



**Series 96
Owner's Manual**

REV. 2.0

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Installation Record and Water Readings

Date of Installation _____

Model Number _____

Serial Number _____

Date Warranty Card Returned _____

Hardness _____

Iron _____

pH _____

Other _____

NOTES: _____

INTRODUCTION

Congratulations on your decision to purchase a Hague Series 96 water treatment appliance. Recognized internationally for built-in quality, dependability, and ease of service, this appliance represents the state-of-the-art in home water treatment.

While your appliance should be installed and serviced by a professional Hague dealer, important information is contained in this manual which will help you get the maximum benefit and enjoyment from your Series 96.

We urge you to read this information carefully and review it again at any time you notice a change in your water or appliance. Later in the manual is a Troubleshooting section. If you are unable to fix a problem simply, please call your Hague dealer for expert service.

How the Series 96 Works

Rain water is naturally soft. As water travels through the ground, it dissolves some of the rocks and minerals it touches. When the dissolved minerals are calcium and magnesium, the water is said to be hard. Hard water often also contains traces of dissolved iron, dirt, and sediment particles. Although hard water is not harmful to drink, it can damage your plumbing, appliances and clothing.

The Series 96 contains a media tank filled with thousands of very small resin beads. The beads enable the ion exchange process. As hard water flows over the resin, the beads attract calcium, magnesium, and iron ions. These ions attach themselves to the beads, pushing sodium ions out of the way.

Depending on your water hardness, after so many gallons have gone through the softener, the beads are full of hardness and iron and the resin bed is said to be exhausted. An exhausted resin bed must be cleaned or regenerated. During regeneration, concentrated salt solution washes over the resin. This time the beads pick up sodium ions from the salt solution and let go of the hardness and iron ions, which are washed down the drain. Fresh water rinses the salt from the resin tank and the water softener is ready to soften water again.

ROUTINE CARE

Salt

A brine solution is used during regeneration to remove calcium and magnesium from the softening resin. Maintain salt level at least 1/3 full; do not let the brine tank run out of salt. Use solar or pellet salt; do not mix the two. Be sure to purchase a clean grade of salt. Rock salt is not recommended because it contains impurities that can plug the injector assembly.

To add salt to the Series 96:

- Remove the brine tank lid
- Add up to 200 lb (90 kg) of salt to the brine cabinet.

During initial installation, or if the brine tank has been emptied of salt and water, add 5 gallons (18.9 liters) of water or 2" over grid plate.

When using potassium chloride as an alternative to nugget or pellet salt (sodium chloride), you must select the potassium option during the programming of the controller.

We do not recommend the use of Potassium Chloride when iron is present in the raw water supply.

Disinfection

The Series 96 unit may be disinfected with 5.25% sodium hypochlorite, which is the active ingredient in household bleach. To disinfect your appliance:

- Add four fluid ounces of hypochlorite solution to the brine tank. (The brine tank should have water in it to permit the solution to be carried into the softener.)
- Initiate a manual regeneration by pressing and holding the REGENERATE pushbutton for 5 seconds.

WARNING: Do NOT mix bleach with commercial resin cleaners since a dangerous chemical reaction may occur.

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Recommendations

Water used for lawns and gardens does not require softening.

To achieve maximum efficiency from your Series 96:

1. Protect your Series 96, including the drain line, from freezing.
2. If dirt, sand, or large particles are present in your water supply, consult your Hague dealer for filters that will eliminate this problem.
3. Bypass the appliance(s) if well, plumbing, or pump work is required, and turn on an outside tap until water runs clear before putting the appliance back in service.

Control Panel

The Series 96 uses an electronic controller to determine how often the appliance regenerates and the amount of salt used in each regeneration. During installation, the control panel is set for your water conditions and the number of people in your family.

If your electricity is out longer than 17 hours, please reset time of day. All other settings will be maintained. For information on programming your electronic controller see pages 8 through 13.

Manual Regeneration

You may want to force your appliance to regenerate if you anticipate using a large amount of softened water. To manually regenerate the Series 96:

- Press and hold the Regenerate button until the screen displays “GOING TO 1.” This forces the appliance into an immediate regeneration.
- The appliance will then follow the regeneration steps: Backwash 1, Brine/Rinse, Backwash 2, Brine Refill, and then return to the Service position.

NOTE: Performing a manual regeneration will not affect your normal regeneration settings.

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SERIES 96 AND YOUR WATER

Water Testing

The Series 96 like any other appliance, requires correct installation and setting for optimum performance. To ensure proper settings, you need to obtain an accurate water test. Your representative has probably already tested your water for you and determined that the Series 96 is the best water softener for your needs. If you need to obtain a water test you can do so as follows:

For municipally supplied or "City" water, call your water utility company. Ask them the hardness, iron content and pH level of your water.

Series 96 Abilities

The Series 96 services 95% of the water conditioning market. It treats hardness, ferrous iron, and sediment. If the water supply being processed through this product has a compensated hardness of more than 90 grains per gallon or contains bacteria, iron bacteria, tannins, algae, oil, acid, salt or other unusual substances, special equipment must be installed ahead of the Series 96. Consult your dealer for more information about special equipment.

- The Series 96 will automatically reduce influent ferrous iron concentrations from up to 10 parts per million to below 0.3 ppm.
- For the Series 96 to operate at peak performance when iron is present in your water, the water must have a pH of 7 or greater.
- The Series 96 automatically filters to a nominal 20 microns. Each time the appliance regenerates, the sediment filter is automatically cleaned with soft water.

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*Iron reduction capability has been tested in the field by the manufacturer.

INSTALLATION

Pre-Installation Checklist

NOTE: If your water pressure is greater than 90 psi (621 kPa), it is recommended that you use a pressure reducing valve.

Be sure to check the following items before installing a Series 96:

- **Water Pressure**—Not less than 20 psi (138 kPa) nor greater than 120 psi (828 kPa).
- **Minimum Flow Rate Required**—2.4 gpm at the end of drain line.
- **Drain**—Drain the appliance to a floor drain or washer drain. To prevent back siphoning, the installer must provide an adequate air gap or a siphon break.
- **Water Quality**—If water supply contains sulfur, bacteria, iron bacteria, tannins, algae, oil, acid, salt, or other unusual substances, special equipment must be installed ahead of the Series 96.
- **Building Codes**—All installations must conform to local plumbing and electrical codes.
- **Minimum Inlet Pipe Size**—Well water recommended minimum inlet pipe size 3/4" I.D. (19 mm). Municipal water recommended minimum inlet pipe size is 1/2" I.D. (12.7 mm).

Installation Cautions

- Do not install if the above items are not satisfactory.
- Do not install if incoming or outlet piping water temperature exceeds 120°F (49°C).
- Do not allow soldering torch heat to be transferred to valve components or plastic parts.

Do not use for treating water that is microbiologically unsafe or of unknown quality without adequate disinfection before or after the system.

Where to Locate The Series 96

Where you will locate the Series 96 depends on what other water treatment equipment you currently have installed. The Series 96 should be located:

After:	Before:
Water Meter	Water Heater
Pressure Tank	

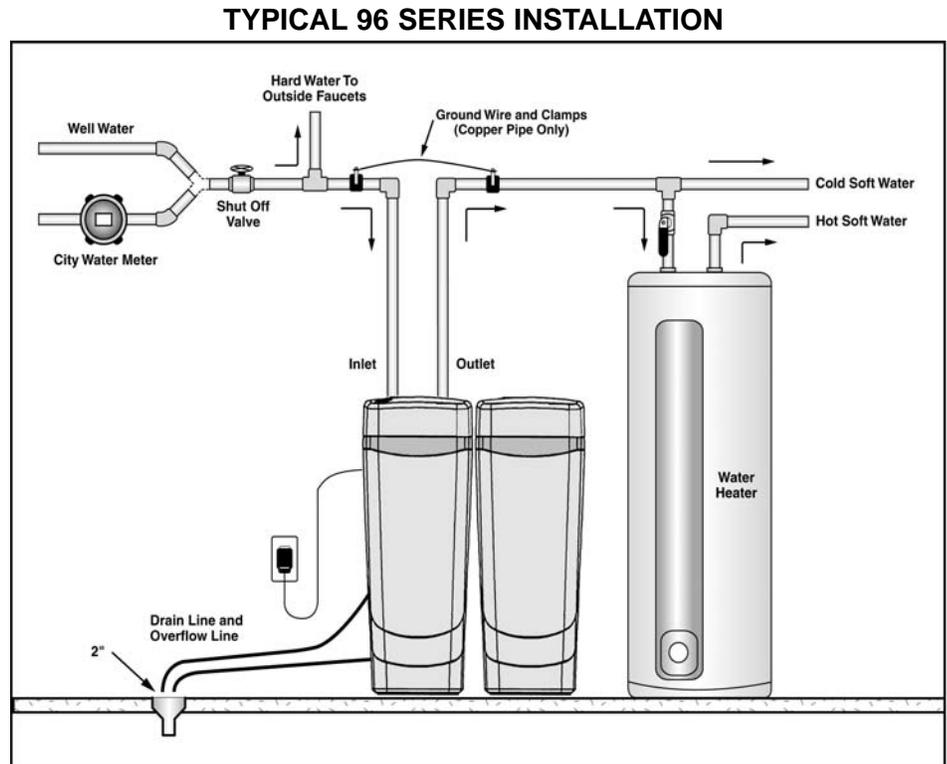


Figure 1

Keep in mind that you need to have a drain available nearby for waste water.

In placing the Series 96, consider the following:

- Install the Series 96 ahead of the water heater to prevent build-up of hard water deposits in the water heater. This placement will maintain the water heater efficiency.
- Install pressure reducing valve if inlet pressure exceeds 90 psi (620 kPa).
- A minimum of 10 feet (3 m) of 3/4" (19 mm) pipe from the outlet of the water conditioner to the inlet of the hot water heater is recommended to reduce the potential for hot water back flowing into the valve.

Connecting the Series 96

1. Place the Series 96 in the desired location. (See Figure 1.)
2. Turn off the electricity and/or water supply to the water heater. For gas heaters, turn gas cock to "PILOT".
3. Make sure the inlet, outlet and drain connections comply with local codes.
4. Check arrows on the bypass valve to be sure the water flows in the proper direction.
Caution: Do not plumb backwards. Inlet is unsoftened water; outlet is softened water.
5. Install the drain line so that there is a 2" (50 mm) air gap between the drain line and the drain line receptacle. The drain hose must be a minimum of 1/2" (12.7 mm) I.D. tubing and should make the shortest run to a suitable drain.
6. Connect the salt tank to the valve head with the flexible 3/8" (9.5 mm) plastic tube included with the system. Be sure to insert the plastic insert in the end of the tube when connecting it to the salt tank.
7. Place the appliance in the bypass position and turn on the main water supply.
8. Open the nearest cold water faucet to flush the plumbing of any excess soldering flux, air, or any other foreign material.
9. Close the faucet and check for leaks. If leaks are found turn off the main water supply and open the nearest cold water faucet to depressurize the lines. Close the faucet to eliminate siphoning action. Repair leaks. Return the bypass to the "service" position.
10. Add water to the brine tank. Fill to a minimum of 2" (50 mm) above the salt shelf. After the first regeneration, the appliance will automatically refill the correct amount of water in the brine tank.
11. Plug in the transformer.
12. Program the Electronic Controller as outlined on pages 8 through 13.
13. Initiate a manual regeneration and monitor appliance for proper operation.
14. Make sure the bypass valve is left in the "service" position.
15. Fill the brine tank with pellet or solar salt.
16. Open the inlet line and turn on the electricity to the water heater. For gas heater, turn gas cock to "ON".
17. To complete the installation, open a cold water tap and allow the unit to flush for 20 minutes or until approximately 72 gallons has passed through the unit. Verify flow rate on controller, indicating water flow. Test water at test port to verify soft water.
18. Place covers on both cabinets.

PROGRAMMING THE SERIES 96

NOTE: To ensure expected performance, the controller will not allow you to enter certain values for the number of people if it means the amount of softening required would exceed the appliance's capacity. Should the controller not accept a value, check the capacity and salt settings.

The Series 96 allows a variety of programming options, from setting the time of regeneration and the number of people to adjusting the hardness, capacity settings, and cycle settings*.

Here's how it works:

The Series 96 calculates how much water a family will need in a day based on the number of people. Whenever the gallons remaining drops below the reserve capacity, the gallons remaining will be replaced with the word "Regen Scheduled" and the Series 96 will automatically regenerate when it reaches the REG TIME. Also as a safety feature, if the appliance's capacity is exceeded, a demand (immediate) regeneration will occur. This way a family should never run out of soft water and the appliance will not regenerate more than it needs to.

*For optional cycle settings, see page 36

NOTES: _____

Figure 2

SERVICE SETTINGS

This section is recommended for qualified service personnel only. The appliance control must be set correctly for proper performance.

REGENERATE

FUNCTION: Multi-purpose. 1.) Used to put the appliance into an immediate regeneration. Press and hold (approximately 5 seconds) until display changes to “Going to 1”. The appliance is now in regeneration and will return to “Gal. Remain” after completion of all cycles. 2.) Used to “speed up” or toggle through all the regeneration cycles.

CUSTOMER SETTINGS

This section is recommended for qualified service personnel only. Must be set correctly for proper performance.

CHANGE

FUNCTION: Used to change values of parameters that can be set. Used in conjunction with SELECT button. Press and release the Select button to move cursor one digit to the right of parameter that can be set. When cursor is at extreme right position, press again to reset cursor to extreme left position.

SELECT

FUNCTION: Used to control cursor movement when in CUSTOMER & SERVICE SETTINGS modes. Used in conjunction with CHANGE button. Press and release the Select button to move cursor one digit to the right of parameter that can be set. When cursor is at extreme right position, press again to reset cursor to extreme left position.

DISPLAY

FUNCTION: When pressed and held, “CUSTOMER SETTINGS” is displayed. Hold for 5 seconds and the customer programming mode is entered. Used simultaneously with the SELECT button to enter service settings program mode, press and hold both buttons for 5 seconds while holding “SERVICE SETTINGS” is displayed. (Note: both buttons must be pressed.)

SCROLL BACK

FUNCTION: Used to toggle back to the previous parameter setting in the event of a mistake in programming. This feature eliminates the need to toggle through the entire program to correct an input error.

CONTROL PANEL DISPLAY Note: It is normal to see the display area toggle between “Gal. Remain”, “Flow GPM” and “Days to Regen” (Mode 1 only).

FUNCTION: Shows status of control; NORMAL OPERATING mode, SERVICE SETTINGS mode or CUSTOMER SETTING mode. It is very important to know which mode the control is in for proper operation.

WATER FLOWING INDICATOR

FUNCTION: Shown in the LCD display, it indicates that water is flowing through the Series 96. Flow rate is displayed in gallons per minute. This is useful for checking for proper plumbing and leaks.



Description Of The Two Series 96 Operating Modes

CAUTION: Be sure the controller is firmly “locked” onto the drive end cap assembly.” The four tabs on top of the drive end cap will allow the clips on the bottom of the controller case to lock onto the end cap tabs. (See detail diagram on page 18; fig. 3.)

MODE 1

TIMER MODE: Will regenerate based on frequency. Example: every 2 days or as specified up to 12 days. Time of regeneration can be set.

MODE 2

PATENTED SAVEMATIC - DEMAND DELAYED: Is based on actual water usage and total capacity of the appliance. Time of regeneration can be set. If total capacity is depleted before set regeneration time, a forced regeneration will occur.

Note: Mode 1 and 2 are equipped with capacity Guard. This ensures that you do not run out of conditioned water due to excess water usage.

THE FOLLOWING EXAMPLE takes you through the steps involved for setting the Series 96 SYSTEM CONTROL. If you follow these steps, you will set the Series 96 for OPERATING MODE 2, DEMAND DELAYED operation. Mode 1 uses a similar procedure. It is necessary to enter the “SERVICE SETTINGS” first, followed by the “CUSTOMER SETTINGS”. Press and hold the SELECT and DISPLAY buttons simultaneously for 5 seconds. The display will show: **Set Language ENG**. Release both buttons.

- 1.00 Push the DISPLAY button to step to the next parameter. The display will show: **Units ENG**
- 1.00a Push the CHANGE button to toggle English/metric units of measure. For this example, set to: **Units ENG**.
- 2.00 Push the DISPLAY button to step to the next parameter. The display will show: **Soft.V.#1.07**. This parameter may not be set.
- 3.00 Push the DISPLAY button to step to the next parameter. The display will show: **Mode 2** The “Mode #” is the number of the OPERATING MODE for which the systems control is set. For this example, leave at: **Mode 2**.
- 4.00 Push the DISPLAY button to step to the next parameter. The display will show: **Hard. Gr. 040** The 040 is the hardness number of the water tested. This number is to be the actual hardness reading and is not compensated for iron.
- 4.00a Push and release the SELECT button until the cursor (_) is positioned in the display as follows: **Hard. Gr. 040**. The cursor is now under the “ten” position.
- 4.00b Continue pushing the SELECT and CHANGE buttons until the desired hardness number is displayed. Example: **Hard. Gr. 025**
- 5.0 Push the DISPLAY button to step to the next parameter. The display will show: **Iron ppm 00** This parameter is used to calculate a compensated hardness automatically.
- 5.00a Push the SELECT and CHANGE buttons until the desired iron number is displayed. Example: **Iron ppm 00**
- 6.00 Push the DISPLAY button to step to the next parameter. The display will show: **Mang. ppm 00**
- 6.00a Push the SELECT and CHANGE buttons until the desired manganese number is displayed. Example: **Mang. ppm 00**
- 6.00b Push the DISPLAY button to step to the next parameter. The display will show: **SALT = Sodium. WARNING!** When iron and/or manganese is present in the water supply, we do not recommend using potassium chloride as a regenerant. Iron and/or manganese bacteria may develop and foul the conditioning media and may void the warranty.
- 6.00c Push the SELECT and CHANGE buttons until the desired regenerant is selected. EXAMPLE: **Salt = Sodium**.

- 7.00 Push the DISPLAY button to step to the next parameter. The display will show: **Comp. Hard. 00025**
This parameter is the calculated compensated hardness using the hardness, iron and manganese settings. The formula is (4 x each ppm iron) + (4 x each ppm manganese) + hardness = compensated hardness. This is not a parameter that can be set. The display should now read: **Comp. Hard. 00025**
- 8.00 Push the DISPLAY button to step to the next parameter. The display will show: **Capty. Gr. 24480**
This parameter is used to set the softening capacity of the appliance. (For optional cycle settings, see page 36.)
- 8.00a Push the SELECT and CHANGE buttons until the desired capacity number is displayed.
In this example, set to: **Capac. Gr. 24480**
- 9.00 Push the DISPLAY button to step to the next parameter. The display will show: **72-96hr Regen Yes**
This parameter, if set to “Yes”, is used to force the appliance to regenerate every 96 hours if regularly scheduled regenerations based on water usage do not occur in 96 hours or less intervals. This should always be “yes” if iron is present in the water.
- 9.00a Push the CHANGE button to toggle parameter value from “No” to “Yes”. In this example, set to: **96hr Regen No**
- 10.00 Push the DISPLAY button to step to the next parameter. The display will show: **Backwash 1 03.0**
(See page 36.) The “03.0” is the time, in minutes to the nearest tenth, for which the first backwash cycle can be set.
- 10.00a Push the SELECT and CHANGE buttons until the desired backwash time is displayed.
In this example, set to: **Backwash 1 03.0**
- 11.00 Push the DISPLAY button to step to the next parameter. The display will show: **Brine/Rinse 30.0**
The “30.0” is the time, in minutes to the nearest tenth, for which the first brine and slow rinse cycles can be set.
- 11.00a Push the SELECT and CHANGE buttons until the desired combined brine and slow rinse cycle time is displayed. In this example, set to: **Brine/Rinse 30.0**
- 12.00 Push the DISPLAY button to step to the next parameter. The display will show: **Backwash 2 01.0**
The “01.0” is the time, in minutes to the nearest tenth, for which the second backwash can be set.
- 12.00a Push the SELECT and CHANGE buttons until the desired backwash time is displayed.
In this example, set to: **Backwash 2 01.0**

NOTES: _____

- 13.00 Push the DISPLAY button to step to the next parameter. The display will show: **Salt lbs. 06.0**
This parameter sets the amount of salt to be used to achieve the capacity setting.
- 13.00a Push the SELECT and CHANGE buttons until the desired salt setting is displayed.
In this example, set to: **Salt lbs 06.0**
- 14.00 Push the DISPLAY button to step to the next parameter. The display will show: **Turbine Test NO**
This feature should only be used by qualified service personnel. It is intended to be used for diagnostic purposes only. **WARNING! Do not engage this feature.**
- 14.00a Push the SELECT and CHANGE buttons until the correct value is displayed.
In this example, set to: **Turbine Test NO**
- 15.00 Push the DISPLAY button to step to the next parameter. The display will show: **Reg. Tonight NO**
This parameter, if set to YES, will force a regeneration at the next set regeneration time (i.e. 02.00.) After the regeneration, the parameter will automatically reset to "No."
- 15.00a Push the CHANGE button to toggle between Yes or No. In this example, set to: **Reg. Tonight YES**
- 16.00 Push the DISPLAY button to step to the next parameter. The display will show: **Filter? No.**
This parameter, if set to YES, is for model selection only and has no effect on the function of the appliance. In this example, set to: **Filter, NO.**
- 17.00 Push the DISPLAY button to step to the next parameter. The display will show:
Gal. Remain 00979

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This is the normal operation display for OPERATING MODE 2. The 00979 represents the number of gallons of softening capacity between regenerations. This completes the SERVICE SETTINGS mode. Even though the SERVICE SETTING mode has been completed, the Series 96 is not ready for service until the CUSTOMER SETTINGS mode is completed. The following example takes you through the steps required for setting the parameters of the CUSTOMER SETTINGS mode for OPERATING MODE 2.

- 1.00 Push and hold the DISPLAY to enter CUSTOMER SETTINGS mode. The display will show: **Set Time 00:00 AM** This parameter is to be set to the current time of day.
- 1.00a Push the SELECT and CHANGE buttons until the desired time is displayed.
In this example, set time to: Example: 11:00 AM or 05:00 PM.
- 2.00 Push the DISPLAY button to step to the next parameter. The display will show: **Reg Time 02:00 AM**
This parameter is to be set for the desired time a normally scheduled regeneration is to occur.
- 2.00a Push the SELECT and CHANGE buttons until the desired time is displayed.
In this example, set to: Reg. Time 02:00. (02:00 is 2:00am)
- 3.00 Push the DISPLAY button to step to the next parameter. The display will show: **# People 04**
- 3.00a Push the CHANGE button until the correct number of people in the household is displayed.
In this example, set to: **# People 05**

- 5.00 Push the DISPLAY button to save the parameter settings and exit the CUSTOMER SETTINGS mode.
The display will show: **Gal Remain 00979**

If you followed the above directions correctly, your Series 96 Control is ready for OPERATING MODE 2 service.

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Blending Valve Adjustment

NOTE: Use of the blending valve is not recommended where objectionable concentrations of ferrous iron or sediment are present. Because the blending valve is mixing "raw" water with softened, any ferrous iron or sediment in the "raw" water will also be blended and reintroduced into the softened water line.

In some situations, a blending valve may be desired. The amount of hardness blended back into the water line is determined by the hardness of the incoming water and the setting of the blending valve. Where extremely hard water is present, the blending valve may only need to be "cracked" open. Where the incoming water has relatively low levels of hardness, the blending valve will need to be opened further.

The blending valve is located between the input and output connections on the top of the bypass valve. It is adjusted by placing a flat blade screwdriver in the slot provided and turning clockwise to open. Total movement of the blending valve from full closed to full open is 1/4 revolution.

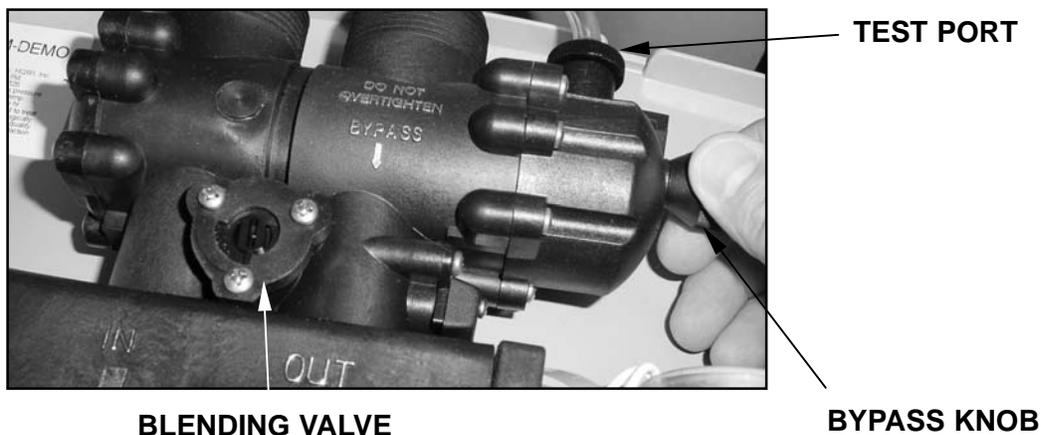
Precise setting of the blending valve will require "trial and error" testing. The initial setting should be conservative. Because of the blending valve's ease of access and adjustment, the end user can increase or decrease the setting according to their preference over a period of time.

WHEN & HOW TO USE THE BYPASS VALVE

The bypass valve is intended to provide isolation of the Series 96 appliance in the event of a system malfunction, leak, or if the use of untreated water for watering plants, shrubs, or lawns is not available otherwise.

Facing your appliance from the front, the bypass is located on the main control valve (See below.) To engage the bypass, locate the cone-shaped knob on the right hand side, behind the controller. Turn the knob counter-clockwise until it stops. Now the appliance is bypassed and all water to the home is raw, untreated water.

To prevent untreated water from entering the home, do not use water while watering your landscape. When watering is finished, return the appliance to service by turning the knob clock-wise until it stops.



TROUBLESHOOTING

This section describes solutions to the most common problems that can occur. If you cannot solve the problem easily, call your Hague dealer for service.

Problem	Cause	Action
No soft water after regeneration	No salt in brine tank.	Add salt
	Sediment in brine tank has plugged the brine line and/or air check. (See Fig. 4, 11.)	Remove the brine line and flush clean. Clean air check. Clean brine tank.
	Refill control is plugged. (See Fig. 9.)	Remove brine piston housing and clear debris from the flow control.
	Drain line is pinched, frozen or restricted (See Fig. 1.)	Straighten, thaw or unclog the drain line.
	Clogged injector assembly. (See Fig. 6.)	Remove injector cap and clean nozzle and throat with a wooden toothpick. Replace throat if removed.
No soft water.	Salt bridge has formed.	High humidity or the wrong kind of salt can create a salt bridge. This is a crust that forms an empty space between the water and salt. To test, use a blunt object like a broom handle. Push the handle into the salt to dislodge the salt bridge.
	The plumbing bypass valve is in the bypass position (See pg. 14.)	Place bypass valve in the service position.
	Appliance is plumbed in backwards. (See Fig. 1.)	Check that appliance is plumbed properly.
	Extended power outage.	Reset time. (See Customer Settings.)
	Water hardness has increased.	Reset water and reset hardness. (See Installation Record.)
	Not metering water.	Flow should be indicated with water usage. If no flow, see below.
	Blending dial is open.	Make sure blending dial is closed.
No flow is indicated when water is flowing.	The bypass valve is in the bypass position (See pg. 14.)	Place bypass in the service position.
	Appliance is plumbed in backwards. (See Fig. 1.)	Check that appliance is plumbed properly.
	Sensor not receiving signal from magnet. (See Fig. 7.)	Remove sensor from bypass housing. Test with magnet on each flat side of sensor. One side should indicate flow. The other will not. If flow is indicated, check turbine. If no flow, replace sensor.
	Turbine is jammed. (See Fig. 7.)	Remove bypass valve and clear debris from turbine.

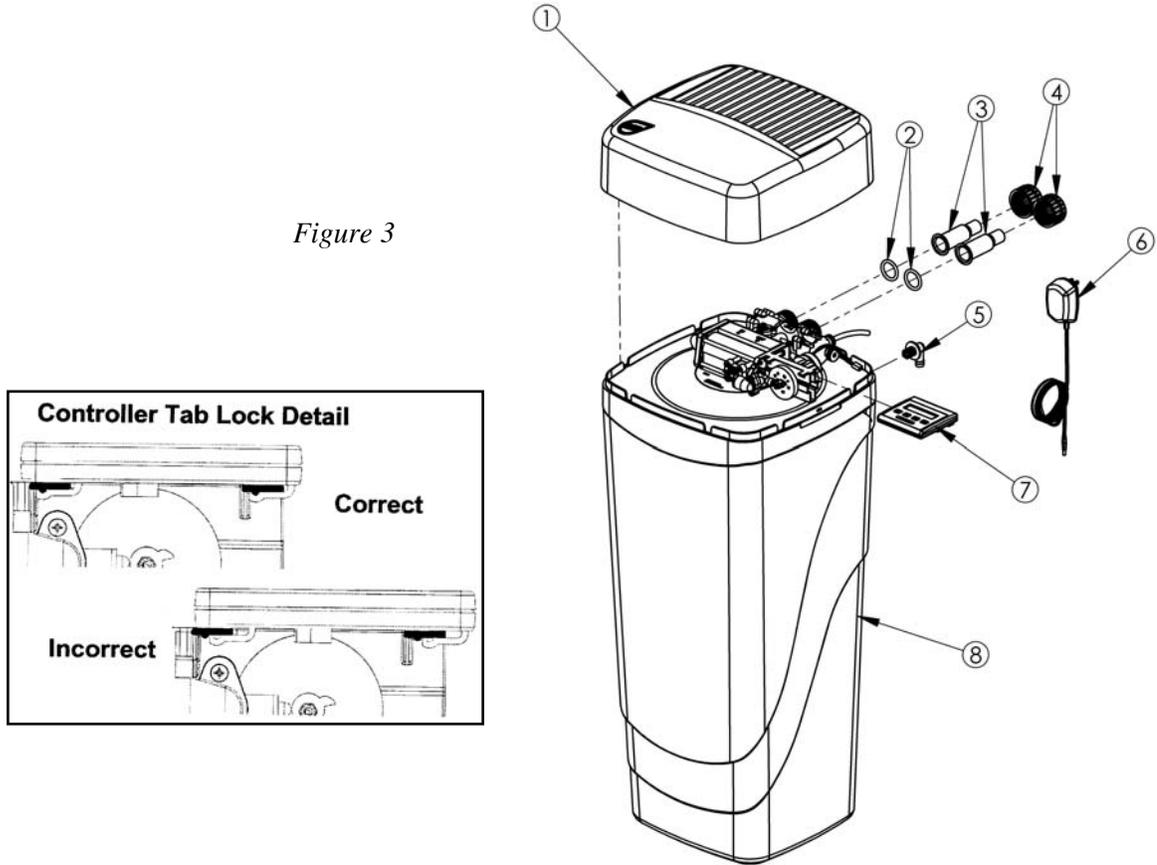
NOTES: _____

TROUBLESHOOTING

Problem	Cause	Action
Flow is indicated when water is not being used. (Fig. 2.)	There is a leak in your household plumbing system	Repair the leak.
No read-out in display.	Electric cord is unplugged.	Plug in transformer. (Fig. 1.)
	No electric power at outlet.	Check power source. Make sure outlet is not controlled by a switch.
	Defective transformer.	Test with volt meter for 12 VAC at control. If less than 10 VAC or greater than 14 VAC, replace transformer.
	Defective circuit board.	With 12 VAC present at control, replace computer control.
High ambient temperature. If temperature exceeds 120 degrees F, display will blank out. This does not affect the operation of the controller.		See Equipment Specifications, page 37.
Appliance stays in regeneration. Cycle display remains “going to __ ? __”.	Defective magnet disk.	Replace magnet disk. (See Fig. 8.)
	Foreign object in valve body.	Remove foreign objects from valve body (See Fig. 5.)
	Broken valve assembly. Motor running. Magnet disk not turning.	Repair drive end cap. (See Fig. 8)
Excess water in brine tank.	Restricted, frozen or pinched drain line. (See Fig. 1.)	Remove restriction, thaw or straighten drain line.
	Plugged brine line, brine line flow control or air check (See Fig. 9, 11.)	Clean flow control, air check and brine line. (See Fig. 9, 11.)
	Sticking brine refill valve. (See Fig. 9.)	Remove brine valve. Lubricate piston with silicone grease and reassemble.
Not regenerating in proper sequence.	Defective magnet disk.	Replace magnet disk. (See Fig. 8.)
	Defective controller	Replace controller. (See Fig. 3.)
Salty water.	Plugged injector.	Clean injector screen, nozzle and throat (See Fig. 6.)
	Low water pressure.	Maintain minimum pressure of 20 psi (See Equipment Specifications, pg. 37.)
	Drain line or flow control is restricted.	Remove restriction.
	Brine line restricted or crimped.	Remove restriction, replace if crimped.
	Excessive amount of water in brine cabinet.	Verify correct water level relative to salt setting. Check brine line and fittings for loose connections (See Brine Cabinet Data, page 35.)
	Insufficient rinse time.	Check cycle setting (pg 36) for proper brine rinse time. Adjust time, if necessary.
	Intermittent pressure drop from feed source.	Install check valve on the inlet water line to the appliance. (Check local plumbing codes first.)

SERIES 96 HOOK-UP/COVER ASSEMBLY

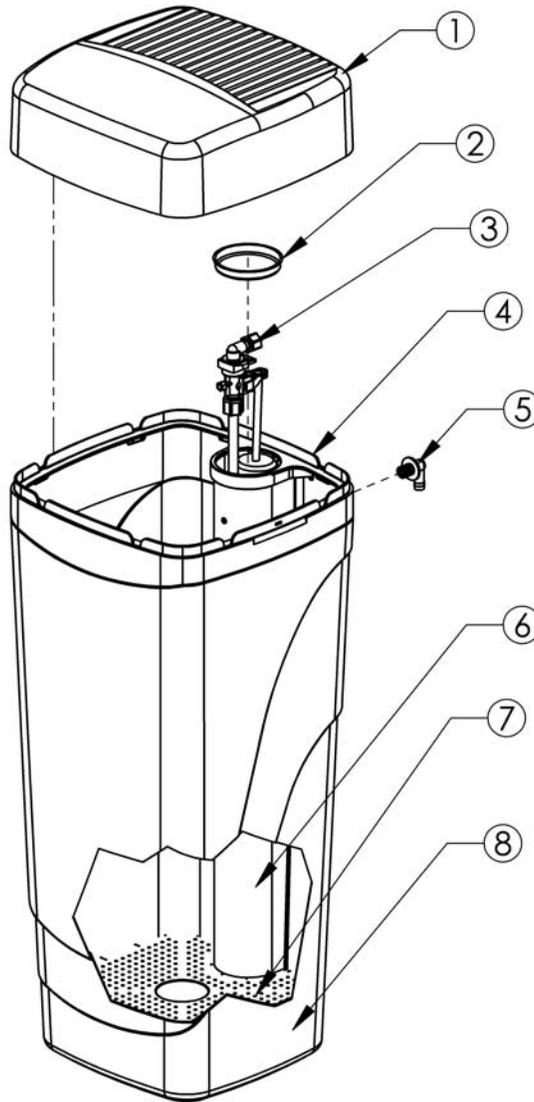
Figure 3



ITEM NO	QTY.	PART NO.	DESCRIPTION
1	1	54501	Media Cabinet Cover Assembly
2	2	90837	Bypass Nut Gasket
3	2	90254	1" or ¾" Copper Adapter
	2	90256	PVC Adapter (optional)
	2	90258	1" Copper Adapter (optional)
4	2	90251	Bypass Nut
5	1	CO700A	Cabinet Overflow
6	1	93245	12V Transformer/Power Cord
7	1	54550	5 Button Control Assembly
8	1	54003	Cabinet

SERIES 96 BRINE TANK ASSEMBLY

Figure 4



For brine tank information on water depth and salt usage, see page 34

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	54006	Brine Tank Cover
2	1	90103	Brine Well Cap
3	1	54525	Safety Shutoff Assembly
4	1	54007	Support Panel (BT)
5	1	CO700A	Cabinet Overflow
6	1	54008	Brine Well
7	1	54009	Grid Plate
8	1	54003	Cabinet

SERIES 96 TANK/CABINET ASSEMBLY

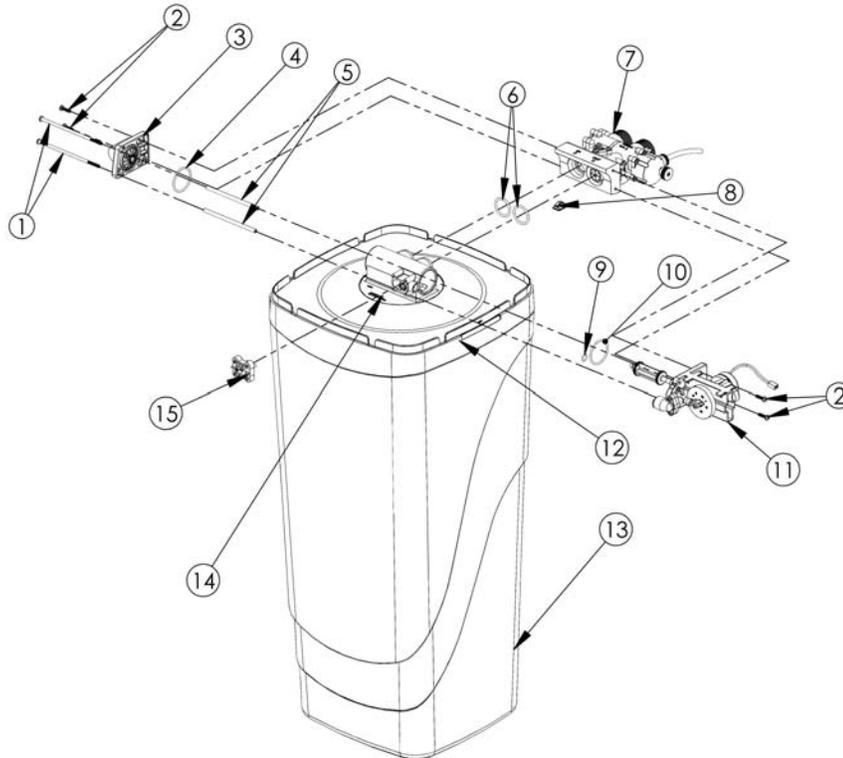


Figure 5

NO.	PART NO.	QTY	DESCRIPTION
1	93809	2	Screw
2	93870	4	Screw
3	90614	1	Drain End Cap Assembly
4	93808	2	O-Ring
5	93835	2	Sleeve
6	93838	2	O-Ring
7	90615-94	1	Bypass Assembly
8	93833	1	Cord Clip
9	90828	1	O-Ring
10	(not used)		
11	95301T-JG	1	Drive End Cap Assembly
12	54013	1	Support Panel
13	54003	1	Cabinet
14	95505	1	Resin Tank
15	93501	1	Injector Assembly

SERIES 96 INJECTOR ASSEMBLY

Part Number 93501

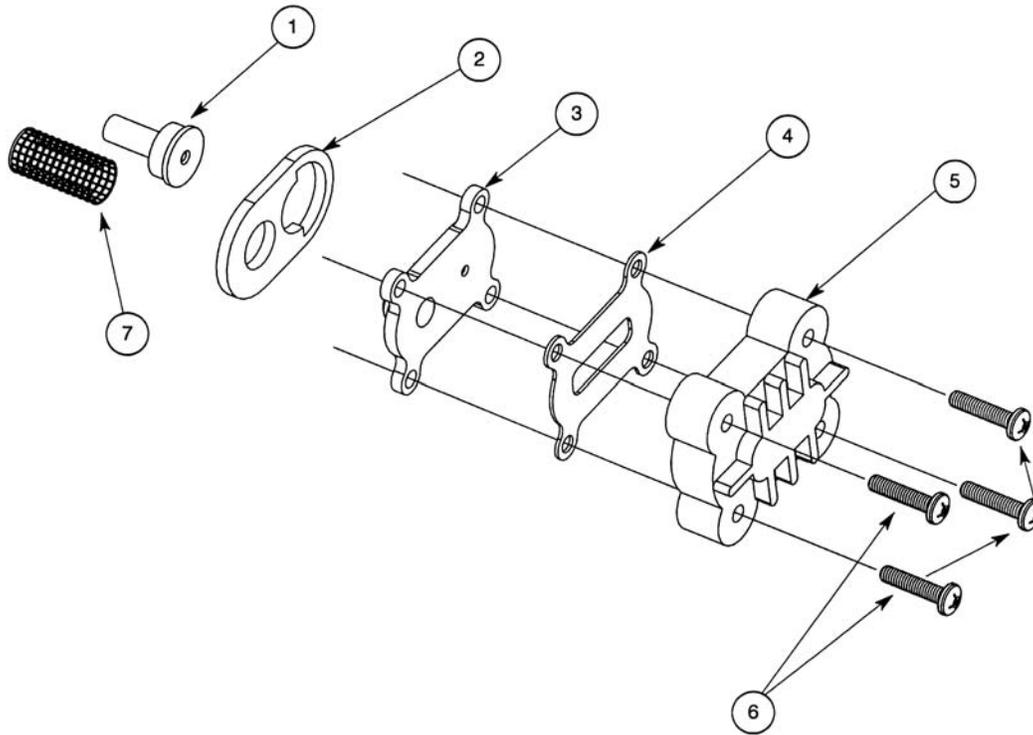


Figure 6

NO.	PART NO.	QTY	ITEM	DESCRIPTION
1	93223	1	Injector Throat	Creates the vacuum that draws the brine solution from the brine cabinet in conjunction with the Injector Nozzle (Part No. 93221). The center hole should be clear of debris, round, and undamaged. The Injector Throat should be pressed flush into the opening in the valve. If the Injector Throat is removed, it must be replaced with a new one.
2	93220	1	Bottom (Thick) Injector Seal	Seals between the Injector Nozzle and the Main Valve Body. The gasket has a definite hole pattern that has to match up with the Nozzle and Main Valve Body opening. The gasket seals at its outer edges and between the inlet screen and nozzle opening. These areas must be free of defects such as tears or pits and be free of debris.
3	93221	1	Injector Nozzle	Creates the vacuum that draws the brine solution from the Brine Cabinet in conjunction with the Injector Throat (Part No. 93223). There are two openings in the Injector Nozzle plate. The small hole, flush on both sides, is the one that creates the "injection-stream" that enters the Injector Throat. It is very important that this hole be clear of debris, round, and undamaged. If this hole becomes "clogged," do not use anything to clear this opening that could damage it, such as metal objects. Use a clean cloth and flush with water. If necessary, a wooden toothpick may be used. When assembling to the Main Valve Body, the Injector Nozzle hole should line up with the Injector Throat.

NO.	PART NO.	QTY	ITEM	DESCRIPTION
4	93232	1	Top (Thin) Injector Seal	Seals between the Injector Nozzle and the Injector Cap. The gasket must be free of defects such as tears or cuts and be free of debris.
5	93222	1	Injector Cap	Holds the Injector Assembly together and seals the assembly to the Main Valve Body.
6	90807	4	Injector Screw	These four machine screws should be tightened evenly and snug.
7	93810	1	Injector Screen	Acts as a pre-filter to keep debris from entering the Injector Nozzle and Injector Throat. Attaches to the cylinder on the Injector Nozzle plate and spherical "bump" inside the Main Valve Body. Some compression of the Injector Screen may occur during assembly. The openings in the Injector Screen must be clear to ensure proper flow to the Injector Assembly.

(P/N 93501 Injector Assembly contains all parts, 1-7)

NOTES: _____

**SERIES 96 BYPASS
ASSEMBLY**

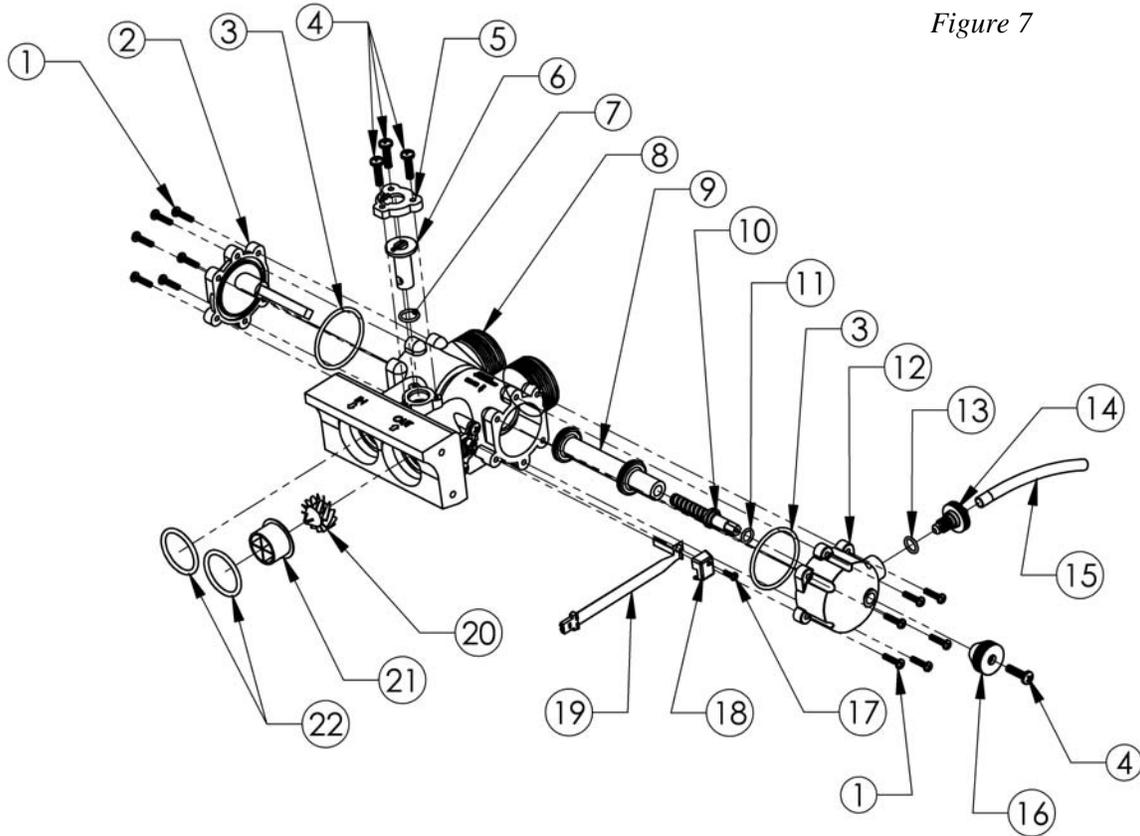


Figure 7

NO.	QTY.	PART NO.	DESCRIPTION	NO.	QTY.	PART NO.	DESCRIPTION
1	12	90807	Screw	12	1	90263	Bypass Endcap - right
2	1	90262	Bypass Endcap - left	13	1	90828	O-Ring
3	2	93808	O-Ring	14	1	90226	Test Port Valve
4	4	90802	Screw	15	1	90812	Tubing 4.0"
5	1	90252	Cap - Blending Valve	16	1	90221	Bypass Piston Knob
6	1	90222	Blending Valve	17	1	90809	Screw
7	1	90827	O-Ring	18	1	90232	Turbine Sensor Cap
8	1	90246	Bypass Housing	19	1	93858	Turbine Sensor Assembly
9	1	90616	Bypass Piston Assembly	20	1	90522	Turbine Assembly
10	1	90218	Bypass Piston Drive Shaft	21	1	93229	Flow Director
11	1	90803	O-Ring	22	2	93838	O-Ring

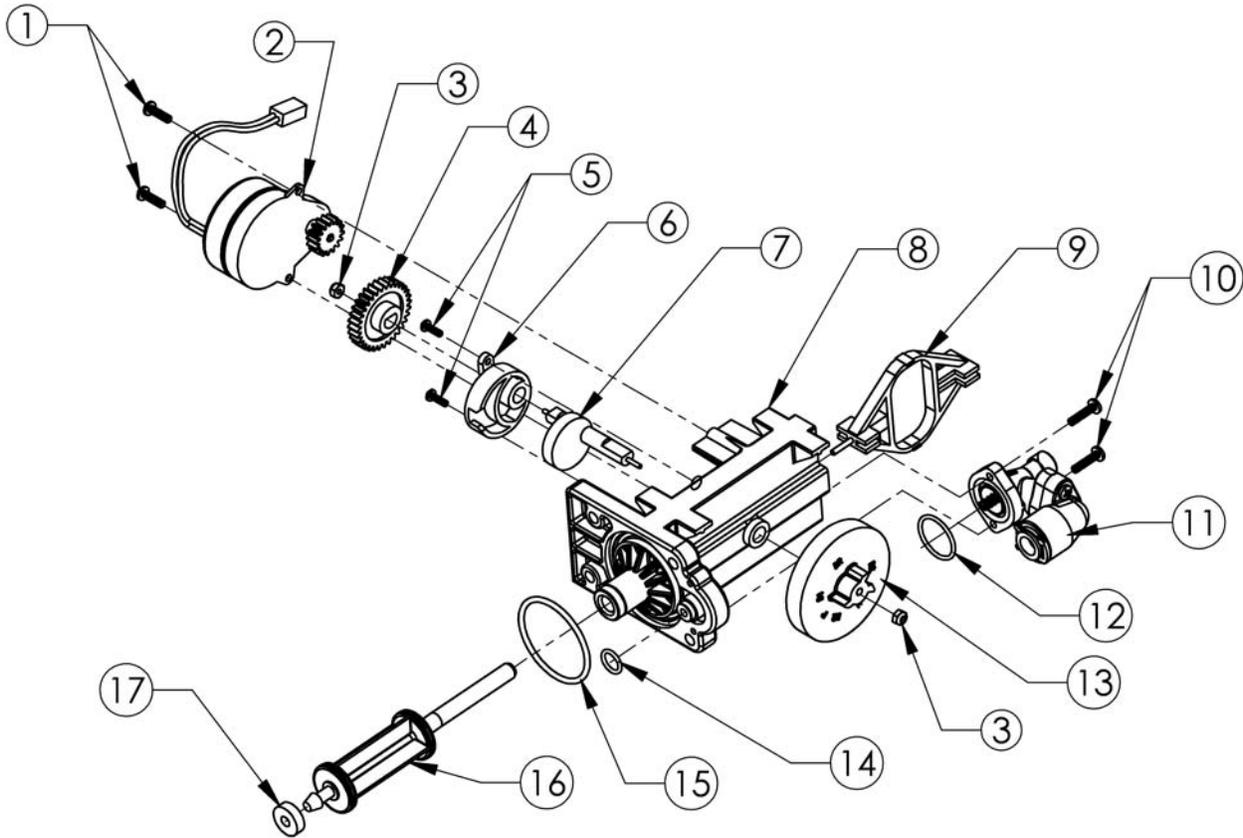
PART NO.	QTY	ITEM	DESCRIPTION
90246-94	1	Bypass Housing	Makes the connection between the plumbing and the Main Valve Body. Also, contains the "Hard Water" Blending Valve and Bypass Piston. The recommended seal for the 1 ¼" male inlet-outlet threads is the nylon Hook-up Nut (Part No. 90251), O-ring (Part No. 90837), and Copper Adapter (Part No. 90254). Make sure the O-ring is between the housing and the Copper Adapter. The O-ring seal areas at the main Valve Body inlet and outlet must be smooth and free of defects and debris, and lubricated with silicone grease before assembling. When attaching to the Main Valve Body, put O-rings on the male bosses on the Valve Body and push the Bypass into place. A "snap" can be heard when the Bypass slides into place. When released, the Bypass should stay in place. If not, the O-rings may be "pinched". If the O-rings are pinched, replace with new ones. The Bypass comes pre-assembled with the Sensor housing and turbine axle. These are not field serviceable and if damaged, must be replaced with a new assembly. The Bypass Piston bore is to be smooth and at the recessed areas have a smooth transition (no sharp corners) to the seat areas.
90262	1	Bypass End Cap-Left	Seals the left Piston opening on the Bypass Housing (Part Number 90246-94). The opening is sealed with an O-ring used as an axial or "face" seal. The O-ring sits in a groove in the End Cap. This groove must be free of defects such as pits or scratches and also free of debris. When assembling the End Cap to the Housing, care should be taken to make sure that the O-ring stays in the groove in the End Cap. If misaligned, the O-ring can become pinched and leak. Also, on the End Cap is the Piston Axle, a 1/4" square shaft that acts as a guide/slide and anti-turning mechanism for the Bypass Piston.
90263	1	Bypass End Cap-Right	Seals the right Piston opening on the Bypass Housing (Part Number 90246-94). The opening is sealed with an O-ring used as an axial or "face" seal. The O-ring sits in a groove in the End Cap. This groove must be free of defects such as pits or scratches and also free of debris. When assembling the End Cap to the Housing, care should be taken to make sure that the O-ring stays in the groove in the End Cap. If misaligned, the O-ring can become pinched and leak. Also, on the End Cap is the guide/bushing for the Bypass Piston Drive Shaft. There is an O-ring seal at the opening for the Drive Shaft. This seal must be free of defects such as pits or scratches and also free of debris.
90218	1	Bypass Drive Shaft	The Bypass Drive Shaft has an acme thread which is used to move the Piston from the "bypass" to "service" position. When operating the Bypass, to achieve either "service" or "bypass," it is only necessary to turn the Handle (Part Number 90221) until the Piston (Part Number 90616) stops. Additional pressure (torque) will not improve the seal. As a matter-of-fact, once the Piston reaches the stop at either position, it can be backed off up to one-half turn of the handle and still achieve a seal.
90616	1	Bypass Piston Assembly	The white Teflon Hydro-slide O-ring covers should be free of defects such as indentations and cuts. The Piston should move freely into and out of the Bypass Housing without damaging the Hydro-slides. If the Hydro-slides catch, tear, or crimp, the Housing should be replaced. NOTE: Some compression will occur when the Hydro-slides pass through the seal areas.
90221	1	Bypass Knob	
90222	1	Blending Valve	Permits the addition of "hard water" into the soft water outlet. It is closed when pointing toward the Main Valve Body, and open when pointing toward the inlet side.
90252	1	Blending Valve Cap	Held in place by the three 1/2" screws. Should be in the proper orientation.
90226	1	Test Port Valve	Used to draw water samples for testing of treated water. NOTE: The Bypass must be in the "service" position to get an accurate sample. There are two types of seals on the Test Port. One seal is an O-ring which seals off the threaded area when the Valve is opened. The other seal is a compression seal between the Test Port Valve material and the Right End Cap material. If this seal is "overtightened," it can damage the sealing area on the End Cap causing a permanent leak.

PART NO.	QTY	ITEM	DESCRIPTION
90802	6	Bypass Handle and Sensor Housing Screw and Blending Valve Cap Screw	
90522	1	Turbine Assembly	The Turbine has a 1/8" diameter Rare Earth magnet pressed into place adjacent to the axle opening. When assembled to the axle, the Turbine should spin freely. Do not use any lubricants. If the Turbine should become "jammed," clean and flush the Turbine and openings.
90807	12	End Cap Mounting Screw	
93808	2	End Cap O-ring	
90803	1	Drive Shaft O-ring	
90827	1	Blending Valve O-ring	
90828	2	Test Port O-ring	
90812	1	Tubing 4.0 in.	(approximate)
93858	1	Turbine Sensor	Picks up the magnetic field from the Turbine and relays it to the Controller. The three wire assembly connecting the "black wafer" Hall Effect Sensor to the controller board must not be severely bent (folded over,) cut, or broken. Care should be taken when putting the Sensor into the Sensor Housing. The "spring" flap below the Sensor must be gently bent over (on top of) the Sensor, and then the Sensor slides all the way into the Sensor Housing. The round hole of the Sensor mounting tab is then placed down over the mounting screw boss. The cap is then put in place and the mounting screw is installed. A slot is provided in the cap for the wire way to exit. The three-wire socket connector must be properly installed in the controller. Stops on the connector prevent improper (upside down) assembly. Do not force the connector past the stops.
90232	1	Turbine Sensor Cap	Snaps on. Held in place with screw. Remove screw and pull cap off to remove.
90809	1	Sensor Cap Screw	
93229	1	Flow Director	
93838	2	I/O Adapter O-ring	
90615-94		Bypass Assembly	Contains all items above

SERIES 96 DRIVE END CAP ASSEMBLY

Part Number 95301T-JG (Note: motor and magnet disc must be ordered separately.)

Figure 8



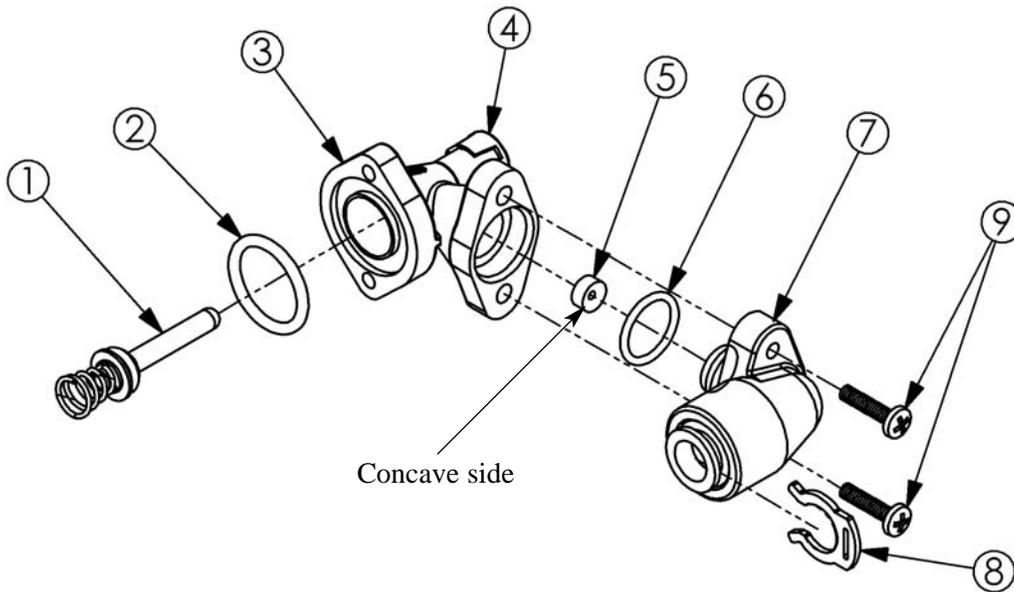
NO.	QTY.	PART NO.	DESCRIPTION
1	2	90802	Screw
2	1	90217	Drive Motor
3	2	93891	¼" Hex Nut
4	1	93238	Drive Gear
5	2	90809	Screw
6	1	93219	Piston Slide Cam Cover
7	1	93217	Piston Slide Cam
8	1	93583	Drive End Cap
9	1	93216	Piston Slide
10	2	90818	Screw
11	1	93601-JG	Brine Valve Housing Assembly
12	1	90821	O-Ring
13	1	54502	Magnet Disk Assembly
14	1	90828	O-Ring
15	1	93808	O-Ring
16	1	93522-A	Drive Piston Assembly
17	1	93839	Drain Gasket

PART NO.	QTY	ITEM	DESCRIPTION
93583	1	Drive End Cap	Seals the two openings on the Main Valve Body. The larger diameter opening is sealed with an O-ring used as an axial or "face" seal. The O-ring sits in a groove in the Drive End Cap. This groove must be free of defects such as pits or scratches and also free of debris. The smaller diameter seal is accomplished with an O-ring used as a radial seal. The O-ring should be placed on the male boss on the Drive End Cap. When assembling the Drive End Cap to the Main Valve Body, care should be taken to make sure the small O-ring is aligned with the opening in the Main Valve Body and that the large O-ring stays in the groove in the Drive End Cap. If misaligned, the O-rings can become pinched and leak.
90217	1	Drive Motor	The Drive Motor is held in place by two 1/2" screws. The screws should be "snug." The brass pinion gear on the Drive Motor should engage the plastic Drive Gear. The wires should be securely fastened to the Control.
93216	1	Piston Slide	The Piston Slide should move freely inside the Drive End Cap Housing. The stainless steel threaded stud should be pointing toward the Main Valve Body.
93217	1	Piston Slide Cam	This is the "heart" of the drive system. There is a threaded stainless steel shaft that runs through the main drive axle. The Drive Gear is attached at the short end and the Magnet Disc at the other end. The Piston Slide Cam is assembled inside of the Piston Slide (93216). This Cam Shaft should turn freely before the Drive Motor is assembled.
93219	1	Piston Slide Cam Cover	The cover secures the Piston Slide Cam (Part No. 93217) in place and acts as a bushing for the Cam Shaft.
95521	1	Magnet Disc Assembly	The Magnetic Disc is assembled to the Piston Slide Cam by means of a "keyed" opening to ensure proper orientation.
90802	2	Screw	
93601-JG	1	Brine Valve Housing Assembly	Attaches to the Drive End Cap with two 3/4" thread cutting screws and has one O-ring seal. When assembling, the O-ring should be placed in the Drive End Cap groove and be lubricated with silicone grease. (See Fig. 8 for more details.)
90828	1	O-ring	
93238	1	Drive Gear	The Drive Gear is assembled to the Piston Slide Cam by means of a "keyed" opening which transfers the "torque" generated by the Drive Motor to the rest of the drive system. If the drive system becomes jammed, this opening can become "rounded" causing the gear to turn, but not the Piston Slide Cam. If this occurs, clear the jam and replace the Drive Gear and Piston Slide Cam (Part No. 93217).
90818	2	Screw	
90809	2	Screw-cam cover	
93808	1	End Cap O-ring	
93522-A	1	Piston Assembly	The Piston should be screwed onto the Piston Slide Cam until it "bottoms out," but care should be taken not to overtighten. The white Teflon Hydro-slide O-ring covers should be free of defects such as indentations and cuts. The Drain Gasket should slide - there will be some friction - without binding on the Piston shaft. When assembling, care should be taken to insert the Piston into the Main Valve Body without excessive side-to-side or up/down motion.
90821	1	Brine Valve Housing O-ring	
93891	2	1/4" Nyloc Hex Nut	
93839	1	Drain Gasket	

SERIES 96 BRINE VALVE HOUSING ASSEMBLY

Part Number 93601-JG

Figure 9

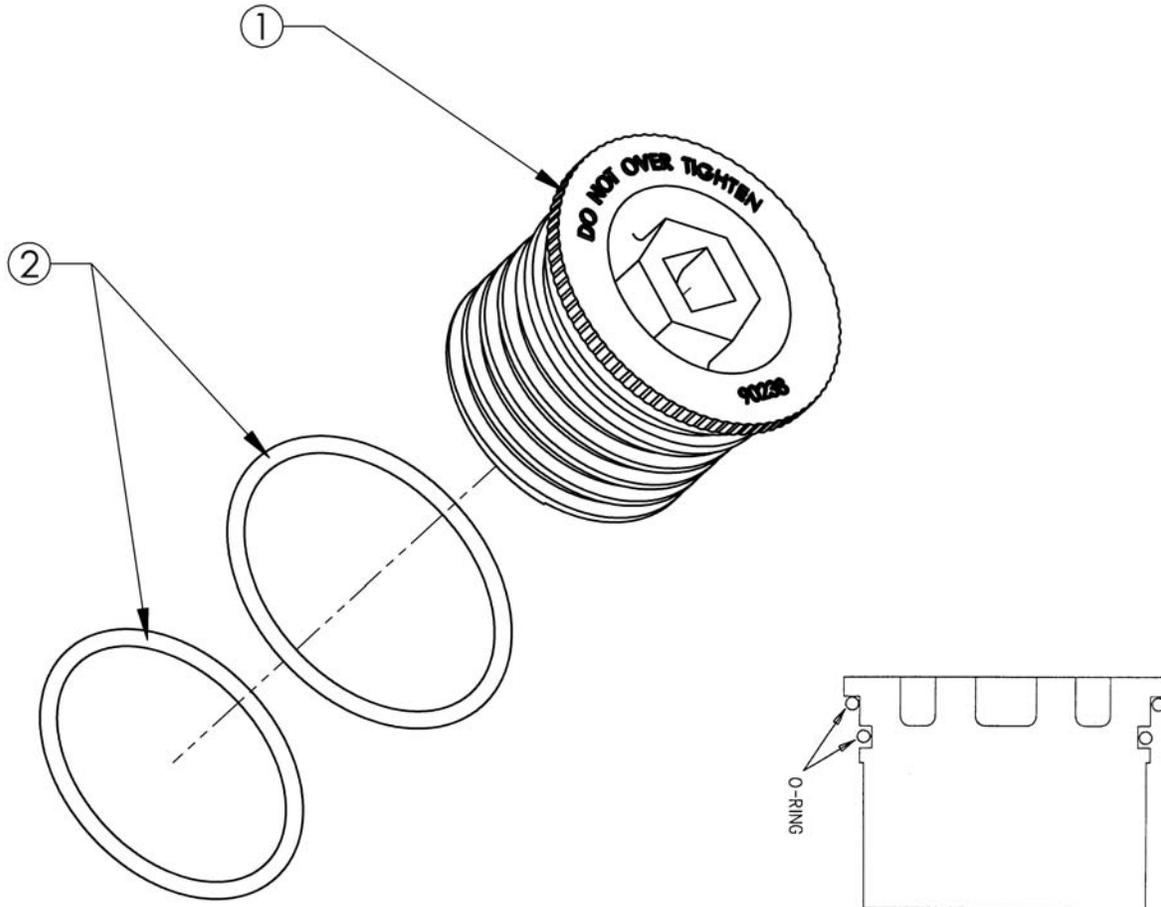


NO.	QTY.	PART NO.	DESCRIPTION
1	1	93620	Piston Assembly (includes O-Ring & Spring)
2	1	90821	O-Ring
3	1	93260	Housing
4	1	93254	Quad Ring Retainer
5	1	90843	.5 gpm Flow Control
6	1	93805	O-Ring
7	1	93243-JG	Housing Cap (John Guest)
8	1	200199	3/8" Locking Clip
9	2	90807	Screw

PART NO.	QTY	ITEM	DESCRIPTION
93260	1	Housing	Should have a Quad-ring for the Piston seal. The Quad-ring (4) is held in place by the brine valve retainer(5). The brine valve housing has four retaining lugs that secure the brine valve retainer. Just inside the entrance hole for the Brine Piston (1) is a concave seat area that must be free of defects such as nicks, indentations or debris. If any defects are detected by visual inspection, repair or replace as needed.
93243-JG	1	Housing Cap Assembly	The Cap is held in place by two 5/8" machine screws that engage the Housing flange. An O-Ring seals the Cap and Housing. Place the O-Ring into the housing opening, lubricate with silicone grease and then, using a twisting action, pressure insert the Cap. CAUTION: the 3/8" locking ring (9) must be installed to prevent air from being drawn into the appliance during brine rinse.
93620	1	Brine Piston	The Piston should have an O-Ring on the shaft side of the flange and a spring pressed onto a boss on the other side. The O-Ring should be free of defects such as cuts or debris on the shaft side. The Piston is Teflon coated brass and should be free of scratches. The Piston should move freely in the housing; silicone lubrication is not recommended on the Piston shaft.
93805	1	O-Ring	The Flow Button has two distinct and different sides. One is "flat"; the other is "concave". The button should be centered in the housing opening with the four locator "ribs" with the concave side facing the Housing Cap.
90843	1	.5 GPM Flow Control	
90807	2	Screw	
93803	1	O-Ring	
200199	1	3/8" Locking Ring	
93254	1	Retainer	
93878	1	Quad Ring	
90820	1	O-Ring	

FILL PLUG ASSEMBLY

Part Number 90618



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	90238	Fill Plug
2	2	90819	O-Ring

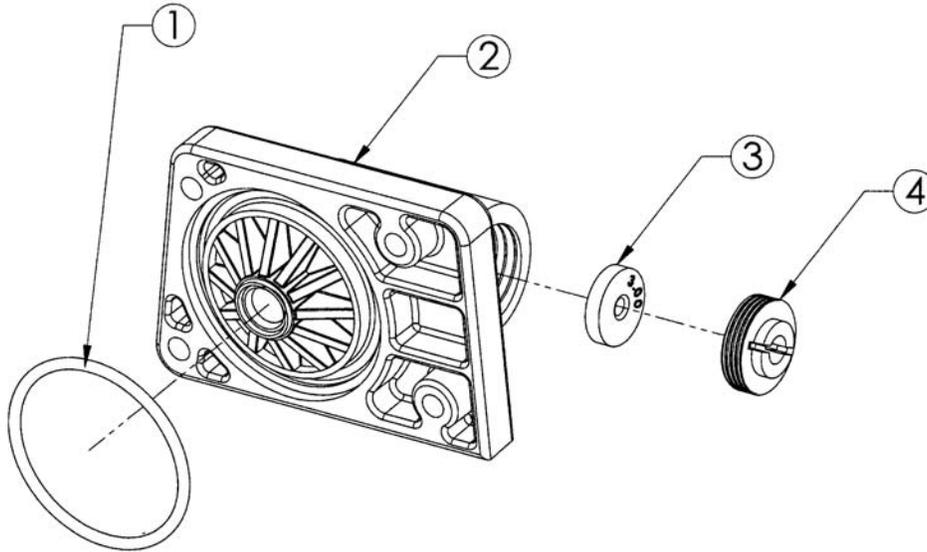
(1) 90238 Fill Plug: The Fill Plug seals the media access ports in the Media Tank. Care should be taken that the O-ring seal areas are kept clean and free of debris. Also, both O-rings should be in the proper locations, one under the flange and one in the groove. Do not overtighten the Fill Plug when assembling. When the flange comes into contact with the Media Tank, stop tightening. A 3/4" socket is recommended for assembly.

(2) 90819 Fill Plug O-ring

(3) 90618 Fill Plug Assembly (contains all of the above parts)

Series 96 DRAIN END CAP ASSEMBLY

Figure 10



NO.	PART NO.	QTY	ITEM	DESCRIPTION
1	93808	1	End Cap O-ring	
2	90268	1	Drain End Cap	Seals the left opening on the Main Valve Body. The opening is sealed with an O-ring used as an axial or "face" seal. The O-ring sits in a groove in the Drain End Cap. This groove must be free of defects such as pits or scratches and also free of debris. When assembling the Drain End Cap to the Valve Body, care should be taken to make sure that the O-ring stays in the groove in the Drain End Cap. If misaligned, the O-ring can become pinched and leak.
3	H2086-2.4* H2086-3.0*	1	Drain Line Flow Control Button	Maintains a constant (plus or minus 10%) backwash flow rate at varying pressures. Care should be taken when replacing Drain Line Flow Control Buttons to ensure that the correct rate is being used for a particular model. Flow Control Button should be assembled with lettering facing retainer.
4	90267	1	Retainer	Holds the backwash Flow Control Button in place. One side is smooth and the other has a groove for a screw driver. When assembling the retainer to the Drain End Cap, the retainer should be "screwed" in until it stops. If the retainer is not fully engaged, the Flow Control may not function properly.
	V185	1	Drain Line Fitting (Not Shown)	(Not supplied)

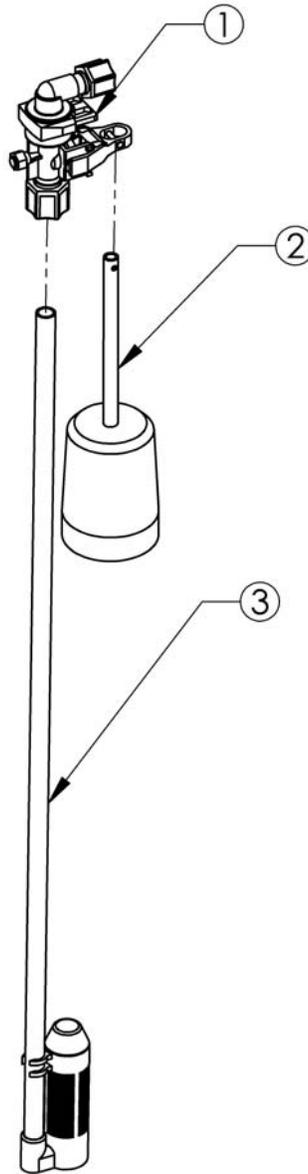
90614-2.4 Drain End Cap Assembly (contains all of the above items.)

90614-3.0 (optional). 96MMB1 or p1 only.

*The numbers after the Drain Line Flow Control Button Part # indicate the backwash flow rate in gpm.

SERIES 96 SAFETY SHUTOFF ASSEMBLY

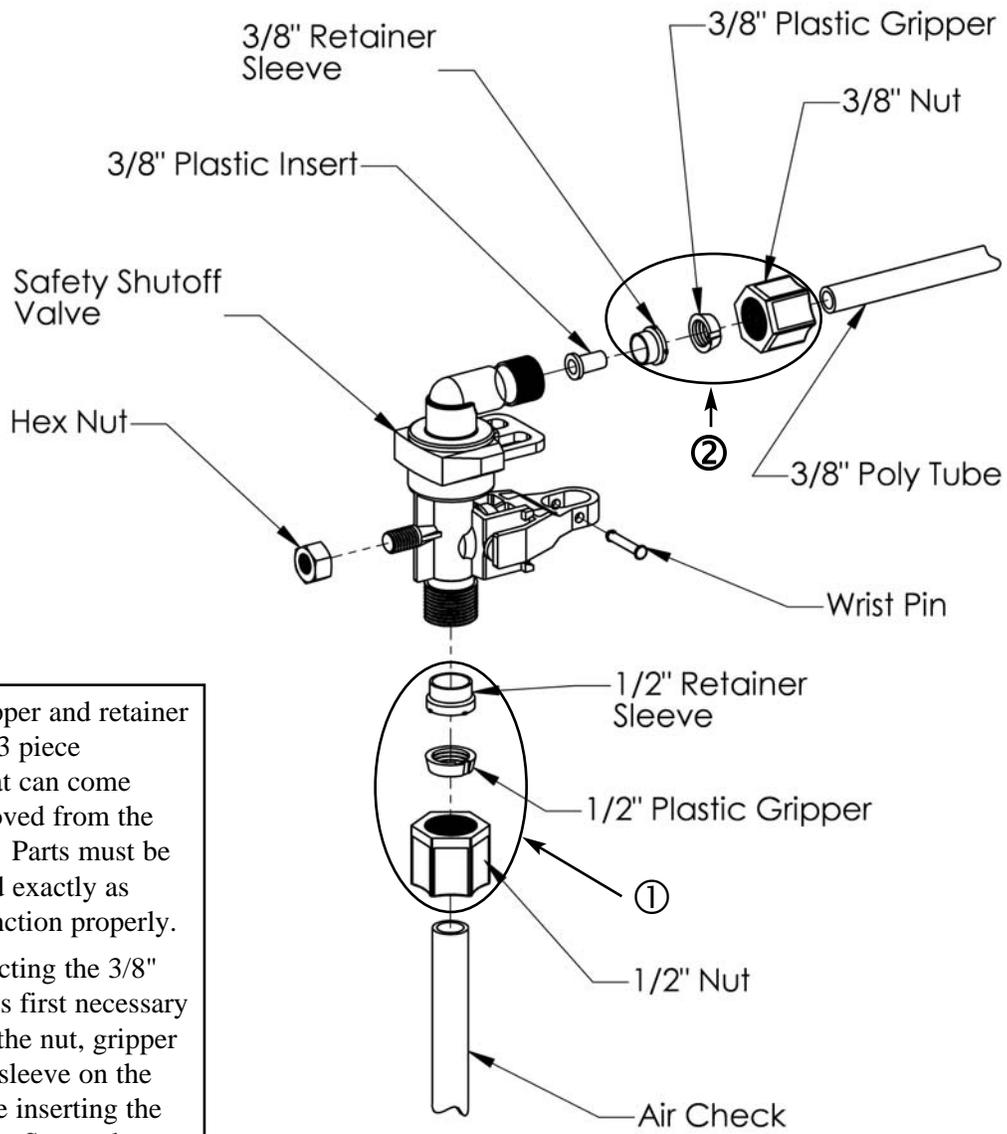
Figure 11



ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	54226	Safety Shutoff
2	1	54227	Float
3	1	54225	Air Check

SAFETY BRINE VALVE ELBOW INSTALLATION

Figure 12



The nut, gripper and retainer sleeve are a 3 piece assembly that can come apart if removed from the elbow body. Parts must be re-assembled exactly as shown to function properly.

When connecting the 3/8" polytube, it is first necessary to assemble the nut, gripper and retainer sleeve on the tubing before inserting the plastic insert. Screw the nut on the elbow body. With a wrench tighten nut securely to create a pressure tight connection.

NO.	QTY.	PART NO.	DESCRIPTION
1	1	54112	1/2" Compressed Assembly
2	1	54138	3/8" Compressed Assembly

BRINE CABINET DATA

Based on the water level measured from the bottom of the MAXIMIZER brine cabinet WITH GRID PLATE, the following depths correlate to the amount of salt used per regeneration:

<u>SALT (lbs.)</u>	<u>DEPTH (inches)</u>
1.0	5 3/4
3.0	8 7/8
6.0	11 7/8
9.0	15 3/8

To maintain peak performance of your appliance, it is recommended that you inspect and clean the brine tank and air check assembly annually or when sediment is present in the brine tank.

CYCLE SETTINGS

1 lb. Salt Setting

Service Setting	English Unit
Hardness Setting Number	_____ (?)
Iron ppm (clear water)*	
Capacity in Grains	5,600
Backwash 1 (minute)	03.0
Brine/Rinse (minute)	07.0
Backwash 2 (minute)	01.0
96 Hour Regeneration	YES/NO
Salt (lbs.)	1

3 lb. Salt Setting

Service Setting	English Unit
Hardness Setting Number	_____ (?)
Iron ppm (clear water)*	
Capacity in Grains	15,400
Backwash 1 (minute)	03.0
Brine/Rinse (minute)	14.0
Backwash 2 (minute)	01.0
96 Hour Regeneration	YES/NO
Salt (lbs.)	3

6 lb. Salt Setting

Service Setting	English Unit
Hardness Setting Number	_____ (?)
Iron ppm (clear water)*	
Capacity in Grains	24,480
Backwash 1 (minute)	03.0
Brine/Rinse (minute)	30.0
Backwash 2 (minute)	01.0
96 Hour Regeneration	YES/NO
Salt (lbs.)	6

9 lb. Salt Setting

Service Setting	English Unit
Hardness Setting Number	_____ (?)
Iron ppm (clear water)*	
Capacity in Grains	30,700
Backwash 1 (minute)	03.0
Brine/Rinse (minute)	45.0
Backwash 2 (minute)	01.0
96 Hour Regeneration	YES/NO
Salt (lbs.)	9

*When iron is present in the raw water supply, regeneration frequency cannot exceed 96 hours. Also, a minimum salt setting of 6 lbs. is required and the #1 backwash must be increased to 7 minutes.

**1, 3 and 9 lb. settings certified by WQA. The 6 lb. setting is not certified by WQA.

EQUIPMENT SPECIFICATIONS - MODEL 96MM

Maximum compensated hardness*	90 gpg / 1,541 mg/l
Maximum ferrous iron reduction*	10 ppm reduced to below 0.3 ppm
Minimum pH	7
“Ultra-fil” self-cleaning sediment filtration	20 microns nominal
Salt use: Use clean, white pellet or solar salt.	1 lb* - 5,600 grain capacity - .45 kg at 362,880 mg 3 lb* - 15,400 grain capacity - 1.36 kg at 997,920 mg 6 lb - 24,500 grain capacity - 2.72 kg at 1,586,304 mg 9 lb* - 30,700 grain capacity - 4.1 kg at 1,989,360 mg
Media type	SUPERSAVER™ fine mesh cation resin
Media quantity	1 cu. ft, 28.3 l
Water pressure	20 to 120 psi, 138 to 828 kPa
Flow rate (as tested by Hague) @ 15 psi / 103.4 kPa pressure drop	11 gpm / 41.7 lpm at 103.4 kPa pressure drop
Rated Flow	8 gpm @ 10 psi pressure drop
Maximum flow to drain during regeneration	2.4 gpm / 9.12 lpm
Maximum flow to drain during regeneration	3.0 gpm / 11.4 lpm (96MM B1 or P1 only)
Flow rates:	Backwash 2.4 gpm / 9.12 lpm Brine & Rinse Total .65 gpm Brine Draw .25 gpm / 1.5 lpm Rinse .4 gpm / 1.5 lpm/ Service 8 gpm at 10 psi pressure drop 30.2 lpm at 68.9 kPa pressure drop
Minimum water temperature	40°F, 6°C
Maximum water temperature	120°F, 49°C
Min./Max. ambient temperature	40°F-120°F
Plumbing connection	3/4" or 1" copper pipe
Salt storage capacity	200 lb, 90 kg
Electrical rating	115V, 60 cycle
Unit size	38" H x 15" W x 30" D 96.5 cm H x 38.1 cm W x 76.1 cm D

*1lb, 3 lb and 9 lb settings were tested and certified by WQA. The maximum compensated hardness, maximum ferrous iron reduction, and 6 lb setting were not tested and certified by WQA.

Model 96MM is the only model tested and certified by WQA.

96MM is efficiency rated according to NSF/ANSI 44. The stated efficiency is valid only at the specified salt dosage:

Rated efficiency	Salt Dosage	Capacity at that Dosage
5,600 grains/lb	1.0 lbs	5,600 grains

OPERATIONAL, MAINTENANCE, AND REPLACEMENT REQUIREMENTS ARE ESSENTIAL FOR THE PRODUCT TO PERFORM TO SPECIFICATIONS.

Conforms to NSF/ANSI Standard 44 for Softening Performance Efficiency, Barium Reduction, and Radium 226/228 Reduction. Water softeners using sodium chloride for regeneration add sodium to the water. Persons who are on sodium restricted diets should consider the added sodium as part of their overall sodium intake.

15 YEAR LIMITED RESIDENTIAL WARRANTY

TO PLACE THE EQUIPMENT UNDER WARRANTY, THE WARRANTY REGISTRATION CARD MUST BE COMPLETED AND RETURNED BY THE ORIGINAL OWNER TO HAGUE QUALITY WATER INTERNATIONAL WITHIN 30 DAYS OF INSTALLATION.

Coverage

This warranty covers the Hague Maximizer® System delivered to the original owner when the system is purchased for personal, family, or household use. It is intended to cover defects occurring in workmanship or materials or both.

Warrantor's Performance and Length of Warranty

Hague Quality Water International warrants that upon receipt from the original owner of any Hague Media Tank, Brine Tank or Valve Body found to be defective in material or workmanship, Hague will repair or replace the defective item, at no charge for that item, for 15 YEARS from date of installation.

Hague Quality Water International further warrants that upon receipt from the original owner of any other mechanical or electronic parts, and the fine mesh polystyrene resin, which are found to be defective in material or workmanship, Hague will repair or replace the defective parts, at no charge for those parts for 3 YEARS from date of installation; and thereafter will repair or replace the defective parts only upon receipt of payment by the original owner of the following percentages of the then current list prices for the parts:

Years from Installation	% of list price to pay
3-4	50%
4-5	55%
5-6	60%
6-7	65%
7-8	70%
8-9	75%
9-10	80%
over 10	100%

All defective parts must be returned, along with the equipment serial number and date of original installation, to an authorized Hague dealer or Hague Quality Water International PREPAID, and replacement parts will be returned by Hague to the original owner FREIGHT COLLECT.

Further Exclusions and Limitations on Warranty

THERE ARE NO WARRANTIES OTHER THAN THOSE DESCRIBED IN THIS WARRANTY INSTRUMENT.

This warranty does not cover any service call or labor costs incurred with respect to the removal and replacement of any defective part or parts. Hague Quality Water International will not be liable for, nor will it pay service call or labor charges incurred or expended with respect to this warranty.

In the event the water supply being processed through this product contains bacterial iron, algae, sulphur, tannins, organic matter, or other unusual substances, then unless the system is represented as being capable of handling these substances in the system specifications, other special treatment of the water supply must be used to remove these substances before they enter this product. Otherwise, Hague Quality Water International shall have no obligations under this warranty.

This warranty does not cover damage to a part or parts of the system from causes such as fire, accidents, freezing, or unreasonable use, abuse, or neglect by the original owner.

This warranty does not cover damage to a part or parts of the system resulting from improper installation. All plumbing and electrical connections should be made in accordance with all local codes and the installation instructions provided with the system. The warranty does not cover damage resulting from use with inadequate or defective plumbing; inadequate or defective water supply or pressure; inadequate or defective house wiring; improper voltage, electrical service, or electrical connections; or violation of applicable building, plumbing, or electrical codes, laws, ordinances, or regulations.

THIS WARRANTY DOES NOT COVER INCIDENTAL, CONSEQUENTIAL OR SECONDARY DAMAGES.

ANY IMPLIED WARRANTIES ON THE PRODUCT DESCRIBED IN THIS WARRANTY WILL NOT BE EFFECTIVE AFTER THE EXPIRATION OF THIS WARRANTY. NO DEALER, AGENT, REPRESENTATIVE OR OTHER PERSON IS AUTHORIZED TO EXTEND OR EXPAND THIS LIMITED WARRANTY.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Claims Procedure

Any defects covered by this warranty should be promptly reported to Hague Quality Water International at 4343 South Hamilton Road, Groveport, Ohio 43125. In writing about the defects, please provide the original owner's name, telephone number, and original address; serial number and model number of the product; date of purchase; and name of dealer from whom purchased. Hague Quality Water International reserves the right to replace defective parts with exact duplicates or their equivalent.

For Owner's Reference

_____	_____
Model No.	Equipment Serial No.
_____	_____
Installation Date	Installer's Signature
_____	_____
Independent Dealership Name	
_____	_____
Independent Dealership Address	



System conforms to NSF/ANSI 44 softening performance, efficiency, barium reduction and radium 226/228 reduction as verified and substantiated by test data. Barium/Radium reduction occurs as long as the unit is softening the water. Test product water every 12 months with the hardness test strips to check for proper functioning.



Hague Quality Water International
4343 S. Hamilton Rd.
Groveport, OH 43125
Litho USA
Form 96901
RV0404 ©1995

Made in USA
Manufactured using one or more of
the following patent numbers:
5,089,140
5,300,230 DES.332,480
DES.331,097 5,116,419
5,157,979 5,378,370