

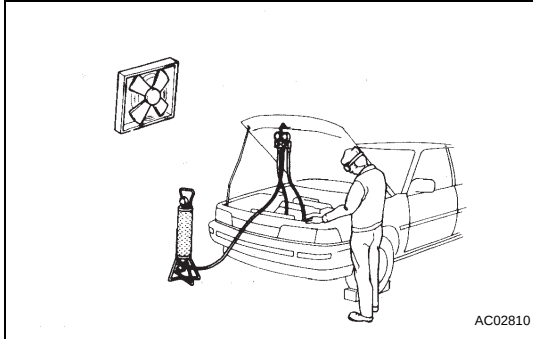
AIR CONDITIONING SYSTEM

PRECAUTION

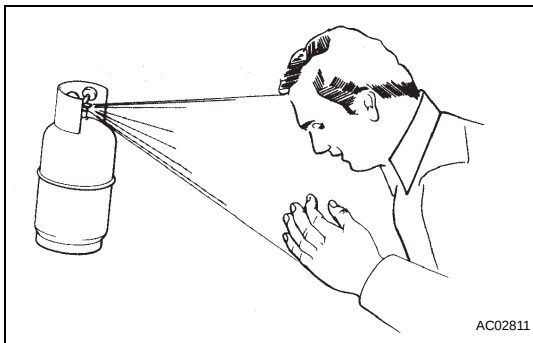
NOTICE:

When disconnecting the cable from the negative (-) battery terminal, initialize the following systems after the cable is reconnected.

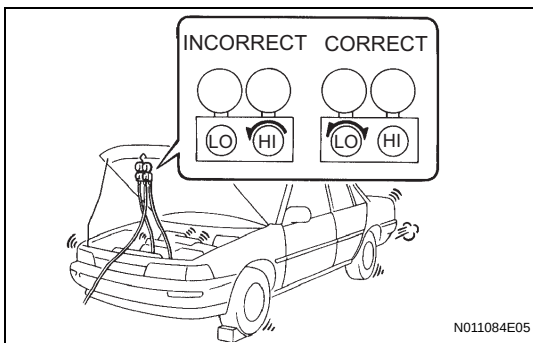
System	See procedure
Power window control system (with Jam protection function)	IN-23
Sliding roof system	



1. **DO NOT HANDLE REFRIGERANT IN AN ENCLOSED AREA OR NEAR AN OPEN FLAME**
2. **ALWAYS WEAR PROTECTIVE GLASSES**

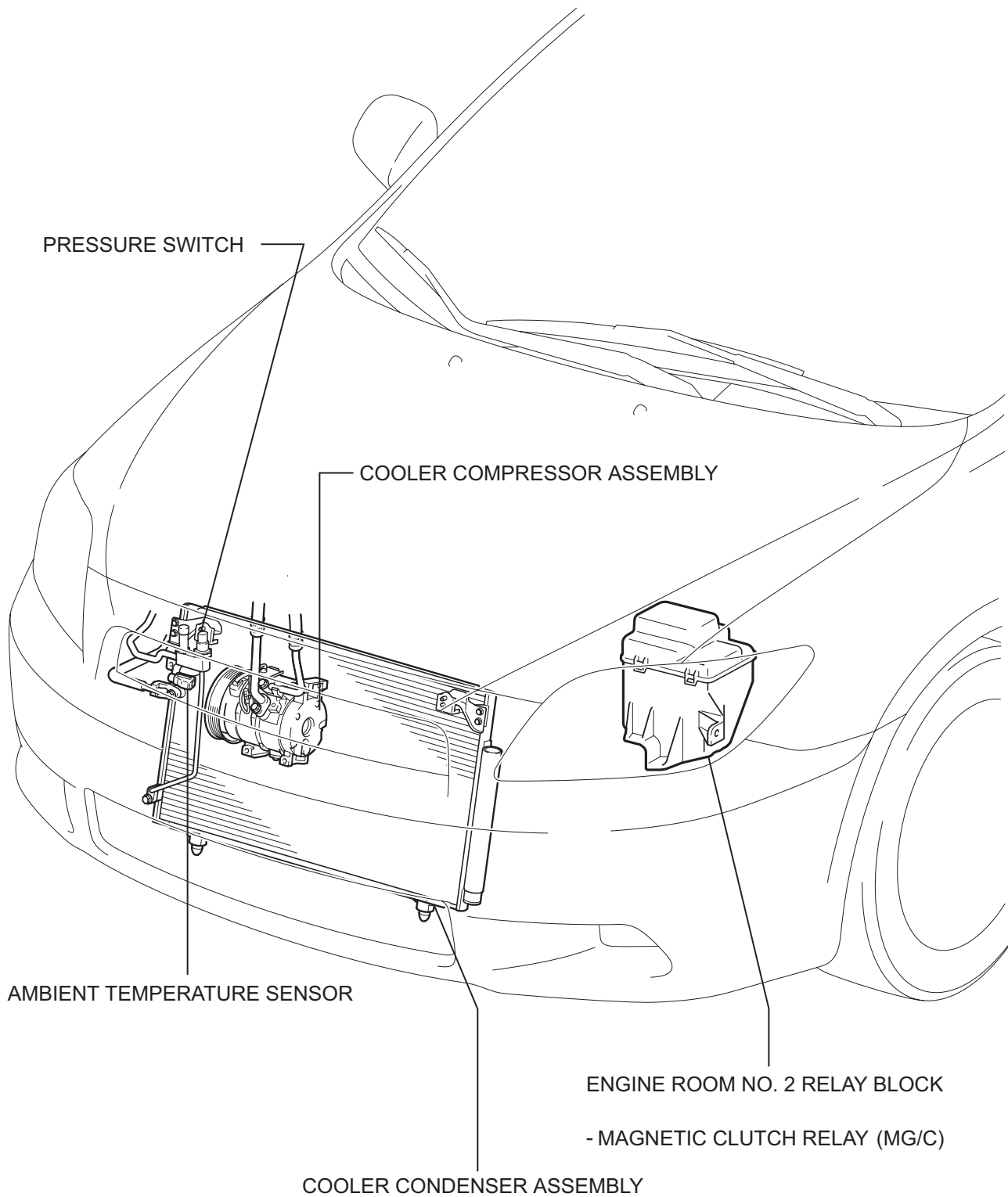


3. **AVOID SKIN OR EYE CONTACT WITH LIQUID REFRIGERANT**
If liquid refrigerant comes in contact with your eyes or skin:
 - (a) Rinse the area thoroughly with cold water.**CAUTION:**
Do not rub your eyes or skin.
 - (b) Apply clean petroleum jelly to the skin.
 - (c) Go immediately to a hospital or see a physician for professional treatment.
4. **NEVER HEAT CONTAINER OR EXPOSE IT TO OPEN FLAME**
5. **DO NOT DROP OR STRIKE CONTAINER OF REFRIGERANT**
6. **DO NOT OPERATE COMPRESSOR WITHOUT ENOUGH REFRIGERANT IN REFRIGERANT SYSTEM**
If there is not enough refrigerant in the refrigerant system, oil lubrication will be insufficient and the compressor may burn out. Care should be taken to avoid this.
7. **DO NOT OPEN HIGH PRESSURE MANIFOLD VALVE WHILE COMPRESSOR IS OPERATING**
Open and close only the low pressure valve. If the high pressure valve is opened, refrigerant flows in the reverse direction and causes the charging cylinder to rupture.
8. **BE CAREFUL NOT TO OVERCHARGE SYSTEM WITH REFRIGERANT**



Overcharged refrigerant will cause problems such as insufficient cooling, poor fuel economy, engine overheating, etc.

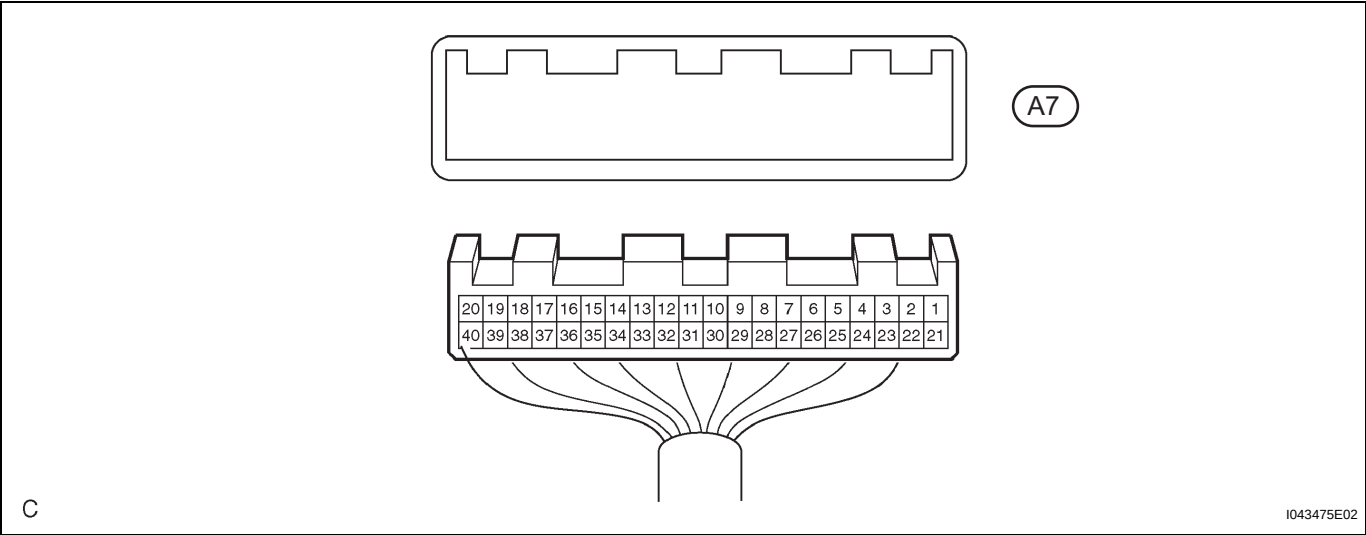
PARTS LOCATION



TERMINALS OF ECU

1. CHECK AIR CONDITIONING AMPLIFIER ASSEMBLY

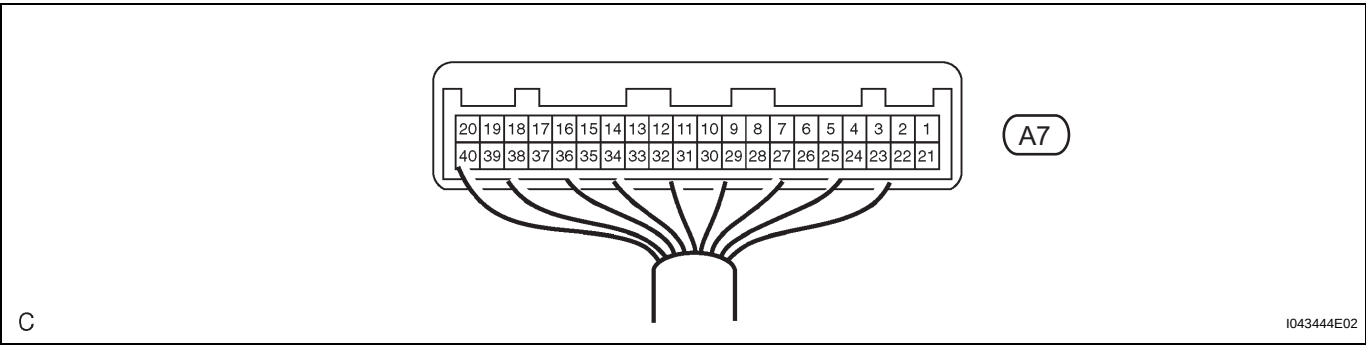
- (a) Disconnect the connector from the air conditioning amplifier assembly.
- (b) Measure the voltage and resistance according to the value(s) in the table below.



Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
GND (A7-12) - Body ground	W-B - Body ground	Ground for main power supply	Always	Below 1 Ω
IG (A7-20) - GND (A7-12)	P - W-B	Power source (IG)	Ignition switch: ON	10 to 14 V
+B (A7-40) - GND (A7-12)	V - W-B	Power source (Backup)	Always	10 to 14 V

If the results are not as specified, inspect the circuits connected to the other parts.

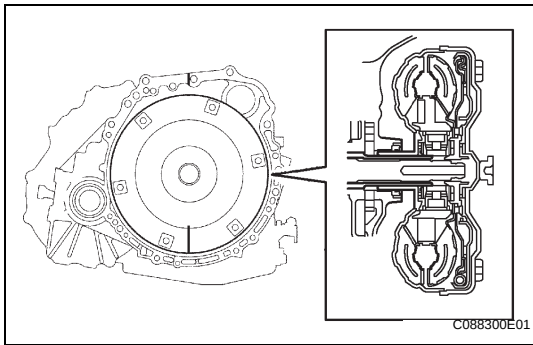
- (c) Connect the connector to the air conditioning amplifier assembly.
- (d) Measure the voltage and resistance according to the value(s) in the table below.



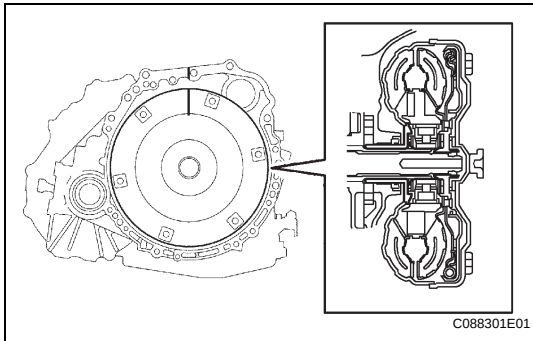
Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
AOF (A7-1) - GND (A7-12)	W - W-B	Air vent mode control servo motor operation voltage	Ignition switch: ON Mode switch: DEF	10 to 14 V
			Ignition switch: ON Mode switch: FACE	Below 1 V
AOD (A7-2) - GND (A7-12)	LG - W-B	Air vent mode control servo motor operation voltage	Ignition switch: ON Mode switch: FACE	10 to 14 V
			Ignition switch: ON Mode switch: DEF	Below 1 V

AX





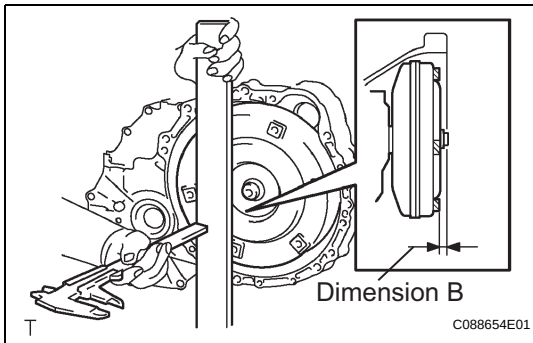
- (e) Rotating the torque converter clutch, fit the spline part of the stator shaft with the spline part of the stator.
HINT:
Rotate it about 180°.



- (f) Rotating the torque converter clutch, match the 2 marks on the case and the torque converter clutch again and fit the key of the oil pump drive gear into the key way of the torque converter clutch.

NOTICE:

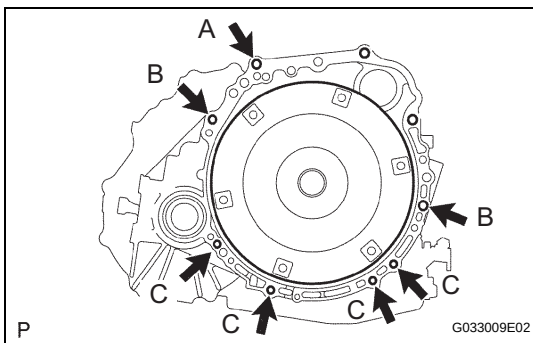
When rotating the torque converter clutch, do not push it with excessive force.



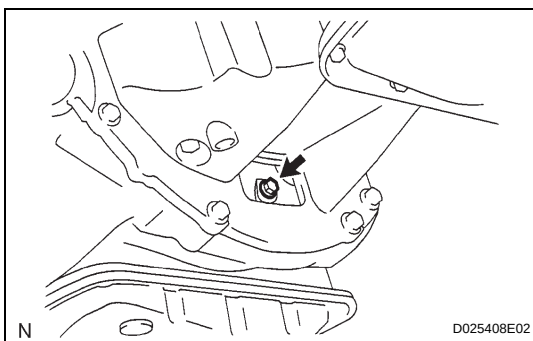
- (g) Using a vernier caliper and straightedge, measure dimension B shown in the illustration and check that B is greater than A.

Standard dimension:

$$B = A + 1.0 \text{ mm (0.039 in.) or more}$$

**2. INSTALL AUTOMATIC TRANSAXLE ASSEMBLY**

- (a) Install the transaxle to the engine with the 7 bolts.
Torque: 64 N*m (653 kgf*cm, 47 ft.*lbf) for bolt A
46 N*m (469 kgf*cm, 34 ft.*lbf) for bolt B
44 N*m (449 kgf*cm, 32 ft.*lbf) for bolt C



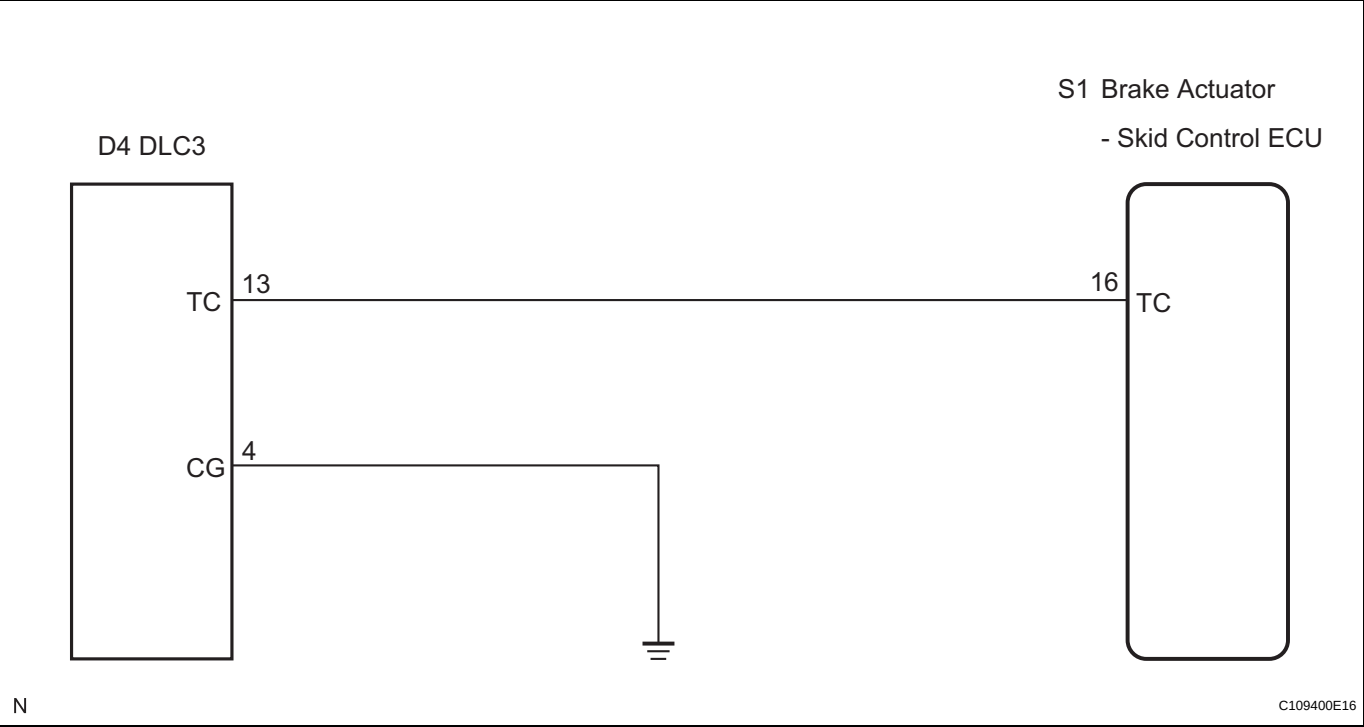
- (b) Install the 6 torque converter clutch mounting bolts.
Torque: 41 N*m (418 kgf*cm, 30 ft.*lbf)
HINT:
First install the black colored bolt, and then the remaining 5 bolts.

TC and CG Terminal Circuit

DESCRIPTION

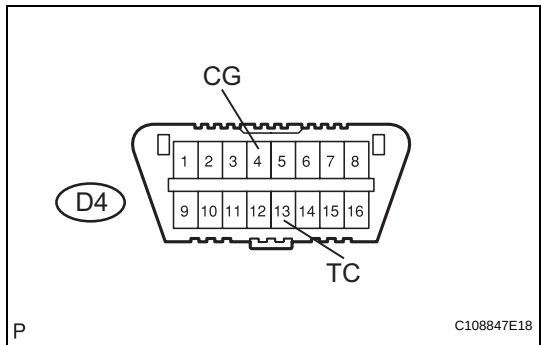
Connecting terminals TC and CG of the DLC3 causes the ECU to display the DTC by flashing the ABS warning light.

WIRING DIAGRAM



INSPECTION PROCEDURE

1 CHECK DLC3 (TC VOLTAGE)



- (a) Turn the ignition switch to the ON position.
- (b) Measure the voltage of the wire harness side connector.

Standard voltage

Tester Connection	Condition	Specified Condition
D4-13 (TC) - D4-4 (CG)	Ignition switch ON	11 to 14 V

NG

Go to step 3

BC

OK

INSTALLATION

1. INSTALL FAN SHROUD ASSEMBLY

- (a) Attach the 2 pawl fittings of the shroud.
- (b) Install the fan assembly with the 2 bolts.
Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf)

2. INSTALL RADIATOR SUPPORT LOWER

3. INSTALL RADIATOR ASSEMBLY

- (a) Install the radiator assembly with the 2 radiator support uppers and 2 bolts.
Torque: 19 N*m (194 kgf*cm, 14 ft.*lbf)
- (b) Connect the radiator reservoir hose.
- (c) Connect the 2 clamps of the engine room main wire.
- (d) Connect the 2 cooling fan motor connectors.

4. CONNECT NO. 1 OIL COOLER OUTLET TUBE (for Automatic Transaxle)

5. CONNECT NO. 1 OIL COOLER INLET TUBE (for Automatic Transaxle)

6. CONNECT RADIATOR HOSE OUTLET

7. CONNECT RADIATOR HOSE INLET

8. ADD ENGINE COOLANT (See page [CO-6](#))

9. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

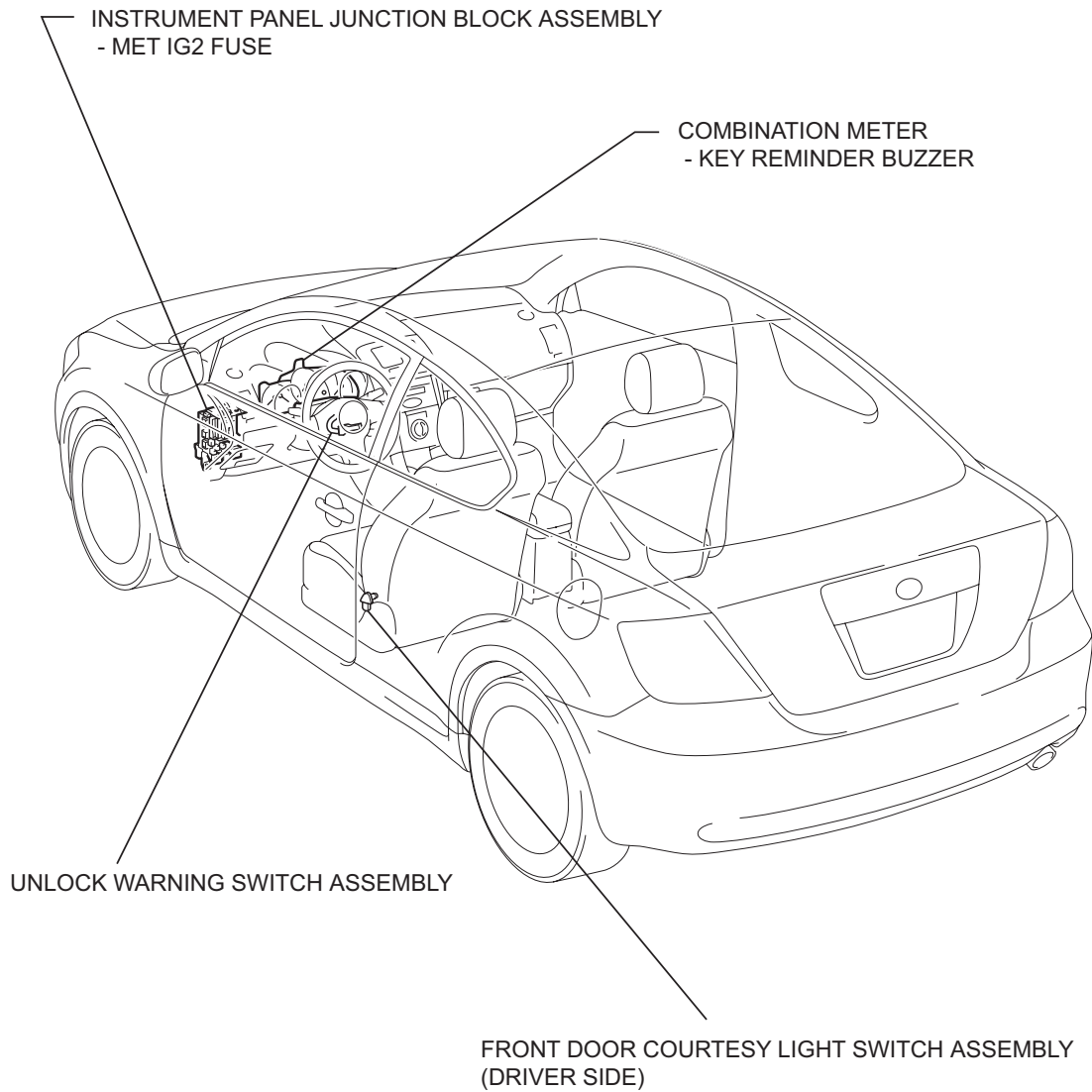
10. CHECK FOR ENGINE COOLANT LEAKAGE (See page [CO-1](#))

11. PERFORM INITIALIZATION

- (a) Perform initialization (see page [IN-23](#)).
NOTICE:
Certain systems need to be initialized after disconnecting and reconnecting the cable from the negative (-) battery terminal.

12. INSTALL ENGINE UNDER COVER RH

PARTS LOCATION

**DL**

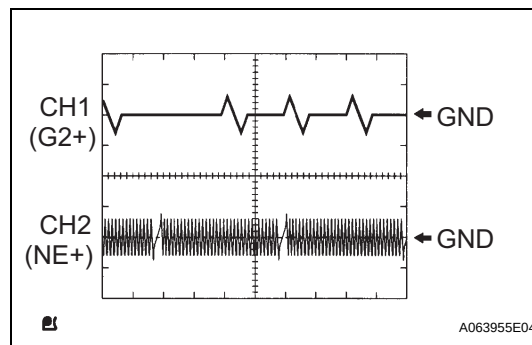
Tester Display	Measurement Item	Diagnostic Note
ENG SPEED #2	Engine rpm during No. 2 cylinder fuel cut	Output only when FUEL CUT #2 is performed using ACTIVE TEST
ENG SPEED #3	Engine rpm during No. 3 cylinder fuel cut	Output only when FUEL CUT #3 is performed using ACTIVE TEST
ENG SPEED #4	Engine rpm during No. 4 cylinder fuel cut	Output only when FUEL CUT #4 is performed using ACTIVE TEST
ENG SPEED ALL	Average of engine rpm values during fuel cut of No. 1 to No. 4 cylinders	Output only when ACTIVE TEST is performed
VVT CHNG ANGL#1	VVT angle	-
VVT OCV DUTY B1	VVT OCV operation duty	-
FC IDL	Fuel cut idle	ON: when throttle valve fully closed and engine speed over 3,500 rpm
FC TAU	Fuel cut during very light load	Fuel cut being performed under very light load to prevent engine combustion from becoming incomplete
IGNITION	Ignition counter	-
CYL #1	Cylinder #1 misfire	Only displayed during idling
CYL #2	Cylinder #2 misfire	Only displayed during idling
CYL #3	Cylinder #3 misfire	Only displayed during idling
CYL #4	Cylinder #4 misfire	Only displayed during idling
CYL ALL	All cylinders misfire	Only displayed during idling
MISFIRE RPM	Engine speed when misfire occurred	-
MISFIRE LOAD	Engine load when misfire occurred	-
MISFIRE MARGIN	Margin to detect engine misfire	-
ENG RUN TIME	Accumulated engine running time	-
TIME DTC CLEAR	Cumulative time after DTC cleared	-
DIST DTC CLEAR	Accumulated distance from DTC cleared	-
WU CYC DTC CLEAR	Warm-up cycle after DTC cleared	-

DTC	P0335	Crankshaft Position Sensor "A" Circuit
DTC	P0339	Crankshaft Position Sensor "A" Circuit Inter-mittent

DESCRIPTION

The Crankshaft Position (CKP) sensor system consists of a CKP sensor plate and a pickup coil. The sensor plate has 34 teeth and is installed on the crankshaft. The pickup coil is made of an iron core and a magnet. The sensor plate rotates and, as each tooth passes through the pickup coil, a pulse signal is created. The pickup coil generates 34 signals per engine revolution. Based on these signals, the ECM calculates the crankshaft position and engine RPM. Using these calculations, the fuel injection time and ignition timing are controlled.

DTC No.	DTC Detection Condition	Trouble Area
P0335	When either condition below is met: - No CKP sensor signal to ECM while cranking (1 trip detection logic) - No CKP sensor signal to ECM at engine speed of 600 rpm or more (1 trip detection logic)	- Open or short in CKP sensor circuit - CKP sensor - Sensor plate (CKP sensor plate) - ECM
P0339	Under conditions (a), (b) and (c), no CKP sensor signal to ECM for 0.05 seconds or more (1 trip detection logic): (a) Engine speed 1,000 rpm or more (b) Starter signal OFF (c) 3 seconds or more have lapsed since starter signal switched from ON to OFF	- Open or short in CKP sensor circuit - CKP sensor - Sensor plate (CKP sensor plate) - ECM



Reference: Inspection using an oscilloscope.

HINT:

- The correct waveform is shown.
- G2+ stands for the Camshaft Position (CMP) sensor signal, and NE+ stands for the CKP sensor signal.

Item	Content
Terminals	CH1: G2+ - NE- CH2: NE+ - NE-
Equipment Settings	5 V/Division, 20 ms./Division
Conditions	Cranking or idling

MONITOR DESCRIPTION

If there is no signal from the CKP sensor although the engine is running, the ECM interprets this as a malfunction of the sensor.

If the malfunction is not repaired successfully, a DTC is set 10 seconds after the engine is next started.

DTC	P2610	ECM / PCM Internal Engine Off Timer Performance
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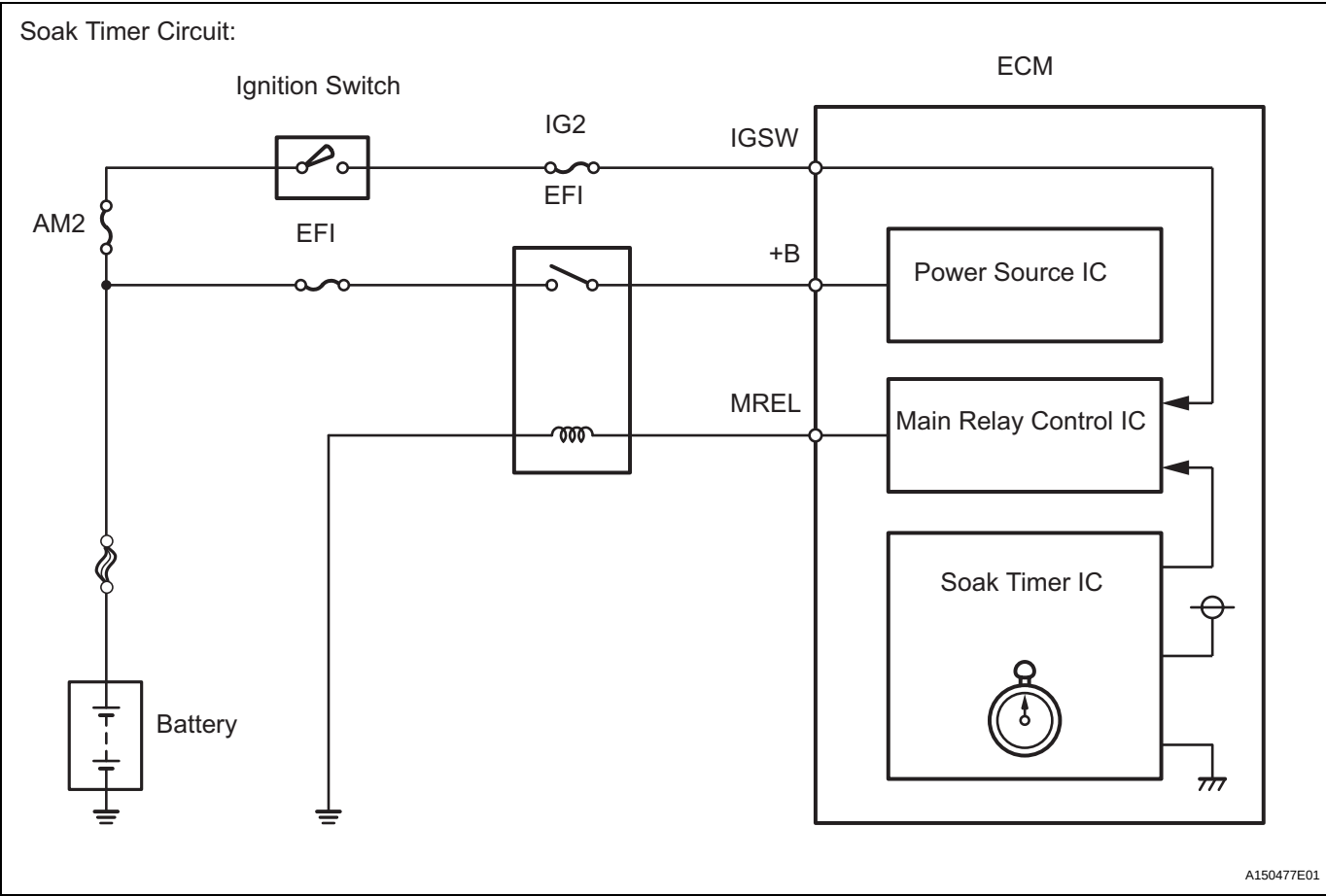
DTC SUMMARY

DTC No.	Monitoring Item	Malfunction Detection Condition	Trouble Area	Detection Timing	Detection Logic
P2610	Soak timer (built into ECM)	ECM internal malfunction	ECM	Engine running	2 trip

DESCRIPTION

ES

To ensure the accuracy of the EVAP (Evaporative Emission) monitor values, the soak timer, which is built into the ECM, measures 5 hours (+-15 minutes) from when the ignition switch is turned off, before the monitor is run. This allows the fuel to cool down, which stabilizes the Fuel Tank Pressure (FTP). When 5 hours have elapsed, the ECM turns on.



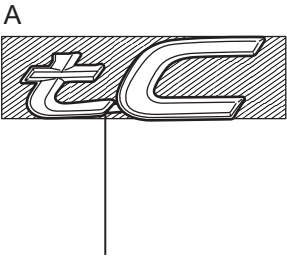
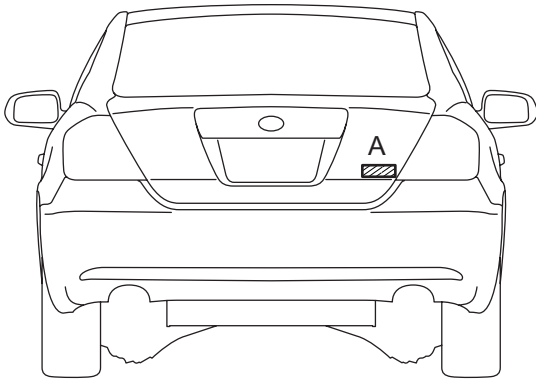
MONITOR DESCRIPTION

5 hours after the ignition switch is turned off, the soak timer activates the ECM to begin the EVAP system monitor. While the engine is running, the ECM monitors the synchronization of the soak timer and the CPU clock. If the soak timer and CPU clock are not synchronized, the ECM interprets this as a malfunction, illuminates the MIL and sets the DTC (2 trip detection logic).

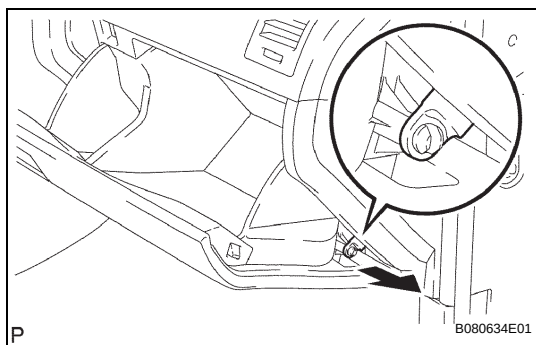
MONITOR STRATEGY

Required Sensors/Components	ECM
Frequency of Operation	Once per driving cycle

NAME PLATE
COMPONENTS

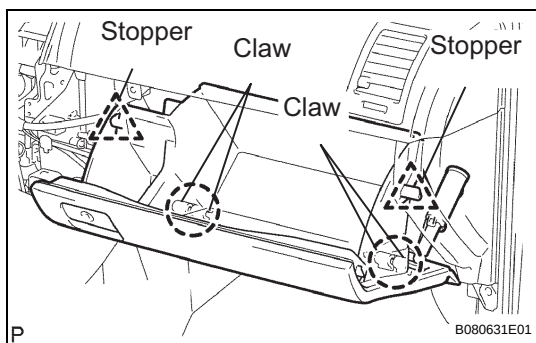


NO. 5 BACK DOOR NAME PLATE

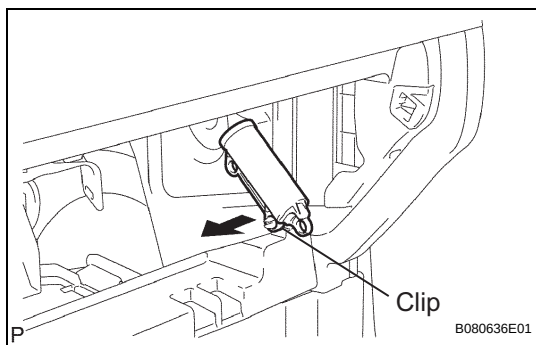


10. REMOVE GLOVE COMPARTMENT DOOR ASSEMBLY

- (a) Disconnect the glove compartment door stopper from the glove compartment door.



- (b) Slightly press in on the upper sides of the glove compartment door assembly to release the 2 stoppers.
- (c) Detach the 4 claws and remove the glove compartment door.



11. REMOVE GLOVE COMPARTMENT DOOR STOPPER SUB-ASSEMBLY

- (a) Detach the clip and remove the glove compartment door stopper.

12. REMOVE FRONT PILLAR GARNISH LH (w/o Curtain Shield Airbag) (See page [IR-12](#))

13. REMOVE FRONT PILLAR GARNISH LH (w/ Curtain Shield Airbag) (See page [IR-12](#))

14. REMOVE FRONT PILLAR GARNISH RH (w/o Curtain Shield Airbag)

HINT:

Use the same procedures for the RH side and LH side.

15. REMOVE FRONT PILLAR GARNISH RH (w/ Curtain Shield Airbag)

HINT:

Use the same procedures for the RH side and LH side.

16. DISCONNECT PASSENGER AIRBAG CONNECTOR

17. REMOVE UPPER INSTRUMENT PANEL SUB-ASSEMBLY

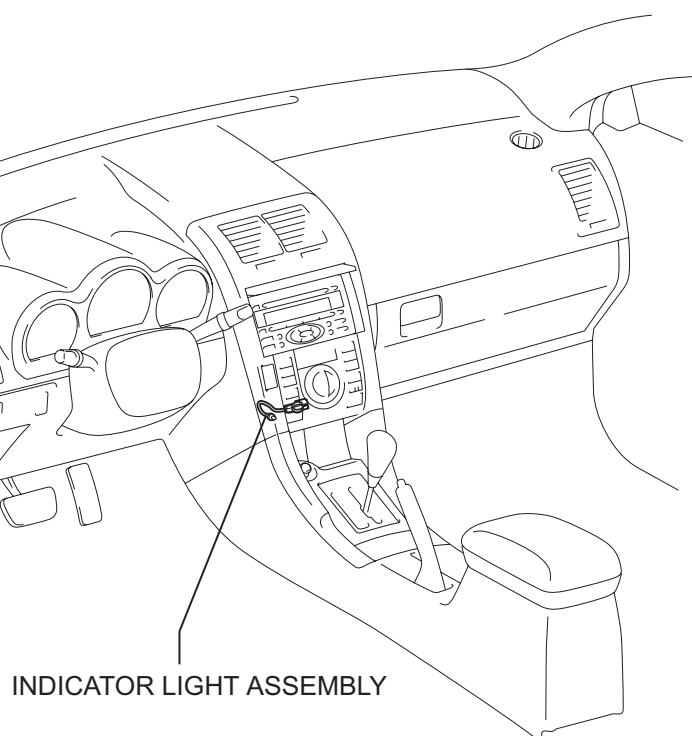
- (a) Remove the 5 screws and 2 bolts.
- (b) Detach the 13 claws.

TORQUE SPECIFICATIONS

Part tightened		N*m	kgf*cm	ft.*lbf
Park/Neutral position switch x Transaxle	Bolt	5.4	55	48 in.*lbf
	Nut	6.9	70	61 in.*lbf
Control shaft lever x Park/Neutral position switch		13	132	10
Engine hanger x Engine		38	387	28
Drain plug x Oil pan		49	500	36
Transaxle x Engine	Bolt A:	64	653	47
	Bolt B:	46	469	34
	Bolt C:	44	449	32
Torque converter clutch x Drive plate		41	418	30
Engine mounting bracket RR x Transaxle		64	653	47
Engine mounting bracket FR x Transaxle		64	653	47
Center member x Body	Bolt A:	45	459	33
Center member x Suspension member	Bolt B:	65	663	48
Engine mounting insulator RR x Engine mounting bracket RR		87	887	64
Engine mounting insulator RR x Suspension member		65	663	48
Engine mounting insulator FR x Engine mounting bracket FR		52	530	38
Engine mounting bracket LH x Transaxle		64	653	47
Engine mounting insulator LH x Body	Bolt A:	52	530	38
	Nut B:	87	887	64
Starter x Transaxle		64	653	47
Starter wire x Starter		9.8	100	87 in.*lbf
Oil filter tube x Transaxle		5.5	56	49 in.*lbf
Oil cooler tube clamp x Transaxle	Bolt A:	5.5	56	49 in.*lbf
	Bolt B:	12	122	9
Oil cooler outlet tube x Transaxle		34	347	25
Oil cooler inlet tube x Transaxle		34	347	25
Wire harness x Transaxle	Bolt A:	5.0	51	44 in.*lbf
	Bolt B:	8.4	86	74 in.*lbf
No. 1 control cable bracket x Transaxle		12	122	9
Control cable clamp x Transaxle		12	122	9
Air cleaner assembly x Body		5.0	51	44 in.*lbf
No. 1 engine cover sub-assembly x Engine		7.0	71	62 in.*lbf
Transmission wire x Transaxle		5.4	55	48 in.*lbf
Solenoid valve x Valve body	Bolt A:	6.6	67	58 in.*lbf
	Bolt B:	11	112	8
Valve body x Transaxle		11	110	8
Temperature sensor lock plate x Valve body		6.6	67	58 in.*lbf
Oil strainer x Valve body		11	112	8
Oil pan x Transaxle		7.8	80	69 in.*lbf
Shift lever assembly x Body		12	122	9
Control cable x Control shaft lever		12	122	9
Control cable x Body	Bolt:	5.0	51	44 in.*lbf
Speed sensor (NC sensor) x Transaxle		11	112	8
Speed sensor (NT sensor) x Transaxle		11	112	8

FRONT CONSOLE ILLUMINATION

COMPONENTS



INDICATOR LIGHT ASSEMBLY