Fleck 5600SXT Water Softener Instructions

Overview

Thank you for your water softener purchase from aQuatell. We appreciate your business and look forward to serving you in the future.

This instructional manual is intended to aid you in the installation and programming of your newly purchased water softener. The programming instructions provided here are abbreviated versions of the full manufacturers instructions and you may wish to reference the manufacturer instructions for further details. It's important to note that the images in this manual are not necessarily to scale.

We ask that you fully read these instructions and contact us with any questions before you begin the installation process. In many situations, installing a water softener means turning off your water for some period of time. If you find yourself with questions half way through the installation, you may be without water until the question has been resolved. We can be reached by phone weekdays between 9am - 5pm Eastern time: 1-866-966-9951.

Delivery of your Softener

Your water softener is delivered in several boxes. One box will contain the softening tank and brine tank. Another box will contain the valve and other installation items. The resin will ship in either one or two boxes depending on the size of softener purchased. When you receive your shipment inspect it for any obvious signs of damage. If your shipment has been damaged please report this immediately to aQuatell.

Before you Begin

Before you begin the installation it's a good idea to identify all of the components:

Brine Tank

Box(es) of resin

Resin Tank

Softener Valve

Bypass Valve / Plumbing Adapters

or

Brine Well (with float assembly)

Brine Line

Riser Tube

Upper Media Screen

Brine Line Adapter Kit (doesn't include hose)

Overflow Bulkhead Fitting

Funnel

Drain Line Barb

Putting it all together - Overview

Once you've identified all of the components of your softener, you're ready to begin the installation. First, you'll want to locate a good spot for your softener. All parts of your water softener should be located in a protected, dry, level, non-freezing area. The water softener needs to be located in very close proximity to your water main, and also needs to be located close to a drain. Suitable drains include a floor drain, sump pit, washing-machine drain, or (where regulations permit) an outside downspout or gutter drain. It's important that you identify and follow any local plumbing codes for the installation of your softener.

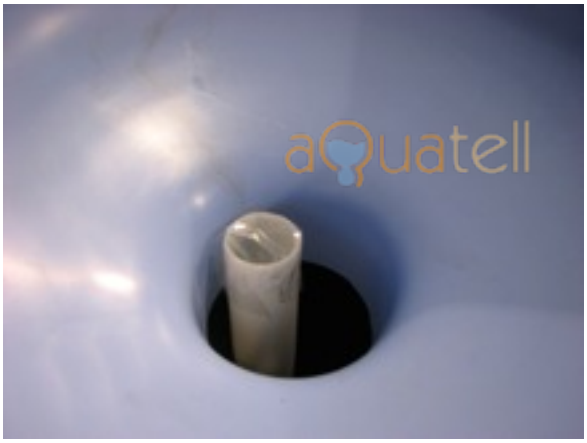
The drain line can be routed down to the floor or overhead. Whichever method is used please ensure that all turns are gradual to prevent kinking in the line. Be sure to secure the drain line in place as the pressure of the draining softener will move an unsecured line.

The softener you have purchased requires power in order to operate the valve. Ideally, you should position the water softener a few feet from a power outlet. aQuatell recommends that all water purification equipment, including softeners, be plugged into a Ground Fault Circuit Interrupter (GFCI) outlet.

Check that the resin tank is sitting flat in the black plastic boot on the bottom of the tank. If the boot appears to be on an angle push down on the resin tank and rock the tank very slightly back and forth to lower the resin tank fully into the boot.

Putting it all together - The Softening Tank

The softening tank houses the resin and is where the softening of your water occurs. The softening tank is the cylindrical tank with a threaded opening at the top. Set the softening tank in the desired location. Insert the riser tube into this tank so that the slotted basket is at the bottom of the softening tank. At the open end of the riser tube cover the opening with a piece of tape. Now place the funnel in the opening of the softening tank and add the resin:



Once all of the resin has been added it is very important to remove the piece of tape from the top of the riser tube.

Next, secure the upper media screen to the bottom of the water softener valve. The upper media screen is a about three inches in length and is cylinder shaped. Depending on the type of softener you ordered, the media screen may be white, black, or red:

There is an opening on both ends of the upper media screen. With the larger opening facing the underside of the softener valve, press and turn the upper media screen so that it locks into place. Once this is complete, ensure that the top lip and the threads of the softening tank are free from resin. Apply a small amount of silicone lubricant (vegetable oil can be substituted) to the top surface of the threads of the softening tank, to the o-ring on the underside of the softener valve, and to the outer side of the top of the riser tube.

Lower the softener valve onto the softening tank making sure that the riser tube passes through the upper media screen. Once the valve is lowered onto the tank, turn the valve in a clockwise direction (as viewed from above). It is very important to exert force only on the valve and not on the controller (at the front of the valve) during this step. Continue turning the valve until some

resistance is met and then give the valve another 1/12th turn. Because the valve is o-ring sealed to the tank, the valve does not need to be over-tightened. Over-tightening can cause the o-ring to become deformed and this can cause immediate or future leaking.

Putting it all together - The Brine Tank

If you received a softener that is 32,000 grains or less, the brine well (4" diameter white tube) will be attached to the side of the brine tank already. If you received a softener larger than 32,000 grains you will need to attach the brine well to the side of the brine tank as follows:

1. Remove the lid from the brine well (4" diameter white tube)
2. Carefully remove the float assembly from the inside of the brine well.
3. Looking from the top (down the brine well), identify the hole in the side of the brine well
4. Looking at the side of the brine tank (usually black) you will see two holes.
5. Working from the outside of the brine tank pass the threaded end of the overflow bulkhead fitting pictured left through the bottom hole in the brine tank and through the hole in the side of the brine well. Secure the fitting (and the brine well) by attaching and tightening the nut from the inside of the brine well.
6. The brine well should now be secured to the side of the brine tank.
7. Attach a drain line to the barbed end of the bulkhead fitting and run this to a floor drain.

Putting it all together - The Float Assembly

If you haven't done so already, remove the lid from the brine well and carefully remove the float assembly. You can do this by holding the elbow with the grey plastic hex nut and slowly pulling this upwards. The float assembly is delicate, so proceed carefully. Once it's removed it will look like this:

The float assembly controls the flow of brine solution out of the brine tank, and the flow of fresh water into the brine tank. On the thin vertical bar of the float assembly identify the two black rubber washers. These washers control the range of motion of the cup-shaped float.

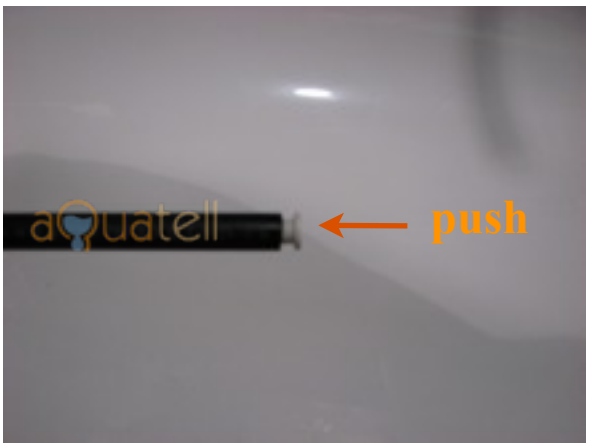
Ensure that the top washer is about 3” below the top standoff and about two inches above the bottom standoff. When these rubber washers are positioned properly the float will hit the top washer before the brine tank water level gets to the brine tank overflow (the same piece that holds the brine well to the brine tank)

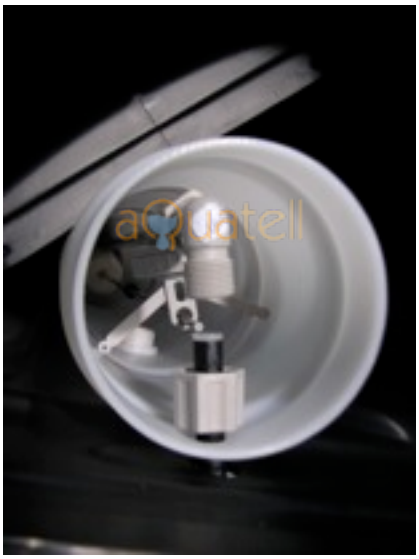
The next step is to unscrew the hex nut from the top of the float assembly (see orange arrow above). Once the hex nut is removed you will see a small tube insert inside. Remove the tube insert and keep it and the hex nut aside then carefully lower the float assembly back down into the brine well.

Putting it all together - Attaching the Brine Line to the Brine Tank

The brine line (thin black plastic tubing) connects the water softener to the brine tank. At different stages of the softener regeneration process it carries brine solution from the brine tank to the softener and it also carries fresh water from the softener to the brine tank. This tubing needs to be attached to the brine tank and the softener.

In a previous step you unscrewed the hex nut of the overflow assembly and set aside the tube insert. Install the tube insert on one end of the brine line and then install this on the overflow assembly as pictured below:





To attach the brine line to the brine tank you will first insert the tube insert into one end of the brine line. Be sure to push it all the way in. Then pass this end of the brine line through the upper hole in the brine tank and through into the brine well. Slide the hex nut onto the brine line and then insert the brine line fully into the threaded elbow of the brine float. Now tighten down the hex nut until it is snug making sure that the brine line is held firmly in place.

If the float assembly did not come with a tube insert, but instead has two small plastic rings, place the plastic rings on the brine line instead of the tube insert. All other steps are the same.

Putting it all together - Attaching the Brine Line to the Valve

The brine line connector on the Fleck valve is made of brass and located on the side of the valve. It can be identified on the picture below.

With your softener hardware you will find a small plastic bag containing the hardware you need to connect the brine line to the brine line connector on the valve. There are four small pieces in the bag that need to be attached to brine line as in the picture below:

The brass tube insert and woven metal insert must both be pushed fully into the brine line. Once all the pieces have been attached to the brine line push it into the brine line adapter on the valve, and tighten down the brass nut to hold it in place. After completing this make sure that during the process of attaching the brine line to the valve, that the brine tank connection did not loosen.

Putting it all together - Attaching the Drain Line to the Valve

The drain line port on the Fleck is located at the rear of the valve. Included in your pack of hardware is a grey drain line barb that is threaded on one end (see orange arrow below). Screw

this drain line adapter into the port. Some softeners will ship with a straight drain line adapter and some will ship with a 90 degree adapter. On some softeners it is necessary to remove the turbine assembly before screwing in the drain line barb. The turbine assembly is easily removed by first removing the steel holding clips on either side of the bypass assembly (see blue arrow below):

Prepare the drain line barb by applying three or four passes of teflon tape on the threads. Unscrew the clips shown with the blue arrow and then remove the turbine assembly by pulling firmly. Wiggling it back a forth gently may help. Do not pull the turbine assembly too far from the valve as you may pull out the grey wire that connects the turbine assembly to the valve. Once the turbine assembly has been removed, attach the drain line barb and then re-attach the turbine assembly by fastening the steel clips that were removed earlier.

Flexible tubing with an inner diameter of 1/2" is usually used for the drain line. This can be secured to the drain line barb with a small gear clamp (not included). The drain line can be routed to a floor drain, utility tub, drain stem, or can be sent to the outdoors. Be sure to abide by all local plumbing codes when deciding on the drain location. The open end of the drain line needs to be secured as it will move when water is flowing through it.

Putting it all together - Installing the Bypass Valve & Plumbing Adapters

The bypass valve is a set of on/off valves that sit between your softener valve and your plumbing. The role of the bypass valve is two-fold. It offers an easier way to connect your existing plumbing to your softener and it also provides a way to bypass the water softener. The bypass functionality is helpful if you ever need to make a repair to your softener - you can do so without having to interrupt the water flow to your home.

With any water softener installation it is very important that all incoming and outgoing plumbing is supported. The bypass should not support any of the weight of the plumbing as this will often cause leaks or premature failure of the bypass. The plumbing can be supported by affixing it to a wall. It is also important that incoming and outgoing plumbing is lined up properly with the bypass. If plumbing is brought in on an angle, or if the plumbing exerts any sideward pressure on the bypass valve, it will often cause a leak.

There are two bypass options for the Fleck valve as pictured below:

The plastic bypass comes in two pieces: the bypass and the plumbing adapter. The plumbing adapter will be 3/4' or 1" threads as ordered. The first step in the installation of the plastic bypass is to attach the bypass valve to the plumbing adapter. This is accomplished by pushing the two pieces together and tightening the metal clips on the side (orange arrow above).

Both the plastic bypass/adapter and the stainless steel bypass are attached to the Fleck valve in the same fashion:

Metal clips hold the bypass to the turbine. Simply push the bypass onto the turbine assembly and tighten down the metal clips. These clips do not need to be overtightened.

Putting it all together - Plumbing Your Softener

The plumbing adapters for the Fleck valve are either 1" or 3/4" male or female threads. When connecting to the plumbing adapter threads, two or three passes of teflon tape should be used on the male threads. Ensure all local plumbing codes are adhered to when connecting the softener to your plumbing. When facing the front of the water softener, the inlet to the softener is on the right, and the outlet is on the left. Ensure you route your plumbing accordingly. The inlet/outlet is also labelled on the bypass itself.

Putting it all together - Filling the Softener with Water

Now that your softener is plumbed in place, you need to direct your hard water into the softener to fill it and of course to begin producing soft water for your home. Before doing anything else, make sure your softener is in the bypass mode. For all plastic bypasses you'll know if you're in bypass mode if both plastic knobs (one for inlet, one for outlet) are turned so that they're perpendicular to the plumbing. There also arrows and words on the bypass that will show you what position is the bypass position.

Once you're in bypass mode, open your water main back up. Where your plumbing enters and exits the bypass you'll want to have a quick look for leaks. If nothing is leaking, slowly open the inlet side of the bypass. Once this is open all the way, open the outlet side of the bypass just a crack. You will hear water trickling into the softening tank. The idea is to slowly fill the softening tank with water. Once the softening tank is full, open the outlet side of the bypass all the way. The bypass valve should now be fully open on both the inlet and outlet sides.
Your water softener is now in service mode and you will begin to get softened water immediately as the resin comes pre-charged. The final step in setting up your new water softener is to program the valve to your conditions.

Programming your water softener - Before you Begin

Now that your softener is plumbed, it must be programmed to your specific conditions. In order to properly program your softener you will need to know your water hardness in Grains per Gallon (gpg) and the capacity of the softener you ordered. It is also useful to know how much iron is present in the water. The softener can be programmed in two ways.

Programming your water softener - Capacity vs. Efficiency

Water softeners are sized based on "grains capacity". For instance you may have purchased a "32,000 grain" water softener. The grains capacity refers to how much hardness a softener can remove before it needs to regenerate. More accurately, the grains capacity refers to the amount of softening capacity after the softener has regenerated. The amount of salt used during the regeneration cycle directly affects the amount of capacity in the newly regenerated softener.

As an example, a 32,000 grain water softener contains 1 cubic foot of softening resin. In order to recover the full 32,000 grains of softening capacity from this volume of resin, the softener must use 18 pounds of salt during the regeneration cycle. This is a very large amount of salt. This method, where maximum salt dose is used to yield maximum softening capacity will be referred to as the "Max Capacity" method.

This same 1 cubic foot water softener can be regenerated with 5 pounds of salt yielding 20,000 grains of softening capacity. While the softener will regenerate slightly more often, it will use less than 1/3 the amount of salt as compared to the method above. This method, we will refer to as the "Salt Efficiency" method.

Unless there is a specific reason to do otherwise, all softeners should be programmed using the Salt Efficiency settings. In the following section we will provide instructions on how to program your softener for either method.

Programming your water softener - Entering the values

1. Power the softener valve by plugging in the power adapter
2. Press and hold the UP button until the programming icon appears – this is a small pencil icon that appears in the bottom left hand corner of the screen
3. Use the UP and DOWN buttons to program the time to read 12:01 PM. When this is displayed press the EXTRA CYCLE button (button that has four arrows in the shape of a square).
4. Now press and hold both the UP and DOWN buttons until the programming icon (pencil) appears in the bottom left corner of the screen. Then release UP and DOWN buttons.
5. There should now be "DF" displayed in the top left of the screen. Press the UP button until "GAL" appears in the center of the screen. Then press EXTRA CYCLE.

6. There should now be “VT” displayed in the top left of the screen. Press the UP button until “St1B” appears in the center of the screen (please note that this may look like “St16”). Press the EXTRA CYCLE button.

7. There should now be “CT” displayed in the top left of the screen. Press the UP button until “Fd” appears in the center of the screen. Press the EXTRA CYCLE button.

8. There should now be “NT” displayed in the top left of the screen. Press the UP button until “1” appears in the center of the screen. Press the EXTRA CYCLE button.

9. There should now be “C” displayed in the top left of the screen. Use the UP and DOWN buttons to set the capacity of the softener. Use the following chart to match the softener you purchased to the number you should enter for this step (use Salt Efficiency settings unless suggested otherwise):

Softener Type	Value to use for Salt Efficiency Method	Value to use for Max Capacity Method
24,000 Grain (3/4 cubic foot)	15	24
32,000 Grain (1 cubic foot)	20	32
48,000 Grain (1.5 cubic foot)	30	48
64,000 Grain (2 cubic foot)	40	64
80,000 Grain (2.5 cubic foot)	50	80
96,000 Grain (3 cubic foot)	60	96

10. Once the proper number is displayed on the screen press the EXTRA CYCLE button.

11. There should now be an “H” displayed in the top left of the screen. Use the UP or DOWN buttons to enter your water hardness value in Grains per Gallon. Add three grains per gallon of hardness to this value for every 1.0 parts per million (ppm) of iron that is in your water. Press EXTRA CYCLE.

12. There should now be “RS” displayed in the top left of the screen. Use the UP button to select “SF” and then press the EXTRA CYCLE button.

13. There should now be “SF” displayed in the top left of the screen. Use the UP or DOWN buttons to set the number to 15, and then press EXTRA CYCLE.

14. There should now be “DO” displayed in the top left of the screen. If you are using municipal water source set this value to 14. If you are using any other water source set this value to 7. Then press EXTRA CYCLE.

15. You should now see “RT” in the top left of the screen. Use the UP and DOWN buttons to set the time of day that will be used for regeneration. Typically a time of low water demand is selected – often 2:00 AM. Once the desired time is set, press EXTRA CYCLE

16. You should now see “BW” in the top left of the screen. Set this to “10” and then press EXTRA CYCLE

17. You should now see “BD” in the top left of the screen. Set this to “60” and then press EXTRA CYCLE

18. You should now see “RR” in the top left of the screen. Set this to “10” and then press EXTRA CYCLE

19. You should now see “BF” in the top left of the screen. This value needs to be set depending on the size of softener you ordered. You must match the value used in this step to the value used in step 9. For instance, if you used the Salt Efficiency value in step 9 you must use the Salt Efficiency setting from this chart for this step. Use the following chart to determine the value to input for this stage:

Softener Type	Value to use for Salt Efficiency Method	Value to use for Max Capacity Method
24,000 Grain (3/4 cubic foot)	3	9
32,000 Grain (1 cubic foot)	4	12
48,000 Grain (1.5 cubic foot)	5	18
64,000 Grain (2 cubic foot)	7	24
80,000 Grain (2.5 cubic foot)	9	30
96,000 Grain (3 cubic foot)	10	36

20. Once this value has been entered press EXTRA CYCLE to advance to the next stage.

21. You should now see “FM” displayed in the top left of the screen. Use the UP or DOWN button until “t0.7” is displayed in the center of the screen, and then press NEXT CYCLE. You have now completed programming your Fleck 5600SXT valve.

22. You will now run a regeneration cycle while you are present to watch for leaks. Begin the regeneration cycle by pressing and holding the NEXT CYCLE button until you hear the gears turn.

23. You will see “BW” in the top right hand corner and will have numbers counting down. You should also have water exiting the drain line of the softener. Inspect the drain line connector at the valve for leaks and also make sure that the receptacle into which the drain is running, is able to handle the flow. You do not need to let this cycle run to completion. Once you’ve inspected the components, press the NEXT CYCLE button again to advance to the next stage.

24. You will see “BD” in the top right hand corner and will have numbers counting down. Open the brine tank and listen - you should hear air being sucked into the softener through the brine line. Press the NEXT CYCLE button again.

25. You will see “RR” in the top right hand corner and will have numbers counting down. Press the NEXT CYCLE button again.

26. You will see “BF” in the top right hand corner and will have numbers counting down. Allow this stage to run for it’s full duration. While this stage is running check the brine line adapter on the softener valve for any leaks. You’ll also want to have a look inside the brine tank to make sure it’s filling with water. Also watch to make sure that the safety float in the brine tank does not stop the flow of water before the time has run down for this stage.

27. You can now add a few bags of salt to your brine tank. Your water softener installation is now complete. Enjoy your luxurious softened water!