



# SERVICE MANUAL



## WS-40/80 Hobart Compact Water Softener Installation Instructions

WS-40

WS-80

### - 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.

The reproduction, transfer, sale or other use of this Manual, without the express written consent of Hobart, is prohibited.

This manual has been provided to you by ITW Food Equipment Group LLC ("ITW FEG") without charge and remains the property of ITW FEG, and by accepting this manual you agree that you will return it to ITW FEG promptly upon its request for such return at any time in the future.

# TABLE OF CONTENTS

INSTALLATION .....	3
INSTALLATION WS-40/80 .....	3
DISC REPLACEMENT .....	8
DISC REPLACEMENT WS-40/80 .....	8
DISC SELECTION .....	10
DISC SELECTION WS-40/80 .....	10

# INSTALLATION

## INSTALLATION WS-40/80

SAVE THESE INSTRUCTIONS



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

1. Locate water supply line and appropriate drains for softener installation.
2. Install by-pass valving.



Fig. 1

3. Install high temperature prefilter if needed.



Fig. 2

4. Remove all items from shipping package.

5. Install wheel kit on WS-80.

**NOTE:** Wheel kit for WS-40, already installed.

6. Locate brass in/out adapters, 4 O-rings, and silicone seal lube.

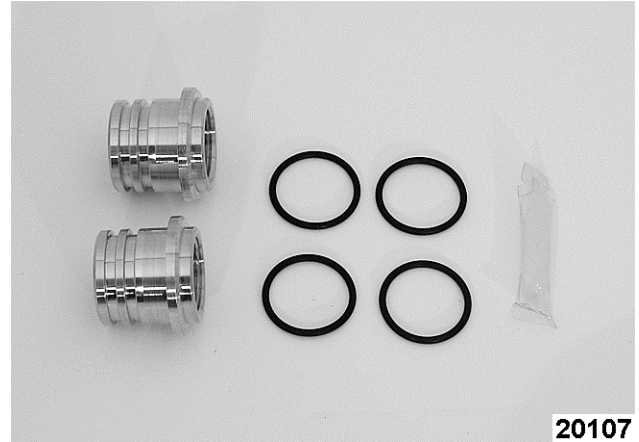


Fig. 3

7. Locate connector hoses and apply 2 to 3 wraps of Teflon tape to the male threads.

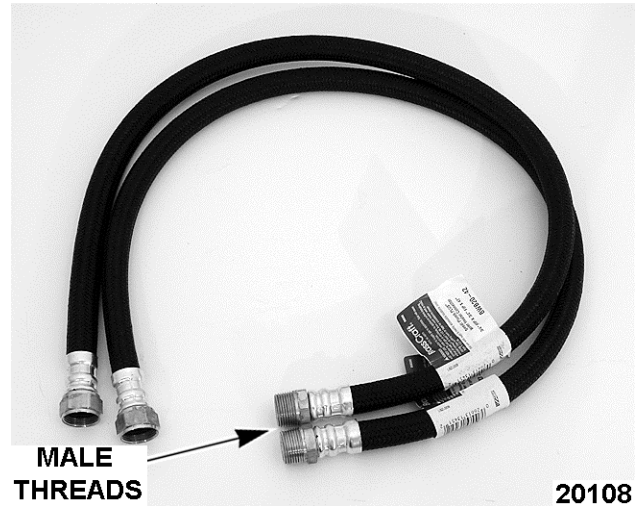


Fig. 4

8. Thread the brass in/out adapters tightly onto the threaded ends of the connector hoses.



Fig. 5

9. Install one O-Ring into each groove of the brass adapter.



Fig. 6

10. Apply a small amount of seal lube evenly onto each O-ring.



Fig. 7

11. Remove the pin and bracket from the softener in/out port area.



Fig. 8

12. Install the brass adapters into the in/out ports and secure by reinstalling the bracket and pin.

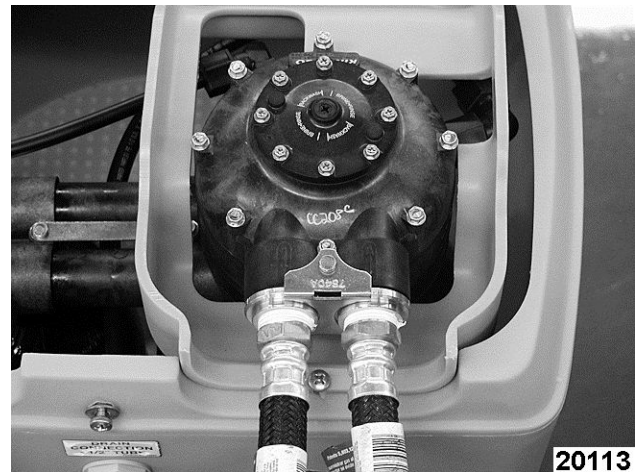


Fig. 9

13. The female end of the connector hoses is designed to thread onto 3/4" pipe thread. Perform appropriate plumbing to provide connections from the water supply to the inlet hose/port and from the outlet port/hose.

**NOTE:** The inlet port is identified with an arrow pointing towards the softener controls. The outlet port is identified with an arrow pointing away from the softener controls. These connections may be made before the pressure reducing valve.

14. Insert tubing provided into the drain port on the back of the cabinet and run it to an appropriate drain. Be sure to provide a "air gap" between the end of the tubing and the top of the drain.

**NOTE:** Drain line length should not exceed 8 feet vertical and 30 feet horizontal from the softener.

15. Insert tubing provided into the overflow port on the back of the softener and run drain lower than the cabinet connection to provide a gravity drain in the event of a internal cabinet leak.

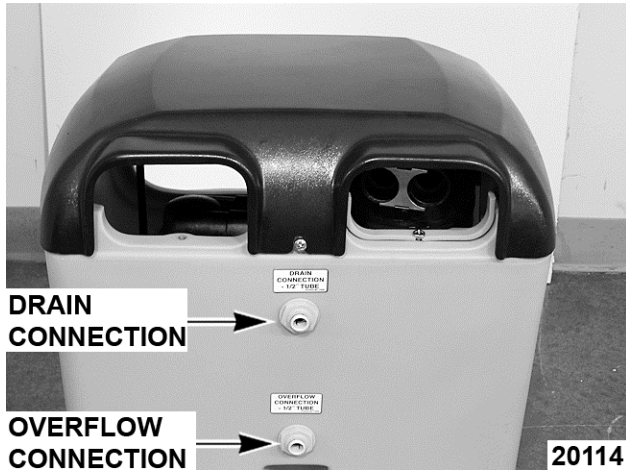


Fig. 10

16. Review the meter disc selection chart and the water analysis provided. If no water analysis is provided test the water supply.
17. 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](http://www.ProProducts.com).
18. Determine the correct number disc. DISC SELECTION

**NOTE:** Both the WS-40 and the WS-80 have a #4 meter disc installed at the factory. If this is not correct disc for your application, locate meter disc kit and REPLACE DISC.

19. Remove brine valve assembly from cabinet to set float cup.
  - A. Disconnect tubing from brine valve elbow by holding collet and pulling tubing straight away.

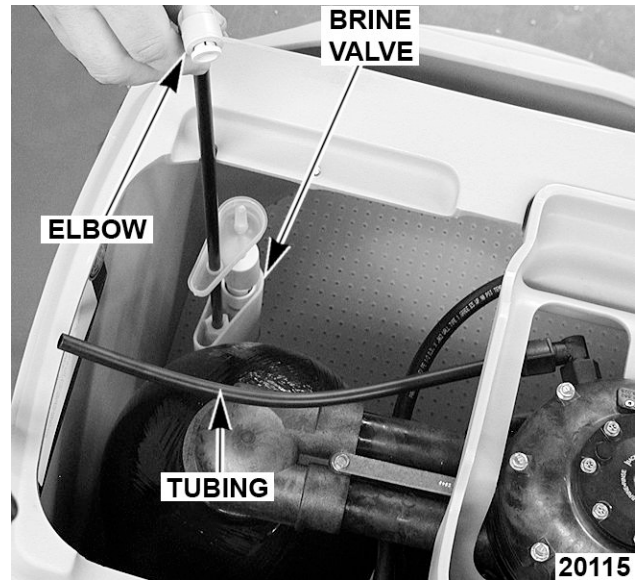


Fig. 11

- B. Remove the brine valve assembly by lifting straight up.
- C. Set it on a flat surface, to measure height of float cup.
- D. Measure from bottom of brine valve to top of float cup.

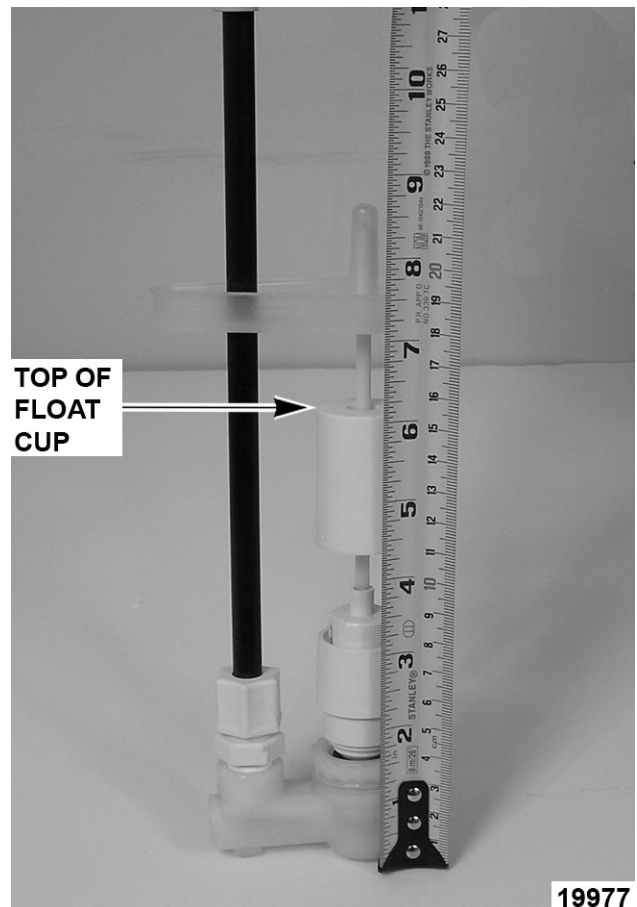


Fig. 12

Brine Valve Settings		
Unit	Brine Setting	Float Cup Height
WS-40	1.0 lb.	6.25"
WS-80	1.4 lb.	6.5"

E. Reinstall brine valve into the cabinet.

**NOTE:** Do not drop brine valve into drum. Dropping may lower float cup, resulting in an improper setting.

20. To install salt alarm system remove paper lining from back of salt alarm connector box.

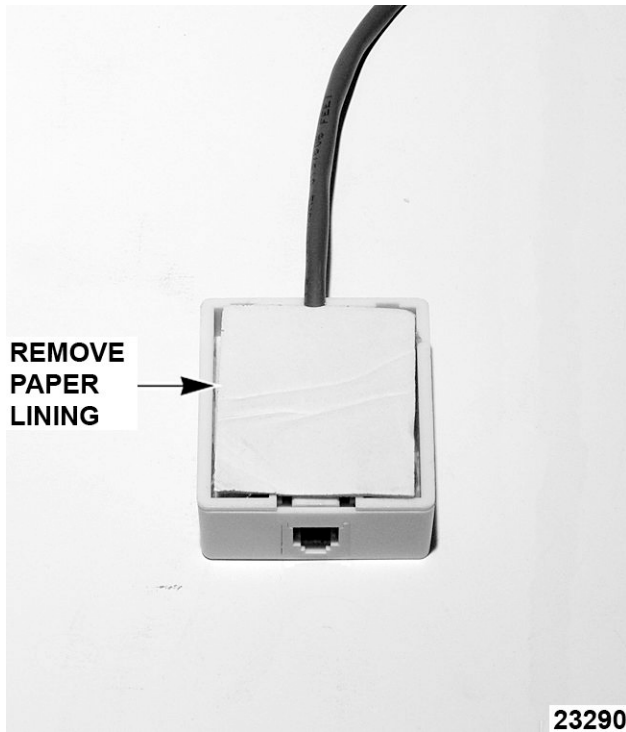


Fig. 13

21. Remove plastic lining from Velcro® backing located on back of salt alarm controller.

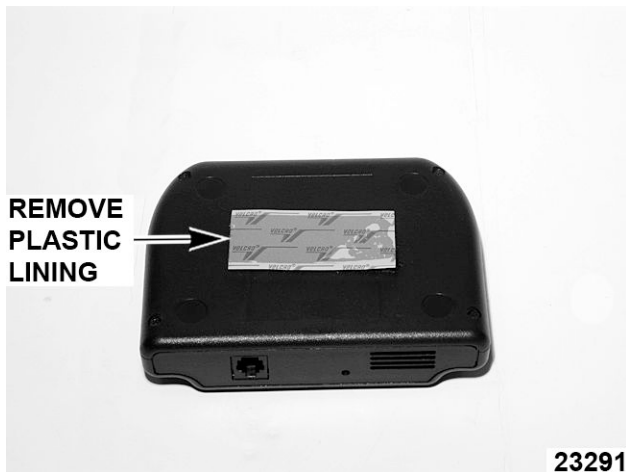


Fig. 14

22. Remove four screws securing back cover to salt alarm controller.



Fig. 15

23. Install three (3) AA batteries into salt alarm controller.

**NOTE:** When installing batteries - be certain to inspect connector to ensure it is secure.

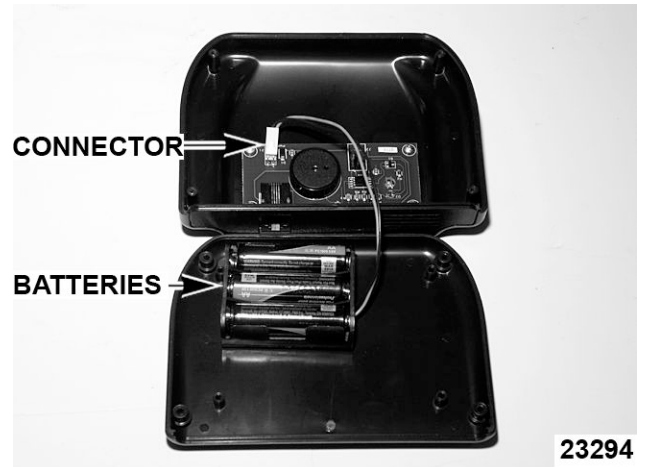


Fig. 16

24. Re-install back cover to salt alarm controller.

25. Using the adhesive backing on both devices - place alarm controller and salt alarm connector box in a position that will allow salt alarm controller to be seen and heard when it is activated.

26. Insert phone cable into salt alarm connector box and salt alarm controller.

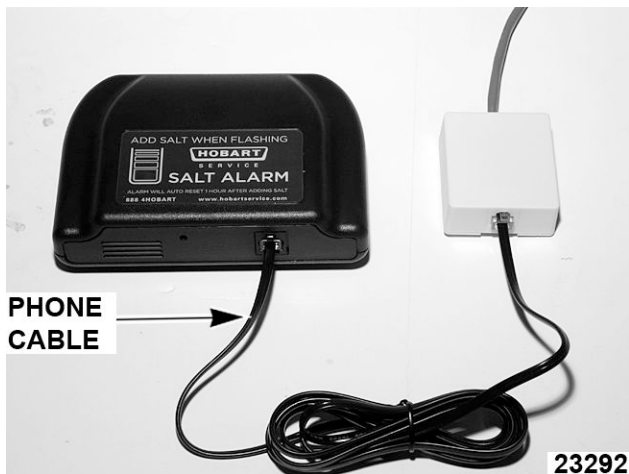


Fig. 17

27. Check for proper operation by pressing the recessed red button on bottom of salt alarm controller. If controller is operating properly - the indicator light will flash and an audible tone will be heard.

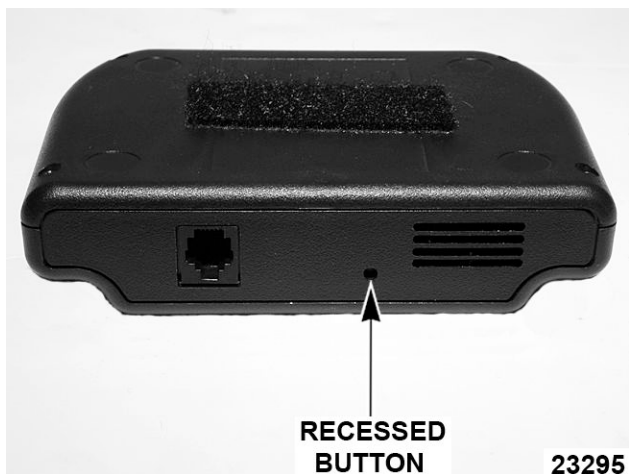


Fig. 18

- 28.
  29. 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.
30. Open inlet valve slowly allowing system to pressurize.
  31. Water and air will be expelled from drain until system is completely pressurized.
  32. A manual regeneration should be started to purge air and color from softening system. This is done by pushing down on actuator with a Phillips screwdriver and rotating clockwise slowly until pressure is felt.

33. Continue slowly until internal water flow is heard at softener valve. The softener will automatically run through a regeneration. This process should be repeated in 12 to 15 minutes to flush other resin tank.
34. Check for plumbing leaks.
35. Check unit for proper operation.

# DISC REPLACEMENT

## DISC REPLACEMENT WS-40/80

1. Remove screws and cap cover from level one.

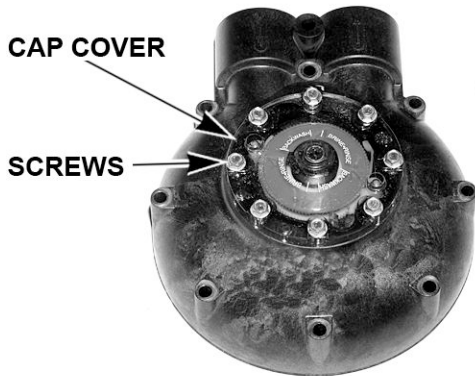


Fig. 19

23287

2. Remove balance piston.

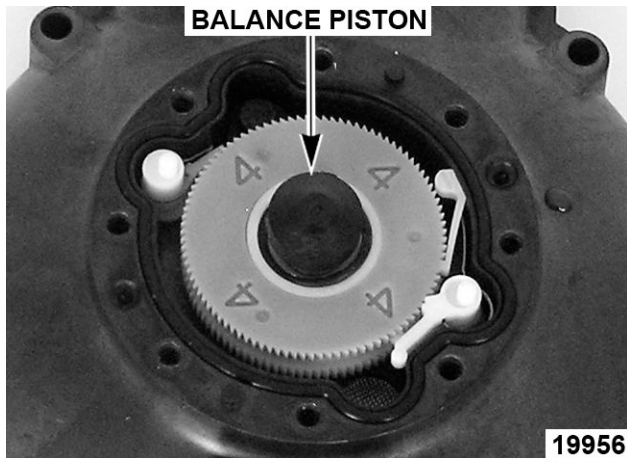


Fig. 20

19956

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

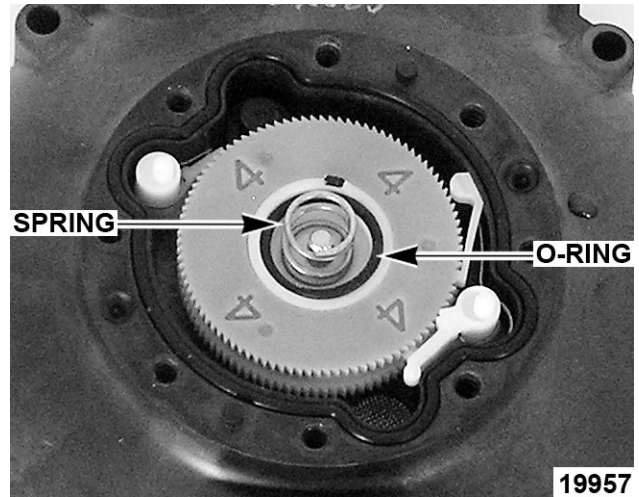


Fig. 21

19957

4. Remove meter drive pawl.

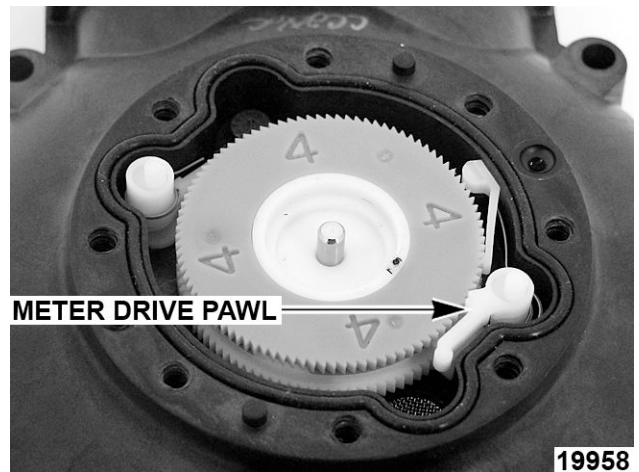


Fig. 22

19958

5. Remove meter disc.

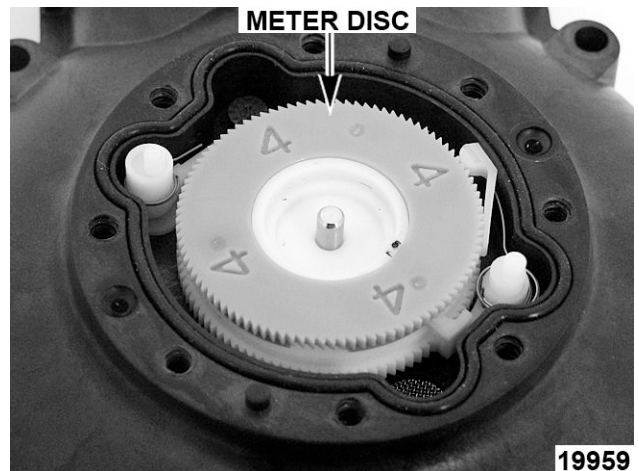


Fig. 23

19959



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

**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.

# DISC SELECTION

## DISC SELECTION WS-40/80

The amount of hardness removed (in compensated gpg) will be based on the amount of brine and the meter disc selected.

1. 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.
2. 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](http://www.ProProducts.com).
3. Determine the salt setting. The salt setting is determined by taking the compensated hardness (calculated in step 1 above) and using the specification table for model WS-40 or WS-80.
4. Verify the float cup setting. Use specifications for the WS-40 or WS-80 to determine the correct setting the float cup height.

<b>Specifications</b>	<b>WS-40</b>	<b>WS-80</b>
<b>Salt usage / generation</b>	1.0 lbs.	1.4 lbs.
<b>Capacity</b>	2,527 grains	4,818 grains
<b>Efficiency</b>	2,527 gr./lb.	3,442 gr./lb.
<b>Dosing</b>	5.5 lbs./cu. ft.	3.5 lbs./cu. ft.
<b>Float cup setting</b>	6.25"	6.5"

<b>WS-40 Disc Selection *</b>								
<b>Disc Number</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>Compensated Hardness *</b>	4	8	11	15	19	23	27	30
<b>Gallons Between Regeneration</b>	9.1	9.1	9.1	9.1	8.4	6.6	5.4	4.4
<b>Rregeneration Gallons (min.) @ 15 psig</b>	583	282	194	146	117	97	83	73
<b>* Compensated hardness in gpg = Hardness + (3 x Fe in mg/l)</b>								

<b>WS-80 Disc Selection *</b>								
<b>Disc Number</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>Compensated Hardness *</b>	5	11	17	22	27	32	35	40
<b>Gallons Between Regeneration</b>	10.2	10.2	10.2	10.2	10.2	8.3	6.7	5.5
<b>Rregeneration Gallons (min.) @ 15 psig</b>	732	366	244	183	146	122	105	92
<b>* Compensated hardness in gpg = Hardness + (3 x Fe in mg/l)</b>								