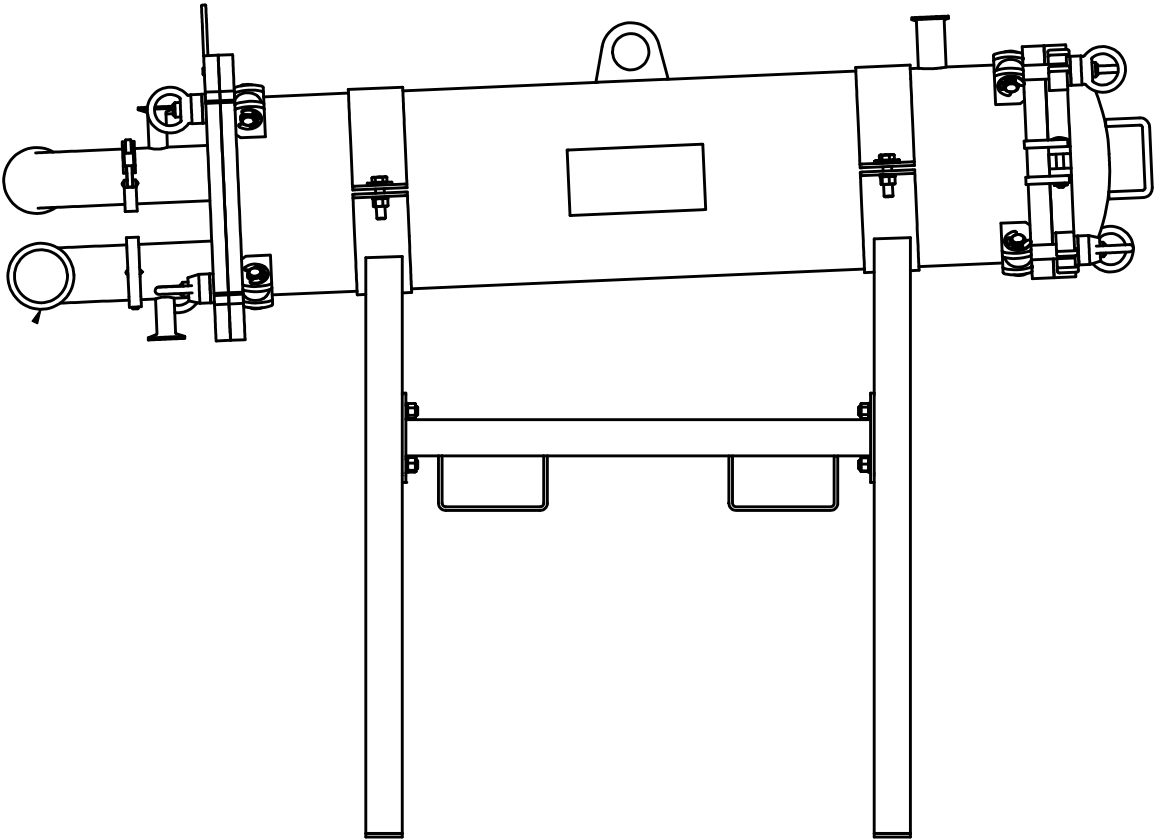


3M™ Filtration Products

3M™ High Flow Sanitary Design Filter Housings (40" and 60") Installation and Operating Instructions





Failure to follow installation, operation, and maintenance instructions may result in unit failure and will void warranty.


Safety Information

Please read, understand, and follow all safety information contained in these instructions prior to the use of these 3M™ High Flow Sanitary Design Filter Housings. Retain these instructions for future reference.

Intended Use

These 3M High Flow Sanitary Design Filter Housings have been evaluated for use in the filtration of food & beverage and process fluids and have not been evaluated for use in any other applications. It is the end user's responsibility to ensure process fluids are compatible with the materials of construction and can be safely used. The products are intended for installation by qualified installers in accordance with these installation instructions, local regulations/codes, and industry requirements.

EXPLANATION OF SIGNAL WORD CONSEQUENCES	
 WARNING	Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death.
 CAUTION:	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury and/or property damage.
NOTICE	Indicates a situation which, if not avoided, could result in product or system damage.

 WARNING	
<p>To reduce the risks associated with explosion, burns, or exposure to contaminants:</p> <ul style="list-style-type: none"> • Always shut off inlet effluent supply and depressurize system as shown in manual prior to service. <p>To reduce the risks associated with fire or explosion:</p> <ul style="list-style-type: none"> • Removal of packaging used with this product may produce static electrical charges or sparks, risking combustion of flammable or explosive materials, liquids, or gases. Only open packaging in an area free of flammable and explosive materials. <p>To reduce the risks associated with explosion and exposure to contaminants:</p> <ul style="list-style-type: none"> • Always operate the housing within the pressure and temperature design limits. Refer to the housing nameplate for this information. • Do not modify the vessel or its components. • Over-pressurization of liquid should be prevented by the installation of proper pressure relief valves. • Never, for whatever reason, open the filter housing's closure nuts and bolts during operation or under pressure regardless of how low the pressure is. • Use only 3M replacement parts. • Replacement parts must be installed by personnel trained and equipped to service filter vessels. • Ensure system is maintained above the freezing temperature of the process fluid. • Do not use a vessel that has been damaged or has damaged components. <p>To reduce the risks associated with impact and exposure to contaminants:</p> <ul style="list-style-type: none"> • Ensure product does not experience any external loads or forces on the vessel. • These systems have not been evaluated for seismic activity. <p>To reduce the risks associated with explosion:</p> <ul style="list-style-type: none"> • Use filter for liquid service only. Not for continuous gas service. <p>To reduce the risks associated with impact:</p> <ul style="list-style-type: none"> • Do not open or remove filter housing cover unless the filter housing is bolted and anchored in place <p>To reduce the risks associated with exposure to contaminants:</p> <ul style="list-style-type: none"> • Ensure that all system pressure has been relieved and inlet/outlet valves are closed prior to opening the system to atmosphere. • Avoid water hammer. • Always use appropriate personal protective equipment (PPE) when installing or servicing the filter housing, or when changing filter elements. • This product must be installed per the appropriate federal, state, or local plumbing and pressure standards to ensure safe use in the desired application. • Dispose of used filter housing or cartridge in accordance with federal, state, and local laws and regulations. 	

⚠ CAUTION

To reduce the risks associated with pinch hazards:

- Do not place hands or fingers under the vessel cover where they can be pinched.

NOTICE – To Reduce Product Damage:

- Ensure differential pressure is not exceeded prior to filter cartridge replacement.

I. Introduction

The following instructions are for the installation of all 3M High Flow Sanitary Design filter housing models. 3M High Flow series filter element installation/operating instructions are packaged with each box of filter elements.

NOTE: Always operate the housing within the pressure and temperature design limits. Refer to the housing nameplate for this information. Do not exceed cartridge operating parameters.

NOTE: Housing should be rinsed and cleaned prior to use.

These instructions include:

1. Assembling the housing saddle (stand) or legs (single filter models only);
2. Installing Vent Valves, Inlet/Outlet Drain Valves and Pressure Gauges;
3. Cover Closure and operation for swing bolt.

II. 3M™ High Flow Sanitary Design Filter Housing Installation.

NOTE: 3M High Flow Sanitary Design Filter Housings are available in horizontal models (see Figure 1). When installing, ensure that the drains are downward facing to allow proper housing drainage. Check to ensure that there is adequate

space around the housing to allow for easy removal of the filter element and that there is enough clearance to swing the cover to the fully open position. Install valves in the process lines coming into and going out of the housing to stop the fluid flow through the filter during element change-outs.

Unpack and inspect the filter housing. Check to ensure that all parts are supplied and in serviceable condition.

Table 1. - 3M™ High Flow Sanitary Design Filter Housings Details

Part Number	Description
1HFX40HCS	1-Around 40" High Flow, Non-Code, Horizontal, 316L SS, EPDM Gasket, 3" Sanitary Inlet/Outlet
1HFX60HCS	1-Around 60" High Flow, Non-Code, Horizontal, 316L SS, EPDM Gasket, 3" Sanitary Inlet/Outlet

Inspect all sealing surfaces (including cover o-ring groove, flanges, and threaded connections) to ensure that they are free of damage (scratches etc.) that may prevent proper sealing.

If the housing is to be installed into a new system, plumb the system to the dimensions noted on the proposal drawing (or the final assembly drawing).

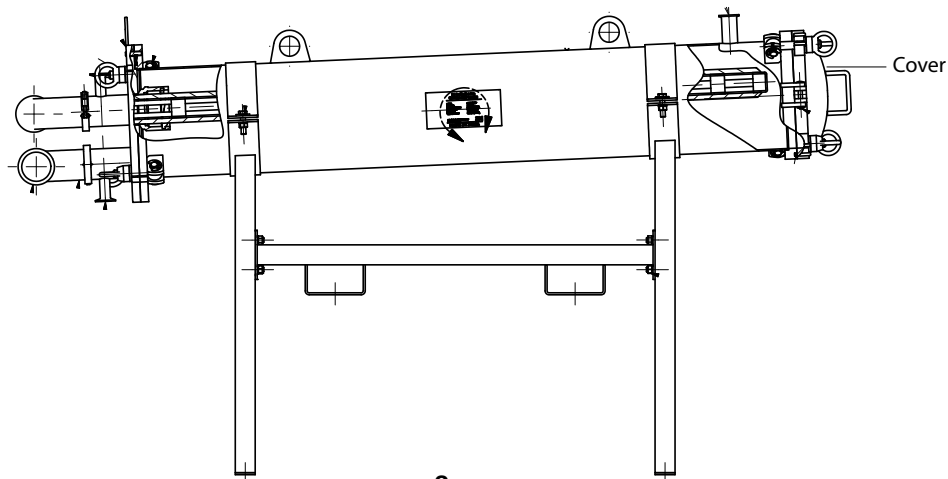
NOTE: Housing is supplied with flange covers and thread protectors for vents, drains and gauge ports. These must be removed and replaced with the proper plugs, system piping, or gauges.

⚠ WARNING

To reduce the risk associated with tipping over of the housing due to the housing not being adequately fastened down:

- Do not open or remove vessel cover unless vessel housing is bolted and anchored in place.

Figure 1. - 3M™ High Flow Sanitary Design Filter Housing



II. 3M™ High Flow Sanitary Design Filter Housing Installation.

1. Unpack the saddle stand. Check to ensure that all parts are supplied and in serviceable condition. Parts included are (Table 2):

Table 2. - Saddle Stand Components

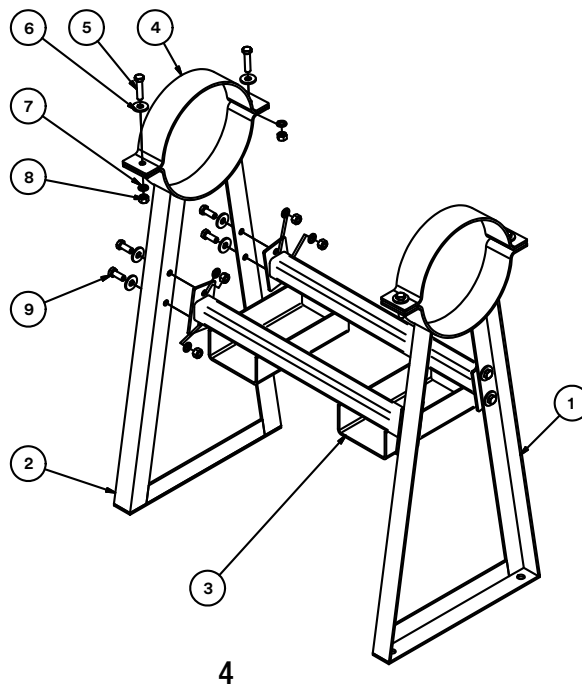
Component ID (see Figure 2)	Description	Quantity
1	Leg Weldment - Higher	1
2	Leg Weldment - Lower	1
3	Leg Weldment - Center Lift	1
4	Plate - Housing Clamp	2
5	Screw - Hex Head (M12 X 50 mm LG)	4
6	Washer - Plain (M12)	12
7	Washer - Spring (M12)	12
8	Nut - Hex (M12)	12
9	Screw - Hex Head (M12 X 30 MM LG)	8

2. Using two 3/8" Hex Head bolts, two 3/8" lock washers, and two 3/8" diameter washers, attach the Saddle Reinforcement to the Outlet Side Saddle. Repeat for the Cover Side Saddle.

3. Place the saddle in the installation location. Ensure that Outlet Side Saddle aligns with the outlet (downstream) pipe. Using an appropriate hoist or other lifting device, place the housing onto the saddle. Remove the inlet/outlet flange covers and all other thread protectors (drains, vents, gauge ports etc). Make sure the housing drains and inlet flange are facing downward (see Figure 2) and the front saddle is between the inlet and drain.
4. Locate the four U Bolt mounting holes in saddle. Position a 5/8" diameter washer over each hole.
5. Install a 5/8"-11 Hex Nut on each threaded end of the U Bolt.
6. Place the two U Bolts over the housing and through the washer/saddle hole.
7. Install 5/8" diameter washer and 5/8"-11 Hex Nut on each threaded end of the U Bolt and tighten until housing is secure.
8. Ensure correct alignment with the system connections (flanges).
9. Using the 1 inch holes in the saddle base as a template, anchor the housing to the floor using appropriate fasteners. Ensure compliance with all local, state and federal codes.
10. Connect the system (up- and downstream) pipes to the housing. Ground the housing, in accordance with local code. Tighten the housing floor/pad mounting bolts, as required.

INSTALLATION NOTE: The saddle is designed to provide the correct housing angle (2 to 3 degree slope downward from cover to outlet) to ensure proper housing drainage. Ensure that the platform or floor where the housing is to be located is level.

Figure 2. - Model 1HF Horizontal Housing Saddle Assembly Details



Cartridge Installation Instructions:

1. Ensure that filter o-ring is properly seated in the o-ring groove of the bottom end-cap. This o-ring is not reusable. Verify compatibility with the chemistry and temperature of the process fluids. O-rings are available in a variety of materials designed to be compatible with most manufacturing processes.
2. Insert the filter cartridge on the center post. Push the cartridge into the housing until it is fully seated. To ensure proper cartridge seating, gently twist the handle back and forth while pushing the cartridge into the housing.
3. Slowly turn the cartridge clockwise holding the handle firmly until it stops (after 90° rotation). At this point, the o-ring is fully engaged into the receptacle. Maximum allowable turning torque: 100 inch-pound. To ensure that the cartridge is locked into the housing cartridge receptacle, gently pull the cartridge as if removing it. If the cartridge releases, repeat steps 2 and 3.
4. Close the filter housing cover (see Cover Closure).

Figure 5. - Cartridge Installation



⚠ CAUTION

To reduce the risk associated with pinched fingers due to fingers being placed under the filter cover:

- Do not place hands or fingers under the vessel cover where they can be pinched.

Cartridge Removal Instructions

Normally the filter life endpoint is determined by the pressure difference across the filter cartridge. The terminal pressure drop is dependent on the application, but should not exceed 35 psid.

1. Close inlet and outlet valves. Open the vent valve to relieve system pressure.
2. Open the drain valve and allow the vessel to drain completely.
3. Loosen the mounting bolts on the cover and swing the bolt away from the housing. Swing the cover to the open position.
4. Turn the filter cartridge handle 90° (Figure 6) counter-clockwise until it releases out of the bottom receptacle.
5. Pull the cartridge handle to remove the filter.
6. Install new filters (see Cartridge Installation Instructions).

Figure 6. - Cartridge Removal



⚠ WARNING

To reduce the risk associated with exposure to contaminants:

- Dispose of used filter cartridge in accordance with federal, state, and local laws and regulations.

⚠ CAUTION

To reduce the risk associated with pinched fingers due to fingers being placed under the filter cover:

- Do not place hands or fingers under the vessel cover where they can be pinched.

Cover Closure

Prior to closing the housing cover, ensure that the o-ring is properly placed in the groove on the housing.

1. Swing the housing cover closed.
2. Swing the eye bolt assemblies up and into the cover slots.
3. Hand tighten each eye nut.
4. Using a screwdriver or bar, tighten each eye nut by 1/2 turn until metal-to-metal contact between the cover and the housing is achieved.

Filling

1. Ensure that the vent on the top of the housing is open. Close all drains.
2. Slowly open the process inlet valve to introduce fluid to the housing. Completely fill the housing with process fluid until this fluid begins to exit the vent.
3. Close the vent valve.
4. Slowly open the inlet valve to its "full open" position.
5. Slowly open the outlet valve to its "full open" position.

The 3M High Flow Sanitary Design Filter Housing Models 1HFX40HCS and 1HFX60HCS use standard size O-Rings (Parker 2-452). End-users are responsible for evaluating whether replacement O-Rings meet all the chemical compatibility and regulatory requirements of their application.

Product Selection and Use:
Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (e.g., OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product and appropriate safety products, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.
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Notes



**3M Purification Inc.
Separation and Purification
Sciences Division**

400 Research Parkway
Meriden, CT 06450 U.S.A.
(800) 243-6894
(203) 237-5541
www.3Mpurification.com

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