OM MANUAL

MediaPRO
CUSTOM MEDIA FILTRATION

SINGLE 9 - 13” GLASS FILTER & NHWB OPTION

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Freecall 1800 656 771
southlandfiltration.com.au

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AS/NZS 4801 SAFETY | ISO 14001 ENVIRONMENT | AS/NZS 4801 SAFETY

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INSTALLATION RECORD

S-9-GF, S-10-GF, S-12-GF, S-13-GF with optional No Hard Water Bypass (NHWB)

Please complete the following as a record for Warranty & Service purposes.

FILTER MODEL: _____

SERIAL NO.: _____

PURCHASED FROM: _____

PURCHASE DATE: _____

DATE INSTALLED: _____

INSTALLED BY: _____

COMPANY: _____

CONTACT: _____

This product is to be installed by suitably qualified personnel only. Please review this manual thoroughly before installing your sediment filter. For correct installation, follow the recommended steps and guidelines. If at any stage of installation you are unsure of how to proceed, please call our technical team on AU 1800 656 771 or NZ 0800 721 447 for further information.

ABOUT

AFM (Activated Filter Media) Glass Filter

AFM media is a highly processed recycled glass filter media. Due to its purity after the process it is perfectly suited for potable, food process and aquaculture applications. 3 micron particle sediment removal is standard but can be set up to achieve 1 micron particle removal. Please familiarise yourself with the components of your Sediment Glass filter below.

COMPONENTS OF THE GLASS FILTER

Control Valve

Clack Automatic 5 Cycle, this controls the cycles of the filter operation. Features safe 15-volt DC power supplied by a wall mounted transformer (supplied).

The valve is time-clock controlled which can be set to backwash anywhere from 1 – 28 days (7 days is a standard setting). This in turn automatically initiates the backwashing of the filter media based on setting selected.

(Optional differential pressure initiated backwash available. Contact Southland Filtration for further information.)

AFM Glass Media

Recycled and reprocessed with a 3 step activation process which modifies the structure and chemistry of the media.

Activated Filtered Media (AFM) is used for the removal of suspended particles. These include dirt, silt and the reduction of hydrophobic contaminants (e.g. hydrocarbons, organics and microplastics suspended in the water).

Pressure Vessel (Media Tank)

Wave Cyber pressure vessels have a one-piece HDPE liner with a FRP filament winding outer shell.

The pressure vessel houses the filter media and the distributor system.

Anthracite Media

Anthracite filter media is used as a pre-filter layer for the removal of larger suspended particles. This layer extends the run time of the media bed between backwashes.

Underbed Support Media

A coarse grade of AFM is also used as the support media.

It also helps distribute an even water flow through the media bed to and from the distributor system during service/backwash.

How does your Glass Filter work?

SEDIMENT

Sediment affects the clarity of water. This is measured as NTU (Nephelometric Turbidity Units). Tap/Drinking water guidelines are 5 NTU or less. Based on aesthetic considerations, the turbidity should not exceed 5 NTU at the consumer's tap.

Sediment is made up of loose sand, clay, silt, and other soil particles that settle at the bottom of a body of water. Sediment can come from soil erosion or from the decomposition of plants and animals. Wind, water and ice help carry these particles to rivers, lakes and streams. Sediment is also washed off the roof and into the rainwater tanks.

Suspended sediment (SS) is primarily fine inorganic particles of clay and silt (typically less than 0.063 mm.) It may also include fine sand and particulate organic matter suspended in the water column. The smallest particle we can see with the naked eye is 0.040 mm (40 microns).

Sediment in the water supply will reduce the effectiveness of chlorine disinfection.

Note: Turbidity of less than 1 NTU is desirable for efficient disinfection.

FUNCTION OF A SEDIMENT WATER FILTER

The Activated Filter Media (AFM) utilises a tall cylinder to create a media bed depth sufficient to filter sediment as the water is passed through and over the media. When sized correctly it efficiently removes and retains the sediment and inorganic particles through mechanical filtration.

AFM is not just a passive filter media - the surface is activated by using a unique formular of chemicals and heat in a Sol-Gel type process. This is where the surface of each grain of media is altered to control the surface properties. This achieves a self-sterilizing surface resistant to bacterial growth. The AFM has a 'hydrophobic-neutral' surface charge which aids in the adsorption of organic substances including hydrocarbon and microplastic.

The size, structure, and surface of the AFM granules provide a low-pressure loss and a high sediment loading capability. When the media bed is loaded with sediment it will require backwashing. (A backwash should be initiated when an increased pressure loss of approximately 70-140 kPa is reached). This process simply reverses the flow through the media bed to fluidise and agitate the bed to release the collected sediment and flush it out to the drain. This is achieved without the loss of media.

WHAT CONTROLS THE BACKWASH?

The AFM Sediment filter has an automatic 'time clock' control valve that controls the service, backwash and rinse cycles. Once the controller is programed and set it automatically initiates the backwash and cycles the valve based on the programing (e.g. day, time of backwash and length of cycle times required).

This controller can also backwash the filter based on pressure loss by using a pressure switch wired to the pressure differential switch connection on the circuit board. (For details on this optional system, contact Southland Filtration).

WHAT ARE THE STAGES OF THE BACKWASH CYCLE?

1st Stage - Service Position

In this position the raw water is passed down through the media for the removal of the sediment supplying filtered (treated) water for usage. Note: The filter is in this position prior to commencing the backwash cycle.

2nd Stage - Backwash Position

The water flow through the media is reversed to lift and wash the filter media bed clean of entrapped sediment and particulate matter to waste.

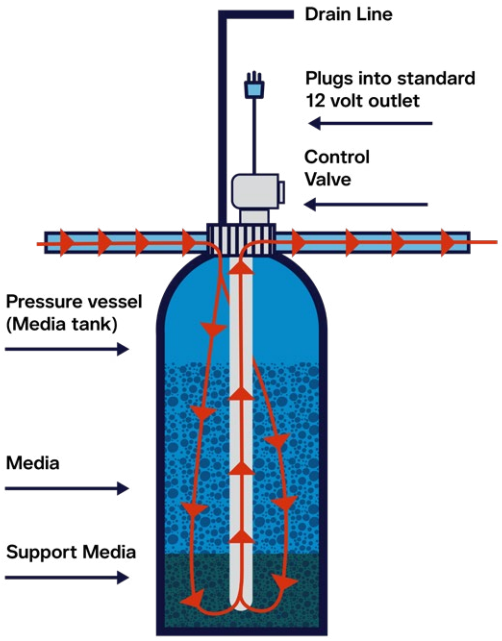
3th Stage - Fast Rinse Position

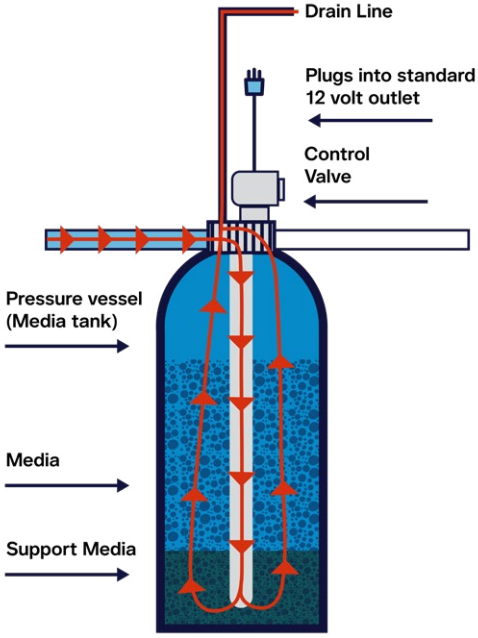
The water flow is passed down through the media to settle the media bed and flush any residual particles left in the media and control valve to waste before returning to service.

The backwash cycle is now complete.

Note: This controller has the ability to repeat the backwash and rinse cycles, and is commonly used for a more efficient backwashing of the media.

All functions are fully automatic once the control valve has been programmed and set.





General Specifications

Minimum operating pressure	**240 kPa (35psi)**
Maximum operating pressure	**700 kPa (100psi)**
Maximum & maximum operating temperature	**5°C to 43°C**
Inlet & outlet connections	**25mm Male BSP**
Valve drain fitting	**19mm Hose Barb**
Valve drain fitting (S-13-GF + NHWB)	**25mm Hose Barb**
Mains power requirement	**240 Volt, 10 amp**
Control valve power	**15 Volt DC supplied by wall mount transformer**
Transformer output current	**500mA**

MODEL	CONTINOUS SERVICE FLOW RATE	PEAK SERVICE FLOW RATE	BACKWASH FLOW RATE
S-9-SF	14 lpm	20 lpm	20 lpm
S-9-SF-NHWB	14 lpm	20 lpm	20 lpm
S-10-SF	17 lpm	25 lpm	25 lpm
S-10-SF-NHWB	17 lpm	25 lpm	25 lpm
S-12-SF	24 lpm	36 lpm	38 lpm
S-12-SF-NHWB	24 lpm	36 lpm	38 lpm
S-13-SF	29 lpm	43 lpm	42 lpm
S-13-SF-NHWB	29 lpm	43 lpm	42 lpm

INSTALLATION & OPERATING WARNINGS

CAUTION!

The Sediment filter is NOT designed to remove microbiologically unsafe contaminants from the water supply. If the water is for potable and/or food process use it should be disinfected prior to use.

IMPORTANT! FAILURE TO COMPLY COULD VOID WARRANTY

1. All plumbing must conform to Australian Standards guidelines and Local Council regulations.
2. For filters subjected to permanent hydrostatic pressure an integral non-testable backflow prevention device should be fitted in the inlet line. This should be in accordance with AS3500.1 and complying with AS 2845.1 Clauses 3.6.3, 3.6.4, 7.3.1 and 7.3.3
3. For filters subject to hydrostatic pressure greater than 700 kPa a suitable pressure control device should be fitted in the supply line.
4. Where the hot water system is a mains-pressure storage type, a cold water relief valve of suitable rating should be fitted (if not already installed), between the non-return valve and the cold water inlet of the hot water system.
5. For installations subject to excessive or prolonged water hammer, a water hammer arrestor should be fitted.
6. Waste connections should comply with minimum air gap requirements as per AS3500.1,Table 4.5.

IMPORTANT! FOR TANK FILLING OR OPEN-DISCHARGE APPLICATIONS ONLY

The automatic control valve must have a positive back pressure during the regeneration or backwash cycle to ensure effective operation and prevent untreated water going to service. If using the softener/filter to fill a storage tank (or any other open-discharge application) a 'No Hard Water Bypass Valve' must be used. (NOTE: Softener/Filter Models with 'NHWB' suffix include bypass option).

(**Note:** Softener/Filter Models with 'NHWB' suffix include bypass option).

Fig. A No Hard Water Bypass valve (NHWB)

If there is any step or parts you are not sure of during installation please do not hesitate to contact Southland Filtration for clarification to avoid incorrect installation.

INSTALLATION & OPERATING CHECKLIST

Step One: Locate the Sediment Filter

1. It is advisable to locate the filter in a protected environment. If the unit is to be installed outside, or in the open, a protective shelter or shed is recommended.
2. The distance between the filter and a drain or waste outlet should be as short as possible.
3. Hot water can severely damage the filter. If installing near a hot water service ensure a minimum of 2 metres of piping between the outlet of the filter and inlet of the heater to help avoid heat transfer. Ensure a non-return valve on the inlet of the hot water system is present and functional.
4. Do NOT install filter where it or its connections (including drain and overflow lines) will be subjected to ambient temperatures under 1°C or over 49°C.
5. Do NOT install filter near chemicals or chemical fumes.
6. The filter will require a standard 3-pin, 240-volt 10-amp grounded power outlet.
7. If the filter is to be installed outside or where the sunlight hits the LCD display it is recommended to purchase the weatherproof cover for the valve to protect the LCD display and electronics.
8. An approved inlet isolation valve (not supplied) is recommended to be installed on the inlet line.

Fig. C Waterproof cover

Step Two: Filter Assembly & Media Loading

1. Position the filter media tank (pressure vessel) in the selected location allowing room for servicing.
2. Place the riser pipe (distributor tube) assembly in the media tank (if not already installed). Ensure it is sitting in the recess in bottom of tank. The top of the riser pipe should be approximately 5mm above the top of the tank.
3. Cover or plug the top of the riser pipe (distributor tube) with a cap or plastic bag (not supplied) to stop the media entering the riser pipe (distributor tube).
4. Refer to the table below for the amount of media required for your model. Check you have the correct quantity. Hold the distributor tube central to the neck of the media tank and apply light downward pressure to stop the tube from moving. Then using a suitable funnel load the media as follows:

   Loading sequence is:
   - **First AFM Grade 2,**
   - **next AFM Grade 1,**
   - **next Anthracite.**

Table 1

MODEL	UNDERBED AFM GRADE 2	AFM GRADE 1	ANTHRACITE 1.1 – 2.5MM
S-9-GF & NHWB	12kg	26kg	5kg
S-10-GF & NHWB	16kg	36kg	7kg
S-12-GF & NHWB	22kg	49kg	10kg
S-13-GF & NHWB	29kg	59kg	12kg

5. Remove the cap/plug from the tube and clean the media from the media tank threads and the top of the distributor tube.

   NOTE: Prevent any accidents and/or injury by cleaning up any spilt media on the ground around the media tank – this can be very slippery!
6. Lightly smear O-ring (silicon) grease to the outside of the top of the distributor tube to approximately 50mm down from the top of the tube.

7. Place the automatic control valve over the distributor tube and, exerting light downward pressure, screw the valve into the media tank thread until the valve bottoms against the top lip of the tank. CAUTION! – Hand-tighten only, (approximately 1/4 turn should be sufficient).
8. Place the automatic control valve over the riser pipe (distributor tube) and exerting slight downward pressure, screw the valve into the media tank thread until the valve bottoms against the top lip of the tank. CAUTION! - Hand tighten only, (1/4 turn
should be sufficient).
9. Re-position the filter media tank so that the control valve is facing in the correct direction.

Step Three: Water Line Connection

FOR FILTER MODELS: S-9-GF, S-10-GF, S-12-GF, S-13-GF

1. Connect the incoming water line (untreated water) to the inlet adaptor (Fig. C) on the bypass valve (Fig. A). Looking front-on at the valve the inlet is at the back of the valve on the right-hand side.
2. Connect the outgoing water line (treated water) to the outlet adaptor (Fig. C) on the bypass valve at the back of the valve on the left-hand side. Flow direction arrows are moulded on the control valve barrels to show the correct flow direction.

Fig. A

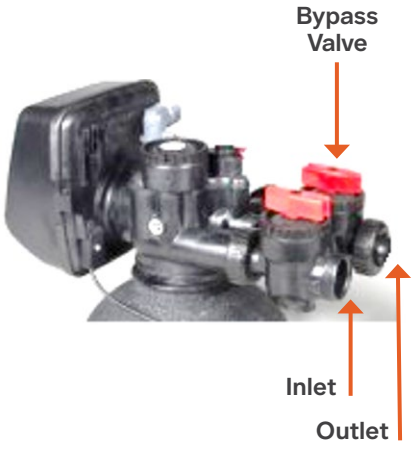


Fig. B Inlet/outlet Adaptors

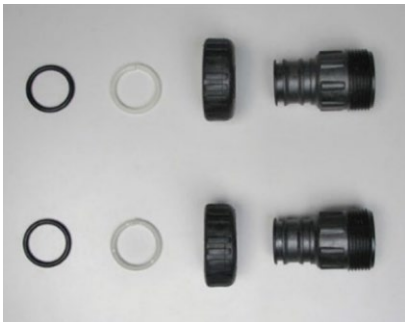


Fig. C Optional Adaptors

FOR FILTER MODELS: S-9-GF-NHWB, S-10-GF-NHWB, S-12-GF-NHWB, S-13-GF-NHWB

1. Connect the incoming water line (untreated water) to the inlet adaptor (Fig. C) on the bypass valve (Fig. D). Looking front-on at the valve the inlet is at the back of the valve on the right hand side.
2. Connect the outgoing water line (treated water) to the outlet adaptor on the NHWB (Fig. D) at the back of the valve on the left-hand side. Flow direction arrows are moulded on the control valve barrels to show the correct flow direction.

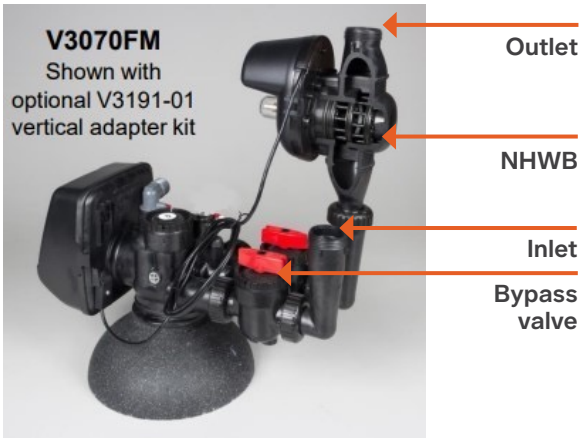


Fig. D Optional Adaptors

Note: NHWB shown in Vertical position, it can also be put in Horizontal position.

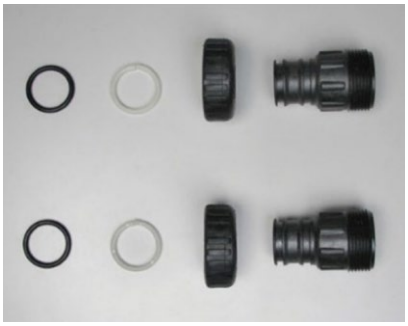


Fig. C Optional Adaptors

Step Four: Drain & Overflow Line Connection

1. If ideally located, the filter will be above, and not more than 6 metres from the drain. Connect 19/25mm (3/4/1") tubing or hose (not supplied) to the drain outlet fitting to the drain (Fig. E).

   IMPORTANT: Support the hose or tube to prevent kinking. A kinked hose will prevent proper backwash and regeneration. Alternatively, the 19/25mm (3/4/1") hose tail fitting can be removed and the drain hard plumbed with 19/25mm (3/4/1") pipe and fittings (not supplied).

2. If the filter is located where the drain lines must be elevated, you may elevate the lines up to 2 metres providing the run does not exceed 5 metres and the water pressure at the softener is not less than 280kPa.

   Note: You can elevate an additional 610mm for each additional 70kPa pressure.

3. Where the drain line is elevated but empties into a drain below the level of the control valve, form a 180mm loop at the far end of the line so that the bottom of the loop is level with the valve drain line connection. This will provide an adequate siphon trap.

4. Where a drain empties into an overhead sewer line, a sink-type trap must be used.

Fig. E

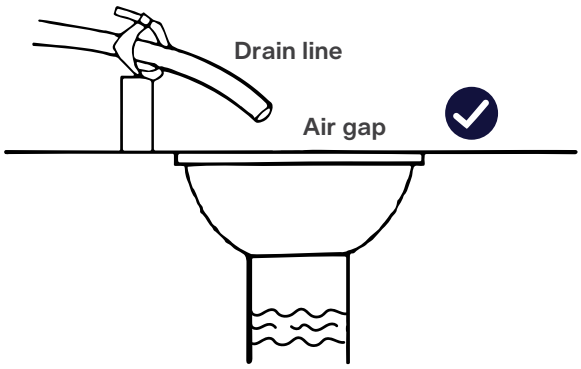
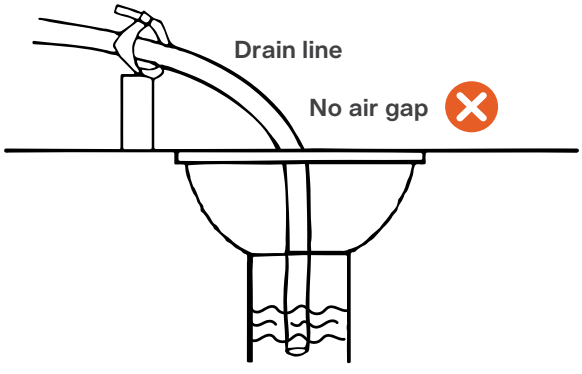


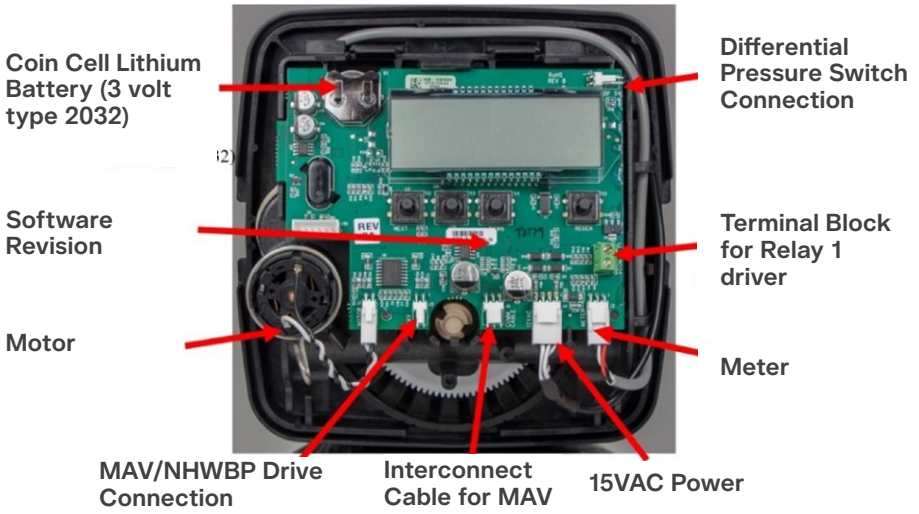
Fig. F



CAUTION!

Do NOT connect the drain line directly into a drain, sewer line or trap. Always allow an air gap between the drain line (not supplied) and the wastewater (Fig. F) to prevent the possibility of vacuum pressure in the pressure vessel or sewage being back siphoned into the pressure vessel.

Control Board Connections



System Start-up

The final steps before putting the filter into service:

- Set the actual time of day into the control valve.
- Backwash the filter.

Step Five: Setting Time of Day

1. Close the inlet isolation valve.
2. Plug in the transformer and turn on the power point. The control valve will automatically drive to the service position. If a NHWB is fitted it will sync with the valve and drive to service.
3. 3. Scroll through the display by pressing the NEXT button until time of day screen is displayed. (Refer Fig. H)
4. Press and hold the SET CLOCK button until the Hour flashes. (Refer Fig. H)
5. Using the UP or DOWN buttons press to change the Hour then press NEXT to set. Repeat the same to change the Minutes. (Refer Fig. H)
6. Press NEXT to set and return to Time of Day

Fig H.

7. Time of day should only need to be set after power outages lasting more than 8 hours, if the backup 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 backup battery replaced. Refer (Fig. H).

Step Six: Initial Start Up

1. Make sure the inlet isolation valve is closed.
2. Close the outlet valve on the bypass or outlet isolation valve if NO bypass is installed.
3. Press and hold the REGEN button (refer Fig. I on next page) for three seconds until the drive motor starts.
4. When the drive stops the valve will be in backwash, next turn the power OFF.
5. Slowly open the inlet water supply valve 1/4 to 1/3 allowing water to fill the tank slowly in order to expel air. CAUTION: If water flows too rapidly, there could be a loss of media out of media tank to the drain.
6. When the water is flowing steadily to drain without the presence of air, fully open the inlet valve and turn the power back ON to let the controller finish the backwash cycle.
7. When the backwash cycle is finished the valve will forward to (and start) the fast rinse cycle.
8. When the fast rinse cycle is finished the valve will forward to (and start) the 2nd backwash cycle. This will ensure that all the manufacturing dust and fines are flushed out of the system.
9. When the 2nd backwash cycle is finished the valve will forward to (and start) the 2nd fast rinse cycle.
10. When the 2nd fast rinse cycle is finished the valve will forward to the Service position.
11. Put the bypass valve into the service position and/or open the outlet isolation valve.
12. The Filter is now in service and ready to supply Filtered (treated) water.

Fig G.

Note: The handles also indicate the flow direction

Immediate Backwash Feature

An immediate backwash can be initiated at any time by pressing and holding the REGEN button for 3 seconds. (Refer Fig. I)

A backwash can be set to be imitated at the pre-programmed time by pressing the REGEN button once and letting go. (Refer Fig. I)

Fig. I

INSTALLATION IS NOW COMPLETE

Owner Operator Screen Displays

User Displays

General Operation

When the system is operating, one of five displays may be shown. Pressing NEXT will alternate between the displays shown below.

User 1
Typical user display. Shows volume remaining to regeneration. This screen will not be viewed if the control is set for time-clock operation.

User 2
Displays number of days to next regeneration. Only viewed if Step 11S or Step 5F is set to OFF.

User 3
Displays flow rate L/min. If a meter is not used this display will be shown but 0 will be displayed. If 1.0 ℾ is selected in Step 2CS an "A" in front of the flow rate indicates that the tank with the control valve on it is in service. If "b" is displayed the tank with the in/out head is in service.

Note: "A" and/or "B" will only be displayed on Twin - Alternating or Multiple systems.

User 4
Displays total volume in cubic meters since last reset. If a meter is not used this display will be shown but 0 will be displayed.
PRESS ▼ FOR 3 SECONDS TO RESET TO 0.

User 5
Shows current time.

Talk to an expert

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