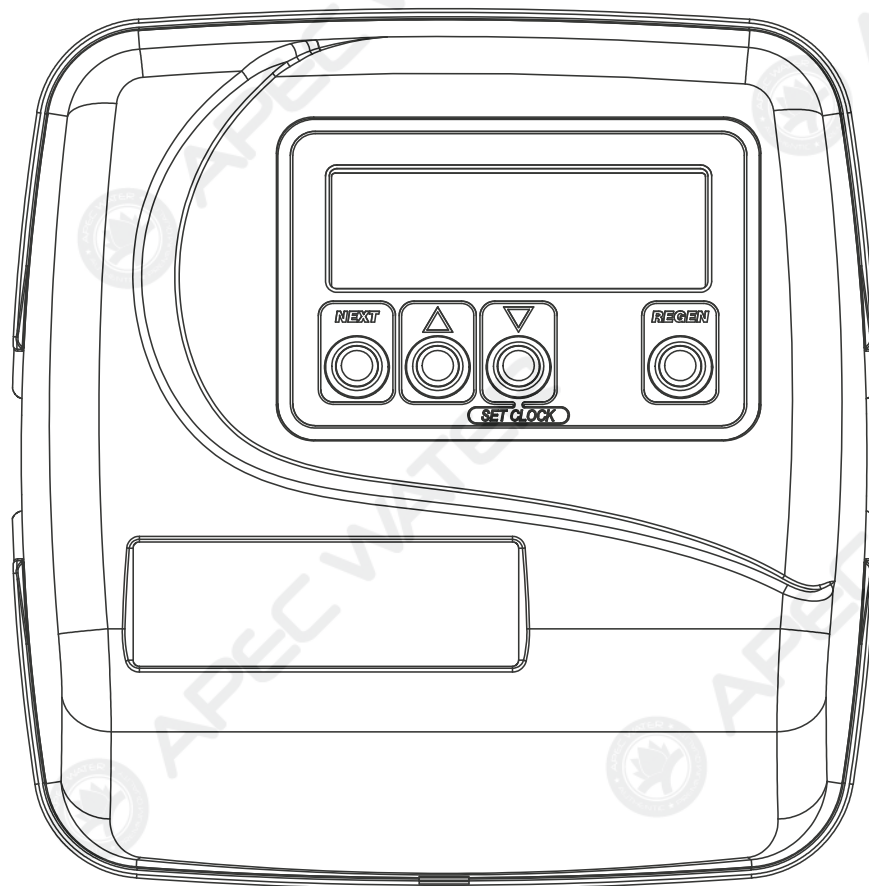


WTS-MAX CONTROL VALVE PROGRAMMING MANUAL

Ver 1.0



APEC WATER



www.FreeDrinkingWater.com

All Rights Reserved © APEC Water Systems

Table of Contents

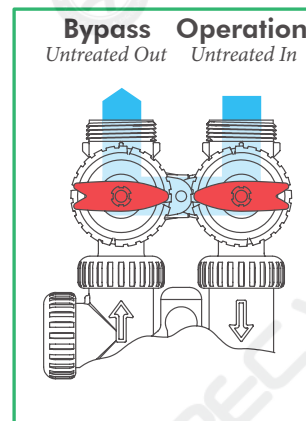
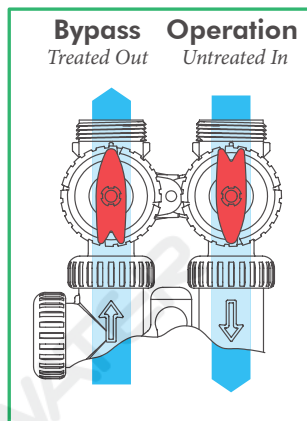
Bypass Operation	02
Setting Time of Day	02
Controller Setup	03
Regeneration & Error Screens, Button Operation & Function.....	05
Manual Regeneration	05
Front Cover and Drive Assembly.....	06

Copyright:

This manual is copyrighted by APEC Inc. Under the copyright laws, this manual may not be reproduced in any form, in whole or part, without the prior written consent of APEC Inc. Manual print ver 1.0, 2020 Dec.

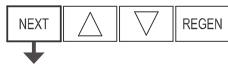
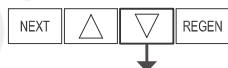
Bypass Operation

To shut off water to the system, please position arrow handles as shown in the bypass operation diagram to the right. If your valve doesn't look like the diagram, contact your service technician for instructions on how to shut off water.



Setting Time of Day

Push **NEXT** until time of day screen is displayed. Press and hold ▼ until **SET TIME** is displayed and the hour flashes once. Press ▲ or ▼ until the correct hour is displayed.



Then press **NEXT**. The minutes will flash. Press ▲ or ▼ until the correct minute is displayed



Press **Next** to return to the User Displays. Time of day should only need to be set after power outages lasting more than 8 hours, if the battery has been depleted and a power outage occurs, or when daylight savings time begins or ends. If a power outage lasting more than 8 hours occurs, the time of day will flash on and off which indicates the time of day should be reset. If a power outage lasts less than 8 hours and the time of day flashes on and off, the time of day should be reset and the battery be replaced.

Controller Setup

Cycle Sequence, Adjustable Default Times (minutes)						
Type	Backwash	Draw	Backwash	Rinse	Backwash*	Fill
Filtering Backwash	8			4		
Filtering Regen	8	60	8	8	0:30	.95 GAL
Filtering Regen (2.0")	8	60	8	8	0:30	6

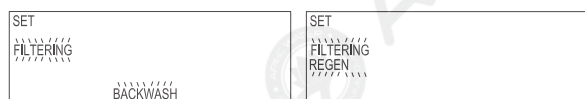
*Cycle is non-adjustable, not shown in cycle sequence programming.

Step 1F

Press **NEXT** and ▼ simultaneously for 5 seconds and release. If screen in Step 2S does not appear, the lock on valve programming has been activated.

To unlock, press ▼, **NEXT**, ▲, **REGEN** in sequence, then press **NEXT** and ▼ simultaneously for 5 seconds and release.

Step 2F

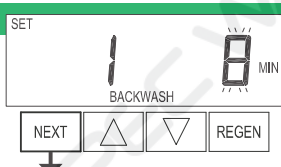


Choose FILTERING BACKWASH or FILTERING REGEN (see table) using ▲ or ▼.

Press **NEXT** to go to Step 3F.
Press **REGEN** to exit Filter System Setup.

Step 3F

Select the time for the first cycle using ▲ or ▼.



Press **NEXT** to go to Step 4F.
Press **REGEN** to return to previous step.

Step 4F

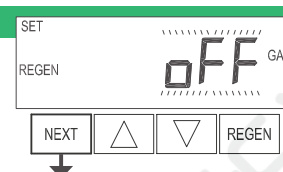
Select the time for the second cycle using ▲ or ▼. If Step 2F is set to FILTERING REGEN, press **NEXT** to program the rest of the cycle times.



If Step 2F is set to FILTERING BACKWASH, press **NEXT** to go to Step 5F. Press **REGEN** to return to previous step.

Step 5F

Set Regeneration trigger using ▲ or ▼. If value is set to:

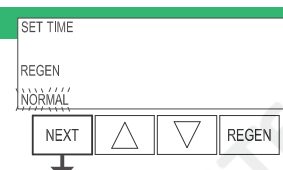


- “oFF” regeneration will be triggered solely by the day override setting (see Installer Display/Settings Step 4i);
- a number, regeneration will be triggered by the value specified (in gallons).

Press **NEXT** to go to Step 6F.
Press **REGEN** to return to previous step.

Step 6F

Set Regeneration Time Options using ▲ or ▼. If value is set to:



- “NORMAL” means regeneration will occur at the preset time;
- “on 0” means regeneration will occur immediately when the volume capacity reaches 0 (zero); or
- “NORMAL + on 0” means regeneration will occur at one of the following:
 - the preset time when the volume capacity falls below the reserve or the specified number of days between regenerations is reached whichever comes first; or
 - immediately after 10 minutes of no water usage when the volume capacity reaches 0 (zero).

“NORMAL” is the default if Step 5CS is set to ALT A or ALT B, and “NORMAL + on 0” is not available.

“on 0” is the default if Step 2CS is set to 1.0, and “NORMAL + on 0” is not available.

(Continued next page)

Controller Setup

Step 6F

This step will not appear if Step 5F is set to off or Step 5CS is set to "SYS".

See Setting Options Table on Page 12 for more detail.

Press **NEXT** to go to Step 7F.

Press **REGEN** to return to previous step.

Step 7F

Set Relay Operation using ▲ or ▼. The choices are:

- Set Time on: Relay activates after a set time at the beginning of a regeneration and then deactivates after a set period of time. The start of regeneration is defined as the first backwash cycle or Dn brine cycle, whichever comes first.
- Set Gallons Filtering on: Relay activates after a set number of gallons have been used while in service and then deactivates after a set period of time or after the meter stops registering flow, whichever comes first.
- Set Gallons Filtering Regen on: Relay activates after a set number of gallons have been used while in service or during regeneration and then deactivates after a set period of time or after the meter stops registering flow, whichever comes first.
- ERROR: Relay closes whenever the valve enters error mode, and immediately deactivates when error mode is exited. If set to ERROR, Steps 8F and 9F will not be shown.
- Set Off: If set to Off, Steps 8F and 9F will not be shown.

Press **NEXT** to go to Step 8F.

Press **REGEN** to return to previous step.

Step 8F

Set Relay Actuation Time or Gallons using ▲ or ▼. The choices are:

- Relay Actuation Time: After the start of a regeneration the amount of time that should pass prior to activating the relay. The start of regeneration is defined as the first backwash cycle or brine cycle, whichever comes first. Ranges from 1 second to 200 minutes.

- Relay Actuation Gallons: Relay activates after a set number of gallons has passed through the meter.

Ranges from 1 to 200 gallons.

Press **NEXT** to go to Step 9F.

Press **REGEN** to return to previous step.

Step 9F

Set Relay Actuation Time or Gallons using ▲ or ▼. The choices are:

- Relay Actuation Time: After the start of a regeneration the amount of time that should pass prior to activating the relay. The start of regeneration is defined as the first backwash cycle or brine cycle, whichever comes first. Ranges from 1 second to 200 minutes.

- Relay Actuation Gallons: Relay activates after a set number of gallons has passed through the meter. Ranges from 1 to 200 gallons.

Press **NEXT** to go to Step 9F.

Press **REGEN** to return to previous step.

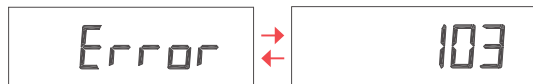
Regeneration & Error Screens, Button Operation & Function



Regen Screen

Displays the time remaining in the current cycle. Pressing **REGEN** advances to the next cycle.

Error Screen



Alternated flashing Err and error code every 3 seconds. Clear by disconnecting the power supply at the PC board and reconnecting, or press **NEXT** and **REGEN** simultaneously for 3 seconds.



In Alternator Systems when a unit is waiting to initiate the first cycle step of regeneration, "REGEN Pndg" is displayed.



"STby" is displayed in Alternator Systems when a valve is in Standby state.



"REGEN Pndg RINSE FILL" is displayed whenever a zero-capacity tank has transferred to an off-line state and is currently waiting to initiate the second portion of a regeneration cycle. Viewed only when Delayed Rinse and Fill is set to ON.

Button Operation and Function



Scrolls to the next display.



Pressing once and releasing will schedule a regeneration at the preset delayed regeneration time.

Pressing again and releasing will cancel the regeneration.

Pressing and holding for 3 seconds will initiate an immediate regeneration.

Pressing while in regeneration will advance to the next cycle.

Pressing in the program levels will go backwards to the previous screen.



Changes variable are displayed.



Key sequence to lock and unlock program settings.



Holding for 3 seconds initiates a control reset. The software version is displayed and the piston returns to the home/service position, resynchronizing the valve.



Used with valve type 1.0Γ, holding for at least 3 seconds causes a switch in the tank in Service without cycling the regeneration valve. After tank switch, days remaining and capacity remaining status is retained for each tank until the next regeneration.

Manual Regeneration

Normally, you don't need to perform regeneration after installation, please follow the two steps below in case manual regeneration is needed.

1. Pressing and releasing the **REGEN** button. "REGEN TODAY" will flash on the display and the regeneration will occur at the delayed regeneration time. The user can cancel the request by pressing and releasing the **REGEN** button.
2. Pressing & holding the **REGEN** button for approximately 3 seconds will immediately start the regeneration. The user cannot cancel this request, except by resetting the control by pressing **NEXT** and **REGEN** simultaneously for 3 seconds.

Front Cover and Drive Assembly

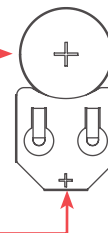
Part No.	Description	Qty
CL3175EE-01	WS1 Front Cover Assembly	1
CL3107-01	Motor Assembly	1
CL3106-01	Drive Bracket & Spring Clip	1
CL3408EE-04BOARD	WS1 thru 2 EE PCB 5 Digit Rpl Board	1
CL3110	Drive Reducing Gear 12 x 36	3
CL3109	Drive Gear Cover	1
CL3002TC	TC Drive Assembly	*
Not Shown		
CL3186	AC Adapter 120V-12V	1
CL3186EU	AC Adapter 220-240V-12V EU	
CL3186UK	AC Adapter 220-240V-12V UK	
CL3186-01	AC Adapter Cord Only	

Relay Specifications: 12V DC Relay with a coil resistance not less than 80 ohms. If mounting relay under the cover check for proper mounting dimensions on the backplate.

Wiring for Correct On/Off Operation

PC Board Relay Terminal Block.....Relay
 RLY 1.....Coil - +
 COM.....Coil +

Correct
Battery
Orientation



Battery replacement is 3 volt lithium coin cell type 2032.

When replacing the battery, align positives and push down to fully seat.



Fully Seated

CL3408EE-04BOARD

PC Board Relay
Terminal Block

CL3110

CL3109

CL3106-01

CL3107-01

CL3175EE-01



Advanced Purification Engineering Corp.

301 Brea Canyon Road
City Of Industry, CA 91789

For questions or comments please visit our website at:

www.FreeDrinkingWater.com

For technical support contact us at:

Techsupport@freedrinkingwater.com
1-800-880-4808