

# Fuel Filter Changing and Fuel Line Bleeding

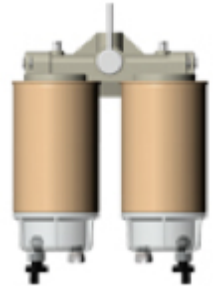
## (from PNWCO on Yahoo Groups)

**Notes: Be sure tanks are full!**

**Have lots of rags, plastic bags and two strong filter wrenches. Rubber strap are type good. Servicing Racor filters is not possible while engine is running. (per Racor documentation)**

### RACOR FILTERS

1. Close both tank outlet valves.
2. Place catch pan beneath filter.
3. Open drain fitting in bottom of filter bowl (counterclockwise) and vent fitting (10mm) on top of mounting head. Fuel within filter assembly will drain into catch pan.
4. Discard fuel in catch pan.
5. Remove filter bowl and then filter. (Note: The filter may come off the head rather than just the bowl. Use two strap wrenches to get a good grip. This may have to be done on a workbench.)
6. Reassemble with new filter element and o-ring. Wet o-rings with motor oil.
7. Close drain fitting in bottom of bowl and replace vent fitting finger tight.



### ENGINE FUEL FILTER

8. Remove engine mounted secondary filter. (simply unscrew it into a 1 quart plastic bag.)
9. Replace secondary filter. Make sure both drain (if there is one) and vent fittings are closed. Don't bother trying to install it wet, it'll make a mess and you have to bleed it anyway.

### BLEED THE SYSTEM

10. Bleed in to remove air from system:
  - a. Open both tank shutoff valves
  - b. Place drip catch pan under engine filter
  - c. Remove vent fitting from primary filter assembly (RACOR). The filter assembly will start to fill with fuel because it is lower than the fuel level in the tanks and in a few minutes will overflow out the vent fitting. Use an absorbent pad to absorb the random fuel bubbles that emerge during the process. The primary filter is now bled in. (Note: No problem if the tanks aren't full enough. It is easy to pump fuel through both filters in one operation.)
  - d. Replace vent fitting and tighten. (Note: It is a good idea to allow a tablespoon or so of fuel to overflow to make sure all air is purged.)
  - e. Remove vent fitting from secondary filter.
  - f. Move toggle underneath fuel pump back and forth until vent hole spurts fuel. If no fuel observed coming out vent turn engine over slightly to rotate the pump drive cam and repeat. A one second engagement with start key is usually sufficient. You should be rewarded with fuel. It goes remarkably quickly and you don't need to keep a can of stale diesel on board. The secondary filter is now bled in. (Filling both a Racor and the engine filter took about 150 pump strokes. Pump resistance increases just before fuel spurts out so go slowly at the end.)
  - g. Tighten vent fitting in secondary filter.
11. Start engine and run for 20 minutes to check for leaks and to be sure there is no air in the system. If engine does not start, continue as follows.
  - a. Use the hand pump and pump for about half a minute to automatically vent the fuel injection pump.
  - b. Slacken off the injector delivery line nuts and set the engine speed control to wide open throttle (WOT). Turn the engine over with the starter motor until fuel comes out of the delivery lines. Avoid fuel spillage. Tighten delivery line nuts.

