

OWNERS GUIDE

**BRASWELL GENUS
WATER SOFTENER**

Braswell

Water Quality Systems, Inc.

415 E. Washington
Jackson, Missouri 63755

FOR REFERENCE PURPOSES

When your Water Quality System is installed, be sure your Dealer fills in the information below.

MODEL NUMBER _____

WATER ANALYSIS:

CONTROL SERIAL NUMBER _____

HARDNESS _____ GPG

TANK SERIAL NUMBER _____

IRON _____ PPM

DATE OF INSTALLATION _____

PH _____

SPECIAL REMARKS _____

OTHER _____

DEALER _____

ADDRESS _____

PHONE FOR SERVICE _____

CONGRATULATIONS!

Welcome to the wonderful world of Quality Water. Your Water Quality System is engineered and manufactured as the result of a consumation of many years of experience in the highly specialized field of Water Treatment. The exclusive patented features in your Water Quality System bears this out. This appliance is carefully engineered for full performance with a minimum of maintenance. We know you will enjoy its many benefits. We thank you for choosing our Water Quality System.

OWNER and/or USER RESPONSIBILITY

Read the owner and operator manual carefully and familiarize yourself with your new Water Quality Appliance. Most service calls can be prevented with a little preventative maintenance and this can be done during regularly scheduled salt delivery service where it is available by your Water Quality Dealer, thus making it further profitable to ensure the best of approved salt and performance of your unit at a very reasonable rate. Unscheduled service calls at the request of the customer, that are not the result of defective equipment, materials or workmanship will be charged at the regular service rate by the Dealer, so . . .

BEFORE YOU CALL THE SERVICE MAN, PLEASE CHECK . . .

- Is the unit plugged into an electrical outlet that is not on a switch leg and is on the proper voltage?
- Is the unit supplied with a sufficient supply of approved salt that has not become hard or bridged?
- Is the unit protected from freezing, including drain lines and lines to and from the salt dissolver? And is the unit protected from excessive heat or dampness from sweating pipes or leaks?
- Is the water pressure supply to the unit within the limits set by the manufacturer or has the source of water been changed?
- To test for adequate programming or other suspected problems, use your small pure soap kit and proceed as follows--Rinse the bottle each time and test both hot and cold water. If hard, this indicates an over-use and if you determine the over-use was not a temporary problem, you should adjust the timer as indicated in this manual. Hot or cold, a test indicating hard water could signal an over-use or a malfunction has taken place. Please convey this information to the Dealer when calling for service. Many service calls can be handled over the phone with proper communication.

BRASWELL - GENUS I

LIMITED RESIDENTIAL WARRANTY

March 1, 1992

This warranty is extended to the original owner only and is not transferable to subsequent owners of this equipment.

To place the equipment under warranty, THE WARRANTY REGISTRATION CARD MUST BE COMPLETED IN ITS ENTIRETY AND RETURNED TO BRASWELL WATER QUALITY SYSTEMS, INC., Jackson, Missouri, within thirty (30) days of installation by a factory authorized dealer.

TERMS OF THIS WARRANTY:

The manufacturer, Braswell Water Quality Systems, Inc., warrants BRASWELL-GENUS I equipment to be free of defects of workmanship and materials for the following terms.

Defective parts will be repaired or replaced FOB Factory from the original owner along with the unit serial number.

10 Years: From date of manufacture of valve bodies and internal valve parts. The brine tank and mineral tank.

5 Years: From date of manufacture of all electric controls control valve solenoids, gaskets, springs, and seals.

LIMITATIONS OF THIS WARRANTY:

Your GENUS I equipment must be sold to you by an authorized Braswell Dealer in order to receive benefits of this warranty.

This warranty does not cover damage due to:

- abuse, misuse, or neglect
- excessive water pressure (over 125 psi)
- excessive water temperature (over 120 DegF.)
- freezing
- alterations
- application or installation not in accordance with published factory specifications or the instructions provided in the operation manual or not conforming to local codes.
- over-chlorinated water (over 1.5 ppm residual)
- or any other act of God not reasonably within the Dealer's power to prevent or control.

This warranty does not cover any labor or service call costs incurred with respect to the removal or replacement of any defective part or parts.

In the event that the water supply being processed through this system contains bacterial iron, algae, sand, or other unusual substances, unless the system is represented as being capable of handling these substances in factory published literature, these substances must be removed before entering this product.

There are no other warranties, expressed or implied, other than stated in this document to the extent permitted by local state laws.

Braswell Water Quality Systems, Inc., shall not be liable for indirect, special or consequential damages in connection with the use of this equipment to the extent allowed by local state laws.

CHECK LIST BEFORE INSTALLATION

1. Water pressure should be at least 20 psi. minimum. If pressure is over 80 psi. install a pressure reducer. (Most hot water heaters are rated at 75 psi. working pressure.
2. Flow rate should be at least 3.5 gpm. @ 20psi.
3. Drain availability - Floor drain , washer drain, etc. Run overhead no more than 5 feet above the water softner. Increase the size of the drain for long runs. All plumbing codes require a 3" air gap at the end of the drain line.
4. Electricity - continously hot receptacle of 110v - 60 Cyc.
5. Water quality - if the water supply contains sulphur, iron bacteria, tannins, algea, oils, acids, salt or other unusual substances, your system may require pre-treatment ahead of the water softner.

SOME DON'TS

1. Don't install if inlet water temperature exceeds 120 deg. F.
2. Don't allow heat from torches to be transferred to plastic or valve parts.

SOME DO'S

1. Install the system after the pressure tank. Ask for advice on any special plumbing arrangement.
2. Be sure to comply with all local plumbing and electrical codes.
3. Install pressure reducing valve if pressure is over 80 psi.
4. Examine inlet piping. If it is clogged, replace it or clean it. Minimum size should be 3/4" nominal.
5. Install gravity drain on the brine tank.

INSTALLATION AND STARTUP PROCEDURES

1. Open all the boxes and check to see that all parts and assemblies are as indicated for complete assembly.
2. Install the connector, fittings, and yoke straps to the control valve.
3. Install the (optional) by-pass to the in house lines at the softener location.
4. Install the single tank adapter to the back of the control valve. Plumb the by-pass in. Install 1/2 " I.D. flexible tube for draining. (Increase the size of drain if the tube runs overhead or a long distance.) Install the brine tank and harness assembly. Put enough water in the brine tank to cover the grid about 1 ". Add 1/3 cup of Chlorox to the water. Turn on the inlet water slowly and pressurize the tank.
5. Place 50 lbs of salt in the brine tank.
6. To purge air from the tank, open the inlet and outlet valves. You also need to open a nearby cold faucet.
7. Check the system for leaks.
8. Install the timer assembly to the control valve using the wiring harnesses. Red to #1, Yellow to #2 and Blue to #3. (Whites are common) Plug the cord into a continuously hot 110 AC receptacle.
9. Rotate the timer to the start position and then slowly to the third position. This will immediately purge any remaining air from the system. (You can tell by the sound when all the air is out)
10. Turn the timer to the first position and you will notice a flow of brine to the control valve as soon as the vacuum develops.
11. When the brine is completely drawn, advance the timer to the second or pulsing slow rinse position. Pulsing will then start in about a minute.
12. Advance the timer to the third position for the upflow fast rinse and let the timer advance automatically through the fixed five minute period and automatically advance to the downflow purge and refill period. Please time the purge period for accuracy of setting the salt dosage. (Refer to the chart for this info.)
13. Check the water at the drain or nearest cold water faucet for complete rinsing. The test cycle might require additional rinsing.
14. Frequency of regeneration will be set depending on the size of the family, estimated water usage, and the water analysis. Please allow 1GPG for each PPM of iron shown in the test. Consult the chart for capacity and salt settings.

HOW TO SET WATER SOFTENER TIME CONTROL

1

SET SKIPPER WHEEL SO THAT "TO-DAY" OR NUMBER ONE IS OPPOSITE ARROW. *

LIFT TABS ON SKIPPER WHEEL CORRESPONDING TO DAYS REGENERATION IS DESIRED.

FOR MANUAL REGENERATION
MOVE LEVER IN DIRECTION OF ARROW
AS FAR AS IT WILL GO — THEN RELEASE.

NOTE — TIMING INCREMENTS
ARE 1½ MINUTES EACH.

2

SKIPPER WHEEL

SET TIME OF DAY AT WHICH
UNIT IS TO REGENERATE BY
LOOSENING THIS SCREW,
AND TURNING THIS DIAL
IN EITHER DIRECTION SO THAT ARROW
POINTS TO DESIRED REGENERATION TIME
IN THE WINDOW OF THE BLACK DIAL.

THEN TIGHTEN SCREW.

REGENERATION CYCLE	
RED	BRINE & SOAK
WHITE	SLOW & FAST RINSE
YELLOW	PURGE & REFILL

A. TO CHANGE TIME SETTING ON
YELLOW DIAL LIFT BLACK KNOB
AND TURN POINTER TO DESIRED
TIME IN MINUTES.

B. TO CHANGE TIME ON RED OR
WHITE DIAL — LOOSEN CENTER
SCREW THEN LIFT AND TURN
WHITE OR YELLOW DIAL UNTIL
POINTER IS AT DESIRED SETTING.

CAUTION!

MAKE SURE GEARS ARE ENGAGED
BEFORE TIGHTENING SCREW.

SET RED ARROW TO RIB ON
PLASTIC BOX. FOR IDLE
POSITION.

3

SET TIME OF DAY BY LIFTING UP
YELLOW DIAL AND TURNING IT
IN EITHER DIRECTION UNTIL
ACTUAL TIME IS OPPOSITE ARROW.

IMPORTANT!

SALT LEVEL MUST ALWAYS BE ABOVE WATER LEVEL IN BRINE TANK.

PROGRAMMING GUIDE FOR MECHANICAL TIMER

- STEP 1: Enter grains per gallon of hardness. _____
- STEP 2: Multiply PPM of iron by 1(x1) enter here _____
- STEP 3: Add steps 1 & 2 and enter answer here. _____
- STEP 4: Total compensated hardness = grains hardness/gallon + PPM iron X the appropriate factor from COMPENSATED HARDNESS CHART below. Enter compensated hardness here. _____
- STEP 5: Multiply number of people ____ X 70 gallons per day. _____
- STEP 6: Multiply the number in step 4 X number in step 5. (This is the total number of grains of hardness which must be removed each day) _____
- STEP 7: Refer to the CAPACITY CHARTS for the lowest salt dosage for the greatest number of days between regenerations. Enter selected capacity. _____
- STEP 8: Divide the number in Step 7 into the number in Step 6 and enter. (This is the number of days between regenerations.)
NOTE: If this number is less than 2 please select a higher setting or select a larger system. _____
- STEP 9: The timer is a 12 day system and can be programmed for any sequence of days divisible in 2, ie. 1-2-3-4-6-12. (Refer to REGENERATIONS SCHEDULE PAGE ON THE NEXT PAGE)

COMPENSATED HARDNESS CHART

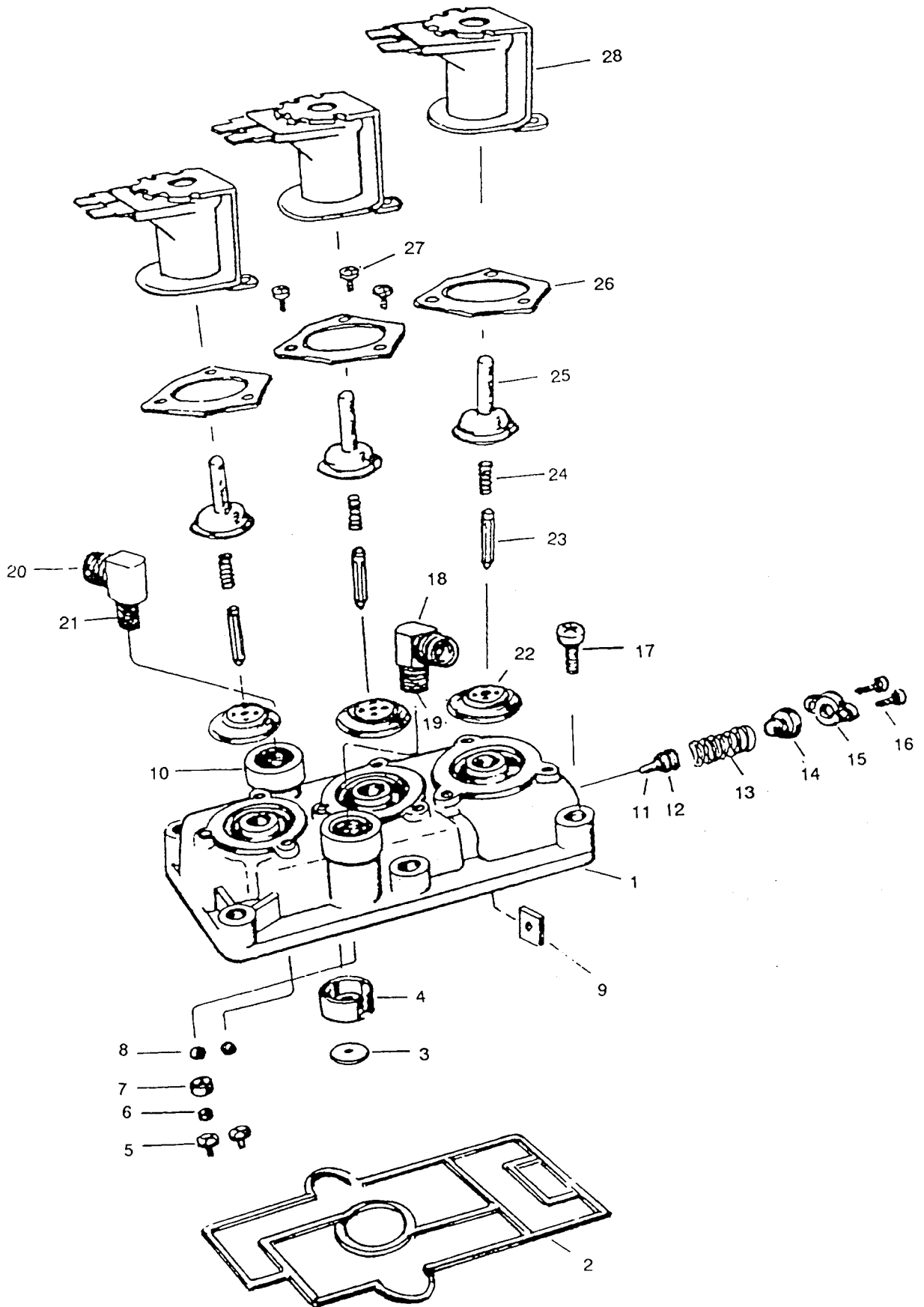
Your Test	Multiply By	_____
1 - 20	1.1	_____
21 - 40	1.2	_____
41 - 70	1.3	_____
71 - 100	1.4	_____
100 +	1.5	_____

CONTROL MODULE ASSEMBLY

REF. NO.	PART NUMBER	DESCRIPTION	UNITS PER. ASSY.
1	1CMBDY000000	CONTROL MODULE BODY	1
2	1CMSEAL00000	CONTROL MODULE SEAL	1
3	1BWFC1000000	BACKWASH FLOW CONTROL	1
4	1BWFCSUP0000	BACKWASH FLOW CONTROL SUPPORT	1
5	1BDRKEEPER00	BRINE DRAW AND REFILL KEEPER	2
6	1RFC00000000*		1
7	1RFCRETAIN00	REFILL FLOW CONTROL RETAINER	1
8	1516CKBALL00	5/16 DIAMETER CHECK BALLS	2
9	1PURGEGATE00	PURGE GATE	1
10	1BRRING14580	BRASS RING	2
11	1PURGECK0000	PURGE CHECK	1
12	1PURGECKSEAL	PURGE CHECK SEAL	1
13	1VBSRING000	VACUUM BREAKER SPRING	1
14	1VBBALLCK000	VACUUM BREAKER SPLIT BALL CHECK	1
15	1VBCOVER0000	VACUUM BREAKER COVER	1
16	1SCR8716ST00	VACUUM BREAKER MOUNTING SCREW #8 X 7/16 SERMAGUARD COATED	2
17	1SCR142034SS	CONTROL MODULE MOUNTING SCREW 1/4-20 X 3/4 PL PAN HD MS 18-8 SS	6
18	138BREL18MP	BRASS ELBOW 3/8 OD X 1/8 MPT	1
19	1INSST0P0000	BALL CHECK STOP INSERT (OUTLET)	1
20	138BREL18MP	BRASS ELBOW 3/8 OD X 1/8 MPT	1
21	1INSSEAT0000	BALL SEAT INSERT (INLET)	1
22	1SOLDIAPHRAG	SOLENOID DIAPHRAGM HIGH LIFT	3
23	1SOLARMATURE	SOLENOID ARMATURE	3
24	1SOLSPRING00	SOLENOID SPRING	3
25	1SOLGUIDE000	SOLENOID GUIDE	3
26	1SOLRETAINER	SOLENOID RETAINER	3
27	1SCR8716ST00	SOLENOID MOUNTING SCREW #8 X 7/16 SEMAGUARD COATED	9
28	1SOL110B0000	SOLENOID	3

* SPECIFY TANK SIZE

CONTROL MODULE ASSEMBLY



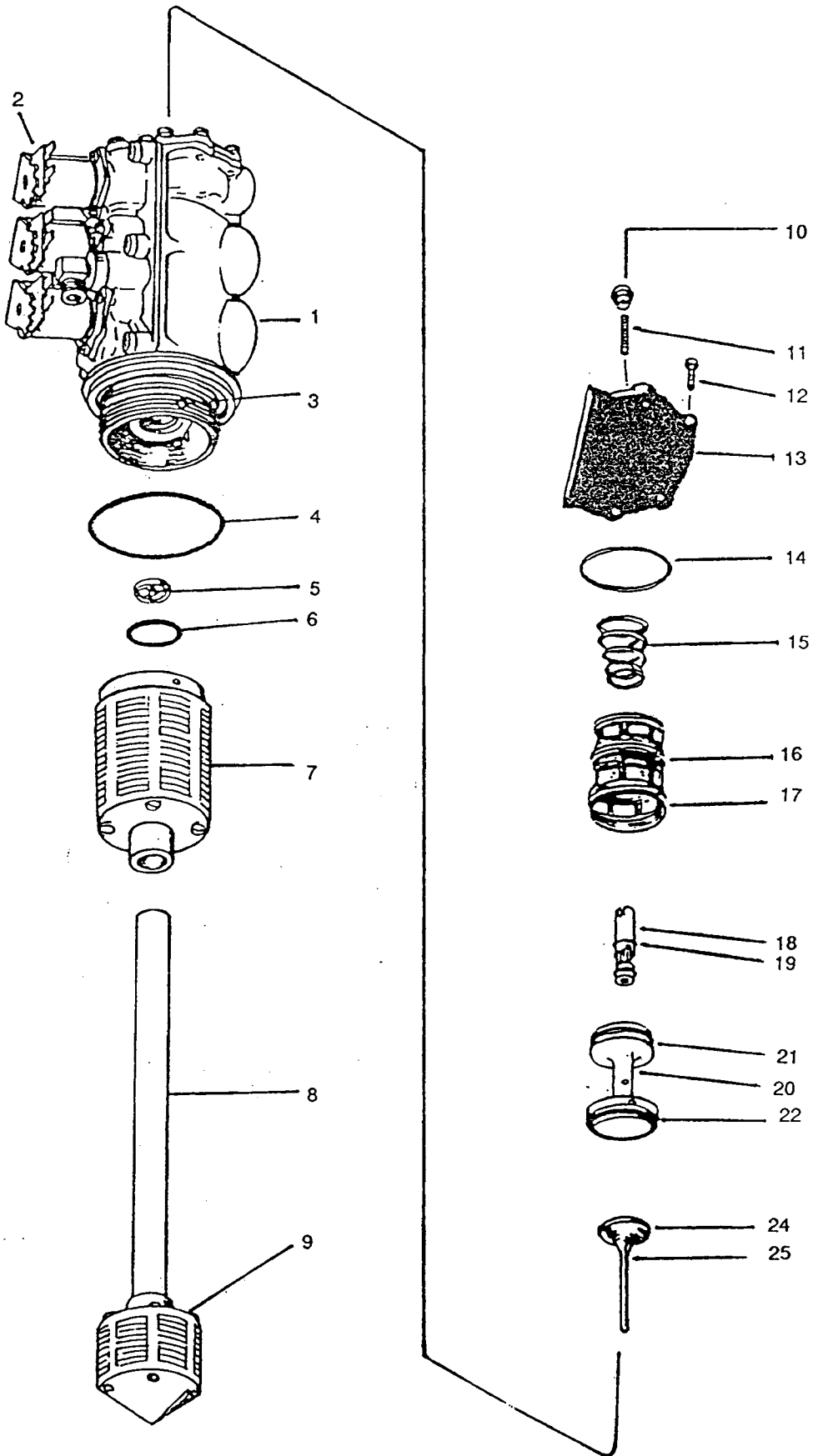
CONTROL VALVE ASSEMBLY

REF. NO.	PART NUMBER	DESCRIPTION	UNITS PER. ASSY.
1	1CV41820000**	CONTROL VALVE BODY (BRASS OR NORYL)	1
2	A1CMBY110850*	CONTROL MODULE ASY. COMPLETE	1
3	1SCR612SS000	UPPER DISTRIBUTOR MOUNTING SCREW #6 X 1/2 PL FH SM 18-8 SS	2
4	1ORING235000	VALVE BASE O-RING #235	1
5	1CKSTEMGUIDE	CHECK STEM GUIDE	1
6	1ORING121000	RISER TUBE O-RING #121	1
7	1UD20SEG0130	BRASWELL UPPER DISTRIBUTOR	1
8	5RT1050ABS0*	RISER TUBE	1
9	5LD10SEG0000	BRASWELL LOWER DISTRIBUTOR	1
10	3NUTK1032NP0	KNURL NUT NP 10/32	1
11	1STUD10321SS	STUD 10/32 X 1 18-8 SS	1
12	1SCR103212SS	TOP LID MOUTING SCREW 10/32 X 1/2 PL RH MS 18-8 SS	6
13	1TOPLID00000	TOP LID	1
14	1ORING142000	TOP LID O-RING #142	1
15	1PISTONSPG00	PISTON RETURN SPRING	1
16	1PISTONCAGE0	PISTON CAGE	1
17	1ORING127000	CAGE O-RING #127	3
18	S1ASPA100000	ASPIRATOR	1
19	1ORING010000	ASPIRATOR O-RING #010	2
20	S1PISTONW000	PISTON	1
21	1PISTONCUPSL	PISTON CUP SEAL	1
22	1PISTONGAST0	PISTON GASKET	2
23	S1BPPLUGWRNG	BY-PASS PLUG (MTS ONLY) W/O-RING	1
24	1STEMCKSEAL0	STEM CHECK SEAL	1
25	1STEMCHECK00	STEM CHECK	1

* SPECIFY TANK SIZE

** SPECIFY BRASS OR NORYL

CONTROL VALVE ASSEMBLY



TIMER SETTINGS & CAPACITY RATINGS ALL GENUS MODELS

MODEL	RESIN	BRINE DRAW MIN	SLOW RINSE MIN	REFILL MIN	REFILL FC	SALT LBS	GRAINS CAPACITY
★GENUS 844	22M	7.5	12	2.5	.5	3.75	11,250
		8.0	14	3.0	.5	4.5	13,500
		9.0	16	3.5	.5	5.25	15,000
GENUS I 1040	30M	10.5	28	3.5	.5	5.25	15,750
		12.0	30	4.0	.5	6.0	18,000
		14.0	32	5.0	.5	7.5	22,000
GENUS I 1047	40M	12.0	32	3.0	.75	6.75	22,500
		14.0	35	4.0	.75	9.0	26,000
		16.0	38	5.0	.75	11.25	33,000
GENUS I 1054	45M	13.5	36	4.0	.75	9.0	27,000
		15.0	39	5.0	.75	11.25	33,750
		17.0	42	6.0	.75	13.5	37,000
GENUS I 1248	60M	16.5	44	4.0	1.0	12.0	36,000
		18.0	48	5.0	1.0	15.0	40,000
		20.0	52	6.0	1.0	18.0	50,000

Above capacities are based on a minimum of 3,000 GR/LB of salt.
Higher salt dosages will be proportionately less.

REGENERATION SCHEDULE

Regeneration frequency per 12 day period	PULL TABS OUT											
	1	2	3	4	5	6	7	8	9	10	11	12
1	•											
2	•						•					
3	•				•				•			
4	•			•			•			•		
6	•		•		•		•		•		•	
12	•	•	•	•	•	•	•	•	•	•	•	•

QUICK SERVICE GUIDE

PROBLEM	CAUSE	CORRECTION	PROBLEM	CAUSE	CORRECTION
Unit fails to regenerate.	A. Electrical service to unit has been interrupted. B. Timer is defective. C. Power failure. D. Solenoid coils burned out. E. Drain frozen.	A. Assure constant elect. power source. B. Replace timer. C. Reset time of day. D. Replace coils E. Thaw out or replace.	Excessive water in the salt tank.	A. #3 solenoid leakage. B. Ball check leaking. C. Aspirator plugged. D. #1 coil inoperative.	A. Clean #3 assembly, check for bent guide. B. Check for trash. C. Clean aspirator. D. Replace.
Unit delivers hard water.	A. By-pass open. B. By-pass O-rings damaged. C. No salt or salt is hard and bridged. D. Aspirator plugged. E. Excessive water use in home. R.O. water not being measured. F. Insufficient water refilling to brine tank. G. Hot water hardness. H. Cracked riser tube. I. Low pressure or back pressure on drain. J. Broken vacuum breaker spring. K. #2 solenoid in-operative.	A. Close by-pass B. Replace O-rings. C. Add salt or break up bridging. D. Clean the aspirator. E. Increase regeneration frequency. Also check for leaks. F. Check #3 solenoid coil, refill flow control and timer setting. G. Active anode or redissolving of lime. H. Check for crack or seal. Replace tube. I. Correct the drain and pressure. J. Replace spring. K. Clean solenoid.	Unit fails to draw brine.	A. Drain line plugged or frozen or back pressure. B. Aspirator plugged. C. #1 solenoid inoperative. D. Low water pressure. E. Trash in purge check. F. Brine tube disconnected. G. #2 solenoid in-operative.	A. Clean drain. B. Clean aspirator. C. Replace. D. Correct pressure. E. Clean check. F. Replace and tighten. G. Clean solenoid.
			Unit cycles continuously.	A. Broken Pawl in the timer.	A. Replace timer.
			Water runs to drain continuously	A. Trash under (1&3) diaphragm. B. Bent solenoid guide. C. Broken armature springs. D. O-ring seal on control cage broken or missing. E. Cracked top lid. F. Piston return spring caught under top lid.	A. Clean or replace. B. Replace solenoid guide. C. Replace armature spring. D. Replace O-ring seal. E. Replace top lid. F. Replace or realign piston return spring.
			Vacuum breaker leaks.	A. Dust or foreign matter in lip seal.	A. Clean or replace.
			Odor.	A. Sulphur. B. Methane.	A. Consult your dealer for recommendations. B. Consult your dealer for recommendations.
Unit uses too much salt.	A. Improper salt setting. B. Excessive water in the brine tank.	A. Reset correctly. B. Defective #1 solenoid. Trash in the brine suction line or under the brine elbow. Trash under #3 solenoid diaphragm.	Salty water after regeneration.	A. Low water pressure. B. #2 coil not operative. C. Too much water in brine tank. D. Test water for chlorides, sulfates, or nitrates. E. Air leak in tubing harness.	A. Increase water pressure or increase regeneration time. B. Check power and/or replace timer. C. Check brine refill tube for continuous flow. D. Add F.O. for drinking or find a new source of supply. E. Replace fittings that leak.
Loss of water pressure.	A. Iron build-up in lines to unit. B. Iron build-up in unit. C. Trash in system. D. Clogged upper distributor.	A. Clean or replace lines. B. Clean unit with acid or salt additive. C. Clean complete control and by-pass. Add pre-filter. D. Remove and clean.			
Loss of resin through house lines.	A. Defective distributor.	A. Replace distributor.			
Iron in conditioned water.	A. Salt dosage too low. B. No salt usage. C. Oxidized iron or colloidal iron.	A. Reset control B. Correct bridging. C. Install pre-filter.			