



INSTALLATION PROCEDURE
WETTING PROCEDURE
INTEGRITY TEST GUIDE
BUBBLE POINT



POLYFLOW[®] MEMBRANE

PLEATED POLYPROPYLENE MEMBRANE
ALL-POLYPROPYLENE HARDWARE AND SUPPORTS

PRODUCT LINES

Polyflow Membrane

Polyflow Membrane SELECT

Polyflow Membrane SELECT (Wet Pack)

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1. INSTALLATION PROCEDURE

O-Ring Cartridges

1. Wipe the plastic bag clean, then cut it open at the end nearest the O-Rings and inspect them for damage.
2. Lubricate the O-Rings and housing bore with service fluid or other appropriate liquid.
3. Insert the O-Ring fitting into the housing bore with a slight twisting motion. (Leave the bag on the filter cartridge for protection and grasp it as near as possible to the O-Ring fitting.) *CAUTION: Excessive twisting of or pushing on the pleated section of the filter cartridge may cause damage.*
4. Once the filter cartridge is seated in the housing bore, gently rotate the cartridge a few degrees in either direction to relax the O-Rings
5. Remove the plastic bag from the filter cartridge and reassemble the housing.

Flat Gasket Cartridges

1. Wipe the plastic bag clean and cut it open at both ends.
2. Install a gasket on each end of the cartridge ensuring that each lies flush against the face of the flat end cap.
3. Slide the cartridge over the post in the housing and align it with the sealing surfaces.
4. Remove the plastic bag from the cartridge and reassemble the housing.

Alternate Installation for Wet Pack Cartridges

The filter cartridge contained within this package has been pre-wet and packaged using high purity deionized water. Pre-wetting allows for the immediate installation of this cartridge into aqueous based applications. The integrity testing procedure is covered in section 3 of this guide.

1. Carefully puncture the inflatable bag and remove the bagged cartridge.
2. The cartridge has been triple bagged. Outer bags may be removed as the cartridge is brought into successively cleaner operational areas.
3. Cut the final bag open nearest to the O-rings. Once the final bag has been cut open, dispose of the water. Keep the bag in place and install the filter within 20 minutes.
4. Assure that the O-rings and housing bore have been lubricated with the UPW.
5. Insert the O-ring fitting into the housing bore with a twisting motion (NOTE: Leave the bag on the cartridge for protection and grasp the filter near the O-ring fitting). *CAUTION: Excessive twisting of or pushing on the middle or closed end of the cartridge could damage the membrane.*
6. Once filter is seated in the housing bore, gently rotate the cartridge in either direction to relax the O-rings.
7. Remove the plastic bag from the cartridge and reassemble the housing.
8. To help prevent membrane de-wetting, assure that the filter housing is properly vented during operation.

2. WETTING PROCEDURE

CAUTION: Wetting is a required procedure for certain filtration applications (see below).

GENERAL INFORMATION

These filter elements contain a membrane made of polypropylene. This material is hydrophobic; it resists penetration by water, aqueous (water based) liquids, and other liquids with high surface tensions (greater than 24dyne/cm). For filtration service in these fluids, the membrane must first be saturated, or *wetted*, with a low surface-tension liquid. Because a liquid displacing another liquid involves little or no resistance due to surface tension, the pressure required to initiate flow in a *wetted* filter element is much less than that for an *unwetted* element.

NOTE: The membrane should be protected from exposure to gas while in liquid service, since this could de-wet the exposed area, thus reducing the effective filtration area, increasing the filter pressure drop, and shortening the filter life expectancy. To help prevent this the filter housing should be properly vented during filling and before operating the system.



WETTING PROCEDURE*

There are two methods for preparing a wetted element for service. *The method to use is determined by the amount of wetting liquid permitted in the service system.* The wetting liquid should have a surface tension less than 24dyne/cm. It should also be chemically compatible with the filter element material(s), the filtrate fluid, and the service system. Isopropyl alcohol (IPA) is a common wetting agent: electronics-grade IPA is a purer grade. IPA is used as an example in the following procedures.

METHOD 1: OPEN-CONTAINER WETTING

(Greater System Exposure to IPA)

Place the element, with the open end up, in a clean container (such as a filter housing bowl). Add IPA until the filtration area (containing membrane) is submerged. Do not fill the center tube with IPA. Allow the membrane to wet from the outside to the inside. Agitate the element briefly. After ten (10) minutes, remove it, let excess fluid drain off, and install it in the filter housing. Flush with 25 gallons (95 liters) of service fluid (per 10" equivalent) at 2gpm (7.6lpm).

METHOD 2: REMOTE-SITE WETTING

(Lesser System Exposure to IPA)

NOTE: Requires a separate system that can alternately flow IPA and water through the element. Install the element in filter housing of flushing system. Seal the housing, and flush it with 2 gallons (7.6 liters) of IPA (per 10" equivalent) at 1 gpm (3.8lpm). Next, flush the element with 25 gallons (95 liters) of water (per 10" equivalent) at 2 gpm (7.6lpm). Remove the cartridge and transport it to the site of the filter use. *If the element is transported through uncontrolled (contaminated) areas or will not be quickly installed in the service system, it is recommended to transport it in a clean, sealed container.* Install the element in the housing and seal. Fill the housing, while venting if permissible, and flow 25 gallons (95 liters) of service liquid (per 10" equivalent) through the element at 2gpm (7.6lpm).

3. INTEGRITY TEST GUIDE

NOTE: Integrity test values reported here apply to filter cartridges wetted with *60% SEMI-grade isopropyl alcohol (IPA) and 40% DI water.* It is also acceptable to use another compatible liquid (with surface tension less than 24dyne/cm), although the Bubble Point values must be corrected for surface tension and air permeability differences.

BUBBLE POINT TEST

1. Install the filter cartridge into the housing.
2. Open the vent valve and fill the housing with wetting fluid until liquid exits from the vent.
3. Wet the filter as described in the Wetting Procedure (See Section 2).
4. Drain the housing (upstream and downstream of the filter cartridge).
5. Connect the housing inlet to a regulated (0-60psig) source of clean, compressed gas, and connect the housing outlet to a tube extending into a collection vessel (e.g., beaker) partially filled with liquid.
6. Pressurize the filter assembly to 3psig (0.2bar) and hold at this pressure for 30 seconds to displace any residual wetting solution.
7. Increase the gas pressure slowly while observing for bubbles in the collection vessel.
8. Report the Bubble Point as the pressure at which a surge of bubbles appears from the tube in the collection vessel.
9. Acceptable minimum Bubble Point values (*in 60% IPA / 40% DI Water*) are listed below:

Minimum Bubble Points

FILTER RATING (micron)	MINIMUM BUBBLE POINT	
	(psig)	(bar)
0.1	16	1.1
0.2	9	0.6
0.07	20	1.3

NOTE: When using a wetting fluid that has a surface tension different from that of 60% IPA/40% DI Water, please contact Parker Support bwf.oxn.support@support.parker.com for the appropriate integrity test values.

*Non-aqueous service may indicate modification of the procedure for fluids with other surface tensions.

Contact Parker Support for more information at bwf.oxn.support@support.parker.com.

