

TROUBLESHOOTING

Ten steps to determine the problem...

1. Gather Information

Any information obtained can reduce troubleshooting time.

2. Test the Water

Test hot, cold and raw.

- ☐ *Hot water, stored in the water heater, can tell you what the water was like yesterday.*
- ☐ *Cold water, directly from the softener, tells you what the water is like right now.*
- ☐ *Raw water, before treatment, tells you if the water to be treated has changed and if the correct meter disc was installed originally.*

Test water at the brine fitting while water is running to determine if the softener is producing soft water.

Is there really a problem with the softener? Or does the problem lie elsewhere at the customer site?

3. Observe the installation

Look for customer related problems.

- ☐ *Is the by-pass open or leaking?*
- ☐ *Is the softener out of salt?*
- ☐ *Is there bridged salt in the drum?*
- ☐ *Is the prefilter clogged?*

Look for obvious installation mistakes.

- ☐ *Is the meter disc and salt setting correct according to raw water?*
- ☐ *Is the by-pass disc correct?*
- ☐ *Are the inlet and outlet lines reversed?*
- ☐ *Drain installation – Are there any kinks, restrictions or T's from other appliances using water?*

Is the unit running water to drain?

Refer to the section for problems and solutions.

4. Run a soft water faucet wide open

Watch the meter disc.

- ☐ *Is it turning?*
Watch the no back pawl.
- ☐ *As the meter disc turns clockwise, the no back pawl should drop into the next tooth, preventing the meter disc from turning backwards. Does it?*
Measure the metering rate.
- ☐ *Wait for the no back pawl to drop into a tooth. Place a bucket under the faucet to catch the water. Let the meter disc turn for another tooth or two, then measure the water captured in the bucket. The approximate metering rate for all models is shown below.*

CC Softeners

Model Number	CC 206	CC 208
Gallons/Tooth (1/2 louver nozzle)	6	7.6

5. Place the unit in manual regeneration in the brine position

Check if unit is drawing brine by disconnecting the brine line from the elbow on the Level 3.

- ☐ *Is the brine suction elbow screen clogged?*
- ☐ *Is the suction sound smooth and continuous with no water blow back?*
- ☐ *Moisten a finger and place it on the open end of the elbow. Can you feel a smooth continuous suction?*

6. Remove the brine valve

Check the brine valve setting.

- ☐ Is it set according to the brine valve installation sheet?

7. Look for leaks in the house

Make sure that no water is being used.

- ☐ *Is the meter disc still turning?*
Some leaks may be so slow that the meter disc will not turn.
- ☐ *Are there any leaky faucets?*
- ☐ *Are there any toilets that run continuously?*

Place the unit in service position (6 o'clock or 12 o'clock).

Close the soft water side of the by-pass and leave it closed for one minute. On a Kinetico by-pass, turn it to the off position.

Open it.

- ☐ *Did you hear a surge of water through the valve when it was opened? If so, there is a leak somewhere in the house.*

8. Measure water pressure

Low water pressure can cause hard water and/or salty water.

Measure the water pressure:

1. Adapt a pressure gauge to the brine fitting port on Level 3.
2. Turn on one cold water faucet wide open.
3. Place either tank in the backwash portion of cycle.

- ☐ *Did the pressure drop below 15 psi at the brine fitting?*
The Kinetico valve requires a minimum of 15 psi for the CC Series to function properly.

9. Measure backwash flow rate

Too little backwash flow can cause salty water.

Measure the amount of water coming out of the drain line during the backwash portion of cycle.

- ☐ *Is it less than the backwash rate on the specification sheet?*

10. Check unit shutoff

The drain should be dry at the service positions (12 o'clock and 6 o'clock).

An occasional drip may occur. Measure the drip rate. There should be less than 5 ml of water collected in 22 seconds.

- ☐ *Is the drain running or dripping excessively in the service positions?*

Solving the Problem

Having run through the above 10 steps, you are now ready to solve whatever problems have been uncovered. The next section tells specifically how to resolve common complaints and problems with water treatment systems.

HARD WATER

Problem	Reason	Solution
1. Water meter disc is not turning.	<ul style="list-style-type: none"> ❑ Non-conforming meter drive pawl. ❑ Meter drive spring installed wrong. ❑ No back pawl not installed. ❑ Damaged tooth on the meter disc. ❑ Damaged gear in the gearing stack. 	<ul style="list-style-type: none"> ▪ Replace meter drive pawl. ▪ Reinstall meter drive spring. ▪ Install no back pawl. ▪ Replace meter disc. ▪ Regear Level 1 Assembly and check allowable flow rates.
2. The unit will not go into automatic regeneration.	<ul style="list-style-type: none"> ❑ Water meter disc is not turning. ❑ Control disc will not automatically advance out of service position. ❑ Damaged teeth on control disc. 	<ul style="list-style-type: none"> ▪ See number 1 above. ▪ Replace regeneration start pawl. ▪ Replace control disc.
3. No vacuum in brine position.	<ul style="list-style-type: none"> ❑ Check stems missing or not working correctly. ❑ Plugged venturi. ❑ Plugged backwash flow control. ❑ Plugged brine elbow screen. 	<ul style="list-style-type: none"> ▪ Replace or add check stems. ▪ Clean out Level 3 venturi throat and molded venturi nozzle (Do <i>not</i> use a paper clip!). ▪ Clean out backwash flow control. ▪ Clean out brine elbow screen.
4. Short salting.	<ul style="list-style-type: none"> ❑ The brine drum is not level. The grid system allows a water level no more than 1" above the grid. If the brine drum is not level, it may exceed this. 	<ul style="list-style-type: none"> ▪ Level the brine drum.
5. Bridged salt in the brine drum.	<ul style="list-style-type: none"> ❑ Salt has solidified in the drum. 	<ul style="list-style-type: none"> ▪ Carefully move the salt around to break up the mass of solidified salt.
6. The by-pass is open.	<ul style="list-style-type: none"> ❑ An open by-pass allows water to flow around the system without any treatment at all. 	<ul style="list-style-type: none"> ▪ Close the by-pass.

7. The by-pass is leaking.

- This can be determined by testing the water at a soft water tap. With the water still running, disconnect the brine line at the valve and test the water. Water that tests soft at the brine fitting and hard at the tap indicates a by-pass that is leaking.
- Repair or replace the by-pass.

8. Brine drum does not refill or overfills.

- The brine valve is set incorrectly.
 - Set the brine valve according to instructions on the brine valve installation sheet in the owner's pack or tech manual.
- The brine valve is non-conforming
 - Replace the brine valve.
- The brine drum is dirty.
 - Clean out the brine drum.
- The venturi nozzle is plugged.
 - Clean out Level 3 venturi throat and molded venturi nozzle (Do *not* use a paper clip!).
- The brine elbow screen is plugged.
 - Remove and clean brine elbow screen.

Frequent Regeneration

Problem	Reason	Solution
1. The customer does not understand Kinetico units.	<ul style="list-style-type: none"> □ If customers previously owned an electric unit with timer based regeneration, they may not realize that Kinetico units can regenerate at any time of the day or night. 	<ul style="list-style-type: none"> ▪ Explain to the customer how the Kinetico softener works. Emphasize that regeneration is controlled by the measurement of water use rather than on an arbitrary timed basis.
2. High water usage.	<ul style="list-style-type: none"> □ The customer may be using more water than he realizes. 	<ul style="list-style-type: none"> ▪ Obtain a water-bill (if customer is on a city water system) and determine how much water should be used.
3. The unit does regenerate too frequently.	<ul style="list-style-type: none"> □ Incorrectly labeled meter disc. Verify that the number of slots on the disc match the number molded on the disc. □ Incorrect meter nozzle 	<ul style="list-style-type: none"> ▪ Install the correct meter disc. ▪ Verify meter nozzle and replace if necessary.

High Salt Consumption

Problem	Reason	Solution
1. Regenerates too frequently.	<ul style="list-style-type: none"> □ See the section entitled Frequent Regeneration. 	<ul style="list-style-type: none"> ▪ See the section entitled Frequent Regeneration.
2. Water level in the brine drum is too high.	<ul style="list-style-type: none"> □ The brine valve is set wrong or non-conforming. □ The brine valve or the brine drum is dirty. □ The brine valve leaks. 	<ul style="list-style-type: none"> ▪ Verify the brine valve setting. Replace non-conforming brine valve. ▪ Clean brine valve and drum. ▪ Tighten the connectors on the brine valve.

Salty Treated Water

Problem	Reason	Solution
1. Restricted drain line.	<ul style="list-style-type: none"> □ The drain is kinked or clogged. 	<ul style="list-style-type: none"> ▪ Clear any obstructions. Make sure that the drain line flows smoothly and unrestricted.
2. Low water pressure.	<ul style="list-style-type: none"> □ The unit should not see water pressure drop below 15 psi on the outlet at any time. During the backwash portion of the regeneration cycle, it must hold at least 15 psi or the brine may not rinse out completely. □ The prefilter cartridge is plugged. 	<ul style="list-style-type: none"> ▪ Test the outlet pressure with the unit in backwash and one faucet at high flow. Measure the pressure by placing a gauge on the brine fitting. Raise pressure if below 15 psi. ▪ Replace prefilter cartridge.
3. The backwash flow control is plugged.	<ul style="list-style-type: none"> □ Without enough backwash flow to the drain, the unit cannot wash all the salt from the media tanks. 	<ul style="list-style-type: none"> ▪ Clean the backwash flow control.
4. The drain is extremely long or placed higher than 8 feet above the floor.	<ul style="list-style-type: none"> □ Such drain runs can put back-pressure on the unit and restrict the drain flow. This causes the same result as number 3 above. 	<ul style="list-style-type: none"> ▪ Locate a closer drain or use a larger diameter drain line.
5. The upper distributors are plugged. (This does not apply to High Efficiency softeners)	<ul style="list-style-type: none"> □ Foreign material that finds its way into the media tanks may be collected around the upper distributors during backwash, clogging them. 	<ul style="list-style-type: none"> ▪ Clean upper distributors. ▪ Install a prefilter.
6. Water level in the brine drum is too high.	<ul style="list-style-type: none"> □ The brine valve is set wrong or non-conforming. 	<ul style="list-style-type: none"> ▪ Verify the brine valve setting. Replace non-conforming brine valve.

Iron Bleed-through

Problem	Reason	Solution
1. Customer plumbing.	<ul style="list-style-type: none"> Previous iron buildup inside existing plumbing after the water softener. 	<ul style="list-style-type: none"> Verify that customer plumbing is the problem by testing the water quality at the brine fitting with water running.
2. The water meter disc is not set properly for current raw water conditions.	<ul style="list-style-type: none"> The composition of raw water can change with time. 	<ul style="list-style-type: none"> Check the hardness and iron content of raw water. Install the correct disc for current raw water conditions.
3. The salt setting is not set properly for current raw water conditions.	<ul style="list-style-type: none"> The composition of raw water can change with time. 	<ul style="list-style-type: none"> Check the hardness and iron content of raw water. Set the brine valve for current raw water conditions.
4. The iron may be ferric iron.	<ul style="list-style-type: none"> Ferric iron is not removable by ion exchange. The iron may be finer than the micron rating of the installed prefilter cartridge. 	<ul style="list-style-type: none"> Verify by using the demo softener to determine if iron is removable by ion exchange. Add additional equipment if needed. Install a cartridge with finer micron rating.
5. The customer's plumbing may include a galvanized pressure tank.	<ul style="list-style-type: none"> A galvanized pressure tank will create oxidized iron. 	<ul style="list-style-type: none"> Replace the galvanized pressure tank with a bladder style pressure tank.

Water Running to Drain

Note: With softeners and filter/softeners, start by testing the drain water. If the drain water is hard, the tank currently in service has a problem with its drain valve. If the drain water is soft, start with number 1 below.

Problem	Reason	Solution
1. The balance piston O-ring is not seated properly.	<ul style="list-style-type: none"> ❑ Water will leak past an improperly seated balance piston O-ring and out the drain. 	<ul style="list-style-type: none"> ▪ Depress the actuator several times to seat the O-ring. Replace worn or non-conforming O-ring.
2. Bad control disc.	<ul style="list-style-type: none"> ❑ A scored control disc will allow a fast drip to a pencil-sized stream to flow through the drain. 	<ul style="list-style-type: none"> ▪ Replace the control disc.
3. The drain or control valve seals are not seating properly.	<ul style="list-style-type: none"> ❑ Foreign matter under the seals will not allow them to seat properly. 	<ul style="list-style-type: none"> ▪ Disassemble and remove the foreign matter from seals.
4. Low water pressure.	<ul style="list-style-type: none"> ❑ If the water pressure is less than 15 psi (CP208-210) or 25 psi (CP213-216) at the brine fitting, the system may not operate properly. ❑ Test Backwashing Filters with the unit in backwash and 1 faucet (cold) running water. 	<ul style="list-style-type: none"> ▪ Increase water pressure.
5. The Main Valve piston quad rings or Level 4 internal quad rings are not sealing.	<ul style="list-style-type: none"> ❑ The quad rings may be rolled, pinched, torn or just dirty. ❑ The quad rings may be chloramine or chlorine damaged if on a chlorine treated water supply. 	<ul style="list-style-type: none"> ▪ Replace and re-silicone the quad rings. ▪ Replace quad rings with silicone seals. Order chloramine kit, part number 10534.

Pressure Loss

Problem	Reason	Solution
1. Reduced pressure entering the unit.	<ul style="list-style-type: none"> □ The prefilter is clogged. 	<ul style="list-style-type: none"> ▪ Replace the clogged prefilter.
2. The upper and/or lower distributors are plugged.	<ul style="list-style-type: none"> □ Foreign matter from the input lines is accumulating in the distributors. 	<ul style="list-style-type: none"> ▪ Clean the distributors. Add a prefilter to eliminate the foreign matter before it enters the unit.

Taste, Color & Odor

Problem	Reason	Solution
1. Treated water has a metallic or iron taste.	<ul style="list-style-type: none"> □ See the section entitled "Iron Bleed-Through." 	
2. Treated water has chlorine odor and/or taste.	<ul style="list-style-type: none"> □ This is due to heavily chlorinated raw city water. 	<ul style="list-style-type: none"> ▪ Install a carbon filter.
3. Treated water has a salty taste.	<ul style="list-style-type: none"> □ In high TDS (1000+) applications, salt taste may be present due to the ion exchange process or sodium chloride in the raw water. □ See the section entitled "Salty Treated Water." 	<ul style="list-style-type: none"> ▪ Inform the customer of the Kinetico Drinking Water System or Commercial RO System.
4. Treated water has a yellow tint.	<ul style="list-style-type: none"> □ The raw water may have traces of tannins present. □ See the section entitled "Iron Bleed-Through." 	<ul style="list-style-type: none"> ▪ If tannins are present, use tannin softener.
5. Treated water has an odor (hot water only).	<ul style="list-style-type: none"> □ The magnesium rod in hot water tanks can cause a reaction that gives off an odor of rotten eggs. 	<ul style="list-style-type: none"> ▪ Remove this rod from the hot water heater. An alternative rod may be installed.

Leaks

Problem	Reason	Solution
1. Water leaks from any of the assembly levels.	<input type="checkbox"/> Main Valve screws are not tightened.	▪ Depressurize the unit and tighten the Main Valve screws.
	<input type="checkbox"/> One of the seals between assembly levels (Level 1 through Level 4) is pinched or missing.	▪ Replace the non-conforming seal.
	<input type="checkbox"/> One of the screw holes is stripped or cracked.	▪ Replace the base.
	<input type="checkbox"/> There is a crack on the seal area near a screw hole.	▪ Replace the level.
2. Water feed pressure is too high (125 psi maximum).	<input type="checkbox"/> No pressure regulator installed.	▪ Install pressure regulator.
	<input type="checkbox"/> The pressure regulator is broken.	▪ Replace pressure regulator.
3. Water leaks at the main base or remote base.	<input type="checkbox"/> The base is not tightened properly.	▪ Tighten base.
	<input type="checkbox"/> The O-ring on the base is pinched or missing.	▪ Replace base O-ring.

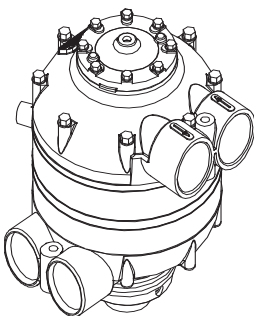
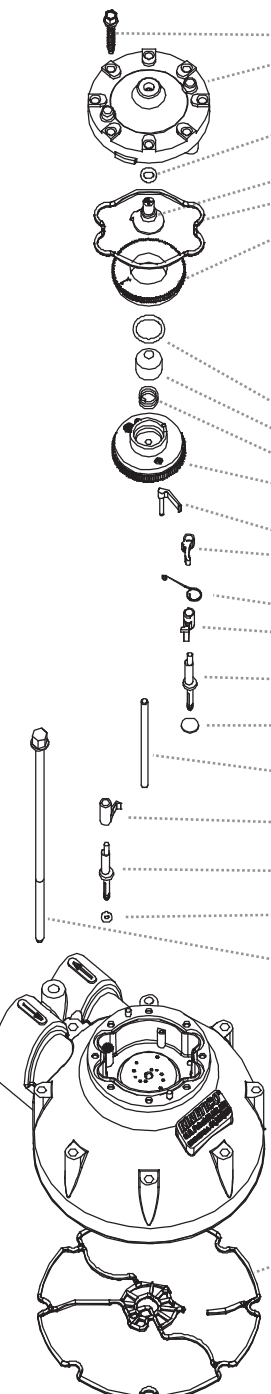
Equipment Noise

Problem	Reason	Solution
1. The unit makes a squealing noise.	<input type="checkbox"/> The control disc is not flat on the ceramic, causing the drain valve to flutter.	▪ Replace the control disc, balance piston spring and the balance piston O-ring. You may also want to change the drain valves and seals.
2. The unit makes a gurgling, hissing or bubbling sound.	<input type="checkbox"/> On new installations, there may be some air trapped in the unit initially.	▪ Run through an entire cycle to allow the air to escape.
	<input type="checkbox"/> Air is being drawn into the plumbing.	▪ Identify air leaks in the plumbing and fix them.
	<input type="checkbox"/> The brine line and/or the brine valve are not air checking.	▪ Identify and replace the faulty part(s).

Unit Sticks in Cycle

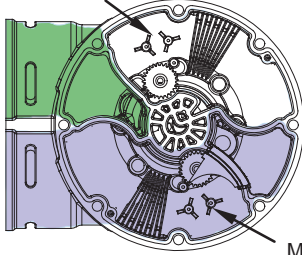
Problem	Reason	Solution
1. The unit sticks in regeneration or backwash cycle.	❑ The regeneration flow path is plugged at the regeneration nozzle or flow control.	▪ Clean the regeneration flow path.
	❑ The regeneration drive pawl and/or spring is weak or broken.	▪ Replace the regeneration drive pawl.
	❑ There is a damaged tooth on the control disc.	▪ Replace the control disc.
	❑ The eccentric pinion is worn.	▪ Replace the eccentric pinion (snap fit).
	❑ On backwashing filters, low pressure or poor backwashing may cause a plugged bed.	▪ Increase inlet pressure or the frequency of backwash. Unit may need re-bedding.
2. The unit sticks in service cycle.	❑ The regeneration start pawl is broken or missing.	▪ Replace or install regeneration start pawl.
	❑ The control disc has a worn or missing tooth.	▪ Replace control disc.

PARTS

Complete Valve	Level One
 <p>CC 206s.....11293 CC 206c.....11544 CC 208s.....11272 CC 208c/h.....11505</p>	 <p>Cap Screw (8)..... 1010 Cap9044B Actuator O-ring..... 1460 Actuator9284A Cap Seal8628 Meter Disc 1 1504 Disc 2 1505 Disc 3 1506 Disc 4 1507 Disc 5 1508 Disc 6 1509 Disc 7 1510 Disc 8 1511 Balance Piston O-ring 1070 Balance Piston 9260 Balance Piston Spring 5448 Control Disc 4689 (central brining)4700A No-Back Pawl 7097 Meter Drive Pawl 7014 Meter Drive Pawl Spring..... 7010 Regen Start Pawl 1783 Eccentric Pin 1520 Level 1 Filter 10781 Support Pin 1023 Regen Drive Pawl 5511 Eccentric Pin 1520 Regen O-ring 2657 Level 1 Screw (8) 1830 Level 1 Seal (Red LSR)..... 8471 Level 1 Assembly (includes ... Level 2) CC 206s11294A CC 206c13441A CC 208s11277A CC 208c/h11536A</p>

Gearing

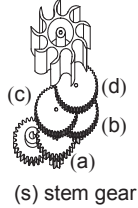
Regeneration Gearing



Meter Gearing

4 Stack Meter Gearing

turbine (t)



(s) stem gear

Unit (gallons) s-a-b-c-d-t

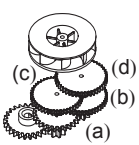
CC 206s (600) s-2-2-7-6-t
CC 206c/h (600) s-2-2-7-t
CC 208s (750) s-2-1-5-4-t
CC 208c/h (750) s-2-1-5-4-t

Part	Number
Gear Stem	1521
Gear 1	1522
Gear 2	1523
Gear 4	1525
Gear 5	1526
Gear 6	1527
Gear 7	1528
Turbine (PP9)	9258

Regeneration Gearing

Unit (time) Short Hand
CC 206s (11 min.) s-2-2-2-2-t
CC 206c/h (11 min.) s-2-2-2-2-t
CC 208s (11 min.) s-2-2-2-2-t
CC 208c/h (11 min.) s-2-2-2-2-t

turbine (t)



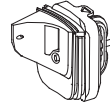
(s) gear stem

Part	Number
Gear Stem	1521
Gear 2	1523
Turbine (#10 jet)	8781F

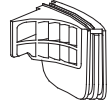
Gearing Part Numbers (all)

Gear 1	1522
Gear 2	1523
Gear 3	1524
Gear 4	1525
Gear 5	1526
Gear 6	1527
Gear 7	1528
Turbine (#8 jet)	11011A
Turbine (#PP9)	9258
Turbine (#10 jet)	8781F
Stem Gear	1521
Washers	1773
E-ring	1022
Meter Turbine Retainer	7859
Gear Alignment Clip	11902A

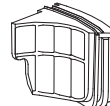
Nozzles



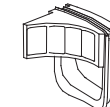
Micro Nozzle
0.05 gpm – 5 gpm 10880B



1/2 Louver Nozzle
CC 206s
CC 206c/h
CC 208s
CC208c/h
0.3 – 25 gpm 11018



Full Louver Nozzle
0.7 – 40 gpm 11019



Open Louver Nozzle
1.1 – 50 gpm 11188

Inlet / Outlet Adapters



1 1/4" or 1" Brass - Solder 7841
(complete kit) 7842A



3/4" or 1" PVC - Glue 5335D
(complete kit) 1483A



3/4" or 1" Brass – Solder 1355
(complete kit) 1454A



3/4" Brass – FNPT 3748
(complete kit) 3801A



Cotterless Clevis Pin 10169



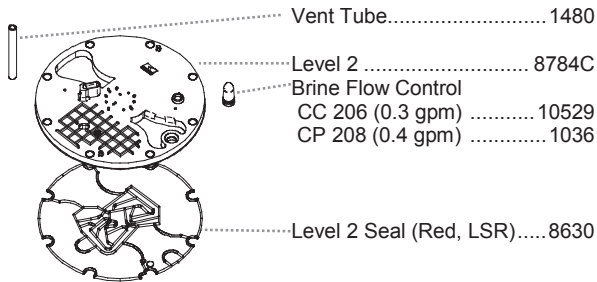
Module Set Screw 11551
(CC 206c only)



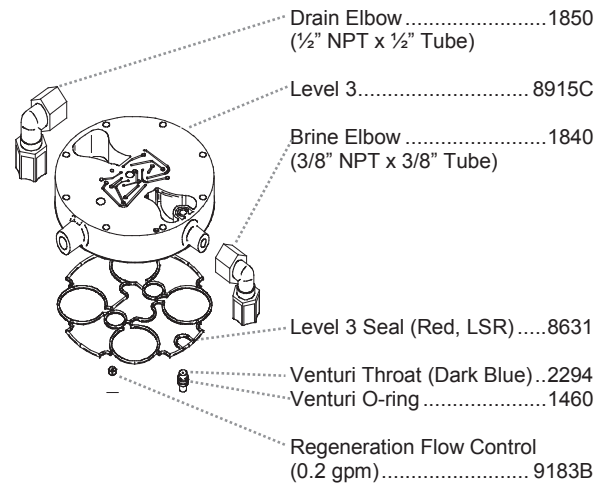
Adapter Bracket 7840A

Tank Connector O-ring 1328

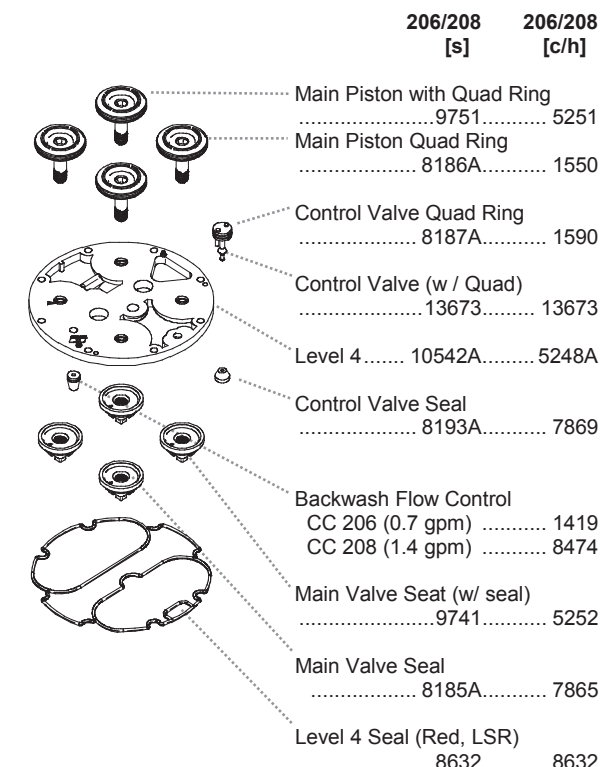
Level 2



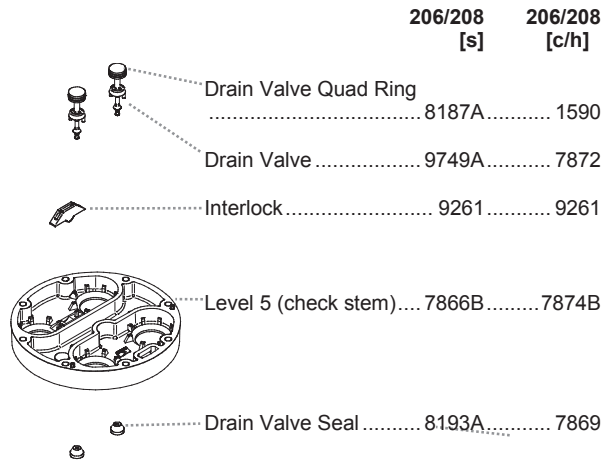
Level 3



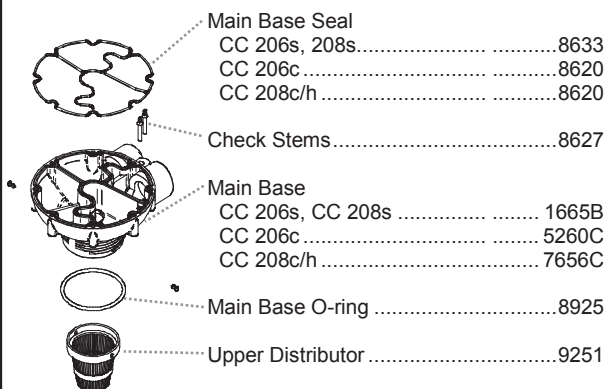
Level 4



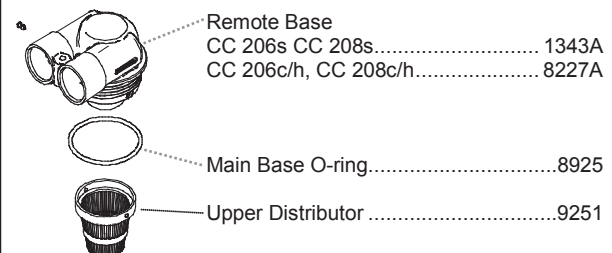
Level 5



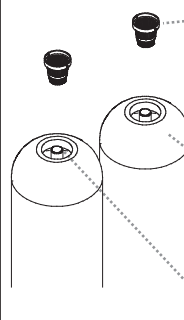
Level 6



Remote Base

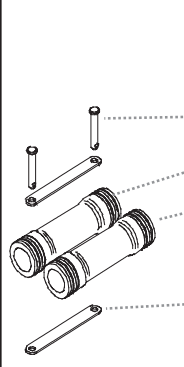


Media Tanks, Distributors and Riser Tubes



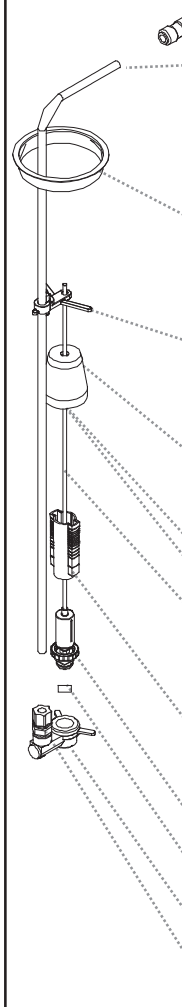
Upper Distributor	9251
Media Tank	
CC 206s	7224A
CC 206c	11540A
CC 208s	11107A
CC 208c/h	11714
Riser Tube (Included w/Tank)	

Tank Connectors



Connector Kit	
CC 208	11014A
Connector Pin	4742
Connector O-ring	1328
Connector Pipe	
CC 206 (6")	2344
CC 208 (8")	11323A
Connector Link	
CC 206 (6")	10211
CC 208 (8")	2845

Brine Valve



$\frac{3}{8}$ " x $\frac{3}{8}$ " Tube Union	9210
Bent Tube	
CC 206c/h	11549
8x16 Brine Tank	7899
12x20 Brine Tank	7899
18x35 Brine Tank	7802
Well Cover	
CC 206c	10087B
CC 208c/h	10087B
8x16, 12x20, 18x35	7815A
Rod Lock	7796
8x16, 12x20, 18x35	7796
Float Cup	10699
8x16, 12x20, 18x35	7821
Float Cup Grommet	7789
Float Cup Retainer	7820A
Rod Guide	
CC 206c/h	10698
CC 208c/h	10698
8x16, 12x20, 18x35	7798
Adjuster Tube	
CC 206c, CC208c/h	10091
8x16, 12x20, 18x35	7787B
Brine Valve Assembly	7786
Brine Valve Quad Ring	9804
Brine Valve Body with connector	7783
Connector, $\frac{3}{8}$ " Tube x $\frac{1}{4}$ " MNPT	7781

Complete Brine Valve Assemblies

CC 206c/h	11548
CC 208c/h	11511
8 x 16 Brine Tank	7928
12 x 20 Brine Tank	7928
18 x 35 Brine Tank	7805

Media

Softening Resin, Standard Mesh Non-solvent	13672
--	-------