TO: Service Locations

FROM: Service Operations

SUBJECT: W470589209100 - Fuel Flow/Aeration Test Adaptors

GENERAL INFORMATION

The Detroit™ special tool group has released a new essential tool for the fuel system on DD13, DD15, and DD16 engines equipped with a two-filter fuel system.

For service locations that are EPA07 and EPA10 DD certified in SSI, no action is required. Tools will be automatically shipped and invoiced to your facility during the month of April. Locations that are NOT EPA07 and EPA10 DD certified in SSI, will need to order the tools through the Paragon system.

The W470589209100 fuel flow/aeration test adaptors, used in conjunction with the existing J-48708 fuel flow tool, will measure fuel flow from the pressure limiting valve, injector amplifier return, and injector needle return.
W470589209100 Fuel Flow/Aeration Test Adapters Kit Content

1. W470589209101 – Injector amplifier return flow test adaptor
2. W470589209102 - Pressure Limiting Valve (PLV) flow test adaptor
3. W470589209103 - Injector amplifier and needle return line caps
4. W470589209104 – Injector needle return flow test adaptor
5. 3/32 x 7/16 x 5/8 O-ring (spare parts)
6. 3/32 x 1/2 x 11/16 O-ring (spare parts, one O-ring to be installed on the J-48708-4 threaded fitting)
TOOL USAGE INSTRUCTIONS

Pressure Limiting Valve (PLV) Flow Test Adaptor Installation

⚠️ WARNING:

PERSONAL INJURY
To avoid injury, never remove any engine component while the engine is running.

1. Remove the Pressure Limiting Valve (PLV) line banjo bolt from the fuel rail. Retain the two sealing washers for reuse during this procedure.

2. Using the sealing washers removed in step 1, install the W470589209102 PLV flow test adaptor (1) through the PLV line and into the fuel rail. Torque to 15 N·m (132 lb-in.).
3. Connect the female fitting (2) of the J-48708-2 clear hose, part of J-48708 Fuel Flow Tool kit, to the W470589209102 PLV flow test adaptor (1). Hand-tighten the fitting.

4. Attach the quick-connect end of the J-48708-2 line to the J-48708-1 container.
5. Carry out the test as instructed in Power Service Literature (PSL).

Pressure Limiting Valve (PLV) Flow Test Adaptor Removal

1. Remove the special service tools in reverse order of installation. Discard the PLV line sealing washers.
2. Install the PLV line banjo bolt with two new sealing washers. Torque to 30-33 N·m (22-24 lb·ft).

Injector Amplifier and Needle Return Flow Test Adaptors Installation

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<th>WARNING:</th>
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1. Remove the return lines P-clip bolt (1) and the P-clip.

NOTE: It may be necessary to hold the cylinder head fittings with the J-48836 Offset Wrench while loosening the return line fittings.

2. Use the J-48770 HP Fuel Line Torque Adaptor (1) to disconnect the injector needle and amplifier return lines from the cylinder head fittings (2).

NOTE: Do not remove the return lines from the engine.

3. For KM63 Gen 2: Remove the two bolts securing the return lines to the fuel filter module.
   For all others: Remove the needle and amplifier return line banjo bolts from the fuel filter module.
4. For KM63 GEN2 only: Disconnect the needle, amplifier and PLV return lines from the fuel filter module.
5. Remove the two cylinder head fittings.
6. Install the two W470589209103 injector amplifier and needle return line caps. Torque the caps to 15 N·m (132 lb·in.).
7. Install the W470589209101 injector amplifier return flow test adaptor (1) and the W470589209104 injector needle return flow test adaptor (2) onto the cylinder head. Hand tighten the adaptors.

8. Install a 3/32 x 1/2 x 11/16 O-ring, supplied in the W470589209100 kit, onto the threaded fitting at the end of the J-48708-4 line. Do not remove the O-ring from the fitting at the end of the test.
9. Connect the J-48708-2 line (1) to the W470589209101 injector amplifier return flow test adaptor, and the J48708-4 line (2) to the W470589209104 injector needle return flow test adaptor. Hand tighten the lines.

NOTE: Due to low fuel flow in the injector amplifier and needle return lines, air can be better observed if the J-48708 clear lines are looped, and the lines are filled with fuel between cylinder head and the loops.

10. Using zip ties, create a loop in each of the J-48708 lines.
12. KM63 GEN2 only: Connect the needle, amplifier and PLV return lines to the fuel filter module.
13. For KM63 Gen 2: Install the two bolts securing the return lines to the fuel filter module. Torque to 30 N·m (22 lb·ft). For all others: Connect the needle and amplifier return line onto the fuel filter module and install the banjo bolts and the sealing washers. Torque to 30-33 N·m (22-24 lb·ft).
14. Carry out the test as instructed in PSL.

Injector Amplifier and Needle Return Flow Test Adaptors Removal

1. Remove the special service tools in reverse order of installation.
2. Install the two cylinder head fittings with new sealing washers. Torque to 55-60 N·m (40-44 lb·ft).
3. KM63 GEN2 only: Using new O-rings, connect the needle, amplifier and PLV return lines to the fuel filter module.
4. For KM63 Gen 2: Install the two bolts securing the return lines to the fuel filter module. Torque to 30 N·m (22 lb·ft). For all others: Connect the needle and amplifier return lines onto the fuel filter module and install the banjo bolts with new sealing washers. Torque to 30-33 N·m (22-24 lb·ft).
5. Install the return lines P-clip and the P-clip bolt. Torque to 15 N·m (132 lb·in.).
6. Connect the injector needle and amplifier return lines to the cylinder head fittings. Torque to 25 N·m (18 lb·ft).

ADDITIONAL INFORMATION

Ordering Information - Tools will be automatically shipped and invoiced to your facility during the month of April. Locations that are NOT EPA07 and EPA10 DD certified in SSI, will need to order the tools through the Paragon system. Tools can be ordered through Paragon using a DDE supplier prefix.
- DDE W470589209100 Fuel Flow/Aeration Test Adaptors

CONTACT INFORMATION

Please contact the Detroit™ Customer Support Center at 800-445-1980 or email csc@daimler.com if you have any questions.