Y: Engine Oil Temperature (EOT) Sensor

Y: Introduction

Y1 DIAGNOSTIC TROUBLE CODE (DTC) 0198

- DTC 0198 indicates EOT sensor circuit out of range high.
- Possible causes:
  - Open in harness
  - Damaged connection
  - Damaged EOT sensor
  - Damaged PCM
- Key off.
- Disconnect suspect EOT sensor and inspect connector terminals for damage. Repair if necessary.
- Measure resistance from Pin A to ground.

Is resistance less than 5 ohms?

Yes	No
GO to Y2 .	REPAIR open in signal return circuit. CLEAR DTCs and RETEST.

Y2 INDUCE OPPOSITE FAILURE

- Key on/engine off.
- Jumper Pin A to Pin B at harness connector.

Is DTC 0197 present?

Yes	No
REPLACE EOT sensor. CLEAR DTCs and RETEST.	GO to Y3 .

Y3 CHECK CONTINUITY OF SENSOR SIGNAL AND SIG RTN CIRCUITS

- Key off.
- EOT sensor disconnected.
- Disconnect PCM. Inspect for damaged or pushed-out pins, corrosion, loose wires, etc. Service as necessary.
- Install breakout box. Leave PCM disconnected.
- Measure resistance between harness connector Pin B and Test Pin 38 (EOT) at the breakout box.

Is each resistance less than 5 ohms?

Yes	No
REPLACE PCM. REMOVE breakout box. CLEAR DTCs and RETEST.	SERVICE open in signal circuit. CLEAR DTCs and RETEST.

Y4 DIAGNOSTIC TROUBLE CODE (DTC) 0197: INDUCE OPPOSITE DTC 0198

- DTC 0197 indicates EOT sensor circuit out of range low.
- Possible causes:
  - Grounded circuit in harness
  - Damaged EOT sensor
  - Damaged PCM
  - Damaged connection
- Key off.
- Disconnect vehicle harness from EOT sensor. Inspect for damaged, corroded, pushed-out pins or loose wires, etc. Service as necessary.
- Run KOEO Self Test.

Is DTC 0198 present?

Yes	No
REPLACE EOT sensor. RECONNECT harness. RERUN Scan Tool Diagnostic Test.	GO to Y5 .

Y5 CHECK TEMPERATURE SENSOR SIGNAL CIRCUIT FOR SHORT TO GROUND

- Key off.
- Suspect temperature sensor disconnected.
- Disconnect PCM. Inspect for damaged or pushed-out pins, corrosion, loose wires, etc. Service as necessary.
- Install breakout box. Leave PCM disconnected.
- Measure resistance between Test Pin 38 (EOT) and Test Pins 25, 51, 76, 77, 91 and 103.

Is each resistance greater than 10,000 ohms?

Yes	No
REPLACE PCM. REMOVE breakout box. CLEAR DTCs and RETEST.	SERVICE short to ground circuit. REMOVE breakout box. CLEAR DTCs and RETEST.

Y6 CONTINUOUS MEMORY DIAGNOSTIC TROUBLE CODE (DTC) 0198, OR 0197: CHECK SENSOR

- Continuous Memory DTC 0198 indicates EOT sensor circuit out of range high. The DTC was generated under normal driving conditions.
- Continuous Memory DTC 0197 indicates EOT sensor circuit out of range low. The DTC was generated under normal driving conditions.

Sensors	Continuous Memory DTCs
EOT	0198 and 0197

- Possible causes:
  - Worn or damaged EOT sensor
  - Open circuit in harness
  - Grounded circuit in harness
  - Worn or damaged PCM

- Key on/engine off.
- Access EOT PID.
- Tap on EOT sensor to simulate road shock, wiggle harness connector while observing NGS Tester value.

Does EOT sensor value default to 100°C (212° F)?

Yes	No
GO to Y9 .	GO to Y7 .

Y7 CHECK VEHICLE HARNESS

- Key on, engine off.
- Access EOT PID.
- Grasp the vehicle harness close to the EOT sensor connector. Wiggle, shake harness while working towards the PCM.

Does EOT sensor value default to 100°C (212° F)?

Yes	No
REPAIR circuit as required.	GO to Y8 .

Y8 CHECK PCM AND VEHICLE HARNESS CONNECTORS

- Key off.
- Disconnect PCM. Inspect for damage, loose or pushed-out pins, loose or poorly crimped wires.

Are connectors and terminals OK?

Yes	No
Unable to duplicate and/or identify concern at this time. CLEAR DTCs and RETEST.	SERVICE as necessary. CLEAR Continuous Memory and RETEST.

Y9 INSPECT CONNECTOR PINS

- Disconnect harness connector.
- Inspect pins.

Is a fault detected?

Yes	No
REPAIR damaged pins as required. CLEAR DTCs and RETEST.	REPLACE EOT sensor. CLEAR DTCs and RETEST.

Y10 DIAGNOSTIC TROUBLE CODE (DTC) 0196 OR 0195: CHECK OPERATION, INSTALLATION OF EOT SENSOR

- DTC 0196 or 0195 indicates that the engine oil temperature is not warm enough to perform a KOER Cylinder Contribution Self Test. The engine oil temperature must be greater than 74°C or 165° F (1.37 volts).
- Possible causes:
  - Engine not fully warmed up
  - Low oil level
  - Worn or damaged EOT sensor
  - Faulty thermostat
  - EOT sensor circuit failure
- Verify no KOEO DTCs are present.
- Drive vehicle until thermostat opens.
- Fully warm engine.
- Check that upper radiator hose is hot and pressured.
- Rerun Scan Tool Diagnostic Test.

Is DTC 0196 or 0195 present?

Yes	No
GO to Y11 .	SERVICE other DTCs as necessary.

Y11 EOT SENSOR CHECK

- Key on/engine off.
- Engine at normal operating temperature.
- Access EOT PID on NGS Tester.
- Observe EOT PID while tapping on EOT sensor.

Does EOT valve fluctuate or go below 74°C or 165° F (1.37 volts)?

Yes	No
REPLACE EOT sensor. CLEAR DTCs and RETEST.	GO to Y12 .

Y12 CHECK VEHICLE HARNESS

- Observe EOT PID valve on NGS Tester while performing the following:
- Grasp the vehicle harness close to the EOT sensor connector, wiggle, shake vehicle harness while working towards PCM.

Does valve fluctuate?

Yes	No
REPAIR circuits as required. CLEAR DTCs and RETEST.	GO to Y13 .

Y13 CHECK PCM AND VEHICLE HARNESS CONNECTOR

- Key off.
- Disconnect EOT sensor connector.

- Disconnect PCM.
- Inspect for damage, loose or pushed-out pins.

Are connectors and terminals OK?

Yes	No
Unable to duplicate and/or identify concern at this time. CLEAR DTCs and RETEST.	SERVICE as required. CLEAR DTCs and RETEST.