

Nalfleet Corrosion Shield Installation & Maintenance Manual

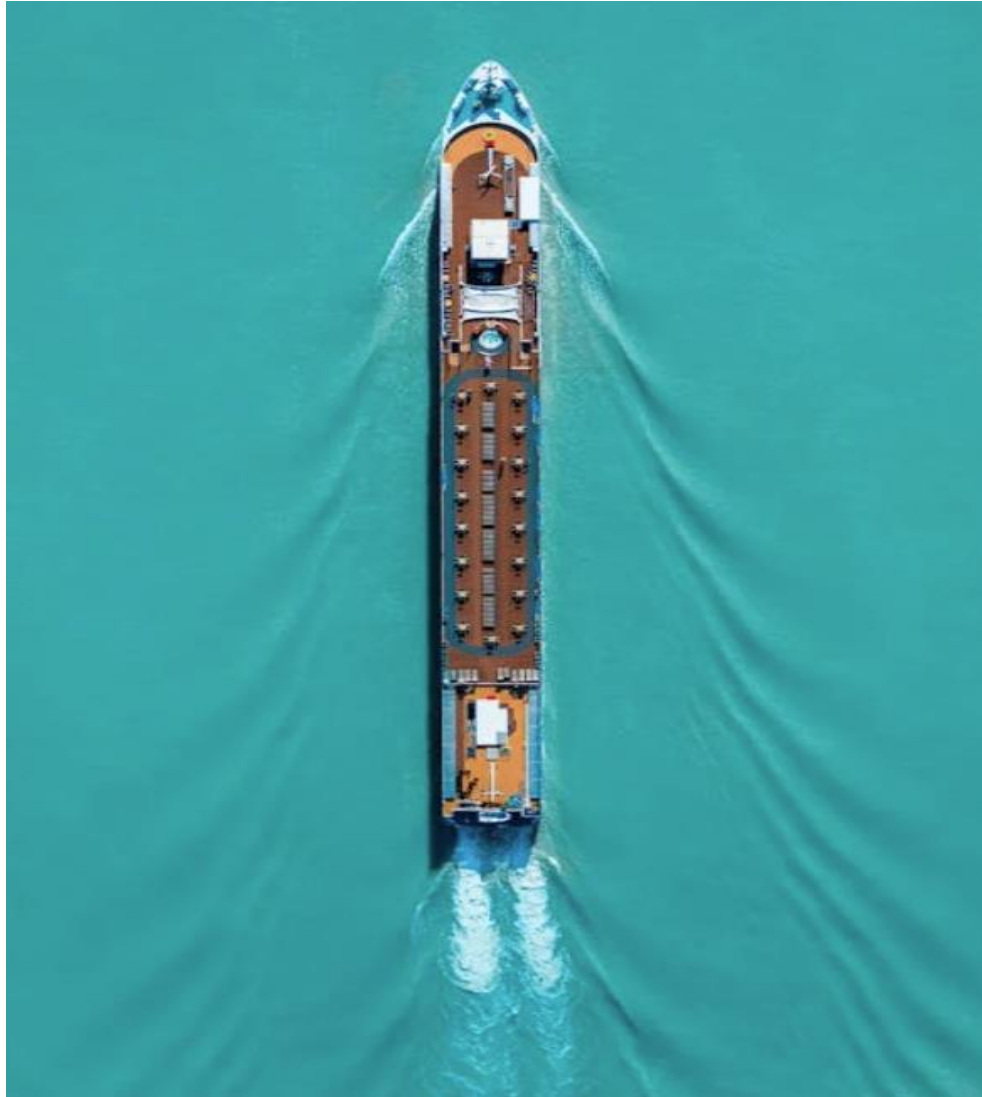


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1.0 Introduction:

Dear Customer, thank you for selecting Nal fleet Product range. This manual is intended to provide the installation, start up and maintenance guideline for the product **Corrosion Shield 20-1**, should you need any further information, pls. reach out to our customer service contact.

2.0 Product Description:

Corrosion Shield 20-1 is an innovative product combining filtration, corrosion management to address challenges on the potable water system. The 2 steps approach prevent corrosion products and sediments carryover to downstream potable water distribution system and corrosion inhibitor actively minimize corrosion on the distribution system.

Corrosion Shield 20-1 consists of 2 parts:

Corrosion Block 20-1: is an innovative product design to reduce carryover of corrosion product, sediments in the potable water distribution through filtration therefore preventing and improving potable water quality. Product complies to DM25, ACS and NSF/ANSI 42 standards

Corrosion Treat 20-1: is an innovative product design to reduce marine potable water pipeline corrosion, red water events and reduce mineral/corrosion product scale potential. Product complies to DM25, ACS and NSF/ANSI/CAN 60 standards.

3.0 Corrosion Shield 20-1 Installation and Maintenance Guideline:

Customer scope: To connect all incoming and outgoing connection valves/line/flexible/fittings to Corrosion Block 20-1 and Corrosion Treat 20-1.

The installation and maintenance guidelines are segregated into 4 sections.

3.1 Pre-Installation

3.2 Installation & Start up

3.3 General Maintenance

3.4. Cartridge Replacement

Pic 1: Overall system set up requirement for Corrosion Shield 20-1"

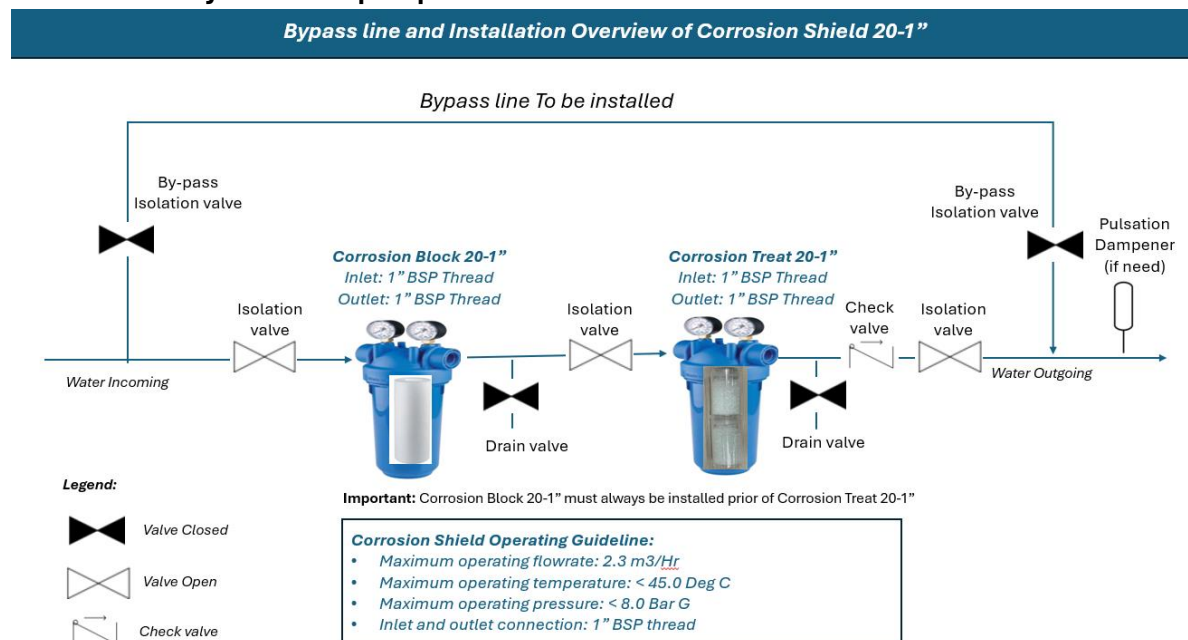


Table 1: Dimension, Gross Weight, Connection Size for Corrosion Shield & Individual Parts

No	Product number	Product description	UoM	Qty	Gross Weight (kg)	Width (mm)	Height (mm)	Depth (mm)	Connection	
									Inlet (BSP Thread)	Outlet (BSP Thread)
1	735101	CORROSION SHIELD 20-1"	Pcs	Pcs	7.604	107	643	122	1"	1"
2	735106	CORROSION BLOCK 20-1"	Pcs	Pcs	3.192	107	643	122	1"	1"
3	735111	CORROSION TREAT 20-1"	Pcs	Pcs	4.412	107	643	122	1"	1"
4	735116	HOUSING 20-1" WITH PRESSURE GAUGE	Pcs	Pcs	1.800	107	643	122	1"	1"
5	735121	CORROSION BLOCK CARTRIDGE 20" 25 MC	Pcs	Pcs	0.320	61	505	61		
6	735127	CORROSION TREAT CARTRIDGE 20"	Pcs	Pcs	2.500	70	510	70		
7	735153	SPANNER SET (2 PCS)	Pcs	2 PCS/set	0.080	117	3	223		
8	735158	LUBRICATION SET (4 PCS)	Pcs	4 PCS/set	0.016	20	20	70		
9	735162	EPDM O RING 83 MM SET (4 PCS)	Pcs	4 PCS/set	0.016	83	3.5	83		
10	735147	Pressure Gauge 1/8", 0 - 12 BarG	Pcs	Pcs	0.070	55	50	32		

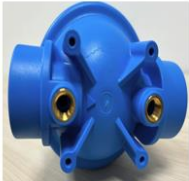
Housing Material: Plastic, non-toxic, suitable for potable water

In the installation manual, the following are the key parts of **Corrosion Block 20-1"** and **Corrosion Treat 20-1"**

Pic 2: Part List For Corrosion Block 20-1"

Corrosion Block 20-1" – Part List and Product Description					
Filter Housing In & Out Connection: 1" Thread: BSP Qty: 1	Filter Head 	Corrosion Block 20-1" Cartridge: 4 pcs 	Spacer: 1 PC 	Lubrikitt: 4 pcs 	EPDM O Ring 83 mm: 4 pcs 
	Filter Bottom 		Spanner: 2 pcs 	Pressure Gauge 1/8", 0 - 12 BarG : 2 pcs 	

Pic 3: Part List For Corrosion Treat 20-1"

Corrosion Treat 20-1" – Part List and Product Description					
Filter Housing In & Out Connection: 1" Thread: BSP Qty: 1	Filter Head 	Corrosion Treat Cartridge 20": 1 pc 	Lubrikitt: 4 pcs 	EPDM O Ring 83 mm: 4 pcs 	
	Filter Bottom 		Spanner: 2 pcs 	Pressure Gauge 1/8", 0 - 12 BarG : 2 pcs 	

Important Reminder: For **Corrosion Shield 20-1**, the installation is suitable for the following operating conditions

- a. Maximum operating flowrate: 2.3 m³/Hr
- b. Maximum operating temperature: < 45.0 Deg C
- c. Maximum operating pressure: < 8.0 Bar G
- d. Inlet and outlet connection: 1" BSP thread

3.1. Pre-Installation:

1. Assemble the **Corrosion Block 20-1** and **Corrosion Treat 20-1** according to the installation guide.
2. Install pressure gauges to **Corrosion Block 20-1** and **Corrosion Treat 20-1** according to the pressure gauge installation guide.
3. Recommend to install bypass line to ensure potable water is always available when either **Corrosion Block 20-1** or **Corrosion Treat 20-1** is under maintenance or for other abnormal operation.
4. Ensure the water inlet and outlet valves are isolated prior connecting the **Corrosion Block 20-1** or **Corrosion Treat 20-1** to existing system.

3.2. Installation & Start Up:

1. Identify the IN-OUT position at the filter head section, look for the "**TRIANGLE**" sign, this is the indication of the flow direction. IN represent connection of water inlet to filter housing and OUT represent water outlet.
2. Connect the water inlet to the 1" BSP thread located at the filter head (remember: Follow the "**TRIANGLE**" sign as indication of water inlet)
3. Connect to existing water pipeline with fixed pipeline or flexible hoses.
4. Unscrew the pressure gauge downstream of the "**TRIANGLE**" sign (e.g. located at the outlet connection) to allow air venting
5. Gradually open incoming water valve to the filter unit, observed air venting from the top section, once water started to flow out from the pressure gauge port, start to screw back and tighten the pressure gauge, stop incoming water supply if this is easier for the pressure gauge to be installed.
6. Ensure there's no water leak from the filter unit, tighten the filter head, filter bottom and pressure gauge if needed.
7. Continue to observe and check for leakages for 48 hrs.
8. In the case of leakage, open the filter housing, remove the O-ring from the bowl, place a new O-ring and lubricate the O-ring with Lubrikit, retighten the filter unit.
9. Continue to observe and check for leakages for 48 hrs.
10. It's recommended after the installation, slowly turn on a water supply after the installation and let the water flow for at least 5 minutes before use.

3.3. General Maintenance:

Periodically clean the housing with water and sponge. If not in use for long time, remove the cartridge, upon restart, use a new cartridge.

Recommended replacement frequency as below. The products should always be stored in a cool, sheltered and dry storage condition.

Table 2: Corrosion Shield 20-1" part and replacement list

No.	Item	Product	Product No.	Frequency
1	Housing	HOUSING 20-1" WITH PRESSURE GAUGE	735116	Every 5 yrs
2	Filter Cartridge	CORROSION BLOCK CARTRIDGE 20" 25 MC	735121	Every 3 mths
3	Corrosion Inhibitor Cartridge	CORROSION TREAT CARTRIDGE 20"	735127	Every 12 mths
3	Spanner	SPANNER SET (2 PCS)	735153	As need
4	Lubrikit	LUBRICATION SET (4 PCS)	735158	Every 3 mths (when change cartridge) or as need
5	O Ring	EPDM O RING 83 MM SET (4 PCS)	735162	Every 3 mths (when change cartridge) or as need
6	Pressure Gauge	Pressure Gauge 1/8", 0 - 12 BarG	735147	As need

1. After every maintenance or change of filter cartridge, it's recommended to change the O ring with a new one and lubricate the O ring with Lubrikit before tightening the filter bottom to the filter head. Ensure there's no water leak from the filter unit, tighten the housing bowl housing head and pressure gauge if need.
2. Continue to observe and check for leakages for 48 hrs.
3. It's recommended after the installation, slowly turn on a water supply after the installation and let the water flow for at least 5 minutes before use.

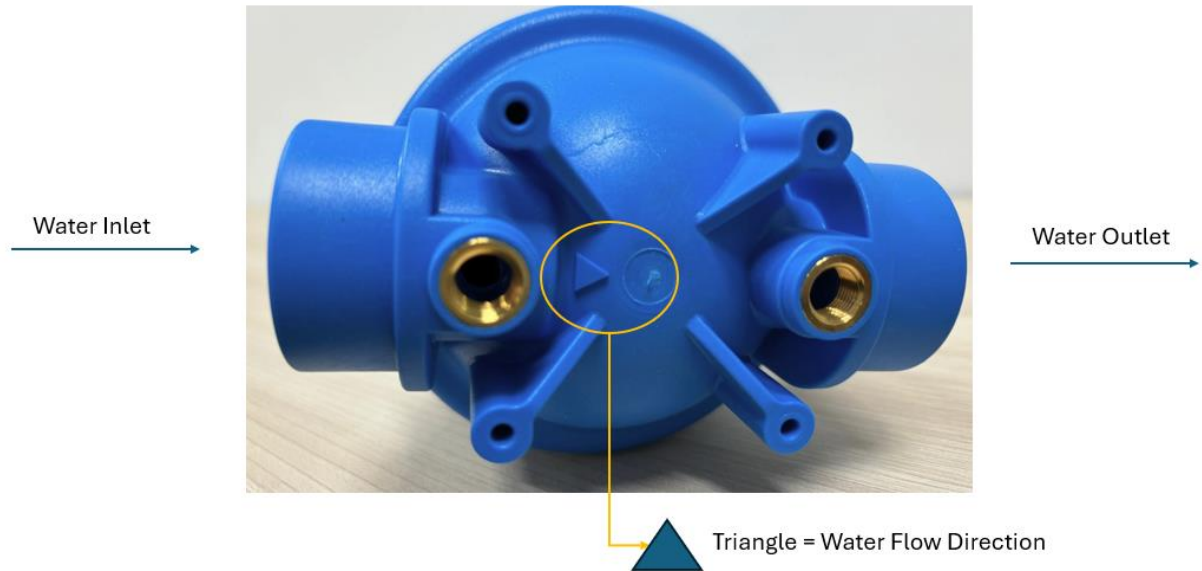
3.4. Cartridge Replacement (For Both Corrosion Block 20-1" or Corrosion Treat 20-1"):

1. Check and shutoff incoming water valve
2. Release the pressure of the line by gradually opening drain valve on the connection line
3. Gradually unscrew to open the filter housing using the spanner provided
4. Remove the used cartridge (**Corrosion Block 20-1" or Corrosion Treat 20-1"**)
5. Wipe clean the filter housing with water and a soft sponge.
6. Remove the plastic wrap on the new cartridge
7. Transfer the spacer from the existing to the new filter cartridge (**Corrosion Block 20-1" only**)
8. Insert the new cartridge into housing
9. Replace existing filter bottom O ring with a new O ring.
10. Lubricate the O ring with Lubrikit before tightening the filter bottom to the filter head
11. Tighten the filter bowl to the filter head with the spanner, do not over tighten.



12. Remove the pressure gauge downstream of the “TRIANGLE” sign (e.g. located at the outlet connection) to allow air venting
13. Turn on the water supply
14. When water is observed coming out from the pressure gauge port, start re-install the pressure gauge, do not over tighten, used white sealing tape if need.
15. Ensure there’s no water leak from the filter unit, tighten the filter head, filter bottom and pressure gauge if needed.
16. Continue to observe and check for leakages for 48 hrs.
17. In the case of leakage, open the filter housing, remove the O-ring from the bowl, place a new O-ring and lubricate the O-ring with Lubrikit, retighten the filter unit.
18. Continue to observe and check for leakages for 48 hrs.
19. It’s recommended after the installation, slowly turn on a water supply after the installation and let the water flow for at least 5 minutes before use.

Pic 4: How to identify the installation flow direction located on the filter head



Pic 5: Installation Guide For Corrosion Block 20-1"



**Pic 6: Installation Guide For Corrosion Treat 20-1"**

Corrosion Treat 20-1" Installation Guide

Corrosion Inhibitor Cartridge
Note: Product is supplied as 1 pc consist of 2 block

Filter Housing

Filter Head Section, :
Inlet and outlet 1" BSP Thread

Filter Bottom Section

Note: Grey/black sealant material facing up

Step 1: Remove 735217 from packaging material

Step 2: Prepare to insert into filter bottom section

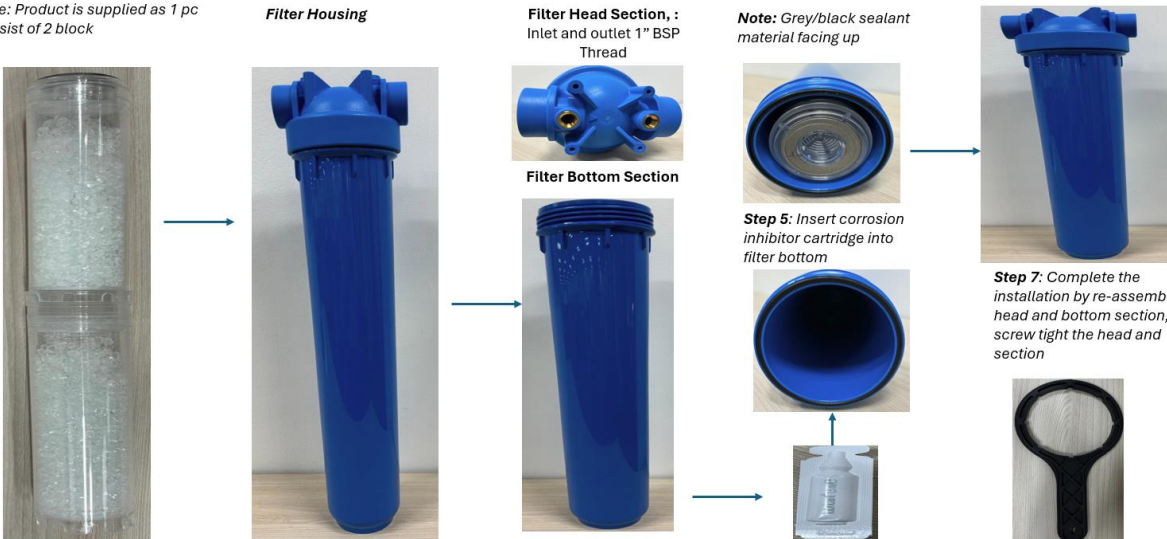
Step 3: Unscrew the housing into filter head section and filter bottom Section

Step 4: Use the lubrikit to lubricate the housing -ring which is located at the filter bottom top

Step 5: Insert corrosion inhibitor cartridge into filter bottom

Step 6: Tighten the filter bowl to the filter head with spanner

Step 7: Complete the installation by re-assemble head and bottom section, and screw tight the head and section

**Pic 7: Installation Guide For Pressure Gauge**

Pressure Gauge Installation Guide

Filter Housing

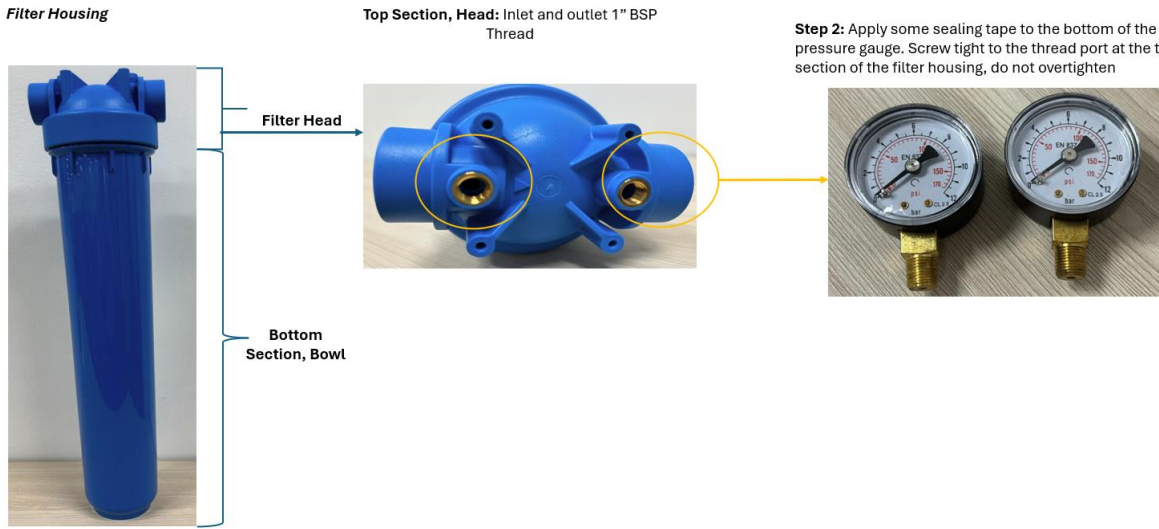
Top Section, Head: Inlet and outlet 1" BSP Thread

Filter Head

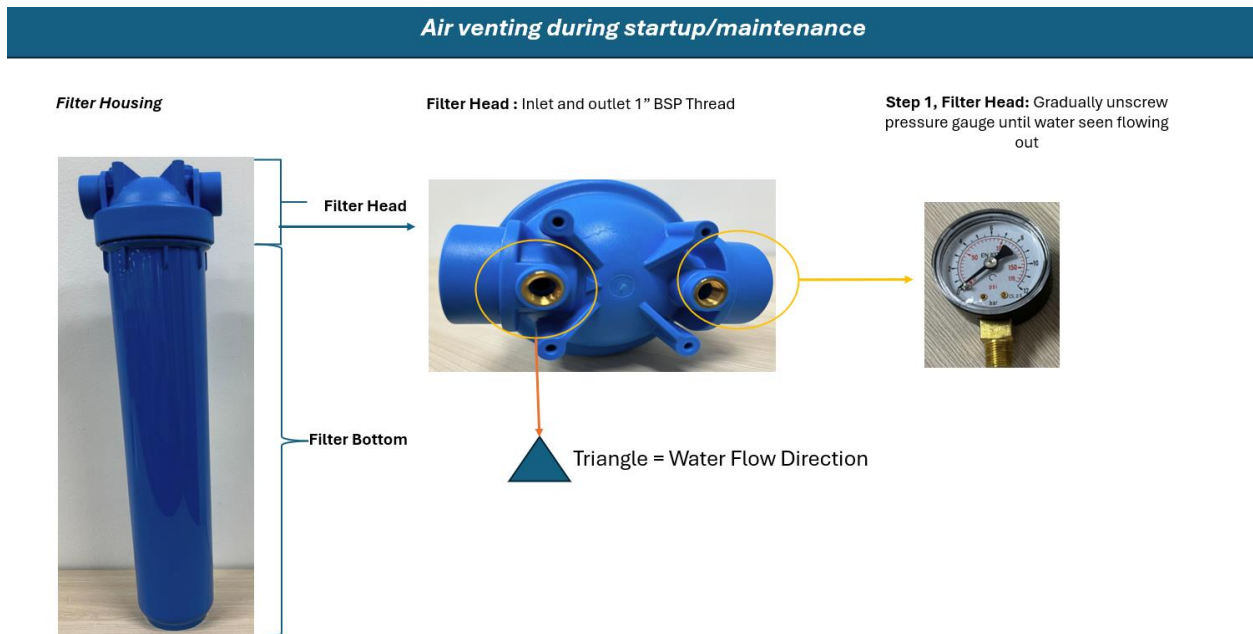
Bottom Section, Bowl

Step 1: Prepare completed set of filter housing follow the installation manual of with either the Corrosion Block 20-1" or Corrosion Treat 20-1"

Step 2: Apply some sealing tape to the bottom of the pressure gauge. Screw tight to the thread port at the top section of the filter housing, do not overtighten



Pic 8: Air Venting During Startup/Maintenance



Pic 9: Recommended Installation Location For Corrosion Block and Corrosion Shield

