



Marveline TT-II® Spin-on Filters 296000 Series



STANDARD LENGTH CARTRIDGE
455000 Series



EXTENDED LENGTH CARTRIDGE
457000 Series

MARVELINE TT-II® SPIN-ON FEATURES

- Rugged Die Cast Aluminum Head
- Optional Visual or Electrical Indicators
- Large Flow Area Integral By-Pass Valve
- 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 9/16" Clearance for Element Service
- Wide Selection Of Filter Media

240 PSIG (16.5 Bars) Minimum Burst
@ 70°F (20°C)

Disposable Media Elements with 0.6 micrometers to 100 micrometers (microns) nominal rating.

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

60 PSIG (4.1 Bars) Maximum Operating Pressure
Flows to 75 GPM (300 l/min.)

How to Order Marveline TT-II® Spin-on Filters

1. Insure Operating Pressure does not exceed 60 PSIG (4.1 Bars).
2. Examine pressure drop versus flow curves, (page 4). For desired media select standard or extended length filter element.
3. Examine Fluid Table and determine fluid group. Group, A, B, or C.
4. Select filter head prefix number from Table I and insert into positions I of part number.
5. Select port size and style number from Table II and insert into part number position II.
6. Select head option(s) letter from Table III and insert into part number position III.
7. Select by-pass valve option number from Table IV and insert into part number position IV.
8. Select cartridge length prefix number from Table V and insert into part number position V.
9. Select cartridge option(s) letter from Table VI and insert into part number position VI.
10. Select cartridge media suffix number from Table VII and insert into part number position VII.
11. Select optional visual or electric indicator part number from Table VIII and insert into part number position VIII.

Example



NOTE: POSITION I NUMBER FROM TABLE I, POSITION II NUMBER FROM TABLE II, ETC.
 ABOVE EXAMPLE: 296161-C-2500/455217-7110/909420-20

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 or subplate mounted for remote or panel usage, (as illustrated at left).



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 1 amp at 24 volt D.C., and 2 amps at 12 volt D.C. Operation is a grounding circuit requiring only one electrical lead for a simple installation. It is a normally open switch.

FLUID TABLE

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

TABLE I FILTER HEAD PREFIX NUMBER

Group A Fluids	Group B Fluids	Group C Fluids
296	296	297

MARVELINE TT-II® SPIN-ON FILTER WEIGHTS

Standard Length	2 lbs.	4 oz.
Extended Length	2 lbs.	10 oz.

Add 5 oz. For Port Adapters

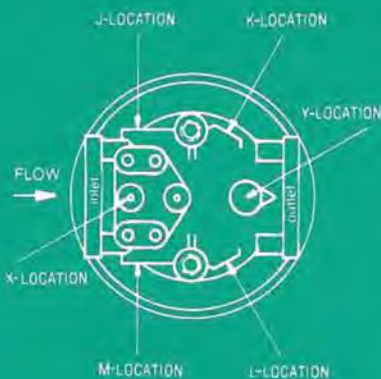
TABLE II PORT ADAPTERS *1

*1 Port Adapters shipped unmounted
*2 Includes screws and seals

Housing Port Part Number	NPTF Pipe	SAE Straight Thread	Service Part ² 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		15/8"-12	296162-22K
201	1 1/4"-11 1/2		(integral)

TABLE III HEAD AND HOUSING OPTIONS See Note Below

Gage Port Options
1/8 NPTF Threads



Insert Letter in Position III	Description
J	Inlet
K	Outlet
L	Outlet
M	Inlet
X	Inlet
Y	Outlet
U*	Anodized Head
C	Head Machined For Indicator
—	No Options
—	Inset
—	Dash

Note: If no options selected insert dash in part number positions III.

*Recommended for high water base fluids and for water.

TABLE IV BY-PASS VALVE OPTION

Housing Suffix Number	By-Pass Valve Setting*
0000	No By-Pass
0300	3 PSID (0.20 Bars)
0500	5 PSID (0.34 Bars)
0800	8 PSID (0.54 Bars)
1000	10 PSID (0.68 Bars)
1200	12 PSID (0.82 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%

TABLE VI CARTRIDGE LENGTH PREFIX NUMBER

Length	Group A Fluids	Group B Fluids	Group C Fluids
Standard	455217	455217G	456217
Extended	457217	457217G	458217

TABLE VII MEDIA SUFFIX 1 NUMBERS

Letter	Description
G	Glycols, H.W.B.F.,
—	No option, Insert Dash

Insert Letter In Position VI of Filter Cartridge Part Number

TABLE VII MEDIA SUFFIX 1 NUMBERS

Suffix Number	Micronic Rating	Cartridge Color
7101	0.6 Nominal	Gold
7103	3 Nominal	Yellow
7110	10 Nominal	White
7120	20 Nominal	Red
1210	100 Mesh	Gray

NOTE 1: Spin-On Filter Cartridge 455217-7110 has Been Qualified per MIL-F-52723 (ME). Consult Factory For Details.

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 AT 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 POSITION VIII, ALSO ADD LETTER "C" TO HOUSING OPTION IN POSITION III.

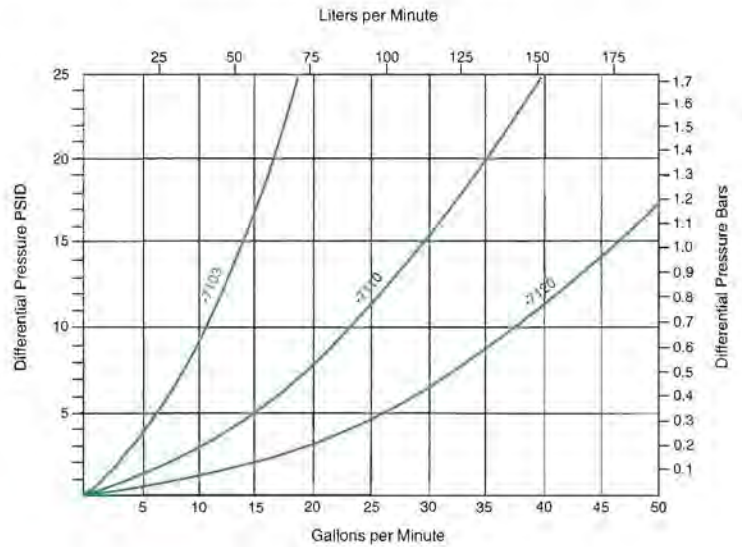
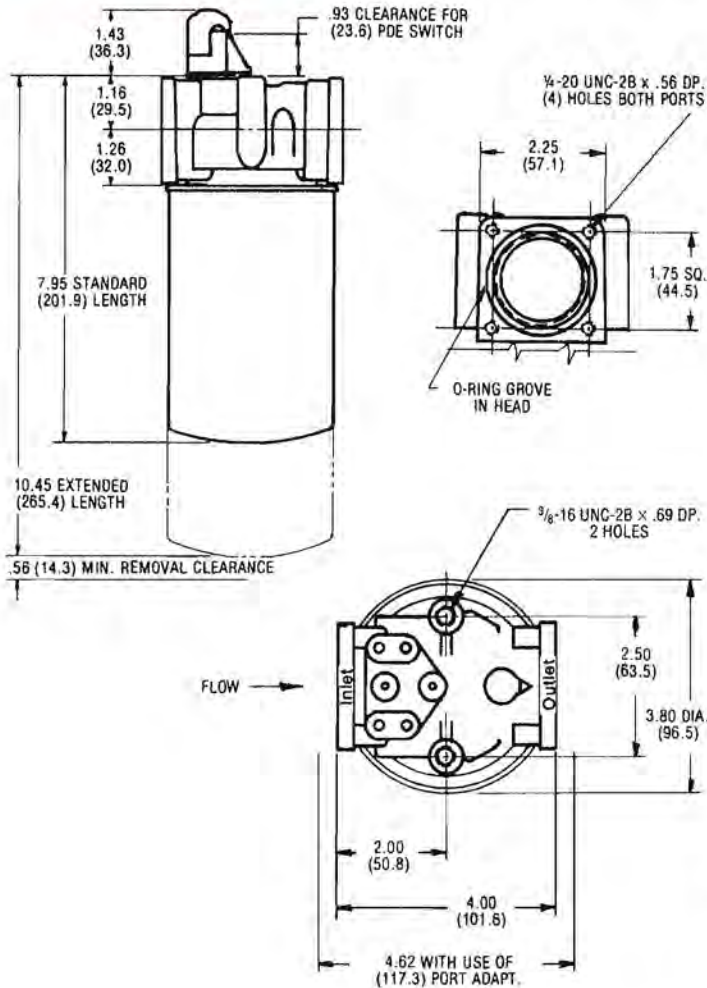
Marveline TT-II® Spin-on Filters

Graph 1. Pressure Drop Versus Flow
Standard Length Cartridge
296201-000/455217-(Below)

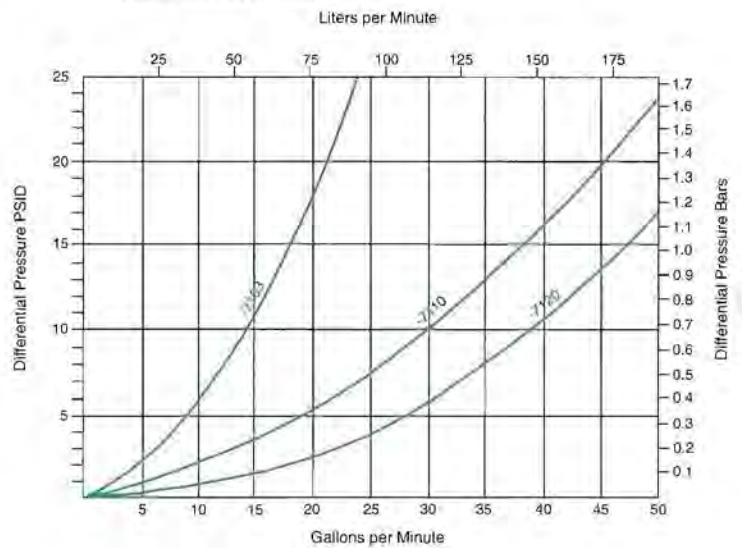
All Graph Data
Petroleum Base Fluids
At 100 SUS

DRAWING 1. DIMENSIONS

DIMENSIONS: INCHES (mm)

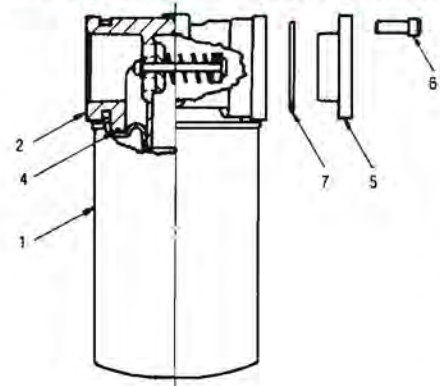


Graph 2. Pressure Drop Versus Flow
Extended Length Cartridge
296201-000/457217-(Below)



DRAWING 2. PARTS IDENTIFICATION

PARTS LIST: ORDER BY
PART NUMBER

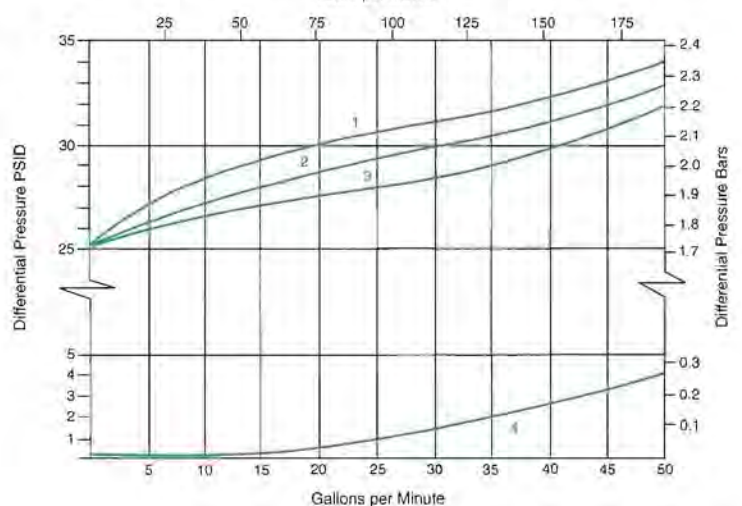


Item	Description	Part No.
1	Cartridge	See tables V, VI & VII
2	Head Assembly	296000 (by-pass valve suffix number from table IV)
4	Cartridge Seal	Part of Item 1 296000-18
5	Port Adapter	See table II
6	Adapter Screw	296000-23
7	Adapter Seal	296000-14A

Graph 3. By-Pass Valve Data
Note: Dual Scale Ordinate

For Units Having 25-50 PSID
By-Pass Valves Add Curve 4
of Graph 3 to Pressure Drop
In Graphs. 1 and 2

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 to 50 PSID By-Pass Valves



MARVEL ENGINEERING COMPANY
2085 N. HAWTHORNE AVE. • MELROSE PARK, IL 60160-1173
PHONE (708) 343-4090 FAX (708) 343-4159
E-MAIL marvelfilters@aol.com www.marvelengineering.com

MARVELINE TT-II SERIES FILTERS ARE PROTECTED BY ONE OF MORE PATENTS AND
HAVE PATENTS APPLIED FOR.
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