Peerless, Inc.

Water Conditioning Equipment

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Phone: (269) 344-6137 Fax: (269)344-2894

Operation & Maintenance Manual

30 FME-XTR Series Water Softeners

INSTALLATION DIAGRAM

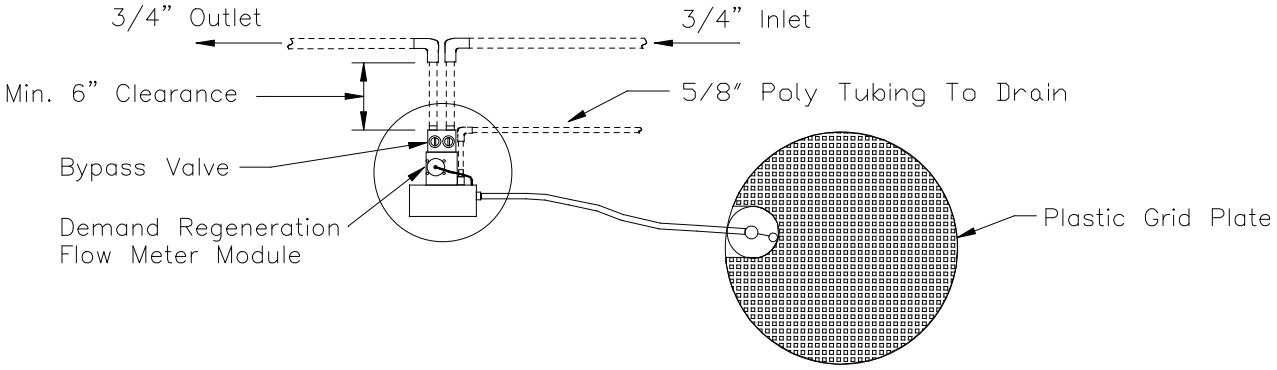
Specifications - 30 FME-XTR and 30 FME-S-XTR

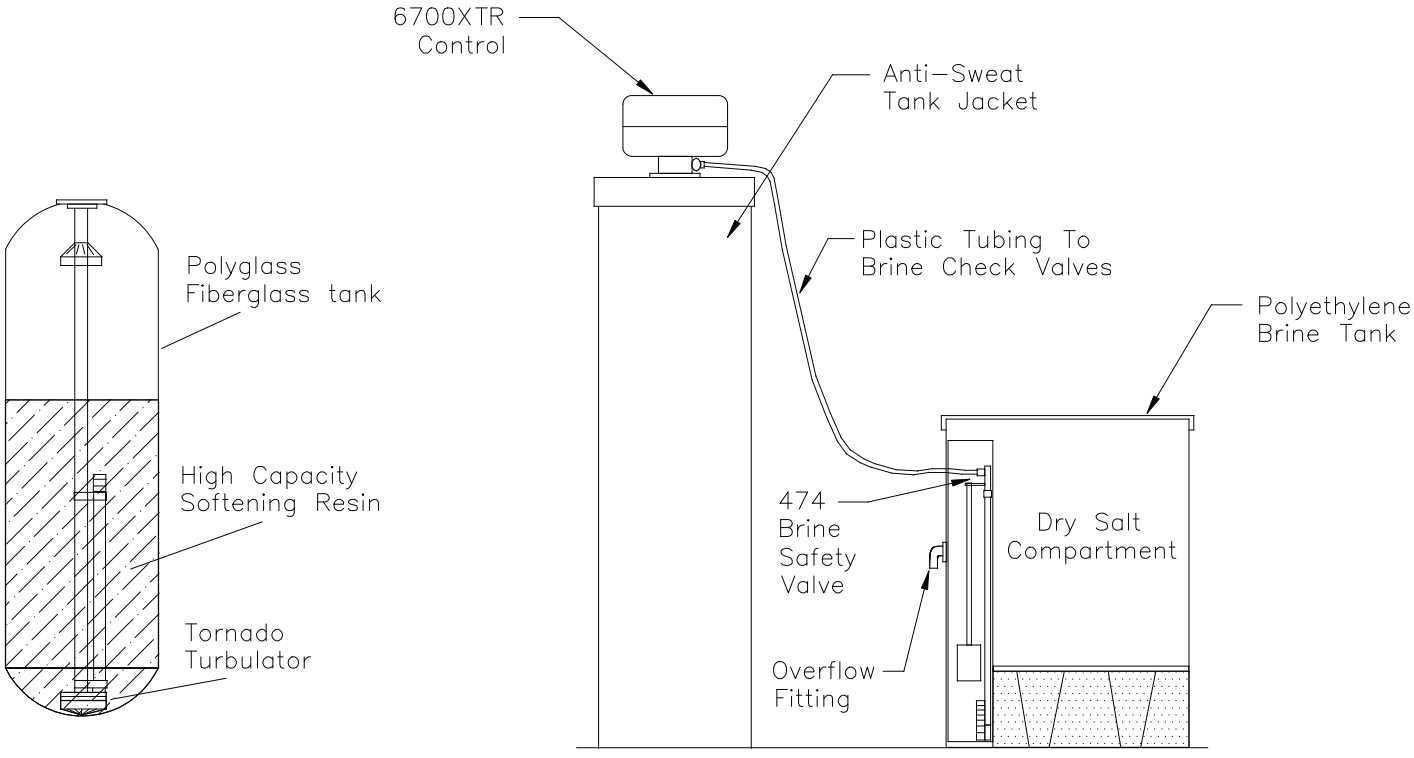
Rough in dimension: From the floor to the center of bypass approximately 50" for 30 FME-XTR, and approximately 36-1/2" for a 30 FME-S-XTR
Maximum distance and size for drain line: 50' horizontal, 10" vertical rise, using 1/2" ID drain line
Maximum distance and size for brine line: 15' horizontal (see note) using 1/4" ID poly tubing

NOTE: The horizontal distance for the brine tank can be increasted to 35' if the brine tank is installed above the unit.

EXAMPLE: Softener installed in the basement and brine tank installed on 1st floor. The brine tank CANNOT be installed below the bottom of the unit. The drain and brine lines should NOT be installed with tubing that can collapse. This will cause the unit to malfunction.

CAUTION: Do NOT connect drain line tubing from control valve to overflow fitting/tubing on brine tank.





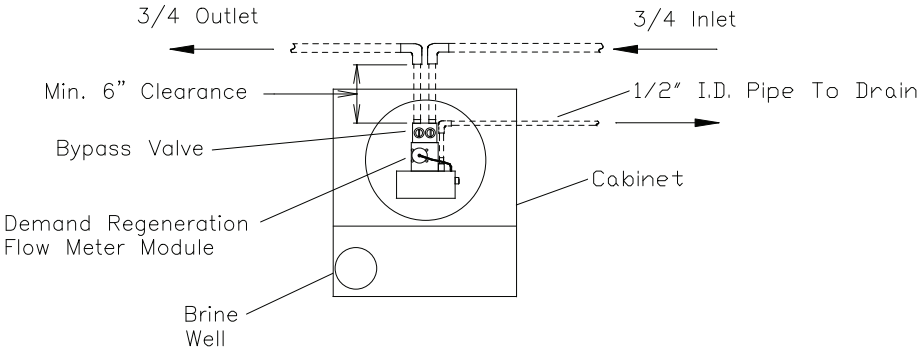
INSTALLATION DIAGRAM

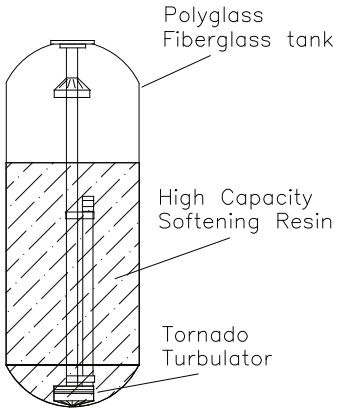
Specifications - 30 FME-C-XTR

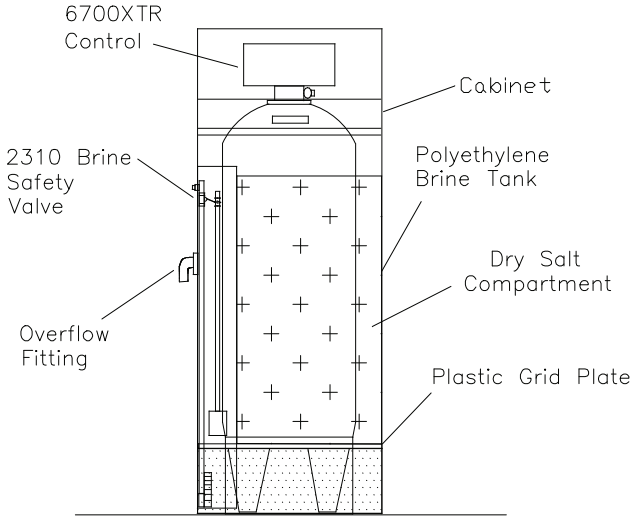
Rough in dimension: From the floor to the center of bypass approximately 50"
Maximum distance and size for drain line: 50' horizontal, 10" vertical rise, using 1/2" ID drain line

The drain and brine lines should NOT be installed with tubing that can collapse. This will cause the unit to malfunction.

CAUTION: Do NOT conenct drain line tubing from control valve to overflow fitting/tubing on brine tank.







PEERLESS FMC-E Automatic Water Softener						
Flow Meter Regeneration	Service Pipe	Service Flow Rate	Backwash Rate	Tank Dimensions Inches		Electric Required
Model Number	Size Inches	Gallons Per Minute	Gallons Per Minute	Softener Dimensions	Brine Tank Dimensions	60 Hz
30 FMC-E	3/4	8.3	3.0	10" X 35"	15" X 26"	120VAC

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Start-up Procedure
Peerless 30 FME-XTR Series Softeners

1. Pipe ¾" or 1" inlet and outlet service piping, according to the print, and arrows on bypass and control valve..

2. **Set brine tank in place on a clean, level surface.** This prevents bottom puncture when weight of water and salt are added. Connect brine line (furnished in brine tank) from brine tank to valve. Line must be air tight.

3. Connect 5/8" OD poly tubing (not supplied) from valve to suitable drain. ***DO NOT*** use ½" copper male adapter. It ***WILL*** crack drain housing on valve.

4. With bypass valve in the bypass position, open a cold water tap nearby and let it run a few minutes. Once free from air, partly open bypass to allow water to slowly fill tank. Once water stops running into tank, rotate bypass valve into the full service position, and close cold water tap.

5. Plug unit into an approved 120V AC outlet. **SET TIME OF DAY**. Press the Up/Down arrow until the time of day is displayed. Press the Left arrow to select the digit you want to change. Press the Up/Down arrow to adjust the valve. **NOTE:** Time of day must be set correctly to either AM or PM.

6. A. Test water, and set computed grains of hardness. Do not forget to compensate for iron. To set hardness value press and hold the up AND down arrows for 5 seconds. The display will read Water Hardness. Press the left arrow to select the digit you want to change. Press the Up/Down arrow to adjust the valve. Press the Extra Cycle button, (the button with four (4) arrows).
   B. The display will show Regeneration Day override. Factory default (15 days.) Press the Left arrow to select the digit you want to change. Press the Up/Down arrow to adjust the valve. Press the Extra Cycle button; the button with four (4) arrows, to return to normal display.
   C. The display will now show regeneration time. Factory default (2:00AM). Press the Left arrow to select the digit you want to change. Press the Up/Down arrow to adjust the valve. Again, press the Extra Cycle button to return to normal display.

7. Manually add water to brine tank until water is 1/2" above the grid.

8. A. Press and hold the extra cycle button for 5 seconds. The display will read "Valve moving to Cycle step 1". When the display reads backwash, let run 5 minutes
   B. Press the Extra Cycle button and release. The display will read "Valve moving to Cycle step 2". When the display reads brine & slow rinse, press the Extra Cycle button again.
   C. The display will read "Valve moving to Cycle step 3". When the display reads rapid rinse, wait 5 minutes then press the Extra Cycle button again.
   D. The display will read "Valve moving to Cycle step 4". Then the display reads brine tank fill, wait until the air is purged out of the brine line, and press the Extra Cycle button to return the unit to service.

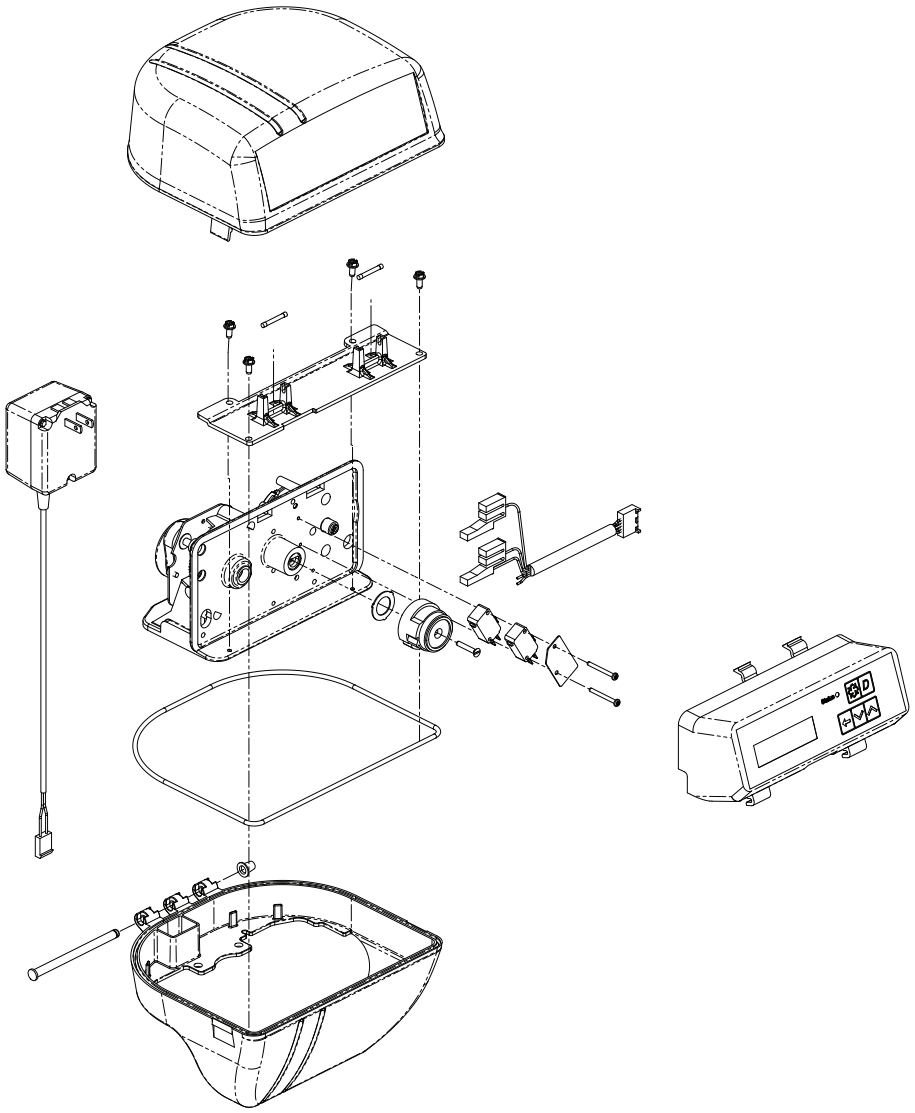
9. Fill brine tank with salt. Peerless recommends Hardi-Cube, Dura-Cube or Mini-Cube or salt substitutes, i.e. Potassium Chloride, (trade names) K-Life or Soft Touch. These are recommended for their high solubility and pureness. The use of softening agents such as ROCK, SOLAR or BLOCK salt will **Negate the Warranty** on your equipment as they are not pure enough and will cause problems for your equipment.

10. Open cold water valves in house to relieve air. Let water run for 3 minutes and test cold water to make sure it is soft.

11. Hot water from the water heater (unless drained and filled with soft water) will not become soft until the customer has used approximately 3 times the holding capacity of the water heater.

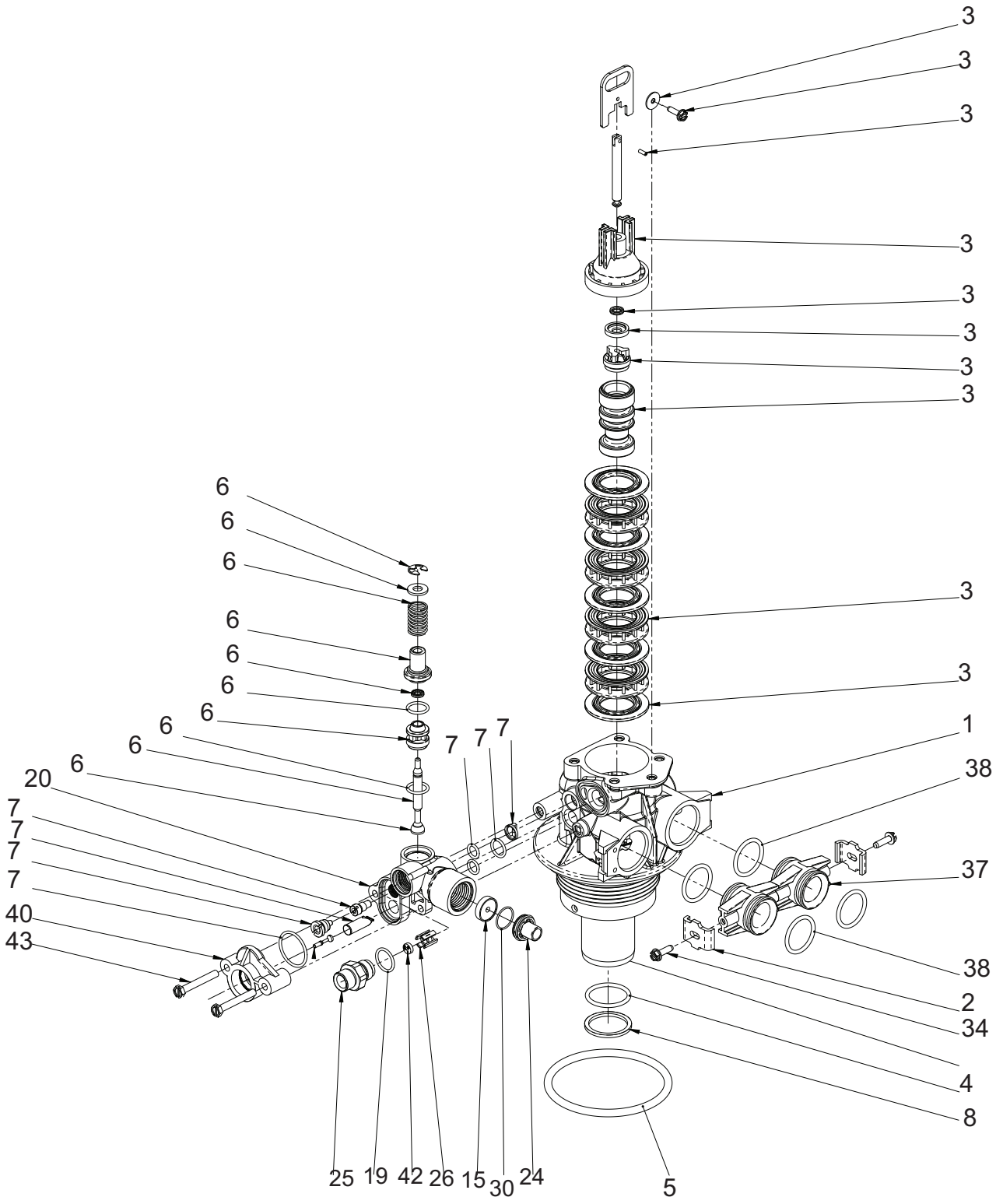
12. Write the installation date (month/year) on the sticker found inside the front cover.

6700XTR Powerhead Assembly



Part # 6700-Powerhead

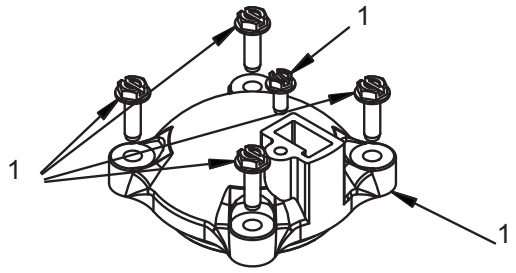
Control Valve Assembly

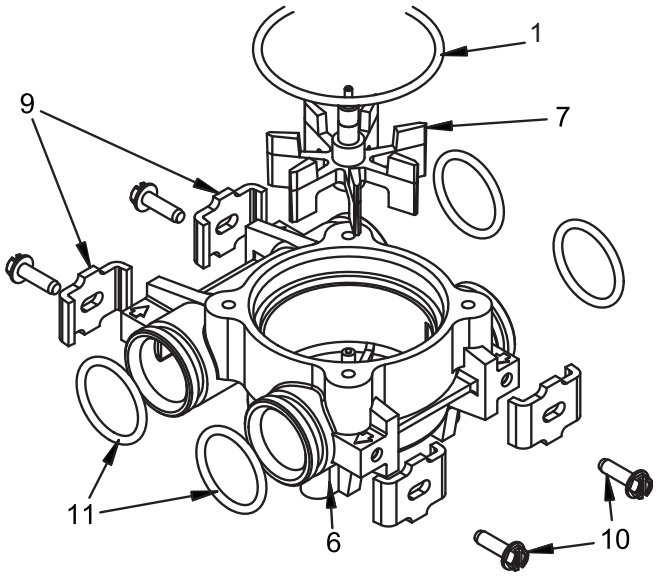


Control Valve Assembly

Item No.	Quantity	Part No.	Description
1	1	19707-30	Valve Body, 5600 Upflow, Bayonet
2	1	13255	Clip, Mounting
3	1	P0003	Piston & Seal Kit
4	1	13304	O-ring, -121
5	1	12281	O-ring, -338
6	1	P0002	Brine Stem Assembly
7	1	P0048-01	Injector Assembly
8	1	13030	Retainer, Dist Tube, O-ring
15	1	12088	Washer, Flow 1.2 GPM
19	1	12977	O-ring, -015
24	1	13173	Retainer, DLFC Button
25	1	13244	Adapter, BLFC
26	1	13245	Retainer, BLFC
30	1	15348	O-ring, -563
34	2	13314	Screw, Slot Ind Hex, 8-18 x .60
38	4	13305	O-ring, -119
40	1	13166	Injector Cover
42	1	17307	Washer, Flow, .5 gpm
43	2	15607	Screw, Hex Hd Mach, 10-24 x 1 3/8

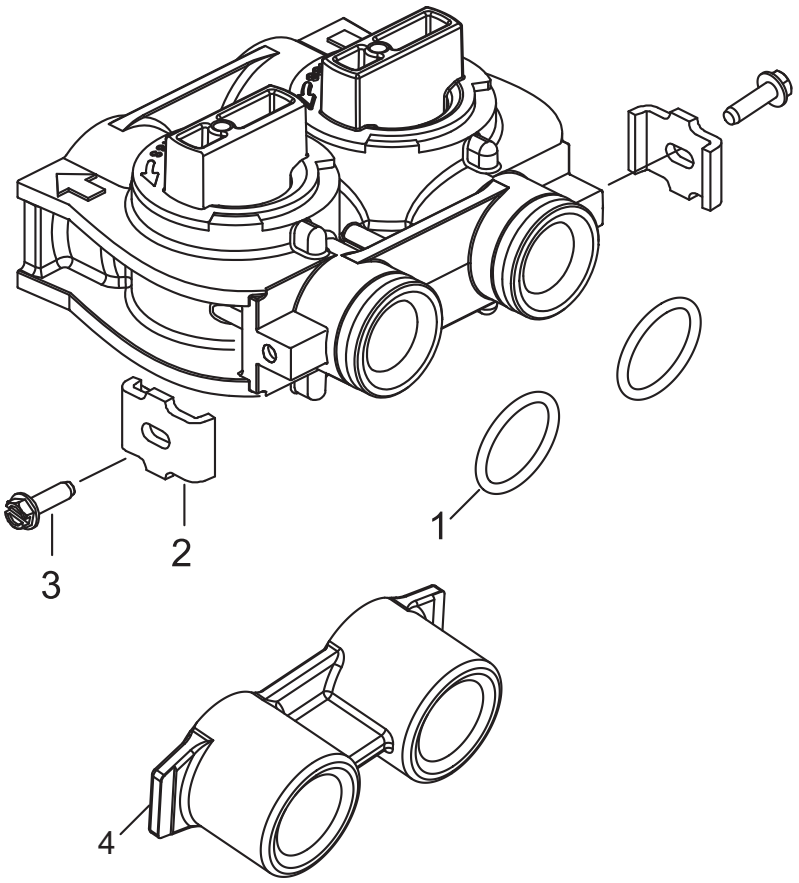
Meter Assembly





Item No.	Quantity	Part No.	Description
1	1	14038	Cap, Meter, Electronic
5	5	17798	Screw, Slot Hex Wsh Hd
6	1	13821	Body, Meter, 5600
7	1	13509	Impeller, Meter
8	4	12473	Screw, Hex Wsh, 10-24 x 5/8
9	4	13255	Clip, Mounting
10	4	13314	Screw, Slot Ind Hex, 8-18 x .60
11	4	13305	O-ring, -119
12	1	14613	Flow Straightener

Bypass Valve Assembly, Non-Metallic



Item No.	Quantity	Part No.	Description
1	2	13305	O-ring, -119
2	2	13255	Clip, Mounting
3	2	13314	Screw, Slot Ind Hex, 8-18 x .60
4	1	41027-01	Yoke, 3/4”, NPT, Cast, Machd
		41026-01	Yoke, 1”, NPT, Cast, Machd, SS
		61049-01	Complete bypass assembly w/yoke, plastic

474 Safety Brine Valve System

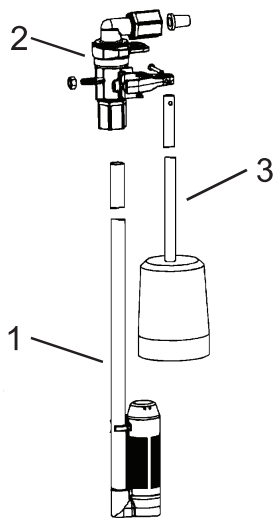
used in these models:

Softeners: 20 FM/M and 30 FM/M, 30 FME-XTR, and 30 FME-S-XTR and 30 CME

Filters: 10 NIT-W and 10 TF-W

Our 474 safety brine valve system incorporates the 474 air check assembly to provide higher flow rates and greater flexibility than traditional brine delivery systems.

Featuring a 1/2" riser pipe, our 474 safety brine valve system is capable of providing brine draw and refill rates up to 1-1/2 gallons per minute. The 474 safety brine valve system is used as a the primary brine shut-off valve.



The 474 Safety Brine Valve System consists of three components which can be ordered separately.

1. 474 Air Check Assembly

The 474 air check assembly is available in one length; riser is 1/2" in diameter. Please specify 30.75" length when ordering. See order number below.

2. 474 Safety Brine Valve

The 474 safety brine valve includes a 3/8" elbow with polytube insert.

3. 474 Float Assembly

There is one float length available. The 32" (overall length) float assembly is designed to be used as the primary brine refill shut-off. It is easily adjusted with two grommets to fit your system (not shown).

System Features

- 1/2" riser pipe
- Higher flow rates-refill and brine draw up to 1-1/2 GPM with 3/8" elbow
- Fits both 3-1/2" and 4" brine wells
- Can be used as a safety back-up float or primary brine shut-off
- Components are air tested to ensure proper performance

Order Information

Order No.	Description	Order No.	Description
J7500-474	474 brine safety valve assembly complete (includes all parts)	H4640-32	474 Float Assembly 32" w/2 Grommets
		H4600	474 Brine Safety Valve w/3/8" elbow
		H4500-30.5	474 Air Check 1/2"x30.75"

2310 Brine Safety Valve

used in these models:
Softeners: 20/30 FMC(M), 30 FME-C-XTR, 60 FME-W, and 60 CME
Filters: 13 TF-W □□

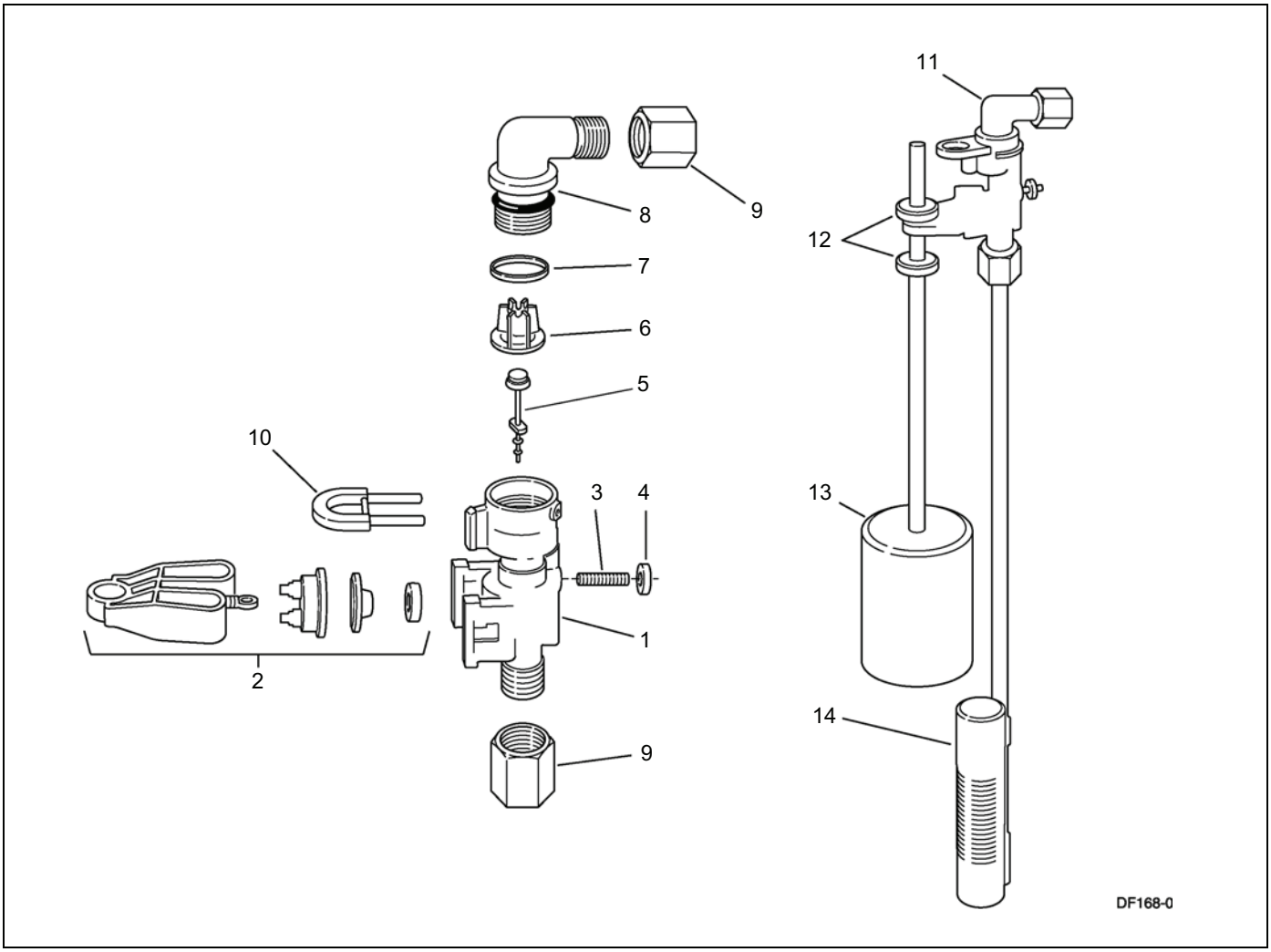


Figure 21: ***2310*** Safety Brine Valve

Item Number	No. Req'd	Part Number	Description
1	1	19645	safety brine valve body
2	1	19803	safety brine valve arm assembly
3	1	19804	stud, 10-24
4	1	19805	nut, 10-24
5	1	19652-01	poppet and seal
6	1	19649	flow dispenser
7	1	11183	o-ring, 017
8	1	19647	elbow, safety brine valve
9	2	19625	nut assembly, 3/8
10	1	18312	retaining clip
11	1	60014	safety brine valve, 2310 (includes items 1-10)
12	2	10150	grommet (included with item 13)
13	1	60068	float assembly, 2310
14	1	60002	500 air check assembly

If an error is detected, an error screen will alternate with the main display screen every few seconds, and the **LED light will be red.**

During an error condition, the unit continues to monitor the flow meter and update the remaining capacity. Once an error condition is corrected, the unit returns to the operating status it was in prior to the error, and regeneration resumes according to normal programming. If an error is cleared by reprogramming the unit in the Master Programming Mode, the volume remaining may be reset to the full unit capacity (as though it had just regenerated). If an error is present, a regeneration can only occur manually by pressing and holding the Extra Cycle button for 5 seconds. If the unit was in regeneration when the error occurred, it will complete the regeneration cycle and go into service.

When the problem is corrected, and the error no longer displays (it may take several seconds for the unit to stop displaying the error message), the unit will return to normal operation. The **LED light** will no longer be **red**, and will turn **Green** if the unit is regenerating, or **Blue** if the unit is in service.

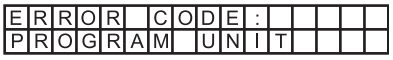
Problem	Correction
A. Flashing/blinking display	A. Power outage has occurred. Either wait 5 minutes for blinking to stop, or press any key on the keypad.
B. Unit not responding after going into regeneration	B. Verify the unit is configured correctly (ex: wiring valve type). Perform a Master Reset by holding the Shift button and cycling power. Check and verify the choices selected in Master Programming Mode.
C. Unit displays “ERROR CODE: REPLACE UNIT” (corrupted UAP)	C. Contact your local water treatment professional.

Error Codes

Error Code	Display Message	Correction
01	ERROR CODE: PROGRAM UNIT	Go through all screens in Master Programming Mode.
02	ERROR CODE: PROGRAM UNIT	Go through all screens in Master Programming Mode.
03	ERROR CODE: SERVICE UNIT	Perform a Master Reset by holding the Shift button and cycling power. Go through all screens in Master Programming Mode. Manually initiate a regeneration cycle by pressing the Extra Cycle button for 5 seconds.
04	ERROR CODE: SERVICE UNIT	Perform a Master Reset by holding the Shift button and cycling power. Go through all screens in Master Programming Mode. Manually initiate a regeneration cycle by pressing the Extra Cycle button for 5 seconds.
05	ERROR CODE: SERVICE UNIT	Call your local water treatment professional as soon as possible. Leave the unit running (do not unplug).

NOTE: If the above corrections do not work, please contact your local water treatment professional.

Error Display Screen Examples



Troubleshooting - Control Valve

Problem	Cause	Correction
1. Water conditioner fails to regenerate.	A. Electrical service to unit has been interrupted	A. Assure permanent electrical service (check fuse, plug, pull chain, or switch)
	B. Timer is defective.	B. Replace timer.
	C. Power failure.	C. Reset time of day.
2. Hard water.	A. By-pass valve is open.	A. Close by-pass valve.
	B. No salt is in brine tank.	B. Add salt to brine tank and maintain salt level above water level.
	C. Injector screen plugged.	C. Clean injector screen.
	D. Insufficient water flowing into brine tank.	D. Check brine tank fill time and clean brine line flow control if plugged.
	E. Hot water tank hardness.	E. Repeated flushings of the hot water tank is required.
	F. Leak at distributor tube.	F. Make sure distributor tube is not cracked. Check O-ring and tube pilot.
	G. Internal valve leak.	G. Replace seals and spacers and/or piston.
3. Unit used too much salt.	A. Improper salt setting.	A. Check salt usage and salt setting.
	B. Excessive water in brine tank.	B. See problem 7.
4. Loss of water pressure.	A. Iron buildup in line to water conditioner.	A. Clean line to water conditioner.
	B. Iron buildup in water conditioner.	B. Clean control and add mineral cleaner to mineral bed. Increase frequency of regeneration.
	C. Inlet of control plugged due to foreign material broken loose from pipes by recent work done on plumbing system.	C. Remove piston and clean control.
5. Loss of mineral through drain line.	A. Air in water system.	A. Assure that well system has proper air eliminator control. Check for dry well condition.
	B. Improperly sized drain line flow control.	B. Check for proper drain rate.
6. Iron in conditioned water.	A. Fouled mineral bed.	A. Check backwash, brine draw, and brine tank fill. Increase frequency of regeneration. Increase backwash time.
7. Excessive water in brine tank.	A. Plugged drain line flow control.	A. Clean flow control.
	B. Plugged injector system.	B. Clean injector and screen.
	C. Timer not cycling.	C. Replace timer.
	D. Foreign material in brine valve.	D. Replace brine valve seat and clean valve.
	E. Foreign material in brine line flow control.	E. Clean brine line flow control.

Problem	Cause	Correction
8. Softener fails to draw brine.	A. Drain line flow control is plugged.	A. Clean drain line flow control.
	B. Injector is plugged.	B. Clean injector
	C. Injector screen plugged.	C. Clean screen.
	D. Line pressure is too low.	D. Increase line pressure to 20 P.S.I.
	E. Internal control leak	E. Change seals, spacers, and piston assembly.
	F. Service adapter did not cycle.	F. Check drive motor and switches.
9. Control cycles continuously.	A. Misadjusted, broken, or shorted switch.	A. Determine if switch or timer is faulty and replace it, or replace complete power head.
10. Drain flows continuously.	A. Valve is not programming correctly.	A. Check timer program and positioning of control. Replace power head assembly if not positioning properly.
	B. Foreign material in control.	B. Remove power head assembly and inspect bore. Remove foreign material and check control in various regeneration positions.
	C. Internal control leak.	C. Replace seals and piston assembly.

General Service Hints For Meter Control

Problem: Softener delivers hard water

Reason: Reserve capacity has been exceeded.
Correction: Check salt dosage requirements and reset program wheel to provide additional reserve.

Reason: Meter is not measuring flow.
Correction: Check meter with meter checker.