

Equeron Equilibrium Drive™ Automatic Filters

Operation and Maintenance Manual

12 Nov 2025



INTRODUCTION

This manual has been generated to assist you with the Installation, Operation and Maintenance of the Equeron™ Automatic Water Filter.

You will be working with a product that is the culmination of significant thought, design and experience.

We invite you to visit our website for details and to provide feedback so the product can continue to evolve.



www.equeron.com

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1. SAFETY

Personal Protective Equipment (PPE): PPE should be worn at all times when working on this equipment.



Risks:

- The machinery you will be working on will be under high hydraulic pressure and have electronic components associated with its operation. Failure to follow proper safety guidelines can result in injury, severe permanent disability or death.
- Several components that make up the construction of this equipment are heavy and should be handled with proper lifting-securing devices.
- The use of “Lock-Out” and “Tag-Out” devices is advised.

Your company should have already established guidelines for working on this type of equipment. If you are unsure of how to proceed then **STOP** and contact your manager or supervisor for advice.

Guidelines have already been established by your local State, Government or Country.

2. GENERAL DESCRIPTION

The filter was designed to automatically remove small particulate from flowing pressurized water. The water filter is constructed of durable 304 or 316L stainless steel and is resistant to corrosion.

Water quality and composition are important factors to consider when selecting this filter for your application. This should have been discussed with our factory or sales team prior to purchase.

The filter can be installed indoors or outdoors

Automatic Operation: The filter is fully automated and will clean itself when debris accumulates on the filter screen element. Cleaning is determined by pressure loss across the filter due to the screen becoming covered with debris. A pressure sensing device constantly monitors Inlet versus Outlet pressure. When a difference between the Inlet and Outlet reaches 0.5 Bar (7 psi) the filter controller will open the backwash valve and purge the screen of the accumulated debris. The cleaning cycle is very efficient and takes only 15 seconds to complete.

Minimum Temperature: The filter and accessories must be protected from freezing temperatures (less than 0°C / 32°F). Water allowed to freeze within the filter will cause extensive damage and necessitate costly repairs and/or complete replacement of the filter.

Maximum Temperature: The filter also has a maximum allowable water temperature of 80°C (176°F) due to the internal materials of construction. Exceeding this temperature may result in component failure.

Salinity: This filter is not suitable for seawater service, maximum chloride levels must **NOT exceed 300 mg/L with 304SS and 1,100 mg/l with 316L.**

Water Chemistry: Water with high chemical content or pH can attack the stainless steel and damage the filter.

Water Pressure: Water pressure is also necessary for proper operation of the filter. The minimum recommended pressure is 2.4 Bar (35 psi) and the maximum pressure for a standard filter is 10 Bar (150 psi).

Not meeting or exceeding these requirements can cause improper operation or damage to the filter. High- and Low-pressure options are available and need to be discussed with Equeron™ prior to purchase.

3. HANDLING

Weight: The dry filter can weigh as much as 250 kilograms (550 pounds). Exact weights can be found on the website.

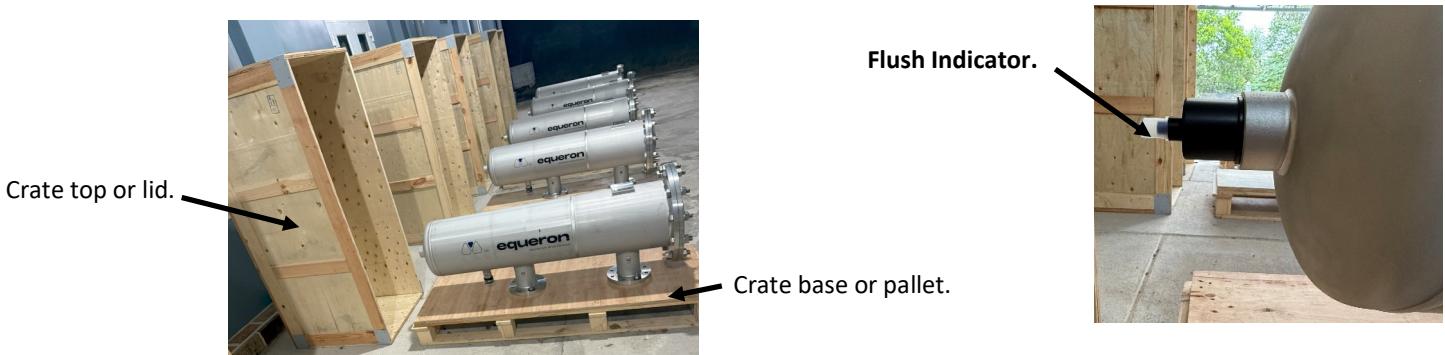
Packaging: Your filter is packed in a fully enclosed treated wooden crate suitable for import/export. The crate is strong and designed to protect the filter and all attached accessories to complete installation.

Inspection: Inspect the crate for damage upon its arrival at your location and report any damage to the shipping company for compensation.

Unpacking: Remove the crate sides and cover by removing the screws and/or crating straps securing it to the wooden shipping base/pallet. Use caution when lifting the wood as it can be heavy. With the sides and top removed you will have a full view of the filter and how it is secured to the shipping base as shown below.

Unpack the Lid Davit and install in the Davit bracket on either side of the filter tank.

Unpack the indicator and install on the 2 inch coupling on the tank end dome.



There are 4 carriage bolts securing the filter flanges to the shipping base (Figure 1). These can be removed with a wrench.

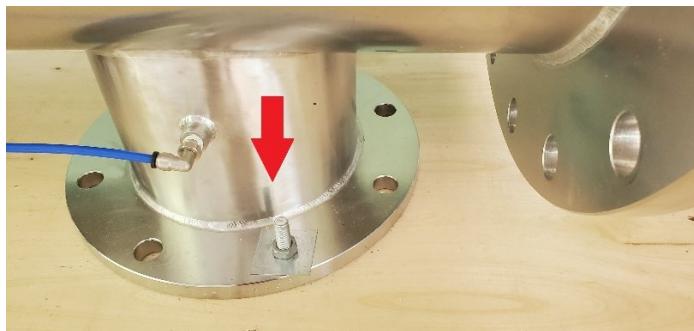


FIGURE 1

Positioning: Use caution as the filter is now free to move. The filter should now be lifted and moved to the installation site. It is recommended that (2) weight corresponding nylon straps be secured around the filter main body for transportation. The dry filter can weigh as much as 250 kilograms (550 pounds). Exact weights can be found on the website.

The filter should only be moved with a forklift, hoist or crane with proper lifting capacity by an experienced operator.

4. SITE REQUIREMENTS

Flanges: The filter should be installed on piping that matches the flange size of the filter.

Supports: The piping should already have proper supports that accommodate both the piping and filter weight once installed. This piping should be secure and not allow any movement of the filter once bolted to the piping flanges. There should be adequate room to service and inspect the filter once installed.

Access: Access to the filter screen and cleaning mechanism is through the large cover bolted to the filter. The cover can weigh as much as 37 kg (82 lbs.) so use lid davits if provided and caution when removing. A minimum distance from the filter cover to any obstruction is shown in Figure 2. Failure to provide the necessary clearance will render the filter unserviceable.

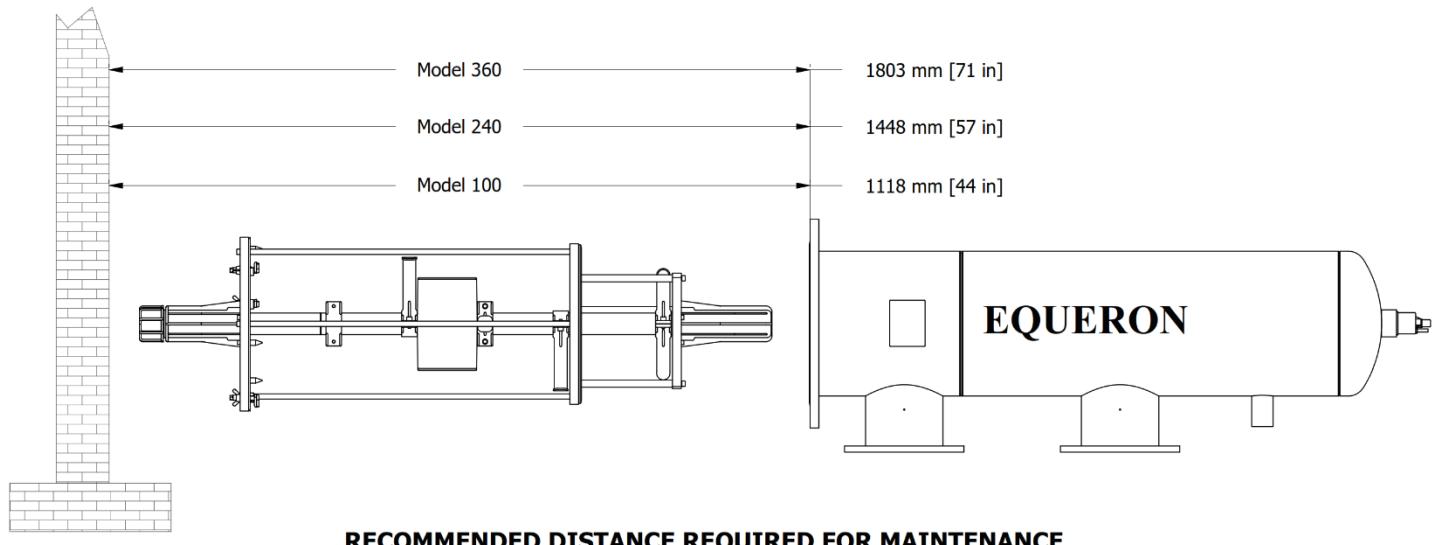


FIGURE 2

Lid Davit: Filter Models 240 and 360 come standard with the Davit feature for safe and easy handling of the cover. Install Davit as shown in Figure 3. The Davit can be installed on either side of the filter.





Drain Connection: The filter will need to discharge backflush water to an adequately sized floor drain, drainpipe or holding tank. For backwash volume consult with Equeron™ specifications or visit the website.



Power: The filter will require electric power for a filter controller (if controller is required) and filter backflush valve. The power requirements can range from 12 VDC up to 480 VAC, 3PH depending on equipment selected. Our standard Equeron™ EQ5 Filter Controller (shown) requires either 120 or 240 VAC. Refer to the EQ5 Filter Controller Manual for additional information.

5. INSTALLATION

Incorrect filter installation will cause extensive damage to the filter cleaning mechanism and will void the warranty.

Orientation: The filter can be installed in any orientation as it is not affected by gravity. The filter body oriented in the “horizontal” position is the most common installation and allows for easy access to the filter cover and internal mechanism.

Access & Draining: The ability to safely and easily remove the internal screen and cleaning mechanism is critical.

Ease of access is the most important consideration when installing the filter (please refer to section “4. Site Requirements”). You will be required to service the filter on an annual basis. Keep in mind that the filter will be full of water when attempting to service it and will require draining.



Flow Direction: It is essential the water flows in the correct direction through the filter.

The filter “INLET” and “OUTLET” can be identified by the arrows on the corresponding pipe. Make sure that UNFILTERED (Influent) water enters the filter inlet flange and that FILTERED (Filtrate) water exits the filter outlet flange.

Inlet/Outlet Valves: We recommend the installation of isolation butterfly valves at the filter INLET and OUTLET flanges. They should be sized to match the filter flange size and equipped with either a lever or gear actuator. Also, we strongly recommend that a check valve be installed on the OUTLET flange if a possibility of reverse flow exists (pumping uphill). Reverse flow will damage the filtering screen and possibly other components.

Closing the isolation butterfly valves during filter service eliminates draining all the water within the system.



Bypass Piping: It is also recommended to install bypass piping around the filter.

Backflush Valve: You will need to install the backflush valve to the filter. This valve should have been purchased with the filter and sized to match the flush port piping. The valve should be installed with a union where it attaches to the filter body.

Backflush Drain: The discharge side of the valve should be connected to a properly sized drain.

It is important that this piping is free flowing with no restrictions or back-pressure.

The pipe diameter used should be one pipe size greater than the size of the valve. The flush valve piping should allow for restriction free gravity flow to the drain.



Keep pipe fittings to a minimum and if possible, use 45-degree bends instead of 90-degree to help maintain desired free flow.

Flush piping should never be elevated above the height of the flush valve.

Flushing against a standing column of water or a pressurized pipe will not allow for complete cleaning of the filter screen and will cause plugging of the filter.

6. CONTROLS

EQ5 Controller is the standard Equeron™ Filter Controller. Refer to the EQ5 Manual as shown on the website. Scan the QR Code on the EQ5 Controller's faceplate for instructions. (See Figure 4)



FIGURE 4

By design the filter is very easy to operate.

As mentioned earlier in this manual, water pressure is all that is required. Sophisticated controls and monitoring systems are not necessarily needed.

Connecting a manually operated ball or butterfly valve to the flush port will do the job. This flush valve would need to be opened for about 10 seconds when pressure loss due to debris accumulation on the screen reaches 0.5 bar (7 psi) to clean the screen element. Allowing the pressure loss to increase beyond 0.5 bar (7 psi) can damage the filter, thus the need for automation.

We'll assume you don't have the time to observe the filter all day. So, we can supply filter controllers with basic functions and more advanced models with monitoring and feedback options.

We can also provide the logic necessary for communication with an existing control system.

7. STARTUP/COMMISSIONING

With the filter and ancillary equipment properly installed, it is now time to pressurize the filter and process water.

Steps:

1. Confirm that unfiltered water is available and can be introduced to the filter with adequate pressure (usually 2.4 bar or 35 psi or more).
2. Review the entire installation and make sure that all required supporting equipment can be utilized. This includes pumps, isolation and bypass valves, open drains, check valves, alarms and contacts.
3. Notify all participating personnel that the filter will be pressurized and tested.
4. The outlet isolation valve should be closed. Introduce water into the filter inlet by opening the isolation valve installed at or near the inlet flange. This valve should be slowly opened partially to prevent pressure surges, 10% open is adequate. We want the filter to slowly pressurize so we can check for any leaks in the piping or control tubing and fittings. A partially opened valve can be quickly closed should leaks be detected and minimize standing water in the immediate area.
5. Once it is determined that there are no leaks, the inlet isolation valve can now be opened 100%. Now you can slowly open the outlet isolation valve allowing flow through the filtration system.
6. You can now observe pressures with the pressure monitoring system. (Figures 5 & 6)



FIGURE 5



FIGURE 6

7. It can be identified by the pressure gage and associated tubing and fittings. This pressure gage system will be installed on the filter outlet pipe directly above the mating flange. You should notice that the gauge is attached to a 3-position ball valve. This allows pressure reading of the filter's INLET, OUTLET and FLUSH chamber pressures all from a single gage.
8. Read the INLET pressure and make sure that it meets or exceeds the minimum required operating pressure of 2.4 Bar (35 psi) and does not exceed the maximum allowable pressure of 10 Bar (150 psi). If either reading does not meet or exceeds allowable limits DO NOT proceed with startup and correct the issue.
9. If pressures are within limits you will now want to initiate a manual backflush of the filter. This is done to purge the filter of any trapped air that may have entered the system and confirm that the internal cleaning mechanism is working.
10. A manual backwash is initiated at the filter controller as described in the controller's manual.

11. It is recommended to initiate at least 2 manual backwashes. The first one will be to expel air within the filter and the second one is for observing the flush indicator at the end of the filter housing (Figure 7).

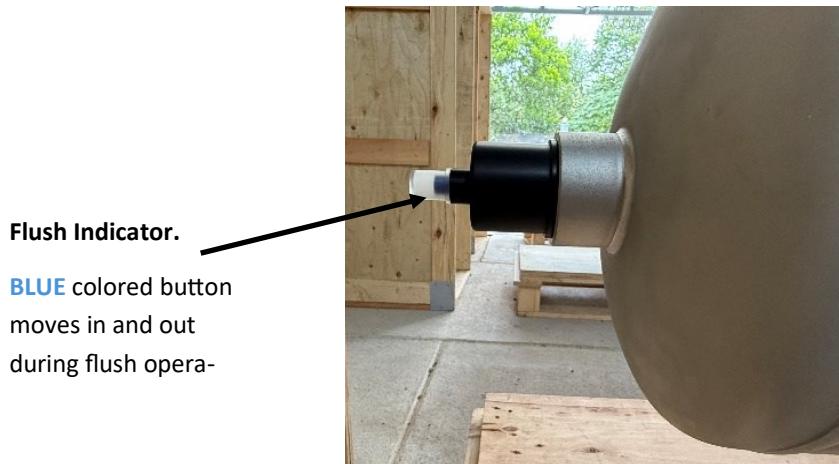


Figure 7

12. The indicator has a **BLUE** colored button that should move out of the plastic housing at least one time during the preprogrammed 15 second backwash cycle.
13. If motion is not detected proceed to Section 9 TROUBLESHOOTING of this manual.
14. If motion is detected, Startup can continue.
15. You will now open the isolation valve installed at the filter outlet flange. This valve should only be opened approximately 10% so that pressure surges are prevented and water quality can be evaluated before introducing full flow through the filter.
16. Upon opening of the valve, immediately observe the pressure differential gauge.
17. A clean filter will indicate zero on the gage. As debris accumulates on the screen you will see an increase in the pressure differential.
18. At a setting of 0.5 Bar (7 psi) the filter will automatically enter the backwash cycling for the 15 second duration.
19. After the backwash duration, the pressure differential should return to zero. An increase to pressure differential setpoint can happen very quickly if the water quality is poor. This is common on startup as the water has never been filtered before or there was a lot of construction debris left inside the piping.
20. Normal cleaning interval times can be as frequent as 5 minutes with longer times preferred. If the interval time is normal, then the isolation valve at the filter outlet can be opened to 100% and the filter allowed to operate at designed capacity continuously.

8. DAILY OPERATION

The Equeron™ Filter is designed for years of trouble-free operation.

Frequent adjustments are not necessary.

Recording the number of backflush cycles on a daily, weekly or monthly basis can be an indicator of fluctuations in water quality. If cycles are consistent then water quality can be assumed stable. If cycle times have a large degree of variation, then the water quality may be unstable.

Weather, temperature, time of year, and surrounding environment can all contribute to fluctuations.

The filter controller will constantly monitor the filter and backflush accordingly. Normal wear of critical components inside the filter can cause decreased filter efficiency that can also result in more frequent or incomplete backflushing of the filter element.

Schedule the annual inspection of your filter and replace worn components for trouble free operation.

9. MAINTENANCE

9.1. TOOLS REQUIRED:

The following tools are required for maintenance purposes:

- 41 mm wrench for Models 240 and 360 / 36 mm wrench for Model 100 or adjustable wrench
- 5 mm hex wrench
- 3 mm hex wrench
- 2.5 mm hex wrench
- snap-ring pliers



Identification of Parts: refer to the exploded parts drawing in SECTION 11 for help in identifying components mentioned below. *Indicates parts included when purchasing the standard maintenance parts kit.

9.2. INTERNAL ASSEMBLY REMOVAL

Prior to proceeding with any maintenance related activities read Section 1 with reference to risks associated with operation and maintenance and recommended PPE.

Close the Inlet and Outlet isolation valves.

Depressurize the filter, this can be accomplished by opening the flush valve. Check that the pressure in the filter is 0. **NEVER OPEN A PRESSURIZED FILTER.**

Drain: The filter housing can be drained of water by removing the 25 mm drain plug installed in the filter cover prior to removal of 41 mm (Model 240/360) 36 mm (Model 100) bolts.



Remove Cover: Use caution when removing the filter cover as it is heavy. If your filter has the Davit option, the filter cover will be supported which allows for safe and easy removal.

Remove Internal Assembly: With the cover removed you will next locate and turn counterclockwise the 3 wingnuts attached to the bulkhead retainers. The slot machined in the wingnut indicates the position of the lock. (Figure 8)



FIGURE 8

When the slot is perpendicular (across) the diameter of the tank the bulkhead is **locked**.

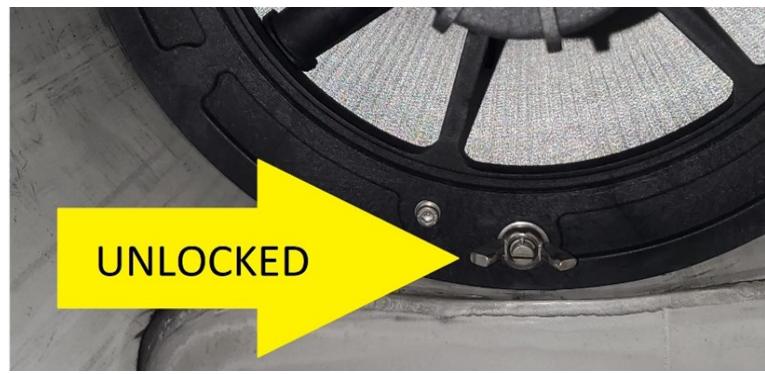


FIGURE 9

When the slot is in line with the diameter of the tank the bulkhead is **unlocked**. (Figure 9)

The wingnuts should rotate 90 degrees and when in proper position allow you to slide the entire assembly towards you and out through the filter cover opening.

The internal assembly is heavy and may require 2 people. Care should be taken not to drop the assembly or dent the filter screen element.

If possible, pressure wash the entire assembly and screen prior to continuing with maintenance.



Install Inlet Bulkhead with the arrow pointing upward (12 o'clock) when the filter In/Outlet flanges are horizontal. This helps prevent the Locks from hitting the guide rods in the filter body.

9.3. REVERSER/PAWL REPLACEMENT

1. Remove the large cap (33) that is attached to the reverser housing (31). This will expose the reverser holder (30).



2. The Reverser Holder is 2-piece snapped together. The Reverser Holder may be snapped apart so the Pressure Balance housing may be removed for easy access to the Pawl Retainer and its mounting screws.
3. Reach inside the screen or grasp the water motor (19) and pull the collector tube (18) assembly towards you. This should expose the reverser screw (29). (Figure 10)
4. Rotate the reverser screw until it is fully extended and allows access to pawl retainer (27) and the 2 mounting screws.
5. Remove the 2 mounting screws (E) using a 3mm hex wrench. (Figure 11)

Notes: You might want to put a cardboard or whatever to cover the inlet hole so you don't drop tools or parts down the inlet pipe. Especially the pawl since it is located right over the inlet and it can fall out of the assembly very easily.

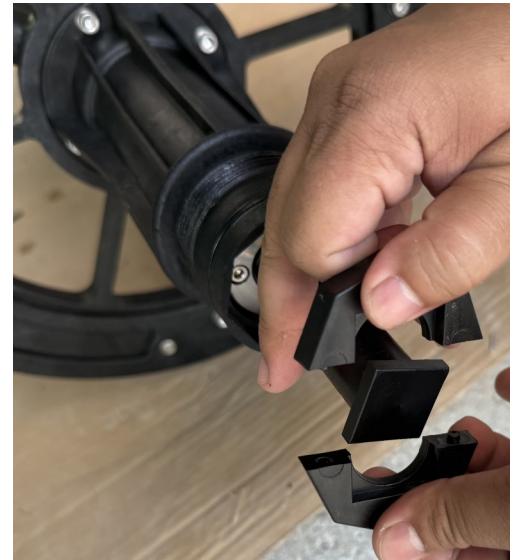
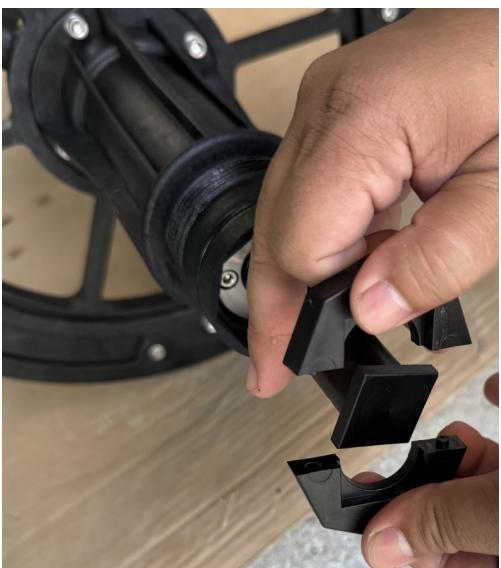


FIGURE 11



5.

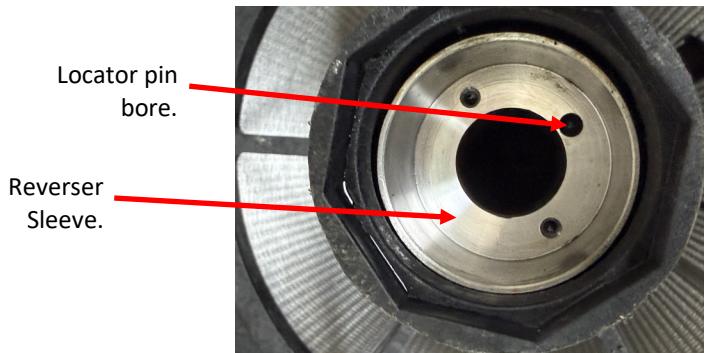


- With the screws removed you can remove the pawl retainer (27), pawl (28) and reverser (29) together.
- Replace the reverser and reinstall all components in reverse order. Installing the Pawl Retainer requires aligning the Pawl Retainer locator pin with its bore in the Reverser Sleeve.



Locator pin.

Pawl Retainer.



Locator pin bore.

Reverser Sleeve.

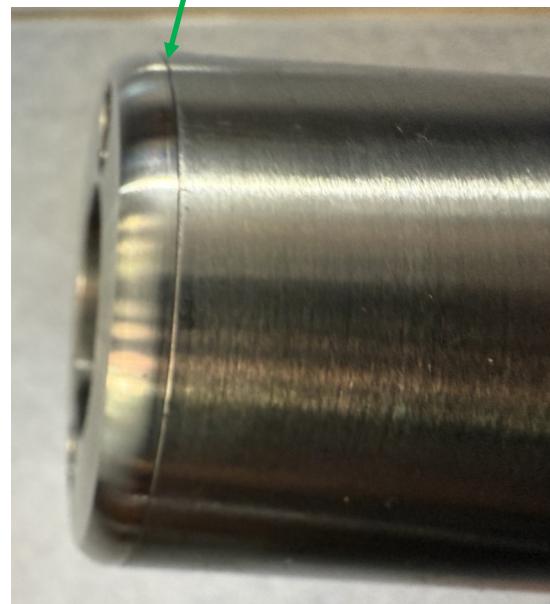
CORRECT

Locator pin **CORRECTLY SEATED** in its bore.



INCORRECT

Locator pin **NOT SEATED** in its bore.



Install Inlet Bulkhead with the arrow pointing upward. This helps prevent the Locks from hitting the guide rods in the filter body.

9.4. BUSHING REPLACEMENT

1. Remove reverser as described in SECTION 9-3.
2. Remove housings (5) and (31) from the bulkhead (25) and support plate (9) by removing the 8 housing retaining screws (B) with a 5mm hex wrench.
3. Remove housings and locate the snap-ring (8) inside the housing. Remove snap-ring with snap-ring pliers. (Figure 12)



FIGURE 12

4. The bushing assembly can now be removed from the housing and replaced.
5. Use silicone O-Ring lubricant generously on the inside and outside of the bushing seals to aid installation. (Figure 13)



FIGURE 13

6. Reinstall the snap-ring making sure it's fully seated in its groove.
7. Before reattaching the housings to the bulkhead apply silicone to the polished ends of the scanner tube (18) and the internal seals of the bushings. (Figure 14)



FIGURE 14

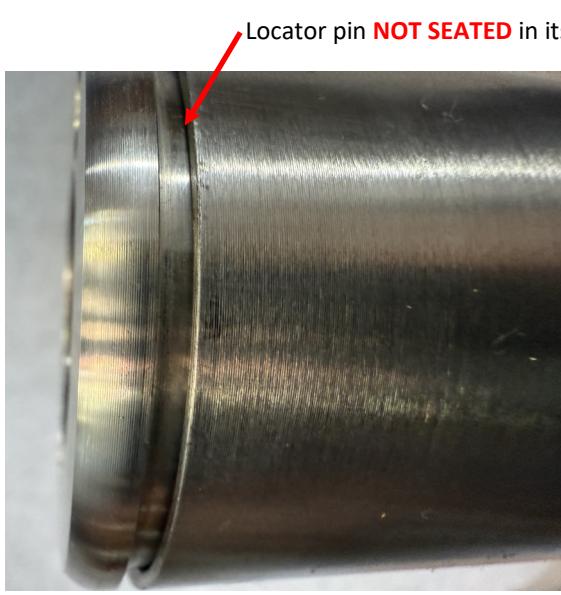
8. Temporarily install the Pawl Retainer. (Figure 15 and 16) The Pawl Retainer has a radius that allows the Collector Tube to be inserted at that end. Failure to install the Pawl Retainer may result in damage to the Bushing Seals.



FIGURE 15



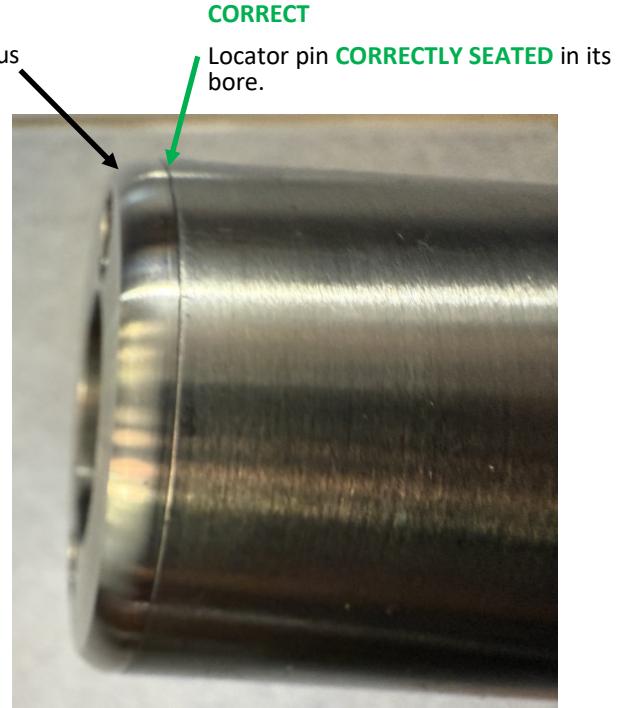
FIGURE 16



Pawl Retainer radius

INCORRECT

Locator pin **NOT SEATED** in its bore.



CORRECT

Locator pin **CORRECTLY SEATED** in its bore.

9. Take care not to damage, roll or pinch the seals inside the bushings as the Collector Tube is pushed into the Bushing Assembly.

10. Reinstall 3 mm retaining screws that attach the housings to their mating surface.

9.5. FLOATING SEAL-LOWER BULKHEAD

1. Remove hydraulic Pressure Motor (19) from the Collector Tube assembly (18) by removing the 2 retaining screws (B) with a 5mm hex wrench.
2. From Lower Bulkhead (12) Remove 4 Spacer Bar (22) retaining screws (C) with a 5mm hex wrench.
3. Separate the Lower Bulkhead assembly from the Spacer Bars. (Figure 17)



FIGURE 17

4. Remove 3 Floating Washer Retainer screws (D) using a 2.5mm hex wrench.
5. Remove retainer (15) and install new Floating Washer (14). (Figure 18)



FIGURE 18

6. Reinstall retainer and 3 screws. Check that the Floating washer moves freely under the Floating Washer retainer.
7. Reattach Lower Bulkhead assembly to Spacer Bars.

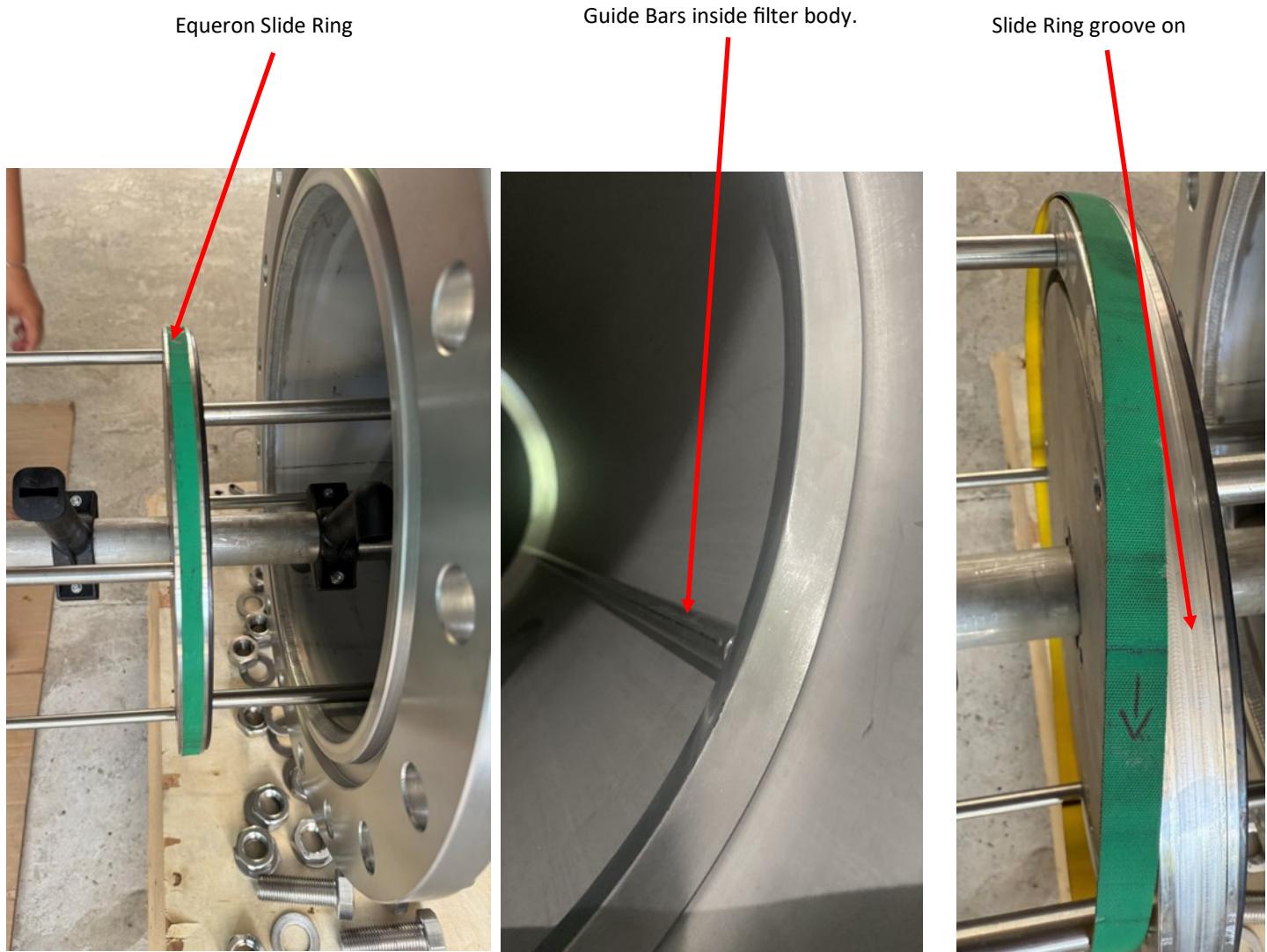
8. Lubricate polished end of Collector Tube as it needs to slip into bushing assembly.



9. Make sure screen element (23) and seal (13) fit correctly into the bulkhead groove prior to tightening the 4 Spacer Bar 5mm retaining screws.
10. Debris in the bulkheads' grooves will cause misalignment and leakage past the screen seal, thoroughly clean those grooves.

9.6. LOWER BULKHEAD SLIDE RING

1. The Green looking gasket on the Lower Bulkhead OD is Equeron's Slide Ring. This Slide Ring is used to reduce the friction between the Lower Bulkhead OD and the guide bars inside the filter body while sliding the internal assembly into the filter body.
2. Replace the Slide Ring if damaged and the internal assembly will slide much easier during installation.



9.7. MAGNET REPLACEMENT-SCANNER

1. Remove lower Collector Tube housing (5) from the support plate (9) by removing the 4 retaining screws (B) with a 5mm hex wrench.
2. Remove Snap Ring (16) from the end of the scanner tube using snap ring pliers. (Figure 19)

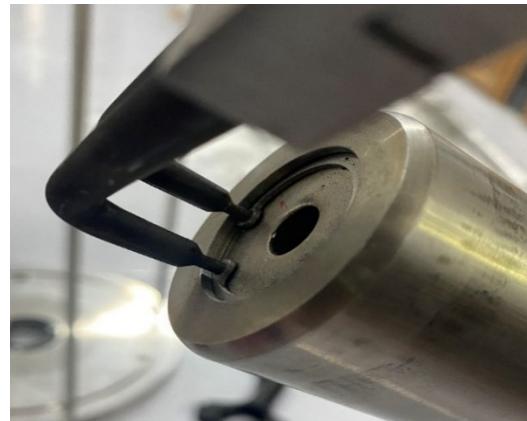


FIGURE 19

3. Replace magnet. Make sure magnet (17) is installed in the correct orientation with the red line visible. (Figure 20) The magnet must oppose or repel the indicator (40) when in close contact. (Figures 21 & 22)



FIGURE 20



FIGURE 21

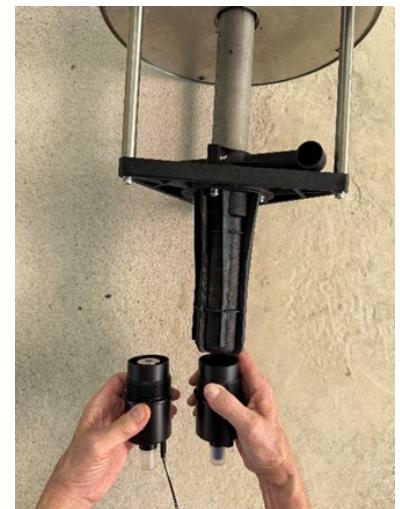


FIGURE 22

4. If the magnet is attracted to the indicator it is installed backward.
5. With magnet in correct orientation reinstall snap ring. Make sure snap ring is fully seated in the mating groove.
6. Lubricate the polished end of the scanner tube and reinstall lower scanner housing (5) with 4 retaining screws.

9.8. INDICATOR

An indicator is installed on the filter body to show that the internal cleaning mechanism is working during the filter's flushing or screen cleaning cycle. The Indicator comes standard with a visual indication. Visual indication is shown with a blue plunger moving in and out of the Indicator housing while the flush valve is open and the screen is being cleaned. This indicator optionally comes with a magnetically activated SPST switch. As the blue plunger moves out of the indicator housing, the magnetic switch provides a switch closure for full continuity between its two wires. As the blue plunger moves back into the indicator housing, the magnetic switch provides switch opening for no continuity between the two wires.



If you order the filter with the magnetic switch , it is already calibrated.

1. Installing the SPST magnetic switch in the filter requires calibration.
2. Make sure the Indicator is installed and fully seated to the coupling as shown.



3. Connect the VOM (volt ohm meter) to the SPST switch wires as shown, and set the Ohm meter to read resistance/ohms.
4. Rotate the Collector Tube such that it's fully extended towards the Indicator. The BLUE Indicator button should extend outward and be visible.
5. Ohm meter should show continuity or "0" ohms resistance with the BLUE Indicator button extended.
6. If not, then screw the SPST magnetic switch into the Indicator body until "0" ohms is shown.
7. Rotate the Collector Tube such that the Blue Indicator button recedes inside the Indicator.
8. Ohm meter should show no continuity or OL (overload, infinite) ohms resistance with the BLUE Indicator button fully receded.
9. If not, then slightly screw the SPST magnetic switch out of the Indicator body until "OL" or infinite resistance is shown.
10. Repeat Steps 4 thru 8 until both continuity conditions occur by rotating the Collector Tube assembly in both directions.



BUE Indicator button extended =
"0" ohms = SPST switch closed.



BUE Indicator button receded =
"OL" or infinite ohms = SPST switch open.

9.9. SCREEN CLEANING

1. Remove reverser as described in Section 9-3.
2. Separate upper bulkhead (22) from 4 Spacer Rods (29) by removing retaining screws with a 5mm hex wrench.
3. Remove upper bulkhead.
4. Screen element can now be removed from internal assembly.
5. There is a screen seal located inside the bulkhead grooves that the screen is centered in. Locate this seal and clean both the seal and groove that it is located in.
6. Debris in the bulkhead groove will cause misalignment and leakage past the seal.
7. The screen can be cleaned using a high-pressure washer. Use a fan spray nozzle and thoroughly clean the screen mesh from both the inside and outside of the screen. (Figure 23 & 24)
8. The screen is durable and will withstand high pressure cleaning.



FIGURE 23



FIGURE 24

9. To determine if a screen is clean hold a light on the inside of the screen and look closely at the mesh from the outside. If the opening in the mesh is clear and light is visible the screen is clean. (Figure 25)



FIGURE 26

10. If visibility is not good you may have to chemically clean the screen. This is done by spraying (Figure 26) or soaking the screen in a container filled with water and muriatic acid. Follow instructions provided by muriatic acid manufacturer. Soaking the screen for approximately 8 hours should remove calcium deposits and other embedded organic material.

11. Pressure wash screen again after soaking in acid.

12. Reinstall the screen seals and screen back into the bulkhead grooves.

13. Secure the bulkhead to the (4) Spacer Rods.

10. TROUBLESHOOTING

10.1. FILTER NOT BACKFLUSHING

Cause	Resolution
If the incoming water is exceptionally clean, backwash not required.	Recommend setting a 12 or 24 hour timed periodic flush via the filter controller. Install a finer micron screen to capture smaller particles in the water and increase flush frequency.
Primary screen element not installed inside filter.	Install primary screen
Primary screen damaged, possible tear or hole in fine micron screen.	Screen needs to be repaired or replaced
DP (differential pressure) sensing device not functioning or setpoint too high.	Make sure DP setpoint is at 0.5 bar (7 psi). With filter pressurized, test device by removing downstream pressure sensing tubing or wires. DP reading should be maximized, and backflush initiated. If not replace DP device. 
Backflush valve inoperable/damaged	Test and replace as necessary.
Drain line from backflush valve not allowing flow of water during backflush.	Inspect piping for obstructions, collapse or incorrect installation. Piping MUST be free flowing to drain with minimal bends. Backpressure on the flush line is not recommended.

10.2. CONTINUOUS OR FREQUENT BACKFLUSHING

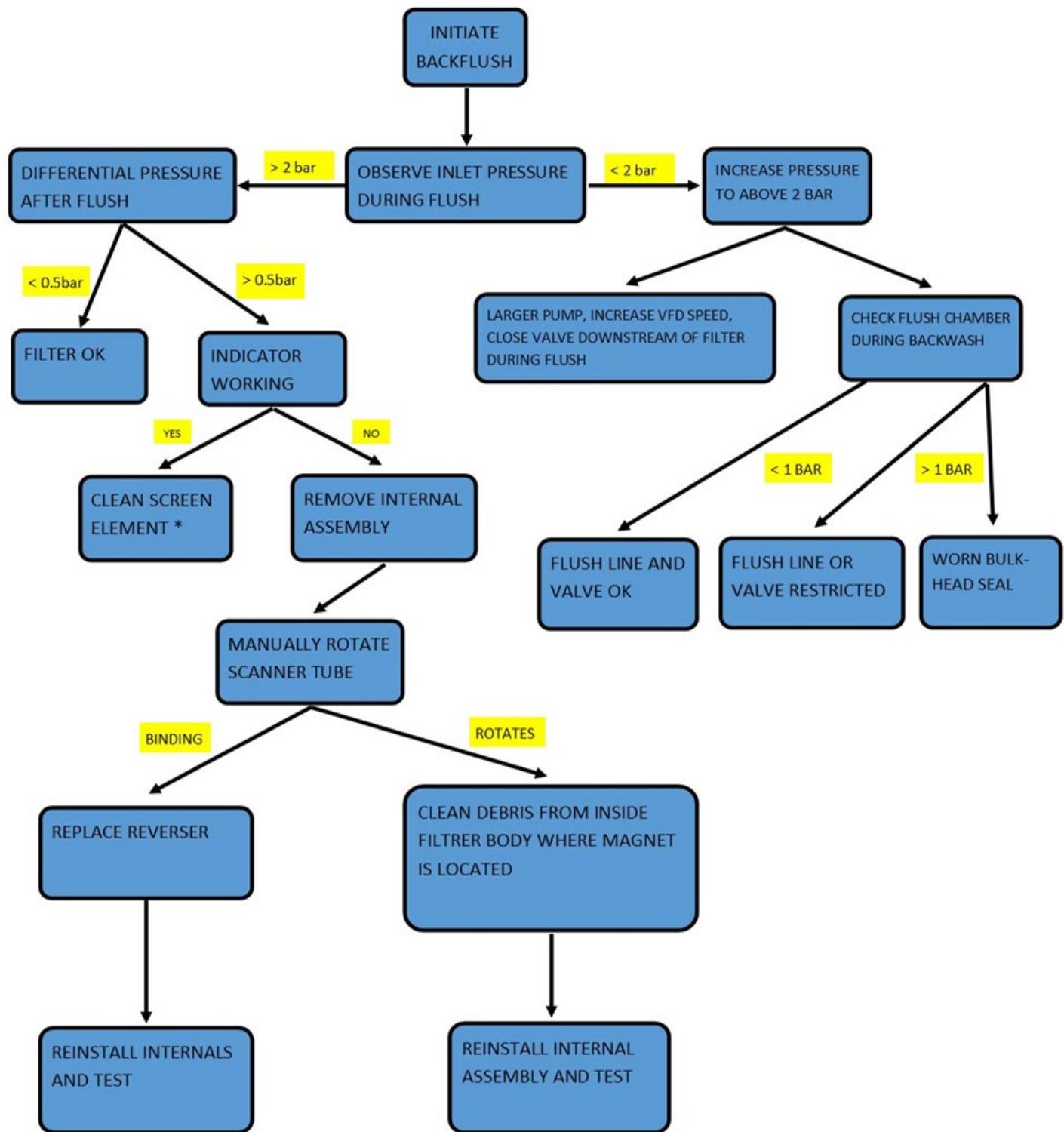
Cause	Resolution
DP sensing device connected incorrectly.	Ensure that "high" and "low" connections are correct. Backward installation will result in continuous backflushing.
Change in water quality, higher than normal particulate count.	Install strainer or prefilter upstream of filter to reduce rapid particle loading. Chemically treat water if organic growth is present.
	Install a coarser screen element to allow smaller particulate to pass through screen thus decreasing time between backflushes.
Incomplete screen cleaning, backwash duration too short. Duration should be at least 15 seconds for complete and thorough cleaning of the screen element.	Verify that the backflush indicator is cycling at least once during the flush. Increasing the cycle duration will allow for multiple cleaning passes of the screen and help remove debris embedded in the screen mesh.
Internal scanning mechanism is not functioning. Possible problems: <ol style="list-style-type: none"> 1. Reversing screw damaged or worn due to excessive cycling. 2. Lower bulkhead floating seal worn allowing water to bypass scanning nozzles. 3. Scanning nozzle end worn and too far from screen surface to allow for proper cleaning of screen. 4. Lower bulkhead O-Ring damaged or missing allowing water to bypass scanning nozzles and enter flush chamber. 	Verify that the backflush Indicator is indicating. If not, wear components may need replacing. Follow the instructions in Section 9 of this manual.
Impacted screen, particle size or shape can be such that particles become impaled within the screen mesh.	Clean screen. Reconsider screen micron size and/or installation of a strainer.
Plated screen, high mineral content within water can allow plating of the screen element with calcium or other deposits.	These can only be removed with chemical cleaning of the screen.
Stapled screen, fibrous material can wrap around the weave of the screen element and be difficult to remove.	High-pressure washing of screen element or chemical cleaning may be necessary to restore screen.

10.3. INDICATOR NOT MOVING

Cause	Resolution
Indicator magnet installed backward on the end of the scanner tube assembly.	Reinstall in correct orientation
Accumulation of ferrous material on the inside of the filter tank where the indicator is mounted. Ferrous material are attracted to magnetic pull of the indicator and held in place on inside surface of tank and interferes with magnetic forces actuating indicator.	Manual removal of accumulated particulate from inside filter tank required.
Reverser screw damaged and scanner not rotating	Refer to Maintenance Section 9 of manual.
Screen (28) dented or collapsed and scanner (13) not able to rotate within the screen.	Screen replacement required
Large debris trapped between the screen (28) and suction nozzle (23) not allowing rotation.	Remove debris.

Follow the attached flow chart to help diagnose common filter functional issues.

10.4. TROUBLESHOOTING FLOWCHART



* see maintenance section

11. SPARE PARTS

Spare parts are readily available from Equeron.

It is recommended that a spare parts kit be purchased and kept on-hand.

Equeron recommends an annual tear-down and inspection of the filter. All necessary replacement wear components are included with the spare parts kit.

All components of the filter are shown in the below Exploded Parts Drawing and available for purchase.

When ordering replacement parts be sure to provide the filter serial number show on the ID Plate that is permanently attached to the filter body. (Figures 27 & 28)



FIGURE 27



FIGURE 28

Drive Kit

- Pawl
- Pawl Retainer
- Reverser
- Reverser Holder



Floating Washer Kit

- Floating Washer Retainer
- Floating Washer



Collector Seals Bushing Kit qty 2

- Collector Seal Bushing
- Wiper Seal
- Pressure Seal
- O-Ring



Internal Assembly Seals Kit

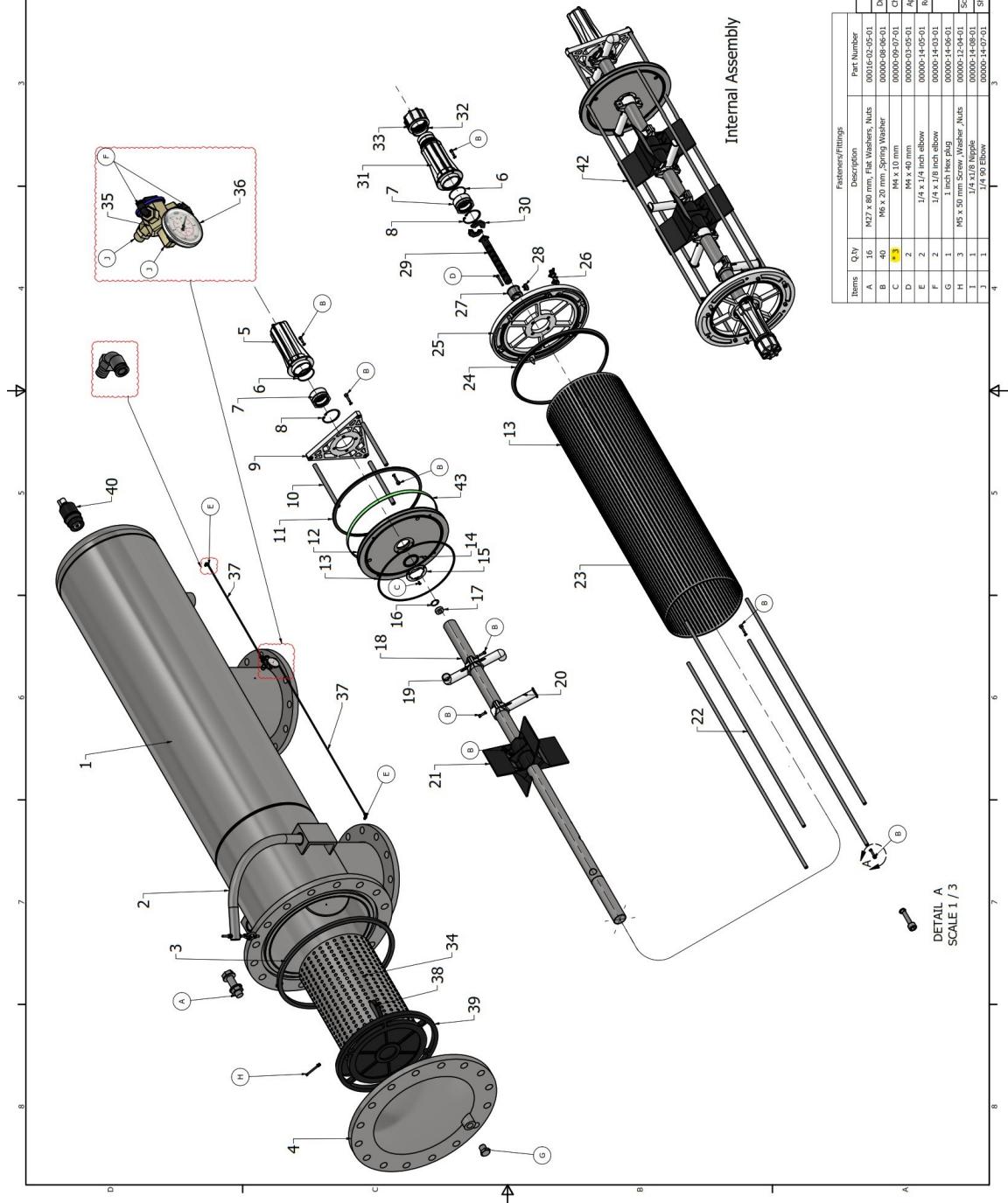
- Inlet Bulkhead Lip Seal
- Outlet Bulkhead Lip Seal
- Qty 2 Screen Seals
- IPBH Cap O-ring
- Qty 3 Lock O-Ring



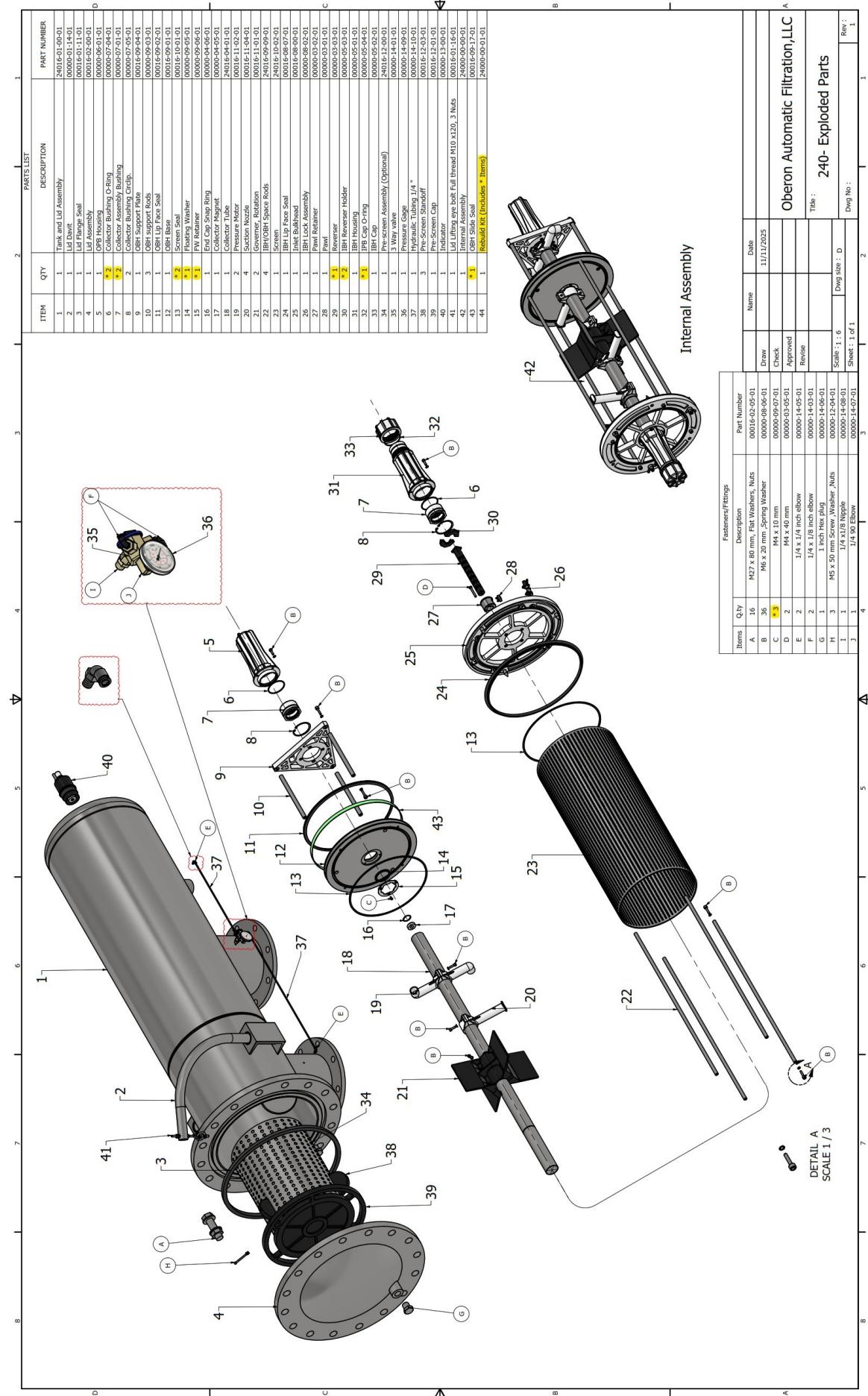
12. EXPLODED PARTS DRAWING

12.1. MODEL 360

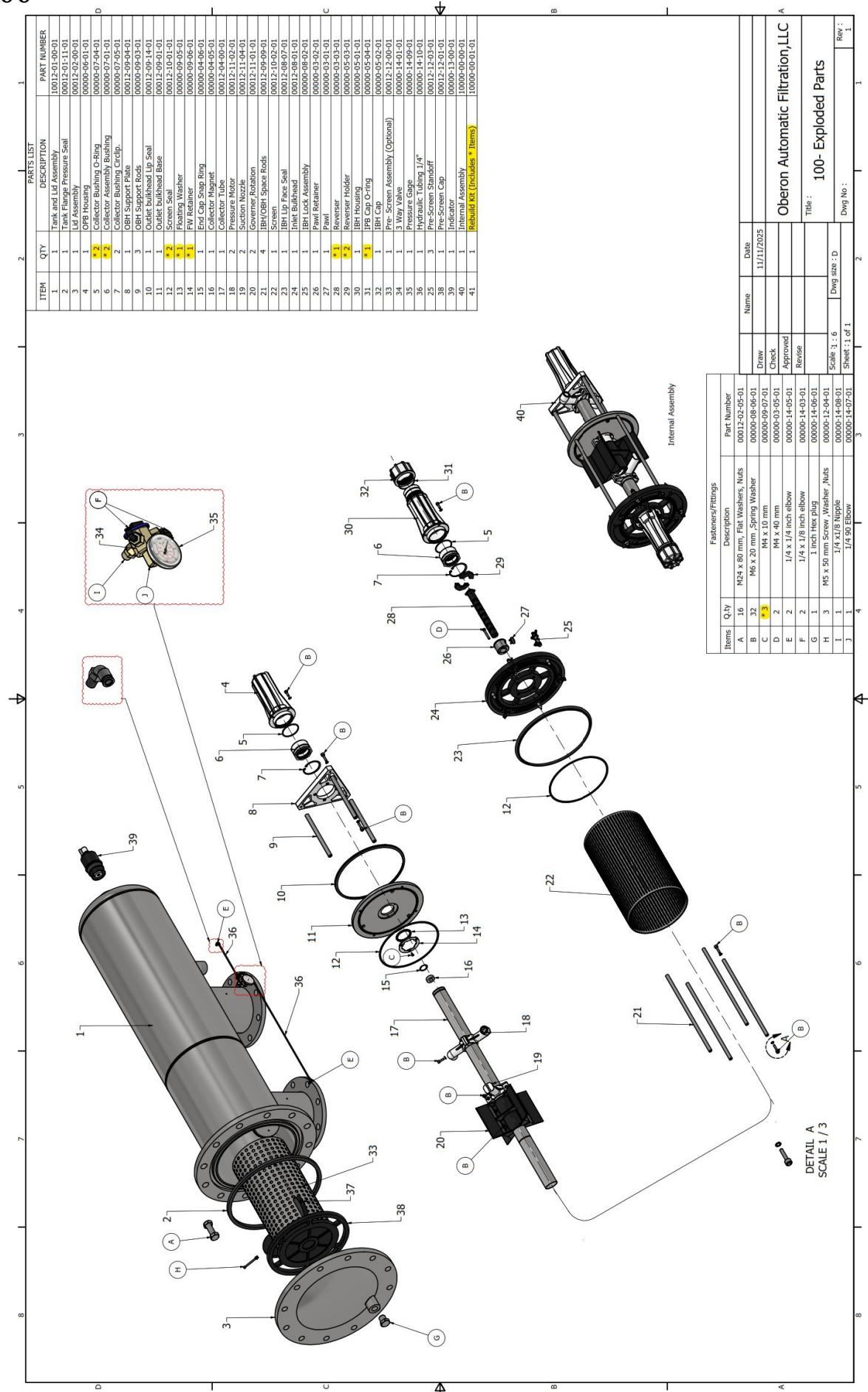
PARTS LIST		PART NUMBER
ITEM	QT/Y	DESCRIPTION
1	1	Tank and Lid Assembly
2	1	Lid Cover
3	1	Side Seal
4	1	Lid Assembly
5	1	OFB Housing
6	2	Collector Bushing CH-Ring
7	2	Collector Bushing
8	1	Collector Bushing Circ Lip
9	1	OFB Support Plate
10	3	OFB Support Rods
11	12	IBH Lip Face Seal
12	12	OFB Support Rod
13	4	Screen
14	4	Flushing Nozzle
15	5	FW Retainer
16	1	End Cap Snap Ring
17	1	Collector Magnet
18	1	Collector Tube
19	2	Pressure Motor
20	6	Section Nozzle
21	1	OFB Support Rod
22	4	IBH Lip Face Seal Rods
23	1	Screen
24	1	IBH Lip Face Seal
25	1	Inlet Bulkhead
26	1	IBH Lock Assembly
27	1	Pawl Retainer
28	1	Pawl
29	4	Re-Screen
30	1	IBH Nozzle Holder
31	1	IBH
32	1	IBH
33	1	IBH Cap O-Ring
34	1	IBH Cap
35	1	Pre-Screen Assembly (Optional)
36	1	3 Way Valve
37	1	Hydraulic Tubing 1/4"
38	1	Pre-Screen Standoff
39	1	Pre-Screen
40	1	Valve
41	1	Lid Lifter
42	1	Internal Assembly
43	1	OFB Side Seal
44	1	Rebuild Kit (Includes Items)



12.2. MODEL 240



12.3. MODEL 100



13. SHUT-DOWN /STORAGE

Should long term shutdown of the filter be required the following steps are recommended.

1. Initiate several manual backflushes to thoroughly clean the filter screen element prior to removing pressure from the system. This is best accomplished with the outlet filter isolation valve closed.
2. Close the inlet isolation valve and initiate one final manual backflush to depressurize the filter and allow for safe removal of the filter cover.
3. If possible, remove the filter internal assembly and pressure wash all components. (refer to maintenance section)
4. Now is a good time to inspect and rebuild the internal assembly.
5. **Winterization:** If freezing temperatures are possible, store the internal assembly in a warm climate-controlled environment. If not possible, you will need to use compressed air to expel water that can be trapped inside the cleaning mechanism.
 - a. Refer to the exploded parts drawing and remove the suction scanner assembly (13) and use air to remove water from both the large and small tubes associated with this device.
 - b. You should also remove water from all the small hydraulic control lines attached to the filter and filter controller. These fittings are “quick-connect” type and no tools are required.
 - c. Remember to reinstall the tubing in the exact location you removed it from.
 - d. You can now reassemble the filter and leave it in its location knowing it has been protected from freezing temperatures.

14. WARRANTY

EQUERON™ FILTRATION - LIMITED WARRANTY STATEMENT

This Limited Warranty is the sole and exclusive warranty provided by **Equeron™ Filtration** ("Seller") and is given in place of all other warranties, express or implied.

Warranty Coverage:

Equeron™ Filtration warrants that its filters and components ("Products") are free from defects in materials and workmanship under normal use, when properly installed and operated in accordance with Seller's instructions:

Standard filter products: **1 year from date of installation or 18 months from shipment (whichever occurs first).**

Stainless steel filter bodies: **5 years from date of installation or 5 years and 6 months from shipment (whichever occurs first).**

Exclusive Remedy:

During the warranty period, Seller will, at its sole discretion, repair or replace defective Products. This remedy is available only if:

The Product is installed and operated in accordance with Seller's written instructions and good engineering practices;

The Product has not been modified without Seller's prior written approval; and

The customer obtains prior written authorization and returns the Product, freight prepaid, to Seller.

Exclusions:

This warranty does not cover:

Products operated outside published specifications;

Use with incompatible fluids or processes;

Operation outside stated pressure or temperature limits;

Unauthorized modifications;

Blocked filter screens (debris accumulation is not a defect).

Disclaimer of Warranties:

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Limitation of Liability:

SELLER'S LIABILITY UNDER THIS WARRANTY IS LIMITED SOLELY TO REPAIR OR REPLACEMENT, AT SELLER'S DISCRETION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LOST PROFITS, LOSS OF USE, DOWNTIME COSTS, PROPERTY DAMAGE, VEGETATION LOSS, SUBSTITUTE EQUIPMENT COSTS, LABOR COSTS, OR PERSONAL INJURY. SELLER'S TOTAL LIABILITY SHALL NOT EXCEED THE PURCHASE PRICE OF THE PRODUCT.

Commercial Use Only / Non-Transferable:

This warranty applies only to the **original purchaser** who bought the Product directly from Equeron™ Filtration for **commercial or industrial use or resale**. It does not apply to consumer use and does not extend to subsequent purchasers or users.