

User Guide

25 mm High Pressure Stainless Steel Filter Holder

XX4502500

Introduction

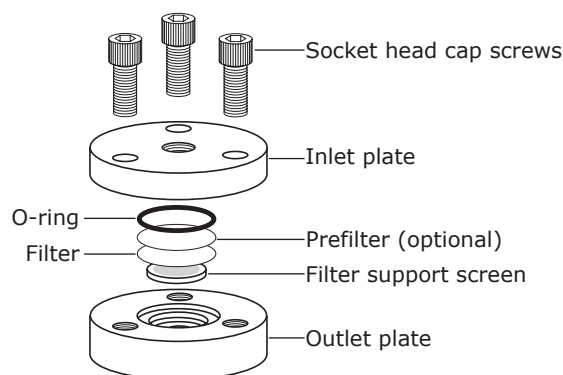
The 25 mm High Pressure 316 Stainless Steel Filter Holder is used in laboratory applications to filter high-pressure gases or liquids for clarification/particulate removal or analysis of particulates retained on a membrane filter.

WARNING: Do not use with fluids rated as dangerous substances.

The pressure limit for this filter holder is 345 bar (5,000 psi) inlet, 69 bar (1,000 psi) differential.

NOTE: Although this stainless steel filter holder can withstand high pressures, polymeric membrane filters are subject to compaction and flow degradation at much lower pressures. The pressure at which a given membrane filter will compact depends on its composition (polymer and backing). In general, membrane filters with smaller pore sizes ($\leq 2.0 \mu\text{m}$) can withstand higher pressure differentials ($\Delta P = P_{\text{inlet}} - P_{\text{outlet}}$) than membrane filters with larger pore sizes. When using polymeric membrane filters, a reduction in flow as pressure is increased indicates that the pressure is too high and that the filter should be used at a lower ΔP .

Filter Holder Assembly



1. Unscrew the three socket head cap screws, using the hex key supplied, if necessary.
2. Remove the O-ring from the inlet plate and inspect for damage; imperfections can cause leaks during filtration. Replace if damaged. Place the O-ring back into the inlet plate O-ring groove.
3. Make sure filter support screen is seated with the smooth side up in the outlet plate.
4. Using smooth-tip forceps, place a 25 mm filter on top of the support screen. If using a prefilter in addition to the membrane filter, center it on top of the membrane filter.
5. Place the inlet plate onto the assembly, aligning the holes of the inlet and outlet plates.
6. To evenly seal the membrane, hand-tighten the screws the same number of turns all the way around, then tighten completely using the hex key supplied with the holder.

Installation

The 25 mm filter holder comes with $\frac{1}{8}$ in. female national pipe thread (NPT) inlet and outlet, and can be installed with either rigid or flexible tubing. Wrap the male threads with polytetrafluoroethylene (PTFE) tape, then tighten connections with a wrench.

Autoclaving

NOTE: The filter holder can be autoclaved with the filter in place for clarification/sterilization applications that do not require removing the filter intact for further use.

1. Remove the holder from the in-line plumbing.
2. 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 all 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 holder or support screens.

4. Rinse all parts thoroughly with hot running tap water and then rinse with cold laboratory-grade water. 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.

5. Replace any damaged components with EMD Millipore Corporation replacement parts. Use of parts from other manufacturers/suppliers may compromise the safety and functionality of the filter holder.

Specifications

Maximum pressure	Inlet: 345 bar (5,000 psi)
	Differential: 69 bar (1000 psi)*
Filter diameter	25 mm
Prefilter diameter	25 mm
Effective filtration area	Approximately 2.2 cm ² (0.34 in. ²)
Connections	Inlet and outlet: $\frac{1}{8}$ in. female NPT
Dimensions	Diameter: 5.1 cm (2.0 in.)
	Height: 3.1 cm (1.2 in.)
Weight	349 g (12.3 oz)
Materials of construction	Inlet and outlet plates: 316 stainless steel
	Filter support screen: 316 stainless steel
	O-ring (2-018): Buna-N rubber
	Socket head cap screws: 18/8 stainless steel

*See note regarding membrane filter pressure differential in Introduction

Typical Filter Flow Rates

For typical flow rates and available microporous membrane filters, go to [SigmaAldrich.com](https://www.sigmaaldrich.com) and enter the membrane or filter name (*Durapore*®, *MF-Millipore*®, *Fluoropore*®, etc.) in the search box.

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

We certify that this product complies with the European Pressure Equipment Directive, 2014/68/EU of 15 May 2014. This product is classified under Article 4 § 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 as the manufacturer or authorized representative of this product within the European Community. In compliance with Article 4 § 3 of the Pressure Equipment Directive, this product does not bear the CE mark.

Product Ordering Information

This section lists catalogue numbers for the 25 mm High Pressure Stainless Steel Filter Holder, spare parts, and accessories. See the Technical Assistance section for contact information. You can purchase these products on-line at SigmaAldrich.com.

Filter Holder Description	Catalogue Number
25 mm High Pressure Stainless Steel Filter Holder	XX4502500
Replacement Parts	
Replacement parts kit (includes socket head cap screw (3), 2-018 O-rings (3), filter support screen (1), 1/4 in. hex key (1))	XX45025RK
Stainless steel filter support screen (1/pk)	XX4502504
Accessories	
Filter forceps, stainless, blunt end (3/pk)	XX6200006P
PTFE tape, 1.3 × 660 cm (0.5 × 260 in.) roll	TP0001326

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