

Technical documentation Installation instruction



HYGIENIK 2.0 WITH HOT WATER STATION 2.0



812556_Rev.3 - Original Instructions



HEAT PUMPS FROM AUSTRIA

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1. General information

1.1. General information

Please read this documentation carefully. It contains important instructions for correct installation and safe and economical operation of the system.

1.2. Safety instructions

Installation and maintenance work can be associated with dangers resulting from high system pressures, high temperatures and live parts and may only be carried out by specialist staff.

Hot water storage tanks may only be installed by competent specialist staff and must be put into operation by a customer service specialist trained for that purpose by iDM-Energiesysteme GmbH.

When working on the hot water storage tank, disconnect the system and ensure that it is volt-free and secured against unintentional restarting.

Furthermore, all safety instructions in the respective documentation or on instruction plates affixed to the hot water storage tank and/or hot water station itself and all other pertinent safety regulations must be observed.

1.3. Transport

Lifting equipment corresponding to the dimensions and weight of the hot water storage tank must be used for transport, installation and assembly. The high empty weight of the tank means an increased risk of accidents.

1.4. Servicing and maintenance

Regular maintenance as well as an inspection and servicing of all important system components ensure safe and economical operation of the system in the long term. Safety valves must be activated at regular intervals to check for correct functioning.

Only original iDM spare parts or spare parts complying with iDM specifications may be used!

1.5. Cleaning

If necessary, the hot water storage tank can be cleaned using a moist cloth. The use of cleaning agents is not recommended.

1.6. Installation of additional components

The installation of additional components which have not been verified with the equipment may impair the function. No warranty or liability will be assumed for any damage resulting from the installation of additional components.

1.7. Installation location

- No heavy dust formation
- No permanently high air humidity
- Frost-proof
- It must be ensured that the structural integrity of the installation surfaces or openings in ceilings and walls is adequate and is not impaired by the installation.



General instructions for operation of the Hygienik 2.0.



General instructions for installation of the Hygienik 2.0.




Important information on installation and operation of the Hygienik 2.0. These instructions must be observed!



Space for the customer service phone no.

1.8. Information on environmental protection




Water heaters with hot water module are assemblies made from high-quality material which must not be disposed of in the same way as household waste. They must be disposed of in a professional and appropriate manner and in accordance with the regulations of the local authorities.

Disposal contrary to the regulations may lead to damage to the environment and health and may be subject to penalty under law.

In the case of hot water modules from iDM Energiesysteme, the following limit values prescribed by the manufacturer of the plate heat exchangers must be complied with:

pH value	6 - 10
Total hardness	6...15 °dH
Conductivity	no specification
Filtered substances	<30 mg/l
Chlorides	above 100°C no chlorides permitted
Free Chlorine	<0.5 mg/l
Hydrogen sulphide	no specification
Ammonia	no specification
Sulphates	<300 mg/l
Hydrogen carbonate	no specification
Hydrogen carbonate / Sulphates	no specification
Sulphide	<5 mg/l
Nitrate	no specification
Nitrite	no specification
Iron	no specification
Manganese	no specification
Free aggressive carbonic acid	no specification

1.10. Standards and guidelines



For installation, observe all pertinent national and international routing, installation, accident prevention and safety regulations pertaining to the installation of pipeline systems and electrical components and equipment as well as the information in these installation instructions.

These include:

- the generally valid accident prevention and safety regulations
- the provisions regarding environmental protection
- the regulations of the professional associations
- the pertinent laws, standards, regulations and provisions, e.g. DIN, EN, DVGW, VDI and VDE
- provisions of the local public utilities

1.11. Quality of the service water

We recommend that you have water analysis carried out in order to prevent damage as a result of insufficient water quality at the hot water module.

The testing institute carrying out the analysis of the service water should be instructed to test specifically for the substances that apply where non-ferrous metal plate heat exchangers are used as hot water modules.

2. Description

2.1. Hygienik 2.0

The iDM-Hygienik 2.0 is a complete water heater with hygienic hot water supply using a counterflow plate heat exchanger.

The tank containing heating water is heated as required via an external heat generator (e.g. via a heat pump, an oil or gas boiler, wood boiler,...).

The hot water is heated in a continuous process via a large-area counterflow heat exchanger made of stainless steel. This prevents bacterial growth. Two hose connections and an isolating valve are provided for easy decalcification of the plate heat exchanger. The plate heat exchanger is supplied with heat from the tank via a speed-controlled primary circuit pump. The primary circuit pump is activated via a flow switch in the cold water line.

The tank is suitable for charging with an iDM heat pump. A screw-in electric heating immerser can also be used to heat the tank. A further option is the use of a solar plant with hot water supply via a solar station which is available as an accessory.

The iDM-Hygienik 2.0 is available in two versions:

- With layer separate plate (suitable in the upper section for hot water heating and in the lower area as a buffer storage tank). The layer separate plate maintains temperature stratification, in particular when using the Hygienik 2.0 with an iDM heat pump.
- Without layer separate plate (only for hot water heating)

Application range

With the Hygienik 2.0, hot water tapping quantities of up to 70 l/min. can be achieved. Large-scale premises can be supplied by combining several tanks.

Scope of delivery

The Hygienik 2.0 comprises a storage tank with all necessary connections and two sensor rails for precise positioning of the required sensors. The tank body is equipped with fleece/Neopor® insulation and enclosed in a plastic outer shell with a black cover.

2.2. Hot water station

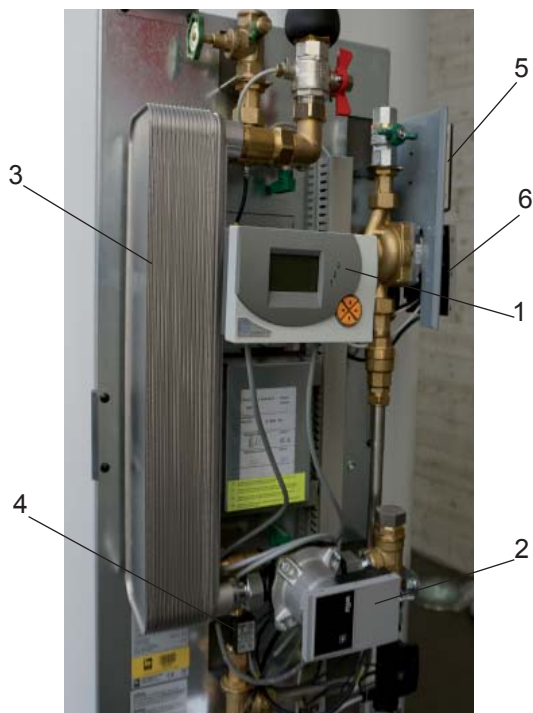
The hot water station can either be mounted directly on the Hygienik 2.0 or on a wall. This means it is also possible to operate the hot water station with a tank made by another manufacturer.

Scope of delivery:

- Hot water stations 25 l or 35 l with or without mixing valve
- Hot water stations 50 l or 70 l
- Bracket for installation of the hot water station on a wall
- Screws for mounting the hot water station on the Hygienik
- iDM cover hood for the hot water station, made from EPP rigid foam
- Installation instruction

Optional accessories

- Controller UVR 61-3 HEP
- Heat meter
- Circulation module for installation in the hot water station 25l and 35l



- 1...UVR 61-3 HEP speed controller (accessory)
- 2...High-efficiency pump
- 3...Plate heat exchanger
- 4...Flow switch
- 5...Heat meter (accessory)
- 6...Circulation module for 25l and 35l hot water stations (accessory)

2.3. Notes on dimensioning

The Hygienik 2.0 is available in various combinations for different tank and heat exchanger sizes. The following criteria must be considered in order to select the appropriate type.

Hygienik	Application
500 l	For a single-family home, possibly with solar plant for hot water heating
825 l	For two-family homes
1000 l	For a solar plant with partly solar room heating or for single-family homes with wood boiler system
1500 l	For apartment buildings
2000 l	For solar and wood boiler systems with higher tank volume

Several tanks can be combined, depending on specific requirements.

“Tapping output” of the plate heat exchanger

The tapping output is the current maximum hot water tapping quantity that can be heated by the plate heat exchanger from a cold water temperature of 10°C to 50°C at a tank temperature of 55°C.

The selection of the appropriate plate heat exchanger type will depend on the number of residential units and the equipment on the drinking water side. Refer to DIN 4708, Part 2, for information on dimensioning.

Hot water stations are available with the following tapping outputs:

- 25 l / min.
- 35 l / min.
- 50 l / min.
- 70 l / min.

“Single tapping volume”

This is the total quantity of hot water at 45 °C that can be tapped from a Hygienik 2.0 when the tank is heated to 60°C right to the bottom and is not reheated by the heat generator.

“NL” performance index

The “NL” performance index top-bottom as defined by DIN 4708 indicates how many standard residential units (as per DIN 4708, Part 2) can be supplied by the Hygienik 2.0 under standard conditions.

“Hot water requirement”

The hot water requirement for a building must be defined in accordance with DIN 4708, Part 2 or using the “Sander method.” A suitable Hygienik 2.0 type is then selected from the table below.

3. Technical data Hygienik 2.0

Hygienik 2.0	Unit	500/25	500/35	825/25	825/35	1000/25	1000/35
Energy efficiency class	-	B	B	1)	1)	1)	1)
Average power loss	W	69	69	90	90	99	99
Total storage tank contents	l	500	500	825	825	920	920
Storage tank contents above LSP ²⁾	l	325	325	405	405	500	500
Storage tank contents below LSP	l	175	175	420	420	420	420
Diameter incl. insulation	mm	870	870	1022	1022	1018	1018
Height incl. insulation	mm	1890	1890	1970	1970	2170	2170
Installation depth without insulation	mm	Ø650	Ø650	Ø790	Ø790	Ø790	Ø790
Tilted dimension of tank body	mm	1800	1800	1910	1910	2080	2080
Weight	kg	100	105	115	120	125	130
Single tapping volume at 45°C without LSP ²⁾	l	525	525	866	866	966	966
Single tapping volume at 45°C with LSP ²⁾	l	341	341	435	435	524	524
Tapping output	l/min	25	35	25	35	25	35
Performance index at tank temperature 52°C	-	3	5	4	7	5	8
Performance index at tank temperature 60°C	-	4	6	5	8	6	10
Performance index at tank temperature 70°C	-	5	8	6	10	8	12
Max. res. units ³⁾	-	2	3	4	7	6	10
Max. hotel rooms ³⁾	-	-	-	-	-	5	8
Max. showers at sport facilities ³⁾	-	-	-	-	-	4	6

¹⁾ In accordance with EU Ordinance 812/2013 on the energy labeling of hot water storage tanks, there is no energy labeling for hot water storage tanks with a total volume exceeding 500 l

²⁾ Calculated with:
Storage temperature 60°C
Tapping temperature 45°C
Cold water temperature 15°C

³⁾ at a storage tank charging temperature of 70°C

Pressure loss on the drinking water side: approx. 0.3 bar

Max. operating pressure on the heating side: 4 bar

Max. operating pressure on the drinking water side: 6 bar

Max. operating temperature: 90°C



Hygienik 2.0	Unit	1000/50	1500/25	1500/35	1500/50	1500/70
Energy efficiency class	-	1)	1)	1)	1)	1)
Average power loss	W	99	134	134	134	134
Total storage tank contents		920	1500	1500	1500	1500
Storage tank contents above LSP ²⁾	l	500	615	615	615	615
Storage tank contents below LSP	l	420	885	885	885	885
Diameter incl. insulation	mm	1018	1170	1170	1170	1170
Height incl. insulation	mm	2170	2400	2400	2400	2400
Installation depth without insulation	mm	Ø790	Ø950	Ø950	Ø950	Ø950
Tilted dimension of tank body	mm	2080	2320	2320	2320	2320
Weight	kg	135	160	165	170	175
Single tapping volume at 45°C without LSP ²⁾	l	966	1575	1575	1575	1575
Single tapping volume at 45°C with LSP ²⁾	l	524	645	645	645	645
Tapping output	l/min	50	25	35	50	70
Performance index at tank temperature 52°C	-	12	5	10	13	15
Performance index at tank temperature 60°C	-	15	6	12	15	20
Performance index at tank temperature 70°C	-	18	8	15	20	30
Max. residential units ³⁾	-	18	6	12	20	30
Max. hotel rooms ³⁾	-	15	6	10	15	25
Max. showers at sport facilities ³⁾	-	10	5	7	12	18

¹⁾ In accordance with EU Ord. 812/2013 on the energy labeling of hot water storage tanks, there is no energy labeling for hot water storage tanks with a total volume exceeding 500 l

²⁾ Calculated with:
 Storage temperature 60°C
 Tapping temperature 45°C
 Cold water temperature 15°C

³⁾ at a storage tank charging temperature of 70°C

The figures given for residential units, hotel rooms and sport facilities are reference values for rough planning. For detailed dimensioning, the corresponding standards and directives must be applied. The figures given are based on the following design data:

Residential units:

Each unit equipped with bathtub

Tapping volume per outlet tap: 10 l/min. at 45°C

Simultaneity factor in acc. with Handbuch für Heizung, Lüftung, Klima, Recknagl-Sprenger

Hotel rooms:

Half of the rooms equipped with bathtub, the other half with showers

Tapping volume per bathtub outlet: 10 l/min. at 45°C; per shower: 8 l/min. at 42°C

Simultaneity factor: 1.5 times as high as that given in Handbuch für Heizung, Lüftung, Klima, Recknagl-Sprenger.

Sport facilities:

Tapping volume per shower: 8 l/min. at 42°C

Simultaneity factor: 0.9

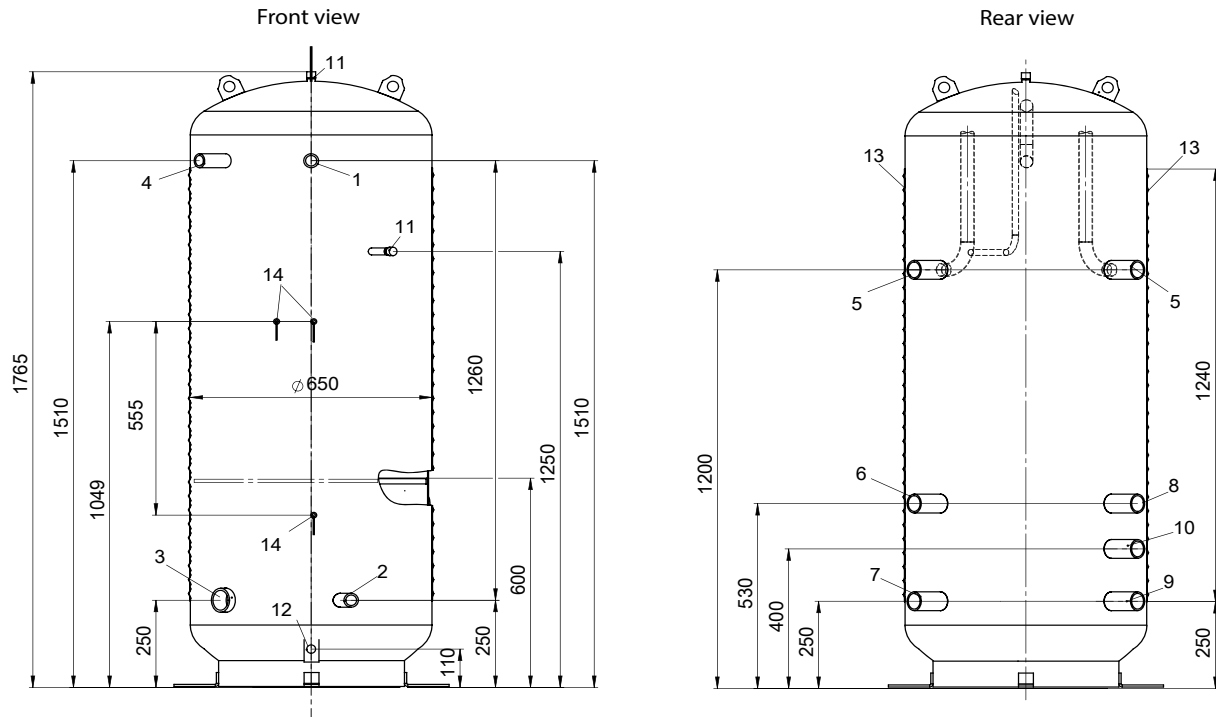
Hygienik 2.0	Unit	2000⁴⁾/25	2000⁴⁾/35	2000⁴⁾/50	2000⁴⁾/70
Energy efficiency class	-	1)	1)	1)	1)
Average power loss	W	164	164	164	164
Total storage tank contents	l	2000	2000	2000	2000
Storage tank contents above LSP ²⁾	l	700	700	700	700
Storage tank contents below LSP	l	1300	1300	1300	1300
Diameter incl. insulation	mm	1340	1340	1340	1340
Height incl. insulation	mm	2505	2505	2505	2505
Installation depth without insulation	mm	Ø 1100	Ø 1100	Ø 1100	Ø 1100
Tilted dimension of tank body	mm	2440	2440	2440	2440
Weight	kg	200	205	210	215
Single tapping volume at 45°C without LSP ²⁾	l	2100	2100	2100	2100
Single tapping volume at 45°C with LSP ²⁾	l	734	734	734	734
Tapping output	l/min	25	35	50	70
Performance index at tank temperature 52°C	-	5	9	13	15
Performance index at tank temperature 60°C	-	6	12	15	20
Performance index at tank temperature 70°C	-	8	15	20	30
Max. res. units**	-	7	14	22	33
Max. hotel rooms**	-	6	10	18	28
Max. showers at sport facilities	-	5	7	12	18

¹⁾In accordance with EU Ordinance 812/2013 on the energy labeling of hot water storage tanks, there is no energy labeling for hot water storage tanks with a total volume exceeding 500 l

²⁾Calculated with:
 Storage temperature 60°C
 Tapping temperature 45°C
 Cold water temperature 15°C

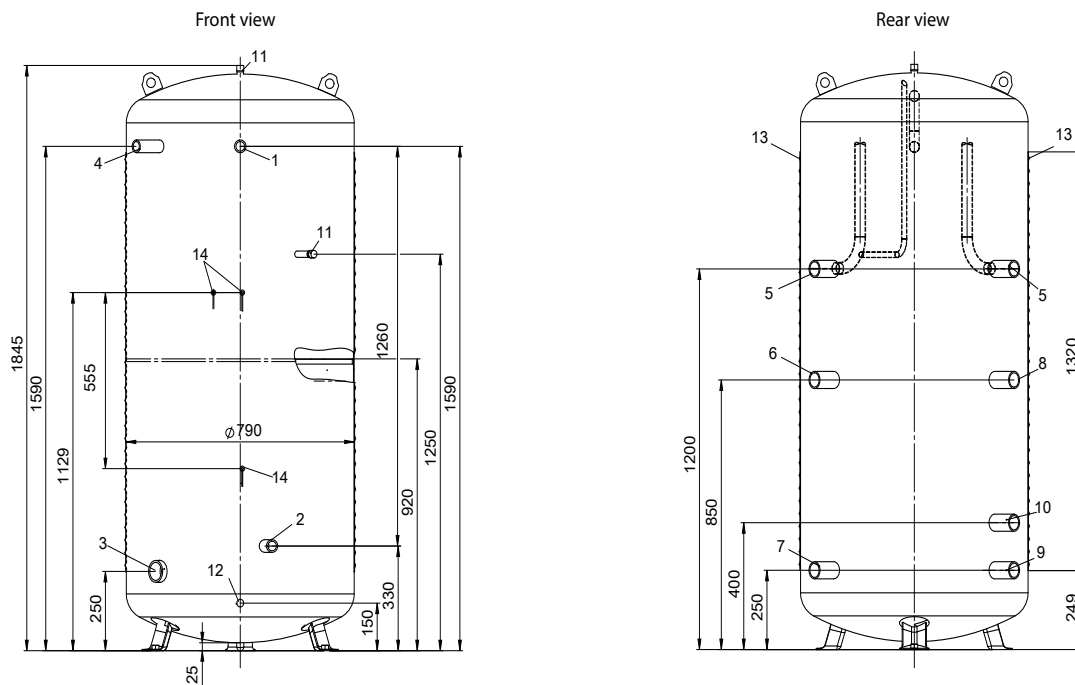
³⁾at a storage tank charging temperature of 70°C

⁴⁾the Hygienik 2000 l is also available with flange connection as Hygienik 2000 Max 2.0, see page 16

Hygienik 500 2.0 (with / without layer separate plate)


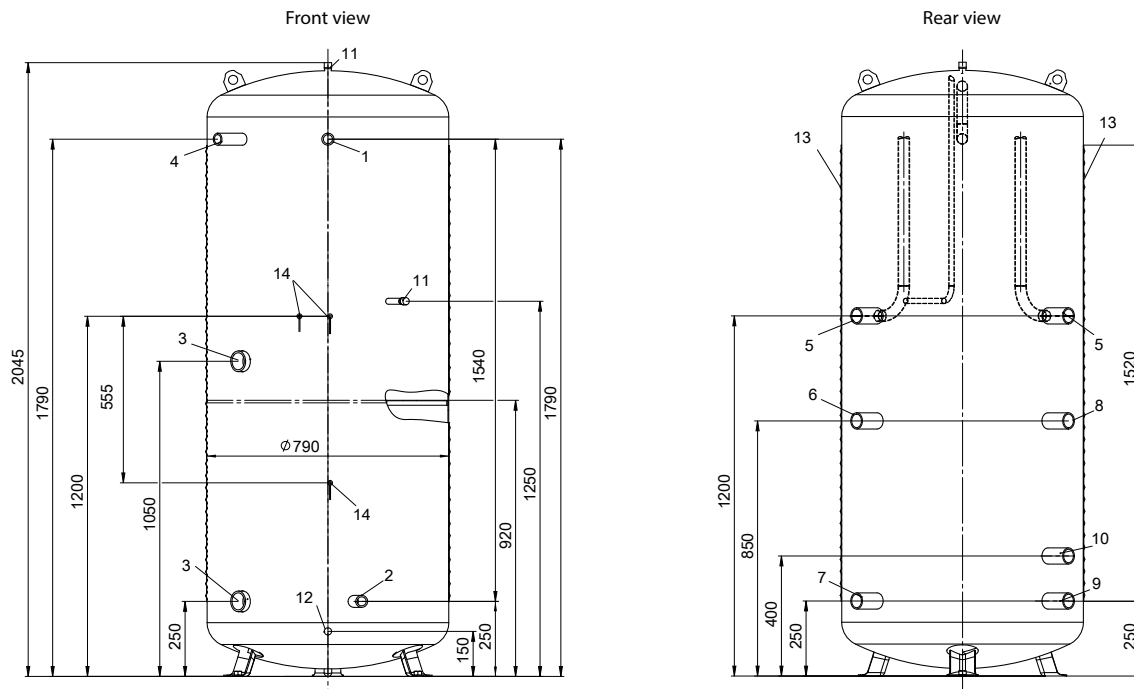
Item	Connection	Dimension
1	Flow, hot water station	R 1"
2	Return, hot water station	R 1"
3	Socket for electric heating immerser	R 2"
4	Socket for circulation lance or return circulation station	R 1"
5	Flow HGL resp. domestic hot water or flow circulation station	R 1 1/2"
6	Flow, heat pump	R 1 1/2"
7	Return, heat pump	R 1 1/2"

Item	Connection	Dimension
8	Flow, second heat generator / Solar	R 1 1/2"
9	Return, heating	R 1 1/2"
10	Optional return	R 1 1/2"
11	Ventilation	R 1/2"
12	Drainage	R 1/2"
13	Sensor terminal	
14	Mounting, hot water station	

Hygienik 825 2.0 (with / without layer separate plate)


Item	Connection	Dimension
1	Flow, hot water station	R 1"
2	Return, hot water station	R 1"
3	Socket for electric heating immerser	R 2"
4	Socket for circulation lance or return circulation station	R 1"
5	Flow HGL resp. domestic hot water or flow circulation station	R 1 1/2"
6	Flow, heat pump	R 1 1/2"
7	Return, heat pump	R 1 1/2"

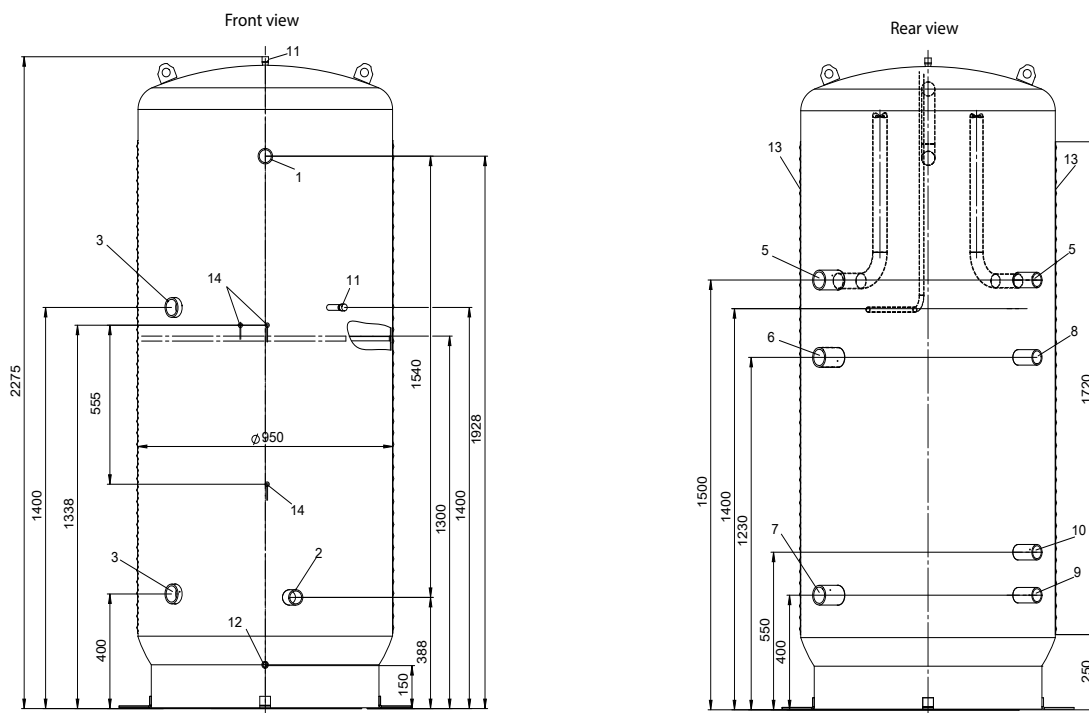
Item	Connection	Dimension
8	Flow, second heat generator / Solar	R 1 1/2"
9	Return, heating	R 1 1/2"
10	Optional return	R 1 1/2"
11	Ventilation	R 1/2"
12	Drainage	R 1/2"
13	Sensor terminal	
14	Mounting, hot water station	

Hygienik 1000 2.0 (with / without layer separate plate)


Item	Connection	Dimension
1	Flow, hot water station	R 1"
2	Return, hot water station	R 1"
3	Socket for electric heating immerser	R 2"
4	Socket for circulation lance or return circulation station	R 1"
5	Flow HGL resp. domestic hot water or flow circulation station	R 1½"
6	Flow, heat pump	R 1½"
7	Return, heat pump	R 1½"

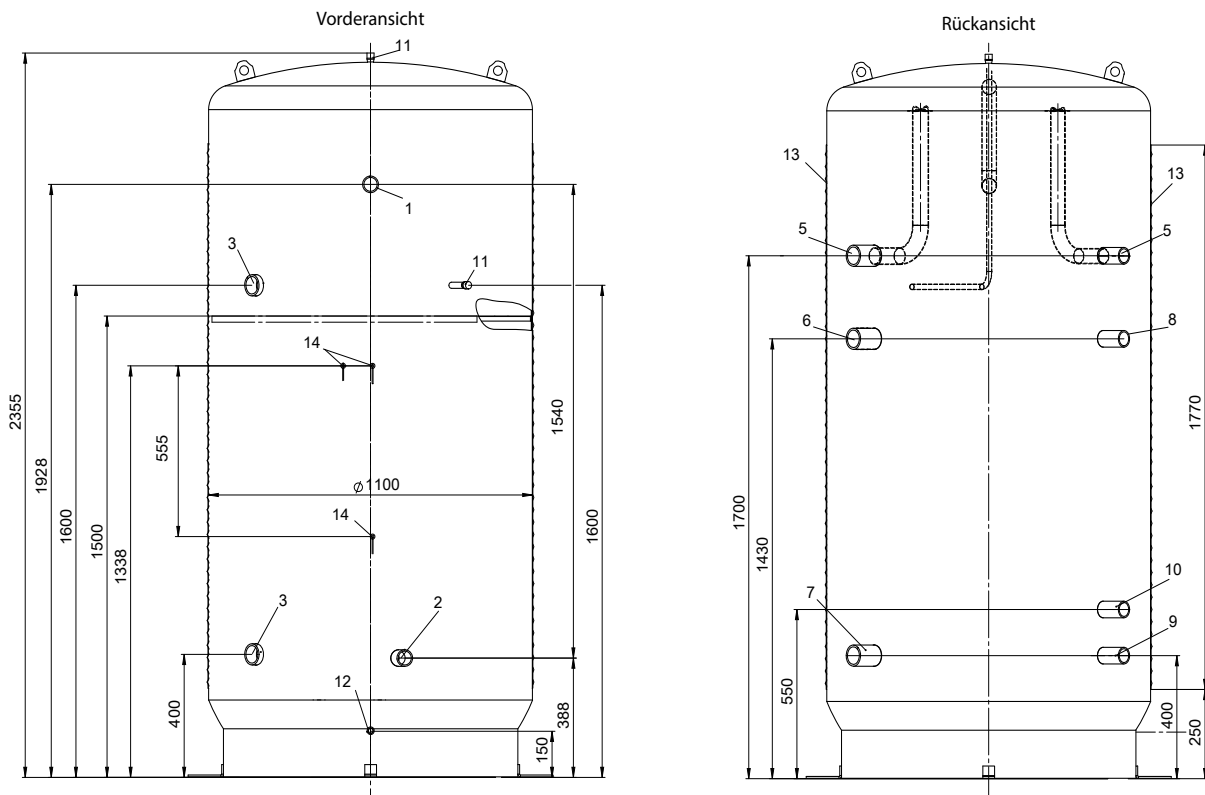
Item	Connection	Dimension
8	Flow, second heat generator / Solar	R 1½"
9	Return, heating	R 1½"
10	Optional return	R 1½"
11	Ventilation	R ½"
12	Drainage	R ½"
13	Sensor terminal	
14	Mounting, hot water station	

Hygienik 1500 2.0 (with / without layer separate plate)



Item	Connection	Dimension
1	Flow, hot water station	R 1½"
2	Return, hot water station	R 1½"
3	Socket for electric heating immerser	R 2"
5	Flow HGL resp. domestic hot water	R 1½"
6	Flow, heat pump	R 2"
7	Return, heat pump	R 2"
8	Flow, second heat generator / Solar	R 1½"

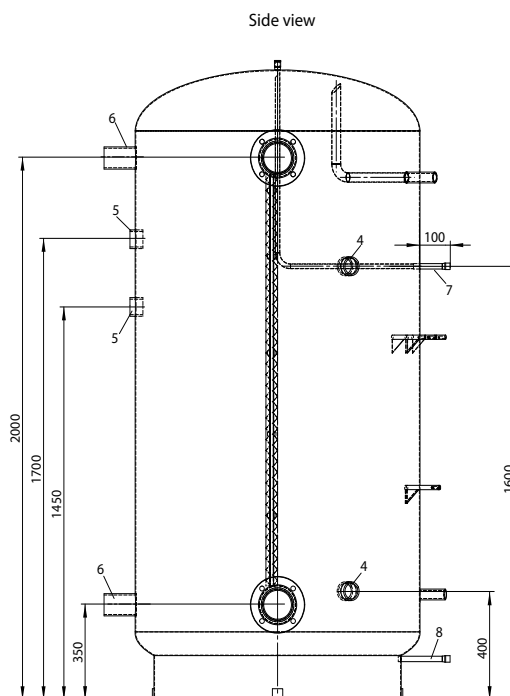
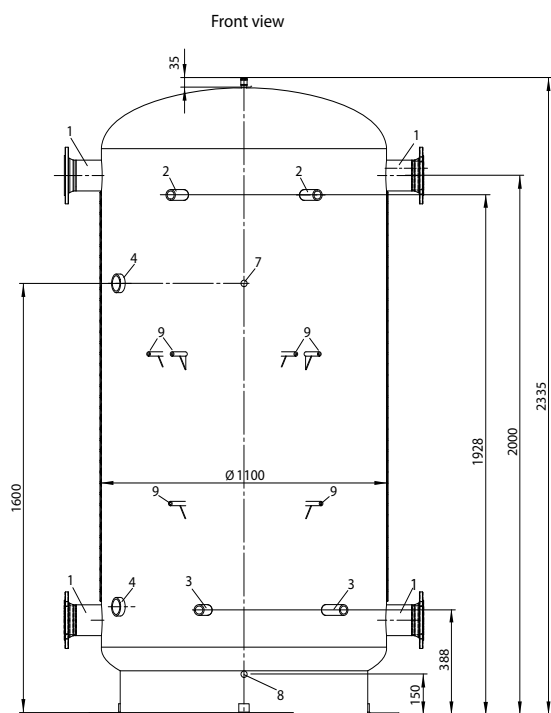
Item	Connection	Dimension
9	Return, heating	R 1½"
10	Optional return	R 1½"
11	Ventilation	R ½"
12	Drainage	R ½"
13	Sensor terminal	
14	Mounting, hot water station	

Hygienik 2000 2.0 (with / without layer separate plate)


Item	Connection	Dimension
1	Flow, hot water station	R 1½"
2	Return, hot water station	R 1½"
3	Socket for electric heating immerser	R 2"
5	Flow HGL resp. domestic hot water	R 1½" / 2"
6	Flow, heat pump	R 2"
7	Return, heat pump	R 2"
8	Flow, second heat generator / Solar	R 1½"

Item	Connection	Dimension
9	Return, heating	R 1½"
10	Optional return	R 1½"
11	Ventilation	R ½"
12	Drainage	R ½"
13	Sensor terminal	
14	Mounting, hot water station	

Hygienik 2000 Max 2.0



Item	Connection	Dimension
1	Flange (4x)	DN100/PN6
2	Warm water station flow	R 1 1/4"
3	Warm water station return	R 1 1/4"
4	Electric heating immerser (2x)	R 2"
5	Circulation (2x)	2"
6	Sleeve	R 2 1/2"
7	Venting	R 1/2"
8	Drainage	1/2"
9	Holding for warm water station	

4. Installation

4.1. Installation conditions for the Hygienik 2.0

The iDM Hygienik 2.0 should be installed as close as possible to the drinking water tapping points to keep water lines as short as possible and avoid the need for a circulation line.

During storage, transport and installation of the equipment, it must be ensured that it is not subjected to mechanical forces such as warping, scratches and tension.

4.2. Installation location of the Hygienik 2.0

The iDM Hygienik 2.0 must be installed in a frost-proof room by a licensed specialist firm. The pertinent laws, regulations and standards both for boiler house pipework and drinking water installations must be observed.


Minimum distances required for installation and servicing work must be observed based on the specific installation situation, the routing of pipework and the size of the installation room.


The following table provides further information on the dimensions of the various storage tanks.


Tank size	Diameter
Hygienik 500 l	870 mm
Hygienik 825 l	1022 mm
Hygienik 1000 l	1018 mm
Hygienik 1500 l	1170 mm
Hygienik 2000 l	1340 mm

4.3. Connecting sockets of the Hygienik 2.0

In order to avoid heat losses, openings are not provided for all sockets in the insulation jacket. Additional connections can be used by breaking open the relevant perforations.

 By selecting a decentralized position for the hot water stations near the tapping points (e.g. inside the residential units), the content of the hot water pipes can be reduced to under 3 l.

 To prevent corrosion inside the tank, follow the instructions with regard to the heating water!

 The insulation jacket and the hood must not be exposed to intense sunlight or other heat sources. There is a risk of damage to the insulation and the surface.

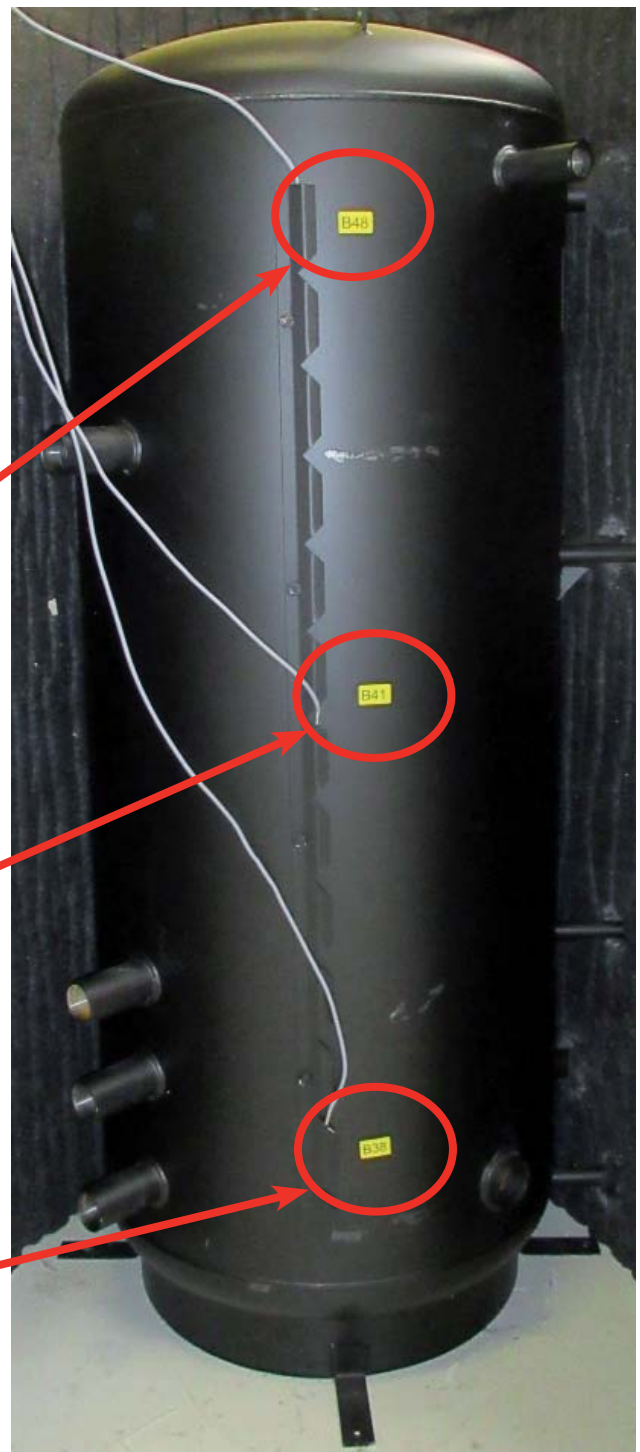


pic.: Damaged insulation caused by improper storage.

4.4. Installing the insulation jacket with a hook strip

The insulation provided is positioned below the tank body. For easier installation and to prevent the tank tilting, have a second person lift the tank slightly.

Once the insulation of the base has been attached, the sensors must be fixed in position as shown on the equipment identification sticker on the tank body using the sensor terminal block.







When the sensors have been correctly positioned, the insulation jacket can be installed. The insulation sections are pulled over the connections with the Neopor/fleece insulation facing inward. The sensor cables are routed out of the insulation on the side at the top.

The hook fastening strip is hooked into the first catch and closed on the opposite side from bottom to top. The insulation jacket is tightened using the hook strips until it lies snugly against the tank body. When the insulation is lying firmly against the tank body, fit the cover strip provided onto the fastening strip.



Cover strip

 2 persons are required to install the insulation jacket with hook fastening strip!

 Store the insulation jacket in a warm room prior to installation, or wait until the tank has heated before closing the hook fastening strip!
Pull the insulation jacket on carefully to avoid damaging it!



Once the insulation jacket has been installed, fit the cover to the top of the Hygienik. The cover consists of two parts. First, fit the smaller part with the fleece insulation facing inward. Then fit the larger part with the plastic side facing outward. Refer to the photos on the left side of this page.



The scope of delivery includes plugs, fleece material and polystyrene caps to cover and insulate the connections that are not used. Fit these as required. We recommend that you insulate and cover connections that are not used, as this can reduce heat losses.



Plug



Insulating material made of fleece



Polystyrene covers

5. Installing the hot water station 2.0



5.1. Description

The 25 l or 35 l hot water stations can either be mounted directly on the Hygienik 2.0 or on the wall.
The 50 l hot water station can be mounted on the Hygienik 2.0 with a capacity of 1000 l, 1500 l and 2000 l.
The 70 l hot water station can be mounted on the Hygienik 2.0 with a capacity of 1500 l and 2000 l.
The 50 l and 70 l hot water stations can also be mounted on a wall.

Optional accessories

- Controller UVR 61-3 HEP (Art.No. 173531)
- Heat meter for 25 l/min. and 35 l/min. (Art.No. 173534)
- Heat meter for 50 l/min. and 70 l/min. (Art.No. 173536)
- Circulation module (Art.No. 173500), only for 25 l and 35 l hot water stations

If the hot water station is used with a heat pump with Navigator 1.7, the sensor B42 must be replaced with the sensor KTY 81-210 which is included in the sensor package of the heat pump. The wiring is carried out according to the wiring diagram of the heat pump.



Installing the hot water station on the Hygienik



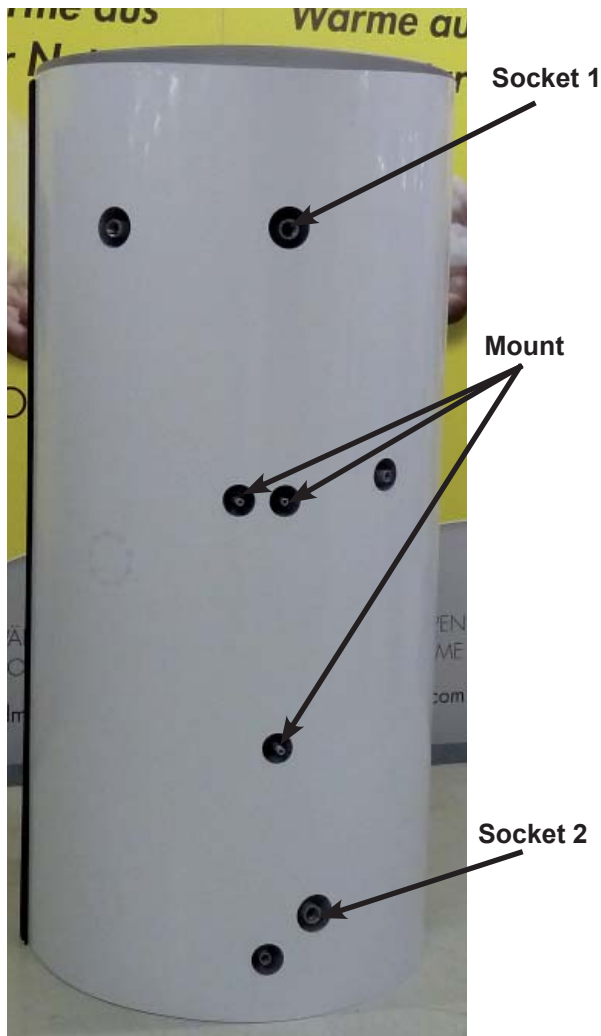
Installing the hot water station on the wall

5.2. Installing the hot water station on the Hygienik

Hot water stations 25 l - 70 l 2.0 are mounted on the Hygienik 2.0 on the construction site.

The hot water stations are installed on the Hygienik 2.0 using the tank connecting set provided.

The tank connecting set comprises two corrugated stainless steel hoses and the corresponding threaded fittings.



The hot water station is connected at sockets 1 and 2 using the corrugated hoses. Mounts, as shown above, are provided for installation of the hot water stations. The holder for the hot water station must be fixed on the mounts by two delivered screws. The hot water station is hooked into the holder must be fixed with the third included screw below.



Holder for the installation on the Hygienik and on the wall



Stainless steel corrugated hoses



Connection at the top with Armaflex insulation



Connection at the bottom with Armaflex insulation

Fit the Armaflex insulation supplied over the corrugated hoses before connecting them to the Hygienik 2.0.

5.3. Installing the hot water station on the



Attach the bracket for installation of the hot water station to the wall using two screws. The screws, wall plugs and washers required for fitting are included as standard delivery content.

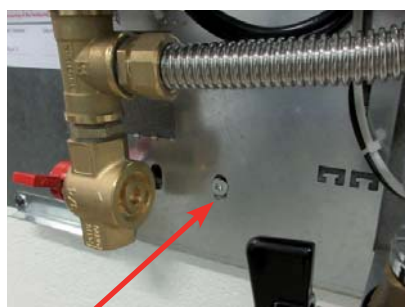


Wall bracket

Hook the hot water station into the wall bracket at the opening provided in the baseplate of the hot water station.

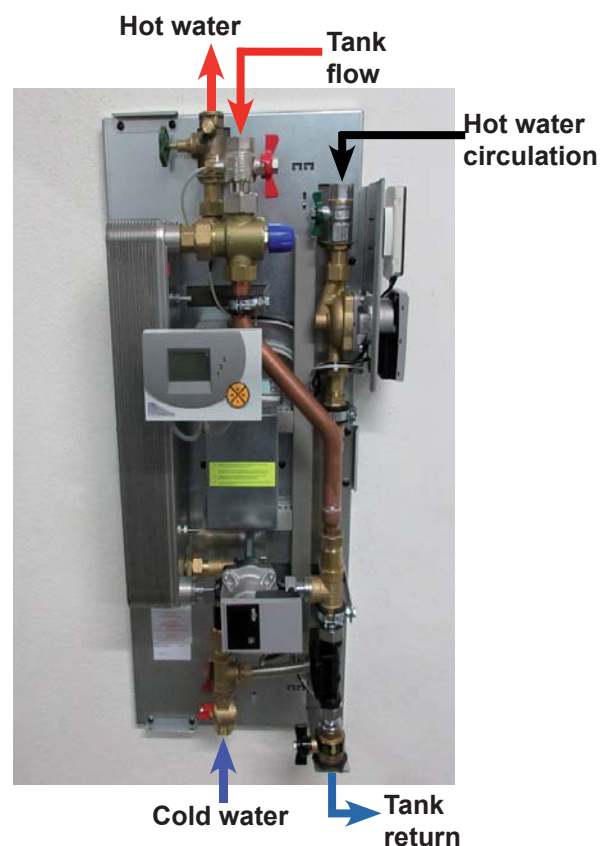


It must be ensured that the threaded wall fitting is capable of bearing the weight of the mounted hot water station during operation.



Retaining screw

When the hot water station is mounted on the wall bracket, the lower section of the hot water station is attached to the wall with an additional retaining screw. Once the hot water station has been fully set up, install the flow / return lines to the Hygienik. Also install the plumbing pipes.



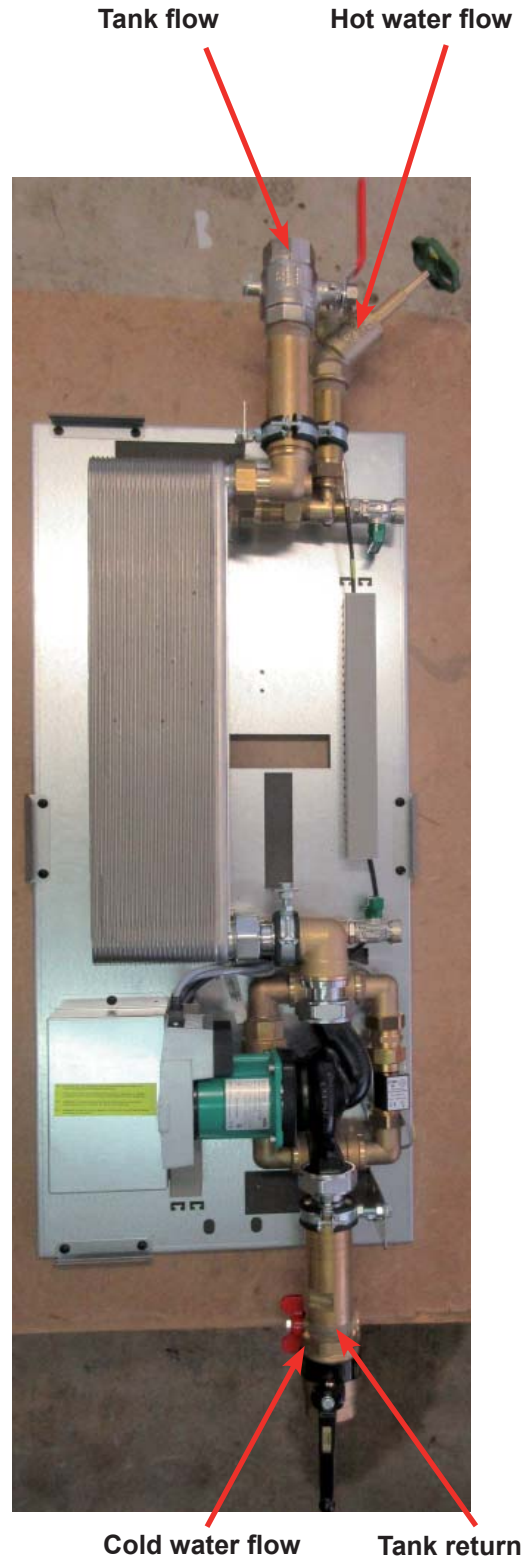
Working from the front, slide the iDM cover hood onto the hot water station in straight position until it snaps into place. In order to avoid energy losses, the cover hood should always be mounted on the hot water station.

To reduce heat losses, the pipework between Hygienik and hot water station and the hot water pipe must be insulated by the customer.

The ball valves shown below are included in the scope of delivery of the 50 l and 70 l hot water stations. It is essential to fit these valves on the construction site if the hot water stations is to be mounted on the wall and not on the Hygienik 2.0.



Ball valves included in the scope of delivery of the 50 l and 70 l hot water stations



Cold water flow Tank return

5.4. Installing the circulation module

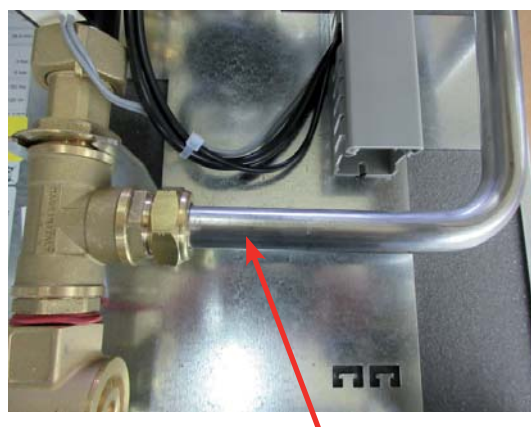
An optional circulation module (Art. No. 173500) can be installed with the 25l and 35l hot water stations.



Circulation pipe



Remove plug

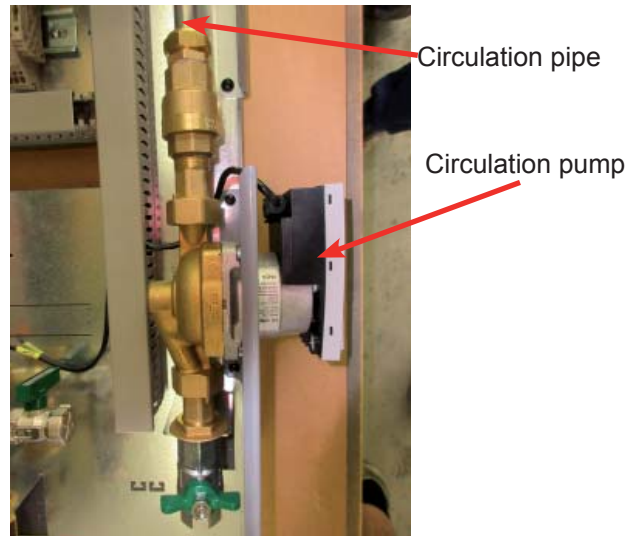
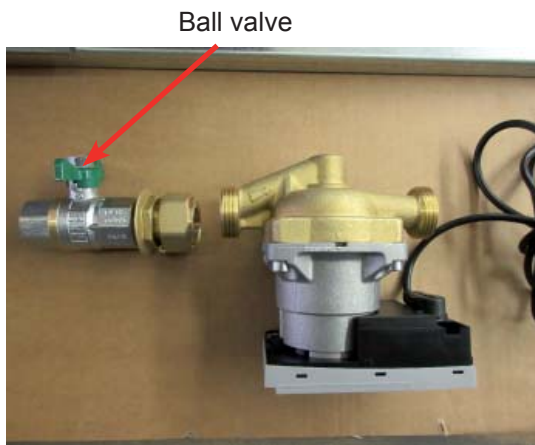


Connect circulation pipe

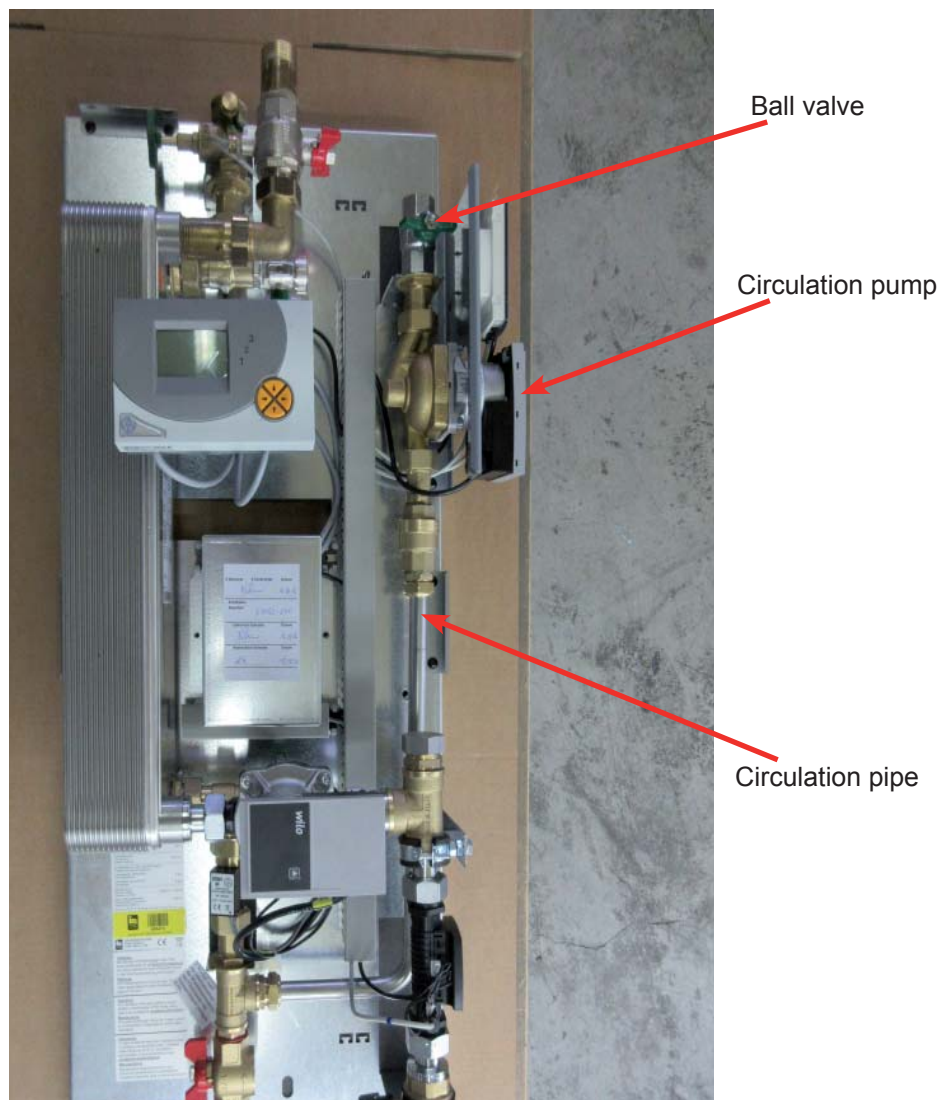
The circulation pipe is routed under the return line of the hot water station. Remove the plug on the return line connection and connect the circulation pipe here.



Using side cutting pliers, remove the perforated metal sheet over the recess for the circulation pump.



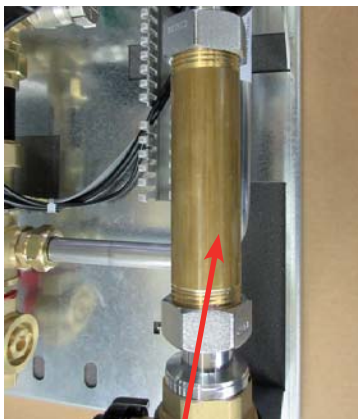
Fit the ball valve provided onto the pump. Mount the circulation pump on the circulation pipe and attach to the bracket near the ball valve. It is essential to observe the flow direction when installing the circulation pump.



Fully assembled circulation module

5.5. Installing the heat meter

An optional heat meter (Art. No. 173534) can be installed with the 25l and 35l hot water stations.



Brass pipe



Metering unit

Remove the brass pipe from the tank return and insert the metering unit of the heat meter.



Temperature sensor

The temperature sensor of the heat meter is installed in the tank flow.



Mount



Operating unit



The mount for the operating unit is attached at the side. The operating unit is attached with a screw-on connection.

5.6. Installing the UVR 61-3 HEP controller

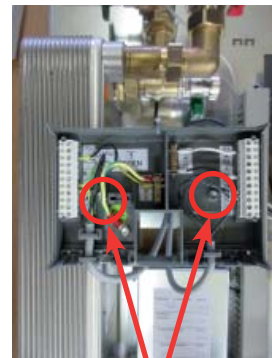
If the hot water station is to be operated without a Navigator, it is possible to install a UVR 61-3 HEP as a controller. The scope of delivery includes 2 brackets, one for the 25l and 35l hot water stations and one for the 50l and 70l hot water stations.



Fixing bores



Attach the bracket for the controller using the bore holes provided.



Fixing screws

Remove the operating unit of the controller and fix the housing to the bracket using the two fixing screws. Then replace the operating unit.



The controller, the pump and the sensor are connected as shown in the circuit diagram. The circuit diagram is enclosed with the UVR 61-3 HEP.

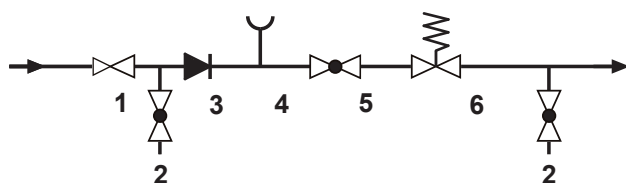
5.7. Connecting to the hot water station on the drinking water side

The hot water station is suitable for normal drinking water (pH value > 7.3) as defined by the Drinking Water Ordinance and DIN 50930-6. The connecting pipework can be established with copper pipes or plastic pipes.

The connections must be of pressure-resistant design.

Type-tested safety installations pursuant to DIN 1988 and DIN 4753 must be installed in the cold water line (see illustrations below).

The operating pressure of 3 bar as stated on the type plate must not be exceeded. If necessary, a pressure reducer is to be installed.



- 1...Pressure reducer (only for pressures exceeding 6 bar)
- 2...Drain valve
- 3...Backflow preventer
- 4...Manometer connector 1/2"
- 5...Isolating valve
- 6...Membrane-Si valve

A ball valve with dirt trap is installed in the cold water line before the flow switch. This valve must be checked after filling and flushing the lines.

In areas where the water is hard, a water softening device should be installed.

The plate heat exchanger is cleaned and decalcification of the plate heat exchanger is performed using a small pump by flushing with a descaling agent from top to bottom via the installed flushing valves.

Connecting the hot water station electrically

Electrical connection must be performed as shown in the enclosed electric circuit diagram.



Hot water circulation is possible via the optional iDM circulation module for the 25 l and 35 l hot water stations. If protection against scalding is required, the hot water station must be equipped with a mixing valve to limit the inlet temperature at the heat exchanger. This applies in particular when using solar plants.

Technical data

Type	25l	35l
Tapping output*	25 l/min.	35 l/min.
Pressure loss on drinking water side	0.3 bar	0.3 bar
Max. operat. pressure heating side	4 bar	4 bar
Max. operat. pressure drinking water side	6 bar	6 bar
Max. operating temperature	85°C	85°C
Transmission perf. of the circulation modules ¹⁾	7.7 kW	10.7 kW
Electrical connection	230V/50Hz	230V/50Hz
Electrical power consumption	50 watts	50 watts
Dimensions HxWxD in mm	1000 / 440 / 260	

¹⁾ Hot water flow temperature 60°C
Maximum cool down in the circulation 5 K

Type	50l	70l
Tapping output*	50 l/min.	70 l/min.
Pressure loss on drinking water side	0.3 bar	0.3 bar
Max. operat. pressure heating side	4 bar	4 bar
Max. operat. pressure drinking water side	6 bar	6 bar
Max. operating temperature	85°C	85°C
Electrical connection	230V/50Hz	230V/50Hz
Electrical power consumption	50 watts	50 watts
Dimensions HxWxD in mm	1000 / 440 / 260	

*at tank temperature 60°C and hot water tapping temperature 55°C
Cold water temperature 10°C

6. Programming the UVR 61-3 HEP

The UVR 61-3 HEP speed controller is available as an accessory. The controller is used to regulate the speed of the plate heat exchanger pump with pulse-width modulation or 0-10 V control. The connected flow switch (S6) detects a tapping process and switches on the plate heat exchanger pump A1. The speed of the plate heat exchanger pump is regulated in such a way that

the hot water temperature (sensor S5) is maintained at the set value (factory setting 47°C).

The UVR61-3 HEP is configured to "PWM" at the factory.

If the pump is to be controlled via 0-10V, the setting must be changed to 0-10V as described on page 39. The parameters "Output mode" and "Lower speed limit" must also be changed, as described on page 41.

The factory-set parameters are stored in an EEPROM and are retained in the event of a power failure.

Note:

The parameters are set at the factory for use with the IDM hot water module. Only the desired hot water temperature should be changed if required!

When using a solar plant, Program 640 in the enclosed instructions must be configured. The sensor systems and the solar charging pump are connected as shown in the circuit diagram.

The temperatures and the status of the flow switch can be displayed:

S1 = collector temperature

S2 = tank temperature

S3 = not assigned

S4 = not assigned

S5 = hot water tapping temperature

S6 = flow switch, display:

999 = open, no tapping process

- 999 = closed, tapping process

Note:

For quick adjustment of the hot water temperature, please follow the instructions on pages 38 and 39. The desired temperature can then be set under **menu item "SWA47"**.

The preset temperature values are only reference values and may need to be adjusted.



Technical data:

Sensors:	PT1000 resistance sensor, linearized, precision between 10 and 90°C: -1°C
Note:	GND of all sensors is connected internally and is interchangeable.
Differential temperature:	Adjustable from 0.0 K to 99 K
Threshold values:	Adjustable from - 20°C to 150°C
Speed control:	30 speed stages, regulation to absolute value
Temperature display:	- 50°C to + 199°C
Resolution:	From - 9.9°C to + 100°C with 0.1°C, otherwise 1°C
Precision:	Typ. 0.4°C and max. +1°C in range from 0°C to 100°C
Output 1:	Triac 250 V/ 1.5 A (350 W)
Output 2:	Relay 250 V/ 3 A (700 W)
Output 3:	Relay 250 V/ 3 A (700 W)
Note:	All outputs are protected together with a 3.15 A fuse!
Mains supply:	230 V/ 50 Hz
Power consumption:	max. 3 W
Note:	The system must be grounded in accordance with the regulations!

Resistance values of the PT1000 temperature sensors (1097 Ω at 25°C)

T (°C)	0	10	20	30	40	50	60	70	80	90	100
R (Ohm)	1000	1039	1078	1117	1155	1194	1232	1270	1309	1347	1385

Troubleshooting

If the pump does not run although hot water is being tapped, check the following:

- Is the switching element of the flow switch snapped on in the correct position (brass part) and in the correct direction (cable upward)?
- Can the float element in the flow switch move freely (or is it blocked by contamination)?
- Can the pump be switched on and off in manual operation (see menu item “TST” on page 41)?
- Does the pump run if the white contact of the flow switch is bridged?
- If the controller is not in operation although the mains voltage is connected, the fuse (3.15 A fast-acting) should be checked and replaced if necessary.

Operation

Operation of the controller and navigation through the menus are carried out using 4 buttons. The large-area display contains all symbols for all important functions and a clear text field.

Function of the buttons:



- ◀ ▶ = Navigation buttons for selecting the symbol and changing parameters
- ▼ = Used to access a menu, enable a value for changing with the navigation buttons (the value then flashes)
- ▲ = Return from the last selected menu level, exit parametrization of a value

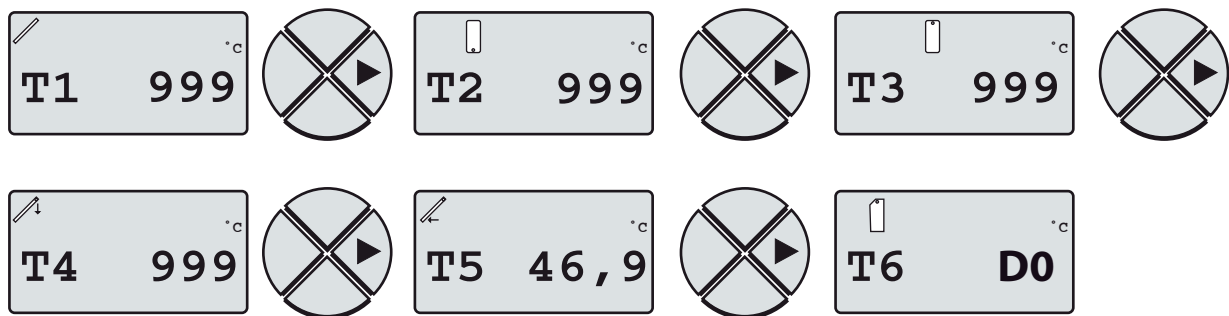
In normal operation, the side buttons (◀ ▶) are the navigation buttons for selecting the desired display, for example the hot water tapping temperature or plate heat exchanger inlet temperature. Each time the button is pressed, a different symbol with the corresponding temperature appears (see below).

In this application, temperature sensor T3 is the flow switch and is displayed as follows:

Hot water supply not active: 999

Hot water active: - 99

Depending on the program number, it is only possible to select symbols from the top line of the basic display.



The corresponding symbol always appears above the text line for information purposes. All information is displayed below the text line during parametrization.

An illuminated number to the right of the display indicates an active output. For example, “1” lights up if the plate heat exchanger pump is in operation, “3” if the solar circuit pump is in operation.

From within a menu structure, the controller automatically switches back to temperature display mode after one minute if no button is pressed during this time.

The controller is already programmed as a speed controller for the plate heat exchanger pump and is ready for use!

The programming of the controller is described below:

The menu “**PAR**” (see next page) primarily contains the installation layout (program number) and is used to set the solar differential temperature control.

The menu “**MEN**” contains descriptions of the settings for the plate heat exchanger pump speed control.

Setting the controller / parametrization in the “PAR” menu

The settings of the installation layout (program) and the parameters for the solar differential temperature control and the plate heat exchanger pump speed control are described below.



Press ► to select the adjacent window



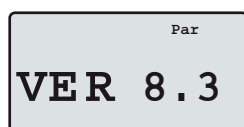
Press ▼



Set the code by pressing ▼, and the display begins to flash
Using the ► button, set **Code 32**
Confirm with ▲. The display stops flashing



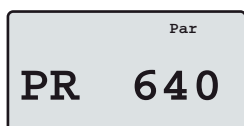
Press ►



Controller program **version** (may differ from the version shown here!)



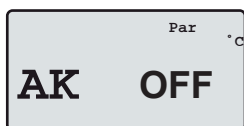
Press ►



Factory-set **Program** for the speed controller



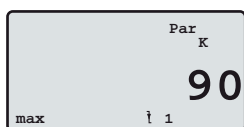
Press ►



WireSwitching not necessary for this application



Press ►



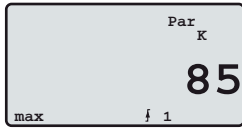
Change MAX limitation switch-off threshold for sensor T2 (tank sensor), factory setting **90°C**,

as follows: Press ▼, display begins to flash
Change setting with ► or ◀

Save setting with ▲, display stops flashing



Press ►



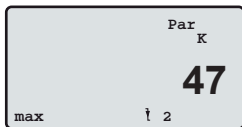
Change **Max** limitation switch-on threshold for sensor **T2** (tank sensor), factory setting **85°C**,

as follows: Press \blacktriangledown , display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



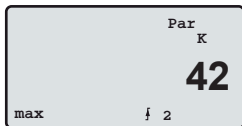
Change **Max** limitation switch-off threshold for sensor **T4** (not assigned), factory setting **47°C**,

as follows: Press \blacktriangledown , display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



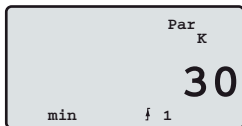
Change **Max** limitation switch-on threshold for sensor **T4** (not assigned), factory setting **42°C**,

as follows: Press \blacktriangledown , display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



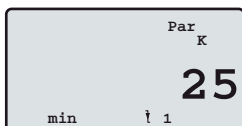
Change **Min** limitation switch-on threshold for sensor **T1** (collector sensor), factory setting **30°C**,

as follows: Press \blacktriangledown , display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



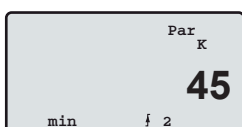
Change **Min** limitation switch-off threshold for sensor **T1** (collector sensor), factory setting **25°C**,

as follows: Press \blacktriangledown , display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



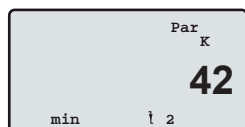
Change **Min** limitation switch-on threshold for sensor **T3** (not assigned), factory setting **45°C**,

as follows: Press \blacktriangledown , display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



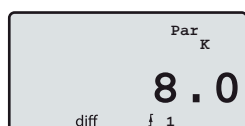
Change **Min** limitation switch-off threshold for sensor **T3** (not assigned), factory setting **42°C**,

as follows: Press \blacktriangledown , display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



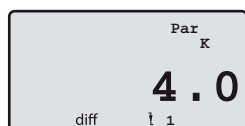
Change **Differential** switch-on threshold for sensor **T1** (collector sensor), factory setting **8.0 K**

as follows: Press \blacktriangledown , display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



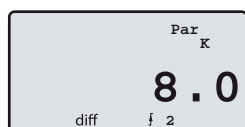
Change **Differential** switch-off threshold for sensor **T1** (collector sensor), factory setting **4.0 K**

as follows: Press \blacktriangledown , display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



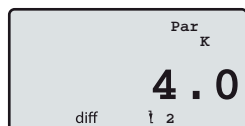
Change **Differential** switch-on threshold for circulation pump (not used), factory setting **8.0 K**,

as follows: Press \blacktriangledown , display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



Change **Differential** switch-off threshold for circulation pump (not used), factory setting **4.0 K**,

as follows: Press \blacktriangledown , display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



Change display of time, e.g. **16.24**

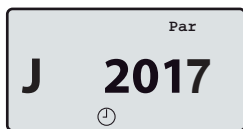
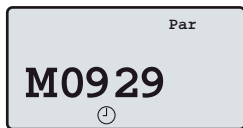
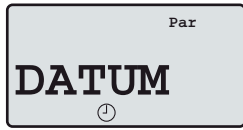
as follows: Press \blacktriangledown , minute display begins to flash

Change setting with \blacktriangleright or \blacktriangleleft

Press \blacktriangledown , hour display begins to flash

Save setting with \blacktriangleup , display stops flashing

Press \blacktriangleright



In this menu, you can set and read off day, month and year and set automatic

switchover between summer time and standard time.

To change: Press ▼, display begins to flash

Change setting with ► or ◀

Save setting with ▲, display stops flashing

Press ▼

Setting/displaying the **Month** (e.g. **09**) and day (e.g. **29**)

To change: Press ▼, month begins to flash

Change setting with ► or ◀,

Press ▼, day begins to flash

Save setting with ▲, display stops flashing

Press ►

Setting/displaying the **Year** (e.g. **2017**)

To change: Press ▼, display begins to flash

Change setting with ► or ◀

Save setting with ▲, display stops flashing

Press ►

Automatic switchover between and summer and standard time

To change: Press ▼, display begins to flash

Change setting with ► or ◀

Save setting with ▲, display stops flashing

Press ▲

Press ►

Press ► For circulation, set **AGU2** and the start and end time

Press ► For circulation, set **AGU2** and the start and end time

Press ► For circulation, set **AGU2** and the start and end time
(The time windows should be set, otherwise 24h circulation)



Automatic operation of Output 1 (= plate heat exchanger pump switches in accordance with program)

To change: Press ▼, display begins to flash

Change setting with ▶ or ◀ (**OFF** or **ON**)

Return with ▲, display stops flashing



Press ▶



Automatic operation of Output 2 (= not assigned)

To change: Press ▼, display begins to flash

Change setting with ▶ or ◀ (**OFF** or **ON**)

Return with ▲, display stops flashing



Press ▶



Automatic operation of Output 3 (= solar circuit pump switches as programmed)

To change: Press ▼, display begins to flash

Change setting with ▶ or ◀ (**OFF** or **ON**)

Return with ▲, display stops flashing



Press ▶



End or start of the "PAR" menu:



Press ▲

Averaging for the hot water tapping temperature sensor (Menu “MEN”)



The following section describes the settings for the plate heat exchanger pump speed control.

Press **▶** to select the adjacent window



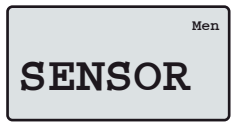
Press **▼**

Language selection: **English** is set
 To change: Press **▼**, display begins to flash
 Change setting with **▶** or **◀**
 Confirm with **▲**, display stops flashing



Press **▶**

Set the code by pressing **▼**, and the display begins to flash
 Using the **▶** button, set **Code 64**
 Confirm with **▲**, display stops flashing



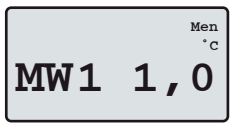
Press **▶**

Sensormenu



Press **▼**

Sensor **S1** (collector sensor) is of type **PT1000**



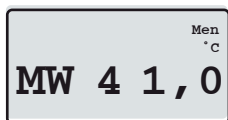
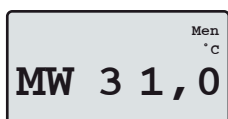
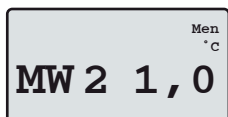
Press **▶**

AV1 1.0 = Averaging for sensor S1 over 1.0 seconds
 (= factory setting)

To change: Press **▼**, display begins to flash
 Change setting with **▶** or **◀**
 Save setting with **▲**, display stops flashing



Press **▶**



Sensor **S2** (solar return flow sensor) is of type **KTY**

Press ►

AV 2 1.0 = Averaging for sensor S2 over 1.0 seconds
(= factory setting)

To change: Press ▼, display begins to flash

Change setting with ► or ◀

Save setting with ▲, display stops flashing

Press ►

Sensor **S3** (tank sensor) is of type **KTY**

Press ►

AV 3 1.0 = Averaging for sensor S3 over 1.0 seconds
(= factory setting)

To change: Press ▼, display begins to flash

Change setting with ► or ◀

Save setting with ▲, display stops flashing

Press ►

Sensor **S4** (circulation) is of type **KTY**

The sensor type must be set for circulation.

Press ►

AV 4 1.0 = Averaging for sensor S4 over 1.0 seconds
(= factory setting)

To change: Press ▼, display begins to flash

Change setting with ► or ◀

Save setting with ▲, display stops flashing

Press ►

Sensor **S5** (hot water sensor) is of type **KTY**



Press ►

AV 5 0.4 = Averaging for sensor S5 over 0.4 seconds
(= factory setting)

To change: Press ▼, display begins to flash

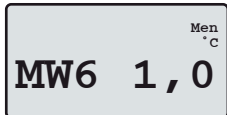
Change setting with ► or ◀

Save setting with ▲, display stops flashing



Press ►

Sensor **S6** (digital input, flow) is a **Digital** sensor



Press ►

AV 6 1.0 = Averaging for sensor S6 over 1.0 seconds
(= factory setting)

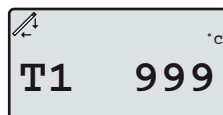
To change: Press ▼, display begins to flash

Change setting with ► or ◀

Save setting with ▲, display stops flashing



Press ▲ until “**ENTER**” appears, the current temperatures can be displayed by pressing ►



.....

Setting the speed control (menu “MEN”)

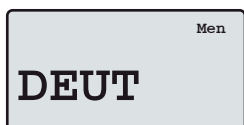
The following section describes the settings for the plate heat exchanger pump speed control.



Press ▶ to select the adjacent window



Press ▼



Language selection: **Deutsch is set**
 To change: Press ▼, display begins to flash
 Change setting with ▶ or ◀
 Confirm with ▲, display stops flashing



Press ▶



Set the code by pressing ▼, the display begins to flash
 Using ▶, set **Code 64**
 Confirm with ▲. The display stops flashing



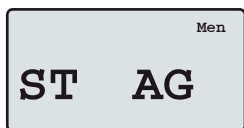
Press ▶



Pump speed control



Press ▶



Absolute value control inverse operation is not activated at the factory



Press ▼



Control output 1



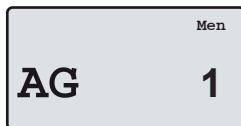
Press ▶



Pulse Width Modulation, set at the factory
Switchover to 0...10V possible



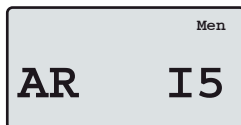
Press ▶



Output 1



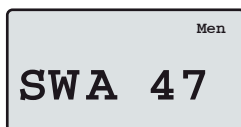
Press ▶



Absolute value control inverse operation in acc. with sensor **5**,
i.e. if the temperature increases at sensor 5, the speed is
reduced and vice versa
Factory setting: AR I5



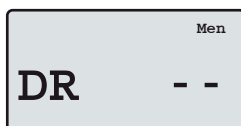
Press ▶



Set value of the absolute control, factory setting: **47°C**
To change: Press ▼, display begins to flash
Change setting with ▶ or ◀
Confirm with ▲. The display stops flashing



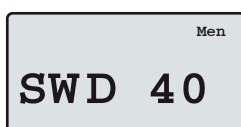
Press ▶



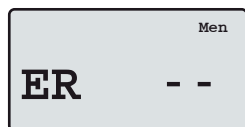
Differential control, factory setting: switched off



Press ▶



Set value of the differential control, factory setting: **40°C**



Press ▶

Event control, factory setting: switched off



Press ▶

Threshold value of the event control, factory setting: **40°C**



Press ▶

Set value of the event control, factory setting: **40°C**



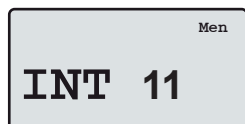
Press ▶

Proportional component of the PID_controller, factory setting: **5**

To change: Press ▼, display begins to flash

Change setting with ▶ or ◀

Confirm with ▲. The display stops flashing



Press ▶

Integral component of the PID_controller, factory setting: **11**

To change: Press ▼, display begins to flash

Change setting with ▶ or ◀

Confirm with ▲. The display stops flashing



Press ▶

Derivative component of the PID_controller, factory setting: **3**

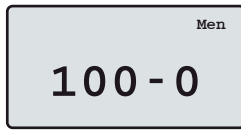
To change: Press ▼, display begins to flash

Change setting with ▶ or ◀

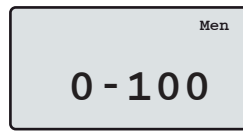
Confirm with ▲. The display stops flashing



Press ▶



PWM



0...10V

Output mode, set to **100-0** for PWM to **0-100** for 0...10V



Press ▶



PWM



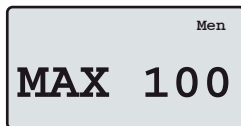
0...10V

Lower speed limit for the plate heat exchanger pump, factory setting: **0**

To change: Press ▼, display begins to flash
Change setting with ▶ or ◀
Confirm with ▲. The display stops flashing



Press ▶



Upper speed limit for the plate heat exchanger pump, factory setting: **100**

To change: Press ▼, display begins to flash
Change setting with ▶ or ◀
Confirm with ▲. The display stops flashing



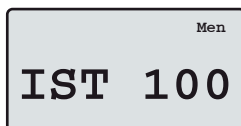
Press ▶



Start-up delay, set to **0**



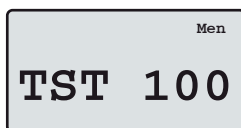
Press ▶



Current **actual** value of the speed control, Setting not possible



Press ▶



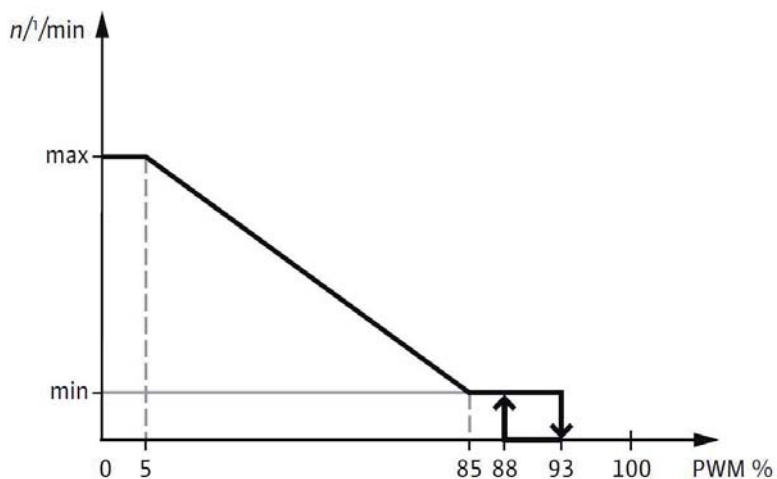
Current speed stage for **Testing** the plate heat exchanger pump,

To change: Press ▼, display begins to flash
Change setting with ▶ or ◀
Confirm with ▲. The display stops flashing



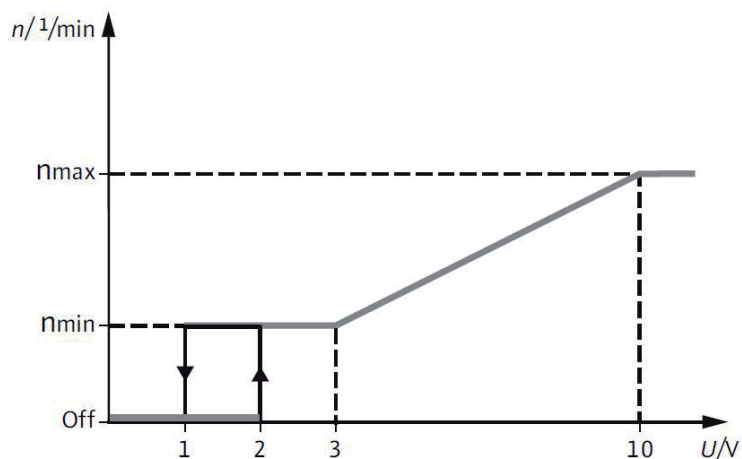
Press ▲ 5x to exit setting mode

PWM - pump (Yonos Para)



Configuration menu → **Fresh water**
Minimum speed 20 %

0-10V - pump (Stratos Para - T2)



Configuration menu → **Fresh water**
Minimum speed 30 %

7.1. Explanation of symbols and notes on the installation layouts

Legend and notes on the installation layouts

Solutions from iDM are designed to offer the broadest possible range of applications for heat pumps. Both innovation through diversity and the use of already existing heat generation systems are key considerations.

The following installation layouts are suggested configurations. They are schematic diagrams and do not show the full range of components required.

When actually designing a system, the specific conditions, applicable standards and laws and the data and information in the installation instructions must be taken into account.



The following systems are just a few examples for a much greater range of configuration options for heat pump systems. Design and planning of a system that meets your specific requirements must always be carried out together with a system planning engineer trained by iDM!

Abbreviations

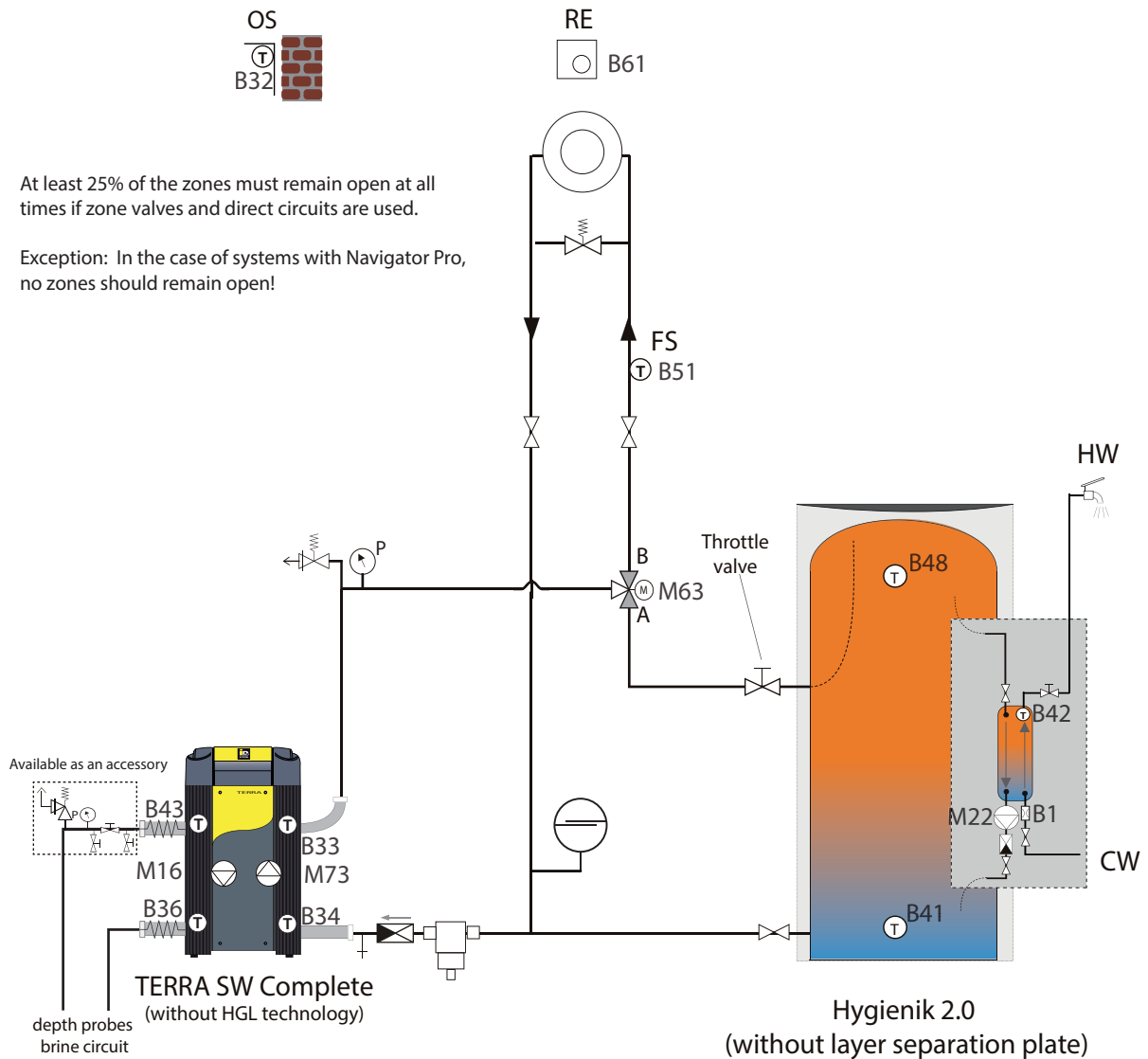
HC	Heating circuit
CW	Cold water
HW	Hot water
LSP	Layer separate plate
FM	Flow meter
Pool	Swimming pool

Symbol	Meaning
	Heat distribution system (low-temperature heating)
	Circulation pump
	3-way mixing valve (without bypass), motor drive
	3-way mixing valve, thermal activation
	Back-pressure valve
	Ball valve
	Flow regulation valve
	Flow switch
	Safety valve
	Heating manometer
	Diaphragm expansion vessel
	Temperature sensor
	Flow sensor
	Tank sensor
	External sensor
	Offset roomstat for heating circuit A
	Offset roomstat for heating circuit C
	Room thermostat
	Control thermostat
	Air separator
	Sludge separator
	Flow meter
	Throttle valve
	Filter
	Flow sensor
	Electric heating immerser

7.2. List of installation layouts

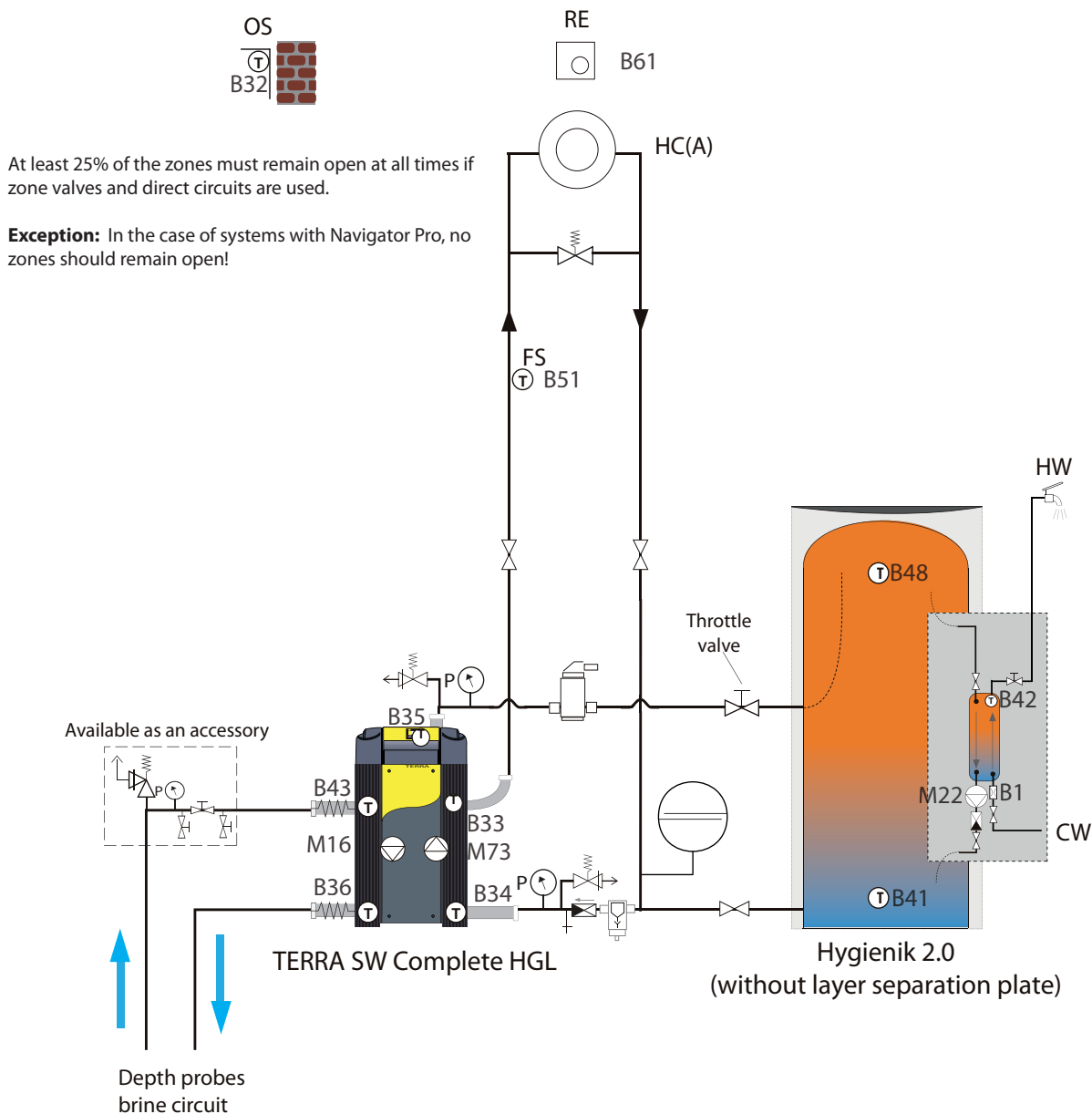
System designation	System code	Chapter
TERRA SW Complete + Hygienik 2.0 + direct heating circuit	N_2.19-0-2-0-3-0	7.2.1
TERRA SW Complete HGL + Hygienik 2.0 + direct heating circuit	N_1.3-0-2-0-3-0	7.2.2
TERRA SW Complete + Hygienik 2.0 + 3 heating circuits	N_2.19-0-1-0-1-0	7.2.3
TERRA SW Complete HGL + Hygienik 2.0 with LSP and circulation	N_1.3-0-1-0-1-4	7.2.4
Aero ILM Complete HGL + Hygienik 2.0 + Termo	N_1.12-7-2-5-1-0	7.2.5
TERRA ML 8-18 Complete HGL + Hygienik 2.0	N_1.4-7-1-0-1-0	7.2.6
TERRA AL Twin + Hygienik 2.0 with LSP	N_2.13-7-1-0-1-0	7.2.7
TERRA AL 60 Max + Hygienik 2.0 + Termo	N_2.14-0-2-5-1-0	7.2.8

7.2.1. TERRA SW Complete + Hygienik 2.0 + direct heating circuit N_2.19-0-2-0-3-0



Only one heating circuit is possible. The heating circuit must be designed as a pump circuit (no mixer!) and no zone balancing valves may be used!

7.2.2. TERRA SW Complete HGL + Hygienik 2.0 + direct heating circuit N_1.3-0-2-0-3-0

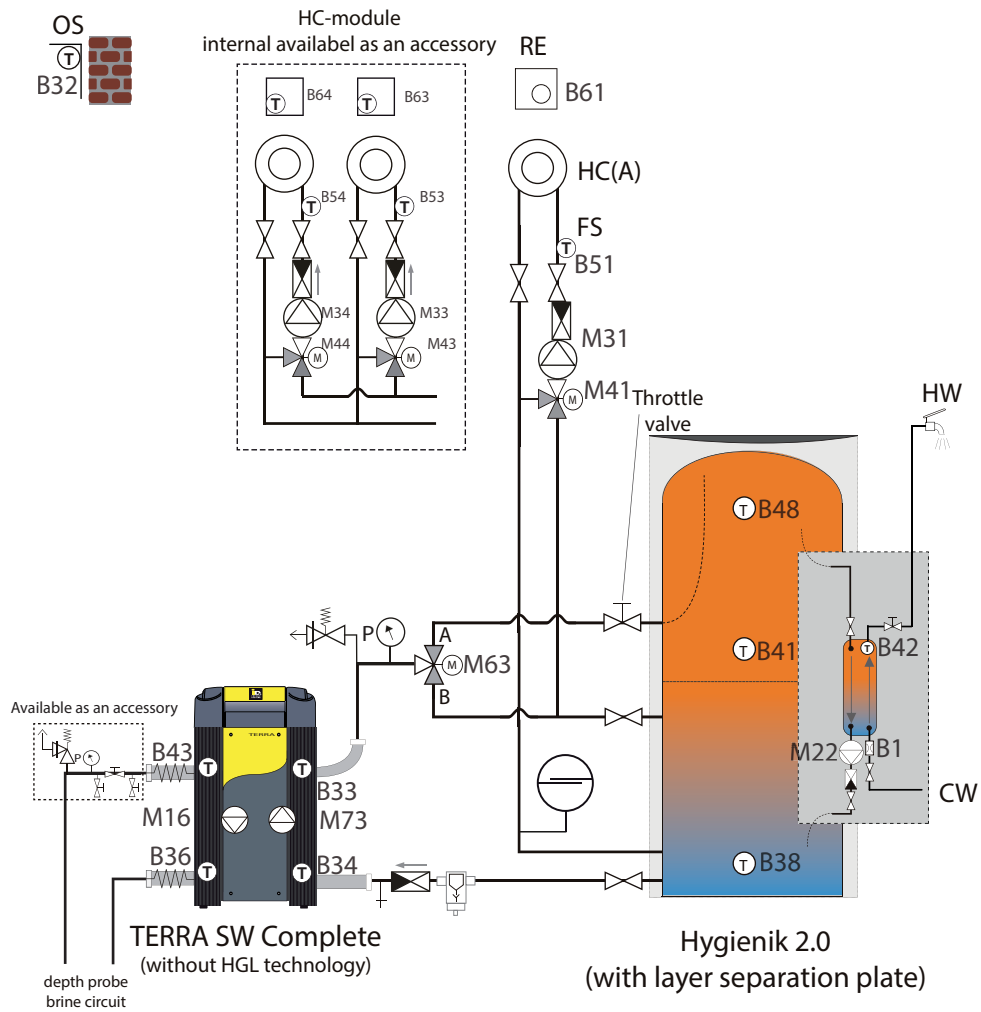


The heat distribution system must be an underfloor heating system.

The underfloor circuits must always remain open, zone valves may only be installed for approx. ¼ of the area.

Temperature fluctuations occur in the flow due to the heat pump switching on and off.

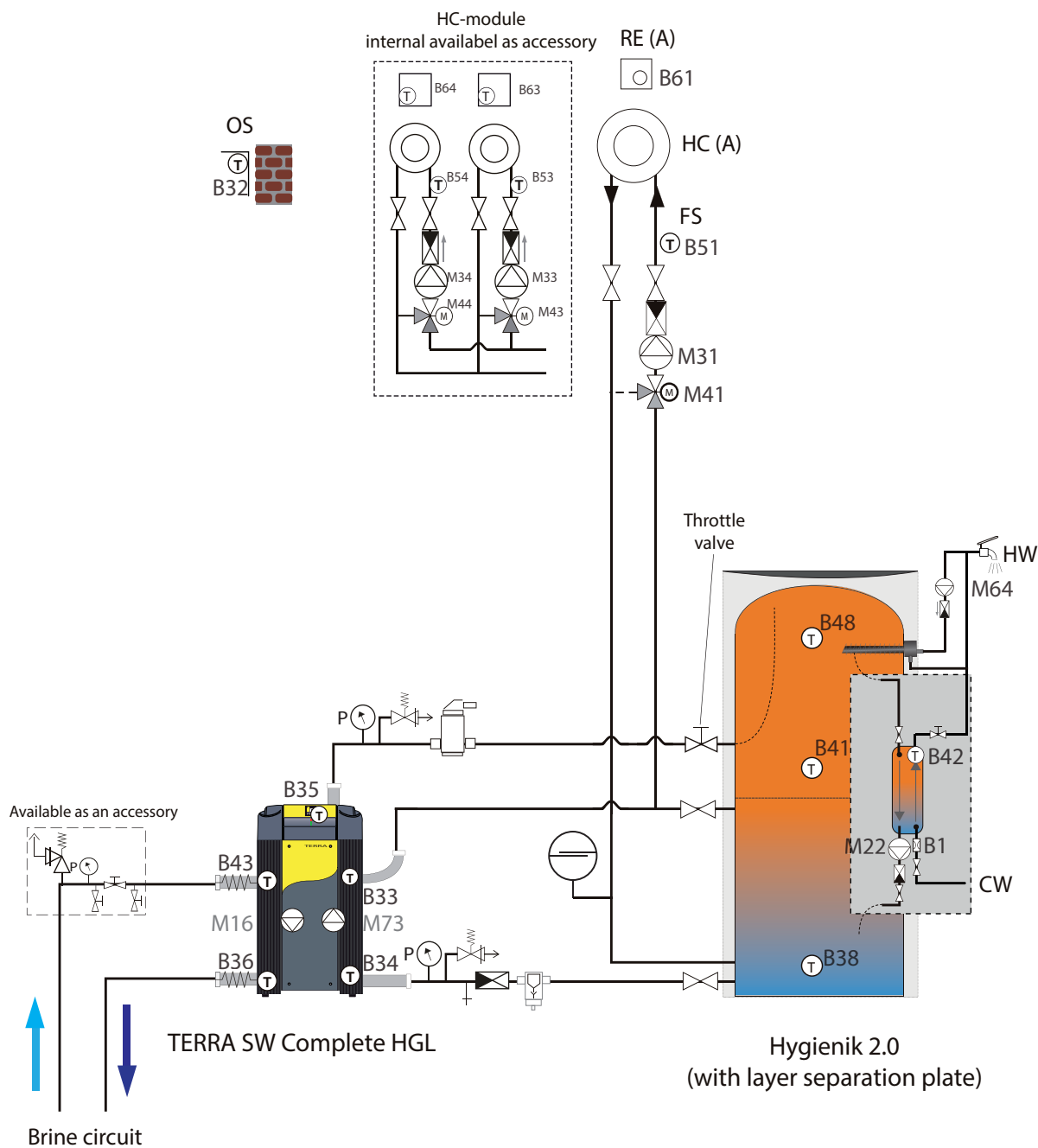
7.2.3. TERRA SW Complete + Hygienik 2.0 + 3 heating circuits N_2.19-0-1-0-1-0



The center tank connection is used as a buffer tank for heating operation. A Hygienik with layer separate plate is required.

The heating return and the heat pump return must be fed separately into the Hygienik storage tank.

7.2.4. TERRA SW Complete HGL + Hygienik 2.0 with LSP + circulation N_1.3-0-1-0-1-4

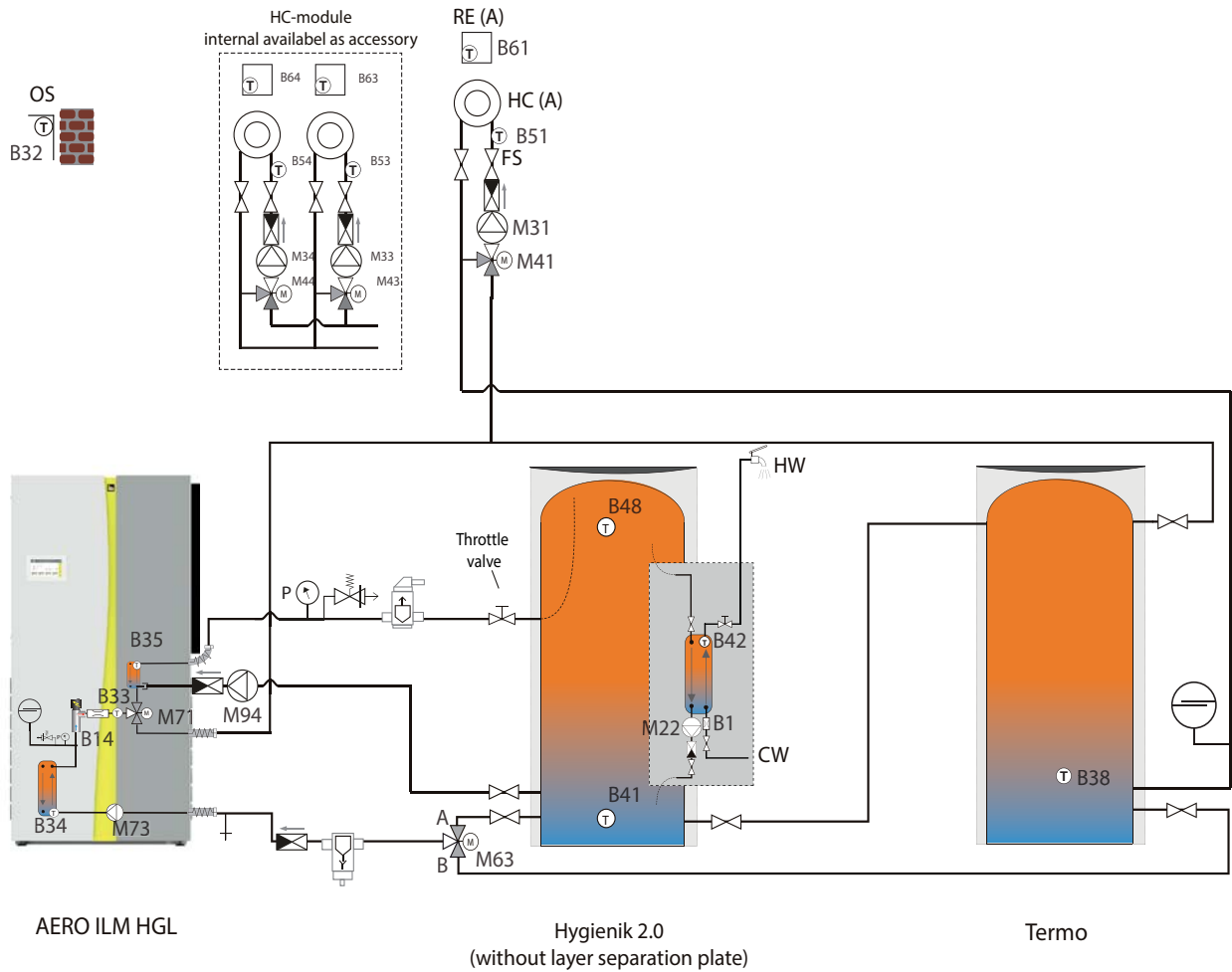


The center tank connection is used as a buffer tank for heating operation. A Hygienik with layer separate plate is required.

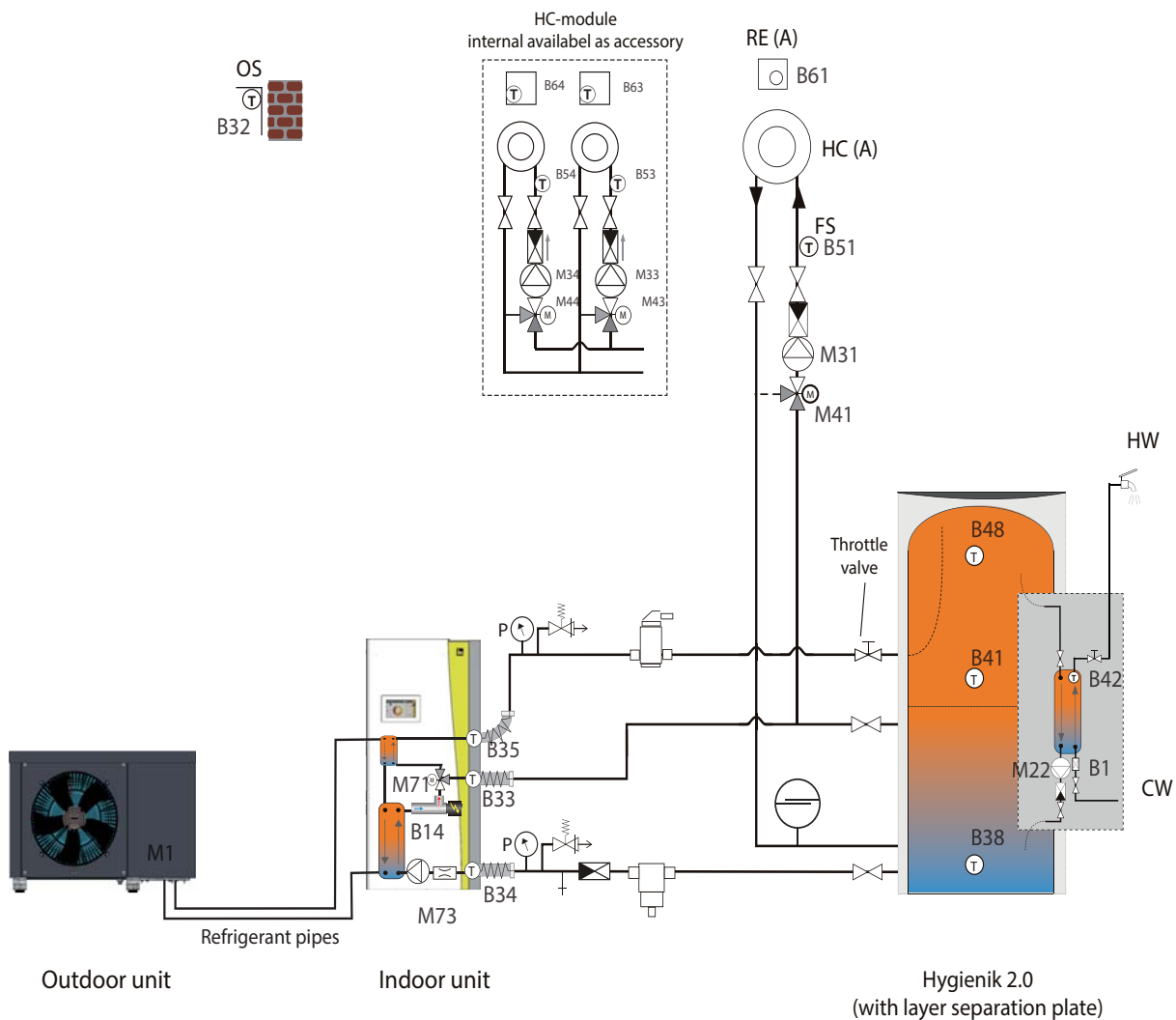
The heating return and the heat pump return must be fed separately into the Hygienik storage tank.

Circulation allows a higher hot water temperature to be achieved.

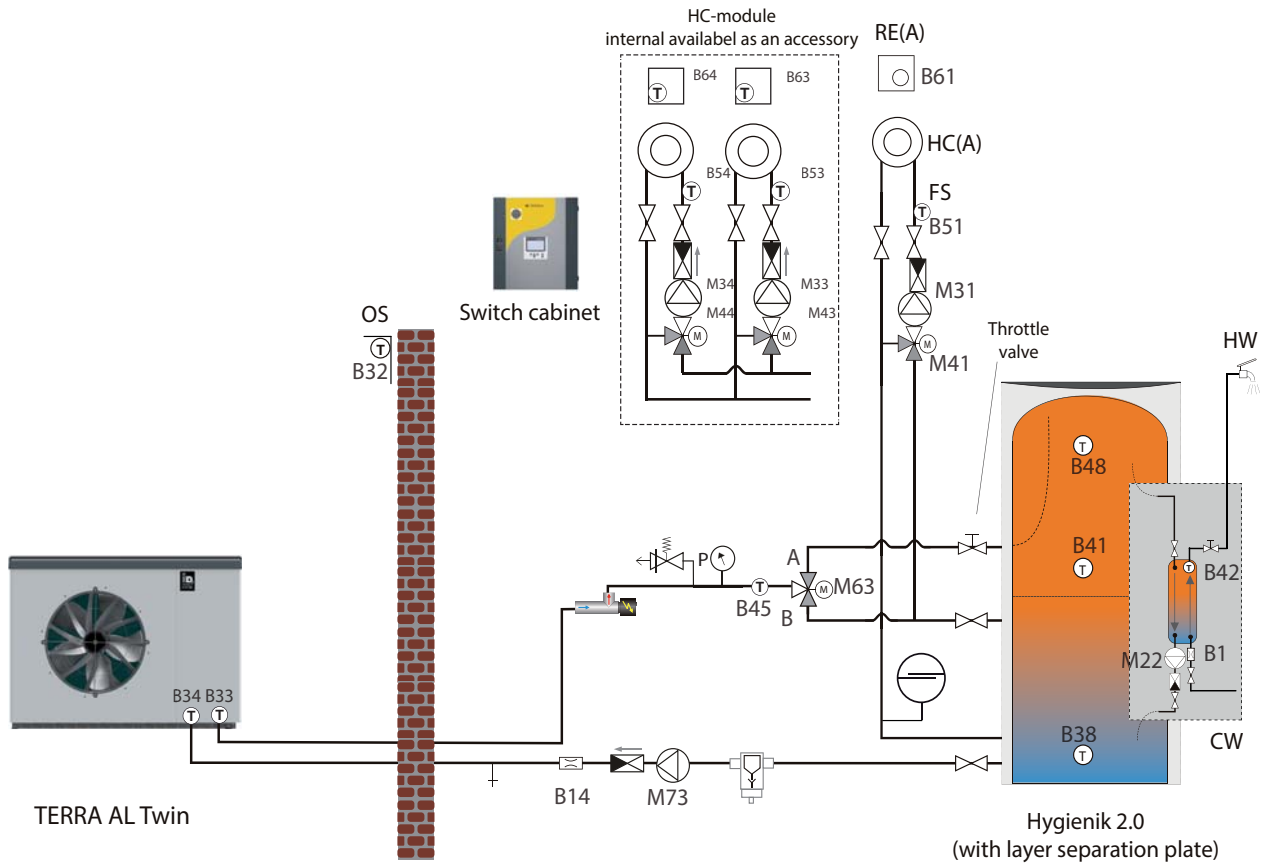
7.2.5. Aero ILM Complete HGL + Hygienik 2.0 + Termo N_1.12-7-2-5-1-0



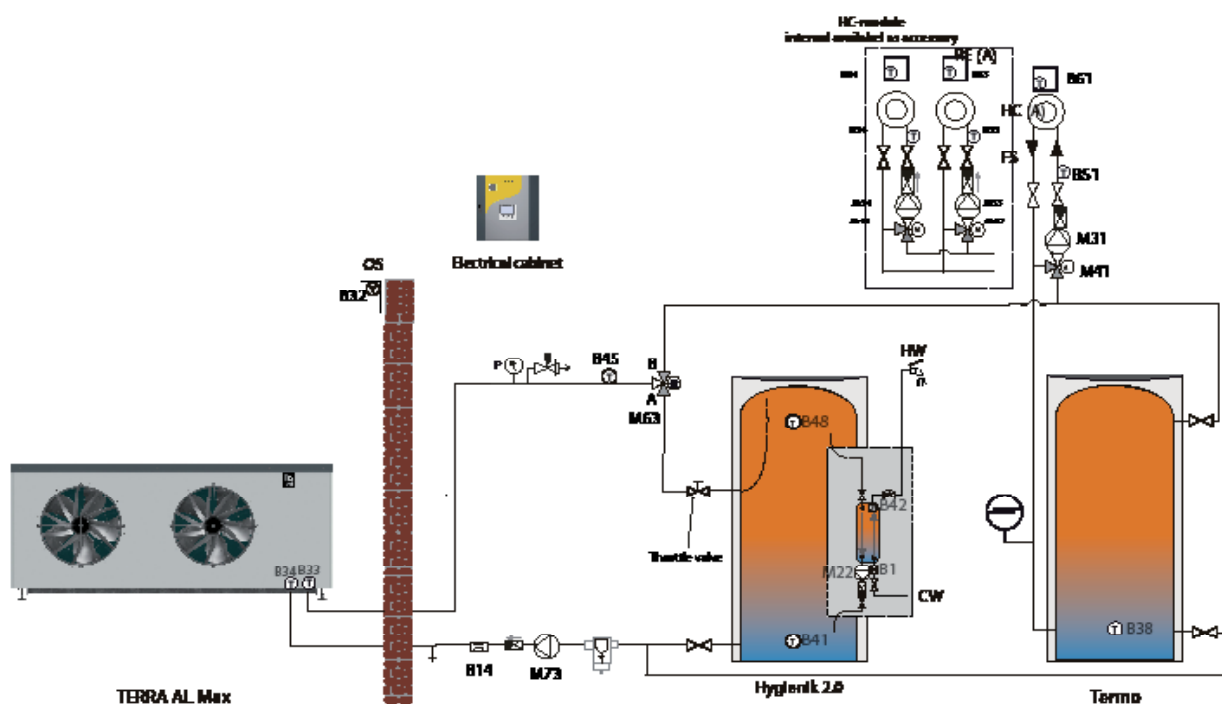
7.2.6. TERRA ML 8-18 Complete HGL + Hygienik 2.0 N_1.4-7-1-0-1-0



7.2.7. TERRA AL Twin + Hygienik 2.0 with LSP N_2.13-7-1-0-1-0



7.2.8. TERRA AL 60 Max + Hygienik 2.0 + Termo N_2.14-7-2-5-1-0



8.1. Heating water quality

Depending on the quality of the heating water, limescale (firmly adhering layer primarily consisting of calcium carbonate) may form, particularly on heat exchanger surfaces, i.e. in the event of a high calcium hydrogen carbonate content, there is the danger of increased limescale formation.

For this reason, we recommend softening / demineralization in the case of systems with a water hardness, that is, a calcium hydrogen carbonate concentration $\text{Ca}(\text{HCO}_3)_2$, of more than 14°dH .

Contact your water supply company for information on the concentration of calcium hydrogen carbonate $\text{Ca}(\text{HCO}_3)_2$ in your heating water.

Multiply by 0.179 to convert "degrees German hardness ($^\circ\text{dH}$) to the unit mol/m^3 .

With increasing size of buffer storage tanks, the ratio between the limescale-forming constituents (due to the high heating water content) and boiler output (heat exchanger surface) becomes more and more unfavorable.

Examination of the limescale-forming constituents is necessary in such systems. Heating (thermal inhibition) of the heating water (see below) is always advisable.

From a concentration of $2.5 \text{ mol}/\text{m}^3$ (corresponding roughly to 14°dH) upward and with performance ratios of over $20 \text{ l}/\text{kW}$, excessive limescale formation is possible, and appropriate countermeasures should be implemented.

8.2. Thermal inhibition of heating water

To prevent concentration of the limescale-forming constituents in individual areas of the heat exchanger, we recommend that after filling the system, as the last step of commissioning, you heat the tank content.

By setting the maximum boiler output (for example, the chimney sweep function) and maximum flow temperatures for the consumers, limescale formation can be distributed evenly and in a targeted manner over the heat exchanger surfaces of the boiler.

The tank charging pump should be set to ON (manual operation) during the heating process. This ensures complete circulation of the water in the tank.

If the heating circuit temperatures allow this, the high flow temperature should also be pumped at full pump load through all heating circuits to ensure that all heating water is reached.

8.3. Treatment of the water in the heating system

To prevent damage caused by corrosion, sludge accumulation and limescale in the heating system, the water used to fill the tank and the heating system must be treated in accordance with VDI guideline 2035, EN 12828 and ÖNORM H5195.

The measures prescribed by these guidelines include the following:

Softening and demineralization

The most effective measures to prevent the formation of limescale are softening and demineralization. Calcium and magnesium ions are removed from the water.

Physical measures

These are aimed at preventing limescale formation using permanent magnetic or electrical fields. There is currently no scientific verification of the effectiveness and function of such measures.

Use of rainwater

A simple and inexpensive method of preventing limescale is the use of rainwater as heating water. Rainwater is virtually lime-free, but under certain circumstances may be acidic and have an aggressive effect on system components. It is advisable to test the pH value here. The pH value should lie between 8.2 and 9.5.

8.4. Repairs

Should it become necessary to drain the Hygienik 2.0 in order to carry out repair work, the system must be refilled with treated water. Alternatively, the drained water can be collected and used to refill the system.

8.5. For existing systems

To prevent contamination or corrosion in the Hygienik 2.0, existing heating systems must be flushed thoroughly before connecting the tank! This applies irrespective of limescale formation.

8.6. Filling and draining

Filling and draining valves are provided for easy filling and draining of the system (see illustration on the right).

To ensure frost-proof draining of the system, both the tank with the pipework and the drinking water side of the plate heat exchanger must be drained at the points provided, and all back-pressure valves must be opened.



If it is not possible to tap warm drinking water although the temperature in the Hygienik 2.0 is adequate, check the following:

- system pressure (should be approx. 2 bar)
- open top drain valve and check whether there is air in the tank
- correct functioning of the flow switch
- correct functioning of the primary circuit pump

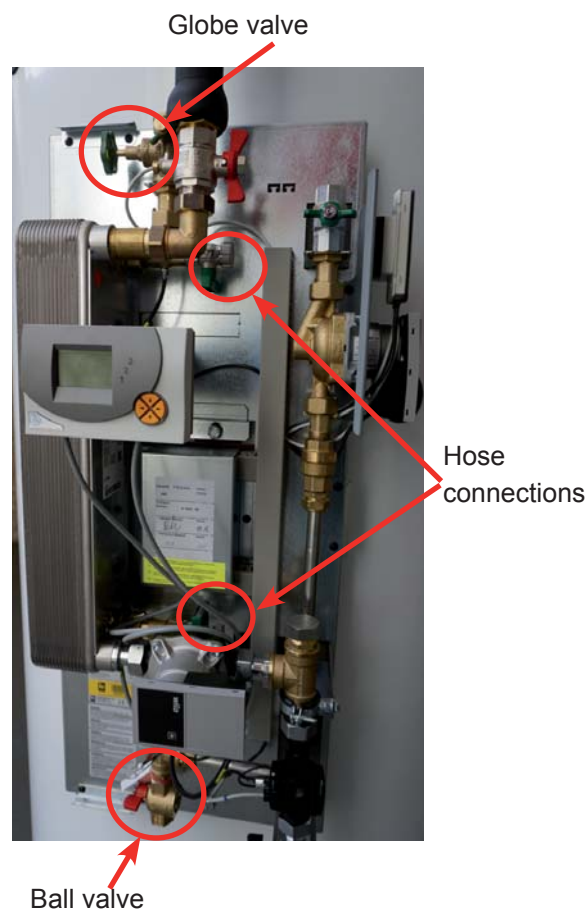
8.7. Cleaning and decalcification intervals

The plate heat exchanger of the hot water station must be decalcified regularly on the drinking water side. Recommendation: For the first time 6 months after commissioning. However, the cleaning/decalcification interval depends on the water quality and will be specified by customer service during initial maintenance. Experience shows that cleaning/decalcification will be necessary approximately every 2 years.

8.8. Cleaning and decalcification

Close the globe valve on the drinking water side and the ball valve in the cold water inlet. At the hose connections provided, connect the hoses to rinse with a cleaning and descaling solution with a small pump and rinse against the flow direction.

Then rinse with sufficient clean water.





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UID-Nr.: ATU 433 604 02



CE Declaration of Conformity

IDM-Energiesysteme GmbH, Seblas 16-18, A-9971 Matrei in Osttirol, confirms that the device(s) listed below, in the form marketed by us, fulfill(s) the requirements of the EC Directives, EC safety standards and product-specific EC standards. This Declaration shall become null and void if modifications are made to the device(s) without our approval.

EC Directives

EC Low Voltage Directive
(2014/35/EU)

EC EMC Directive
(2014/30/EU)

Amongst others, the following harmonized standards were applied accordingly:

EN 60529
EN 55014-1/2
EN 60204-1
EN 61000-3-2/3-3

Valid for the following products

Hot water stations

Hot water station 2.0 for a tapping volume of 25 l/min.
Hot water station 2.0 for a tapping volume of 35 l/min. delivery volume
Hot water station 2.0 for a tapping volume of 50 l/min. delivery volume
Hot water station 2.0 for a tapping volume of 70 l/min. delivery volume

Hot water station 2.0 for a tapping volume of 25 l/min., with mixing valve
Hot water station 2.0 for a tapping volume of 35 l/min., with mixing valve

Hot water station 2.0 for a tapping volume of 25 l/min., with mixing valve for Hygienik Solar
Hot water station 2.0 for a tapping volume of 35 l/min., with mixing valve for Hygienik Solar

Details on the type, year, serial number and other technical data you can find on the name plate.

Person authorized to create technical documentation

IDM-Energiesysteme GmbH
Seblas 16-18
9971 Matrei in Osttirol



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Matrei pp., February 27, 2017
Place, date

Ing. Andreas Bachler, Technical Director
(Stamp of IDM) Legally binding signature

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