

TECHNICAL MEMORANDUM

№ 022208 REV. № 04

TOPIC: Task Master III Programming Guide

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The Task Master III (TM-III) control valve must be programmed before it can be put into service. Also, under some circumstances, it may be necessary to re-program the controller. Use this guide to properly program the controller in a TM-III valve.

Before beginning any programming, determine the valve application. For softeners, there are three basic modes.

- 1) Single or multiple vessels with TIMED regeneration.
- 2) Single vessels with DEMAND regeneration.
- 3) Twin Alternating vessels with DEMAND regeneration.

NOTE: An ERCt “timed” regeneration controller CANNOT be programmed to accept a flow meter and a demand regeneration program. An ERCd controller is required for demand or flow meter operation.

Refer to the wiring diagrams on page 11 and 12 of the TM-III O & M manual (WKI No.: 900401) for proper installation of Shut-Off Kits and flow meter.

TIMED REGENERATION SYSTEMS

- 1) Set valve type to “150”. See page 19 in the TM-III manual. A new un-programmed controller will show one of 4 numbers flashing when it is first plugged in. Use the up/down arrows to scroll to “150” then press the square button to set. Previously programmed controllers will flash the valve type number immediately after being plugged in. To change, press the square set button immediately after plugging in. scroll to the correct number and press the set button again to register the change. New controllers will advance to the next step. Otherwise use the arrow keys to move to the desired setting, and then press the set button to enter the program mode at each step.
- 2) Refer to the “742” programming guide on page 16 of the manual.
- 3) Enter the number of cubic feet of resin in the tank. Refer to Table A for your softener model number. (If resin volume is greater than 15, enter 15) Press the set button to record your setting.
- 4) Set time of day and day of week.
- 5) Time of regeneration is pre-set at 2:00 AM. This can be changed or skip to next step.
- 6) Days between regeneration can be set for any number between 0 and 99. This value should be calculated based on your softener capacity, water hardness, and expected flow rate. If multiple tanks are programmed for sequential regeneration, this must be set to “0”
- 7) Set salt to “10”.
- 8) After the last setting is made, the display will return to the time of day after about 30 seconds.

DEMAND REGENERATION SYSTEMS

- 1) Set valve type to “150” for a single tank or “2150” for Twin Alternating. See page 19 in the TM-III manual. A new un-programmed controller will show one of 4 numbers flashing when it is first plugged in. Use the up/down arrows to scroll to “150” or “2150” then press the square button to set. Previously programmed controllers will flash the valve type number immediately after being plugged in. To change, press the square set button immediately after plugging in. Scroll to the correct number and press the set button again to register the change. New controllers will advance to the next step. Otherwise use the arrow keys to move to desired setting, and then press the set button to enter the program mode at each step.
- 2) Refer to the “762” programming guide on page 15 of the TM-III manual.
- 3) Enter the number of cubic feet of resin in the tank. Refer to Table A for your softener model number (If resin volume is greater than 15, enter 15). Press the set button to record your setting.
- 4) Set time of day and day of week.
- 5) Time is regeneration is skipped. This cannot be changed.
- 6) Days override. Leave at “0” entering a number between 0 and 99 will force regeneration on those days.
- 7) Set salt to “10”.
- 8) Enter the calculated capacity of one tank in Kilograins.
- 9) Enter the hardness of incoming water in grains/gallon.
- 10) Refer to Level II programming on page 28 in the TM-III manual.
- 11) To enter Level II programming, press the down and up arrows together for 5 seconds.
- 12) Use arrow keys to go to “P18”. Set “P18” to “3”.
- 13) Set P19 to correct K factor for the meter installed in your system, as follows:

Table A - Softener Sizing		
WKI Model No.	Capacity (Kgr)	Resin (ft ³)
50	44	1 ½
70	62	2 ¼
100	90	3 ¼
120	117	4
150	138	5
180	176	6
240	221	8
300	264	10
450	389	15
600	535	20
750	658	25
900	753	30
1200	1053	40

$$K_{\frac{3}{4}'' \text{ meter}} = 99.99$$

$$K_{1-1/2'' \text{ meter}} = 28.0$$

$$K_{3'' \text{ meter}} = 7$$

Note: Watch the decimal point! Be careful to set it to 28.0 not .280. Also for the ¾” meter it is easier to use the down button and back up to 99.99

Note 2: Also for the ¾” meter, the actual K-factor for this meter is greater than 100, so the tank capacity should be increased by 40%

Approximately 30 seconds after the last setting is made, the display will begin alternating between current flow rate, and gallons until regeneration.

ALL SYSTEMS






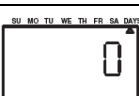
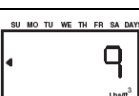

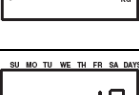
- 1) Refer to page 30 in TM-III manual.
- 2) On all systems, set C1, C5, C8 to values below. C2, and C3 will be set by the controller.
- 3) On systems having resin volume greater than 15 feet, set C2 and C3 to values listed in Table B on next page.

- Hold SET and UP arrows at the same time to enter C-level programming
- Individual cycle times as calculated below

Table B - Task Master III Regeneration Times						
WKI Model No.	Backwash, C1 (min)	Brine Draw, C2 (min)	Slow Rinse, C3 (min)	Fast Rinse, C5 (min)	Refill Time, C8 (min)	Total Regeneration Time (min)
50	14	35	60	16	0	125
70	14	35	60	16	0	125
100	14	35	60	16	0	125
120	14	35	60	16	0	125
150	14	35	60	16	0	125
240	14	35	60	16	0	125
300	14	35	60	16	0	125
450	14	44	88	16	0	162
600	14	44	88	16	0	162
750	14	44	88	16	0	162
900	14	35	60	16	0	125
1200	14	35	60	16	0	125

REGENERATION SYSTEMS

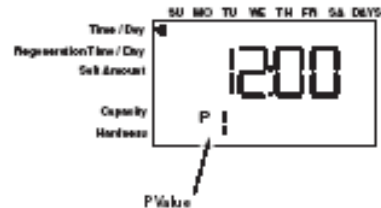
PROGRAMMING CHART

LEVEL 1 PROGRAMMING			
Value to Set	Initial Display	Buttons to Press	Value to Enter
Valve Type		then ↓ or ↑ press ■	150 or 2150
Resin Volume		then ↓ or ↑ press ■	Table A
Time of Day (12 hr.)		press ■ then ↓ or ↑ press ■	Current Time
Day of Week		press ■ then ↓ or ↑ press ■	Current Day
Time of Regeneration		press ■ then ↓ or ↑ press ■	Do Not Change
Days Override		press ■ then ↓ or ↑ press ■	Do Not Change
Salt Dosage		press ■ then ↓ or ↑ press ■	10
Capacity		press ↓ to override press ■ then ↓ or ↑ press ■	Table A
Hardness		press ■ then ↓ or ↑ press ■	Incoming Water Hardness in Grains

- Hold DOWN and UP arrows at the same time to enter level II programming
- Individual cycle times as calculated below

LEVEL 2 PROGRAMMING

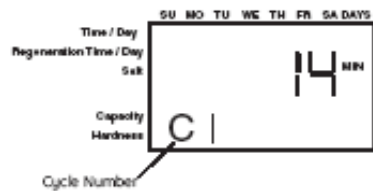
Value to Set	Value to Enter
P16 (0)	3
P18 (1)	3
P19 (1)	Step 13 on Page 2



- Hold SET and UP arrows at the same time to enter C-level programming



LEVEL 3 PROGRAMMING

Cycle	Description	Cycle Time to Enter
C1	Backwash	Table B
C2	Draw	Table B
C3	Slow Rinse	Table B
C5	Fast Rinse	Table B
C8	Refill	0 (2 for seq. regen)



11.0 Level II Programming

The 742/762 features a special programming level for more demanding applications. The home owner/end user should never have to access this level.

To enter Level II programming press and hold  and  for 5 seconds. A "P" value is displayed indicating Level II.

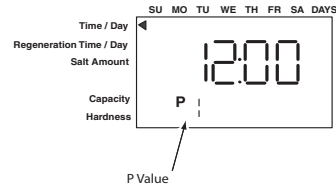



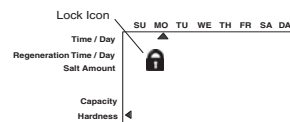
Table 2 Level II Parameters for 742/762

	Parameter Description	Range of Values	Minimum Increment	Default	Units of Measure	Notes
P9	Units of measure	0-1	1	(2)		0 = US, 1 = Metric
P10	Clock mode	0-1	1	(2)		0 = 12 hour clock, 1 = 24 hour clock
P11	Service Interval	0-250	1	0	months	Uses 30 days for each month.
P12	Remote Regeneration Switch Delay (Time clock only)	3-250	1	60	seconds	Time remote switch must be active to start regeneration (742 only).
P13	Skipped					
P14	Conditioner	Refill rate	0-400	1	(1)	gpm x 100
	Filter	Skipped				
P15	Conditioner	Draw rate	0-400	1	(1)	gpm x 100
	Filter	Skipped				
P16 (3)	Reserve Type (demand only)	0-3	1	0		0 = Variable reserve delayed regeneration 1 = Fixed reserve delayed regeneration 2 = Variable reserve immediate regeneration 3 = Fixed reserve immediate regeneration
P17 (3)	Initial average or fixed reserve (demand only)	0-70	1	30	% of Capacity	Depends on value entered in P16
P18 (3)	Flow sensor select (demand only)	1-4	1	(1)		1=1" Autotrol turbine, 2=2" Autotrol turbine, 3=User defined K-Factor, 4=User defined Pulse Equivalent,
P19 (3)	K-Factor or Pulse Equivalent (demand only)	0.01-99.99 1-9999	0.01 1	0.01 1	ppg gpp	K-Factor P18=3; Pulse Equivalent P18-4

Notes: (1) default selected with valve type and resin volume. (2) Factory Default is "0" for North America units and "1" for World Units. (3) P16 through P19 skipped on 742 time clock units.

11.1 Locking/Unlocking Parameters



Level I parameters 1 thru 8 can be locked/unlocked during Level II programming. When the Level I P number is displayed, pushing  will toggle the lock.

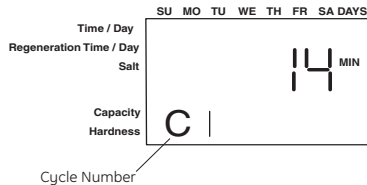


12.0 Cycle Time Programming

The 742 and 762 controls allow users to program all cycle times manually. Use this feature to view or enter user-defined cycle times.

To View Cycle Times:

- View programmed cycle time by holding  AND  for 5 seconds.





- Use  or  to display programmed time in each cycle.

Table 3 Cycle Times

Cycle	Default Cycle Time (minutes)	Cycle Time Range (minutes)
C1- Backwash	14	0-250
C2- Draw (1)	(2)	
C3 - Slow Rinse	(3)	
C5 - Fast Rinse	6	
C8- Refill (1)	(4)	



(1) Draw and Refill times are calculated on a conditioner valve using the draw, refill rates and salt setting. Draw and Refill times may be programmed in minutes on the 3 cycle filter valve.

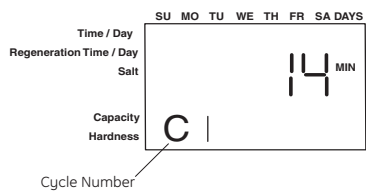
(2) Depends on valve type and resin volume. Time calculated from total salt amount and draw rate.







(3) Depends on valve type, resin volume, and rinse rate. Time calculated for 2.0 bed volumes.

(4) Depends on valve type and resin volume. Time calculated from total salt amount and refill rate.

To Program Individual Cycle Times:

1. Hold  AND  to enter cycle time programming mode.



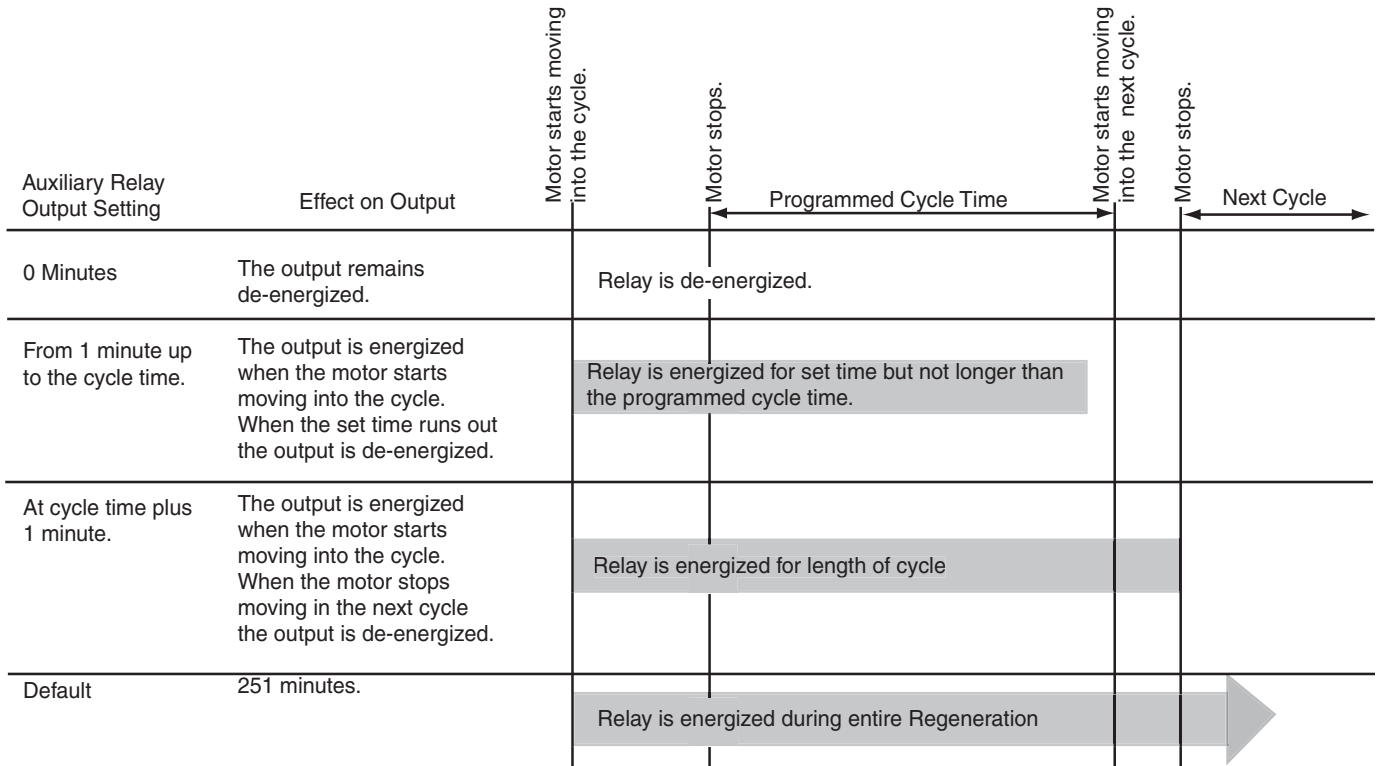
2. Press  or  to select cycle to be changed.
3. Press  while a programmed cycle time is displayed. The cycle time in minutes flashes, indicating it can be changed.
4. Press  or  to change the flashing cycle time.
5. Press  to enter the flashing time displayed for that cycle.
6. Repeat procedure to program other cycle times.

12.1 Auxiliary Relay Programming

Two auxiliary relay outputs “A” and “b” are available and can be programmed to meet user needs. Each auxiliary



relay output can be programmed to be energized during all or part of each cycle individually. See Figure 17 for wiring.

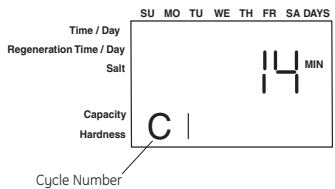
Setting the Auxiliary Outputs




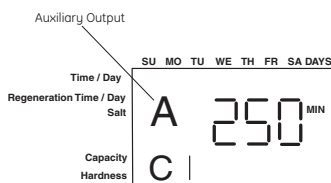
To View Auxiliary Relay Times:




NOTE: Auxiliary relays are not programmable on twin alternating systems.

1. Enter cycle time programming by holding  AND  for 5 seconds.







2. Press  to enter auxiliary output programming mode. The letter “A” or “b” is shown in the left-most digit of the display, indicating the auxiliary output is being displayed.



3. Press  or  to display auxiliary output times for each cycle.
4. Press  again to toggle between cycle time programming, auxiliary output “A” programming and auxiliary output “b” programming.

To Program Auxiliary Relay Output Times:

1. Press  while the auxiliary relay output time is displayed. The auxiliary output time flashes indicating it can be changed.
2. Press  or  to change the flashing time displayed for that cycle.
3. Press  to enter the flashing time displayed for that cycle.
4. Repeat procedure to program other auxiliary relay output times.