

## **Changing the Ferrari 328 Fuel Filter**

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This is really not a difficult job, just requires a bit of contortion; plan on about 2 hours the first time. I did this on my garage floor, but if you have access a lift might prove ideal. Factory recommends replacing filter at 30k/52.5k/75k mile services.

*(example shown is 1988.5 car, but the entire series is identical)*

### **Parts required:**

Bosch fuel filter #0450905601-85E (box labeled #71039) from BAP-Geon \$16  
Copper fitting washers NAPA #1242 & #1243 (not included with my filter) approx \$1.20

### **Tools required:**

Floor jack/frame stand  
Lug nut wrench (I use Snap-On 7/8" with aluminum insert & zip-lock plastic bag to prevent marring lug bolts)  
16mm & 17mm flare nut wrenches  
17mm & 19mm combination wrenches (*reversible ratcheting 17mm combination wrench would have made removing firewall bracket much easier*)  
Large adjustable wrench  
Metric 6-pt 3/8-drive socket set  
Catch pan (I used small kitty-litter pan)

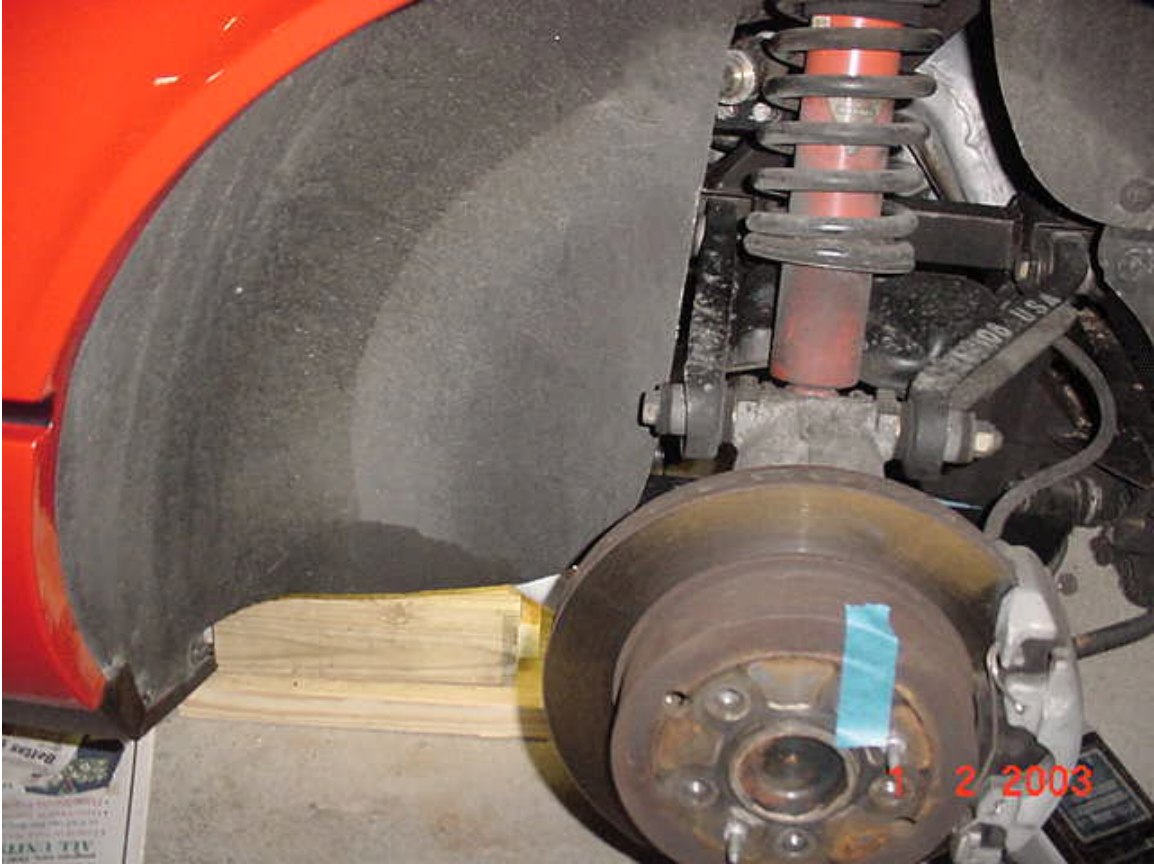
Disconnecting the battery is always advisable (can simply disconnect ground strap at left front). My fuel injection manual recommends disconnecting battery then (with ignition off) jumping 12v (+) to cold-start injector for 10 seconds to relieve K-Jetronic system pressure. Can't comment on this; instead I avoided running the car for a week beforehand and had no problems. Goes without saying to work in well-ventilated area unexposed to open flames, etc.

### **Procedure in Detail:**

Block the front wheels. Break the torque on the left rear wheel lug nuts (I lifted only the left rear wheel, but you could lift the entire rear section if desired):



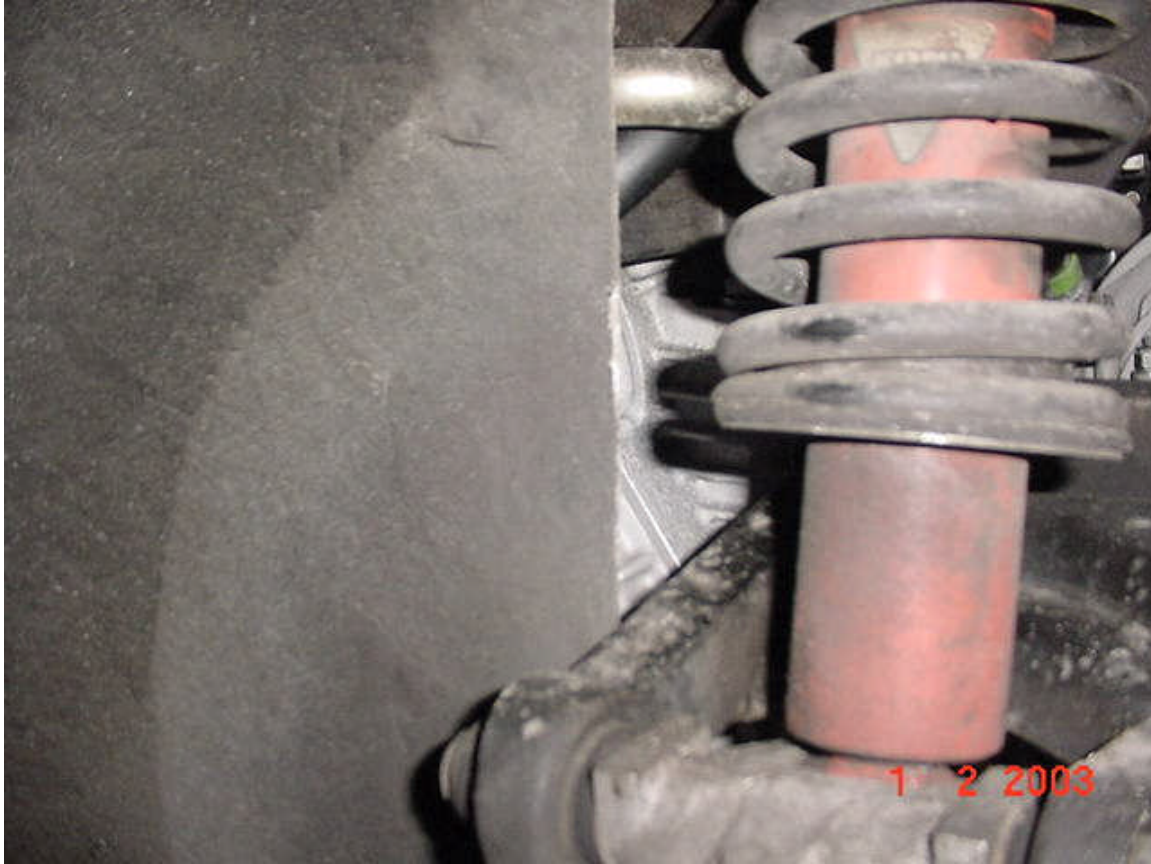
My floor jack would only fit under the car diagonally from the left rear corner; positioned on suspension-mount frame section. I used a thin piece of wood and OR towel to protect the frame:



My jack stands were too tall to position under the frame rail once lifted, so I improvised a stand out of 4x4 wooden blocks securely fastened together. Blue masking tape is index of wheel location on rotor.

Depressurize fuel system, disconnect battery, well-vent area, no open flames, etc.

Remove the lug bolts and wheel. Inner wheelwell shield removal is not necessary. The left fuel tank and fuel pump are readily visible; trace the braided outflow fuel line to the fuel filter mounted on the firewall bulkhead. While in the vicinity inspect the tank-to-pump and crossover rubber fuel lines:



Both factory fittings on my car had yellow paint daub markings. Using the 16mm flare wrench (*note: this is not a standard size*) loosen the upper metal fuel line coupling from the adaptor fitting (which will be removed on bench). I was able to hold the adaptor at the lower fitting with a 19mm wrench; despite cleaning off undercoating I was unable to fit my 17mm flare wrench over the lower braided coupling and eventually was successful using an 11/64 flare wrench (17.4mm). After loosening these lines I had a reasonably steady flow of gasoline as the fuel filter drained. Unfortunately this acts as a solvent on the undercoating making a bit of a mess.

Most challenging part of the entire procedure is removing the 17mm hex nyloc filter bracket retaining nut. Due to the curvature of the bracket, it cannot be directly assessed with a standard socket. A crows-foot with extension might work, but I was able (with patience) to loosen using a 17mm open-end wrench pivoting parallel to the aluminum firewall sheeting. Be prepared to catch the nut and washer – the encircling bracket is quite springy! Fuel filter is then easily removed from car. After filter is removed firewall appears such:





Each end of the fuel filter has a different brass adaptor fitting which is re-used. Holding the nut molded into the filter with large adjustable wrench, I removed each with a 6-pt socket (16mm & 15mm as I recall) to prevent marring flats. Two small (also differently-sized) copper washers function as in-line gaskets; NAPA sells slightly thinner (perfectly functional) washers as parts #1242 and #1243 for about 60¢ each [the Wix replacement for this Bosch filter comes with two sets of gaskets that were identical to factory that I was able to persuade the parts counter gentleman to sell for \$2]. Transfer the adaptor fittings onto respective ends of the new filter; I am unaware of a specific torque value but went to “tight” back-holding molded hex on filter. Arrow on filter indicates direction of fuel flow (from under car, arrow should point directly upward). Notice the slight difference in shoulder configuration between the original (with undercoating) and current Bosch issue:



New filter with adaptors installed:



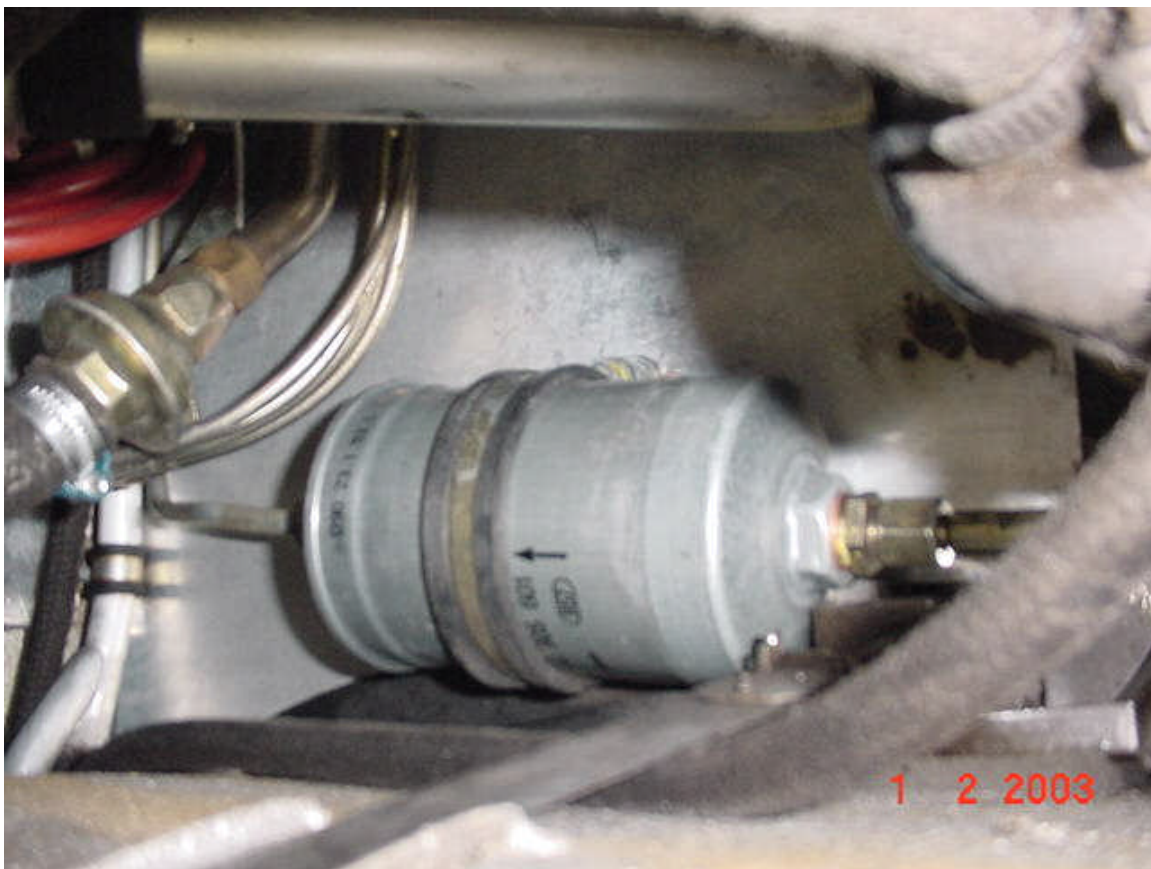
I placed a piece of masking tape at the approximate location the bracket should be located on the new filter (using the previous as a reference). I tried several techniques but was



most successful loosely installing the bracket on the firewall stud with hex nut and washer then maneuvering the new filter down into the bracket from above. Tighten the bracket slightly but leave the filter mobile at this point.

Center the outlet fuel line over the adaptor and hand-tighten the coupler fitting. I ran it down, then partially loosened, then re-tightened to ensure the line was centered. Similarly affix the lower input braided line. There is a small bracket for the gas tank strap near the filter – I made sure the lower aspect of the filter was not against this (to prevent vibration-induced abrasion/rupture of filter) and tightened the bracket nut. Tighten the fuel line couplers; again use a 19mm to hold the lower adaptor fitting while tightening the lower coupler and use 16mm flare on the upper.

Fuel filter re-installed in place on firewall (view upwards):



As access to the filter is difficult once the car is returned to the ground, I chose to run the car *in situ* to test for leaks. Gearshift in neutral, standing beside car started up; sputtered a bit and the fuel pump made some noise until the system re-pressurized (about 15sec). Shut car off and inspected fittings- fortunately no leaks. Reinstalled wheel and lightly tightened lug bolts. Jack car & remove frame stand. Torque wheel bolts to 72ft-lbs apiece, going around bolt circle twice.

Congratulations. Suspect this is a \$125 job at the dealer.