

## Fuel Manager® Diesel Fuel Filtration

**FM1, FM10, FM100 and FM1000**

**Complete Systems, Elements and Service Parts**



Fuel Manager diesel fuel filter/water separator systems are used globally in a wide variety of diesel engine powered applications. As a modular system, optional Fuel Manager features can be selected to address specific operating requirements. This versatility allows the user to have the optimum fuel system filtration combined with exceptional economy.

The Fuel Manager series includes: FM1, FM10, FM100 and FM1000. Each of these Fuel Manager types serve specific engine power ratings for engines from 7.3 to 447 kW (10 to 600 BHP). All Fuel Manager elements are fuel/water separators with provisions for draining coalesced water. Systems are for use with diesel fuel and bio-blended diesel fuel, and are not for use with gasoline or other volatile fuels.

Each member of the fuel manager series is described herein with details regarding complete filtration systems, modular components, service parts and general installation and operational information. A glossary of terms is provided to assist in clarifying some of the nomenclature used in this publication.

For additional filtration information reference Fuel Manager Brochure 99889, FM100 Assembly Information Chart 99881, Fuel Manager Cross Reference guide 99642 and the Fuel Manager Users Guide 99795.

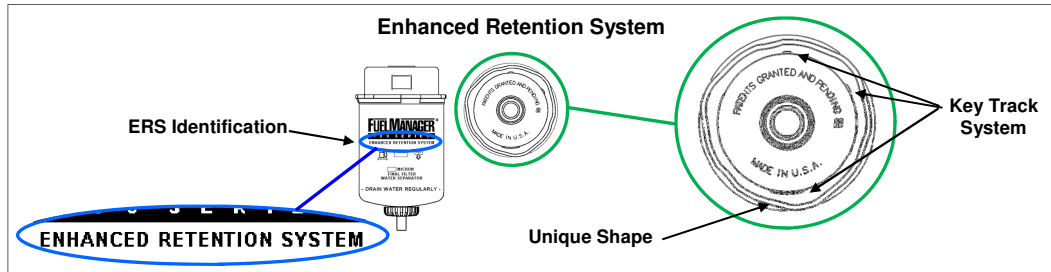
***IMPORTANT! The elements and header assemblies listed herein are considered to be for “Service” use and are not compatible with Fuel Manager components used by our OEM customers.***



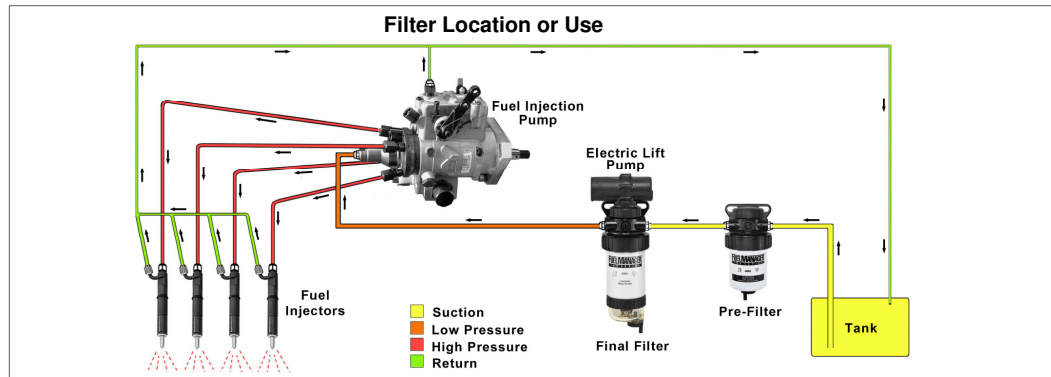
# Glossary of Terms

**Air Vent Plug:** Each FM system has a vent plug incorporated into the header assembly that is turned 1/2—3/4 turn to activate the air egress process and lightly tightened once complete.

**Enhanced Retention System (ERS):** A unique shape and indexing arrangement that provides superior element retention while augmenting Stanadyne's patented "Key Track" system.

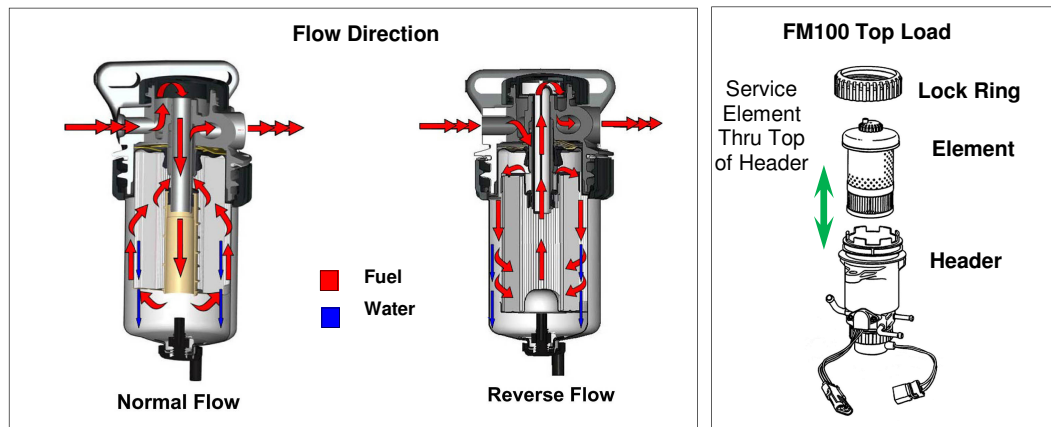


**Filter Location or Use:** The ideal diesel fuel supply system should contain a pre-filter (primary) and a separate final (secondary) filtration system, as shown in the Figure below. Pre-filters are typically rated as 150, 30, 10 microns where final filters are either 5 or 2 microns. Some situations may require the use of only one filter. In these cases an optional, serviceable pre-filter screen is available.



**Flow Direction:** Fuel flow through the header and element assembly are classified into two types: *Normal* and *Reverse*. A *Normal* flow header assembly has one inlet and one outlet port on each side, where internally the fuel flows thru the center tube then through the media. A *Reverse* flow header assembly has both inlet ports in the front and both outlet ports in the rear (toward the mounting flange). Internally the fuel flows thru the media first then out thru the center tube. Filter systems with optional electric lift/supply pumps must use a reverse flow type of system to ensure fuel is filtered prior to entering the pump.

**Top Load:** A type of FM100 systems where the element is serviced thru the top of the header assembly instead of from underneath, as shown in the illustration below.





# FM1



- ⇒ **Engine power rating:** 10 to 55 HP (7.5 to 41 kW)
- ⇒ **Max. fuel flow rate:** 25 US gallons/hour (95 liters/hour)
- ⇒ **Max. operating pressure:** 20 P.S.I. (138 kPa)
- ⇒ Integral 8mm barbed fittings for flex hose use
- Corrosion resistant polymer header assembly
- Configurations for Pre-Filter and Final Filter usage
- Patented “Twist on” element retention design
- Ideal for smaller On-Off Road, Agricultural and Industrial applications.
- All systems and replacement elements are “Reverse Flow”<sup>1</sup> configuration.

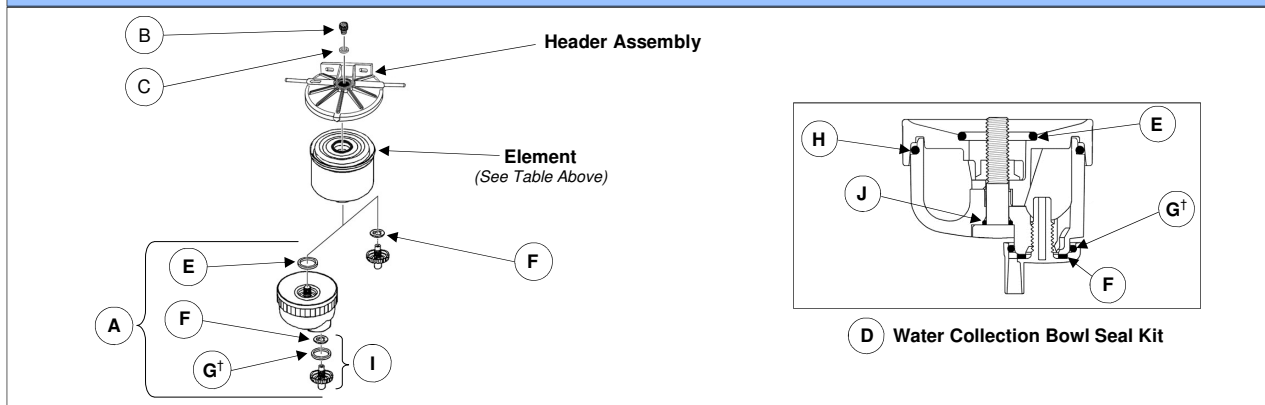
## FM1 Complete Filter/Water Separator Systems

System Part No.	Use	Micron Rating	Components	Element Part No.	Element Length	Dim. “A” <sup>2</sup>	Dim “B” <sup>2</sup>	Pkg. Qty.
40074	Final Filter	5	Air Vent Plug	40072	3.6 (91.4)	5.9 (149.6)	5.3 (133.6)	1
41467	Final Filter	5	Water Collection Bowl , Air Vent plug	40072	3.6 (91.4)	7.6 (193.0)	7.0 (178.2)	1
42145	Pre-Filter	30	Air Vent Plug	42140	3.6 (91.4)	5.9 (149.6)	5.3 (133.6)	1

## FM1 Service Replacement Elements

Element Part No.	Use	Micron Rating	Element Length	Pkg. Qty.
40070	Final Filter	5	2.8 (71.1)	12
40072	Final Filter	5	3.6 (91.4)	12
40096	Final Filter	5	4.3 (109.2)	12
42139	Pre-Filter	30	2.8 (71.1)	12
42140	Pre-Filter	30	3.6 (91.4)	12
42141	Pre-Filter	30	4.3 (109.2)	12

## FM1 Components



## FM1 Service Parts

Component Reference	Description	Part No.	Pkg. Qty.
(A)	Complete Water Collection Bowl Kit	29899	1
(B)	Plastic Air Vent Plug	28691	6
(C)	O-Ring - Air Vent Plug	13494	10
(D)	Water Collection Bowl Seal Kit (Contains 6 each of seals (E) (F) (H) (J))	30448	1
(E)	O-Ring - Filter element to water collection bowl header	10519	10
(F)	Sealing Washer - Three “Lobed” seal for all plastic drain valves	32010	5
(G)	O-Ring - Plastic drain valve <sup>†</sup> Only Available Separately	29210	5
(H)	O-Ring - Water collection bowl to water collection bowl header	31498	5
(I)	Plastic Drain Valve Kit	32003	1
(J)	O-Ring - Collection bowl draw bolt	30911	5

<sup>1</sup> Reference *Glossary of Terms* on page 1. <sup>2</sup> Reference *FM1 Dimensions* on page 11.

## FM10



- ⇒ **Engine power rating:** 10 to 200 HP (7.5 to 150 kW)
- ⇒ **Max. fuel flow rate:** 50 US gallons/hour (190 liters/hour)
- ⇒ **Max. operating pressure:** 30 P.S.I. (200 kPa)
- ⇒ Integral 8mm barbed fittings for flex hose use
- Corrosion resistant polymer header assembly
- For use as a Final Filter
- Patented “Twist on” element retention design
- Economical and environmentally friendly

### FM10 Complete Filter/Water Separator Systems

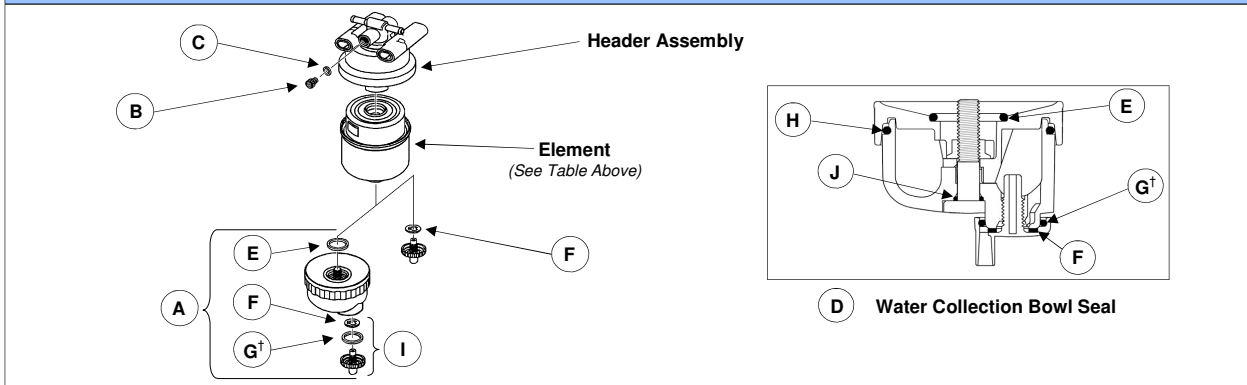
System Part No.	Use	Micron Rating	Flow Direction <sup>1</sup>	Components	Element Part No.	Element Length	Dim. “A” <sup>2</sup>	Dim “B” <sup>2</sup>	Pkg. Qty.
36691	Final Filter	5	Normal	Air Vent Plug	36682	2.8 (71.1)	6.6 (167.6)	4.7 (119.4)	1
36996	Final Filter	5	Normal	Air vent plug	35746	4.3 (109.2)	8.1 (205.7)	6.2 (157.5)	1
37865	Final Filter	5	Normal	Water Collection Bowl , Air vent plug	36682	2.8 (71.1)	8.5 (217.7)	6.6 (169.5)	1

### FM10 Service Replacement Elements

Element Part No.	Use	Micron Rating	Flow Direction <sup>1</sup>	Element Length	Pkg. Qty.
38680	Pre-Filter	30	Normal	3.6 (91.4)	12
36682	Final Filter	5	Normal	2.8 (71.1)	12
35746	Final Filter	5	Normal	4.3 (109.2)	12
36995	Final Filter	5	Reverse	5.1 (129.5)	12
38640	Final Filter	5	Reverse	6.0 (152.4)	12
36994	Final Filter	2	Reverse	6.0 (152.4)	12

<sup>1</sup> Reference *Glossary of Terms* on page 1. <sup>2</sup> Reference *FM10 Dimensions* on page 11.

### FM10 Components



### FM10 Service Parts

Component Reference	Description	Part No.	Pkg. Qty.
(A)	Complete Water Collection Bowl Kit	29899	1
(B)	Plastic Air Vent Plug	28691	6
(C)	O-Ring - Air Vent Plug	13494	10
(D)	Water Collection Bowl Seal Kit (Contains 6 each of seals (E) (F) (H) (J))	30448	1
(E)	O-Ring - Filter element to water collection bowl header	10519	10
(F)	Sealing Washer - Three “Lobed” seal for all plastic drain valves	32010	5
(G)	O-Ring - Plastic drain valve <sup>†</sup> <i>Only Available Separately</i>	29210	5
(H)	O-Ring - Water collection bowl to water collection bowl header	31498	5
(I)	Plastic Drain Valve Kit	32003	1
(J)	O-Ring - Collection bowl draw bolt	30911	5

<sup>1</sup> Reference *Glossary of Terms* on page 1. <sup>2</sup> Reference *FM1 Dimensions* on page 11.

## FM 100



- ⇒ **Engine power rating:** 50 to 350 HP (37 to 261 kW)
  - ⇒ **Max. fuel flow rate:** 80 US gallons/hour (300 liters/hour)
  - ⇒ **Max. operating pressure:** 60 P.S.I. (413 kPa)
  - ⇒ Top Load Filter: Max. Engine power 325 HP (243.75 kW), max. fuel flow 75 g/h (283 l/h)
  - ⇒ Water separation efficiency: Up to 95% of whole water separation
  - Heavy duty aluminum header assemblies with a variety of threads sizes and port configurations available
  - Optional modular features (Heaters, Primer Pumps, WIF Sensors, etc.)
  - Elements available in different sizes and micron ratings
  - **MARINE** systems and components have enhanced corrosion resistant coatings and conform to U.S.C.G. regulations
- NOTE:** Enhanced Retention System (ERS) elements are **not** compatible with other elements or headers.

### FM100 Complete Filter/Water Separator Systems

System Part No.	Use	Micron Rating	Flow <sup>1</sup>	Port Size	Components	Element Part No.	Element Length	Dim. "A" <sup>2</sup>	Dim "B" <sup>2</sup>	Pkg. Qty.
35599	Pre-	150	N	3/8-18 NPT	Air Vent Plug	31649	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
33640	Pre-	150	N	3/8-18 NPT	Collection Bowl, Air Vent Plug	33169	3.6 (91.4)	8.1 (205.7)	6.2 (157.5)	1
34817	Pre-	150	N	M12 x 1.5	Collection Bowl, Air Vent Plug	33169	3.6 (91.4)	8.1 (205.7)	6.2 (157.5)	1
34818	Pre-	150	N	M14 x 1.5	Collection Bowl, Air Vent Plug	33169	3.6 (91.4)	8.1 (205.7)	6.2 (157.5)	1
33816	Pre-	30	N	1/4-18 NPT	Collection Bowl, Air Vent Plug	31865	4.3 (109.2)	11.3 (286.5)	9.4 (239.0)	1
40954	Pre-	30	R	1/4-18 NPT	Collection Bowl, Air Vent Plug	35014	4.3 (109.2)	11.3 (286.5)	9.4 (239.0)	1
42093	Pre-	30	N	1/4-18 NPTF	Collection Bowl, Air Vent Plug	31863	3.6 (91.4)	10.6 (269.0)	8.72 (221.6)	1
39452	Pre-	30	N	3/8-18 NPT	Collection Bowl, Air Vent Plug	31865	4.3 (109.2)	11.3 (286.5)	9.4 (239.0)	1
33641	Pre-	30	N	3/8-18 NPT	Air Vent Plug	31865	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
34819	Pre-	30	N	M12 x 1.5	Air Vent Plug	31865	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
41341	Pre-	30	R	M12 x 1.5	Collection Bowl, Air Vent Plug	40955	4.3 (109.2)	11.3(286.5)	9.4 (239.0)	1
34820	Pre-	30	N	M14 x 1.5	Air Vent Plug	31865	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
40253	Pre-	30	R	M14 x 1.5	Air Vent Plug - <b>ERS</b>	37294	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
42049	Pre-	30	N	M14 x 1.5	Collection Bowl, Air Vent Plug	31865	4.3 (109.2)	11.3(286.5)	9.4 (239.0)	1
41343	Pre-	30	R	M14 x 1.5	Collection Bowl, Air Vent Plug	40955	4.3 (109.2)	11.3(286.5)	9.4 (239.0)	1
29367	Final	5	N	In:3/8" (90°) Out:1/4"	<b>Top Load</b> , 100 Watt Heater, 12 Volt Water in Fuel Sensor	31712	3.6 (91.4)	12.3 (312.4)	7.9 (200.6)	1
30481	Final	5	N	In: 3/8" (0°) Out: 1/4"	<b>Top Load</b> , 100 Watt Heater, 12 Volt Water in Fuel Sensor	31712	3.6 (91.4)	12.3 (312.4)	7.9 (200.6)	1
35726	Final	5	N	1/4-18 NPT	Collection Bowl, Air Vent Plug	33168	2.8 (71.1)	9.7 (248.4)	7.9 (201.0)	1
38630	Final	5	N	1/4-18 NPT	Hand Primer, Air Vent Plug	33168	2.8 (71.1)	7.8 (198.4)	5.9 (150.9)	1
33642	Final	5	N	3/8-18 NPT	Air Vent Plug	31873	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
34821	Final	5	N	M12 x 1.5	Air Vent Plug	31873	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
34822	Final	5	N	M14 x 1.5	Air Vent Plug	31873	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
36694	Final	2	N	1/4-18 NPT	Air Vent Plug	36693	2.8 (71.1)	7.8 (198.4)	5.9 (150.9)	1
42050	Final	2	R	M14 x 1.5	Collection Bowl, Air Vent Plug	36012	6.0 (152.4)	12.2(309.8)	11.2(284.5)	1
42533	Final	2	N	1/4-18 NPTF	Collection Bowl, Air Vent Plug	36693	2.8 (71.1)	9.84 (249.9)	7.97 (202.6)	1

### FM100 MARINE Filter/Water Separator Systems

33643	Pre-	150	N	3/8-18 NPT	Marine Drain Valve, Vent plug	32200	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
40957	Pre-	30	R	1/4-18 NPT	Marine Drain Valve, Vent plug	40958	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
33644	Pre-	30	N	3/8-18 NPT	Marine Drain Valve, Vent plug	32177	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
41342	Pre-	30	R	M12 x 1.5	Marine Drain Valve, Vent plug	40958	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
41344	Pre-	30	R	M14 x 1.5	Marine Drain Valve, Vent plug	40958	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1
33645	Final	5	N	3/8-18 NPT	Marine Drain Valve, Vent plug	32178	4.3 (109.2)	9.3 (236.5)	7.4 (189.4)	1

<sup>1</sup> Reference *Glossary of Terms* on page 1. (N = Normal, R= Reverse)

<sup>2</sup> Reference *FM100 Dimensions* on page 11.

## FM 100 With Electric Lift Pump



- ⇒ Final filter assemblies for aftermarket use where an electric lift pump and higher fuel flow rates are desired.
- ⇒ For Engine Sizes from 50 to 350 Horsepower (37 to 261 kW)
- ⇒ Typically, Includes a Water Collection Bowl with plastic drain valve.
- ⇒ Heavy-Duty aluminum headers with anti-corrosion coating.
- ⇒ Reverse Flow<sup>1</sup> for extended pump life.
- ⇒ Lift Pump Requirements:
  - Power: 12 Volt, 4 Amp
  - Circuit: Fused, Switched (Key "On" = constant power). Includes; five feet (1.5m) of 18 gauge wire harness (2 wire) with mating terminal connector.
- ⇒ **Two** Types of Lift Pump Assemblies Available: (Brush Type and Brushless)
- ⇒ Maximum System Flow up to 80 gallons per hour.
- ⇒ Assembly contains a Non-Adjustable Internal Pressure Regulator
- ⇒ **NOT** direct replacements for OEM Fuel Manager systems.

## FM100 Complete Filter/Water Separator Systems with Electric Lift Pumps

System Part No.	Use	Micron Rating	Flow <sup>1</sup>	Port Size	Components	Element Part No.	Element Length	Dim. "A" <sup>2</sup>	Dim "B" <sup>2</sup>	Pkg. Qty.
33945	Final	5	R	1/4-18 NPT	Lift Pump (Brush), 40 gph flow, 8 psi pressure regulator Collection Bowl, Vent Plug	33959	4.3 (109.2)	11.3 (286.5)	9.4 (239.0)	1
39359	Final	5	R	M14 x 1.5 M16 x 1.5	Lift Pump (Brush), 40 gph flow, 17 psi pressure regulator Collection Bowl, Vent Plug	39442	6.0 (152.4)	12.94 (328.7)	11.1 (281.2)	1
41775	Final	5	R	1/4-18 NPT	Lift Pump (Brushless), 80 gph flow, 10 psi pressure regulator, Collection Bowl, Vent Plug	33959	4.3 (109.2)	11.3 (286.5)	9.4 (239.0)	1
42468	Final	5	R	1/4-18 NPTF	Lift Pump (Brushless), 80 gph flow, 17 psi pressure regulator, Collection Bowl, Vent Plug	33959	4.3 (109.2)	11.3 (286.5)	9.4 (239.0)	1
42946	Final	2	R	3/8-18 NPTF	Lift Pump (Brushless), 80 gph flow, 17 psi pressure regulator, Vent Plug	42944	6.0 (152.4)	12.94 (328.7)	11.1 (281.2)	1
42963	Final	2	R	1/2-20 UNF	Lift Pump (Brushless), 80 gph flow, 10 psi pressure regulator, Vent Plug	42944	6.0 (152.4)	12.94 (328.7)	11.1 (281.2)	1

<sup>1</sup> Reference *Glossary of Terms* on page 1 (N = Normal, R= Reverse).

<sup>2</sup> Reference *FM100 Dimensions* on page 11.

## FM100 Service Replacement Elements

Element Part No.	Use	Micron Rating	Flow Direction <sup>1</sup>	Element Length	Retention <sup>1</sup>	Pkg. Qty.
33169	Pre-Filter	150	Normal	3.6 (91.4)	Original	12
31649	Pre-Filter	150	Normal	4.3 (109.2)	Original	12
31648	Pre-Filter	150	Normal	6.0 (152.4)	Original	12
33962	Pre-Filter	150	Reverse	3.6 (91.4)	Original	12
33963	Pre-Filter	150	Reverse	4.3 (109.2)	Original	12
33965	Pre-Filter	150	Reverse	6.0 (152.4)	Original	12
39870	Pre-Filter	150	Reverse	4.3 (109.2)	ERS	12
31863	Pre-Filter	30	Normal	3.6 (91.4)	Original	12
31865	Pre-Filter	30	Normal	4.3 (109.2)	Original	12
31867	Pre-Filter	30	Normal	5.1 (129.5)	Original	12
31869	Pre-Filter	30	Normal	6.0 (152.4)	Original	12
37079	Pre-Filter	30	Normal	3.6 (91.4)	ERS	12

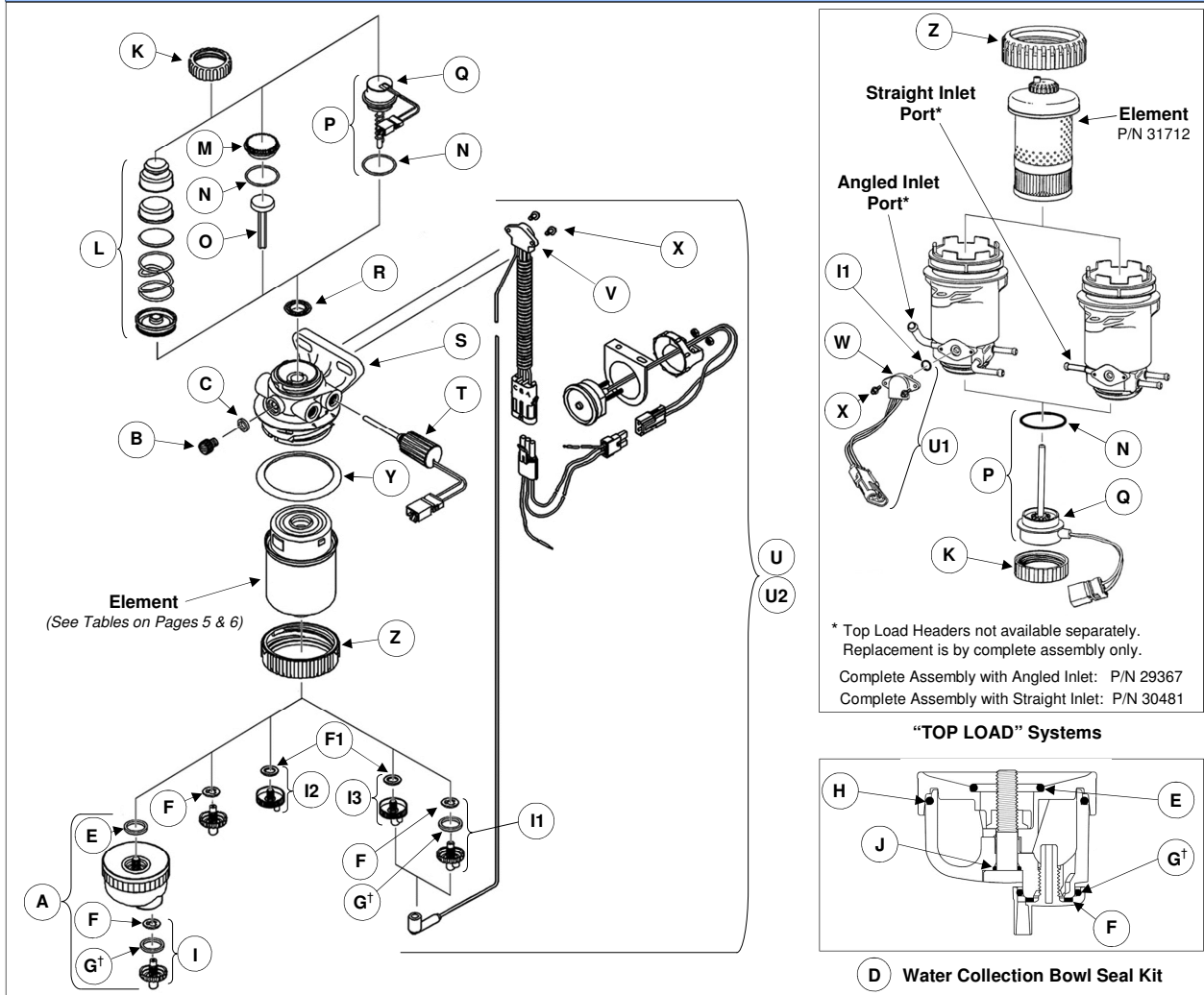
<sup>1</sup> Reference *Glossary of Terms* on page 1.



FM100 Service Replacement Elements (continued)						
Element Part No.	Use	Micron Rating	Flow Direction <sup>1</sup>	Element Length	Retention <sup>1</sup>	Pkg. Qty.
36810	Pre-Filter	30	Normal	4.3 (109.2)	ERS	12
34878	Pre-Filter	30	Reverse	3.6 (91.4)	Original	12
35014	Pre-Filter	30	Reverse	4.3 (109.2)	Original	12
35632	Pre-Filter	30	Reverse	5.1 (129.5)	Original	12
35634	Pre-Filter	30	Reverse	6.0 (152.4)	Original	12
37294	Pre-Filter	30	Reverse	4.3 (109.2)	ERS	12
37296	Pre-Filter	30	Reverse	5.1 (129.5)	ERS	12
37302	Pre-Filter	30	Reverse	6.0 (152.4)	ERS	12
37258	Pre-Filter	10	Reverse	4.3 (109.2)	Original	12
37255	Pre-Filter	10	Reverse	6.0 (152.4)	Original	12
37300	Pre-Filter	10	Reverse	6.0 (152.4)	ERS	12
31712	Final Filter	5	Normal	3.8 (96.0)	Top Load	12
33168	Final Filter	5	Normal	2.8 (71.1)	Original	12
31871	Final Filter	5	Normal	3.6 (91.4)	Original	12
31873	Final Filter	5	Normal	4.3 (109.2)	Original	12
31875	Final Filter	5	Normal	5.1 (129.5)	Original	12
31877	Final Filter	5	Normal	6.0 (152.4)	Original	12
37290	Final Filter	5	Normal	2.8 (71.1)	ERS	12
37292	Final Filter	5	Normal	4.3 (109.2)	ERS	12
37299	Final Filter	5	Normal	6.0 (152.4)	ERS	12
33957	Final Filter	5	Reverse	2.8 (71.1)	Original	12
33958	Final Filter	5	Reverse	3.6 (91.4)	Original	12
33959	Final Filter	5	Reverse	4.3 (109.2)	Original	12
33960	Final Filter	5	Reverse	5.1 (129.5)	Original	12
33961	Final Filter	5	Reverse	6.0 (152.4)	Original	12
39851	Final Filter	5	Reverse	4.3 (109.2)	ERS	12
39442	Final Filter	5	Reverse	6.0 (152.4)	ERS	12
36693	Final Filter	2	Normal	2.8 (71.1)	Original	12
35614	Final Filter	2	Normal	4.3 (109.2)	Original	12
35612	Final Filter	2	Normal	6.0 (152.4)	Original	12
39187	Final Filter	2	Normal	4.3 (109.2)	ERS	12
37297	Final Filter	2	Normal	6.0 (152.4)	ERS	12
36012	Final Filter	2	Reverse	6.0 (152.4)	Original	12
42944	Final Filter	2	Reverse	6.0 (152.4)	Original	12

FM100 MARINE Service Replacement Elements						
32200	Pre-Filter	150	Normal	4.3 (109.2)	Original	12
32201	Pre-Filter	150	Normal	6.0 (152.4)	Original	12
32177	Pre-Filter	30	Normal	4.3 (109.2)	Original	12
32180	Pre-Filter	30	Normal	6.0 (152.4)	Original	12
40958	Pre-Filter	30	Reverse	4.3 (109.2)	Original	12
37293	Pre-Filter	10	Reverse	4.3 (109.2)	ERS	12
37301	Pre-Filter	10	Reverse	6.0 (152.4)	ERS	12
32178	Final Filter	5	Normal	4.3 (109.2)	Original	12
32179	Final Filter	5	Normal	6.0 (152.4)	Original	12
37295	Final Filter	5	Reverse	4.3 (109.2)	ERS	12
37291	Final Filter	2	Normal	4.3 (109.2)	ERS	12
37298	Final Filter	2	Normal	6.0 (152.4)	ERS	12

## FM100 Components



## FM100 Service Parts

Component Reference	Description	Part No.	Pkg. Qty.
(A)	Water Collection Bowl Kit	29899	1
(B)	Plastic plug, Air Vent	28691	6
(C)	O-Ring for Air Vent Plug	13494	10
(D)	Water Collection Bowl Seal Kit (Contains 6 each of seals: (E), (F), (H), (J))	30448	1
(E)	O-Ring for water collection bowl header to element	10519	10
(F)	Sealing Washer - Three "Lobed" for plastic drain valves	32010	5
(G)	O-Ring for Plastic Drain Valve † <i>Only available Separately</i>	29210	5
(H)	O-Ring for water collection bowl to bowl header	31498	5
(I)	Plastic Drain Valve Kit	32003	1
(J)	O-Ring - Collection bowl draw bolt	30911	5
(K)	Retaining Nut Small Diameter (Cap, heater, etc.)	28849	6
(L)	Hand Primer Pump, Normal Flow	29578	1
	Hand Primer Pump, Reverse Flow	35474	1
(M)	Cap plate, Top of FM100 Header Assemblies	28853	6
(N)	O-Ring for Header Top (quad cross-section)	28869	6
(O)	Volume Plug used under Cap Plate	29552	6

## FM100 Service Parts (continued)

Component Reference	Description	Part No.	Pkg. Qty.
P	Top Load Heater Kit - 12 volt, 100 Watt	31341	1
	Top Load Heater Kit - 12 volt, 150 Watt	32364	1
	Top Load Heater Kit - 24 volt, 150 Watt	33649	1
Q	Top Load Heating Element - 12 volt, 100 Watt	30446	1
	Top Load Heating Element - 12 volt, 150 Watt	30447	1
R	Pre-Filter Screen - 150 Micron	29575	1
S	Header Assembly, Normal Flow - Port Threads: 1/2-20	30837	1
	Header Assembly, Normal Flow - Port Threads: 1/4-18 NPT	33260	1
	Header Assembly, Normal Flow - Port Threads: 3/8-18 NPT	33648	1
	Header Assembly, Normal Flow - Port Threads: M12 x 1.5	34504	1
	Header Assembly, Normal Flow - Port Threads: M14 x 1.5	34306	1
T	Side Load Heater Kit - 12 volt, Threads: 1/4-18 NPT	32283	1
	Side Load Heater Kit - 12 volt, Threads: 3/8-18 NPT	35160	1
	Side Load Heater Kit - 12 volt, Threads: 1/2-20	30939	1
	Side Load Heater Kit - 12 volt, Threads: M12 x 1.5	34743	1
	Side Load Heater Kit (Deutsch Electrical Terminals) - 12 volt, Threads: 1/2-20	36550	1
	Side Load Heater Kit - 24 volt, Threads: 1/4-18 NPT	34144	1
	Side Load Heater Kit - 24 volt, Threads: 3/8-18 NPT	34145	1
	Side Load Heater Kit - 24 volt, Threads: 1/2-20	34146	1
	Side Load Heater Kit - 24 volt, Threads: M12 x 1.5	35334	1
	Side Load Heater Kit - 24 volt, Threads: M16 x 1.5	40144	1
U	Electronic Water in Fuel Sensor Kit - 24 volt	33651	1
Ui	Electronic Water in Fuel Sensor Kit, Top Load - 12 volt	29996	1
V	Sensor, Water in Fuel - 12 volt	32343	1
	Sensor, Water in Fuel - 24 volt	31942	1
W	Sensor, Water in Fuel, Top Load - 12 volt	30831	1
X	Mounting Screws, Water in Fuel Sensor	24322	4
Y	Dust Seal under retaining nut, Large diameter	29577	6
Z	Retaining Nut Large Diameter (Element)	29458	6
Not Shown	Lift Pump wiring harness	34061	1
I1	Water Sensor Drain Valve Kit, Plastic	32342	1

## FM100 Marine Specific Components

U2	Electronic Water in Fuel Sensor Kit - 12 volt (Aluminum drain valve assembly)	30866	1
L	Marine Hand Primer Pump Kit, Normal Flow (Enhanced corrosion resistant coating)	30841	1
I2	Standard Marine Drain Valve Kit, aluminum	30552	1
I3	Water Sensor Drain Valve Kit, aluminum	30660	1
F1	Washer for Aluminum Drain Valves	29675	5

### Additional Information:

- Side Load Heaters are 100 watt with Packard terminal connectors unless otherwise noted.
- All Electric Fuel Heaters have automatic switching. Heater comes ON at 42°-58°F (5.5°-14.4°C) and goes OFF at 75°-85°F (23.9°-29.4°C).
- Wire harness assemblies are made with 18 gauge jacketed copper wire and come complete with mating terminal connector with connecting wire leads.

## FM1000



- ⇒ **Engine power rating:** 250 (187 kW) to 600 HP (447 kW)
- ⇒ **Max. fuel flow rate:** 180 US gallons/hour (680 liters/hour)
- ⇒ **Max. operating pressure:** 100 P.S.I. (688 kPa) *without water collection bowl*
- Heavy duty aluminum header assemblies available with a variety of internal threads sizes and sealing configurations.
- Accepts optional modular features. Elements available in different sizes and micron ratings.
- Larger capacity for longer filter life and extended change intervals
- Not for Marine Use.

### FM1000 Filter/Separator Systems

System Part No.	Use	Micron Rating	Flow <sup>1</sup>	Port Size	Components	Element Part No.	Element Length	Dim. "A" <sup>2</sup>	Dim "B" <sup>2</sup>	Pkg. Qty.
33688	Pre-	30	N	1/2-14 NPT	Air Vent plug	33634	4.0 (101.6)	9.2 (233.7)	7.0 (178.6)	1
33692	Pre-	30	N	1/2-14 NPT	Air Vent plug	33638	8.0 (203.2)	13.2 (335.3)	11.0 (280.2)	1
33696	Pre-	30	N	7/8-14 UNF	Air Vent plug	33634	4.0 (101.6)	9.2 (233.7)	7.0 (178.6)	1
33700	Pre-	30	N	7/8-14 UNF	Air Vent plug	33638	8.0 (203.2)	13.2 (335.2)	11.0 (280.2)	1
36224	Pre-	150	N	M22 x 1.5	Water in Fuel Sensor (24v), Hand Primer, Air Vent Plug	36223	8.0 (203.2)	13.3 (339.1)	11.3 (286.0)	1
33686	Final	5	N	1/2-14 NPT	Air Vent Plug	33119	4.0 (101.6)	9.2 (233.7)	7.0 (178.6)	1
33690	Final	5	N	1/2-14 NPT	Air Vent Plug	33636	8.0 (203.2)	13.2 (335.2)	11.0 (280.2)	1
33694	Final	5	N	7/8-14 UNF	Air Vent Plug	33119	4.0 (101.6)	9.2 (233.7)	7.0 (178.6)	1
33698	Final	5	N	7/8-14 UNF	Air Vent Plug	33636	8.0 (203.2)	13.2 (335.2)	11.0 (280.2)	1
37776	Final	5	N	7/8-14 UNF	300 Watt (12v) Top Heater, Collection Bowl, Air Vent Plug	33636	8.0 (203.2)	15.6 (396.3)	13.4 (341.1)	1
42925	Pre-	30	N	M22 x 1.5	Collection Bowl, Air Vent Plug	33638	8.0 (203.2)	13.2 (335.2)	11.0 (280.2)	1
42939	Final	5	N	M22 x 1.5	Collection Bowl, Air Vent Plug	33636	8.0 (203.2)	13.2 (335.2)	11.0 (280.2)	1

<sup>1</sup> Reference *Glossary of Terms* on page 1 (N = Normal, R= Reverse).

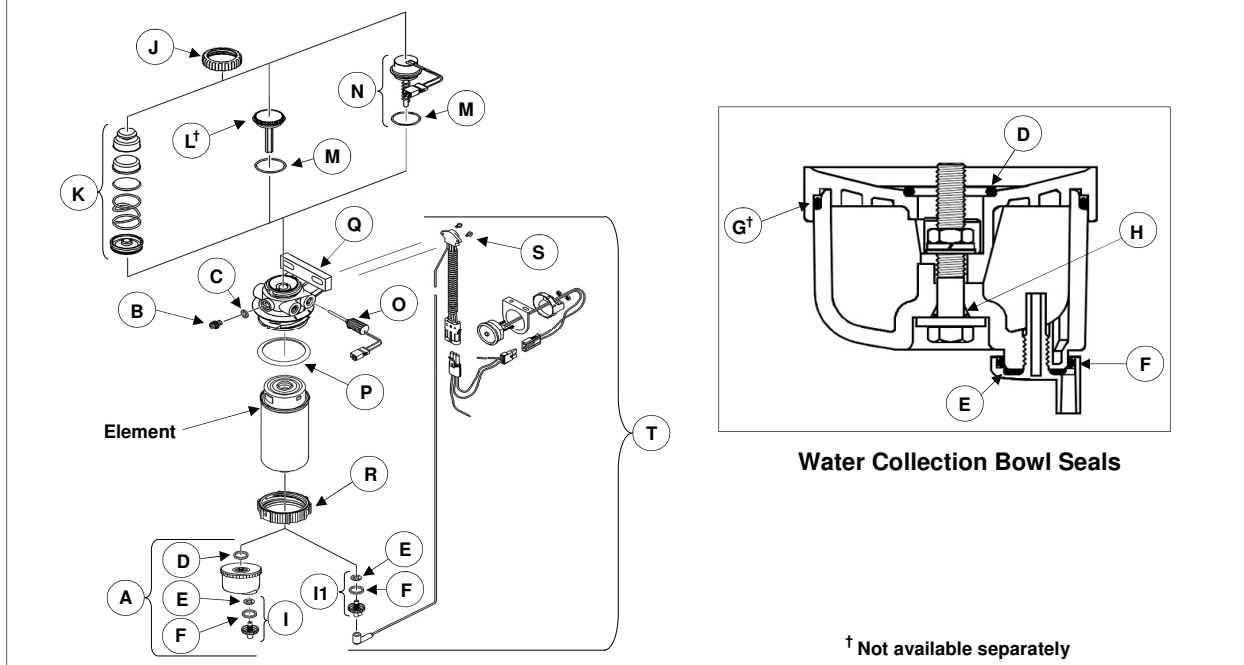
<sup>2</sup> Reference *FM1000 Dimensions*

### FM1000 Service Replacement Elements

Element Part No.	Use	Micron Rating	Flow Direction <sup>1</sup>	Element Length	Pkg. Qty.
36223	Pre-Filter	150	Normal	8.0 (203.2)	6
33634	Pre-Filter	30	Normal	4.0 (101.6)	6
33638	Pre-Filter	30	Normal	8.0 (203.2)	6
37968	Pre-Filter	10	Reverse	8.0 (203.2)	6
33119	Final Filter	5	Normal	4.0 (101.6)	6
33636	Final Filter	5	Normal	8.0 (203.2)	6
39595	Final Filter	5	Reverse	3.0 (76.2)	8

<sup>1</sup> Reference *Glossary of Terms* on page 1

## FM1000 Components



## FM1000 Service Parts

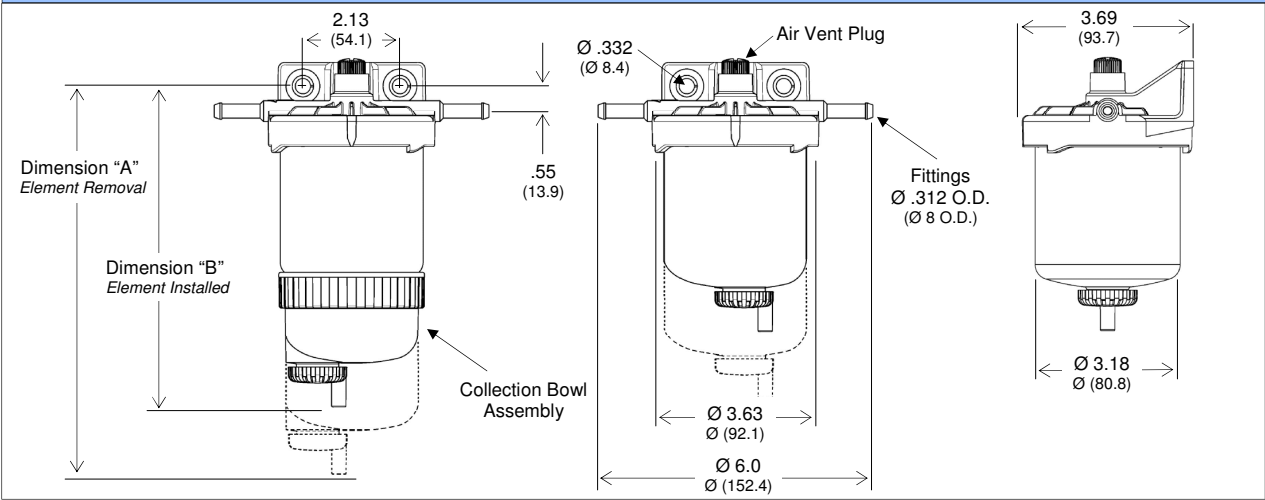
Component	Description	Part No.	Pkg. Qty.
(A)	Complete Water Collection Bowl Assembly	35635	1
(B)	Plastic Plug, Air Vent	28691	6
(C)	O-Ring for Air Vent Plug	13494	10
(D)	O-ring, Water Collection Bowl Header to Element	10519	10
(E)	Sealing Washer - Three "Lobe" Seal for Plastic Drain Valves	32010	5
(F)	O-ring, Plastic Drain Valve	29210	5
(G†)	O-ring, Bowl Header to Bowl ( <i>Only available in FM1000 Seal Kit: P/N 36768</i> )	—	—
(H)	O-ring, Draw Bolt to Bowl	32884	5
(I)	Standard Drain Valve Kit, Plastic	32003	1
(I†)	Water Sensor Drain Valve Kit, Plastic	32342	1
(J)	Retaining Ring, Small Diameter (Top Cap/Volume Plug)	28694	1
(K)	Hand Primer Module Assembly, Normal Flow	36910	1
	Hand Primer Module Assembly, Reverse Flow	37348	1
(L†)	Top Cap/Volume Plug ( <i>Only available with a Complete FM1000 System</i> )	—	—
(M)	O-ring under Top Cap/Volume Plug and Top Load Heater Assembly	29588	1
(N)	Heater Kit, Top Load (12V, 300 Watt)	36238	1
(O)	Heater Kit, Side Load (12V, 200 Watt) (Heater Thread: 1/2-20, includes adapter to M16x1.5)	40145	1
(P)	Element Dust Seal	33104	1
(Q)	Header Assembly, Black "E" coated (Ports Thread Size: 1/2-14 NPT)	33564	1
	Header Assembly, Black "E" coated (Ports Thread Size: 7/8-14)	33102	1
(R)	Retaining Ring, Large Diameter (Element)	33108	1
(S)	Mounting Screws, Water in Fuel Sensor	24322	4
(T)	Electronic Water in Fuel Sensor Kit, 12 Volt	29268	1
	Electronic Water in Fuel Sensor Kit, 24 Volt	38023	1
<b>Not Shown</b>	FM1000 Seal Kit, includes: (C) (E) (F) (G) (H) (I) (N) (R) (V†) (W†)	36768	1
(V†)	Hand Primer Pump, Outer Seal ( <i>Only available in FM1000 Seal Kit: P/N 36768</i> ) - <b>Not Shown</b>	—	—
(W†)	Hand Primer Pump, Inner Seal - <b>Not Shown</b>	22591	10

NOTE: All Electric Fuel Heaters have automatic switching. Heater comes ON at 42°-58°F (5.5°-14.4°C) and goes OFF at 75°-85°F (23.9°-29.4°C).

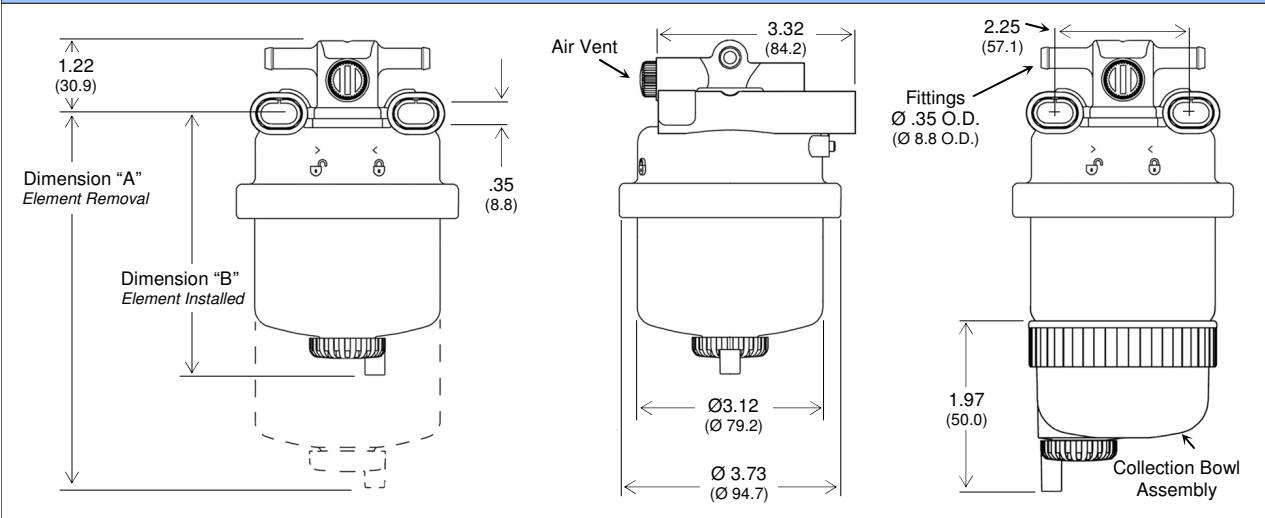
# Basic Fuel Manager System Dimensions

NOTE: These are typical dimensions.

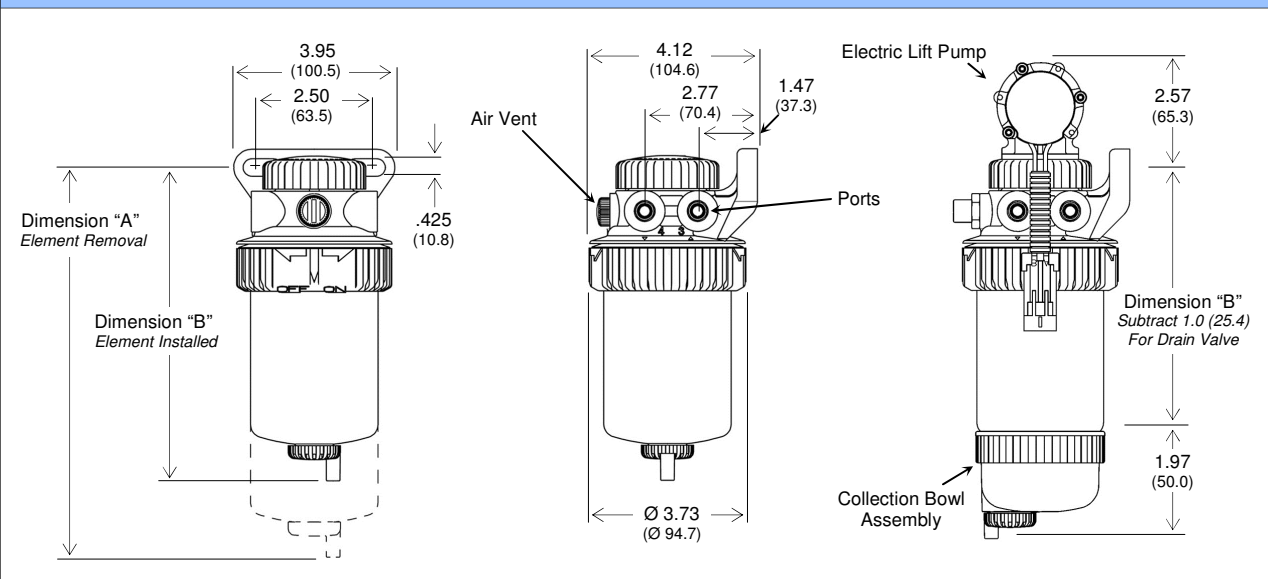
## FM1



## FM10

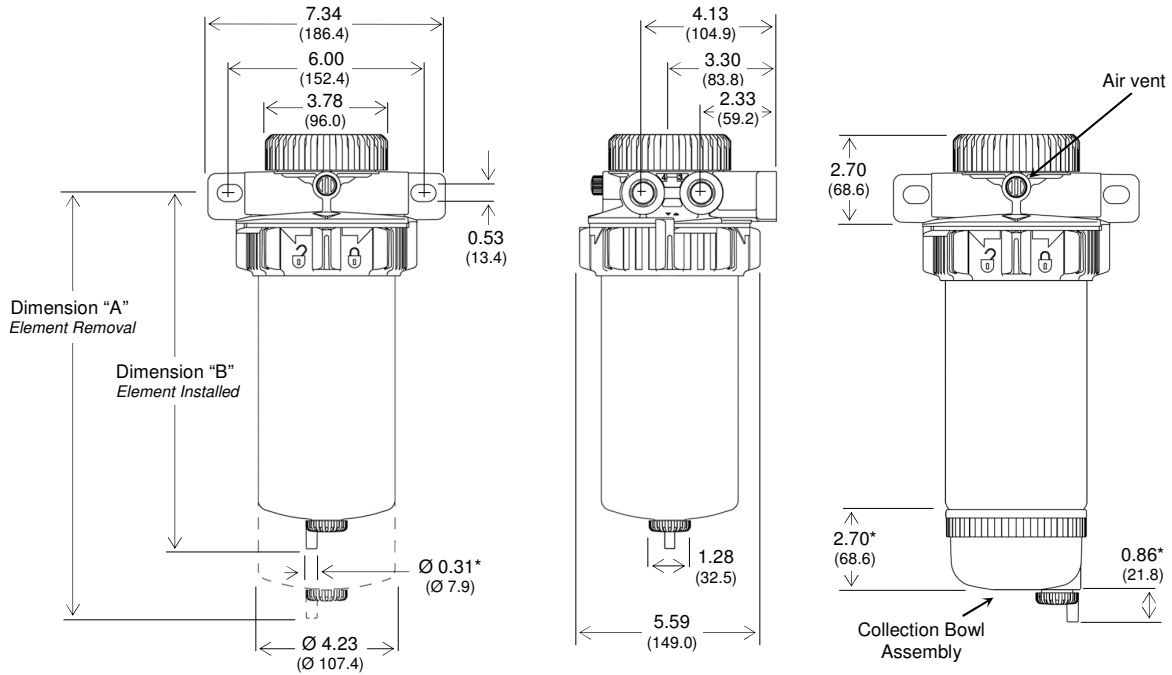


## FM100



# Basic Fuel Manager System Dimensions

## FM 1000



\* Drain Valve dimension vary with type, these are average dimensions. Applicable for FM1, FM10 and FM100

FM100 Top Load	Normal Flow Header Connection	Reverse Flow Header Connection
<p>Technical drawing of the FM100 top load showing the following dimensions and components:</p> <ul style="list-style-type: none"> <li>Inlet to Outlet distance: 4.88 (123.9)</li> <li>Outlet diameter: <math>\varnothing 3.78</math> (<math>\varnothing 96.0</math>)</li> <li>Vent height: 7.66 (194.6)</li> <li>Water Sensor and Heater connection height: 7.93 (201.4)</li> </ul>	<p><b>Flow Direction Arrow</b></p> <ul style="list-style-type: none"> <li>Flow direction arrows are cast in header flange below the ports.</li> <li>Ports 2 &amp; 3 Inlet</li> <li>Ports 1 &amp; 4 Outlet</li> <li>Heater (Side Load) typically goes in the Inlet port that is unused.</li> </ul>	<p><b>Flow Direction Arrow</b></p> <ul style="list-style-type: none"> <li>Flow direction arrows are stamped in front of header inlet ports.</li> <li>Ports 1 &amp; 4 Inlet</li> <li>Ports 2 &amp; 3 Outlet</li> <li>Heater (Side Load) typically goes in the Inlet port that is unused.</li> </ul>







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