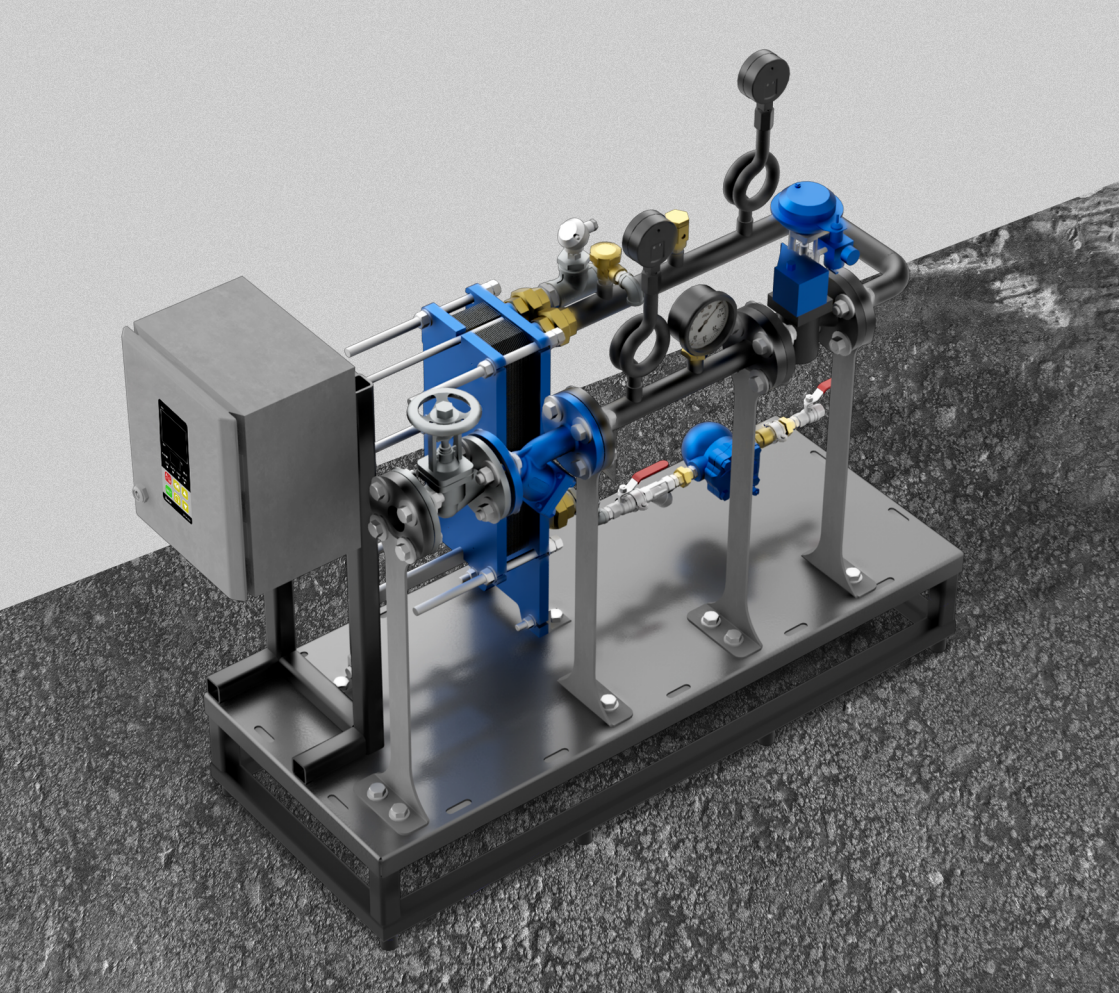




Heatbox User Manual

Project :

Customer :

Heat Exchanger Type :

Serial No :

Year :

The information contained in this document is based on the most up-to-date information and production materials available at the time of publication. Therefore, due to rapid developments in this field, we are not responsible for any changes in technical specifications that may affect the content of this document.

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1. Heatbox – Hot Water Production System

Heatbox systems are used to produce water at the desired temperature for heating or process applications. Water at 60 °C first enters the plate heat exchanger. In the plate heat exchanger, the heat of the 158.8 °C steam is transferred to the 60 °C water through heat exchange, increasing the water temperature. The temperature of the water leaving the plate heat exchanger must be at least 80 °C. If the water does not reach 80 °C, the opening range of the steam line is proportionally increased or decreased by the 2-way proportional control valve. The 2-way proportional control valve is used as a diverting and mixing valve in central heating systems. The hot water, at a minimum of 80 °C, continues through the line and enters the main distribution line.

Generates hot water at the required temperature for heating and processes.

- Provides fast and instant response for domestic or process hot water demand.
- Designed to supply constant-temperature water even under variable loads.
- Delivered as skid-mounted, ready-to-install package systems.
- Easily commissioned with simple electrical, water and steam connections.
- Requires minimal installation space.
- Remote access and control are possible depending on the selected automation options.
- Features a hygienic design that prevents dirt and bacterial formation.

Control Panel

The user-friendly touch screen provides a visual display of all system values.

Plate Heat Exchanger

- It is one of the system components that guarantees design performance values.
- The specially designed heat exchanger offers high efficiency and low pressure drop.
- It is easy to maintain, and its removable structure allows capacity adjustments.

Temperature Control

- Electrical or pneumatic actuators are used.
- Proportional control is recommended.
- Precise temperature control is achieved with PT100 sensors.

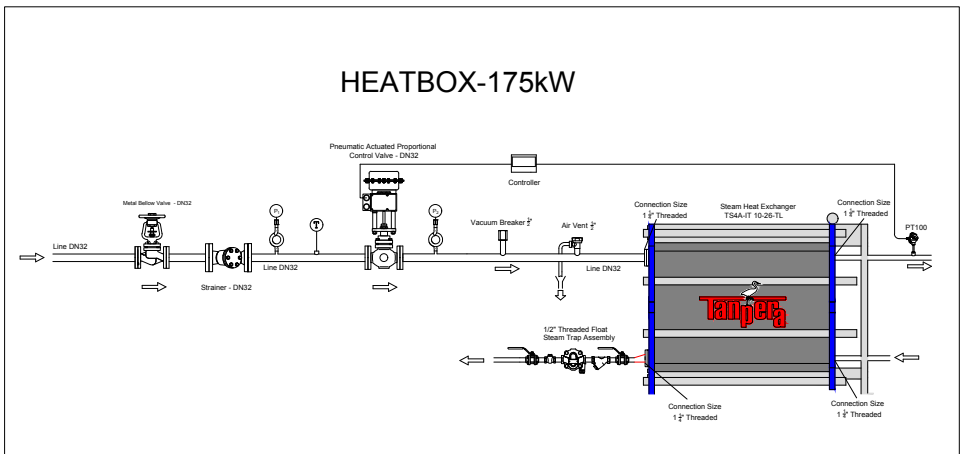
Product Dimensions	500 mm * 1260 mm * 1200 mm
Installed Power	0.1 kW
Electrical Connection	220-230V 50-60Hz
Control Voltage	24 V AC

2. Responsibility and Warranty Conditions

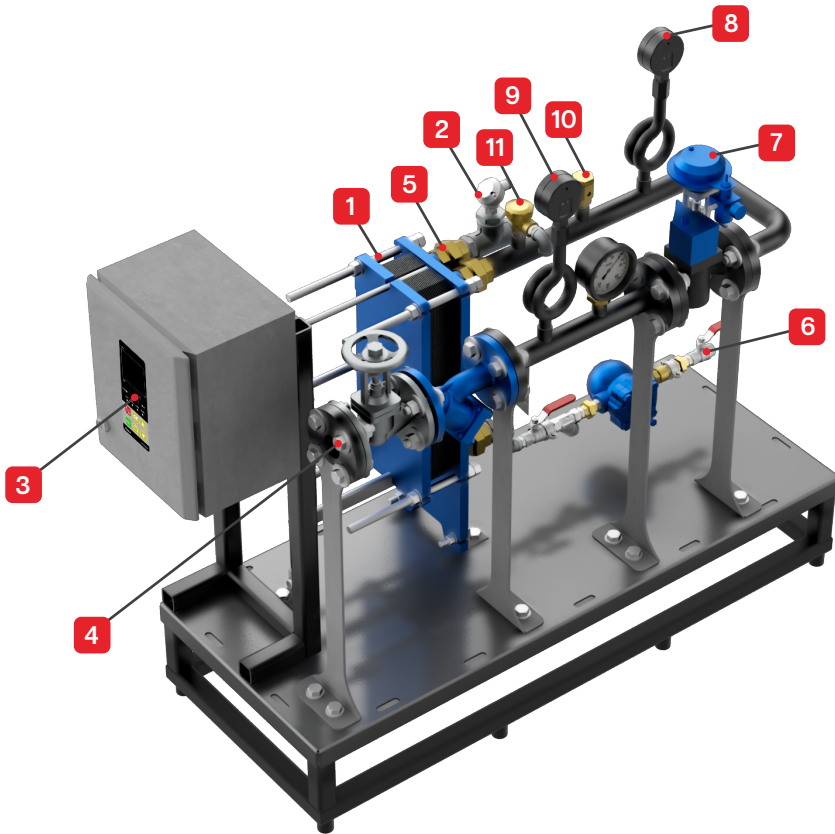
This technology is manufactured for TANPERA HEATBOX systems.

- ➔ Responsibility passes to the operator upon delivery of the device.
- ➔ The installation and user manual must be read before delivery.
- ➔ The installation and user manual must be kept near the control unit in a visible location.
- ➔ Environmental suitability must be checked in accordance with the Transport, Storage and Placement instructions given in Section 5.
- ➔ Mechanical and electrical installation must be carried out only by authorized personnel or companies familiar with the product, considering the environmental and fluid conditions described in Section 6.
- ➔ No work should be performed on the device before commissioning. Otherwise, any resulting damage is not covered by our company, and warranty conditions will be void.
- ➔ **The warranty period is 2 years from the invoice date.**

3. Flow Diagram



4. Device Description



- 1** Heat Exchanger
- 2** Temperature Sensor
- 3** Automation Control Panel
- 4** Steam Line
- 5** Water Line
- 6** Condensate Line
- 7** Pneumatic Proportional Control Valve
- 8** Pressure Gauge
- 9** Thermometer
- 10** Vacuum Breaker
- 11** Air Vent

5. Product Nameplate



Heatbox

Capacity	175kW
Primary Circuit	158,8/158,8 °C (64,1)°C Steam
Secondary Circuit	60/80 °C Water
Operating Pressure	10 Bar
Year of Manufacture	2024
Serial Number	THB0001

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6. Safety



The **“Electrical”** symbol indicates that failure to follow the safety instructions may result in electric shock, death, or serious (irreversible) injury.



The **“Danger”** symbol indicates an immediate hazard. Failure to follow the safety information may lead to death or serious (irreversible) injury.



The **“Hot Surface”** symbol indicates that the surface temperature is above 60°C. Failure to follow the safety information may result in serious (irreversible) injury.



During commissioning or maintenance, general safety precautions must be taken against excessive temperatures.

Notes

- The device contains high-pressure hot water during operation. Ensure the device is not running and the system is depressurized before maintenance or dismantling.
- Device components are heavy. Appropriate safety measures must be taken during transport and handling.
- The device must be used in a fixed and stable installation.
- The device is not suitable for outdoor use.
- The device is not suitable for use in flammable environments or with mineral oils.
- The device must operate with clean water free of particles.

7. Delivery Scope

The delivery scope is specified in the dispatch note. Check the material for accuracy and damage immediately upon receipt. Report any transport damage without delay.

Pallet Contents:

- Control panel and Heatbox unit.
- Expansion tank.
- Installation and operating instructions.

8. Transportation Rules

- The products must be transported in a manner that prevents them from tipping over, being crushed, or getting wet.
- During unloading, ensure the products do not fall or overturn; if necessary, use handling equipment to move them to the storage or installation area.

9. Storage Conditions

- The products must be stored in a dry and well-ventilated environment.
- Precautions must be taken to prevent the products from tipping over due to earthquakes or other causes.
- No load should be placed on the products, and they must be stored in a way that prevents objects from falling onto them.
- The products must be protected against water pressure and moisture coming from above or from the sides.

10. Relocation and Dismantling Procedures

- Power disconnection must be performed by authorized personnel to prevent electrical accidents.
- If the facility is active during mechanical dismantling, all safety conditions must be observed.
- Before mechanical dismantling, the tank and the hydraulic tank must be drained.
- After mechanical dismantling, relocation must be carried out in accordance with the transportation rules.

11. Environmental Conditions

- The products must be operated in a dry and well-ventilated environment.
- They must be protected from flooding and moisture coming from the floor or from above.
- Provision must be made for water drainage that may be required during maintenance.
- A clearance must be left for service and maintenance in case the expansion tank needs to be tilted.
- At least 600 mm of space must be left around the hydraulic and control unit for maintenance operations.

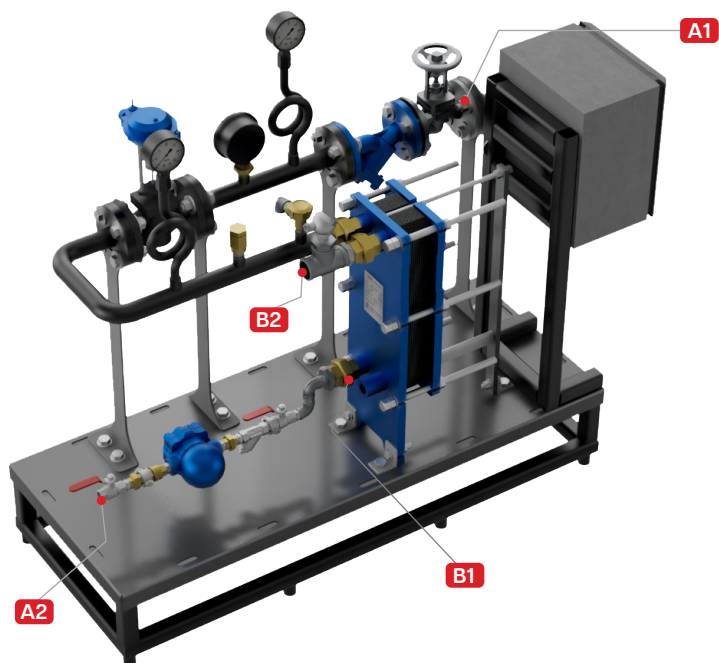
12. Fluid Conditions

- The heating system must be filled with water of standard-compliant quality.
- Air and gas must be vented from the heating system.
- Flushing of the heating system must be performed to remove remaining dirt and residues.

13. Installation

Electrical Installation

- A single-phase electrical line of $3 \times 2 \text{ mm}^2$ and an automatic breaker panel are required for the electrical connection of the device.
- The plug coming from the electrical panel must be connected to a suitable power supply line.
- The control panel must not be opened. Only the electrical cable provided for installation should be connected.



A1 Connection:

Steam inlet line (DN32).

A2 Connection:

Condensate outlet line (DN15).

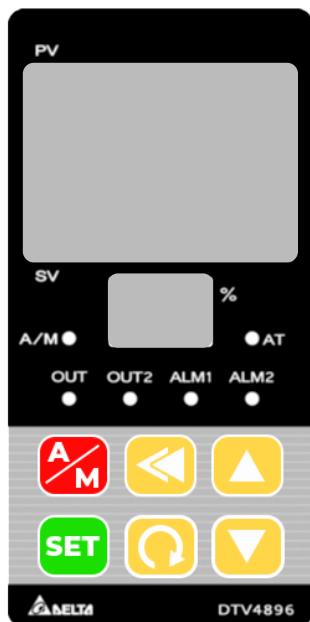
B1 Connection:

Domestic water inlet line heated inside the Heatbox (DN32).

B2 Connection:

Hot water outlet line leaving the heat exchanger after heat transfer (DN32).

14. Automation Control Panel



PV: Current value

SV: Set value

%: Output percentage

AT: Auto-tuning indicator

A/M: Manual control indicator

OUT1/OUT2: Output indicators

ALM1/ALM2: Alarm output indicators

Key Functions:

A/M: Manual/automatic mode switch

SET: Select/Setting key

▲ and ▼: Page navigation keys

◀ Shift left key

Start Mode

This parameter can be set in operating mode. The user can select which mode will be the start mode for programmable control. This function can be used only when the program is in STOP mode.

Auto Mode

Heats according to the set operating temperature and performs the heating process automatically.

Stop Mode

Safely deactivates all equipment on the device. Shuts the device down and switches it to standby mode.

14. Automation Control Panel

Changing Modes

When power is turned on, the DTV is in operating mode and displays PV and SV.
Press the SET key for more than 3 seconds to enter the initial setting mode. Press the SET key for less than 3 seconds in operating mode to enter the setting mode. Press the SET key once in either mode to return to operating mode.

Selecting Parameters

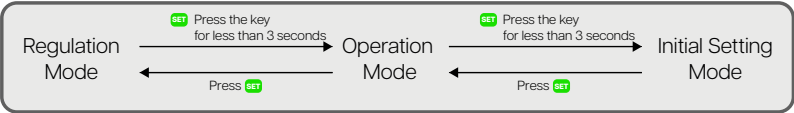
In operating, setting, or initial setting mode, press the  key to select parameters for configuration.

Setting Numerical Parameters

Locate the parameter to be adjusted. Use the   keys to change the value.
Press the  key to move to the desired digit; the digit will flash.
Press  to confirm and save the adjustment.

Setting Numerical Parameters

Select the parameter to be adjusted and use the   keys to change it.
The parameter will flash while being edited.
Press  to confirm and save.



Setting Parameters (Calibration)

First, the desired temperature value is entered by the user. Then, hold the SET key until "AT" appears in the PV display. When "AT" is shown, press the SET key to bring the SV display to the "on" command, after which the percentage indicator will show 100%. When the measured temperature rises above the set value, the proportional valve closes and the percentage indicator becomes 0%. When the temperature drops below the set value, the proportional valve will open.



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