

FB: Power Take Off (PTO)

This pinpoint test is intended to diagnose the following:

- PTO switch
- PCM (12A650)

Powertrain Control Module (PCM) Connector

For PCM connector views or reference values, refer to Section 6, Reference Values.

Vehicle	Pin	Circuit
F-Series Super Duty	B85 B98 B88 B84	PTORPM PTOIL PTOENG PTO
Transit	B33 B80 B91 B87	PTORPM PTOIL PTOENG PTO
All other vehicles	B85 B98 B88 B84	PTORPM PTOIL PTOENG PTO

FB1 PTO INDICATOR LAMP

Did you come to this pinpoint test for an always on/ never on PTO indicator?

Yes	GO to FB5 .
No	GO to FB2 .

FB2 PTO NOT WORKING CORRECTLY: CHECK THE PTO INDICATOR LAMP OPERATION

Note: The following conditions must be met before the PTO engages:

- engine at normal operating temperature
- accelerator pedal is released
- transmission fluid temperature (TFT) within normal operating temperature
- parking brake is applied
- brake pedal is released
- automatic transmission is in the PARK position
- manual transmission - the clutch pedal is released

Note: This step requires operating the PTO component. Refer to the aftermarket manufacturer for the PTO operating instructions. Follow all safety precautions.

- Ignition ON, engine running.
- Activate the PTO switch.

Does the PTO indicator illuminate?

Yes	GO to the aftermarket PTO mechanical manual.
No	GO to FB3 .

FB3 CHECK THE INTEGRITY OF THE PTO SWITCH AND THE PTO SWITCH CIRCUIT

- Access the PCM and monitor the PTO_STATUS (MODE) PID.
- Cycle the PTO switch, from off to on to off.

Does the PTO PID change state?

Yes	GO to FB4 .
No	REPAIR the PTO circuit or switch as necessary. Clear the PCM DTCs. REPEAT the self-test.

FB4 CHECK THE PTOIR_V PID STATE IN THE PCM

Note: The PTOIR_V PID represents an analog input which reflects the user requested engine speed.

- Access the PCM and monitor the PTOIR_V (VOLT) PID.
- Cycle the PTO switch,

Does the PTOIR_V PID change state?

Yes	GO to FB5 .
No	REPAIR the PTO RPM circuit or switch as necessary. Clear the PCM DTCs. REPEAT the self-test.

FB5 CHECK THE PTOIL PID STATE IN THE PCM

- Access the PCM and monitor the PTOIL (MODE) PID.
- Cycle the PTO switch,

Does the PTOIL PID change state?

Yes	GO to the aftermarket PTO mechanical manual.
No	REPAIR the circuit as necessary. Clear the PCM DTCs. REPEAT the self-test.

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