



# Technical Service Information

## JEEP GRAND CHEROKEE

### P0352 IGNITION FAULT

**COMPLAINT:** A 2003 Jeep Grand Cherokee 4.0L 4x4 with a 42RE comes into the shop for transmission repair. After installing a rebuilt transmission the vehicle exhibits a misfire. This was not a problem before transmission repairs. Upon inspection, the vehicle has stored a P0352 code for an ignition coil #2 primary circuit fault. Diagnostics related to this code was performed but no circuit problems were found.

Upon further inspection of the PCM, it was discovered that when the control side of the #2 ignition coil was checked at idle, it becomes very erratic. The alternator was unplugged to see if that would make a difference but it did not. It was also noticed that when the engine is revved up to 200 to 300 rpm's, the PCM sets codes P0351 and P0353 for circuit #1 and circuit #3 ignition coil primary circuit faults. Before condemning the PCM, all circuits were double checked for shorts, for good power and grounds and all checked good. At this point a new PCM was installed. This too did not fix the problem. Out of frustration the throttle was violently snapped several times when suddenly code P0320 for the crank sensor signal sets.

**CAUSE:** This shop has a couple of men who do the R & R work. One of them will pull the crank sensor off when removing the transmission to prevent the possibility of damaging it when installing the transmission. When he installs the crank sensor, he places a piece of cardboard from a rebuild kit onto the tip of the sensor with which to properly adjust the sensor and there is never a problem. In this situation, the man who never pulls the sensor had to install the transmission with the sensor removed by the other R & R guy. When he installed the sensor, he used the bolt mark left on the bracket as his guide (figure 1). This caused the crank sensor to be slightly out of adjustment which prevented it from coding right away. What is puzzling is how it caused P0351, P0352 and P0353 to set. When O. E. information is looked at for these codes, a mis-adjusted crank sensor is not one of them. This is the list they provide:

- Good trip equal to zero
- (A142) ASD relay output circuit
- Coil rail resistance
- Ignition coil
- Ignition coil driver circuit open
- Ignition coil driver circuit shorted to ground
- PCM

**CORRECTION:** Once the crank sensor was adjusted correctly, all problems were corrected.

O. E. Install procedure: The Crankshaft Position (CKP) sensor is mounted to the transmission bell-housing and is adjustable via the attaching bolt. A wire shield/router is attached to the sensor. New replacement sensors should be equipped with a paper spacer glued to bottom of sensor. If installing (returning) a used sensor to vehicle, a new paper spacer must be installed to bottom of sensor. This spacer will be ground off the first time the engine is started.

If installing a new sensor, be sure a paper spacer is glued to the bottom of the sensor. If it is missing you will need to obtain a new spacer. The part number is PN05252229. The same applies to reused sensors. Simply clean the bottom of it and peel and stick the new spacer to the bottom. The spacer measures 0.551" in diameter and 0.034" in thickness.



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**CORRECTION:** Installation procedure continued:

- Install sensor into transmission bell-housing hole.
- Position sensor wire shield to sensor.
- Push sensor against flywheel/drive plate.
- With sensor pushed against flywheel/drive plate, tighten mounting bolt to 7 Nm (60 in. lbs.) torque.
- Route sensor wiring harness into wire shield.
- Connect sensor pigtail harness electrical connector to main wiring harness.

**Technician's Note:** *Some models have a coil pack running across the rear of the engine with the connector pointing downwards. Caution is required as it is very easy to damage this connector while installing the transmission.*

*Many thanks to Lorenzo Ortiz from Phillips Transmissions*



Figure 1