NETAFIM™
GROW MORE WITH LESS

FILTRATION

AGF SAND MEDIA FILTERS

OPERATION, INSTALLATION & MAINTENANCE GUIDE

TABLE OF CONTENTS

Features & Applications 4
Specifications 4
System Operation 6
Installation & Assembly
- Filter Pad 7
- Installation 7
- Grooved Victaulic Coupling Assembly 7
- Backflush Valve Assembly 8
- Manifold Assembly 8
- Air Vent and Quick Reacting Relief Valve Assembly 8
- Backflush Manifold Assembly 8
- Backflush Controller and Hydraulic Command Assembly 9
- Backflush Controller Electrical Wire Hookup 9
- Solenoid Electrical Wire Hookup 9

Adding the Sand or Media 10
Backflush Operation
- Backflush Principles 10
- Pressure Differential Switch (PDS) 10
- Time Settings 11
- Manual Backflushing 11
- Backflush Pressure 11
- Backflush Restriction Valve Adjustments 11

System Start-up
- Pre-Start 12
- Start-up 12

System Maintenance
- Monthly and Seasonal Maintenance 12
- Replacing Media (Sand) 13

Troubleshooting 14
Replacement Parts 15

FEATURES & APPLICATIONS

PRODUCT FEATURES

- Integral polyethylene liner and high-strength plastic underdrain are resistant to common agricultural chemicals.
- Large access ports allow for easy inspection of media beds.
- Standard with corrosion-proof polypropylene manifolds.
- Proven backflush valves combined with an integral tank venting system provide smooth system start-up and backflushing.
- Designed with 55 mushrooms providing efficient backflushing - lifting and flushing the sand bed evenly.
- Modular construction for easy servicing as all components can be removed and easily replaced using common tools.
- Light-weight composite construction allows for easy transportation without the use of expensive installation equipment and labor.
- Adjustable leg height for easy retrofit to existing manifold systems.

APPLICATIONS

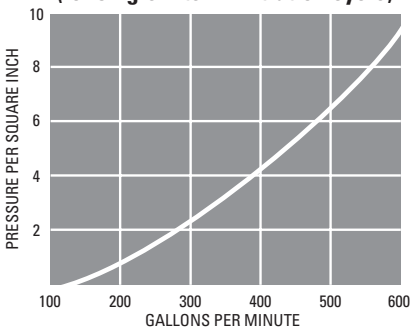
- Filtering surface water with high concentration of algae and other organic material.
- Filtering well water to remove sand particles and undissolved iron.

SPECIFICATIONS

SPECIFICATIONS

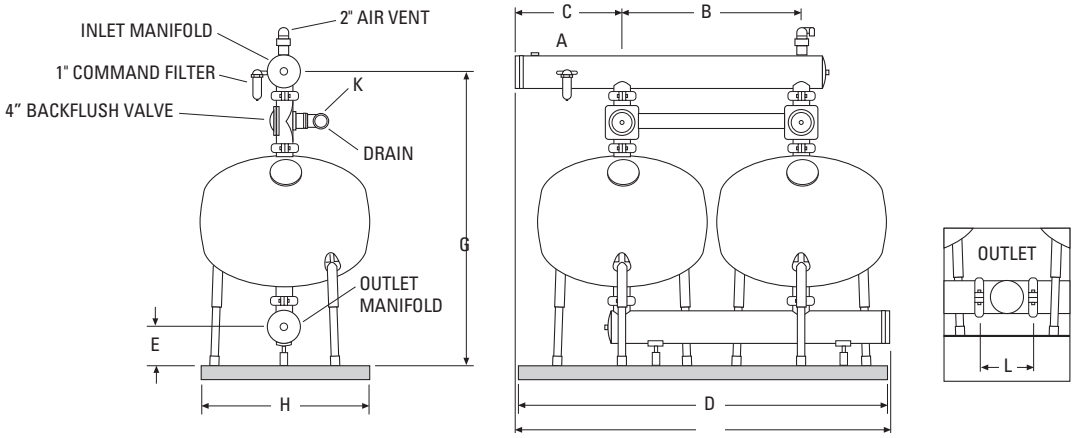
- Maximum Flow Rates: Good water quality - 25 GPM/sq. ft.
  Dirty water - 20 GPM/sq. ft.
- Minimum Operating Pressure for Filtration: 15 psi
- Minimum Operating Pressure for Backflushing: 30 psi downstream of the filter for proper cleaning
- Maximum Operating Pressure: 85 psi
- Filter Tank Size: 48”
- Media Required: 1300 lbs. per filter tank
- Manifolds: Polypropylene
- Quick Reacting Relief Valve installed on the Inlet Manifold is recommended.

AGF HEADLOSS
(for single filter in filtration cycle)



SPECIFICATIONS

FILTERS	MANIFOLD SIZE	FILTRATION AREA (ft²)	VOLUMES AT RATED FLOW: DIRTY WATER 14-18 GPM/ft²	AVERAGE WATER 18-28 GPM/ft²	CLEAN WATER 23-28 GPM/ft²	WEIGHT (FILTERS ONLY)	MEDIA REQUIRED
1	N/A	12.5	175-225	225-290	290-350	265 LBS.	1,300 LBS.
2	6"	25.0	350-450	450-575	575-700	530 LBS.	2,600 LBS.
3	6"	35.7	525-675	675-860	860-1,050	795 LBS.	3,900 LBS.
4	8"	50.0	700-900	900-1,150	1,150-1,400	1,060 LBS.	5,200 LBS.
4 (TEE)	T6" x 10" x 6"	50.0	700-900	900-1,150	1,150-1,400	1,060 LBS.	5,200 LBS.
5 (TEE)	T6" x 10" x 6"	62.5	875-1,125	1,125-1,440	1,440-1,750	1,325 LBS.	6,500 LBS.
6 (TEE)	T6" x 10" x 6"	75.0	1,050-1,350	1,350-1,725	1,725-2,100	1,590 LBS.	7,800 LBS.



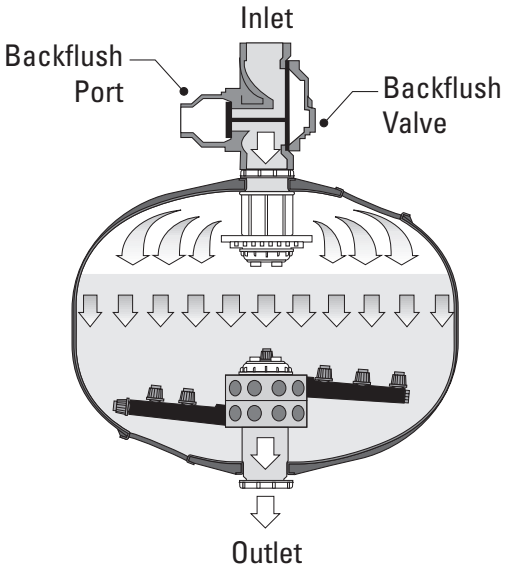
AGF SYSTEM DIMENSIONS

KEY	DIMENSION EXPLANATION	2 TANKS	3 TANKS	4 TANKS	4 TANKS (TEE)	5 TANKS (TEE)	6 TANKS (TEE)
A	INLET/OUTLET DIAMETER	6"	6"	8"	10"	10"	10"
B	TANK DISTANCE	52"	52"	52"	52"	52"	52"
C	INLET/OUTLET REFERENCE	26"	26"	26"	26"	26"	26"
D	LENGTH	101"	153"	205"	224"	276"	328"
E	OUTLET HEIGHT	12 1/2"	12 1/2"	11 1/2"	12 1/2"	12 1/2"	12 1/2"
G	INLET HEIGHT	78"	78"	79"	78"	78"	78"
H	WIDTH	49"	49"	49"	49"	49"	49"
J	DISTANCE BETWEEN INLET/OUTLET	104"	156"	208"	-	-	-
K	BACKWASH LINE DIAMETER	4"	4"	4"	4"	4"	4"
L	LENGTH OF 6" X 10" X 6" TEE	-	-	82 1/2"	66"	19"	19"

SYSTEM OPERATION

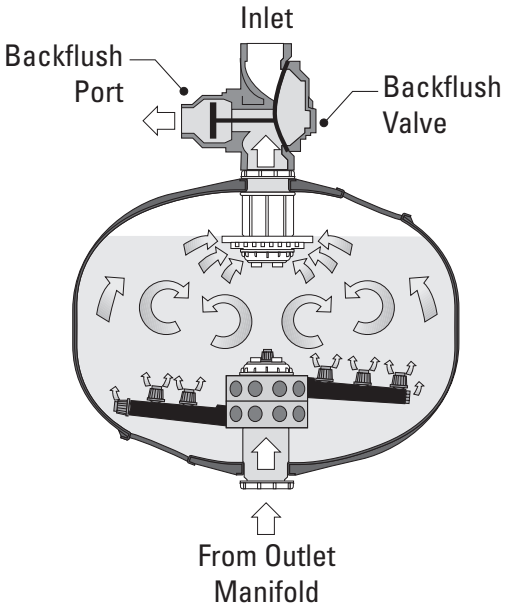
FILTRATION MODE

During filtration, unfiltered water enters the AGF filter system via the inlet manifold and the filtered water exits the system to the field through the outlet manifold. During filtration, the inlet ports are open and the backflush ports are closed. Water flows from the top to bottom across the sand layer.



BACKFLUSH MODE

During backflush, the inlet port closes and the backflush port opens. This reverses the flow of water in the filter. Clean water from the other filters now flows into the filter from the bottom, lifting the sand media and freeing the accumulated debris. The debris will be flushed out the top of the filter through the backflush valve into the backflush manifold. Only one filter should backflush at a time. The backflush flow depends on the pressure differential between the outlet manifold and the backflush manifold.



INSTALLATION & ASSEMBLY

FILTER PAD

- Pour a concrete level slab 4" thick with a 6" by 6" footing.
- Compact the soil all around the filter station pad to prevent erosion.
- It is recommended that the pad dimensions exceed the filter battery dimensions by at least 1 1/2 feet on all sides.

INSTALLATION

- Bring the filter as close to the cement pad as possible.
- Remove the plastic straps and the cover wrapping.
- Set the 3 legs aside. Remove the styrofoam packaging and lay it next to the tank.
- Lay the tank on its side on top of the packing material.
- Insert the unattached legs as follows:
  - Determine the correct filter height. Note: With the legs inserted as provided, the outlet will be approximately 17" above ground level. If the battery height needs to be lower, for example retrofitting to an existing system, the legs may be cut to size. See Figure 1.

CAUTION: Once fully inserted, the legs cannot be removed. Carefully check measurements before proceeding.

  - Make all cuts as square as possible and verify that the three legs are the same length after cutting.
  - Insert the legs into the leg housing.
  - Place a piece of wood over the leg base cap and strike the wood with a hammer until the leg is fully seated in the housing. See Figure 2.
- When placing the filter upright, make sure that two legs are resting firmly on the ground. Two people are recommended for this process.
- Orient the AGF filter tanks on the foundation by facing tank access ports in the same direction. See Figure 3.
- Pump inlet should be 3' to 4' below the surface and a minimum of 2.5' off the bottom to prevent intake of excess dirt when pumping from a ditch or reservoir.

GROOVED VICTAULIC COUPLING ASSEMBLY

- AGF filters are assembled with grooved victaulic couplings connecting the components.
- Grooved victaulic coupling assembly:
  - Remove bolts from coupling and place the rubber gasket completely onto one of the grooved components to be assembled. A soap or gasket lube can be used to lubricate the gasket. Adjoin the two grooved components and slide the rubber gasket back so that it is centered between the two grooved fittings. Place the clamps around the gasket and tighten bolts. Install all other components before tightening the bolts. See Figure 4.

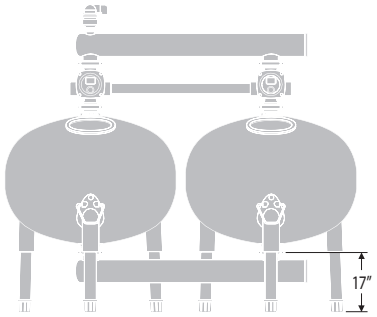


FIGURE 1 - Height above ground level

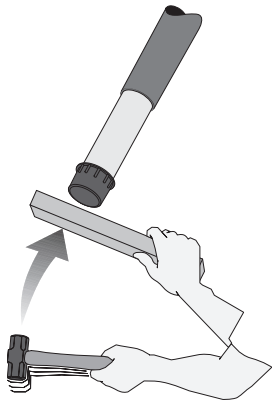


FIGURE 2 - Assembling the legs

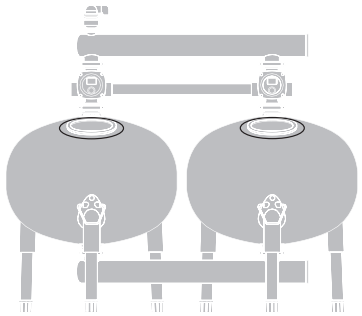


FIGURE 3 - Filter tank positioning

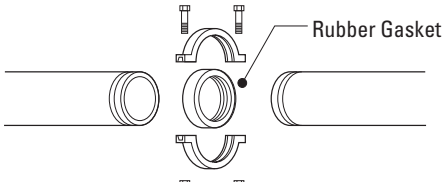


FIGURE 4 - Gasket position during assembly

INSTALLATION & ASSEMBLY

BACKFLUSH VALVE ASSEMBLY

- Install one backflush valve on each AGF filter tank.
- Verify that the "flow" arrow on the backflush valve points downward towards the filter tank. See Figure 5.
- Do not tighten the couplings at this time.

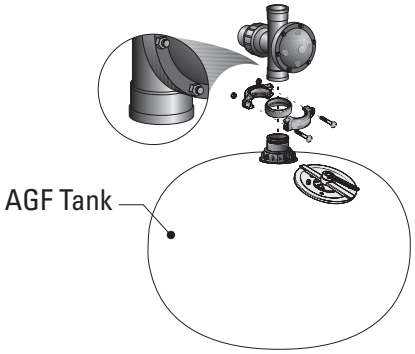


FIGURE 5 - Backflush valve installation

MANIFOLD ASSEMBLY

- Align and attach the inlet manifold to the backflush valves with the grooved victaulic couplings.
- Align and attach the outlet manifold to the filter tank outlet with the grooved victaulic couplings.
- Tighten only enough to hold the manifolds in place - do not overtighten.

AIR VENT AND QUICK REACTING RELIEF VALVE ASSEMBLY

- Install the 2" Combination Air Vent onto the inlet manifold. See Figure 6.
- It is highly recommended to install a 2" Quick Reacting Relief Valve to protect the filter station from high pressure surges. Must purchase separately from distributor.
- Install the 2" Quick Reacting Relief Valve to the inlet manifold using a 2" Threaded nipple. See Figure 6.
- Tighten all grooved victaulic couplings when these filter components are installed.
- Use of a 2" Quick Reacting Relief Valve with Netafim inlet/outlet manifolds extends warranty from 2 years to 5 years

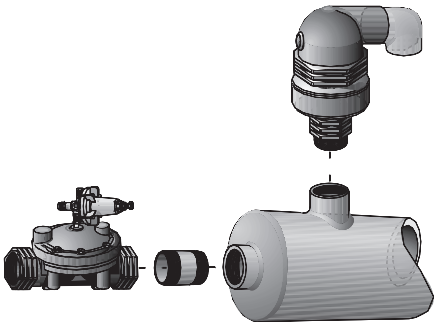


FIGURE 6 - Air Vent and Quick Reacting Relief Valve assembly

BACKFLUSH MANIFOLD ASSEMBLY

Parts described in this section are not supplied by Netafim - must be purchased separately from distributor.

- The minimum recommended size for the backflush manifold is 4". PVC is generally used to construct this manifold.
- The backflush water should be discharged through an open pipe (to atmosphere) and not connected to any pressurized line. It is helpful to have the end of the discharge line accessible. A clear PVC sight tube to verify backflush is highly recommended. The backflush manifold should not be run to a location that is more than 10' higher than the backflush valve and should not exceed 100' in length. For exceptions, evaluate conditions and contact Netafim.
- Install a 2" Guardian Air/Vacuum Air Vent in the Backflush manifold after the last AGF filter and upstream of the restriction valve.
- A backflush restriction valve must be installed in the backflush manifold for reliable backflush function. This valve should be installed close the filters. Gate or globe valves can be used as a backflush restriction valve. Adjustment of this valve is explained in Backflush Restriction Valve Adjustment section, page 9.

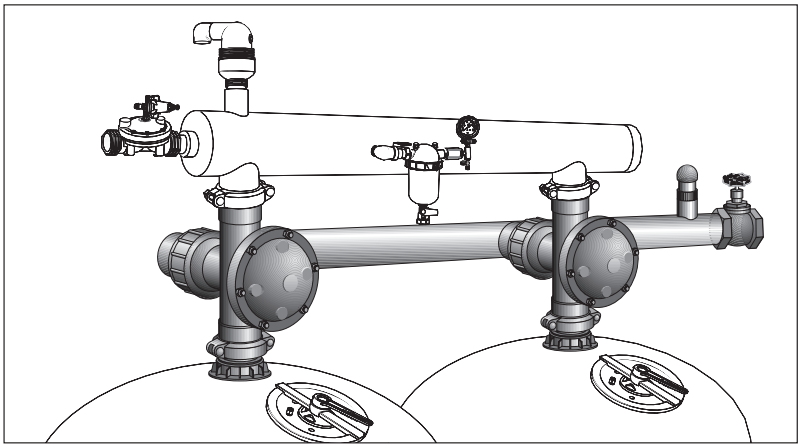


FIGURE 7 - Backflush manifold assembly

BACKFLUSH CONTROLLER AND HYDRAULIC COMMAND SYSTEM ASSEMBLY

- Follow the instructions for the installation of the backflush controller from the manufacturer.
- The bottom of the backflush controller accepts two 1/8" x 8mm fittings for the Pressure Differential Switch marked HI (center) and LO.
- Attach the hydraulic command disc filter and pressure gauge assembly to the inlet manifold. A 1" Disc Filter is used and requires a connection fitting.
- Attach the pressure gauge assembly to the outlet manifold.
- Connect hydraulic control tubing from the HI Port of the Pressure Differential Switch on the Backflush Controller to the tee fitting labeled HP. This connects to the solenoid on the first AGF filter and continues until all the solenoids are connected. The last solenoid will have an elbow fitting. See Figure 8 and Figure 9.
- Connect hydraulic control tubing from LO port of the Pressure Differential Switch on the Backflush Controller labeled LP to the fitting of the pressure gauge installed in the outlet manifold.

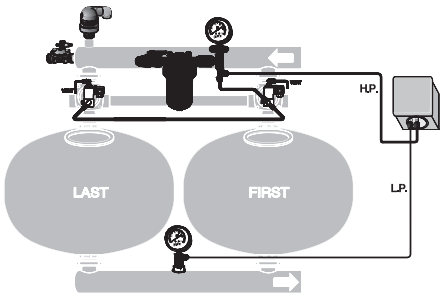


FIGURE 8 - Hydraulic command assembly

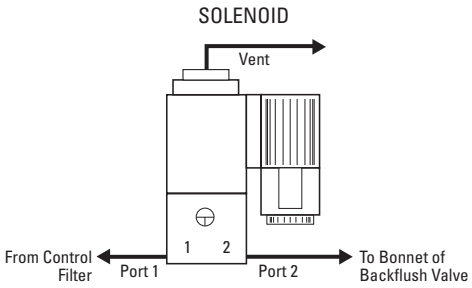


FIGURE 9 - Solenoid hydraulic connections

BACKFLUSH CONTROLLER ELECTRICAL WIRE HOOK-UP

- Use 1/2" conduit and 16 gauge wire or larger from the backflush controller to the solenoids.
- C is common to all solenoids 24VAC or 12VDC. For the 12VDCL (latching), use positive or red lead.
- M is master valve - used with Pressure Sustaining Normally Open or Electric valves to control the downstream flow. See Figure 10.
- Terminals 1-8 for each solenoid are the "hot" lead.
- Seal the wire access holes to the controller.

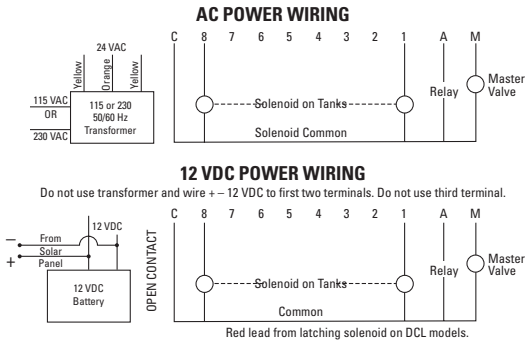


FIGURE 10 - Backflush controller wiring

SOLENOID ELECTRICAL WIRE HOOK-UP

- Loosen bolt (A). Pull hub assembly off. See Figure 11.
- Remove (D) and push terminal (C) out with a screwdriver through the access port.
- Connect wires to 1 and 2 of the terminal block (C). For DCL solenoids, connect negative (black) to 1. If no conduit is used, first put the wires through the 1/2" x 1/4" reducer.
- Reassemble the hub and seal on the access port (D).

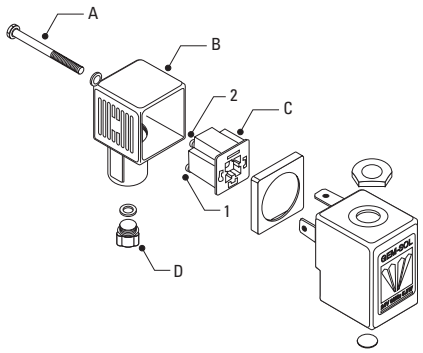


FIGURE 11 - Solenoid electrical wiring

ADDING THE SAND OR MEDIA

- Remove the top access cover of the AGF filter tank and before adding any media to the filter, inspect the inside of the filter tank to be certain there are no foreign objects in the tank. Check the "mushroom" covers and connector pins to be sure they are all in place and secured straight.
- Fill each tank through the top access port with the sand media to the level indicated on the label affixed to the filter tank exterior.

SILICA SAND DATA

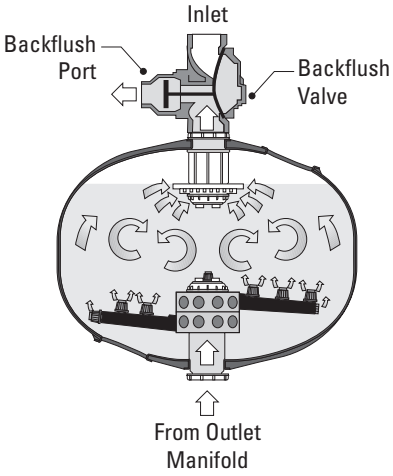
MEDIA TYPE	MESH RANGE	MEAN EFFECTIVE SIZE (MM)	UNIFORMITY COEFFICIENT	MINIMUM BACKFLUSH FLOW
CRUSHED SILICA 12	80-130	1.1 - 1.2	1.5	240 GPM
STANDARD SAND 6/20	100-140	0.9 - 1.0	1.5	240 GPM
CRUSHED SILICA 16	155-200	0.6 - 0.7	1.5	200 GPM
U.S. SILICA 80	160-200	0.6 - 0.7	1.5	225 GPM
CRUSHED SILICA 20	170-230	0.45 - 0.5	1.5	180 GPM

NOTE: Use of gravel or any other material besides the recommended sand or silica media as indicated in the Silica Sand Data Chart, voids the warranty and can cause damage to the underdrain and tank structure.

BACKFLUSH OPERATION

BACKFLUSH PRINCIPLES

- During backflush, once a preset pressure differential or preset time is reached, the backflush controller will activate one solenoid (valve and filter tank) at a time to perform a backflush operation. The inlet port closes and the backflush port opens. This reverses the flow of water in the media filter; clean water from the other filters now flows into the filter from the bottom and through every mushroom with equal pressure, lifting the sand media and freeing the accumulated debris. The debris will be flushed out the top of the filter through the backflush valve into the backflush manifold to a suitable location. Only one filter should backflush at a time. The water which is backflushing one filter will have passed through the other filters and thus backflushing will be done with clean filtered water.
- As debris builds up in the AGF filter, a pressure loss will develop across the filter. The dirtier the filter becomes, the greater the pressure loss. When the pressure loss reaches a critical limit, the filter is dirty and in need of a backflush. Backflush controllers will sense the pressure loss through hydraulic connections and command a backflush sequence to begin when necessary.
- It is recommended to backflush every 2-4 hours regardless of pressure loss.



PRESSURE DIFFERENTIAL SWITCH (PDS)

- The PDS in the backflush controller reads the current pressure loss and has an adjustable needle which determines the set-point for backflush cycle initiation.
- The PDS has an adjustable setting from 0 to 15 psi. See Figure 12.
- The pressure differential is the combined headloss through the filter and the valve when the sand is clean. With the filter clean and in filtration mode, read the current pressure loss. This is the Baseline Pressure Loss for clean filters - usually 2 to 3 psi.
- To establish a backflush Set Point pressure, add 5 to 7 psi to the Baseline Pressure Loss and set the adjustable hand to this Set Point. The filter system will now enter into a backflush cycle any time this pressure loss Set Point is reached.

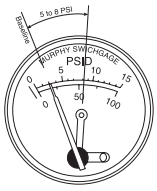
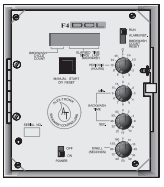


FIGURE 12 - PDS



BACKFLUSH CONTROLLER

BACKFLUSH OPERATION

TIME SETTINGS

- The Flush Time setting determines the duration of the backflush for each filter. The recommended Flush Time setting is 90 seconds. In low pressure applications, more time may be required. If over 90 seconds is required to make a proper backflush, it may be that the filter is becoming excessively dirty between backflushes. When 90 seconds fails to provide a complete backflush, decrease the pressure differential setting by 1 to 2 psi to decrease the period between backflushing cycles. NOTE: Finer grades of sand will require longer backflushing than coarser grades.
- The Dwell Time is the time period between the flushing of each filter in a given backflushing cycle. This is necessary to let the sand settle down and for the pump to recover pressure. A recommended Dwell Time is 20 to 40 seconds.
- The Periodic Flush time is the flushing interval in hours. This setting establishes a time schedule for backflushing to ensure that a backflush takes place if there is a failure in the pressure differential switch. Typical Periodic Flush times can be set anywhere from 2 to 4 hours depending on the water quality. To properly set the Periodic Flush time, the filter should be observed through several backflush cycles initiated by the pressure differential switch, recording the time between each backflush cycle. Multiply the amount of time between backflush cycles by 1.2 to get the proper Periodic Flush time setting.
- It is common for open water sources to have different quantities of debris during the irrigation season and it is important to adjust your backflush settings in response to this change.

MANUAL BACKFLUSHING

- All backflush valves can be operated manually. A manual override knob is installed on the base of all non-latching solenoids. See Figure 13.
- During normal operation, the knob will be facing down. Turning this knob 90 degrees to the left or right will activate the solenoid and put the media filter into a backflush mode. Backflushing should be maintained until the water becomes clear. At this point, the knob can be returned to the auto position for normal irrigation.
- Backflushing normally requires 90 to 120 seconds.

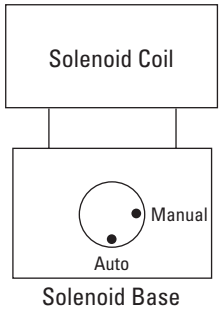


FIGURE 13 - Solenoid manual override

BACKFLUSH PRESSURE

- Filters must have both adequate pressure and water velocity for proper backflush. It is recommended that AGF filters have a minimum of 30 psi of pressure on the downstream side during backflush.
- When the system consists of only two or three filters, the water pressure must be carefully considered. Backflushing requires that all the water flows through one filter to backflush the other filter. This can change the pressure drop through the one filter, resulting in inadequate pressure for the other filter - especially when using a pump with a steep characteristic curve.
- For low pressure or low flows, consult an Authorized Netafim Dealer for recommendations. Generally the addition of a Pressure Sustaining Normally Open Valve downstream of the filter station will increase backflush efficiency.

BACKFLUSH RESTRICTION VALVE ADJUSTMENTS

- The backflush flow must be restricted in order to prevent the media from being washed out with the dirty water. In the backflush mode, the media is in a turbulent suspension with the water and debris. Proper adjustment of the Backflush Restriction Valve will allow for proper backflush flow with only a trace of media being lost through the backflush. A small loss of media is considered optimum.
- To check if media (sand) is being washed out with the backflush water, place a screen over the outlet of the backflush manifold and examine the water for sand. Another method is cupping your hand under the backflush water as it exits the backflush manifold and feeling for sand grittiness.
- Adjust the Backflush Restriction Valve. Repeat this adjustment at normal system operation and perform an automatic backflush by pushing the Manual Start button.

SYSTEM START-UP

PRE-START

- Make sure all grooved victaulic couplings and connections are tight.
- Secure the top cover and tighten.
- Open field valves to allow water flow from filters to field.
- Open the backflush manifold throttle valve to fully open.
- Check the backflush controller and solenoid operation. Solenoids will click when an electric signal is sent and the metal screw on top of the coil becomes magnetic (test with a screwdriver- it sticks). After checking, set backflush controller in the off position.

START-UP

- Open the main valve supplying water to the filters and start the pump.
- Let the downstream pressure gradually build up to 30 psi - can be checked via pressure gauge on the downstream manifold.
- Start a manual backflush using the override on the solenoid for each filter. Run backflush cycle for at least 3 minutes or until you can see clear water coming out of the backflush manifold. Repeat for each filter.

Note: New media (sand) has contaminants and fines. After a few backflush cycles, it will be removed and the water will become clean.

- Check for any leaks and tighten the cover ports a little more if necessary.
- Start automatic backflushing with the backflush controller after confirming the settings are correct.

SYSTEM MAINTENANCE

MONTHLY AND SEASONAL MAINTENANCE

- Check the control filter every few weeks and clean the filter element.
- Inject Chlorine upstream of the filters during and at the end of the season or as necessary to control algae and bacterial growth.
- At the beginning of the irrigation season, fill the filter with water and add Chlorine. Let stand for 30 minutes. Backflush for 2 minutes and begin irrigation.
- At the end of every irrigation season, add Chlorine to the water in the filter for 30 minutes and allow to set. Backflush for at least 2 minutes. Drain all the water from the filter, leaving it dry and close the inlet and outlet valves.
- The Chlorine injection rate in GPH is:
  Strength (10% solution = 10 factor) x GPM x ppm Chlorine x 0.00006 = gallons of Chlorine per hour
  Example: 10% solution x 40 GPM x 25 ppm Chlorine x 0.00006 = 0.6 GPH
- Shock treatments may require 20 to 50 ppm.
- Flush the entire system after the treatment as Chlorine is a dangerous chemical and all application regulations and safety rules must be observed. Contact a qualified person for further assistance.
- Recommended monthly - open upper cover and check sand level. Add media if required.
- Check for external damage to the filter. Any damage to the protective coating of the filter must be repaired as soon as possible.
- At the end of the irrigation season, initiate a backflush cycle, at a minimum of 30 psi, to ensure a clean sand bed during the off season.

REPLACING MEDIA (SAND)

- The sand media is usually changed every 3 to 5 years depending on how much the system operates. The sand edges become rounded and sharp edges are necessary for proper filtration.
- Close all the valves and verify that no pressure remains in the filter tanks.
- Open the top service cover.
- Open the 3" plug on the lower cover, start the pump, and drain all the water and sand from the filter. Remove the lower cover for faster draining. Do not use sharp tools to help remove the sand as mushrooms can be damaged.
- Rinse and clean the inside of the filter tank.
- Check the mushrooms.
- Close the 3" plug and install the lower cover (make sure threads are free of sand).
- Fill the tank with water and add the new sand media.
- Open all the valves for normal operation and readjust the Backflush Restriction Valve in the backflush manifold. See Backflush Restriction Valve Adjustments on page 9 for further instructions.

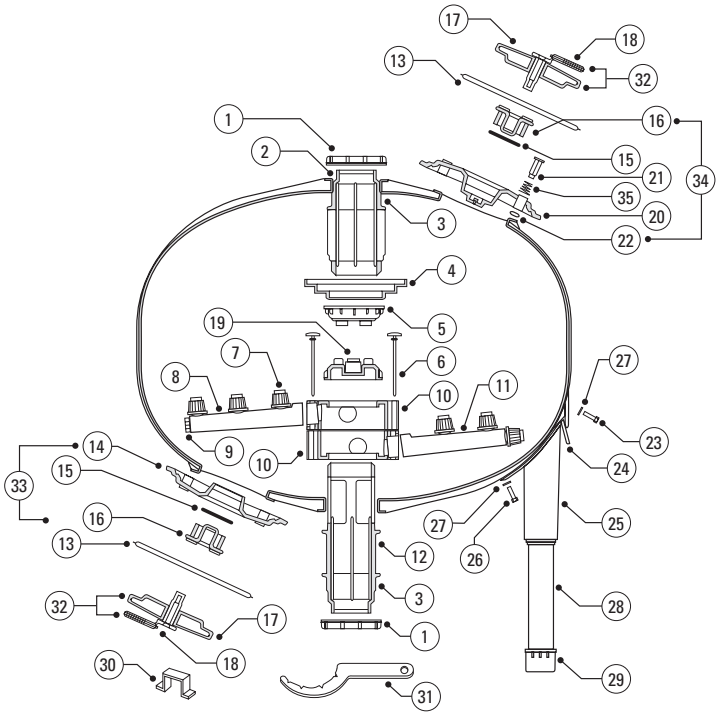
NOTE: Use of gravel or any other material besides the recommended sand or silica media as indicated in the 'Adding the Sand Media' Chart on page 10, voids the warranty and can cause damage to the underdrain and tank structure. Tanks must be filled with water prior to adding recommended media. Failure to do so could damage the internal components and void the warranty.

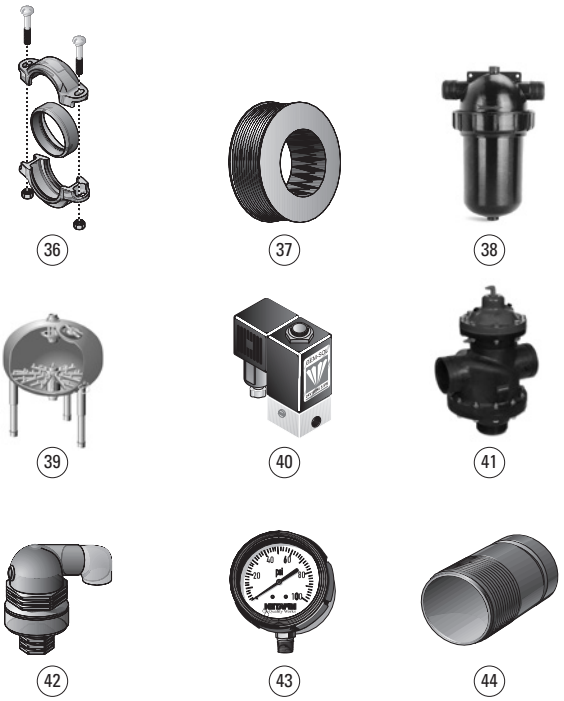
TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSES	SOLUTIONS
Filter station differential increases rapidly during operation, especially at start-up	Excessive flow rate	During system start-up, throttle downstream flow to the designed flow rate. Use a manual valve or pump control/sustaining valve.
	Unusual concentration of contaminants	Check water source quality. See an Authorized Netafim Dealer for assistance.
All the filters in station will not backflush	Controller output problem	Check that the controller is on and programmed correctly. Attempt to manually actuate the solenoid with the clock. The solenoids should emit a clicking noise when actuated.
	Insufficient downstream pressure for backflush	Use the manual knob on the base of the solenoid to backflush one tank. Note the downstream pressure reading. If the pressure falls below 20 psi, it may be necessary to throttle the field valves to build up sufficient backflush pressure.
	Hydraulic command system failure	Check to be sure the isolation valve is in the "on" position. Remove one of the hydraulic tubes leading to the solenoids and verify that pressurized water is available. Inspect the hydraulic command filter for contamination.
Filter station differential remains high after backflush	Gauge error	Check gauge differential on manifolds against the differential gauge in the controller. If there is a discrepancy, check readings with a new gauge.
	Insufficient backflush pressure	Verify that the downstream pressure during backflush is at least 20 psi. If it is not, it may be necessary to throttle a valve downstream of the filter station to develop sufficient backflush pressure.
	Insufficient backflush flow	Check the Backflush Restriction Valve setting. Adjust according to the procedures outlined in the Backflush Restriction Valve Adjustments section.
	Excessive contamination of media	Open the access cover and inspect the media bed after a backflush. Verify that the sand level is correct and that there is not an excessive amount of debris in the sand. Verify that the backflush manifold line meets the size requirements outlined in the Backflush Manifold Assembly section.
Leaking around grooved couplings	Pinched gasket	Remove couplings and inspect gasket. Apply gasket lube to prevent pinching.
	Torn or cracked gasket	Remove torn gasket and replace.
	Components out of alignment	Remove couplings and gaskets and inspect grooved fittings. Fittings should join squarely with no major gaps.
Leaking around access ports or top access vent	Debris between gasket and seat	Remove gasket and inspect gasket and seat for any debris.
	Torn or cracked gasket	Inspect gasket for cracking or other damage - replace if necessary.
	Cracked access cover	Inspect access cover for cracks or damage - replace if cracked or defective.
	Torn or cracked O-ring	Remove top access cover and inspect vent O-ring for damage - replace if necessary.
	Damaged vent	Inspect vent for possible cracks - replace if necessary.
One or several filters will not backflush	Controller output problem	Check for correct controller output with multi-tester or switch solenoid wires with another station to check for output signal.
	Solenoid wiring is defective	Use ohmmeter to verify that wiring is intact. Attempt to manually activate the solenoid with the knob on the base.
	On filters with manual selector valve - valve setting incorrect	Verify that selector valve knob is pointed towards the solenoid.
	Solenoids clogged or damaged	Open solenoids and inspect internal ports for evidence of clogging. Open carefully to avoid losing the internal spring-loaded plunger.

REPLACEMENT PARTS

Key	Item Number	Model Number	Description
1	70620-008650	27AP28200012	Locking Nut
2	70620-009300	27AP28200014	Inlet
3	70620-007070	27AP50060482	Seal
4	70620-009250	27AP28200018	Distribution Plate
5	70620-008660	27AP28200010	Upper Sealing Nut
6	70620-009000	27AP28200028	Pin
7	70620-009400	27AP28200030	Mushroom (55 per tank)
8	70620-009270	27AP22480052	Upper Diffuser Complex With mushrooms
9	70620-008850	27AP28200026	End Cup
10	70620-009260	27AP28200020	Drum
11	70620-009280	27AP22480054	Lower Diffuser Complex with Mushrooms
12	70620-008500	27AP28200016	Outlet
13	70620-009500	27AP50050548	Cover Seal
14	70620-008780	27AP28200324	Lower Cover
15	70620-003975	25AP50032235	O-Ring 2-235
16	70620-008820	27AP28200340	Lower Plug
17	70620-008600	27AP28200036	Bridge
18	70620-008700	27AP28200038	Tightening Screw
19	70620-009100	27AP28200011	Lower Plug Assembly
20	70620-008800	27AP28200322	Upper Cover
21	70620-009590	27AP28200046	Vacuum Release
22	70620-007060	27AP50032310	O-Ring 2-310
23	-	27AP50403830	W 3/8" x 1 1/4" Screw
24	-	27AP50760248	Handle
25	70620-009570	27AP28200040	Leg Housing
26	-	27AP50403840	W 3/8" x 1 1/2" Screw
27	-	27AP50409138	3/8" Washer
28	70620-009600	27AP50501400	Leg
29	70620-008900	27AP28200050	Base Cup
30	70600-009460	27AP50760022	Lower Drain Plug Tool
31	70600-009450	27AP50760021	Locking Nut Wrench
32	70620-008620	27AP22480056	Bridge Complete
33	70620-008760	27AP22480032	AGF Lower Cover Complete
34	70620-008750	27AP22480022	AGF Upper Cover Complete
35	70620-008770	27AP50400018	Spring
36	70040-003100	44VIC04	Victaulic Coupling
37	40001-000381	15CONT8C10	8mm Control Tubing (10' coil)
38	70641-001600	25A47-120	1" Manual Disc Filter
39	70640-015000	27AGF48	48" AGF Tank Only
40	70800-003260	61BBC-024	24VAC Brass Solenoid
41	71000-013430	61BFG4GPB	4" Series 350 Backflush Valve
42	70561-001700	65ARIB2PP	2" Combination Air Vent
43	00110-001790	6809020-100	Pressure Gauge 0-100 psi
44	77350-017720	44NIPVS04	PVC Nipple 4" Slip x Groove





NETAFIM USA
5470 E. Home Ave.
Fresno, CA 93727
CS 888 638 2346
www.netafimusa.com

A048 6/13