

1/2"-14"
NPTF

3/4"-14"
NPTF

1"-11 1/2"
NPTF

1 1/4"-11 1/2" NPTF
Integral in Head

3/4"-16"
SAE
Straight

1 1/16"-12"
SAE
Straight

1 5/16"-12"
SAE Straight



Standard length housing
321000 Series



Extended length housing
323000 Series



Double length housing
325000 Series

All housings have wrench hex for
housing removal

MARVELINE TT-II® SERIES FEATURES

- Rugged Die Cast Aluminum Construction
- Optional Visual or Electrical Indicators
- Large Flow Area Integral By-Pass Valve
- Positive Radial Filter Element Seal
- Custom Designed Port Adapters are Available to meet any need
- Mix and Match Port Sizes and Styles to fit YOUR needs
- With or Without By-Pass Valve
- Optional 1/8-27 NPTF Gage Ports
- Requires Only 2 5/8" Clearance for Element Service
- Optional Marvelmag® magnetic filtration
- Wide Selection Of Filter Media

1200 PSIG (80 Bars) Minimum Burst @ 70°F (20°C)
Cleanable Media Elements from 20 Mesh to 10 Micrometers (Microns)
Disposable Media Elements from 100 Micrometers to 0.6 Micrometers (Microns)
300°F (150°C) Maximum Operating Temperature

"T" Type Filters with Threaded Housings and Bolt-On Port Adapters

300 PSIG (20.7 Bars) Maximum Operating Pressure

Flows to 75 GPM (300l/Min)

How to Order Marveline TT-II Series Filters

1. Insure Operating Pressure does not exceed 300 PSIG (20.7 Bars).
2. Examine pressure drop versus flow curves (page 5). For desired media select standard, extended or double length filter element and housing.
3. Examine Fluid Table (next page) and determine fluid group.
4. Select housing length from Table I to match selected element length and fluid group. Insert this number into housing assembly number (see below).
5. Select port size and style number from Table II and insert into housing assembly number.
6. Select housing option(s) letter(s) from Table III and insert into housing assembly number.
7. Select by-pass valve option from Table IV and insert into housing assembly number.
8. Select element length prefix number from Table V and insert into element assembly number.
9. Select element option(s) prefix from Table VI and insert into element assembly number.
10. Select media suffix number from Table VII and insert into element assembly number.
11. Select optional visual or electric indicator part number from Table VIII and insert into optional indicator number.

Example:

Housing Assembly Number				Element Assembly Number			Optional Indicator Number
323	161	C	2500	560206	M	7110	909420-20
Table I	Table II	Table III	Table IV	Table V	Table VI	Table VII	Table VIII

NOTE : THE EXAMPLE TT-II® FILTER IS EXTENDED LENGTH HOUSING, 1" NPTF PORTS, HEAD MACHINED FOR OPTIONAL INDICATOR, 25 PSI BY-PASS, 10 MICRON MEDIUM WITH MAGNETIC (MAGRODS) ELEMENT OPTION, AND 20 PSI VISUAL COLORGAGE INDICATOR. I.E. 323161C2500/560206M7110 w/909420-20 is the complete Model Number for ordering.

Marveline TT-II Accessories
See Tables VI and VIII for Ordering



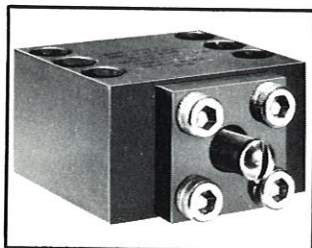
MARVEL "PDC" COLORGAGE® INDICATOR

Filter element condition indicator combines reliable "pressure-differential" operating principle with attention-compelling Color Bands (Green, Yellow, Red — as unmistakable as traffic lights) to clearly pre-warn of element clogging. Available integrally mounted on filter head (as illustrated in drawings below) or subplate mounted for remote or panel usage.



MARVELMAG™ MAGNETIC FILTER SHIELD

So easy to service! "Lay-in . . . Lift-out" Magnetic rods. MarvelMag Shield is formed by individual magnetic rods placed in grooves on outer surface of Synclinal element. To clean rods, just lift out, wipe off, and lay them back in grooves. Slip-on spring clip keeps rods from being magnetically dislodged accidentally.



MARVEL "PDE" SWITCH®

Pressure differential electric (PDE) switch is designed to provide an electrical indication of a filter element requiring replacement as it loads with contaminant. The switch is rated at .5 amp at 24 volt D.C., and 1 amp at 12 volt D.C. Operation is a grounding circuit requiring only one electrical lead for a single installation. It is a normally open switch.

FLUID TABLE

Group A	Group B	Group C
Hydraulic Oils	High Water	Phosphate
Coolants	Base Fluids	Ester
Lubricants	Water Glycols	Base

TABLE I HOUSING ASSEMBLY NUMBER PREFIX

Length	Group A Fluids	Group B Fluids	Group C Fluids
Standard	321	321	322
Extended	323	323	324
Double	325	325	326

*Anodization may be required. Consult factory for recommendation.

TABLE II PORT ADAPTERS*

Housing Port Part Number	NPTF Pipe	SAE Straight Thread	Service Part Number for replacement
081	1/2"-14		296081-22K
082		3/4"-16	296082-22K
121	3/4"-14		296121-22K
122		1 1/16"-12	296122-22K
161	1"-11 1/2		296161-22K
162		1 5/16"-12	296162-22K
201	1 1/4"-11 1/2		(Integral)

*Port Adapters shipped unmounted

TABLE IV BY-PASS VALVE OPTION

Housing Suffix Number	By-Pass Valve Setting*
0000	No By-Pass
0300	3 PSID (.20 Bars)
0500	5 PSID (.34 Bars)
0800	8 PSID (.54 Bars)
1000	10 PSID (.68 Bars)
1200	12 PSID (.82 Bars)
1500	15 PSID (1.02 Bars)
2000	20 PSID (1.36 Bars)
2500	25 PSID (1.70 Bars)
4000	40 PSID (2.72 Bars)
5000	50 PSID (3.40 Bars)

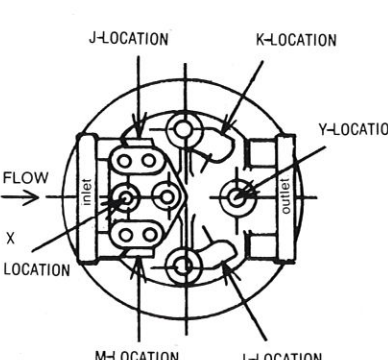
* BY-PASS VALVE "CRACKS" OPEN AT SETTING ± 10%.

MARVELINE TT-II FILTER ASSEMBLY WEIGHTS

	321000	323000	325000
Disposable Elements	2 lb. 14 oz.	3 lb. 6 oz.	4 lb. 9 oz.
Cleanable Elements	2 lb. 15 oz.	3 lb. 7 oz.	4 lb. 10 oz.

ADD 7 OZ. FOR PORT ADAPTERS

TABLE III Head and Housing Options See Note Below

Gage Port Options 1/8" NPTF Threads	Insert Letter in Table III	Description
	J	Inlet
	K	Outlet
	L	Outlet
	M	Inlet
	X	Inlet
	Y	Outlet
	U*	Anodized Housing
	D	Optional Drain
	C	Head Machined For Indicator
	—	No Options
	—	Insert
	—	Dash

NOTE: If no housing options selected insert dash in part number table III.

*Recommended for high water base fluids and for water.

DRAWING 1. DIMENSIONS

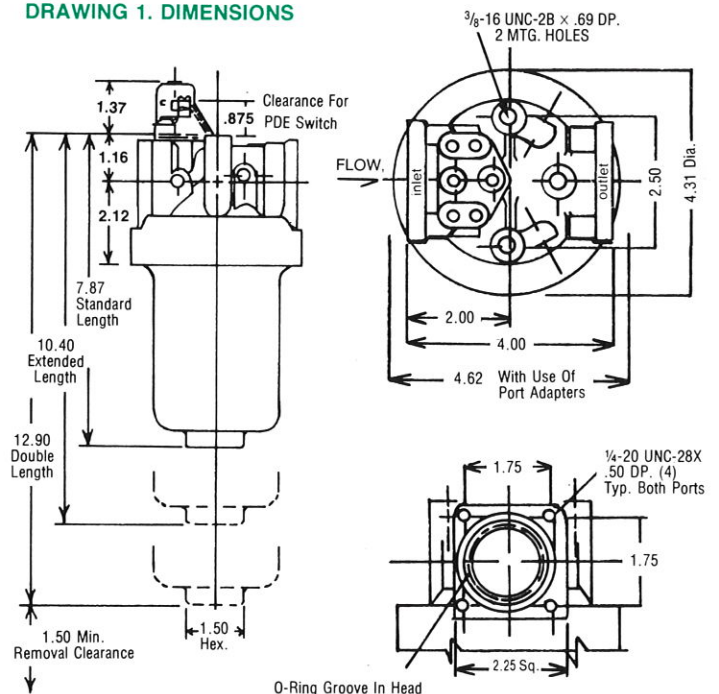


TABLE V ELEMENT LENGTH PREFIX NUMBER

Length	Group A Fluids	Group B Fluids*	Group C Fluids
Standard	529206	529206 G	530206
Extended	560206	560206 G	561206
Double	562206	562206 G	563206

TABLE VI ELEMENT OPTIONS

Letter	Description
—	No options insert dash in position VI
M	Marvel Magrods (Includes Pleating)
MN	Element Pleated for Magrods (No magrods supplied)
G	For Group B Applications (Furnish fluid specifications)
R	O-Ring Seal in lieu of tetraseal

TABLE VII MEDIA SUFFIX NUMBERS¹

DISPOSABLE MEDIA				
Nominal Micron Rating	Media Only Suffix Number	Media With Inside Mesh Back-Up ²	Media With Outside Mesh Back-Up	Media With Both Inside and Outside Mesh Back-Up ²
0.6	7101	7201	7301	7401
3	7103	7203	7303	7403
3	—	8203	—	8403
10	7110	7210	7310	7410
20	7120	7220	7320	7420
100	7199	7299	7399	7499

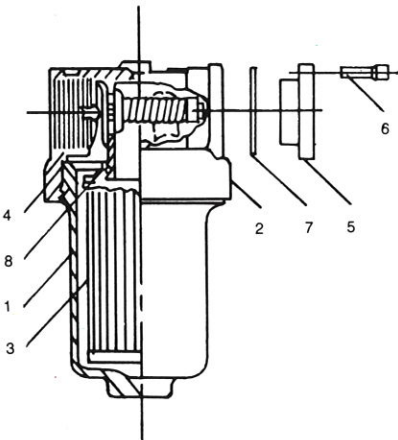
CLEANABLE MEDIA ³		
Micron Rating	Suffix Number	Description
914	1202	20 Mesh
546	1203	30 Mesh
385	1204	40 Mesh
308	1205	50 Mesh
262	1206	60 Mesh
180	1208	80 Mesh
141	1210	100 Mesh
105	1215	150 Mesh
74	1220	200 Mesh
2 Nominal	2210 ³	8-10 S.S. Micron
5 Nominal	2215 ³	15-16 S.S. Micron
10 Nominal	2225 ³	19-21 S.S. Micron
17 Nominal	2240 ³	36-40 S.S. Micron

NOTE 1. MESH REINFORCEMENT IS RECOMMENDED FOR SHOCK RETURN LINES. FOR INSTALLATIONS WITH HIGH BY-PASS FLOW. OR FOR MOMENTARY REVERSE FLOW APPLICATIONS. CONSULT FACTORY FOR RECOMMENDATIONS.

NOTE 2. CONSULT FACTORY ON AVAILABILITY ON 20 MICRON FIBERGLASS ELEMENT 8220 & 8420

Note 3. MAY REQUIRE ULTRASONIC CLEANERS. CONSULT FACTORY

DRAWING 2. PARTS IDENTIFICATION



PARTS LIST: ORDER BY PART NUMBER

Item	Description	Part No.
1	Housing	301000-1
2	Head Assembly	321000 Note 1
3	Element	See Tables V, VI, VII
4	Housing Seal	301000-3
5	Port Adapter	See Table II
6	Adapter Screw	296000-23
7	Adapter Seal	296000-14
8	Element O-Ring	529206-7

NOTES:
1 SEE TABLE II & IV

TABLE VIII OPTIONAL INDICATOR PART NUMBERS¹

Setting ²	Colorgage ^{3,4} Visual Indicator	PDE Electric ^{3,4} Indicator Switch
2 PSID (.14 Bar)	909420-02	MEC 404-0200
3 PSID (.20 Bar)	909420-03	MEC 404-0300
5 PSID (.34 Bar)	909420-05	MEC 404-0500
8 PSID (.55 Bar)	909420-08	MEC 404-0800
10 PSID (.68 Bar)	909420-10	MEC 404-1000
12 PSID (.83 Bar)	909420-12	MEC 404-1200
15 PSID (1.03 Bar)	909420-15	MEC 404-1500
20 PSID (1.38 Bar)	909420-20	MEC 404-2000
25 PSID (1.72 Bar)	909420-25	MEC 404-2500
40 PSID (2.76 Bar)	909420-40	MEC 404-4000

NOTE 1: INDICATOR SETTING SHOULD BE ONE SETTING LOWER THAN BY-PASS VALVE SETTING. EXAMPLE: USE A 20 PSID COLORGAGE® WITH A 25 PSID BY-PASS VALVE.

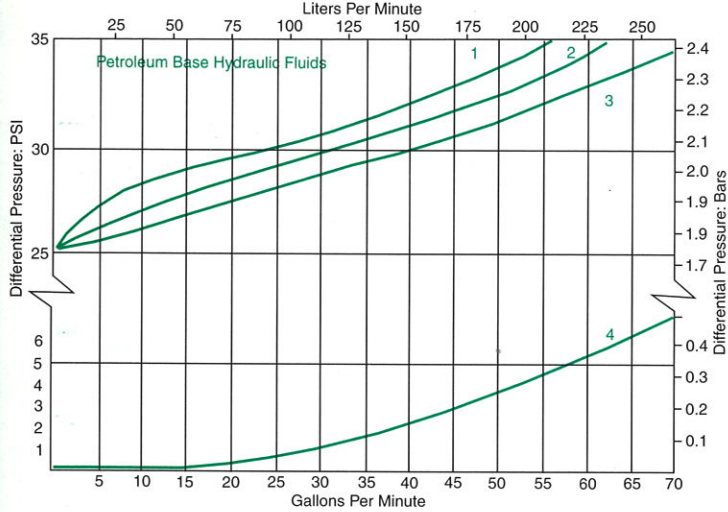
NOTE 2: COLORGAGE® AND PDE SWITCH SETTINGS ARE ± 10%.

NOTE 3: PETROLEUM BASE FLUIDS ONLY. CONSULT FACTORY USE WITH OTHER FLUIDS.

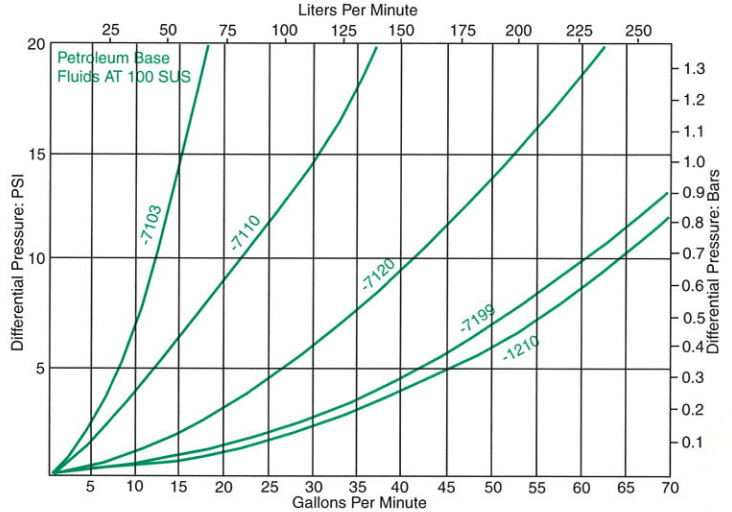
NOTE 4: IN ADDITION TO SPECIFYING OPTIONAL INDICATOR IN TABLE VIII, ALSO ADD LETTER "C" TO HOUSING OPTION IN TABLE III.

For pressure drop data for units having 25–50 PSID by-pass valves add Curve 4 of Graph 1 to pressure drop Curves in Graphs 2-6.

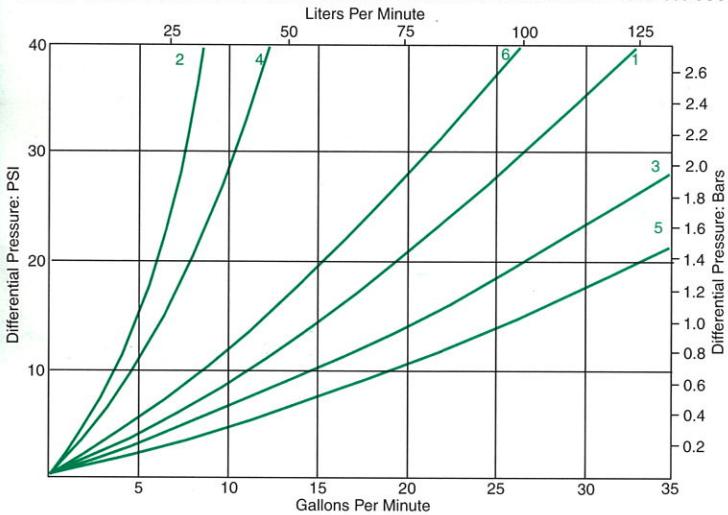
Graph 1. By-Pass Valve Data Note: Dual Scale Ordinate
 Curve 1. Flow Thru 25 PSID Crack By-Pass At 600 SUS
 Curve 2. Flow Thru 25 PSID Crack By-Pass At 225 SUS
 Curve 3. Flow Thru 25 PSID Crack By-Pass At 100 SUS
 Curve 4. Additional Pressure Drop Due To 25 or 50 PSID By-Pass Valve
 (Add Additional Pressure Drop to No By-Pass Assembly Pressure Differential)



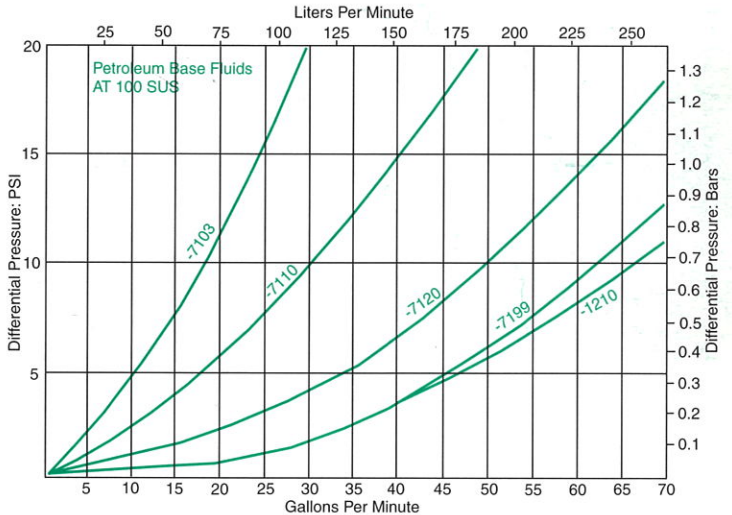
Graph 2. Pressure Drop Verses Flow: Standard Length Assembly
 321201-0000/529206-Below Standard Length Element



Graph 3. Effect of Viscosity on 7110 Media
 Curve 1. 321201-0000/529206-7110 At 225 SUS
 Curve 2. 321201-0000/529206-7110 AT 600 SUS
 Curve 3. 323201-0000/560206-7110 AT 225 SUS
 Curve 4. 323201-0000/560206-7110 AT 600 SUS
 Curve 5. 325201-0000/562206-7110 AT 225 SUS
 Curve 6. 325201-0000/562206-7110 AT 600 SUS

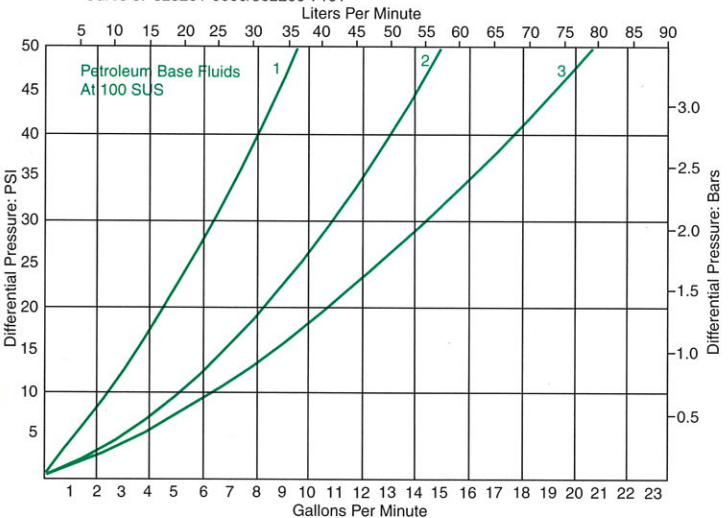


Graph 4. Pressure Drop Versus Flow: Extended Length Assembly
 323201-0000/560206-Below Extended Length Element

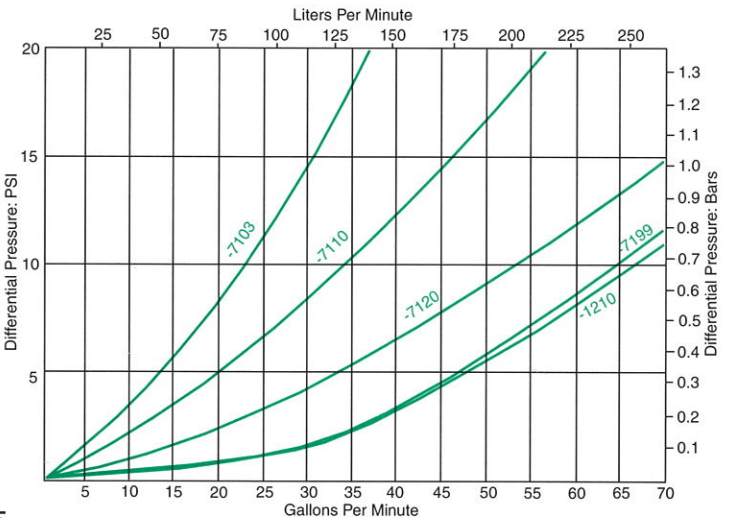


Graph 5. Pressure Drop Versus Flow: 7101 Media

Curve 1. 321201-0000/529206-7101
 Curve 2. 323201-0000/560206-7101
 Curve 3. 325201-0000/562206-7101



Graph 6. Pressure Drop Versus Flow: Double Length Assembly
 325201-0000/562206-Below Double Length Element



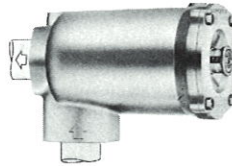
Other Marvel Filters



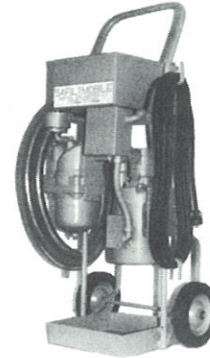
**UP TO 350 PSI — UP TO 150 GPM
NEW *MARVELINE TB WITH 12 INTER-CHANGEABLE PORT OPTIONS AND 3 FILTER-SIZE OPTIONS**

New concept of interchangeable filter ports! 4 pipe thread port adapter sizes - plus 4 straight thread port adapter sizes - plus 4 flange type port adapter sizes. Plus 3 filter-length options: (1) with standard length element; (2) with extended length element; (3) with double length element. A total of 36 options - with all port adapters quickly interchangeable on all 3 filter sizes. Available with Colorgauge indicators and Marvelmag Magnets.

**LINE TYPE
UP TO 150 GPM
*MARVELBO-S**



Most popular, dependable suction filter with famous Colorator Indicator (see below). 2-stage filtration plus MarvelMag. Lightweight, sturdy. Lowest pressure drop. MarvelMag optional.

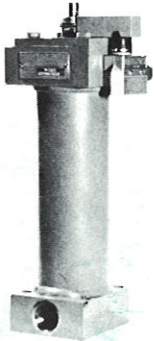


***SAFILMOBILE**

Unique new filter cart. Wheel it anywhere, anytime - inside, outside - to filter/transfer oil, other liquids at up to 10 GPM.

Safe - all air-powered - operates from any air line.

Triple filtration action. Absolutely failsafe operation.



**UP TO 3000 PSI
UP TO 150 GPM**

Extra sturdy, dependable, large capacity "R2" and "R5" models with famous Colorator Indicators and (optional) MarvelMag Magnets. Single and double element models standard. 3 & 4 element models also available.



***MARVEL
MHP
6000 PSI (Max)
Pressure Filter.**

3/4" to 1-5/8" straight thread ports.

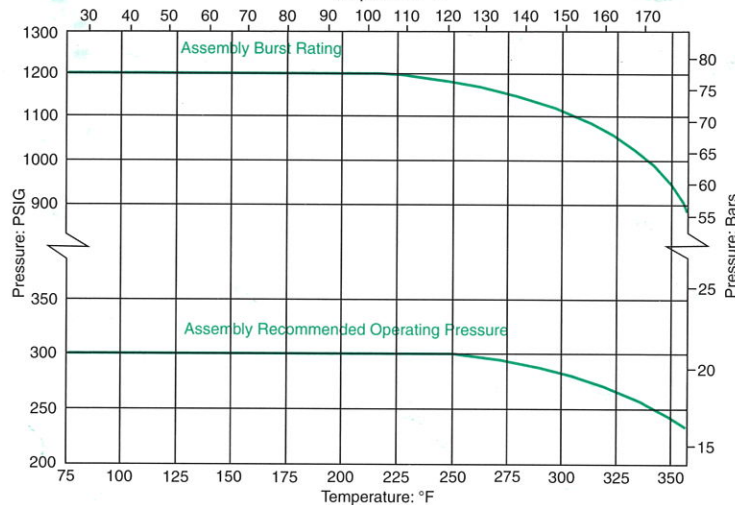


***MARVEL-SC FILTER**

Continuous Flow In-Tank Suction Filter

The Marvel-SC filter is designed to permit filter element servicing without machine shutdown. The model SC saves space by mounting inside the reservoir, it is self-priming and is designed for low pressure drop. The model SC is available with either disposable or cleanable elements and has a standard feature a visual element condition indicator. Magnetic filtration is optional.

Graph 7. Effect of Temperature: Burst Rating and Operating Pressure Rating
Note: Dual Ordinate Ranges; Maximum Operating Temperature 300° F (150°C)



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MARVEL ENGINEERING COMPANY

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MARVELINE TT-II SERIES FILTERS ARE PROTECTED BY ONE OR MORE PATENTS AND HAVE PATENTS APPLIED FOR.
*REGISTERED TRADEMARK MARVEL ENGINEERING COMPANY