HOW TO USE THIS MANUAL

GENERAL INFORMATION

1. GENERAL DESCRIPTION

(a) This manual is written in accordance with SAE J2008.
  (1) Diagnosis
  (2) Removing / Installing, Replacing, Disassembling / Reassembling, Checking and Adjusting
  (3) Final Inspection

(b) The following procedures are omitted from this manual. However, these procedures must be performed.
  (1) Use a jack or lift to perform operations.
  (2) Clean all removed parts.
  (3) Perform a visual check.

2. INDEX

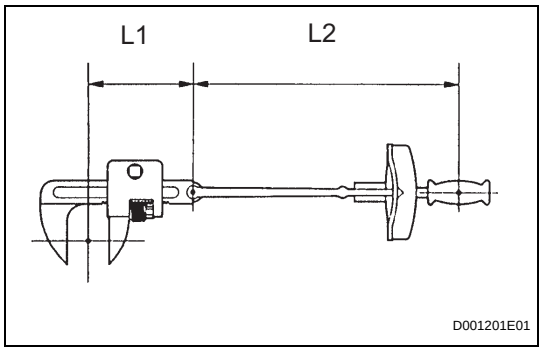
(a) An alphabetical INDEX section is provided at the end of the manual as a reference to help you find the item to be repaired.

3. PREPARATION

(a) Use of Special Service Tools (SST) and Special Service Materials (SSM) may be required, depending on the repair procedure. Be sure to use SST and SSM when they are required and follow the working procedures properly. A list of SST and SSM is in the "Preparation" section of this manual.

4. REPAIR PROCEDURES

(a) A component illustration is placed under the title where necessary.



(1) Use the formula below to calculate special torque values for situations where SST or an extension tool is combined with a torque wrench.
Formula:
T' = L2 / (L1 + L2) * T

T'	**Reading of torque wrench {N*m (kgf*cm, ft.*lbf)}**
T	**Torque {N*m (kgf*cm, ft.*lbf)}**
L1	**Length of SST or extension tool {cm (in.)}**
L2	**Length of torque wrench {cm (in.)}**

NOTICE:
If an extension tool or SST is combined with a torque wrench and the wrench is used to tighten to a torque specification in this manual, the actual torque will be excessive and parts will be damaged.

2. FOR VEHICLES EQUIPPED WITH SRS AIRBAG AND FRONT SEAT OUTER BELT ASSEMBLY WITH PRETENSIONER

The TOYOTA TACOMA is equipped with a Supplemental Restraint System (SRS).

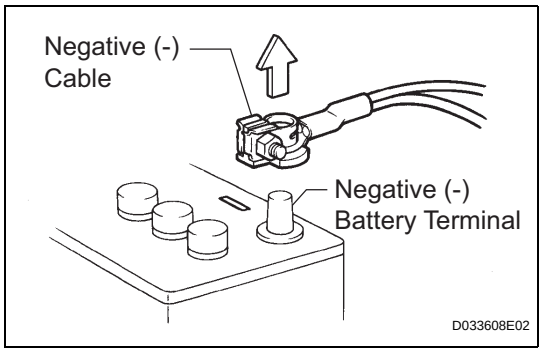
CAUTION:
Failure to carry out the service operations in the correct sequence could cause the SRS to unexpectedly deploy during servicing and lead to serious injury. Furthermore, if a mistake is made when servicing the SRS, it is possible that the SRS may fail to operate properly. Before servicing (including removal or installation of parts, inspection or replacement), be sure to read the following section carefully.

(a) GENERAL NOTICE

(1) As malfunctions of the SRS are difficult to confirm, the Diagnostic Trouble Codes (DTCs) become the most important source of information when troubleshooting. When troubleshooting the SRS, always check the DTCs before disconnecting the battery.

IN

(i) WIRE HARNESS AND CONNECTOR
(1) The SRS wire harness is integrated with the instrument panel wire harness assembly. All the connectors in the system are a standard yellow color. If the SRS wire harness becomes disconnected or the connector becomes broken, repair or replace it.



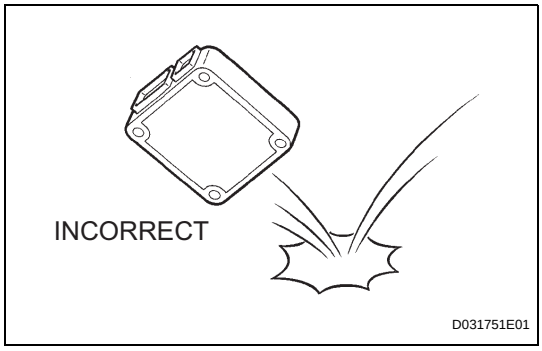
3. ELECTRONIC CONTROL

(a) REMOVAL AND INSTALLATION OF BATTERY TERMINAL

NOTICE:

Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.

(1) Before performing electronic work, disconnect the cable from the negative (-) battery terminal to prevent component and wire damage caused by accidental short circuits.
(2) When disconnecting the cable, turn the ignition switch off and the headlight dimmer switch OFF and loosen the cable nut completely. Perform these operations without twisting or prying the cable. Then disconnect the cable.
(3) Clock settings, radio settings, audio system memory, DTCs and other data are erased when the cable is disconnected from the negative (-) battery terminal. Write down any necessary data before disconnecting the cable.



(b) HANDLING OF ELECTRONIC PARTS
(1) Do not open the cover or case of the ECU unless absolutely necessary. If the IC terminals are touched, the IC may be rendered inoperative by static electricity.
(2) Do not pull the wires when disconnecting electronic connectors. Pull the connector.
(3) Be careful not to drop electronic components, such as sensors or relays. If they are dropped on a hard surface, they should be replaced.
(4) When cleaning the engine with steam, protect the electronic components, air filter and emission-related components from water.
(5) Never use an impact wrench to remove or install temperature switches or temperature sensors.
(6) When measuring the resistance of a wire connector, insert the tester probe carefully to prevent terminals from bending.

4. REMOVAL AND INSTALLATION OF FUEL CONTROL PARTS

(a) PLACE FOR REMOVING AND INSTALLING FUEL SYSTEM PARTS
(1) Work in a location with good air ventilation that does not have welders, grinders, drills, electric motors, stoves, or any other ignition sources.

HINT:

- In troubleshooting, confirm that the problem symptoms have been accurately identified. Preconceptions should be discarded in order to make an accurate judgment. To clearly understand what the problem symptoms are, it is extremely important to ask the customer about the problem and the conditions at the time the malfunction occurred.
- Gather as much information as possible for reference. Past problems that seem unrelated may also help in some cases.
- The following 5 items are important points in the problem analysis:

What	Vehicle model, system name
When	Date, time, occurrence frequency
Where	Road conditions
Under what conditions?	Running conditions, driving conditions, weather conditions
How did it happen?	Problem symptoms

3. SYMPTOM CONFIRMATION AND DIAGNOSTIC TROUBLE CODE

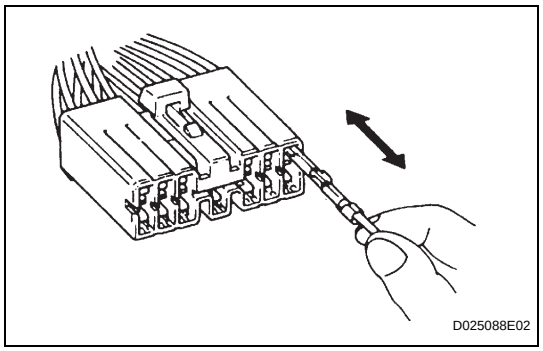
HINT:

The diagnostic system in the TOYOTA TACOMA has various functions.

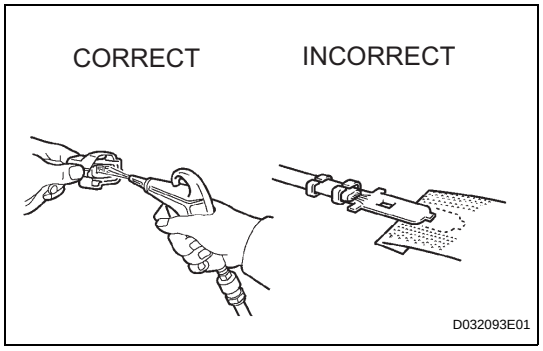
- The first function is the Diagnostic Trouble Code (DTC) check. A DTC is a code stored in the ECU memory whenever a malfunction in the signal circuits to the ECU occurs. In a DTC check, a previous malfunction's DTC can be checked by a technician during troubleshooting.
- Another function is the Input Signal Check, which checks if the signals from various switches are sent to the ECU correctly.

  By using these functions, the problem areas can be narrowed down and troubleshooting is more effective. Diagnostic functions are incorporated in the following system in the TOYOTA TACOMA.

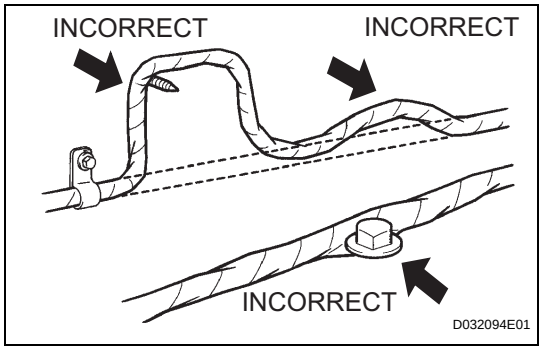
System	DTC Check (Normal Mode)	DTC Check (Check Mode)	Freeze-frame Data	Sensor Check / Test Mode (Input Signal Check)	Data List	Active Test	Customize Parameter
1GR-FE SFI SYSTEM	○	○	○	-	○	○	-
2TR-FE SFI SYSTEM	○	○	○	-	○	○	-
A340E AUTOMATIC TRANSAXLE SYSTEM	○	○	-	-	○	○	-
A750E AUTOMATIC TRANSAXLE SYSTEM	○	○	-	-	○	○	-
A750F AUTOMATIC TRANSAXLE SYSTEM	○	○	-	-	○	○	-



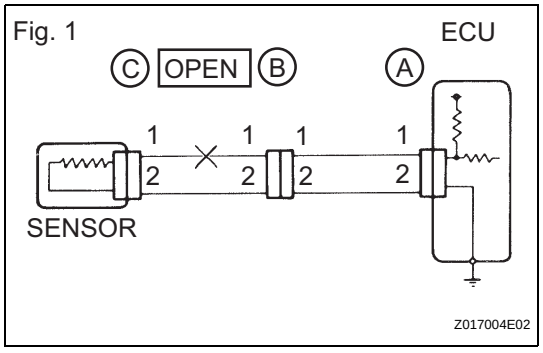
(3) Checking the contact pressure of the terminal:
Prepare a spare male terminal. Insert it into a female terminal, and check for ample tension when inserting and after full engagement.
NOTICE:
When testing a gold-plated female terminal, always use a gold-plated male terminal.



(d) REPAIR METHOD OF CONNECTOR TERMINAL
(1) If there is any foreign matter on the terminal, clean the contact point using an air gun or cloth. Never rub the contact point using sandpaper as the plating may come off.
(2) If there is abnormal contact pressure, replace the female terminal. If the male terminal is gold-plated (gold color), use a gold-plated female terminal; if it is silver-plated (silver color), use a silver-plated female terminal.
(3) Damaged, deformed, or corroded terminals should be replaced. If the terminal does not lock into the housing, the housing may have to be replaced.



(e) HANDLING OF WIRE HARNESS
(1) If removing a wire harness, check the wiring and clamping before proceeding so that it can be restored in the same way.
(2) Never twist, pull or slacken the wire harness more than necessary.
(3) The wire harness should never come into contact with a high temperature part, or rotating, moving, vibrating or sharp-edged parts. Avoid contact with panel edges, screw tips and other sharp items.
(4) When installing parts, never pinch the wire harness.
(5) Never cut or break the cover of the wire harness. If it is cut or broken, replace it or repair it with vinyl tape.



2. CHECK FOR OPEN CIRCUIT

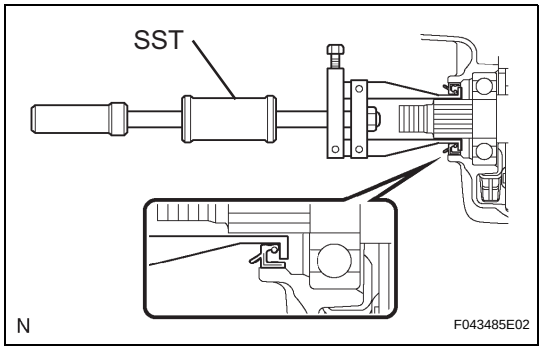
(a) For an open circuit in the wire harness in Fig. 1, check the resistance or voltage, as described below.

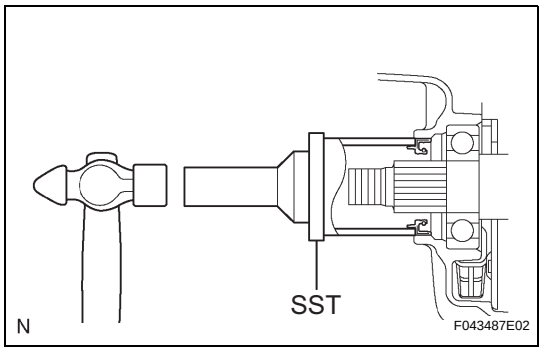
ABBREVIATIONS	MEANING
R/B	Relay Block
R/F	Reinforcement
RAM	Random Access Memory
RBS	Recirculating Ball Type Steering
RFS	Rigid Front Suspension
RH	Right-Hand
RHD	Right-Hand Drive
RLY	Relay
ROM	Read Only Memory
RR / Rr	Rear
RRS	Rigid Rear Suspension
RSE	Rear Seat Entertainment
RWD	Rear-Wheel Drive
SC	Supercharger
SCV	Swirl Control Valve
SDN	Sedan
SEN	Sensor
SICS	Starting Injection Control System
SOC	State Of Charge
SOHC	Single Overhead Camshaft
SPEC	Specification
SPI	Single Point Injection
SRS	Supplemental Restraint System
SSM	Special Service Materials
SST	Special Service Tools
STD	Standard
STJ	Cold-Start Fuel Injection
SW	Switch
SYS	System
T/A	Transaxle
T/M	Transmission
TACH	Tachometer
TAM	P.T. TOYOTA-Astra Motor
TASA	TOYOTA Argentina S.A.
TAT	TOYOTA Motor Thailand Co. Ltd.
TAW	TOYOTA Auto Works Co. Ltd.
TBI	Throttle Body Electronic Fuel Injection
TC	Turbocharger
TCCS	TOYOTA Computer-Controlled System
TCV	Timing Control Valve
TDC	Top Dead Center
TDV	TOYOTA de Venezuela C.A.
TEMP.	Temperature
TEMS	TOYOTA Electronic Modulated Suspension
TFT	TOYOTA Free-Tronic
TIS	Total Information System For Vehicle Development
TKM	TOYOTA Kirloskar Motor Ltd.
TMC	TOYOTA Motor Corporation
TMMIN	PT. TOYOTA Motor Manufacturing Indonesia

TRANSFER CASE OIL SEAL

REMOVAL

1. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL (for 1GR-FE)**
2. **DRAIN TRANSFER OIL**
3. **REMOVE EXHAUST FRONT PIPE ASSEMBLY NO. 2 (for 1GR-FE) (See page EX-3)**
4. **REMOVE PROPELLER SHAFT HEAT INSULATOR BRACKET SUB-ASSEMBLY (for 1GR-FE) (See page PR-16)**
5. **REMOVE PROPELLER SHAFT ASSEMBLY FRONT (See page PR-16)**
6. **REMOVE OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY (See page TF-14)**
7. **REMOVE TRANSFER CASE OIL SEAL**
   (a) Using SST, remove the oil seal.
   SST 09308-00010
   NOTICE:
   Do not damage the oil-seal-fitted surface of the case.

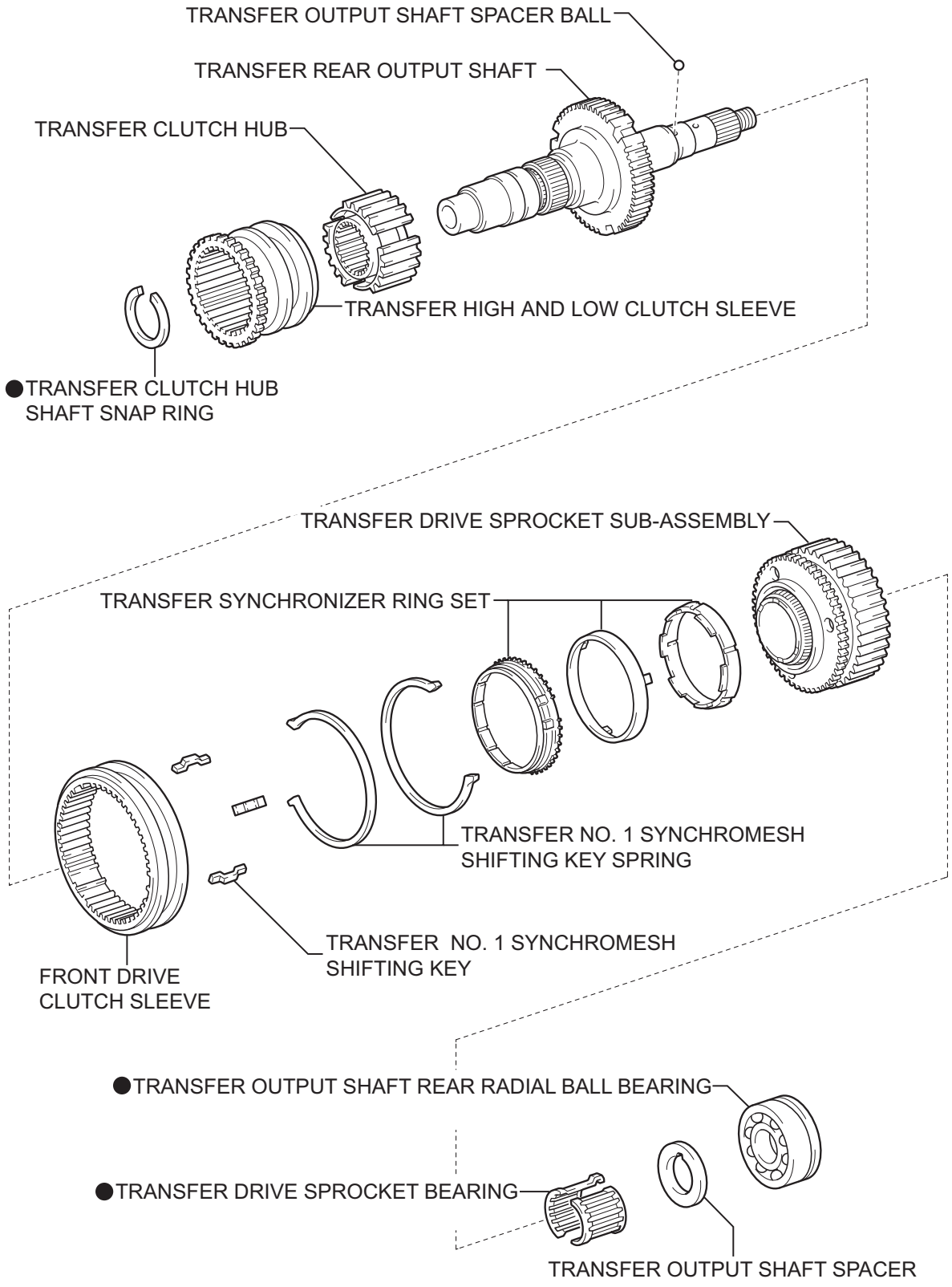




INSTALLATION

1. **INSTALL TRANSFER CASE OIL SEAL**
   (a) Coat the lip of a new oil seal with MP grease.
   (b) Using SST and a hammer, tap in the oil seal until its surface is flush with the case upper surface.
   SST 09316-60011 (09316-00011)
2. **INSTALL OUTPUT SHAFT COMPANION FLANGE SUB-ASSEMBLY (See page TF-37)**
3. **INSTALL PROPELLER SHAFT ASSEMBLY FRONT (See page PR-19)**
4. **INSTALL PROPELLER SHAFT HEAT INSULATOR BRACKET SUB-ASSEMBLY (for 1GR-FE) (See page PR-20)**
5. **INSTALL EXHAUST FRONT PIPE ASSEMBLY NO. 2 (for 1GR-FE) (See page EX-3)**
6. **ADD TRANSFER OIL**
7. **INSPECT TRANSFER OIL (See page TF-3)**
8. **CONNECT CABLE TO NEGATIVE BATTERY TERMINAL (for 1GR-FE)**
   Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)
9. **CHECK FOR EXHAUST GAS LEAKAGE**

REAR OUTPUT SHAFT ASSEMBLY:



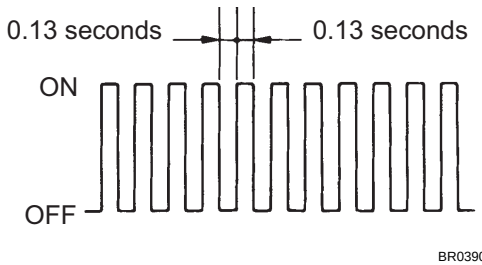
● Non-reusable part

P

C114122E02

TF

Blinking pattern in TEST MODE:



(g) Check that the ABS warning light blinks as shown in the illustration.
HINT:
If the ABS warning light does not blink, inspect the ABS warning light circuit and the TS and CG terminal circuit.

Trouble Areas	See Page
ABS warning light circuit	BC-64 BC-68
TS and CG terminal circuit	BC-78

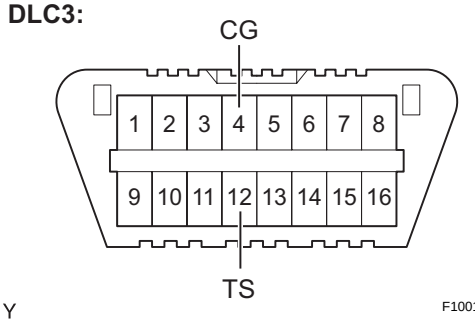
(h) Start the engine.
(i) Active the ABS sensor (deceleration sensor, 4WD detection switch, L4 detection switch and speed sensor) in test mode (SIGNAL CHECK) using intelligent tester.

2. TEST MODE PROCEDURE (for Using a SST Check Wire)

HINT:
- If the ignition switch is turned from the ON to the ACC or LOCK position during test mode, DTCs related to the signal check function will be erased.
- During test mode, the skid control ECU records all DTCs related to the signal check function. By performing the signal check, the codes are erased if normality is confirmed. The codes left over are the codes where an abnormality was found.

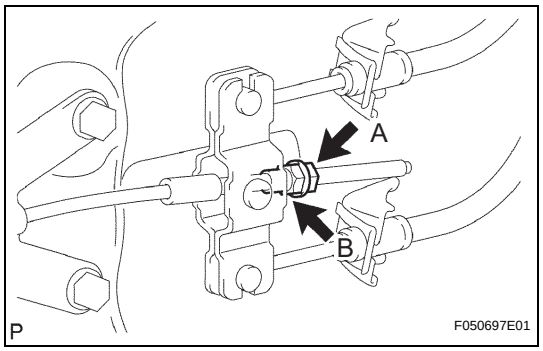
(a) Turn the ignition switch to OFF.
(b) Check that the steering wheel is in the straight-ahead position.
(c) A/T: Check that the shift lever is in the P position and apply the parking brake.
M/T: Check that the shift lever is in neutral and apply the parking brake.

DLC3:



(d) Using SST, connect terminals TS and CG of the DLC3.
SST 09843-18040
(e) Turn the ignition switch to the ON position.

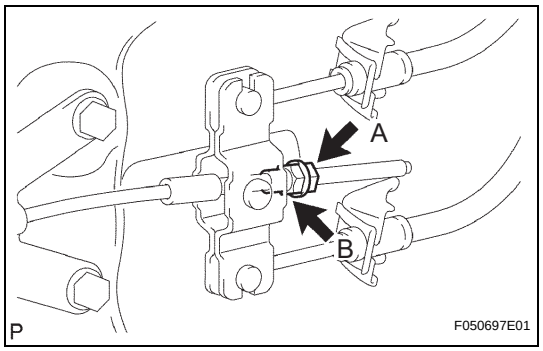
BC



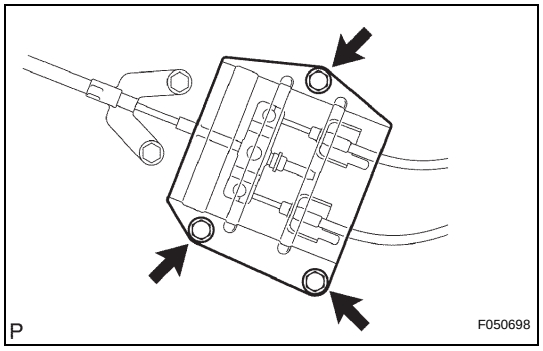
(b) Loosen the lock nut A and turn the adjusting nut B until the parking brake pedal travel is corrected to the specified value.
(c) Tighten the lock nut.
Torque: 13 N*m (127 kgf*cm, 9 ft.*lbf)
(d) Check whether the parking brake drags or not.
(e) When operating the parking brake pedal, check that the parking brake pedal indicator light comes on.

11. ADJUST PARKING BRAKE LEVER TRAVEL (for Manual Transmission)

(a) Confirm that the parking brake lever is released.



(b) Loosen the lock nut A and turn the adjusting nut B until the parking brake lever travel is corrected to the specified value.
(c) Tighten the lock nut.
Torque: 13 N*m (127 kgf*cm, 9 ft.*lbf)
(d) Check whether the parking brake drags or not.
(e) When operating the parking brake lever, check that the parking brake lever indicator light comes on.



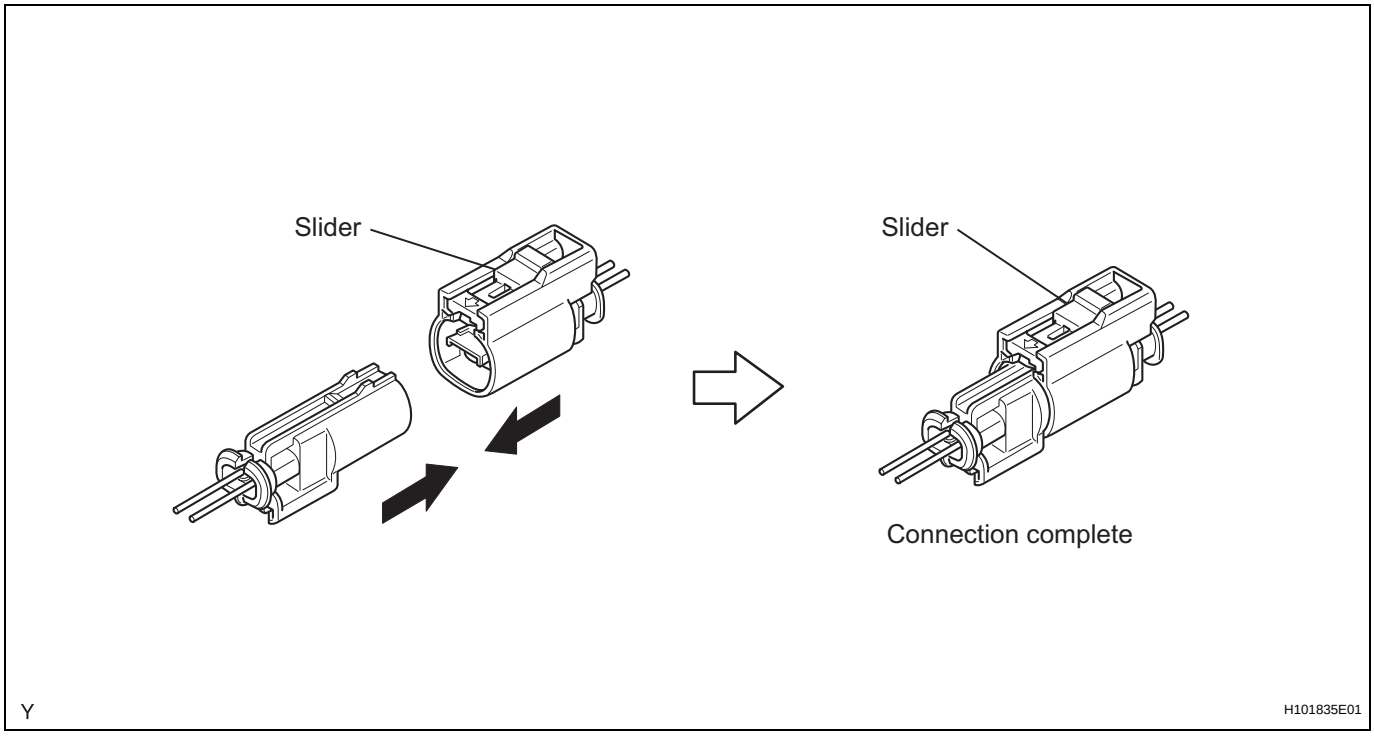
12. INSTALL PARKING BRAKE CABLE JOINT PROTECTOR (for Bench Seat Type)

(a) Install the 3 bolts and parking brake cable joint protector.
Torque: 13 N*m (127 kgf*cm, 9 ft.*lbf)
(b) Return the floor carpet to its original position.
(c) Return the seat to its original position.

13. INSTALL CONSOLE BOX ASSEMBLY REAR (for Separate Seat Type) (See page IP-24)

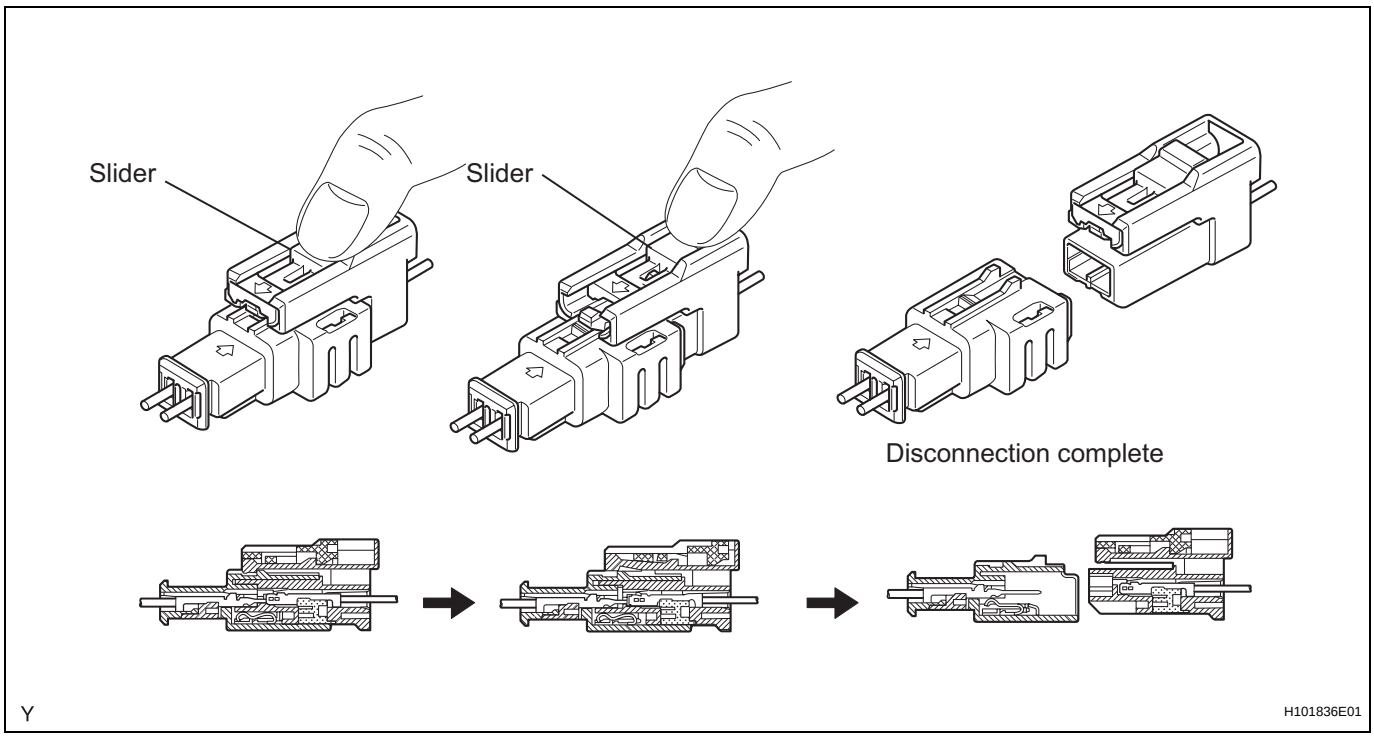
14. INSTALL CONSOLE UPPER REAR PANEL SUB-ASSEMBLY (for Automatic Transmission on Separate Seat Type) (See page IP-25)

15. INSTALL CONSOLE UPPER REAR PANEL SUB-ASSEMBLY (for Manual Transmission on Separate Seat Type) (See page IP-25)



8. DISCONNECTION OF CONNECTOR FOR FRONT PASSENGER AIRBAG ASSEMBLY

(a) Place a finger on the slider, slide the slider to release the lock, and then disconnect the connector.



RS

1	CHECK DTC

(a) Proceed to the appropriate step according to DTC readings.
(1) If using the intelligent tester (read the 5-digit DTCs): Using the intelligent tester, check for DTCs (See page RS-34).

Result

Result	Proceed to
DTC B1800 is output.	A
DTC B1801 is output.	B
DTC B1802 is output.	C
DTC B1803 is output.	D

(2) If not using the intelligent tester (read the 2-digit DTCs):
Check for DTCs (See page RS-34).

Result

Result	Proceed to
DTC 51 is output.	E

B → Go to step 7

C → Go to step 11

D → Go to step 15

E → Go to step 21

A

2	CHECK CONNECTOR

(a) Turn the ignition switch to the LOCK position.
(b) Disconnect the negative (-) terminal cable from the battery, and wait for at least 90 seconds.
(c) Check that the spiral cable connectors (on the steering pad side) are not damaged.
OK:
The lock button is not disengaged, and the claw of the lock is not deformed or damaged.

NG → REPLACE SPIRAL CABLE

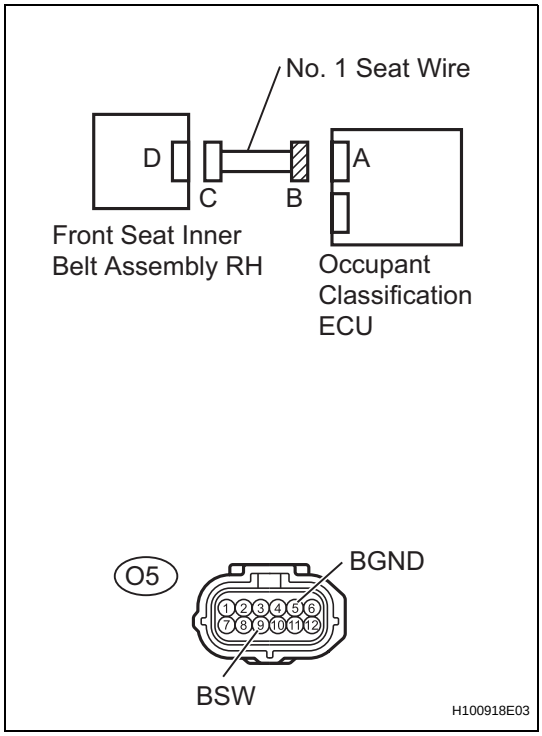
OK

3	CHECK CONNECTION OF CONNECTORS

(a) Check that the connectors are properly connected to the center airbag sensor assembly and the spiral cable.
OK:
The connectors are properly connected.

RS

4 CHECK NO. 1 SEAT WIRE (TO B+)



(a) Disconnect the connectors from the occupant classification ECU and the front seat inner belt assembly RH.
(b) Connect the negative (-) terminal cable to the battery.
(c) Turn the ignition switch to the on position.
(d) Measure the voltage.

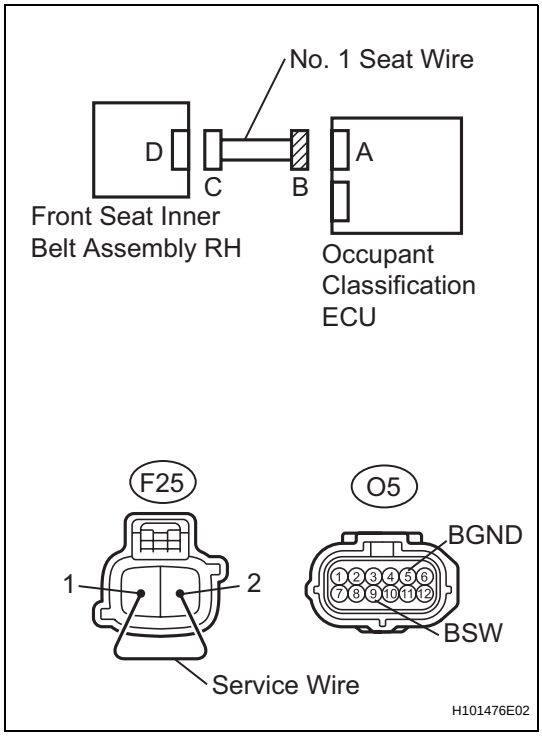
Standard voltage

Tester connection	Condition	Specified condition
O5-9 (BSW) - Body ground	Ignition switch on	Below 1 V
O5-5 (BGND) - Body ground	Ignition switch on	Below 1 V

NG → **REPAIR OR REPLACE NO. 1 SEAT WIRE**

OK

5 CHECK NO. 1 SEAT WIRE (FOR OPEN)



(a) Turn the ignition switch to the lock position.
(b) Disconnect the negative (-) terminal cable from the battery, and wait for at least 90 seconds.
(c) Using a service wire, connect J11-2 and J11-1 of connector C.

NOTICE:
Do not forcibly insert a service wire into the terminals of the connector when connecting.

(d) Measure the resistance.

Standard resistance

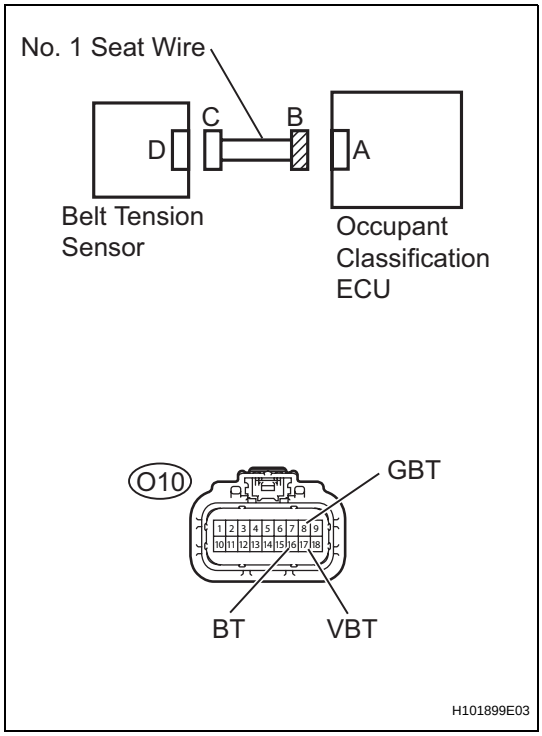
Tester connection	Condition	Specified condition
O5-9 (BSW) - O5-5 (BGND)	Always	Below 1 Ω

NG → **REPAIR OR REPLACE NO. 1 SEAT WIRE**

OK

RS

5 CHECK NO. 1 SEAT WIRE (TO GROUND)



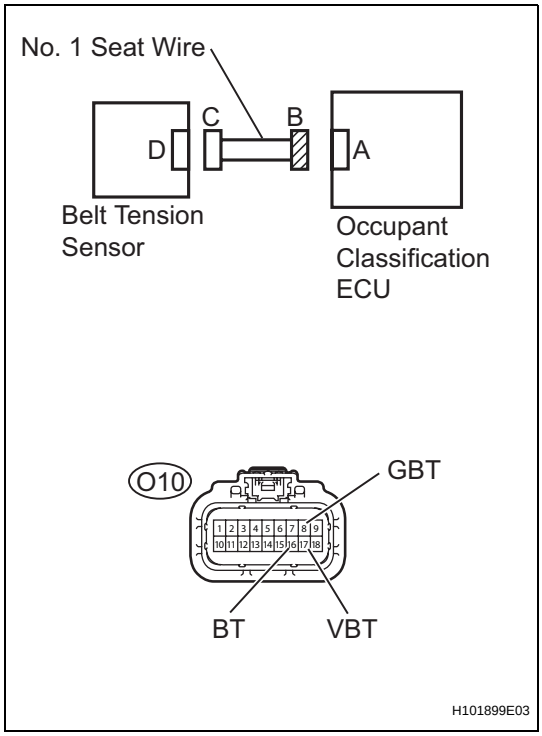
(a) Disconnect the service wire from connector C.
(b) Measure the resistance.
Standard resistance

Tester Connection	Condition	Specified Condition
O10-8 (GBT) - Body ground	Always	1 MΩ or higher
O10-16 (BT) - Body ground	Always	1 MΩ or higher
O10-17 (VBT) - Body ground	Always	1 MΩ or higher

NG → REPAIR OR REPLACE NO. 1 SEAT WIRE

OK

6 CHECK NO. 1 SEAT WIRE (FOR SHORT)



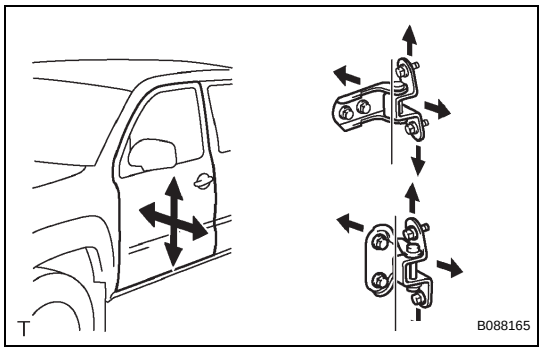
(a) Measure the resistance.
Standard resistance

Tester Connection	Condition	Specified Condition
O10-16 (BT) - O10-8 (GBT)	Always	1 MΩ or higher
O10-17 (VBT) - O10-8 (GBT)	Always	1 MΩ or higher

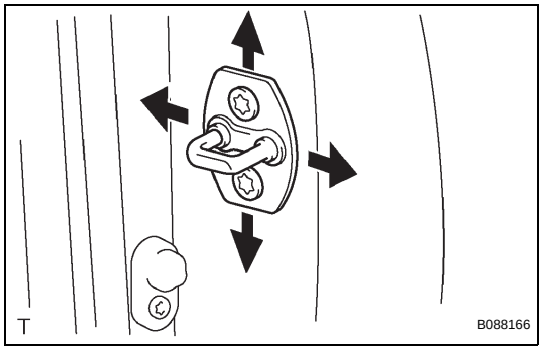
NG → REPAIR OR REPLACE NO. 1 SEAT WIRE

OK

RS

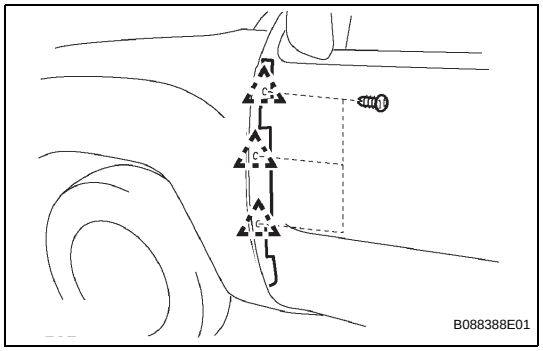


(g) Horizontally and vertically adjust the door by loosening the door side hinge bolts.
(h) Tighten the door side hinge bolts after the adjustment.
Torque: 26 N*m (265 kgf*cm, 19 ft.*lbf)



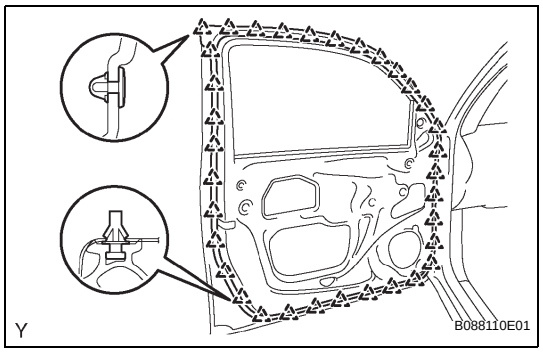
(i) Adjust the striker position by slightly loosening the striker mounting screws with a torx socket wrench T40 and hitting the striker with a plastic hammer.
(j) Using a torx socket wrench T40, tighten the striker mounting screws after the adjustment.
Torque: 23 N*m (235 kgf*cm, 17 ft.*lbf)

ED

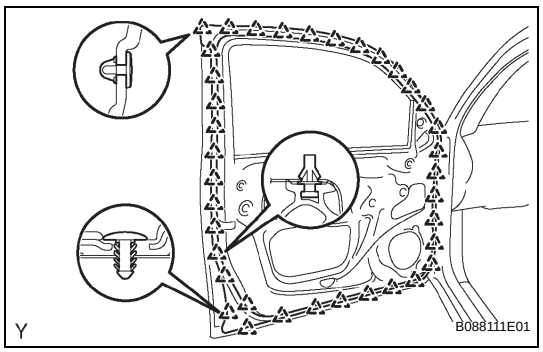


(k) Install the front fender side panel protector LH with the 3 clips.
(l) Connect the cable to the negative battery terminal.
Torque: 3.9 N*m (40 kgf*cm, 35 in.*lbf)
(m) Inspect the SRS warning lamp (See page RS-28)

REASSEMBLY



1. INSTALL FRONT DOOR WEATHERSTRIP LH (for Double Cab)
(a) Engage the 34 clips and install a new front door weatherstrip LH.
(b) Remove the tab tape at both ends of 2-sided tape attached to the weather strip, and attach the weather strip to the door panel with the 2-sided tape.



2. INSTALL FRONT DOOR WEATHERSTRIP LH (for Access Cab)
(a) Engage the 36 clips and install a new front door weatherstrip LH.
(b) Remove the tab tape at both ends of 2-sided tape attached to the weather strip, and attach the weather strip to the door panel with the 2-sided tape.