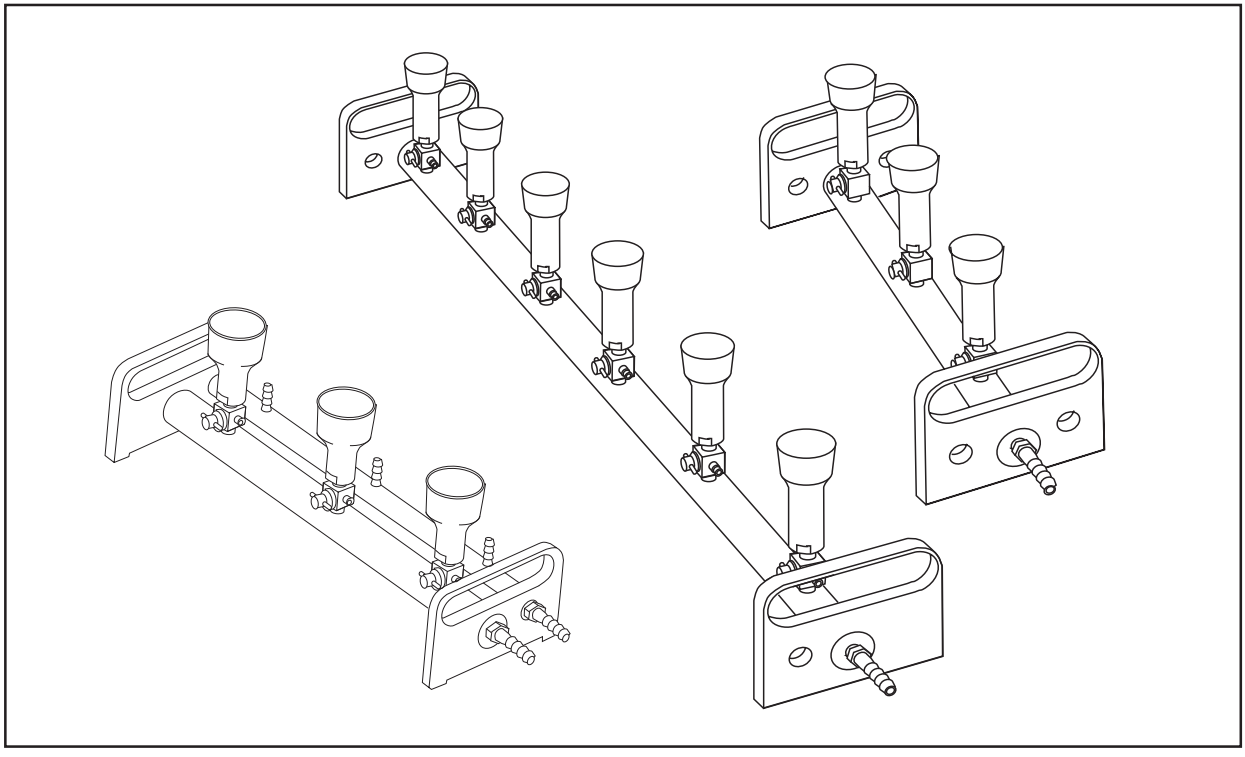
MILLIPORE

# Filter Holder Manifold User Guide

- 3- and 6-Place Stainless Steel Manifolds
- 3- and 6-Place Sterility Test Manifolds
- 3-Place PVC Manifold



# Notice

The information in this document is subject to change without notice and should not be construed as a commitment by Millipore Corporation. Millipore Corporation assumes no responsibility for any errors that may appear in this document. This manual is believed to be complete and accurate at the time of publication. In no event shall Millipore Corporation be liable for incidental or consequential damages in connection with or arising from the use of this manual.



P35745, Rev. B, 1/05

# Contents

# Filter Holder Manifolds

## Introduction

This document describes how to use the 3- and 6-place stainless steel manifolds and sterility test manifolds, and the 3-place PVC manifold. It contains details on:

- Manifold function
- Components
- Assembly
- Use
- Maintenance
- Specifications
- Ordering information

# Manifold Function

The manifold may be used for simultaneous filtration of three or six test samples. Each filter holder support station accepts any Millipore filter holder fitted with a No. 8 silicone perforated stopper.

## Applications

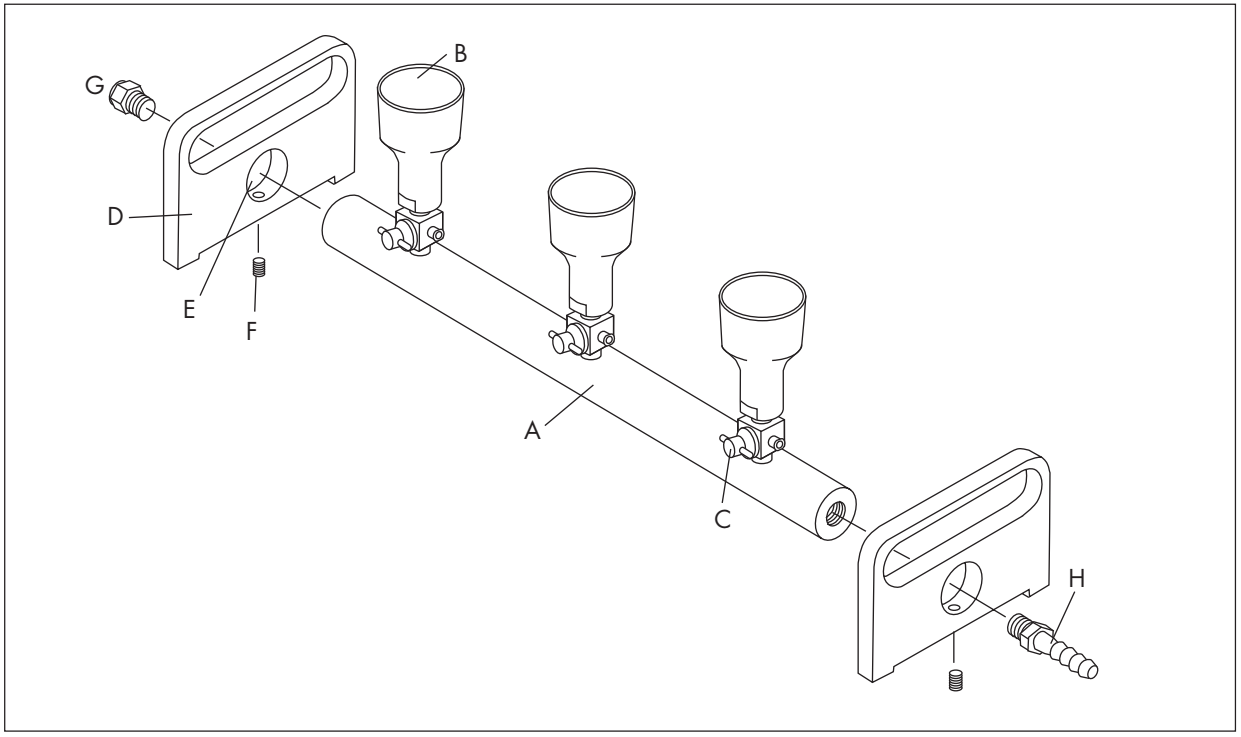
Although the three manifolds look similar, each type has differences in materials and design (or both) to best suit its application. See this chart for details.

| Manifold | Application |
|---|---|
| Stainless Steel Manifold (3- and 6-place) | Aseptic applications requiring autoclaving, but not requiring a closed system. A port on each 3-way vacuum valve allows for a vent filter attachment for removal of airborne particulates. |
| Sterility Test Manifold (3- and 6-place) | Sterility testing and sterilizing applications requiring a closed system, autoclaving, and use of a microporous membrane. The unit has an extra rinse manifold pipe for bringing rinse fluid directly and aseptically into the filter funnel without external contamination. A port on each 3-way vacuum valve allows for a vent filter attachment for removal of airborne particulates. |
| PVC Manifold (3-place) | Non-sterile applications (autoclaving not required). The unit is made of polyvinyl chloride (PVC), a non-autoclavable material that is much lighter in weight than stainless steel. The unit does not have a 3-way vacuum valve at each filter holder station, so vacuum must be vented at the source only. |

# Manifold Components

The following sections illustrate the components making up each type of manifold.

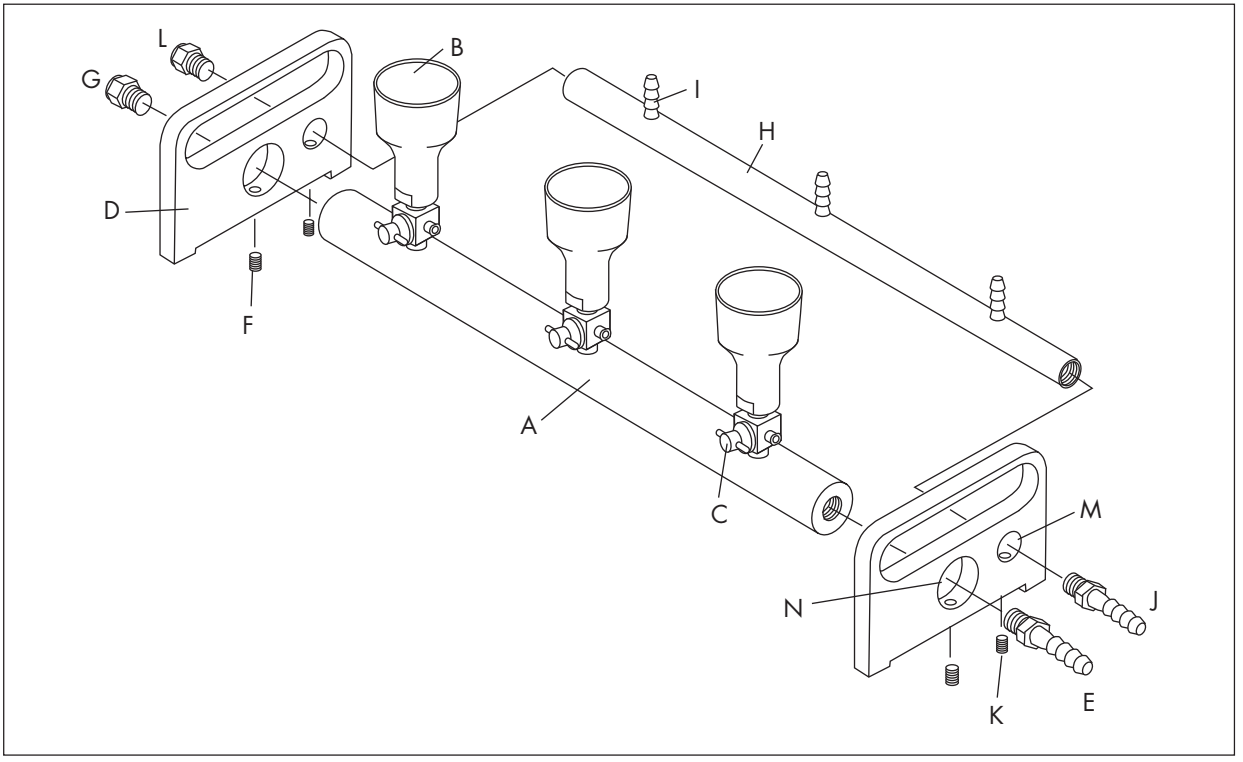
## Diagram of the 3-Place Stainless Steel and PVC Manifolds




| Letter | Component | Letter | Component |
|---|---|---|---|
| A | Manifold pipe | E | Hole for manifold pipe |
| B | Filter holder support (tulip) | F | Set screw |
| C | Control valve | G | Vacuum pipe plug |
| D | Handle | H | Vacuum hose adapter |

NOTE: The 6-place stainless steel manifold components are the same as above, with six filter holder supports (B) instead of three.

## Diagram of the Sterility Test Manifold




| Letter | Component | Letter | Component |
|---|---|---|---|
| A | Manifold pipe | H | Rinse manifold pipe |
| B | Filter holder support (tulip) | I | Rinse manifold tubing connector |
| C | Control valve | J | Rinse manifold hose adapter |
| D | Handle | K | Rinse manifold set screw |
| E | Vacuum hose adapter | L | Rinse manifold pipe plug |
| F | Set screw | M | Hole in handle for rinse pipe |
| G | Vacuum pipe plug | N | Hole in handle for manifold pipe |

NOTE: The 6-place sterility test manifold components are the same as above, with six filter holder supports (B) instead of three.

# How to Assemble the Manifold

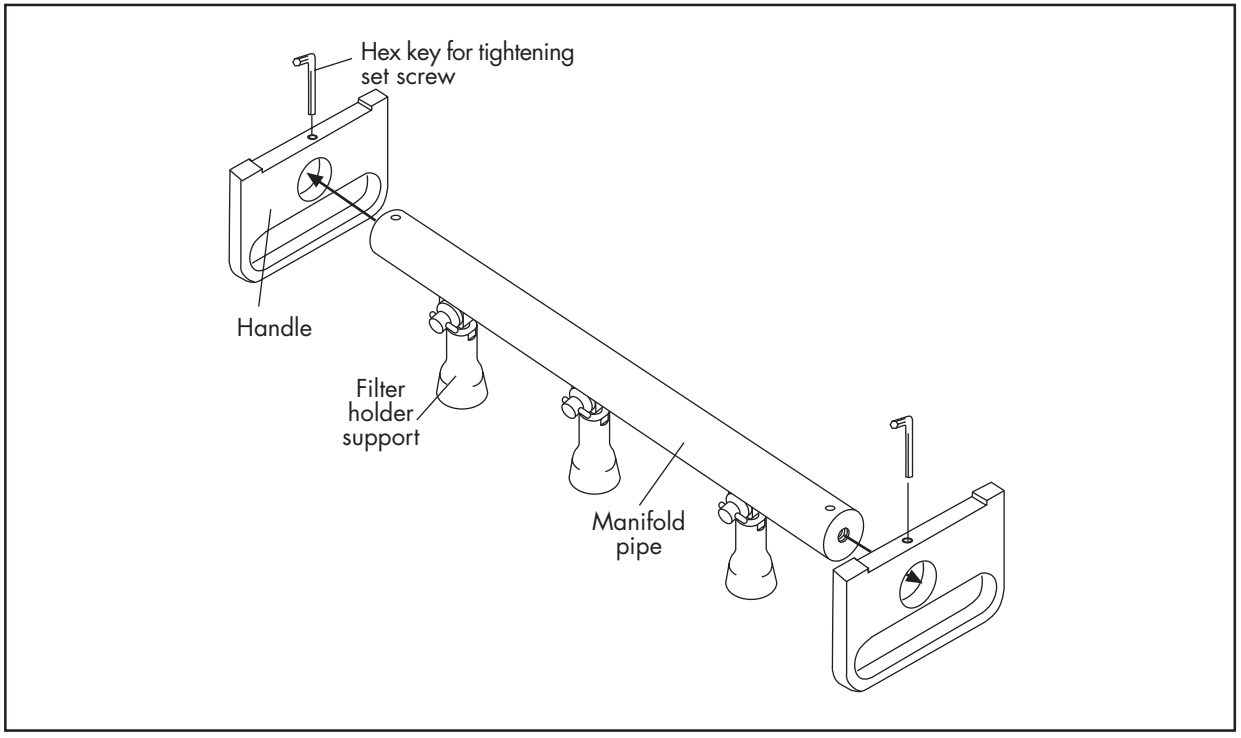
The following sections show how to set up the manifolds. Basic assembly for all units is the same, with some differences in the assembly of the sterility test manifold.

## How to Assemble the Stainless Steel and PVC Manifolds

To set up the stainless steel and PVC manifolds, follow the steps in this section.

NOTE: Assembling the 6-place stainless steel manifold is the same as for the 3-place unit.

1. Invert the manifold on a flat, sturdy surface, making sure the filter holder supports are facing down and are perpendicular to the manifold pipe.
2. Slide each end of the pipe into the hole in the handle. Using the hex key, immediately tighten the set screw beneath each handle until it just touches the pipe.



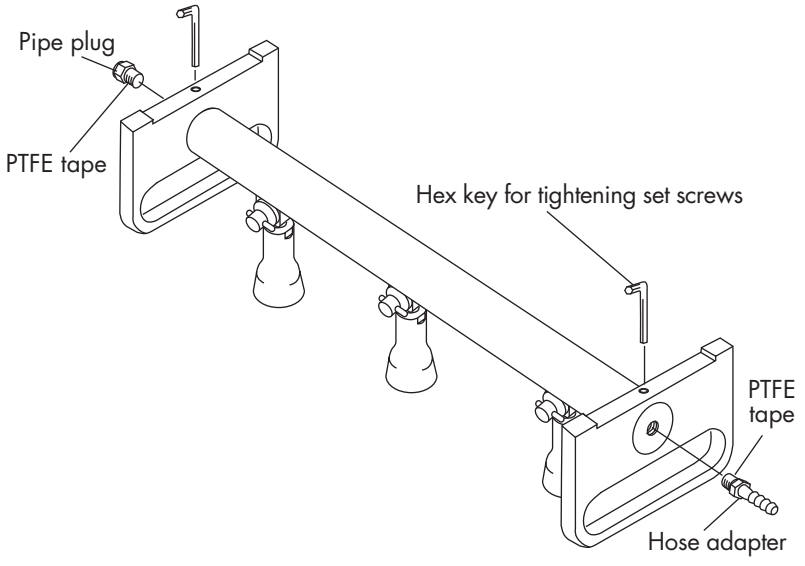
## How to Assemble the Stainless Steel and PVC Manifolds, continued

3. Turn the manifold upright and make sure that it sits steady on the table surface. Re-align handles if necessary.
4. Invert the manifold without disturbing the handle alignment. Tighten the set screws one-quarter to one-half turn.

   NOTE: Do not tighten the set screws more than one-half turn after they touch the pipe or you could damage the thread.

5. Insert the pipe plug into one end of the manifold pipe and hose adapter into the other end. Tighten with a wrench.

   NOTE: The plug and hose adapter fit either end of the manifold pipe. Choose whichever orientation is convenient.




6. Turn the manifold upright.

## How to Assemble the Sterility Test Manifold

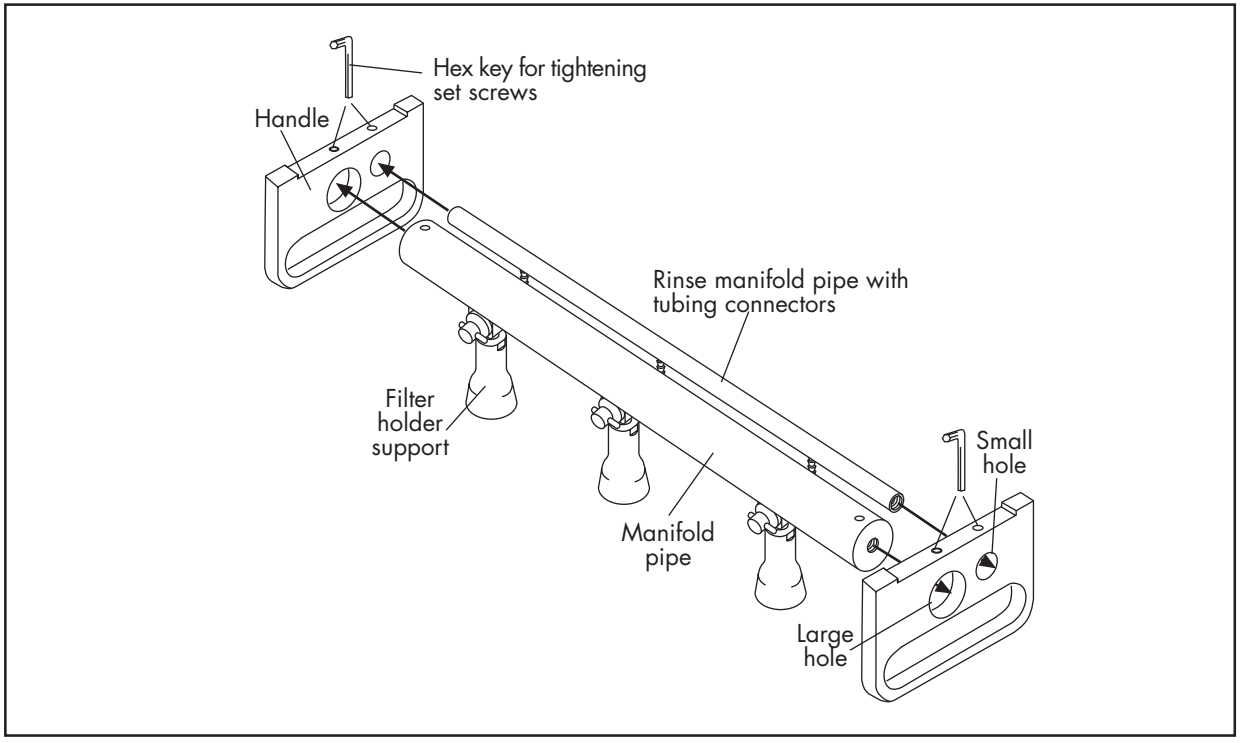
To set up the sterility test manifold, follow the steps in this section.

NOTE: Assembling the 6-place sterility test manifold is the same as for the 3-place unit.

1. Invert the manifold on a flat, sturdy surface.
2. Slide each end of the larger pipe into the larger hole at the front of the handles, making sure that the control valves are facing out.
3. Slide each end of the smaller pipe (the rinse manifold) into the smaller hole at the rear of the handle.

   NOTE: Make sure the filter holder supports and tubing connectors are facing down, perpendicular to the manifold pipe, and parallel to each other.

4. Using the hex key, immediately tighten the set screw beneath each handle until it just touches the pipe.



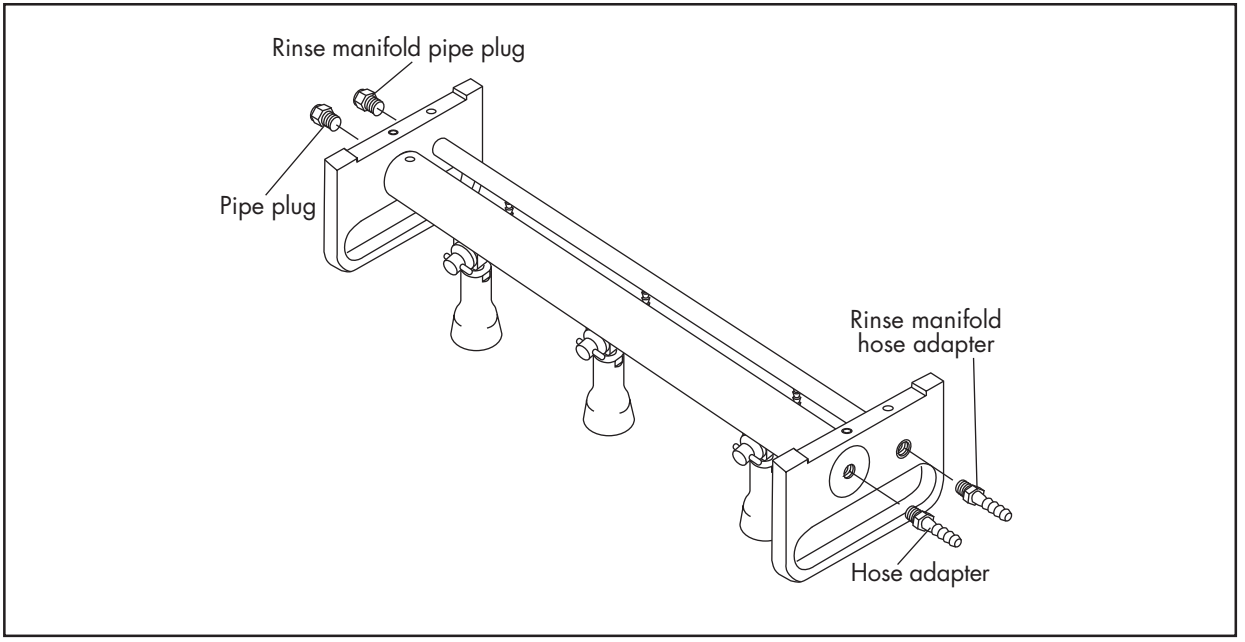
## How to Assemble the Sterility Test Manifold, continued

5. Turn the manifold upright and make sure that it sits steady on the table surface. Re-align handles if necessary.
6. Invert the manifold without disturbing the handle alignment. Tighten the set screws one-quarter to one-half turn.

   NOTE: Do not tighten the set screws more than one-half turn after they touch the pipe or you could damage the thread.

7. Wrap the threads of the pipe plugs and hose adapters with PTFE tape. Insert the pipe plugs into one end of the manifold pipe and hose adapters into the other end. Tighten with a wrench.

   NOTE: The plugs and hose adapters fit either end of the manifold pipe. Choose whichever orientation is convenient.




8. Turn the manifold upright.

# How to Autoclave the Manifold (stainless steel manifolds only)

1. Wrap the manifold with autoclave paper such as Kraft paper or Tyvek® material.
2. Autoclave at standard conditions.

   NOTE: Validate the autoclaving procedure.

3. Allow the unit to cool before use.

# How to Install Vent Filters (stainless steel manifolds only)

The vacuum release port on each control valve has a Luer-Lok™ connection to which a 0.22 µm filter can be attached. This filter enables sterile air to be filtered back into the holder when the vacuum is released. There are two options available.

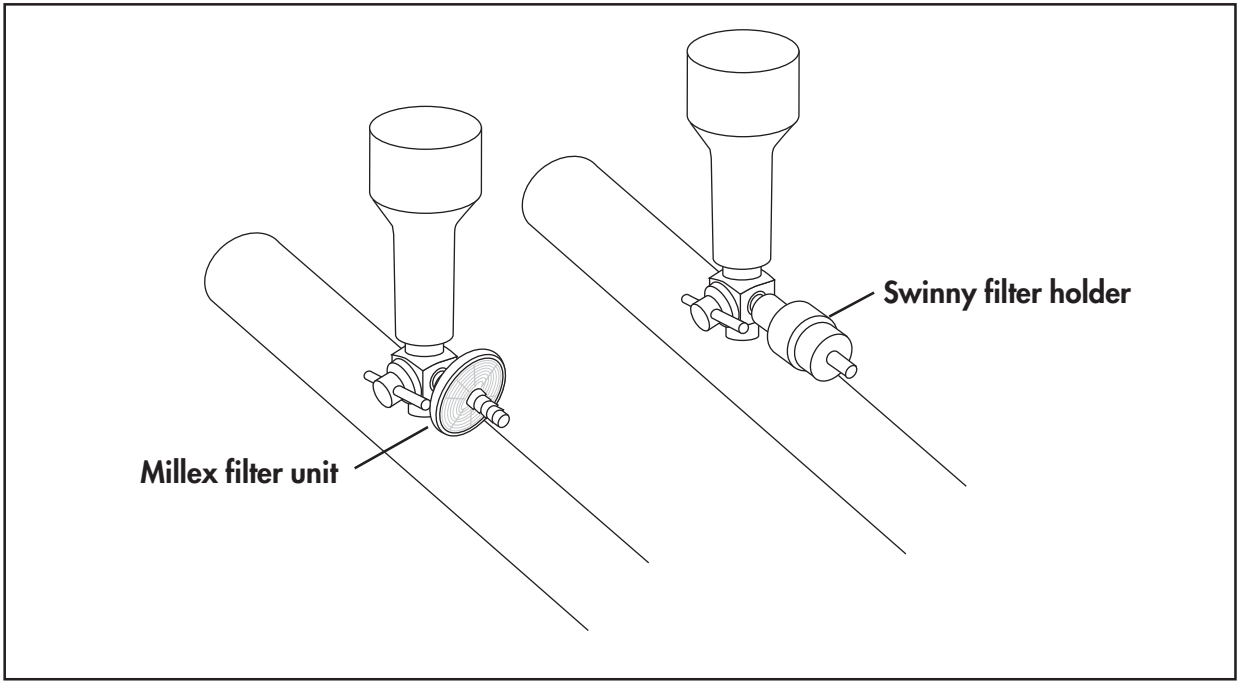
### Millex® Filter Units (Millipore cat. no. SLFG 025 LS)

1. Autoclave the manifold.
2. After the manifold has cooled, attach sterile Millex filter units to the luer connection of each of the valve ports.

### Swinny Filter Holders (Millipore cat. no. XX30 012 00)

1. Assemble the Swinny filter holder with a Fluoropore™ (PTFE) membrane filter (Millipore cat. no. FGLP 013 00) in place as directed in the Swinny filter holder user guide (P30970).

   NOTE: Do not tighten the holder completely until autoclaving is complete.
2. Wrap the Swinny unit with autoclave paper such as kraft paper or Tyvek material.
3. Autoclave the Swinny unit for 15 minutes at 121 °C under wet tank, slow exhaust conditions.
4. After the unit has cooled, tighten the Swinny filter holder completely using aseptic technique and being careful not to touch the inlet or outlet.
5. Attach the unit to the autoclaved manifold at the Luer-Lok connection.

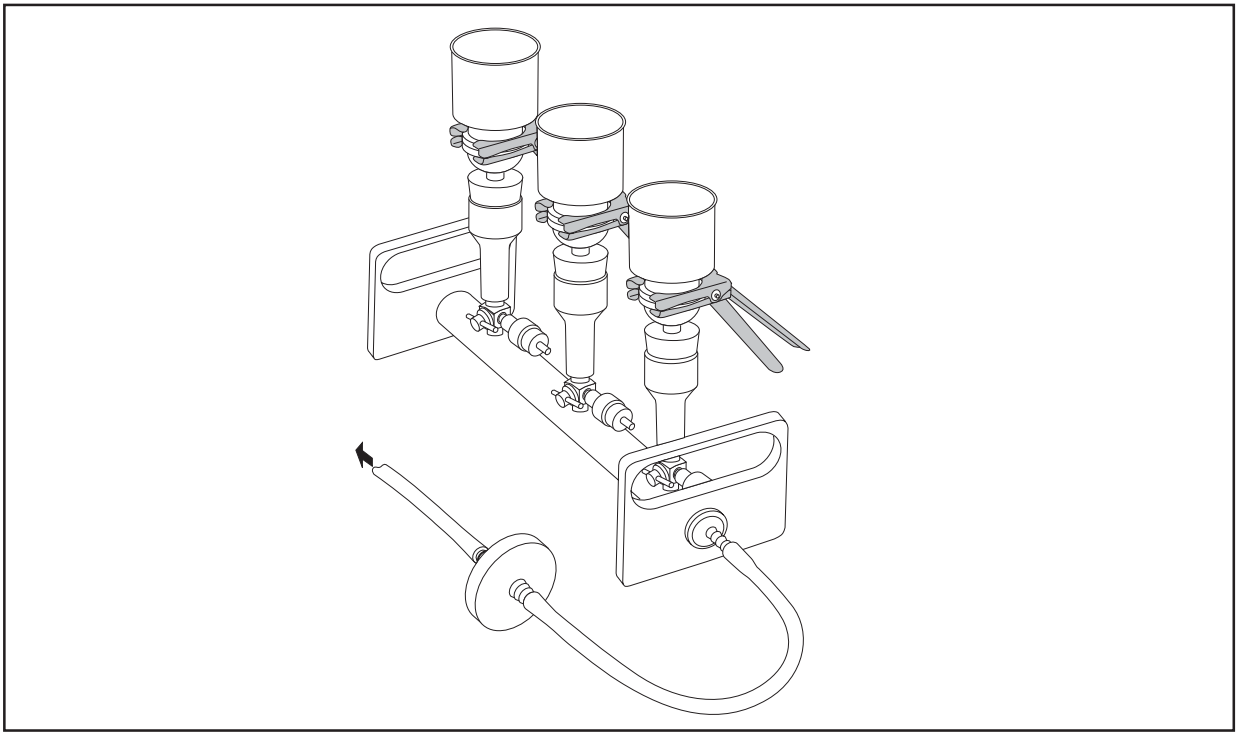


# How to Use the Manifold

1. Put on laboratory gloves and safety glasses. Attach a Millipore filter holder fitted with a No. 8 stopper to a filter holder support station on the manifold.
2. Connect the manifold to a vacuum source. Pour the sample into the filter holder funnel, apply vacuum to filter the sample, adjusting valve to control flow speed as needed, then turn off the vacuum.
3. Pour rinse fluid into the filter holder funnel after the sample has been filtered. Apply vacuum to draw fluid through the filter. Repeat the rinsing step as necessary.

   NOTE: The sterility test manifold is fitted with tubing that brings sterile water (such as Milli-Q® water) directly and aseptically into the filter funnel.

4. Turn off the vacuum after the rinse. Disconnect the hose(s) and remove the filter holder.



# How to Clean the Manifold

Immediately after use, clean the manifold parts to ensure optimum performance.

1. Clean all parts with a sponge, hot water, and non-alkaline, non- abrasive cleanser.

   **CAUTION:** Do not use steel wool or abrasive materials since they can harm the components.

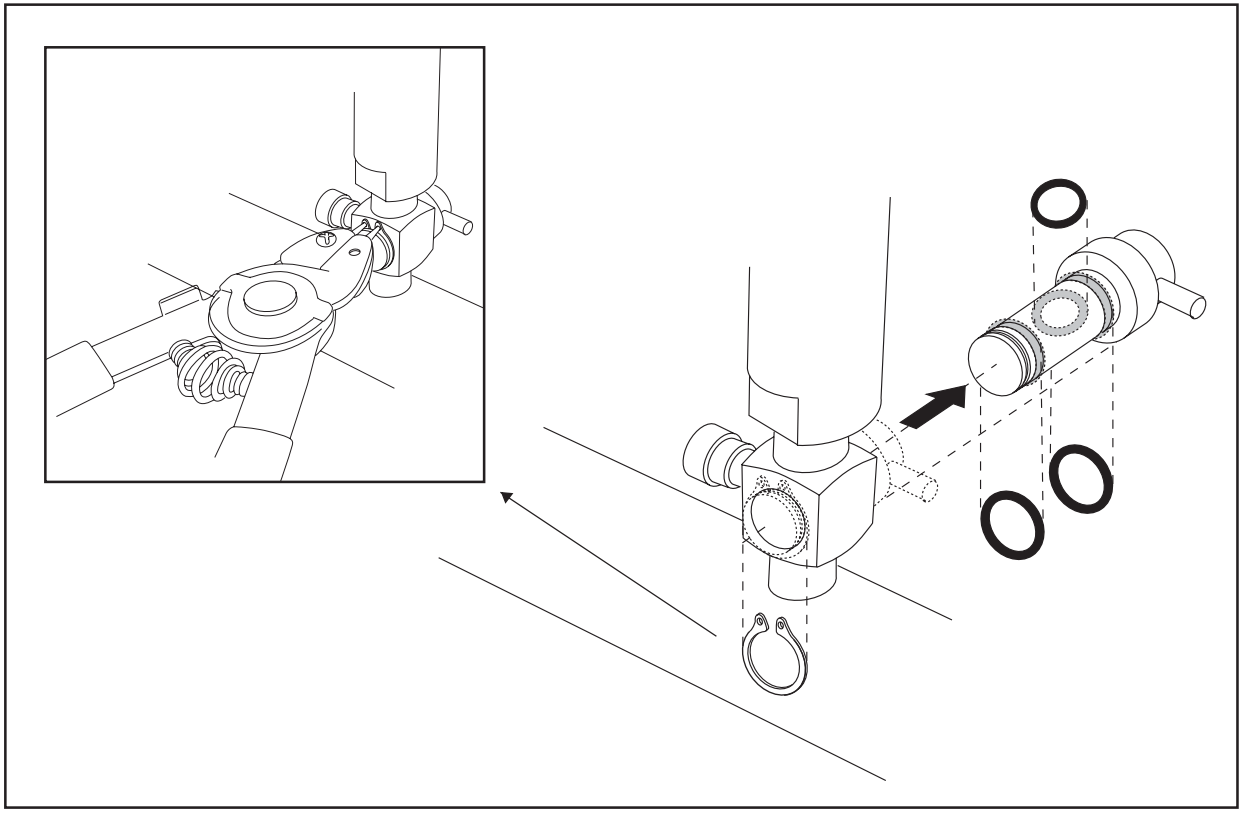
2. Rinse parts thoroughly with clean, laboratory-grade water (such as Milli-Q water) and then air dry.

   **CAUTION:** Do not wipe components dry with paper or cloth since fibers and lint left on surfaces can generate electrostatic forces that attract more dirt.

# How to Change the Valve O-rings

Each valve contains three O-rings, two large and one small.

1. Using a pair of "C clip" pliers, remove the C clip from the valve. Pull the handle to separate it from the main body of the valve. The O-rings are on the handle stem.
2. Remove the three old O-rings and discard, replacing them with new O-rings.
3. Return the handle to its original position in the valve body and replace the C clip.



# Product Specifications

The following sections provide details about the manifolds' materials of construction, physical characteristics, and connections.

## Manifold Materials

| Component Part | Stainless Steel or Sterility Test Manifold | PVC Manifold |
|---|---|---|
| Handles | Anodized aluminum | Polypropylene |
| Body | Stainless steel | Polyvinylchloride |
| Control valves | 316 stainless steel with Viton® seals | 316 stainless steel with Viton seals |
| Hose adapters | Stainless steel | Polypropylene |

## Stainless Steel or Sterility Test Manifold Physical Characteristics

| Characteristic | 3-Place Manifold | 6-Place Manifold |
|---|---|---|
| Dimensions | 451 × 152 × 152 mm (17.75 × 8 × 8 in.) | 876 × 152 × 152 mm (34.5 × 8.0 × 8.0 in.) |
| Weight | 5.0 kg (11.0 lb) | 9.8 kg (21.6 lb) |
| Autoclavable | Temperature: 121 °C (250 °F) | Temperature: 121°C (250 °F) |

## 3-Place PVC Manifold Physical Characteristics

| Characteristic | PVC Manifold |
|---|---|
| Dimensions | 451 × 152 × 152 mm (17.75 × 8 × 8 in.) |
| Weight | 1.5 kg (3.3 lb) |
| Not autoclavable | Temperature limit sustainable: 55 °C (131 °F) |

### Manifold Connections

| Component Part | Connection |
|---|---|
| Filter holder supports | Will accept any Millipore filter holder fitted with a No. 8 silicone stopper |
| Hose adapter on manifold pipe | For use with 9.5 mm (3/8 in.) I.D. tubing |
| Hose adapter on rinse manifold pipe (Sterility test manifold, only) | For use with 6 mm (1/4 in.) I.D. tubing |
| Female Luer-Lok port on each 3-way vacuum valve | For vent filter unit attachment (13 mm Swinnex® holder or 25 mm Millex filter unit) |

NOTE: The PVC manifold does not have a 3-way vacuum valve.

# Product Replacement Parts

This section lists the catalogue numbers of the 3- and 6-place stainless steel and sterility test manifolds and the 3-place PVC manifold. See the section you need.

### 3- and 6-Place Stainless Steel Manifolds

| Part | 3-Place Manifold Catalogue Numbers | 6-Place Manifold Catalogue Numbers |
|---|---|---|
| Filter holder manifold | XX25 047 35 | XX25 047 00 |
| Filter holder support (tulip) | XX25 047 01 | XX25 047 01 |
| Three-way control valve with Luer-Lok connector | XX25 047 02 | XX25 047 02 |
| Three-way valve O-ring set (10/set); C-ring clip (6/set) | XX25 047 RK | XX25 047 RK |
| Hose adapter, 2/pk | XX25 047 05 | XX25 047 05 |
| Pipe plug, 2/pk | YY13 010 09 | YY13 010 09 |
| End bracket, 2/pk | 15201 | 15201 |
| PTFE tape | TP00 013 26 | TP00 013 26 |
| Set screw, 2/pk (1/4"- 20 × 1/2" long) | STD | STD |
| Hex key | P12286 | P12286 |

## 3- and 6-Place Sterility Test Manifolds

| Part | 3-Place Manifold Catalogue Numbers | 6-Place Manifold Catalogue Numbers |
|---|---|---|
| Sterility Test Manifold | XX25 047 38 | XX25 047 58 |
| Filter holder support (tulip) | XX25 047 01 | XX25 047 01 |
| Rinse manifold | XX25 047 38 | XX25 047 58 |
| Three-way control valve with Luer-Lok connector | XX25 047 02 | XX25 047 02 |
| Three-way valve O-ring set, 10/set | XX25 047 07 | XX25 047 07 |
| C-ring clip, 6/set | XX25 047 08 | XX25 047 08 |
| Hose adapter, 2/pk | XX25 047 05 | XX25 047 05 |
| Pipe plug, 2/pk | YY13 010 09 | YY13 010 09 |
| End bracket, 2/pk | 15201 | 15201 |
| PTFE tape | TP00 013 26 | TP00 013 26 |
| Set screw, 2/pk (1/4"- 20 × 1/2" long) | STD | STD |
| Hex key | P12286 | P12286 |

## 3-Place PVC Manifold

| Part | 3-Place PVC Manifold Catalogue Numbers |
|---|---|
| Filter holder manifold | XX26 047 35 |
| Filter holder support (tulip) | XX26 047 01 |
| Two-way control valve | XX26 047 02 |
| Hose adapter, 2/pk | XX43 047 04 |
| End bracket, 2/pk | 15201 |
| Pipe plug, 2/pk | YY13 010 09 |
| PTFE tape | TP00 013 26 |
| Set screw, 2/pk (1/4"- 20 × 1/2" long) | STD |
| Hex key | P12286 |

# Technical Assistance

For more information, contact the Millipore office nearest you. In the U.S., call **1-800-MILLIPORE** (1-800-645-5476). Outside the U.S., see your Millipore catalogue for the phone number of the office nearest you or go to our web site at www.millipore.com/offices for up-to-date worldwide contact information. You can also visit the tech service page on our web site at www.millipore.com/techservice.

# Standard Warranty

**Millipore Corporation** ("Millipore") warrants its products will meet their applicable published specifications when used in accordance with their applicable instructions for a period of one year from shipment of the products. **MILLIPORE MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** The warranty provided herein and the data, specifications and descriptions of Millipore products appearing in Millipore's published catalogues and product literature may not be altered except by express written agreement signed by an officer of Millipore. Representations, oral or written, which are inconsistent with this warranty or such publications are not authorized and if given, should not be relied upon.

In the event of a breach of the foregoing warranty, Millipore's sole obligation shall be to repair or replace, at its option, the applicable product or part thereof, provided the customer notifies Millipore promptly of any such breach. If after exercising reasonable efforts, Millipore is unable to repair or replace the product or part, then Millipore shall refund to the customer all monies paid for such applicable product or part. **MILLIPORE SHALL NOT BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, SPECIAL OR ANY OTHER INDIRECT DAMAGES RESULTING FROM ECONOMIC LOSS OR PROPERTY DAMAGE SUSTAINED BY ANY CUSTOMER FROM THE USE OF ITS PRODUCTS.**

MILLIPORE