

LPURITAN WATER CONDITIONING CRAWFORDSVILLE, INDIANA.

INSTALLATION AND START UP PROCEDURES

Some models come preloaded with the softening resin and gravel, while other models may ship with them not loaded. If your model is preloaded, then skip to step #3. NOTE: If your model is preloaded, be sure to remove the plastic card located between the control head and top of tank. This card is used to prevent the resin from getting into the head during shipment. If your model was shipped in a carton, a cardboard insert is used instead of the plastic card.

1. Remove the control head by taking out the two mounting screws that attach the head to the flanged tank adapter. The flanged tank adapter then unscrews from the tank. Locate the distributor tube inside the tank and cover with a piece of tape so gravel and resin will not fall inside. With the aid of a funnel, pour in the gravel marked #1, followed by gravel marked #2. After all of the gravel has been loaded, pour in the entire amount of softening resin that was shipped with your model. Once loaded, the resin level should come within 15 to18 inches of the top of the tank. Some settling will occur once water is added to the tank. Remove tape from distributor tube.

2. If possible at this point, fill tank completely with water. This will allow the resin to settle and eliminate the need of "purging" the air out of the tank later. Screw the flanged tank adapter back into the top of the tank, and with the aid of a large wrench make sure the rubber o-ring is seated firmly against the tank. Attach the control head to the flanged tank adapter with the two mounting screws.

3. Plumbing connections can now be made. When viewed from the front, the inlet is on the right and the outlet is on the left. The plumbing size needed is either 3/4" or 1", depending on how your model was ordered. If using copper material, do not sweat within 10" of the control head, so the internal rubber and plastic components will not be damaged.

4. The drain connection is on the right side of the control head. 5/8" OD flexible tubing or 1/2" ID plastic pipe is the material recommended to be used. The drain piping should never be connected directly to the building's sanitary drain line. An air gap device should be used to prevent backflow of waste water into the water softener.

5. Attach the 3/8" plastic tubing from the salt tank to the brine valve located on the left side of the control head. Add water to the salt tank until the level is 1" above the grid plate. A good grade of pellet or solar salt is recommended for your water softener. The powercord can now be plugged into a 110v electrical outlet.

6. If the resin tank was filled with water during the loading process, skip this step. Otherwise slowly turn the timer regeneration knob clockwise until the brine valve cam indicates it is in the "refill" position. You must slowly step the timer through each position and not skip over any of them.

7. Turn the water on to the softener by turning the red handle on the bypass to the service position, or if you have a 3-valve bypass design, close the middle valve and open the inlet and outlet valve. If you placed the timer in the refill position (from step #6), you should notice air being sent to the salt tank. When it appears the air has stopped surging into the salt tank, the resin tank has now been purged of air and the timer regeneration knob can be placed into the "service" position. Turn on the nearest faucet and allow water to run until it is clear.

MAINTENANCE AND SERVICE HINTS

Always keep salt in the salt tank above the water level.

If there is an electrical interruption, be sure to reset the time of day on your timer.

If the water appears rusty after regeneration, increase the backwash time on the timer. More frequent regeneration will also help this situation. If the condition persists, call your Puritan dealer. You may have a type of iron in your water that would require further treatment.

If there is a trace of salt in the water after regeneration, reset the brine rinse time on the timer for a longer period of time. This most frequently is caused by low water pressure and/or low water volume from the well. The brine injector could also be plugged and need cleaning. To clean the brine injector, shut the water off to the softener. Remove the brine injector cap and gasket. Remove the screen located under the cover and clean it or replace it. Run a fine wire down through the plastic brine injector located in front of the screen. (A paper clip that has been straightened out makes a very good tool for this job.) Replace the gasket and cover and turn the water supply back on.

Softener not using salt and/or water not soft. First check the salt in the salt tank to see it has not caked together or bridged above the water level. If it has caked or bridged, loosen it by poking it with a stick or broom handle. Be very careful when doing this so you do not hit against the sides or bottom of the tank. This could cause damage to the tank that would not be covered by the guarantee. A plugged brine injector can also cause the problem. See above for cleaning instructions.

Water soft but does not last until the next regeneration. Set the timer to regenerate more often. This can also be caused by short salting; that is, not using enough salt per regeneration to completely clean the softener mineral. This can be increased by setting the brine refill on the regeneration wheel for a longer time.

BYPASS

The bypass valve enables you to turn off the conditioning unit without shutting off the water supply to the house.





SERVICE POSITION

BYPASS POSITION

SERVICE HINTS

Eaile to dury bring	Classed durin flows controller	Clean duain flass controllar
Fails to draw brine	Clogged drain now controller	Clean drain now controller
	Injector assembly clogged	Clean injector assembly
	Unit fails to stop in brine position	Problem with micro switches or timer
Fails to use salt but draws brine	Salt bridged in salt tank	Break salt bridge with broom handle being careful not to crack salt tank
	Brine full of insolubles from salt	Clean out salt tank
Fails to put water in salt tank	Clogged brine flow controller	Clean brine flow controller
	Unit fails to stop in refill position	Problem with micro switches or timer
Salt in lines after regeneration	Water level too high in salt tank	Check paragraph overflowing salt tank
	Rinse time too short	Set rinse time longer
Unit overflows salt tank	Check to see if unit draws brine	Check instruction above for unit fails to draw brine
	Check to see if cam operated brine valve is shutting off	Replace brine valve
Unit runs at drain continuously	Rings and spacers are worn	Replace all rings, spacers and piston
	Drive Cam broke	Replace drive cam
Unit sticks in position or fails to advance	Rings or spacers out of place	Replace all rings, spacers and piston
	Foreign material in piston chamber	Inspect, clean, and replace if necessary piston and rings
Unit regenerates wrong time of the day	Timer is showing incorrect time of day	Reset timer to proper time of day
Unit fails to regenerate	Power failure or no power	Plug into constant source of 110 volt electricity - check circuit breaker
	Timer motor not turning	Replace timer motor
	No regeneration pins pulled	Pull regeneration pins for desired frequency of regeneration (time clock units only)
	Meter not turning	Replace meter cap assembly (metered units only)

MODEL 3200 TIMER

timer setting procedure

How To Set Days On Which Water Conditioner Is To Regenerate:

Rotate the skipper wheel until the number "1" is at the red pointer. Set the days that regeneration 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 the red pointer, extend or retract fingers to obtain the desired regeneration schedule.

How To Set The Time Of Day:

Press and hold the red button in to disengage the drive gear.

Turn the large gear until the actual time of day is at the time of day pointer.

Release the red button to again engage the drive gear.

How To Manually Regenerate Your Water Conditioner At Any Time:

Turn the manual regeneration knob clockwise.

This slight movement of the manual regeneration knob engages the program wheel and starts the regeneration program.

The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.

Even though it takes three hours for this center knob to complete one revolution, the regeneration cycle of your unit might be set only one half of this time.

In any event, conditioned water may be drawn after rinse water stops flowing from the water conditioner drain line.

How To Adjust Regeneration Time:

- 1. Disconnect the power source.
- 2. Locate the three screws behind the manual regeneration knob by pushing the red button in and rotating the 24 hour dial until each screw appears in the cut out portion of the manual regeneration knob.
- 3. Loosen each screw slightly to release the pressure on the time plate from the 24 hour gear.
- 4. Locate the regeneration time pointer on the inside of the 24 hour dial in the cut out.
- 5. Turn the time plate so the desired regeneration time aligns next to the raised arrow.
- 6. Push the red button in and rotate the 24 hour dial. Tighten each of the three screws.
- 7. Push the red button and locate the pointer one more time to ensure the desired regeneration time is correct.
- 8. Reset the time of day and restore power to the unit.





3200 ADJUSTABLE REGENERATION TIMER

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

MODEL 3200 TIMER

regeneration cycle program setting procedure (brine tank refill separate from rapid rinse)

How To Set The Regeneration Cycle Program:

The regeneration cycle program on your water conditioner has been factory preset, however, portions of the cycle or program may be lengthened or shortened in time to suit local conditions.

To expose cycle program wheel, grasp timer in upper lefthand comer and pull, releasing snap retainer and swinging timer to the right.

To change the regeneration cycle program, the program wheel must be removed. Grasp program wheel and squeeze protruding lugs towards center, lift program wheel off timer. (Switch arms may require movement to facilitate removal.)

Return timer to closed position engaging snap retainer in back plate. Make certain all electrical wires locate above snap retainer post.

How To Change The Length Of #1 Backwash Time:

The program wheel as shown in the drawing is in the service position. As you look at the numbered side of the program wheel, the group of pins starting at zero determines the length of time your unit will backwash.

FOR EXAMPLE: If there are six pins in this section, the time of backwash will be 12 min. (2 min. per pin). To change the length of backwash time, add or remove pins as required. The number of pins times two equals the backwash time in minutes.

How To Change The Length Of Brine And Rinse Time:

The group of holes between the last pin in the backwash section and the second group of pins determines the length of time that your unit will brine and rinse (2 min. per hole).

To change the length of brine and rinse time, move the second group of pins to give more or fewer holes in the brine and rinse section. Number of holes times two equals brine and rinse time in minutes.

How To Change The Length Of #2 Backwash Time:

The second group of pins on the program wheel deter-mines the length of time that your water conditioner will backwash (2 min. per pin).

To change the length of backwash time, add or remove pins at the higher numbered end of this section as required. The number of pins times two equals the backwash time in minutes.



How To Change The Length Of Rapid Rinse:

The second group of holes on the program wheel determines the length of time that your water conditioner will rapid rinse (2 min. per hole). To change the length of rapid rinse, move the brine refill group of pins to give more or fewer holes in the rapid rinse section. Number of holes times two equals rapid rinse time in minutes.

How To Change The Length Of Brine Tank Refill Time: The third group of pins on the program wheel determines the length of time that your water conditioner will refill the brine tank (2 min. per pin).

To change the length of refill time, add or remove pins at the end of the third group of pins as required.

The regeneration cycle is complete when the outer micro switch is released by pins of the brine tank refill section. The program wheel, however, will continue to rotate until the inner micro switch drops into the notch on the program wheel.

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

MODEL 3210 TIMER

demand regeneration control

start-up procedure

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 opposite "time of day arrow." Set program wheel by lifting the "people" dial and rotating it so that the number of people in the household is aligned with the grains per gallon water hardness scale. Release the dial and check for firm engagement at setting. (This method will provide reserve capacity based on 75 gallons per person.)

Optional Programming Procedure

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

How To Set The Time Of Day:

Press and hold the red button in to disengage the drive gear.

Turn the large gear until the actual time of day is opposite the time of day pointer.

Release the red button to again engage the drive gear.

How To Manually Regenerate Your Water Conditioner At Any Time:

Turn the manual regeneration knob clockwise.

This slight movement of the manual regeneration knob engages the program wheel and starts the regeneration program.

The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.

Even though it takes three hours for this center knob to complete one revolution, the regeneration cycle of your unit might be set for only one half of this time.

In any event, conditioned water may be drawn after rinse water stops flowing from the water conditioner drain line.



MODEL 3210 TIMER

regeneration cycle program setting procedure (brine tank refill separate from rapid rinse)

How To Set The Regeneration Cycle Program:

The regeneration cycle program on your water conditioner has been factory preset, however, portions of the cycle or program may be lengthened or shortened in time to suit local conditions.

To expose cycle program wheel, grasp timer in upper left-hand corner and pull, releasing snap retainer and swinging timer to the right.

To change the regeneration cycle program, the program wheel must be removed. Grasp program wheel and squeeze protruding lugs towards center, lift program wheel off timer. (Switch arms may require movement to facilitate removal,)

Return timer to closed position engaging snap retainer in back plate. Make certain all electrical wires locate above snap retainer post.

How To Change The Length Of #1 Backwash Time:

The program wheel as shown in the drawing is in the service position. As you look at the numbered side of the program wheel, the group of pins starting at zero determines the length of time your unit will backwash.

FOR EXAMPLE: If there are six pins in this section, the time of backwash will be 12 min. (2 min, per pin). To change the length of backwash time, add or remove pins as required. The number of pins times two equals the backwash time in minutes.

How To Change The Length Of Brine And Rinse Time:

The group of holes between the last pin in the backwash section and the second group of pins determines the length of time that your unit will brine and rinse (2 min. per hole).

To change the length of brine and rinse time, move the second group of pins to give more or fewer holes in the brine and rinse section. Number of holes times two equals brine and rinse time in minutes.

How To Change The Length Of #2 Backwash Time:

The second group of pins on the program wheel determines the length of time that your water conditioner will backwash (2 min. per pin).

To change the length of backwash time, add or remove pins at the higher numbered end of this section as required. The number of pins times two equals the backwash time in minutes.



How To Change The Length Of Rapid Rinse:

The second group of holes on the program wheel determines the length of time that your water conditioner will rapid rinse (2 min. per hole). To change the length of rapid rinse, move the brine refill group of pins to give more or fewer holes in the rapid rinse section. Number of holes times two equals rapid rinse time in minutes.

How To Change The Length Of Brine Tank Refill Time:

The third group of pins on the program wheel determines the length of time that your water conditioner will refill the brine tank (2 min. per pin).

To change the length of refill time, add or remove pins at the end of the third group of pins as required.

The regeneration cycle is complete when the outer micro switch is released by pins of the brine tank refill section. The program wheel, however, will continue to rotate until the inner micro switch drops into the notch on the program wheel.

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

PURITAN CONTROL POSITIONS

water conditioner flow diagrams



Hard water enters unit at valve inlet – flows thru piston – down center tube – thru bottom distributor and up thru the mineral – around the piston and out the drain line.

PURITAN CONTROL POSITIONS

water conditioner flow diagrams



Hard water flows directly from inlet down thru mineral into center tube bottom distributor and up thru center tube - around piston and out thru the drain line.

Hard water enters unit at valve inlet, flows up thru injector housing and thru brine valve to fill brine tank.

MODEL 3200 TIMER

12 day timer assembly



MODEL 3200 TIMER - 12 DAY

ltem No.	No. Reg'd	Part No.	Description
1	1		
2	1		Cvcle Actuator Arm
3	1	40096-24	
5	1	13886-01	
6	5		Screw - Timer Knob & Motor Plate
7	1	11999	Button Decal
8	1	14381 .	Skipper - Wheel Assy
9	1		Skipper - Wheel Label
10	1		Regeneration Pointer
11	1		Spring Clip
12	2	13311	Spring - Skipper Wheel Detent
13	2		Ball 1/4" Dia.
14	1		Spring - Main Gear Detent
15	1	13911	Main Drive Gear
16	1		Program Wheel
17	21		Roll Pin
18	1		Program Wheel Decal
19	1		Idler Shaft
20	1		Spring - Idler
21	1		Idler Gear
22	1		Drive Gear
23	1		Curved Washer
24	1		Motor Mounting Plate
25	1		Motor - 110 V. 60 Hz.
			Motor - 24 V. 60 Hz.
26	2		Screw - Motor Mtg.
27	2	11384	Screw - Timer Hinge
28	1		Hinge Bracket
29	3		Insulator
30	1		Switch
31	1		Switch
32	2	11413	Screw - Switch Mtg.
33	1		Decal - Time of Day
34	1		
აე ენ	T 4		
30 27	I 2		Mire Connector (Net Shown)
31 20	∠ 1		
JU	T		Ball 1/4" DIa.

MODEL 3210 TIMER

timer assembly metered



MODEL 3210 TIMER - METERED

ltem No.	No. Req'd	Part No.	Description
1.	1	13870-01	Timer Housing Assy
2.	1		Cycle Actuator Gear
3.	1	40096-24	
	1	40096-02	
5.	1	13886-01	Knob
6	4		Screw - Timer Knob & Motor Plate Mtg.
7	2	11999	Button Decal
8.	1	60405-15	Program Wheel Assy (Specify Hardness Capacity)
9	1	13806	Program Wheel Retainer
10.	1	13748	Screw - Program Wheel Mtg.
11.	1	14265	Spring Clip
12.	1	15424	Spring - Detent
13.	1	15066	Ball - 1/4" Dia.
14.	1	13911	Main Drive Gear
15.	1	19210	Program Wheel Assy
16.		15493	Roll Pin
18.	1	13018	Idler Shaft
19.	1	13312	Spring - Idler
20.	1		Idler Gear
21.	1	13164	Drive Gear
23.	1	13887	Motor Mtg. Plate
24.	1		Motor - 110 V. 60 Hz.
	1	19659	Motor - 24 V. 60 Hz.
25.	2	13278	Screw - Motor Mtg.
26.	1	13830	Drive Pinion - Program Wheel
27.	1	13831	Clutch - Drive Pinion
28.	1	14276	Spring
29.	1	14253	Spring Retainer
31.	2	11384	Screw - Timer Hinge
32.	1	13881	Hinge Bracket
33.	3	14087	Insulator
34.	1	10896	Switch
35.	1	15320	Switch
36.	2	11413	Screw - Switch Mtg.
37.	1	14007	Decal - Time of Day
38.	1	14045	Decal - Instructions
39.	1		Harness (Not Shown)
40.	2		Wire Connector (Not Shown)

PURITAN DRIVE



PURITAN DRIVE

Item	No.		
No.	Req'd	Part No.	Description
1	1		Backplate
2	1	60304-13	Timer Assy - 12 Day
3	1	11838	Power Cord
4	1		Strain Relief
5	1	11667	Motor Harness
7	5		Screw - Motor Mtg.
10	1		Bracket - Drive Side
11	2	10231	Screw - Drive Mtg.
12	2		Insulator
13	2		Switch
14	1		Pin - Connecting Rod
15	1		Retaining Ring - Drive
16	1		Connecting Link
17	1		Drive Cam
18	2		Roll Pin
19	1		Drive Bearing
20	2		Screw - Switch Mtg.
21	1		Motor - 110 V. 60 Hz.
22	1		Bracket - Brine Side
23	1		Brine Cam
24	2		Screw - Timer Mtg.
27	1		Hole Plug
28	1	60232-110	Cover (Not Shown)
29	2		Screw (Cover Mtg.) (Not Shown)

PURITAN VALVE



PURITAN VALVE

ltem No.	No. Req'd	Part No.	Description
1	1	14367-01NP	Valve Body - Nickel Plt.
2	5	11451	Spacer
3	6	10545	Seal
4	1	14398	Piston
5	1	15430	Piston Rod
6	1	14309	Piston Retainer
7	1	10598	End Plug Assy
8	1	14399	Spacer
9	1	10209	Quad Ring
10	1	10234	O-Ring - End Plug
11	1	14805	Gasket - Injector
12	1	17776	Injector Body
13	1	10913	Nozzle (specify color)
14	1	10914	Throat (specify color)
15	1	10227	Screen
16	1	10229	Gasket - Cover
17	1	11893	Cover - Injector
18	2	10692	Screw
19	1	60705-00	D.L.F.C. Retainer
20	1	12088	D.L.F.C. Button (2.4 GPM)
21	1	11183	O-Ring - D.L.F.C. Retainer
22	1	11180	Screw
24	2	10244	O-Ring - Distributor Tube
25	1	11208	O-Ring - Adapter - Top
26	1	10381	O-Ring - Tank Seal
27	2	11224	Screw - Adapter
28	1	11966	Distributor Tube Pilot - 3/4"
	1	14364	Distributor Tube Pilot - 1"
29	1	12341NP	Adapter 3/4" 2 1/8"-8 ThdN1
30	1	41027-01	Adapter - 3/4" NPT
		13398-00NP	Adapter - 1" NPT (Optional)
31		19228-01	Coupling
32	2	13255	Clip
33	4	13305	O-Ring - Coupling
34		13314	Screw - Coupling
35	1	15382-99NP	
36	2	14202-01	Screw-Clip (Optional)

2,3,8 1 60121-77 Seal and Spacer Kit 4-7,9,10 . 1 60093 Piston Assembly

PURITAN METER ASSY



ltem No.	No. Req'd	Part No.	Description
1	4	12473	Screw - Meter Cover Assy
2	1	15452-01	Meter Cover Assy - Rt. Angle
3	1	13847	O-Ring - Meter Cover Assy
4	1	13509	Impeller
5	4	13314	Screw - Adapter Clip
6	4	13255	Adapter Clip
7	1	13821	Meter Body
8	4	13305	O-Ring - Meter Body

PURITAN BYPASS VALVE ASSY



Item	No.		
No.	Req'd	Part No.	Description
1	1	17290NP	Bypass Valve Body, 3/4" Nickel Plate
	1	13399NP	Bypass Valve Body, 1" Nickel Plate
2	1		Seal, Bypass
3	1		Plug, Bypass
4	1		Side Cover
5	1	13604-01	Label
6	8	15727	Screw
7	1		Side Cover
8	1	11979	Lever, Bypass
9	1		Screw. Hex Head. 1/4"-14

PURITAN SAFETY FLOAT VALVE



ltem No.	No. Req'd	Part No.	Description
1	1	H4600	Safety brine valve
2	1	H4640	Float assembly
3	1	H4500	Air check

MODEL 1650 Brine Valve



Item INO.		
No. Req'd	Part No.	Description
1 1	10328	Elbow, 90 1/4" NPT x 3/8"
3 3	10332	Insert, 3/8"
4 1	10330	Sleeve, 3/8" Nut Brine
5 1	10329	Tube Fitting, 3/8" Nut Brine
6 1	14428	Tube, Brine Valve
7 1	19625	Assy, GFN Nut
8 1	16924	O-Ring
9 1	12626	Seat, Brine Valve
10 1	12552	Brine Valve Stem, 1600
11 1	19625	Assy, GFN Nut
12 1	17906	Guide, Brine Valve Stem
13 1	10250	Retaining Ring
14 1	10249	Spring, Brine Valve
15 1	17884	Brine Valve Body Assy, Plastic
19 1	60010-xx	BLFC Assy

7-19 1 60011-020 1650 Brine Valve Assembly