



HAYWARD® FILTRATION

BAG FILTER HOUSINGS



HAYWARD®

manufacturer of



HAYWARD® FILTRATION

A HISTORY OF INNOVATION

In 1923, HAYWARD® began manufacturing specialty metal valves and industrial flow control products. Since then, HAYWARD has evolved through strategic acquisitions and technological advances.

Today, HAYWARD Filtration is a truly global organisation manufacturing market-leading brands synonymous with performance, quality and innovation.

The HAYWARD Filtration business comprises 3 complimentary technologies; Gas-Liquid Separators, Pipeline Strainers, Bag and Cartridge liquid filtration systems. With 7 global manufacturing facilities, 26 wholly owned subsidiaries and independent distributor network, HAYWARD Filtration actively serves Customers in over 45 countries.

Building on more than 75 years of Strainer filter expertise, in 1996 HAYWARD diversified into Bag and Cartridge liquid filtration by acquiring American Felt and Filter's Filtration division. In 1998, HAYWARD established itself as a key supplier outside of the USA by acquiring Germany's LOEFFLER® Filter-Technik. In 1999, the acquisition of GAF® Filter Systems established HAYWARD as the world's premier supplier of liquid bag filtration products.

To understand more about HAYWARD® Filtration the company, its Products, Applications and Customer Service, we encourage you to visit us at:

www.haywardindustrial.com



QUALIFICATIONS

This brochure details what is now regarded as the most comprehensive, innovative range of Filter Housings and Accessories available on the market. Over recent years HAYWARD® Filtration has introduced new concepts to Filter Housing design encompassing the revolutionary QIC-LOCK™ quick opening cover-lid mechanism (see page 8/9) greatly reducing change-out times and a tangential outlet which lowers housing height making it easier to access the filter bags.

Probably HAYWARD Filtration's greatest achievement is the development and implementation of a single global product line manufactured worldwide in multiple locations to a common design whilst complying with local code requirements:

- In Europe, Asia-Pacific and South America HAYWARD Filtration is fully qualified to provide pressure housings of Category I-IV under the Pressure Equipment Directive (PED) (97/23/EC) which came into effect May 29, 2002. HAYWARD manufactures housings to Design Code AD 2000-Merkblätter, the Notified body is TÜV Rheinland-Berlin Brandenburg, Conformity Assessment up to Module H1 and G.
- In North America, South America and Asia, HAYWARD Filtration is fully qualified to provide the same range of housings according to ASME.

In every location, HAYWARD Filtration Sales and Technical Support specialists can review the needs of an installation and recommend the right combination of hazard category and housing design to meet any need.

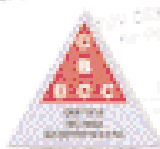


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QIC-LOCK™ Concept

Multi-Bag housing Open and Close cycles in less than 30 seconds!

QIC-LOCK™ MAXILINE™ VMDE

The user friendly, perfect sealing bag filter housing for safe filtration and minimized product loss. Ideal for batch processes which demand the highest quality of filtration.

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QIC-LOCK™ MAXILINE™ VMBF

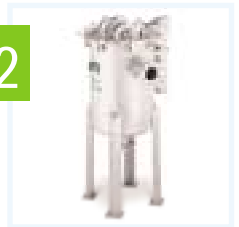
The user friendly, cost effective bag filter housing for high volume applications and processes demanding frequent bag change-out. Ideal for batch process runs and safety filtration.



MAXILINE™ MDE

The user friendly, perfect sealing bag filter housing for safe filtration and minimized product loss. Ideal for long term process runs, which demand the highest quality of filtration.

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MAXILINE™ MBF

The user friendly, cost effective bag filter housing for high volume, multiple applications and processes.



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Sanitary Housings

Design considerations for sanitary housings; surface finish, cleaning featuring "Seen to be Clean", special connections and materials.



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Custom Designed Housings

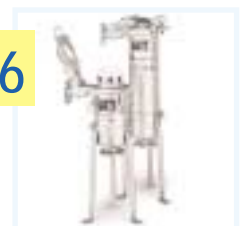
HAYWARD® bag filter housing are designed to accommodate a wide range of possible standard modifications.



TOPLINE™ Filter Housings

The best filter housing for the most demanding applications.

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TECHNICAL DATA

SERIES	Type	No. of Bags		Bag Size	max. Flow 2	Material 1	max. allowable Pressure		max. allowable Temperature		Housing volume		Housing weight	Inlet outlet collection	Type	Vent 4	Main dimensions ³ [mm]					
				[m³/h]			[bar]	[°C]	[L]	[kp]	N1 / N2	A					B	C	D	E	F	
MAXILINE VMDE	VMDE-0401-AS10-100D	4	01	80	SS		10	120	90	180	DN 100	Flange	1/4"		475	390	229	559	400	1950		
	VMDE-0402-AS10-100D	4	02	160	SS		10	120	185	220	DN 100	Flange	1/4"		475	740	229	559	400	2300		
MAXILINE VMBF	VMBF-0401-AS10-100D	4	01	80	SS		10	120	110	180	DN 100	Flange	1"		475	345	205	559	400	1950		
	VMBF-0402-AS10-100D	4	02	160	SS		10	120	205	220	DN 100	Flange	1"		475	740	205	559	400	2300		
	VMBF-0802-AS10-150D	8	02	320	SS		10	120	440	465	DN 150	Flange	1"		520	740	245	800	520	2500		
	VMBF-1202-AS10-250D	12	02	480	SS		10	120	645	770	DN 250	Flange	1"		760	620	395	950	625	3300		
MAXILINE MDE	MDE-0401-AS10-100D	4	01	80	SS		10	120	90	180	DN 100	Flange	1/4"		475	330	252	559	400	2000		
	MDE-0402-AS10-100D	4	02	160	SS		10	120	185	220	DN 100	Flange	1/4"		475	680	252	559	400	2350		
MAXILINE MBF	MBF-0401-AS10-100D	4	01	80	SS		10	120	110	180	DN 100	Flange	1"		475	345	205	559	400	1630		
	MBF-0402-AS10-100D	4	02	160	SS		10	120	205	220	DN 100	Flange	1"		475	740	205	559	400	2270		
	MBF-0802-AS10-150D	8	02	320	SS		10	120	440	465	DN 150	Flange	1"		520	740	245	800	520	2360		
	MBF-1202-AS10-250D	12	02	480	SS		10	120	645	770	DN 250	Flange	1"		760	611	395	950	625	3000		
	MBF-1602-AS10-300D	16	02	640	SS		10	120	945	975	DN 300	Flange	1"		875	590	470	1100	753	2800		
	MBF-2002-AS10-350D	20	02	800	SS		10	120	1750	1050	DN 350	Flange	1"		980	700	555	1250	790	3085		
	MBF-2402-AS10-350D	24	02	960	SS		10	120	1750	1700	DN 350	Flange	1"		980	735	555	1400	880	3120		
TOPLINE	TBF-0101-AD10-050D	1	01	20	SS		10	160	13	36	DN 50	Flange	1/4"		450	395	49	219	307	1360		
	TBF-0102-AD10-050D	1	02	40	SS		10	160	27,5	42	DN 50	Flange	1/4"		450	790	49	219	307	2140		
	TBF-0101-AS16-050D	1	01	20	SS		16	160	13	40	DN 50	Flange	1/4"		445	341	160	219	307	1400		
	TBF-0102-AS16-050D	1	02	40	SS		16	160	27,5	48	DN 50	Flange	1/4"		445	736	160	219	307	2190		
SIDELINE	SBF-0103-AD16-040B	1	03	6	SS		16	160	3	12	1 1/2"	BSP	1/4"			300	75	114	110	840		
	SBF-0104-AD16-040B	1	04	12	SS		16	160	4,5	13	1 1/2"	BSP	1/4"			455	75	114	110	985		
	TSBF-0103-AD16-040B	1	03	6	SS		16	160	3	12	1 1/2"	BSP	1/4"			300	75	114	110	840		
	TSBF-0104-AD16-040B	1	04	12	SS		16	160	4,5	13	1 1/2"	BSP	1/4"			455	75	114	110	985		
	SBF-0101-AD10-050D	1	01	20	SS		10	160	18	38	DN 50	Flange	1/4"			495	80	219	220	1040		
	SBF-0102-AD10-050D	1	02	40	SS		10	160	32	46	DN 50	Flange	1/4"			890	80	219	220	1820		
	SBF-0101-AD10-080D	1	01	20	SS		10	160	18	40	DN 80	Flange	1/4"			495	80	219	220	1040		
	SBF-0102-AD10-080D	1	02	40	SS		10	160	32	48	DN 80	Flange	1/4"			890	80	219	220	1820		
	SBF-0101-AS16-050D	1	01	20	SS		16	160	18	41	DN 50	Flange	1/4"			495	80	219	220	1040		
	SBF-0102-AS16-050D	1	02	40	SS		16	160	32	51	DN 50	Flange	1/4"			890	80	219	220	1820		
	SBF-0101-AS16-080D	1	01	20	SS		16	160	18	52	DN 80	Flange	1/4"			495	80	219	220	1040		
	SBF-0102-AS16-080D	1	02	40	SS		16	160	32	46	DN 80	Flange	1/4"			890	80	219	220	1820		
	TSBF-0101-AD06-050D	1	01	20	SS		6	160	18	38	DN 50	Flange	1/4"			495	80	219	220	1040		
	TSBF-0102-AD06-050D	1	02	40	SS		6	160	32	46	DN 50	Flange	1/4"			890	80	219	220	1820		
DUOLINE	DTBF-0202-AD10-050D	1+1	02	40	SS		10	160	60	145	DN 50	Flange	1/4"		463	790	49	219	848	2150		
	DSBF-0202-AD10-050D	1+1	02	40	SS		10	160	68	165	DN 50	Flange	1/4"		463	890	80	219	674	2280		
MODULENE	TBF-0201-AS10-080D	1	01	40	SS		10	160	30	110	DN 80	Flange	1/4"		400	260	232	219	400	1360		
	TBF-0202-AS10-080D	1	02	80	SS		10	160	60	130	DN 80	Flange	1/4"		400	655	232	219	400	2140		
	MSBF-0201-AD10-080D	2	01	40	SS		10	160	36	131	DN 80	Flange	1/4"		463	618	80	219	660	2000		
	MSBF-0202-AD10-080D	2	02	80	SS		10	160	64	147	DN 80	Flange	1/4"		463	1013	80	219	660	2400		
	TBF-0201-AS10-080D	2	01	40	SS		10	160	30	110	DN 80	Flange	1/4"		400	260	232	219	400	1360		
TOPLINE-Dual	TBF-0202-AS10-080D	2	02	80	SS		10	160	60	130	DN 80	Flange	1/4"		400	655	232	219	400	2140		
POLYLINE	PBF-0101-PO10-050B	1	01	12	PPL		10	20	25	23	2"	BSP	1/4"		83	610	86	263	156	1380		
	PBF-0102-PO10-050B	1	02	24	PPL		10	20	36	29	2"	BSP	1/4"		83	1016	86	263	156	1380		
	PBF-0101-PO10-050D	1	01	12	PPL		10	20	25	25	DN 50	Flange	1/4"		83	610	86	263	219	1380		
	PBF-0102-PO10-050D	1	02	24	PPL		10	20	36	31	DN 50	Flange	1/4"		83	1016	86	263	219	2140		
	PBF-0102-PF06-050D	1	02	24	PVDF		7	20	36	46	DN 50	Flange	1/4"		83	1016	86	263	219	2140		
	DPBF-0201-PO10-050D	1+1	01	12	PPL / PVC		10	20	55	74	DN 80	Flange	1/4"		160	990	132	263	760	1620		
	DPBF-0202-PO10-050D	1+1	02	24	PPL / PVC		10	20	78	86	DN 80	Flange	1/4"		160	1400	132	263	760	2380		
FLOWLINE	FBF-0101-AD10-050B	1	01	20	SS		10	120	15,5	17	2"	BSP	1/4"			489	85	195	150	1040		
	FBF-0102-AD10-050B	1	02	40	SS		10	120	27	23	2"	BSP	1/4"			884	85	195	150	1820		
	FBF-0101-AD10-050D	1	01	20	SS		10	120	15,5	21,5	DN 50	Flange	1/4"			487	85	195	150	1040		
	FBF-0102-AD10-050D	1	02	40	SS		10	120	27	27	DN 50	Flange	1/4"			882	85	195	150	1820		
ECOLINE	EBF-0103-AC09-040B	1	03	6	SS		9	120	3	3,5	1 1/2"	BSP	1/4"			299	60	114	110	660		
	EBF-0104-AC09-040B	1	04	12	SS		9	120	4,5	4,5	1 1/2"	BSP	1/4"			454	60	114	110	970		
	EBF-0101-AC06-050B	1	01	20	SS		6	120	15,5	7,5	2"	BSP	1/4"			489	70	195	150	1025		
	EBF-0102-AC06-050B	1	02	40	SS		6	120	27	11	2"	BSP	1/4"			884	70	195	150	1805		

Product Codes

D	-	V	MBF	-	04	02	-	AC	10	-	050	D
D-DUOLINE		V-QIC-LOCK-Quick closure	MDE-MAXILINE		No. of bags	Bag Size		Material	Pressure rating		Connection Size	Connection Type
M-MODULINE		T-T-Bolt closure	MBF-MAXILINE		01, 02,	01-short 7"		AC- SS 316Ti	06-6bar		040-DN40	B-BSP female
			TBF-TOPLINE		04, 08,	02-long 7"		AS-min. SS 316	07-7bar		050-DN50	D-DIN flange
			SBF-SIDELINE		12, 16,	03-short 4"		AD-min. SS 316/CF8M	09-9bar		080-DN80	
			PBF-POLYLINE		20, 24	04-long 4"		PO-PPL Polypropylene	10-10bar		100-DN100	
			FBF-FLOWLINE					PF-PVDF	16-16bar		150-DN150	
			EBF-ECOLINE								250-DN250	
											300-DN300	
											350-DN350	

APPLICATIONS

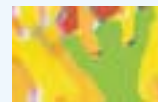
	ECOLINE	FLOWLINE	SIDELINE	TOPLINE	MAXILINE				POLYLINE	SANITARY Housings	DUOLINE	MODULINE
					MBF	VMBF	MDE	VMDE				
Coarse filtration >500 µm	■	■	■		■	■			■		■	■
Medium filtration >10 µm			■	■	■	■	■	■	■	■		
Fine filtration <10 µm				■			■	■		■		
Pre-filtration	■	■	■		■	■			■		■	■
Safety filtration			■	■	■	■	■	■		■	■	■
High volume					■	■						■
Batch filtration		■	■	■		■		■	■	■		
Circuit filtration			■	■	■	■	■	■	■			■
Continuous filtration											■	
Solvents, Paints			■	■	■	■	■	■		■		
Fats and Oils			■	■	■	■	■	■		■	■	■
Catalyst, Activated Carbon				■			■	■		■		
Acids, Bases			■	■	■	■	■	■	■		■	
Petrochemicals			■	■	■	■	■	■			■	■
Water, Waste Water	■	■	■	■	■	■	■	■	■	■	■	■
Chemical Industry			■	■	■	■	■	■	■	■	■	■
Pharmaceuticals				■			■	■		■		
Metal Cleaning	■	■	■		■	■		■				■
Automotive				■	■	■	■	■				■
Electronics				■			■	■	■	■		
Food and Beverage			■	■			■	■		■		
Paint and Laquer			■	■	■	■	■	■			■	
Water Treatment	■	■	■	■	■	■	■	■	■	■	■	■
Galvanic Industry			■	■					■			



Automotive



**Metal Parts
Washing**



**Resins, Polymers
Inks, Dispersions**



**Chemical
Industry**



Petrochemicals



Water Treatment



**Electronics
Semiconductor**



**Paint and
Lacquer**



Galvanic Industry



**Food and
Beverage**



Pharmaceuticals



Environmental

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SIDELINE™ Filter Housings

Mid-priced filter housings for most applications.

DUOLINE™ / MODULINE™ / TOPLINE™ Dual Filter Housings

Discover the flexibility of using multiple housings together as part of a system.

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POLYLINE™ Filter Housings

All-plastic, rugged Polypropylene or PVDF construction for superior corrosion resistance.

FLOWLINE™ Filter Housings

Versatile, heavy-duty but cost-effective filter housings.

**20****21**

ECOLINE™ Filter Housings

Light-weight, economical filter housings.

HAYWARD®

Filter Housing Accessories

Original HAYWARD Accessories, Consumables and Spare Parts for safety and reliability.

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Filter Bags / Pipeline Strainers

Overview of the entire HAYWARD filter bag range and HAYWARD Strainer range.



Cartridges / Cartridge Housings

Overview of the entire HAYWARD Cartridge element range and HAYWARD Cartridge housing range.

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QIC-LOCK™ CONCEPT

User friendly

Economical

**Fast · Simple · Efficient · Economical · Safe · User friendly · Durable
Low Maintenance · Cost effective · Approved design · High Productivity**

Slogans that reflect bag filter user expectations in the modern day Production environment.

MULTI-BAG/MAXILINE™ HOUSING CLOSE CYCLES IN LESS THAN 30 S

The revolutionary QIC-LOCK™ opening mechanism answers all the demands of Bag Filtration users working in an environment where productivity and safety are the key priorities. Years of field-based experience on earlier designs such as the V-clamp “toggle” closure followed by the “ratchet” system have all proven the requirement and benefits for rapid opening mechanisms.

- QIC-LOCK is safe to use, an interlock prevents opening until the housing is entirely vented.
 - QIC-LOCK is simple and fast to operate, standing in 1 position, the operator can rotate the hand-wheel and open the lid, there is no requirement to have full movement and access around the housing or the use of any tools as with conventional bolted closures.
 - QIC-LOCK is also a rugged design, precision machining assures long-life and repeatable operation, SS 316 and special coating protects the spindle surface from wear and corrosion.
- The design is approved for all pressure housing design codes.

QIC-LOCK doesn't just make life easier for operators; there are significant economical benefits to be realised with greatly reduced down times and lower maintenance costs.

Safe





- 1** Filter element change necessary, opening the safety interlock ensures simultaneous pressure relief



- 2** Rotation of the spindle using a hand-wheel opens the V-clamp into the end position



- 3** Opening the lid aided by spring assisted mechanism



- 4** Filter element change



- 5** Closing of the lid



- 6** Closing of the V-clamp by rotation of the spindle



- 7** Closing of the safety interlock, housing is ready to go on-line!

Easy

ple

OPEN AND
SECONDS!

efficient

effective

Fast

MAXILINE™ VMDE

QIC-LOCK™ MAXILINE™ VMDE

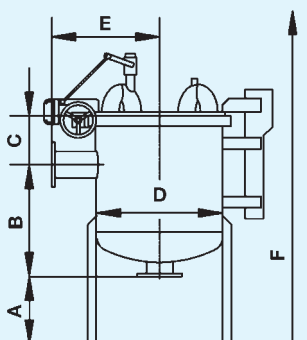
The user friendly, perfect sealing bag filter housing for safe filtration and minimized product loss. Ideal for batch processes which demand the highest quality of filtration.

- QIC-LOCK rapid opening mechanism ensures simple, operator friendly and safe operation with minimal downtime to increase productivity and decrease running costs.
- Flat-lid design removes the requirement for additional sealing devices. In conjunction with HAYWARD® SENTINEL® filter bags, efficiencies of >99.98% can be achieved – true absolute filtration. Under pressure, the unique pressure activated lip of each SENTINEL ring seals directly against the lid providing perfect, bypass-free sealing.
- The flat-lid construction also minimises the amount of residual product left on the inner surface of the lid when opening, this reduces product loss, possibility of spillage and makes cleaning easier.
- Direct feeding of filter bags via individual inlets generates a laminar flow, this ensures optimal cake formation to further improve performance
- A counter-balanced spring assisted lid-lifting mechanism balances the lid perfectly giving it a weightless feel. Opening and closing of the lid with the “little finger” is a reality.
- Side inlet and bottom outlet provides easy and full drainage, tangential outlet option available to reduce housing height.
- Product wetted parts made from stabilized stainless steel guarantee high corrosion resistance with many fluids.
- 2 standard 4 bag housing designs available (size 01 and 02).



These value added features:

Gives these benefits



HAYWARD QIC-LOCK spindle quick closure

Operator friendly, simple, fast bag change-out
Ideal for processes requiring frequent bag changes e.g. Batch process

Simple, safe and effective bag sealing via flat-lid design

Likelihood of faulty batches resulting from poor bag sealing or cross contamination are eliminated, easier cleaning and maintenance

Fluid distribution via individual inlets per bag

Laminar flow optimises cake formation

MAXILINE™ VMBF

QIC-LOCK™ MAXILINE™ VMBF

The user friendly, cost effective bag filter housing for high volume applications and processes demanding frequent bag change-out.

Ideal for batch process runs and high dirt load applications.

- QIC-LOCK rapid opening mechanism ensures simple, operator friendly and safe operation with minimal downtime to increase productivity and decrease running costs.
- Unique 3-point hold down or bayonet fittings ensure high quality of seal between each filter bag and housing body. Special tool (supplied) ensures simple effective operation.
- A counter-balanced spring assisted lid-lifting mechanism balances the lid perfectly giving it a weightless feel. Opening and closing of the lid with the "little finger" is a reality.
- Positive O-ring sealing offers easy and safe operation.
- Side inlet and bottom outlet provides easy and full drainage, tangential outlet option available to reduce housing height.
- Product wetted parts made from stabilized stainless steel guarantee high corrosion resistance with many fluids.
- Housing volume is optimized to minimize product loss.
- 6 standard sizes with 4 through to 24 bag housings available (size 01 and 02).



These value added features:

HAYWARD QIC-LOCK spindle quick closure

Simple, safe and effective bag sealing via 3-point hold down or bayonet fittings

In-house fluid distribution

Proven bag filter design

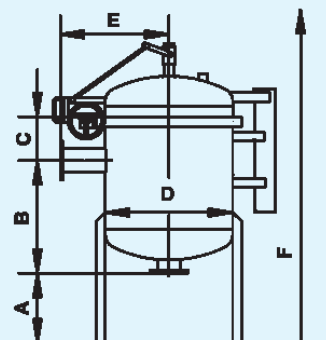
Gives these benefits

Operator friendly, simple, fast bag change-out. Ideal for processes requiring frequent bag changes e.g. Batch process

Easy installation and positioning of bags, excellent sealing characteristics

Minimized pressure loss, easy to clean

General filter design is easily adapted to other processes and applications



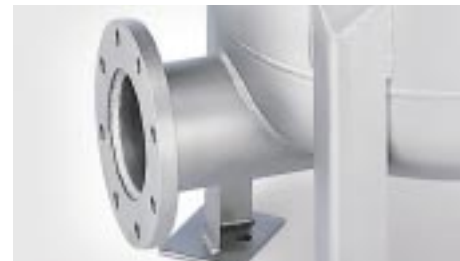
MAXILINE™ MDE



MAXILINE™ MDE

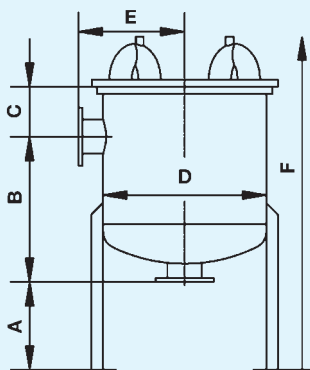
The user friendly, perfect sealing bag filter housing for safe filtration and minimized product loss. Ideal for long term process runs, which demand the highest quality of filtration.

- Flat-lid design removes the requirement for additional sealing devices. In conjunction with HAYWARD® SENTINEL® filter bags, efficiencies of >99.98% can be achieved – true absolute filtration. Under pressure, the unique pressure activated lip of each SENTINEL ring seals directly against the lid providing perfect, by-pass free sealing.
- The flat-lid construction also minimises the amount of residual product left on the inner surface of the lid when opening, this reduces product loss, possibility of spillage and makes cleaning easier.
- Direct feeding of filter bags via individual inlets generates a laminar flow, this ensures optimal cake formation to further improve filtration performance.
- The bag filter housing is designed with a proven swing eye-bolt closure mechanism.
- A counter-balanced spring assisted lid-lifter balances the lid perfectly giving it a weightless feel. Opening and closing of the lid with the "little finger" is a reality.
- Side inlet and bottom outlet provides easy and full drainage, tangential outlet option available to reduce housing height.
- Product wetted parts made from stabilized stainless steel guarantee high corrosion resistance with many fluids.
- 2 standard 4 bag housing designs available (size 01 and 02).



These value added features:

Gives these benefits



Standard design with swing eye-bolts and spring lid-lifter

Proven design, robust and reliable, easy to use

Simple, safe and effective bag sealing via flat-lid design

Likelihood of faulty batches resulting from poor bag sealing or cross contamination are eliminated, easier cleaning and maintenance

Fluid distribution via individual inlets per bag

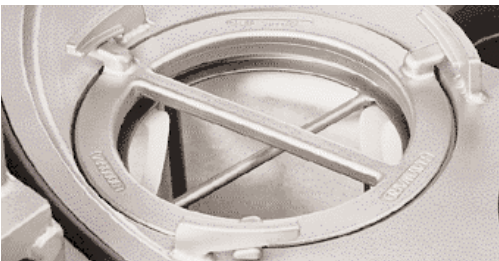
Laminar flow optimises cake formation

MAXILINE™ MBF

MAXILINE™ MBF

The user friendly, cost effective bag filter housing
for high volume, multiple applications
and processes.

- The bag filter housing is designed with a proven swing eye-bolt or segment clamp closure mechanism.
- Unique 3-point hold down or bayonet fittings ensure high quality of seal between each filter bag and housing body. Special tool (supplied) ensures simple, effective operation.
- A counter-balanced spring assisted lid-lifter balances the lid perfectly giving it a weightless feel. Opening and closing of the lid with the "little finger" is a reality.
- Positive O-ring sealing offers easy and safe operation.
- Side inlet and bottom outlet provides easy and full drainage, tangential outlet option available to reduce housing height.
- Product wetted parts made from stabilized stainless steel guarantee high corrosion resistance with many fluids.
- Housing volume is optimized to minimize product loss.
- 6 standard sizes with 4 through to 24 bag housings available (size 01 and 02).



These value added features:

Standard design with swing eye-bolts and spring lid-lifter

Simple, safe and effective bag sealing via 3-point hold down or bayonet fittings

In-house fluid distribution

Proven bag filter design

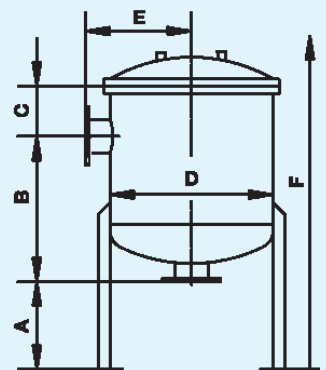
Gives these benefits

Proven design, robust and reliable, easy to use

Easy installation and positioning of bags, excellent sealing characteristics

Minimized pressure loss, easy to clean

General filter design is easily adapted to other processes and applications



SANITARY

SANITARY HOUSINGS

In the late 1990's HAYWARD® launched a range of new, high performance "Premium" bag filters. Absolute filter elements, e.g. PROGAF™ with 99.9% efficiency at 1 µm, 95% at 0.15 µm have redefined the suitability of filter bags for applications previously only possible with expensive Cartridges e.g. Membrane protection or Activated Carbon removal.

As a system supplier, we recognise the demands on housing design. Cleaning/sterilisation, corrosive chemicals and system validation/code approval are all major issues in Fine Chemical/Pharmaceutical, Food/Beverage and high purity Water applications.

Surface Finish

Surface finish is critical:

- Ease of cleaning - smoother finishes are easier to clean by traditional methods SIP or CIP.
- Risk of bacterial growth - smoother finishes offer less surface support for bacteria.

Surface finishes up to Ra 0.4 µm can be guaranteed.



Ra 0.4 µm Finish



Connections

Connections, flanges and threads are risk areas for bacterial growth. A number of special connections are available for such sanitary applications e.g. Tri-clamps for Fine Chemical/Pharmaceutical, IDF, Milk and RJT couplings for Food/ Beverage.

Cleaning

Design can further minimise bacterial/residual contamination, no under-cuts, edges or dead volumes are allowed. "Seen to be Clean" is a HAYWARD innovation. Designs allow visual inspection of all internal pipe-work and surfaces, there is no requirement for costly housing removal and bioscope analysis.



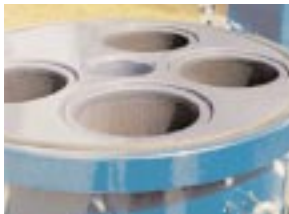
"Seen to be Clean" Housing

Chemical resistance

Use of special materials e.g. Hastelloy or coatings provide chemical resistance as do special O-rings e.g. FEP-Silicon.

CUSTOM DESIGNED HOUSINGS

HAYWARD® bag filter housing are designed to accommodate a wide range of possible standard modifications



HALAR coating

Material of construction optimised for Chemical and Temperature compatibility:

Housing - Carbon steel, Stainless steel in various grades, Hastelloy, Titanium, Polypropylene and PVDF

Coatings - E-CTFE (HALAR), rubber lined, PTFE/FEP, Polyurethane and Epoxy

Sealings - A wide range of Gaskets and O-rings are available

Process operating conditions:

Pressure/Temperature - Depending on housing size, up to 100bar/400°C, Heating jackets with 15bar/400°C

Flow rates - Up to 1000m³/h



QIC-LOCK™

Lid Closure/Lifting mechanisms:

Closure - QIC-LOCK spindle, T-bolt, Swing eye-bolts, Hex-nuts, Stud-bolts, Segment clamps

Lifting - Spring, counterbalanced, hydraulic and Davit-arm



Surface Finish/Connections:

Surface - Glass-beaded, Electro-polished, Hand-polished, Acid-pickled, Coated (see above)

Connections - Standardised flanges and threads (DIN, ANSI, BSP), Sanitary (Tri-clamp, Milk pipe, IDF, RJT and other sterile types)



Approvals and Design Codes:

PED (Pressure Equipment Directive 97/23/EC)

AD 2000-Merkblätter, EN 13445, Stoomwezen, CODAP, BS5500, ASME VIII Div 1

Notified body: TÜV, Rheinland-Berlin Brandenburg CE 0035

Modules: Up to module H1, G

SVTI and UDT

ASME (American Society of Mechanical Engineers)

U stamp and UM stamp, CRN (Canadian Registration Number)

Skid mounting and mobiles:

Skids - In-house engineering capability to couple multiple housings and or integrated control systems

Mobiles - Application specific mobile units e.g. Wine Pallet



Wine Pallet

TOPLINE™

TOPLINE™ Filter Housings

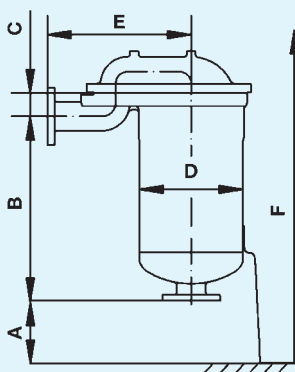
The best filter housing for the most demanding applications.

- TOPLINE is the finest single bag filter housing available. From its high-performance design to its heavy duty investment-cast components, everything about TOPLINE is simply the best.
- TOPLINE's side inlet, flow through the top design results in a minimum headroom of unfiltered liquid for easy bag change-out, as well as providing optimum sealing of the filter bag.
- For filter bags sizes 01 and 02.
- TOPLINE's type 316 stainless steel construction means superior corrosion resistance and consistent performance, year after year. A smooth, bead-blasted finish, coupled with TOPLINE's minimum 2-weld design, makes it easy to completely clean the interior of the housing.
- All TOPLINE housings come with HAYWARD's exclusive Five Year Warranty. A special line of CE stamped housings are also available as standard.
- TOPLINE... for applications too demanding for ordinary bag filters.



These value added features:

Gives these benefits



"Over-the-top" inlet connection with hinged cover

Makes bag change-out quick and easy

Cover positively seals filter bag

Superior bypass-free sealing

Swing eye-bolt closure

Easy and robust opening and closing

Electropolished SS 316 perforated plate basket

Perfect bag support, easy to clean

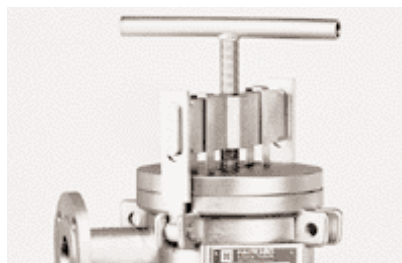
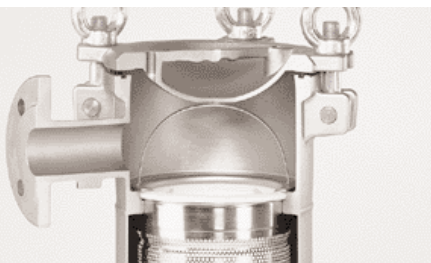
Mounting legs to adjust housing height

Stable and adjustable construction

SIDELINE™ Filter Housings

Mid-priced filter housings for most applications.

- A SIDELINE housing from HAYWARD is a solid, investment-cast filter in the medium cost range.
- SIDELINE offers the choice between a standard eye-bolt closure or a quick-opening centerbolt closure (T-bolt) and a choice of DN 50 or DN 80 flanged connections as standard.
- For filter bags sizes 01, 02, 03 and 04.
- SIDELINE's type 316 stainless steel construction means superior corrosion resistance and consistent performance, year after year. A smooth, bead-blasted finish, coupled with SIDELINE's minimum 2-weld design, makes it easy to completely clean the interior of the housing.
- All SIDELINE housings come with HAYWARD's exclusive Five Year Warranty. A special line of CE stamped housings are also available as standard.
- SIDELINE... for all heavy duty industrial applications.

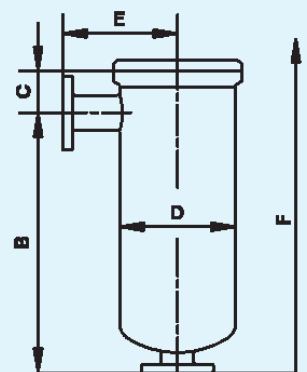


These value added features:

Side-entry inlet with evacuation cover
Cover adaptable to different opening directions
Integrated handle in cover-lid
Bag hold-down ring compressed by cover-lid
Swing eye-bolt closure
Electropolished SS 316 perforated plate basket
Mounting legs to adjust housing height (option)

Gives these benefits

Eliminates spillage of liquid on opening
Perfect accessibility, easy maintenance
Ergonomical and easy to open
Good 360° sealing of the filter bag
Easy and robust opening and closing
Perfect bag support, easy to clean
Stable and adjustable construction



DUOLINE™ / MODULINE™ / TOPLINE™



DUOLINE DSBF

DUOLINE™ Filter Housings

Duplex units for continuous filtration processes.

The DUOLINE bag filter system consists of two bag filter housings (SIDELINE or TOPLINE) fitted together at the inlet and outlet by 3-way cook valve units. Both cook valves are connected together by a center post actuator in order to guarantee a synchronised change from filter A to filter B. A quick turn of the actuator diverts the flow from one filter housing to the other. The filtration process runs continuously during bag change-outs.

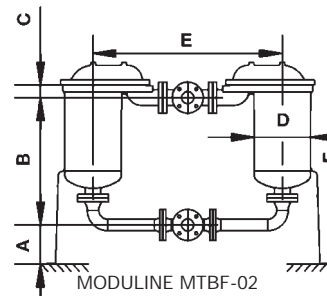
MODULINE™ Filter Housings

Double or modular multibag unit for larger flow rates.

The MODULINE filter housings are multibag units assembled from two or more standard SIDELINE (MSBF) or TOPLINE (MTBF) housings using standard ellbows, manifolds or T-Pipe modules. The MODULINE filter concept offers greater flexibility, capacity can be easily increased by adding further modules.



MODULINE MSBF-02



MODULINE MTBF-02



TOPLINE TBF-02

TOPLINE™ Dual Filter Housings

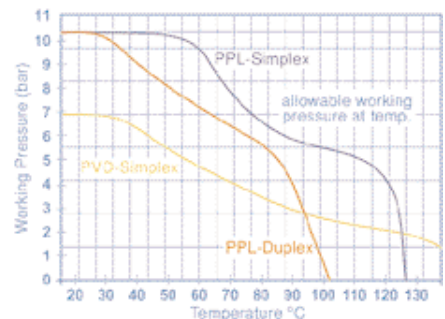
Compact 2-bag unit with single cover-lid.

The TOPLINE TBF-02 filter housing combines the advantages of the TOPLINE series with a compact 2-bag design. Features a single cover-lid, eye-bolt closure and standard adjustable leg assembly.

POLYLINE™ Filter Housings

All-plastic, rugged Polypropylene or PVDF construction for superior corrosion resistance.

- POLYLINE filter housings have no metal components to rust or corrode. The glass fiber reinforced polypropylene withstands relatively high pressure/temperature combinations. Available for filter bag sizes 01 and 02. Severely aggressive liquids can be filtered by a PVDF version, size 02 only.
- The cover is hand-removable without the need for any tools and features an all-plastic, built-in vent valve with integral 1/4" gauge tap. The two bottom pipe connections are interchangeable as outlet or drain, allowing easy modification to in-line or loop piping arrangements to accommodate any installation design.
- For applications that require continuous flow, a duplex model is available. Here, the flow never has to shut down for bag change-out. For contamination sensitive or severely corrosive filtration applications, POLYLINE is your best choice.

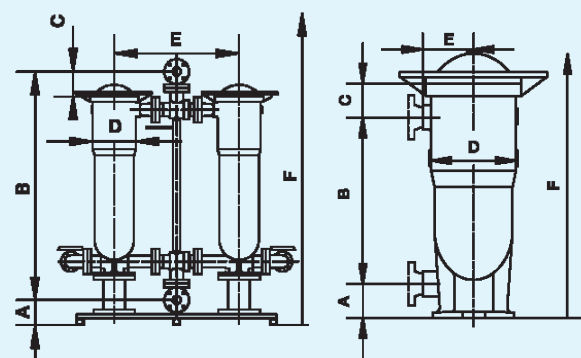


These value added features:

- Unique, one-piece molded body
- Glass reinforced polypropylene construction
- Hand-removable "spin off" cover
- Integral installation flange
- Double outlet connections
- Duplex model with CPVC valves available

Gives these benefits

- No seams, welds or crevices
- High pressure and temperature resistance
- Easy to open, no tools needed
- Solid floor mounting
- One can be used as drain
- For continuous flow applications



FLOWLINE™

FLOWLINE™ Filter Housings

Versatile, heavy-duty but cost-effective filter housings.

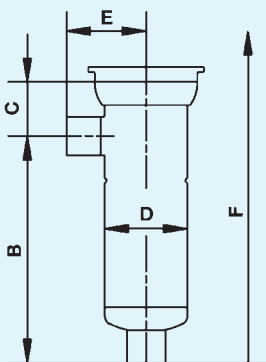
- A FLOWLINE housing from HAYWARD® is the best choice for industrial, commercial and OEM applications that do not require a code stamp. The standard design is available with threaded or flanged connections.
- FLOWLINE's cost-effective design incorporates all of the features heavy duty applications demand but in a light-weight construction.
- FLOWLINE's special design uses a minimum number of welds for a smooth, easy to clean interior surface.
- For filter bags sizes 01 and 02.
- FLOWLINE's type 316 stainless steel construction means superior corrosion resistance and consistent performance year after year. A smooth, bead-blasted finish makes it easy to completely clean the interior of the housing.



These value added features:

Gives these benefits

Side-entry inlet with evacuation cover	Eliminates spillage of liquid on opening
Cover adaptable to different opening directions	Perfect accessibility, easy maintenance
Integrated handle in cover-lid	Ergonomical and easy to open
Bag hold-down ring compressed by cover-lid, PROFILE basket seal design in FPM	Good, 360° sealing of the filter bag
Swing eye-bolt closure	Easy and robust opening and closing
Electropolished SS 316 perforated plate basket	Perfect bag support, easy to clean



ECOLINE™ Filter Housings

Light-weight, economical filter housings.

- An ECOLINE housing from HAYWARD® is the entry model to the range. It is a light-weight design for commercial, OEM, non-hazardous, low pressure applications that do not require a Code Stamp.
- ECOLINE's cost-effective design incorporates a handy V-clamp closure and threaded couplings. The lid is fitted with a 1/4" BSP connection for easy fitting of a vent or gauge.
- For filter bags sizes 01, 02, 03 and 04.
- ECOLINE's type 316 stainless steel construction offers superior corrosion resistance and consistent performance. A smooth, bead-blasted finish makes it easy to completely clean the interior of the housing.

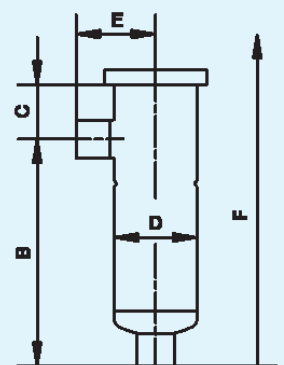


These value added features:

- Side-entry inlet with evacuation cover
- Loose, light-weight cover with V-clamp closure
- Bag hold-down ring compressed by cover-lid, PROFILE basket seal design in FPM
- Electropolished SS 316 perforated plate basket
- Mounting legs or wall mounting brackets (option)

Gives these benefits

- Eliminates spillage of liquid on opening
- Easy maintenance
- Good 360° sealing of the filter bag
- Perfect bag support, easy to clean
- Easy to install



Lid gasket

Bag

ACCESSORIES

HAYWARD®

FILTER HOUSING ACCESSORIES

Original HAYWARD® Accessories, Consumables and Spare Parts for safety and reliability

The wide range of filter housing Accessories from HAYWARD makes it possible to custom design a housing to the exact requirements of your application, no matter how complex or unique it may be.

Accessories can be used to improve processes as well as the application requirement itself. For example, displacement balloons make bag change-out easier, LOFNETIC magnetic inserts extend filter bag life in applications where magnetic particles are encountered.

Original HAYWARD “added value” Accessories are guaranteed to work with your HAYWARD filter housings as part of the system to deliver the highest performance and reliability.

01 Restrainer Baskets

Heavy duty, electropolished SS 316 perforated plate baskets (included with housing) allows use of filter bags and HAYFLOW™ elements up to differential pressures of 3.5 bar. Available in all standard sizes, fitting all HAYWARD bag filter housings. Specially designed restrainer baskets, including special of construction such as HASTELLOY or E-CTFE (HALAR) coated, are available. Standard baskets can be used in combination with adaptor rings for retrofitting other types of housings.

02 LOFNETIC Magnets

Magnets assemblies are a combination of a bag positioner fitted in the center with a magnetic bar(s) inserted into the filter bag during filtration. They extend lifetime by retaining magnetic particles such as chips and fines, preventing deposition onto the filter media. They also retain finer magnetic dust when using bags of coarser micron rating. HAYWARD magnetic strainers are available in size 01 and 02 using one or two SS 316 covered magnetic bars.

03 Bag Positioner

Highly recommended for all installations, mandatory for some, bag positioners or “bag lock’s” ensure correct positioning of the filter bag within the basket and eliminate any “bobbing” up and down movement of the bag caused by uncontrolled back pressure. This avoids any chance of bag bursting. ACCUGAF™, PROGAF™ and LOFCLEAR™ 500 filter bags need to be equipped in all cases with a bag positioner. A special new collar design firmly fixes the element inside the bag during filtration. They are available in sizes 01 and 02.





04 Leg Assembly

Height-adjustable leg assemblies are standard for size 01 and 02 TOPLINE™ housings and optional for ECOLINE™, FLOWLINE™ and SIDELINE™ housings. Wall mounting brackets are also available.

05 Displacement Balloons

Inserting a displacement balloon inside the filter bag minimizes the amount of residual liquid present in the filter bag and reduces product loss. This eases the changing of the

filter bags and eliminates the need for expensive pressure-aided draining systems. A special new collar design firmly positions the balloon inside the bag. The SS 316 balloons' maximum DP is 16 bar, they are available in sizes 01 and 02.

06 Manifold Modules

HAYWARD standard pipe modules are available in SS 316. 90° elbows, flange reductions, flanged "T" sections and flange manifolds can be easily assembled to make DUOLINE™ or MODULINE™ bag filter versions based on FLOWLINE™, SIDELINE™ or TOPLINE™ size 01 or 02 housings.

07 Adapter Head for Open filtration

Used in conjunction with SNAP-RING® filter bags in gravity feed open systems. Adapter heads are available in SS 316 and polypropylene with a 1.5" BSP connection. For pressures to 1.5 bar.

08 Gaskets and O-ring seals

As standard, HAYWARD metal filter housings are fitted with NBR O-rings, plastic housings have FPM O-rings. Other material options such as EPDM, FPM, FEP encapsulated FPM or Silicone rubber are available as are flat gaskets. The options offer a variety of chemical and thermal resistances to meet a multitude of uses and applications.

09 Mesh Strainers

Bag filter housings may be fitted with SS 316 mesh lined strainers in place of baskets to convert them to strainer filters. Mesh strainers are available in four standard sizes: 01, 02, 03 and 04, micron ratings are 25, 50, 100, 150, 250, 400, 800 µm respectively.

10 Miscellaneous

Gauges, Vents, Eye-bolts, Clamp-screws, V-clamps, Center-bolts, Butterfly and Ball Valves are available as accessories or spare parts to fit the various HAYWARD bag filter housings.

11 Bag Hold-down Rings

The various ECOLINE™, SIDELINE™, FLOWLINE™, POLYLINE™ and MAXILINE™ MBF bag filter housings are fitted with different bag hold-down rings (included with housing). They hold the filter bag securely inside the restrainer basket which in turn is positioned correctly within the housing.

FILTER BAGS

PROGAF™

A revolution in filter bags. PROGAF combines a high-efficiency media with a high capacity pre-filter for effective particulate removal down to submicron level.

ACCUGAF™

Highly efficient filter bags that have an extremely high particle retention efficiency. Applications that require this high filtration efficiency can now take advantage of bag filtration with HAYWARD's ACCUGAF.

LOFCLEAR™

High Efficiency filter bags with a special multi-layer, pleated construction that results in a better than nominal efficiency in demanding applications.

HAYFLOW™

HAYWARD's revolutionary new long-life filter element.

DURAGAF™

Features increased media thickness with finer fibers for high pore volume. Reduced time between bag change-outs improves efficiencies and reduces operating costs.

CLEARGAF™

For Food/Beverage and Pharmaceutical applications most HAYWARD filter bags can be manufactured, packaged and stored to meet EEC and FDA requirements.

SENTINEL®

All-welded construction bags for higher filtration efficiency. Patented pressure reactive ring seal ensures bypass-free sealing.

SNAP-RING®

Sewn construction filter bag for less demanding applications.

BANDSEAL™

Tie-on filter bags for filtration without a housing.

PIPELINE STRAINERS

Protecting your Pumps, Filters, Nozzles, Flowmeters, Valves, Heat Exchangers, Condensers, Oil Burners, and Boilers from pipeline debris. Models available in different materials, for piping as from 1/4" up to 48".

Duplex Strainers

Never have to be shut down for cleaning ... the line can run continuously. When one basket becomes dirty, flow is switched to the other. The first basket is removed, cleaned and is ready for use again.

Simplex Strainers

The particulate matter is captured in the strainer basket. The line is then temporarily shut down for cleaning the basket.

Automatic Self-Cleaning Strainers

Motorised units designed for the continuous removal of entrained solids from liquids in pipeline systems.

Custom fabricated Strainers

Nothing too big – Nothing too small – Nothing too special!

Y-Strainers

Compact design.

Strainer Baskets and Elements

The heart of every strainer. Available in a wide range of materials, mesh linings or perforations to handle any straining problem.

CARTRIDGES



LOFTOP

Melt Blown absolute rated Polypropylene Filter Cartridges

LOFTREX

Meltblown Industrial Polypropylene Filter Cartridges

LOFWIND

String wound Filter Cartridges

LOFCLEAN

Resin Bonded Acrylic fiber Filter Cartridges

LOFSORB

Extruded Carbon Cartridges

LOFDISC

Cellulose and active Carbon Filter Modules

CARTRIDGE HOUSINGS



TOPCART

A range of single and multiple heavy duty SS 316 cartridge filter housings designed for industrial liquid filtration. Options for DOE, SOE-222 and SOE-226 adaptor configurations.

ECOCART

Lightweight SS 304 single and multiple round housings for DOE cartridges.

POLYCART

Single round plastic cartridges housings, ideal for in-line water filtration systems using DOE cartridges.

POLYLINE™

Heavy duty, glass reinforced polypropylene or PVDF housings for 5 pcs 30" DOE or SOE-222 cartridges.

LOFDISC

SS 316 housing for filter modules, available in industrial or sanitary finish.



HAYWARD®

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