

Master Programming Mode Flow Chart

NOTE: Depending on current option settings, some displays cannot be viewed or set.

To Set Time of Day:

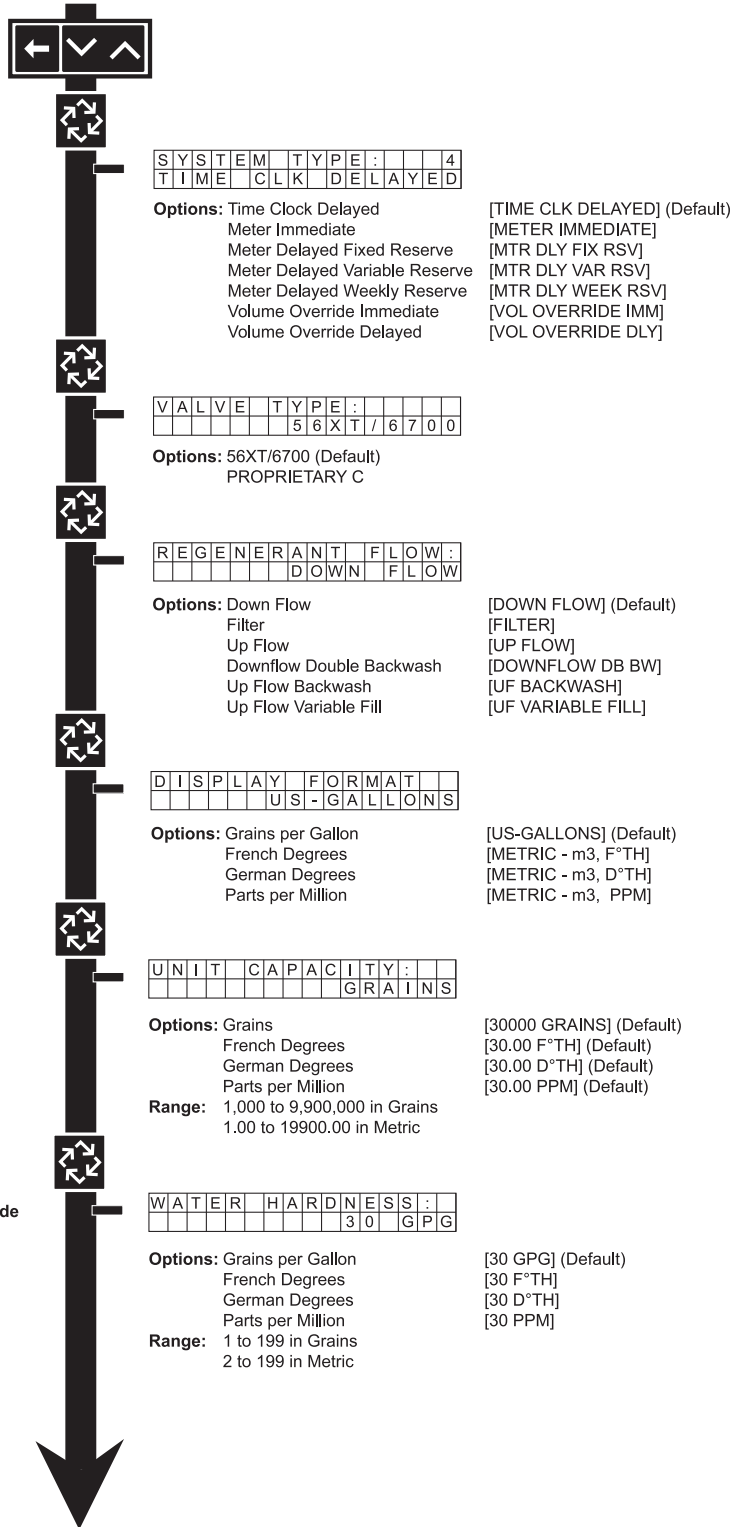


Press and hold the Up and Down buttons for 2 seconds. Press the Shift button to select the digit you want to modify.

Entering Master Programming Mode:

1. Press and hold the Shift and Up buttons for 5 seconds.
OR
2. Set the Time of Day display to **12:01 P.M. or 12:01HR**. Then go to the main display screen, press the Up and Down buttons at the same time for 5 seconds.

NOTE: Feed Water Hardness will not be shown in Volume Override or Time Clock system types.



CAUTION: Before entering Master Programming, please contact your local professional water dealer.

Master Programming Mode Flow Chart

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NOTE: Only shown when System Type is Meter Delayed Fixed Reserve or Volume Override Delayed



CAPACITY SAFETY FACTOR: 00%

Options: Capacity Safety Factor [00%] = Default
Range: 0 to 50%

NOTE: Only shown when System Type is Volume Override Immediate or Volume Override Delayed



VOLUME OVERRIDE: 1000g

Options: U.S. Format [1000g] = Default
 Metric [m3]



REGENERATION DAY OVERRIDE: OFF

Options: Override On [12 DAYS](Example)
 Override Off [OFF] (Default)

Range: OFF (0) to 99 Days
 4 Time Clock: 1 to 99 Days



REGENERATION TIME: 02:00AM

Options: A.M. or P.M. [02:00AM] (Default)
 Military Time [02:00 HR] (Default)



CYCLE BACK WASH: 0:10:00

NOTE: See the Master Programming Mode section for details regarding the regeneration cycle steps.

Options: Regeneration Cycle Step #1
 Regeneration Cycle Step #2
 Regeneration Cycle Step #3
 Regeneration Cycle Step #4
 Regeneration Cycle Step #5

NOTE: Only shown when Regenerant Flow is UF Variable Fill



MEDIA VOLUME: 000.00 CuFt

Options: Cubic Feet [CuFt] (Default)
 Liter [ltr]

Range: .25 to 999 cubic feet or 1 to 9999 liters

NOTE: Only shown when Regenerant Flow is UF Variable Fill



SALT DOSAGE: 00.0 lb\CuFt

Options: Pounds per Cubic Foot [lb\CuFt] (Default)
 Grams per Liter [g\ltr]

Range: 0.1 to 99.9 pounds per cubic foot for U.S. values and 0.1 to 99.9 grams per liter for Metric values.



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Master Programming Mode Flow Chart

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NOTE: Only shown when Regenerant Flow is UF Variable Fill



B	L	F	C	S	I	Z	E	:							
				0	.	1	2	5							g p m

- Options:** 0.125 Gallons per Minute [0.125 gpm] (Default)
 0.250 Gallons per Minute [0.250 gpm]
 0.500 Gallons per Minute [0.500 gpm]
 1.000 Gallons per Minute [1.000 gpm]
 1.200 Gallons per Minute [1.200 gpm]
 1.500 Gallons per Minute [1.500 gpm]
 2.000 Gallons per Minute [2.000 gpm]
 3.000 Gallons per Minute [3.000 gpm]
 4.000 Gallons per Minute [4.000 gpm]
 5.000 Gallons per Minute [5.000 gpm]
 6.000 Gallons per Minute [6.000 gpm]
 7.000 Gallons per Minute [7.000 gpm]
 8.000 Gallons per Minute [8.000 gpm]
 9.000 Gallons per Minute [9.000 gpm]
 10.000 Gallons per Minute [10.000 gpm]

NOTE: BLFC size is only displayed in gallons per minute despite units of measure configuration setting.

A	U	X	I	L	I	A	R	Y	R	E	L	A	Y	:							
									D	I	S	A	B	L	E	D					

- Options:** Auxiliary Relay Disabled [DISABLED] (Default)
 Auxiliary Relay Enabled [ENABLED]

A	U	X	R	E	L	A	Y	O	U	T	P	U	T	
S	T	A	R	T	1	:		0	:	0	0	:	0	0

- Options:** Auxiliary Relay Output Start 1 [0:00:00] (Default)
Range: Adjustable from 0 to the sum of all regeneration cycle steps minus one minute.

A	U	X	R	E	L	A	Y	O	U	T	P	U	T	
E	N	D	1	:				0	:	0	0	:	0	0

- Options:** Auxiliary Relay Output End 1 [0:00:00] (Default)
Range: Adjustable from auxiliary relay start 1 minutes to the sum of all regeneration cycle step times.

A	U	X	R	E	L	A	Y	O	U	T	P	U	T	
S	T	A	R	T	2	:		0	:	0	0	:	0	0

- Options:** Auxiliary Relay Output Start 2 [0:00:00] (Default)
Range: From auxiliary relay end 1 (minutes) to the sum of all regeneration step times minus one minute.

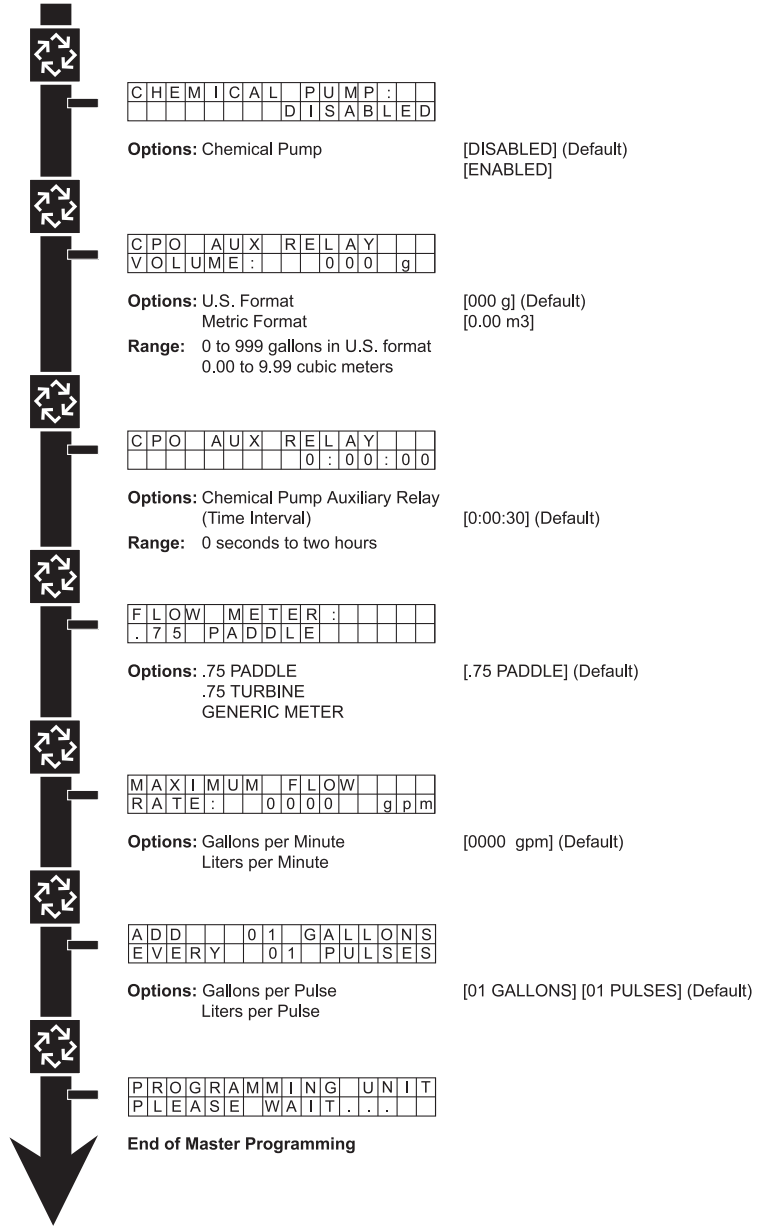
A	U	X	R	E	L	A	Y	O	U	T	P	U	T	
E	N	D	2	:				0	:	0	0	:	0	0

- Options:** Auxiliary Relay Output End 2 [0:00:00] (Default)
Range: From auxiliary relay start 2 (minutes) to the sum of all regeneration step times.

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Master Programming Mode Flow Chart

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Master Programming Mode

When the Master Programming Mode is entered, parameters can be set to make the timer function as needed.

NOTE: Depending on current option settings, some displays cannot be viewed or set.

Entering Master Programming Mode:

1. Press and hold the Shift and Up buttons for 5 seconds.
OR
2. Set the time of day display to **12:01 PM** or **12:01HR** (See the User Programming section to learn how to set the Time of Day). Then go to the main display screen, press the Up and Down buttons at the same time for 5 seconds.

Exiting Master Programming Mode:

1. Press the Extra Cycle button once per display until all are viewed. Master Programming Mode is exited and the normal display screen appears.
2. To exit the Master Programming Mode without saving, press the Diagnostic button.

NOTE: If no keypad activity is made for 5 minutes while in the Master Programming Mode, or if there is a power failure, no changes will be made, and the unit will go back to the main display screen.

Resets:

Soft Reset: Press and hold the Up and Down buttons for 25 seconds until 12:00PM (or 12:00HR) appears. This resets all parameters except for the flow meter totalizer volume.

Master Reset: Hold the Shift button while powering up the unit. This resets all of the parameters in the unit. Check and verify the choices selected in Master Programming Mode.

1. System Type

This program step selects the system type.

- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

```
SYSTEM TYPE: 4
TIME CLK DELAYED
```

2. Valve Type

This program step selects the valve type.

- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

```
VALUE TYPE:
56XT/6700
```

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Master Programming Mode

3. Regenerant Flow

This program step selects how the regenerant flows through the tank (must match cam). The selections available will vary depending on the previously chosen valve model.

- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

```
REGENERANT FLOW:
DOWN FLOW
```

4. Display Format

This program step selects the display format.

- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

```
DISPLAY FORMAT:
US - GALLONS
```

5. Unit Capacity

This program step selects the timer's total capacity of hardness that can be removed.

- Press the Shift button to select the digit you want to modify.
- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

```
UNIT CAPACITY:
0030000 GRAINS
```

6. Feed Water (Hardness)

This program step is used to set the feed water hardness. The system will automatically calculate volume remaining based on the unit capacity, capacity safety factor, and feed water hardness entered.

- Press the Shift button to select the digit you want to modify.
- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

NOTE: Feed Water Hardness will not be shown in Volume Override or Time Clock system types.

```
WATER HARDNESS:
030 GPG
```

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Master Programming Mode

7. Capacity Safety Factor

This program step is used to set the reserve capacity of the unit. This is a percentage by which the unit's capacity is reduced.

- Press the Shift button to select the digit you want to modify.
- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

```
CAPACITY SAFETY  
FACTOR: 00%
```

8. Volume Override

This program step is used to set the volume override of the unit.

- Press the Shift button to select the digit you want to modify.
- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

```
VOLUME OVERRIDE:  
0001000 9
```

9. Regeneration Day Override

This program step sets the maximum amount of time (in days) the unit can be in service without a regeneration.

- Press the Shift button to select the digit you want to modify.
- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

```
REGENERATION DAY  
OVERRIDE: 01 DAYS
```

10. Regeneration Time

This program step sets the time of day for the regeneration to occur in delayed systems.

- Press the Shift button to select the digit you want to modify.
- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

```
REGENERATION  
TIME: 02:00AM
```

CAUTION: Before entering Master Programming, please contact your local professional water dealer.

Master Programming Mode

11. Regeneration Cycle Step Programming

This program step programs the Regeneration Cycle step times 1 through 5. Please refer to the chart below for regenerant flow default cycle steps and times.

CYCLE 1 00:10:00
BACK WASH

Regenerant Flow	Cycle 1	Time	Cycle 2	Time	Cycle 3	Time	Cycle 4	Time	Cycle 5	Time
Down Flow	Back Wash	10 Minutes	Brine & Slow Rinse	1 Hour	Rapid Rinse	10 Minutes	Brine Tank Fill	12 Minutes	N/A	N/A
Back Wash Filter	Back Wash	15 Minutes	Draw	0	Settling Rinse	10 Minutes	Refill	0	N/A	N/A
UF Back Wash	Backwash	10 Minutes	Brine & Slow Rinse	1 Hour	Rapid Rinse	10 Minutes	Brine Tank Fill	12 Minutes	N/A	N/A
Down Flow Double Backwash	Back Wash	10 Minutes	Brine & Slow Rinse	1 Hour	Back Wash	10 Minutes	Rapid Rinse	10 Minutes	Brine Tank Fill	12 Minutes
Up Flow	Brine Rinse	60	Back Wash	10	Rapid Rinse	10 Minutes	Brine Tank Fill	12 Minutes	N/A	N/A
Upflow Variable Fill	Brine Rinse	Variable	Pause	60 minutes	Brine Rinse	60 Minutes	Back Wash	12 Minutes	Rapid Rise	10 Minutes

12. Media Volume

This program step sets the volume of the media in the resin tank.

- Press the Shift button to select the digit you want to modify.
- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

13. Salt Dosage

This program step sets the salt dosage in the unit.

- Press the Shift button to select the digit you want to modify.
- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

14. Brine Line Flow Control Size

This program step allows the selection of the desired brine line flow control size in the unit (must match physical brine line flow control).

- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

15. Auxiliary Relay Output

The next two displays are part of a series of settings used to program the optional relay output. The first setting turns the output on/off during regeneration only. The second turns the output on during service only, every time a set volume of water used has accumulated.

NOTE: When auxiliary outputs are in the OFF (default) setting, press the Up or Down buttons to set the first setting. Then press the Extra Cycle button to advance to the second setting.

CAUTION: Before entering Master Programming, please contact your local professional water dealer.

Master Programming Mode

a. Timed Auxiliary Relay Output Window (Start & End Time Setting)

This option setting consists of two displays. The first display sets the turn-on time of the output, referenced to the start of the first regeneration cycle. The second display sets the output turn-off time, referenced again to the start of the first regeneration cycle. An OFF setting cancels this setting. All settings are in minutes and output timing is synchronized with regeneration cycle timing.

Start Time: Any time during regeneration.

End Time: At start time, and anytime during the regeneration cycle.



AUXILIARY RELAY:
DISABLED

b. Chemical Pump Auxiliary Relay Output Window

This option setting consists of two displays. The first display sets the volume of water flow at which the output turns on. The second display sets the on time (in seconds) of the output.

- Activate output after volume set is reached.
- Press the Shift button to select the digit you want to modify.
- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.



CHEMICAL PUMP:
DISABLED

16. Flow Meter Size

This program step sets the size of the flow meter.

- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.



FLOW METER:
.75 TURBINE

17. Maximum Flow Rate

This program step sets maximum flow rate of the generic flow meter.

- Press the Shift button to select the digit you want to modify.
- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

18. Pulses per Gallon/Liter

This program step sets the pulses per gallon/liter for generic flow meters.

- Press the Shift button to select the digit you want to modify.
- Press the Up or Down buttons to adjust this value.
- Press the Extra Cycle button.

19. End of Master Programming Mode

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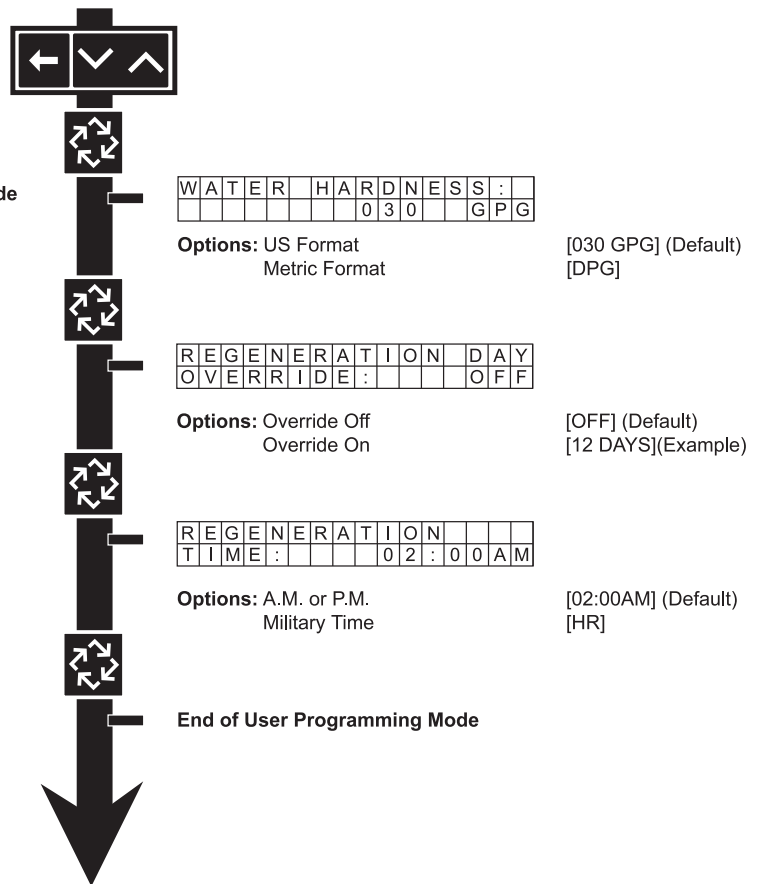
User Programming Mode & Flow Chart

NOTE: Depending on current option settings, some displays cannot be viewed or set.

Entering User Mode:

Press and hold the Up and Down buttons for 5 seconds.

NOTE: Feed Water Hardness will not be shown in Volume Override or Time Clock system types.



NOTE: Depending on current option settings, some displays cannot be viewed or set.

1. Enter User Mode

- Press and hold the Up and Down buttons for 5 seconds.

2. Set Feed Water Hardness

- Press the Shift, Up, and Down buttons to move the cursor and change the value of the numbers.
- Press the Extra Cycle button to proceed to the next step.

NOTE: Feed Water Hardness will not be shown in Volume Override or Time Clock system types.

3. Set Regeneration Day Override

- To turn on and set the days, press the Down button.
- Press the Shift, Up, and Down buttons to move the cursor and change the value of the numbers.
- Press the Extra Cycle button to proceed to the next step.

4. Regeneration Time

- Press the Shift, Up, and Down buttons to move the cursor and change the value of the numbers.
- Press the Extra Cycle button

5. End of User Programming Mode