HOBART
SERVICE

SERVICE MANUAL

WS-P213 Hobart Water Softening System Installation Instructions

WS-P213

19981

- NOTICE -

This Manual is prepared for the use of trained Hobart Service Technicians and should not be used by those not properly qualified.

This manual is not intended to be all encompassing. If you have not attended a Hobart Service School for this product, you should read, in its entirety, the repair procedure you wish to perform to determine if you have the necessary tools, instruments and skills required to perform the procedure. Procedures for which you do not have the necessary tools, instruments and skills should be performed by a trained Hobart Service Technician.

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701 S. Ridge Ave Troy, OH 45374
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INSTALLATION

INSTALLATION WS-P213

⚠ WARNING Disconnect the electrical power to the machine and follow lockout / tagout procedures.

1. Determine location to install equipment. Make sure the unit will be on a flat surface.
2. If sand, silt, or turbidity is present, install a separate prefilter.

Fig. 1

3. Install by-pass valving. Be certain to note the inlet and outlet arrows on the valve head.
4. Connect the inlet/outlet adapters leading to the softener using the proper size plumbing.
5. Plumb as necessary to accommodate the bypass valve and to complete the installation.

NOTE: Actual installation of by-pass valving may vary from installation to installation. Be sure to follow state and local codes.

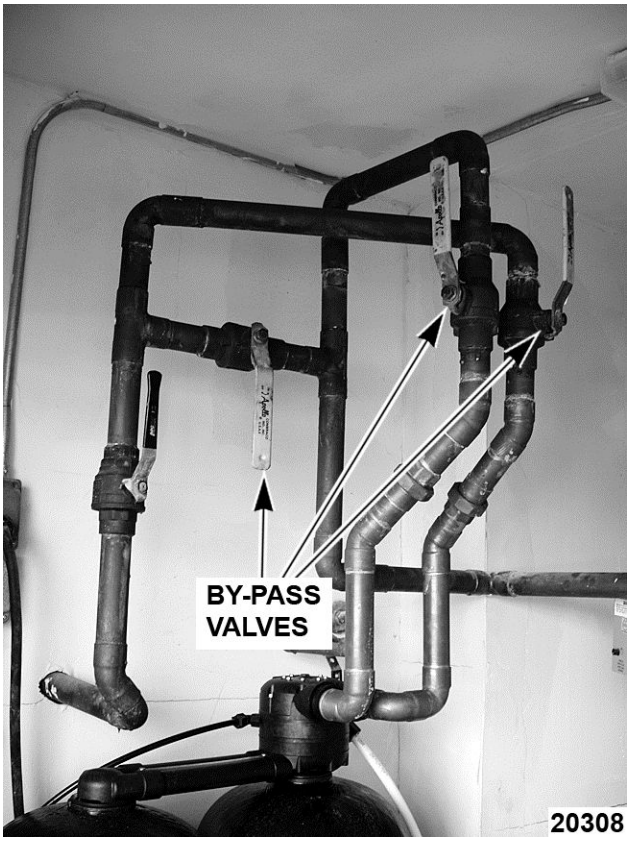

Fig. 2

NOTE: When installing a plastic component in line, it is recommended that grounding straps be put in place before the lines are actually cut to ensure the ground is never broken.

NOTE: Do not solder brass adapters while inserted in the module base. Damage to plastic and rubber parts may result due to the heat. In addition, the materials used in the soldering process may attack certain types of plastics.

NOTE: Care should be taken during the installation process to assure that solder and flux do not come in contact with the media tanks, the control module, and related components.

6. After all plumbing is completed, but before connecting equipment, flush both the inlet and outlet lines by opening the by-pass valve and allowing water to rinse out any debris in the lines.
7. Locate enclosed kit containing four O-rings, two pipes with O-rings, and the silicone packet. Apply a liberal amount of silicone to the four Orings, and the O-rings in the two pipes. Install the four O-rings on the inlet/outlet adapters.

8. Connect the main tank with softener valve to the inlet/outlet adapter. The inlet/outlet adapter is inserted into the control valve and locked in place by the plastic E-clips.

NOTE: Be certain the E-clips are fully inserted into the valve. Check to make sure that all three tabs on the E-clips are fully inserted.

9. Connect the remote tank to the main tank using connector pipes, connector links and connector pins.

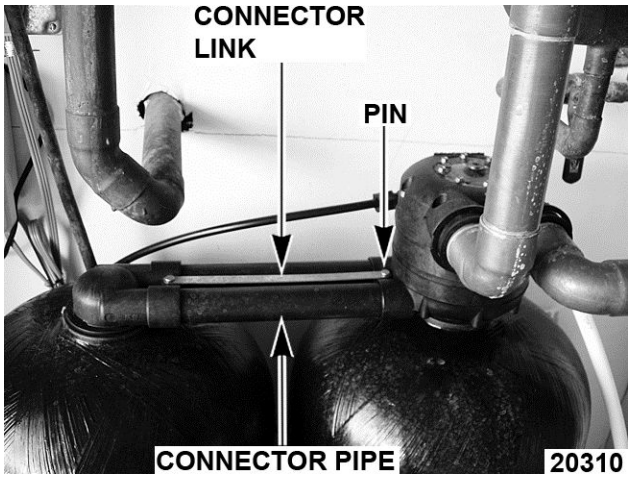

Fig. 3

NOTE: Always use both links and pins.

10. Run a drain line to the discharge point.

NOTE: Follow state and local codes.

11. Before connecting unit, check for obstructions or kinks. Apply Teflon tape to pipe threads on side of softener valve, and install the two fittings supplied. Connect drain line to valve.

NOTE: An air gap must be provided for all drain lines. Check state and local plumbing codes for proper setup of drain line air gaps.

NOTE: On drain lines that must travel more than 8 feet up and 30 feet over, it is best to take the 5/8" drain line that fits the valve and attach it in a larger diameter line or pipe.

12. Position the brine drum.

Fig. 4

NOTE: In Hobart Softeners, the brine drum mixes and stores a solution of salt or potassium chloride for regeneration of the softener media. During the brine rinse cycle, this solution is drawn from the brine drum and through the media to regenerate it. The brine drum contains an adjustment to draw the correct amount of salt or potassium chloride solution for each cycle. This adjustment is made in two places, the adjuster tube and the float cup.

NOTE: The adjuster tube measures the amount of solution that is drawn from the brine drum into the softener during the brine rinse cycle. The float cup height determines how much softened water flows back into the brine drum to prepare for the next regeneration. The adjuster tube is set by cutting and removing tabs on both sides of the tube. Cut across each tab horizontally, following the channel in the plastic. Break off each tab individually until the proper setting is reached. The remaining number or letter imprinted on the tab determines the correct setting.

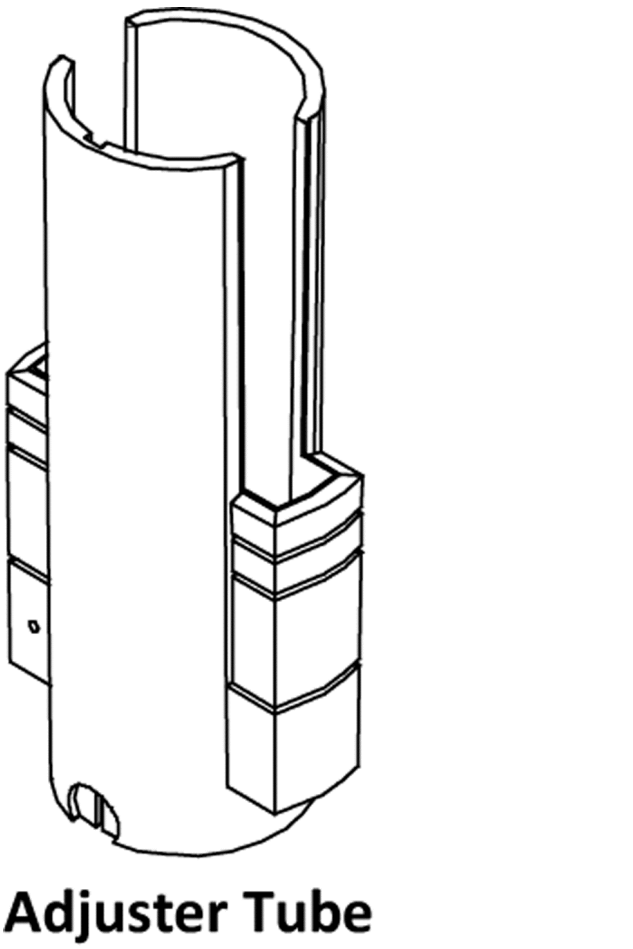

Fig. 5

NOTE: The float cup height determines how much softened water flows back into the brine drum to prepare for the next regeneration. The float cup is set by adjusting its height above the bottom of the Brine Valve Assembly. By removing the brine valve assembly and resting it on a flat surface, the height of the float cup can be measured with a ruler. The height is measured from the base of the brine valve assembly to the top of the float cup.

NOTE: Standard settings are defined by markings on the rod of the brine valve assembly. Where the predefined settings are not adequate, the actual float cup height must be measured and the setting must be measured and set according to the measured float cup height.

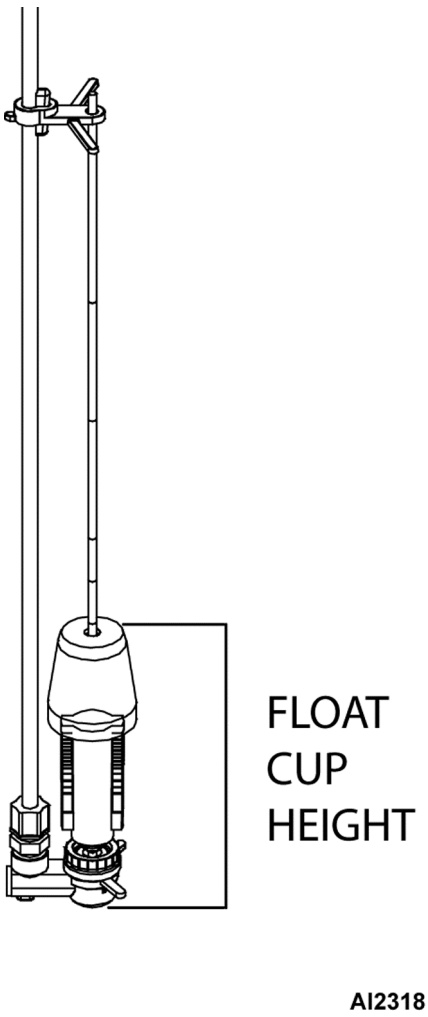

Fig. 6

NOTE: Determining the correct brine valve setting for a particular application is a three step process:

13. Determine the compensated hardness. This requires a hardness test and an iron test on raw water at the application site. Compensated hardness is calculated by multiplying the ferrous iron (in ppm) by 3 and adding it to the grains of hardness.
14. To test the water supply, use the water analysis test kit available through Pro Products Inc. The recommended kit is #2401 Field Analysis Kit. To order the test kit contact Pro Products at 800-285-9176 or visit www.ProProducts.com.
15. Determine the salt setting. The salt setting is determined by taking the compensated hardness from Step 13 and using the specifications table from DISC SELECTION WS-P213.

16. Determine adjuster tube and float cup settings. Use Brine Valve Settings for WS-P213: 24 x 40 Brine Valve Adjustment to determine the correct settings for both the adjuster tube and the float cup height.

Brine Valve Settings for WS-P213: 24 x 40 Brine Valve Adjustment		
Salt Setting	15 lbs.	25 lbs.
Adjuster Tube	1.25	K
Float Cup	10.5"	12"

NOTE: Do not drop the brine valve into the drum. Dropping may lower the float cup, resulting in an improper setting. After the adjustments have been made to the adjuster tube and the float cup, the brine valve assembly must be installed in the brine drum. Locate the brine valve in the brine well so the 3/8" bent tube is along the back of the brine well away from the brine drum wall. The 3/8" bent tube snaps into a notch and extends from the brine drum about 1 inch.

17. Determine the correct number disc by referring to DISC SELECTION WS-P213
18. To install disc refer to DISC REPLACEMENT WS-P213

DISC REPLACEMENT

DISC REPLACEMENT WS-P213

1. To change disc, remove screws and cap cover from level one

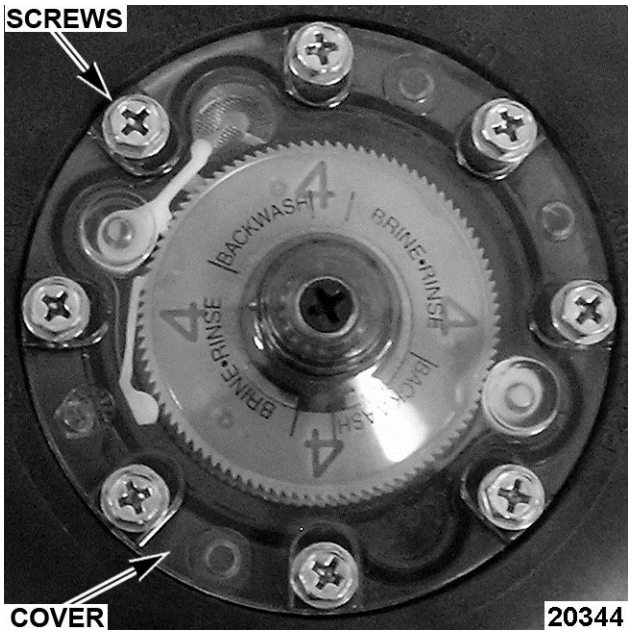

Fig. 7

2. Remove balance piston.

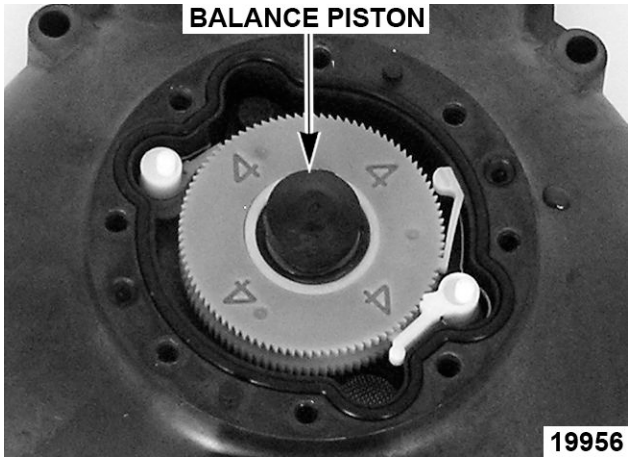

Fig. 8

3. Remove balance piston o-ring and balance piston spring.

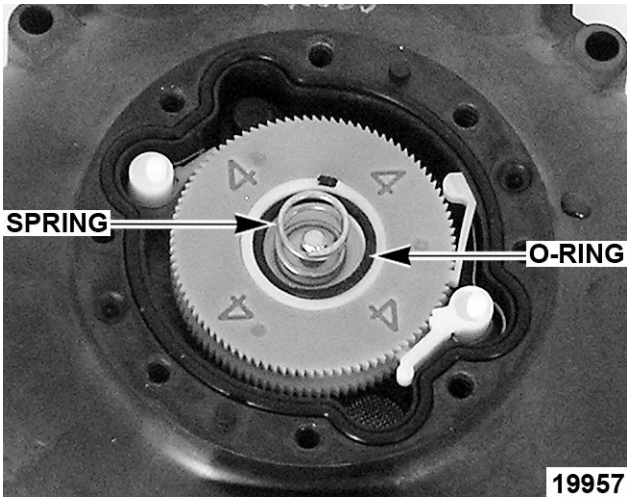

Fig. 9

4. Remove meter drive pawl.

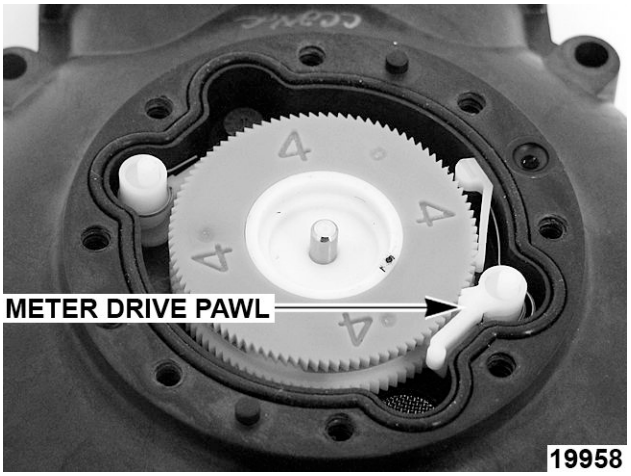

Fig. 10

5. Remove meter disc.

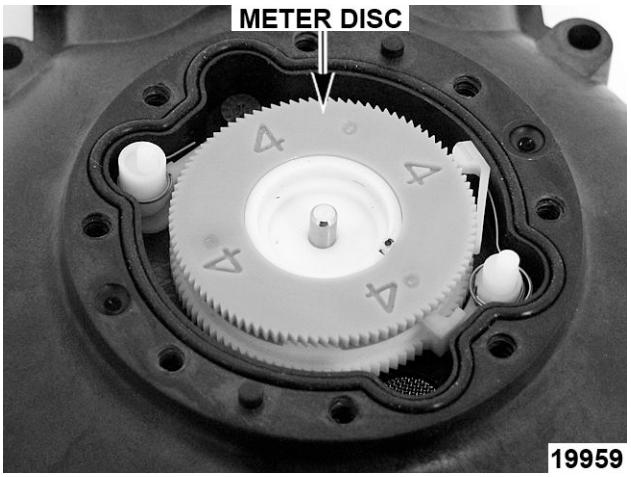

Fig. 11

6. Install correct meter disc and reassemble in reverse order.

NOTE: Make certain all components are correctly installed.

NOTE: Be certain to start cap screws by hand rotating backwards until screw drops into thread then tighten. An alternating, crossing pattern should be used while tightening cap screws to ensure correct cap fit. Add a clean grade of salt at this time. Higher grades of Pelletized Salt for impurities and solubility should be used.

NOTE: Do not use rock salt or solar salt.

NOTE: On iron-bearing water, a salt that contains resin cleaning additives is recommended.

7. Open the inlet valve slowly and allow the tanks to fill slowly with water. Water will run at the drain until unit is full and pressurized.
8. With the unit in service and under pressure, allow the brine drum to fill with water until the brine valve shuts off.
9. After the unit is fully pressurized, purge air form the lines by opening soft water outlet.

NOTE: When brine drum overflow could cause damage, a ½" I.D. overflow line must be installed on the barbed overflow fitting on drum and connected to a drain. Make sure drain is not higher than barbed fitting. **FOLLOW STATE AND LOCAL CODES**

10. Check for plumbing leaks.
11. Check unit for proper operation.

DISC SELECTION

DISC SELECTION WS-P213

Using the full louver nozzle, the amount of hardness removed (in compensated gpg) will be based on the amount of brine and the meter disc selected.

Specifications	WS-P213 Overdrive Operation	WS-P213 Overdrive Operation
Salt usage / generation	15 lbs.	25 lbs.
Capacity	60,000 grains	70,000 grains
Efficiency	4,000 gr./lb.	2,800 gr./lb.
Dosing	6.0 lbs./cu. ft.	10.0 lbs./cu. ft.
Float cup setting	10.5"	12"

Specifications	WS-P213 Alternating Operation	WS-P213 Alternating Operation
Salt usage / generation	15 lbs.	25 lbs.
Capacity	60,000 grains	70,000 grains
Efficiency	4,000 gr./lb.	2,800 gr./lb.
Dosing	6.0 lbs./cu. ft.	10.0 lbs./cu. ft.
Float cup setting	10.5"	12"

WS-P213 Disc Selection Overdrive Operation								
Disc Number	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Compensated Hardness @ 15 lbs.*	5	10	14	17	21	25	30	35
Compensated Hardness @ 25 lbs.	6	12	16	20	24	30	35	40
Peak flow during regeneration	28.0	28.0	28.0	20.7	15.7	12.4	10.0	8.3
*** Compensated hardness in gpg = Hardness + (3 x Fe in mg/l)**								

WS-P213 Disc Selection Alternating Operation								
Disc Number	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Compensated Hardness @ 15 lbs.*	6	12	18	24	30	35	40	45
Compensated Hardness @ 25 lbs.	7	14	21	28	34	40	45	51
Flow during regeneration (@ 15 psig)	20	20	20	20	15.7	12.4	10.0	8.3
Gallons/Regeneration:	**8,922**	**4,461**	**2,974**	**2,231**	**1,784**	**1,487**	**1,275**	**1,115**
*** Compensated hardness in gpg = Hardness + (3 x Fe in mg/l)**								