Equipment rating plate

The equipment rating plate is situated in the top right corner on the apartment station's mounting plate.

The serial number and equipment type may be gathered from this plate.

Values listed in the technical specifications refer to this type of equipment

General specifications

Max. operating temperature	90°C
Operating pressure	PN 10
Minimum cold water pressure	2 bar
Weight, approx.	9 kg
Connections, flat sealing	3/4"IG

Performance parameters WK1

Heating water flow °C	Tapping amount l/min	kW	Pressure loss CW - side bar	Heating water return °C
55	6,5	18	0,17	35
60	9,5	26	0,27	32
65	11,5	33	0,40	31
70	13,5	37	0,55	29
75	15,5	43	0,75	26

Performance parameters WK1 M

Heating water flow °C	Tapping amount l/min	kW	Pressure loss CW - side bar	Heating water return °C
55	9	25	0,28	27
60	12	33	0,45	25
65	14,2	40	0,63	23
70	16,5	46	0,85	22
75	18,5	51	1,01	19

Performance parameters WK2

Heating water flow °C	Tapping amount l/min	kW	Pressure loss CW - side bar	Heating water return °C
55	10	28	0,55	25
60	12,7	35	0,75	22
65	15	42	0,93	19
70	17,3	48,5	1,10	17
75	19,5	54	1,35	16

The performance parameters listed apply to the following input parameters:

Heating drinking water	40 °K (e.g. 10°C --> 50°C)
Pressure loss, primary	0.15 bar
Volume flow, primary	800 litres/h

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Installation and Operating Instructions

Hydraulic Interface Unit
WK1
WK1M
WK2

Table of contents

Troubleshooting

Hot water temperature too low Hot water lead temperature too low	Check hot water lead temperature, if necessary increase (min. 10° above the desired tapping temperature)
Air in the system	Let off air with the venting screw (4).
Differential pressure too low	If heat meter is available: Check whether hot water volume flow is min. 600 to 700 l/h. If volume flow is lower than that: Check differential line pressure, target value approx. 0.2 bar If necessary, increase pump pressure. If differential pressure regulator is available in the station: Check differential pressure setting acc. to page 9 of these instructions, if necessary increase.
Wrong setting of volume flow controller or of scalding protection (if available)	Set components to the correct value; refer to pages 10, 11.
Waiting time for hot water too long If available: Temperature at thermostatic lead module TLM set at too low a value!	Set higher temperature acc. to page 10. Follow the setting instructions given there.
Station too far away from line (> 7m)	Retrofit thermostatic lead module TLM
Tapped quantity too small (Refer to page 14 for target quantities) Wrong volume flow controller installed	Check which cold water volume flow controller is used by means of the information given on page 7. If necessary, replace with a larger one.
P-controller defective!	Replace P-controller.
Formation of drops on the leak hole of P-controller	
Compression gland inside controller defective	Replace P-controller.
Apartment heating does not get hot Control valve closed.	Set control valve to correct value pursuant to page xx.
Flow noise inside the heater valves Excessive differential pressure	Check differential line pressure, target value approx. 0.2 - 0.3 bar. If a differential pressure controller is available in the station: Check the differential pressure setting pursuant to page 9 of these instructions, if necessary set to 0.2 to 0.3 bar. Set control valve for apartment heating circuit to correct value (refer to page 8).

Return flow temperature limiter (optional)

Setting the maximum return flow temperature from the apartment heating:

Set desired code (1 - 5) above the black adjusting lug. The following temperatures apply in this regard:

Scale value	1	2	3	4	5
Return flow temperature °C	25	35	45	55	50

Setting the return flow temperature limiter does not replace the hydraulic alignment of the apartment station and the heater valves.

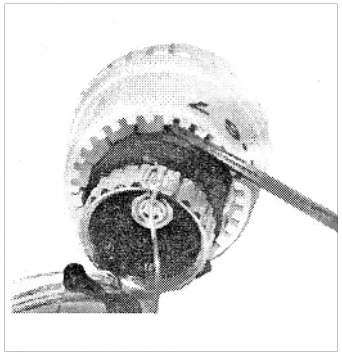
Locking the setting.

Unscrew the 2 mm hexagon socket screw (A) and set to desired value. Retighten hexagon socket screw, the setting is now locked.

Thermostatic hot water regulator (optional)

Setting the tapping temperature:

Set the desired code (1 - 7) at the regulator. The following temperatures apply in this regard:



Scale value	1	2	3	4	5	6	7
Temperature °C	30	35	40	45	50	55	60

The push-on tabs may be used to limit the setting range or to set the temperature to a fixed value.

Unscrew the valve head cap nut from the valve. Remove valve head; be careful not to bend capillary tube in the process.

Carefully lever the push-on tab from the guide using a small screwdriver.

Insert push-on tab into the relevant guides below the desired scale setting.

Components and equipment connections

1 Stainless steel plate heat exchanger
2 P-controller
3 Cold water quantity limiter (page 7)
4 Ventilation (page 7)
5 Thermostatic lead module (optional, page 10)
6 Control valve for heating system (page 8)
7 Scalding protection T - Mix (optional, page 10)
8 Differential pressure regulator (optional, page 9)
9 Mounting plate
10 Dirt trap
11 1/2" internal thread coupling for heat meter - thermometer pocket (page 6)
12 Adaptor for heat meter (110mm x 3/4"external thread), page 6
13 Adaptor for cold water meter (110mm x 3/4"external thread), page 6
14 Casing frame
15 Return flow temperature limiter (page 11)
16 Thermostatic hot water temperature regulator (page 9)

A Cold water to apartment
B Hot water
C Cold water from line
D Hot water flow pipe
E Hot water return pipe
F Heating system flow pipe
G Heating system return pipe

Function description

The WK apartment station supplies an apartment unit with heating and hot water.

The drinking water is only heated on demand via a stainless steel plate heat exchanger (1) following the continuous flow principle.

The large thermal length of the heat exchanger (1) provides for excellent cooling of the heating water and low return flow temperatures.

The energy is supplied via the hot water flow pipe by heating water with a flow temperature of at least 55 C.

The domestic water temperature is controlled by means of a pressure-controlled proportional control valve (P-controller, 2). The P-controller only opens if hot water is tapped. Once tapping is completed, the valve closes the drinking water side and the heating side.

Provided flow temperatures are constant, the proportional quantity control always achieves the same tapping temperature, regardless of whether small or large quantities are tapped.

With the aid of the thermostatic hot water temperature regulator (16) (optional) it is possible to achieve a stable tapping temperature even at fluctuating flow temperatures.

Alternatively, it is also possible to equip the WK with the scalding protection T-Mix, especially with hot water flow temperatures of > 70º (optional).

A thermostatic lead module (5) TLM (optional) is used at a line's last station or in case of large distances from the line. It prevents the risers from cooling during times when no water is tapped.

The hydraulic adjustment of the apartment station may be performed with the control valve for the heating side (6). A two-point actuator that is actuated by a room thermostat (optional) may be installed on top of the valve.

The differential pressure regulator (8, optional) controls a stable pressure difference for the WK's operation. If none is installed in the apartment station, a differential pressure regulator must be used in the line.

Thermostatic lead module TLM (optional)

Setting line lead temperature:
Set desired code (1 - 5) above the black adjusting lug. The following temperatures apply in this regard:

Scale value	1	2	3	4	5
Line - temperature °C	25	35	45	55	50

The line temperature at the TLM should be set to approx. 15 °K below the network flow temperature.

Setting the line lead temperature at too low a value may lead to longer waiting periods during hot water heating.

Excessive settings may cause the heating water return flow temperature to increase

Example: Network lead temperature = 65ºC
Recommended line lead temperature = 50ºC
Setting TLM: between 3 and 4

Locking the setting.
Unscrew the 2 mm hexagon socket screw (A) and set to desired value. Retighten hexagon socket screw, the setting is now locked.

Scalding protection T - Mix (optional)

Setting the maximum tapping temperature:

Align the desired temperature on the green adjusting wheel with the lug on the valve.

Differential pressure regulator (optional)

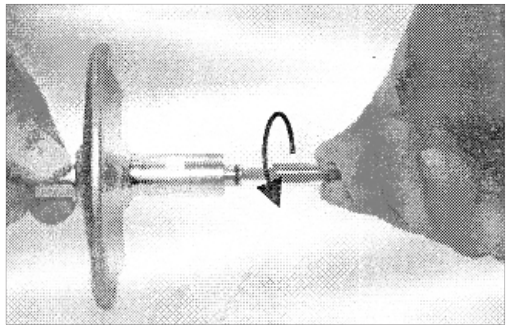
Setting the differential pressure:

The target differential pressure set at the factory is approx. 0.2 - 0.3 bar. This differential pressure may be adjusted at the regulator.

Lock station's ball valves.

Unscrew capillary tube screw connection using a spanner #10. Carefully pull out the capillary tube.

Carefully unscrew the membrane housing together with the adjusting spindle from the holder on the blue hand wheel.



Carefully unscrew adjusting spindle from the membrane housing and note the visible notches:

One notch visible: 0.3 bar

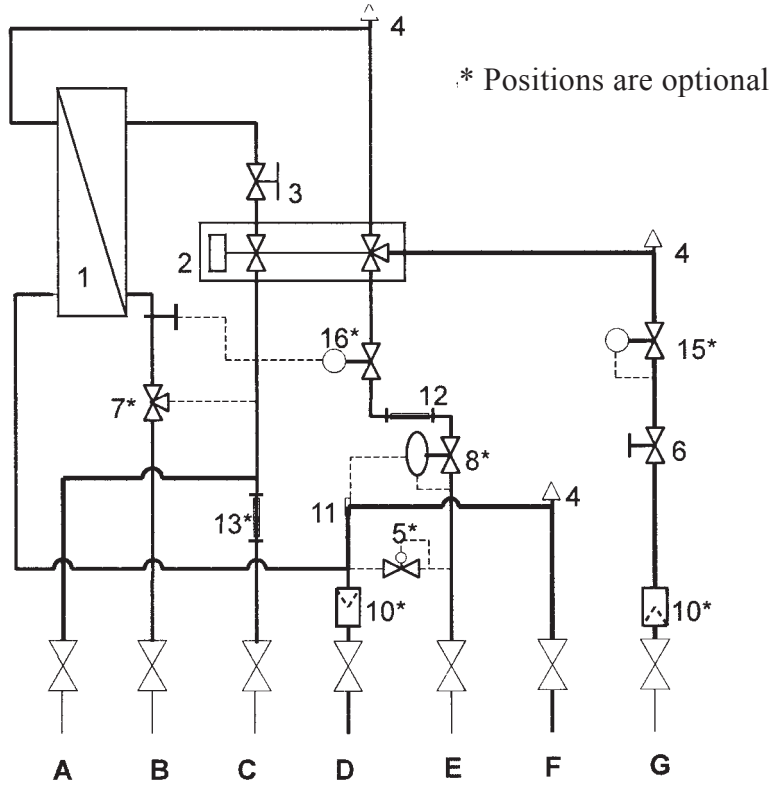
Two notches visible: 0.2 bar

Three notches visible: 0.1 bar

One rotation of the spindle corresponds to approx. 0.015 bar.

After you have set the differential pressure, carefully insert the membrane housing with spindle into the opening on the blue hand wheel and screw together while applying slight pressure.

Hydraulic diagram



1 Stainless steel plate heat exchanger
2 P-controller
3 Cold water quantity limiter (page 7)
4 Ventilation (page 7)
5 Thermostatic lead module (optional, page 10)
6 Control valve for heating system (page 8)
7 Scalding protection T - Mix (optional, page 10)
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General instructions

Installation of the apartment station may only be carried out by a specialist workman.

Necessary DIN and VDE regulations have to be complied with (e.g. DIN 4751, 4753, 1988 and VDE0100).

Unprofessional installation of the apartment station rules out any warranty claims vis-à-vis Stockshed Limited.

Wall installation

The apartment station is wall-mounted by suspending it with the aid of the lateral oblong mounting holes provided in the mounting plate.

Slightly push down the top snap lock of the casing door and remove the casing door.

To avoid damaging the casing frame during installation, the two cross-recessed screws at the top should be unscrewed and the casing frame removed from the mounting plate.

Mark the spacing between fastening holes on the wall at the desired mounting height.

Drill mounting holes and insert dowels.

Screw in fastening screws (6 mm).

Remove apartment station from the cardboard box and hang it onto the fastening screws.

Align station and tighten fastening screws.

Hang casing frame into the guide lugs and fasten with the two cross-recessed screws at the top.

Hang the door with the bent plate into the bottom of the frame, swing to the top and allow the snap lock to engage.

Connection to prefabricated mounting rail (optional)

Place station with the screw connections onto the mounting rail's ¾" external thread unions and keep hold of it.

Slightly tighten the screw connections by hand.

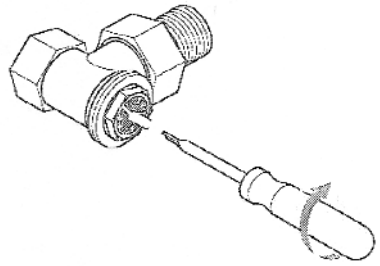
Mark the holes to be drilled through the 4 oblong holes.

Put station down again, drill fastening holes with 6 mm drill and insert matching dowels.

Place station back onto the mounting rail and securely screw together the station's ¾" cap nuts with the rail.

Securely fasten the station on the wall using 6 mm screws.

Adjustment control valve for the apartment heating



Remove white protective cap, or if necessary actuator, from the valve.

Close valve by turning the pre-setting scale to the right using a slotted screwdriver.

Position of slot corresponds to zero setting. If necessary, mark zero setting with a felt-tip pen.

Obtain heating volume flow for the apartment from planning documents or table 1.

Read off respective setting from table 2 and set at the valve.

Install protective cap or actuator on valve.

Table 1:
Heating volume flow per apartment (litre/h)

kW/ Apartment	Spread heating °K 10	20	30	40
1	86	43	29	22
2	172	86	57	43
3	258	129	86	65
4	344	172	115	86
5	430	215	143	108
6	516	258	172	129
7	602	301	201	151
8	688	344	229	172
9	774	387	258	194
10	860	430	287	215

Table 2:
Valve settings (at 0.1 bar pressure loss over the valve)

l/h	75	150	200	300	400	450	500	550	600	650	800
Setting	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	4,0	6,0	8,0

Example: Heating output 4 kW / spread of heating 20°K --> 172 litres/h (from table 1)
From table 2: Recommended valve setting: 3.0.

Cold water volume flow controller

A restrictor plate is situated in the top screw connection of the P-controller's cold water connection.

The maximum cold water volume flow is restricted by means of this restrictor plate, which may be exchanged if necessary.

The specified maximum volume flow of the insert may be gathered from its colour:

blue: 10 litres/min
red: 12 litres/min
green: 15 litres/min

Restrictor plate

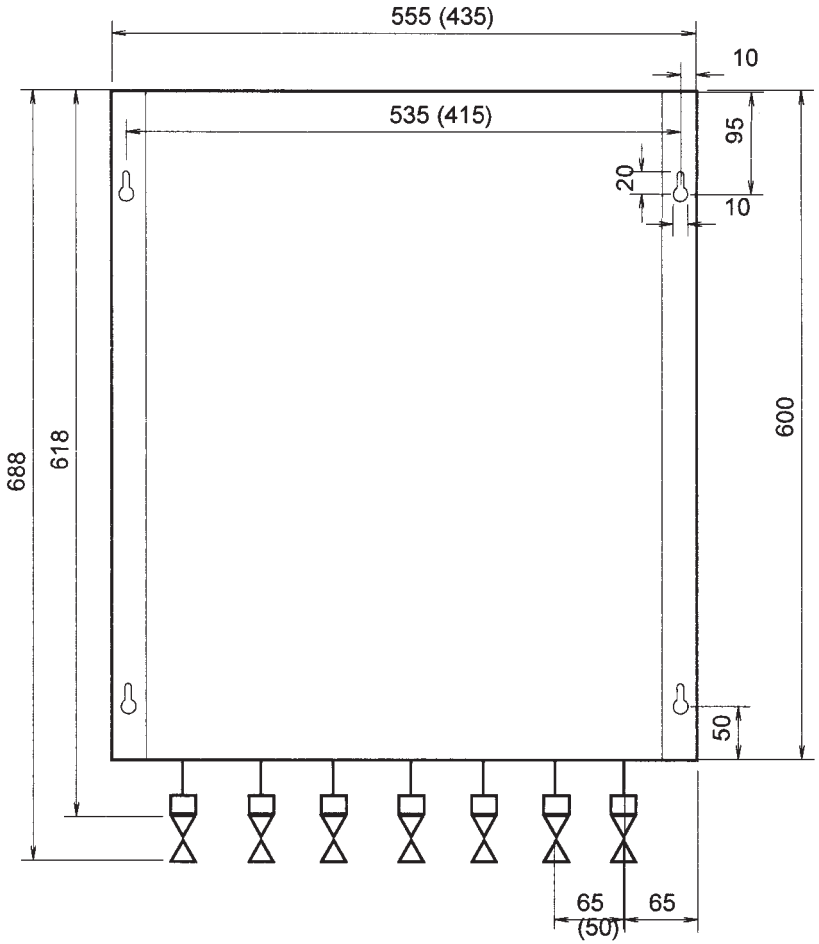
Putting into operation

De-aerating the heating circuit

Air present inside the heating system may possibly gather in the apartment station during the start-up phase.

This air needs to be removed at regular intervals by opening the three venting screws to prevent any problems during hot water heating.

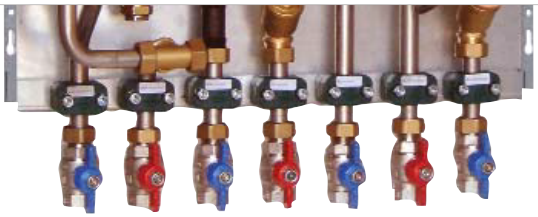
Assembly drawing



Dimensions with surface-mounted casing: (HxWxD mm): 710x600x160 (710x480x160)

Dimensions (in brackets) refer to the narrow model of the apartment station WK

Connection assignment



Connection (without type DG ball valves: flat sealing): cap nut ¾" external thread
In case of supply with DG or angle ball valves: all connections ¾" internal thread

A: Cold water to apartment (optional)
B: Hot water
C: Cold water from line
D: Hot water flow from line
E: Hot water return flow to line
F: Heating system flow pipe
G: Heating system return pipe

Purging and filling the system

Prior to filling, the entire system has to be purged thoroughly and meticulously.

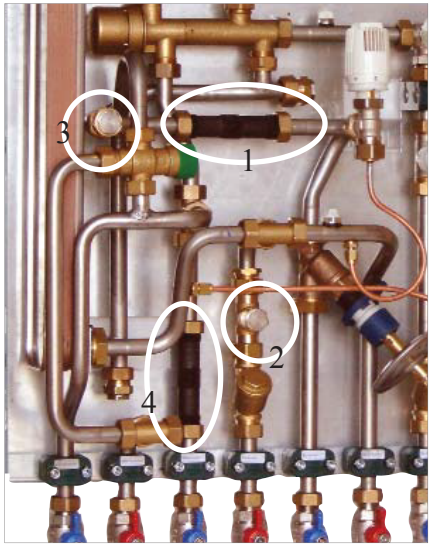
Check tightness of flat-sealing connections. If necessary, retighten connections. When retightening connections, always lock the nut on the opposite side!

Regularly remove retained air in the system by opening the venting screw (4). On this occasion, take note of the system operating pressure, replenish if necessary.

Installation heat meter

It is possible to install a heat meter inside the apartment station.
For this purpose, the 110 mm x ¾" adaptor has to be removed.

Prior to installation of the heat meter, the entire heating system has to be completely purged!



1 Adaptor for heat meter
2 Sensor sleeve ½" internal thread for flow sensor
3 Sensor sleeve ½" internal thread for separate return flow sensor
4 Cold water meter adaptor (optional)

Close all the ball valves on the station.

Blow off system pressure by opening a venting screw.

Unscrew adaptor screw connections (1); absorb any emerging water with a rag.

Remove adaptor (1) and insert heat meter or heat meter mounting part and secure by screws - observe direction of flow!

Remove dummy plug (2) of ½" internal thread sensor sleeve.

Insert flow sensor of the heat meter with matching thermometer pocket into the sleeve (2) and tighten.

If available, a separate return flow sensor may be installed inside the sensor sleeve (3) in the same manner.

Installation cold water meter (optional)

Close all the ball valves on the station.

Unscrew adaptor screw connections (4); absorb any emerging water with a rag.

Remove adaptor (1) and insert cold water meter or cold water meter mounting part and secure by screws - observe direction of flow!