Instruction manual

UWS
OUR WATER. SAFE.

Heaty-Serie

Water treatment devices (small)

Heaty Mobile

Heaty Mini pH LED

Heaty 50 Small HW

Heaty 100 Small HW

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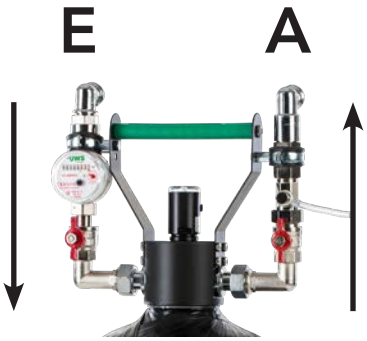
These operating instructions are based on the device versions from 01/01/2015 (technical data). The technical information is not affected by this and is effective immediately.

1. Heating systems must always be flushed and cleaned before final filling in accordance with EN 14336 (DIN / Ö-Norm / SN) „Heating systems in buildings - Installation and acceptance of hot water heating systems". The flushing or cleaning must be recorded.
2. The conductivity of the raw water must be measured and entered in the system log after conversion into °dH / °fH. It is not sufficient to accept the hardness specified by the supplier. If the raw water is softened, measurement is only possible using so-called hardness drops. Furthermore, this will give you an indication of the capacity of your unit.
3. The raw water pipe must have a minimum flow pressure of 1.5 bar. Filling is also possible below the minimum pressure, but the capacity of the mixed bed resin can be impaired by a lack of flow.

   If conductivity is reduced during operation, it may be necessary to install a pump. The pump must be free of residues.

   Please observe the notes on conductivity reduction during operation.
4. In the area of application of DIN EN 1717 (Germany), a pipe isolator must also be installed upstream of the filling station. The regulations of the water supply companies must be observed.



NOTE

Appearance of the filling units

The appearance of an individual filling device can vary depending on the design and year of manufacture. However, the basic principle always remains the same.

Connecting Heaty to the water mains

1. Connect **Heaty** to a water tap at **inlet E** with a hose.
2. Now connect **Heaty** to the heating circuit with another hose at **outlet A**.
3. Now start filling by opening the water tap to the Heaty. The built-in flow limiter means that the tap can always be opened fully. There is no risk of the mixed bed resin being overrun by high water pressure.
4. Now fill **Heaty** until the desired amount of water is in the heating circuit. To check the water quality, there is an indicator on the Heaty (version with LED). If the LED flashes red, the resin must be replaced.
   Please observe the instructions for handling the LED (see page 8).

   For units without LED, you can take water from the tap and check it with a hand-held meter. If the conductivity is > 120 µS, stop filling and fill a new resin into the composite container.
5. After filling, remove the hoses from the **Heaty**.
6. Measure the conductivity and pH value of the heating water and enter these values in the system logbook.

Change mixed-bed resin

NOTE

Handling mixed bed resin

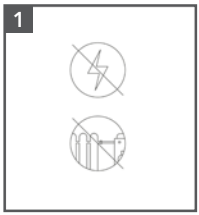
Observe the following points when handling the mixed bed resin:

- Do not store the mixed bed resin openly as it will lose capacity.
- Use the outer packaging of the refill pack to dispose of the replaced mixed bed resin.
- Change the mixed bed resin over a drain so that the water separated from the replaced mixed bed resin can drain off.
- Wear appropriate personal protective equipment (goggles, gloves).

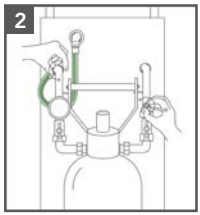
When the mixed bed resin is used up, proceed as follows:

NOTE

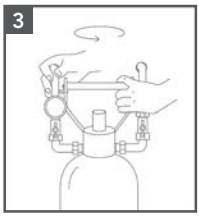
The resin can be changed anywhere. This makes it possible to continue filling immediately.



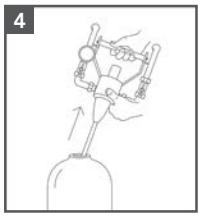
1.
Make sure that the appliance is disconnected from the mains and the heating or cooling system.



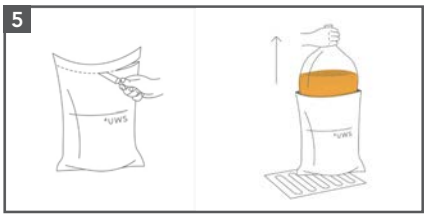
2.
Remove the hoses from the unit and open all valves to drain the unit.



3.
Turn the 3-way head on the handle counterclockwise to release the 3-way head.

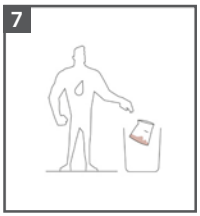


4.
Pull the 3-way head with the suction lance out of the composite container.



5.
Remove the refill pack of mixed bed resin from the outer packaging and place the outer packaging over a drain.

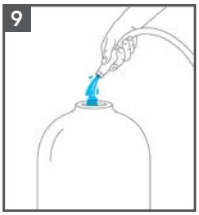
6.
Empty the exhausted mixed bed resin from the composite container into the outer packaging:



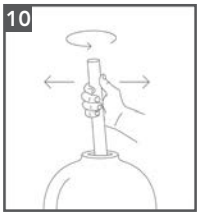
7.
Dispose of the mixed bed resin and empty the remaining water into a drain.

▶ The spent mixed bed resin is retained by the outer packaging while the water flows into the drain.

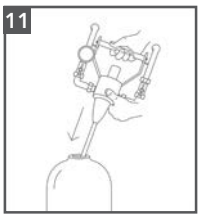
8.
Open the refill pack of mixed bed resin and pour it into the composite container using a funnel. If necessary, compact the mixed bed resin by shaking or circling the composite container.



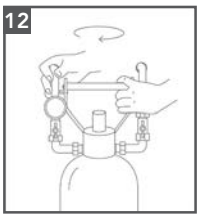
9.
Fill the composite container with water up to a height of approx. 2 cm below the thread.



10.
Stir the mixed bed resin with a pipe or other suitable tool to make it easier to insert the 3-way head with suction lance.



11.
Insert the 3-way head with suction lance back into the composite container.



12.
Hand-tighten the 3-way head clockwise.

Video instruction
resin change

▶ The mixed bed resin has been changed and the filling device is working at its full capacity again.

NOTE

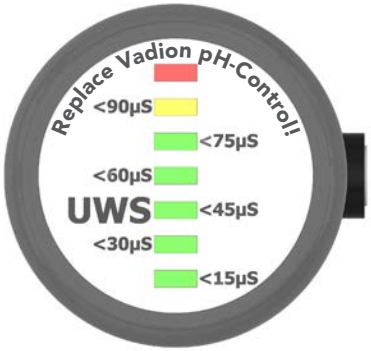
Close the packaging

Storing the resin openly will greatly reduce its capacity!

LED function

At the beginning of the process, the individual LEDs are checked (light organ). If the Vadion pH-Control has been replaced, the LED display of the measuring cell may light up red. In this case, continue the process for approx. 5 minutes. If the display of the LED measuring cell does not change, bleed the measuring cell or check the measuring cell with a manual measuring device to rule out a fault. If there is no error, the capacity of the mixed-bed resin is exhausted and the mixed-bed resin must be replaced.

The measuring cell with LED display shows the remaining capacity of the mixed-bed resin. The colours of the LED display have the following meanings:

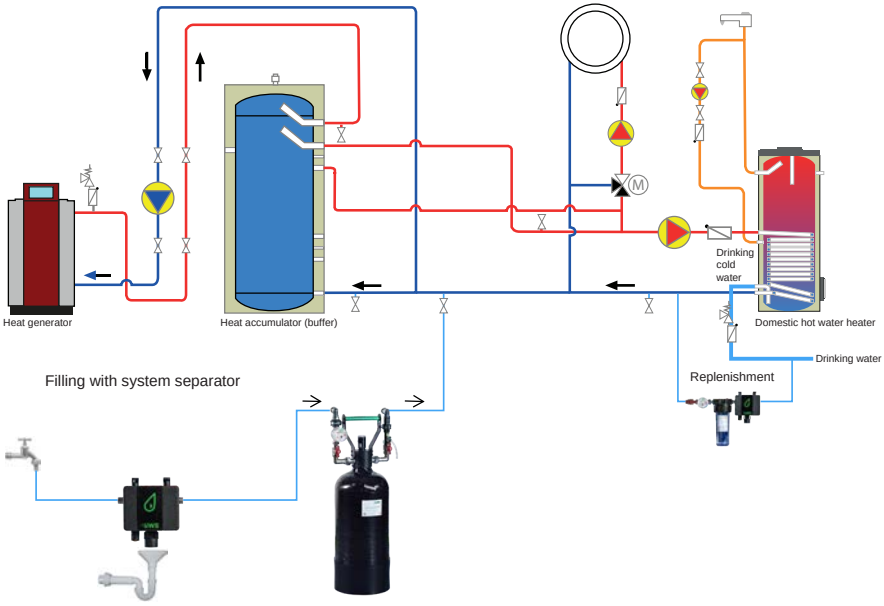


Colour of the LED display	Conductivity (µS/cm)	Meaning
Green	<15	Capacity very good
	<30	Capacity good
	30 - <75	Capacity sufficient
Yellow	<90	Capacity insufficient, replace mixed bed resin **promptly** (see p.6)
Rot	>90	Capacity exhausted, replace mixed bed resin **immediately** (see p.6)

Conductivity reduction during operation

Quick guide

1. Connect **Heaty** to a water tap at **inlet E** with a hose.
2. Open all shut-off valves and HK valves fully.
3. Set the system temperature to max. 50°C (with Heaty Mobile and Heaty Mini pH LED) or max. 80°C (with Small HW series).
4. The circulation volume is automatically limited according to the composite size used via suitable flow limiters.
5. Determine the conductivity with the LED measuring cell.
6. If the conductivity is > 100 µS/cm, replace the mixed bed resin (LED flashes red).
7. Dismantle the UWS unit after reaching the desired conductivity value.



NOTES

1. **If the pressure in the return line is too low, it may be necessary to install a pump.** This can be a flushing pump or similar, but it must be free of residues.
2. It is not possible to determine the conductivity via the conventional hand-held meters if the water temperature exceeds 50 °C.
3. In the case of units with a system separator or a filling fitting, these very assemblies must be bypassed.

CAUTION

Risk of burns

The fittings can become hot during operation. Danger of burns!

Lime content and water hardness

By measuring the conductivity, the lime content and the water hardness can be roughly estimated. The following table illustrates the correlations:

Conductivity [µS/cm]	Lime content [g/1,000 l]	Classification Water hardness
<100	<35	desalinated
100	50	very soft
200–300	100-150	soft
400–500	200-250	medium hard
600–800	300-400	hard
900–1,000	450-500	very hard

The following table serves to determine the exact water hardness:

NOTE

This conversion is only applicable if the water is not softened and does not contain any chemical additives.

In the case of softened water, measurement via the hardness drop method is necessary. Hand-held measuring devices do not provide meaningful values for softened water.

Conductivity [µS/cm]	Hardness [°dH]	Hardness [°fH]	Lime content [g/1,000 l]	Conductivity [µS/cm]	Hardness [°dH]	Hardness [°fH]	Lime content [g/1,000 l]
<100	<1	<2	<35	1,120	32	57	560
105	2	5	53	1,155	33	59	578
140	4	7	70	1,190	34	61	595
175	5	9	88	1,225	35	62	613
210	6	11	105	1,260	36	64	630
245	7	12	123	1,295	37	66	648
280	8	14	140	1,330	38	68	665
315	9	16	158	1,365	39	69	683
350	10	18	175	1,400	40	71	700
385	11	20	193	1,435	41	73	718
420	12	21	210	1,470	42	75	735
455	13	23	228	1,505	43	77	753
490	14	25	245	1,540	44	78	770
525	15	27	263	1,575	45	80	788
560	16	28	280	1,610	46	82	805
595	17	30	298	1,645	47	84	823
630	18	32	315	1,680	48	85	840
665	19	34	333	1,715	49	87	858
700	20	36	350	1,750	50	89	875
735	21	37	368	1,785	51	91	893
770	22	39	385	1,820	52	93	910
805	23	41	403	1,855	53	94	928
840	24	43	420	1,890	54	96	945
875	25	45	438	1,925	55	98	963
910	26	46	455	1,960	56	100	980
945	27	48	473	1,995	57	101	998
980	28	50	490	2,030	58	103	1,015
1,015	29	52	508	2,065	59	105	1,033
1,050	30	53	525	2,100	60	107	1,050
1,085	31	55	543	2,100	60	107	1,050

Determining the capacity

The capacity of the unit indicates the amount of water of a certain conductivity that can be treated with a mixed bed resin filling. The capacity depends on various factors such as the water temperature, the chemical composition or the flow pressure.

NOTE

Online capacity calculator

Please use the capacity calculator for filling devices on the manufacturer's homepage: https://uws-technologie.de/berechnungstools/

Technical data

	Heaty Mobile	Heaty Mini pH LED
Article no.	103000	100105
Pipe connection	3/4"	3/4"
Max. Filling capacity l/h (depending on DB)*	240	360
Min. flow pressure bar	1.5	1.5
Max. Operating pressure bar	8	8
Max. Operating temperature °C	50	50
Height/width/depth mm (approx. dimensions)	550 / 380 / 230	710 / 320 / 170
Weight kg (approx.)	9.0	9.2
Mixing bed capacity	4	6
Capacity at 420 µS/cm to < 100**	approx. 600 l	approx. 900 l
Power supply required	Yes, for LED	Yes, for LED

	Heaty 50 Small HW	Heaty 100 Small HW
Article no.	100409	100403
Pipe connection	3/4"	3/4"
Max. Max. filling capacity l/h (depending on DB)	600	1,200
Min. flow pressure bar	1.5	1.5
Max. Operating pressure bar	8	8
Max. Operating temperature °C	80	80
Height/width/depth mm (approx. dimensions)	680 / 320 / 220	820 / 330 / 280
Weight kg (approx.)	12.7	26.2
Mixing bed capacity	9.5	23
Capacity at 420 µS/cm to < 100**	approx. 1,350 l	approx. 3,420 l
Power supply required	Yes, for LED	Yes, for LED

Maintenance tasks

When replacing the resin, check the upper and lower nozzles of the suction lance for damage and blockage and clean or replace if necessary.

The flow limiter and any dirt trap must be checked occasionally for dirt, especially if the flow is too low.

All UWS systems are only frost-proof if the residual water has been completely drained. No guarantee can be given.

After a longer period without operation, the units must be flushed briefly.

Spare Parts

100011-1	Replacement head for cartridge
100012	3-way head for composite
100012-10	Seal 3-way head
100013	Spare parts kit for cartridge
100013-10	Stand for composite container
100013-12	Manifold with nozzle
100017	2-way head for composite
100026	Filling fitting with manometer 1/2"
100041	Funnel
100115	Composite container Heaty Mini without head
100221	Flow limiter set 6 l/min
100515	Composite container Heaty 50 without head
100521	Flow limiter set 10 l/min
101015	Composite container Heaty 100 without head
101020	Flow limiter set 20 l/min
102015	Composite container Heaty 200 without head
102020	Flow limiter set 40 l/min
101016	Composite container Heaty 100 HW without head

1. The heating systems must comply with the state of the art.
2. The current regulations on the construction, commissioning, design and filling of heating systems must be observed.
3. A minimum flow pressure of 1.5 bar is required for proper operation of the UWS units.
4. Deionised water can cause the removal of existing limescale layers. Any resulting damage is due to the existing deposits on the material and not to the deionised water.
5. The heating systems must always be flushed and cleaned according to EN 14336 (DIN / Ö-Norm / SN).
6. If there are still residues of additives of any kind in the system, especially acids such as glycol, cleaning agents, etc., UWS cannot guarantee compliance with the guide values.
7. If microbiology or bacterial infestation is present, UWS does not guarantee compliance with the guide values.
8. The mixed bed resin must always be protected from air and opened refill bags must always be completely filled into the composite.
9. All UWS systems are only frost-proof if the residual water has been completely drained. No guarantee can be given.
10. The installer is responsible for keeping the system log in accordance with VDI 2035 / SWKI 97.
11. UWS accepts no liability for application errors on the part of the installer.
12. The UWS system technology is to be operated exclusively by the specialist tradesman.

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Your contact: