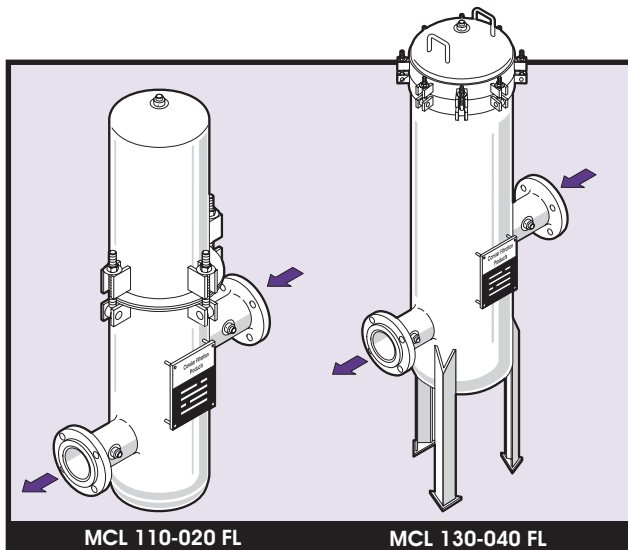


INDUSTRIAL FILTRATION PRODUCTS

CONSLER MCL/SMCL SERIES LIQUID FILTRATION EQUIPMENT



Features

- Connection sizes from 1" to 6" accommodate flow rates to 800 GPM.
- 1 5/8" core ID allows for very low pressure differentials.
- ASME code stamp available for assurance of quality.
- Available in over 175 varieties of media, retention and efficiencies to exactly match application requirements.
- Large pleated design results in large effective filtration areas which leads to long life, cost effective filtration.
- Available with either all plastic or metal support structures to maximize performance flexibility.
- Modified and custom designs (materials of construction, inlet/outlet orientation, higher pressure, etc.) to match unique filtration requirements.

Applications

- For applications where minimal pressure differential is important in a compact filter vessel.
- Particle removal from viscous liquid process fluids where low pressure loss is important.
- Clarifying or maintaining the cleanliness of oils, coolants, chemicals and process water.
- Filtration where large throughputs/long life is important from both an efficiency and cost effectiveness viewpoint.

Cartridge Design & Construction

MCL Filter elements have been designed to minimize pressure differential while maximizing effective filtration area. The very large core ID (1 5/8") does not restrict flow as would the design of a conventional cartridge. Its extra length and increased OD result in much larger effective filter areas than are found in conventional filters. The results of this design feature are low pressure differentials, low energy costs, greater throughput and decreased disposal costs.

MCL filter elements are used in multiples in various sized vessels to optimize the MCL element's performance characteristics. This reduces the actual number of MCL filter elements necessary to match application flowrate and throughput requirements. This means cost effective filtration from the perspective of both capital cost and operation cost.

MCL filter elements are fabricated in two basic versions with numerous options available.

MCL filter elements with metal endcaps, metal core and other metal support structures are extremely rugged and can withstand differential pressures up to 80 psi without collapse. These metal supported MCL filter elements are most commonly utilized with one of 6 filter media: paper, polyester, cotton, fiberglass, polypropylene and stainless steel mesh. Depending upon which media is selected, micron retention ranges from 1 to 150 microns, and effective filtration area per filter element can be up to 12 square ft.

An all plastic (polypropylene media with polypropylene support structures) MCL filter element is available. At a 98% efficiency, media retentions are available at 1, 5, 10 and 25 microns. Available in double lengths, to reduce sealing surfaces & facilitate quick changeouts. This all plastic element is fabricated using thermal bonding techniques which eliminate the possibility of extractables. This also simplifies chemical compatibility concerns and the meltblown/spunbonded media assures a fiber free filtrate. The highly automated assembly process results in a very cost competitive filter element.

Filter Housings

Standard materials are carbon steel (MCL) or 304 stainless (SMCL). All standard vessels are designed and constructed in accordance with ASME Code Sec. VIII Division I requirements for unfired pressure vessels and are available with "U" stamp registration and certification.

Optional gasket and suitable element materials will allow the filter vessel to be applied in service conditions up to its maximum design of 180 psig at 466° F. (8 1/4 & 10 1/4 OD. Carbon steel housings are designed to 180 psi at 466° F). Leg supports and hinged closures are furnished as standard on larger units.

Standard filter housings may also be modified or customized to meet each unique or special application need. Typical design modifications include special leg lengths, end connection types inlet/ outlet orientations, cover lifting devices, and special controls or accessories. High pressure (6000 PSIG) and high flow rate (3,500 GPM) models are also available.

MCL Specifications

Model No.	Conn. Size (In.)	Flow Rate At 2.5 PSID ² (GPM)	"H" Housing Factor	Dimensions - Inches ¹						Housing Gasket Part No.	Strainer Basket			Approx. Weight (Lbs.)
				A	B	C	D	E	F		Base No.	No Req'd.	No. of Stacks by Cart./Stack	
MCL 105-010 FL	1	30	1	5 1/4	2 1/4	0	20	15 1/4	7	6003B03	15100-	1	1 x 1	25
MCL 110-015 FL	1 1/2	80	2	8 1/4	4	3 1/16	27 1/4	18	6	6005B04	15100-	2	2 x 1	50
MCL 110-020 FL	2	100	3	8 1/4	4	4 1/16	27 1/4	18	7	6005B04	15100-	2	2 x 1	50
MCL 120-030 FL	3	200	6	10 1/4	5 3/4	6 1/16	38	20	14	6006B04	15100-	8	4 x 2	85
MCL 130-030 FL	3	275	7	12 3/4	10	6 1/16	43	22 3/4	6	6007B03	15100-	12	6 x 2	300
MCL 120-040 FL	4	290	8	10 1/4	5 3/4	8 1/16	38	20	15	6006B04	15100-	8	4 x 2	85
MCL 130-040 FL	4	375	9	12 3/4	10	8 1/16	53 3/8	22 3/4	6	6007B03	15100-	12	6 x 2	300
MCL 135-040 FL	4	390	9	12 3/4	10	8 1/16	62	22 3/4	6	6007B03	15100-	18	6 x 3	340
MCL 140-040 FL	4	420	10	16	11	8 1/16	51	26	10	6008B03	15100-	18	9 x 2	410
MCL 145-040 FL	4	440	10	16	11	8 1/16	64	26	10	6008B03	15100-	27	9 x 3	430
MCL 140-060 FL	6	570	11	16	11	12 1/16	51	26	10	6008B03	15100-	18	9 x 2	420
MCL 145-060 FL	6	590	11	16	11	12 1/16	64	26	10	6008B03	15100-	27	9 x 3	440
MCL 150-060 FL	6	760	12	20	13	12 1/16	55	32	11	6009B03	15100-	28	14 x 2	750
MCL 155-060 FL	6	800	12	20	13	12 1/16	68	32	11	6009B03	15100-	42	14 x 3	800

1. All dimensions are approximate. 2. Based on water, with 20 micron polyester cartridges. 3. Call factory for gasket part numbers for stainless steel housings.

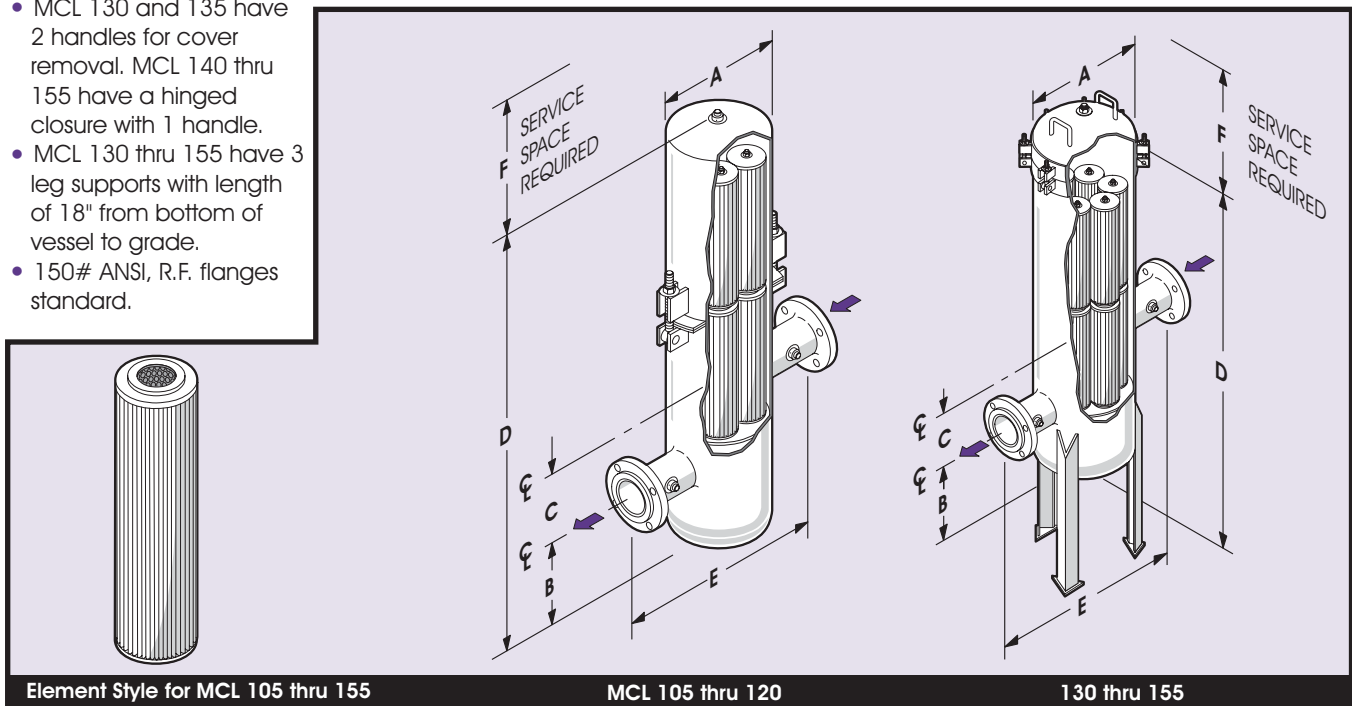
Standard Features:

- All standard filter housings are supplied with Buna N closure gaskets (250° F max.).
- All models are furnished with 1/4" NPT plugged gauge connections on inlet/outlet nozzles.
- MCL 105 thru 135 have 1" drain and vent connections. All are plugged 3000# NPT couplings.
- MCL 130 and 135 have 2 handles for cover removal. MCL 140 thru 155 have a hinged closure with 1 handle.
- MCL 130 thru 155 have 3 leg supports with length of 18" from bottom of vessel to grade.
- 150# ANSI, R.F. flanges standard.

MCL/SMCL Filter Cartridges (Metal Core and Endcaps)

Nominal Retention Rating	Medium	Max Temp.	Area Sq. Ft./Cart.	Max Flow Per. Cart.-GPM*	Resistance "R" Factor	Cartridge Code Number	
						Steel Core	304 SS Core
5 Microns	Cotton	200° F	4.3	26	2.1	20	59
10 Microns	Paper	240° F	12.0	48	3.3	27	—
20 Microns	Paper	240° F	12.0	50	2.1	44	—
25 Microns	304 SS	300° F	4.8	60	.9	25	15
40 Microns	304 SS	300° F	4.8	60	.9	05	35
75 Microns	304 SS	300° F	4.8	60	.9	45	55

*Based on water



Element Style for MCL 105 thru 155

MCL 105 thru 120

130 thru 155

Selecting The Proper Filter Model

Select a filter model from the specifications tables (MCL and SMCL) based on existing system connection size and flow rate. Flow rates shown are based on water and 20 micron polyester cartridges at 2.5 PSID.

Select a cartridge style from the table on page 2 which meets micron retention, material compatibility and temperature requirements. Within each micron group in the table, the least expensive materials are listed first.

To specify the complete filter part number insert the code numbers of the desired cartridge in the blank prefix boxes of the filter housing number. To specify cartridges, insert the cartridge code numbers in the blank suffix boxes of the cartridge base number.

Examples: COMPLETE FILTER: = MCL 130-030 FL
 CARTRIDGE ONLY: = 15100-

Determining Filter Pressure Loss

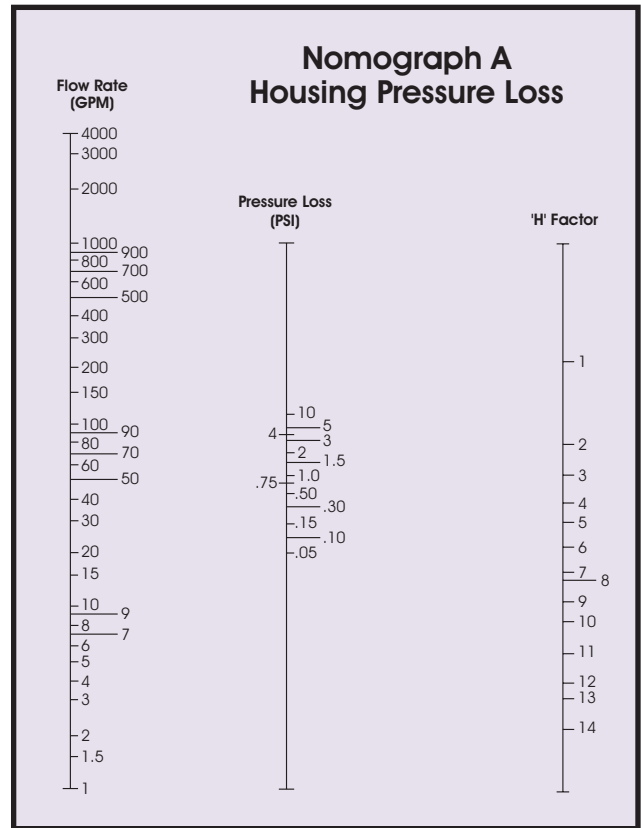
To determine filter pressure loss find the pressure loss through the housing using nomograph "A", through the selected cartridges using nomograph "B", and add the two together.

Nomograph "A" – Housing Pressure Loss

1. Draw a straight line from the FLOW RATE scale to the housing "H" FACTOR scale. ("H" Factors can be obtained from the MCL/SCML tables.)
2. Read the pressure loss across the housing at the line intersection with the PRESSURE LOSS scale. Housing pressure loss = ____ psi

Nomograph "B" – Cartridge Pressure Loss

1. Divide the flow rate by the number of cartridges in the selected filter model to determine the flow per cartridge. (The flow per cartridge should not exceed that recommended in the cartridge table. If it does, select a filter with more cartridges).
 $\text{_____ gpm} \div \text{_____ cartridges} = \text{_____ gpm/cartridge}$
2. Draw a straight line from the intersection with the INDEX LINE to the resistance "R" FACTOR scale as indicated in the cartridge table.
3. Draw a straight line from the intersection with the INDEX LINE to the resistance "R" FACTOR scale as indicated in the cartridge table.
4. Pressure loss across the cartridges is indicated at the intersection with the PRESSURE LOSS scale.
 Cartridge pressure loss = _____ psi



Total Filter Pressure Loss

Housing pressure Loss _____ psi
 Cartridge pressure loss + _____ psi
 TOTAL pressure loss = _____ psi

Notes

- If the pressure loss is higher than the application allows, select a cartridge with more filter area or a lower resistance factor, or select a filter model with a greater "H" factor.
- Contact your local representative or our sales engineering staff for sizing assistance.

