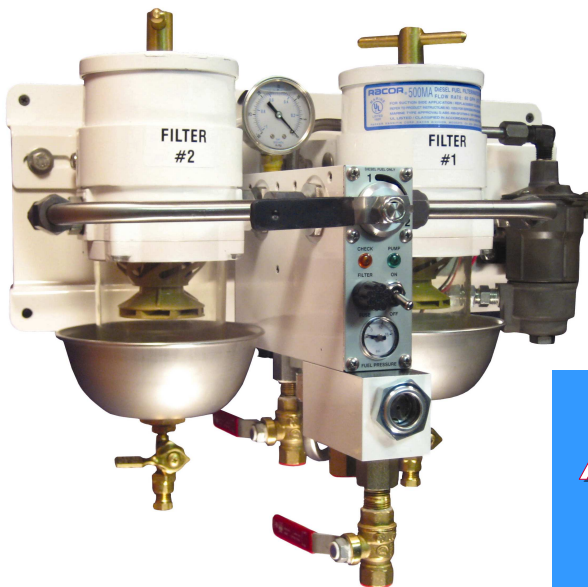# *Filter* BOSS
COMMANDER

"Don't leave shore without it"

PREVENT unwanted engine shutdowns

IMPROVES fuel system reliability
and your vessels safety

SIMPLE operation and installation

Dual Fuel Filter Controller
AND Fuel Polishing System

0 - 180 GPH Fuel Flows

Cleaner Fuel - Better Performance - Better Mileage
www.ktisystems.com   800-336-0315

FilterBOSS
by KTI SYSTEMS INC.

The *FilterBOSS COMMANDER* system was designed to combat the normal fuel problems of a diesel engine.

A Dual fuel filter system that allows for one online filter, while the other is offline but ready for use.

The single lever operation makes it easy to switch filters.
This allows for continued engine operation during the filter change.

Optional Remote operation (EFS) allows the operator to electrically switch filters from the helm.

The remote "Early Warning Panel " will alert the operator that the filter is starting to clog and needs to be changed also allows for easy integration with the ships monitoring system.

An integrated fuel pump provides back up fuel pressure to the engine lift pump if the lift pump has low pressure or fails. The pump also allows for quick system bleeding. Fuel filter servicing is easier using the "Filter Filler".

The
FilterBOSS
ADVANTAGE
The early warning panel is mounted at the helm and lets you know the filter is clogging *BEFORE* you lose your engine.

Early Warning Panel

(see page 6)

Fuel polishing accomplished with the integrated fuel pump and built in manifolds makes it easy to clean your fuel. The "polishing" mode will allow the operator to check the quality of the fuel that is being put into the tank while at the fuel pump or to run periodic fuel cleaning maintenance. The built in flow sight allows the operator to check for air bubbles when bleeding the system.

Easy system testing can be accomplished prior to departure. This checks the fuel system for air leaks, proper fuel system operation and warning light operation.

The vacuum gauge helps the operator know the condition of the online filter and also helps in finding air leaks when performing the system test. The pressure gauge lets the operator know the pump is working and also helps in pressure testing the system for fuel leaks. The "Filter Light" helps the operator to view the condition of the fuel in limited lighting areas.

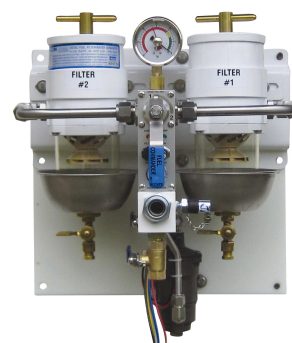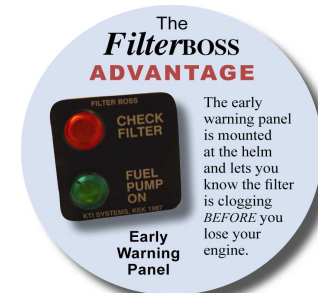Powder coated aluminum housing with stainless steel fittings and tubing
Modular design for tight spaces
12 and 24 volt control voltage
0 to 180 gallons per hour fuel flow

**FC60-12-V
Vertical mounted unit**

Owning a FilterBOSS gives the operator CONFIDENCE that his fuel system is working properly. The PEACE OF MIND knowing that when a problem appears he has the right equipment for the job, and NOT HAVING TO WORRY about surprises.

What makes the *Filter*BOSS better:

Capabilities	SINGLE SPIN-ON	DUAL TURBINES	*Filter* BOSS	FUEL POLISHING SYSTEM
Filter Type	filter/water separator	filter/water separator	filter/water separator	filter/water separator
Water Block	Aquabloc II	Aquabloc II	Aquabloc II	Aquabloc II
Filters	1	2	2	1
Filter Type	Racor Spin-on	twin Racor Turbine	Racor Turbine	Racor or Separ
Water Removal	99%	99%	99%	99%
Clogged Filter warning			●	●
Remote filter warning			●	
Primary filter switching (manual)		●	●	
Primary filter switching (remote at the helm)			●	
Filter servicing port			●	
Fuel polishing			●	●
Back up engine fuel pressure			●	
Quick fuel system bleeding			●	
Fuel transfer			●	●
Leak testing			●	
System testing			●	
Vacuum gage	●	●	●	●
Pressure gage			●	
Flow site			●	
Magnetic conditioner	●	●	●	●
Polishing Timer			●	●
Water detector	●	●	●	●
Pump type			gear/piston	gear
Voltage			12/24/115	12/24/115

● – Standard   ● – Optional

The *Filter*BOSS system is the most complete, most efficient and most reliable fuel maintenance system you can install.

CHOOSING THE RIGHT SYSTEM

Our systems are rated in total fuel FLOW, that is the fuel burned and the fuel returned to the tank. If your engine burns 2 gallons per hour (GPH) and returns 15 GPH it would be a total of 17 GPH. For this example, we would recommend the FC60 system with a rated filter fuel flow from 0-60 GPH. If your fuel flow is more than 70% of the rated system, go to the next higher size. This will allow for more fuel filtration.

You will also want to consider the size of your fuel tanks for the "polishing" mode of our unit.

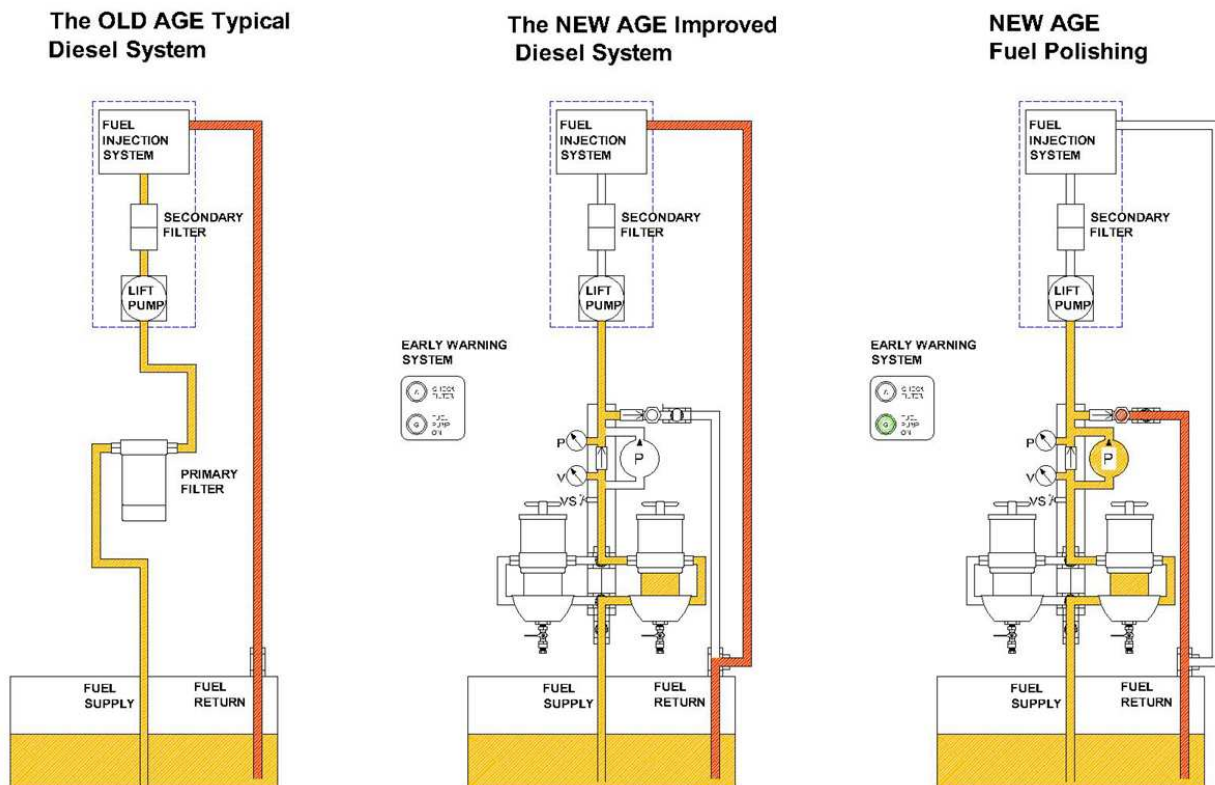| SYSTEM	FUEL FLOW
FC60	0-60 GPH
FC90	0-90 GPH
FC180	0-180 GPH

IF YOU NEED ASSISTANCE IN CHOOSING, PLEASE DO NOT HESISTATE TO CONTACT US.

www.ktisystems.com   800-336-0315

It's time to bring your fuel maintenance system into the new age:

The *Filter*BOSS COMMANDER is both:

The OLD AGE Typical Diesel System

The NEW AGE Improved Diesel System

NEW AGE Fuel Polishing

Now you can have one system that offers you complete fuel maintenance:

KTI SYSTEMS' *Filter*BOSS COMMANDER

The only fuel system that allows the crew to test the fuel system before heading out, has remote filter warning (optional remote operation), backs up the engine fuel pump and allows for onboard fuel polishing.

www.ktisystems.com   800-336-0315

*Filter*BOSS
COMMANDER
"Don't Leave Shore Without It."

OPTIONAL HELM OPERATION

Electric **F**ilter **S**witch
(EFS)
for **all** COMMANDER models.

Mounted at the helm for a one time switch to a clean filter, without needing to go below!

You will still need to change the clogged filter and reset the switch, but perhaps it can wait to be done under better conditions…

The helm mounted panel is 2 ½" square, and comes with an audible signal. When the light and alarm activate, you lift the switch cover and move to Filter 2. Switch cover can not be closed without resetting to filter one; reminding you to clean that element. An emergency release allows for manual override if needed.
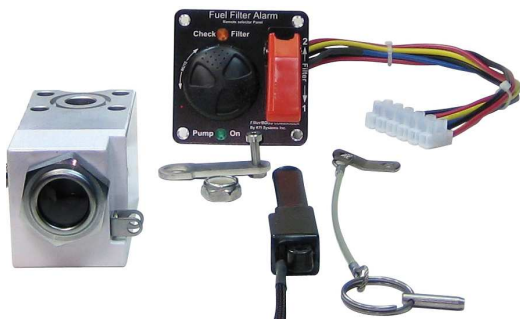
Also available as an upgrade kit to previously purchased COMMANDER models.
PART NO: EFS-12

4

*Filter*BOSS
COMMANDER
"Don't Leave Shore Without It."

Part No: **ETK2008-12/24**

MODULAR SYSTEM

Fuel Pressure Gauge

Vacuum Gauge with tell-tale for easy filter monitoring

Flow Sight for easy system bleeding

System Alert Lights

KTI SYSTEMS' *Filter*BOSS COMMANDER is a dual filter controller with built in vacuum and pressure gauges for monitoring the online filter. This modular system allows for the mounting of the COMMANDER along with two fuel filters and an integrated fuel pump, in the best configuration for your boat. The remote Early Warning Panel (EWP) allows an advance warning at the helm that the filter is clogging by an amber LED light. A green LED light indicates when the fuel pump is on. The warning panel is 1" square so it can be mounted in close quarters. The bleed port along with an integrated fuel pump helps with filter or engine servicing to bleed out air. It will also allow for onboard fuel polishing. The "Filter Filler" helps to top off the filter when changing elements. Additionally the fuel pump can supply fuel flow to the injector unit if the engine lift pump fails. The unit is powder-coated aluminum with stainless steel fittings and a Con-x weather tight cannon plug with 10' electrical harness.

You will need two fuel filters and a fuel pump to use this system as instructed.

5   **www.ktisystems.com   800-336-0315**

FRONT VIEW

VACUUM GAUGE

FILTER SELECT HANDLE

COMMANDER

CHECK FILTER LIGHT

FUSE HOLDER

PRESSURE GAUGE

FLOW SIGHT

PUMP ON LIGHT

PUMP ON/OFF SWITCH

4.75

3/8 X 18 NPT

SIDE VIEW

8.96

11.73

FROM FILTER OUTLET

TO FILTER INLET

ALTERNATE MOUNTING HOLES

FROM PUMP

TO PUMP

FUEL INLET

CON-X PLUG

BLEED RETURN

TO ENGINE

TO ENGINE

FUEL INLET SHUT OFF VALVE

BLEED VALVE SHUT OFF

Part No: ETK2008-12/24

How the Filter Filler Works…..

VOLTAGE	12 OR 24
AMPS	Varies by Pump
FLOW RATE	Varies by Filter & Pump
FUEL TYPE	DIESEL
FUSE	5 AMP
MAX PRESSURE	15 PSI
VACUUM SWITCH TRIP POINT (70 Degree day)	TRIP POINT 7 TO 10 IN HG
PORT SIZE	3/8 NPT or 1/2 NPT
VACUUM GAUGE	-30 IN HG, 2.5" INTERNAL SNUBBER
PRESSURE GAUGE	0-15 PSI, 1" INTERNAL SNUBBER
EARLY WARNING PANEL	STANDARD
10' WIRING HARNESS	STANDARD
FILTER FILLER	STANDARD
FILTER LIGHT	N/A

NEW optional helm operated switch-EFS
See page 4

Remove Filter Filler Cap
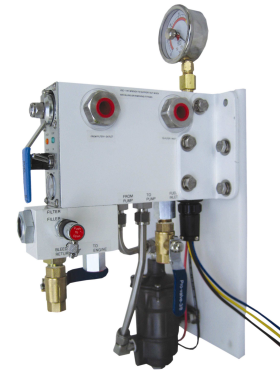

Attach Filler Hose

Insert into filter

Turn on pump, push in valve

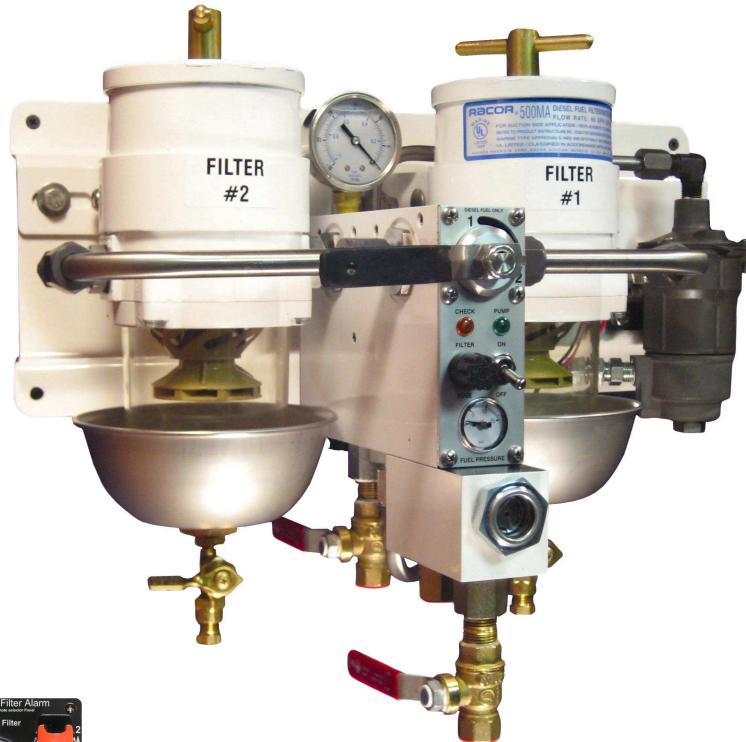ETK2008M custom mounted with fuel pump on HDPE panel, ready for filters.

We are proud of our customized units, if you have a special size requirement for mounting your *FilterBOSS*, call us to help with the design!

6

Filter BOSS COMMANDER

"Don't Leave Shore Without It."

Part No: FC60-12/24

FILTER #2

FILTER #1

Racor 500MA
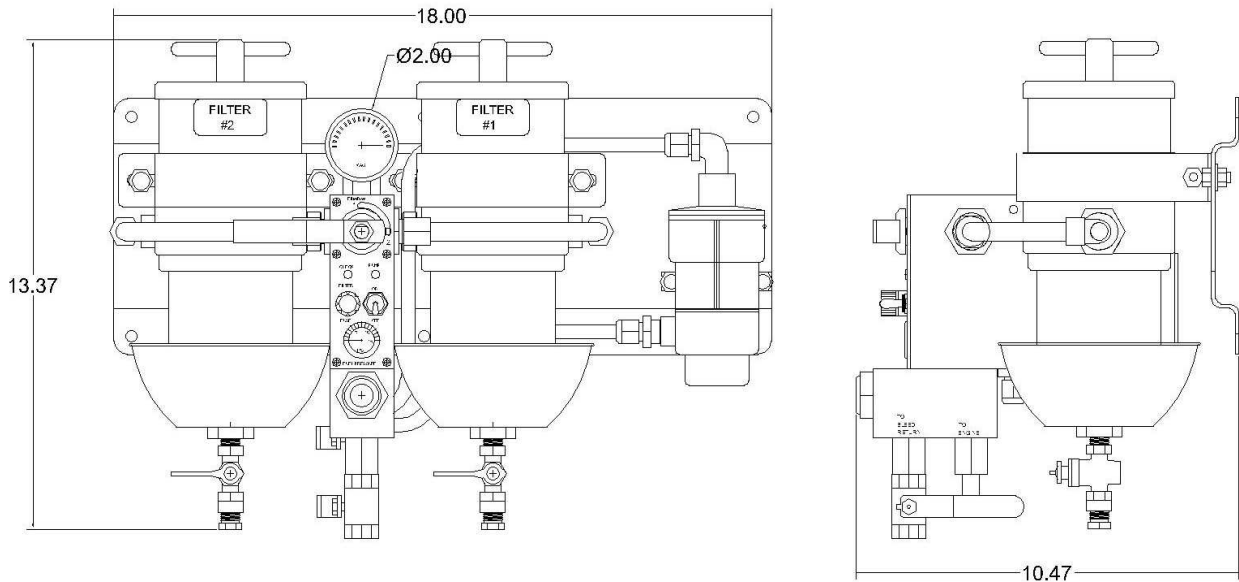
FC60-EFS

Fuel Filter Alarm

The dual filter package comes complete with the *Filter* **BOSS COMMANDER** mounted on a pre-drilled panel with two **Racor 500MA** turbine style filters and the integrated **Walboro** fuel pump. The filters and pump are connected with stainless steel tubing and tested for leaks. All the installer needs to do is mount the dual filter package, connect the fuel inlet and outlet lines, install the early warning panel and connect the pre-assembled wiring harness.

Racor Filters are available in 2, 10 or 30 micron.

www.ktisystems.com   800-336-0315

18.00
Ø2.00
FILTER #2
FILTER #1
13.37
10.47

Part No: FC60-12/24

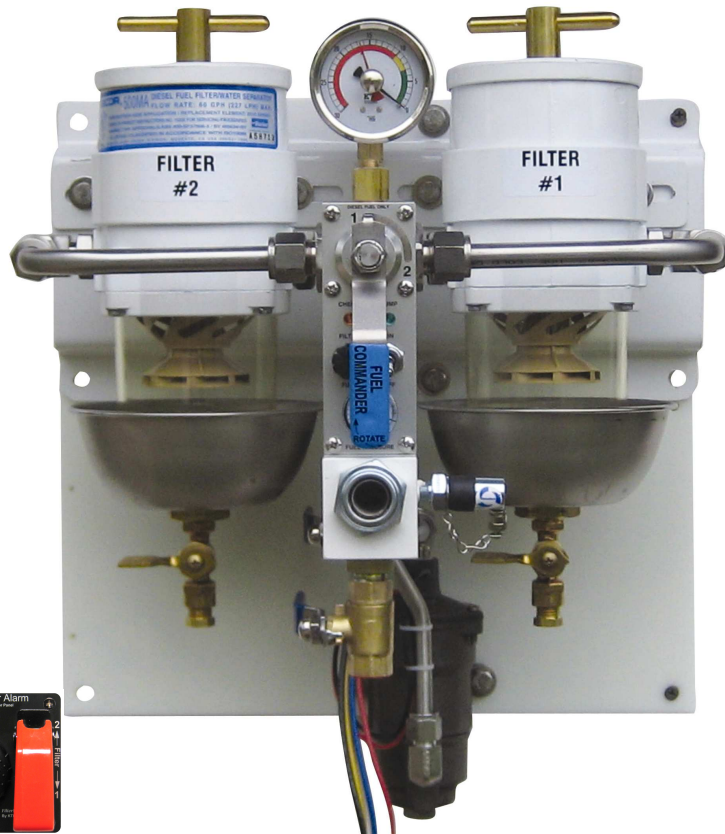|			
VOLTAGE	12 OR 24	**FILTER**	RACOR 500MA
AMPS	3 OR 1.7	WATER REMOVAL	99%
FLOW RATE	45 GPH	MAX FLOW	60 GPH
FUEL TYPE	DIESEL	MICRONS	2, 10 and 30
FUSE	5 AMP	DRAIN VALVE	STANDARD
MAX PRESSURE	15 PSI		
VACUUM SWITCH TRIP POINT (70 Degree day)	TRIP POINT 7 TO 10 IN HG	**FUEL PUMP**	WALBORO
PORT SIZE	3/8 NPT	PRESSURE	6 to 9 PSI
VACUUM GAUGE	-30 IN HG, 2.5" INTERNAL SNUBBER	LIFT	48 INCHES
PRESSURE GAUGE	0-15 PSI, 1" INTERNAL SNUBBER	FLOW RATE	45 GPH
EARLY WARNING PANEL	STANDARD	AMPS	3 AMPS
10' WIRING HARNESS	STANDARD	FILTER	INLET 70 MICRON
FILTER FILLER	STANDARD	**OPTIONS**	WATER DETECTOR
FILTER LIGHT	STANDARD		FUEL HEATER
			SONALERT

8

NEW optional helm operated switch-EFS See Page 4

*Filter*BOSS
COMMANDER
"Don't Leave Shore Without It."
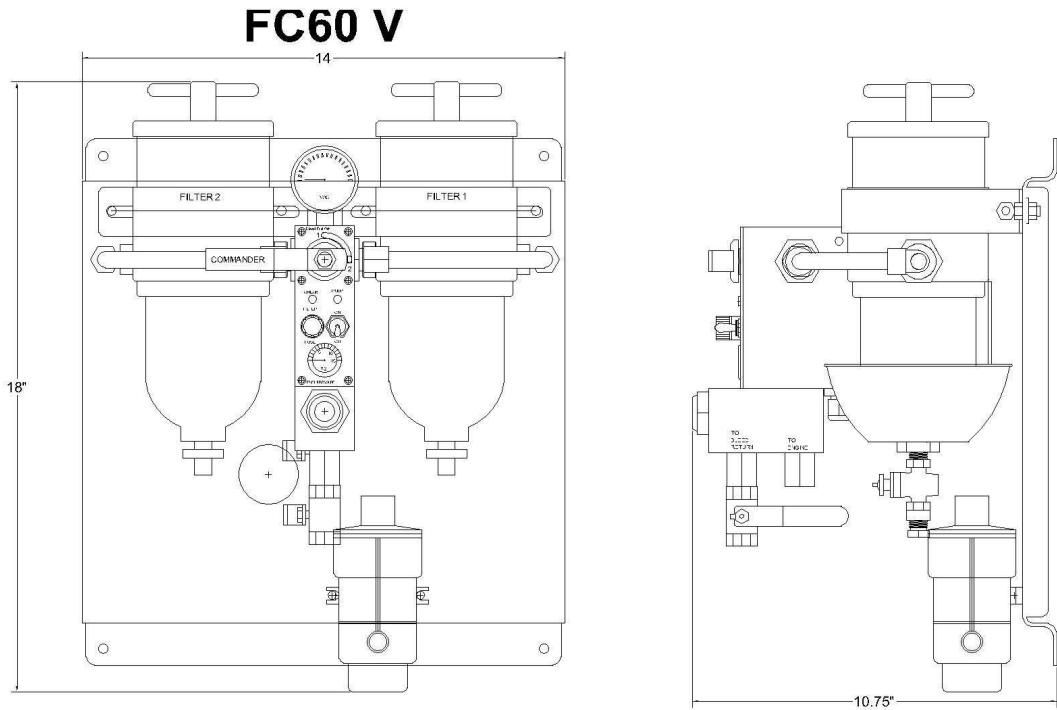
Part No: FC60-V-12/24

FILTER #2

FILTER #1

FC60-V--EFS

The dual filter package comes complete with the *Filter*BOSS COMMANDER mounted on a pre-drilled panel with two **Racor 500MA** turbine style filters and the integrated **Walboro** fuel pump. The filters and pump are connected with stainless steel tubing and tested for leaks. All the installer needs to do is mount the dual filter package, connect the fuel inlet and outlet lines, install the early warning panel and connect the pre-assembled wiring harness.

Racor Filters are available in 2, 10 or 30 micron.

9   **www.ktisystems.com   800-336-0315**

FC60 V

14

18"

FILTER 2   FILTER 1

COMMANDER

10.75"

Part No: FC60-V-12/24

|			
VOLTAGE	12 OR 24	**FILTER**	RACOR 500MA
AMPS	3 OR 1.7	WATER REMOVAL	99%
FLOW RATE	45 GPH	MAX FLOW	60 GPH
FUEL TYPE	DIESEL	MICRONS	2, 10 and 30
FUSE	5 AMP	DRAIN VALVE	STANDARD
MAX PRESSURE	15 PSI		
VACUUM SWITCH TRIP POINT (70 Degree day)	TRIP POINT 7 TO 10 IN HG	**FUEL PUMP**	WALBORO
		PRESSURE	6 to 9 PSI
PORT SIZE	3/8 NPT	LIFT	48 INCHES
VACUUM GAUGE	-30 IN HG, 2.5" INTERNAL SNUBBER	FLOW RATE	45 GPH
PRESSURE GAUGE	0-15 PSI, 1" INTERNAL SNUBBER	AMPS	3 AMPS
EARLY WARNING PANEL	STANDARD	FILTER	INLET 70 MICRON
10' WIRING HARNESS	STANDARD	**OPTIONS**	WATER DETECTOR
FILTER FILLER	STANDARD		FUEL HEATER
FILTER LIGHT	STANDARD		SONALERT

NEW optional helm operated switch-EFS   See Page 4

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*Filter*BOSS
COMMANDER
"Don't Leave Shore Without It."

Part No: **FC90-12/24**

FILTE #2

ILTER #1

FC90-EFS

Fuel Filter Alarm

Check Filter
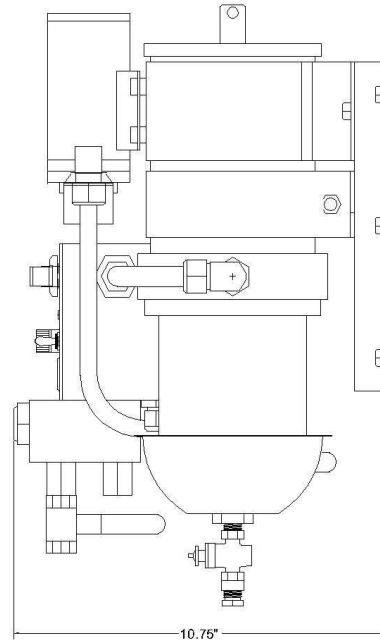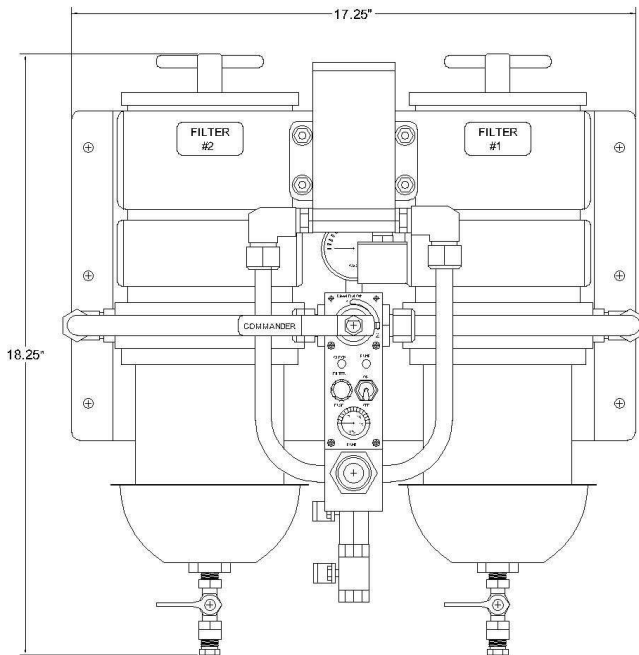
Pump On
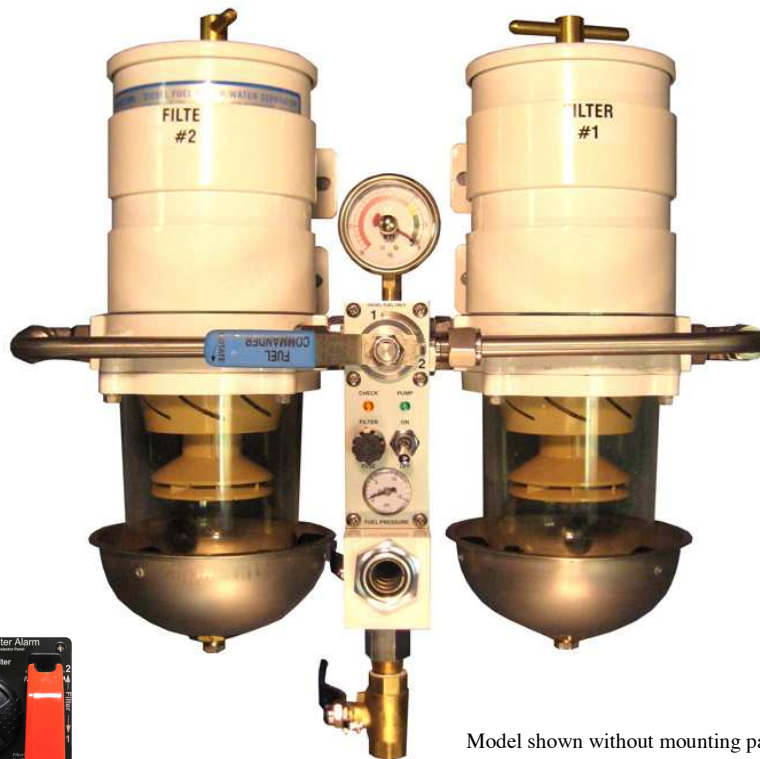
Model shown without mounting panel or fuel pump

The dual filter package comes complete with the *Filter*BOSS COMMANDER mounted on a pre-drilled panel with two **Racor 900MA** turbine style filters and the integrated fuel pump. The filters and pump are connected with stainless steel tubing and tested for leaks. All the installer needs to do is mount the dual filter package, connect the fuel inlet and outlet lines, install the early warning panel and connect the pre-assembled wiring harness

Racor Filters are available in 2, 10 or 30 microns

www.ktisystems.com   800-336-0315

FC90

17.25"

18.25"

FILTER #2

FILTER #1

COMMANDER

10.75"

Part No: FC90-12/24

VOLTAGE	12 OR 24		**FILTER**	RACOR 900MA
AMPS	5		WATER REMOVAL	99%
FLOW RATE	90 GPH		MAX FLOW	90 GPH
FUEL TYPE	DIESEL		MICRONS	2, 10 and 30
FUSE	7 AMP		DRAIN VALVE	STANDARD
MAX PRESSURE	15 PSI		**FUEL PUMP**	UP2/E/CLK
VACUUM SWITCH TRIP POINT (70 Degree day)	TRIP POINT 7 TO 10 IN HG		PRESSURE	15 PSI Max
PORT SIZE	1/2 NPT		LIFT	48 INCHES
VACUUM GAUGE	-30 IN HG, 2.5" INTERNAL SNUBBER		FLOW RATE	80 GPH
PRESSURE GAUGE	0-15 PSI, 1" INTERNAL SNUBBER		AMPS	5 AMPS
EARLY WARNING PANEL	STANDARD		**OPTIONS**	ELECTRIC FILTER SWITCH (EFS)
10' WIRING HARNESS	STANDARD			WATER DETECTOR
FILTER FILLER	STANDARD			FUEL HEATER
FILTER LIGHT	STANDARD			SONALERT

NEW optional helm operated switch-EFS

12

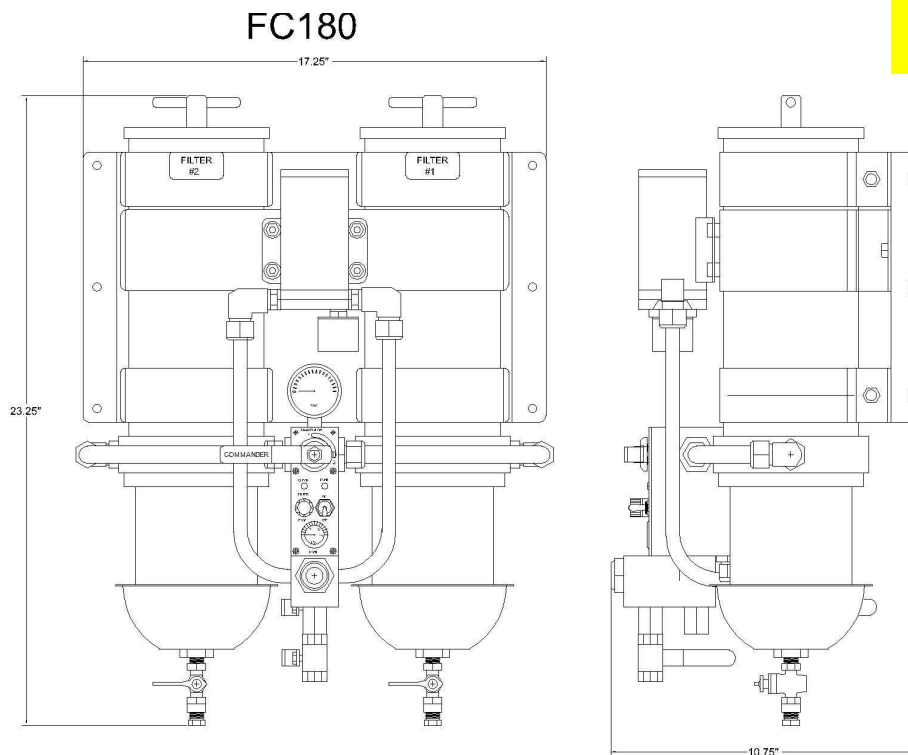# *Filter*BOSS COMMANDER

"Don't Leave Shore Without It."

Part No: FC180-12/24

FC180-EFS

The dual filter package comes complete with the *Filter*BOSS COMMANDER mounted on a pre-drilled panel with two **Racor 1000MA** turbine style filters and the integrated fuel pump. All the installer needs to do is mount the dual filter package, connect the fuel inlet and outlet lines, install the early warning panel and connect the pre-assembled wiring harness. The filters and pump are connected with stainless steel tubing and tested for leaks. The fuel pump is mounted in front of the filters to save space.

Racor filters are available in 2, 10 or 30 microns

FC180

17.25"

23.25"

FILTER #2

FILTER #1

COMMANDER

10.75"

Part No: FC180-12/24

VOLTAGE	12 OR 24
AMPS	5
FLOW RATE	180 GPH
FUEL TYPE	DIESEL
FUSE	7 AMP
MAX PRESSURE	15 PSI
VACUUM SWITCH TRIP POINT (70 Degree day)	TRIP POINT 7 TO 10 IN HG
PORT SIZE	1/2 NPT
VACUUM GAUGE	-30 IN HG, 2.5" INTERNAL SNUBBER
PRESSURE GAUGE	0-15 PSI, 1" INTERNAL SNUBBER
EARLY WARNING PANEL	STANDARD
10' WIRING HARNESS	STANDARD
FILTER FILLER	STANDARD
FILTER LIGHT	STANDARD

FILTER	RACOR 1000MA
WATER REMOVAL	99%
MAX FLOW	180 GPH
MICRONS	2, 10 and 30
DRAIN VALVE	STANDARD
FUEL PUMP	UP2/E/CHK
PRESSURE	0 to 15 PSI
LIFT	48 INCHES
FLOW RATE	160 GPH
AMPS	15 AMPS
OPTIONS	ELECTRIC FILTER SWITCH (EFS)
	WATER DETECTOR
	FUEL HEATER
	SONALERT

14

The **SENTINEL**

Is our Early Warning System Kit and Boost Pump

THE SENTINEL SYSTEM
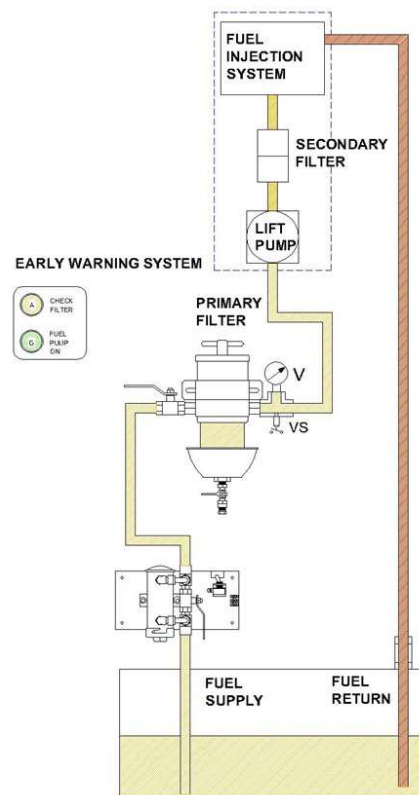
- Single Filter System
- Easy change top-loading filter
- Remote Early Warning detection
- Easy Engine Bleeding
- Back up engine fuel pump
- Easy system testing
- Filter condition gauge
- Modular system

A single filter system to improve that spin-on type filter

NOTE: Engine must be shut down to change filter.

EARLY WARNING SYSTEM

PART NO: ADK1986-2 1/4" NPT
PART NO: ADK1986-3 3/8" NPT

Designed to allow the crew to monitor the fuel filter condition while underway, it is the ONLY vacuum gauge with a *HELM MOUNTED WARNING PANEL*.

When the primary filter starts to clog, the engine driven lift pump will increase suction (vacuum) which can be measured by the gauge. When the needle is in the yellow band, the filter is starting to clog and should be changed. The Early Warning Panel mounted at the helm will also warn the crew with a "Check Filter" light, indicating that the filter is clogging. Included for installation is a filter shut off valve, which allows the crew to check the system for leaks and proper operation prior to departure.

FUEL BOOST PUMP

PART NO: BRK1926
Higher Fuel Flow, 3/8" fittings

The Fuel Boost Pump was designed so it can be installed between your fuel tank and primary filter, or between the primary filter and the engine lift pump. In parallel with the Fuel Boost Pump is a bypass shut off valve; this allows the "normal" flow to travel around the pump which reduces the possibility of the pump clogging. Locating the Fuel Boost Pump between the fuel tank and primary filter will allow for pressure servicing of the filter. The Fuel Boost Pump will supply sufficient fuel pressure and flow for servicing and bleeding, as well as act as a back up if your engine lift pump fails and is not leaking.
The Fuel Boost Pump comes pre-mounted.
Mounting board is 4.5" x 9.5"

16

ACCESSORIES

Fuel Manifold Systems

PART NO: **MAN2502-A** 2 Valves ¼"
PART NO: **MAN2503-A** 3 Valves ¼"
PART NO: **MAN2504-A** 4 Valves ¼"
PART NO: **MAN3752-A** 2 Valves 3/8"
PART NO: **MAN3753-A** 3 Valves 3/8"
PART NO: **MAN3754-A** 4 Valves 3/8"
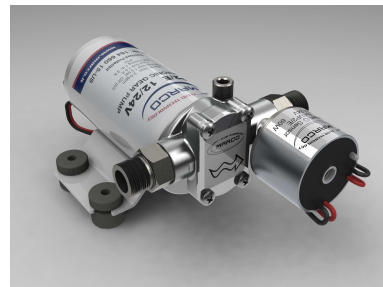 Annodized Aluminum housings

Fuel Pumps

MARCO FUEL PUMPS
PART NO: UP2/E/CLK   80 GPH
PART NO: UP2/E/CHK   160 GPH

Voltage: 12 Volt or 24
Motor Life Approx 2000 hrs
Self Priming with wet gears 4 ft.
Built in pressure control

WALBORO FUEL PUMP
PART NO: FRB-13

Voltage: 12 Volt
Minimum Flow Rate: 45 gph
Maximum Current Draw: 2.3 amps
Life: >18,000 hours
Dry Lift: 48 inches

RACOR WATER DETECTOR

PART NO: **RK20726**   2" Gauge Type Water Detection
Module with light and audio warning. Red 'DRAIN' lamp
illuminates continuously and horn sounds momentarily
when water is detected. Initial power-up self diagnosis
feature and circuit protection included. Plastic case, satin
black dial with white lettering.
1 probe included.
Power draw for 12 vdc = 3 milliamps,

ACCESSORIES

AUDIBLE WARNING ALERT

PART NO: **TMB-V86** 1 3/8" Signal can be easily wired in the helm area for AUDIBLE BEEP-TONE WARNING along with the *Filter*BOSS Early Warning Light.

Alarm is epoxy encapsulated and polarity protected. The solid-state electronics are housed in a 94 V-O flame retardant, heavy-duty thermoplastic enclosure with a stainless steel, corrosion-resistant sound diaphragm., with adjustable mute control.

RACOR TURBINE SERIES FILTERS

Three-stage filter system removes nearly all the water and 100% of harmful solids in fuel. The primary stage centrifuges the fuel, which send the large particulate matter and water droplets down to the sediment bowl. The second stage uses a coalescing ring, which causes the remaining water to form into droplets and fall into the sediment bowl while the dry fuel continues upward. The third stage is an Aquabloc® filter, which removes the remaining minute grit and water. A built in check valve keeps the fuel from draining back into your tank. The MA model is US Coast Guard Approved with a heat shield for application in a marine environment.   **Available in 2, 10, 30 MICRON filters.**

PART NO: **RAC500MA**   Fuel flow is 60 GPH and the inlet/outlet port size is 3/4"-16 UNF which requires two installation fittings to adapt to your fuel line fitting size. This unit also requires drain valves to be added if desired.

PART NO: **RAC900MA**   Fuel flow is 90 GPH and the inlet/outlet port size is 7/8"-14 UNF which requires two installation fittings to adapt to your fuel line fitting size. This unit also requires drain valves to be added if desired.

PART NO: **RAC1000MA** Fuel flow is 180 GPH and the inlet/outlet port size is 7/8"-14 UNF which requires two installation fittings to adapt to your fuel line fitting size. This unit also requires drain valves to be added if desired.
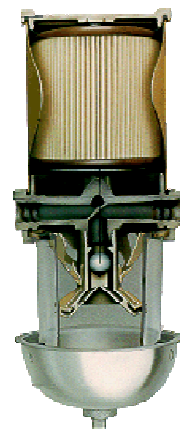
RACOR REPLACEMENT ELEMENTS
       Available in 2, 10, 30 MICRONS

PART NO: **RAC2010** For 500 series
PART NO: **RAC2040** For 900 series
PART NO: **RAC2020** For 1000 series
Available in case pricing

MARINE FUEL SHUT OFF VALVE

PART NO: **M670CL** Drain valve for Racor MA filters.
                (not supplied with filters)

We also carry fuel line, hose barbs, hose clamps, and more... for your complete installation needs.   18

*Filter*BOSS
by K T I S Y S T E M S INC.

THREE Levels of Protection

Basic Protection for coastal cruising

EARLY WARNING SYSTEM
YOUR FILTER

Mounts to any filter
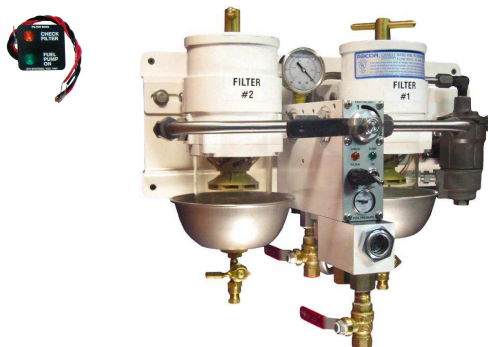Remote Warning (clogged filter)
Vacuum Gauge
Fuel System Testing

Intermediate Protection for offshore cruising

SENTINEL SYSTEM

Single Racor Turbine filter
Remote Warning (clogged filter)
Vacuum Gauge
Fuel System Testing
Back up fuel pressure
Quick system bleeding

Full Protection for blue water cruising

COMMANDER SYSTEM

Dual Filter System
Fuel Polishing
Remote Warning (clogged filter)
Remote Operation (Optional)
Vacuum Gauge
Fuel System Testing
Back up fuel pressure
Quick system bleeding
Filter Filler
Flow site

www.ktisystems.com   800-336-0315   04/2011