

JD: Crankshaft Position (CKP) Sensor

[← JD: Introduction](#)

JD1 CHECK CKP+ CKP—CONTINUITY

Note: Refer to the PCM connector pin numbers in the beginning of this Pinpoint Test.

- Disconnect the CKP sensor and PCM.
- Measure resistance of CKP(+) and CKP(-) circuits between the PCM harness connector and the CKP harness connector.

Is resistance greater than 5 ohms?

Yes	No
REPAIR open circuit.	GO to JD2 .

JD2 CHECK FOR CKP+ BIAS VOLTAGE FAULT

- Key on, engine off.
- Reconnect the PCM.
- Measure voltage between CKP(+) at the CKP harness connector and battery negative post.
- Key off.

Was voltage greater than 1.0 volt but less than 2.0 volts?

Yes	No
GO to JD3 .	Bias fault. GO to JD19 .

JD3 CHECK FOR CKP- BIAS VOLTAGE FAULT

- Key on, engine off.
- Measure voltage between CKP(-) circuit at the CKP harness connector and battery negative post.

Was voltage between 1.0 and 2.0 volts?

Yes	No
KEY OFF. GO to JD10 .	Bias fault. GO to JD4 .

JD4 DETERMINE IF BIAS HIGH OR BIAS LOW FAULT

Was bias voltage reading in GO to [JD3](#) less than 1.0 volt?

Yes	No
Bias low fault. GO to JD5 .	Bias high fault. GO to JD6 .

JD5 CHECK CKP- CIRCUIT FOR SHORT TO GROUND IN HARNESS

- Disconnect PCM.
- Measure resistance of CKP(-) circuit at the PCM harness connector and battery negative post.

Is each resistance greater than 10K ohms?

Yes	No
REPLACE PCM (refer to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM)).	REPAIR short circuit.

JD6 CHECK CKP- CIRCUIT FOR SHORT TO POWER IN HARNESS

- Disconnect PCM.
- Key on, engine off.
- Measure voltage of CKP(-) circuit at the PCM harness connector and battery negative post.

Is voltage less than 0.5 volt?

--	--

Yes	No
REPLACE PCM (refer to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM)).	REPAIR short circuit.

JD10 CHECK CKP SENSOR AMPLITUDE AT PCM

- Reconnect CKP sensor.
- Disconnect PCM.
- Measure voltage between CKP(+) and CKP(-) at the PCM harness connector when cranking engine.

Note: Vehicles with IPATS will require the starter relay to be energized during this test.

- Key off.

Was settled ac voltage reading greater than 0.4 volt?

Yes	No
CKP circuit is OK. GO to JD11 .	Amplitude fault. GO to JD12 .

JD11 CHECK CKP(+) CIRCUIT FOR SHORT TO GROUND AT SENSOR

- Measure resistance between CKP+ and battery negative post.

Is the resistance greater than 10K ohms?

Yes	No
GO to JB1 .	GO to JD17 .

JD12 CHECK CKP CIRCUIT RESISTANCE FOR AMPLITUDE FAULT

- Measure resistance between CKP(+) and CKP(-) at the PCM harness connector.

Is resistance between 300 and 800 ohms (900 and 1300 for LS6LS8)?

Yes	No
GO to JD16 .	GO to JD13 .

JD13 DETERMINE IF RESISTANCE HIGH OR RESISTANCE LOW FAULT

Was the resistance from GO to [JD12](#) less than 300 ohms?

Yes	No
Low resistance fault. GO to JD14 .	REPLACE CKP sensor.

JD14 CHECK CKP+ FOR SHORT TO CKP-

- Disconnect CKP sensor.
- Measure resistance between the CKP+ and CKP- at the harness connector.

Is resistance less than 5 ohms?

Yes	No
REPAIR short.	REPLACE CKP.

JD16 CHECK CKP SENSOR AND PULSE WHEEL

- Check pulse wheel and CKP sensor visually for damage.

Is CKP sensor and pulse wheel OK?

Yes	No
REPLACE CKP sensor.	REPAIR or REPLACE damaged parts.

JD17 CHECK FOR OPEN OR SHORT IN PCM

- Disconnect the CKP sensor and connect the PCM.
- Key off.
- Measure the resistance between the CKP+ and CKP- at the CKP harness connector.

Is the resistance between 16K and 24K ohms?

Yes	No
GO to JD18 .	REPLACE the PCM.

JD18 CHECK CKP+ CIRCUIT FOR SHORT TO CKP- CIRCUIT IN HARNESS

- Disconnect PCM.
- Measure resistance between CKP+ and CKP- at the PCM harness connector.

Is resistance greater than 1000 ohms?

Yes	No
REPLACE CKP sensor.	REPAIR short circuit.

JD19 DETERMINE IF BIAS VOLTAGE HIGH OR BIAS VOLTAGE LOW FAULT

Was bias voltage reading in GO to [JD2](#) less than 1.0 volt?

Yes	No
Low bias voltage fault. GO to JD20 .	High bias voltage fault. GO to JD21 .

JD20 CHECK CKP+ CIRCUIT FOR SHORT TO GROUND IN HARNESS

- Disconnect PCM.
- Measure resistance between CKP+ and battery negative post.

Is resistance greater than 10K ohms?

Yes	No
REPLACE PCM (refer to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM)).	REPAIR short circuit.

JD21 CHECK CKP+ CIRCUIT FOR SHORT TO POWER IN HARNESS

- Disconnect PCM.
- Key on, engine off.
- Measure voltage of CKP+ and battery negative post.

Is voltage less than 0.5 volt?

Yes	No
REPLACE PCM (refer to Section 2, Flash Electrically Erasable Programmable Read Only Memory (EEPROM)).	REPAIR short circuit.