OM MANUAL

MediaPRO
CUSTOM MEDIA FILTRATION

SINGLE 9-13" SEDIMENT 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-SF, S-10-SF, S-12-SF, S-13-SF 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. For NZ 0800 721 447 for further information.

ABOUT

Turbidex Filter Media (Hyper Filtration Media)

Turdidex (clinoptilolite) media material, bed depth and granule shape results in a very high sediment loading capacity with much higher service flow rates than multi-media or sand filters. Sediment removal as low as 3 to 5 micron particles.

Deep bed filtration with less pressure loss, higher service flow, longer runs times between backwashes and lighter weight results in efficient and cost effective advantages. Please familiarise yourself with the components of your Sediment Filter

COMPONENTS OF THE SEDIMENT FILTER

Control Valve

Clack Automatic 5 Cycle, this controls the cycles of the filter operation. Features safe 24-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.)

Underbed Gravel

Graded and washed gravel is the support media for the Turbidex.

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

Pressure Vessel (Media Tank)

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

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

Turbidex Media

Clinoptilolite based granular media.

Turbidex media is used for the removal of suspended particles. These include dirt, silt and organic matter suspended in the water.

How does your Sediment 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.) This 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 Turbidex media 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 what is regarded as mechanical filtration.

The size, structure, and shape of the Turbidex granules provide a high service flow rate, 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 – 140kPa 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 Turbidex 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 programming (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 of 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.

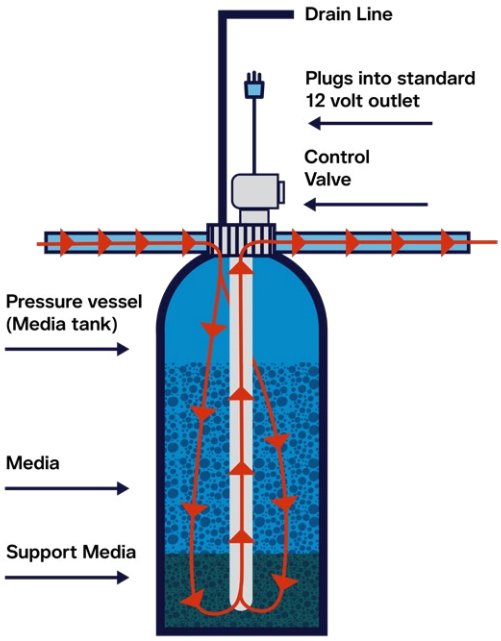
3th Stage - Fast Rinse Position

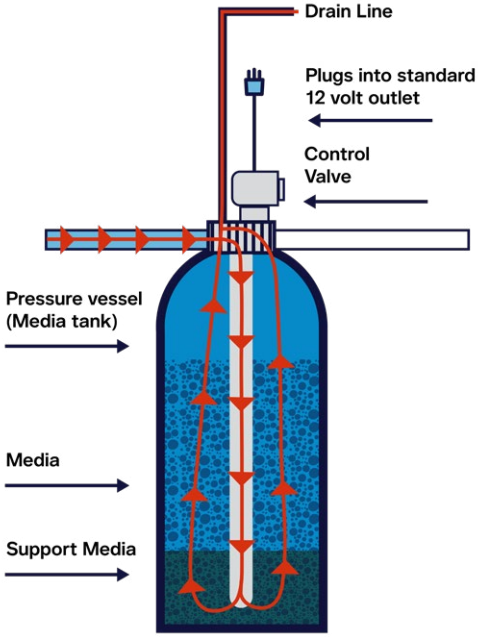
The water flow is passed down through the media to settle the media bed and flush any residual particles left in the media and control valve to waste before returning to service. .

The backwash cycle is now complete.

Note: This controller has the ability to repeat the backwash and rinse cycles which 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 (S-9-SF & S-10-SF + NHWB)	**19mm Hose Barb**
Valve drain fitting (S-12-SF & S-13-SF + 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	20 lpm	34 lpm	28 lpm
S-9-SF-NHWB	20 lpm	34 lpm	28 lpm
S-10-SF	25 lpm	42 lpm	34 lpm
S-10-SF-NHWB	25 lpm	42 lpm	34 lpm
S-12-SF	36 lpm	60 lpm	49 lpm
S-12-SF-NHWB	36 lpm	60 lpm	49 lpm
S-13-SF	43 lpm	71 lpm	57 lpm
S-13-SF-NHWB	43 lpm	71 lpm	57 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).

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. An approved inlet isolation valve (not supplied) is recommended to be installed on the inlet line.

Fig. B 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 pour in the underbed gravel first, followed by the turbidex media.

Sequence is: first # 6 Gravel then the Turbidex media.

Table 1

MODEL	UNDERBED GRAVEL #5	UNDERBED GRAVEL #6	TURBIDEX
S-9-SF & NHWB	NA	8kg	22kg
S-10-SF & NHWB	NA	10kg	31kg
S-12-SF & NHWB	NA	15kg	42kg
S-13-SF & NHWB	NA	15kg	52kg

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: To prevent any accidents and/or injury ensure to clean up any spilt media on the ground around the media tank – this can get very slippery!

6. Lightly smear O-ring (silicon) grease to the outside of the top of the distributor tube to approx. 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. 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-SF, S-10-SF, S-12-SF, S-13-SF

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

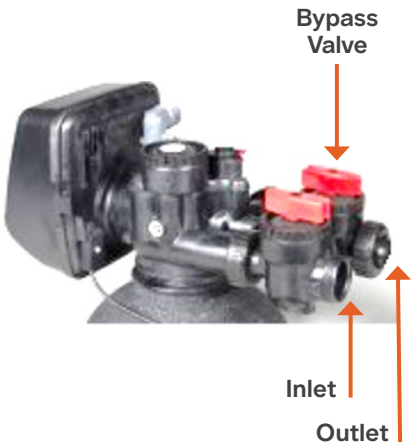


Fig. C Inlet/outlet Adaptors

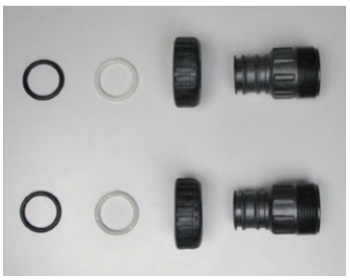


Fig. C Optional Adaptors

FOR MODELS S-9-SF-NHWB, S-10-SF-NHWB, S-12-SF-NHWB, S-13-SF-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

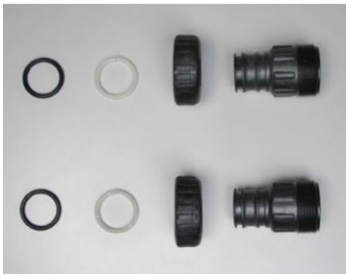


Fig. C Inlet/outlet Adaptors

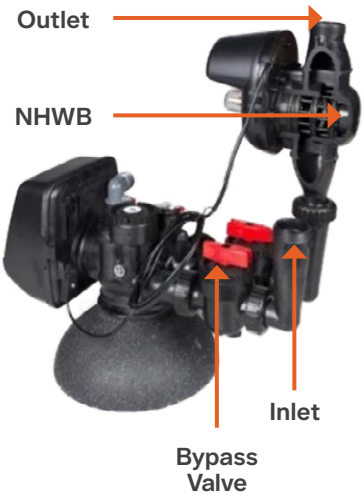


Fig. D V3070FM. Shown with optional V3191-01 vertical adapter kit

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

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. 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.

CAUTION!

Never 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.

Fig. E

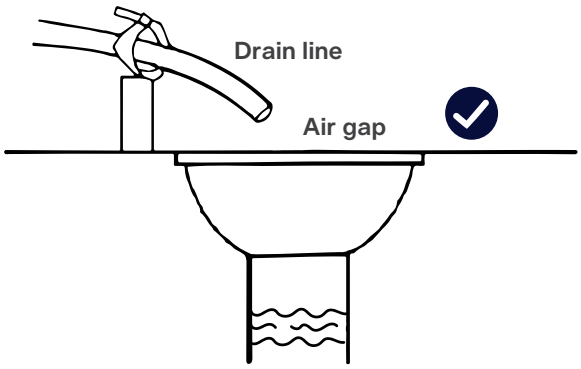
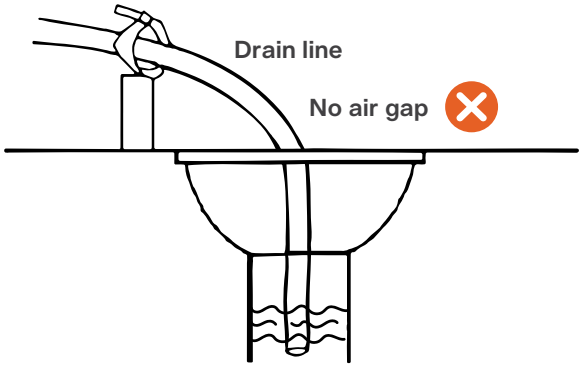


Fig. F



Control Board Connections

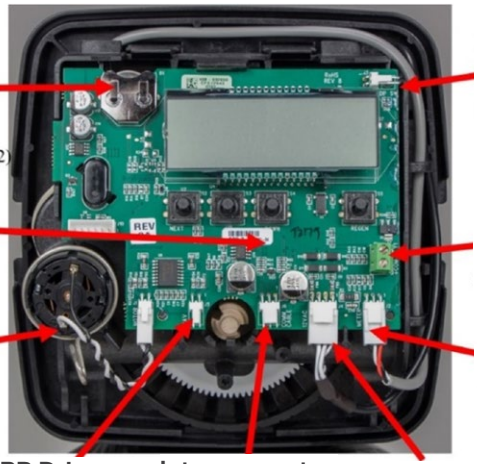


Fig G.

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. 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 display.

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. G).

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.

   Note: The handles also indicate the flow direction.
3. Press and hold the REGEN button (refer Fig. I) 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. (Ideally once the water is running to drain shut the inlet valve and let the media soak overnight.)
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 turbidex 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.

    NOTE: If you did not soak the media before initial backwash we recommend another backwash sequence is required to fully clean the filter bed.

Fig G.

Note: The handles also indicate the flow direction

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.

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.

MAINTENACE

FAQs and Troubleshooting

TC control valves do not have meters so shaded areas are not applicable for TC control valves

PROBLEM	POSSIBLE CAUSE	SOLUTION
1. Timer does not display time of day.	a. Power Adapter unplugged	a. Connect power
	b. No electric power at outlet	b. Repair outlet or use working outlet
	c. Defective Power Adapter	c. Replace Power Adapter
	d. Defective PC board	d. Replace PC board
2. Timer does not display correct time of day	a. Switched outlet	a. Use uninterrupted outlet
	b. Power outage	b. Reset time of day. If battery is present the battery may be depleted. See Front Cover and Drive Assembly drawing for instructions.
	c. Defective PC board.	c. Replace PC board
3. Display does not indicate water is flowing. Refer to user instructions for how the display indicates water is flowing.	a. Bypass valve in bypass position	a. Put bypass valve in service position
	b. Meter connection disconnected	b. Connect meter to PC board
	c. Restricted/stalled meter turbine	c. Remove meter and check for rotation or foreign material
	d. Defective meter	d. Replace meter
	e. Defective PC board	e. Replace PC board
	f. Meter not installed	f. Install meter
	g. PC board incorrectly programmed	g. Refer to programming instructions
4. Control valve regenerates at wrong time of day	a. Power outages	a. Reset time of day. If battery is present the battery may be depleted. See Front Cover and Drive Assembly drawing for instructions.
	b. Time of day not set correctly	b. Reset to correct time of day
	c. Time of regeneration incorrect	c. Reset regeneration time
	d. Control valve set at “on 0” (immediate regeneration)	d. Check control valve set-up procedure regeneration time option
	e. Control valve set at NORMAL + on 0 (delay + immediate regeneration)	e. Check control valve set-up procedure regeneration time option

PROBLEM	POSSIBLE CAUSE	SOLUTION
5. Control valve stalled in regeneration	a. Motor not operating	a. Replace motor
	b. No electric power at outlet	b. Repair outlet or use working outlet
	c. Defective Power Adapter	c. Replace Power Adapter
	d. Defective PC board	d. Replace PC board
	e. Broken drive gear or drive cap assembly	e. Replace drive gear or cap assembly
	f. Broken piston retainer	f. Replace drive cap assembly
	g. Broken main or regenerant piston	g. Replace main or regenerant piston
6. Control valve does not regenerate automatically when the correct button(s) is depressed and held. For TC valves the buttons are UP and DOWN. For all other valves the button is REGEN.	a. Power Adapter unplugged	a. Connect Power Adapter
	b. No electric power at outlet	b. Repair outlet or use working outlet
	c. Broken drive gear or drive cap assembly	c. Replace drive gear or drive cap assembly
	d. Defective PC board	d. Replace PC board
7. Control valve does not regenerate automatically but does when the correct button(s) is depressed and held. For TC valves the buttons are UP and DOWN. For all other valves the button is REGEN.	a. Bypass valve in bypass position	a. Put bypass valve in normal opera- tion position
	b. Meter connection disconnected	b. Connect meter to PC board
	c. Restricted/stalled meter turbine	c. Remove meter and check for rotation or foreign matter
	d. Defective meter	d. Replace meter
	e. Defective PC board	e. Replace PC board
	f. Set-up error	f. Check control valve set-up procedure
8. Time of day flashes 'On and Off'	a. Power outage	a. Reset time of day. If battery is present the battery may be depleted. See Front Cover and Drive Assembly drawing for instructions.

PROBLEM	POSSIBLE CAUSE	SOLUTION
9. Error Codes 101, 1001 or E1 – Unable to recognise start of regeneration 102, 1002 or E2 – Unexpected stall 103, 1003 or E3 – Motor ran to long, timed out trying to reach next cycle position 104, 1004 or E3 – Motor ran to long, timed out trying to reach home position If other error codes display contact the factory	a. Control valve has just been serviced	a. Unplug power source jack from the printed circuit board (black wire) and plug back in or press button sequence to reset valves: TC valves (three buttons) press and hold SET and DOWN buttons for 3 seconds. (Cover button may have other names like “SET HOUR “, “CLOCK” or “SET CLOCK” but the circuit board is labeled with SET.) All other valves press and hold NEXT and REGEN buttons for 3 seconds.
	b. Foreign matter is lodged in control valve	b. Check piston and spacer stack assembly for foreign matter
	c. High drive forces on piston	c. Replace piston(s) and spacer stack assembly
	d. Control valve piston not in home position	d. Unplug power source jack from the printed circuit board (black wire) and plug back in or press button sequence to reset valves: TC valves (three buttons) press and hold SET and DOWN buttons for 3 seconds. (Cover button may have other names like “SET HOUR “, “CLOCK” or “SET CLOCK” but the circuit board is labeled with SET.) All other valves press and hold NEXT and REGEN buttons for 3 seconds.
	e. Motor not inserted fully to engage pinion, motor wires broken or disconnected, motor failure	e. Check motor and wiring. Replace motor if necessary
	f. Drive gear label dirty or damaged, missing or broken gear	f. Replace or clean drive gear
	g. Drive bracket incorrectly aligned to back plate	g. Reseat drive bracket properly
	h. PC board is damaged or defective	h. Replace PC board
	i. PC board incorrectly aligned to drive bracket	i. Ensure PC board is correctly snapped on to drive bracket

PROBLEM	POSSIBLE CAUSE	SOLUTION
10. Error Codes for MAV and NHWB 106 or 1006 – MAV/NHWB unable to nd proper park position, mo- tor ran too long. 107 or 1007 – MAV/NHWB motor ran too short (stalled) while looking for proper park position If other error codes display contact the factory	a. Foreign matter is lodged in MAV/ NHWB	a. Check MAV/NHWB piston and spacer stack assembly for foreign matter
	b. High drive forces on MAV/ NHWB piston	b. Replace MAV/NHWB piston and spacer stack assembly
	c. MAV/NHWB motor not inserted fully to engage pinion, motor wires broken or disconnected, motor failure	c. Check MAV/NHWB motor and wiring. Check interconnect wir ing to both PC boards. Replace motor or wiring if necessary.
	d. MAV/NHWB drive gear damaged, missing or broken gear	d. Replace MAV/NHWB drive cap.
	e. MAV/NHWB main gear cover assembly incorrectly aligned to drive assembly.	e. Reseat MAV/NHWB main gear cover assembly properly
	f. PC board is damaged or defective	f. Replace PC board

Talk to an expert

AU 1800 656 771
NZ 0800 721 477

southland FILTRATION

New South Wales
Unit 2, 5-7 Whyalla Place, Prestons, 2170.
Ph: 02 9098 1667

Victoria
17 Business Park Drive, Ravenhall, 3023.
Ph: 03 9009 5213

Queensland
Unit 6, 13-25 Dunhill Crescent, Morningside, 4170.
Ph: 07 3624 9900

Tasmania
Level 1, 100 Sunderland Street, Derwent Park, 7009.
Ph: 03 6272 1477