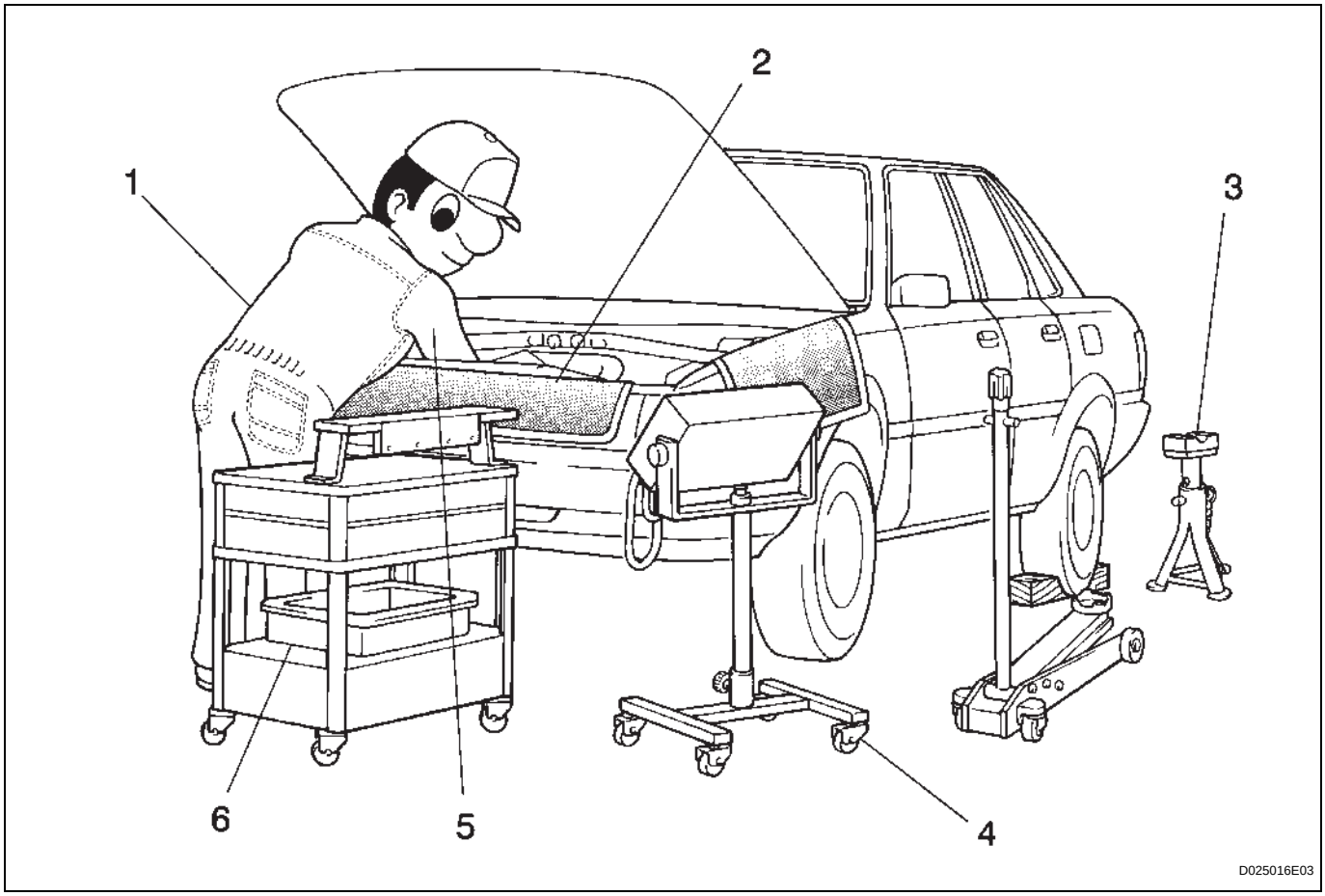
REPAIR INSTRUCTION

PRECAUTION

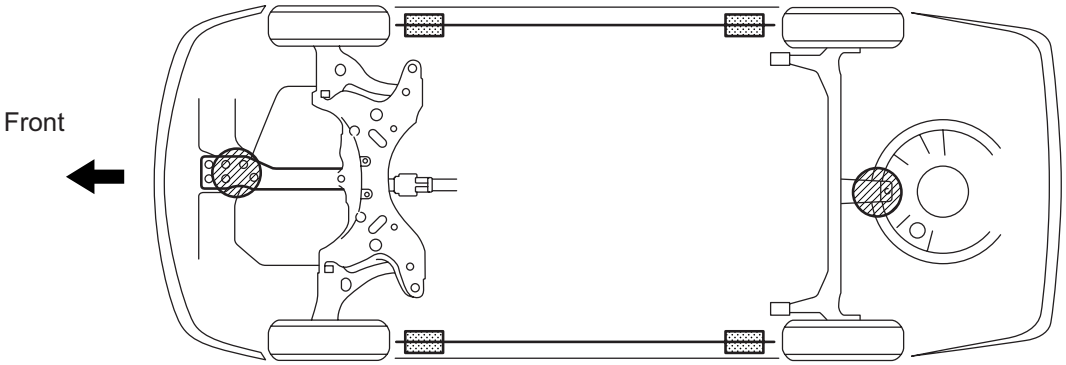
1. BASIC REPAIR HINT

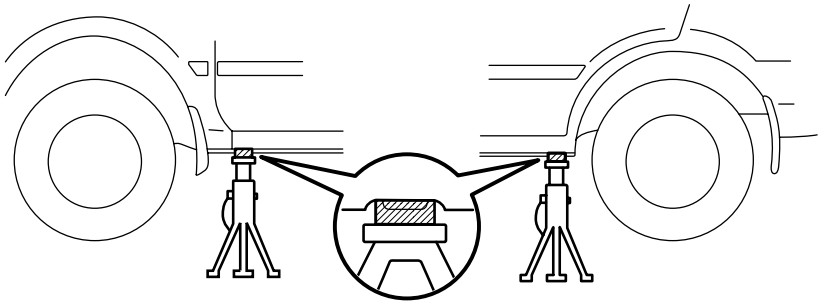
(a) HINTS ON OPERATIONS



1	Attire	• Always wear a clean uniform. • Hat and safety shoes must be worn.
2	Vehicle protection	Prepare a grille cover, fender cover, seat cover and floor mat before starting the operation.
3	Safety operation	• When working with 2 or more persons, be sure to check safety for one another. • When working with the engine running, make sure to provide ventilation for exhaust fumes in the workshop. • If working on high temperature, high pressure, rotating, moving, or vibrating parts, wear appropriate safety equipment and take extra care not to injure yourself or others. • When jacking up the vehicle, be sure to support the specified location with a safety stand. • When lifting up the vehicle, use appropriate safety equipment.
4	Preparation of tools and measuring gauge	Before starting operation, prepare a tool stand, SST, gauge, oil and parts for replacement.
5	Removal and installation, disassembly and assembly operations	• Diagnose with a thorough understanding of proper procedures and of the reported problem. • Before removing the parts, check the general condition of the assembly and for deformation and damage. • When the assembly is complicated, take notes. For example, note the total number of electrical connections, bolts, or hoses removed. Add matchmarks to insure reassembly of components in the original positions. Temporarily mark hoses and their fittings if needed. • Clean and wash the removed parts if necessary and assemble them after a thorough check.

IN





JACK POSITION ——————————————————

Front ———— Front crossmember

Rear ———— Rear axle beam

CAUTION:

When jacking up the rear and front, make sure the vehicle is not carrying any extra weight.

SUPPORT POSITION ——————————————————

Safety stand and swing arm type lift

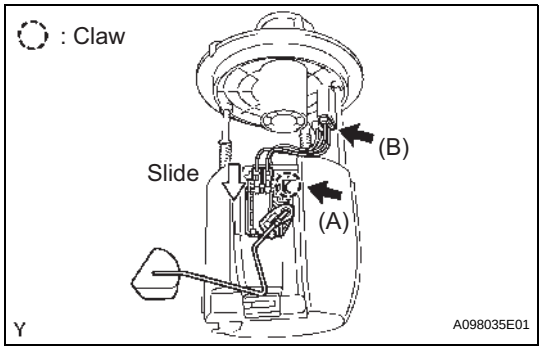
H

D101620E02

TORQUE SPECIFICATIONS

Part Tightened		N*m	kgf*cm	ft*lbf
VANE PUMP ASSEMBLY				
Vane pump housing rear x Vane pump housing front		22	220	16
Power steering oil pressure switch		21	210	15
Pressure port union sub-assembly		69	700	51
Power steering suction port union set bolt		12	120	9
Vane pump assembly x Pump bracket rear		37	380	27
Vane pump assembly set bolt		37	380	27
Pressure feed tube assembly x Vane pump assembly		41 (44)	420 (450)	30 (33)
Pressure feed tube assembly clamp set bolt		7.8	80	69 in.*lbf
RACK & PINION POWER STEERING GEAR ASSEMBLY				
Engine hanger set bolt		38	390	28
Control valve housing set bolt		18	185	13
Control valve shaft lock nut		25	250	18
Rack housing cap		59	600	43
Rack guide spring cap lock nut		43 (59)	440 (600)	32 (43)
Rack x Rack end sub-assembly		62 (83)	630 (850)	46 (61)
Turn pressure tube union nut		12 (13)	120 (130)	9 (9)
Tie rod end sub-assembly lock nut		74	750	54
Rack & pinion power steering gear assembly set bolt		58	590	43
Steering intermediate shaft x Control valve pinion shaft		35	360	26
Front suspension crossmember sub-assembly x Frame	Bolt A	157	1,600	116
	Bolt B	113	1,152	83
Crossmember x Engine mounting insulator RR		52	530	38
Center member x Frame		60	612	44
Center member x Engine mounting insulator FR		52	530	38
Front suspension arm sub-assembly lower No. 1 x Lower ball joint		89	910	66
Front stabilizer link assembly set nut		74	750	55
Pressure feed tube assembly x Rack & pinion steering gear assembly		23 (25)	235 (255)	17 (18)
Steering gear outlet return tube x Rack & pinion steering gear assembly		23 (25)	235 (255)	17 (18)
Pressure feed tube clamp set bolt		7.8	80	69 in.*lbf
Tie rod end sub-assembly x Steering knuckle		49	500	36
Steering intermediate shaft assembly No. 2 set bolts		35	360	26
Front wheel set nut		103	1,050	76

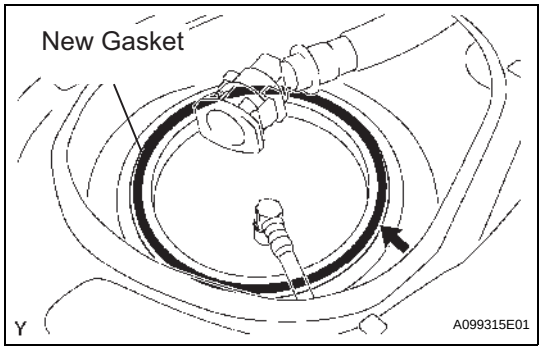
( ): For use without SST



7. INSTALL FUEL SENDER GAUGE ASSEMBLY

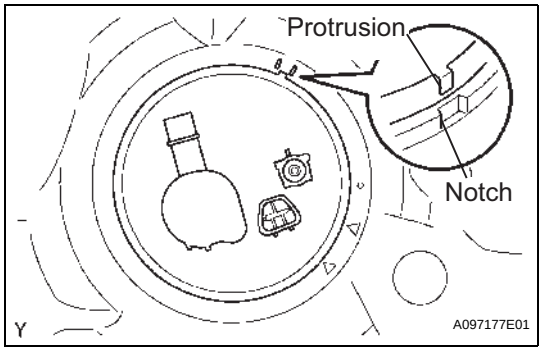
(a) Slide the fuel sender gauge to fit the claw (A).

(b) Connect the fuel sender gauge connector (B).



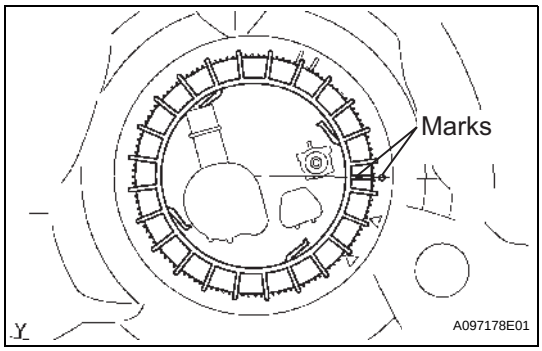
8. INSTALL FUEL SUCTION WITH PUMP AND GAUGE TUBE ASSEMBLY

(a) Install a new gasket onto the fuel tank.

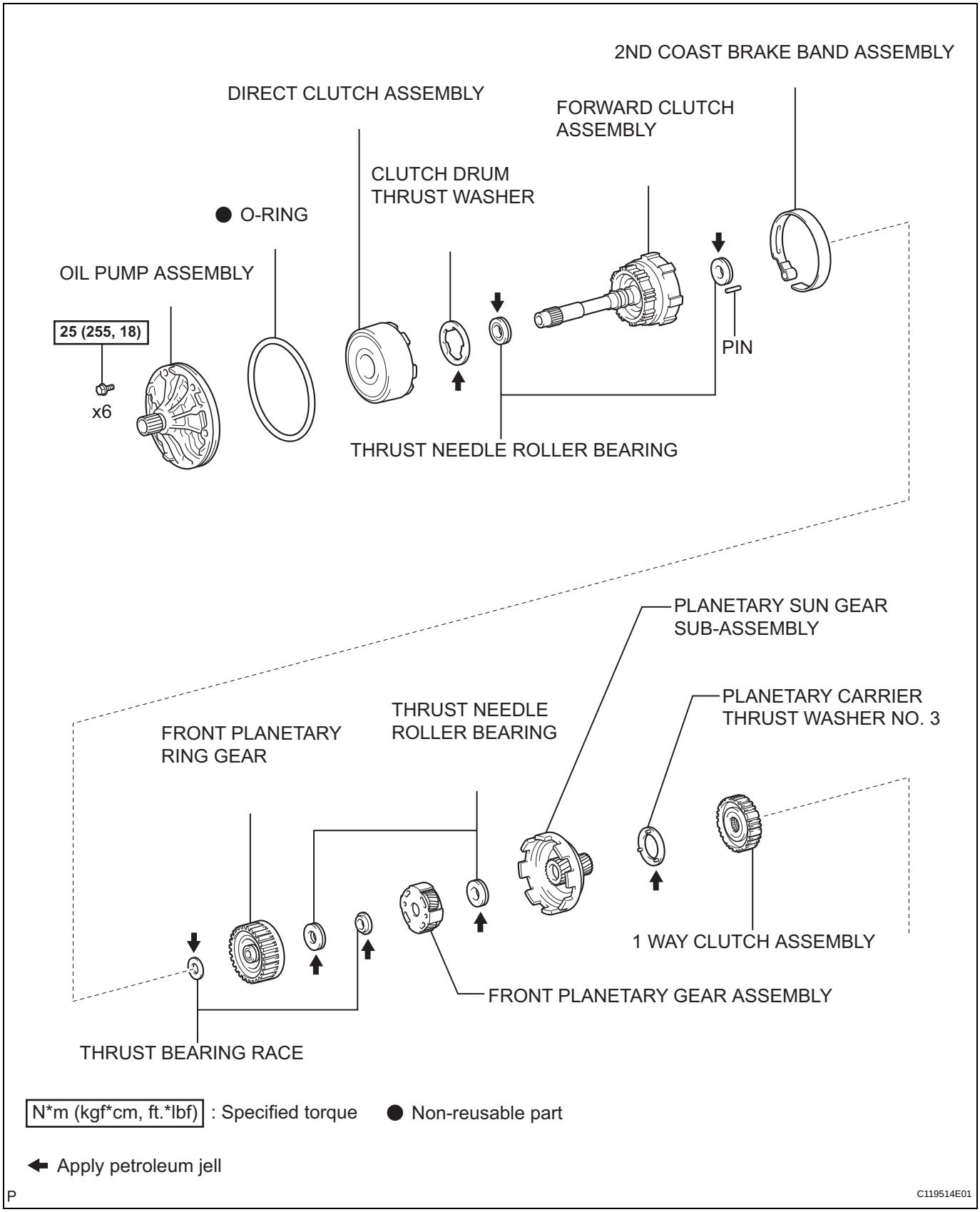


(b) Set the fuel suction tube to the fuel tank.
NOTICE:
Make sure that the fuel sender gauge arm does not bend.

(c) Align the protrusion of the fuel suction tube with the notch of the fuel tank.



(d) While holding the fuel suction tube by hand, align the marks of a new fuel pump gauge retainer and fuel tank as shown, then install the fuel pump gauge retainer.

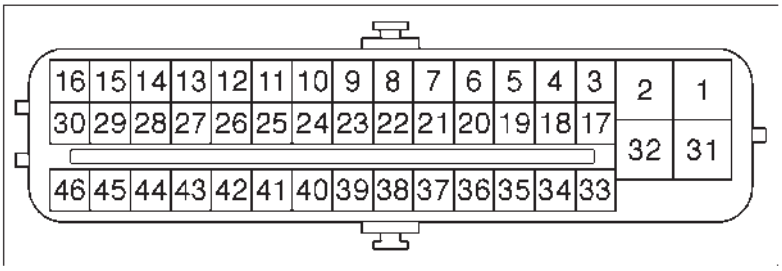

2ND COAST BRAKE BAND ASSEMBLY
DIRECT CLUTCH ASSEMBLY
FORWARD CLUTCH ASSEMBLY
CLUTCH DRUM THRUST WASHER
● O-RING
OIL PUMP ASSEMBLY
25 (255, 18)
x6
PIN
THRUST NEEDLE ROLLER BEARING
PLANETARY SUN GEAR SUB-ASSEMBLY
PLANETARY CARRIER THRUST WASHER NO. 3
THRUST NEEDLE ROLLER BEARING
FRONT PLANETARY RING GEAR
1 WAY CLUTCH ASSEMBLY
FRONT PLANETARY GEAR ASSEMBLY
THRUST BEARING RACE
N*m (kgf*cm, ft.*lbf) : Specified torque
● Non-reusable part
Apply petroleum jell
P
C119514E01

AX

TERMINALS OF ECU

1. Terminals of ECU

Skid Control ECU:



N

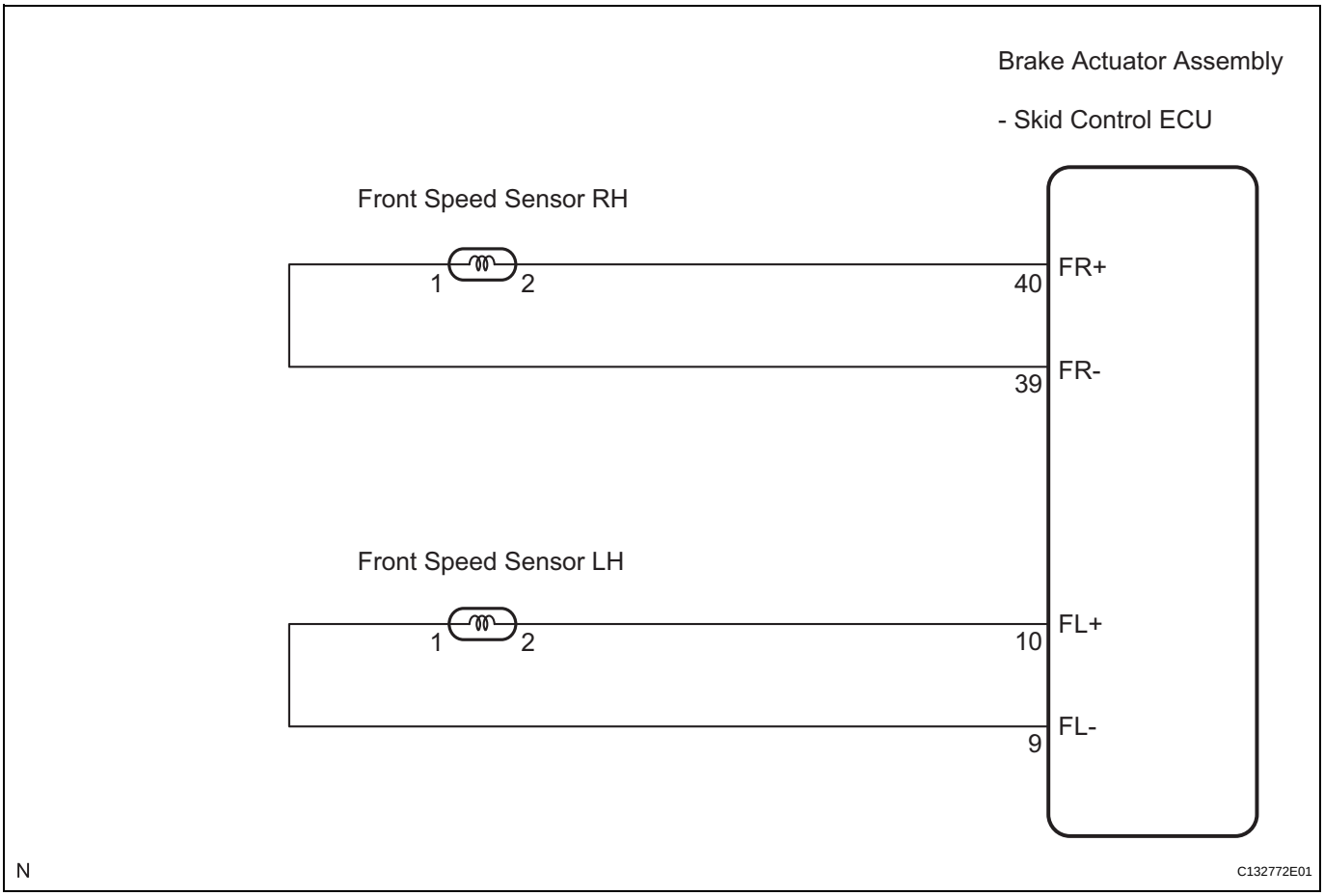
F045080E13

Symbols (Terminal No.)	Terminal Description
GND1 (1)	Skid control ECU ground
+BS (2)	Solenoid valve power supply
P (6)	P range switch input
FL- (9)	Front LH wheel speed signal input (-)
FL+ (10)	Front LH wheel speed signal input (+)
D/G (13)	Diagnosis tester communication line
STP (14)	Stop light switch input
RL+ (15)	Rear LH wheel speed signal input (+)
RL- (16)	Rear LH wheel speed signal input (-)
WA (17)	ABS warning light output
SP1 (18)	Speed signal output for meter
TS (20)	Sensor diagnosis check input
TC (21)	Diagnosis tester communication line
PKB (23)	Parking brake switch input
+BM (31)	Motor relay power supply
GND2 (32)	Skid control ECU ground
WTIR (33)	WTIR input for meter
TSI (34)	TSI input for meter
N (36)	N range switch input
FR- (39)	Front RH wheel speed signal input (-)
FR+ (40)	Front RH wheel speed signal input (+)
INIT (41)	Tire pressure warning switch input
BRL (43)	BRAKE warning light output
RR+ (44)	Rear RH wheel speed signal input (+)
RR- (45)	Rear RH wheel speed signal input (-)
IG1 (46)	ECU power supply

DTC No.	DTC Detecting Condition	Trouble Area
C0200/31 C0205/32	Any of the following conditions is detected: – At a vehicle speed of 6 mph (10 km/h) or more, pulses are not input for 30 sec. – A lapse in pulse signal transmission from the speed sensor occurs frequently when the vehicle is running (ABS is in operation). – Noise can be detected in pulse signals transmitted from the speed sensor 75 times or more within 5 seconds. – An open in the speed sensor system is detected when the vehicle is stopped (less than 1 second).	• Right front and left front speed sensor • Each speed sensor circuit • Speed sensor rotor • Sensor installation
C1235/35 C1236/36	At a vehicle speed of 12 mph (20 km/h) or more, the condition that noise is included in the speed sensor signal continues for 5 sec. or more.	• Right front and left front speed sensor • Speed sensor rotor

HINT:
DTC No. C0200/31 and C1235/35 are for the right front speed sensor.
DTC No. C0205/32 and C1236/36 are for the left front speed sensor.

WIRING DIAGRAM



BC

INSPECTION PROCEDURE

1	READ VALUE OF INTELLIGENT TESTER (FRONT SPEED SENSOR)

(a) Connect the intelligent tester to the DLC3.
(b) Start the engine.

DISASSEMBLY

HINT:
Overhaul the RH side by the same procedures as LH side.

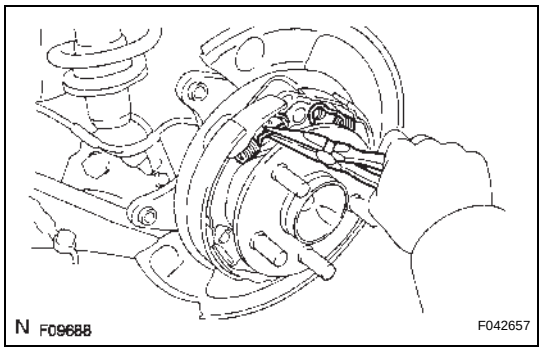
1. REMOVE REAR WHEEL

2. SEPARATE REAR DISC BRAKE CALIPER ASSEMBLY LH

3. REMOVE REAR DISC

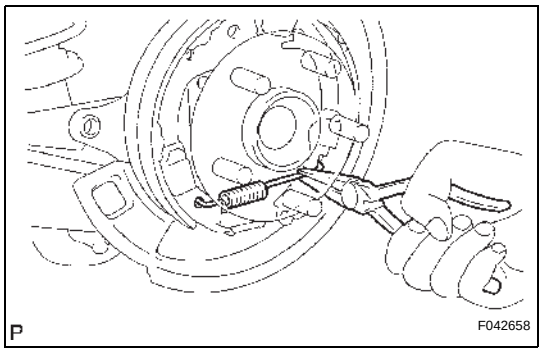
4. REMOVE PARKING BRAKE SHOE STRUT LH

(a) Using needle-nose pliers, remove the 2 upper side tension springs.
(b) Remove the parking brake shoe strut LH.



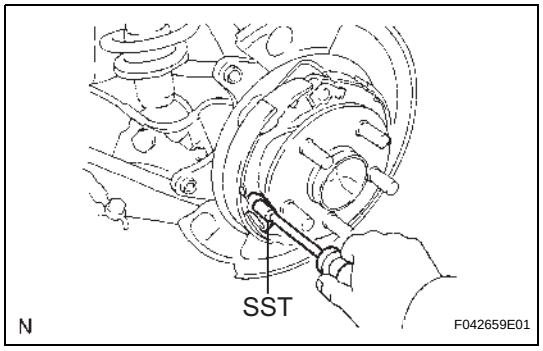
5. REMOVE PARKING BRAKE SHOE ADJUSTING SCREW SET

(a) Using needle-nose pliers, remove the anchor side tension spring.
(b) Remove the shoe adjusting screw set.



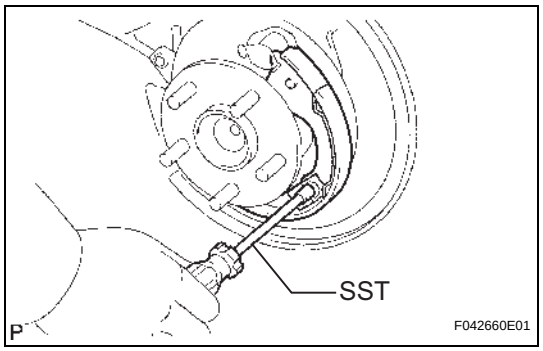
6. REMOVE PARKING BRAKE SHOE ASSEMBLY LH NO. 1

(a) Using SST, remove the parking brake shoe hold-down compression spring, parking brake shoe hold-down spring pin and parking brake shoe assembly LH No. 1.
SST 09718-00010



7. REMOVE PARKING BRAKE SHOE ASSEMBLY LH NO. 2

(a) Using SST, remove the parking brake shoe hold-down compression spring and parking brake shoe hold-down spring pin.
SST 09718-00010
(b) Disconnect the parking brake shoe assembly LH No. 2 from the parking brake shoe lever LH, and remove the parking brake shoe LH No. 2.

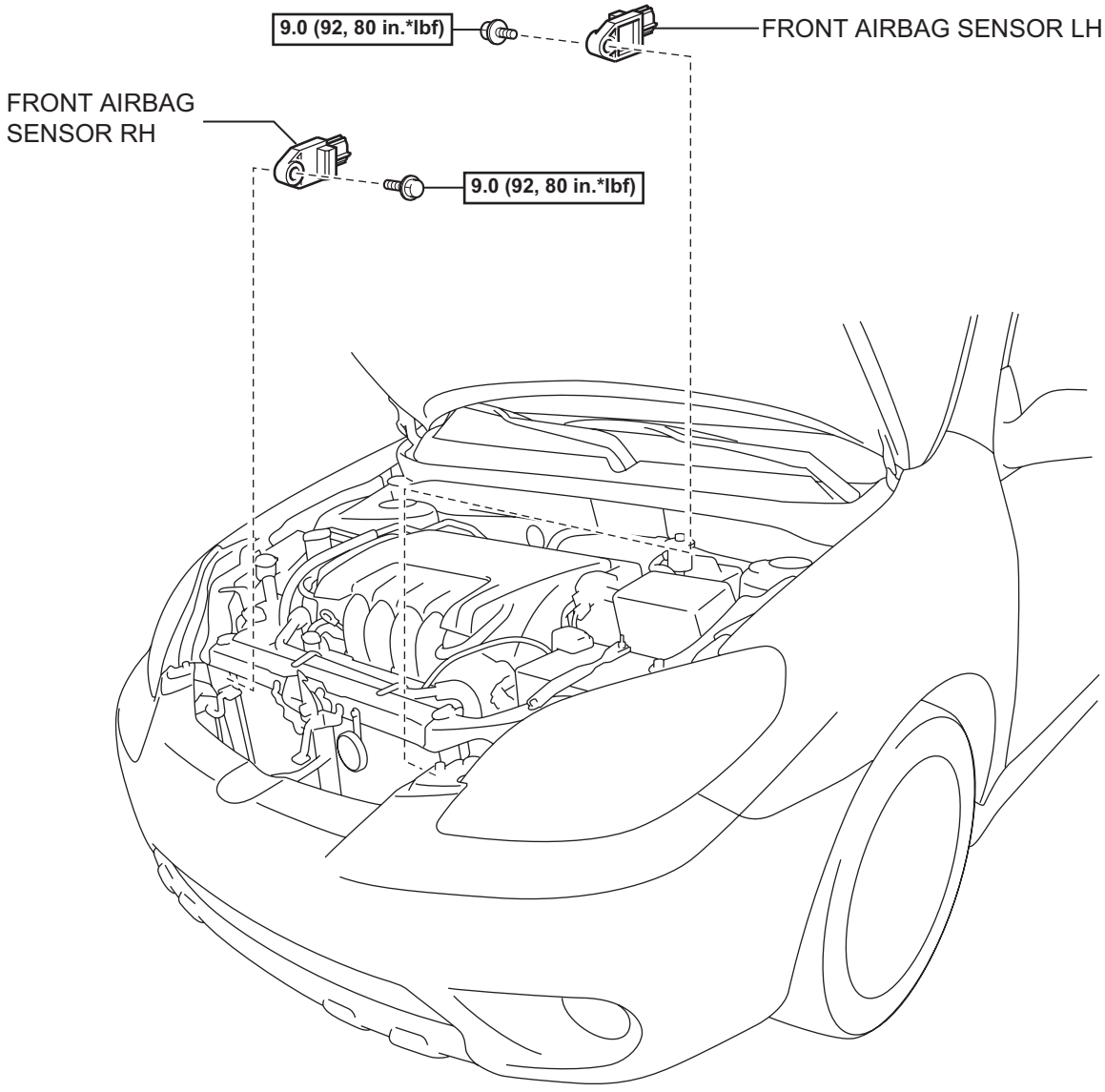


PB

FRONT AIRBAG SENSOR

COMPONENTS

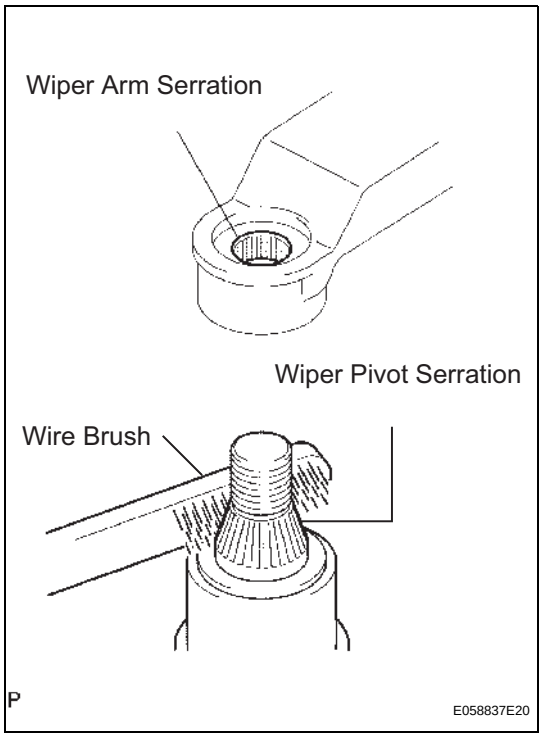
RS



N*m (kgf*cm, ft.*lbf) : Specified torque

C

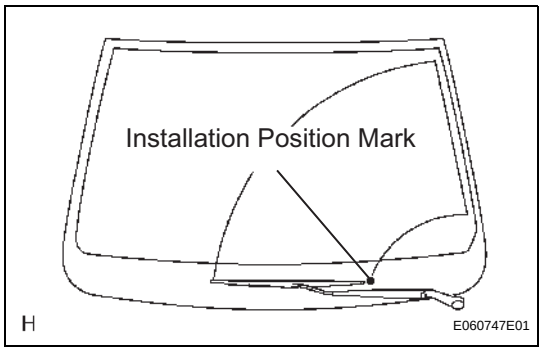
C119581E01



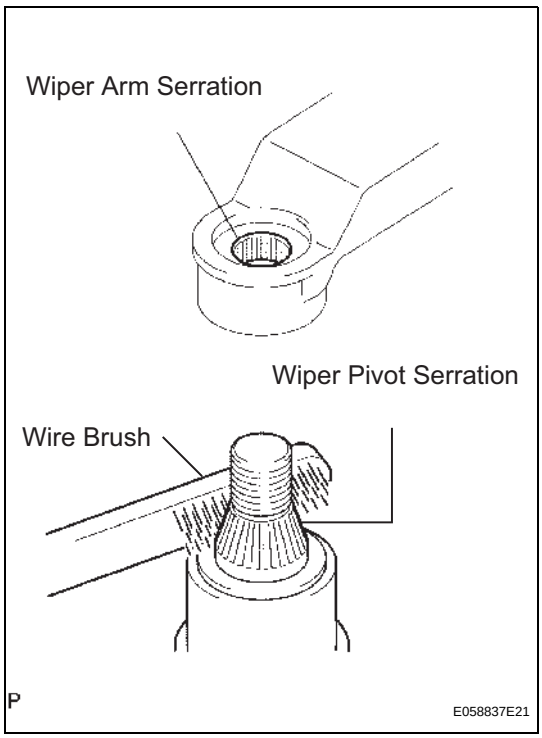
6. INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY LH

(a) Clean the wiper arm serrations.

(b) Clean the wiper pivot serrations with a wire brush (when reinstalling).



(c) Install the front wiper arm & blade assembly LH with the nut to the position shown in the illustration.
Torque: 21 N*m (214 kgf*cm, 15 ft.*lbf)
HINT:
Hold down the arm hinge by hand in order to fasten the nut.



7. INSTALL FRONT WIPER ARM AND BLADE ASSEMBLY RH

(a) Clean the wiper arm serrations.

(b) Clean the wiper pivot serrations with a wire brush (when reinstalling).

DIAGNOSTIC TROUBLE CODE CHART

HINT:
The parameters listed in the chart are for reference only. Factors such as instrument type may cause readings to differ slightly from stated values.
If any DTCs are displayed during a check mode DTC check, check the circuit for the DTCs listed in the table below. For details of each DTC, refer to the page indicated.

SFI SYSTEM:

DTC Code	Detection Item	Trouble Areas	MIL	Memory	See page
P0010	Camshaft Position "A" Actuator Circuit (Bank 1)	1. Open or short in Oil Control Valve (OCV) circuit 2. OCV 3. ECM	Comes on	DTC Stored	ES-45
P0011	Camshaft Position "A" - Timing Over-Advanced or System Performance (Bank 1)	1. Valve timing 2. OCV 3. OCV filter 4. VVT (Variable Valve Timing) controller 5. ECM	Comes on	DTC Stored	ES-49
P0012	Camshaft Position "A" - Timing Over-Retarded (Bank 1)	Same as DTC P0011	Comes on	DTC Stored	ES-49
P0016	Crankshaft Position - Camshaft Position Correlation (Bank 1 Sensor A)	1. Mechanical system (Timing chain has jumped tooth or chain stretched) 2. ECM	Comes on	DTC Stored	ES-59
P0031	Oxygen Sensor Heater Control Circuit Low (Bank 1 Sensor 1)	1. Open in Air-Fuel Ratio (A/F) sensor heater circuit 2. A/F sensor heater 3. EFI relay 4. ECM	Comes on	DTC Stored	ES-61
P0032	Oxygen Sensor Heater Control Circuit High (Bank 1 Sensor 1)	1. Short in A/F sensor heater circuit 2. A/F sensor heater 3. EFI relay 4. ECM	Comes on	DTC Stored	ES-61
P0037	Oxygen Sensor Heater Control Circuit Low (Bank 1 Sensor 2)	1. Open in Heated Oxygen (HO2) sensor circuit 2. HO2 sensor heater 3. EFI relay 4. ECM	Comes on	DTC Stored	ES-66
P0038	Oxygen Sensor Heater Control Circuit High (Bank 1 Sensor 2)	1. Short in HO2 sensor heater circuit 2. HO2 sensor heater 3. EFI relay 4. ECM	Comes on	DTC Stored	ES-66
P0100	Mass or Volume Air Flow Circuit	1. Open or short in Mass Air Flow (MAF) meter circuit 2. MAF meter 3. ECM	Comes on	DTC Stored	ES-71
P0101	Mass or Volume Air Flow Circuit Range / Performance Problem	MAF meter	Comes on	DTC Stored	ES-78
P0102	Mass or Volume Air Flow Circuit Low Input	1. Open in MAF meter circuit 2. MAF meter 3. ECM	Comes on	DTC Stored	ES-71
P0103	Mass or Volume Air Flow Circuit High Input	1. Short in MAF meter circuit 2. MAF meter 3. ECM	Comes on	DTC Stored	ES-71
P0110	Intake Air Temperature Circuit	1. Open or short in Intake Air Temperature (IAT) sensor circuit 2. IAT sensor (built into Mass Air Flow [MAF] meter) 3. ECM	Comes on	DTC Stored	ES-81

DTC	P2419	Evaporative Emission System Switching Valve Control Circuit Low

DTC	P2420	Evaporative Emission System Switching Valve Control Circuit High

DTC SUMMARY

DTCs	Monitoring Items	Malfunction Detection Conditions	Trouble Areas	Detection Timings	Detection Logic
P2419	Vent valve stuck closed	P043E, P043F, P2401, P2402 and P2419 present when one of following conditions met during key-off EVAP monitor: • EVAP pressure just after reference pressure measurement greater than -1 kPa-g (-7.5 mmHg-g) • Reference pressure less than -4.85 kPa-g (-36.4 mmHg-g) • Reference pressure greater than -1.057 kPa-g (-7.93 mmHg-g) • Reference pressure not saturated • Reference pressure difference between first and second 0.7 kPa-g (5.25 mmHg-g) or more HINT: Typical example values	• Canister pump module (Reference orifice, leak detection pump, vent valve) • Connector/wire harness (Canister pump module - ECM) • EVAP system hose (pipe from air inlet port to canister pump module, canister filter, fuel tank vent hose) • ECM	While ignition switch OFF	2 trip
P2420	Vent valve stuck open (vent)	Following condition met during key-off EVAP monitor: • EVAP pressure change when vent valve closed (ON) less than 0.3 kPa-g (2.25 mmHg-g)	• Canister pump module (Reference orifice, leak detection pump, vent valve) • Connector/wire harness (Canister pump module - ECM) • ECM	While ignition switch OFF	2 trip

HINT:
The vent valve is built into the canister pump module.

DESCRIPTION

The circuit description can be found in the EVAP (Evaporative Emission) System (See page ES-341).

INSPECTION PROCEDURE

Refer to the EVAP System (See page ES-346).

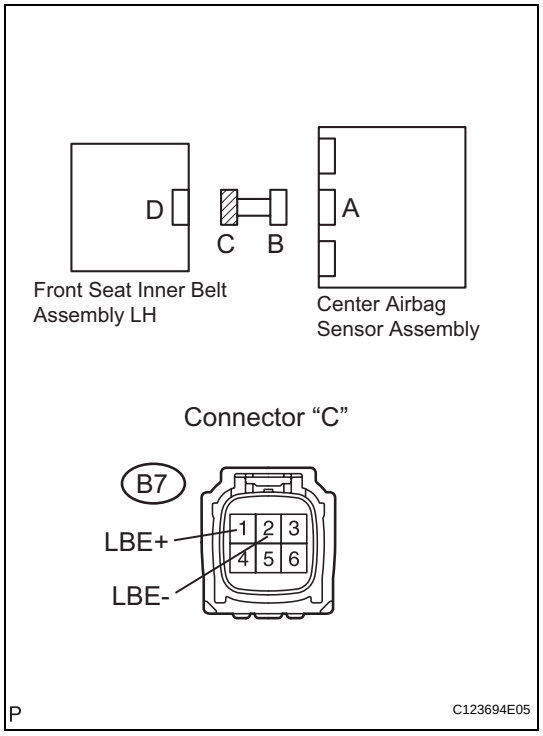
MONITOR DESCRIPTION

5 hours* after the ignition switch is turned to OFF, the leak detection pump creates negative pressure (vacuum) in the EVAP system. The ECM monitors for leaks and actuator malfunctions based on the EVAP pressure.
HINT:
*: If the engine coolant temperature is not below 35°C (95°F) 5 hours after the ignition switch is turned to OFF, the monitor check starts 2 hours later. If it is still not below 35°C (95°F) 7 hours after the ignition switch is turned to OFF, the monitor check starts 2.5 hours later.

Sequence	Operations	Descriptions	Duration
-	ECM activation	Activated by soak timer, 5 hours (7 or 9.5 hours) after ignition switch turned to OFF.	-

A

5 CHECK WIRE HARNESS (SHORT TO B+)



(a) Connect the negative (-) terminal cable to the battery, and wait for at least 2 seconds.
(b) Turn the ignition switch to the ON position.
(c) Measure the voltage according to the value(s) in the table below.

Standard voltage

Tester connection	Condition	Specified condition
B7-1 (LBE+) - Body ground	Ignition switch ON	Below 1 V
B7-2 (LBE-) - Body ground	Ignition switch ON	Below 1 V

Result

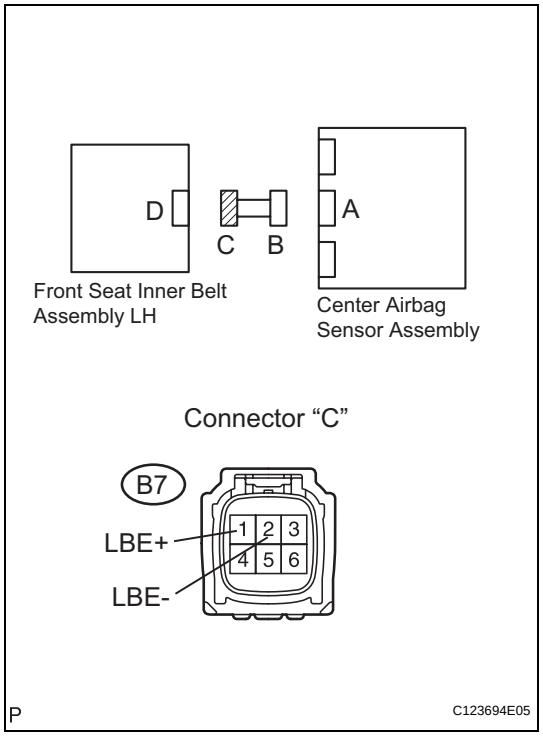
Result	Proceed to
OK	A
NG (with Side and curtain shield airbag)	B
NG (without Side and curtain shield airbag)	C

B → REPAIR OR REPLACE FLOOR WIRE

C → REPAIR OR REPLACE INSTRUMENT PANEL WIRE NO. 3

A

6 CHECK WIRE HARNESS (SHORT TO GROUND)



(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) Measure the resistance according to the value(s) in the table below.

Standard resistance

Tester connection	Condition	Specified condition
B7-1 (LBE+) - Body ground	Always	1 MΩ or higher
B7-2 (LBE-) - Body ground	Always	1 MΩ or higher

Result

Result	Proceed to
OK	A
NG (with Side and curtain shield airbag)	B
NG (without Side and curtain shield airbag)	C

B → REPAIR OR REPLACE FLOOR WIRE

C → REPAIR OR REPLACE INSTRUMENT PANEL WIRE NO. 3

REMOVAL

1. **PRECAUTION**
   CAUTION:
   Be sure to read "PRECAUTION" thoroughly before servicing (See page RS-1).

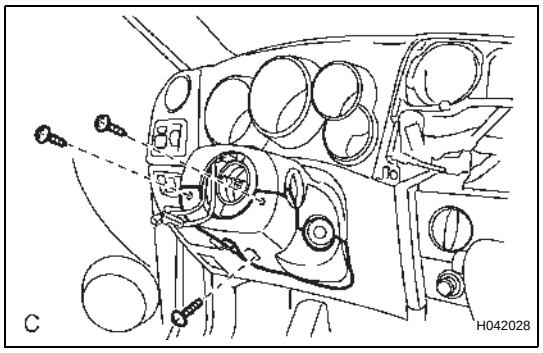
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
   CAUTION:
   Wait for 90 seconds after disconnecting the cable to prevent the airbag working.

3. **PLACE FRONT WHEELS FACING STRAIGHT AHEAD**

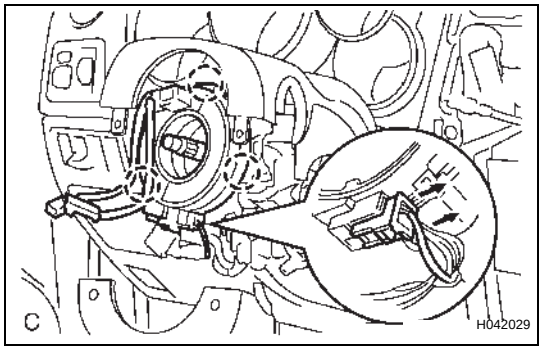
4. **REMOVE STEERING PAD (See page RS-274)**

5. **REMOVE STEERING WHEEL ASSEMBLY (See page SR-7)**

6. **REMOVE STEERING COLUMN COVER**
   (a) Remove the 3 screws and steering column lower cover.



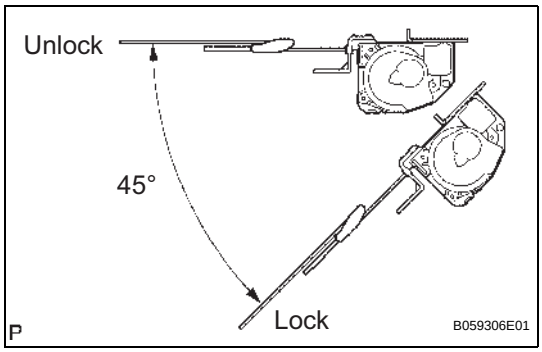
7. **REMOVE SPIRAL CABLE**
   (a) Slide the steering column upper cover.
   (b) Disconnect the connectors from the spiral cable.
   NOTICE:
   When handling the airbag connector, take care not to damage the airbag wire harness.
   (c) Disengage the 3 claws and remove the spiral cable.



SB

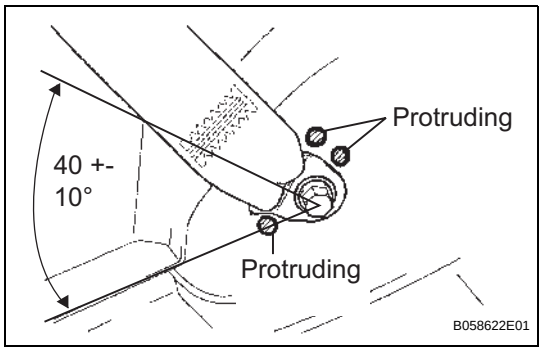
INSTALLATION

1. INSTALL REAR SEAT 3 POINT TYPE BELT ASSEMBLY
NOTICE:
Do not disassemble the retractor.



(a) Before installing the ELR, check the ELR.
(1) Gently tilt the ELR and pull the belt. Check that the belt will not lock within 15° of tilt in all directions Then check that the belt will lock when over 45° of tilt is applied.
If the operation is not as specified, replace the rear seat belt assembly outer.

(b) Install the rear seat belt assembly outer (retractor side) with the bolt.
Torque: for upper bolt
4.9 N*m (50 kgf*cm, 43 in.*lbf)
for lower bolt
41.2 N*m (420 kgf*cm, 30 ft.*lbf)



(c) Install the rear seat belt assembly outer (floor anchor side) with the bolt.
Torque: 41.2 N*m (420 kgf*cm, 30 in.*lbf)
NOTICE:
Do not make the anchor part run onto the protruding part of the floor panel.

(d) After installing the ELR, check the ELR.
NOTICE:
The check should be performed with the assembly installed.
(1) With the belt installed, check that the belt locks when it is pulled out quickly.
If the operation is not as specified, replace the rear seat belt assembly outer.

(e) Check the fastening function of the child restraint system.
NOTICE:
The check should be performed with the assembly installed.
(1) When the belt is pulled put fully, the belt should automatically try to retract.
(2) After the belt has fully retracted, the belt should be able to be pulled out and retracted again. If the operation is not as specified, replace the rear seat belt assembly outer.

2. INSTALL DECK TRIM SIDE PANEL ASSEMBLY LH

3. INSTALL DECK TRIM SIDE PANEL ASSEMBLY RH

4. INSTALL REAR SEAT SIDE GARNISH LH

5. INSTALL REAR SEAT SIDE GARNISH RH

6. INSTALL REAR SEAT CUSHION ASSEMBLY AND REAR SEATBACK ASSEMBLY

7. INSTALL DECK TRIM COVER REAR