A: Vehicle Battery

A: Introduction

A1 DIAGNOSTIC TROUBLE CODES (DTCs) P0563/P0562/P0560

- Key on, engine off.
- Measure voltage across battery terminals.

Is voltage greater than 10.5 volts?

Note: DTC P0563 may be a temporary condition with a 24-volt jump start. DTC P0562 may be a temporary condition at crank only.

P0563 — System voltage high

P0562 — System voltage low

P0560 — System voltage malfunction, below 11.5 volts during KOER tests

Yes	No
F-Series, GO to A2 . E-Series, GO to A12 .	REPAIR discharged battery. REFER to the Electrical Group in the Workshop Manual.

A2 CHECK VOLTAGE AT MAXI FUSE 9

- Measure voltage between power distribution box Maxi Fuse 24 and battery negative post.
- Key off.

Is voltage greater than 10.5 volts?

Yes	No
GO to A3 .	REPAIR open in Circuit 37 (Y) between the power distribution box and the starter relay. RESTORE vehicle.

A3 CHECK FUSE

- Check power fuse:
  - F250/550 - 24
  - Excursion - 113
  - F650/750 - 117

Is fuse blown?

Yes	No
REPAIR short to ground. REPLACE Maxi Fuse 24. RESTORE vehicle.	GO to A4 .

A4 CHECK CIRCUIT 37 (Y) TO RELAY

- Remove PCM relay and fuse:
  - F250/550 - 24
  - Excursion - 113
  - F650/750 - 117
- Measure resistance of Circuit 554 (YE/BK) between the nonpower side of fuse and the PCM relay connector.

Is resistance less than 5 ohms?

Yes	No
GO to A5 .	REPAIR open in Circuit 37 (Y). RESTORE vehicle.

A5 CHECK IGNITION FEED TO DIODE

- Key off.
- Remove diode from power distribution box.
- Key on, engine off.
- Measure voltage between battery ground and ignition feed side of diode connector.
- Key off.

Was voltage greater than 10.5 volts?

Yes	No
GO to A6 .	REPAIR open in ignition feed Circuit 16 (R/LG) or ignition switch. RESTORE vehicle.

A6 CHECK DIODE

- Disconnect diode and inspect.

Does diode check OK?

Yes	No
F-Series, GO to A7 . E-Series, GO to A13 .	REPLACE diode. RESTORE vehicle.

A7 CHECK CIRCUIT 20 (WH/LB)

- Measure resistance of Circuit 20 (WH/LB) between the nonpower side of diode connector and the PCM relay connector.

Is resistance less than 5 ohms?

Yes	No
GO to A8 .	REPAIR open in Circuit 20. RESTORE vehicle.

A8 CHECK GROUND CIRCUIT 57 (BK) AT RELAY

- Measure resistance between battery ground and Circuit 57 (BK) at PCM relay connector.

Is resistance less than 5 ohms?

Yes	No
GO to A9 .	REPAIR open in Circuit 57 (BK). RESTORE vehicle.

A9 CHECK CIRCUIT 361 (R) FROM RELAY TO PCM

- Install breakout box, leave PCM disconnected.
- Measure resistance of Circuit 361 (R) between the PCM relay connector and PCM Test Pins 71 and 97.

Is resistance less than 5 ohms?

Yes	No
GO to A10 .	REPAIR open in Circuit 361 (R). RESTORE vehicle.

A10 CHECK PWR GND CIRCUIT CONTINUITY

- Measure resistance between battery negative post and PCM Test Pins 25, 51, 76, 77 and 103.

Is each resistance less than 5.0 ohms?

Yes	No
F-Series, GO to A11 . E-Series, GO to A14 .	REPAIR open in PWR GND circuit. RESTORE vehicle. CLEAR DTCs and RETEST.

A11 CHECK PCM RELAY

- Install PCM relay.
- Key on, engine off.
- Measure resistance between PCM Test Pins 71 and 97 and the nonpower side of fuse:
  - F250/550 - 24
  - Excursion - 113
  - F650/750 - 117

Is resistance less than 5 ohms?

Yes	No
If fault is still present, REPLACE PCM. RESTORE vehicle.	REPLACE PCM relay. RESTORE vehicle.

A12 CHECK VOLTAGE AT PCM RELAY

- Key off.
- Remove PCM relay.
- Key on, engine off.
- Measure voltage of Circuit 37 (Y) between the PCM relay connector and battery ground.

Is voltage greater than 10.5 volts?

Yes	No
GO to A5 .	REPAIR open in Circuit 37 (Y) between PCM relay and starter relay. RESTORE vehicle.

A13 CHECK CIRCUIT 16

- Measure resistance of Circuit 16 (R/LG) between the nonpower side of the diode connector and the PCM relay connector.

Is resistance less than 5 ohms?

Yes	No
GO to A8 .	REPAIR open in Circuit 16 (R/LG). RESTORE vehicle.

A14 PCM RELAY CHECK

- Install PCM relay.
- Key on, engine off.
- Measure voltage between battery negative post and PCM Test Pins 71 and 97.

Is voltage greater than 10.5 volts?

Yes	No
If fault is still present, REPLACE PCM. RESTORE vehicle.	REPLACE PCM relay. RESTORE vehicle.