
ISSUE
The engine may stall when coming to a stop or after clutch disengagement. This may be caused by one or more of the following:
- System-related conditions identified using the Diesel Engine Performance Chart,
- Fuel injection pump contamination or
- Use of low lubricity fuel.

ACTION
Use the Diesel Engine Performance Chart and the following procedure to diagnose and repair the stall condition.

DETAILED SERVICE PROCEDURE
Completing the Engine Performance Chart assists technicians in identifying and resolving diesel engine stalling concerns caused by system-related conditions, such as fuel system restrictions.

1. Complete the “Engine Performance Chart - Diesel Engine Diagnostic Guide”
   - 7.3L base engine - FPS-8512-C;
   - 7.3L turbo-charged engine - FPS20269101;
   - 6.9L engine - FPS-8433-C
giving additional attention to the following items:
   a. “Fuel Quality Check”
   b. “Fuel Supply System Check”
   c. “Fuel Return Line Pressure Check”
   d. “Low Idle (RPM) Check” - (make sure that idle RPM is not set below RPM designated on Emissions Label)
   e. “Injection Pump Timing Check”

NOTE
DO NOT REPLACE THE FUEL INJECTION PUMP UNLESS:
- INJECTION PUMP TIMING ADVANCE IS NOT AT SPECIFICATION (REFER TO ENGINE PERFORMANCE CHART), OR
- INJECTION PUMP TRANSFER PRESSURE (MEASURED AT THE RPM DESIGNATED ON THE ENGINE PERFORMANCE CHART) IS NOT AT SPECIFICATION.

Perform vehicle road test to verify effectiveness of any corrections made during the diagnostic procedure.

IF ENGINE STALL CONCERN HAS BEEN RESOLVED, DO NOT PROCEED ANY FURTHER.

2. Remove the governor assembly cover from the injection pump using the “Governor Cover Assembly And Gasket Removal And Installation Procedure Below. Visually inspect the inside of the pump:
   a. If a red rust color is present, excessive water has run through the pump. Replace the injection pump, drain the water separator, replace the fuel filter and clean and test the “Water In Fuel” sensor for proper operation.
   b. If a black sludge is present, the fuel system is contaminated. Flush the fuel system completely, replace the injection pump, drain the water separator, replace the fuel filter, and clean and test the “Water In Fuel” sensor for proper operation.
   c. If the pump is clean inside, the pump is fully functional. Reinstall the Governor Cover assembly to the injection pump using the Governor Cover Assembly And Gasket Removal And Installation Procedure which follows.
COVER ASSEMBLY AND GASKET REMOVAL AND INSTALLATION PROCEDURES

REMOVAL

CAUTION
CLEAN THE TOP OF THE PUMP WITH SOLVENT BEFORE REMOVING THE GOVERNOR COVER ASSEMBLY. EXTREME CARE MUST BE TAKEN TO PREVENT DIRT OR FOREIGN MATERIAL FROM ENTERING THE INJECTION PUMP TO PREVENT PUMP DAMAGE.

1. Disconnect the battery.
2. Disconnect the Fuel Shut-Off (F.S.O.) and Housing Pressure Cold Advance (H.P.C.A.) solenoid wires from the governor and remove the fuel return line connector fitting and seal from the top of the governor cover, Figure 1.
3. Remove the seal wire (if applicable).
4. Remove the three (3) governor cover screws and washers, Figure 2.
5. Remove the governor cover and gasket.

INSTALLATION

1. Carefully install the governor cover assembly to the pump as follows, Figure 3:
   a. Make sure the screws are NOT in the governor cover.
   b. Position the governor cover about 1/4” forward of its final alignment (toward the front of the vehicle and about 1/8” above the pump).
   c. Move the cover rearward and downward into position so that the arm contacts the link, being careful not to roll the gasket, Figure 3.
   d. With the cover on the pump and before installing the screws, move the governor cover forward and backward until preload of the internal spring is felt, indicating that the F.S.O. is NOT binding internally.
   e. Reinstall the three (3) governor cover screws with one flat washer and one lock washer with each screw. The flat washer must be against the pump cover. Screw with the seal wire hole must be in the rear position of the governor cover. Tighten screws to 4.5 N•m (40 lb-in), Figure 2.
2. If F.S.O. clicking is NOT heard/observed:
   a. DO NOT start the engine.
   b. Check for battery voltage (minimum 10 volts) at F.S.O. connector, Figure 5:
      - If no voltage, service open circuit in wiring and repeat solenoid “click” check.
      - If voltage is present, continue to next step.
   c. Remove the governor cover. Check engagement of F.S.O. and internal governor components. Refer to Figure 3.
   d. Reinstall the cover carefully, following the previous instructions in step 1, and observe that F.S.O. clicking is heard.
3. If F.S.O. clicking is heard/observed:
   a. Turn off ignition switch.
   b. Connect the F.S.O. and H.P.C.A wires.
c. Reinstall original return line connector fitting with a new connector fitting seal (if appropriate).

d. Reinstall the fuel return line.

e. Start engine and check for leaks.

f. If no leaks are evident, install new seal wires (if appropriate) and crimp the seal, Figure 2.

Perform vehicle road test to verify effectiveness of any service procedures performed.

IF ENGINE STALL CONCERN HAS BEEN RESOLVED, DO NOT PROCEED ANY FURTHER.

4. Try different blends / suppliers of #2D diesel fuel (winter blend #2D fuel for temperatures below 20° F) or add “Stanadyne All Season Diesel Fuel Conditioner” to fuel per directions on the container. Conditioner may require using one full tank of fuel to take full effect, but often begins working after driving 2-5 miles. Other brands of conditioners or additives are not recommended. The Stanadyne conditioner was tested and found to be the best available product for resolving the low lubricity fuel-related engine stalling concern without adverse side effects. Case lots of the conditioner can be purchased through Stanadyne Regional Distributors, Figure 6. Individual bottles of the conditioner can be purchased through many stanadyne and John Deere dealers:

<table>
<thead>
<tr>
<th>STANADYNE DIESEL FUEL CONDITIONER</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>940511A Remove Governor Cover, Check For Presence Of Rust Or Sludge, Re-install Cover - F-Series</td>
<td>0.7 Hr.</td>
</tr>
<tr>
<td>940511B Remove Governor Cover, Check For Presence Of Rust Or Sludge, Re-install Cover - E-Series</td>
<td>0.8 Hr.</td>
</tr>
<tr>
<td>940511C Additional Time To Replace Fuel Injection Pump, Clean, Test (and replace if necessary) The “Water In Fuel” Sensor, Replace Fuel Filter - F-Series</td>
<td>2.6 Hrs.</td>
</tr>
<tr>
<td>940511D Additional Time To Replace Fuel Injection Pump, Clean, Test (and replace if necessary) The “Water In Fuel” Sensor, Replace Fuel Filter - E-Series</td>
<td>3.1 Hrs.</td>
</tr>
<tr>
<td>940511E Additional Time To Flush Fuel Lines - All Vehicles</td>
<td>0.5 Hr.</td>
</tr>
</tbody>
</table>

5. Refer to Figure 6 for a list of Stanadyne Regional Distributors.

Please contact the distributor nearest you.

OTHER APPLICABLE ARTICLES: NONE


<table>
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<tr>
<th>OPERATION</th>
<th>DESCRIPTION</th>
<th>TIME</th>
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<tbody>
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<td>Remove Governor Cover, Check For Presence Of Rust Or Sludge, Re-install Cover - F-Series</td>
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DEALER CODING

<table>
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<tr>
<th>BASIC PART NO.</th>
<th>CONDITION CODE</th>
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<tr>
<td>9A543</td>
<td>49</td>
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</tbody>
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OASIS CODES: 607000
RETURN LINE CONNECTOR FITTING INSTALLATION

RETURN LINE CONNECTOR FITTING “O” RING SEAL REPLACEMENT PROCEDURE

NOTE: THIS PROCEDURE IS USED FOR THE FOLLOWING:
- TO REPAIR FUEL LEAKS AT THE RETURN LINE CONNECTOR FITTING.
- EACH TIME THE RETURN LINE CONNECTOR FITTING IS REMOVED FROM THE PUMP
  (WHEN REPLACING THE GOVERNOR COVER ASSEMBLY).

1. DISCONNECT FUEL RETURN PIPE AND REMOVE 90° ELBOW.
2. REMOVE RETURN LINE CONNECTOR FITTING FROM GOVERNOR COVER.
3. REMOVE RETURN LINE CONNECTOR FITTING “O” RING SEAL AND DISCARD.
4. INSTALL NEW FITTING “O” RING SEAL (E3TZ-9E583-A).
5. INSTALL RETURN LINE CONNECTOR FITTING AND TORQUE TO 11.3 N m (100 IN.-LBS.)
   MINIMUM.
6. INSTALL 90° ELBOW AND CONNECT FUEL RETURN LINE.

Figure 1 - Article 94-5-11
GOVERNOR COVER REMOVAL

1. SEAL WIRE
2. GOVERNOR COVER SCREWS
3. GOVERNOR COVER
4. GASKET LOCATION
5. FUEL RETURN LINE

TB-7800-A

Figure 2 - Article 94-5-11

GOVERNOR COVER INSTALLATION

ARM TO CONTACT LINK AT ARROW SHOWN BELOW

GOVERNOR COVER

CUTAWAY VIEW

1/8" APPROX.

TB-7801-A

Figure 3 - Article 94-5-11
Figure 4 - Article 94-5-11
INJECTION PUMP WIRING SCHEMATIC

WIRE FROM HPCA SOLENOID TO COLD ADVANCE (YELLOW)

COLD IDLE SOLENOID CONNECTION

ESO SOLENOID CONNECTION

HPCA SOLENOID CONNECTION

COLD IDLE SOLENOID

WIRE FROM HPCA SOLENOID TO TEMPERATURE SENSING SWITCH (YELLOW)

HARNESS SECTION

TEMPERATURE SENSING SWITCH

LINK

WIRE TO ELECTRIC SHUT-OFF (ESO) (RED)

TEMPERATURE SENSING SWITCH

FUSEABLE LINK

IGNITION SWITCH

FRONT OF ENGINE

TB-7798-A

Figure 5 - Article 94-5-11
STANADYNE REGIONAL DISTRIBUTORS — (PLEASE CONTACT THE DISTRIBUTOR NEAREST YOU)

ALASKA
Alaska Kenworth
2838 Porcupine Drive
Anchorage, AK 99501
Phone: 907-279-0602

CALIFORNIA
H. G. Makelim
P.O. Box 2827
South San Francisco, CA 94083
Phone: 415-873-4757

COLORADO
Central Motive Power
P.O. Box 17128 T.A.
Denver, CO 80217
Phone: 303-428-3611

CONNECTICUT
Connecticut Driveshaft
470 Naugatuck Avenue
Milford, CT 06460
Phone: 1-800-972-9782

FLORIDA
Interstate Diesel Electric
4220 N. Orange Blossom Trail
Orlando, FL 32804
Phone: 407-293-7971

INDIANA
Midwest Brake
1140 S. West Street
Indianapolis, IN 46225
Phone: 317-632-4487

KENTUCKY
Auto Wheel & Rim
900 S. 7th Street
Louisville, KY 40203
Phone: 502-582-1363

Diesel Injection Service
P.O. Box 9389
Louisville, KY 40209
Phone: 502-361-1181

LOUISIANA
Gerhardt’s, Inc.
P.O. Box 10161
Jefferson, LA 70181
Phone: 504-733-2500

MAINE
New England Wheel & Rim
312 St. John Street
Portland, ME 04102
Phone: 207-774-1448

MARYLAND
District International Trucks
5000 Tuxedo Road
Hyattsville, MD 20781
Phone: 301-772-5100

MASSACHUSETTS
C.A. Krohne & Sons
500 West Columbia Avenue
Springfield, MA 01105
Phone: 413-781-5824

W. D. Smith Co.
382 Hartford Turnpike
Shrewsbury, MA 01545
Phone: 508-756-0574

MINNESOTA
Diesel Service Co.
P.O. Box 8009
2567 Kasota Ave.
St. Paul, MN 55108
Phone: 612-844-0124

Nordic Truck Parts
2603 Fairview Ave. N.
St Paul, MN 55113
Phone: 612-639-9601

MONTANA
Original Equipment, Inc.
P.O. Box 2135
Billings, MT 59101
Phone: 406-245-3081

NEW MEXICO
Central Motive Power
P.O. Box 1924
Albuquerque, NM 87107
Phone: 505-884-2525

NEW YORK
Frey, The Wheelman
25 Eastern Avenue
Syracuse, NY 13211-0118
Phone: 315-437-3371

LaBan Equipment Co.
P.O. Box 1148
Valley Stream, L.I., NY 11582
Phone: 516-561-2203

NORTH CAROLINA
Diesel Equipment Co.
P.O. Box 18066
Greensboro, NC 27406
Phone: 919-373-8331

OREGON
Myrro & Sons
3600 Franklin Boulevard
Eugene, OR 97403
Phone: 503-747-4561

Pennsylvania
Cumberland Truck Equipment
25 Roadway Drive
Carlisle, PA 17013
Phone: 717-249-2922

TENNESSEE
Mid South Power Distributing
P.O. Box 161096
Memphis, TN 38186
Phone: 901-945-0300

TEXAS
Magneto & Diesel Injection
P.O. Box 9488
Houston, TX 77011
Phone: 713-928-5686

UTAH
DESSCO
652 West 1700 South
Salt Lake City, UT 84104
Phone: 801-972-1836

WASHINGTON
Power Distributing
4813 South Airport Way
Seattle, WA 98108
Phone: 206-682-7471

WISCONSIN
Diesel Injection Service
P.O. Box 369
Sun Prairie, WI 53590
Phone: 608-837-7358

CANADA
GCL Diesel
4041 74th Ave. S.E., Unit 9
Calgary, AB T2C 2H9
Canada
Phone: 403-279-2368

Lucas Canada
30 E. Wilmont Street
Richmond Hill, ON L4B 1A4
Canada
Phone: 416-731-5100