



USER MANUAL

AUTOMATIC WATER SOFTENING SYSTEM



MINI E

Date of installation
Serial number

Please read the operating instructions before commissioning!
The manufacturer is not responsible for malfunctions resulting from incorrect operation or failure to follow the instructions in this manual.
Keep for future reference! This operating manual is an integral part of the device.

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General In Instructions

1. Before installing and operating this device, read the relevant installation and operating instructions contained in this manual.
2. The manufacturer assumes no responsibility for improper use or incorrect operation of the device.
3. The system is intended solely for the removal of unwanted minerals that accumulate as limescale (calcium and magnesium). This device is part of the system protection.
4. It is prohibited to make any changes to the system without consulting the manufacturer. The manufacturer assumes no responsibility for damage caused by such modifications.
5. The temperature in the device's operating room must be at least 10 °C.
6. General regulations and provisions, as well as accident prevention regulations
7. The installation site of the device must be protected against water damage (e.g., via the existing floor drain). The manufacturer is not responsible for damage caused by water.
8. The unit in which the filter is used must be free of lime and gypsum deposits prior to installation.
9. Do not install the device near heat sources or open flames.
10. Protect the filter system from mechanical damage.
11. Installation and maintenance of the filter system must only be performed by trained and authorized personnel.
12. Do not use abrasive chemicals, cleaning solutions, or astringent cleaning agents for cleaning.
13. For all inquiries and spare part orders, please provide the correct model number and serial number of the unit. This is the only way to ensure an effective and prompt response or order fulfillment.

Transport and Packaging

Our systems are carefully packaged and inspected prior to shipment.

When shipped via a freight forwarder, transport damage cannot be ruled out. It is therefore necessary to inspect the packaging upon receipt of the goods.

1. Check the delivery for completeness using the delivery note.
2. If the packaging is damaged: Conduct a visual inspection of the goods and record your findings in the shipping company's shipping documents. Take photographs of the damaged packaging and the device. Note any potential claims for hidden damage that may become apparent after the device is put into operation in the shipping documents. Contact the shipping carrier immediately, as otherwise the transport insurance will not cover the damage. Keep the package for a possible later inspection by the shipping carrier or insurance company.
3. In the event of a return, the package must be packed in such a way that it is protected from mechanical damage.
4. Drain the water from the system before shipping. This helps reduce shipping costs. It also prevents damage to the packaging from any water that may leak out.

After storage and transport below 0 °C, the product must be stored in its opened original packaging for at least 24 hours before being put into operation at the specified ambient temperatures.

Disclaimer

Installation must be performed exactly according to the instructions in this manual. The manufacturer is not liable for any damages, including consequential damages, resulting from improper installation or use of the product.

How works:

Hard water contains a combination of calcium (Ca), magnesium (Mg), and iron (Fe). The water softening process removes these positively charged ions using ion-exchange resin. When the ion-exchange resin loses its effectiveness, it is regenerated using a chemical reagent.

Regeneration:

Regeneration involves flushing out the deposits with a tablet salt solution and flushing the absorbed calcium and magnesium ions into the wastewater.

Regeneration takes place after the customer presses the REGEN button. Regeneration should be performed depending on the water hardness at the installation site and the water consumption of the end device. No hard water is present during regeneration.

The regeneration process consists of 4 cycles:

1. Backwash
2. Brine and slow rinses
3. Refilling
4. Fast rinse

Standards, regulations, and legal requirements

1. The water supplied to the unit must meet the requirements of the utility's water usage regulations.
2. Parts that come into contact with treated water must be made of material resistant to treated water,
3. A floor drain must be installed in the water treatment room. The purchaser is responsible for ensuring proper drainage.
4. The maximum temperature of the supply water is 30 °C

1. Description of the unit

1.1. System Design

The MINI E water treatment system is a high-quality, precision device. When properly installed and maintained, it guarantees reliable operation for many years. The MINI E small-capacity water softening station is used where the water flow does not exceed 35 l/min.

System configuration:

1. Water Softener Type: MINI E
2. Drain hose ½"

1.2. Technical s Description

Amount of softened water per 10-hour cycle / regeneration	[liters]	1500
Salt consumption	[kg]	0.7
Flow rate	[l/min]	0–20/35
Operating pressure	[bar]	2.0–6.0
Connections	[cal]	¾"
Height	[mm]	460
Depth	[mm]	430
Width	[mm]	210
Maximum water temperature	[° C]	30
Salt storage capacity	[kg]	11

The system is configured to consume 0.7 kg of reagent per regeneration. Calculate the volume of softened water between regenerations:

The volume of water between regenerations is calculated using the following formula: $Z = 1500 \times 10 / y$

Where

Z is the amount of softened water between regenerations Y is the measured water hardness in 'n' (German degrees)

An example of calculating the amount of softened water 'z' between regenerations. Data: measured water hardness = 15'n

The volume of water 'z' between regenerations is calculated using the following formula: $Z = 1500 \times 10 / 15 = 1000$ liters.

With a water hardness of 15'GH, we obtain 1000 liters of softened water.

TAB. 1. CAPACITY - MINI E

Water hardness				
English Level	Concentration in French	PPM	Grade in German	MINI E efficiency
12.5	18	178.6	10	1500
13.8	19.8	196.5	11	1364
15	21.6	214.3	12	1250
16.3	23.4	232.2	13	1,154
17.5	25.2	250	14	1071
18.8	27	267.9	15	1000
20	28.8	285.8	16	938
21.3	30.6	303.6	17	882
22.5	32.4	321.5	18	833
23.8	34.2	339.3	19	789
25	36	357.2	20	750
26.3	37.8	375.1	21	714
27.5	39.6	392.9	22	682
28.8	41.4	410.8	23	652
30	43.2	428.6	24	625
31.3	45	446.5	25	600
32.5	46.8	464.4	26	577
33.8	48.6	482.2	27	556
35	50.4	500.1	28	536
36.3	52.2	517.9	29	517
37.5	54	535.8	30	500
38.8	55.8	553.7	31	484
40	57.6	571.5	32	469
41.3	59.4	589.4	33	455
42.5	61.2	607.2	34	441
43.8	63	625.1	35	429
45	64.8	643	36	417
46.3	66.6	660.8	37	405
47.5	68.4	678.7	38	395
48.8	70.2	696.5	39	385
50	72	714.4	40	375

The specified performance figures were calculated based on standard application and machine conditions. These figures may vary depending on external factors (e.g., fluctuating raw water quality)

1.3. Control function

Directional valve

Regeneration is performed via the control valve. To start regeneration, the customer must press the REGEN button. After pressing the REGEN button, regeneration is automatically performed by the control valve.



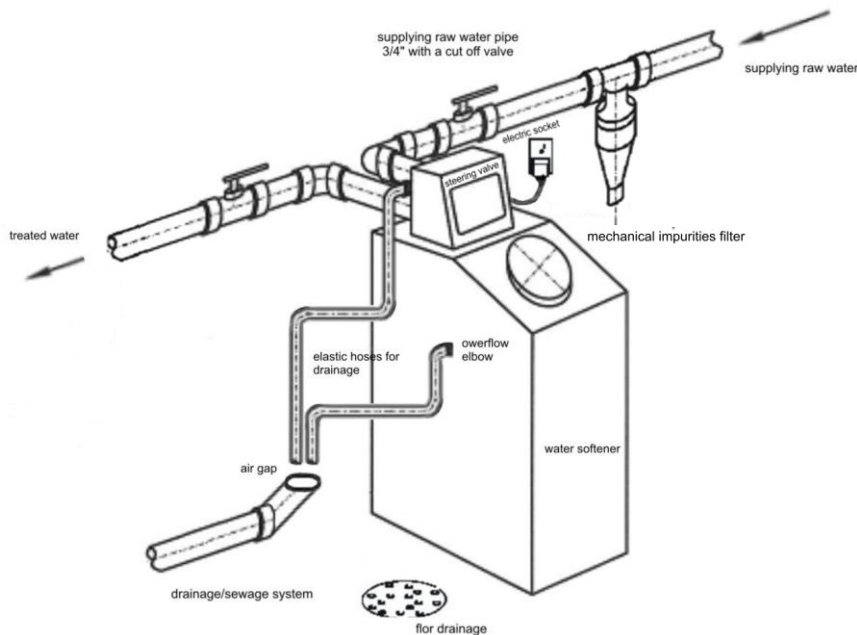
←←REGEN - Press to start regeneration Regeneration

should be performed depending on the water hardness at the installation site and the water consumption of the end device

2. Preparation for the installation

2.1. Installation Preparation Plan

Figure 1.



On the buyer's side:

1. Domestic water supply line (cold) 3/4" with shut-off valve.
2. Drainage (sewer) at a height of max. 100 mm, DN 50 connection.
3. 230 V / 50 Hz, 16 A outlet
4. A floor drain must be present in the room.
5. A sediment filter should be installed before the water softener

2.2. Disassembly, re , and disposal

The unit is dismantled at the end of its service life (for final disposal or scrapping). Follow the reverse installation steps.

Note!

First, thoroughly clean the system with fresh water and completely drain the tanks and lines!

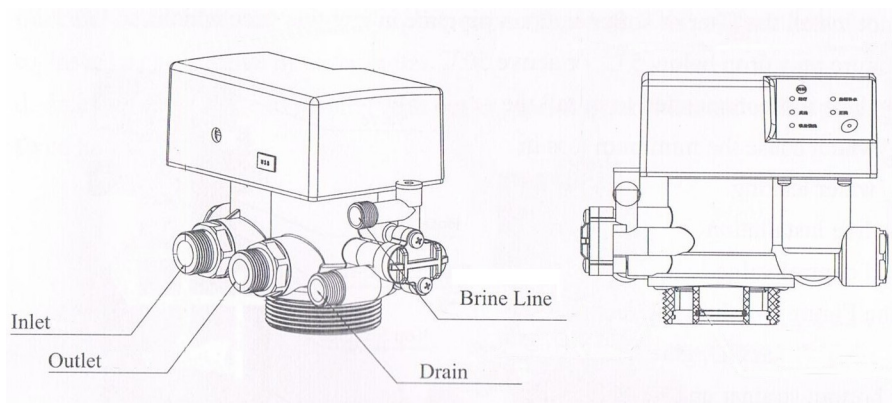
Observe the occupational safety regulations!

The various parts of the unit must be recycled in accordance with the applicable recycling and disposal regulations!

3. Installation

- After completing the installation preparations, place the unit in the designated room according to the system layout.
- All inlets and outlets must be connected on the water side. The unit connections are shown in the following illustration:
- - Connect the inlet (1) and outlet (2) to the water supply;
- - Connect the flexible hose (1/2") that carries away the wastewater to the outlet (3) and to a drain grate or drainage system.
- - The wastewater discharge should have sufficient flow capacity to handle 5 l/min of rinse water. The drain pipe should be rigid enough to prevent breakage, which could result in a blockage and overflow in the reagent tank, as well as a faulty regeneration process;
- - A mechanical sediment filter should be installed upstream of the water softener to protect the unit from mechanical damage caused by deposits from the water lines.
- The brine tank of the water softener must be filled with salt tablets. Then pour in 4 liters of water using a bucket (only during initial startup).
- Check and tighten all screw connections on the unit.
- Plug it into an outlet.
- The unit is factory-set.
- The water pressure must be at least 2.0 bar and no more than 6.0 bar.
- Start the regeneration process by pressing the " " button.
You will hear the hum of an electric motor, which means that the device driver has started regeneration. During regeneration, the system vents and fills the reagent tank with water. Once regeneration is complete, the device is ready for use again. Hard water is present during regeneration.

Figure 2. Description of the control valve.



1. Raw water inlet (3/4")
2. Treated water outlet (3/4")
3. Drain (1/2", flexible connection).
4. Brine tank connection (3/8")

4. Maintenance

Refilling the tablet salt:

1. Remove the brine tank cover,
2. Fill the tank with salt tablets (you can add a maximum of 10 kg of salt tablets to the tank).
3. Replace the brine tank lid in its proper position.

Important: Remember that there must always be enough salt tablets in the brine tank to cover the water level.



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