



Technical Service Information

TOYOTA/LEXUS U140/240 SERIES NO 4TH GEAR AND ENGINE RELATED DTC'S

COMPLAINT: Toyota and Lexus vehicles equipped with the U140/240 series of transaxles may exhibit a no 4th condition before or after overhaul, accompanied with diagnostic trouble codes related to Oxygen Sensor, Knock Sensor and or numerous other engine performance related faults.

CAUSE: The cause may be that the diagnostic trouble codes listed above are causing the Powertrain Control Module to inhibit 4th gear. **Note:** Most of the transmission related codes will also cause no 4th gear as well.

CORRECTION: To verify whether the problem is inside or outside of the trans, refer to figures 1 and 2 for the terminal I.D. and solenoid firing order for 4th gear. Notice that once in 3rd gear, the S4 solenoid has to come on to achieve 4th gear. Probe a volt meter into terminal 8 at the case connector, with the positive lead and connect the negative lead to a good engine ground. Bring the vehicle up to 50-55 mph and look for battery voltage on the volt meter. If there is "No" voltage, and the vehicle has engine performance related codes, they will need to be fixed first. If there is battery voltage at 50-55mph, this would indicate that the problem is inside of the transmission, as the PCM is commanding 4th gear, repair as necessary.

SOLENOID FIRING ORDER

| | S1 | S2 | S4 | DSL/TCC | SLT |
|---------|------|-----|-----|---------|--|
| 1st | ON | ON | Off | ON/M1* | Modulates based on engine load |
| 2nd | Off | ON | Off | | |
| 3rd | +Off | Off | Off | | |
| 4th | Off | Off | ON | ON* | |
| 4th/TCC | Off | Off | ON | ON* | |

NOTE: A failsafe condition will provide reverse and third gear for all forward ranges

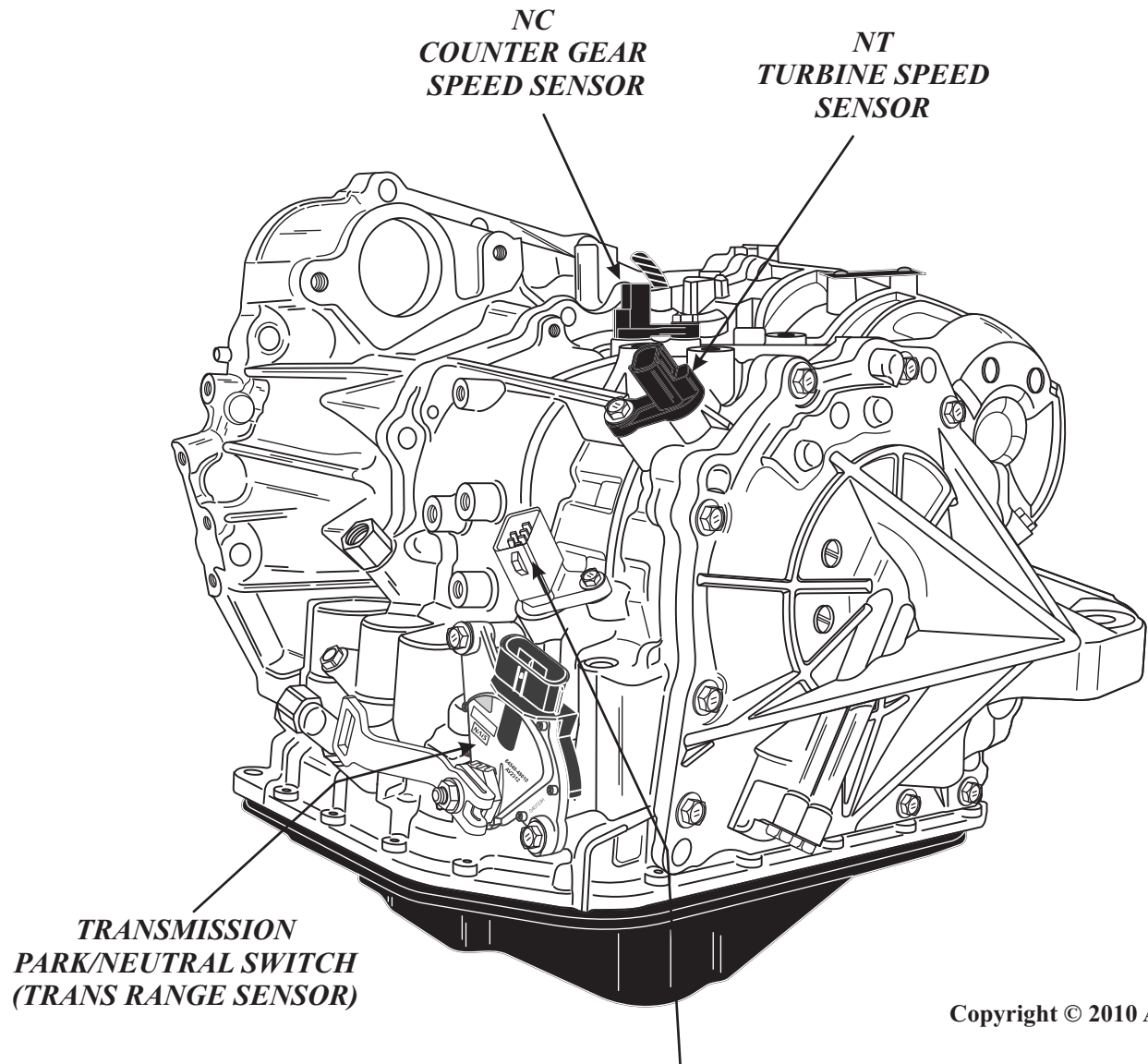
+Off = Pulsed on then Off to control shift overlap on the 2-3 upshift

*DSL - has 3 functions in Manual Low controls B2 brake to provide engine braking in Manual 1, in 3rd and 4th gear controls TCC, and if turned on in Reverse will inhibit Reverse application.

Copyright © 2010 ATSG

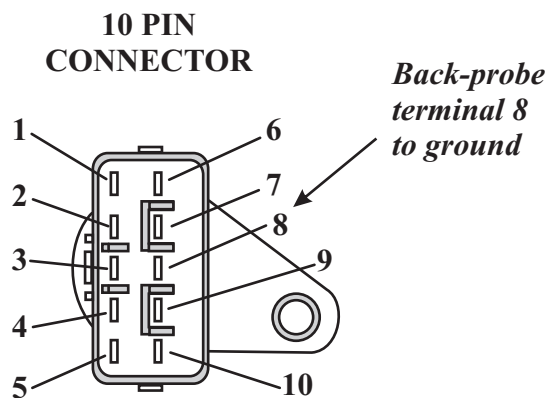
Figure 1

TOYOTA/LEXUS U140/U240 SENSOR AND CONNECTOR LOCATIONS



Copyright © 2010 ATSG

SOLENOID CONNECTOR I.D.



| Terminal | Function |
|----------|--------------|
| 1 | THO (temp +) |
| 2 | SLT + |
| 3 | DSL + |
| 4 | SL2 + |
| 5 | SL1 + |
| 6 | E2 (temp -) |
| 7 | SLT - |
| 8 | S4 + |
| 9 | SL2 - |
| 10 | SL1 - |

Note: Terminal 8 will have battery voltage when 4th gear is commanded

Figure 2