



# Water Softener Installation / Operation Manual



**BrassMaster and BrassMaster Plus Technical Video Library:**  
<https://watercontrolinc.com/residential-technical-support/residential-technical-videos>  
BrassMaster technical videos demonstrate how to set up or remove the control module.  
Replacement control modules are available at <https://watercontrolinc.com/residential-technical-support/>

# Installation Procedure

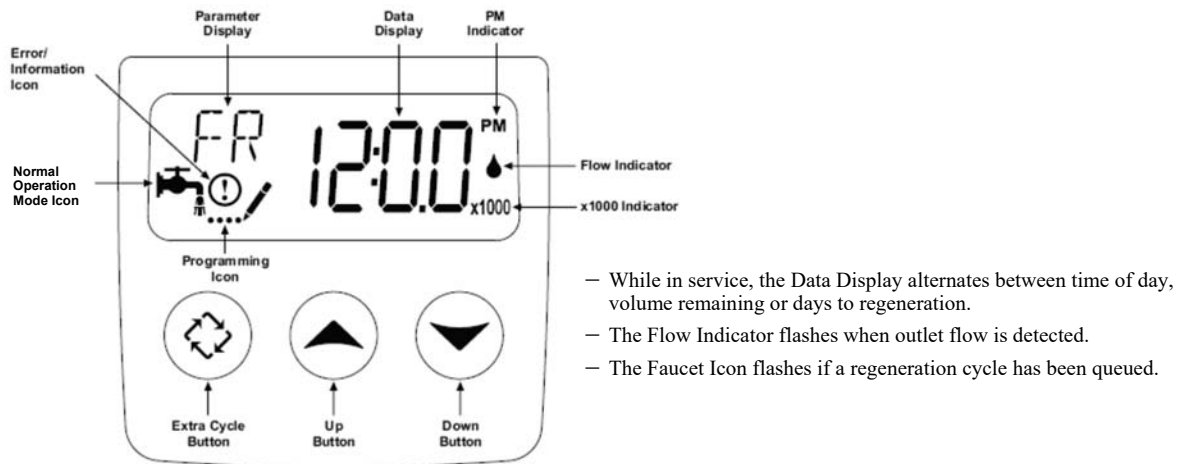
1. **Identify installation location for water softener.** Piping should be such that all household water, with the exception of outside hydrants, flows through softener. A hard water line may be run to a kitchen tap if so desired. This system and installation must comply with state and local laws and regulations.
2. **Connect water piping.** This unit has been supplied with a manually operated bypass device which enables the softener to be isolated from the water service lines for maintenance and service, and also maintain the continuity of the water supply when the softener is disconnected. *Important: Make all sweat-solder connections within 6 inches of softener before applying threaded fittings to supplied bypass valve. Overheating may cause damage to valve.* Turn supplied bypass valve to “Bypass” position and make connections to household water lines. Leave unit in “Bypass” position until startup procedure.
3. **Connect drain line.** Remove barbed drain line fitting from parts bag. Apply thread seal tape to threads, and turn into the female threaded opening on the back side of the control valve. Connect 5/8” drain line (supplied in parts bag) to barbed end of drain line fitting, and run to a nearby drain.  
*IMPORTANT: It is highly recommended that a hose clamp be used to secure tubing to drain fitting to ensure tubing from being removed during elevated pressure situations. Be sure not to submerge drain line end into drain, as an 1 1/2” minimum air gap must be maintained to prevent potential backflow hazard. Firmly secure at drain, while maintaining a minimum 1 1/2” air gap (See detailed drawing on back side of piping diagram).*
4. **Connect brine line (two-tank models only).** Connect 3/8” brine line (supplied in parts bag) to fitting on brine tank, and on the control valve. Tighten both fittings with an adjustable wrench.
5. **Install brine tank overflow line.** Install overflow fitting (supplied in parts bag) into hole in side of brine tank. An owner-supplied overflow line should then be attached and run to a nearby drain. *Failure to run overflow line could cause flooding and water damage should the brine tank overflow.*
6. **Connect to electrical power source.** Connect power cord to a separate 120v, 15 amp, ground fault interrupt (GFI) outlet.

**Proceed to start-up procedure.**

Note: This system is not intended to be used for treating water that is microbiologically unsafe or of unknown quality without disinfection before or after the system.

# Start-Up Procedure

## *Placing unit into service*



1. Fill the mineral tank with water
  - Keep softener in BYPASS
  - Press and hold the extra cycle button for 5 seconds, display will indicate BW, Backwash cycle.
  - Push extra cycle button once and let go, display will indicate BD, Brine Draw cycle.
  - Push extra cycle button again and let go, display will indicate RR, Rapid Rinse cycle.
  - Slowly open bypass valve and allow water to flow for 2-4 minutes. This will allow the media in the tank to become saturated.
  - Open bypass valve to the service position.
  - Push extra cycle button once and let go, display will indicate BF, Brine Fill cycle.
  - Allow timer to fill the brine tank for the entire time on the display. The unit will advance to the service position when completed.
  - Push extra cycle button for 5 seconds, this will start a manual regeneration from start-to-finish. This will take approximately two hours.

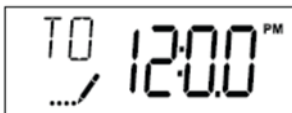
Start-up procedure is now complete.

The unit is now pressurized with water and ready for service.

**Proceed to setting current time of day.**

# Start-Up Procedure

## Setting current time of day



### Setting Current Time / Day

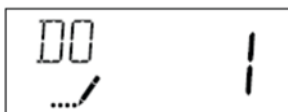
1. Press either the Up or Down buttons to adjust current time of day by one digit. Push and hold either up or down set button to adjust current time of day display by several digits.

## User programming

User Programming Mode Options		
Abbreviation	Parameter	Description
DO	Day Override	The timer's day override setting
RT	Regeneration Time	The time of day that the system will regenerate (meter delayed, timeclock, and day-of-week systems)
H	Feed Water Hardness	The hardness of the inlet water—used to calculate system capacity for metered systems
RC	Reserve Capacity	The fixed reserve capacity

### User Programming Mode Steps (Refer to chart above for user mode indications)

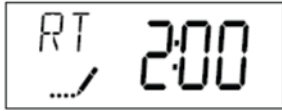
1. Press the Up and Down buttons for five seconds while valve is in service. Display will enter programming mode. (Note: Timer will discard any changes and exit programming mode if any button is not pressed for sixty seconds.



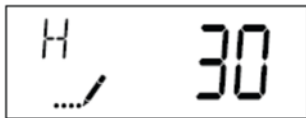
2. **Set Day Override:** This setting specifies the maximum number of days between regeneration cycles. System will regenerate regardless of usage if the days since last regeneration cycle equals the day override setting. This ensures regular regeneration periods. In areas of heavy iron water conditions, this setting should not exceed 5 days.

# Start-Up Procedure

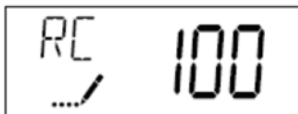
## User programming (cont'd)



3. **Adjust Regeneration Time:** Press the Extra Cycle button to advance to next option. This setting determines the time of day that the unit will enter the regeneration cycle. The most common / default setting is 2:00 AM.



4. **Set Water Hardness:** Press the Extra Cycle button to advance to next option. Set the hardness of the incoming water. For each PPM of iron, add 4 GPG to this setting. This will determine the amount of water usage allowed between regeneration cycles.



5. **Set Fixed Reserve Capacity :** Press the Extra Cycle button to advance to next option. Set the Fixed reserve capacity for the household. This is the amount of water needed in reserve to reach the delayed regeneration time. Standard setting is 50 gallons for each person in the household.

**Control programming is now complete. Press the extra cycle button, and the control will exit from the programming mode and resume normal operation.**

## Sanitization of Unit

After complete installation of unit, dilute 1/2 cup of unscented laundry bleach in 3 gallons of water, and add to brine tank. Initiate a manual regeneration by depressing the extra cycle button. Allow the unit to complete its cycle and advance to the "Service" position. The unit is now sanitized and ready for operation.

# Service

## Checking for a Salt Bridge

A hard crust or "Salt Bridge" can form in the lower half of the salt storage tank. This can be deceiving because the tank will appear to have plenty of salt, but underneath, salt has hardened and when the system regenerates, water cannot quite reach this level to be made into brine (water and salt).

## Breaking a Salt Bridge

Take a wooden broom handle and carefully push it down into the salt, working it up and down. If the tool strikes a hard object (be sure it's not the bottom or sides of the tank), it's probably a salt bridge. Carefully break the bridge with the broom handle. Do not pound on the walls of the tank.

***NOTE:** Salt bridges are typically caused by high humidity or using the wrong kind of salt. In humid areas it is best to fill with less salt, more often. Use only nugget, pellet or coarse solar salt with a purity of 99.5% or higher. DO NOT use rock, block, granulated, and ice cream-making salts, or salt with iron-removing additives.*

## Cleaning the Brine Injector Assembly

**It is recommended to clean the injector and injector screen annually to ensure proper system operation.**

From time-to-time, a softener's brine water injection assembly can become plugged with dirt and debris. This results in poor softener regeneration, which (in-turn) can lead to poor softening performance. Plugging of a brine injector can also cause brine tanks to fill up with water, and eventually overflow.

Cleaning and unplugging a dirty brine injector is an easy process. For a detailed instructional video, please visit: <https://watercontrolinc.com/residential-technical-videos/>

# Winterization Procedures

BrassMaster Northwoods Series water softeners have been specially designed for use in seasonal residences. Their small size provides for easy removal for seasonal storage. Storage should be in an environment where temperatures are maintained above freezing.

## Storage and Removal Procedures:

1. Complete a regeneration cycle by holding down the "Extra Cycle Button." Allow the unit to complete a full regeneration cycle.
2. Turn bypass valve to the "Bypass" position.
3. Hold down the "Extra Cycle Button" to go back into the regeneration mode. Press the "Extra Cycle Button" to advance through each step until you return to the Time of Day. The pressure is now relieved in the system.
4. Disconnect power and drain line connections.
5. Remove stainless steel retainer tabs on the water softener side of the bypass valve with a standard screwdriver, and separate this connection. The BrassMaster Northwoods water softener is now ready for removal and storage. If the softener will be in freezing conditions, carefully remove the control unit and place in a warm environment. Keep distributor tube in place at all times. Siphon water out of distributor tube.

**To re-install your unit, refer to the section "Placing unit into service" on page 3.**

## Maintenance / Warranty Information



All BrassMaster and BrassMaster Plus water softeners feature the Assured Performance Modular (APM) design. If you experience a failure of any valve component, the brass module can be easily removed and replaced. Reference the BrassMaster and BrassMaster Plus Technical Video Library on our website (link is provided below) for detailed steps on how to remove the module. The required (downloadable) form to have your module replaced is also located at this site. Please contact your dealer or Water Control Corporation for module support.

## Salt Maintenance

You must keep salt in the tank. The salt tank operates best when the salt level is below half full. If the tank is filled more than that the salt pellets may "bridge". The salt pellets wedge against each other and do not fall into the water at the bottom. Bridging will eventually provide no salt to make brine. The softener will recharge but not recondition the media. A salt bridge can be broken up using a broom handle or similar rod. Carefully pound it into the salt and the pellets will collapse. After loosening the salt pellets wait 2 hours and start a regeneration. A second recharge may be needed to fully recondition the media. You should only use sodium chloride pellet salt for water softeners. Other types of salt (rock or snow melting) will contain dirt and chemicals that will affect your water softener.

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For factory module support contact: Water Control Corporation  
7150 143<sup>rd</sup> Ave NW • Ramsey, MN 55303  
Phone: 1-866-405-1268 • Fax: 763-427-5665  
[www.watercontrolinc.com](http://www.watercontrolinc.com)

# Official Warranty

## Water Control Corporation

### BrassMaster Series Water Softeners

#### Limited Warranty

Water Control Corporation warrants the control valve to be free of manufacturer's defects for a period of 3 (three) years from the date of installation, and the fiberglass reinforced mineral tank, and plastic brine tank, to be free from leaking due to manufacturer's defects for a period of 5 (five) years. We will, at our discretion, repair or replace defective products. This warranty does not include any costs associated with removal of defective products, or installation of replacement products. All replacement parts will be provided FOB Ramsey, MN. This warranty is transferable.

#### DISCLAIMER OF IMPLIED WARRANTIES

Water Control Corporation makes no warranties except those expressly stated in this document. To the extent permitted by the laws of the applicable state, **ALL WARRANTIES CONTAINED IN THIS DOCUMENT ARE EXPRESSLY IN LIEU OF, AND WATER CONTROL CORPORATION EXPRESSLY DISCLAIMS, ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

#### WHAT IS NOT COVERED BY THESE WARRANTIES

1. Conditions and damages resulting from any of the following:
  - Wear caused by unfavorable water conditions
  - Improper installation, delivery, or maintenance
  - Any repair, modification, alteration, or adjustment not authorized by the manufacturer or an authorized servicer
  - Misuse, abuse, accidents, or unreasonable use
  - Improper setting of any control
  - Incorrect electric current, voltage, or supply
2. Warranties are void if the original serial numbers have been removed, altered, or cannot be readily determined.
3. The cost of service or service call to:
  - Correct installation errors
  - Instruct the user on proper use of the product
  - Transport the product to the servicer
4. Any costs associated with removal of defective products, or installation of replacement products.
5. Consequential, special, or incidental damages sustained by any person as a result of the breach of these warranties. Some states do not allow the exclusion or limitation of consequential or incidental damages, so the above exclusion may not apply to you.