Operating manual

Heat Transfer Station

16.03.2012

Applicable for:

HTS PS1

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V1.0/03.12

1 Foreword

Dear Customer,

You have opted for a Huber product. You have made a good choice. Thank you for your confidence in our product.

Read through this operating manual carefully prior to start-up. Strictly follow all notes and safety instructions.

Proceed with transport, start-up, operation, maintenance, repairs, storage and disposal in accordance with this operating manual.

Subject to proper operation, we offer a full warranty and liability for our product.

2 Proper operation

The Heat Transfer Station is manufactured exclusively for commercial use and is intended for the temperature control of externally connected applications using thermal fluids.
The temperature control unit is to be operated exclusively in accordance with this operating manual.
Any other use or use exceeding this is considered as improper use.

Heat Transfer Stations without explosion protection solutions are not permitted for operation in explosive environments.
The Heat Transfer Station is not permitted for use as a medicinal product.

3 Basic safety instructions

Your Heat Transfer Station conforms to the current state of technical development and the recognized safety-related regulations. Nonetheless, your Heat Transfer Station may pose a sudden or unexpected hazard. Safety devices are therefore installed in the Heat Transfer Station for your protection. These devices must not be circumvented, bypassed, removed or deactivated. The Heat Transfer Station may only be used when in a faultless technical condition.
Repairs to the Heat Transfer Station are reserved for specialists at Peter Huber Kaeltemaschinenbau AG.
In case of malfunctions, the Heat Transfer Station must be shut down immediately and inspected by a trained specialist.
Only thermal fluids that are suitable for the overall system, taking into account their material compatibility and temperature control scale, can be used.
Unauthorized technical modifications to the Heat Transfer Station, improper installation, commissioning, operation and maintenance of the unit, as well as non-observance of the operating manual shall invalidate any liability claims against the manufacturer.

3.1 Obligations of the user

The user must guarantee that the Heat Transfer Station is operated only in a faultless condition and exclusively by qualified and trained personnel.
The user of the Heat Transfer Station is responsible for ensuring proper installation in accordance with this operating manual. The Heat Transfer Station must not be technically modified by either the user or the operators.

3.2 Obligations of the operators

Following diligent training and induction in the operating manual, the operators are responsible for ensuring proper operation of the Heat Transfer Station. The operators must guarantee that all cables and connections, as well as the power supply cable of the Heat Transfer Station are in a faultless and reliable condition.

3.3 Workstation

The workstation is located at the control panel of the Heat Transfer Station and is dictated by the customer's connected peripheries. Accordingly, the workstation must be designed failsafe by the customer.

3.4 Safety devices on the temperature control unit

Over-temperature protection of the circulation pump
Your temperature control unit conforms to DIN 12876 with class designation NFL

Rating	Temperature control fluid	Technical requirements	Code [d]
I	Non-combustible [a]	Overheat protection [c]	NFL
II	Combustible [b]	Adjustable overheat protection	FL
III	Combustible [b]	Adjustable over-temperature protection and additional low level protection	FL

[a] Usually water; other fluids only if non-combustible even within the temperature range of an individual fault.

[b] The temperature control fluids must have a combustion point of ≥ 65 °C; that means, the use of ethanol requires supervised operation.

[c] The overheat protection can, for instance, can be realized using a suitable fill level sensor or a suitable temperature limiter.

[d] Optional at the choice of the manufacturer.

3.5 Depiction of safety instructions

Safety instructions are depicted by a pictogram and a signal word. The signal word describes the severity of the imminent hazard.

 **HAZARD**	Immediate imminent danger to the life and health of persons (serious injury or death).
 **WARNING**	Possible imminent danger to the life and health of persons (serious injury or death).
 **CAUTION**	Possible hazardous situation (minor injury or property damage).
Instruction: 	Instruction to proceed in a particular manner or undertake an action to ensure the safe handling of the machine.
Note: 	Application hints and especially useful information.

4 Installing your Heat Transfer Station

CAUTION

Be aware that fingers can become crushed when installing the unit. Wear protective gloves.

Remove the Heat Transfer Station from the transport packaging. Dispose of the packaging in accordance with environmental guidelines. Store the original packaging in case the unit has to be returned to the factory for repairs. Inspect the Heat Transfer Station for any transport damage. Any complaints are to be taken up with the shipper. Use of the Heat Transfer Station is permitted only under normal environmental conditions in accordance with DIN EN 61010-1:2001.

The following must therefore be taken into consideration when installing the Heat Transfer Station:

- use only indoors,
- use the unit up to a maximum geographical height of 2,000 m,
- the working surface must essentially be even, drip-tight, slip-proof and fire-resistant,
- wall and ceiling clearance for adequate exchange of air (waste heat discharge, fresh air supply) of min. 30 cm,
- ambient temperature minimum 5 °C to maximum 40 °C (trouble-free operation requires these values to be respected),
- maximum relative humidity 80 % for temperatures to 32 °C,
- short distance to supply connections,
- the Heat Transfer Station must be installed so that the access to the isolator (to the mains) is not hindered or prevented,
- mains voltage fluctuations not greater than ± 10 % of the mains voltage,
- transient overvoltages, as they normally occur in the mains power supply,
- appropriate degree of fouling: 2,
- overvoltage class II

5 Commissioning

Position the Heat Transfer Station in accordance with the installation instructions in this manual.

WARNING

To guarantee operational safety, ensure that the unit is installed in a vertical, stable and tilt-proof position.

The inlet and outlet on the circulation pump of your Heat Transfer Station are supplied with sealing caps fitted. Remove them and store in a safe place. Connect the circulating pump outlet of the Heat Transfer Station (marked on the unit housing by an outbound arrow) to the circulation pump inlet on your application. Then connect the circulation pump inlet of the Heat Transfer Station (marked on the unit housing by an inbound arrow) to the circulation pump outlet on your application. The hose connections must not be laid bent or crushed.

WARNING

Before working with thermal fluids, familiarize yourself with their specific properties. Data sheets on Huber thermal fluids can be found in the Download area at **www.huber-online.com**.
Do not use temperature control fluids with ether, strong mineral acid, oxidizing acid or amine additives. Do not use demineralized water, mineral water, sea water, acetone or $CaCl_2$ brines.

Thermal fluids can escape from damaged hoses!
Use only temperature control hoses that conform to the specification of the employed thermal fluids to make the connection between temperature control unit and application.
We recommend the use of HUBER temperature control hoses. These are optimally matched to HUBER temperature control units in respect of working temperature, flow characteristics and thermal transfer. Obtain more information at **www.huber-online.com** or in our printed catalog.
Check the temperature control hoses for material fatigue at regular intervals. Make sure that the temperature control hoses are fastened to the respective unit connections to prevent slippage. Use hose clips to secure the hoses.

Peter Huber Kaeltemaschinenbau AG accepts no liability for damage caused by using unsuitable or non-recommended temperature control liquids.

Then fill the Heat Transfer Station with thermal fluid.

Consider the NFL class designation of your Heat Transfer Station. Accordingly, the unit must be operated only with non-flammable thermal fluids. As a general rule, water is used as a thermal fluid. Alternative fluids may be used only if they are non-flammable even in the temperature range of an isolated malfunction.

To fill, open the cover for the thermal fluid tank located on the top of the unit. Pour thermal fluid into the filler neck until the water level reaches the position between the Min (minimum) and Max (maximum) mark of the measuring hose attached to the front. Close the filler nozzle using the screw cover.

Remove overflowing thermal fluid from the unit housing according to its specification.

Adding anti-corrosion agents is imperative if the water circuit is damaged by the ingress of salt (chloride, bromide). Uphold the warranty by taking appropriate measures.

Information on corrosion (formation, prevention) can be found at www.huber-online.com under “Download/Thermal fluid safety data sheets/Characteristics of water”.

Turn the mains switch (37) located on the front to the Off position (0). Connect the Heat Transfer Station mains plug to your mains socket.

WARNING

Make sure that the voltage stated on the rating plate matches the mains voltage and mains frequency of your power connection. Use only use mains sockets with earthing contacts (type PE) for the power supply.

Carry out a final inspection of the Heat Transfer Station and your installation. Verify

- stability of the filled Heat Transfer Station as well as the connected external applications,
- proper filling with thermal fluid,
- firm seating of the screw cover on the top of the unit housing,
- temperature control hoses are not laid bent or crushed.

When the safety and the hazard-free operation of the Heat Transfer Station is guaranteed, vent the circulation pump of the Heat Transfer Station as well as your external applications and the connecting hoses. Turn on the mains switch on the front (I). Allow the thermal fluid in the Heat Transfer Station and in the connected application to circulate completely. Then stop the circulation by turning off the Heat Transfer Station at the mains switch. Equalize any volume reduction at the measuring hose caused by venting by manually replenishing the thermal fluid. Then check all hose connections and start your temperature control application.

Check the operation of the Heat Transfer Station at regular intervals. Check the level of the thermal fluid on the measuring hose is correct, the leak-tightness of all hose connections to the Heat Transfer Station, as well as your application and the stability of the unit and apparatus.

6 Draining

Stop the current temperature control application of the Heat Transfer Station. Turn the mains switch to the Off position. Detach the hoses connecting your application to the Heat Transfer Station. Open the tank closure on the thermal fluid tank on the top of the Heat Transfer Station housing. Remove the upper end of the flexible measuring hose from its holder and guide it into a suitable container. Allow all the thermal fluid to drain out.

7 Maintenance

When operating with water and temperatures > 60 °C, there is a risk of the internal circuit of the Heat Transfer Station calcifying.
Take appropriate measures (e. g. regular decalcifying) to ensure the trouble-free function of the temperature control unit.

Regularly clean dust and dirt from the ventilation louvers on the housing of the Heat Transfer Station to ensure optimum air exchange of the circulation pump.

8 Decommissioning your Heat Transfer Station

8.1 Decontamination

The user is responsible for ensuring appropriate decontamination, if the temperature control unit or parts thereof come into contact with hazardous materials. Decontamination depends on the type and amount of the contamination material. Consult the safety data sheet on the contamination material and carry out a thorough decontamination.
Essentially, decontamination is required before external personnel come into contact with the temperature control unit. This also applies to repairs and/or factory testing of the temperature control unit. When sending your temperature control unit to the factory, fill out the decontamination confirmation in the attachment and attach it to the shipment. Additional decontamination confirmations can be found on the Internet at www.huber-online.com .

8.2 Preparing your temperature control unit for transport

Before decommissioning, make sure all thermal fluids are correctly drained from the Heat Transfer station as described in **Draining**. The temperature control unit is completely drained, cleaned with solvents and allowed to dry.
Check that the mains switch is in the Off position. Disconnect the temperature control unit from the power supply. Clean the stainless steel surfaces using a standard stainless steel cleanser. Carefully clean the plastic surfaces using a mild detergent.
Pack the temperature control unit in the original packaging. Transport the temperature control unit only in the upright position.

8.3 Disposing of your temperature control unit

Avoid environmental damage by having old, unusable temperature control units disposed of by approved specialist companies.

BESTÄTIGUNG / CONFIRMATION

An / To:

Huber Kältemaschinenbau AG
Werner-von-Siemens-Str. 1
77656 Offenburg

Von / from:

Firma / company:_____ **Betreiber** / responsible body:
Strasse / street:_____ **Name** / name:
Ort / city:_____ **Funktion** / function:
Tel.:_____ **Gebäude** / building:
Fax:_____ **Raum** / room:
Email:

Hiermit bestätigen wir, dass nachfolgend aufgeführtes HUBER- Temperiergerät:
We hereby confirm that the following HUBER-equipment:

☐ UNISTAT ☐ UNICHILLER ☐ MINISTAT ☐ CC ☐

Typ / Type:
Serien-Nr. / Serial no: **S**

mit folgendem Thermofluid betrieben wurde
Was used with the below mentioned heat transfer fluid

Beachten Sie bitte bei der Verwendung fremder Temperiermedien:
Durch die Vielzahl unterschiedlicher Thermofluide sind wir gezwungen vor Beginn der Reparatur die Geräte zu spülen. Die dabei entstehenden Kosten müssen wir Ihnen in Rechnung stellen. Sie können die für Sie anfallenden Kosten niedrig halten, wenn sie das Gerät vor der Rücksendung mit Ethanol spülen. Vielen Dank!

Please note that if you're using none Huber heat transfer fluids we have to flush the system before we start with your repair. The resulting costs have to be added onto your bill. You can reduce your repair costs by flushing your system with ethanol before return. We appreciate your help!

Darüber hinaus bestätigen wir, dass das oben aufgeführte Gerät sorgfältig gereinigt wurde,
die Anschlüsse verschlossen sind und sich weder giftige, aggressive, radioaktive noch andere gefährliche Medien in oder am Gerät befinden.
Additionally we confirm that the above mentioned equipment has been cleaned, that all connectors are closed and that there are no poisonous, aggressive, radioactive or other dangerous substances on or inside the equipment.

Stempel	**Ort/ Datum**	**Betreiber**
Seal	**City/ date**	**responsible body**