DG727

Shop Manual

830E

DUMP TRUCK

SERIAL SUFFIX

AFE32-DJ - AFE32-DM
AFE32-DS & UP

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5. Remove capscrews and nuts from the studs securing alternator housing to the engine flywheel housing adapter. (4, Figure 4-1)

6. Take up hoist slack and remove capscrews and lockwashers (1) securing the alternator to the engine/alternator cradle structure.

7. Keep alternator as level as possible and move away from engine. Use care to prevent damage to alternator mounting studs. Retain shims for possible use during reinstallation.

8. For further disassembly instructions for the alternator refer to the General Electric Service Manual.

Alternator Installation

The following instructions, Engine/Alternator Mating, must be followed to ensure proper alignment and engine crankshaft endplay.

⚠CAUTION

Failure to follow these instructions can result in serious damage to the engine and/or alternator.

ENGINE/ALTERNATOR MATING

Detroit Diesel Engine

Before attaching the alternator to the engine it is essential the axial end play and axial alignment of the crankshaft be maintained within limits. This will prevent possible thrust washer failure due to insufficient crankshaft end play and assure alternator to engine alignment to avoid placing an overstress condition on the rear main bearings, flywheel housing adapter and flex coupling.

DETROIT DIESEL ENGINE DATA

Max. Flywheel Housing Eccentricity:	0.013 in. (0.330 mm) TIR
Max. Axial Runout of Flywheel Housing: . .	0.013 in. (0.330 mm) TIR
Max. Eccentricity of Flywheel:	0.011 in. (0.279 mm) TIR
Max. Axial Runout of Flywheel Face: . .	0.011 in. (0.279 mm) TIR
Max. Eccentricity of Flywheel Housing Adapter: . .	0.026 in. (0.660 mm) TIR
Max. Axial Runout of Flywheel Housing Adaptor: . .	0.026 in. (0.660 mm) TIR
Crankshaft End Play:	0.004 in. - .014 in. (0.102 mm - 0.356 mm)

This procedure is to assure that crankshaft and alternator end play will remain within specification and the rotor and stator frame will be in alignment with the crankshaft.

Alternator End Play Measurement

1. Thoroughly clean the alternator housing frame face and the rotor drive adapter face.

2. With the alternator in a horizontal position, place a level on the alternator housing and block it so housing is level.

3. Shim coupling adapter with a 0.062 in. (1.57 mm) shim between each of the four radius corners of the rotor drive adapter and alternator housing. Because of machining tolerances between inside diameter and the coupling adapter flange, there is a possibility that a small number of shims must be added or subtracted from the above shim pack to line up the rotor as close as possible to its center line. (Refer to Figure 4-3.)

4. Place a magnetic base dial indicator on the alternator housing face with its indicator stem on the rotor drive adapter. (Refer to Figure 4-4.)

5. Push rotor toward the commutator end as far as the commutator bearing will allow it to move. Hold the rotor in this position and set the dial indicator at "0" reading.

6. Pull rotor toward rotor drive adapter end, and read total bearing movement, taking two or three readings for verification.

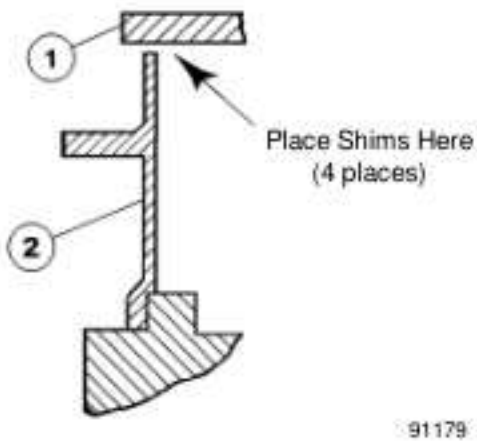


FIGURE 4-3. ARMATURE CENTERING SHIMS

1. Alternator Housing 2. Rotor Drive Adapter

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POSSIBLE CAUSES	SUGGESTED CORRECTIVE ACTION
TROUBLE: Loss of Pressure	
Faulty output circuit components.	Repair or replace relief valve or pressure compensator valve.
Worn piston pump.	Repair or replace worn parts.
Worn or grooved cylinder wear plate and/or port plate: wear plate and/or port plate separation from cylinder, each other or valve plate.	Repair or replace worn parts.
Worn pistons, shoes or piston bores.	Repair or replace worn parts.
TROUBLE: Excessive or High Peak Pressure	
Faulty output circuit components.	Repair or replace relief valve or pressure compensator valve.
TROUBLE: Noise or Squeal	
Low compensator pressure setting.	Check compensator pressure setting.
Fluid too cold or viscosity too high.	Use proper viscosity oil or warm oil before starting.
Air leak at inlet connection.	Inspect inlet hose and connections for looseness.
Insufficient inlet oil.	Check for proper hydraulic tank oil level. Check for clogged suction strainer. Make sure suction line shut-off valve is open.
Broken or worn piston/shoe assembly.	Repair or replace broken/worn parts.
TROUBLE: Steering Function Slow	
Low pressure compensator pressure setting.	Check and adjust compensator pressure setting.
Plugged filter or suction strainer.	Replace filter element or clean suction strainer.
TROUBLE: Irregular or Unsteady Operation	
Fluid level is reservoir is low or supercharge is insufficient.	Check for proper hydraulic tank oil level.
Air entering hydraulic system.	Inspect inlet hose and connections.
Worn axial piston pump.	Repair or replace broken/worn parts.
Faulty output circuit components.	Repair or replace relief valve or pressure compensator valve.

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PROBLEM (Continued): CODE E-11, E-12, E-13, or E-14 IS DISPLAYED.

POSSIBLE CAUSES	*CORRECTION*
Damaged wiring and/or connectors on pressure transducers.	Examine wiring and connectors.
Damaged harnesses to pressure transducers.	Trace harnesses for shorts.

PROBLEM: CODE E-21 THROUGH E-24 IS DISPLAYED.

Explanation: The truck empty weight has changed enough to require recalibration of the computer. These codes can show up during the sensor check procedure. If one of them is displayed, clear the code and calibrate the computer.

PROBLEM: CODE E-31 IS DISPLAYED.

Explanation: The 18 volt power circuit, 39F, is shorted to ground. 39F provides power for the four pressure transducers, the inclinometer, and the Data Storage Trigger Module (DSTM).

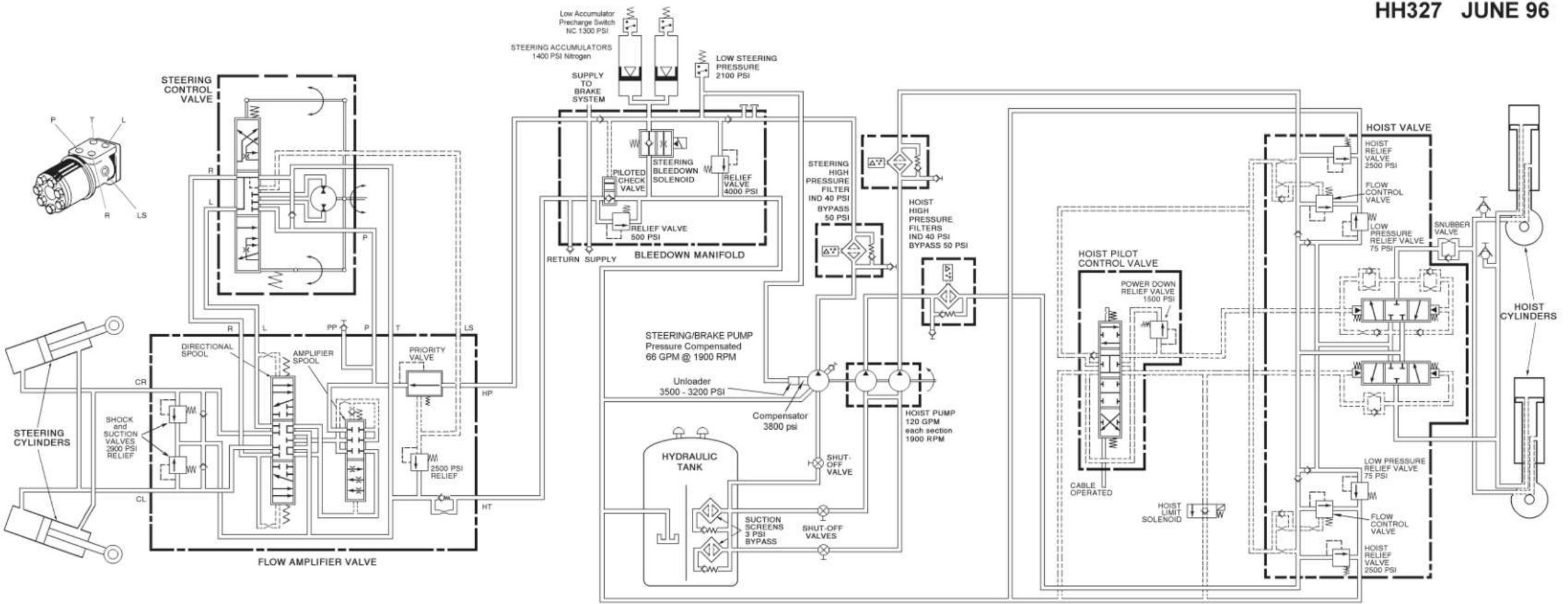
POSSIBLE CAUSES	*CORRECTION*
Damaged wiring and/or connectors on pressure transducers.	Examine wiring and connectors.
Damaged wiring and/or connectors on inclinometer.	Examine wiring and connectors.
Shorted connections on DSTM.	Examine wiring for shorts.
Damaged harnesses to pressure transducers or inclinometer.	Trace harnesses for shorts.
Internal short.	Replace payload meter computer.

PROBLEM: CODE E-32 IS DISPLAYED.

Explanation: One of the circuits from the computer to the three light relays, circuits 39A, 39B, or 39C is shorted to ground, or there is a short circuit between the + 18 volt sensor supply (circuit 39F) and any of the four pressure sensor inputs to the computer (circuits 39FA, 39FB, 39FC, or 39FD).

POSSIBLE CAUSES	*CORRECTION*
Damaged or loose connections inside payload meter housing.	Examine wiring inside payload meter housing for shorts.
External two wire cable to pressure sensor(s) is damaged and the two wires are shorted together.	Examine wiring harness to pressure sensor(s) for shorts, etc.
Damaged and/or shorted pressure sensor.	Disconnect a suspected sensor. Clear E-32 error code by pushing CAL button. If E-32 code is displayed again, the problem was not in that sensor. Reconnect sensor and repeat with a different sensor. If within 5 seconds, "E-01", "E-02", "E-03", or "E-04" (corresponding to disconnected sensor), is displayed, this sensor is defective and should be replaced.

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