



High-Efficiency Water Softener

HE 1"
CE



M007-11 – Rev. 01 – 12/2012

TECHNICAL DATA SHEET

The Culligan HE water softener, designed to satisfy the most varied professional and semi-industrial requirements, is a specific device for removing hardness (Calcium and Magnesium), by means of exchanger resins that are selected and suitable for contact with water and are foodsafe, such as Cullex strong cation exchange resins in a sodium cycle, normally able to be regenerated with sea salt.

The vertical cylindrical container is made of non-toxic plastic material, an exclusive Culligan "Quadra-Hull®" patent composed of four overlapping layers:

- A foodsafe internal liner
- A body of fiberglass reinforced with an epoxy resin
- Additional carbon reinforcing, that ensures optimal pressure resistance
- A directly sealed outer covering, that resists moisture

The HE water softener provides savings in costs while being environment friendly. The HE water softener, using Culligan patented technologies, such as countercurrent resin regeneration, optimization of salt consumption and proportional regeneration, enables saving water and electricity by up to 46% compared to a conventional water softener.

Culligan proportional regeneration technology enables the water softener to regenerate only the spent part of the bed of resin, which reduces to a minimum the consumption of salt and the associated water consumption necessary for the regeneration.

The Culligan Dial-a-Softness® control system enables selecting the hardness of the water for the service without an additional external mixing device.

The exclusive Culligan Soft-Minder® monitors the daily use of water by flow meter and offers an advanced diagnostic program. It allows the regeneration program to be started according to:

- volume of treated water
- timed
- volume of treated water with timed regeneration (domestic volume)

The exclusive HE valve, which uses motor pistons, offers more reliability than conventional rotating valves. The design of the valve with several pistons means easier maintenance and longer life.

The brine container made with corrosion-proof components and the Dabl-Safe system that controls the level and the quality of the brine ensure perfect functionality.

Moreover, the HE valve is fitted with an automatic bypass system to supply untreated water to the service even when the water softener is being regenerated.

The HE valve is already arranged for the following accessories:

Modem function: via telephone line it sends e-mails to up to 2 settable recipients, sending an equipment operation status report

Smart brine tank: it is possible to evaluate the presence of salt in the brine system (brine tank), the % of actual brine, the level of the brine and the correct operation of the suction system (suction time control)

Remote monitor: via radio link it transmits information relevant to water softener operation from the control unit to a remote display

Progressive flow: enables management of several water softener columns operating in parallel in cascade to cover peak water demands without having to oversize the water softener

Communication cable: enables the display of data from control unit to PC or PLC/remote control network



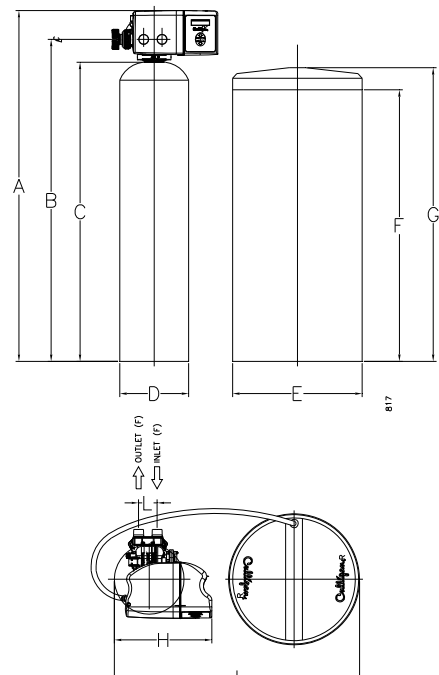
Service water stop: through this device it is possible to stop the water to the service when the water softener is being regenerated

IMPORTANT

- **Equipment for the treatment of potable water, conforming with the requirements of Min. Decree 25/2012.**
- Refer to the technical manual supplied with the system for all information and instructions.
- Any installation, maintenance or repair work on the systems must be carried out by qualified personnel in compliance with Min. Decree 37/08, the best state of the art and in conformity with the instructions given in the technical manual.
- The place where the systems, auxiliary material and consumables are located must comply with the storage, use and safety requirements of the current regulations.
- The water produced by every unit must only be used for its specifically intended purpose. Culligan declines any liability for the consequences of improper use of the water produced by its equipment.
- Any operation fault in the systems must be promptly reported to the Culligan Service Center. Culligan declines any liability for the consequences of prolonged use of a faulty system.
- When necessary, the choice, dosing and handling of chemicals must be done by professionally qualified personnel, complying with the instructions given by Culligan and in the Technical Safety sheets.
- Culligan also declines any liability in the following specific cases:
 - improper use of the device;
 - use contrary to the specific national regulations (power and water supplies, installation and maintenance);
 - installation without following the instructions supplied in this manual;
 - power and water supply faults (electrical discharges – voltage rushes – water supply overpressure – low water pressure);
 - unsuitable ambient operating temperature;
 - inadequate maintenance;
 - unauthorized work or modifications;
 - use of non-original replacement parts or not specific for the model;
 - total or partial non-compliance with the instructions;
 - for anything not specified, the operator must rely on common sense when using the device.

OVERALL DIMENSIONS

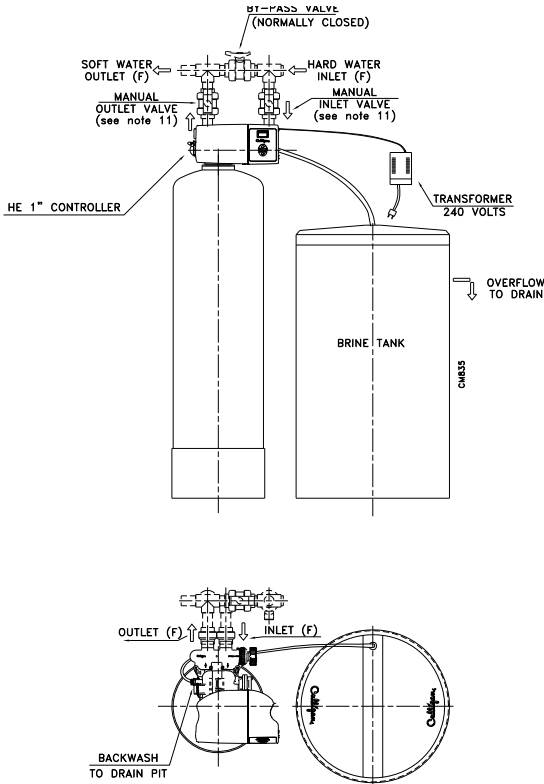
| Model | | HE 20 1" | HE 40 1" | HE 60 1" | HE 90 1" |
|-------|----|-------------|-------------|-------------|-------------|
| A | mm | 1270 | 1580 | 1530 | 1860 |
| B | mm | 1147 | 1452 | 1401 | 1731 |
| C | mm | 1067 | 1372 | 1321 | 1651 |
| Ø D | mm | 229 | 254 | 305 | 356 |
| Ø E | mm | 457 | 457 | 610 | 610 |
| F | mm | 934 | 934 | 934 | 934 |
| G | mm | 1016 | 1016 | 1016 | 1016 |
| H | mm | 350 | 365 | 394 | 415 |
| I | mm | 690 | 720 | 920 | 970 |
| L | mm | 61 | 61 | 61 | 61 |



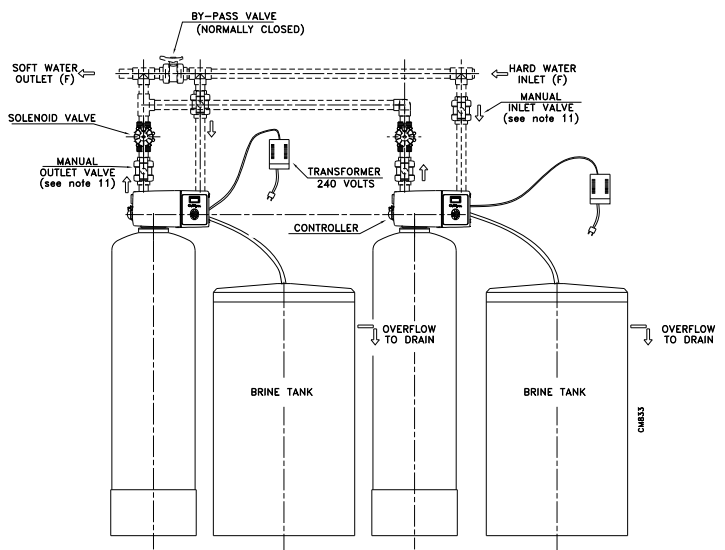
INSTALLATION

The water softener must be installed by qualified personnel, in compliance with Min. Decree 37/08, the best state of the art and in conformity with the instructions given in the technical manual.

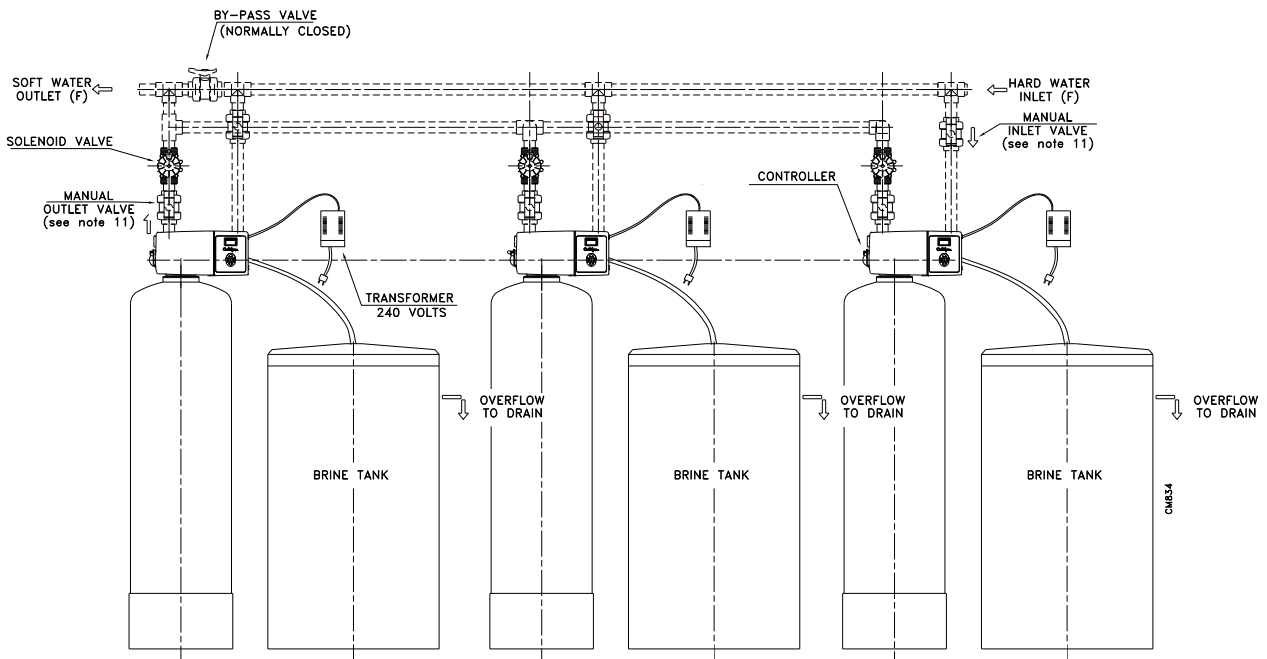
SIMPLEX installation diagram



DUPLEX installation diagram



PROGRESSIVE installation diagram





TECHNICAL SPECIFICATIONS

| Model | HE 20 1" | HE 40 1" | HE 60 1" | HE 90 1" |
|--|---|--|--|--|
| Total dimensions (w x d x h) mm | 690 x 460 x 1270 | 720 x 460 x 1580 | 920 x 610 x 1530 | 970 x 610 x 1860 |
| Tank type | Quadra-Hull™ | | | |
| Resin Tank dimensions (Dia x H) mm (Dia x H) inch | 229 x 1067 9 x 42 | 254 x 1372 10 x 54 | 305 x 1321 12 x 52 | 356 x 1651 14 x 65 |
| Salt container dimensions (Dia x H) mm (Dia x H) inch | 457 x 1016 18 x 40 | 457 x 1016 18 x 40 | 610 x 1016 24 x 40 | 610 x 1016 24 x 40 |
| Resins, type and quantity | Cullex® 20 L | Cullex® 40 L | Cullex® 56 L | Cullex® 85 L |
| Underbed, type and quantity | Cullsant® 5.4kg | Cullsant® 5.4kg | Cullsant® 5.4kg | Cullsant® 5.4kg |
| Exchange capacity - Reg. salt dosing | 97 m³x°F - 1.8 kg 136 m³x°F - 3.6 kg 150 m³x°F - 5.4 kg | 194 m³x°F - 2.7 kg 311 m³x°F - 5.4 kg 356 m³x°F - 8.2 kg | 226 m³x°F - 3.6 kg 330 m³x°F - 7.3 kg 401 m³x°F - 8.2 kg | 343 m³x°F - 5.4 kg 492 m³x°F - 10.9 kg 589 m³x°F - 16.0 kg |
| Salt container capacity | 170 kg | 170 kg | 295 kg | 295 kg |
| Service rated flow rate - pressure loss | 2.0 m³/h - 0.8 bar | 2.1 m³/h - 0.8 bar | 2.3 m³/h - 0.7 bar | 2.4 m³/h - 0.8 bar |
| Auxiliary flow rate - pressure loss | 2.5 m³/h - 1 bar | 2.5 m³/h - 1 bar | 2.9 m³/h - 0.8 bar | 2.9 m³/h - 0.8 bar |
| Total hardness, Max | 51.3 °f | | 30 gpg | |
| Total iron, Max | 2 ppm | | | |
| Iron/Hardness ratio, Min. | 14 °f at 1 ppm | | 8 gpg at 1 ppm | |
| Operating pressure | Min 1.4 – Max 8.6 bar | | | |
| Operating temperature | Min 0 – Max 49 °C | | | |
| Electrical power supply | 230/24V – 50/60 Hz | | | |
| Electrical power input | Min 8.4 – Max 21.6 Watts | | | |
| Operating weight | 260 kg | 290 kg | 490 kg | 560 kg |
| Shipping weight | 55 kg | 77 kg | 115 kg | 152 kg |
| Inlet/outlet/discharge fittings | 1"/1"/0.5" | | | |
| Water flow rate to the discharge, max | 0.5 m³/h | 0.5 m³/h | 0.7 m³/h | 1.2 m³/h |
| Volume of water to the discharge in Reg.* | 125 l | 132 l | 201 l | 297 l |

* Calculated on a backflushing time of 10 minutes. The average time for a complete reg. is about 70 minutes

MAINTENANCE

To keep the water softener in a good operating condition it is necessary to inspect the system periodically. As a rule this should be done at least once a year. More frequent servicing may be necessary according to the operating conditions; for example: raw water with a lot of sediment, chlorine, turbidity or very high hardness levels. If the system is not used for a long time, it is necessary to call the Culligan Support Center that will run a general check before putting the water softener back into operation.

CLEANING THE WATER SOFTENER

To clean the outside of the components of the water softener use only non-abrasive soaps and warm water. Do not use any products containing acids.

USING SALT

Only use CULLIGAN quality salt. Do not use any other salts as a rule: fine or coarse kitchen salts are unfit for this use. It is recommended to use salt in tablet form. Water softeners that use Sodium Chloride (NaCl) for regeneration add Sodium to the water. Persons who are on a low-salt diet must take account of this when calculating their daily Sodium intake; in these cases Potassium Chloride (KCl) can be used as the regenerating agent for the regeneration. Even though Culligan quality salt is used it is in any case necessary to clean the salt container removing any debris that can, over time, accumulate on the bottom of the salt container, so as to ensure the water softener works properly.

WARRANTY

The system is guaranteed for a period of two years, as stated on the Culligan warranty claim/certificate. In the event of the system and/or its component parts being tampered with or damaged by excessive input voltages, warranty will be invalidated. Warranty will be invalidated in the event of the system being put to any use other than that intended