

## User Guide

# Stainless Steel In-line Filter Holder, 47 mm

**XX4404700**

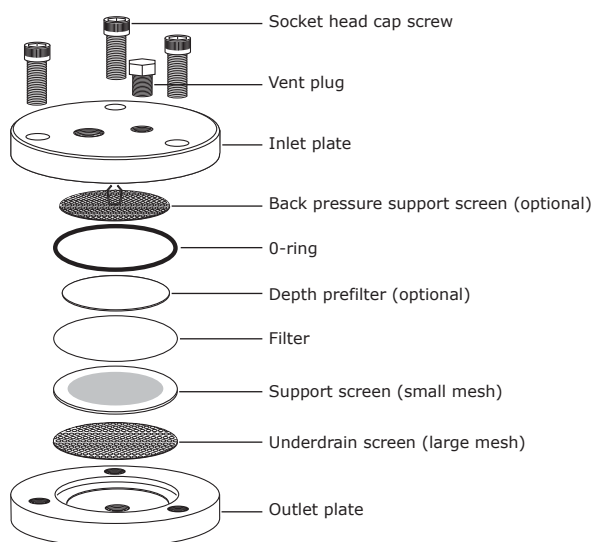
## Introduction

The 47 mm Stainless Steel In-line Filter Holder is designed for the filtration of gases or liquids at inlet pressures up to 19 bar (275 psi). With the appropriate filter material, the stainless steel assembly allows filtration of chemically aggressive fluids or gases. Three heavy-duty socket head screws allow disassembly of the filter holder for filter replacement.

The filter holder can be loaded with any pre-cut 47 mm filter and an optional depth prefilter. An optional back-pressure support screen is provided for back-surge protection. The holder may be autoclaved with the filter in place using the accessory polytetrafluoroethylene (PTFE)-coated support screens, XX4404702 and XX4404704.

## Assembly

Refer to the assembly diagram below:



1. Unscrew the three socket head cap screws, using the hex key supplied if necessary.
2. Remove the silicone O-ring and inspect for damage; imperfections can cause leaks during filtration. Replace damaged parts.
3. Place the underdrain screen (large mesh) in the outlet plate and then place the support screen (small mesh), smooth side facing up, on top.
4. Using smooth-tip forceps, place a 47 mm pre-cut filter on top of the support screen, and then place the O-ring on top of the filter. If a depth-type prefilter (42 mm) is required to extend the life of the final filter, place the prefilter disc inside the O-ring.
5. If using the back-pressure support screen, insert it into inlet plate.
6. Place the inlet plate onto the assembly, aligning the inlet and outlet plate holes and screw down tightly.

**NOTE:** For even sealing of the membrane, tighten the screws the same number of turns all the way around, first by hand, then completely using the hex key supplied with the holder.

7. Wrap the male threads of the plug for the vent hole with PTFE tape. Place the plug in the vent hole and tighten with a wrench.

**NOTE:** To prevent over-pressurization, the accessory vent/relief valve (XX4204708, sold separately) can be installed in place of the vent plug.

## Installation

The filter holder comes with 1/4 in. female national pipe thread (NPT) inlet and outlet ports. The unit can be installed in either rigid or flexible tubing. Wrap male tube fitting threads with PTFE tape, then tighten connections with a wrench.

## Autoclaving

The filter holder can be autoclaved with the filter in place. For applications where the filter must be removed intact for further use, PTFE-coated filter support screens are recommended. For clarification/sterilization applications that do not require removing the membrane intact for further use, uncoated stainless steel filter support screens can be used.

1. Remove the holder from the in-line plumbing.
2. If the final application requires removing an intact filter from the filter holder, exchange the filter support screen and back-pressure support screen for their PTFE-coated equivalents (XX4404702 and XX4404704).  
Make sure that all inner surfaces of the filter holder are completely dry, then assemble the holder with a filter in place. Hand tighten the cap screws.
3. Wrap the holder with lint-free autoclave paper, and autoclave for 15 minutes at 121 °C and 1 bar (15 psi).
4. After the unit has cooled, fully tighten it with the supplied hex key, being careful not to touch the outlet port.
5. Replace it in the plumbing line using aseptic technique to maintain sterility.

## Maintenance

Clean the filter holder regularly. Frequency of cleaning will depend on the level of contamination in the fluid being filtered.

1. Remove holder from plumbing system.
2. Disassemble it completely and remove all PTFE wrapping from the connector threads.
3. Clean components thoroughly with a sponge, hot water, and a non-abrasive cleanser. Scrub threaded parts, recesses, and orifices with a stiff bristle brush and cleanser to remove all traces of contaminants.

**CAUTION:** To avoid component damage, never use steel wool or abrasive materials on any part of the filter holder.

4. Rinse all parts thoroughly with hot running tap water and then rinse several times with cold laboratory-grade water.
5. Allow the components to air dry while disassembled.

**CAUTION:** Do not wipe dry with paper or cloth, as this leaves fibers and lint on the surfaces and also generates electrostatic forces that can attract more dirt. Filtered compressed air can be used to facilitate drying.

## Specifications

<b>Maximum pressure</b>	19 bar (275 psi) inlet and differential
<b>Filter diameter</b>	47 mm
<b>Prefilter diameter</b>	42 mm (thick depth prefilter)
<b>Effective filtration area</b>	Approximately 13.8 cm <sup>2</sup> (2.14 in <sup>2</sup> )

### Connections

Inlet	1/4 inch female NPT
Outlet	1/4 inch female NPT
Vent	1/8 inch female NPT

### Dimensions

Diameter	7.6 cm (3.0 in.)
Height	3.6 cm (1.4 in.) includes vent plug

<b>Weight</b>	823 g (1.8 lb)
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### Materials of construction

Inlet and outlet plates	316 stainless steel
Underdrain and back pressure support screens	316 stainless steel
Filter support screen	316 stainless steel
O-ring	silicone
Socket head cap screws	410 stainless steel

## Typical Filter Flow Rates

Flow rates are determined by the filter. Go to [SigmaAldrich.com](http://SigmaAldrich.com) and search the product number of the filter being used. Scroll to Specifications.

## Statement Regarding Compliance with the Pressure Equipment Directive, 2014/68/EU

We certify this product complies with the European Pressure Equipment Directive, 97/23/EC of 29 May 1997. This product is classified under Article 3 § 3 of the Pressure Equipment Directive. It has been designed and manufactured in accordance with sound engineering practices to ensure safe use. The product is accompanied by user instructions and bears markings to permit identification of EMD Millipore Corporation as the manufacturer or authorized representative of this product within the European Community. In compliance with Article 3 § 3 of the Pressure Equipment Directive, this product does not bear the CE mark.

## Product Ordering Information

Purchase these products on-line at [SigmaAldrich.com](https://SigmaAldrich.com).

Description	Qty	Catalogue Number
Stainless Steel In-line Filter Holder, 47 mm	1	XX4404700
<b>Replacement Parts</b>		
Back-pressure support screen	1	XX4404703
O-ring, silicone (2-131)	6	XX4304701
Support screen, 47 mm	1	XX4204709
Underdrain screen, 47 mm	1	5614
Pipe plug, 1/8 in. NPT	1	009507P
<b>Accessories</b>		
PTFE-coated support screen	1	XX4404702
PTFE-coated back pressure support screen	1	XX4404704
Stainless steel hose connector 1/4 in. male NPT to 3/8 in. ID (inner diameter) hose	1	XX2504705
Vent/relief valve, 19 bar (275 psi)	1	XX4204708
Filter forceps, stainless, blunt end	3	XX6200006P
PTFE tape, roll, 0.5 in. x 260 in. (1.3 x 660 cm)	1	TP0001326

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