



Hardware for Pod disposable depth filter systems

Innovative, high-performance Pods are ideal for primary and secondary clarification in lab, pilot, and process-scale applications.

Millistak+®, Millistak+® HC Pro, and Clarisolve® depth filter media are offered in a scalable, disposable format, the Pod Filter System. Accommodating applications from lab to pilot to process scale, the Pod format offers great flexibility because of its unique modular design.

The Pod system is ideal for a wide variety of primary and secondary clarification applications, including mAb and recombinant protein cell culture harvest, downstream polishing, prefiltration for virus removal filtration, and microbial filtration.

The system's modular design allows users to operate the system with as few as one or as many as thirty Pod filters at pilot or process scales respectively. These options make it easy to configure a system for a specific application, and conveniently reconfigure it as process capacity requirements scale-up or down.



Benefits

- Modular format offers scalability up to 20,000 liters
- Optional 100% disposable flow path eliminates need for housing, CIP, and cleaning validation
- Robust construction is easy to set up and use
- Increase your filtration area by 6-fold without increasing footprint

Linear Scalability

The innovative Pod filter system consists of six filter sizes and two expandable holders. No matter what size Pod filter you choose, the same flow path and configuration ensures a linearly scalable solution from bench to process scale.

Easy to Use

With the compact, modular design of our Pod system, you can increase productivity and shorten cycle times.

Installation and set-up of the Pod system is simple and straightforward. The unique design of the disposable adapters makes it easy to connect the Pods to the process piping. The self-contained and disposable nature of the system protects operators from exposure to biohazards and eliminates maintenance as well as cleaning validation requirements.

Configurations

- **Pilot scale holder** — accommodates up to two full size Pods. An optional accessory kit expands capacity to 5 full scale Pods. Total surface area is dependent on media grade.

- **Process scale holder** — accepts from five to ten Pods per rack. Up to three racks can be stacked for process flexibility. Total surface area is dependent on media grade.
- **Disposable adapters** — connect Pods to process piping, creating disposable flow path.
- **Disposable diverter plates** — enable more than one media grade on a single rack.
- **Disposable feed and filtrate manifolds** — make your flow path 100% disposable by replacing the stainless steel manifolds with disposable versions. Available for 1, 2, and 3 rack process scale holders.



The Pod pilot scale holder supports your process as you scale up.

Pod Holder Specifications*

Materials of construction		
	Pilot Scale	Process Scale
All metal surfaces in contact with process fluids (manifold)	N/A	316 L stainless steel
End plate clamp and guide rods	17-4 PH steel	17-4 PH steel
All other metal surfaces (including end plates)	304 stainless steel	304 stainless steel
TC gaskets/Valve diaphragms	N/A	EPDM
TC clamp (2-pieces)	304 stainless steel	304 stainless steel
Diverter plate	Polypropylene	Polypropylene
Manifold surface finish, internal	N/A	Electropolished, Ra <0.5 μm (<20 micro-inches)
Performance properties	Capable of supporting and sealing pod filters up to 50 psig maximum operating pressure at 25 °C. Inlet and outlet connection to the pods and vents are via disposable adapters.	
Maximum differential pressure		
Forward	50 psid (3.5 bar) at 25 °C; 15 psid (1.0 bar) at 80 °C	
Reverse	30 psid (2.1 bar) at 25 °C	
Regulatory information	Sealing materials and plastics in contact with the product meet USP <88> biological reactivity test for Class VI plastics and are Title 21 CFR 177.2600 and 177.1550 compliant.	

Pod Disposable Manifold Specifications*

Materials of construction	
Tee	
Extension Tee	Polypropylene
Elbow	
Tubing	Double braided silicon
Gaskets	Silicone
Clamps	Glass filled nylon
Specifications	
> Max. operating pressure: 50 psi (3.4 bar)	
> Hot water sanitization: 1 cycle of 80 °C for 30 minutes	
> Toxicity: Component materials comply with the requirements of USP <88> biological reactivity tests for Class IV plastics	

* No holder required for lab scale pod

Ordering Information

Description	Qty/Pk	Catalogue No.
Pilot Scale Holder		
Millistak+® POD Pilot Holder, for 1 to 2 filters	1	MP0DPIL0T
Millistak+® POD Pilot Holder expansion KIT, for 1 to 5 filters	1	MP0DPIL0TX
Millistak+® POD Pilot Holder, for 1 to 2 filters, w/o hydraulic system	1	SH2S011V08
Process Scale Holders		
Millistak+® POD 1-rack Process Holder; for 5 to 10 filters; Gemü® valves	1	MP0DSYS1A
Millistak+® POD 1-rack Process Holder; for 5 to 10 filters; ITT valves	1	MP0DSYS1B
Millistak+® POD 1-rack Process Holder; for 5 to 10 filters; no valves	1	MP0DSYS1N
Millistak+® POD 1-rack Process Holder expansion KIT; for 5 to 10 filters; no valves or casters	1	MP0DSYS1X
Millistak+® POD 2-rack Process Holder; for 5 to 20 filters; Gemü® valves	1	MP0DSYS2A
Millistak+® POD 2-rack Process Holder; for 5 to 20 filters; ITT valves	1	MP0DSYS2B
Millistak+® POD 2-rack Process Holder; for 5 to 20 filters; no valves	1	MP0DSYS2N
Millistak+® POD 3-rack Process Holder; for 5 to 30 filters; Gemü® valves	1	MP0DSYS3A
Millistak+® POD 3-rack Process Holder; for 5 to 30 filters; ITT valves	1	MP0DSYS3B
Millistak+® POD 3-rack Process Holder; for 5 to 30 filters; no valves	1	MP0DSYS3N
Holder Replacement Parts*		
Hydraulic pump	1	MP0DHYPUMP
Hydraulic system pressure gauge (for design without quick connector)	1	MP0DHYGAGE
Hydraulic fluid (1 liter)	1	MP0DHFLUID
Clamp insert	1	MP0DINSERT
1.5 in. TC stainless steel clamp for use with MP0DINSERT (for design without quick connector)	1	YY2004045
Clamp rod knob	1	MP0DCRKN0B
Clamp rod for 2 filters	1	MP0DCR0D02
Clamp rod for 5 filters	1	MP0DCR0D05
Clamp rod for 10 filters	1	MP0DCR0D10
Manifold elbow, 90 °C, 1.5 in. 316 stainless steel	1	MP0DSSELB0
Manifold tee, 1.5 in. 316 stainless steel	1	MP0DSSTEE
Manifold spool, 1 in. x 6.60 in. L	1	MP0DMANSPH
Manifold spool, 1.5 in. x 13.16 in. L	1	MP0DMANSPV
Manifold bracket assembly	1	MP0DMANBRK
Replacement diaphragm for 1 in. Gemü® MP0DVALVEA	2	MP0DVLVADIA
Replacement diaphragm for 1 in. ITT MP0DVALVEB	2	MP0DVLVBDIA
¼ inch ball valve	1	VPMHFNPTVAL
¼ inch ball valve (for design with quick connector)	1	VPMHSOVALVE
Hydraulic system pressure gauge (for design with quick connector)	1	VPMHHYGAGE
Holder Accessories*		
SS CIP Spool connecting horizontal manifold	1	MP0DCIPSPLH
SS CIP Spool connecting vertical manifold	1	MP0DCIPSPLV
1-rack Disposable feed and filtrate manifold		MP0DDSPMAN1
2-rack Disposable feed and filtrate manifold		MP0DDSPMAN2
3-rack Disposable feed and filtrate manifold		MP0DDSPMAN3
Disposable adapter kit** 3 through adapters, 3 blind adapters	1	MP0DADAPT
Disposable adapter kit** 6 through adapters, required if using MP0DDIVERTR	1	MP0DADPTF
1.5 in. TC sanitary gauge, 0–4 bar (0–60 psi)	1	MP0D60PSIG
1.5 in. TC EPDM gasket	10	HGTC150EP
Diaphragm valve, 1 in. Gemü®	1	MP0DVALVEA
Diaphragm valve, 1 in. ITT	1	MP0DVALVEB
MP0DSYS upright kit	4	MP0DSYSUPRT
MP0DSYS caster cap and 0-ring	1	MP0DSYSCAP
Disposable diverter plate	10	MP0DDIVERTR
Pod pilot holder handle	1	MP0DPLTHNDL
End Plate Replacement Kit		
This kit replaces the bronze bushings with linear ball bearings to facilitate movement of the end plate. The kits come with one end plate, new guide rods and associated hardware.		
Pod Retrofit Kit for MP0DPIL0T		MP0DRET1
Pod Retrofit Kit for MP0DPIL0T with extension rods		MP0DRET2
Pod Retrofit Kit for process scale holders		MP0DRET3

* Consult your sales associate for replacement part and accessory availability.

** The disposable adapter kit must be ordered with individual Pod filters in order to install the Pod filter in the holder.

System Services

The pharmaceutical and biotechnology industries are highly regulated, and to help you navigate this challenging environment we offer a wide range of services. These services help you save time, lower costs, and comply with regulations. For your peace of mind, all our services are performed by our global experts who have a unique intimate knowledge of our equipment, backed by years of experience.

Qualification Services

Our qualification services are designed to make the integration of our system into your process as seamless as possible and ensure your equipment is properly installed and functioning per your pre-defined requirements.

- Site acceptance test (SAT) (combined with IQ/OQ)
- Installation qualification/operational qualification (IQ/OQ) (combined with SAT)

Preventive Maintenance (PM)

Maintenance is the most cost-effective and critical component to ensuring the best performance of your system. Regular preventive maintenance reduces repair costs, increases uptime, and is a cGMP requirement.

During your maintenance visit, certified Field Service Engineers will verify your equipment using established protocols to ensure documented compliance with quality requirements. Upon completion of the service, a full report of the services performed will be provided.

Repair Services and Spare Parts

Repair services

In the unlikely case your system does experience a problem, our worldwide engineers' organization will provide on-site technical support to get you back up and running as quickly as possible.

Spare parts

Purchasing spare parts directly from us is the only way we can guarantee that you get the right parts every time, with the same level of performance as the original.

For additional information,
please visit www.EMDMillipore.com

To place an order or receive technical assistance,
please visit www.EMDMillipore.com/contactPS

