

# FBO-10 and FBO-14

## Fuel Filter/Water Separator For High-Flow Applications



These versatile housings have three filter options to meet various requirements: a fuel filter/water separator, a silicone treated filter, and a water absorber. For fuel dispensing applications the fuel filter/water separator filter is recommended.

FBO-10 and FBO-14 filter assemblies are designed to meet the toughest hydrocarbon refueling conditions and designed for easy cartridge changeouts.

The FBO assembly can be used on mobile refuelers or installed in refueling cabinets. The FBO unit can also be used for diesel fuel dispensing pumps, as a primary fuel filter/water separator for large diesel engines, or as bulk fuel handling, fuel transfer, and other higher flow applications.



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## Product Features

- Die-cast aluminum head
- Steel filter bowl assembly
- Powder coated components
- Mounting bracket
- Locking ring collar “no V-clamps”
- 1.5” NPT inlet and outlet
- Viton® seals for compatibility to various fuels
- Designed to withstand a max pressure of 150 PSI (10 bar) and a max temperature of 240°F (115°C)
- Manual drain valve (1/4” NPT)
- Manual vent valve
- Sight glass (1/2” NPT)
- 120 volt AC explosion proof heater option available
- Wide variety of accessories, filters and applications available

Note: Viton® is a registered trademark of DuPont™



ENGINEERING YOUR SUCCESS.

# Application

FBO assemblies are specifically designed to meet the filtration requirements of today's high pressure common-rail diesel injection systems. The unit is used for fuel dispensing pumps or as a primary fuel filter/water separator on large diesel engine applications.

FBO-10 and FBO-14 filter assemblies were designed to meet the toughest conditions and offer ease of filter change outs. The FBO assembly can flow from 10 GPM (38 LPM) to 75 GPM (284 LPM), depending on which model, filter, and type of fuel to be filtered.

The assembly features a "locking ring collar", which attaches the filter housing to the aluminum die

cast filter head with four bolts. The slotted "locking ring collar" allows maintenance personnel to hand loosen the four collar bolts, rotate, and lower the bowl assembly for filter changeouts.

With a new filter cartridge installed, simply raise the bowl and rotate into position on the locking ring and hand tighten evenly (evenly torquing the 4 closure bolts to 100 lb-in is highly recommended).

The closure hardware consists of stainless steel nuts, bolts, and washers with metal hand knobs for ease of maintenance. No wrenches or other special tools are required, allowing one person to easily change the filter cartridge (no V-band clamps are used).

## Biodiesel Filtration

FBO assemblies are great for biofuel applications because of ease of service, rugged construction, and the optional electric heater.

Biodiesel is known to attack certain synthetic rubber compounds so Viton o-rings are used to prevent o-rings from swelling, softening, shrinking, or hardening.

Racor recommends using a thermostatically controlled electric heater in the head and/or filter bowl to help avoid biofuel waxing and gelling. Pour point suppressants and biocides are necessary for reliable operation.



FBO Commercial Application



FBO Commercial Application



FBO Commercial Application

# New Additions

New to the FBO family of filters are the Racor heavy duty Fuel Recycler Cart and the FBO Duplex Stand. The filter cart polishes, cleans up, and recycles old or contaminated fuel. It can be used in preventative maintenance as a servicing unit. The all aluminum construction keeps it lighter for mobility purposes, while being durable and corrosion resistant for many years of operation.

By popular demand the FBO Duplex Stand was designed with continuous duty applications in mind. The Duplex Stand assembly allows the isolation of one filter at a time for servicing while still in operation.



FBO Duplex Stand

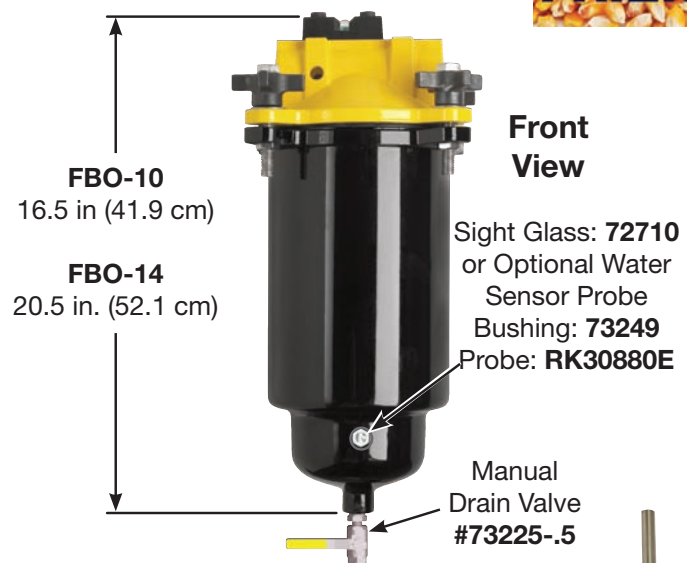
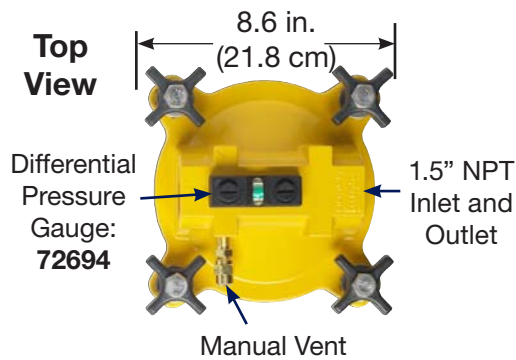


FBO Filter Cart

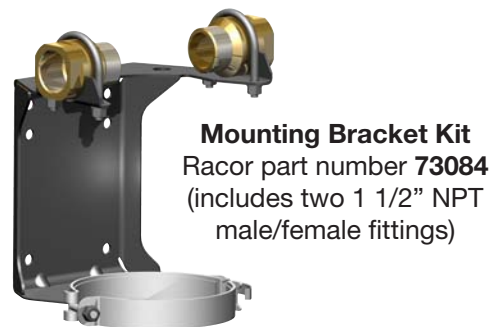
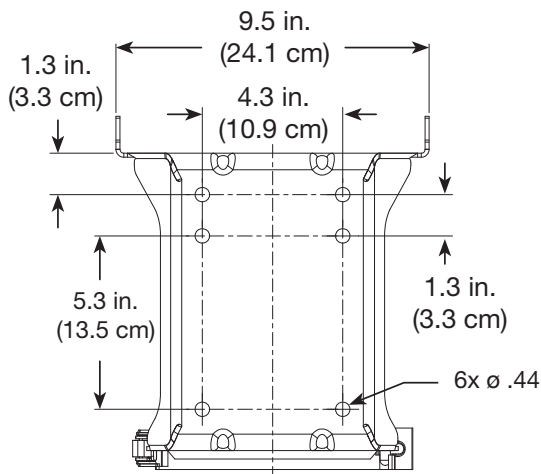
# Technical Information

Specifications	Maximum Flow Rates			Clean	Change
FBO-10	Diesel	Gasoline	Kerosene	Delta P	Delta P
Silicone Treated Filter	25 GPM (95 LPM)	53 GPM (200 LPM)	35 GPM (132 LPM)	2.5 PSID	15 PSID
Water Separator	20 GPM (76 LPM)	32 GPM (121 LPM)	21 GPM (79 LPM)	2.5 PSID	15 PSID
Water Absorber	20 GPM (76 LPM)	45 GPM (170 LPM)	35 GPM (132 LPM)	2.5 PSID	30 PSID
FBO-14	Diesel	Gasoline	Kerosene	Delta P	Delta P
Silicone Treated Filter	30 GPM (113 LPM)	75 GPM (284 LPM)	50 GPM (189 LPM)	2.5 PSID	15 PSID
Water Separator	25 GPM (95 LPM)	45 GPM (170 LPM)	30 GPM (113 LPM)	2.5 PSID	15 PSID
Water Absorber	25 GPM (95 LPM)	70 GPM (265 LPM)	55 GPM (208 LPM)	2.5 PSID	30 PSID

## FBO Mounting Information



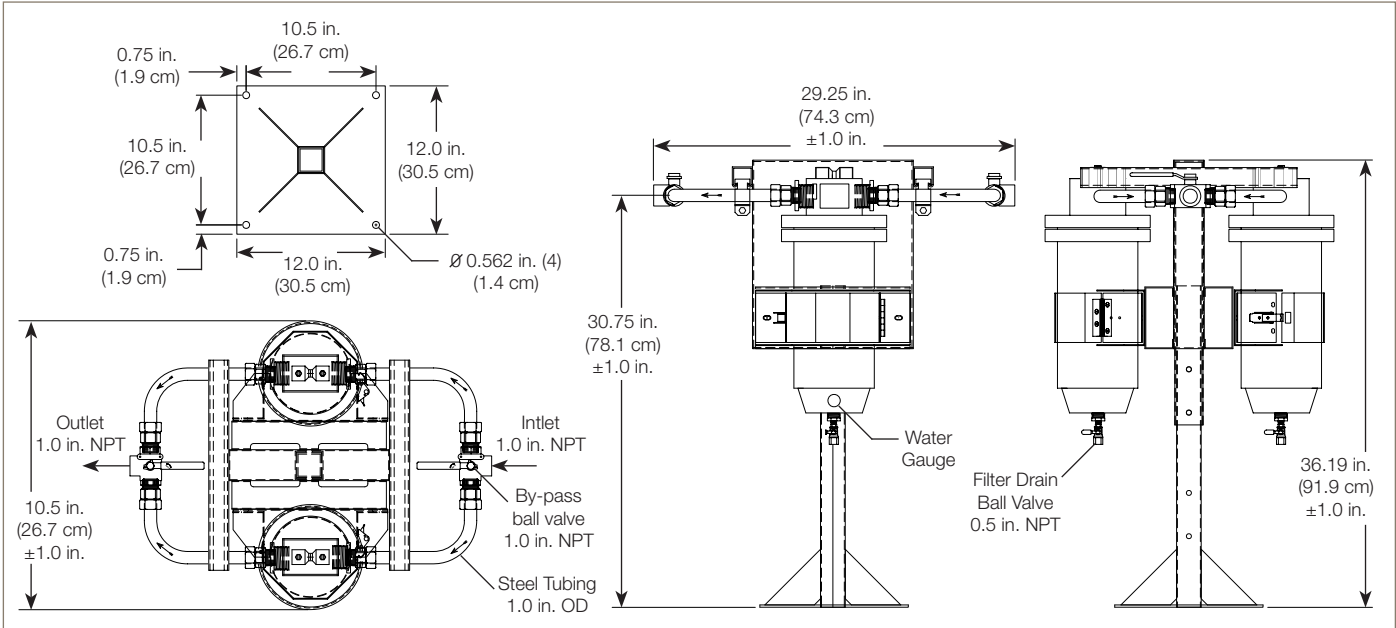
### Mounting Bracket Hole Pattern



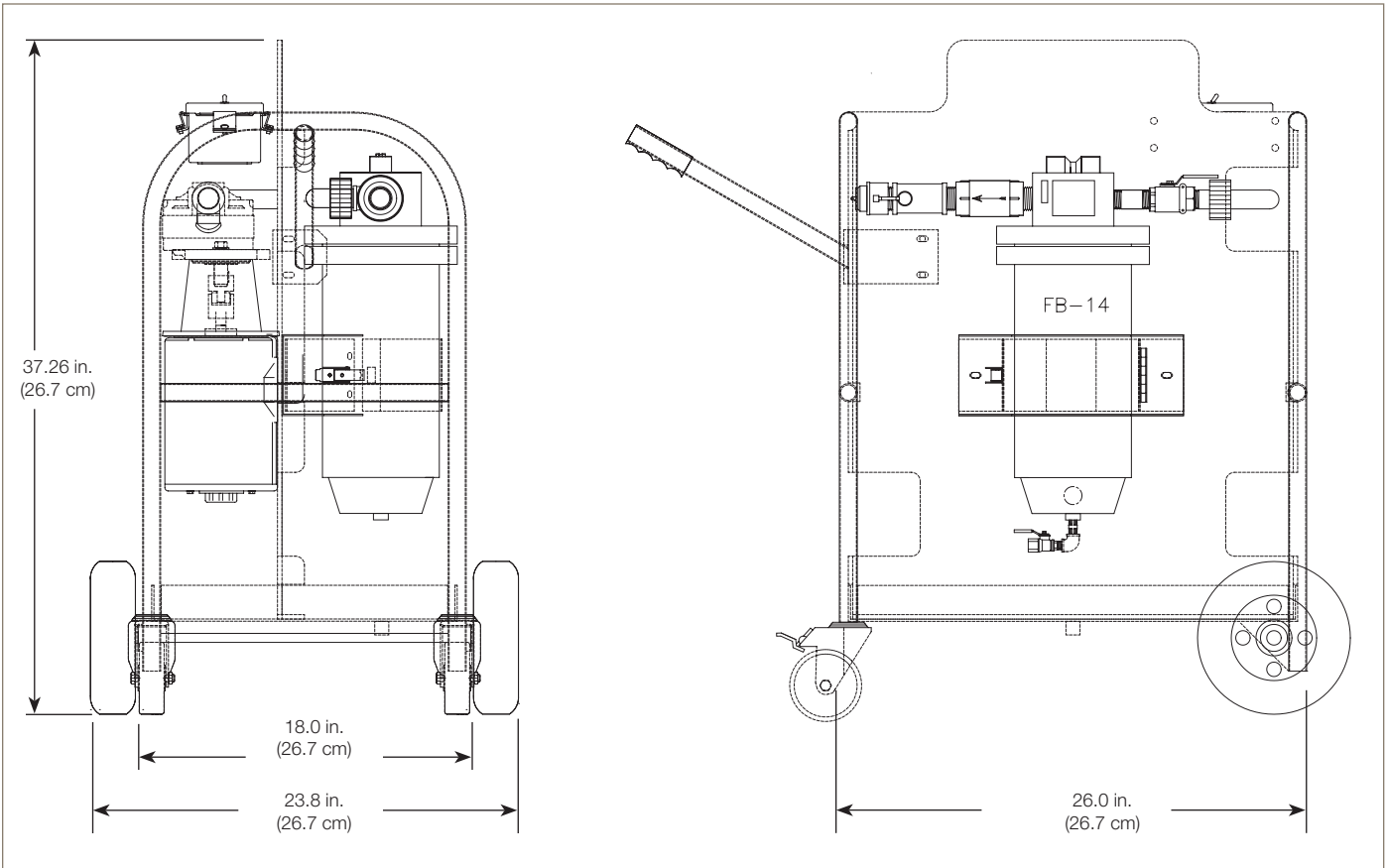
**FBO-HTR-KIT**

# FBO Details

## FBO-14-DPL-DUPLEX



## FC 20-1-120V



# Replacement Filters

Filters are used to protect the OEM supplied fuel system.

## Water Separator

Water separator filters remove water and contaminants from hydrocarbon fuel streams and are the most popular filters.

## Silicone Treated

Silicone treated fuel filters remove particle contaminants down to one micron.



Silicone filters can also be used upstream, before a fuel filter/water separator, to extend filter life.

## Water Absorber

Water absorber filters absorb water and filter out contaminants from diesel fuel and other hydrocarbon streams.



# Filter Cartridge Chart

FBO	Micron Rating	Water Separator	Silicone Treated Filter	Water Absorber
 <p><b>FBO-10</b> (6 X 10 Element)</p>	1	FBO 60327 FBO 60360 <sup>2</sup>	FBO 60330	FBO 60333
	5	FBO 60328	FBO 60331	FBO 60334
	10	FBO 60353	FBO 60354	FBO 60355
	25	FBO 60329	FBO 60332	FBO 60335
 <p><b>FBO-14<sup>1</sup></b> (6 X 14 Element)</p>	1	FBO 60336 FBO 60361 <sup>2</sup>	FBO 60339	FBO 60342
	5	FBO 60337	FBO 60340	FBO 60343
	10	FBO 60356	FBO 60357	FBO 60358
	25	FBO 60338	FBO 60341	FBO 60344

<sup>1</sup> 72951 Monitor Adapter Plate enables the FBO-14 to take five, RMO-210-4 monitor elements.

<sup>2</sup> API/EI 1581 5th Edition filters are certified for jet fuel applications.

# How to Order

Below is a guide to help order a FBO assembly with the accessories you need.

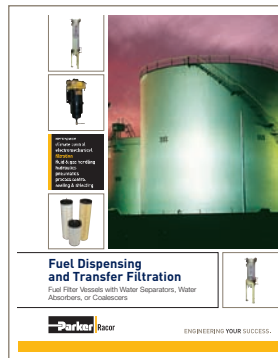
Assembly	Filter Cartridge (see previous page)	Delta P Gauge	Sight Glass	Drain Valve	Mounting Bracket
FBO-10	Order Separately				
FBO-10-DP	Order Separately	X			
FBO-10-DPL	Order Separately	X	X	X	
FBO-10-25M	FBO 60332	X	X	X	
FBO-10-HTR <sup>1</sup>	Order Separately	X	X	X	
FBO-14	Order Separately				
FBO-14-DP	Order Separately	X			
FBO-14-DPL	Order Separately	X	X	X	
FBO-14-25M	FBO 60341	X	X	X	
FBO-14-HTR <sup>1</sup>	Order Separately	X	X	X	
FBO-14-BKT-10F	FBO 60357	X	X	X	X
FBO-14-BKT-10FW	FBO 60358	X	X	X	X
FBO-14-BKT-10FWS	FBO 60356	X	X	X	X
FBO-14-BKT-25F	FBO 60341	X	X	X	X
FBO-14-BKT-25FW	FBO 60344	X	X	X	X
FBO-14-BKT-25FWS	FBO 60338	X	X	X	X
FBO-14-DPL-DUPLEX	Order Separately	X	X	X	

<sup>1</sup>Note: Includes 120 volt AC explosion proof heater for stationary applications only.

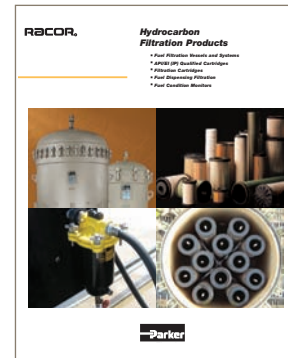
## Additional Information



The Racor mobile fuel polishing cart (FC-20-1-120V or FC-20-1-120V-KIT) are built with the robust FBO-14-DPL technology and are stocked and available. See brochure # 7872 for more details.



For more information of filtration in fuel dispensing applications, see brochure # 7648.



Additional information is available for high flow fuel filtration application in brochure # 7537.

# Parker Filtration's Products and Systems



## AEROSPACE

### Key Products

- Filter Vessels (API/IP)
- Fluid Conditioning Monitors (Fuel & Hydraulic)
- Fuel Filter/Water Separators
- Fuel Inerting Systems (OBIGGS)
- Fuel Loading Filters (API/IP)
- Fuel, Hydraulic, & Lubrication Filters
- Nitrogen Tire Inflation Systems



## FOOD & BEVERAGE

### Key Products

- Carbon Dioxide Purifiers
- Compressed Air Dryers
- Fiber & Membrane Filters
- Nitrogen Generators
- Stainless Steel Filter Housings
- Steam & Sterile Air Filters
- Validation Test Equipment
- Water Chillers
- Water Filters



## INDUSTRIAL & PLANT EQUIPMENT

### Key Products

- ASME Coded Vessels
- Compressed Air Filters
- Condensate Management
- Contamination Monitoring
- Desiccant Dryers
- Membrane Filters & Dryers
- Refrigerated Dryers
- Hydraulic Filters
- Oil/Water Separators
- Process Filters
- Portable Hydraulic Systems



## LIFE SCIENCES

### Key Products

- Breathing Air Filters & Systems
- Chillers
- Compressed Air Filters
- Filter Integrity Analyzers
- Gas Sterilization Filters
- High Purity Gas Filters
- Hydrogen Gas Generators
- Nitrogen TriGas Systems
- Sterile Water Filters
- Syringe Filters



## MARINE

### Key Products

- Air Intake Filters
- ASME High Flow Vessels
- Crankcase Emission Filter Systems
- Fuel Dispensing Filters
- Engine Fuel Filter/Water Separators
- Engine Oil & Coolant Filters
- Gasoline Filters
- Hydraulic Filters
- Hydrocarbon Fluid Filters
- Oil/Water Separators
- Submarine CO<sub>2</sub> Reduction Units
- Water Desalination & Purification Systems



## OIL & GAS

### Key Products

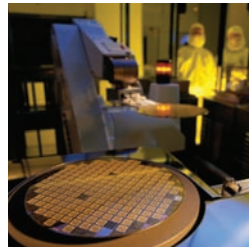
- Air Intake Filters
- ASME High Flow Vessels
- Compressed Air Filters & Dryers
- Compressed Air Water Separators
- Crankcase Emission Filter Systems
- Engine Fuel Filter/Water Separators
- Engine Oil & Coolant Filters
- Fluid Condition Monitoring Systems
- Fuel Dispensing Filters
- Hydraulic Filters
- Hydrocarbon Fluid Filters
- Integrity Test Equipment
- Nitrogen Generators
- Mechanical Separators
- Membrane & Sterile Air Filters
- Oil/Water Separators



## POWER GENERATION

### Key Products

- Air Intake Filters
- ASME High Flow Vessels
- Bioenergy Water Chillers
- Crankcase Emission Filter Systems
- Engine Fuel Filter/Water Separators
- Fluid Condition Monitoring Systems
- Fuel Dispensing Filters
- Load Tap Filters
- Hydrogen Generators
- Magnetic Prefilters
- Nitrogen Generators
- Portable Hydraulic Systems
- Water Sensors



## PROCESS

### Key Products

- Alternative Gas Dryers & Absorbers
- Bag Filters
- Compressed Air Dryers
- Instrumentation Filters
- Nitrogen Generators
- Oil Absorption Filters
- Pleated Filter Cartridges
- Process Filters
- Semiconductor Filter Cartridges
- Stainless Steel Prefiltration Vessels
- Zero Air Generators



## TRANSPORTATION & MOBILE EQUIPMENT

### Key Products

- Air Intake Filters
- Alternative Fuel Filters
- ASME High Flow Vessels
- Crankcase Emission Systems
- Fuel Delivery Systems
- Fuel Dispensing Filters
- Fuel Filter/Water Separators
- Multi-stage Filter Systems
- High Pressure Natural Gas Filters
- Nitrogen Tire Inflation Systems
- Suction & Return Line Hydraulic Filters
- Transmission Filters
- Truck & Railway Dryers



## WATER

### Key Products

- Desalination & Purification Systems
- Oil Absorption Filters
- Oil/Water Separators
- Pleated Filter Cartridges
- Stainless Steel Prefiltration Vessels
- Sterile Water Filters

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 7589 Rev D (Oct 2010)

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