

ASME U-Stamp Liquid Filter Housings

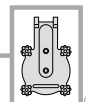
Over-the-Top® Design



Technical Bulletin A

Filtration Systems

Division of Mechanical Mfg. Corporation



INDIVIDUAL FILTER VESSELS



Model S-112



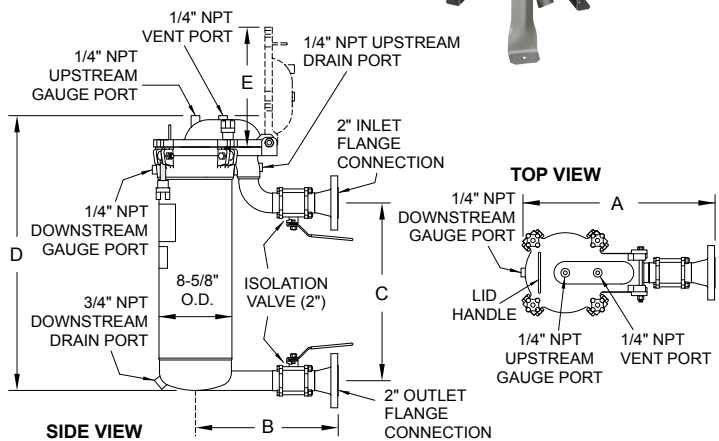
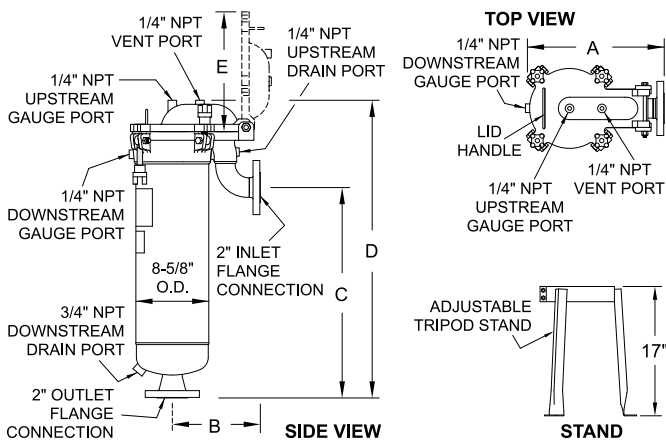
Model S-122



VALVED, INDIVIDUAL HOUSINGS



Model S-122-LP-V



MODEL	A	B	C	D	E	WT/LBS
S-112	15-1/2"	10-1/2"	12"	22"	14"	110
S-122	15-1/2"	10-1/2"	26"	35-1/2"	14"	130

Adjustable Tripod Stand: 17" H, 12" bolt hole circle, Band: 2" wide, 8-5/8" I.D.

MODEL	A	B	C	D	E	WT/LBS
S-122-LP-V	21-7/8"	17-1/4"	22-3/4"	33-1/2"	14"	140

Adjustable Tripod Stand: 17" H, 12" bolt hole circle, Band: 2" wide, 8-5/8" I.D.

Description

ASME U-Stamp Liquid Filter Housings meet the requirements of Section VIII, Division 1, and provide the ideal solution for fine filtration. *Filtration Systems* vessels feature *Over-The-Top*[®] design. Compression of our *Zero-Bypass*[®] bag collar between the housing lid and the top of the support basket provides a positive 360-degree seal, preventing bypass of unfiltered liquid. Solids are trapped and collected in the bag, eliminating clean up of the vessel interior during bag change-out.

Filter housings accommodate a variety of filter media, making them highly versatile for industrial, pharmaceutical, water, beverage and other process applications. Individual, Valved Individual and Multi-Housing Systems accommodate size #1 (7" dia. x 16" long) or #2 (7" dia. x 32" long) filter bags, cartridges or strainer baskets.

Vessels are T-316 stainless steel or carbon steel, 150 or 300 psi, valved or non-valved. Alternate inlet and outlet connections may be ordered, allowing the vessels to be placed directly in line with existing process piping.

Valved, Individual Housings allow liquid flow to be shut off at the unit, rather than at a distant source, saving time during media change-out. A Low-Profile Horizontal Outlet is a standard feature of Valved, Individual Housings.

Multi-Housing Filter Systems are available with 2 to 12 modules, providing increased flow rate capacity by using multiple housings simultaneously. Valved versions have stainless steel ball valves on the inlet and outlet of each vessel. Functioning as shut-off valves,

they isolate individual housings from the filtering process, allowing continuous service of the remaining housings during media removal and replacement.

All Multi-Housing Systems are equipped with two inlet and two outlet connections. Alternate connection ports allow users the option of choosing any inlet and outlet site(s) to accommodate space and piping requirements. Unused ports may be sealed with user-furnished blind flanges, plugs or caps. *Filtration Systems* versatile, modular design provides simplified installation, equipment expansion and easy access to the headers for inspection and cleaning. Systems are built on a stable frame, shipped fully assembled and require no anchor bolts for installation. Anchor holes available upon request.

Standard Features

- *Over-The-Top* Design
- ASME U Stamp, Section VIII, Div. 1
- Available in 150 psi or 300 psi maximum working pressure
- Investment Cast Lid and Body
- Hinged Lid with Handle, Built-in Lid Stop and Safety Detents
- Perforated T-316 S/S Support Basket with Longitudinal Taper
- Gauge Ports, Vent Ports and Drain Ports
- Buna-N O-Rings
- Adjustable Tripod Stand or Frame

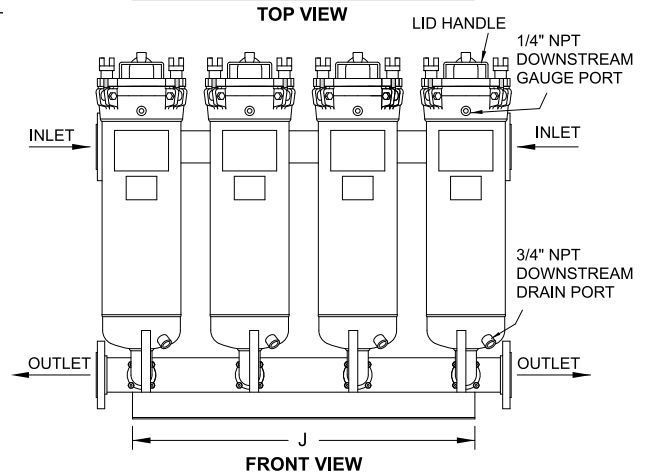
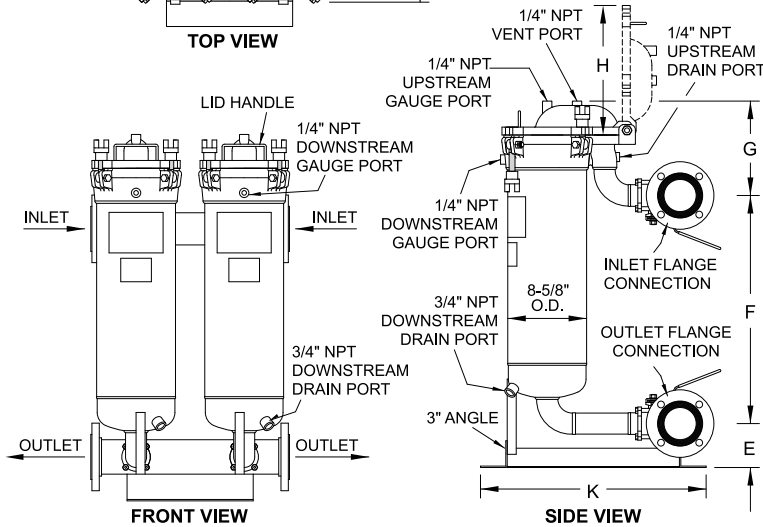
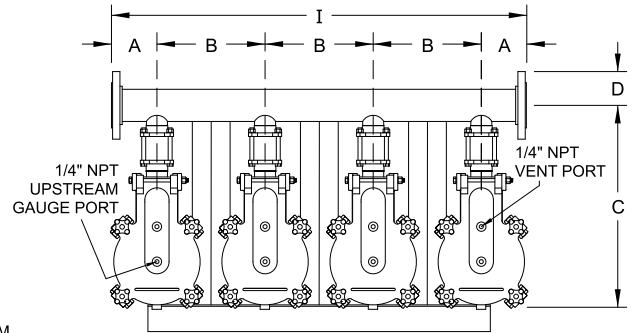
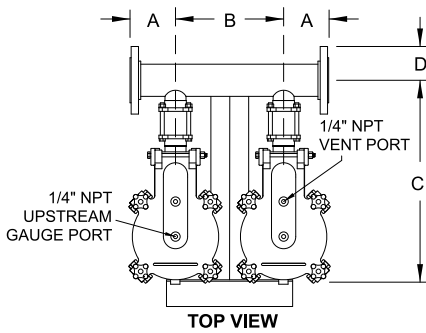
MULTI-HOUSING FILTER SYSTEMS



Model S-223-V



Model S-424-V



MODEL	NO. OF HOUSINGS	*FLANGE SIZE (INCHES)	**MAXIMUM FLOW RATE (GPM) @ 2.2 psid	LIQUID VOLUME (gal/water)	2 TO 12 MODULES AVAILABLE ALL DIMENSIONS ARE IN INCHES											SHIPPING WEIGHT (LBS)
					A	B	C***	D	E	F	G	H	I	J	K***	
-223-V	2	3	440	15.5	5	12	21	3 3/4	4 3/4	26 1/4	9 1/2	14	22	13	27	295
-324-V	3	4	660	24.4	5	12	21 3/4	4 1/2	5 1/4	26 1/4	9 1/2	14	34	25	27 1/2	435
-424-V	4	4	880	32.5	5	12	21 3/4	4 1/2	5 1/4	26 1/4	9 1/2	14	46	37	27 1/2	575
-526-V	5	6	1100	47.4	5	12	22 3/4	5 1/2	6 1/4	26 1/4	9 1/2	14	58	49	28 1/2	715
-626-V	6	6	1320	56.9	5	12	22 3/4	5 1/2	6 1/4	26 1/4	9 1/2	14	70	61	28 1/2	855
-726-V	7	6	1540	66.3	5	12	22 3/4	5 1/2	6 1/4	26 1/4	9 1/2	14	82	73	28 1/2	995
-826-V	8	6	1760	75.8	5	12	22 3/4	5 1/2	6 1/4	26 1/4	9 1/2	14	94	85	28 1/2	1135
-928-V	9	8	1980	113.9	5	12	23 3/4	6 3/4	7 3/4	26 1/4	9 1/2	14	106	97	29 1/2	1427
-1028-V	10	8	2200	126.6	5	12	23 3/4	6 3/4	7 3/4	26 1/4	9 1/2	14	118	109	29 1/2	1595
-1128-V	11	8	2420	139.3	5	12	23 3/4	6 3/4	7 3/4	26 1/4	9 1/2	14	130	121	29 1/2	1765
-1228-V	12	8	2640	151.9	5	12	23 3/4	6 3/4	7 3/4	26 1/4	9 1/2	14	142	133	29 1/2	1930

* Headers & Flanges are available from 2" – 10"

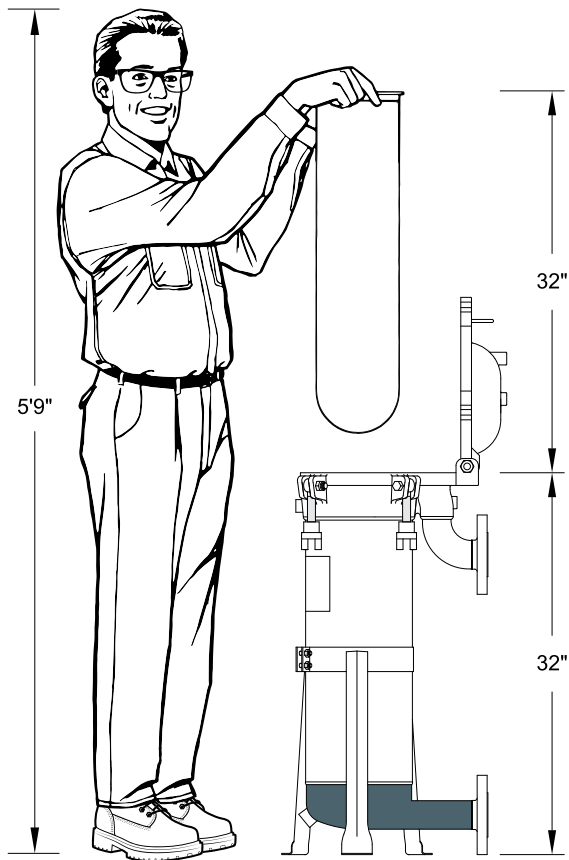
** Flow Rates are based on water in a housing without filter media. Actual flow rates are determined by the specific filter media selected, as well as the characteristics of the application.

*** For Non-Valved Systems, subtract 5".

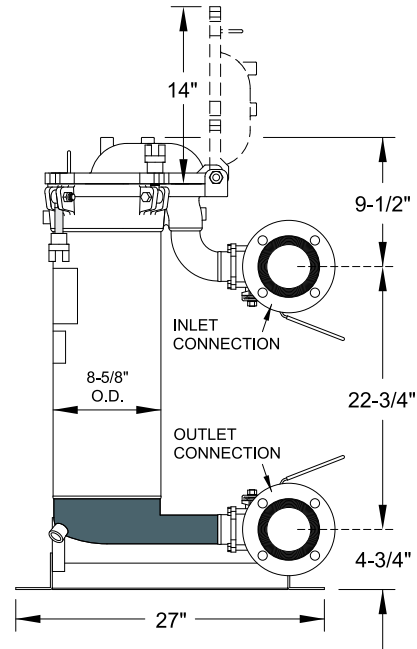
LOW-PROFILE, HORIZONTAL OUTLET

Lower working height means easier filter bag change-out

The Low-Profile, Horizontal Outlet is a one-piece investment casting exclusive to the *Filtration Systems* product line. This option lowers the working height of the filter vessel by 4" on Individual Housings and 3" on Multi-Housing Systems, eliminating the need for a ladder or platform when changing filter media. Ergonomic related injuries and accidental spills during change-out are reduced. This self-draining outlet is optional on all stainless or carbon steel Individual Housings and Multi-Housing Systems. The "LP" upgrade is available with R/F ANSI flanges, NPT threads or sanitary ferrule connections.



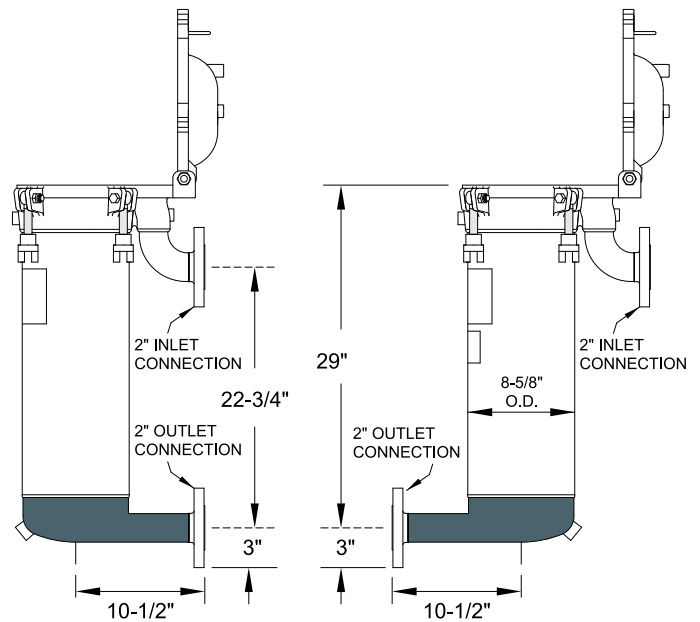
LOW-PROFILE, HORIZONTAL OUTLET ON MULTI-HOUSING SYSTEMS



LOW-PROFILE, HORIZONTAL OUTLET ON INDIVIDUAL FILTER HOUSINGS

"C" Configuration

"S" Configuration



Low-Profile Configuration Options

"C" Configuration (Inlet over Outlet)

The outlet of the filter vessel is on the same plane as the inlet, or in the shape of the letter "C", in a profile view.

"S" Configuration (Inlet opposite Outlet)

The outlet of the filter vessel is opposite the inlet, or in the shape of the letter "S", in a profile view. In this type of configuration, the filter becomes "in-line" with existing piping.

Custom Outlet Configurations

The direction of the "LP" outlet, relative to the inlet, can be positioned to accommodate custom piping arrangements.

Note: On all Low-Profile configurations, the standard drain placement is opposite the outlet of the vessel. The location of the drain can be modified upon request. Please consult factory for other custom requirements.

The Low-Profile, Horizontal Outlet is an integral part of the housing options exclusive to *Filtration Systems* product line:

- SAFEsistem® – Safety Apparatus Filter Enhancement
- Dual-Valve Linkage Mechanism – DVLM™
- Common Drain Manifold – CDM™

AVAILABLE OPTIONS

SAFESystem[®] **SAFETY APPARATUS** **FILTER ENHANCEMENT**

Reduce employee exposure to potentially hazardous filtering processes with the unique and exclusive *SAFESystem* option. This equipment upgrade prevents our filter vessels from being accidentally opened while in service. In addition, the vessel cannot be pressurized until both the filter lid and Safety Shield are closed.

The *SAFESystem* is designed to assure user compliance as a safeguard against misuse or improper operation of our filtration equipment. Our patented equipment option is available when ordering any *Filtration Systems* ASME Code individual, duplex or multi-housing system.

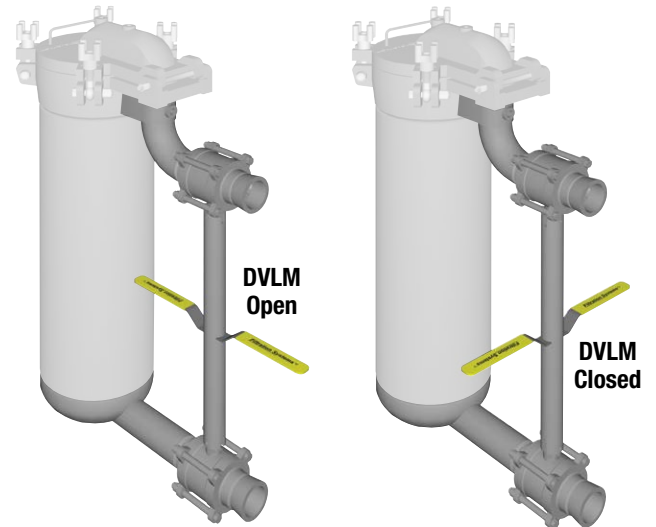
SAFESystem FEATURES:

- **Protective Safety Shield with Viewing Window and Retractable Locking Pin...** protects operators from exposure and allows safe monitoring of pressure & temperature status; retractable locking pin mechanism prevents unintentional lid closure.
- **Dual-Valve Linkage Mechanism...** coordinates with the Safety Shield to prevent the vessel from inadvertently being opened until the inlet and outlet valves are closed, isolating the vessel from the fluid stream.



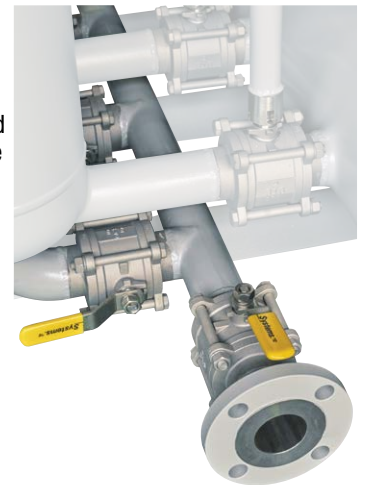
DUAL-VALVE LINKAGE MECHANISM – DVLM[™]

The DVLM is a mechanical integration of the Inlet and Outlet valves on a filter vessel. It connects and ties in the inlet & outlet valves on an individual or multi-housing system. Operated by a 90-degree turn of the handle, this mechanism opens and closes both the inlet and outlet valves simultaneously. On multi-housing systems the DVLM isolates each module from the inlet and outlet headers, simultaneously.



COMMON DRAIN MANIFOLD – CDM[™]

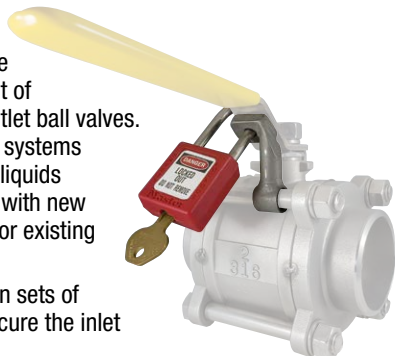
Drain Valves on the outlet drain of each module connect to a common drain manifold, allowing independent operation and rapid drainage of post-filtered liquid. It also assists with drainage of thicker liquids and reclaiming valuable process liquids. The Common Drain Manifold option is available on all new Multi-Housing Filter Systems from the factory.



BALL VALVE SAFETY LOCKOUT ASSEMBLY

Filtration Systems Ball Valve Safety Lockout Assemblies are designed to restrict movement of the handle on the inlet and outlet ball valves. An essential upgrade for filter systems in an industrial setting where liquids are present. Designed for use with new *Filtration Systems* equipment or existing systems in the field.

Lockout assemblies are sold in sets of 2 components designed to secure the inlet and outlet valve.



ADDITIONAL OPTIONS

- Modified Connections: R/F ANSI Flanges, NPT Threads or Sanitary Ferrules
- Thermal Jackets; Two-Piece, Stainless Steel
- Cartridge Chambers; Stainless Steel
- Actuated Valves; Pneumatic or Electric
- Alternate Outlet Locations
- Additional Ports
- Drain Valves, Vent Valves and Pressure Gauges
- Assorted O-Ring Materials



OPTIONAL FINISHES



INTERIOR POLISHED FINISHES

Interior Polished Finishes for beverage, pharmaceutical, dairy and other critical liquid process applications.



HALAR® LINING

HALAR Fluoropolymer Lining offers a broad range of chemical & thermal resistance properties, a seamless filtering environment and a safe alternative to plastic housings. HALAR coating is an inexpensive alternative to Hastelloy housings and other specialty alloys.

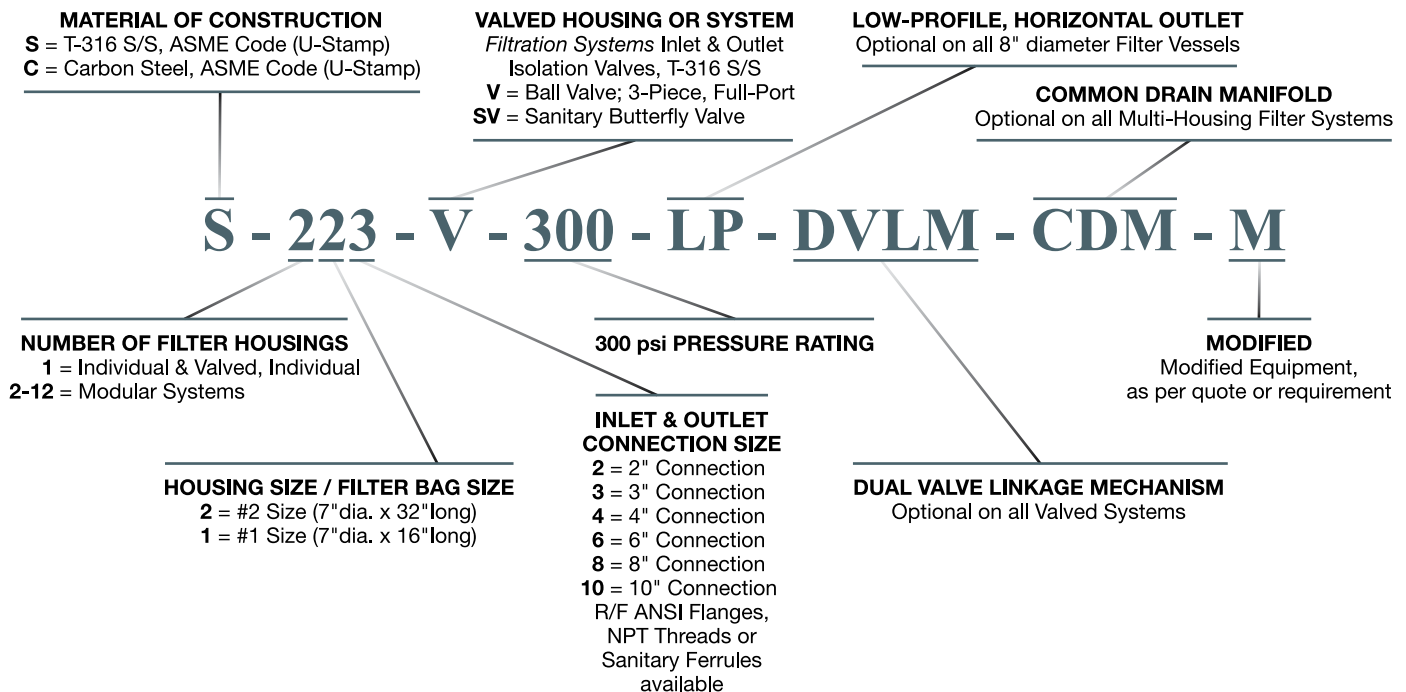
HALAR is a Registered Trademark of Solvay



EPOXY COATING

Highly Chemical Resistant, 2-part Epoxy Novolac Coating available on Vessel Interior, Exterior and Stands.

MODEL NUMBER CODING SYSTEM



FILTER MEDIA OPTIONS



Filtration Systems Over-the-Top® Filter Housings accommodate a variety of filter media, making them highly versatile for industrial, pharmaceutical, water, beverage and other process applications.

Our vessels and filter media are specifically designed to work together as a system, maximizing efficiency and results.



HIGH-PERFORMANCE LIQUID FILTER BAGS

- Efficiency Ratings up to 99.98%... *provides absolute rated performance*
- Fully Welded Construction... *eliminates solids bypass*
- Zero-Bypass® Bag Collar... *assures an optimum compression seal*
- Integrated Polymeric Support®... *provides superior mechanical strength*
- Ratings from 0.2 to 600 Microns... *absolute or nominal ratings*



MESH OR MICRON LINED BASKETS

Triple-wall, mesh and micron lined baskets provide liquid straining and filtering at various levels of mesh and micron ratings. These reusable, stainless steel baskets are ideally suited for high temperature applications and/or aggressive service.

Available Mesh or Micron Ratings:

- 20 – 200 Mesh
- 5 – 250 Micron



PERFORATED STRAINER BASKETS

Heavy-duty perforated baskets convert Filtration Systems filter vessels into high-capacity liquid strainers. When our filter housings are used with strainer baskets, they allow heavy loading of larger solids at high flow rates.

Available in Perforation sizes from 3/64" – 1/2"



APX® LARGE DIAMETER CARTRIDGE ELEMENTS

The APX Filter Element combines large surface area and high flow rates to provide massive solids loading with longer run times. The unique and easy to use drop-in design requires no Support Basket in the Filter Housing.

Absolute Ratings from 0.5 to 100 Microns



STANDARD SPECIFICATIONS AND FEATURES

ASME U STAMP HOUSINGS	INDIVIDUAL FILTER VESSELS		VALVED, INDIVIDUAL HOUSINGS	NON-VALVED MULTI-HOUSING SYSTEMS	VALVED MULTI-HOUSING SYSTEMS
	112	122	122-LP-V	2 -12 Housings	2 -12 Housings
FILTER BAG SIZE	#1 (7" dia. x 16" long)	#2 (7" dia. x 32" long)	#2 (7" dia. x 32" long)	#2 (7" dia. x 32" long)	#2 (7" dia. x 32" long)
MAXIMUM FLOW RATE* (without filter media)	110 gpm @ 1.1 psid	220 gpm @ 2.2 psid	220 gpm @ 2.2 psid	See Dimensional Chart, pg. 3	
LIQUID VOLUME (gal/water)	3.8 gal	6.5 gal	7 gal	See Dimensional Chart, pg. 3	
CODE STATUS	ASME U Stamp, Sec.VIII, Div. 1.				
MATERIAL OF CONSTRUCTION	T-316 S/S or Carbon Steel, Investment Cast Lid & Body				
LID CLOSURE	360° Hinged Closure with Lid Handle, Safety Detents, and Lid Stop				
MAXIMUM WORKING PRESSURE	150 psi or 300 psi				
MAXIMUM WORKING TEMPERATURE	S/S Housings:	450°F			
	Carbon Housings:	500°F			
MAXIMUM SUPPORT BASKET DIFFERENTIAL OPERATING PRESSURE	100 psi				
INLET & OUTLET CONNECTIONS	150 psi Housings:	2" Flanges, 150 lb., R/F, ANSI		See Dimensional Chart, pg. 3	
	300 psi Housings:	2" Flanges, 300 lb., R/F, ANSI			
BALL VALVES: 2" FULL PORT, T-316 S/S & TEFLON, 800 psi	N/A	N/A	2	N/A	2 per Housing
FINISH	S/S Housings:	Blasted Finish, Interior and Exterior			
	Carbon Housings:	One Coat Shop Primer, Exterior			
HARDWARE	S/S Housings:	Stainless Steel Bar Knobs; Plated SA-193-B7 Rod End Eye Bolts			
	Carbon Housings:	Plated Carbon Steel Bar Knobs and Eye Bolts			
PERFORATED SUPPORT BASKETS	T-316 S/S with Longitudinal Taper, 9/64" Perforations, Blasted Finish (1 per housing)				
GAUGE PORTS	1/4" NPT (2 per housing)				
VENT PORT	1/4" NPT (1 per housing)				
UPSTREAM DRAIN PORT	1/4" NPT (1 per housing)				
DOWNSTREAM DRAIN PORT	3/4" NPT (1 per housing)				
O-RINGS	Buna-N, Installed. Alternate Materials Available				
STAND/FRAME	S/S Housings:	S/S Adjustable Tripod Stand		S/S Frame	
	Carbon Housings:	Carbon Steel Adjustable Tripod Stand		Carbon Steel Frame	
LOW-PROFILE, HORIZONTAL OUTLET (LP)	Optional	Optional	Standard	Optional	Optional
SHIPPING WEIGHT (LBS)	110 lbs	130 lbs	140 lbs	See Dimensional Chart, pg. 3	

* Flow rates are based on water in a housing without filter media. Actual flow rates are determined by the specific filter media selected, as well as the characteristics of the application.

Product Identification: All *Filtration Systems* filter vessels have a unique serial number that can be identified by our factory. Nameplates, specifying both the serial number and maximum allowable pressure and temperature ratings, are permanently affixed to all housings.

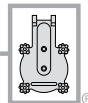
Product Specifications: With over 50 years of industry expertise and proven performance, *Filtration Systems* offers quality products at responsible prices. We continually strive to improve our products through ongoing research and development; therefore, we reserve the right to change specifications without notice.

Warranty: *Filtration Systems* warrants our products to be free from defects in workmanship for a period of one year from the date of purchase, when used in accordance with our specific guidelines. Our only obligation and a customer's remedy, subject to our inspection and evaluation, shall be to replace the product or refund the purchase price.

Limitation of Liability: *Filtration Systems* shall not be held responsible or liable for any loss resulting from the resale, direct or indirect misuse, incidental or consequential damages, arising out of the use of this product.

Filtration Systems

Division of Mechanical Mfg. Corporation



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