



Automatic Sand Media Filters



IS : 14606:1998



CM/L:8300145208

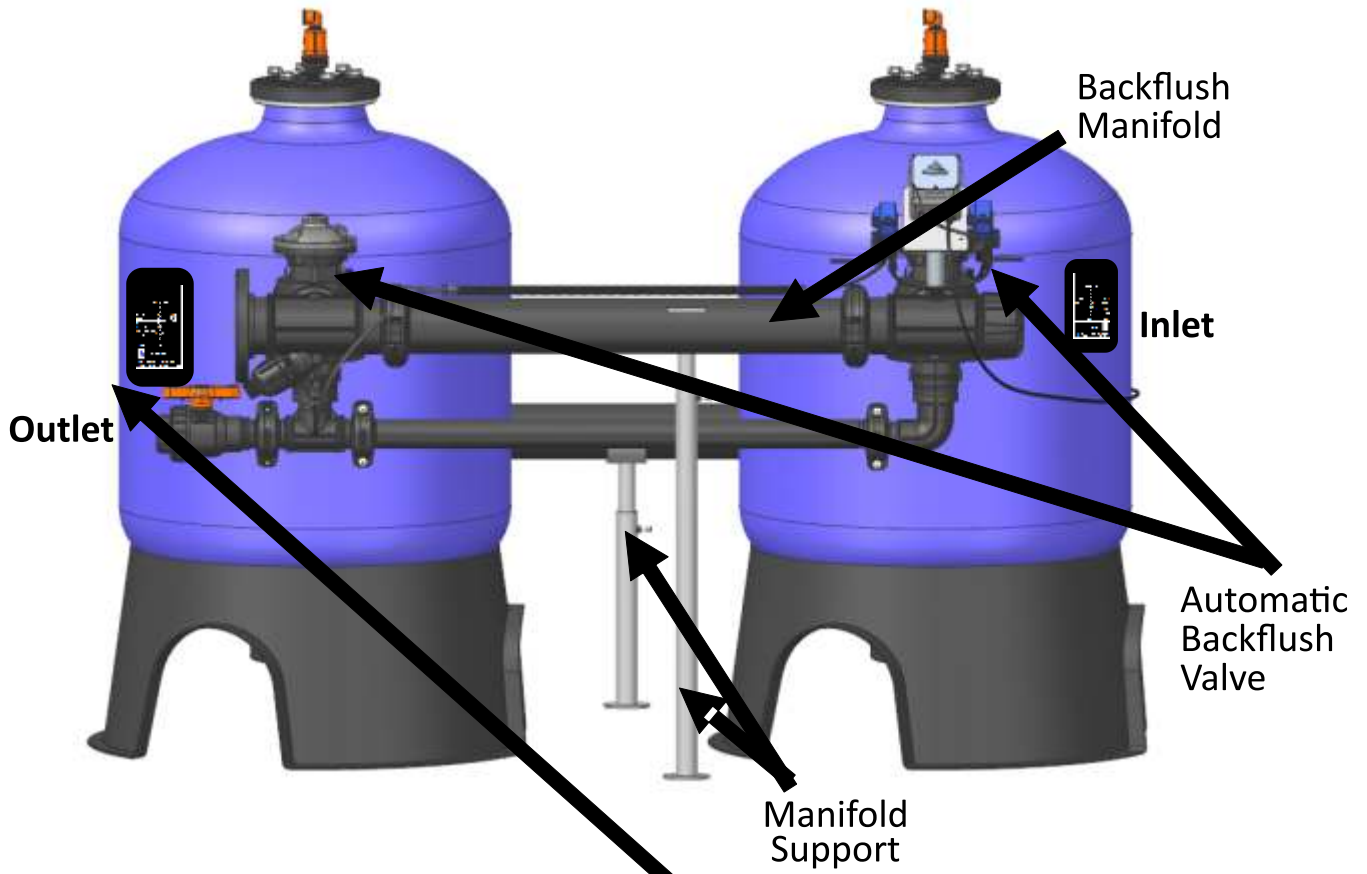
Corrosion-free polymeric technology

Installation Operation & Maintenance Manual

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Mach Clean Media Twin Media Filter



BRAND NAME

MEDIA FILTER

MODEL NO.	HT-567	IS : 14606
CAPACITY	50 M ³ /HR.	 CM/L- 8300145208
NOMINAL SIZE	80 MM	
NOMINAL PRESSURE	4 KG/CM ²	
CLEAN PRESSURE DROP	0.3 KG/CM ²	
BATCH NO.		
SR. NO.		
SAND SIZE	10-12 MESH	

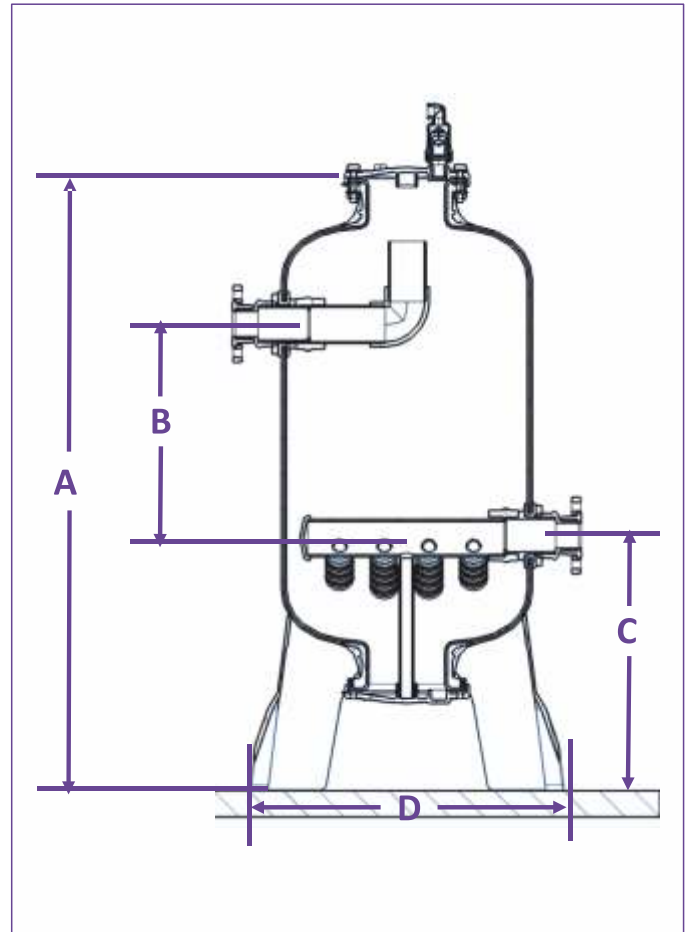
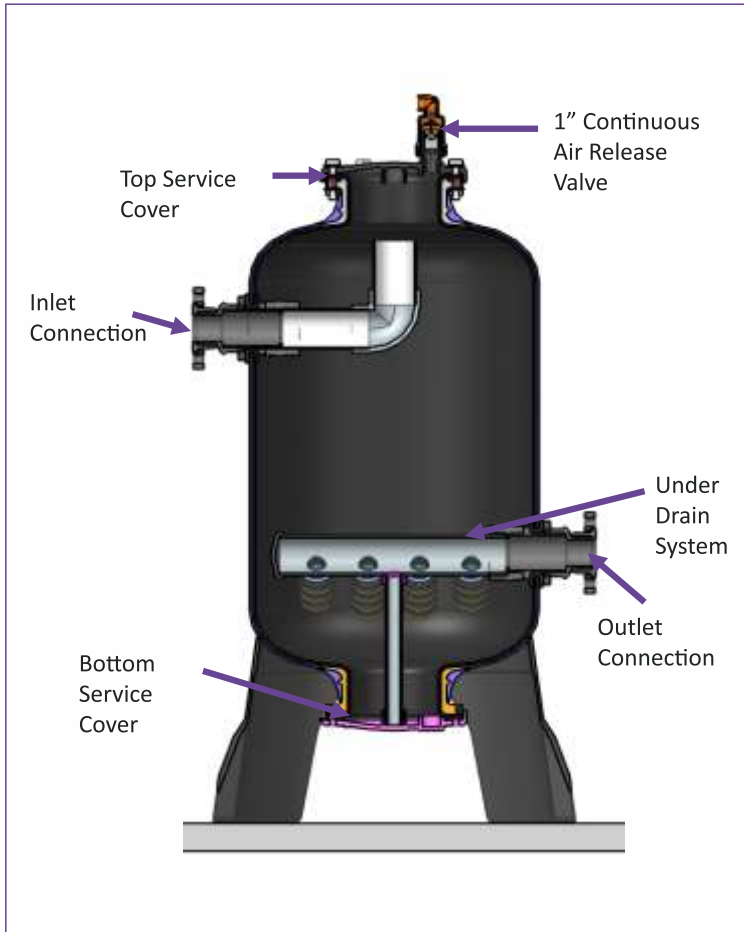


MANUFACTURED BY:
AUTOMATT IRRIGATION PRIVATE LIMITED

Plot No.33&34, SECTOR-IIDC, SIDCUL, B.H.E.L. HARIDWAR, UTTARAKHAND

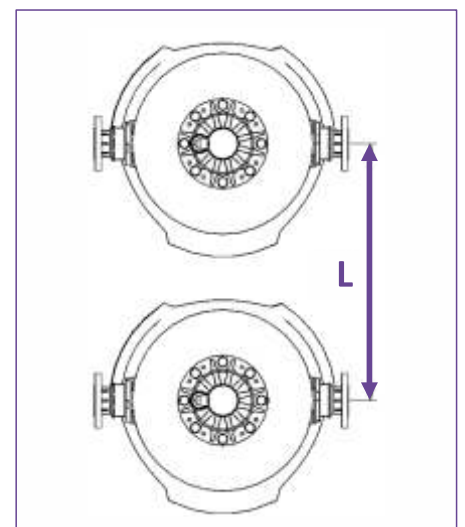
Product Illustration & Components Of Twin Automatic Mach Clean Media Filter

Filter Components & Dimensions



Dimensions (mm)

SIZES	A	B	C	D	L
20" (HT-563)	1260	420	510	610	720
24" (HT-566)	1300	420	520	650	830
30" (HT-567)	1360	380	570	820	980



Distance between two filters

Technical Specification

Body Diameter X No. Of Tanks	Manifold Inlet/ outlet	By Pass Line	Nominal Flow Per Tank	Maximum Flow Per Array	Backflush Flow	Empty Tank Weight Per Tank	Empty Tank Volume Per Tank	Sand Bed Height	Sand Quantity Per Tank	End Connection Type
INCH X NOS.	INCH	INCH	M ³ /HR	M ³ /HR	M ³ /HR	KGS	LITER	MM	KGS	
20 X 2	3	2	25	50	12~14	36	145	400	150	Flanged / Grooved
24 X 2	4	2	40	80	14~16	44	230	400	200	Flanged / Grooved
30 X 2	4	2	50	100	16~18	52	320	370	350	Flanged / Grooved

Maximum Working Pressure – 4 Kg/cm²

Material of Construction:- FRP, EPDM, PPGF

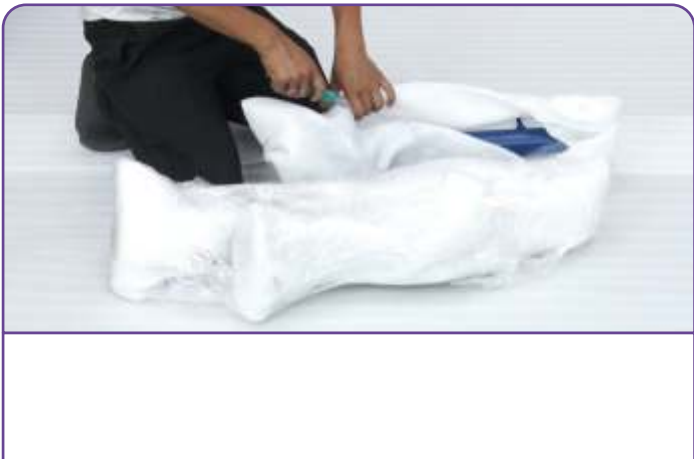
Back Flushing Data

Flushing Cycle Time* (Seconds)	90 Seconds
Back Flushing frequency*	Once every 3 hours
Minimum Backwash Pressure	1.5 kg/cm ²

Note:- * Flushing time & Back Flushing frequency , Depends On Quality of water.



Unpacking - Automatic Twin Sand Media Filter



General/safety Instructions

1. Please read manual carefully before installation.
2. Do not lift filter assembly by holding the tank from inlet /Outlet of the filter.
3. Maximum working pressure of the filter is 4 Bar. Before operation make sure that inlet pressure should not be higher than this.
4. Ensure Upstream & Downstream isolation valves are open before start of the system.
5. Do not apply excessive force or pressure on the filter and backwash assembly.
6. Always use proper tooling and wrenches for maintenance of the filter
7. Always use recommended spare parts while replacing them during maintenance.
8. Do not overtight nuts bolts.
9. Use Teflon tape where ever it is necessary to avoid leakage from threaded joints.
10. Be careful if using acids for cleaning the media.

General Installation Instructions

1. We recommend to install suitable upstream and downstream isolation valves before and after the filter.
2. The diameter of the upstream pipe must not be smaller than the filter inlet.
3. It is recommended to install a pressure relief valve before the filter to protect the upstream line and filter from pressure surge.
4. Ensure the filter is not exposed water pressure that exceeds the maximum pressure defined in technical specifications. If needed, a pressure reducing valve should be installed upstream of the filter.
5. During the flushing process, a minimum back pressure of 1.5 bar should be maintained at the filter for efficient cleaning. In the event that the system cannot provide the minimum backwash pressure, a pressure sustaining valve should be installed downstream of the filter.
6. Please note that the maximum working pressure indicated in the filter's specifications table includes the pressure caused by water hammer and pressure surge effects.
7. It is recommended to install flow control valve after the back flush valve for controlling the back flush flow as mentioned in technical specification table.
8. It is recommended to thoroughly flush the main line at the connection point to remove large objects that may damage the filter's internal mechanism.
9. Backflush line should not be reduced after the flush valve or should not be too long that it creates back pressure on the filter. This can affect cleaning of the filter during backwashing .

Recommended Tools for Installation



Wrench



Cutter

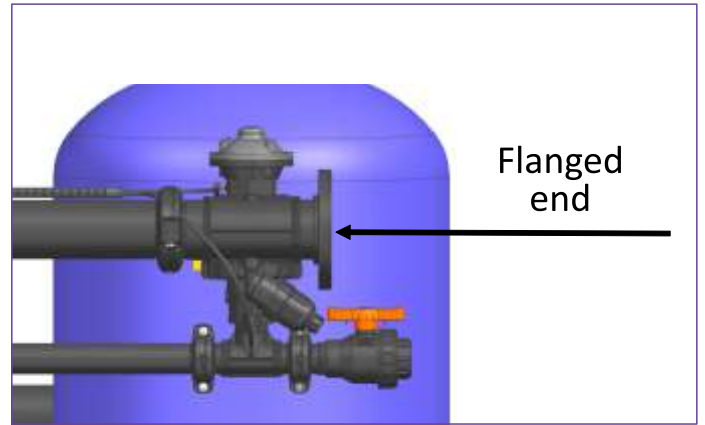
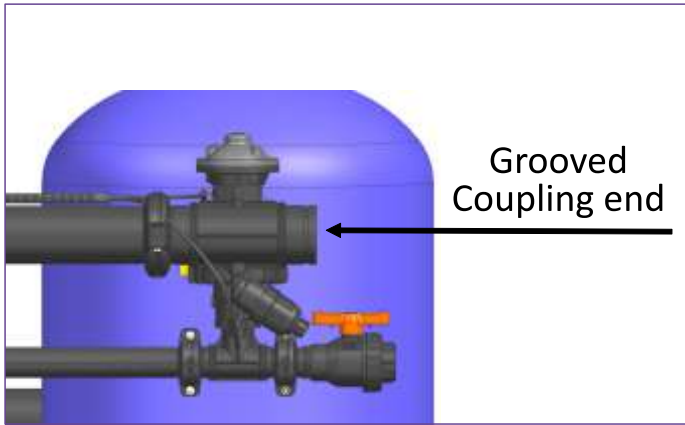


Screw Driver Set

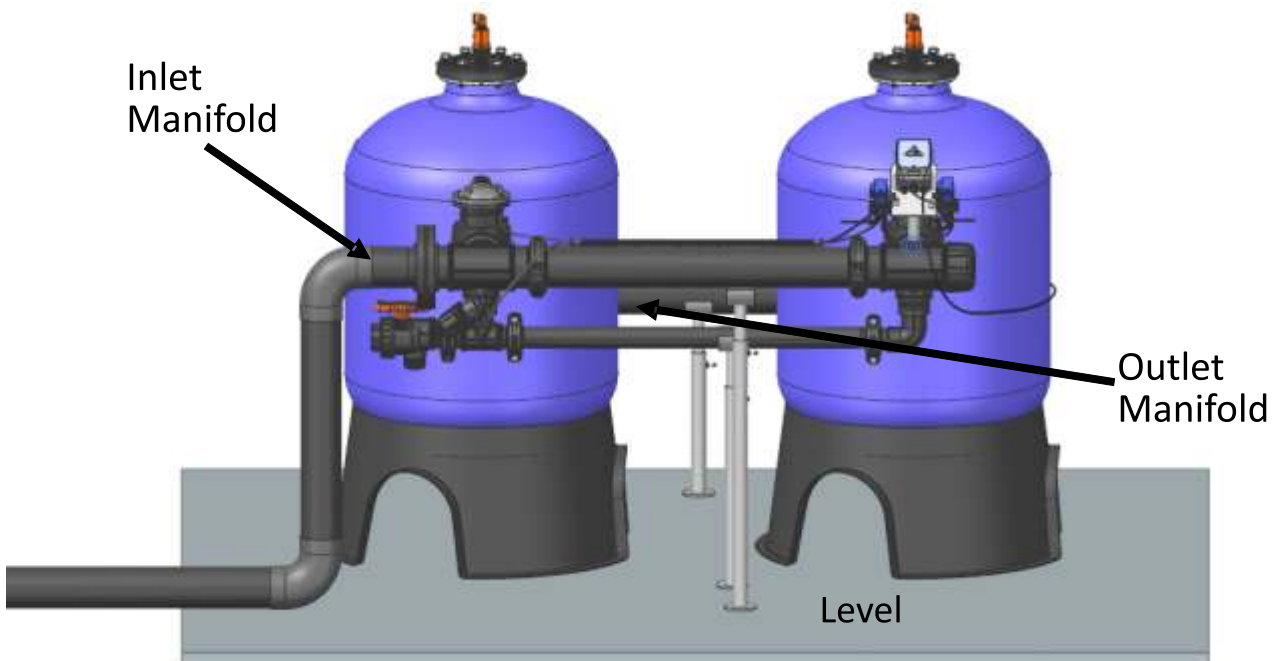
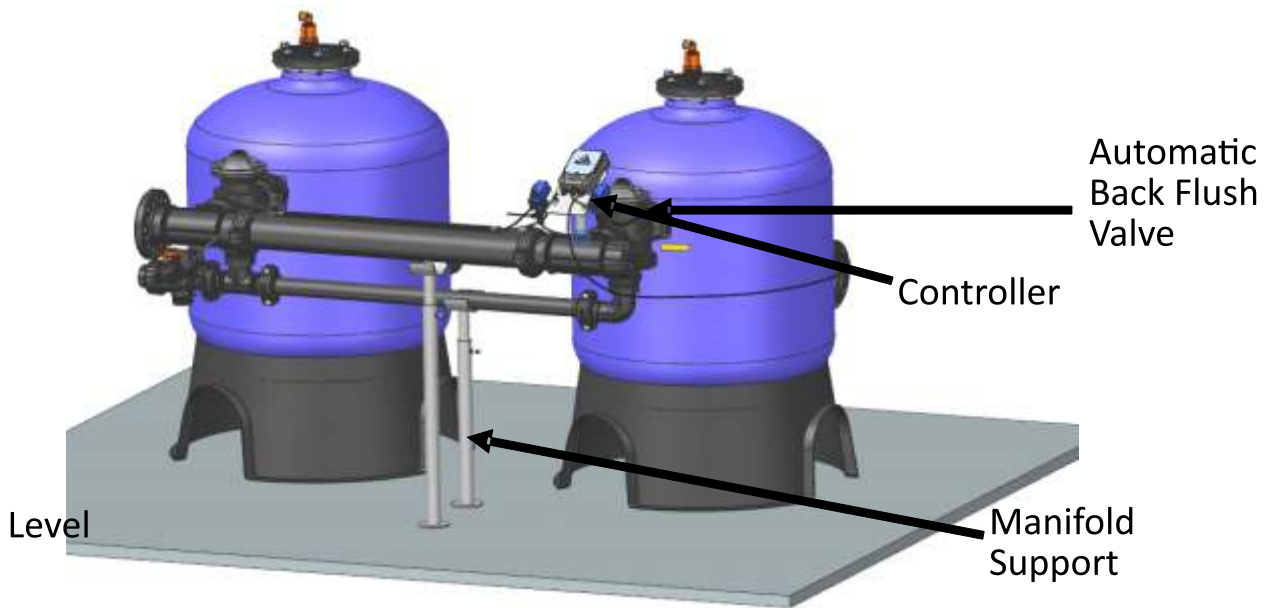


Allen Key Set

Available Connections



Installation Lay Out



To connect a grooved coupling:

- a. Slide the rubber gasket onto the end of one of the pipes to be connected. Apply a dedicated lubricant or liquid soap to the coupling rubber gasket to facilitate insertion.



- b. Place the end of the other pipe to be connected so that it touches the end of the first pipe, and slide the rubber gasket over the end of the second pipe. The rubber gasket should cover the end of both pipes equally, leaving the groove of each pipe exposed.

- c. Place the two housing elements around the rubber gasket. Make sure the rims of the housing elements are inserted into the grooves all around both pipes.



- d. Put the bolts and nuts in place and close them to a tight fit, but do not fasten them yet.

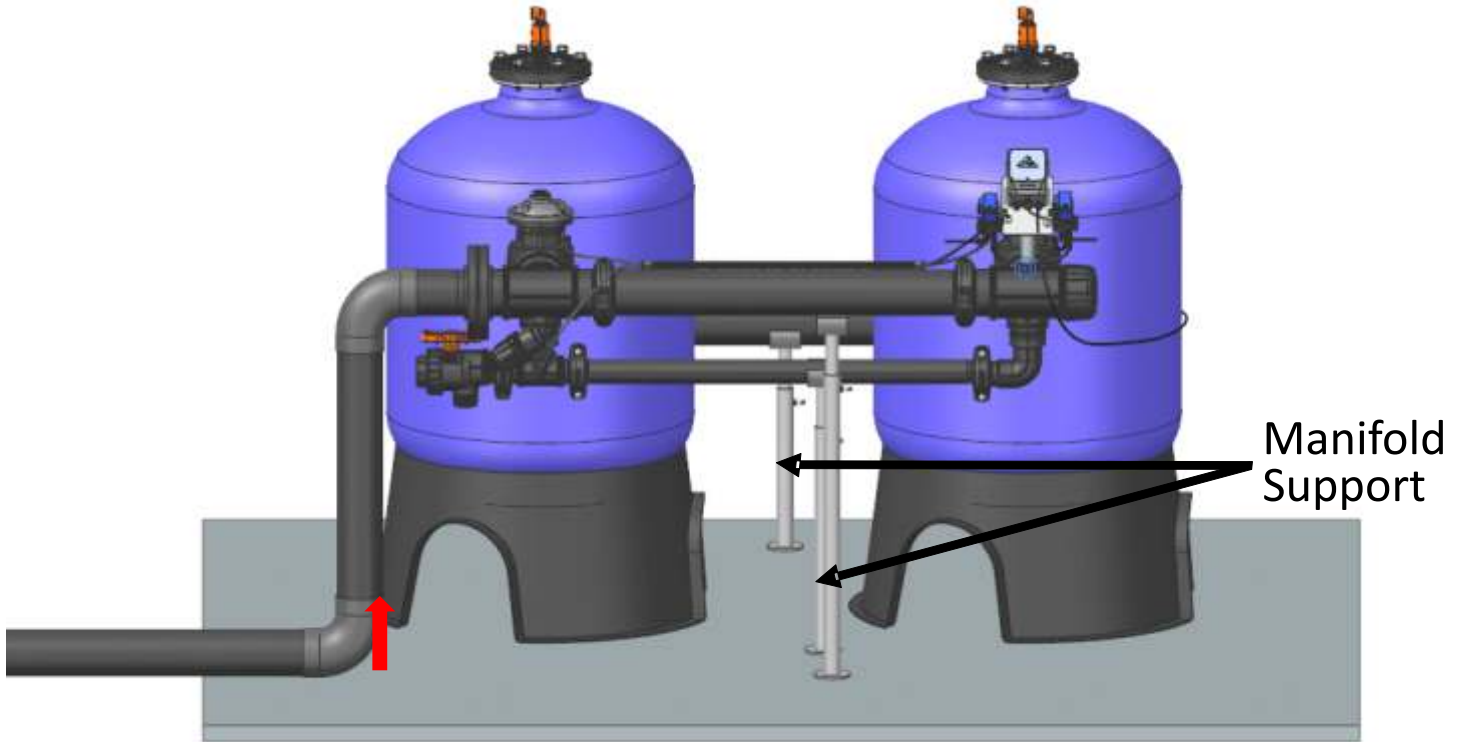
- e. When you are satisfied that the connected parts are properly positioned and the connecting parts are perfectly aligned, fasten the two nuts alternately until the coupling is evenly tightened around both pipes.

Installation Procedure

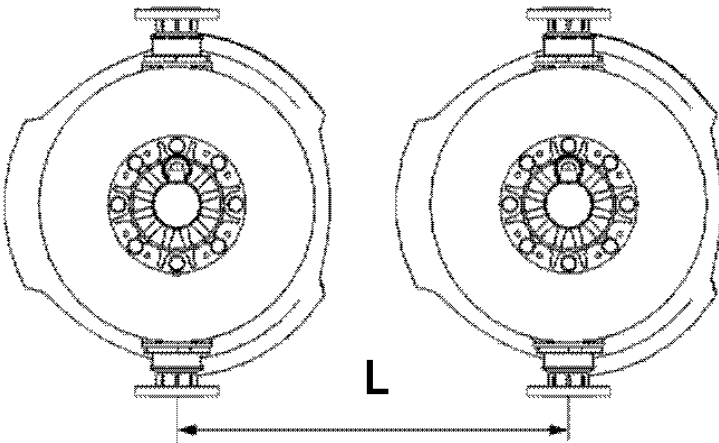
Step 1

Take the filter and install it on concrete platform as shown in picture.

Note: End connection of the filter may be grooved or flanged.



Ensure to use Teflon tape on threaded connections.



Sizes	L
20" HT-563	720
24" HT-566	830
30" HT-567	980

1 Place the filter tank on a plain concrete platform as shown in picture.



2) Connect a backwash valve to each tank inlet with a grooved coupling (see the Grooved coupling connection instructions, page 14 & 15). Be sure that the position of the backwash valves is per the flow arrows marked on the valve.



Attention

When connecting manifold units to valves and tanks, make sure to align both sides of grooved connection precisely in-order to eliminate high unnecessary loads on the TEE and Backwash Valve

3) Connect the inlet TEE to the backwash valves each other with grooved couplings.



4) Connect the HDPE pipes to the inlet TEES to each other with grooved couplings.

5) Connect the elbow and TEE to the backwash valves with grooved couplings.



6) Connect the elbow and TEE to the HDPE with grooved couplings.



7) Connect the Flange with inlet manifold by grooved couplings.



8) Connect the inlet port and TEE with grooved couplings.

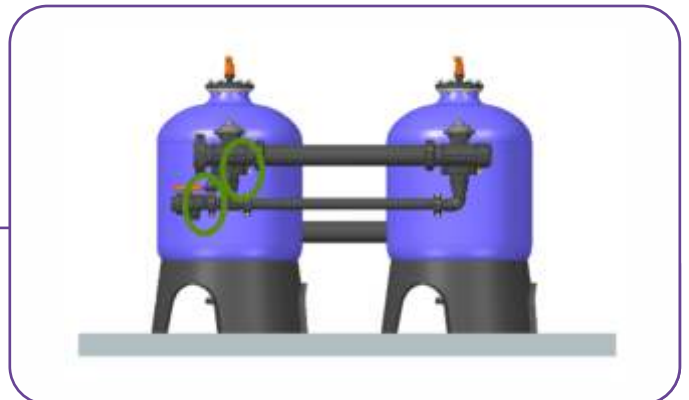
9) Connect the HDPE pipes to the outlet TEES to each other with grooved couplings.



10) Connect the Flange with outlet manifold by grooved couplings.



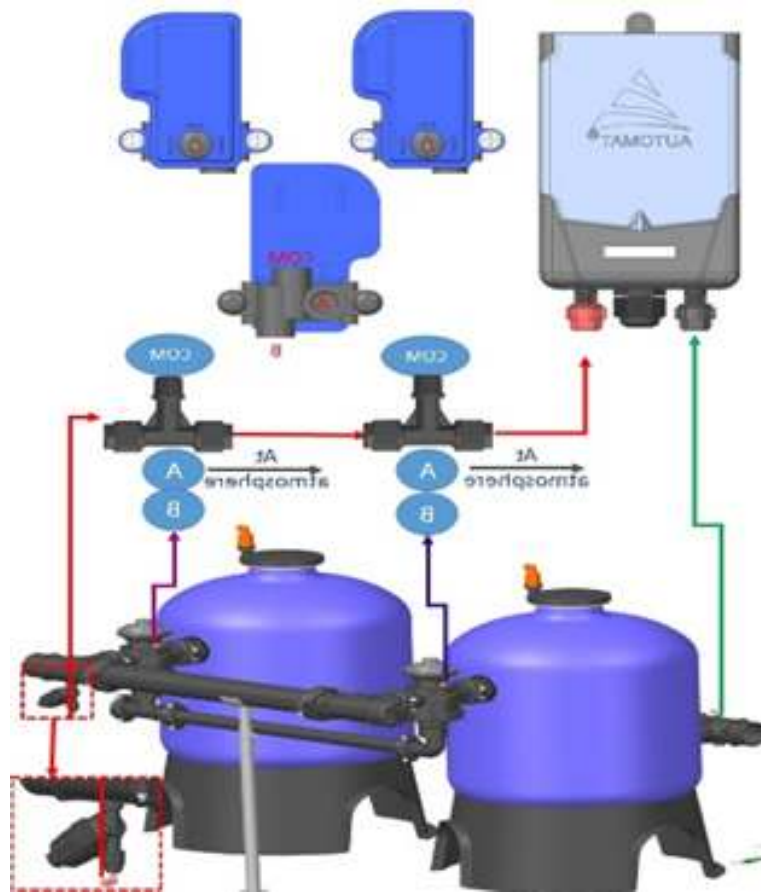
11) Connect Y-filter and flow control valve as shown in pictures.



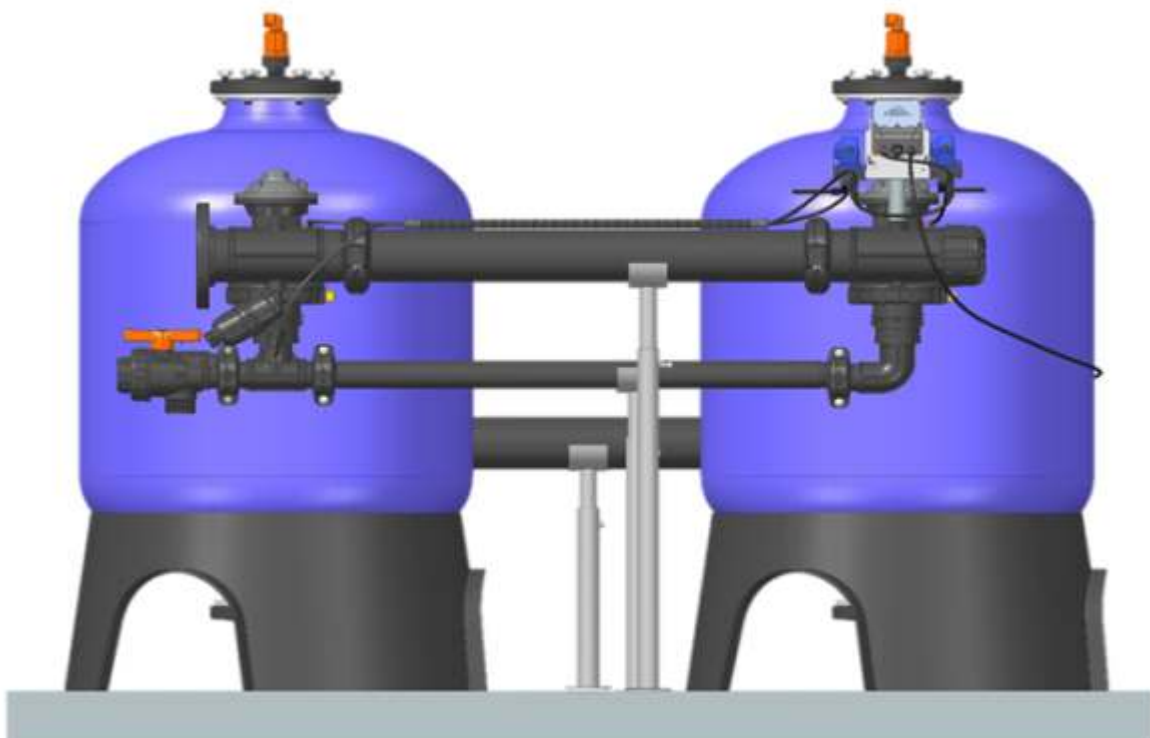
12) Install the controller assembly as shown in pictures.



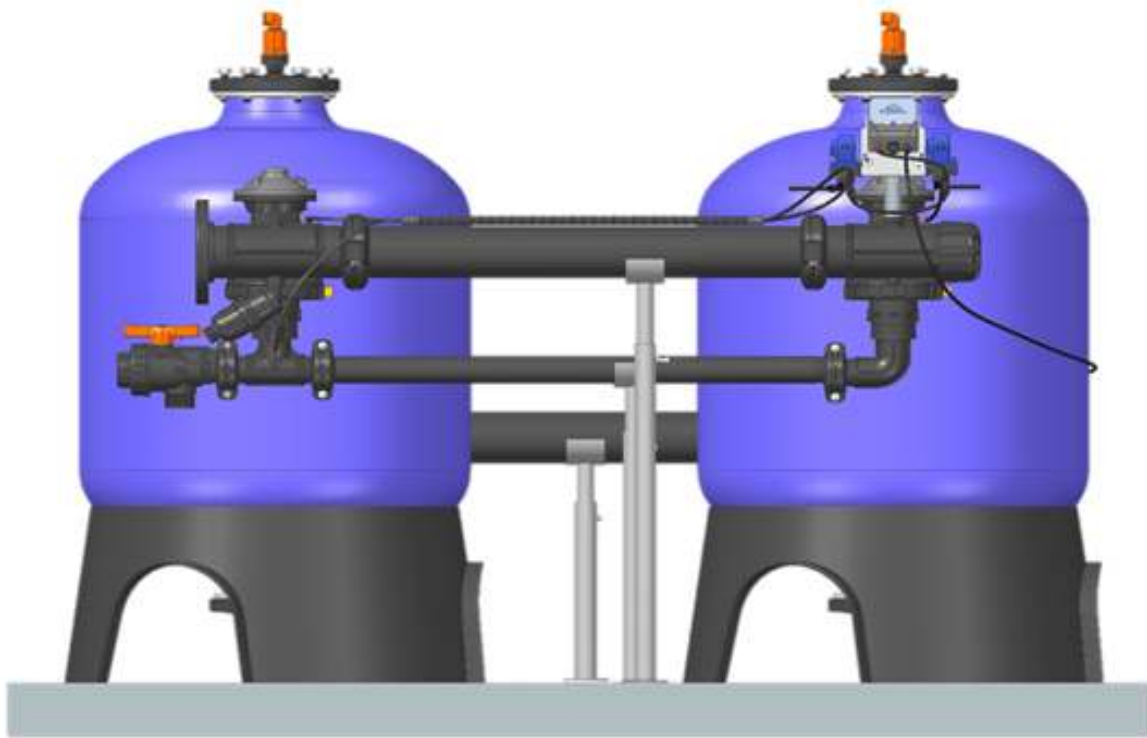
13) Install the controller and commanding tubes as shown in pictures.



14) Install the manifold support as shown in picture.



- 15) Position & align tank & connect inlet to water source and outlet to the inlet of secondary filter. Connect outlet of the secondary filter to the field.



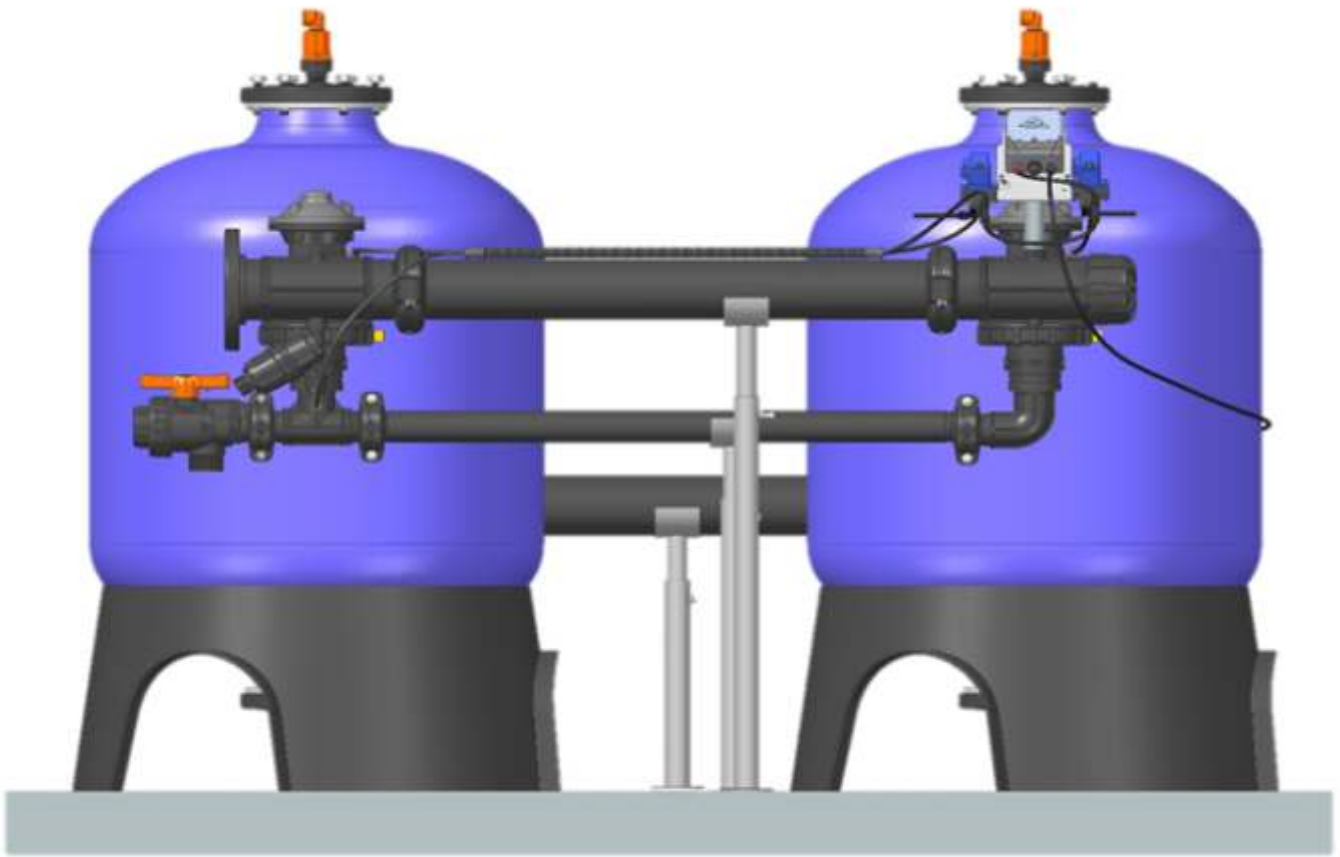
- 16) First fill approximately half tanks with water & cover elbow with cotton to avoid sand from entering in the inlet pipe. Fill sand in tanks till marked level.



Attention

Do not fill the sand in the dry tank .

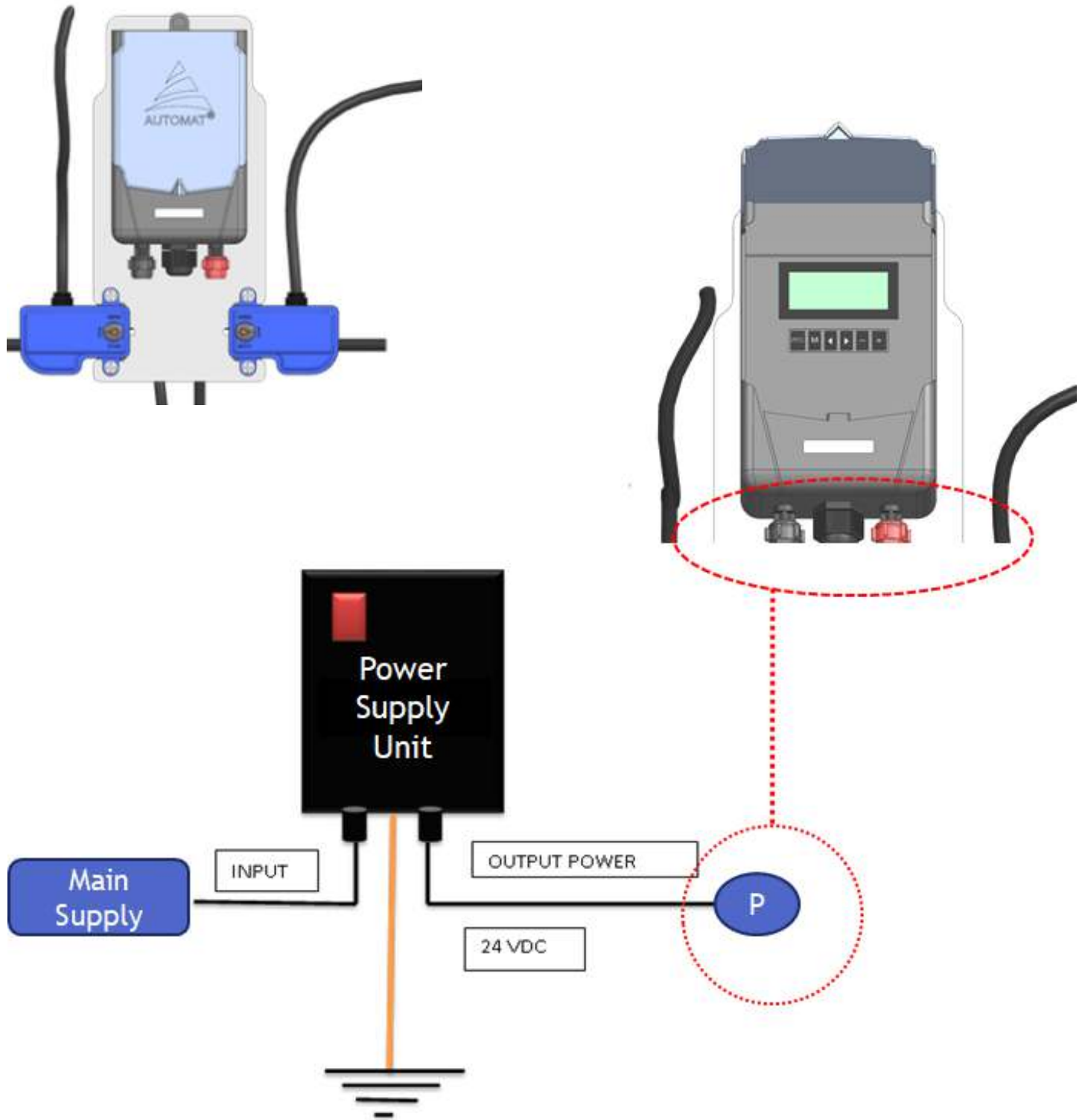
17. After filling the sand remove the cloth from elbow .
18. Put rubber gasket & close Top cover by tightening the nut bolts in cross direction.
19. Install CARV in the top cover as shown in fig



Controller Wiring Layout

Step 3

Connect 24V DC to the "Power" terminal on the controller.



Initial Operation

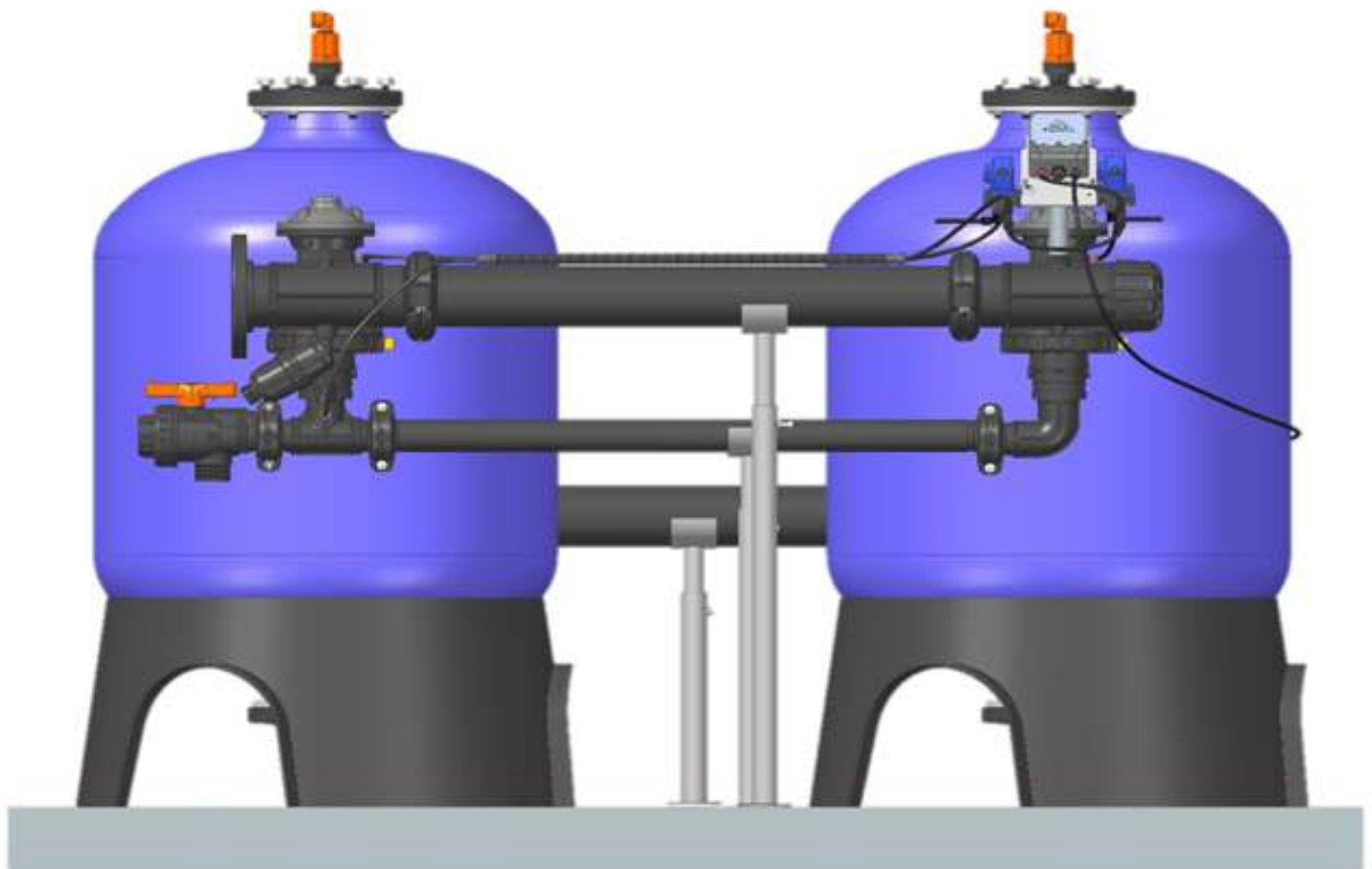
Carefully read this operation manual prior to operating the filter.
Only a qualified technician should commission the filter.

For initial operation (or operation after maintenance) follow the below steps:

1. Switch on the controller by switching on power supply .
2. Slowly open the upstream & down stream isolation valves fully and Start the pump . Close down stream valve partially in such a way that the pressure in the filter becomes 3 to 4 bar .
3. Once the system is pressurized, check for any leakage through filter and connections.
4. Now slowly open the downstream isolation valve completely.
5. Initiate a manual flushing cycle, by pressing the "MANUAL" button on the controller. This will open the flush valve and cleaning will be initiated.
6. Repeat step (4) for 2 to 3 times to evacuate air from the system.
7. Now your filter is ready for operation.



Check the upstream pressure during the manual flushing cycle. Ensure it does not drop below 1.5 bar for efficient cleaning of the filter. Use pressure sustaining valve at filter outlet if required.



Maintenance

1. Installation, operation, and maintenance should be performed in accordance with instructions described in this manual.
2. A general inspection of the filter operation should be done regularly and prior to any scheduled maintenance. This includes seasonal and post season check-ups.
3. When under pressure, the filter may start a flushing cycle automatically at any time, without prior indication.
4. Do not perform any maintenance work or try to open filter parts when the filter is in pressurized condition.

General Inspection Procedure

1. Initiate a flushing cycle manually.
2. Check that the flush valve opens and closes normally.
3. Visually check the filter body and valve for leakage.

Long Term Termination of Filter Operation

1. Perform 2 to 3 manual flushing of the filter.
2. Release pressure from the filter and drain it.

Maintenance Schedule

Once a Week

1. Visually inspect the filter and parts for leakage. Repair if necessary.
2. Perform 2 to 3 manual flushing of the filter.
3. Make sure that during the flushing cycle the inlet pressure does not drop below 1.5 bar @ 15~16 m³/hr flow. Adjust it if it is not so by flow control valve.

At The end of Irrigation Season

1. Perform 2 to 3 manual flushing of the filter.
2. Turn off the pump and close the upstream isolation valve.
3. Visually inspect the filter, O-rings and seals for any damage. Replace damaged ones if necessary and apply grease for lubrication on fasteners.

Winterization

To avoid damage or breakage, the filter, including the cover, valves and command tubes, must be drained prior to frost periods. Filter operation should be suspended in climates where the filter is exposed to freezing temperatures.

User Manual for Auto Backflush Controller

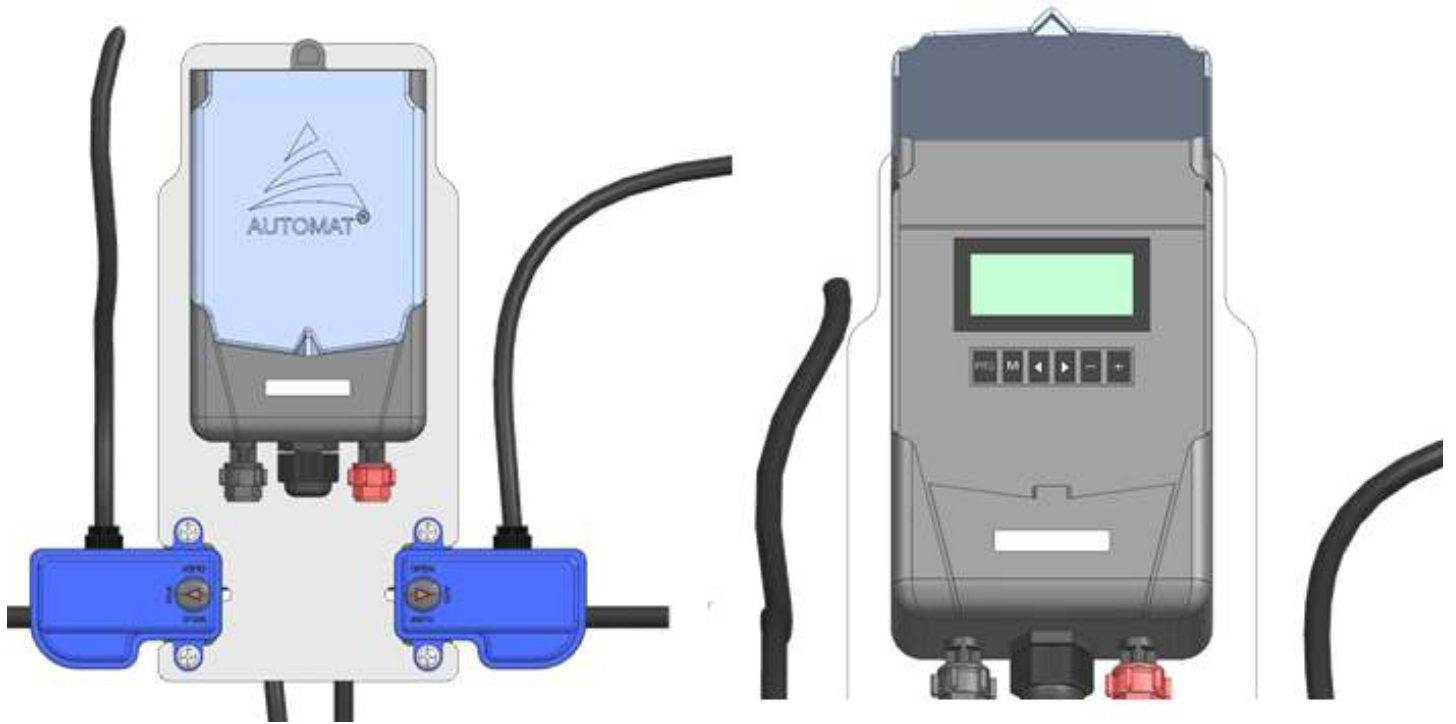


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| 4. Assembly | 8. Programming | 12. Warning |

Safety Instructions

- Prior to operating the controller please read carefully the instructions given in this manual.
- Use this controller only for its intended use. Any misuse of the controller may lead to damage to the controller and may affect your warranty coverage.
- Do not leave the wires loose, use cable ties.
- Electric wiring should be done using standard and approved components by a qualified electrician only.
- It is recommended to provide an emergency cut-off switch near to the controller and should be easily accessible in case the controller is being operated with AC/DC transformer (6 VDC).
- Avoid water splash on electrical equipment.
- Ensure proper earthing to avoid damage to controller or power supply unit.
- Ensure input voltage to the controller is 24V DC (+/- 2 V).

General Description

- The “FILT SMART” controller enables back flushing process of the Automatic “MACH CLEAN” series filter offered by Automat.
- Controllers are configured to pre-set parameters that enables the operation easy and simple thus offering reliable & long-term operation.

Specifications

- Power Input: 6 VDC
By AC/DC Transformer
By 4 x V AA Batteries (Duracell Only)
- Power Output: 12V DC pulse electromagnetic head.
- Operating Temperature: 0°C - 60°C
- Protection Level: IP 54 and UV Protected
- Pressure Unit: bar
- Maximum Operating Pressure: 12 bar / 175 psi

Assembly

- High and Low voltage port: 1/8”
- BSP/NPT Male Thread
- The red nut marked ‘H’ for the high pressure inlet port.
- Black nut marked ‘L’ for low pressure outlet port.

Factory Set Default

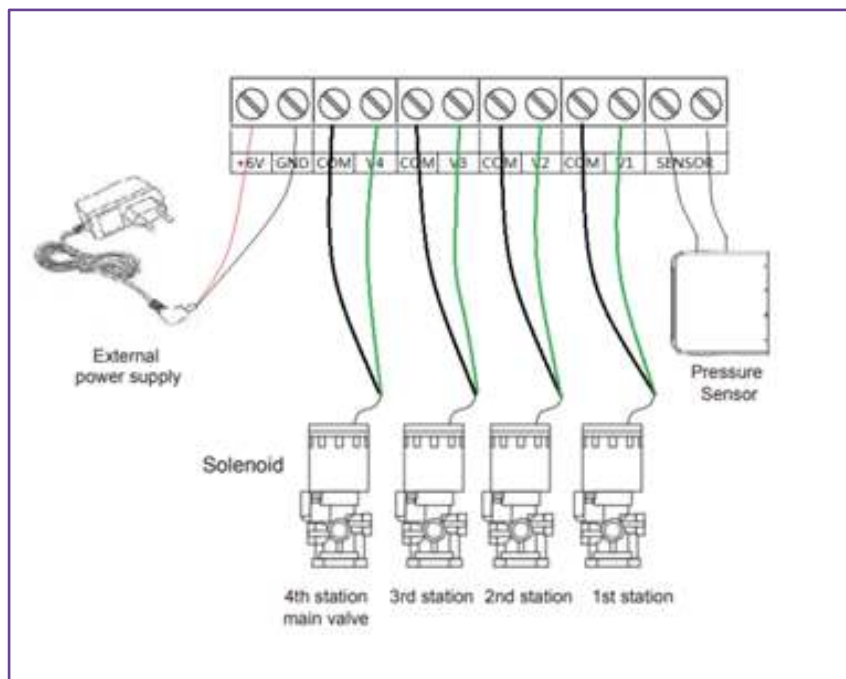
- Flushing Duration :90 seconds
- Time Based Flushing: 180 min

Flushing Methods

- Time based filter flushing.
- Manual filter flushing.

Note: When approaching the freezing temperature, the controller must be removed and stored indoors to prevent structural freezing. To prolong the life of the controller, clean the filter regularly and replace it in time for damage.

Wiring Diagram



Note: The controller comes equipped with in-built pressure differential switch. In case external DP switch is required, the same can be accommodated at sensor ports as shown in the wiring diagram.

Panel Operation



Key	Function
+	For forward setting
-	For Back Setting
▶	For next setting item
◀	For last setting item
M	For manual flush command
PRG	For setting program



IDLE Mode

- The device displays the differential pressure of actual value (DIF) and set differential pressure (SET).
- If MV icon is displayed on the top right corner, it indicates Main Valve is open.
- Battery Power icon is showed on the top left corner.
- When the Battery Power is shown, it means the batteries need to be replaced.
- If the Battery Power icon is in flash, the device will be unworkable.

Controller Operation Status

Sensor Calibration:

At the idle mode, press PRG key. The display will show the below parameter.



If there is a need to calibrate the differential pressure, press + or – when the system has no working pressure difference. Now adjust the DIF number to 0. It indicates that the current differential pressure is zero.



Press PRG key again, display now shows the manually triggered accumulated valve.



Press PRG key again. The display now shows the accumulated value of time based flushing.



Press PRG key again. The display now shows the accumulated value of flushing cycles based on differential pressure.

Automatic Backflush Setting

Press and hold PRG key to start setting program parameter, press PRG to switch the setting item, order is: Back Flushing Period ----> Back Flushing Time ----> Station Delay Time ----> Differential Pressure Trigger Value ----> Main Valve setting ----> Control valve output channel number.

1. Backflushing period setting



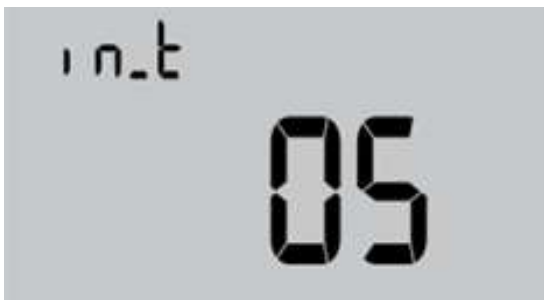
Cy_t: back flushing period Press forward or backward keys to switch hour and minute setting, press + or - to adjust. Maximum is 72 hours and 59 minutes.

2. Backflushing time setting



On_t: back flushing time Press forward or backward keys to switch minute and second setting, press + or - to adjust. Maximum is 5 minutes and 59 seconds.

3. Station delay time setting



In_t: station delay time Press + or - to adjust, from 0 to 59 seconds

4. Differential pressure trigger value setting



dp: differential pressure value Press + or - to adjust, from 0.0 to 7.0 bar

5. Main valve setting



MV: main valve default is OFF Press forward or backward key to switch off or on. When switched to on, will show the main valve delay time, default is 10 seconds. Press + or - to adjust from 0 to 59 seconds. If the main valve is on, the default last output channel is for main valve.

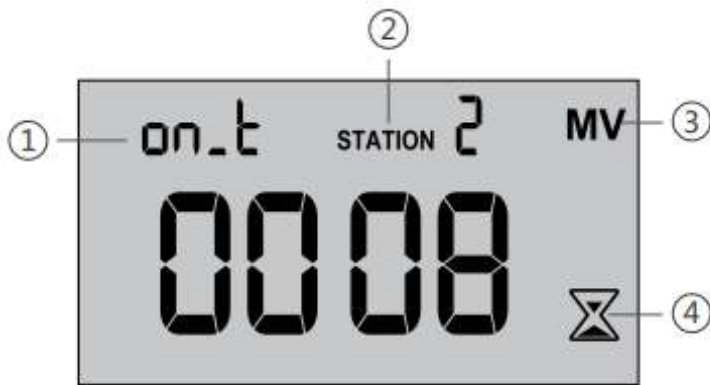
6. Control valve output channel number setting



Uo_c: output channel number Press + or - to adjust, from 0 to 4 channels (if the main valve is off)
Press + or - to adjust, from 0 to 3 channels (if the main valve is on) a

Automatic Backflushing Mode

When the Actual value is greater than the setting value, begin differential pressure back flushing cycle (FC).



**This function is not available.
Please skip this.**

1. on_t: back flushing time
2. STATION: station running in backflushing mode
3. MV: main valve is opened
4. Backflushing working icon

Manual Operating Mode

At automatically back flushing mode, press M key to start manually back flushing mode.



When the time runs to the back flushing interval setting, it will initiate time based back flushing, thus activating the automatic back flushing mode.



After running the manual cycle, display comes back to idle mode.

Press M key again to start or stop the manual flushing and get back to automatic flushing mode.

FILTRON 1-10 (DC/AC)

Features

- The "FILTRON 1-10" is a modular backflushing controller for automatic filters of 1 to 10 stations.
- There exist DC and AC models.
- The DC model can be powered either by 6v DC or 12v DC and it activates 2 wired 12v DC latching solenoids.
The voltage for the solenoids switching is boosted by a charge pump.
- The AC model contains an internal transformer that can be powered by 110v or 220v from which it generates the 24V AC for the solenoids.
- Flushing cycles may be triggered either by time or by the embedded electronic DP sensor reaching the set point, or by a dry contact signal from an external DP sensor.
- Endless looping problems can be eliminated by detecting repeated consecutive cycles passing beyond a predefined limit.
- The unit can optionally handle a Pressure-Sustaining / Main valve, and an Alarm output. The unit is equipped with a customized LCD display and key board.
- The unit counts separately the number of flushing cycles triggered by DP, by time and manually.



How to Program The Controller

The controller is equipped with an LCD display and 4 keys as displayed below. When the unit is left untouched for a minute the display is switched off and the only life signal is given by a beep sound that can be heard every 20 seconds. Holding down any of the keys for a few seconds will bring the screen back to life.



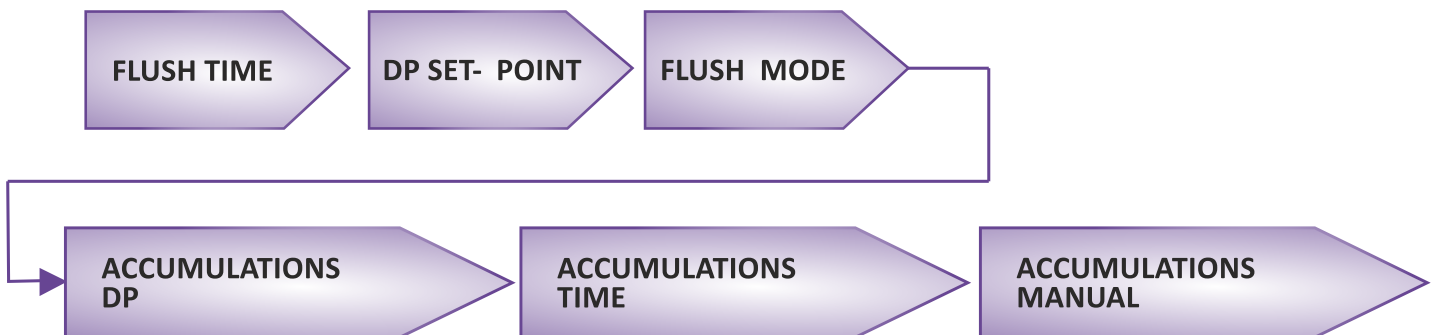
The screen consists of several fields, some of them are editable and some of them are not. For inserting EDIT MODE the ENTER key has to be pushed. The EDIT MODE is indicated by blinking of the characters at the currently editable field. Each time the ENTER key is pushed again, the next editable field becomes under focus and starts blinking. While in EDIT MODE the “+” and “-” keys can be used for changing the value under focus. Pushing the ENTER key again will set the selected value to the current field and move the focus to the next editable field which will start blinking. Once entering this process of passing through the editable fields, the user has no way back but by pushing the ENTER key repeatedly, he passes through the chain of editable fields until arriving back to the FLUSH TIME field, meeting no more blinking fields.



Notice that before the first use of the unit, it may be necessary to pass through the configuration process prior to defining the flushing program in order to adjust the features of controller to the specific application. The configuration process is described below.

Manual Operating Mode

Following is the chain of editable fields. The existence of the DP SET-POINT field depends on whether the system contains a built-in electronic DP or not.



The Flush Time

Defines the duration of the flushing time per station. The following options are selectable:

- 5-20 sec in steps of 1 sec
- 20-55 sec in steps of 5 sec
- 1-6min in steps of 0.5 min

The DP Set Point

At this field the user defines the pressure difference between the filter's inlet and outlet that when reached, a flushing cycle will take place. The DP set-point field will disappear if there is no Electronic DP connected. In this case the Digital DP input can be used.

Up to version 1.02 of the Filtron 1-10, a nonzero value Set-point would have caused the controller to ignore the Digital DP input completely, but a zero Set-point would make the Digital DP effective and cause the Electronic DP to be ignored.

Starting from version 1.03 a change was made so that a nonzero Set-point does no longer cause the Digital DP input to be ignored, but instead a closed contact Digital DP input will cause the unit to keep on executing flushing cycles as long as the contact remains closed, ignoring the looping limit. When the DP contact reopens, the flushing stops right away without completing the running flushing cycle.

Starting from version 1.03 if there is no Analog DP connected or when the set-point equals zero the unit refers to the Digital DP in the normal way, namely when the contact of the Digital DP is constantly closed it will execute consecutive flushing cycles until reaching the Looping Limit and then declare an endless Looping problem.

When the pressure is expressed in BAR the range of values is 0.1 – 2.0 BAR. When the pressure is expressed in PSI the range of values is 1- 30 PSI.

The closed Digital DP contact will be indicated by the symbol :

The Flush Time

The Flush Mode defines how the flushing cycles is triggered. The selectable options are as follows:

Off	No flushing will take place.
By Time	In this case the flushing cycles will be repeated in a selected interval or will be triggered by the DP signal depending on what happens first. No matter how was the flushing cycle started the interval to the next cycle will start to be measured again after each ending of a flushing sequence. The selectable intervals are the following: 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60 minutes 2, 3, 4, 5, 6, 8, 12, 18, 24, 72, 120 hours
DP	Flushing will be triggered by DP only



If the “+” and “-” keys are pressed and held down simultaneously the “Flush Mode” field will show the left time until next cycle, alternately hours and minutes.

The Accumulations

The unit accumulates and displays the number of flushing cycles caused by DP, by time, or manually. At each of the accumulation fields, the “+” or “-” keys may be used for clearing the accumulated value.

The Configuration

In order to enter into the configuration process press and hold down the ENTER key for at least 3 seconds.

The unit will detect how many “plug-in” boards (each of 2 outputs) are used in the particular case.

How will the outputs be allocated depends on the definitions made during the configuration process described below. The following rules apply:

1. Backflush valves will be allocated starting from output 1 and up.
2. The last backflush valve can be canceled and then its allocated output will be left unused.
3. Alarm output, Delay-Valve and Main-Valve when defined, will be allocated in this order, right after the last backflush valve (whether in use or not).

Example

Assuming there are 3 “plug-in” boards, this makes 6 outputs for use. If there are no Alarm-output, no Delay-Valve and no Main-Valve all the 6 outputs will be allocated for backflush valves.

If additionally a Main-Valve is defined, the first 5 outputs will be allocated for backflush valves and output No 6 for the Main-Valve. Output No 5 (of the last backflush valve) can be canceled and left unused. If additionally a Delay-Valve is defined it will be allocated to output 5 right before the Main valve, leaving the first 4 outputs for backflush valves, and once again output No 4 (of the last backflush valve) can be canceled and left unused. If additionally an Alarm-output is defined it will be allocated before the Delay-Valve leaving only 3 of the first outputs for backflush valves. No 3 can again be canceled.

During the configuration process the following features are defined:

Main Valve (sustaining valve)	Yes/ No. When the answer is “Yes” the Pre Dwell delay between the Main Valve opening and the opening of Station No. 1 can be defined. The selectable delay steps are:5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55 sec1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6 min
Dwell Time	The delay between stations – can be set to 5, 10, 15, 20, 25, 30, 35,40, 45, 50, 55, or 60 sec.
DP Delay	The delay during which the DP sensor reading is expected to remain stable before reaction – 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60 sec.
Looping Limit	The number of consecutive flushing cycles triggered by the DP sensor before deciding that there is an endless looping problem. The options are: 1-10 or “no” which means ignoring the looping problem.
Alarm	Yes/No – allocating one output for alarm activation.
Delay Valve	Yes/No – allocating an output for Delay Valve activation.
View Outputs	This is a special mode that enables passing through the list of outputs to see how each output was allocated. Use the + key to change the “no” into “yes” and confirm by “Enter”, then keep using the + key to pass through the list. At the bottom left corner the ordinal number of the output is displayed and its allocated function appears in large letters at the center of the screen. Notice that the number of possible outputs that can be used is always an even number since it results from the number of “plug in” boards (each of 2 outputs) included. However if the number of outputs needed is not an even number, then the last valve allocated for flushing may be canceled by use of the manual operations key.
Pressure units	Deciding about the units to be used for pressure measurement. Selecting between BAR or PSI .
Calibration	Zero calibration of the built in electronic DP sensor. While the sensor ports are disconnected select Calibration = Yes.
Version Display	The last screen of the configuration supplies information about the software version of the controller. The version consists of 4 digits like the following: 00 13

Handling Endless Looping problems

As explained above, endless looping problem will be declared when the number of consecutive flushing cycles triggered by the DP sensor exceeds the “Looping limit” defined during configuration. The fact that endless looping problem was detected will be indicated on the display and will cause the activation of the Alarm output, additionally, the DP indication will no longer be considered as a trigger for flushing. The following flushing cycles will be triggered by the interval count down only.

The problem will be considered as solved when the constant indication of the DP sensor will be removed.

Handling Low pressure

When a closed contact indication is received at the low pressure input of the controller, the symbol will start to appear blinking at the display. All activities will stop including the countdown to the next flushing cycle. If the low pressure happened while a flushing sequence was in progress, when the low pressure condition terminates the flushing sequence will start from the beginning rather than continue from the stop point.


Connecting the DP sensor to the filter system

The DP sensor is connected to the filter system by 2 command tubes, the one which comes from the filter inlet (High pressure) will be connected to the red point, and the one that comes from the outlet (Lower pressure) will go to the black point. It is important to put a small filter of 120 mesh (not supplied) between the red point and the high pressure connection point.


The small filter to be added between the high pressure inlet and the red point. It is the user's responsibility to add this filter.



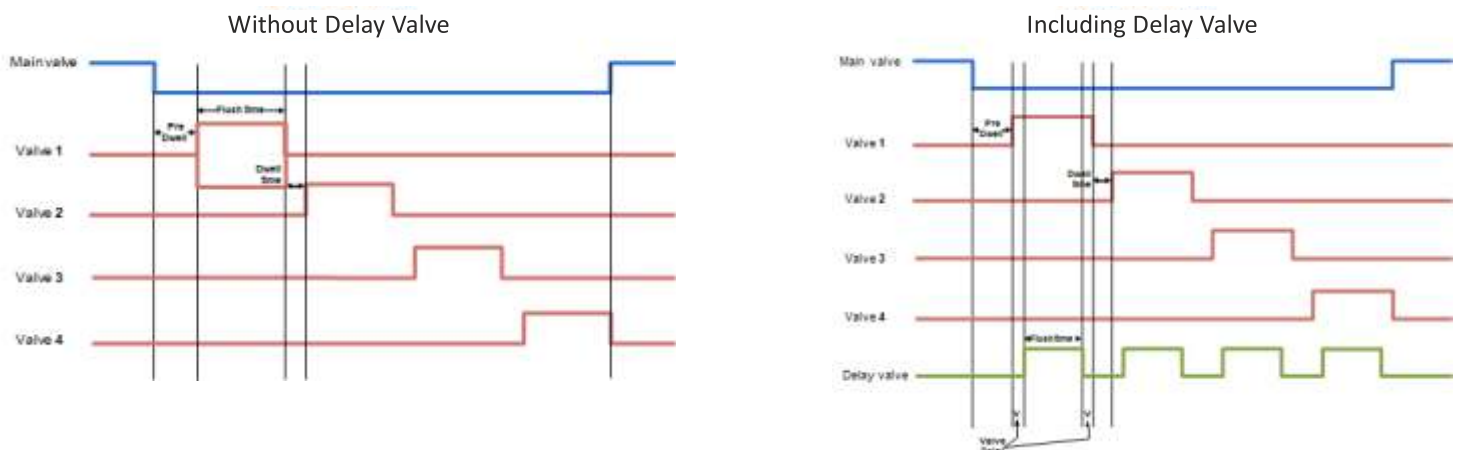
Low battery

The unit has two levels of low battery indication. At the first level when the battery voltage drops to the first level, the sign  will start to appear at the screen. When the battery voltage drops further and reaches the second level, all outputs will shut down, the screen will be cleared leaving only the low battery icon.

Manual Activation

A flushing sequence can be manually activated by the “MANUAL” key. When manually activated the icon  will appear on the display. The same key will be used for manually terminating a sequence in progress.

Timing Diagram

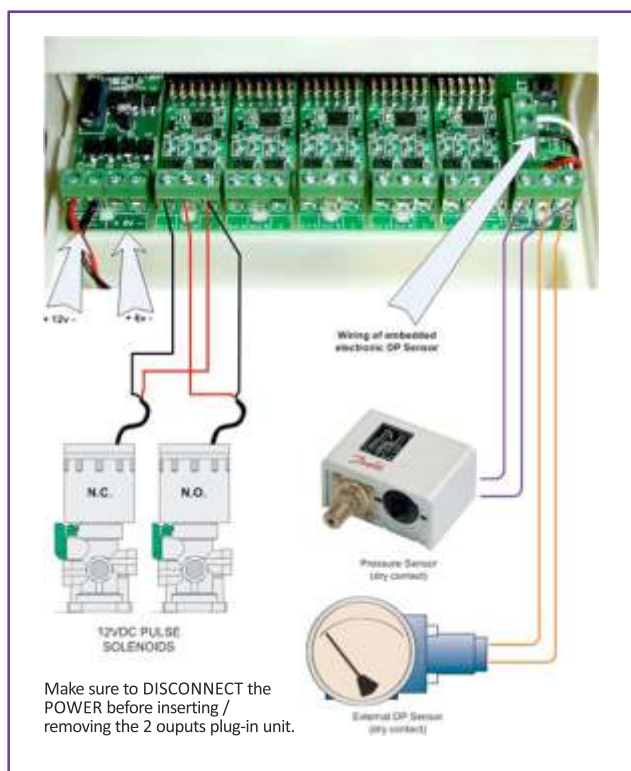


Wiring Diagram

DC MODEL

The drawing below shows the wiring of the DC model of the controller.

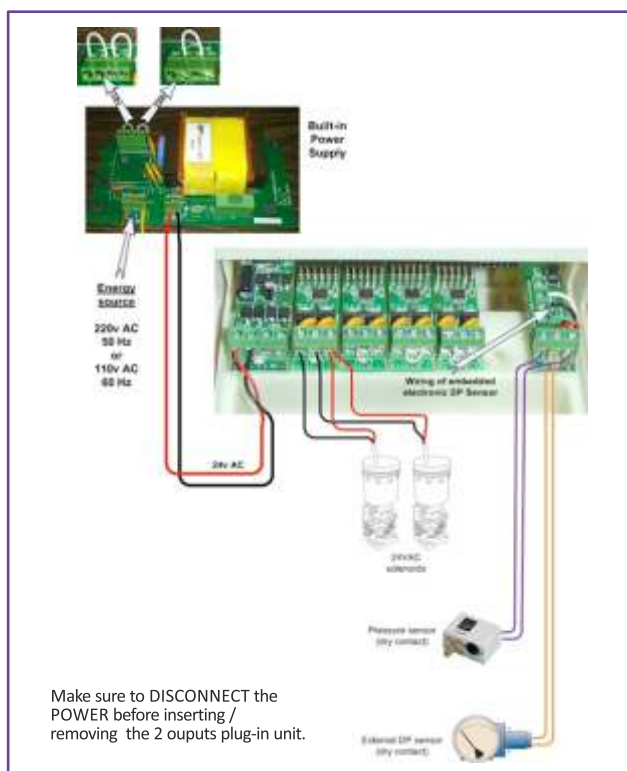
1. The External DP sensor is optional and it is intended for use in cases there is no Embedded Electronic DP included.
2. The powering of the unit can be either by 6v DC or 12v DC.
3. The solenoids will be of 12VDC latch.



AC MODEL

The drawing below shows the wiring of the AC model of the controller.

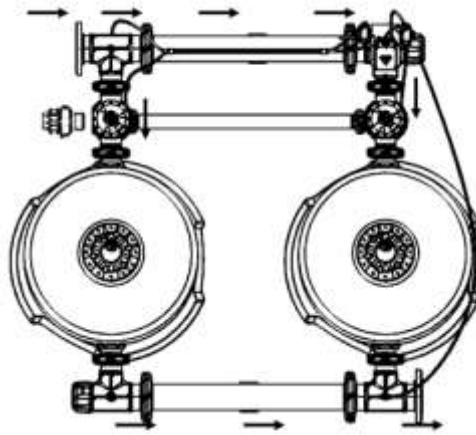
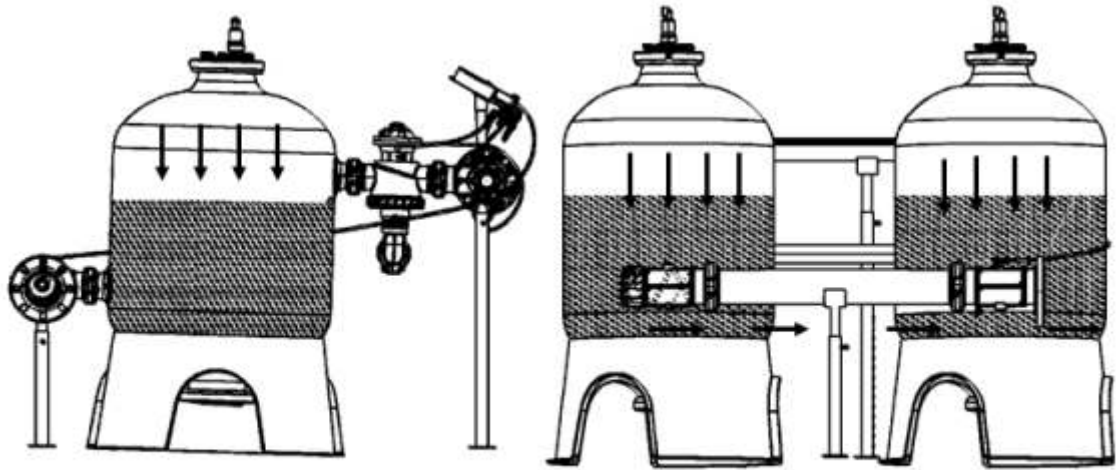
1. The External DP sensor is optional and it is intended for use in cases there is no Embedded Electronic DP included.
2. The powering of the unit is by 24VAC transformed from 220/110 VAC.
3. The solenoids will be of 24VAC.



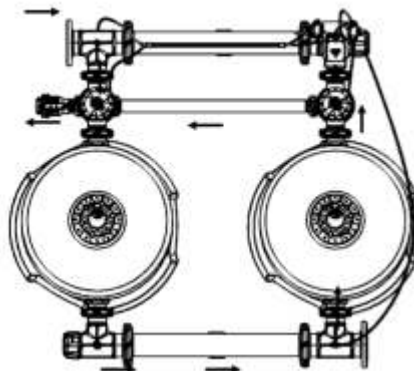
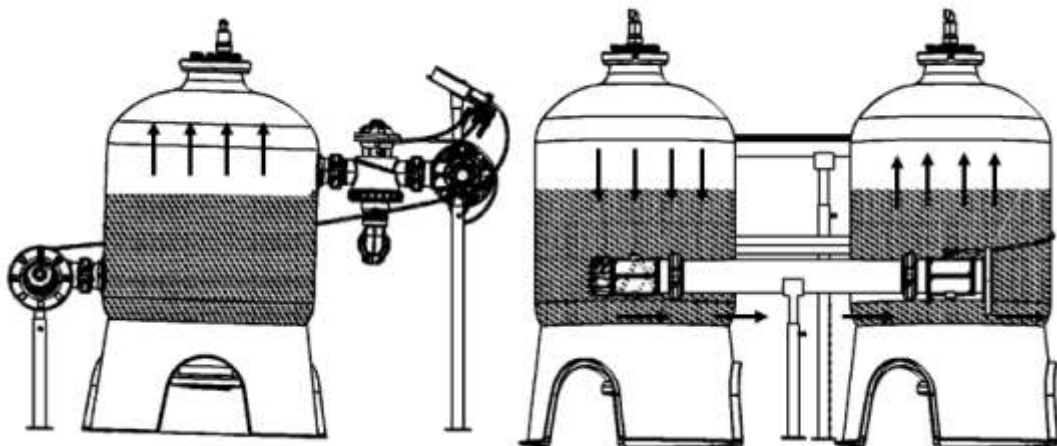
Technical Data

	DC Model	AC Model
Power Source	1). 6v supplied by 4 x 1.5 "D" size alkaline batteries or 2). 12V DC dry battery or 3). 12V rechargeable battery with solar panel of 2 watts	220 or 110 V AC 50 or 60 Hz with built in transformer to 24 V
Outputs	12 v DC latching solenoids	24 v DC latching solenoids
DP	Embedded electronic analog DP sensor or external dry contact DP sensor.	
Pressure Sensor	Dry contact pressure sensor	
Operating Temperature	0-60° C	

Filteration Mode



Back Flush Mode



Maintenance Instructions

Weekly Maintenance

1. Check the secondary filter and if clogged, take out the filtration element and clean it. Reinstall the element as before.
2. Check the filtration system and backwash assembly visually for any leakage from joints and covers.
3. Do check if sand coming out from backflush port. If sand is coming please follow the procedure given in point no. 3 of installation page.

Quarterly Maintenance

1. Perform steps 1 -3 as described in the weekly maintenance section above.
2. Release the pressure of the system by opening any valve downstream from the filtration system until the pressure is fully released.
3. Check the level of media inside the filters. If the level is lower than the media level mark on the filter tank, then add media up to the mark.
4. Manually stir the media inside the tank and check for media solidification.
5. Perform chemical cleaning of the media as given in table 2.

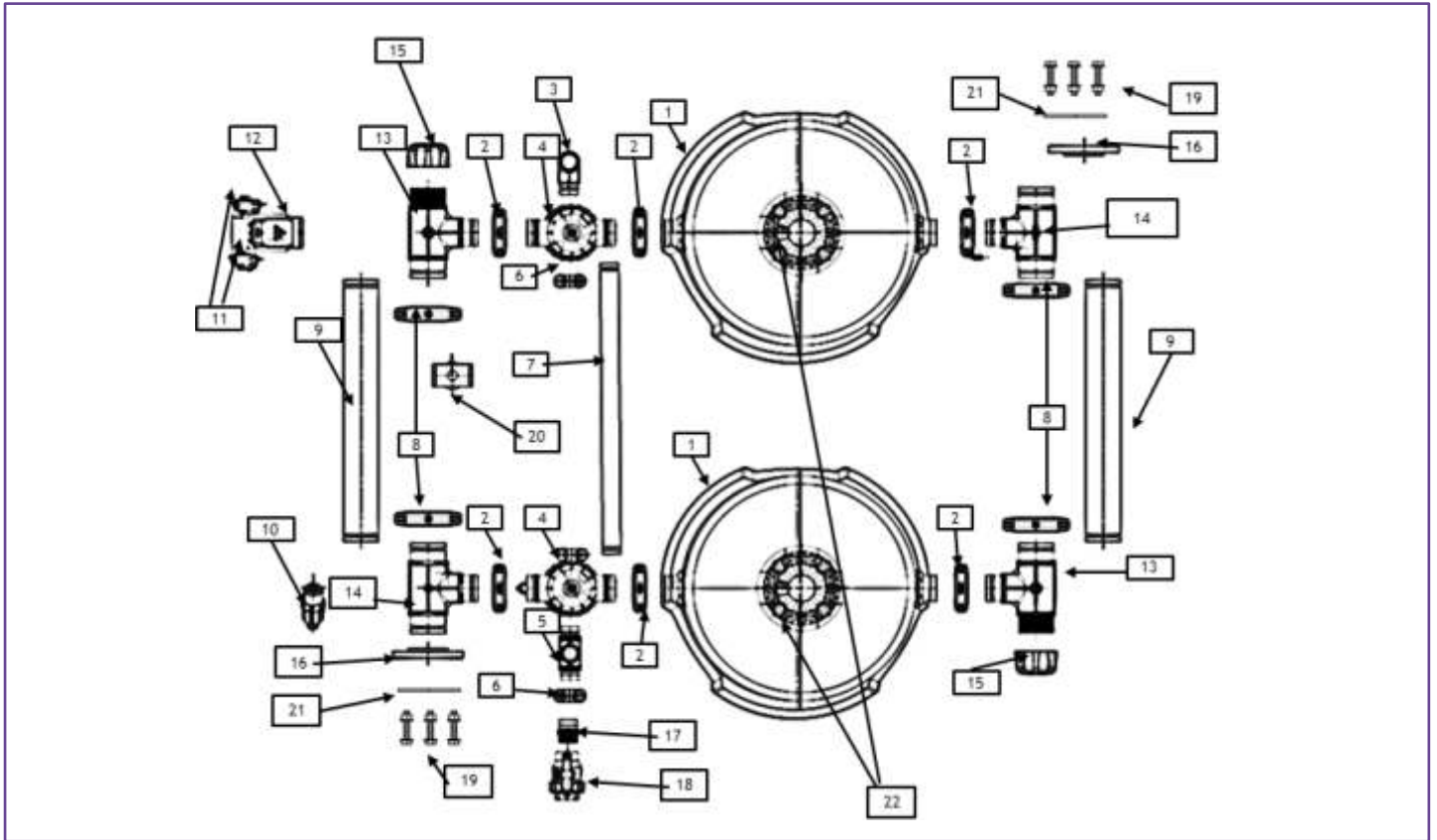
TANK DIA.	Quantity of sodium hypochlorite (NaClO) (liter)		Quantity of hydrogen peroxide (H2O2) (liter)
	Domestic liquid 3% concentration	Technical liquid 10% concentration	Technical liquid 30% concentration
20	1.1	0.4	0.2
24	1.5	0.5	0.2
30	3.0	1.0	0.3

6. Gently stir the media inside each tank with a wooden stick. Ensure while stirring no flutes should get damage and tank is full of water with chemical.
7. Wait at least 3 hours for proper chemical reactions and close the top service ports of all the tanks as before.
9. Start the system in the system and backwash the filter 2~3 times as required.

Trouble Shooting Guide

Symptoms	Probable Causes	Solutions
Poor filtration	Insufficient / Improper back flushing	Do proper back flushing as given in Back flushing column at page no. - 9
	Insufficient Sand bed height	Add more media to the recommended level
	Wrong media selection	Use correct media
	High pressure differential forcing contaminates through the filter	Do proper back flushing as given in Back flushing column
Increased frequency of back wash	Change in quality of water source	Check source water. More filters required
	Soil intake from water pump	Check the water intake.
	Increased flow rate	Check the desired flow rate for the system
	Insufficient Backwash flow rate /Pressure	Set proper backwash flow rate at 1.5bar pressure as given in Table-1
Constant high pr differential	Filters gets clogged	Scrape top layer from sand , flush tank until gets cleaned. Refill sand to the level.
		Shake the clogged sand by wooden stick and mix up in well manner.
	High filter flow	Adjust the inlet flow of water.
	Insufficient frequency of back washing	Do proper back flushing as given in table 1

Part List Twin Automatic Filter



Assembly Bom of MachClean Twin Automatic Media Filter

S.NO.	Description	Quantity
1	SMF TANK	2
2	3"/2" Victaulic Coupling*	6
3	2" Grooved X Threaded Elbow	1
4	3"/2" Automatic Back Flush Valve*	2
5	2" Victaulic X Threaded Tee	1
6	2" Victaulic Coupling	2
7	2" Grooved Hdpe Pipe	1
8	4" /3" Victualic Coupling*	4
9	4" /3" Grooved Hdpe Pipe*	2
10	522 Y Filter	1
11	DC Coils	2
12	Controller	1
13	4"X4"X3"/3"X3"X2" Threadedxvictaulic Tee*	2
14	4"X4"X3"/3"X3"X2" Victaulic Tee*	2
15	4"/3" END CAP	2
16	4"/3" Victaulic Flange	2
17	2" Victaulic X Threaded Adapter	1
18	2" PP SU Ball Valve	1
19	14X60 MS Nut Bolts	8
20	MS Telescopic Stand (long, Medium and Small Each Size)	1
22	4"/3" Flange Rubber Packing*	2
23	1" Air Release Valve	2



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