

The logo for Fuel Fixers Inc. is a yellow rounded rectangle with the text "FUEL FIXERS INC." in bold, black, italicized capital letters.

## INSTALLATION AND OPERATION INSTRUCTIONS FOR THE FF120D

Mount the FF120D to a solid bulk head or other solid surface capable of supporting at least 35 pounds. There **MUST BE** 10" of clearance above the cover of the filter on the unit so you can remove the filter, and 3" of clearance below the clear bowl, so you can drain the water out as it accumulates.

Use the two mounting holes molded in to the side of the FF120D enclosure. Use stainless screws of adequate length with washers, through bolting the unit is the preferred mounting method (again use s.s. screws and washers). We are in no way responsible for mistakes made during or after installation. It is 100% up to the purchaser / end user to make sure the FF120D is installed / mounted / secured properly. If you are not sure what your doing, **ALWAYS, ALWAYS**, hire someone who is qualified and capable to do the installation for you.

**FF120D RUNS ON 12 VOLT DC SIMPLE 2 WIRE CONNECTION**  
**RED IS + (POSITIVE) BLACK IS - (NEGATIVE)**

Wire the unit to a 15 amp 12 volt breaker, when used in boat applications, or to a 12 volt source with a 15 amp fuse in other applications. Use a minimum 14 gauge wire for distances less than 40' away from 12 volt source and 12 gauge wire for installations over 40' from 12 volt power source.

The lower right hand 3/8" barb is IN from your tank pick up.

The upper left hand 3/8" barb is OUT to your return supply to the tank.

( Note barb size may be changed to 1/2" to accommodate your hose I.D. requirements)

### IMPORTANT:

Use fuel compatible pipe thread sealant if changing barbs or adding valves. If you are not sure what your doing, **ALWAYS, ALWAYS**, hire someone who is qualified and capable to do the installation for you. Use new stainless steel clamps and new, fuel rated hose. We are in no way responsible for mistakes made during or after installation. It is 100% up to the purchaser / end user to make sure the FF120D is installed / mounted correctly.

### TANK / ENGINE APPLICATIONS:

Always use quality stainless steel hose clamps and Fuel grade fuel lines in any application, and U.S.C.G. approved fuel line for any boat application. **ALWAYS** return the polished fuel to the tank you are taking it from, other wise you may over flow the tank you are returning to. If you are trying to transfer fuel from one tank to another, on purpose, always monitor that transfer and **DO NOT** leave the FF120D on AUTO until you have closed and opened the correct valves.

Install quality ball valves on both the IN and OUT lines in order to isolate the unit when the engine is running. These ball valves, especially the out going valve from the unit, must be closed prior to

starting the engine to eliminate the chance of the engine pulling fuel from the return side of the FF120D.

#### STAND ALONE FUEL STORAGE TANK APPLICATIONS:

Run fuel grade hose to The 3/8" barbs (barb sizes can be changed to fit the application. Use stainless steel hose clamps. IN on the FF120D unit is from the pickup or Out from tank. Out on the FF120D unit to the return or IN from the tank.

Filling the filter from the top of the FF120D unit (with diesel fuel), making sure the cover gasket is resealed correctly, will aid in the initial start up of the system.

Set the timer / clock

Remove protective clear plastic cover on timer ( just pull it off)

NOTE :Have the power OFF to the FF120D to prevent you from turning on the pump without meaning to. You won't hurt anything but you may jump if you turn on the unit while programming it. The timer is in military 24 hour time (you can do the math).

TIME: Press and continue to hold the CLOCK button.

Set DAY with the DAY button

Set HOUR with the HOUR button (24 hour time only)

Set MINUTE with the MINUTE button

Programming the ON / OFF event timer:

It is not necessary to set all the events (you will understand as you set it up)

Press the TIMER button will enter the program mode. Keep pressing the TIMER button and you will scroll through all the different events. Go through them all to see the numerous choices. ( you can always easily clear it if you if you do something you didn't want to). There is an ON / OFF time for each event. One hour recommended.

WE RECCOMEND NOT HAVING THE UNIT ON FOR MORE THAN ONE HOUR AT TIME.

IT IS FAR BETTER FOR THE FUEL, YOUR BATTERIES AND FOR THE LONGEVITY OF THE FF120D TO TURN ON AND OFF SAY 6 TIMES A WEEK FOR ONE HOUR THAN 1 TIME FOR 6 HOURS. PLEASE BELIEVE US.

Set the events and duration as you desire, Remember the FF120D pumps up to 120 gallons per hour. A full 200 gallon tank ONLY needs to be polished (run through the FF120D) for a total of 2 hours in a given week. There is NO need to over polish your fuel.

The MANUAL button will move a cursor line to ON / OFF / AUTO

ON is FF120D ON AUTO is timer mode And OFF is OFF

NOTE: It is always a good idea to run the FF120D on manual ON before going to AUTO mode, this will allow you to make sure you are pumping from and returning to the same tank you desire to.

To reset all programming to blank, push the small reset button with a pencil.

Replace protective clear plastic cover (ALWAYS)

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The FF120D comes standard with a 2 micron filter, which is the finest / smallest particle filtration available. A 10 and 30 micron filter is available and would be used initially if your fuel is heavily contaminated and you are finding that the 2 micron filter is clogging quickly. These can be purchased through us at [FUELFIXERS.COM](http://FUELFIXERS.COM) if you like or anywhere that sells Racor 1000 compatible filters.

### **Draining water and contaminates: \*\*\***

Supplies needed:

Container large enough to drain bowl

Rags

Turkey baster or air compressor (Only needed if large contaminates plug drain valve)

The clear bottom bowl of the FF120D is where the water and heavy contaminates will accumulate. As soon as the bowl looks dirty and or water appears and can be seen more than an inch off the bottom of the bowl it is time to drain it. (water will look clear or like a milk shake).

Make sure unit is OFF in the OFF position and has been OFF for at least 5 minutes. (the 5 minute part is to allow the water to settle to the bottom of the bowl)

Place container under the drain fitting at the bottom of the bowl.

Loosen the cover on the top of the filter, until cover is loose, (no need to remove cover completely unless you are also going to change the filter.) this allows the bowl to drain more quickly and is less likely to plug up.

The fitting at the bottom of the bowl should be hand-tight, turn it counter clock-wise. Water and contaminates should flow out. Sometimes it is necessary to blow a slight amount of air back into the bottom of the drain plug if it plugs up with heavy debris. (Always discard fuel and old filters in a correct, environmentally sound and legal way!)

Re-tighten the drain-plug fitting (hand tight only!)

Re-tighten cover, if not changing filter (hand tight only!)

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Turn the FF120D on manually, it should self prime and self bleed. Run for at least 5 minutes and check for leaks. If unit does not self prime make sure lid is tight and gaskets are in place.

NOTE: Always check when you are finished and pump has run, for any leaks from the drain plug , the filter cover and or the T-handle.

### **Changing the Filter:**

Supplies needed;

Small container the diameter of the filter (to catch fuel that will drip from filter)

Rags

New filter

Simply turn the T-handle on the top of the unit counter clock-wise, remove the cover and the large gasket O- ring located in the bottom of the cover. The T-handle also has a small O-ring which is located between the T-handle and the top of the cover. Both will be replaced and come with the new filter.

The filter has two plastic handles which are generally wedged between the sides of the filter and the filter unit. (once in a while filters can be put in upside down, no problem it works either way but just needs a small screw driver to remove it )

Pull filter out using small bowl to catch fuel dripping. (Always discard fuel and old filters in a correct, environmentally and legal way !)

Install new filter and O-rings. T-handle O-ring goes on top of cover

( NOTE: sometimes the replacement filters come with a piece of 1" hard rubber that looks like a radiator hose, this is for older style Racor filters and does not get used in the FF120D.)

Push down on lid while screwing down T-handle. Make snug, no need to over tighten.

Turn the FF120D on manually, it should self prime and self bleed. Run for at least 5 minutes and check for leaks. If unit does not self prime make sure lid is tight and gaskets are in place. On a rare occasion it may be necessary to pour diesel fuel into the top of the filter, up to the level of the top of the filter, then reinstall the cover and T- handle.

NOTE: Always check when you are finished and pump has run, for any leaks from the drain plug , the filter cover and or the T-handle.

#### **ERRORS AND OMISSIONS**

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