

# 2003-2007, 5.9L Fuel System Return Flow Test Procedure

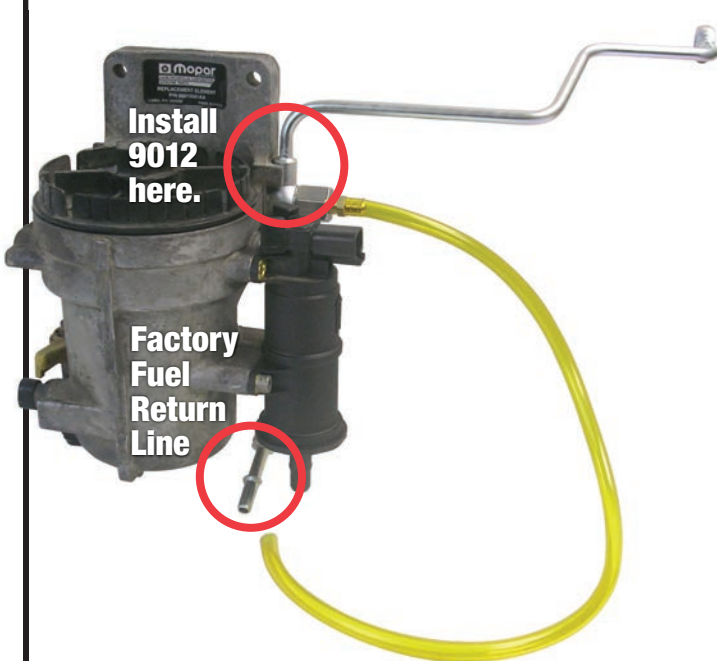
## For Rail Relief Valve Testing:



**GG-RAILTEST-MILLER-9013**  
Shorter 14mm  
– use longer brass barbed fitting

- Remove the banjo bolt on the rail holding return fuel line to the relief valve.
- Replace the banjo bolt with the 9013 (shorter 14mm fitting with long brass barbed fitting) and install hose over barbed fitting.
- Start engine, there should be no fuel flow into the test beaker. You may want to lightly press the throttle to increase the rail pressure. This proves that the relief valve is not opening at a higher rail pressure than idle rail pressure.
- If no fuel is found in the beaker, then the rail relief valve has tested good. Remove the test equipment, reconnect the return fuel line and proceed to the second part of the test.

## For CP3 Injection Pump Return Flow Testing



Install  
9012  
here.

Factory  
Fuel  
Return  
Line



**GG-CP3-INJTTEST-MILLER-9012**  
Longer 12mm  
– use shorter brass barbed fitting

The engine must be at operating temperature to perform this test.

- Remove the banjo bolt from the fuel drain tube on the back of the fuel filter housing. Install the 9012 (longer 12mm bolt with shorter brass barbed fitting) in its place and slide the hose over the barbed fitting. Then run the hose to metering beaker. This isolates the return flow of the CP3 injection pump that is regulated by the cascade overflow valve.
- Start the engine and idle it for one minute. You are looking for less than 1000ml per minute from the fitting. If there is more than 1000ml of fuel in the beaker, replace the cascade overflow valve.



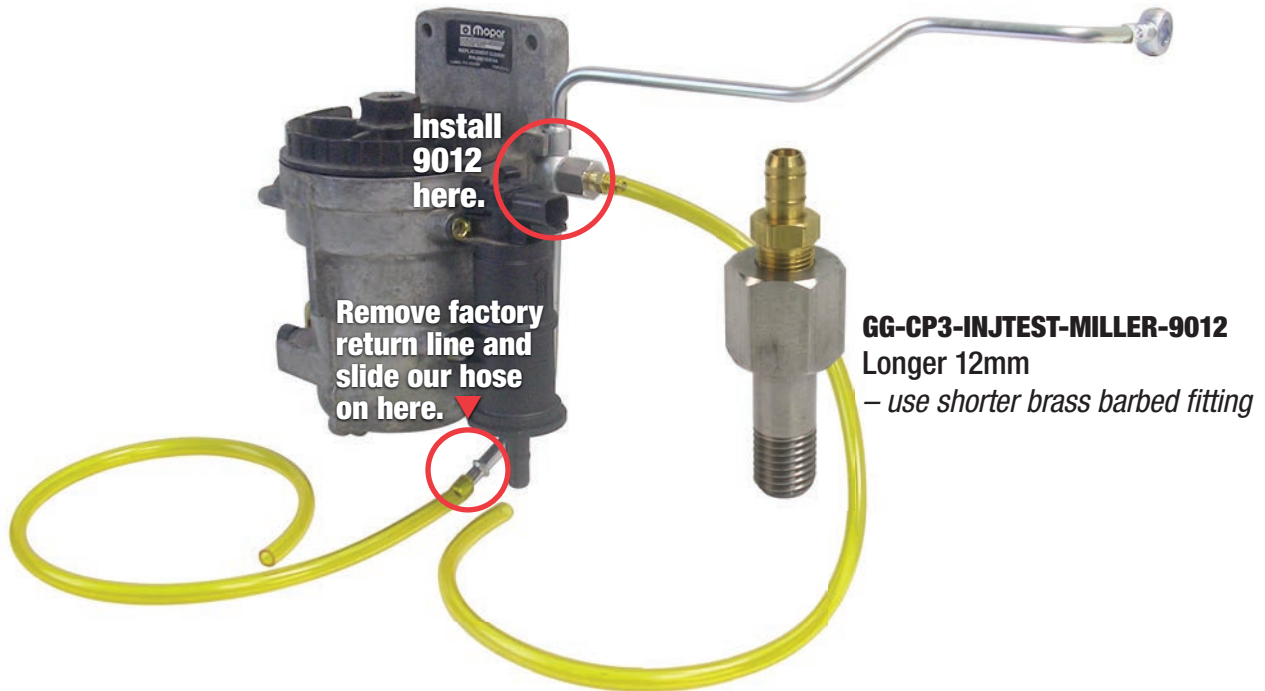
If you need more assistance, we are only a phone call away.

**(770) 886-2500**

Monday–Friday  
8:30am–5:30pm EST

**GENO'S GARAGE, INC.**  
1150 Samples Industrial Drive  
Cumming, Georgia 30041

## For Injector Return Flow Test



The engine must be at operating temperature to perform this test.

- Use tool 9012 (longer 12mm bolt with the shorter brass barbed fitting) at the rear of the fuel filter housing (same location as CP3 return flow test) and route the hose back to the fuel tank or into a clean bucket.
- Just behind the fuel filter housing, you will find a junction where all the injection return lines have merged into one return line. This connects to the fuel hose that sends returned fuel back to the fuel tank. Remove the line going to fuel tank and slide a hose over the metal line to capture and meter the fuel being returned from the injectors.
- Start engine and idle for one minute.
- If the fuel in the beaker exceeds 180ml, retorque all crossover tubes in cylinder head. Then perform this test again. If fuel flow still exceeds 180ml in one minute, use injector block off tool (LT-TESTCAP - sold separately) and start capping off injectors at the rail one by one. Do this until you find that the fuel return does not exceed 180ml. You may need more than one injector cap off tool if more than one injector is not working properly by returning too much fuel. You may use up to 3 cap off tools at a time to help isolate which injectors are not performing properly.

If you have used three cap off fittings and the injector return flow still exceeds 180ml, we suggest having all six injectors tested at a fuel injection shop or replacing all six injectors.



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