# INSTRUCTION

## MINI FLAT HIU STATION
## PICCOLO

INSTALLATION AND OPERATING INSTRUCTIONS
PLEASE READ BEFORE INSTALLATION!

STAND 04/2026

STRASSHOFER®

strasshofer.de

# Table of Contents

# Safety instructions

These instructions are part of the product and contain basic instructions and important information on safety, installation, commissioning, maintenance and optimum use of the appliance.

- Read carefully before use.
- Store during the service life of the product.
- Make it accessible to operating, maintenance and service personnel at all times.
- Pass this on to any subsequent owner, operator or user.

Please also observe the accident prevention regulations applicable in the respective countries, the relevant standards and regulations and the installation and operating instructions for the additional system components. Installation, electrical connection, commissioning and maintenance of the device may only be carried out by a qualified specialist.

**For the operator:** Have a technician give you detailed instructions on how the controller works and how to operate it. Always keep these instructions near the controller.


For more information on commissioning and using the system, please refer to the “Fresh Water Controller SFWC” operating instructions, which are also included.

## Symbols

Warnings are used in these instructions to warn against damage to property and personal injury.


**Failure to observe these instructions may result in life-threatening effects due to electrical voltage.**


**Failure to observe these instructions can result in serious health consequences such as scalds and even life-threatening injuries.**


**Failure to observe these instructions may result in the destruction of the appliance, the system or environmental damage.**


**Information that is particularly important for the function and optimum use of the appliance and the system.**

## Intended use

- Only use the Mini Flat HIU station in combination with a buffer storage for heating domestic hot water in closed heating systems.
- Observe all instructions in this manual and the applicable documents.
- Observe the maximum application limits: see 1.1 Technical Data

Any other use is considered improper use. The manufacturer is not liable for any resulting damage. The user alone bears the risk.

## Improper use

Any uses other than those described in these instructions and in the applicable documents are improper. The manufacturer is not liable for any resulting damage. The user alone bears the risk.

- Do not connect the Mini Flat HIU station directly to a heat generator (e.g. boiler or solar circuit).
- Do not use the Mini Flat HIU station in the following areas: outdoor areas; damp rooms; rooms in which the use of electrical appliances is prohibited; rooms threatened by frost.

# Safety instructions

## Personnel qualification

The Mini Flat HIU station may only be installed, maintained and repaired by authorized and trained specialists.

- Only deploy skilled personnel whose training and experience enable them to recognize risks and avoid potential hazards.
- Define the responsibilities of staff according to their qualifications and job description.
- Ensure that the following requirements are met:
  - The personnel have read and understood these operating instructions.
  - The personnel have received instruction on the hazards involved.
  - The personnel know and observe the relevant accident prevention regulations as well as the safety regulations.

## Security measures

Materials and components used on site must be fully suitable for the intended purpose, tested or approved by the manufacturer and must meet the applicable laws, standards, guidelines and regulations.

- Only use appropriate materials and components.
- Do not make any unauthorized changes to the Mini Flat HIU station.
- The controller of the Mini Flat HIU station and the pumps are powered by electricity.
- Disconnect the system from the power supply before starting maintenance, servicing and repair work and secure it against being switched back on.
- Keep your workplace clean and free of obstructions.
- Make sure there is sufficient lighting.
- Keep children, pets and unauthorized persons away from tools and assembly areas.
- Store hazardous substances and liquids safely and away from the station area.
- Work on the system should only be carried out by a qualified technician.

**During operation**

- If damage occurs to the system:
  - Take the system out of operation.
  - Do not continue to operate the system.

**During maintenance and repair**

- Never allow the operator to remove the EPP cover or carry out repairs.
- Only allow repairs to be carried out by a specialist.
- Only use original spare parts.

**Fire protection**

- Observe applicable fire protection regulations and valid building codes/building regulations. This applies in particular in the following cases:
  - When penetrating ceilings and walls.
  - In rooms with special/stricter requirements for preventive fire protection measures.

## Residual risks

**Water quality**

- Take into account corrosion protection and scale formation in the design in accordance with DIN 1988-7 drinking water analyses (in accordance with DIN 50930 Part 6).
- Test regularly in accordance with DIN 1988


**System failure due to a scaled-up heat exchanger!**

o minimize scaling of the heat exchanger, we recommend installing a water softener starting at **14°dH**.


**Please refer to the resistance table on page 17**

# Safety instructions

## Prevention of property damage

**On-site heating system**

- Flush on-site heating systems thoroughly before installing the station.

**Safety equipment in the primary circuit**

- Observe VDI guideline 2035 (sheet 1 and 2) during planning, installation and operation.
- Plan and install a safety valve in the primary circuit.

**Repairs**

- Repairs should only be carried out by a qualified technician.
- Only use original replacement parts.

# 1. Mini Flat HIU station piccolo

## Mini Flat HIU station piccolo

The piccolo Mini Flat HIU station is a compact unit designed for decentralized hot water supply in multi-story buildings and single-family homes.
It heats drinking water on demand using a flow-through system via a stainless steel plate heat exchanger, ensuring a hygienic and efficient supply. The integrated, self-regulating control system guarantees reliable temperature control without the need for an external power source.

- **Decentralized drinking water heating:** On-demand hot water production using the instant-flow principle via a stainless steel plate heat exchanger—hygienic and efficient.
- **PM Proportional flow controller:** Automatic control of the heating water flow rate without external power for reliable temperature control.
- **Stainless steel piping:** High-quality, corrosion-resistant design for durability and operational reliability.
- **Temperature-maintaining valve:** Prevents stagnation in the supply line and helps to maintain hygienic operating conditions.
- Surface-mounted installation with a cover.

### Domestic hot water preparation

The drinking water is heated using the flow principle through a stainless steel plate heat exchanger only when it is needed.
In heating systems with a buffer tank, the heating water is circulated through the heat exchanger during the draw-off process – in accordance with the resulting pressure drop – by a central, controlled circulation pump.

### Control Function

Control is provided by the PM proportional controller without external power. It regulates the heating water flow rate required for domestic hot water heating. The desired domestic hot water temperature is set directly on the adjustment lever. A temperature-maintaining valve prevents stagnation in the supply line.

### Scope of delivery

Ball valves for supply and return (DN 20 internal thread), reducer ring for cold water and hot water (3/4" external thread x 1/2" internal thread) and mounting kit.

# 1.1 Technical Data

## TECHNICAL DATA

| | |
|---|---|
| Pressure rating: | Heating: PN 6 / Drinking water: PN 10 |
| Heating water supply temperature: | max. 90 °C |
| Drinking water setpoint temperature: | 30 - 60 °C |
| Cold water pressure: | 2,0 bar |
| Connection dimensions: | Heating: DN 25, ¾" int. thread / Drinking water: DN 15/20, ½", ¾" int. thread |
| Dimensions (WxHxD): | 270 x 340 x 120 mm |
| Dimensions with ball valves (WxHxD): | 270 x 440 x 120 mm |

## PERFORMANCE EXAMPLE: HEAT EXCHANGER

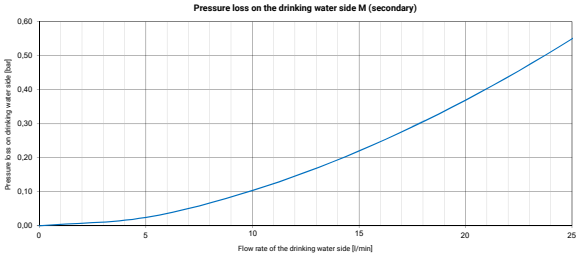
| **Heat exchanger size:** | **M** | | **XL** | |
|---|---|---|---|---|
| Supply / Return temperature primary: | 60 / 30 °C | | 60 / 30 °C | |
| CW inlet / DHW outlet temperature: | 10 / 50 °C | 10 / 45 °C | 10 / 50 °C | 10 / 45 °C |
| DHW tap capacity max.: | 13 l/min | 15 l/min | 16,5 l/min | 18,5 l/min |
| Pressure loss primary *: | 20,3 kPA | | 17,4 kPA | |
| Heating flow rate primary: | 875 l/h | | 1303 l/h | |

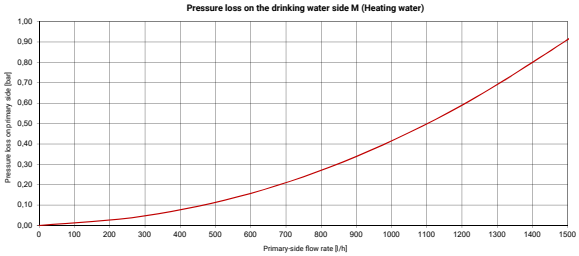
* without cold water and heat meters

(at 2 bar cold water pressure and 350 mbar heating)

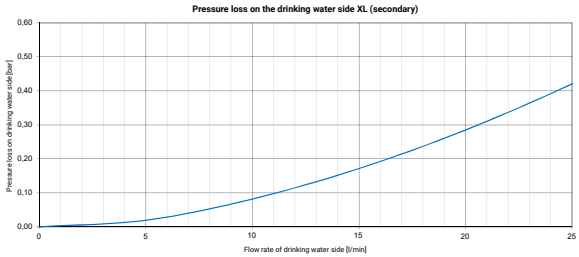
# 1.1 Technical Data

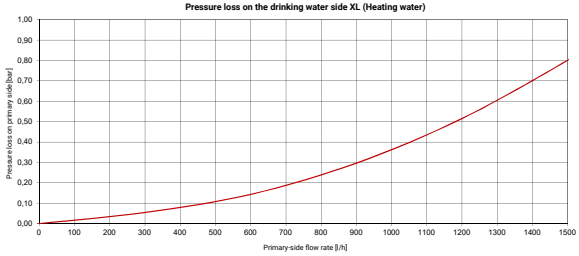
## PRESSURE LOSS TABLE FOR HEAT EXCHANGERS, SIZE M




## PRESSURE LOSS TABLE FOR HEAT EXCHANGERS, SIZE XL



# 1.2 Control Ranges of the PM Controller

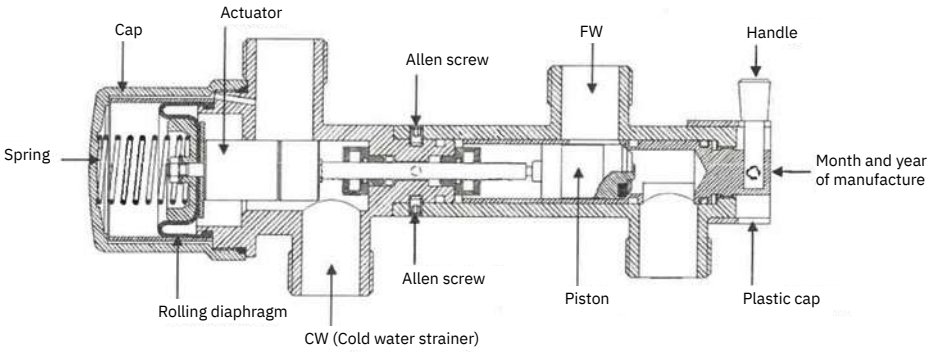
Three control ranges (A, B, or C) are provided to ensure optimal control under various operating conditions.

**Range B is always set at the factory.**

| FW FLOW TEMPERATURE | FW DIFFERENTIAL PRESSURE (OPERATING) | | |
|---|---|---|---|
| | 0,2 - 0,5 bar | 0,5 - 1,0 bar | > 1,0 bar |
| 60 - 70 °C | A | A | B |
| 70 - 80 °C | A | B | B |
| 80 - 90 °C | A | C | C |
| 90 - 100 °C | B | C | C |

## Change to control range A or C

- Remove the handle using the included Allen wrench.
- Remove the plastic cap with the red/blue mark
- Insert the handle and rotate it 360°:
  - A: counterclockwise
  - C: clockwise
- Reinstall the plastic cap and handle.




## Hot water tap temperature

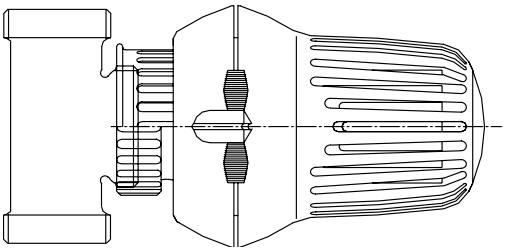
The dispensing temperature is adjusted (within the control range) using the handle;
Toward the red mark: warmer; Toward the blue mark: colder

Adjustment is performed at a flow rate of 8–10 liters per minute.

Check the temperature at the tap. Recommended dispensing temperature: 45 - 48 °C; never higher than 50 °C (to prevent limescale buildup in the water heater).

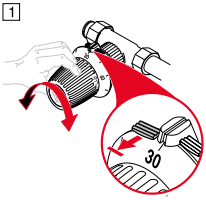
# 1.3 Module T - Temperature maintenance

Temperature maintenance valve ½" for maintaining the supply water temperature at the station inlet. Prevents waiting times when drawing hot water and when the heating system is inactive. Continuously adjustable temperature setting.

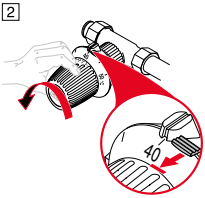


## ESetting the holding temperature (factory setting: 40 °C)

1

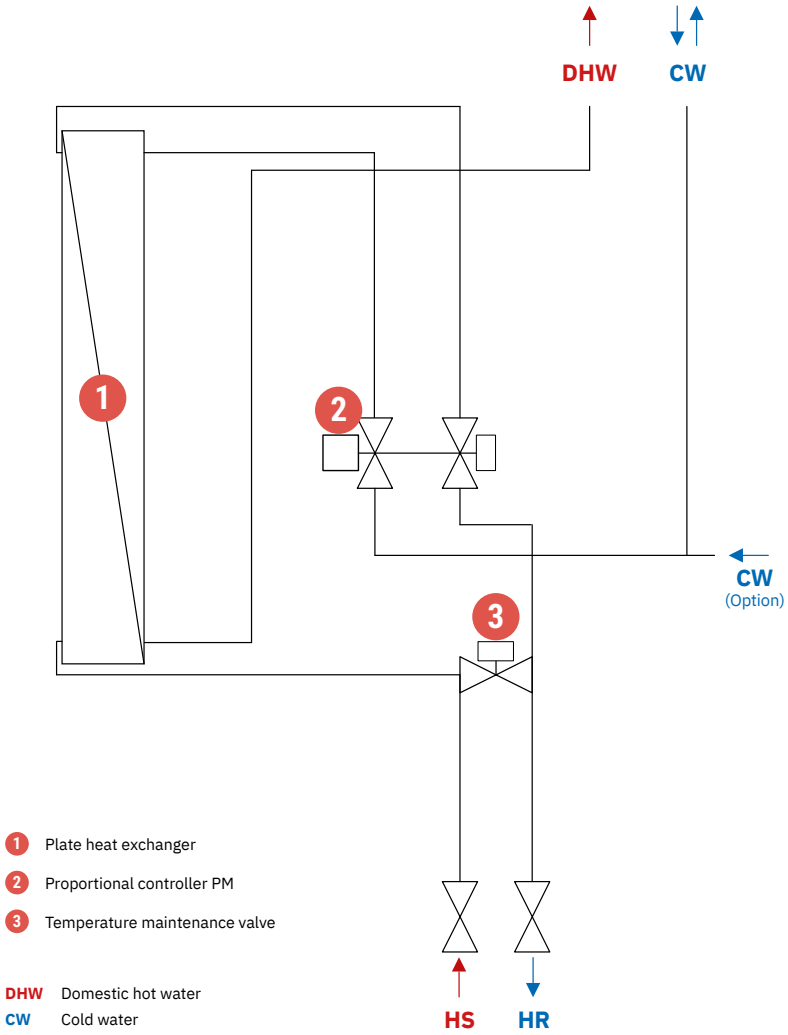



2




To lock a temperature, set the desired value and lock it in place by sliding the left and right locking buttons forward (toward you).

# 1.4 Wiring Diagram



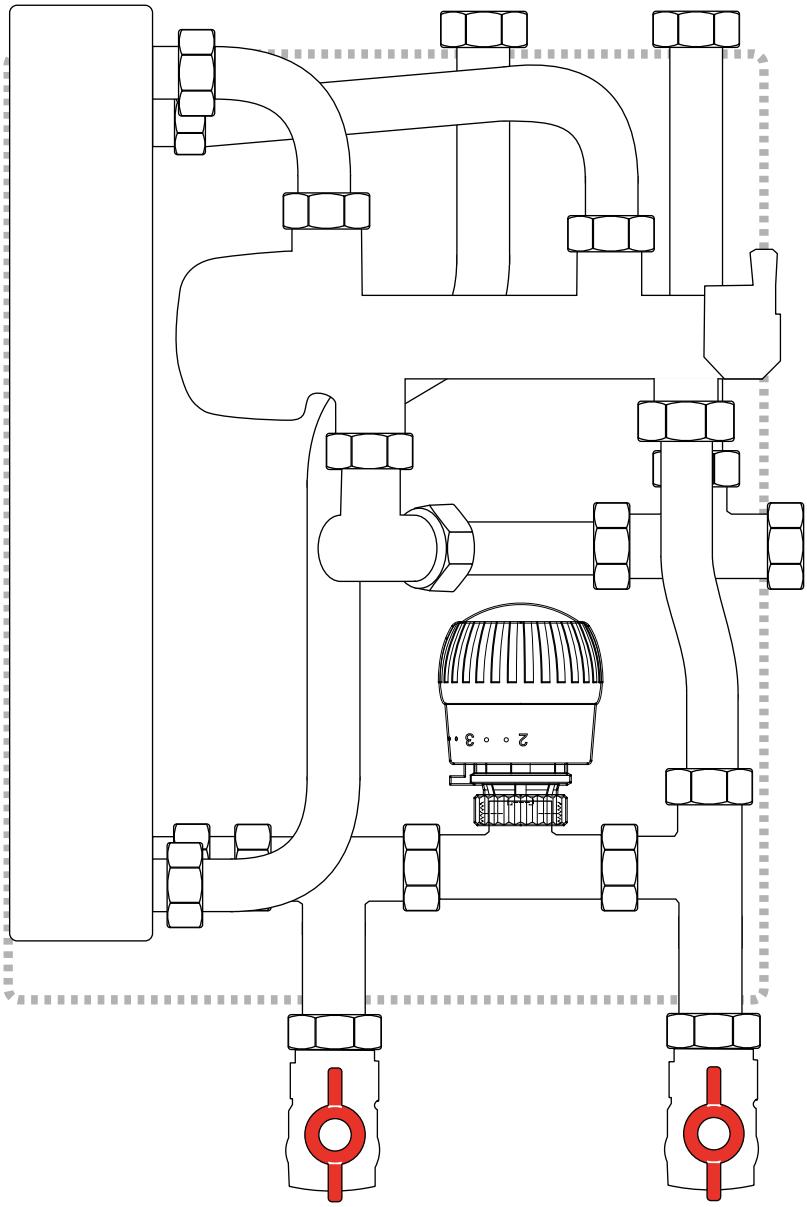

1 Plate heat exchanger

2 Proportional controller PM

3 Temperature maintenance valve

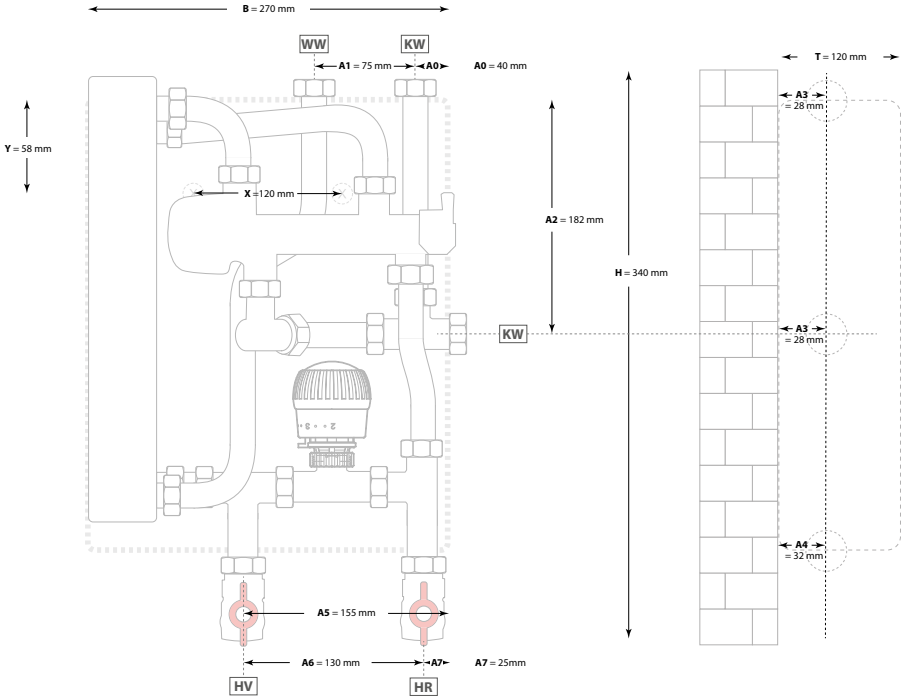
**DHW** Domestic hot water
**CW** Cold water
**HV** Heating Supply
**HR** Heating Return

# 1.5 Diagram



*All illustrations shown are schematic and do not claim to be exhaustive. All information is provided without warranty.*

# 1.6 Wall Mounting




| SIZE CHART | |
|---|---|
| Width B | 270 mm |
| Hight H | 340 mm |
| Depth T | 120 mm |
| X = Distance between drill holes | 120 mm |
| Y = Distance from drill holes to top edge | 58 mm |
| A0 = Distance from CW pipe to right edge | 40 mm |
| A1 = Distance from DHW pipe to CW pipe | 75 mm |
| A2 = Distance from CW pipe to top edge | 182 mm |
| A3 = Distance from wall to DHW/CW pipes (opt.) | 28 mm |
| A4 = Distance from wall to HS / HR pipes | 32 mm |
| A5 = Distance from HS pipe to right edge | 155 mm |
| A6 = Distance from HS pipe to HR pipe | 130 mm |
| A7 = Distance from HR pipe to right edge | 25 mm |

# 2. Assembly & Installation


To prevent damage to the system, the installation site must be dry, stable, and frost-free.

## Assembly

### Installing and securing the frame

- Position the frame against the wall.
- Insert the screws.
- Tighten the mounting screws without applying excessive force until the frame is securely in place.

It is not necessary to remove the base plate.

## Installation

Connect the Mini Flat HIU station to the system as shown in the illustration on page 13.

**1. Primary side Return:** Return to the buffer tank. ¾" int. thr. connection, piping at least DN 20, 22 x 1 mm, max. length 2 m.

**2. Primary side Supply:** Supply to the buffer tank. ¾“ int. thr. connection, piping at least DN 20, 22 x 1 mm, max. length 2 m.


**Improper installation may result in injury!**
Connect the hydraulic system correctly and ensure there are no leaks.


**To ensure that the Mini Flat HIU station functions properly, the power ratings specified in the design must not be reduced!**

- Ensure that the primary heating supply and return lines, as well as the hot and cold water lines, are connected correctly.
- Refer to the hydraulic diagram for installation guidance.

Connect the hydraulic system using the following steps:

**A. Prepare the piping**
Prepare the piping according to your plan.

**B. Install the piping**
Install the piping on the Mini Flat HIU station according to your plan.

**C. Insulate the piping in accordance with national regulations**
Insulate the piping with thermal insulation.

The Mini Flat HIU station is now hydraulically connected.

# 3. Commissioning


**Property damage due to improper installation!**

Improper installation can result in property damage.
Only an authorized professional technician may perform the installation.


**When commissioning the system, please observe the following flushing instructions:**

- Before filling the unit, you must first thoroughly and carefully flush the entire heating system and the apartment's heating system.
- Check the tightness of the flat-seal connections in the mini-apartment station. Tighten the connections if necessary.
  When tightening connections, always check the opposite side.
- Vent the trapped air in the Mini Flat HIU station at the plate heat exchanger. Pay attention to the system operating pressure while doing so.

**To put the Mini Flat HIU station into operation, please follow these steps:**

1. Checking the station before Commissioning
2. Flushing
3. Filling
4. Venting
5. Checking Setpoints
6. Filling out the acceptance report
7. Handing over the unit to the operator

The steps are described in detail below.

## 3.1 Checking the station before Commissioning

Before commissioning, you must perform a visual inspection to ensure that the unit has been installed correctly, as follows:

- Check that installation dirt and dust have been properly removed from the unit.
- Check all pipes and connections on the unit for leaks.
- Check that the electrical connections (if present) have been made correctly, that the polarity of the power connection is correct, and that grounding is ensured.

**If you discover an installation error during the visual inspection, you must temporarily halt commissioning and correct the error first!**

## 3.2 Flushing

To flush the Mini Flat HIU station, follow these steps:

1. **Fill with heating water**
   Fill the Mini Flat HIU station with heating water by opening the ball valves in the primary supply and return lines.
2. **Flush the Mini Flat HIU station**
   Drain the heating water from the flat HIU station into a suitable container.

### 3.3 Filling

Refill the heating water that was removed from the boiler room.

### 3.4 Venting

Vent the Mini Flat HIU station at the plate heat exchanger.

### 3.5 Checking Setpoints

### 3.6 Complete and submit the acceptance report (Commissioning certificate).

### 3.7 Handing over the unit to the operator

## 4. Malfunction / Causes / Remedy

| MALFUNCTION | POSSIBLE CAUSES | REMEDY |
|---|---|---|
| 1. INSUFFICIENT HOT WATER OR WATER AT TOO LOW A TEMPERATURE | **A.** Supply temperature too low | • Increase the supply temperature at the heat source<br>• Check the buffer tank charge |
| | **B.** No volume flow or insufficient volume flow at the unit | • Check the valve settings in the unit<br>Note: The flow rate must match the design specifications<br>• If necessary, clean the strainer in the primary supply line<br>• Check the heat meter type (Note: min. Qn 1,5 with low pressure losses)<br>• Check the settings of the central heating pump<br>Recommendation: Set to constant volume flow<br>• Open the shut-off valves |
| | **C.** Air in the system | • Release air via the fill and drain valve on the unit<br>Note: The vent is intended only for the unit<br>• Vent the branch<br>• Retrofit a central vent at the heat source<br>• Vent the buffer tank |
| 2. HOT WATER NOT WORKING | **A.** Excessive wait times for hot water | • Check the temperature setting on module T and increase it if necessary<br>• Install a domestic hot water recirculation system<br>• Check the settings of the central heating pump<br>Recommendation: Set to constant volume flow |
| | **B.** The PM controller is leaking | • Replace the PM controller |
| | **C.** The PM controller is stuck | • Replace the PM controller |

# 5. Resistance table

The following guide is intended to provide an overview of the corrosion resistance of stainless steels and brazing materials in tap water at room temperature. The table lists several important chemical components; however, actual corrosion is a highly complex process influenced by the combined effects of many different factors.

This table therefore represents a considerable simplification and should not be overinterpreted!

**Explanations:**

**+** = Good resistance under normal conditions
**0** = Corrosion may occur, especially if other factors are rated 0
**-** = Use not recommended

| SUBSTANCES IN WATER | CONCENTRATION (mg/l or ppm) | TIME LIMITS * | STAINL. STEEL AISI 316 | STANDARD PLATE HEAT EXCHANGER ** | SPECIAL PLATE HEAT EXCHANGER *** |
|---|---|---|---|---|---|
| Alkalinity ($HCO_3^-$) | < 70 | Within 24 hrs | + | 0 | + |
| | 70-300 | | + | + | + |
| | > 300 | | + | 0/+ | + |
| Sulfate ($SO_4^{2-}$) | < 70 | No limit | + | + | + |
| | 70-300 | | + | 0/- | + |
| | > 300 | | + | + | + |
| $HCO_3^-$ / $SO_4^{2-}$ | > 1,0 | No limit | + | + | + |
| | < 1,0 | | + | 0/- | + |
| Electrical conductivity | < 10 µS/cm | No limit | + | 0 | + |
| | 70 - 300 µS/cm | | + | + | + |
| | 300 - 500 µS/cm | | + | 0 | + |
| | > 500 µS/cm | | + | - | + |
| pH[2] | < 6,0 | Within 24 hrs | 0 | 0 | + |
| | 6,0 - 7,5 | | + | 0 | + |
| | 7,5 - 9,0 | | + | + | + |
| | > 9,0 | | + | 0 | + |
| Ammonium ($NH_4^+$) | < 2 | Within 24 hrs | + | + | + |
| | 2 - 20 | | + | 0 | + |
| | > 20 | | + | - | + |
| Chloride ($CL^-$) | < 100 | No limit | + | + | + |
| | 100 - 200 | | + | + | + |
| | 200 - 300 | | + | + | + |
| | > 300 | | - | 0/+ | + |
| Free chlorine ($Cl_2$) | < 1 | Within 5 hrs | + | + | + |
| | 1 - 5 | | - | 0 | + |
| | > 5 | | - | 0/- | + |
| Hydrogen sulfide ($H_2S$) | < 0,05 | No limit | + | + | + |
| | > 0,05 | | + | 0/- | + |
| Frei (aggressiv) Kohlendioxid ($CO_2$) | < 5 | No limit | + | + | + |
| | 5 - 20 | | + | 0 | + |
| | > 20 | | + | - | + |
| Total hardness (°dH) | 4,0 - 8,5 | No limit | + | + | + |
| Nitrate [1] ($NO_3^-$) | < 100 | No limit | + | + | + |
| | > 100 | | + | 0 | + |
| Iron [3] (Fe) | < 0,2 | No limit | + | + | + |
| | > 0,2 | | + | 0 | + |
| Aluminium (Al) | < 0,2 | No limit | + | + | + |
| | > 0,2 | | + | 0 | + |
| Manganese [3] (Mn) | < 0,1 | No limit | + | + | + |
| | > 0,1 | | + | 0 | + |

[1] Sulfates and nitrates act as inhibitors for pitting corrosion caused by chlorides in pH-neutral environments.
[2] In general, a low pH value (below 6) increases the risk of corrosion and a high pH value (above 7.5) reduces the risk of corrosion.
[3] $SFe^{3+}$ and $Mn^{4+}$ are strong oxidizing agents and can increase the risk of localized corrosion in stainless steels. SiO2 above 150 ppm increases the risk of calcification.
* Examination time after sample taking
** Standard plate heat exchanger data refer to copper solder joints
*** Special plate heat exchanger data refer to copper-free solder joints

# COMMISSIONING CERTIFICATE / CERTIFICATE OF GUARANTEE

| BUILDING PROJECT | | APARTMENT | |
|---|---|---|---|
| Name: | Sample complex | Floor: | 3rd floor / apt. 5 / left |
| Street: | Any street 12 | Street: | Any street 12 |
| City: | 80000 Munich | City: | 80000 Munich |
| Project: | Sample complex | Phone: | +49 123 456789 |
| Order: | 12-X501 | Email: | info@sample-complex.com |
| Date: | June 22, 2021 | | |

## PRODUCT

| | | | | | |
|---|---|---|---|---|---|
| Type: | BM-F | FM | SM | M | |
| Serial number: | 12345ZX | flush-mounted | surface-mounted | XL | |
| Manufacturing date: | June 22, 2021 | | | | |
| Number of radiator circuits: | 1 | | | | |
| Number of floor circuits: | 10 | | | | |
| Test date: | June 29, 2021 | Tester: | John Doe | | |

**To be completed by the customer** ----------



| COMMISSIONING BY (INSTALLER) | | COMMISSIONING CHECKLISTE | |
|---|---|---|---|
| Name: | Heating engineers Ltd. | Checking before commissioning: | X |
| Street: | Other street 46 | Purging: | X |
| City: | 80212 Munich | Filing: | X |
| Phone: | +49 987 654321 | Venting: | X |
| Email: | info@heating-engineers.com | Check setting values: | X |
| | | Completed acceptance report: | X |

| | | |
|---|---|---|
| Installed thermostatic sanitary fittings? | YES X | NO |
| Removed hot water limitation for sanitary fittings? | YES X | NO |

## MEASURED VALUES

| | | | | | |
|---|---|---|---|---|---|
| Primary supply temperature: | 60 | °C | Temperature maintenance valve: | 40.0 | °C |
| Primary return temperature: | 17 +/- | °C | Sec. differential pressure (module D2): | 255 | mbar |
| Hot water temperature: | 45 | °C | Floor heating supply temperature: | 30 | °C |
| Hot water amount: | 21.0 | l/min | | | |
| Primary volume flow for DHW heating: | 960 | l/h | | | |

## IMPORTANT - PLEASE NOTE!

Commissioning has been carried out correctly.
Please send us the **duly completed acceptance report by email after commissioning.** Only then we can guarantee you adequate support or customer service.

| June 29, 2021 | SAMPLE COMPLEY MUNICH ANY STREET 12 +49 123 456789 A. Sample | Heating engineers Ltd. Other street 46 - 80212 Munich www.heating-engineers.com G. Raymond |
|---|---|---|
| Commissioning date | Customer signature / stamp | Specialist installer signature / stamp |

**email to: see back of instruction**

# COMMISSIONING CERTIFICATE / CERTIFICATE OF GUARANTEE

| BUILDING PROJECT | | APARTMENT | |
|---|---|---|---|
| Name: | | Floor: | |
| Street: | | Street: | |
| City: | | City: | |
| Project: | | Phone: | |
| Order: | | Email: | |
| Date: | | | |

| PRODUCT | | | | | |
|---|---|---|---|---|---|
| Type: | | **FM** flush-mounted | **SM** surface-mounted | **M** | |
| Serial number: | | | | **XL** | |
| Manufacturing date: | | | | | |
| Number of radiator circuits: | | | | | |
| Number of floor circuits: | | | | | |
| Test date: | | Tester: | | | |

**To be completed by the customer ----------**

| COMMISSIONING BY (INSTALLER) | | COMMISSIONING CHECKLISTE | | |
|---|---|---|---|---|
| Name: | | Checking before commissioning: | | |
| Street: | | Purging: | | |
| City: | | Filing: | | |
| Phone: | | Venting: | | |
| Email: | | Check setting values: | | |
| | | Completed acceptance report: | | |
| | | Installed thermostatic sanitary fittings? | YES | NO |
| | | Removed hot water limitation for sanitary fittings? | YES | NO |

| MEASURED VALUES | | | | | |
|---|---|---|---|---|---|
| Primary supply temperature: | | °C | Temperature maintenance valve: | | °C |
| Primary return temperature: | | °C | Sec. differential pressure (module D2): | | mbar |
| Hot water temperature: | | °C | Floor heating supply temperature: | | °C |
| Hot water amount: | | l/min | | | |
| Primary volume flow for DHW heating: | | l/h | | | |

**IMPORTANT - PLEASE NOTE!**

Commissioning has been carried out correctly.
Please send us the **duly completed acceptance report by email after commissioning.** Only then we can guarantee you adequate support or customer service.

| Commissioning date | Customer signature / stamp | Specialist installer signature / stamp |
|---|---|---|

**email to: see back of instruction**

**Strasshofer GmbH**

Am Fernblick 11
08499 Reichenbach
Germany

Phone: +49 3765 3804 30
E-Mail: info@strasshofer.de

**Presented by:**

STRASSHOFER®

strasshofer.de