

# FLECK 5600 SERVICE MANUAL



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# **JOB SPECIFICATION SHEET**

Job Number:			
Model Number:			
Water Hardness:			ppm or gpg
Capacity Per Unit:			
Mineral Tank Size:	Diameter	Heig	Jht:
Salt Setting per Regenei	ration:		
1. Type of Timer:			
A. Time Clock			
B. Meter Initiated	I		
2. Downflow:	Upflow	Upflow Varia	ble
3. Meter Size:			
A. 3/4-inch Turbi	ne		
B. 3/4-inch Paddl	le Wheel		
C. Electronic	_Pulse Count	Meter Size	
4. System Type:			
A. System #4: 1 T Delayed Regenera	Fank, 1 Meter, Imme ation	ediate, or	
B. System #4: Tir	ne Clock		
5. Timer Program Se	ettings:		
A. Backwash:			Minutes
B. Brine and Slov	v Rinse:		Minutes
C. Rapid Rinse: _			Minutes
D. Brine Tank Ref	fill:		Minutes
E. Pause Time: _			Minutes
F. Second Backw	/ash:		Minutes
6. Drain Line Flow C	ontrol:	gpm	

- 7. Brine Line Flow Controller: gpm
- 8. Injector Size#:

# **CALIFORNIA PROPOSITION 65 WARNING**

# **INSTALLATION**

#### Water Pressure

A minimum of 25 psi (1.7 bar) of water pressure is required for regeneration valve to operate effectively.

#### **Electrical Facilities**

An uninterrupted alternating current (A/C) supply is required. Please make sure voltage supply is compatible with unit before installation.

NOTE: Other voltages are available. Please make sure your voltage supply is compatible with your unit before installation.

#### **Existing Plumbing**

Condition of existing plumbing should be free from lime and iron buildup. Piping that is built up heavily with lime and/ or iron should be replaced. If piping is clogged with iron, a separate iron filter unit should be installed ahead of the water softener.

#### Location Of Softener And Drain

The softener should be located close to a drain to prevent air breaks and back flow.

#### **Bypass Valves**

Always provide for the installation of a bypass valve if unit is not equipped with one.

CAUTION Water pressure is not to exceed 125 psi (8.6 bar), water temperature is not to exceed 110°F (43°C), and the unit cannot be subjected to freezing conditions.

#### Installation Instructions

- 1. Place the softener tank where you want to install the unit making sure the unit is level and on a firm base.
- 2. During cold weather, the installer should warm the valve to room temperature before operating.
- 3. All plumbing should be done in accordance with local plumbing codes. The pipe size for residential drain line should be a minimum of 1/2 inch (13 mm). Backwash flow rates in excess of 7 gpm (26.5 Lpm) or length in excess of 20 feet (6 m) require 3/4 inch (19 mm) drain line. Commercial drain lines should be the same size as the drain line flow control.
- 4. Refer to the dimensional drawing for cutting height of the distributor tube. If there is no dimensional drawing, cut the distributor tube flush with the top of the tank.
- 5. Lubricate the distributor o-ring seal and tank o-ring seal. Place the main control valve on tank.

#### NOTE: Only use silicone lubricant.

- 6. Solder joints near the drain must be done prior to connecting the Drain Line Flow Control fitting (DLFC). Leave at least 6 inches (15 cm) between the DLFC and solder joints when soldering pipes that are connected on the DLFC. Failure to do this could cause interior damage to the DLFC.
- 7. Plumber tape is the only sealant to be used on the drain fitting. The drain from twin tank units may be run through a common line.
- 8. Make sure that the floor is clean beneath the salt storage tank and that it is level.
- 9. Place approximately 1 inch (25 mm) of water above the grid plate. If a grid is not utilized, fill to the top of the air

check (Figure 1) in the salt tank. Do not add salt to the brine tank at this time.

- 10. On units with a by-pass, place in bypass position. Turn on the main water supply. Open a cold soft water tap nearby and let run a few minutes or until the system is free from foreign material (usually solder) that may have resulted from the installation. Once clean, close the water tap.
- 11. Slowly place the by-pass in service position and let water flow into the mineral tank. When water flow stops, slowly open a cold water tap nearby and let run until the air is purged from the unit.
- 12. Plug unit into an electrical outlet.
- NOTE: All electrical connections must be connected according to local codes. Be certain the outlet is uninterrupted.



60002 Rev E

Figure 1 Residential Air Check Valve

# START-UP INSTRUCTIONS

The water softener should be installed with the inlet, outlet, and drain connections made in accordance with the manufacturer's recommendations, and to meet applicable plumbing codes.

- Turn the manual regeneration knob slowly in a clockwise direction until the program micro switch lifts on top of the first set of pins. Allow the drive motor to move the piston to the first regeneration step and stop. Each time the program switch position changes, the valve will advance to the next regeneration step. Always allow the motor to stop before moving to the next set of pins or spaces.
- Position the valve to backwash. Ensure the drain line flow remains steady for 10 minutes or until the water runs clear (see above).
- Position the valve to the brine / slow rinse position. Ensure the unit is drawing water from the brine tank (this step may need to be repeated).
- 4. Position the valve to the rapid rinse position. Check the drain line flow, and run for 5 minutes or until the water runs clear.
- 5. Position the valve to the start of the brine tank fill cycle. Ensure water goes into the brine tank at the desired rate. The brine valve drive cam will hold the valve in this position to fill the brine tank for the first regeneration.
- 6. Put salt in the brine tank.

#### NOTE: Do not use granulated or rock salt.

# MODEL 5600 INSTALLATION AND START-UP PROCEDURES

NOTE: Install the water softener with the inlet, outlet, and drain connections made according to manufacturer's recommendations and to meet applicable plumbing codes.



- 1. Manually index the softener control into the In Service position and let water flow into the resin tank. When the water flow stops, open a softened water tap until all air is released from the lines. Then close tap.
- NOTE: Manually dial the various regeneration positions by turning the knob on the front of the control until the indicator shows that the softener is in the desired position.
- 2. Manually index the control to the Backwash position and allow water to flow at the drain for 3 or 4 minutes.
- 3. Remove back cover plate.
- 4. Make sure that the salt dosage is set as recommended by the manufacturer. If necessary, set salt according to the setting instruction sheet. Manually index the control to the Brine Fill position and allow the brine tank to fill to the top of the air check.
- 5. Manually index the control to the Brine Draw position and allow the control to draw water from the brine tank until it stops.
- 6. Plug in the electrical cord and look in the sight hole in the back of the motor to see that it is running. Set the days that regeneration is to occur by sliding tabs on skipper wheel outward to expose trip fingers.
  - Each tab is one day.
  - Finger at red pointer is tonight.
  - Moving clockwise from red pointer, extend or retract fingers to obtain the desired generation schedule.
- 7. Manually advance the control to the beginning of the Brine Fill position and allow the control to return to the In Service position automatically.
- 8. Fill the brine tank with salt.
- 9. Replace back cover on the control.
- 10. Make sure that any bypass valving is left in the normal In Service position.

# MODEL 5600 BACKWASH FILTER INSTALLATION AND START-UP PROCEDURES

NOTE: Install the water softener with the inlet, outlet, and drain connections made according to manufacturer's recommendations and to meet applicable plumbing codes.



### Before plugging in the Unit

- 1. Open a treated water tap down stream of the filter.
- 2. Manually index the filter to the In Service position and allow the mineral tank to fill by slowly opening the main water supply valve. Any bypass should be in the In Service position.
- NOTE: The water flowing from the downstream tap is cloudy and/or contains media fines as well as air. Allow the water to run until it appears clean and free of air.
- 3. When a steady clean flow appears at the tap, close the tap and the main water supply valve and allow the filter media bed to settle for 15–20 minutes.
- 4. Manually index the filter to the Backwash position.
- 5. To prevent a sudden surge of water and air, partially open the main water supply valve so that the flow at the drain of the filter is approximately 1 gpm (3.7 Lpm). The water at the drain is cloudy again and/or contains media fines as well as air. Allow water to flow at the drain until it appears clean and free of air.
- 6. Continue to open the water supply valve until it is completely open. Allow water to flow at the drain until all media fines are washed out of the filter.
- 7. Manually index the filter to the In Service position, and again open the downstream tap. Check to be sure that the water flows clear. If necessary, allow water to flow until all media fines are gone. If the tap is equipped with an aerator check that is not plugged with media fines and pipe scale.
- 8. Plug in the electrical cord and look in the sight hole on the back of the timer motor to ensure that it is running. Set the days backwashing is to occur by sliding tabs on the skipper wheel outward to expose trip fingers. Each tab is one day. Finger at red pointer is tonight. Moving clockwise from red pointer, extend or retract fingers to obtain the desired backwash schedule.
- Set time of day by pushing red button and spin the 24hour gear until the present time of day is visible above the time of day arrow.

### Cycle Times and Flow Diagrams

- 1. In Service position. See page 7.
- 2. Preliminary Rinse position.
  - See page 7 with standard piston (white end plug) or filter piston (black end plug).
  - Eliminated with low water piston (gray end plug).
- 3. Backwash position.
  - See page 7 with standard piston.
  - 15 minutes with filter piston.
  - 7 minutes with low water piston.
- 4. Brine Rinse position.
  - Eliminated, resultingin a 50 minute pause, no water flows during this time.
- 5. Slow Rinse position.
  - Eliminated, resulting in a 50 minute pause, no water flows during this time.
- 6. Second Backwash position.
  - See page 8 with standard piston.
  - 15 minutes with filter piston.
  - 7 minutes with low water piston.
- 7. Settling Rinse position.
  - See page 8 with standard or filter piston.
  - Eliminate with low water piston.
- 8. Brine Tank Refill position.
  - Eliminated, filter is back in service at this time.

# MODEL 5600 INSTALLATION AND START-UP PROCEDURES

NOTE: Install the water softener with the inlet, outlet, and drain connections made according to manufacturer's recommendations and to meet applicable plumbing codes.



### Before plugging in the Unit

- 1. Manually index the softener control to the In Service position and let water flow into the resin tank. When the water flow stops, open a softened water tap until all air is released from the lines. Then close tap.
- 2. The various regeneration positions may be dialed manually by turning the knob on the front of the control until the indicator shows that the softener is in the desired position.
- 3. Set water usage program wheel using any one of the following procedures:

Typical Residential Application

To program, just set the time, set the hardness and it automatically monitors system needs and regenerates only when necessary. To set time of day press red time set button and turn 24-hour gear until present time of day is at "time of day." Set program wheel by lifting the "people" dial and rotating it so that the number of people in the household is aligned with the household grains per gallon water hardness. Release the dial and check for firm engagement at setting. This method provides reserve capacity based on 75 gallons per person.

**Optional Programming Procedures** 

Calculate the gallon capacity of the system, subtract the necessary reserve requirement and set the gallons available at the small white dot on program wheel gear. Note, drawing shows 850 gallon setting. The capacity (gallons) arrow denotes remaining gallons exclusive of fixed reserve.

- 4. Rotate program wheel counterclockwise until it stops at Regeneration position.
- 5. Manually index the control to the Backwash position and allow water to flow at the drain for 3 or 4 minutes.
- 6. Remove back cover plate.
- 7. Make sure than the salt dosage is set as recommended by the manufacturer. Manually index the control to the Brine Fill position and allow the brine tank to fill to the top of the air check.
- 8. Manually index the control to the Brine Rinse position and

allow the control to draw water from the brine tank until it stops.Plug in the electrical cord and look in the sight hole in the back of the monitor to see that it is running.

- 9. Manually advance the control to the beginning of the Brine Fill position and allow the control to return to the In Service position automatically.
- 10. Fill the brine tank with salt.
- 11. Replace back cover on the control. Be sure cable is not pinched between cover and housing.
- 12. Make sure that any bypass valving is left in the normal In Service position.
- 13. Manually index the filter to the In Service position and allow the mineral tank to fill by slowly opening the main water supply valve. Any bypass should be in the In Service position.

# WATER CONDITIONER FLOW DIAGRAMS

### **Service Position**



### Preliminary Rinse Position



### **Backwash Position**



### **Brine Position**



# WATER CONDITIONER FLOW DIAGRAMS CONTINUED

### **Slow Rinse Position**



### Second Backwash Position



### **Settling Rinse Position**



### **Brine Tank Fill Position**



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# MODEL 5600 CONTROL VALVE DRIVE ASSEMBLY CONTINUED

ltem No. QTY	Part No.	Description
1 1	14448-001	Drive Housing, with Pin Drilled for Cover
1A 1	15494-01	"L" Housing, with Pin
		"L" Housing, with Pin Drilled for Designer
2 1	13175	Motor Mounting Plate
		Motor, 120V, 60 Hz
		Motor, 24V, 60 Hz
		Screw, Motor Mtg. and Ground Wire
5(3-5)	13296	Screw, Component Mounting
61	13017	Idler Gear
71	13018	Idler Pinion
	13312	
	13164	
		Main Gear and Shaft
		24-hour Gear Assembly, Silver
		24-hour Gear Assembly, Tan
		Cycle Actuator Gear
		Knob, Manual Regeneration
	13300	
		Spring, Detent, Skipper Wheel
191	14381	Skipper Wheel Assembly, 12-day
1	14860	Skipper Wheel Assembly, 7-day
		Skipper Wheel Ring
		Spring, Compression, 6700
		Regeneration Pointer
		Electrical Cord, Standard
		Wire Connector (not shown)
	13547	
	13229	
		Front Label, Brown on Beige
		Front Label, Blue/Silver on Black
		Rear Label, Softener
		Rear Label, Filter
291	13348	Tape Stripe, Brown on Beige
		Tape Stripe, Blue on Silver
		Brine Cam Assembly, 3-18
		Brine Cam Assembly, 6-36
1	60514-02	Brine Cam Assembly, Minutes

ltem No.	QTY	Part No.	Description
34	2	12473	Screw-drive Mounting
35s	1	12037	Washer
37	1	15151	Screw, Knob
38	1	14176	Valve Position Dial, Standard
	1	14278	Valve Position Dial, Low Water
	1	15478	Valve Position Dial, Chemical Filter
	1	16715	Valve Position Dial, Filter
39	1	14175	Knob Label, Beige
	1	14207	Knob Label, Silver
40s	1	40214	Screw, Brine Cam

s = Not use when a filter valve

# MODEL 5600 CONTROL VALVE DRIVE ASSEMBLY



# MODEL 5600 CONTROL VALVE DRIVE ASSEMBLY CONTINUED

ltem No.	QTY	Part No.	Description
			Adapter Clip (Clock or
		. 10200	Meter)
2	5	. 13242	Seal
	5	. 17772	Silicone Seal
3			Valve Body Assembly, 1″
			Dist.
	1	. 61400-11	Valve Body Assembly, 3/4″ Dist.
4	1	. 13304	O-ring, Distributor Tube, 1"
	1	. 10244	O-ring, Distributor Tube, 13/16″
5	1	. 12281	O-ring, Top of Tank
7	4	. 14241	Spacer
8	1	. 13247	Piston, Standard
	1	. 13781	Piston, Low Water
	1	. 13852	Piston, Filter
		. 10696	
10	1	. 13001	Piston Rod Assembly
11	1	. 12953	Piston Retainer
12	1	. 13446	End Plug Assembly Standard, White
	1	. 13446-10	End Plug Assembly Filter, Black
13	1	. 13446-20	End Plug Assembly Low Water, Gray
			Screw, Injector Mounting
15	2	. 19228	Adapter Coupling
16*	4	. 13305	O-ring, Adapter Coupling
			Screw, Adapter Coupling (Clock or Meter)
18	1	. 12638	0-ring, Drain
19	2	. 13301	O-ring, Injector
20s	2	. 13302	0-ring, Brine Spacer
21	1	. 13303	O-ring, Injector Cover
22	1	. 13163	Injector Body
23s	1	. 10913U	Injector Nozzle, Undrilled
24	1	. 10914	Injector Throat, Specify Size
25	1	. 10227	Injector Screen
26	1	. 13166	Injector Cover
27	1	. 13172	Brine Valve Stem
28	1	. 12626	Brine Valve Seat
29	1	. 13165	Brine Valve Cap
30	1	. 13167	Brine Valve Spacer
31	1	. 12550	Quad Ring
32	1	. 11973	Spring, Brine Valve
33	1	. 16098	Washer, Brine Valve
34	1	. 11981-01	Retaining Ring
35	1	. 10329	BLFC Fitting Nut
			BLFC Ferrule

ltem No.	QTY	Part No.	Description
37	1	. 10332	BLFC Tube Insert
38	1	. 12094	BLFC Button, .25 gpm
	1	. 12095	BLFC Button, .50 gpm
	1	. 12097	BLFC Button, 1.0 gpm
39s	1	. 12977	0-ring, BLFC
40	1	. 13245	BLFC Button Retainer
41	1	. 13244	BLFC Fitting, 3/8"
42	1	. 00000	DLFC Button, Specify Size
43	1	. 13173	DLFC Button Retainer
44	1	. 12767	Screen, Brine Line
45	1	. 15348	0-ring, DLFC (not shown)
46	1	. 13497	Air Disperser
47	1	. 13546	End Plug Retainer
48	3	. 12112	Screw
49	1	. 13363	Washer
50	1	. 13296	Screw
51A	1	. 13398	Yoke, Brass, 1″ NPT
	1	. 13708	Yoke, Brass, 3/4" NPT
51B	1	. 18706	Yoke, Plastic, 1″ NPT
	1	. 18706-02	Yoke, Plastic 3/4″ NPT
52	1	. 13308	Drain Hose Barb
53	1	. 13918	BLFC, Plug
54s	1	. 13857	Brine Valve, Plug

\*not used with meter controls

s = used in backwash filter



# MODEL 5600 CONTROL VALVE DRIVE ASSEMBLY CONTINUED

ltem No.	QTY	Part No.	Description
1	1	14488-001	Drive Housing, with Pin Drilled for Cover
1A	1	15494-01	"L" Housing, with Pin
	1	15494-03	"L" Housing, with Pin Drilled for Designer
2	1	13175	Motor Mounting Plate
3	1	18743	Motor, 120V, 60 Hz
	1	13494	Motor, 24V, 60 Hz
4	2-3	. 11384	Screw, Motor Mtg. and Ground Wire
			Screw, Component Mounting
6	1	. 13017	Idler Gear
7	1	13018	Idler Pinion
8	1	13312	Spring, Idler
9	1	. 13164	Drive Gear
11	1	. 13170	Main Gear and Shaft
12	1	. 19205	24-hour Gear Assembly, Silver
			24-hour Gear Assembly, Tan
			Cycle Actuator Gear
			Knob, Manual Regeneration
15	2	13300	Ball, 1/4″ Dia.
			Spring, Compression, 6700
			Screw, Program Wheel
19	1	. 60405-15	Program Skipper Wheel Assembly, Specify Hardness Capacity
20	1	13806	Program Wheel Retainer
21	1	. 13953	Cover Label, Program Wheel
22	1	11842	Electrical Cord
23	2	12681	Wire Connector
24	1	. 13547	Strain Relief
25	1	. 13229	Back Cover
27	1	13955	Front Label, Beige
	1	13958	Front Label, Silver
28	1	13310	Rear Label, Softener
	1	18520	Rear Label, Filter
29	1	13957	Tape Stripe, Beige
			Tape Stripe, Silver
30	1	60514	Brine Cam Assembly, 3-18
	1	60514-01	Brine Cam Assembly, 6-36
			Brine Cam Assembly, Minutes
			Screw-drive Mounting
35	1	. 12037	Washer
37	1	13830	Drive Pinion, Program Wheel
38	1	13831	Clutch, Drive Pinion
39	1	. 14253	Spring Retainer

ltem No.	QTY	Part No.	Description
40	1	. 14276	Spring
41	1	. 14043	Cable Assembly, Standard
	1	. 14910	Cable Assembly, Extended, Right Angle
42	1	. 14176	Valve Position Dial, Standard
	1	. 14278	Valve Position Dial, Low Water
	1	. 15478	Valve Position Dial, Filter
43	1	. 14175	Knob Label, Beige
	1	. 14207	Knob Label, Silver
44	1	. 15151	Screw, Knob
45	1	. 40214	Screw, Brine Cam

# 5600 ELECTROMECHANCIAL

### Softener Time Clock

Item No.	QTY	Part No.	Description
1	1	560001-003	. 5600, SOF, DFN, CLK, 12DA, 12060, CW 1, .50, LES, NA2, 1600, SOFT
		560001-004	. 5600, SOF, DFN, CLK, 12DA, 24-60, CW 1, .25, LES, NA2, 1600, SOFT
		560001-005	. 5600, SOF, DFN, CLK, 12DA, 12060, CW 1, .50, LES, NA2, 1600, SOFT
		560001-006	. 5600, SOF, DFN, CLK, 12DA, 24-60, CW 1, .50, LES, NA2, 1600, SOFT
		560001-007	. 5600, SOF, DFN, CLK, 12DA, 12060, CW 1, .50, LES, NA2, 1600, SOFT
		560001-009	. 5600, SOF, DFN, CLK, 12DA, 12060, CW 1, .50, LES, NA2, 1600, SOFT
		560001-013	. 5600, SOF, DFN, CLK, 12DA, 12060, CW 1, .25, LES, NA2, 1600, SOFT

### Filter Time Clock

Item No. 1	 <b>Part No.</b> 560000-001	Description . 5600, FIL, DFN, CLK, 7DAY, 12060, CW BWF, BWF, LES, NA2, BWF-, FILT
	 560001-001	. 5600, FIL, DFN, CLK, 12DA, 12060, CW BWF, BWF, LES, NA2, BWF-, FILT
	 560001-002	. 5600, FIL, DFN, CLK, 12DA, 12060, CW BWF, BWF, LES, NA2, BWF-, FILT
	 560001-008	. 5600, FIL, DFN, CLK, 12DA, 22050, CW BWF, BWF, LES, NA2, BWF-, FILT
	 560001-010	. 5600, FIL, DFN, CLK, 12DA, 12060, CW BWF, BWF, LES, NA2, BWF-, FILT
	 560001-012	. 5600, FIL, DFN, CLK, 12DA, 12060, CW BWF, BWF, LES, NA2, BWF-, FILT

### **Softener Meter**

ltem No.	QTY	Part No.	Description
1	1	560002-001	5600, SOF, DFN, M34, MDEL, 12060, CW 1, .50, LES, NA2, 1600, SOFT
		560002-002	5600, SOF, DFN, M34, MDEL, 24-60, CW 1, .50, LES, NA2, 1600, SOFT
		560002-003	5600, SOF, DFN, M34, MDEL, 12060, CW 1, .50, LES, NA2, 1600, SOFT
		560002-004	5600, SOF, DFN, M34, MDEL, 24-60, CW 1, .50, LES, NA2, 1600, SOFT
		560002-005	5600, SOF, DFN, M34, MDEL, 12060, CW 1, .50, LES, NA2, 1600, SOFT
		560002-006	5600, SOF, DFN, M34, MDEL, 12060, CW 1, .50, LES, NA2, 1600, LWAT
		560002-007	5600, SOF, DFN, M34, MDEL, 12060, CW 1, .50, LES, NA2, 1600, LWAT
		560002-008	5600, SOF, DFN, M34, MDEL, 24-60, CW 1, .50, LES, NA2, 1600, LWAT
		560002-009	5600, SOF, DFN, M34, MDEL, 24-60, CW 1, .50, LES, NA2, 1600, LWAT
		560002-010	5600, SOF, DFN, M34, MDEL, 12060, CW 1, .50, LES, NA2, 1600, SOFT
		560002-011	5600, SOF, DFN, M34, MDEL, 12060, CW 1, .50, LES, NA2, 1600, SOFT

Above part numbers DO NOT include the following parts.

Cover Bypass Assembly Yoke Assembly DLFC with Retainer Flow Washers Transformer\*

See accessory page for options. \*See ordering guide for details.

# 5600 VALVE ACCESSORIES

### Covers

13753-02	Cover, 5600, Black
42345-03	Cover, 5600, Mechanical, Smoke
42345-04	Cover, 5600, Mechanical, Transparent
	Blue
60226-11	Cover, 5600, Designer I, Blk/Blk
	Cover, 5600, Designer I, Blue/Blue

#### Bypasses

60041SS	1" Bypass, SS, NPT
60040SS	3/4" Bypass, SS, NPT
60049	Bypass, Plastic

#### Yokes

19620-01	Yoke Assy, 3/4", r/angle, 90 deg.
18706	1" Yoke, Plastic NPT
18706-10	1" Yoke, Plastic BSP
18706-02	
18706-12	
61694	1" Yoke, QC
61700	3/4" Yoke, QC
13708-40	1" Yoke, Sweat
41026-01	1" Yoke, SS, NPT
42690	
41027-01	

#### Washers

19153	Washer, Flow, 0.6 GPM
19152	Washer, Flow, 0.8 GPM
12085	Washer, Flow, 1.2 GPM
19150	Washer, Flow, 1.3 GPM
12086	Washer, Flow, 1.5 GPM
19149	Washer, Flow, 1.7 GPM
12087	Washer, Flow, 2.0 GPM
12088	Washer, Flow, 2.4 GPM
12089	Washer, Flow, 3.0 GPM
12090	Washer, Flow, 3.5 GPM
12091	Washer, Flow, 4.0 GPM
19147	Washer, Flow, 4.5 GPM
12092	Washer, Flow, 5.0 GPM
17814	Washer, Flow, 6.0 GPM
12408	Washer, Flow, 7.0 GPM

#### Retainer

13173-01 .....Retainer, DLFC Button, w/O-ring

#### **Drain Elbows**

12338	.1/2"	Drain	Elbow, 90
19699	.1/2"	Drain	Elbow, 45
13121	.5/8"	Drain	Elbow, 90

#### Hose Barbs

133081/2	2" Straight Hose Barb
13308-015/8	3" Straight Hose Barb

#### Collectors

18280	Top Collector, 1.050
18280-02	
18280-01	Top Collector, 1.050 Wide





COVER, MECHANICAL

COVER



COVER, DESIGNER



BYPASS





WASHER

YOKE









DRAIN ELBOW



COLLECTOR

HOSE BARBS

# **5600 VALVE ASSEMBLIES**

### BLFC

60022-12	BLFC, 0.125 GPM (0.375 lbs NaCl/min)
60022-25	BLFC, 0.25 GPM (0.75 lbs NaCl/min)
60022-50	BLFC, 0.50 GPM (1.5 lbs NaCl/min)
60022-100	BLFC, 1.0 GPM (3 lbs NaCl/min)

#### **Injector Drain Assemblies**

60084-0001	Injector Drain Assy,
	5600, #0, Blank DLFC, .25 BLFC
60084-0002	Injector Drain Assy,
	5600, #0, Blank DLFC, .50 BLFC
60084-0101	Injector Drain Assy,
	5600, #1, Blank DLFC, .25 BLFC
60084-0102	Injector Drain Assy,
	5600, #1, Blank DLFC, .50 BLFC
Injector Assembly	

60384-0	Injector	<sup>•</sup> Assy, Filter	, 5600,	Blank DLFC

#### **Injector Nozzles**

10913-0	Nozzle, Injector, #0, Red (8" Tank)
10913-00	Nozzle, Injector, #00, Violet (7" Tank)
10913-000	Nozzle, Injector, #000, Brown (6" Tank)
10913-1	Nozzle, Injector, #1, White (9" & 10" Tank)
10913-2	Nozzle, Injector, #2, Blue (12" Tank)
10913-3	Nozzle, Injector, #3, Yellow (13" Tank)
10913-4	Nozzle, Injector, #4, Green (14" Tank)
10913BLK	Nozzle, Injector, Black (Filter)

#### Injector Throats

10914-0 ......Throat, Injector, #0, Red (8" Tank) 10914-00 ......Throat, Injector, #00, Violet (7" Tank) 10914-000 ......Throat, Injector, #000, Brown (6" Tank) 10914-1 ......Throat, Injector, #1, White (9" & 10" Tank) 10914-2 ......Throat, Injector, #2, Blue (12" Tank) 10914-3 ......Throat, Injector, #3, Yellow (13" Tank) 10914-4 .....Throat, Injector, #4, Green (14" Tank)

#### Plugs

40947-02 .....Plug, Brine Valve, w/o-ring

#### **BLFC Module Plug Assembly**

13918-01 .....BLFC Module Plug Assy, w/o-ring





BLFC





INJECTOR DRAIN ASSY

INJECTOR ASSEMBLY



INJECTOR THROAT



INJECTOR NOZZLE

PLUG



BLFC MODULE PLUG ASSY

# 5600 VALVE ASSEMBLIES

### Labels

	apels	
	14213	Label, 11.5K
	4214	Label, 13K
,	4343	Label, 15K
,	14076	Label, 16K
,	13969	Label, 18K
,	4046	Label, 21K
,	13961	Label, 24K
	14237	Label, 24K, Black
,	4047	Label, 26K
,	14180	Label, 28K
,	13962	Label, 30K
,	4048	Label, 32K
,	13971	Label, 36K
,	14073	Label, 40K
,	4181	Label, 42K
,	13974	Label, 45K
,	4239	Label, 48K
,	4074	Label, 50K
	14182	Label, 56K
	4034	Label, 60K
	14183	Label, 70K
	18663	Label, Brine Valve Cam, 1.5-8 Lbs.
4	41124	Label, Lbs. Salt, 3-16
2	41125	Label, Lbs. Salt, 6-32
4	41126	Label, Brine Valve Cam, Minute
4	41127	Label, Brine Valve Cam, 1.5-7kg
4	41128	Label, Brine Valve Cam, 3-14kg

#### Switches

60320-03 .....Switch Assy, 5600 Auxiliary

#### **Brine Cam Assemblies**

60514-00 .....Brine Cam Assy, 5600, Less Salt Label

#### Meters

60086	Meter Assy, 3/4" Dual Port, Slip Std,
	Plas, Pdl, w/Clps
14043	Meter Cable , 8.25"
60088-180	Meter Assy, 3/4" Dual Port, Slip Std,
	Rt Ang/180, Plas, Pdl, w/clps
60089-180	Meter Assy, 3/4" Dual Port, Slip Ext,
	Rt Ang/180, Plas, Pdl, w/clps
14910	Meter Cable , 6.75"





LABEL, HARDNESS





LABEL, MINUTES





LABEL, KILOGRAMS



BRINE CAM ASSY



METER ASSY, PADDLE

# 5600 VALVE ASSEMBLIES CONTINUED

### Powerheads

Powerheads	
62089-01	Pwrhd, 5600, Soft, Mtr, Srng, Encl,
	Orange, 120/60, US Cord
62089-02	Pwrhd, 5600, Soft, Mtr, Srng, Encl,
	Sil/Blu, 24/60, XFMR120/24
62089-03	Pwrhd, 5600, Soft, Mtr, Srng, Encl,
	Sil/Blu, 120/60, US Cord
62089-04	Pwrhd, 5600, Soft, Mtr, Srng, Encl,
	Sil/Blu, 24/60, No Cord
62089-05	Pwrhd, 5600, Soft, Mtr, Srng, "L",
	Orange, 120/60, US Cord
62089-06	Pwrhd, 5600, Soft, Mtr, Srng, "L",
	Sil/Blk, 120/60, US Cord
62089-07	Pwrhd, 5600, Soft, Mtr, Srng, "L",
	Sil/Blk, 24/60, No Cord
62089-08	Pwrhd, 5600, Soft, Mtr, Xrng, "L",
	Sil/Blu, 120/60, US Cord
62089-09	Pwrhd, 5600, Soft, Mtr, Srng, "L",
	Sil/Blu, 120/60, US Cord
62089-10	Pwrhd, 5600, Soft, Mtr, Srng, "L",
	Sil/Blu, 24/60, No Cord
62089-11	Pwrhd, 5600, Soft, Mtr, Srng, "L",
	Sil/Blu, XFMR120/24, No Cord
62090-01	Pwrhd, 5600, Soft, Clk, 12D, Encl, Sil/Blu,
02070 01 11111	120/60, US Cord
62090-02	Pwrhd, 5600, Soft, Clk, 12D, Encl, Sil/Blu,
	24/60, No Cord
62090-03	Pwrhd, 5600, Soft, Clk, 12D, Encl, Tan,
	120/60, US Cord
62090-04	Pwrhd, 4650/5600, Soft, Clk, 12D, "L",
	Sil/Blk, 120/60, US Cord
62090-05	Pwrhd, 4650/5600, Soft, Clk, 12D, "L",
	Sil/Blk, 24/60, No Cord
62091-01	Pwrhd, 5600, Filt, Clk, 12D, Encl, Sil/Blu,
	120/60, US Cord
62091-02	Pwrhd, 5600, Filt, Clk, 12D, "L", Sil/Blk,
02071 02	120/60, US Cord
62091-03	Pwrhd, 5600, Filt, Clk, 35D, "L", Sil/Blk,
02071 00	120/60, US Cord
62091-04	Pwrhd, 5600, Filt, Clk, 35D, "L", Sil/Blk,
	24/60, No Cord
62091-05	Pwrhd, 5600, Filt, Clk, 35D, "L", Sil/Blk,
520,1 00	24/60, XFMR120/24

### **Program Wheels**

60405-10	.Program Wheel, w/3/4" Standard Label
	(0-2,100 Gallons)
60405-11	.Program Wheel, Extended Metric
	(0 - 8 M3)
60405-15	.Program Wheel, w/3/4" Standard Label
	w/People Label
60405-20	.Program Wheel, w/3/4"Extended Label
	(0-10, 500 Gallons)
60405-21	.Program Wheel, Extended Metric
	(0 - 40 M3)





POWERHEAD

### **Replace Time Brine Valve, Injectors and Screen**

- 1. Unplug electrical cord from outlet.
- 2. Turn off water supply to conditioner:
  - A. If the conditioner installation has a "three valve" bypass system, first open the valve in the bypass line, then close the valves at the conditioner inlet and outlet.
  - B. If the conditioner has an integral bypass valve, put it in the **Bypass** position.
  - C. If there is only a shut-off valve near the conditioner inlet, close it.
- 3. Relieve water pressure in the conditioner by putting the control in the **Backwash** position momentarily. Return the control to the **In Service** position.
- 4. Disconnect brine tube and drain line connections at the injector body.
- 5. Remove the two injector body mounting screws. The injector and brine module can now be removed from the control valve. Remove and discard valve body 0-rings.
- 6. Replace brine valve.
  - A. Pull brine valve from injector body, also remove and discard O-ring at bottom of brine valve hole.
  - B. Apply silicone lubricant to new O-ring and reinstall at bottom of brine valve hole.
  - C. Apply silicone lubricant to O-ring on new valve assembly and press into brine valve hole, shoulder on bushing should be flush with injector body.
- 7. Replace injectors and screen.
  - A. Remove injector cap and screen, discard O-ring. Unscrew injector nozzle and throat from injector body.
  - B. Screw in new injector throat and nozzle, be sure they are seated tightly. Install a new screen.
  - C. Apply silicone lubricant to new O-ring and install around oval extension on injector cap.
- 8. Apply silicone lubricant to three new O-rings and install over three bosses on injector body.
- Insert screws with washers through injector cap and injector. Place this assembly through hole in timer housing and into mating holes in the valve body. Tighten screws. (Be sure to reinstall brass spacers with injector on model 4600 valve.)
- 10. Reconnect brine tube and drain line.
- 11. Return bypass or inlet valving to normal **In Service** position. Water pressure automatically builds in the conditioner.

#### NOTE: Be sure to shut off any bypass line.

- 12. Check for leaks at all seal areas. Check drain seal with the control in the **Backwash** position.
- 13. Plug electrical cord into outlet.
- 14. Set time of day and cycle the control valve manually to assure proper function.
  - A. Make sure control valve is in the **In Service** position.
- 15. Make sure there is enough brine in the brine tank.
- 16. Rotate program wheel counterclockwise until it stops at **Regeneration** position.
- 17. Start regeneration cycle manually if water is hard.

### **Replace Timer**

- 1. Unplug electrical cord from outlet.
- 2. Turn off water supply to conditioner:
  - A. If the conditioner installation has a "three valve" bypass system, first open the valve in the bypass line, then close the valves at the conditioner inlet and outlet.
  - B. If the conditioner has an integral bypass valve, put it in the **Bypass** position.
  - C. If there is only a shut-off valve near the conditioner inlet, close it.
- 3. Relieve water pressure in the conditioner by putting the control in the **Backwash** position momentarily. Return the control to the **In Service** position.
- 4. Pull cable out of meter cover. Remove the control valve back cover.
- 5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly now lifts off easily.
- Put new timer on top of valve. Be sure drive pin on main gear engages slot in drive yoke (rotate control knob if necessary).
- 7. Replace timer mounting screws. Replace screw and washer at drive yoke.
- 8. Return bypass or inlet valving to normal **In Service** position. Water pressure automatically builds in the conditioner.

#### NOTE: Be sure to shut off any bypass line.

- 9. Plug electrical cord into outlet.
- 10. Set time of day, program wheel, and salt usage. Cycle the control valve manually to assure proper function. Be sure to return the control valve to the **In Service** position.
- 11. Replace the control valve back cover. Be sure grommet at cable hole is in place.
- 12. Make sure there is enough brine in the brine tank.
- 13. Rotate program wheel counterclockwise until it stops at **Regeneration** position.
- 14. Start regeneration cycle manually if water is hard.
- 15. Plug cable into meter cover, rotate cable to align drive flat if necessary.

# SERVICE INSTRUCTIONS CONTINUED

### **Replace Piston Assembly**

- 1. Unplug electrical cord from outlet.
- 2. Turn off water supply to conditioner:
  - A. If the conditioner installation has a "three valve" bypass system, first open the valve in the bypass line, then close the valves at the conditioner inlet and outlet.
  - B. If the conditioner has an integral bypass valve, put it in the **Bypass** position.
  - C. If there is only a shut-off valve near the conditioner inlet, close it.
- 3. Relieve water pressure in the conditioner by putting the control in the **Backwash** position momentarily. Return the control to the **In Service** position.
- 4. Pull cable out of meter cover. Remove the control valve back cover.
- 5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly now lifts off easily. Remove end plug retainer plate.
- 6. Pull upward on end of piston yoke until assembly is out of valve.
- 7. Inspect the inside of the valve to make sure that all spacers and seals are in place, and that there is no foreign matter that would interfere with the valve operation.
- 8. Take new piston assembly as furnished and push piston into valve by means of the end plug. Twist yoke carefully in a clockwise direction to properly align it with drive gear. Replace end plug retainer plate.
- Place timer on top of valve. Be sure drive pin on main gear engages slot in drive yoke (rotate control knob if necessary).
- 10. Replace timer mounting screws. Replace screw and washer at drive yoke.
- 11. Return bypass or inlet valving to normal **In Service** position. Water pressure automatically builds in the conditioner.

#### NOTE: Be sure to shut off any bypass line.

- 12. Plug electrical cord into outlet.
- 13. Set time of day, program wheel, and salt usage. Cycle the control valve manually to assure proper function. Be sure to return the control valve to the **In Service** position.
- 14. Replace the control valve back cover. Be sure grommet at cable hole is in place.
- 15. Make sure there is enough brine in the brine tank.
- 16. Rotate program wheel counterclockwise until it stops at **Regeneration** position.
- 17. Start regeneration cycle manually if water is hard.
- 18. Plug cable into meter cover. Rotate cable to align drive flat if necessary.

### **Replace Seals and Spacers**

- 1. Unplug electricial cord from outlet.
- 2. Turn off water supply to conditioner.
  - A. If the conditioner installation has a "three valve" bypass system, first open the valve in the bypass line, then close the valves at the conditioner inlet and outlet.

- B. If the conditioner has an integral bypass valve, put it in the **Bypass** position.
- C. If there is only a shut-off valve near the conditioner inlet, close it.
- 3. Relieve water pressure in the conditioner by putting the control in the **Backwash** position momentarily. Return the control to the **In Service** position.
- 4. Pull cable out of meter cover. Remove the control valve back cover.
- 5. Remove screw and washer at drive yoke. Remove timer mounting screws. The entire timer assembly now lifts off easily. Remove end plug retainer plate.
- 6. Pull upward on end of piston rod yoke until assembly is out of valve. Remove and replace seals and spacers with fingers.

### **Replace Meter**

- 1. Unplug electrical cord from outlet.
- 2. Turn off water supply to conditioner:
  - A. If the conditioner installation has a "three valve" bypass system, first open the valve in the bypass line, then close the valves at the conditioner inlet and outlet.
  - B. If the conditioner has an integral bypass valve, put it in the **Bypass** position.
  - C. If there is only a shut-off valve near the conditioner inlet, close it.
- 3. Relieve water pressure in the conditioner by putting the control in the **Backwash** position momentarily. Return the control to the **In Service** position.
- 4. Pull cable out of meter cover.
- 5. Remove two screws and clips at bypass valve or yoke. Pull resin tank away from plumbing connections.
- 6. Remove two screws and clips at control valve. Pull meter module out of control valve.
- 7. Apply silicone lubricant to four new O-rings and assemble to four ports on new meter module.
- 8. Assemble meter to control valve. Note, meter portion of module must be assembled at valve outlet.
- 9. Attach two clips and screws at control valve. Be sure clip legs are firmly engaged with lugs.
- 10. Push resin tank back to the plumbing connections and engage meter ports with bypass valve or yoke.
- 11. Attach two clips and screws at bypass valve or yoke. Be sure clip legs are firmly engaged with lugs.
- 12. Return bypass or inlet valving to normal **In Service** position. Water pressure automatically builds in the conditioner.

#### NOTE: Be sure to shut off any bypass line.

- 13. Check for leaks at all seal areas.
- 14. Plug electrical cord into outlet.
- 15. Set time of day.

#### A. Make sure control valve is in the In Service position.

- 16. Rotate program wheel counterclockwise until it stops at **Regeneration** position.
- 17. Start regeneration cycle manually if water is hard.
- 18. Plug cable into meter cover. Rotate cable to align drive flat if necessary.

### **Replace Meter Cover and/or Impeller**

- 1. Unplug electrical cord from outlet.
- 2. Turn off water supply to conditioner:
  - A. If the conditioner installation has a "three valve" bypass system, first open the valve in the bypass line, then close the valves at the conditioner inlet and outlet.
  - B. If the conditioner has an integral bypass valve, put it in the **Bypass** position.
  - C. If there is only a shut-off valve near the conditioner inlet, close it.
- 3. Relieve water pressure in the conditioner by putting the control in the **Backwash** position momentarily. Return the control to the **In Service** position.
- 4. Pull cable out of meter cover.
- 5. Remove four screws on cover.
- 6. Lift cover off of meter module, discard o-ring.
- 7. Remove and inspect impeller for geear or spindle damager, replace if necessary.
- 8. Apply silicone lubricant to new o-ring and assemble to the smallest diameter on meter cover.
- Assemble cover to meter module. Be sure impeller spindle enters freely into cover. Press firmly on cover and rotate if necessary to assist in assembly.
- 10. Replace four screws and tighten.
- 11. Return bypass or inlet valving to normal **In Service** position. Water pressure automatically builds in the conditioner.

#### NOTE: Be sure to shut off any bypass line.

- 12. Check for leaks at all seal areas.
- 13. Plug electrical cord into outlet.
- 14. Set time of day

#### A. Make sure valve is in the In Service position.

- 15. Rotate program wheel counterclockwise until it stops at
- 16. position.
- 17. Start regeneration cycle manually if water is hard.
- 18. Plug cable into meter cover. Rotate cable to align drive flat if necessary.

# **TROUBLESHOOTING**

Problem	Cause	Correction
<ol> <li>Softener fails to regenerate.</li> </ol>	A. Electrical service to unit has been interrupted.	<ul> <li>A. Assure permanent electrical service (check fuse, plug, pull chain or switch).</li> </ul>
	B. Timer is defective.	B. Replace timer.
	C. Power failure.	C. Reset time of day.
2. Softener delivers	A. Bypass valve is open.	A. Close bypass valve.
hard water.	B. No salt in brine tank.	<ul> <li>B. Add salt to brine tank and maintain salt level above water level.</li> </ul>
	C. Injectors or screen is plugged.	C. Replace injectors and screen.
	D. Insufficient water flowing into brine tank.	<ul> <li>D. Check brine tank fill time and clean brine line flow control if plugged.</li> </ul>
	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 uses too much	A. Improper salt setting.	A. Check salt usage and salt setting.
salt.	B. Excess water in brine tank.	B. See problem number 7.
4. Loss of water	A. Iron build-up in line to water conditioner.	A. Clean line to water conditioner.
pressure.	B. Iron build-up in water conditioner.	B. Clean control and add resin cleaner to resin bed. Increase frequency of regeneration.
	C. Inlet of control plugged due to foreign material loose from pipes by recent work done on plumbing system.	C. Remove piston and clean control.
5. Loss of resin through drain line.	A. Air in water system.	A. Assure that well system has proper air elimination control, Check for dry well condition.
6. Iron in conditioned water.	A. Fouled resin bed.	<ul> <li>A. Check backwash, brine draw and brine tank fill, increase frequency of regeneration, increase backwash time.</li> </ul>
<ol> <li>Excessive water in brine tank.</li> </ol>	A. Plugged drain line flow control.	A. Clean flow control.
8. Salt water in service	A. Plugged injector system.	A. Clean injector and replace screen.
line.	B. Timer not cycling.	B. Replace timer.
	C. Foreign material in brine valve.	C. Clean or replace brine valve.
	D. Foreign material in brine line flow control.	D. Clean brine line flow control.
9. Softener fails to draw	A. Draw line flow control is plugged.	A. Clean drain line flow control.
brine.	B. Injector is plugged.	B. Clean or replace injectors.
	C. Injector screen plugged.	C. Replace screen.
	D. Line pressure is too low.	D. Increase line pressure (minimum 20 psi (1.3 bar) at all times).
	E. Internal control leak.	E. Change seals, spacers and/or piston assembly.
10. Control cycles continuously.	A. Faulty timer mechanism.	A. Replace timer.
11. Drain flows continuously.	A. Foreign material in control.	<ul> <li>A. Remove piston assembly and inspect bore, remove foreign material and check control in various regeneration positions.</li> </ul>
	B. Internal control leak.	B. Replace seals and/or piston assembly.
	C. Control valve jammed in Brine or Backwash position.	C. Replace seals and/or piston assembly.
	D. Timer motor stopped or jammed.	D. Replace timer.

# GENERAL SERVICE HINTS FOR METER CONTROL

Problem	Cause	Correction
<ol> <li>Softener delivers hard water.</li> </ol>	A. Reserve capacity has been exceeded.	A. Check salt dosage requirements and reset program wheel to provide additional reserve.
	B. Program wheel is not rotating with meter output.	B. Pull cable out of meter cover and rotate manually, program wheel must move without binding and clutch must give positive "clicks" when program wheel strikes regeneration stop (if not, replace timer).
	C. Meter is not measuring flow.	<ul> <li>C. Check output by observing rotation of small gear on front of timer (program wheel must not be against regeneration stop for this check) each tooth to tooth is approximately 30 gallons (113.5 L) (if not, replace meter).</li> </ul>

# MODEL 5600SF TROUBLESHOOTING

Problem	Cause	Correction
<ol> <li>Filter fails to backwash.</li> </ol>	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. Filter "bleeds" iron.	A. Bypass valve is open.	A. Close bypass valve.
	B. Excessive water usage.	B. Reduce days between, backwashing (see timer instructions), make sure that there is not a leaking valve in the toilet bowl or sinks.
	C. Hot water tank rusty.	C. Repeated flushings of the hot water tank is required.
	D. Leak at distributor tube.	D. Make sure distributor tube is not cracked, check O-ring and tube pilot.
	E. Defective or stripped filter medium bed.	E. Replace bed.
	F. Inadequate backwash flow rate.	F. Make sure filter has correct drain flow control, be sure flow control is not clogged or drain line restricted, be sure water pressure has not dropped, increase backwash flow rate according to specifications for your unit, see your dealer for recommendations.
<ol> <li>Loss of water pressure.</li> </ol>	A. Iron or turbidity build-up in water filter.	<ul> <li>Reduce days between backwashing so filter backwashes more often, make sure filter is sized large enough to handle water usage.</li> </ul>
	B. Inlet plugged due to foreign material broken loose from pipes by recent work done on plumbing system.	B. Remove piston and clean control.
4. Loss of filter medium through drain line.	A. Broken or missing top screen.	A. Replace top screen, must have 0.020" wide slots.
5. Drain flows continuously.	A. Foreign material in control.	<ul> <li>Remove piston assembly and inspect bore, remove foreign material and check control in various cycle positions.</li> </ul>
	B. Internal control leak.	B. Replace seals and/or piston assembly.
	C. Control valve jammed in rinse or backwash.	C. Replace piston, seals and spacers (and drive motor if necessary).

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