



Clean Water Made Easy

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Terminator Iron Filter Installation & Start-Up Guide

For Terminator Iron Filters with Fleck 2510 Control Valve & 8x44 Air Tank with Honeywell Air Vent

Thank you for purchasing a Clean Water System! With proper installation and a little routine maintenance your system will be providing iron free water for many years.

Please review this start-up guide entirely before beginning to install your system and follow the steps outlined for best results.

TERMINATOR FILTER MEDIA CONTAINS DUST.

USE PAPER MASK AND VENTILATE TO AVOID BREATHING DUST.



Questions?

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Packing List

1.0 Cubic Foot Terminator

Qty	Description
1	Fleck 2510 Backwash Control Valve
1	Pipe connector kit (either 1" or ¾")
1	Fleck 2510 Bypass valve
1	1 filter tank and distributor tube
1	Honeywell brass air vent
1	Air mix tank 8" x 44"
1	Waterite "Micronizer" Air injector – blue 1" inlet and outlet
1	Media funnel
1	12 lbs Gravel
1.0	Cubic Feet of Terminator Media - (Birm & Filter Ag)

1.5 Cubic Foot Terminator

Qty	Description
1	Fleck 2510 Backwash Control Valve
1	Pipe connector kit (either 1" or ¾")
1	Fleck 2510 Bypass valve
1	1 filter tank and distributor tube
1	Air mix tank 8" x 44"
1	Honeywell brass air vent
1	Waterite "Micronizer" Air injector – blue 1" inlet and outlet
1	Media funnel
1	14 lbs Gravel
1.5	Cubic Feet of Terminator Media - (Birm & Filter Ag)

2.5 Cubic Foot Terminator

Qty	Description
1	Fleck 2510 Backwash Control Valve
1	Pipe connector kit (either 1" or ¾")
1	Fleck 2510 Bypass valve
1	13" x 54" filter tank and distributor tube
1	UT Air Tank with Air Release
1	Waterite Air injector – blue 1" inlet and outlet
1	Media funnel
1	Box Gravel
2.5	Cubic Feet of Terminator Media - (Birm & Filter Ag)

Pre-Installation

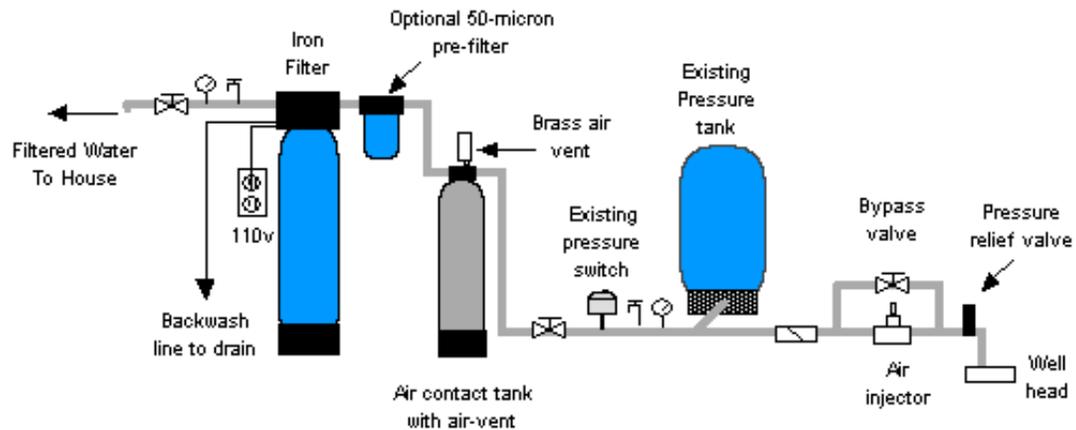
1. Review your packing list and make sure you have received all the parts before beginning installation.
2. If you are going to be turning off the water to the house and you have an electric water heater, shut off the power to the water heater before beginning installation in case water heater is accidentally drained.
3. Pick a suitable location for your filter system on a dry level spot where it won't be exposed to freezing temperatures. A minimum of 20 PSI is required. Maximum pressure is 90 PSI.
4. Get all of your plumbing parts together before beginning installation. Installation typically takes 4 - 6 hours. However after installation the Terminator Filter must be allowed to run through a complete backwash and rinse cycle.
5. After the system is installed and running, your water may be discolored, or full of sediment or rust, particularly if this is older or corroded piping. Typically this clears up over a day or two.

Best Practices for Piping & Drain Installation

1. See typical installation (see Fig 1). The Terminator iron filter is installed after the pressure tank. If you are also installing a water softener, install the softener after the Terminator iron filter.
2. Make sure to follow to connect the in pipe to the Fleck 2510 inlet and the outlet to the outlet. As you face the Fleck 2510 control from the front, the water enters on the right and exits on the left. From the back (see Fig 2) the water enters on the left. The inlet and outlet are attached to the bypass valve which is marked with arrows as well.
3. Make sure there is a working gate or ball valve before the Fleck 2510 Terminator iron filter and also one after as shown in the diagram Fig 1. The pressure gauges are optional and perhaps not necessary but a hose bib (which is a faucet that you can attach a garden hose to) is strongly recommended after the Terminator iron filter before the second ball valve. This makes it easy to rinse your new Terminator iron filter on start-up and gives you a place to test the water before it enters your household plumbing.
4. If you will be using copper piping, do not sweat the copper pipe directly on to the Fleck 2510 control valve. Avoid heating up the Fleck 2510 control valve plastic with the torch.
5. You do not need unions to install your Fleck 2510 control. If you need to remove it, the Fleck 2510 has quick-release couplings that make it easy to put the Terminator filter on by-pass and remove the filter system from the piping.
6. The drain line tubing (not supplied) is connected to a drain from the drain outlet using flexible ½" ID tubing. If the drain line will be over 10 feet, use a ¾" or 1" drain tubing or PVC pipe.

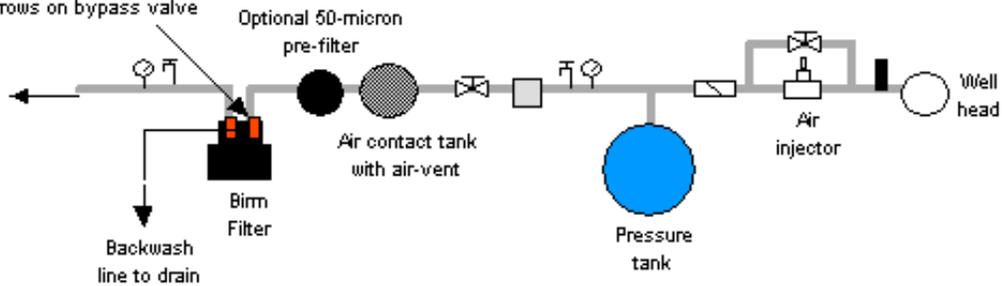
How Your Terminator Works

Fig 1 – Piping Flow Diagram



Plan View

Water inlet is on right side of bypass valve; follow arrows on bypass valve



Key

-  Water piping
-  Check valve
-  Pressure gauge
-  Hose bib
-  Pressure switch
-  Gate or ball valve

Notes: Install after pressure tank. Follow inlet and outlet arrows on filter for proper installation. Connect 1/2" flexible tubing from backwashing control valve to a drain. If the distance to the drain is more than 20 feet use 3/4" or 1" tubing. Drain backwashes under line pressure and can be up to 30 feet away and up to 6 feet above the top of the tank if necessary.

If you install a hose bib & ball valve after the iron filter as shown, it will make it easier to service and test the water at a later date.

Follow all local plumbing and electrical codes.

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The Terminator air-injection iron filter consists of:

1. **Waterite W-988 Air Injector**
2. **Air mix contact tank with brass air vent**
3. **Iron filter tank with Fleck 2510 auto-backwash control valve**

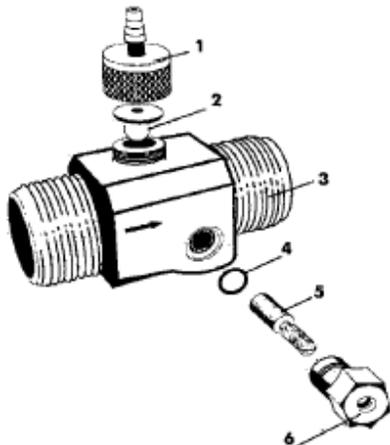
The Waterite W-988 Air Injector- This is the standard air injector included with all Terminator systems. This plastic air injector features plumbing connections of the 1" Male Threads and a flow range for effective air draw of 3.8-16 gallons per minute.

The air injector has an inlet and outlet (see arrow on side of air injector for proper installation). When the well pump turns on, water enters the air injector and is split between the nozzle portion of the injector and the bypass portion. The amount of water entering the nozzle area is regulated by the bypass screw. The further the screw is tightened (clockwise) into the air injector the greater the flow of water onto the nozzle.



As water is restricted into the nozzle and enters the venture a vacuum is formed at this point. This vacuum creates the air draw into the water. As mentioned the further the bypass screw is tightened into the air injector the greater the air draw during the pump cycle. Also as the air draw increases the water flow rate through the air injector and to the home decreases.

Figure 2 - Micronizer



	W-988 Micronizer Parts	P/N
1	Knurled Cap, Brass M-006	WA14050
2	Check Valve M-005	WA14047
3	Main Body – blue M-009	WA14056
4	O-ring M-011	WA14057
5	Valve Gate, Brass M-003	WA14044
6	Gate Retainer, Brass M-002	WA14041

Fig 3 8x44 Air Mix Tank

Air mix contact tank with brass air vent

The air mix tank is pre-assembled, except for the air vent. The air vent is connected to the top of the air-mix tank. The function of the air vent tank is to allow some contact time for the oxygen in the air to dissolve into the water and to bleed off excess air. The air injection allows the Terminator filter media to remove iron by increasing the dissolved oxygen content of the water and converting the iron to a form that can be filtered out by the Terminator filter media.

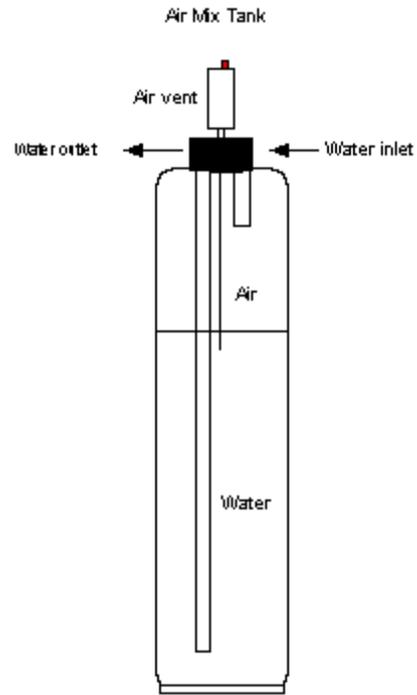
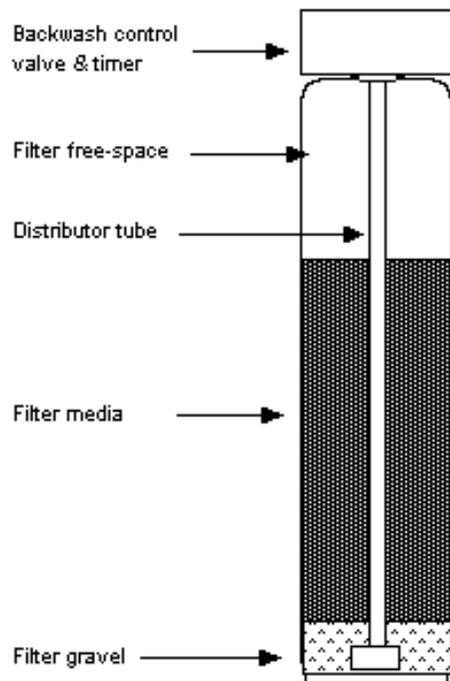


Fig 4 Iron Filter Tank

Terminator Iron Filter with Fleck 2510 auto-backwash control valve

In your Terminator Iron Filter the water enters the top of the tank and flows down through the media and up the distributor tube. The downflow type iron filter removes iron and sediment. Every few days the Fleck 2510 automatically backwashes and rinses the filter media, which cleans the media of all rust and sediment and re-classifies the media preventing channeling. During backwash, the water flow is reversed and water flows down the distributor tube and up through the media, lifting and expanding the filter media.

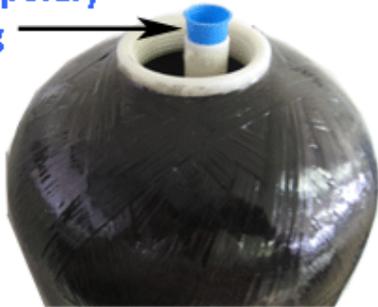


Assembly and Installation Instructions

1. Unscrew by hand the entire Fleck 2510 control valve from top of tank if it was shipped attached to the tank. Place distributor tube in tank, if not already inside tank. If not already done, make sure blue cap is on top of distributor tube, or wrap the top of distributor tube with electrical or duct tape. You do not want gravel or filter media to go down the distributor tube.

Plug or tape top of distributor tube to prevent media from entering distributor tube when adding media. Remove when finished.

Temporary plug



2. Add filter gravel supplied first, using the funnel sent with the Terminator iron filter.

Do not allow any parts of the media bag or other foreign material to enter tank when adding media.

3. Next mix all the Terminator media you received together in a bucket. Add the media to the tank using the funnel provided. Tank will be approximately 60% full.

4. Remove cap or tape from top of distributor tube.

5. If possible at this point, fill tank to top with water.

6. Attach optional plastic top screen to the under-side of the Fleck 2510 control valve. It is a funnel-shaped plastic screen that snaps on to the control valve and prevents media from being backwashed out to drain during the regeneration cycles.

7. Add a small amount of silicone grease or vegetable cooking oil to the Fleck 2510 control valve threads and screw control valve carefully onto the softener tank, making sure not to cross-thread. Do not use



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pipe-joint compound, Teflon tape, or Vaseline or other petroleum greases to lubricate tank threads.

Please Note: When installing Fleck 2510 backwash control-timer valve on to the top of the filter tank, do not over-tighten. Tighten by hand. The control valve is sealed with the o-ring on the base of the control valve. Once you hand-tighten it so the o-ring has sealed against the top of the tank, continue to tighten for perhaps another 1/4 turn until tight. If the control valve is over-tightened and leaks, the black Slip Ring will need to be replaced.

8. See how the Fleck by-pass is connected. Make sure the by-pass valve is in the bypass position when starting the installation. Follow the IN and OUT arrows on the bypass valve and control valve for proper connection of in and out water piping. Leave in the BY-PASS position for now.

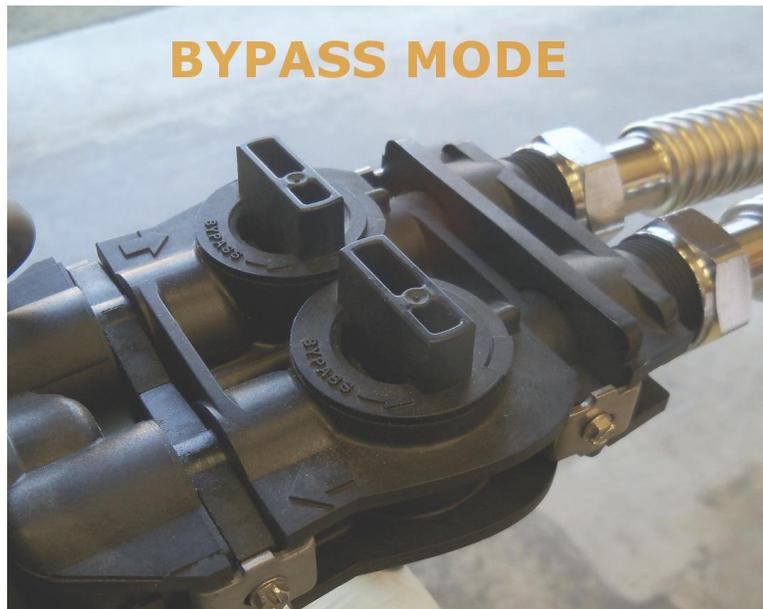
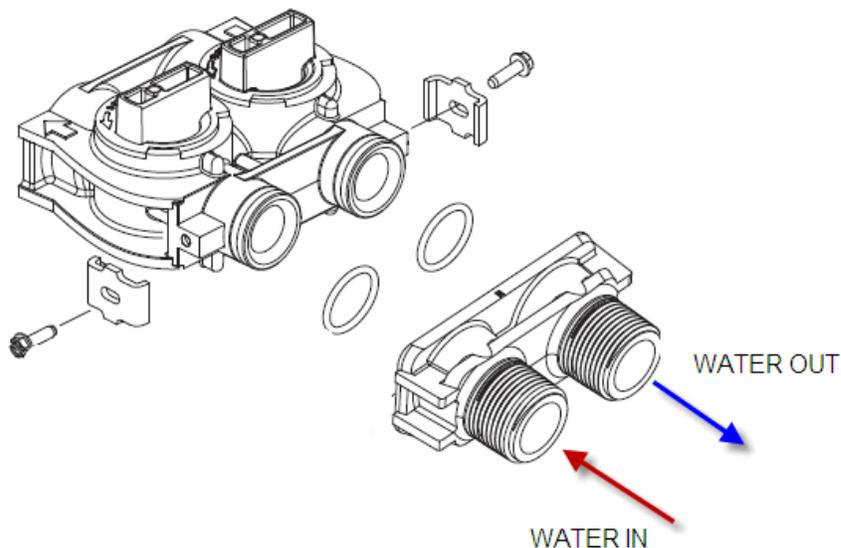


Fig 5

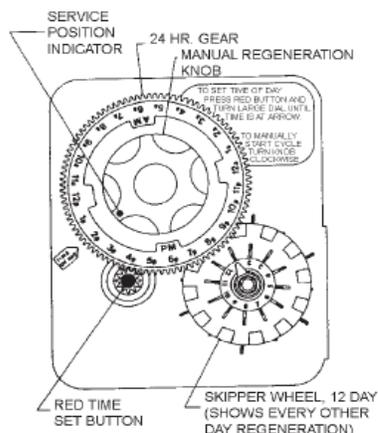
BY-PASS VALVE - Shown in By-Pass Mode



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9. Install air injector (with unions to allow easy removal of air injector for cleaning), and a bypass and valve around air injector (see Fig 1). Connect piping to air mix tank in and outlet. Attach some tubing to vent of air tank and run outside if necessary.
10. Install your water pipes to the Fleck 2510 bypass end connectors. Make sure inlet is installed to the 'In" pipe connector on the bypass valve and outlet is on the "Out" connector.
11. Connect some flexible tubing from the drain connection on the Fleck 2510 control valve to a suitable drain such as a septic tank or drain to a sewer. It is OK to run the drain line up and over the Fleck 2510 Terminator iron filter up to 4 feet above the top of the tank. If the drain line will be more than 20 feet, use larger diameter tubing such as ¾" or 1". Note that it is desirable to be able to run the drain line into a bucket in order to test the backwash flow rate in the future.
12. Turn on the water and leave the Fleck 2510 control on bypass and check for leaks. Leave the ball valve after the Terminator iron filter closed, so water is still off to the house, but connect a garden hose and open up the hose bib after the Terminator iron filter and allow the water to run for several minutes. This important step clears out any foreign material that may be in the pipes from the piping installation. If you do not have a valve installed after the Terminator iron filter and you do not have a hose bib, you will need to turn the water on inside the house to let the water run. Use a bathtub or laundry sink that does not have an aerator screen.
13. Plug in your Fleck 2510 control valve to an outlet.
14. Set 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 it as the time of the day pointer. Release the red button. By setting time for real time of day, the backwash will occur at 2 AM. If you wish it backwash at a different time of day, adjust the current time of day setting, or see 3200 Timer Setting Procedure page 13.
15. Set the Days iron filter will backwash: Rotate the skipper wheel until the number "1" is at the red pointer. Set the days that regeneration (which means backwashing and rinsing) will occur by sliding the tabs on the skipper wheel outward to expose the 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. If iron is very high (over 4.0 ppm) you may want to set it backwash every 2 – 3 days, otherwise every 4 days is a typical setting that works well.

Fig 6 Fleck 2510 Timer

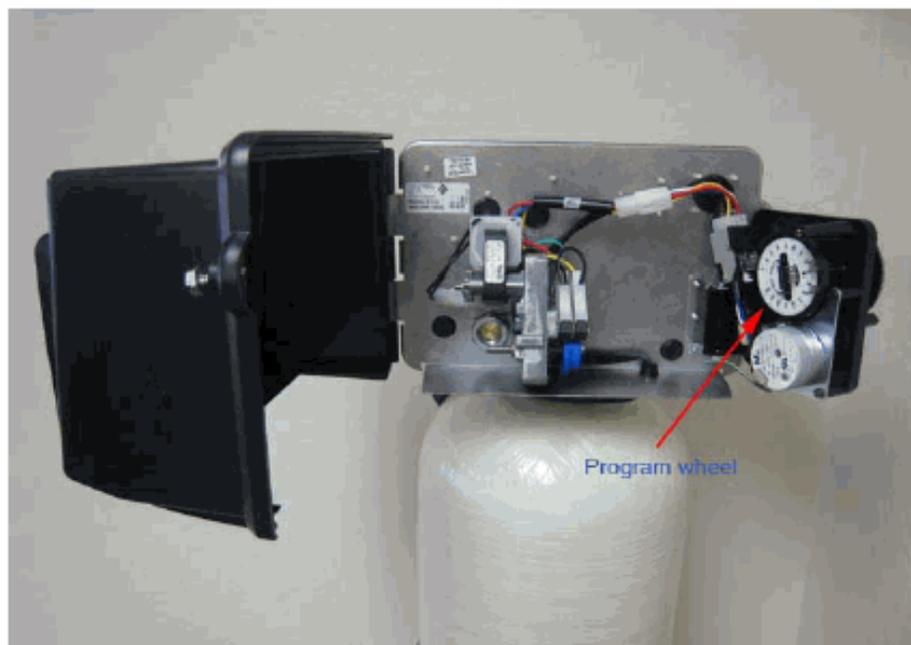


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Control valve without cover, showing timer assembly and program knob on front.



Control valve after timer assembly has been swung open to review program on back - no tools required to open.



Open timer cover. Swing open timer assembly to view the program wheel. 1 pin or space equates to 2 minutes. The program wheel has come preset and does not need to be changed.

16. Turn the program knob slowly a few degrees clockwise to start a manual backwash. You will hear the piston engage and move the piston to the backwash position. If you wish, you can swing open the timer assembly to see how turning the knob on the front moves the program wheel on the backside of the timer. Each pin or hole equals 2 minutes.
17. Now you can slowly turn the bypass valves to the service position and you will hear water rushing out to drain and start to backwash the filter.



18. There should be no media coming out of the drain line, but the water will be black or dirty looking. At this point the Terminator iron filter will be in a backwash mode, which is the first of two cycles it goes through during backwash (also called regeneration"). The backwash takes 10 to 12 minutes. The next cycle is the rinse which takes 6 minutes.
19. After the backwash and rinse cycles are complete, repeat the process and backwash a second time.
20. If possible verify that the backwash flow is 5 gallons per minute, which is the recommended backwash flow rate for 1.0 and 1.5 cubic foot models. You can easily run the drain hose to a bucket and using a watch verify the flow rate in gallons per minute. An adequate backwash is critical to properly clean the media and prevent it from cementing together.
21. There should be no Terminator media coming out of the drain line, but the water will be black or dirty looking. At this point the Terminator iron filter will be in a backwash cycle. The backwash takes 10 minutes. If the water slows down or stops during the first 10 minutes of backwash, press the Extra Cycle to move the Fleck 2510 control to the next cycle, the Rinse cycle. Then repeat the backwash and rinse after the rinse cycle is done, by pressing the Extra Cycle again. If you have high water pressure you may need to turn on the water slowly to the Terminator iron filter at first to prevent some Terminator fines from coming out the backwash. However it is normal for some small amount of fines to come out during the backwash, although you do not want to see a large amount of media

coming out, which would mean you have very high water pressure, or the drain flow for the Fleck 2510 is missing.

22. Adjusting the Air Injector “Micronizer”

A. The proper adjustment of the Micronizer to provide a colloidal suspension of the iron is a final and important step.

B. Close valve after pressure tank before air mix tank. Close down the Micronizer Adjusting Screw three turns by rotating it clockwise.

C. Open valve after pressure tank and open a faucet in house. Then control the water flow with valve.

D. Drain water from the pressure tank until the pump starts, then immediately turn off valve. Using the second hand on a watch, time the pump-up cycle (i.e. the time from the low pressure cut-in of the pump to the high pressure cut-out.) Assume a time of 99 seconds.

E. Re-open valve until the pump starts, then immediately shut the ball/gate valve after pressure tank. Determine the time of air-draw at the Suction Nozzle. This time should be 30% of the total pump-up time, (i.e. 30 seconds). If the air draw time is more than 30 seconds, turn the Adjusting Screw (counterclockwise) slightly. If the draw time is less than 30 seconds, turn the screw clockwise. Determine the total pump time after each adjustment, since this time will change as the Adjusting Screw is being reset.

F. If all the iron is not being removed at the 30% setting of the Adjusting Screw, after 4 weeks, increase the air draw time to 35% of the total pump-up time (35 seconds).

Maintaining Your Terminator iron filter System

Check the air injector to make sure it is drawing air for at least 30% of the pump cycle. Periodic cleaning of the air injector is required. It can be disassembled and cleaned in rust remover, white vinegar or citric acid every year or two depending on usage.

If the water pH is acidic, (less than 7.0 pH) it will be necessary to replenish or add more calcite media once a year.

Every 3 – 5 years the Terminator media can be removed and replaced. This is easily done by putting the filter on bypass, removing the control valve, and laying the tank on its side. Using a garden hose, flush out the media on a tarp, clean the tank and refill with new media.

Troubleshooting the Fleck 2510 Terminator iron filter

One problem that may occur is if you do not have enough backwash flow rate to properly clean the Terminator iron filter. You can verify the backwash flow rate by running the drain line into a bucket and timing it when the Fleck 2510 is in Cycle 1 or backwash.

If you are still getting some iron through the system, you can adjust the filter to backwash every 1 or 2 days

3200 Timer Setting Procedure

How To Set Days On Which Water Conditioner Is To Regenerate (Figure 2):

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:

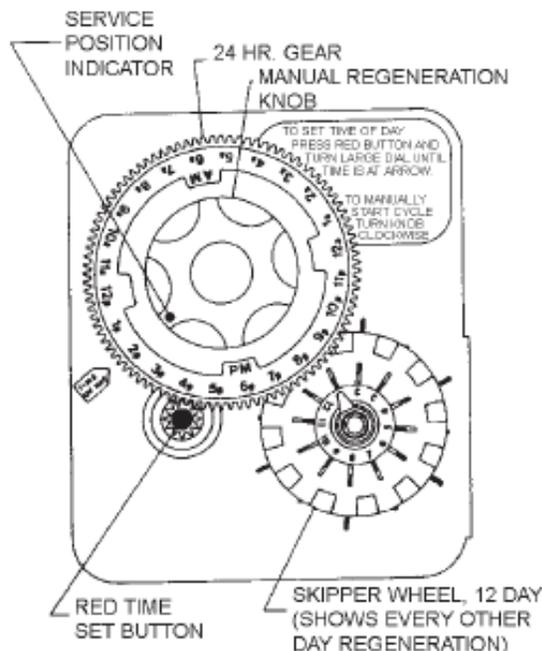
1. Press and hold the red button in to disengage the drive gear.
2. Turn the large gear until the actual time of day is at the time of day pointer.
3. Release the red button to again engage the drive gear.

How To Manually Regenerate Your Water Conditioner At Any Time:

1. Turn the manual regeneration knob clockwise.
2. This slight movement of the manual regeneration knob engages the program wheel and starts the regeneration program.
3. The black center knob will make one revolution in the following approximately three hours and stop in the position shown in the drawing.
4. 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.
5. 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.



What to Do If Your Filter Tank Does Not Sit Level on the Floor

Your black filter tank base is not glued to the bottom of your tank. Occasionally tank bases will become crooked during shipment. If you find that that your tank does not sit level on the floor, you can easily adjust it by holding the empty tank and rapping it on a concrete or solid floor once or twice in order to level it.

Don't Over-Tighten 2510 control When Installing on Tank

Please Note: When installing Fleck 2510 backwash control-timer valve on to the top of the filter tank please do not over-tighten.

Tighten with hands, there is no need for a pipe wrench or other wrench.

The control valve is sealed with the o-ring on the base of the control valve. Once you hand-tighten it so the o-ring has sealed against the top of the tank, continue to tighten for approximately another ¼ turn until tight.

If the control valve is over-tightened and leaks, the black Slip Ring (see control valve manual, it is #26, part 19197 in the exploded view of the control valve) will need to be replaced.