

## Company Profile



Advanced Microdevices (**mdi**) is a leader in innovative membrane technologies. Starting from a single person R&D operation in 1976, **mdi** has developed into a dedicated team of 1200 plus with more than 800,000 products.

The company's core competence is its ability to develop new membrane technologies and innovate existing ones to deliver advantages to the customer for high end purification and separation applications in a wide range of industries such as pharmaceuticals, biopharmaceuticals, biotechnology, food and beverage, hospitals, and immunodiagnostics.

As membranes end up being incorporated into user friendly devices, plastic design and moulding and sealing technologies become an integral part of the chain to deliver value to the customer. Realizing this, **mdi** has grown into a vertically integrated company that helps deliver prototypes rapidly for quicker conversion to products for the market.

**mdi** products are used for critical applications in pharmaceutical and biopharmaceutical industries, such as

aseptic processing and fluid management of critical process fluids such as drug substances and drug products. These include sterilizing grade membrane filters and a wide range of gamma irradiated Single Use Systems (SUS) such as storage and transfer systems, sampling manifolds for bioreactors and process intermediate reservoirs and complex disposable filling lines complete with PUPSIT (Pre-use/ Post Sterilization Integrity Testing). **mdi** also offers world class membranes for making reliable immunoassays for testing of diseases at patient bedside.

**mdi** products meet or exceed industry standards and many of these are recognized as the best available in the world.

These products are manufactured by highly trained manpower in modern GMP facilities with large ISO class 7 production areas under ISO 9001 certified quality management system and are backed by state of the art QC testing, microbiology, reliability and validation laboratories.

A strong pipeline of new products is constantly being developed in its well equipped R&D labs.

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# Introduction

**mdi** has been continuously working to provide to its customer high quality and reliable filtration solutions in accordance to the requirements of various international standards relating to clarification and sterilization. Its integrated solutions covering filtration, purification, fluid management, and lab technologies are supporting the pharmaceutical as well as biopharmaceutical industry to develop and produce drugs safely, timely, and economically.

A complete line of hardware products from **mdi** designed to meet the needs of high purity applications includes Stainless Steel Housings for Cartridge Filters, Membrane Filter Holders, and Vacuum Filtration Assemblies.

## Quality

Keeping in view the criticality of pharmaceutical processes, quality of material of construction is assured and is tested for composition within prescribed limits as per ASTM E 1086. These are easy to clean, with no 'dead' corner, pressure resistant, and leakproof.

Additionally, every housing is tested for a variety of performance parameters relating to pressure, leakage, valve functionality, fitment etc. before release for dispatch.

**mdi** Filter Housings and Disc Filter Holders are offered along with a Certificate of Quality (CoQ) and a Certificate of Material of Construction (MoC).

## Certificate of Quality

The stainless steel filter housing has been tested in **mdi** facility using validated quality assurance processes. The housing passed the leakage test and other tests to ensure consistent and safe performance.

### Single Round Cartridge Filter Housing For Liquid Filtration

Catalog No. : T154A0SEM XLNNB1  
Type : T-Line  
Size : 10"  
Adaptor Code : 7P  
Lot Number : 5C1754X005

### Specifications

Maximum Operating Pressure : 10 bars  
Maximum Operating Temperature : 150 °C

### Material of Construction

Shell : SS 316L  
End Connections : SS 316L  
All Contact Parts : SS 316L  
Sealing Gasket/'O' Ring : Silicone

### Surface Finish

All Surfaces : Mirror polished

### Valve Type

Vent Valve : Needle Valve with 1/4" HB  
Drain Valve : Valve with 1/4" HB

### Connections

Inlet/Outlet End Connection : 1.5" TC  
Gauge Port : 1/4" BSP (F)

### Lot Release Criterion

S. No.	Item	Result	Status
1	<b>Hydro Pressure Testing (Leakage Test)</b>		
	Bell to Base	No leakage	Pass
	Adaptor	No leakage	Pass
	Clamps	No leakage	Pass
	Drain/Vent Valve	No leakage	Pass
2	<b>Visual Examination</b>		
	Dents	No dents	Pass
	Scratches	Scratch free surfaces	Pass
3	<b>Fittings</b>		
	Clamp Fitting	Smooth	Pass
	Vent Valve Fitting	Smooth	Pass
	Drain Valve Fitting	Smooth	Pass

Head of Quality Assurance  
Issue Date: 07-Jul-15

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**An ISO 9001 Company**



## Certificate of MoC

The Stainless Steel used for manufacture of Filter Housing has been tested for compliance to AISI-316L grade of steel.

The results are shown below:

### Stainless Steel Used in Filter Housing

**Catalog No.** : I154A0SEEXLDDDB1

**Lot No.** : 0905150920

Element	Element Found (%)	Specified Limit (%)	Conformity Based on Test Results	
			Yes	No
Carbon	0.027	0.03	√	
Silicon	0.34	1.00	√	
Manganese	1.72	2.00	√	
Phosphorus	0.025	0.045	√	
Sulphur	0.025	0.030	√	
Chromium	17.38	16.0 – 18.0	√	
Molybdenum	2.01	2.0 – 3.0	√	
Nickel	10.45	10.0 – 14.0	√	

**Remarks:** The sample conforms to AISI-316L grade of steel with respect to above test.

**Note:** The results are limited to tested samples and applicable parameters.

**Date:** September 4, 2008



Head of Quality Assurance

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# Filter Housings for Aseptic Processing

Integrating its expertise in filtration technology with industry concerns, **mdi** offers a complete range of specially designed filter housings for aseptic processing in highly regulated pharmaceutical and biopharmaceutical industries.

**mdi** Filter housings for aseptic processing are made from SS 316L grade stainless steel, electro-polished with a roughness average of  $<0.5\ \mu\text{m}$ , suitable for operating at high pressures and temperatures. These are integrity testable and engineered to offer:

- Low installation and maintenance cost
- Optimum flow rates
- Low holdup volumes
- Efficient air-venting mechanism with diaphragm vent valves
- Quick and easy filter change out
- Crevice/Groove-free construction

On the basis of application, these can be categorized into the following categories:

1. Sterilization Grade Liquid Filtration Housings
2. Sterilization Grade Membrane Disc Filter Holders
3. Sterilization Grade Air Filtration Housings
4. Vent Filter Housings



# Sterilization Grade Cartridge Filter Housings and Membrane Disc Holders for Aseptic Liquid Filtration

## Electropolished Single Round Filter Housings for Aseptic Liquid Filtration

**mdi** Electropolished stainless steel housings for aseptic processing with a roughness average of  $< 0.5 \mu\text{m}$  have an easy to clean crevice free construction. The housings offer diaphragm vent valves and drain valves to ensure complete sterilization.

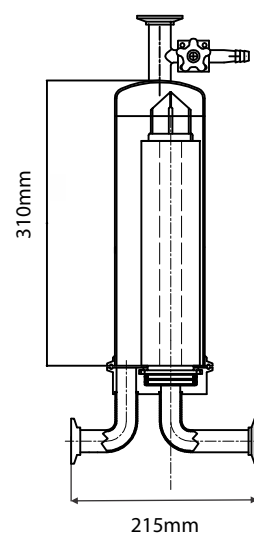
The cartridge filter sits safely in the adaptor in the housing base to ensure proper sealing to prevent bacterial and particulate bypass. These housings are pressure tested for safety and performance.

Specially designed diaphragm vent valves with Quick Coupling Connection are available to assist online integrity testing of these housings.



### Specifications

Type	In-Line/ T-Line
Inlet /Outlet Connection	1.5" Triclover
Size	10" / 20" / 30"
Adaptor Code	7P
Max. Operating Pressure	10 bar
Max. Operating Temperature	150°C
Material of Construction	SS 316L
Gaskets and Rings	Silicone/ Viton/ EPDM
Surface Finish	Electropolished
Roughness Average	$< 0.5 \mu\text{m}$
Vent Valve	Diaphragm Valve with Quick Coupling Connection
Drain Valve	Diaphragm Valve with 8mm Hose Connection
Gauge Port	1/4" BSP or 1.5" TC
Sterilization	SIP/Autoclaving



### Dimensions

	10"	20"	30"
Bell Height (mm)	310	550	790
Width (mm)	215	215	215
Bell Removal Clearance (mm)	320	550	790
Housing Bell Volume (ml)	2300	4300	5700
Weight (Kg)	4.5	5.5	7.2

Housing Type		No. of Cartridges		Size		Adaptor		O-Rings /Gaskets		Inlet/Outlet		Finish		Jacket		Air /Liquid		Vent Valve		Drain Valve		Gauge Port		Pack Size	
Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code	
T-Line SS316L	T	Single Round	1	10"	54	7P	A0	Silicon	S	1" pipe with 50mm TC	K	Electro polished	E	Steam	S	Liquid	L	Needle Valve with 8mm Hose Barb	N	Needle Valve with 8mm Hose Barb	N	1" pipe with 50mm TC	K	1	1
In-Line SS316L	I			20"	55									None	X			Diaphragm with 8mm Hose Barb	D	Diaphragm with 8mm	D				
				30"	56													Diaphragm with Quick Coupling	S						

**Example:**

T	1	54	A0	S	K	E	X	L	D	D	K	1
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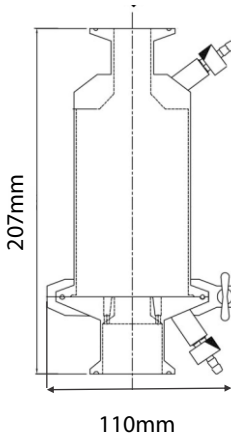
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# Sterilization Grade Cartridge Filter Housings and Membrane Disc Holders for Aseptic Liquid Filtration

## Electropolished Mini-Cartridge Filter Housings for Aseptic Liquid Filtration

These mini-sized stainless steel housings are designed to house cartridges filters with 5" nominal length. These housings meet all performance parameters of aseptic filtration.

All fluid contact surfaces are electropolished with roughness average of < 0.5 µm provides crevice free construction. This along with diaphragm valves ensure complete sterilization.



O-Seal

### Specifications

Type	In-Line
Inlet /Outlet Connection	1.5" Triclover
Size	5"
Adaptor Code	4463/O-Seal
Max. Operating Pressure	10 bar
Max. Operating Temperature	150°C
Material of Construction	SS 316L
Gaskets and Rings	Silicone/ Viton/ EPDM
Surface Finish	Electropolished
Roughness Average	< 0.5 µm
Vent Valve	Needle Valve or Diaphragm Valve (Only in T-Line)
Drain Valve	Needle Valve or Diaphragm Valve (Only in T-Line)
Sterilization	SIP/Autoclaving

### Dimensions

	Seal-O	4463	7P
	T-Line	InLine	InLine T-Line (Jacketed)
Bell Height (mm)	160	160	135
Width (mm)	177	110	152
Bell Removal Clearance (mm)	170	170	145

Housing Type	No. of Cartridges	Size	Adaptor	O-Rings /Gaskets	Inlet/Outlet	Finish	Jacket	Air /Liquid	Vent Valve	Drain Valve	Gauge Port	Pack Size
Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code
T-Line SS316L T	Single Round 1	5" 53	4463 E0	Silicon S	1" pipe with 50mm TC* K	Electro polished E	Steam S	Liquid L	Diaphragm with 8mm Hose Barb*** D	Diaphragm with 8mm Hose Barb D	1/4" BSP B	1 1
In-Line SS316L I			O-Seal F0		3/4" pipe with 50mm TC* O		None X		Diaphragm with Quick Coupling*** S	Needle Valve with 5mm Hose Barb V	1" pipe with 50mm TC K	
					3/4" pipe with 25mm TC** S				Needle valve with 5 mm Hose Barb V			
					1/2" pipe with 25mm TC** M							
					1/2" pipe with 50mm TC** L							

\* 1" pipe with 50mm TC and 3/4" pipe with 50mm TC are available in In-line housing only  
 \*\* 3/4" pipe with 25mm TC, 1/2" pipe with 25mm TC and 1/2" pipe with 50mm TC are available in T-line housing only  
 \*\*\* Diaphragm vent valves with 8 mm Hose Barb or Quick coupling Connections is available with T line housings only

Example: T 1 53 E0 S S E S L D D B 1

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# Sterilization Grade Cartridge Filter Housings and Membrane Disc Holders for Aseptic Liquid Filtration

## Electropolished Stainless Steel Membrane Disc Holders for Aseptic Liquid Filtration

**mdi** stainless steel disc filter holders are made up of corrosion resistant SS 316L grade to fit membrane filters for aseptic filtration of liquids.

These holders are autoclavable and can be cleaned easily to avoid cross-contamination.



### Specifications

Size	142 mm, 293 mm
Inlet Connection	1.5" TC
Outlet Connection	1.5" TC
Size of Membrane Used	142 mm, 293 mm
Max. Operating Pressure	100 psi
Max. Operating Temperature	150°C
Material of Construction	SS 316L
Gaskets and Rings	Silicone
Surface Finish	Electropolished
Filtration Area	142 mm – 120 cm <sup>2</sup> 293 mm – 572 cm <sup>2</sup>
Sterilization	Autoclaving



Housing Type		Size		Inlet /Outlet		Finish		Air /Liquid		X	Vent Valve		Drain Valve		X	X	Pack Size	
	Code		Code		Code		Code		Code			Code		Code				Code
SS316L Membrane Filter Holder	SSMH	293 mm	19	1" pipe with 50mm TC	K	Electro polished	E	Liquid	L		Diaphragm with 8mm Hose Barb	D	Diaphragm with 8mm Hose Barb	D			1	1
		142 mm	16								Diaphragm with Quick Coupling	S	Needle Valve with 8mm Hose Barb	N				
											Needle Valve with 8mm Hose Barb	N						

Example: SSMH 19 K E L X D N X X 1

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# Sterilization Grade Cartridge Filter Housings for Air/Gas Filtration

## Electropolished Single Round Filter Housings for Air/Gas Filtration

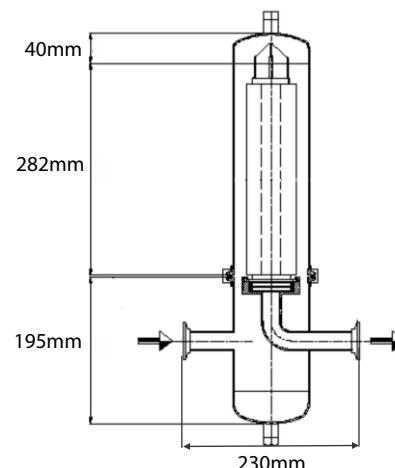
**mdi** Electropolished stainless steel housings for aseptic processing have a sump at the base that allows collection of moisture entrained in the air/gas being filtered. The liquid so collected is drained off through the drain valve.

The cartridges sit safely in the adaptor of housings base to ensure proper sealing to prevent bacterial and particulate bypass. Entire internal surface is electropolished with roughness average of  $<0.5\mu\text{m}$ .



### Specifications

Type	T-Line
Inlet Connection	1.5" TC
Outlet Connection	1.5" TC
Number of Cartridges	Single
Size	10"
Adaptor Code	7P
Max. Operating Pressure	10 bar
Max. Operating Temperature	150°C
Material of Construction	SS 316L
Gaskets and Rings	Silicone
Surface Finish	Electropolished
Roughness Average	$< 0.5 \mu\text{m}$
Vent Valve	Diaphragm Valve with 8mm Hose Barb/Diaphragm Valve with Quick Coupling Connection
Drain Valve	Diaphragm Valve with 8mm Hose Barb/Needle Valve with 6mm Hose Barb
Gauge Port	1/4" BSP or 1.5" TC
Sterilization	SIP/Autoclaving



### Dimensions

	10"
Bell Height (mm)	322
Width (mm)	230
Bell Removal Clearance (mm)	332
Housing Bell Volume (ml)	2300
Weight (Kg)	4.3

Housing Type	No. of Cartridges	Size	Adaptor	O-Rings /Gaskets	Inlet/Outlet	Finish	Jacket	Air /Liquid	Vent Valve	Drain Valve	Gauge Port	Pack Size
T-Line SS316L	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code	Code
	Single Round	1										
		10"	54		1.5" pipe with 50mm TC	E	Electro polished	E	None	X	Air	A
		20"	55						Needle Valve with 8mm Hose Barb	N	Needle Valve with 8mm Hose Barb	N
		30"	56						Diaphragm with 8mm Hose Barb	D	Diaphragm with 8mm Hose Barb	D
									Diaphragm with Quick Coupling	S		
											1" pipe with 50mm TC	K
												1

Example:

T	1	54	A0	S	E	E	X	A	D	D	B	1
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# Sterilization Grade Cartridge Filter Housings for Air/Gas Filtration

## Electropolished Mini Cartridge Filter Housings for Air/Gas Filtration

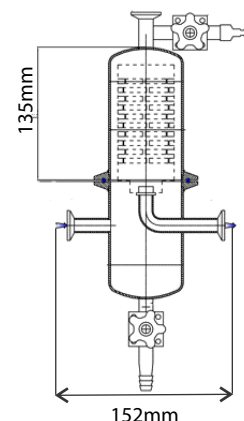
**mdi** electropolished stainless steel mini cartridge filter housing for air/gas filtration have a sump at the base that allows collection of moisture entrained in the air/gas being filtered. The liquid so collected is drained off through the drain valve.

These housings are designed to house mini cartridges filters with 5" nominal length. All fluid contact surfaces are electropolished with roughness average of < 0.5 µm providing crevice free construction, devoid of grooves on the fluid contact surfaces to ensure complete sterilization.



### Specifications

Type	T-Line
Inlet Connection	1.5" TC
Outlet Connection	1.5" TC
Number of Cartridges	Single
Size	5"
Adaptor Code	7P/4463
Max. Operating Pressure	10 bar
Max. Operating Temperature	150°C
Material of Construction	SS 316L
Gaskets and Rings	Silicone
Vent Valve	Diaphragm Valve with 8mm Hose Barb/Diaphragm Valve with Quick Coupling Connection
Drain Valve	Diaphragm Valve with 8mm Hose Barb/Needle Valve with 6mm Hose Barb
Gauge Port	1/4" BSP or 1.5" TC
Sterilization	SIP/Autoclaving



### Dimensions

	<b>4463</b>
Bell Height (mm)	135
Width (mm)	152
Bell Removal Clearance (mm)	205
Housing Bell Volume (ml)	400
Weight (Kg)	2.2

Housing Type		No. of Cartridges		Size		Adaptor		O-Rings /Gaskets		Inlet/Outlet		Finish		Jacket		Air /Liquid		Vent Valve		Drain Valve		Gauge Port		Pack Size	
Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code	
T-Line SS316L	T	Single Round	1	5"	53	4463	E0	Silicon	S	1" pipe with 50 mm TC	K	Electro polished	E	None	X	Air	A	Diaphragm with 8mm HB	D	Diaphragm with 8mm HB	D	1/4" BSP	B	1	1
						7P	A0											Diaphragm with Quick Coupling	S	Needle Valve with 8mm Hose Barb	N	1" pipe with 50mm TC	K		

Example: T 1 53 A0 S K E X A D D B 1

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# Sterilization Grade Vent Filter Housings

## Single Round Steam Jacketed Filter Housings for Venting

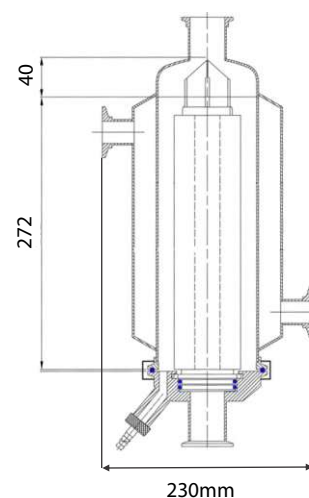
**mdi** Jacketed Filter Housings are fabricated with corrosion resistant 316 L Stainless steel jacket for temperature control using hot water or steam for venting of high temperature storage tanks.

All fluid contact surfaces are electropolished with roughness average of  $< 0.5 \mu\text{m}$  providing crevice free construction, devoid of grooves on the fluid contact surfaces to ensure complete sterilization.



### Specifications

Type	Inline
Inlet Connection	1.5" TC
Outlet Connection	1.5" TC
Number of Cartridges	Single
Size	10"
Adaptor Code	7P
Max. Operating Pressure	10 bar
Max. Operating Temperature	150°C
Material of Construction	SS 316L
Gaskets and Rings	Silicone
Surface Finish	Electropolished
Roughness Average	$< 0.5 \mu\text{m}$
Jacket Inlet	1" TC
Jacket Outlet	1" TC
Gauge Port	1/4" BSP or 1.5" TC
Sterilization	SIP/Autoclaving



### Dimensions

	<b>10"</b>
Bell Height (mm)	354
Width (mm)	230
Bell Removal Clearance (mm)	364
Housing Bell Volume	2300
Weight	6.0

Housing Type		No. of Cartridges		Size		Adaptor		O-Rings /Gaskets		Inlet/Outlet		Finish		Jacket		Air /Liquid		Jacket Inlet/Outlet		Drain Valve		X		Pack Size	
Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code	
In-Line SS316L	I	Single Round	1	5"	53	7P	A0	Silicon	S	1.5" pipe with 50mm TC	E	Electro polished	E	Steam	S	Vent	V	1" pipe with 50mm TC	K	Needle Valve with 8mm HB	N			1	1
				10"	54	O-Seal	F0											1/4" BSP	B						
																		1/2" BSP	D						

**Example:**

I	1	54	A0	S	E	E	S	V	B	N	X	1
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# Sterilization Grade Vent Filter Housings

## Single Round Electrical Jacketed Filter Housings for Venting

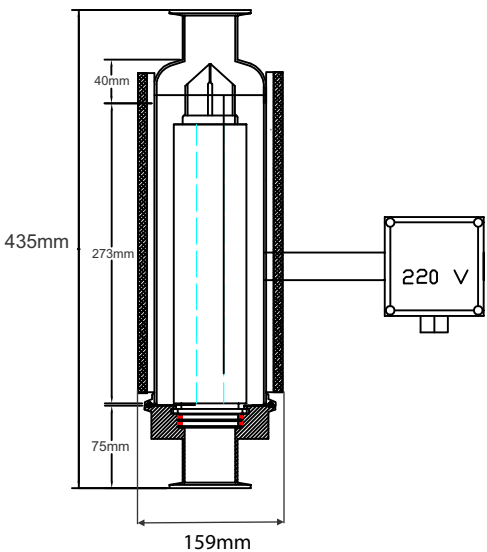
**mdi** housings are made up of corrosion resistant 316 L Stainless steel, electropolished with roughness average of < 0.5 µm. Electric Jacketed Filter Housings incorporate an electrical heating system with temperature control.

An effective removable, insulated electric heater jacket that also prevents heat loss, aids the temperature control mechanism.



### Specifications

Type	In-Line
Inlet Connection	1.5" TC
Outlet Connection	1.5" TC
Number of Cartridges	Single
Size	10"
Adaptor Code	7P
Max. Operating Pressure	10 bar
Max. Operating Temperature	150°C
Material of Construction	SS 316L
Gaskets and Rings	Silicone
Surface Finish	Electropolished
Roughness Average	< 0.5 µm
Operating Voltage (Heating System)	220 V AC
Power Consumption	300 watts



### Dimensions

	<b>10"</b>
Bell Height (mm)	360
Width (mm)	159
Bell Removal Clearance (mm)	370

Housing Type	No. of Cartridges	Size	Adaptor	O-Rings /Gaskets	Inlet/Outlet	Finish	Jacket	Air /Liquid	X	X	X	Pack Size
Code	Code	Code	Code	Code	Code	Code	Code	Code				Code
In-Line SS316L I	Single Round 1	10" 54	7P A0	Silicon S	1.5" pipe with 50mm TC E	Electro polished E	Electrical E	Vent V				1 1

**Example:**

I	1	54	A0	S	E	E	E	V	X	X	X	1
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# Liquid Filtration Housings for General Filtration

## Mirror Polished Single Round Filter Housings for Liquid Filtration

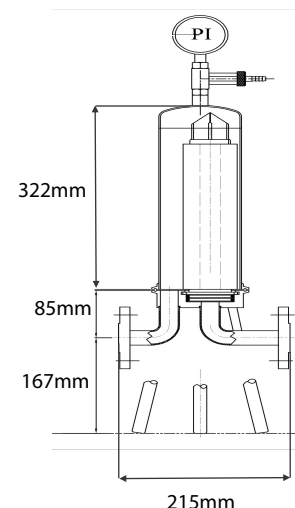
**mdi** Mirror polished stainless steel housings are made up of SS 316L grade. These filter housings are suitable for pre-filtration, clarification and separation applications in pharmaceuticals, fine chemicals, beverage and other process industries.

These are also suitable for terminal filtration in non-critical processes.



### Specifications

Type	T-Line
Inlet Connection	1.5" TC/1" Flange/1.5" Flange
Outlet Connection	1.5" TC/1" Flange/1.5" Flange
Size	10", 20", 30"
Adaptor Code	7P
Max. Operating Pressure	10 bar
Max. Operating Temperature	150°C
Material of Construction	SS 316L
Gaskets and Rings	Silicone/Viton/EPDM
Surface Finish	Mirror Polished
Vent Valve	Needle Valve with 6mm Hose Barb
Drain Valve	Needle Valve with 6mm Hose Barb
Gauge Port	¼" BSP or 1.5" TC
Sanitization	80°C Water



### Dimensions

	10"	20"	30"
Bell Height (mm)	322	565	810
Width (mm)	215	215	215
Bell Removal Clearance (mm)	332	565	810
Housing Bell Volume (ml)	2300	4300	5700
Weight (Kg)	6.8	7.4	9.2

Housing Type		No. of Cartridges		Size		Adaptor		O-Rings /Gaskets		Inlet/Outlet		Finish		X	Air /Liquid		Vent Valve		Drain Valve		Gauge Port		Pack Size	
	Code		Code		Code		Code		Code		Code		Code			Code		Code		Code		Code		Code
T-Line SS316L	T	Single Round	1	10"	54	7P	A0	Silicon	S	1" pipe with 50mm TC	K	Mirror Polished	M		Liquid	L	Needle Valve with 8mm Hose Barb	N	Needle Valve with 8mm Hose Barb	N	1/4" BSP	B	1	1
				20"	55			Viton	V	1" Flange	F													
				30"	56			EPDM	E															

Example:

T	1	54	A0	S	K	M	X	L	N	N	B	1
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# Liquid Filtration Housings for General Filtration

## Mirror Polished Multi-Round Filter Housings for Liquid Filtration

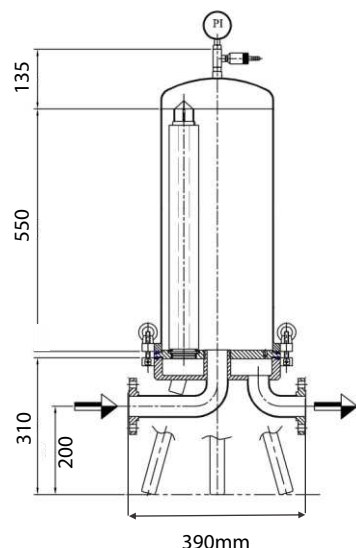
**mdi** Mirror polished multi-round stainless steel housings are made up of corrosion resistant SS 316L grade. These filter housings can house more than one filter elements, and are meant for pre-filtration, clarification and terminal filtration of larger volumes in non-critical processes.

The Housing bell is locked to the base with the help of clamp screws to prevent any leakage.



### Specifications

Type	T-Line
Inlet Connection	1.5" Flange /2" Flange
Outlet Connection	1.5" Flange /2" Flange
Size	10", 20", 30"
Adaptor Code	7P, BEO
Max. Operating Pressure	10 bar
Max. Operating Temperature	150°C
Material of Construction	SS 316L
Gaskets and Rings	Silicone/Viton/EPDM
Surface Finish	Mirror Polished
Vent Valve	Needle Valve with 6mm Hose Barb
Drain Valve	Needle Valve with 6mm Hose Barb
Gauge Port	¼" BSP or 1.5" TC
Sanitization	80°C Water



### Dimensions

	10" X 3R	20" X 3R	30" X 3R
Bell Height (mm)	370	610	850
Width (mm)	290	390	390
Bell Removal Clearance (mm)	380	610	850

Housing Type		No. of Cartridges		Size		Adaptor		O-Rings /Gaskets		Inlet /Outlet		Finish		Jacket		Air /Liquid		Vent Valve		Drain Valve		Gauge Port		Pack Size	
Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code		Code	
T-Line SS316L	T	3 Round	3	10"	54	7P	A0	Silicon	S	1.5" pipe with 50mm TC	E	Mirror Polished	M	Steam	S	Liquid	L	Needle Valve with 8mm Hose Barb	N	Needle Valve with 8mm Hose Barb	N	1/4" BSP	B	1	1
		5 Round	5	20"	55			Viton	V	1.5" Flange	G			None	X										
		7 Round	7	30"	56			EPDM	E	2" Flange	H														
										3" Flange	I														

Example:

T	3	54	A0	S	H	M	S	L	N	N	B	1
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# Stainless Steel Pressure Vessels

## Pressure Vessel for CFSP-S

**mdi** Capsule Filtration System for solvents is ideal for pharmaceutical process development labs and for analytical labs requiring relatively larger volumes of particle free high purity solvents.

The specially designed pressure vessel for these systems has a SS 316 L construction with an extended outlet that allows direct fitment of the capsule filter, doing away with elastomeric seals; thus offering very wide chemical compatibility.



### Specifications

MOC	
Main Body Construction	SS 316 L
Inlet	SS 316 L
Gauge	
Diaphragm	SS 316L
End Connection	¼" BSP
Accuracy	± 2%
Size	2.5" Dial
Range	0-100 psi
Extended Outlet	SS 316 L
Gaskets and Rings	Silicone
Surface Finish	Mirror Polished
Capacity	5/10 Liters
Inlet End Connection	½" Hose Barb
Outlet End Connection	¼" FNPT
Maximum Operating Pressure	100 psi
Maximum Operating Temperature	150°C

Type		Capacity		O-Rings /Seals		Inlet		Outlet		Finish		Vent Valve		Gauge Port		XX	Pack Size	
	Code		Code		Code		Code		Code		Code		Code		Code			Code
Pressure Vessel with Extended Outlet	EPVX	5 Litre	05	Silicon	S	½" Hose Barb	D	¼" FNPT	O	Mirror Polished	M	Needle Valve	N	¼" BSP (F)	B		1	1
		10 Litre	10			6-8 mm PU Tube Inlet	H											

**Example:**

EPVX	05	S	D	O	M	N	B	XX	1
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# Vacuum Filtration Assemblies

## Glass Vacuum Filtration Assembly for 25mm Disc Filters

**mdi** Glass Vacuum Filtration Assembly (25mm) is meant for water microbiology or particulate contaminant removal/analysis and similar applications.

The glass funnel is held on glass base meant for the disc filter. These are held together with anodized aluminium clamp.

### Components:

- Funnel
- Clamp
- Stopper
- Frit Glass/Stainless Steel Filter Support



### Specifications

Funnel	Borosilicate Glass
Filter Support	Fritted Glass/Stainless Steel
Clamp	Anodized Aluminum Spring
Stopper	Silicone
Filter Size (Diameter)	25mm
Funnel Capacity	25ml
Flask Capacity	250ml
Vacuum	850mm of Hg
Sterilization	Autoclavable @ 121°C for 30 minutes

Housing Type		Size		Support		Funnel Capacity		Flask Capacity		Stopper		X	X	Pack Size	
	Code		Code		Code		Code		Code		Code				Code
Glass Filter Holder Assembly	GFHA	25mm	25	SS Screen	X	25ml	02	250ml	01	Perforated Silicone	S			1	1
				Frit Glass	R			Without Flask	XX						

**Example:** GFHA 25 R 02 01 S X X 1

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## Vacuum Filtration Assemblies

### All Glass Vacuum Filtration Assembly for 47mm Disc Filters

**mdi** Glass Vacuum Filtration Assembly (47mm) is meant for water microbiology or liquids for particulate contaminant removal, HPLC solvent purification or analysis of particulate contaminants retained on a membrane filter membrane disc filters and similar applications.

This assembly is also available in all-glass version.

#### Components

- Funnel
- Clamp
- Stopper
- Frit Glass Base/Glass base with SS Screen/Base with Tabulated Cap



#### Specifications

Funnel	Borosilicate Glass
Base	Glass
Support	Frit Glass/ Stainless Steel / Frit Glass with Tabulated Cap
Clamp	Anodized Aluminum Spring
Stopper	Silicone
Funnel Capacity	300ml
Flask Capacity	1000ml/2000ml
Filter Size (Diameter)	47mm
Vacuum	850mm of Hg
Sterilization	Autoclavable @ 121°C for 30 minutes

Housing Type		Size		Support		Funnel Capacity		Flask Capacity		Stopper		X	X	Pack Size	
	Code	47	Code		Code		Code		Code		Code				Code
Glass Filter Holder Assembly	GFHA			SS Screen	R	300ml	04	1000ml	10	Perforated Silicone	S			1	1
				Frit Glass	X			2000ml	20	None (In All Glass)	X				
				Frit Glass Tabulated Cap for All Glass	T			5000ml	50						

Example: GFHA 47 R 04 10 S X X 1

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# Vacuum Filtration Assemblies

## Glass Vacuum Filtration Assembly for 90mm Disc Filters

**mdi** Glass Vacuum Filtration Assembly (90mm) is made up of borosilicate glass for filtration of aqueous, organic or corrosive liquid for particulate contamination analysis. This is also use when large volumes of mobile phase are required.

### Components

- Funnel
- Base + Tabulated Cap
- Screen
- Clamp



### Specifications

Funnel	Borosilicate Glass
Base	Glass
Support	PTFE Coated SS Screen
Clamp	Anodized Aluminum Spring
Stopper	Silicone
Funnel Capacity	1000ml
Filter Size (Diameter)	90mm
Fitting Inlet	Funnel
Fitting Outlet	Tabulated Cap Side Arm
Seal/Gasket	PTFE
Vacuum	850mm of Hg
Sterilization	Autoclave
Flask Capacity	1, 2,5 liters

Housing Type		Size		Support		Funnel Capacity		Flask Capacity		Stopper		X	X	Pack Size	
	Code		Code		Code		Code		Code		Code				Code
Glass Filter Holder Assembly	GFHA	90mm	90	PTFE Coated SS Screen	R	1000ml	10	1000ml	10	Perforated Silicone	S			1	1
								2000ml	20						
								5000ml	50						

**Example:** GFHA 90 R 10 50 S X X 1

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# Vacuum Filtration Assemblies

## Stainless Steel Funnels for 47mm Disc Filters

The 47mm Stainless Steel Filter Holders are designed for vacuum filtering of liquids for particulate or biological contamination analysis. These fit are placed on manifold (three or six place) models to facilitate simultaneous filtration of three or six test samples through a single vacuum source.

The holder accommodates standard 47 mm disc filters Type GCN, GCN-S, RGCN-S etc.



### Specifications

MOC	
Funnel Construction	SS 316 L
Other Body Parts	SS 316 L
Disc Filter Size	47 mm
Funnel Capacity	300 ml
Vacuum	850mm of Hg
Outlet Connection	½" SHB
Perforated Stopper	Silicone
Sterilization	Autoclavable at 121°C for 30 minutes

Housing Type		Size		X	Finish		Air/Liquid		XX	XXX	Pack Size	
	Code		Code			Code		Code				Code
Stainless Steel Holder Assembly	SSVA	47 mm	09		Mirror Polished	M	Liquid	L			1	1

Example: 

SSVA	09	X	M	L	XX	XXX	1
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# Vacuum Filtration Manifolds

## SS Manifolds for mdi Disposable Funnels

These 316 L Stainless Filter manifolds are specially designed for mdi Disposable Funnels used for water as well as product microbiology. The special adaptors provide a leakproof platform for proper fitting of the funnels.

The manifolds are available to accommodate 3 or 6 funnels at a time and have individual port control valves at each funnel location to facilitate selective filtration, if required.



### Specifications

Main Body Construction	SS 316 L
Compatible Funnels	mdi M-Funnel
Funnel Adaptor	Stainless Steel
Number of Ports	3 or 6
Vacuum	850mm of Hg
Outlet Connection	½" SHB
Valve	SS Ball Valve
Sterilization	Autoclavable @ 125°C for 30 minutes

## Accessories

- 1 ltr Bottle with 45mm neck and vacuum adaptor
- 1/8" HP, 650mm Hg oil free Vacuum pump



Vacuum Pump

Housing Type		Places		XX	Outlet Port		Valve		X	X	X	Pack Size	
	Code		Code			Code		Code					Code
SS316L Manifold	SSFM	3 Place	03		½" Hose Barb	D	½"SS Ball Valve	SB				1	1
		6 Place	06										

Example: SSFM 03 XX D SB X X X 1

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# Vacuum Filtration Manifolds

## Vacuum Manifolds with 47mm Vacuum Filtration Assemblies

These manifolds are designed for vacuum filtering of liquids for particulate or biological contamination analysis and are available in 3 and 6 place models to facilitate simultaneous filtration of 3 or 6 test samples through a single vacuum source.

The manifolds with standard 47mm stainless steel vacuum filtration assemblies to accommodate 47mm membrane disc filters and have individual port control valves at each assembly location to facilitate selective filtration, if required.



### Specifications

Main Body Construction	SS 316 L
Compatible Funnels	SS 316 L
Number of Ports	3 or 6
Vacuum	850mm of Hg
Outlet Connection	½" SHB
Valves	½" SS Ball Valve
Sterilization	Autoclavable @ 121°C for 30 minutes

### Accessories

- 1 ltr Bottle with 45mm neck and vacuum adaptor
- 1/8" HP, 650mm Hg oil free Vacuum pump



**Vacuum Pump**

Housing Type		Places		XX	Outlet Port		Valve		X	X	X	Pack Size	
	Code		Code			Code		Code					Code
SS316L Manifold	SSMF	3 Place	03		½" Hose Barb	D	½" SS Ball Valve	SB				1	1
		6 Place	06										

**Example:** SSMF 06 XX D SB X X X 1

### Quality Policy

Quality is built into **mdi** products and services by not only adhering to well designed quality systems to consistently produce high quality, internationally acceptable products but also by striving to incorporate superior performance parameters into all our products and services and provide our customers with a unique performance advantage in their application. Our quality policy provides a glimpse of our commitment:

"**mdi** strives to provide to its customers products and services of highest standards possible, consistently superior, and more satisfying than what is available anywhere else."

### Stride Towards Excellence

At **mdi**, our mission is to constantly strive to achieve excellence in all our endeavors by establishing systems to create excellent products and services to fulfil the needs of our customers. To achieve this we

- Frequently compare our products with competing brands
- Simulate tests for functional use
- Develop easy-to-use innovative products

We are constantly working on improvements and welcome suggestions from our customers.

### Guarantee

All **mdi** products are guaranteed and are backed by our

- Technical expertise and experience of over 45 years
- 'Special **mdi** process' for consistency and repeatability
- Strict quality control and quality assurance regimen
- Certificate of Analysis accompanying all shipments





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### Other Literature available

**mdi** Process Filtration Product Guide

**mdi** Laboratory Filtration Product Guide

**mdi** Biotech Product Guide

**mdi** Diagnostic Product Guide

**mdi** Validation Guides

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