Nitrate Filter
O&M Manual

Rethinking Water

Introduction

Thank you for purchasing your nitrate unit. Please read this manual before attempting assembly/installation. **Only attempt assembly/installation of this system if you have been suitably trained.**

Assembly Instructions

Larger systems are supplied as components as they must be built on site. Please follow the instructions below to assemble your system. If your system does not require assembly, please proceed to 'Installation Instructions':

1. If possible, place the pressure vessel in its final location before filling. Block the top of the riser tube to stop resin getting down the tube. Add approx. 1/3 volume of water to the vessel so when the media is poured in, it doesn't damage the lower screen/lateral.
2. Add the media supplied with a funnel but ensure there is free space left above the media (typically 30%) so that when the system is backwashed the resin can expand into the space and any sediment or contaminants can be backwashed away (there may be media left over). Also ensure the riser tube stays central in the vessel. Unblock the riser tube, clean the vessel threads with a small brush & sweep up any spilled media.
3. Fit the top screen to the valve and slide the valve onto the riser tube and gently push it down onto the vessel threads. Screw the valve in to the resin vessel, taking care not to cross the threads. Excessive force should not be needed as the valve is running in to the vessel. Finally tighten to approximately 20 ft/lbs torque. Adjust position of vessel to line up pipework connections, not the position of the valve on the vessel.
4. Position the brine tank and connect the brine line to the valve head (3/8" push fit) and to the J-Tube (3/8" compression), above the overflow. Ensure that the J-Tube compression fitting is tightened to prevent air draw.

Installation & Commissioning Instructions

Firstly, the area needs to be level, have access to electricity and an open drain. Your system has been designed to operate at between 1.7 and 5 bar pressure. If your pressure falls outside these parameters, it may be necessary to fit a booster pump or a pressure reducing valve to prevent damage to the unit. The operating temperature range of the appliance is 3°C and 45°C. Please observe all local regulations concerning the installation of your system and ensure that you have allowed space for access to the unit for possible future maintenance.


Fig 1

1. Plumb the inlet & outlet into the existing pipework. Do not put any mechanical load on fittings or use them to support pipes. Observe correct flow direction when connecting pipes, influent and treated water ports are indicated with arrows on the control valve. Plumb the drain line on the control valve and extend it to a floor drain, gully trap or suitable drain. Fix the drain pipe end above the drain fixture to provide at least a 1" wide air gap.


Fig 2

2. To connect the power cable, you need to firstly remove the cover, then remove the drive bracket assembly by pressing up on the drive brackets release tabs and pulling towards you (Fig 1). Feed the cable through the back plate (Fig 2) and connect to PC board (Fig 3). It's important that the bracket is reapplied with a loud snap to ensure the gears meet the drive gear.


Fig 3

3. Press & hold "REGEN" until the motor begins to turn. When the motor stops the screen will appear as in Fig 4. Now, open the inlet valve slowly to allow the filter fill with water. At this point water will discharge to the drain and purge any air from the system. Manually fill the brine tank with 10 litres of water. When the air is purged from the system press "REGEN" once to advance to the next cycle, the screen will appear as in Fig 5. The system is now drawing water from the brine tank. Take the time to observe the water level dropping (which happens very slowly). This is vital as it ensures the system can regenerate and operate correctly. If the system will not draw water from the brine tank ensure the fittings are tight and re-do steps 1 & 2.

Fig 4

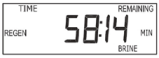

Fig 5

4. Press "REGEN" once, when the motor stops the screen will appear as in Fig 6. Monitor this cycle for a moment to ensure water flows well to drain. Press "REGEN" once, when the motor stops the screen will appear as in Fig 7. At this point the system is refilling the brine tank. Take a moment to ensure the water level rises sufficiently. Press "REGEN" once, when the motor stops the system is in HOME position and ready to offer softened water.

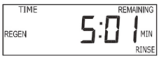

Fig 6

Fig 7

Programming your nitrate level

1. Press "SET CLOCK" button - hours will flash. Use "UP" and "DOWN" buttons to set hours
2. Press "NEXT" button, set minutes and press "NEXT"
3. Press "NEXT" and "UP" buttons together and hold until screen changes
4. Set hardness based on nitrate level of water supply
   (from water analysis or test on site)
5. Press "NEXT". Leave next setting at 2 – 0
6. Press "NEXT". Set the day override (preset at 4)
7. Press "NEXT". Set the regeneration time (preset at 2am)

Controller Features

While in the service position, pressing the "NEXT" button will toggle between the time, current flow rate in litres and the capacity remaining. Press and hold "REGEN" to force an immediate re-generation. When the valve is regenerating it will show a countdown clock for each stage. Press "REGEN" once to skip stages. If for any reason the valve enters error made press + hold "NEXT" and "REGEN" simultaneously for 3 seconds to reset the valve.

Simplex Nitrate Removal Systems Technical Spec

System	Valve	Vessel	Brine Tank size & dimensions (mm)	DLFC Housing	DLFC button	Injector	Flow rate	Back-wash Flow rate	Salt used per regen
30L	WS1	1035	70L 332 x 332 x 880	Std	2.2gpm (1035828)	White (1013665)	1.2m³/hr	0.54m³/hr	6kg
50L	WS1	1054	100L 382 x 382 x 880	Std	2.2gpm (1035828)	White (1013665)	2m³/hr	0.54m³/hr	10kg
60L	WS1	1248	140L 510 x 950	Std	3.2gpm (1012963)	Blue (1036868)	2.4m³/hr	0.69m³/hr	12kg
75L	WS1	1354	140L 510 x 950	Std	4.2gpm (1012964)	Yellow (1012969)	3m³/hr	0.9m³/hr	15kg
100L	WS1	1465	200L 585 x 1040	Std	5.3gpm (1012566)	Green (1012970)	4m³/hr	1.13m³/hr	20kg
150L	WS1	1665	200L 585 x 1040	Std	7.5gpm (1012966)	Orange (1012971)	6m³/hr	1.6m³/hr	30kg
200L	WS1.5	1865	350L 740 x 1275	Std	9gpm (1012967)	Yellow (1029398)	8m³/hr	2m³/hr	40kg
250L	WS1.5	2160	500L 840 x 1335	1" 1012961	11gpm (1014752)	Green (1029395)	10m³/hr	2.27m³/hr	50kg
350L	WS1.5	2472	500L 840 x 1335	1" 1012961	15gpm (1013663)	Orange (1029401)	14m³/hr	3.4m³/hr	70kg

Table showing actual capacities for Nitrate systems at different concentrations of Nitrates + Sulphates

System	150ppm	200ppm	250ppm	300ppm	350ppm	400ppm	450ppm
30L	10	7.5	6	5	4.29	3.75	3.33
50L	16.67	12.5	10	8.33	7.14	6.25	5.56
60L	20	15	12	10	8.57	7.50	6.67
75L	25	18.75	15	12.50	10.71	9.38	8.33
100L	33.3	25	20	16.67	14.29	12.50	11.11
150L	47	36	29	24	21	18.5	16.5
200L	66.67	50	40	33.3	28.57	25	22.22
250L	83.33	62.50	50	41.57	35.71	31.25	27.78
350L	116.67	87.50	70	58.33	50	43.75	38.89

Programming inputs for Clack simplex Nitrate systems

Litres	Valve	System Capacity Kg/CaCo3	Backwash Time	Brine	Rinse	**Fill** Kg of salt or mins for WS2
20	WS1	1	4	40	4	4
30	WS1	1.5	4	60	4	6
40	WS1	2	6	60	4	8
50	WS1	2.5	6	60	6	10
60	WS1	3	6	60	6	8.4
75	WS1	3.7	8	60	8	15
100	WS1	5	8	80	8	20
150	WS1	6	8	80	8	30
200	WS1.25	7.5	10	80	8	40
200	WS1.5	7.5	10	80	10	40
250	WS1.5	12.5	10	120	10	50
350	WS1.5	17.5	10	120	10	70

User settings (NEXT & UP together for 3 seconds)

Set hardness (in the case of Nitrate systems this is the Nitrate level added to the Sulphates)

Set hardness 2 (zero unless using a mixing valve)

Set day override

Set regeneration time (only for simplex)

OEM programming level 1 (NEXT & DOWN for 3 seconds)

Set to SOFTENING

Set backwash time using above table

Set rinse time using table above

Select the fill using table above (in KG)

Set the system capacity using the table above

Set the capacity to AUTO

Set the regen time to NORMAL

Set relay 1 to OFF

Set relay 2 to OFF

Set SALT to OFF (no salt monitor being used)

OEM programming level 2 (NEXT & DOWN for 3 seconds then repeat)

Set valve size eg 1.0 for WS1

If 1.5 or 2 is selected an additional screen appears to set meter size (set to same size as valve)

Set to "OFF" the option to use ALT valve

Set to "DP OFF" (not using differential pressure switch)

Set ppm (units of hardness measurement)

Set stage 1 to BACKWASH

Set stage 2 to BRINE

Set stage 3 to RINSE

Set stage 4 to FILL

Set stage 5 to END

Warranty

This product is guaranteed for the period of one year from the date of purchase against mechanical and/or electrical defects. This guarantee is only valid if the unit has been installed and used in accordance these instructions.

Dealer Information

Assembled by: _____ **Date:** _____

Installed by: _____ **Date:** _____

Pedrollo Distribution Ltd
Crossfield Fort
Crossfield Road Industrial Estate
Lichfield
WS13 6RJ

t: **01543 415200**
e: **sales@pedrollo.co.uk**
w: **pedrollodistribution.co.uk**