395 | 36 | 96 | 1.5 | 1 | 1.5 | 22 | 33 | 40 | 116 |
| TMV150-42072 | 380 | 42 | 72 | 1.5 | 1 | 1.5 | 26 | 34.5 | 46 | 92 |
| TMV150-42084 | 450 | 42 | 84 | 1.5 | 1 | 1.5 | 26 | 34.5 | 46 | 104 |
| TMV150-42096 | 525 | 42 | 96 | 1.5 | 1 | 1.5 | 26 | 34.5 | 46 | 116 |
| TMV150-42108 | 595 | 42 | 108 | 1.5 | 1 | 1.5 | 26 | 34.5 | 46 | 128 |
| TMV150-48072 | 500 | 48 | 72 | 2 | 1.25 | 2 | 32 | 36 | 52 | 92 |
| TMV150-48084 | 585 | 48 | 84 | 2 | 1.25 | 2 | 32 | 36 | 52 | 104 |
| TMV150-48096 | 680 | 48 | 96 | 2 | 1.25 | 2 | 32 | 36 | 52 | 116 |
| TMV150-48108 | 770 | 48 | 108 | 2 | 1.25 | 2 | 32 | 36 | 52 | 128 |
| TMV150-48120 | 865 | 48 | 120 | 2 | 1.25 | 2 | 32 | 36 | 52 | 140 |
| TMV150-54096 | 870 | 54 | 96 | 2 | 1.25 | 2 | 38 | 37.5 | 58 | 116 |
| TMV150-54120 | 1075 | 54 | 120 | 2 | 1.25 | 2 | 38 | 37.5 | 58 | 140 |
| TMV150-60096 | 1065 | 60 | 96 | 2 | 1.25 | 2 | 44 | 39 | 64 | 116 |
| TMV150-60120 | 1315 | 60 | 120 | 2 | 1.25 | 2 | 44 | 39 | 64 | 140 |
| TMV150-72096 | 1500 | 72 | 96 | 2.5 | 1.5 | 2.5 | 50 | 42 | 76 | 116 |
| TMV150-72120 | 1875 | 72 | 120 | 2.5 | 1.5 | 2.5 | 50 | 42 | 76 | 140 |
| TMV150-84120 | 2500 | 84 | 120 | 3 | 2 | 2.5 | 62 | 45 | 88 | 140 |

*Additional sizes are available. Consult a factory representative for more information.*

# Dimensional Drawings: Horizontal




## Horizontal Tank Dimensions (in inches)

**Additional sizes are available. Please contact your Sales Representative for information.**

| MODEL | TANK SIZE (GALLONS) | A | B | C/D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|
| TMH150-30048 | 130 | 30 | 48 | 1.5 | 1 | 1 | 36 | 50 | 52 | 68 |
| TMH150-30060 | 165 | 30 | 60 | 1.5 | 1 | 1 | 36 | 50 | 64 | 80 |
| TMH150-30072 | 205 | 30 | 72 | 1.5 | 1 | 1 | 36 | 50 | 76 | 92 |
| TMH150-30084 | 240 | 30 | 84 | 1.5 | 1 | 1 | 36 | 50 | 88 | 104 |
| TMH150-36072 | 285 | 36 | 72 | 1.5 | 1 | 1.5 | 42 | 56 | 76 | 92 |
| TMH150-36084 | 340 | 36 | 84 | 1.5 | 1 | 1.5 | 42 | 56 | 88 | 104 |
| TMH150-36096 | 395 | 36 | 96 | 1.5 | 1 | 1.5 | 42 | 56 | 100 | 116 |
| TMH150-42072 | 380 | 42 | 72 | 1.5 | 1 | 1.5 | 48 | 62 | 76 | 92 |
| TMH150-42084 | 450 | 42 | 84 | 1.5 | 1 | 1.5 | 48 | 62 | 88 | 104 |
| TMH150-42096 | 525 | 42 | 96 | 1.5 | 1 | 1.5 | 48 | 62 | 100 | 116 |
| TMH150-42108 | 595 | 42 | 108 | 1.5 | 1 | 1.5 | 48 | 62 | 112 | 128 |
| TMH150-48072 | 500 | 48 | 72 | 2 | 1.25 | 2 | 54 | 68 | 76 | 92 |
| TMH150-48084 | 585 | 48 | 84 | 2 | 1.25 | 2 | 54 | 68 | 88 | 104 |
| TMH150-48096 | 680 | 48 | 96 | 2 | 1.25 | 2 | 54 | 68 | 100 | 116 |
| TMH150-48108 | 770 | 48 | 108 | 2 | 1.25 | 2 | 54 | 68 | 112 | 128 |
| TMH150-48120 | 865 | 48 | 120 | 2 | 1.25 | 2 | 54 | 68 | 124 | 140 |
| TMH150-54096 | 870 | 54 | 96 | 2 | 1.25 | 2 | 60 | 74 | 100 | 116 |
| TMH150-54120 | 1075 | 54 | 120 | 2 | 1.25 | 2 | 60 | 74 | 124 | 140 |
| TMH150-60096 | 1065 | 60 | 96 | 2 | 1.25 | 2 | 66 | 80 | 100 | 116 |
| TMH150-60120 | 1315 | 60 | 120 | 2 | 1.25 | 2 | 66 | 80 | 124 | 140 |
| TMH150-72096 | 1500 | 72 | 96 | 2.5 | 1.5 | 2.5 | 78 | 92 | 100 | 116 |
| TMH150-72120 | 1875 | 72 | 120 | 2.5 | 1.5 | 2.5 | 78 | 92 | 124 | 140 |
| TMH150-84120 | 2500 | 84 | 120 | 3 | 2 | 2.5 | 90 | 104 | 124 | 140 |

*Additional sizes are available. Consult a factory representative for more information.*

**To learn more, contact us or any one of our North American sales representatives.**

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