DTC P1388: ASD RELAY CONTROL CIRCUIT

NOTE: For connector terminal identification, see CONNECTOR IDENTIFICATION . For circuit identification and wiring diagram, see GRAND CHEROKEE wiring diagram in WIRING DIAGRAMS article.

NOTE: DTC P1388: ASD RELAY CONTROL CIRCUIT is monitored with ignition on and battery voltage more than 10.4 volts. DTC may be stored in Powertrain Control Module (PCM) if PCM senses an open or short condition in ASD relay circuit. Possible causes are: defective ASD relay, defective PCM, defective connectors or defective wiring.

1. Turn ignition on, with engine off. Using scan tool, read DTCs. If DTC SPECIFIC GOOD TRIP COUNTER is displayed and displayed count is "0", go to next step. If DTC SPECIFIC GOOD TRIP COUNTER is not displayed or displayed count is not "0", go to step 7).
2. Ensure ignition is off. Remove ASD relay. ASD relay is located in Power Distribution Center (PDC). PDC is located next to battery. Refer to label under PDC cover for relay location. Disconnect PCM connectors. PCM is located in engine compartment. See PCM LOCATION table under SYSTEM DIAGNOSTICS. Clean and/or repair connectors as necessary. Using an ohmmeter, check resistance of ASD relay control circuit (Dark Blue/Yellow wire) between ASD relay connector and PCM. If resistance is less than 5 ohms, go to next step. If resistance is 5 ohms or more, repair open ASD relay control circuit. Perform TEST VER-2A.
3. Ensure ignition is off. Ensure ASD relay is still removed. Ensure PCM connectors are still disconnected. Using ohmmeter, check resistance between ground and ASD relay connector, control circuit (Dark Blue/Yellow wire). If resistance is less than 5 ohms, repair control circuit for short to ground. Perform TEST VER-2A. If resistance is 5 ohms or more, go to next step.
4. Turn ignition off. Ensure ASD relay is still removed. Using an ohmmeter, check resistance between ASD relay terminals No. 85 and 86. See **Fig. 23** . If resistance is 50-80 ohms, go to next step. If resistance is not 50-80 ohms, replace ASD relay. Perform TEST VER-2A.
5. Turn ignition off. Ensure ASD relay is still removed. Turn ignition on, with engine off. Using a voltmeter, check voltage on ASD relay connector, fused ignition switch output circuit (Orange/Dark Blue wire). If voltage is more than 10 volts, go to next step. If voltage is 10 volts or less, repair open fused ignition switch output circuit. Perform TEST VER-2A.
6. At this time, PCM is assumed to be defective. Replace PCM. Perform TEST VER-2A.
7. Turn ignition off. Inspect related connectors and wiring harness for damage. Repair connectors and wiring harness as necessary. Visually inspect connectors for corroded, damaged, pushed-out or miswired terminals. Repair connectors as necessary. Perform TEST VER-2A. If connectors and wiring harness are okay, test is complete.

DTC P1389: NO ASD RELAY OUTPUT VOLTAGE AT PCM

NOTE: For connector terminal identification, see CONNECTOR IDENTIFICATION . For circuit identification and wiring diagram, see GRAND CHEROKEE wiring diagram in WIRING DIAGRAMS article.

NOTE: DTC P1389: NO ASD RELAY OUTPUT VOLTAGE AT PCM is monitored with engine running, battery voltage more than 10.4 volts and engine speed more than 400 RPM. DTC may be stored in Powertrain Control Module (PCM) if PCM does not sense voltage when ASD relay is energized. Possible causes are: defective ASD relay, defective PCM, defective connectors or defective wiring.

1. Turn ignition on, with engine off. Using scan tool, read DTCs. If DTC SPECIFIC GOOD TRIP COUNTER is displayed and displayed count is "0", go to next step. If DTC SPECIFIC GOOD TRIP COUNTER is not displayed or displayed count is not "0", go to step 8).
2. Attempt to start engine. If engine starts, go to next step. If engine does not start, go to step 5).
3. Turn ignition off. Remove ASD relay. ASD relay is located in Power Distribution Center (PDC). PDC is located next to battery. Refer to label under PDC cover for relay location. Disconnect PCM connectors. PCM is located in engine compartment. See PCM LOCATION table under SYSTEM DIAGNOSTICS. Clean and/or repair connectors as necessary. Using an ohmmeter, check resistance of ASD relay output circuit (Dark Green/Orange wire) between ASD relay connector and PCM. If resistance is less than 5 ohms, go to next step. If resistance is 5 ohms or more, repair open ASD relay control circuit. Perform TEST VER-2A.
4. At this time, PCM is assumed to be defective. Replace PCM. Perform TEST VER-2A.
5. Turn ignition off. Remove ASD relay. ASD relay is located in Power Distribution Center (PDC). PDC is located next to battery. Refer to label under PDC cover for relay location. Disconnect PCM connectors. PCM is located in engine compartment. See PCM LOCATION table under SYSTEM DIAGNOSTICS. Clean and/or repair connectors as necessary. Using an ohmmeter, check resistance of ASD relay control circuit (Dark Green/Orange wire) between ASD relay connector and PCM. If resistance is less than 5 ohms, go to next step. If resistance is 5 ohms or more, repair open ASD relay control circuit. Perform TEST VER-2A.
6. Turn ignition off. Ensure ASD relay is still removed. Ensure PCM connectors are still disconnected. Turn ignition on, with engine off. Using a voltmeter, check voltage on ASD relay connector, fused ignition switch output circuit (Orange/Dark Blue wire). If voltage is more than 10 volts, go to next step. If voltage is 10 volts or less, repair open fused ignition switch output circuit. Check fuse No. 6 (30-amp) in PDC. Replace as necessary. Perform TEST VER-2A.
7. Turn ignition off. Ensure ASD relay is still removed. Install a known-good ASD relay and attempt to start engine. If engine does not start, go to next step. If engine starts, replace original ASD relay. Perform TEST VER-2A.
8. Turn ignition off. Inspect related connectors and wiring harness for damage. Repair connectors and wiring harness as necessary. Visually inspect connectors for corroded, damaged, pushed-out or miswired terminals. Repair connectors as necessary. Perform TEST VER-2A. If connectors and wiring harness are okay, test is complete.