Installing Water Softener
FLECK 7000

Presented by
Glass Water Systems
5130 S. Dale Mabry
Tampa, Florida 33611
Toll Free 1-877-345-2770

Purchasing Installation Materials

This can be done before the unit arrives. This list is broken down for either a customer using copper or pvc pipe. Therefore, the list will vary depending on your plumbing material that you use for the connection. Also, this list may be added to and is based on installing the unit on 1" plumbing. If you are installing on 3/4" plumbing just substitute this for 1". The same applies for if you are using CPVC, Sch 80 , or PVC. This is strictly a guide and you can purchase less or more of the supplies depending on your situation. Always feel free to call us with any questions about installation at **1-877-345-2770**

PVC installation:

1. 20' – 40' 1" OR 1-1/4" PVC pipe
2. 20' – 60' ½" PVC pipe or 5/8" Poly Tubing
3. 10 - 1" OR 1-1/4" 90s PVC
4. 4 - 1" OR 1-1/4" 45s PVC
5. 5- 1" OR 1-1/4" Couplings PVC
6. 2 – 1" OR 1-1/4" Tees (Optional for Hard Water Faucet)
7. 2- 1" x ¾" Slip x Thr Bushing OR 1-1/4" X ¾" Slip x Thrd
8. 1- ¾" Hose Bibb
9. 1-1" or 1-1/4" Ball Valve (Optional for shut-off on entire system
10. 2- ½" PVC Female Adapter
11. 10 – ½" 90s PVC
12. 5 – ½" Couplings PVC
13. Rain & Shine Glue / CPVC Glue
14. Pipe Cleaner
15. Teflon Tape

If you have additional items you would recommend please call us – improvement and customer satisfaction is our goal.

Copper installation:

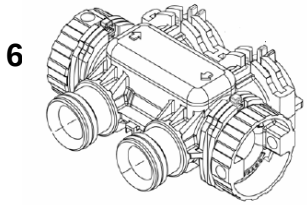
1. 10' – 20' 1" L hard copper pipe
2. 20' – 60' ½" PVC pipe or 5/8" Poly Tubing
3. 6 - 1" 90s Copper
4. 4 – 1" Female Adapters Copper
5. 2 - 1" 45s Copper
6. 5- 1" Couplings Copper
7. 2 – 1" Tees (Optional for Hard Water Faucet)
8. 2- 1" x ¾" Slip x Thr Bushing
9. 1- ¾" Hose Bibb
10. 1-1" Ball Valve (Optional for shut-off on entire system
11. 2- ½" PVC Female Adapter
12. 10 – ½" 90s PVC
13. 5 – ½" Couplings PVC
14. Lead Free Soder
15. Flux and Brush
16. Sand Cloth

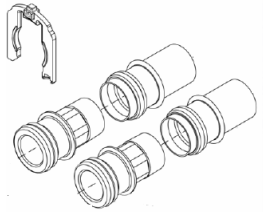
If you have additional items you would recommend please call us – improvement and customer satisfaction is our goal.

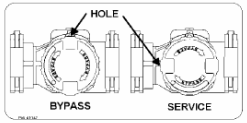
Inventory Contents

It is probably the most important thing to do the day your receive your package. This unit will either be drop shipped from our main supply warehouse in Florida or from our numerous nation wide suppliers. We use this method to keep the cost of shipping low for the customers. The unit may come in numerous packages. The Glass Water Systems representative will inform you of the number of packages. Also, you need to keep all packages if the unit is damaged in shipping and call us immediately. We need this to file a claim with the shipping company.

1. 1- Fiberglass Media Tank (8x44, 9x48, 10x47,12x52) depends on the system you orderd
2. Distributor Tube and Basket
3. High Capacity Resin-
    1. 24K Unit = ¾ Cu Ft Bag
    2. 32K Unit = 1 Cu Ft Bag
    3. 40K Unit = 1-1/4 Cu Ft Bag
    4. 48K Unit = 1-1/2 Cu Ft Bag
    5. 64K Unit = 2 Cu Ft Bag
4. Gravel (Optional)
5. Fleck 7000 Control Valve
6. Bypass
7. Installation Fitting Assemblies
    1. 1” NPT
    2. 1-1/4” NPT
    3. 1-1/4” Brass Sweat
8. Brine Tank
9. 3/8” Brine Line







Determining where to install the unit

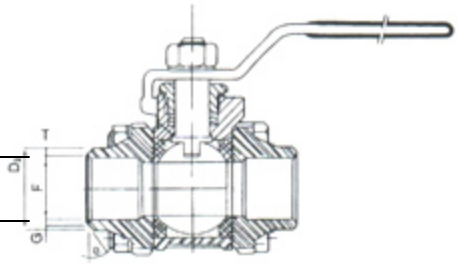
This is the portion where you decide where to install you water softener. You need to make sure that you follow your local plumbing codes. This information will serve as a guide to help you with this process. We encourage you to call with any questions about placement **1-877-345-2770.**

You need to first find the main coming into your home.

1. Locate your water meter
2. This is usually the side of the house it comes in on
3. Most Homes have a L shaped pipe going into the side of the home.
4. Once you have found this you need to dig down and locate the pipe to tie into.

1. Electric
   1. Try and find an outside socket.
   2. If you have to run a further distance than you have cord – you can slice in and extend the line.
   3. You can also drill a hole through the wall and fish it through.
2. Drain
   1. You can either use a sink, an outside drain, or dig a hole approximately 24-36” and fill with rock The hole needs to be about 12-18” in diameter

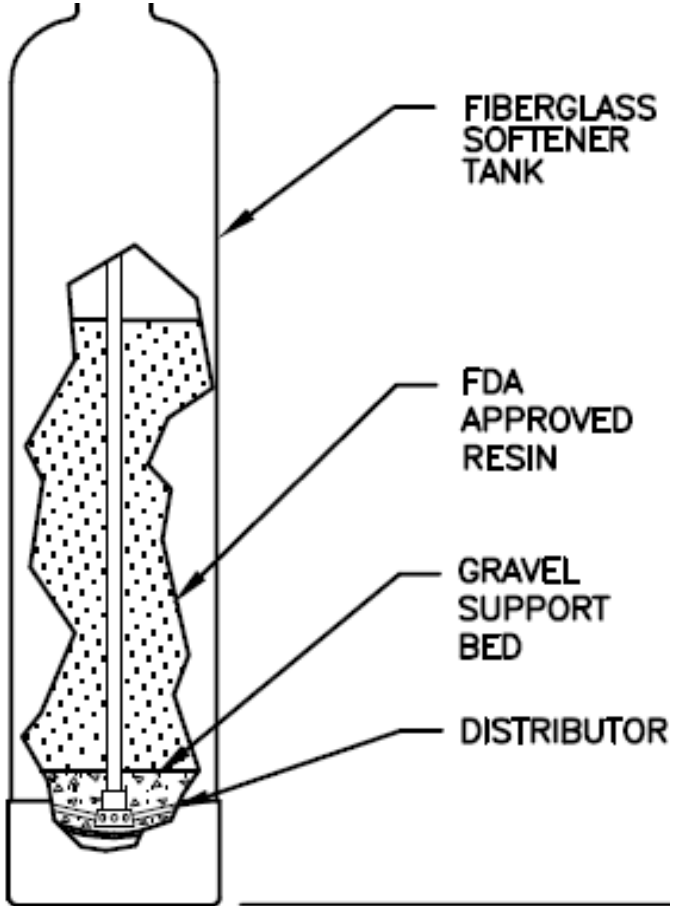
Water meter
Box



Usually homes have
A main shut off with a
Ball valve or a Gate Valve

BEDDING THE UNIT AND PREPARING FOR INSTALLATION

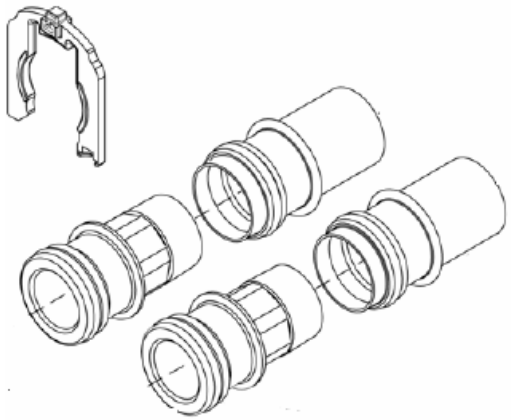
1. Put the Distributor Tube into the tank and tape the opening of the pipe. You cannot get resin or gravel inside the distributor tube.
2. Get a bucket 5 gallon type and cut a hole that will fit over the tank – Tape the Sides. Or use the funnel provided with the package (optional)
3. Fill the tank with the large gravel first and then the fine gravel. You may have no gravel or just one bag of gravel. If you do not have gravel do not worry about it.
4. Put the ¾, 1, 1.25, 1.5, or 2 Cu Ft of Resin in the tank
5. Remove the tape
6. Clean the threads of any resin etc. This will possibly make the valve not seat correctly
7. Take the Valve and screw back on the tank – be careful not to cross-thread the tank. We usually go backwards until it locks in and then tighten it down.
8. After you have the valve on take it and place it where you want it.



Installing the Inlet / Outlet

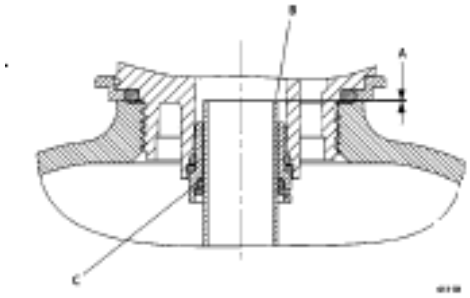
1. Find the main line to your home to install the inlet and outlet. This is usually located on the same side of the house as your water meter.
2. Once you have found the main line you need to cut it and install 2 90s.
3. Turn your water off at the meter or main shut off to the house. This has to be prior to where you are installing the water softener
4. The first 90 will be the inlet to the water softener. You need sweat or glue this fitting.
5. Run the pipe (copper or pvc) up to the sweat copper fitting or pvc fitting The sweat fitting will require you use another 90 to put into the copper fitting adapter.
6. You need to either glue or sweat the fitting before connection to the fitting on the bypass
7. The brass connection fitting that has to be sweat or glued is item 1 in both drawing below.
8. Once you have done this you will follow the procedures on installing the fitting adapters. These are items a and b.

Item 1



Installation Procedures

Installation Instructions

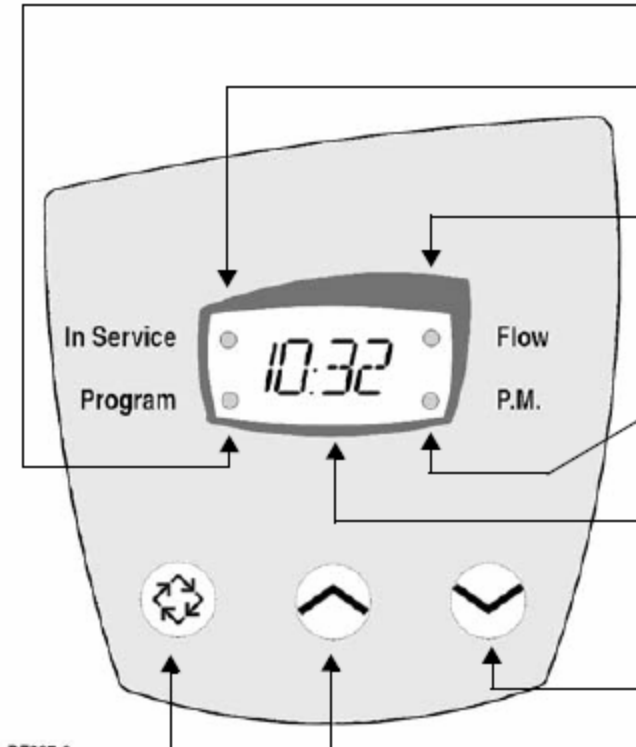


1. Place the softener tank where you want to install the unit.
NOTE: Be sure the tank is level and on a firm, clean base.
2. Perform all plumbing according to local plumbing codes.
3. Cut the 1.05" (32mm) distributor tube flush with the top of the tank (A).
— Deburr the outside of the tube (B) after cutting.
— Lubricate the o-ring (C) with non-petroleum based oil.
4. Lubricate the distributor 0-ring seal and tank 0-ring seal. Use only non-aerosol silicone lubricant.
5. Load media and place the control valve on the tank.
6. All soldering **MUST** be done on any connections requiring soldering prior to connecting the main control valve. The main control valve will by damaged if it is connected at the time of soldering.
7. Apply **Teflon** tape to all threaded fittings.
8. On units with a bypass, place in **Bypass** position.
— Turn on the main water supply.
— Open a cold soft water tap nearby and let water run a few minutes or until the system is free of foreign material (usually solder) resulting from the installation. Close the water tap when water runs clean.
9. Make plumbing connections to valve.
10. Plug the valve into an approved power source.
NOTE: Make all electrical connections according to codes.
11. Place the bypass **In Service** position. Cycle the valve to the Backwash position, and let the water flow slowly into the mineral tank until the air is purged from the unit.
12. Add water to the brine tank until the top of the air check is covered. Manually step the valve to the Brine Draw Position, and allow the valve to draw water from the brine tank until it stops.
NOTE: The air check will check at approximately the midpoint of the screened intake area.
13. Manually step the valve to the Brine Refill Position, and allow the valve to return to **In Service** automatically.
14. With the valve **In Service**, check that there is at least 1" of water above the grid in the brine tank, if used.
15. Fill the brine tank with salt.
16. Allow the control to run automatically. Setup is now complete.

Starting up the system

1. Once all this is installed – let the glue dry
2. **CHECK FOR LEAKS**
3. Open the inlet side valve and slowly let water in
4. Once pressurized open the outlet valve
5. Go inside and start running your hot water – this will let you have immediate soft water
6. Once you have done that follow the instruction on page 17 – 19 for setting up the valve.
7. After doing the instructions go ahead and hit regenerate and let the water softener completely go through all the cycles.
8. Please call us with any questions 1-877-345-2770

7000 Operation Procedures



Program Indicator
Programming Mode Active, Light On

In Service Indicator
Valve In Service, Light On
Manual Regeneration Qued, Flashing Light

Flow Indicator
Water Flow, Light Flashing

P.M. Indicator/Valve Moving Light Flashing
P.M., Light On
A.M., Light Off

Display Screen
Time of Day alternates with Process Display (for example, Volume Remaining, Time Remaining, programming information), Error Codes

Set Down Button
Adjust Values Down

Set Up Button
Adjust Values Up

Extra Cycle Button
User-Initiated and Program Step Advance Regeneration

7000 OPERATING PROCEDURES CONT.

Time Clock Regeneration Valves
In normal operation the Time of Day Display may be viewed at all times. The control operates for a preset number of days between **Regeneration** cycles. When the number of days since the last **Regeneration** reaches the preset number of days, a **Regeneration** cycle initiates at the preset **Regeneration Time**.

Flow Meter Equipped Valves – General
Flow meter equipped valves calculate the volume of water that the system can treat between **Regeneration** cycles based on the system capacity which is preset by the system manufacturer in a Master Programming Mode and the feed water hardness which is programmed in the Start-Up procedure safety factor (Master Mode only). The remaining system capacity displays in gallons or liters. The display has a range of 0 to 9999 (gallons or liters). I the remaining capacity exceeds 9999 liters when in the Metric Mode, then the display changes to millions of liters and a letter t is displayed as the first digit. The display then has a range of t1.0 (1,000,000) to t1.9 (1,900,000).
Flow Meter Equipped Valves – Immediate Regeneration Mode The **Time Of Day** display alternates with the **Volume Remaining** display in gallons or liters. The Meter dot flashes
in direct relation to the water flow rate through the unit. As treated water is used, the **Volume Remaining** display counts down from a maximum value to zero and initiates a **Regeneration** cycle.

7000 OPERATING PROCEDURES CONT.

Flow Meter Equipped Valves – Delayed Regeneration Mode

In Normal operation the **Time Of Day** display alternates with the **Volume Remaining** display. The flow dot flashes in direct relation to the water flow rate through the unit. As treated water is used, the **Volume Remaining** display counts down from a maximum value to zero. If the reserve is reached, a **Regeneration** queues. The display shows all dashes if the entire volume is depleted before the scheduled **Regeneration** time. At the preset **Regeneration Time**, a **Regeneration** cycle initiates.

Control Operation During Regeneration

In **Regeneration** the display shows the **Regeneration** status two ways:

• When the valve advances to the next position, the display flashes the number of that next position followed by three dashes.

• Once the valve reaches a position the display shows that position and number of minutes left in that **Regeneration** step.

NOTE: If the step time exceeds 100, the leading digit flashes.

• Once all **Regeneration** steps are complete, the valve returns to **In Service** and resumes normal operation.

NOTE: Pressing the Extra Cycle Button during a **Regeneration** cycle immediately advances the valve to the next cycle step position and resumes normal step timing.

Control Operation During Programming

The control enters Program Mode with the valve **In Service**. While in Program Mode the control continues to operate normally, monitoring water usage and keeping all displays up to date. Control programming is stored in memory permanently. There is no need for battery backup power.

Control Operation During a Power Failure

During a power failure all control displays and programming are stored for use upon power re-application. An inaccurate or flashing **Time of Day** display indicates that a power outage has occurred. During power failure the control:

• Is fully inoperative and any calls for **Regeneration** are delayed.

• Upon power re-application, resumes normal operation from the point that it was interrupted.

• Does not monitor the volume of water used during a power outage.

• In Delay Regeneration types, the reserve capacity is set to 1/3 the capacity.

7000 OPERATING PROCEDURES CONT.

Manually Initiating a Regeneration

A **Regeneration** cycle may be initiated manually (referred to as an Extra Regeneration Cycle). There are two options when starting an Extra Regeneration Cycle:

- Press and release the Extra Cycle Button:
  - — Flow Meter - Immediate Regeneration controls immediately go into a **Regeneration** cycle.
  - — For Time Clock and Flow Meter - Delayed Regeneration controls, the **In Service** dot begins to flash immediately and a **Regeneration** occurs at the pre-programmed **Regeneration** time.

Figure 2: Manually Initiated Regeneration

- Press and hold the Extra Cycle Button for five (5) seconds:
  - — For Time Clock and Flow Meter - Delayed Regeneration controls, the control immediately begins the **Regeneration** cycle.

7000 Control Start-up

Set Time of Day

Press the **Set Up** and **Set Down** buttons to set time of day.

- Metric = 24 hour clock
- US = 12 hour clock with PM indicator light

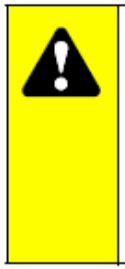
Figure 3: Set Time of Day

Enter Control Programming Mode

- Press and hold both the **Set Up** and **Set Down** buttons for five (5) seconds to enter Programming Mode. When the program mode is entered, the program dot turns on.

Figure 4: Enter Control Programming Mode

7000 Control Start-up Cont.



CAUTION

Do not set the time of day to 12:01 PM when entering the Start-Up programming mode. Doing so causes the control to enter the Master Programming Mode and alter the factory settings, resulting in a system malfunction.

The *7000* controller performs four (4) basic types of **Regeneration** systems. The type of system is selected by the system manufacturer and set in the Master Programming Mode. Basic systems are:

- **Time Clock**
  - — The control operates for a preset number of days between **Regeneration** cycles. On the day that a **Regeneration** cycle is required the system regenerates at the preset Regeneration Time.
- **Meter Immediate**
  - — The control regenerates immediately when the remaining capacity (volume of water that can be treated before a **Regeneration** is required) drops to zero (0).
- **Meter Delayed**
  - — The control regenerates on the day that the remaining capacity drops to less than the reserve volume. **Regeneration** starts at the preset Regeneration Time.

7000 Control Start-up Cont.

Programming a Meter Delayed Regenerated System

1. **Feed water hardness (Display Code H).**

   NOTE: The feed water hardness setting only displays when the system is set to operate as a Meter Immediate or Meter Delayed system type.

   — Press the **Set Up** or **Set Down** buttons to set the amount of feed water hardness in grains/gallon (U.S.) or degrees (metric). The system automatically calculates treated water capacity based on the feed water hardness and the system capacity preset in the Master Programming mode. "Calc" is displayed during calculations.

   Example:

   Range: 4 – 199 U.S. and metric

   — To program 9 grains / gallon (U.S.) or 9 degrees (metric) **[H - 9]**

   — Press the **Set Up** and **Set Down** buttons to adjust this value.

   — Press the **Extra Cycle** button once to advance to the next step.

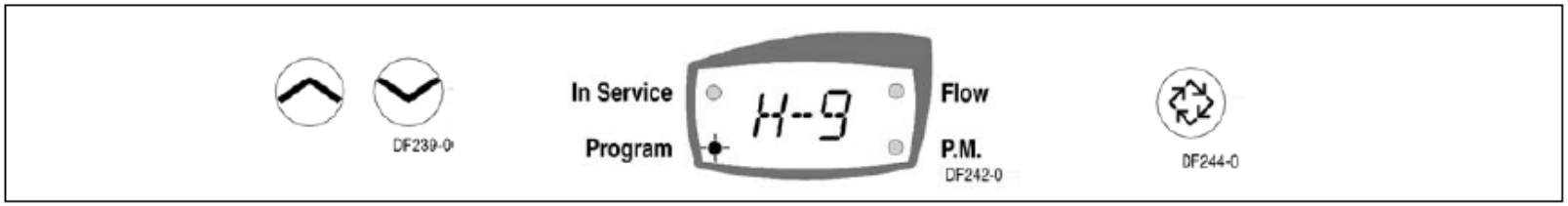


Figure 5: Feed Water Hardness

7000 Control Start-up Cont.

2. **Regeneration Time (No display Code)**

   NOTE: The Regeneration Time setting does not display in Meter Immediate Regeneration Mode since the system regenerates immediately when the available capacity reaches zero (0).

   Identify the Regeneration Time display by observing a non-flashing colon between two sets of numbers. Set the desired time of day for **Regeneration** to occur.

   Example:

   2 o'clock A.M. regeneration time: [2:00] (P.M. Indicator Dot Off)

   — Press the **Set Up** and **Set Down** buttons to adjust this value.

   — Press the **Extra Cycle** button to exit the programming mode or press and hold the **Set Up** and **Set Down** buttons simultaneously for five (5) seconds to enter the Extended Setup Programming Mode.

Figure 6: Regeneration Time

7000 Control Start-up Cont.

3. **EXTENDED Programming Mode**

Regeneration Cycle Step Programming (Display Code 1 to 6)

Use this feature to program the Regeneration Cycle step times. The Regeneration Cycle Step being programmed appears in the first digit of the display. Each display is used to set the duration time in minutes of that specific step in the regeneration cycle.

Example:

Cycle Step	dF	dFFF	FLtr
1	**10** = Backwash	**12** = Refill	**10** = Backwash
2	**60** = Brine Draw	**60** = Brine Making	**10** = Rapid Rinse
3	**5** = 2nd Backwash	**10** = Backwash	
4	**10** = Rapid Rinse	**60** = Brine Draw	
5	**12** = Refill	**5** = 2nd Backwash	
6		**10** = Rapid Rinse	

— Use the **Set Up** and **Set Down** buttons to adjust this value.

— Press the **Extra Cycle** button to advance to the extended diagnostics.

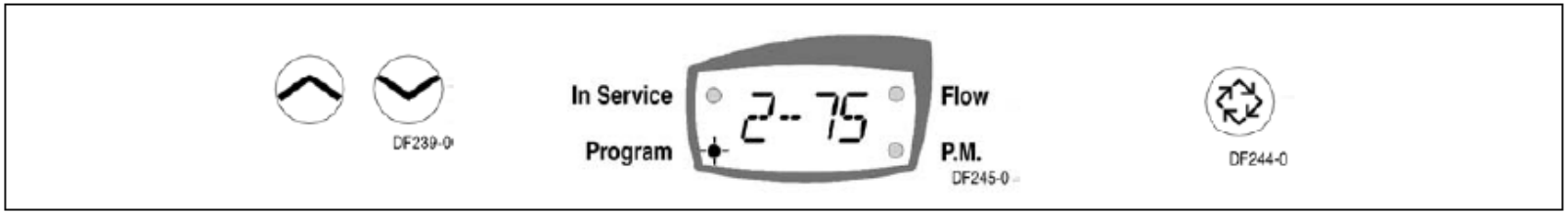


Figure 7: Extended Programming Mode

7000 Control Start-up Cont.

4. **Extended Diagnostics Mode (Viewable Only)**

   (Dy xx) Display Code xx = days since last **Regeneration**

   — Press the **Extra Cycle** button once to advance to the next diagnostics.

   (xxxx) No Display code xxxx = volume used since the last **Regeneration.** (yyyy) No Display code yyyy Reserve Volume.

   — Press the **Extra Cycle** button once to Exit Extended Setup Programming Mode.

   Control Programming Complete

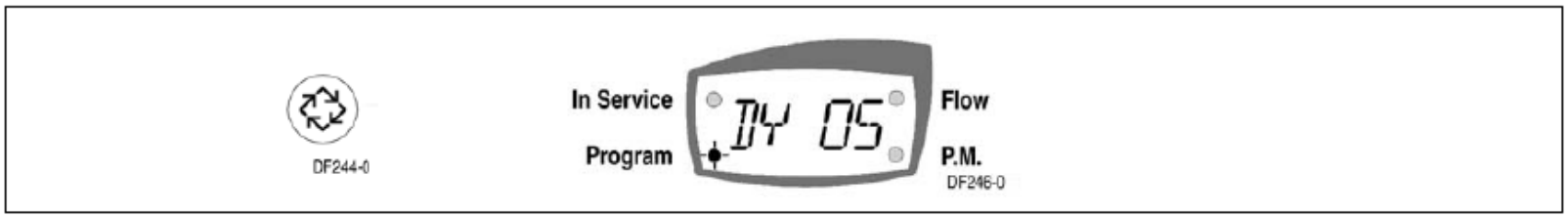


Figure 8: Extended Diagnostics Mode

7000 Control Start-up Cont.

Programming a Meter Immediate Regenerated System

1. **Feed water hardness (Display Code H).**

   The feed water hardness setting displays only if the system is set to operate as a Meter Immediate or Meter Delayed system type.

   — Press the **Set Up** and **Set Down** buttons to set the amount of feed water hardness (grains/gallon or degrees). The system automatically calculates treated water capacity based on the feed water hardness and the system capacity preset in the Master Programming mode.

   Example:

   Range: 4 – 199 US and Metric

   — To program 9 grains / gallon (US) or 9 degrees (Metric) **[H – 9]**

   — Press the **Set Up** and **Set Down** buttons to adjust this value.

   — Press the **Extra Cycle** button once to Exit Setup Programming Mode or press and hold the Up and Down buttons simultaneously for five (5) seconds to enter the Extended Setup Programming Mode.

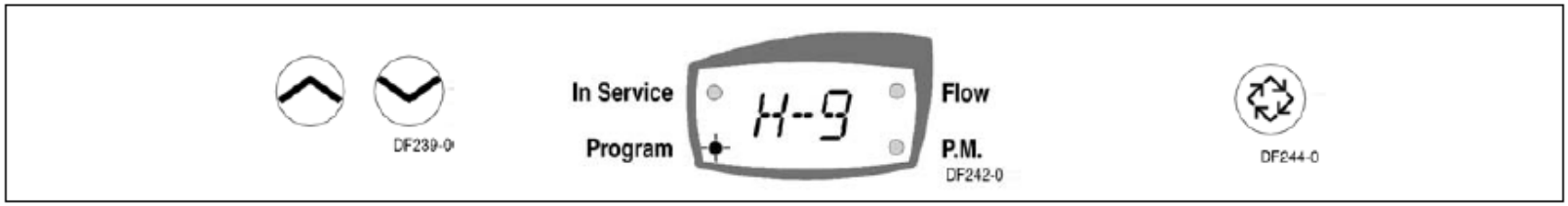


Figure 9: Feed Water Hardness

7000 Control Start-up Cont.

2. **EXTENDED Programming Mode**

Regeneration Cycle Step Programming (Display Code 1 – 6)

This Program Step is used to program the Regeneration Cycle step times. The Regeneration Cycle Step being programmed is displayed in the first digit of the display. Each display is used to set the duration time in minutes of that specific step in the **Regeneration** cycle.

Example:

Cycle Step	dF	dFFF	FLtr
1	10 = Backwash	12 = Refill	10 = Backwash
2	60 = Brine Draw	60 = Brine Making	10 = Rapid Rinse
3	5 = 2nd Backwash	10 = Backwash	
4	10 = Rapid Rinse	60 = Brine Draw	
5	12 = Refill	5 = 2nd Backwash	
6		10 = Rapid Rinse	

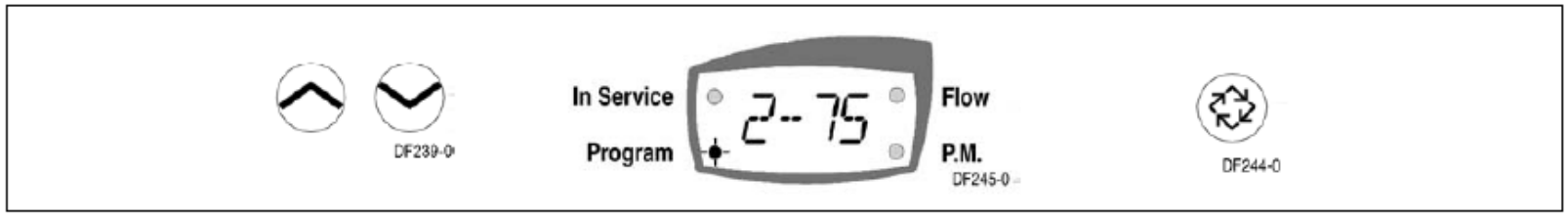


Figure 10: Extended Programming Mode

7000 Control Start-up Cont.

3. **Extended Diagnostics Mode (Viewable Only)**

   (Dy xx) Display Code xx = days since last **Regeneration**

   — Press the **Extra Cycle** button once to advance to the next diagnostics.

   (xxxx) No Display code xxxx = the volume used since the last **Regeneration**

   — Press the **Extra Cycle** button once to Exit Extended Setup Programming Mode.

   Control Programming Complete

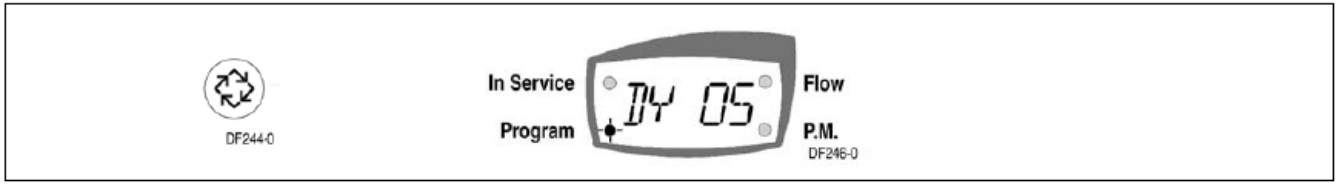


Figure 11: Extended Diagnostics Mode

Programming a Time Clock Regenerated System

1. **Regeneration Time (No Display Code)**

   The Regeneration Time display can be identified by observing a non-flashing colon between two sets of numbers. Set the desired time of day that you want **Regeneration** to occur.

   Example:

   2 o'clock A.M. regeneration time: [2:00] (P.M. Indicator Dot Off)

   — Use the **Set Up** and **Set Down** buttons to adjust this value.

   — Press the **Extra Cycle** button to proceed to the next step.

Figure 12: Regeneration Time

7000 Control Start-up Cont.

2. **Regeneration Day (Display code A)**

   Use this display to set the number of days between **Regeneration** cycles. This setting is identified by observing the letter "A" in the first digit. In the Time Clock regeneration mode, the system regenerates at the time set in Step 1 on the programmed number of days.

   Example:

   Regeneration every 7 days **[A -- 7]**

   — Use the **Set Up** and **Set Down** buttons to adjust this value.

   — Press the **Extra Cycle** button once to Exit Setup Programming Mode or press and hold the **Set Up** and **Set Down** buttons simultaneously for five (5) seconds to enter the extended setup programming mode.

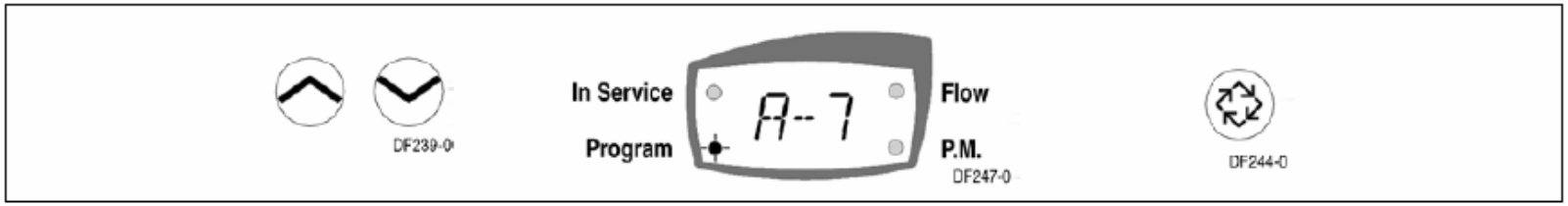


Figure 13: Regeneration Day

7000 Control Start-up Cont.

3. **Extended Programming Mode**

Regeneration Cycle Step Programming (Display Code 1 – 6)

This Program Step is used to program the Regeneration Cycle step times. The Regeneration Cycle Step being programmed is displayed in the first digit of the display. Each display is used to set the duration time in minutes of that specific step in the **Regeneration** cycle.

Example:

Cycle Step	dF	dFFF	FLtr
1	10 = Backwash	12 = Refill	10 = Backwash
2	60 = Brine Draw	60 = Brine Making	10 = Rapid Rinse
3	5 = 2nd Backwash	10 = Backwash	
4	10 = Rapid Rinse	60 = Brine Draw	
5	12 = Refill	5 = 2nd Backwash	
6		10 = Rapid Rinse	

— Use the **Set Up** and **Set Down** buttons to adjust this value.

— Press the **Extra Cycle** button once to proceed to the diagnostics.

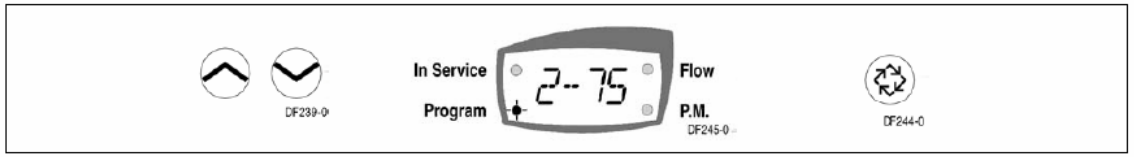


Figure 14: Extended Programming Mode

4. **Extended Diagnostics Mode (Viewable Only)**

(Dy xx) Display Code xx = days since last **Regeneration**

— Press the **Extra Cycle** button once to advance to the next diagnostics.

— Press the **Extra Cycle** button once to Exit Extended Setup Programming Mode.

Control Programming Complete

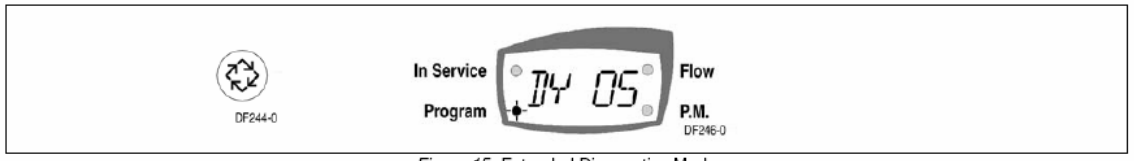


Figure 15: Extended Diagnostics Mode