PowerTech 6.8L and 8.1L, 6068 and 6081 Diesel Engines Level 3 Electronic Fuel Systems with Bosch In-Line Pump

COMPONENT TECHNICAL MANUAL

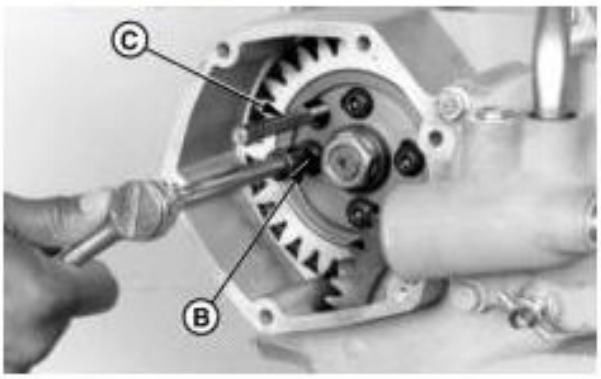
Diesel models 6068, 6081

CTM134 14 SEP 12 (ENGLISH)

John Deere Agriculture

Check and Adjust Injection Pump Static Timing

Injection Pump Drive Gear Timing Hole



Setting Injection Pump Static Timing

[1] - Rotate engine flywheel (in normal running direction) until No. 1 piston is at "TDC" of it's compression stroke. At this point, JDE81-4 Timing Pin should enter hole in flywheel.

[2] - Remove timing hole plug (A).

[3] - Timing marks on injection pump drive hub and fixed pointer should be aligned. If timing mark on injection pump drive hub is not visible, remove JDE81–4 Timing Pin from flywheel and rotate engine (in normal running direction) one more revolution, and reinstall JDE81–4 Timing Pin in flywheel. Look again to see if timing mark aligns with fixed pointer.

[4] - If timing mark and fixed pointer are aligned, injection pump is correctly timed. If they don't align, remove injection pump drive gear cover and O-ring.

[5] - Loosen drive gear-to-pump hub cap screws (B) and rotate hub slightly until JDG866 Injection Pump Timing Pin (C) threads into drive hub and bottoms out.

[6] - Tighten drive gear-to-pump hub cap screws to specification.

Item	Measurement	Specification
Injection Pump Drive Gear-to-Pump Hub Cap Screws	Torque	61 N·m (45 lb-ft)

[7] - Remove JDG866 Injection Pump Timing Pin from injection pump hub.

[8] - Install injection pump drive gear cover using a new O-ring, if needed. Tighten cap screws to specification.

B	Fuse "B" Terminal
C	Switch
D	Component Terminal
E	Wire Terminal
F	Grounded Circuit
G	Component Terminal
H	Load (Lamp)

Ground Circuit:

A "Grounded" circuit (F) results in no component operation and the fuse or circuit breaker opens (for example: a power wire contacting the machine frame, chassis or component housing).

Do the following to isolate the location of a "Grounded" circuit:

a. Switch (C) must be open (off). Check for continuity to ground between (B) and (C).
   - If there is continuity, there is a grounded circuit between (B) and (C). Repair the circuit.
   - No continuity, go to step b.

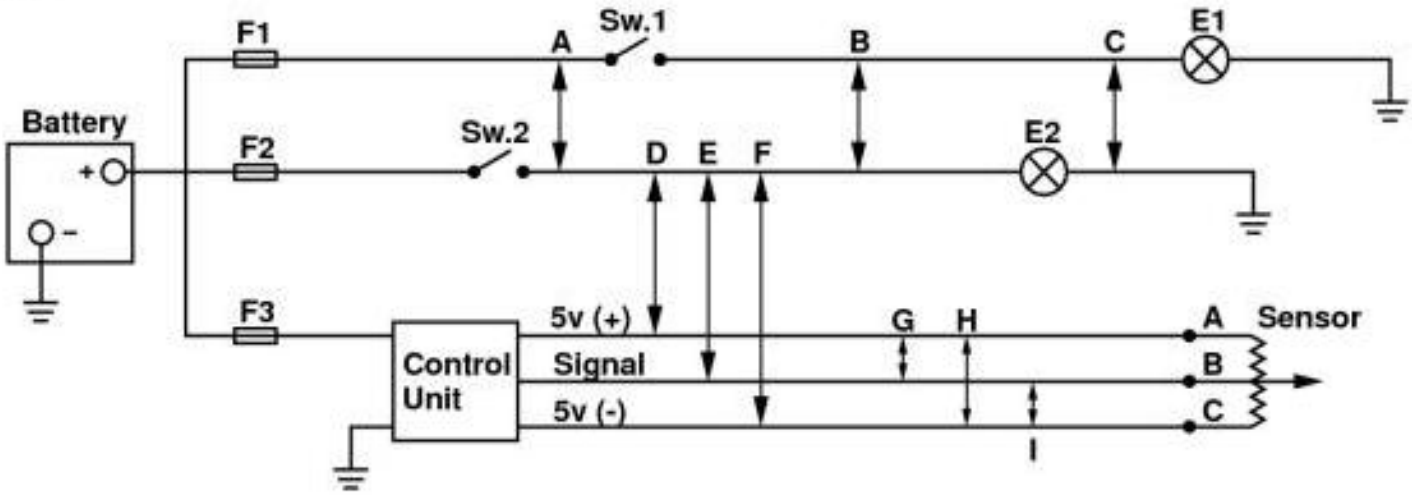
b. Disconnect the load (H) at component terminal (G).

c. With the controlling switch (C) open (off), check for continuity to ground between (D) and (E).
   - If there is continuity, there is a grounded circuit between (D) and (E). Repair the circuit.

     →NOTE: The example is grounded between (D) and (E) at (F).

   - Perform an operational check-out on the component after completing the repair.

[4] -



Shorted Circuit

Shorted Circuit:

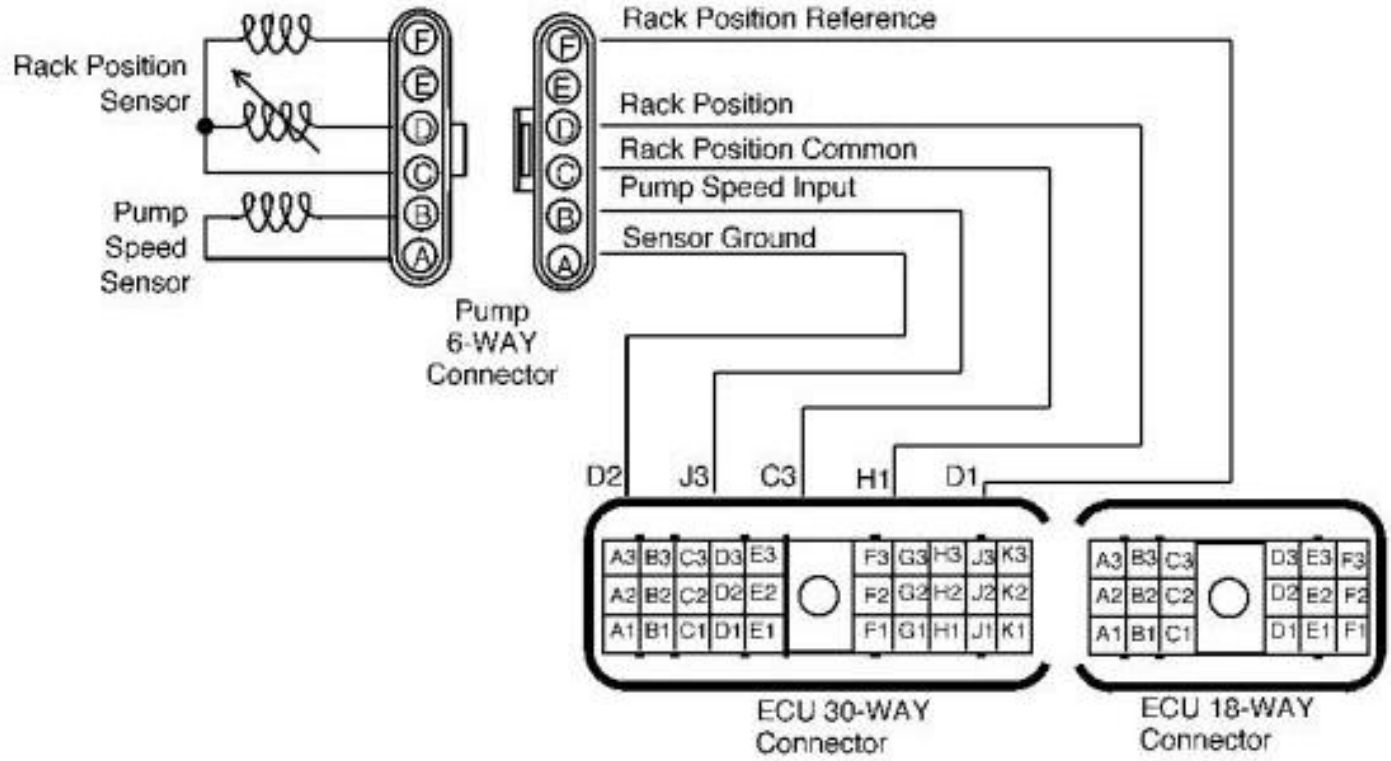
Machines equipped with several electronic control devices contain wiring harnesses that can become shorted by one of the following ways shown above.

1. Battery wire from fuse (F1) is shorted at (A) to another battery wire after switch (Sw.2).
   - Result: Lamp (E1) is on all of the time.
2. Battery wire from fuse (F1) is shorted at (B) to another battery wire after switches (Sw.1 & 2).
   - Result: Both lamps (E1 & E2) operate on either switch (Sw. 1 or 2).
3. Battery wire from fuse (F1) is shorted at (C) to a ground wire.
   - Result: Fuse (F1) opens after closing switch (Sw. 1)
4. Battery wire from switch (Sw. 2) is shorted at (D) to a regulated voltage wire.
   - Result: The sensor signal voltage is distorted.

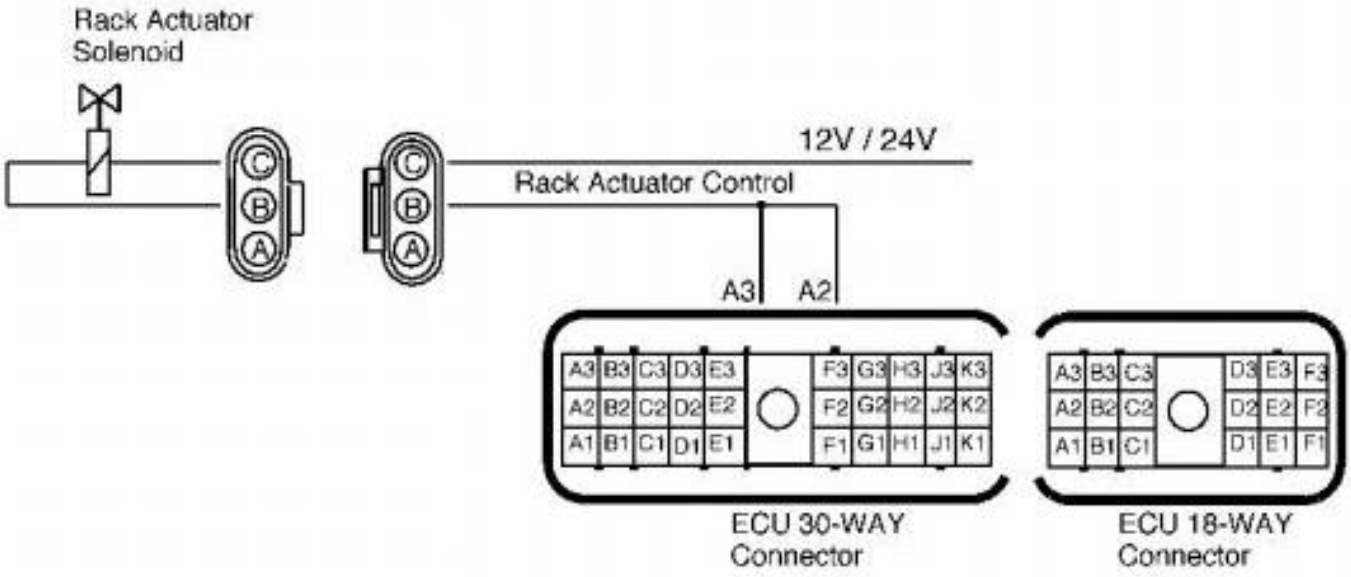
     [The sensor signal voltage goes out of range and a fault code may be restored. The controller may shut down or provide limited operation for its function.]
5. Battery wire from switch (Sw. 2) is shorted at (E) to the sensor signal voltage wire.
   - Result: The sensor signal is distorted.

     [The sensor signal voltage goes out of range and a fault code may be restored. The controller may shut down or provide limited operation for its function.]
6. Battery wire from switch (Sw. 2) is shorted at (F) to the sensor ground wire.

000833.07 — Rack Position Calibration Error



Rack Position Sensor Wiring



Rack Actuator Wiring

Rack Position Sensor and Actuator Solenoid

- The ECU controls the quantity of fuel delivered by the injection pump by energizing the rack actuator solenoid (located inside the injection pump) to achieve a specific position of the rack. The rack is spring loaded to the zero fuel delivery position. As increasing current is supplied to the actuator solenoid by the ECU, the rack is driven toward full fuel delivery position. The rack position sensor, also located inside the injection pump, provides feedback information to the ECU of the actual position of the rack. Information from the rack position sensor indicates to the ECU if the rack actually went to the position the ECU commanded. The rack position sensor consists of two inductive coils, the rack position coil, and rack reference coil. Each coil provides an input voltage to the ECU. The ECU processes these voltages and translates them into an actual position of the rack. For more rack position sensor information, see MEASURING RACK POSITION in Section 03,

CTM134 - John Deere PowerTech 6068 & 6081 Diesel Engines Lev.3 Fuel Systems w.Bosch In-Line Pump Service Manual

Illustrated Factory Technical Service Manual for PowerTech 6.8L and 8.1L, 6068 and 6081 Diesel Engines Level 3 Electronic Fuel Systems with Bosch In-Line Pump This manual contains high quality images, circuit diagrams, instructions to help you to operate, maintenance, diagnostic, and repair your truck. This document is printable, without restrictions, contains searchable text, bookmarks, crosslinks for easy navigation. Language: English Format: PDF, 608 pages Covered models: 6068 6.8L 6081AF001, 6081AFM01, 6081HF001, 6081TRW03 6081TRW05, 6081TRW07, 6081TRW12, 6081TRW12 6081TRW12, 6081TRW12, 6081TRW12, 6081TRW12 6081TRW12, 6081TRW12, 6081TRW04, 6081TRW06 6081TRW08, 6081TRW12, 6081TRW12, 6081TRW12 6081TRW12, 6081HRW06, 6081HRW10, 6081HRW11 6081HRW12, 6081HRW24, 6081HRW07, 6081HRW02 6081HRW13, 6081HRW14, 6081HRW24, 6081HRW08 6081HRW09, 6081HRW15, 6081HRW16, 6090RW451 6081HRW01, 6081HRW04, 6081HRW03, 6081HRW17 6081HRW18, 6081HRW05, 6081HZ006, 6081HZ004 6081HH002, 6081HH001, 6081HH009, 6081HH008 6081HH003, 6081HH010, 6081HH010, 6081HH006 6081HH011, 6081HH005, 6081HH007, 6081HH003 6081HH004, 6081HH003, 6081HN001, 6081HN003 6081HN003, 6081HDW01, 6081HDW01, 6081HDW01 6081HDW70, 6081HDW05, 6081HDW06, 6081AT002 6081HT003, 6081HT004, 6081HT003, 6081HT004