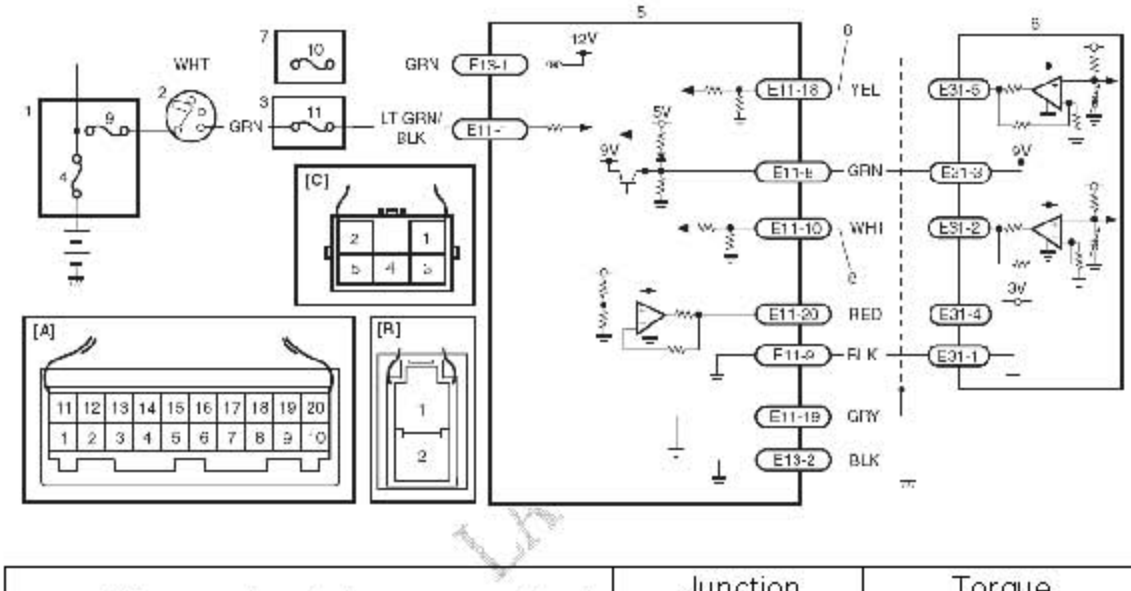
C1111 / C1113 / C1115: Torque Sensor Circuit Failure

DTC C1111: Steering Torque Sensor (Main) Circuit Voltage
DTC C1113: Steering Torque Sensor (Main and Sub) Circuit Correlation
DTC C1115: Steering Torque Sensor (Sub) Circuit Voltage



[A]:	P/S control module connector No.1 "E11" (viewed from harness side)	3.	Junction block assembly	8.	Torque sensor signal circuit
[B]:	P/S control module connector No.2 "E13" (viewed from harness side)	4.	Main fuse	9.	"IGN" fuse
[C]:	Torque sensor connector "E31" (viewed from harness side)	5.	P/S control module	10.	"P/S" fuse
1.	Main fuse box	6.	Torque sensor	11.	"IG1 SIG" fuse
2.	Ignition switch	7.	Individual circuit fuse box No.1		

DTC Detecting Condition and Trouble Area

DTC detecting condition	Trouble area
DTC C1111: Circuit voltage of sensor main is more than 4.5 V or less than 0.5 V (1 driving cycle detection logic) **DTC C1113:** Difference between steering torque calculated based on sensor main signal and steering torque calculated based on sensor sub signal is more than 4.9 N·m or Difference between instantaneous value and average value of steering torque calculated based on sensor main signal and steering torque calculated based on sensor sub signal is more than 2.94 N·m (1 driving cycle detection logic) **DTC C1115:** Circuit voltage of sensor sub signal is more than 4.5 V or less than 0.5 V (1 driving cycle detection logic)	Torque sensor signal circuit Torque sensor P/S control module

DTC Troubleshooting

Step	Action	Yes	No
1	Was "EPS System Check" performed?	Go to Step 2.	Go to "EPS System Check".
2	**DTC check** Is DTC C1153 or C1116 indicated, together?	Go to applicable diag. flow.	Go to Step 3.

Step	Action	Yes	No
3	**Torque sensor signal circuit check** 1) With ignition switch turned OFF, disconnect torque sensor connector. 2) Check for voltage between following terminal with ignition switch ON. • "E11-18" ("YEL" wire) terminal and body ground • "E11-10" ("WHT" wire) terminal and body ground Is it about 0 V?	Go to Step 4.	Torque sensor signal circuit is shorted to other circuit.
4	**Torque sensor circuit check** 1) Disconnect P/S control module connector. 2) Check that torque sensor signal circuit is as follows. • Insulation resistance of wire harness is infinity between "Torque sensor signal circuit" terminal and other terminal at torque sensor connector. • Wiring harness resistance of "Torque sensor signal circuit" is less than 1 Ω. • Insulation resistance between "Torque sensor signal circuit" and vehicle body ground is infinity. Is circuit in good condition?	Go to Step 5.	Repair or replace defective circuit.
5	**Torque sensor check** 1) Connect connectors to P/S control module and torque sensor with ignition switch turned OFF. 2) Check torque sensor out put voltage referring to "Torque Sensor and Its Circuit Inspection". Is torque sensor in good condition?	Substitute a known-good P/S control module and recheck.	Go to Step 6.

Step	Action	Yes	No
6	**P/S control module resistance check** 1) With ignition switch turned OFF, disconnect torque sensor connector. 2) Check for resistance between following terminal with ignition switch ON. • "E11-18" ("YEL" wire) terminal and body ground • "E11-10" ("WHT" wire) terminal and body ground Is it about 1 kΩ?	Replace steering gear case.	Replace P/S control module.