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5 UNIT

As for the units, the SI units (international unit system) have been posted. (The hitherto—employed units, too, are posted.)

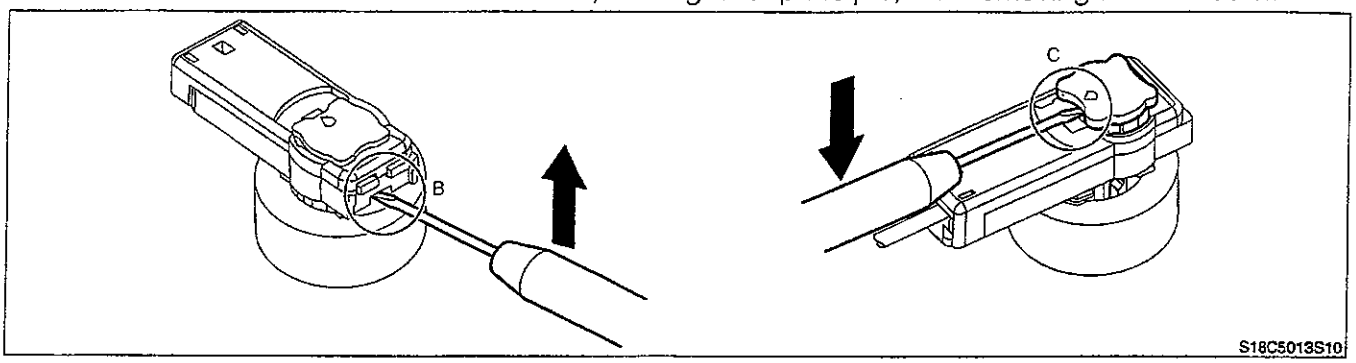
Example: 33.25±13.25N·m{340±135kgf·cm}

5-1 NEW UNIT BECAUSE OF THE INTRODUCTION OF THE SI UNIT

1.SI unit is the international unit system established by aiming to proceed the communication in technology smoothly by unifying the former unit system which were different internationally each other into one value by one unit. The specification value is described in accordance with SI unit system in this service manual.

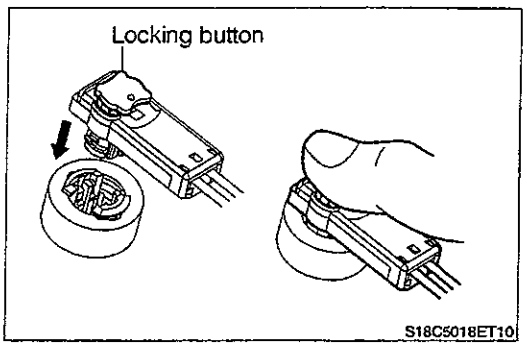
ITEM	SI unit	Conventional units	Conversion table
Force	N	kgf	1kgf = 9.80665 N
Torque	N·m	kgf·cm	1kgf·cm = 0.0980665 N·m
Pressure	kPa	kgf/cm^2	1kgf/ cm^2 = 98.0665 kPa
		mmHg	1mmHg = 0.133322 kPa
Spring constant	N/mm	kgf/mm	1kgf/mm = 9.80665 N/mm
Volume	ℓ	cc	1000cc = 1ℓ
Power	kW	PS	1PS = 0.735499 kW

2.Insert a flat screwdriver with a thin forward end (approx. 2 mm wide) at the point B or C. Pry the point with the screwdriver in the arrow direction, utilizing lever principle, thus removing the connector.



② **POINTS OF INSTALLATION**

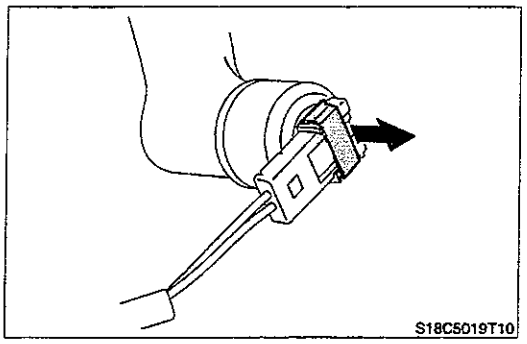
1.Insert the connector firmly as far as it goes. Push and lock the connector, until the locking button clicks.



(2) Type 2

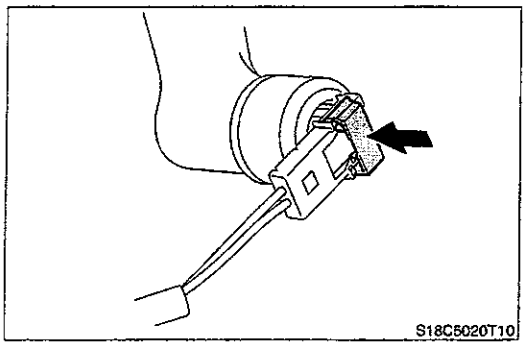
① **POINTS OF REMOVAL**

1.With a flat screwdriver with a thin forward end, pull out the locking button in the arrow direction, thus unlocking the lock. Then, remove the connector.



② **POINTS OF INSTALLATION**

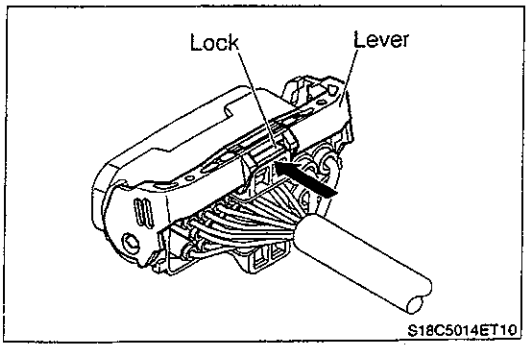
1.Insert the connector firmly as far as it goes. Push and lock the connector, until the locking button clicks.



12-2-2 CONNECTOR WITH LEVER LOCK

(1) POINTS OF REMOVAL

1.Push the lock of the lever section in the arrow direction, thus unlocking the lock.



2 MAINTENANCE SCHEDULE

1.For improved maintenance, the maintenance schedule has been simplified.

NOTE

- **Perform the periodical maintenance at the specified mileage or the time whichever comes first, unless otherwise specified.**

2.Continue to perform the periodical maintenance after 90,000 km (54,000 miles) at the same intervals as before 90,000 km.

3.If the vehicle should be operated under severe driving conditions, operated occasionally, operated in dusty areas, repeating short trip, operated under extremely cold climate and/or on salted roads, it is necessary to perform some maintenance items more frequently than the regular maintenance schedule.

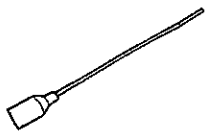
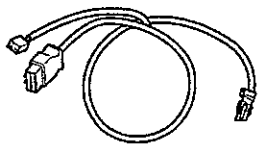
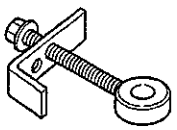
4.This maintenance schedule has been prepared based on requirements mentioned in the owner's manual which are to be performed by the Daihatsu owner thoroughly.

○.....Check or inspect ●.....Change or replace

Section	Item	What to do	×1000 km	15	30	45	60	75	90
		Inspection interval	×1000 miles	9	18	27	36	45	54
			Years	1	2	3	4	5	6
Engine	Air cleaner element	Cleaning Check • Damage Change		○	○	●	○	○	●
	Engine oil & oil filter	Change (Use API: SG or higher)		Engine oil : Every 5,000 km (3,000 miles)/6 months Oil filter : Every 10,000 km (6,000 miles)					
	Fuel line & connections (Including fuel hoses)	Check • Crack • Tightness • Leakage • Damage			○		○		○
	Coolant (Long life coolant)	Change		Every 2 years					
	Drive belt (Alternator, water pump, power steering)	Check • Tension • Crack • Damage		○	○	○	○	○	○
	Spark Plug	Change		Every 60,000 km (36,000 miles)					
Exhaust emission control system	Charcoal canister	Check • Function • Damage				○			○
	Evaporative emission hoses	Change		Every 8 years					
	Exhaust pipe & muffler mounting	Check • Tightness • Damage			○		○		○

JB
1 ENGINE
1-1 ARTICLES TO BE PREPARED

SST

Shape	Part No.	Part name
	09991-87402-000	Wire, tacho-pulse pick up
	09991-87403-000	Wire, diagnosis check
	09991-87404-000 (09991-87401-000)	Wire, engine control system inspection
	09286-87701-000 (09286-87201-000)	bar, alternator adjuster

Instrument

Belt tension gauge,Radiator cap tester,Radiator cap tester adapter,Tachometer,Timing light,Torque wrench,Thickness gauge,Compression gauge

1-2 BASIC CHECK AND ADJUSTMENT
1-2-1 CHECK OF COOLING WATER LEVEL AND WATER LEAKAGE

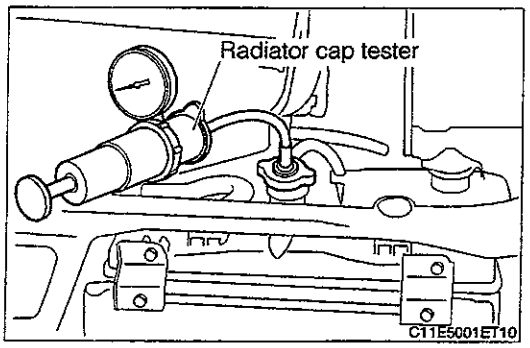
Check that the cooling water level is between the lower limit (LOW) and the upper limit (FULL) of the reservoir tank.

1-2-2 WATER LEAKAGE

With the engine idling, visually check that there is no water leakage from the radiator, radiator hose, heater hose, water pump, heater hose, etc.

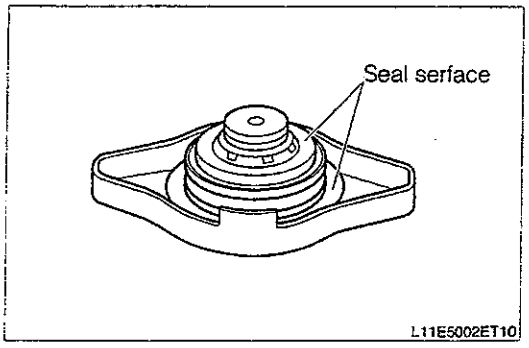
Moreover, apply pressure, using a radiator cap tester. Under this condition, check that no water leakage is present.

SPECIFIED VALUE: Specified value for check
122.7kPa{1.25kgf/cm2}



1-2-3 FUNCTION CHECK OF RADIATOR CAP

1.Remove the radiator cap. Then, visually check the valve seat surface for smear and damage. Also, move the negative pressure valve by your hand and check that it opens and closes.



TO INDEX

B ENGINE UNIT

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ASSEMBLING---------- B - 1
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DISASSEMBLING AND
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DISASSEMBLING AND
ASSEMBLING---------- B - 48

(6) Use the high transmission jack to set the SST on the frame S/A.

NOTE

- Match the stabilizer bar bracket (RH) mounting bolt hole (one of the two holes, which is located at the rear side of the vehicle) with the protrusion of the SST.

(7) Remove the mounting bolt of the frame S/A to the body.

(8) Use the high transmission jack to remove the front frame S/A from the vehicle with the engine Ay, transaxle Ay and steering gear Ay mounted.

CAUTION

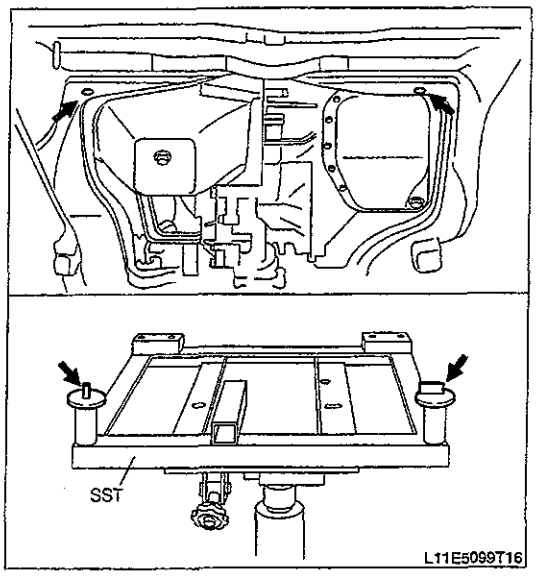
- Slowly remove the engine assembly, making sure that no connectors or hoses are left not removed or that they are not interfering with other parts.
- Remove the drive shaft and the lower arm by giving clearance to avoid interference.

(9) Use the SST (engine slinger devise) and the chain block to support the engine Ay.

SST: 09090-04020-000

CAUTION

- Securely hang the SST on the engine hanger.



(8) Vane pump Ay

1.Remove the vane pump Ay from the engine Ay.

CAUTION

- Remove the vane pump, oil reservoir, hose, etc. as an integrated part, without removing the piping.

(9) Engine mounting front insulator S/A

1.Remove the bolt connecting with the engine mounting front bracket.

CAUTION

- Make sure that the engine assembly is supported in a well balanced way during the removal.

NOTE

- There is no need to remove on the frame side.

(10) Engine mounting lower left insulator

1.Remove the bolt connecting the bracket on the transmission side.

CAUTION

- Make sure that the engine assembly is supported in a well balanced way during the removal.

NOTE

- There is no need to remove on the frame side.

(11) ENGINE MOUNTING REAR INSULATOR S/A

1.Remove the bolt connecting with the engine mounting rear bracket.

CAUTION

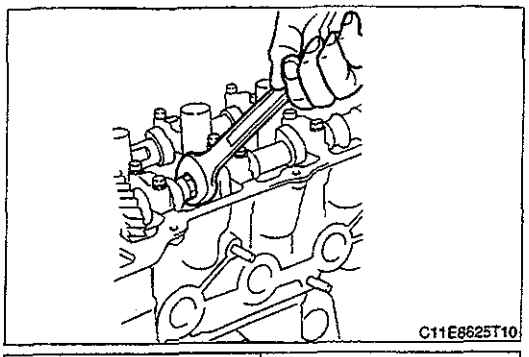
- Make sure that the engine assembly is supported in a well balanced way during the removal.

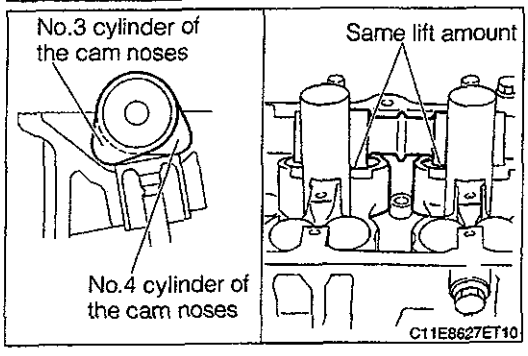
NOTE

- There is no need to remove on the frame side.

(8) Removal of camshaft bearing cap No.3 (intake side)

1.Turn the camshaft No.1 counterclockwise in such a way that the cam noses of the No. 3 and No. 4 cylinders of the camshaft No.1 come at the bottom section and they push their lifters by the same lift amount. Here, the camshaft No.1 should be turned with a spanner applied to the hexagonal section of the camshaft. No.1.



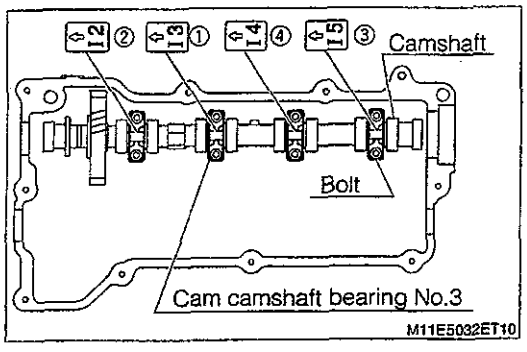


2.Remove the camshaft bearing caps No.3 (4 pieces) at the intake side that are retaining the camshaft No.1 in accordance with the sequence indicated in the right figure.

CAUTION

- Upon completion of the camshaft removal, leave the timing chain in an applied state on the camshaft timing sprocket.
- It should be noted that if the timing chain should drop into the oil pump, the cylinder head and oil pump must be removed.

TOOL: Hexagon wrench (Width across flats : 5mm)



(9) Removal of camshaft No.1 (intake side)

1.Remove the camshaft No.1 by raising the gear side first.

(10) Removal of camshaft sub-gear S/A

1.Clamp the hexagonal section of the No.1 camshaft in a vice with a protective sheet interposed.

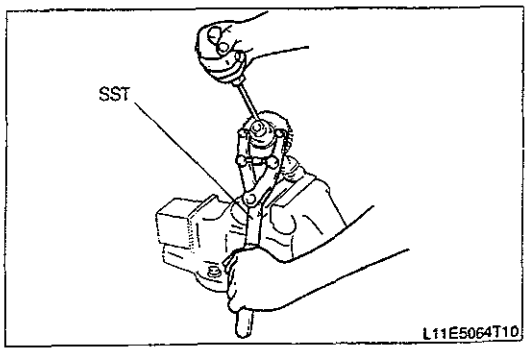
CAUTION

- Be very careful not to scratch the cam section.

2.Remove the bolt for retaining the camshaft sub-gear.

(1) Set the SST to the two ϕ6 holes of the camshaft sub-gear S/A so as to retain the sub-gear.

SST: 09504-87501-000

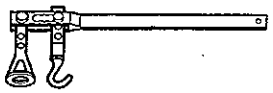
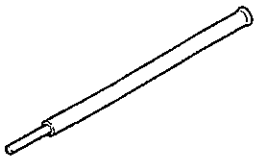
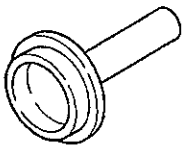


2 CYLINDER HEAD

2-1 DISASSEMBLING AND ASSEMBLING

2-1-1 ARTICLES TO BE PREPARED

SST

Shape	Part No.	Part name
	09202-87702-000 (09202-87701-000)	Replacer, valve spring replacer
	09201-87210-000	Remover & replacer, valve guide bush
	09388-87701-000	Replacer, transfer input gear rear oil seal

Tool

Hexagon wrench (Width across flats : 8mm),Scraper

Instrument

Thickness gauge,Micrometer,Torque wrench,Vernier calipers,Steel square,Precision straightedge

Lubricant,adhesive,others

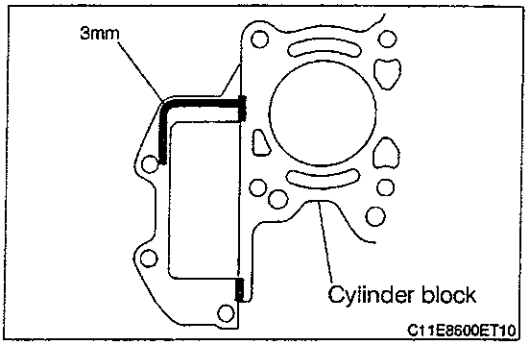
Engine oil,Three Bond1324,Three Bond1207H

3.Apply liquid gasket (Three Bond 1207H) to the mating surfaces of the cylinder block and oil pump and the top surface of the oil pump that are indicated by the range in the right figure.

ADHESIVE: Three Bond1207H

CAUTION

- Be very careful not to apply the liquid gasket excessively. Excessive application may cause the admission of liquid gasket into the cooling system to occur.
- After the liquid gasket has been applied, be certain to assemble the cylinder head within 15 minutes.



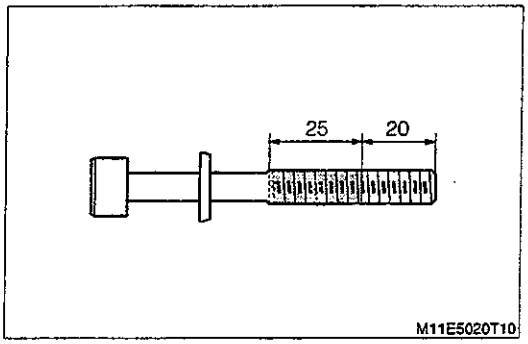
4.Install a new cylinder head gasket, aligning with the knocking pin of the cylinder block.

CAUTION

- Make sure to use a new cylinder head gasket.

(8) Assembling of cylinder head S/A

1.Apply engine oil to the threaded sections and seat surface of the cylinder head bolt. Then, install the bolt into the bolt hole.

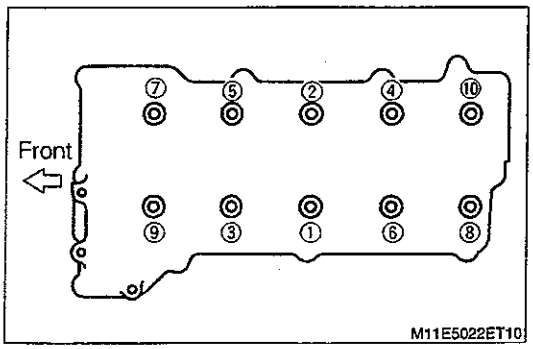


2.Tighten the ten cylinder head bolts over several stages according to the sequence indicated in the right figure. After tightening, torque them to the specified value.

TOOL: Hexagon wrench (Width across flats : 8mm)

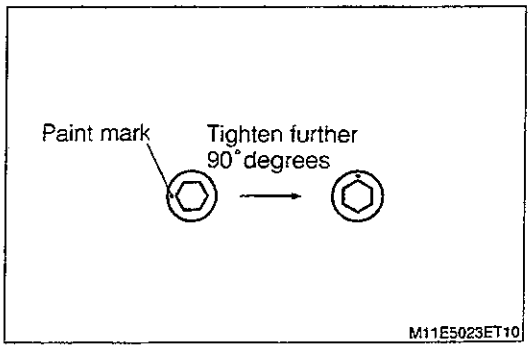
3.After the bolts have been tightened to the specified torque, further retighten them 90 degrees according to the same sequence.

TIGHTENING TORQUE: 34.0 N·m {350 kgf·cm}+90°$^{+10}_{0}$



NOTE

- Apply a paint mark to the head section of every head bolt in the same direction. After the head bolts have been tightened 90° according to the sequence above, ensure that the paint marks of all bolts come at a 90° turned position.



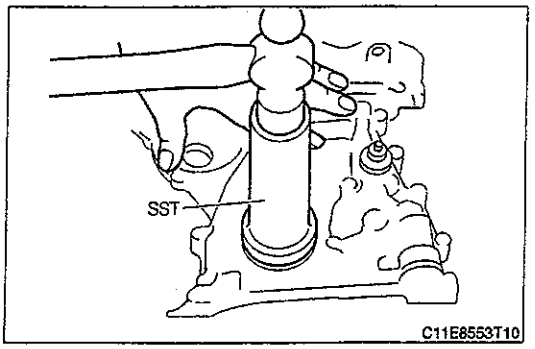
4-1-9 POINTS OF ASSEMBLY

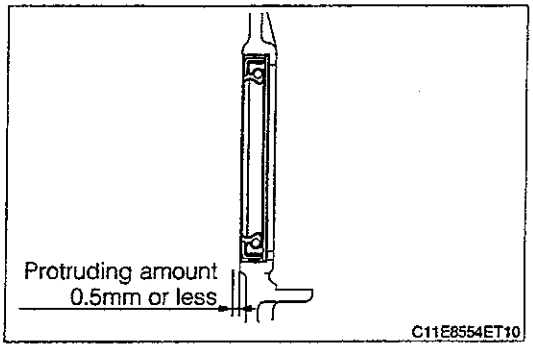
(1) Installation of Type T oil seal

1.Apply engine oil to the lip section of the Type T oil seal. Install the oil seal, using the SST.
SST: 09309-87201-000
LUBRICANT: Engine oil

CAUTION

- Do not reuse the oil seal once it has been removed.
- The oozing out amount after the press-fitting should be 0.5 mm or less.



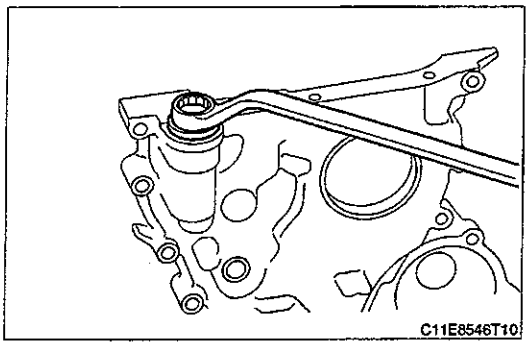


(2) Installation of oil relief control valve

1.Install the oil relief control valve and compression spring in this sequence. Tighten the bolts to the specified torque with the gasket interposed.
TIGHTENING TORQUE: 39.2±4.9 N·m {400±50 kgf·cm}

CAUTION

- Do not reuse the gasket once it has been removed.

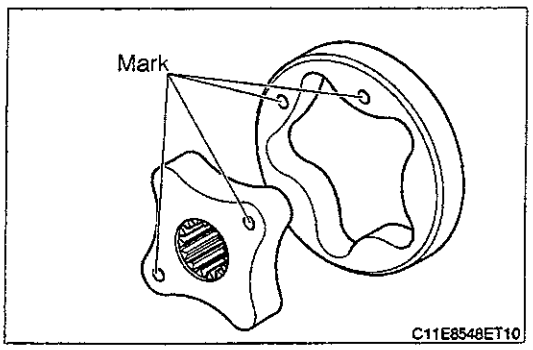


(3) Installation of oil pump set rotor

1.Install the oil pump set rotor to the body in such a way that the front mark, too, faces toward the engine block side.
2.Install the oil pump cover.
3.Install the O-ring.

CAUTION

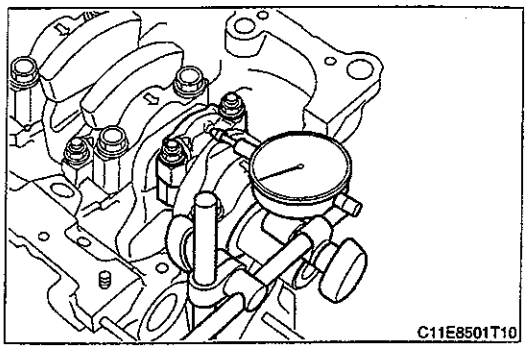
- Do not reuse the O-ring once it has been removed.



6-1-3 DISASSEMBLY AND ASSEMBLY PROCEDURES

(1) Connecting rod thrust clearance check

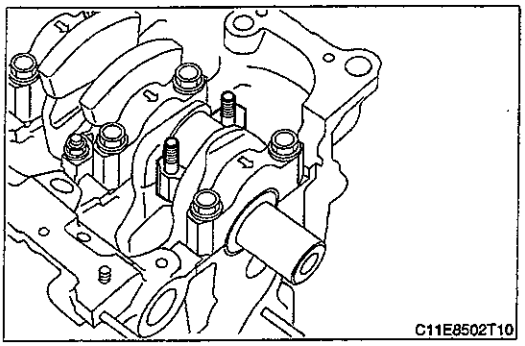
1.With a dial gauge or thickness gauge, measure the thrust clearance of each connecting rod.
2.Set the magnet base of the dial gauge to the crankshaft.
3.If the measured value exceeds the limit, replace the connecting rod.
SPECIFIED VALUE: 0.15-0.40 mm



(2) Connecting rod bearing oil clearance check

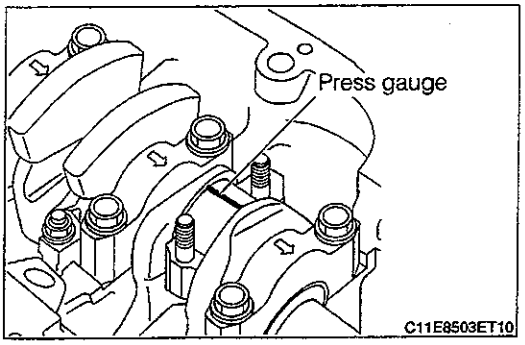
1.Remove the connecting rod bearing cap and connecting rod bearing.
CAUTION
- Keep the parts which belong to the same cylinder together.

2.Clean the bearing and crank pin.

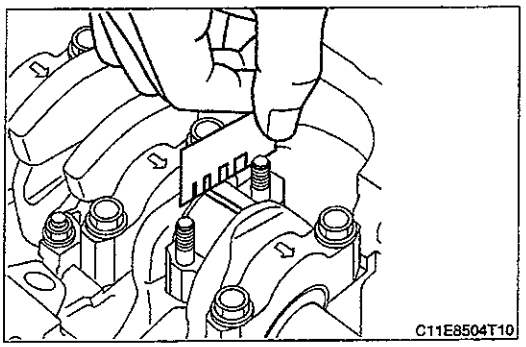


3.Set a press gauge in the axial direction of the crank pin. Tighten the bearing cap to the specified torque.
TIGHTENING TORQUE: 38.0±4.0 N·m {390±40 kgf·cm}

CAUTION
- Do not turn the crankshaft.



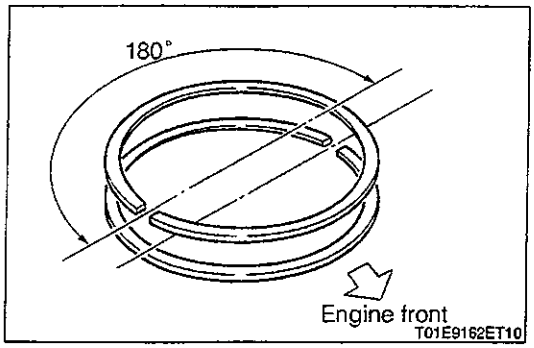
4.Remove the bearing cap. Measure the press gauge at its greatest width.
SPECIFIED VALUE: 0.020-0.044 mm
ALLOWABLE LIMIT: 0.07 mm
5.If the measured value exceeds the limit, replace the connecting rod bearing.



2.Assembling of compression ring

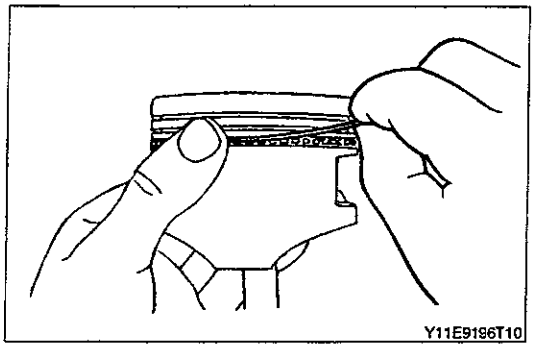
Using the piston ring tool, install the compression ring with the identification mark facing upward.

(1) Assemble each ring in such a way that the mating ends of the No.1 ring comes at the thrust direction (intake manifold side), whereas the mating ends of the next ring comes at the direction opposite to the thrust direction, 180 degrees away.



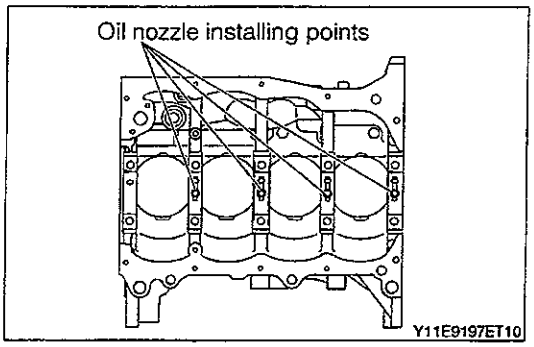
(2) Assembling of oil ring

Assemble the oil rings in such a way that the mating ends of the upper oil ring rail comes at the same direction as the No.1 ring, whereas the mating ends of the lower rail comes at the same direction as the No.2 ring. The end of the expander should be deviated 90 degrees from the mating ends of the rail.



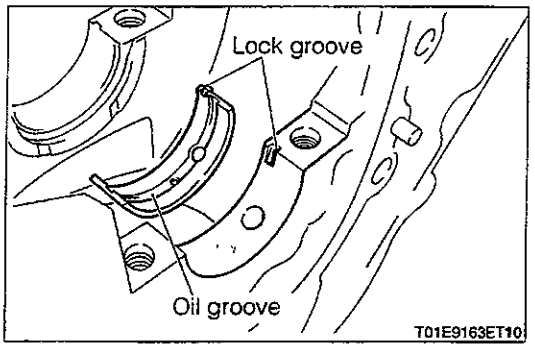
(3) Assembling of cylinder block

1.Assemble the oil nozzle S/A at a position indicated in the right figure.

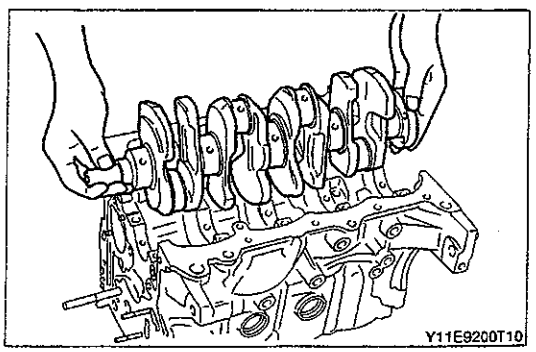


2.Assemble the crankshaft bearing cap, crankshaft, crankshaft bearing, crankshaft thrust washer in the following procedure given below.

(1) Assemble the bearing (upper), aligning with the lock width of the cylinder block.

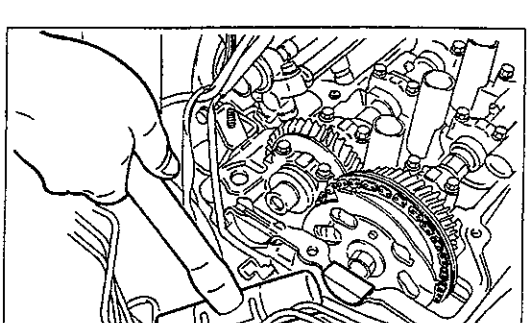


(2) Apply engine oil to the crankshaft sliding surface of the bearing (upper). Then, assemble the crankshaft.



(5) Semicircular plug

1.Use a plastic hammer to remove the semicircular plug.



(6) Camshaft timing sprocket

1.Insert the cross bar into the signal rotor hole so that no load may be applied to the timing chain and turning may be prevented. Then remove the bolts.

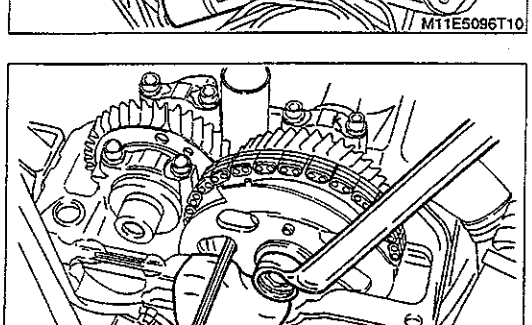
CAUTION

- Place a rag or the like between the cross bar and the cylinder head to avoid damage.

2.Remove the camshaft timing sprocket together with the signal rotor.

CAUTION

- Leave the timing chain on the sprocket and slide to the engine front side.

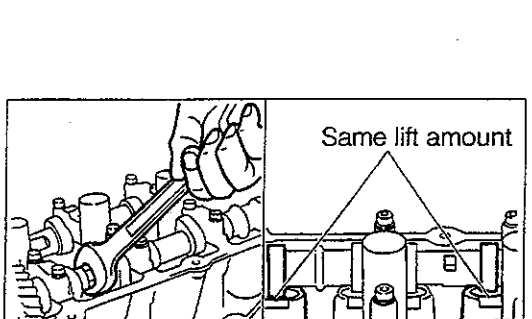


(7) Camshaft bearing cap No.1, No.2

1.After turning the crankshaft approx. 90° from the compression top dead center (TDC) of the cylinder No.1 toward the engine rotational direction, place a spanner on the hexagon portion of the exhaust camshaft. Turn the camshaft counterclockwise by ensuring that the cam noses of the cylinders No.2 and No.4 face downward and depress the lifter by the identical amount.

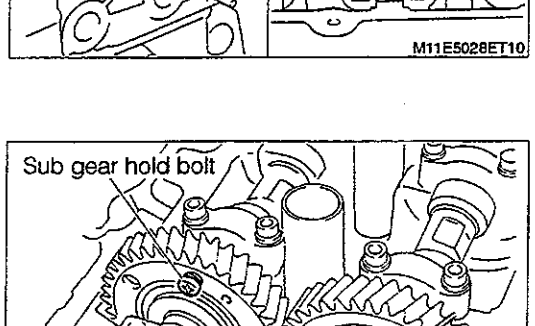
2.Remove the camshaft bearing cap No.1 and the camshaft bearing cap No.2.

TOOL: Hexagon wrench (Width across flats : 5mm)



(8) Camshaft bearing cap No. 3 (exhaust side)

1.With a bolt, fix the sub-gear of the camshaft No.1 side on the driven gear.
(bolt size: outer diameter 5mm, pitch: 0.8mm)



3 THROTTLE BODY

3-1 REMOVAL AND INSTALLATION

WARNING

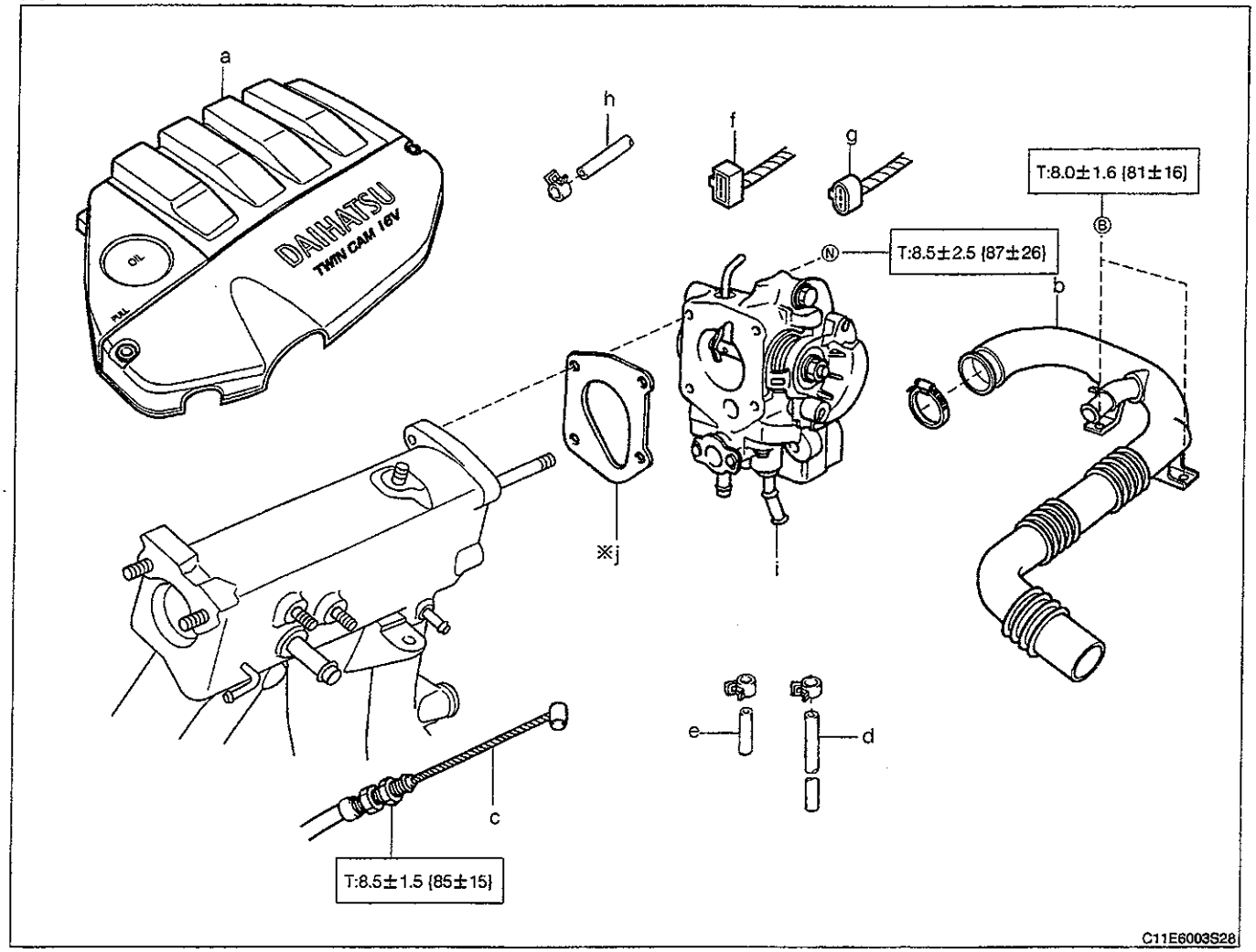
- Never disassemble the water hose while the coolant is hot, for there is a risk of burn.

3-1-1 ARTICLES TO BE PREPARED

Torque wrench

3-1-2 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



※:Non - reusable parts

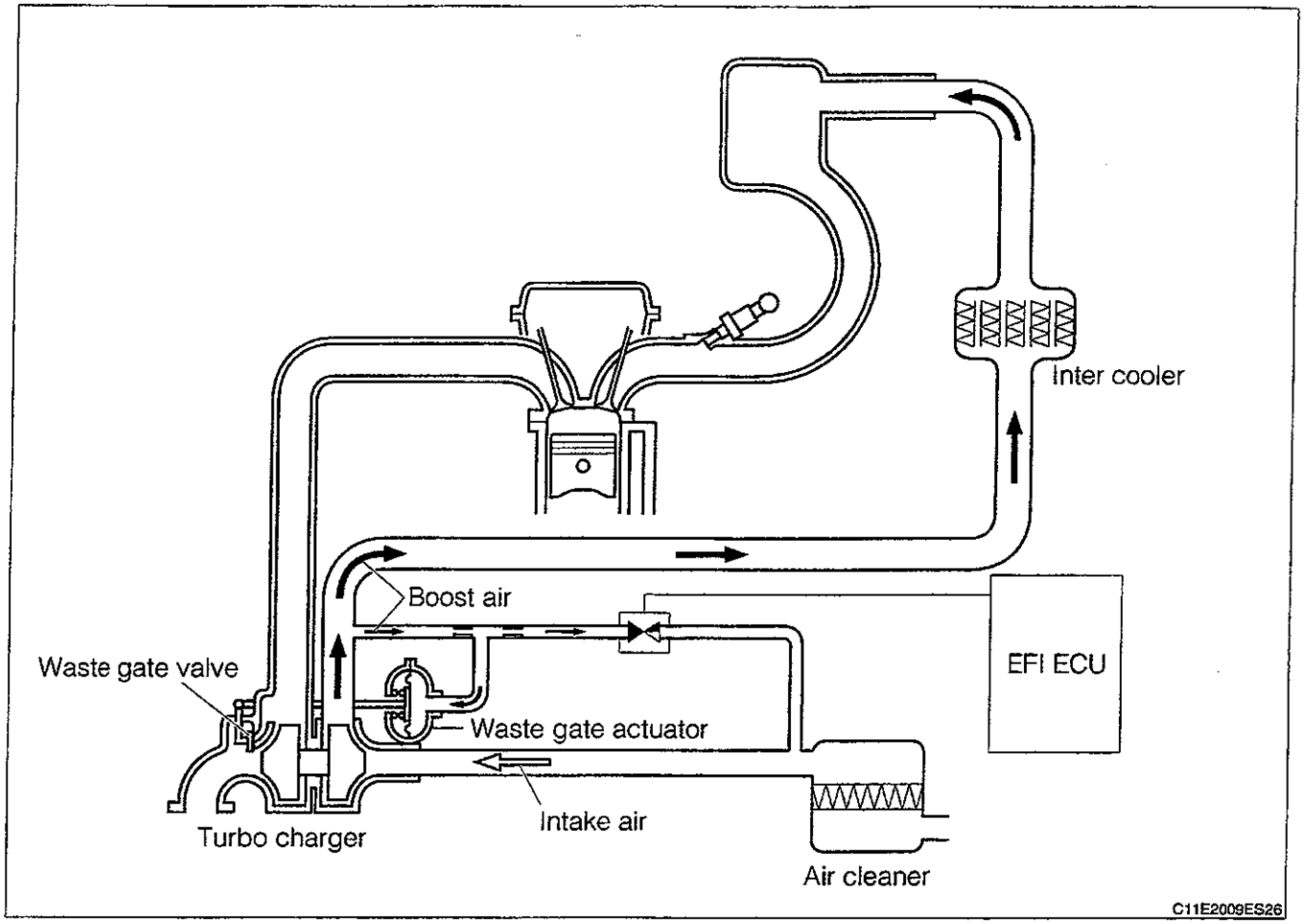
Unit:N·m{kgf·cm}

(2) REMOVAL AND INSTALLATION PROCEDURES

1 a Cover S/A, engine upper
2 b Pipe, intake No.1
▼ ▲ 3 c Cable Ay, accelerator control
4 d Hose, water
5 e Hose, water
6 f Connector (throttle sensor)
7 g Connector (ISC valve)
8 h Hose, purge
9 i Body Ay, throttle
10 j Gasket

7 BOOST PRESSURE CONTROL SYSTEM

7-1 SYSTEM DRAWING



2 ENGINE OIL

2-1 REPLACEMENT

WARNING

- Never carry out the operation while the engine and engine oil are still hot, for there are hazard potentials for getting scald.

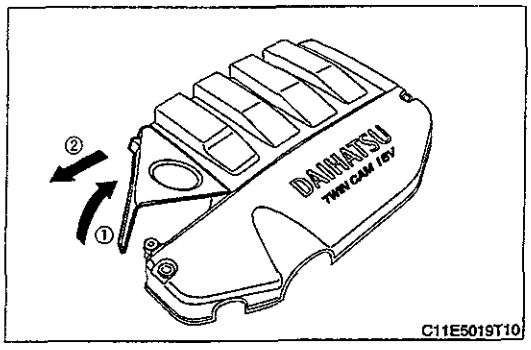
2-1-1 ARTICLES TO BE PREPARED

Lubricant,adhesive,others

Engine oil 5W−30(API Grade SG or higher)

2-1-2 REPLACING PROCEDURE

1.Remove the engine cover at the top of the oil filler cap.
  (1) Open the left/upper section of the engine cover upward.
  (2) Remove the engine cover diagonally.



2.Remove the oil filler cap.
3.Remove the drain plug of the oil pan. Drain the engine oil.
4.Install the drain plug with a new gasket interposed.
  TIGHTENING TORQUE: 29.5±5.9N·m {295±59kgf·cm}

5.Fill engine oil.
  LUBRICANT: Engine oil 5W−30(API Grade SG or higher)

6.Check the oil level.
  Refer to Page B1-2.

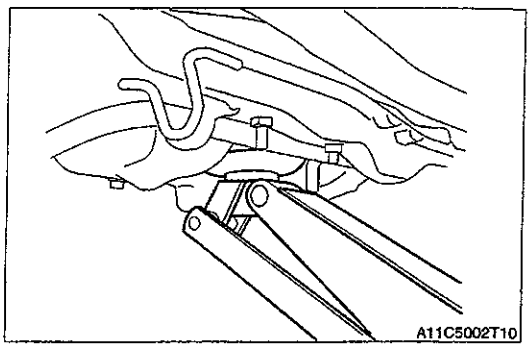
CAUTION

- Prior to starting the check, wait for a little while so as to allow all engine oil to drip into the oil pan.

7.Install the oil filler cap.
8.Reverse the removal procedure to install the engine cover.

NOTE

- If any difficulty is encountered in removing the oil pan, using a garage jack, raise the engine about 10 mm with a wooden block, etc. interposed at the transmission case of joint section between the engine assembly and the transaxle assembly.



CAUTION

- Never apply a jack to the oil pan of the engine assembly or the transaxle assembly.
- When using a jack, be sure to use a rag or the like so as to prevent any scratch.
- Do not raise the engine beyond a required amount.

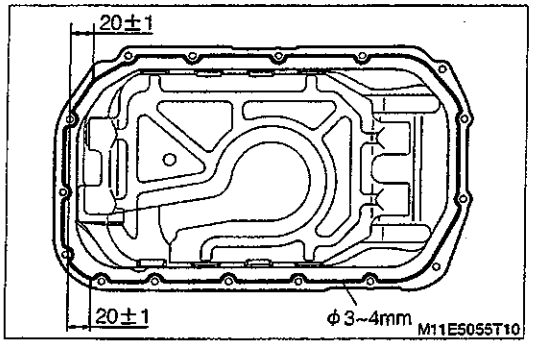
5-1-5 POINTS OF INSTALLATION

(1) OIL PAN S/A

CAUTION

- If the oil pan is deformed, lightly tap the oil pan with a hammer so as to flatten it.
- If it is difficult to flatten the oil pan due to being badly deformed, replace it with a new part.

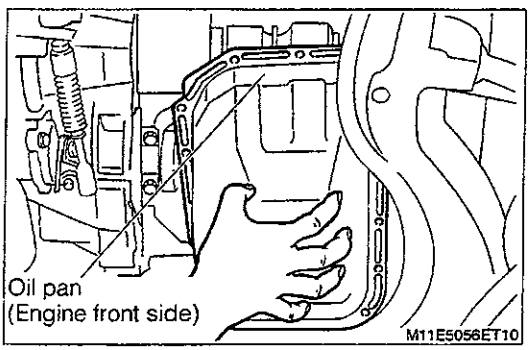
1. Using a scraper, wire brush, etc., clean any gasket that may remain on the oil pan installing surface or the oil pan flange section of the cylinder block.
2. Apply liquid gasket to the oil pan S/A, as indicated in the right figure.
   ADHESIVE: Three Bond1207C



CAUTION

- Apply a liquid gasket without any missing portion with a gauge of ϕ3-4.
- Apply liquid gasket to the section corresponding to the mating surface of the cylinder block × the oil pump, as indicated in the right figure.
- The assembling should be made within 15 minutes after the application of the gasket.

3. With the engine rear side of the oil pan S/A facing toward the rear side of the vehicle, put it in the oil strainer and install it to the block, while turning it.



CAUTION

- Care must be exercised not to allow the liquid gasket to get to the block, etc.

4. Tighten the bolts and nuts to the specified torque.

5-1-6 OPERATION AFTER INSTALLATION

1. Install the front exhaust pipe Ay.
   Refer to Page B4-2.

2. Install a new gasket in place and tighten the drain plug to the specified torque. Pour engine oil.

CAUTION

- Use a new gasket.

TO INDEX TO NEXT SECTION

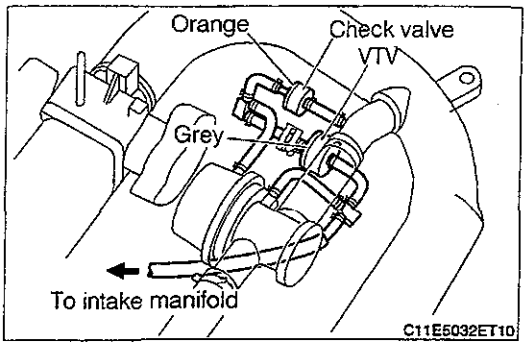
5-1-6 POINTS OF INSTALLATION

(1) VACUUM HOSE(FOR ABV USE)

1.Install the vacuum hose.

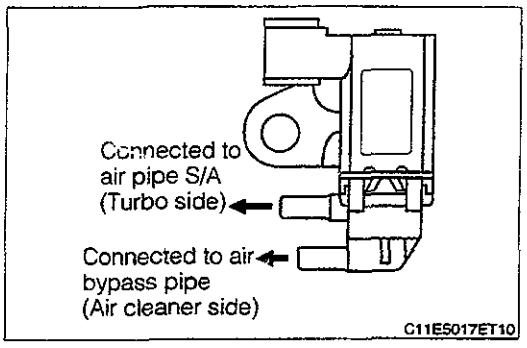
NOTE

- Ensure that each hose is assembled as indicated in the right figure.



(2) VSV BRACKET

1.Install the VSV bracket. Install the vacuum hose, as indicated in the right figure.



(3) ACCELERATOR CONTROL CABLE AY

1.Install the accelerator control cable assembly to the throttle body. After adjusting the accelerator pedal free play, tighten the nut to the specified torque.
SPECIFIED VALUE: 1-5mm (accelerator pedal free play)

5-1-7 OPERATION AFTER INSTALLATION

1.Check the fuel system for leakage with the fuel pressure applied.

1-6 HOW TO PROCEED WITH TROUBLE SHOOTING

1-6-1 GENERAL INFORMATION

1.The engine and engine control system of this vehicle are controlled by the EFI ECU. Furthermore, the vehicle is provided with the on-board diagnosis system.

Therefore, when any abnormality takes place in the input/output systems (sensors, actuators, harnesses, connectors, etc.) of the engine control system, the EFI ECU memorizes the system concerned and informs the driver by making the malfunction indicator lamp (MIL) illuminate or flash.

Also the malfunction is informed to the operator by means of the malfunction indicator lamp (MIL). When trouble-shooting the engine, it is imperative for you to get the general idea of the onboard diagnostic system, and fully understand the precautionary measures in trouble-shooting, the items diagnostic system, and fully understand the precautionary measures in trouble-shooting, the items to be observed and how to use testers.

Then, conduct the trouble-shooting following the flow chart that indicates the correct procedure for the engine troubleshooting.

(1) ON-BOARD DIAGNOSTIC SYSTEM OF VEHICLES FOR EUROPE

1.The vehicles for Europe have the following functions that comply with the 1999/102/EC (generally called Euro-OBD) standards.

2.When the ignition switch is turned ON, the malfunction indicator lamp (MIL) goes on. When no malfunction has been detected, the lamp will go out after the engine has started. (Check for a blown bulb)

3.While the engine is running, if the EFI ECU detects any malfunction in the emission control system/components that will affect the emissions from the vehicle, or in the power train control components, or if any malfunction is detected in the EFI ECU itself, the EFI ECU illuminates or flashes the MIL (only when misfire is detected which will damage the catalyst). Then, the EFI ECU memorizes the malfunction area (DTC by ISO15031-6/SAEJ2012).

If that malfunction will not occur in three successive running, the MIL is automatically turned off. However, the DTC will be recorded in the EFI ECU memory.

DTC No.	De		Malfunction evaluation method	MIL
P0105/31	Manifold pressure pressure		1 trip	!
P0110/43	Intake air malfunction		1 trip	!
P0115/42	Engine co malfunction		1 trip	!
P0116/42	Engine coo circuit mance		2 trip	!
P0120/41	Throttle/P switch "A"		1 trip	!

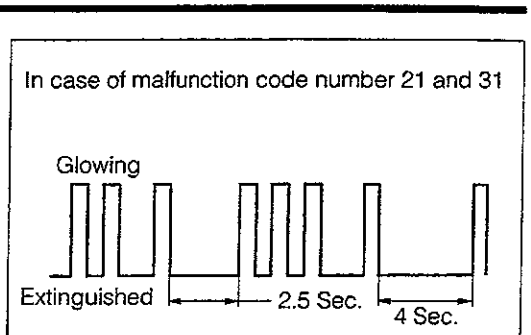
L21E3706ET10

NOTE

- **The MIL is illuminated only by the malfunction that affects the emissions from the vehicle. (Only items bearing a circle ("O" mark) in the MIL column.)**

4.It is possible to read out various data from the engine ECU by connecting the OBD II generic scan tool which complies with the ISO 14230 format or DS-21 diagnosis tester to the DLC of the vehicle. You can perform trouble-shooting efficiently by checking these data (DTC, freeze-frame data, current data, oxygen sensor monitor data, etc.).

7.The illustration shows an example of the flashing pattern of the codes No. 21 and 31. In cases where plural malfunction codes have been detected, the two-digit diagnostic trouble codes are indicated in the sequence of the code number, starting from a smaller number. Each diagnostic trouble code is indicated in the above described pattern. A pause of 2.5 seconds occurs between the outputs of respective diagnostic trouble codes, thus separating one from the others. After all of the plural diagnostic trouble codes that have been detected are indicated, the malfunction indicator lamp is extinguished for four seconds. Then, the detected plural diagnostic trouble codes will be indicated again.



8.For the details of malfunctions, refer to the DTC chart.
Refer to Page B8-32.

9.After completion of the check, disconnect the jump wire and turn OFF the ignition switch. Then, disconnect the SST from the DLC.

NOTE

- **In cases where plural malfunction codes have been detected, the indication will be made progressively, starting from the smaller number to the larger number.**
- **In cases where the DS-21 diagnosis tester or the OBD II generic scan tool is not used, it is impossible to take a reading of unidentified two-trip DTC from the SST connector.**
- **When malfunctioning phenomena are to be reproduced without using the DS-21 diagnosis tester or OBD II generic scan tool, follow the procedure given below to detect the DTC.**

(1) It is assumed that two trip detection logic is used for the DTC detection.
(2) Therefore, after a malfunctioning phenomenon is first reproduced, turn OFF the ignition switch.
(3) Then, repeat the same reproduction procedure once again.
(4) When the malfunction is reproduced again, the malfunction indicator lamp goes on and the DTC is memorized in the engine ECU. For reading out of the DTC.

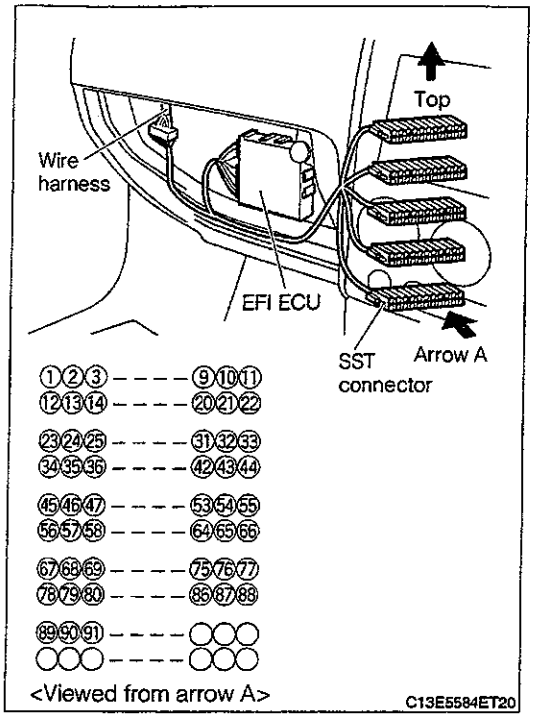
7.RESISTANCE CHECK

(1) Installation of SST

First, install the SST between the engine ECU and the vehicle harness. However, the SST connector at the ECU side should not be connected.

For the installation procedure, refer to the section under "Connecting Procedure for SST".

Refer to Page B8-11.



(2) Measure the resistances between the respective terminals.

(3) Check to see if the measured resistances conform to the specification in accordance with the following table "Standard Resistances".

NOTE

- **Make sure that the ignition switch is turned OFF during the measurement.**
- **The following table shows the resistance at the time when the temperature of parts is 20°C.**

STANDARD RESISTANCES

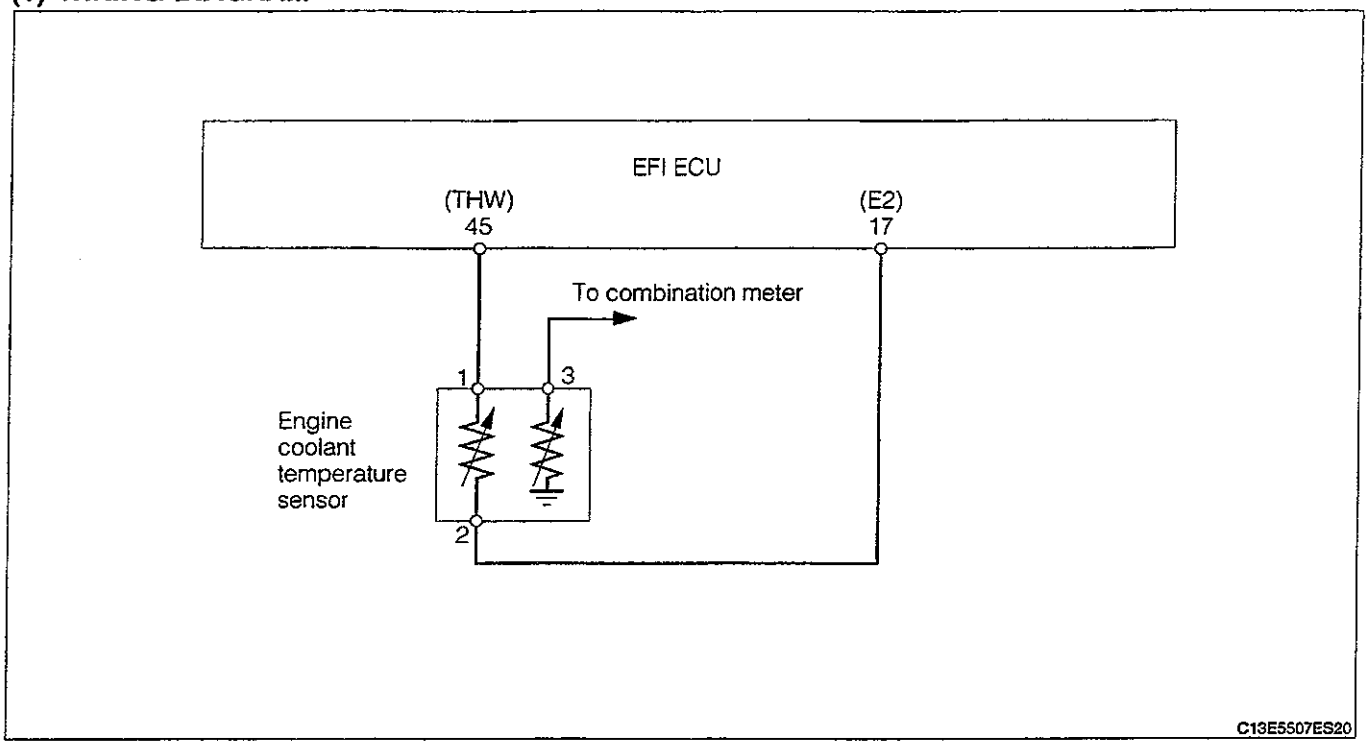
System to be checked	Terminals	Circuit	Standard resistance
Front oxygen sensor system	20 (OXH1) – 7 (+B1)	Front oxygen sensor and main relay	11 – 14.5Ω
Rear oxygen sensor system	50 (OXH2) – 7 (+B1)	Rear oxygen sensor and main relay	11.7 – 14.5Ω
Engine revolution sensor system	22 (N2+) – 52 (N2–)	Engine revolution sensor system	1850 – 2450Ω
Injector system	27 (#10) – 7 (+B1)	No.1 - 4 fuel injector	13.4 – 14.2Ω
	26 (#20) – 7 (+B1)		
	25 (#30) – 7 (+B1)		
	24 (#40) – 7 (+B1)		
VSV for evaporative emission control system purge control system	79 (PRG) – 7 (+B1)	Evaporative emission purge control valve	30 – 34Ω
VSV for boost pressure control system	80 (VSV1) – 7 (+B)	Boost pressure control valve	30 – 34Ω
Ground system	23 (E1) – Body ground	Ground	10Ω or less
	17 (E2) – Body ground		
	47 (E2PM) – Body ground		
	29 (E21) – Body ground		

(3) Engine stalling

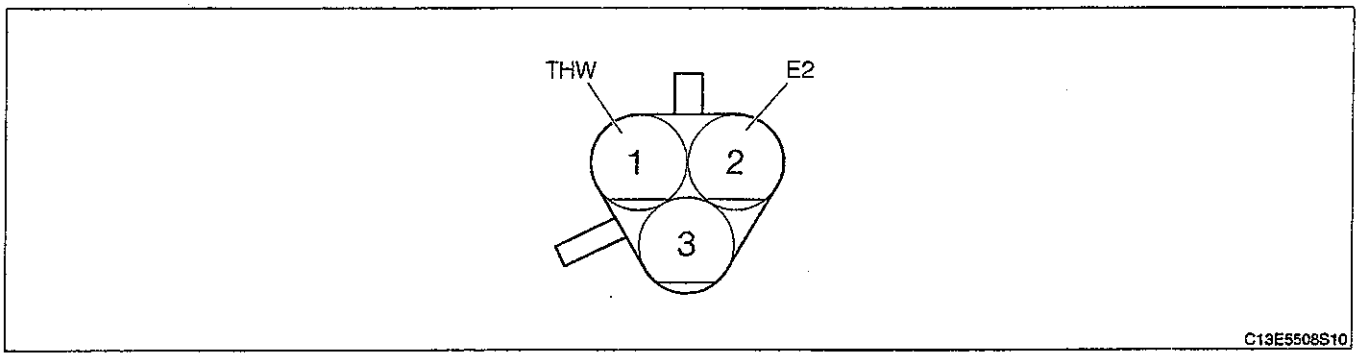
Malfunction phenomena	Cause of malfunction		
	Suspect area	Components	Mode of malfunction
Engine stalls during idling	Fuel supply system	Fuel pump relay	Switch is not turned ON
		Fuel line/fuel filter	Clogged
		Fuel pump	Not operate
	Control system circuit	Engine coolant temperature sensor	Deference of characteristic
		Engine revolution sensor	Defect of output signal
Engine stalls when accelerator pedal is depressed	Control system circuit	Manifold absolute pressure sensor	Deference of characteristic
		Engine coolant temperature sensor	
		Engine revolution sensor	Defect of output signal
Engine stalls when accelerator pedal is released	Air inlet system circuit	Throttle body	Poor operation
	Control system circuit	Manifold absolute pressure sensor	Deference of characteristic
Engine stalls when A/C switch is turned on	Air inlet system circuit	Valve for ISC	Valve is closed at all time
Possible to restart after engine stalling	Power source system	ECU power source circuit	Poor contact
		IG switch	
		Main relay	
	Air inlet system circuit	Valve for ISC	Valve is closed at all time
	Ignition system circuit	IG coil	Poor contact
	Control system circuit	Manifold absolute pressure sensor	Poor contact
		Engine revolution sensor	
		Vehicle speed sensor	Open wire, short circuit

1-12-3 DTC No.P0115/42 Engine coolant temperature sensor (ECT) circuit malfunction

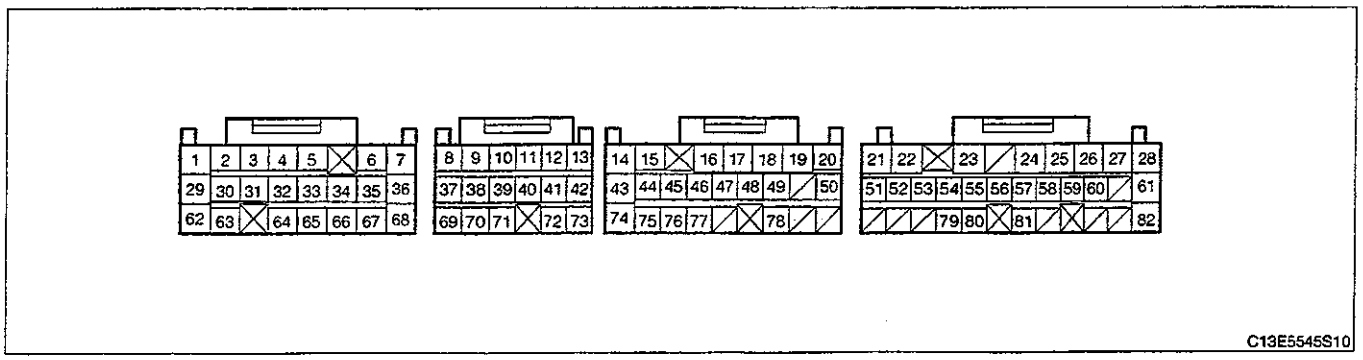
(1) WIRING DIAGRAM



ECT sensor wire harness side



EFI ECU wire harness side



(2) CIRCUIT DESCRIPTION

1.A thermistor built into the ECT sensor changes the resistance valve according to the engine coolant temperature. The structure of the sensor and connection to the EFI ECU is the same as in the DTC P0110/43 (IAT Sensor Circuit Malfunction).

(3) DTC DETECTING CONDITION

1.Open wire or short circuit in the ECT sensor circuit

(3) DTC DETECTING CONDITION

1.When the flowing conditions (a) and (b) continue for more than certain length of time.

(a) After engine warming up, the signal from the oxygen sensor continuously remains in the non-rich state, not becoming rich even once.

(b) Voltage output of oxygen sensor remains at 0.3 V or more, or 0.6 V or less, during idling after engine is warmed up.

(4) TROUBLE AREA

1.Air induction system
2.Fuel pressure
3.Injector
4.Open wire or short circuit in the oxygen sensor circuit
5.Oxygen sensor
6.EFI ECU

(5) POINTS OF INSPECTION

CAUTION

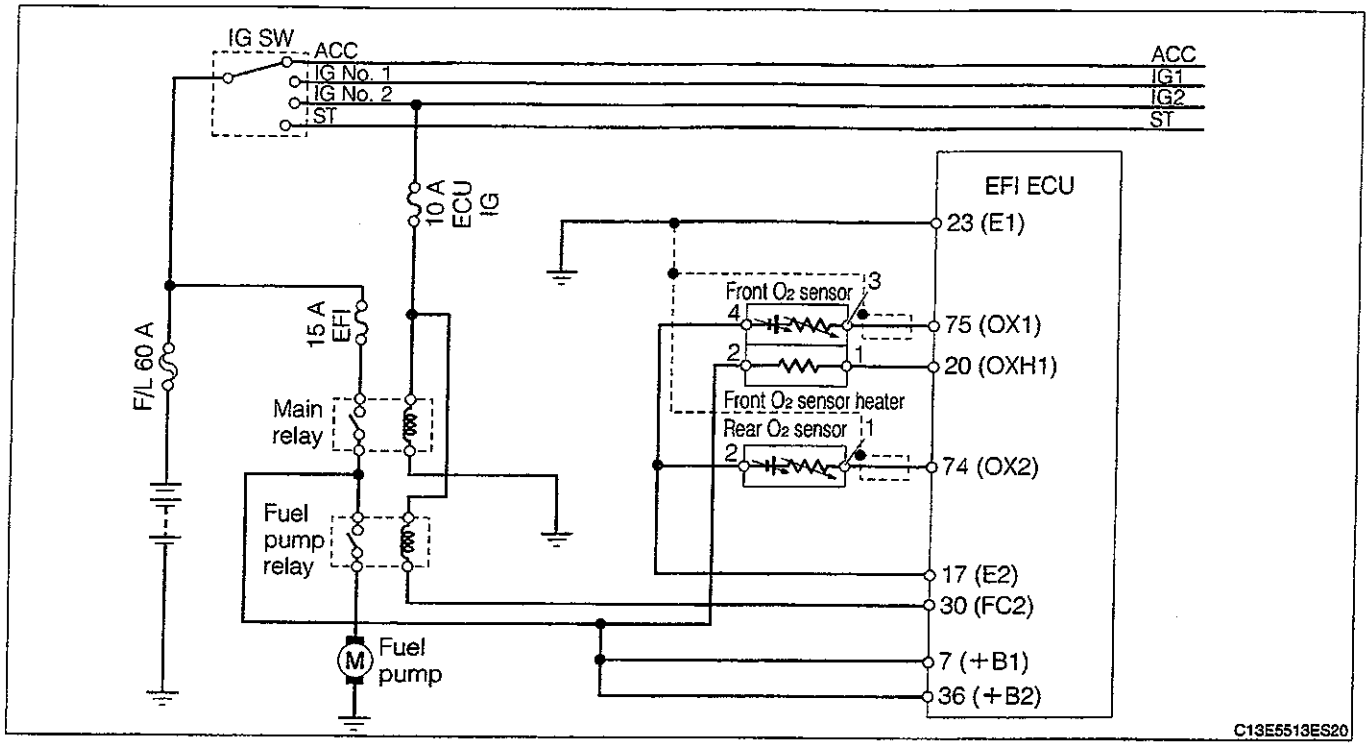
- **If it is the case that any DTC besides misfire is memorized simultaneously, first perform the troubleshooting for them.**

1.Is the signal from the oxygen sensor inputted to the EFI ECU proper ?
2.Is the harness between the oxygen sensor and the EFI ECU proper ?
3.Is the output of oxygen sensor proper ?
4.Are there the open wire or short circuit for the oxygen sensor heater circuit.

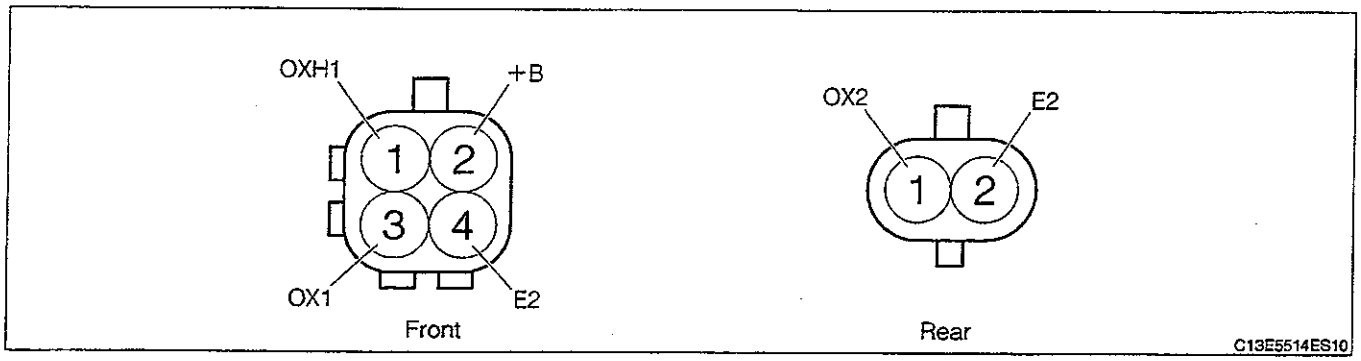
NOTE

- **Sensor 1 means a sensor which is located near the engine block.**
- **Using the DS-21 diagnosis tester or OBD II generic scan tool, confirm the output voltage of the oxygen sensor (bank 1, sensor 1) from the current data. If the output voltage of the oxygen sensor (bank 1, sensor 1) is 0.1 V or less, most likely the circuit of the oxygen sensor (bank 1, sensor 1) is open or shorted.**

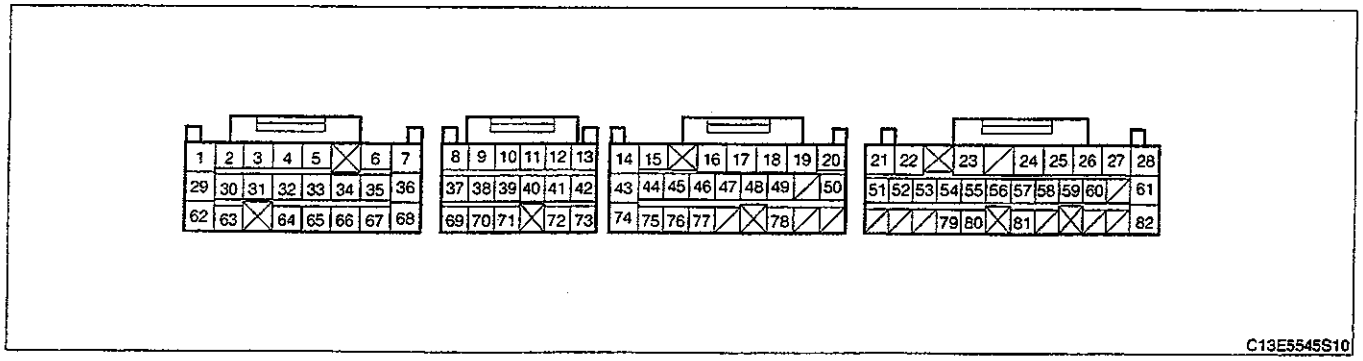
② FOR AUS SPECIFICATION



Sensor wire harness side



EFI ECU wire harness side



(2) CIRCUIT DESCRIPTION

1.Refer to DTC P0130/21 (Oxygen sensor circuit malfunction (Bank 1 sensor 1)).
Refer to Page B8-63.

(3) DTC DETECTING CONDITION

1.Voltage output of heated oxygen sensor remains at 0.4 V or more or 0.5 V or less when vehicle is driven at 100 km/h or more after engine is warmed up.

(6) INSPECTION PROCEDURE

NOTE

- In order to memorize DTC of misfire, it is necessary to drive around MISFIRE RPM, MISFIRE LOAD in the data list for the following period of time.

CONFIRMATION DRIVING PATTERN

Engine speed	Time
Idling	3 minutes 30 seconds or more
1000 rpm	3 minutes or more
2000 rpm	1 minutes 30 seconds or more
3000 rpm	1 minutes or more

NOTE

- If it is the case that any DTC besides misfire is memorized simultaneously, first perform the troubleshooting for them.
- Read the freeze frame data, using the DS-21 diagnosis tester or OBD II generic scan tool. Because the freeze frame data records the engine conditions when the malfunction was detected, when troubleshooting the freeze frame data is useful to determine whether the vehicle was running or stopped, the engine warmed up or not, the air-fuel ratio lean or rich, etc. at the time of the malfunction.
- When the vehicle is brought to the workshop and the misfire is not occurred, misfire can be confirmed by reproducing the condition of freeze frame data. Also, after finishing the repair, confirm that there is no misfire. (See the confirmation driving pattern)

① When using DS-21 diagnosis tester or OBD II generic scan tool:

➤1. Visual check of inside of engine compartment.

1.Check the connecting conditions of the wire harnesses and connectors.

2.Check the vacuum hoses, purge hoses, fuel hoses and pipes for disconnection and breakage.

3.Are the check results OK?

YES: Go to ➤2.

NO: Repair or replace, then confirm that there is no misfire. (See confirmation driving pattern)

(6) INSPECTION PROCEDURE

① When not using DS-21 diagnosis tester or OBD II generic scan tool:

➤1. Spark check.

1.Remove the IG coils and spark plugs (all cylinders #1, 2, 3 and 4).

2.Remove the fuel pump relay.

3.Disconnect the connector of the injector.

CAUTION

- Stop the fuel injection by the operations at Steps 3 and 4 above so as to prevent the catalyst from being damaged by unburnt gas, etc.
- When there is no fuel, the injector injection must be avoided wherever possible, as this may damage the injector.

4.Crank the engine. At this time, check to see if each spark plug sparks.

YES: Ignition system circuit is normal.

NO: Go to ➤2.

➤2. Check of ECU output signal.

1.An oscilloscope is used.

2.While engine is being cranked, check the ignition signal between the following terminals.

ECU side connector 60 (IG1) — ECU side connector 23 (E1)

ECU side connector 59 (IG2) — ECU side connector 23 (E1)

ECU side connector 58 (IG3) — ECU side connector 23 (E1)

ECU side connector 57 (IG4) — ECU side connector 23 (E1)

SPECIFIED VALUE: Normal waveforms are outputted.

NOTE

- Correct evaluation cannot be performed for the ignition signal, unless an oscilloscope is used.

YES: Go to ➤3.

NO: Check of EFI ECU circuit.

➤3. Check of power supply voltage of IG coil.

1.With the IG switch turned ON, measure the voltage between the each connector 1 (+B) at IG coil harness side and the body ground.

SPECIFIED VALUE: Battery voltage

YES: Go to ➤4

NO: Repair or replace the harness between the IG coil and the battery.

➤4. Check of wire herness.

1.Check of continuity between the following terminals.

IG coil side connector 2 (IG1) — ECU side connector 60 (IG1)

IG coil side connector 2 (IG2) — ECU side connector 59 (IG2)

IG coil side connector 2 (IG3) — ECU side connector 58 (IG3)

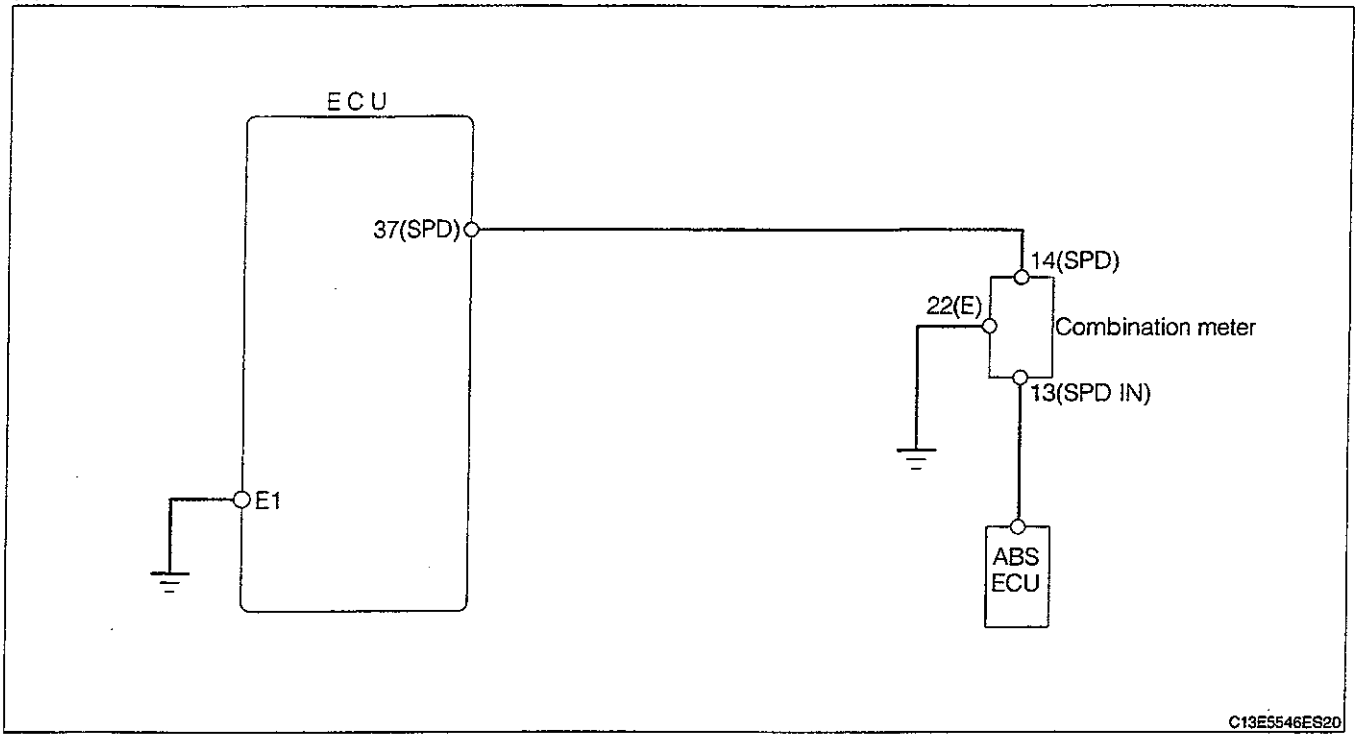
IG coil side connector 2 (IG4) — ECU side connector 57 (IG4)

YES: Go to ➤5.

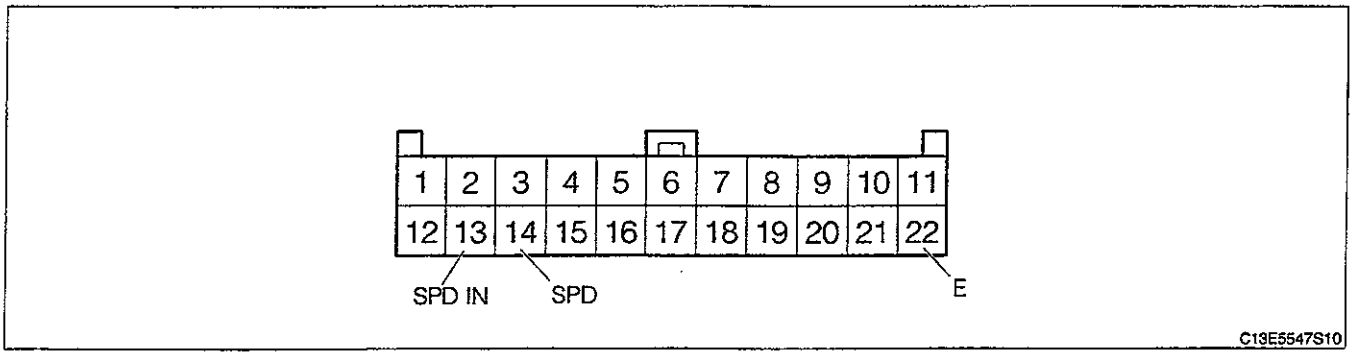
NO: Repair or replace the harness.

1-12-17 DTC No.P0500/52 Vehicle speed sensor circuit malfunction

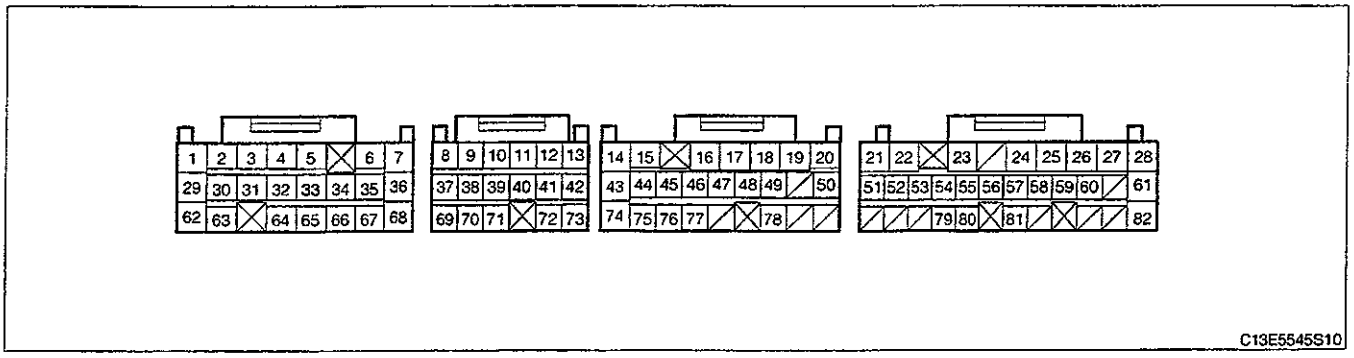
(1) WIRING DIAGRAM



Combination meter wire harness side



EFI ECU wire harness side



(2) CIRCUIT DESCRIPTION

1.The vehicle speed signals (pulses) are inputted from the ABS computer via the combination meter. The EFI ECU calculates the vehicle speed based on the frequency of these pulse signals.

(3) DTC DETECTING CONDITION

1.No vehicle speed sensor signal to EFI ECU during the fuel cut control is functioning.

➤10. Unit check of ignitor unit.
1.Are the check results OK?
Refer to Page B8-146.

YES: Go to ➤11.
NO: Replace the ignitor unit.

➤11. Check of earth circuit of ignitor unit.
1.Measure the continuity between the engine earth and each of harness side terminals 2 (G1) and 8 (G2) of the ignitor unit.
SPECIFIED VALUE: Continuity exists.

2.Are the check results OK?
YES: Replace the IG coil. (All cylinders)
NO: Repair or replace the harness or connector.

➤12. Check of harness between ignitor unit and IG coil.
1.Check the harness and connector for open wire or short.
2.Turn OFF the IG switch.
3.Disconnect each IG coil and the IG coil side connector of the ignitor unit.
(1) Between harness side terminals "2" of each IG coil and harness side terminals 5 (C1), 4 (C2), 3 (C3) and 2 (C4) of ignitor unit.
4.Are the check results for open wire and short OK?
YES: Go to ➤13.
NO: Repair or replace the harness or connector.

➤13. Check of harness between EFI ECU and ignitor unit
1.Check the harness and connector for open wire or short.
2.Disconnect the SST connector from the EFI ECU.
3.Disconnect the EFI ECU side connector of the ignitor unit.
4.Harness side terminals 7 (S1), 6 (S2), 4 (S3), 3 (S4) and 5 (I/O) of ignitor unit — SST connector terminals 60 (IG1), 59 (IG2), 58(IG3), 57 (IG4) and 14 (ICMB).
5.Are the check results for open wire and short OK?
YES: Go to ➤0.
NO: Repair or replace the harness or connector.

(4) POINTS OF INSPECTION

1.If the MIL is not illuminated when the ignition switch is turned ON, it is not to supply the power sauce to the EFI ECU.

(5) INSPECTION PROCEDURE

NOTE

- Read the freeze frame data, using the DS-21 diagnosis tester. Because the freeze frame data records the engine conditions when the malfunction was detected, when troubleshooting the freeze frame data is useful to determine whether the vehicle was running or stopped, the engine warmed up or not, the air-fuel ratio lean or rich, etc. at the time of the malfunction.

① When not using DS-21 diagnosis tester or OBD II generic scan tool:

➤1. Check of ECU backup power supply voltage.

1.Set the SST (sub-harness).
SST: 09842-97203-000

2.With the IG switch turned OFF, measure the voltage between the SST connector 1 (BAT) and the body ground.
SPECIFIED VALUE: Battery voltage

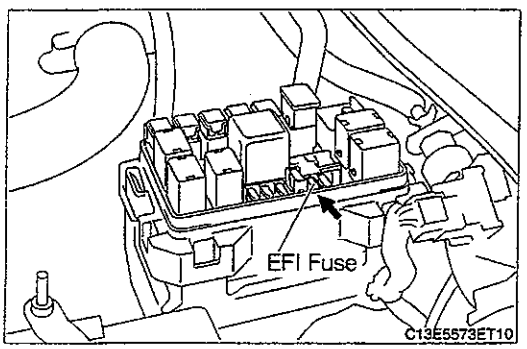
3.Are the check results OK?
YES: Check malfunction that occurs intermittently and poor contact.
NO: Go to ➤2.

➤2. Check of harness between relay block and ECU.

1.With the IG switch turned OFF, disconnect the SST connector from the EFI ECU.
2.Remove the harness from the battery positive terminal.
3.Check the harness and connector for open wire or short.
Harness side connector B-20 (BAT) of the relay block — ECU 1 (BAT)
Stud bolt of the relay block and the battery positive terminal.
4.Are the check results for open wire and short OK?
YES: Go to ➤3.
NO: Repair or replace the harness or connector.

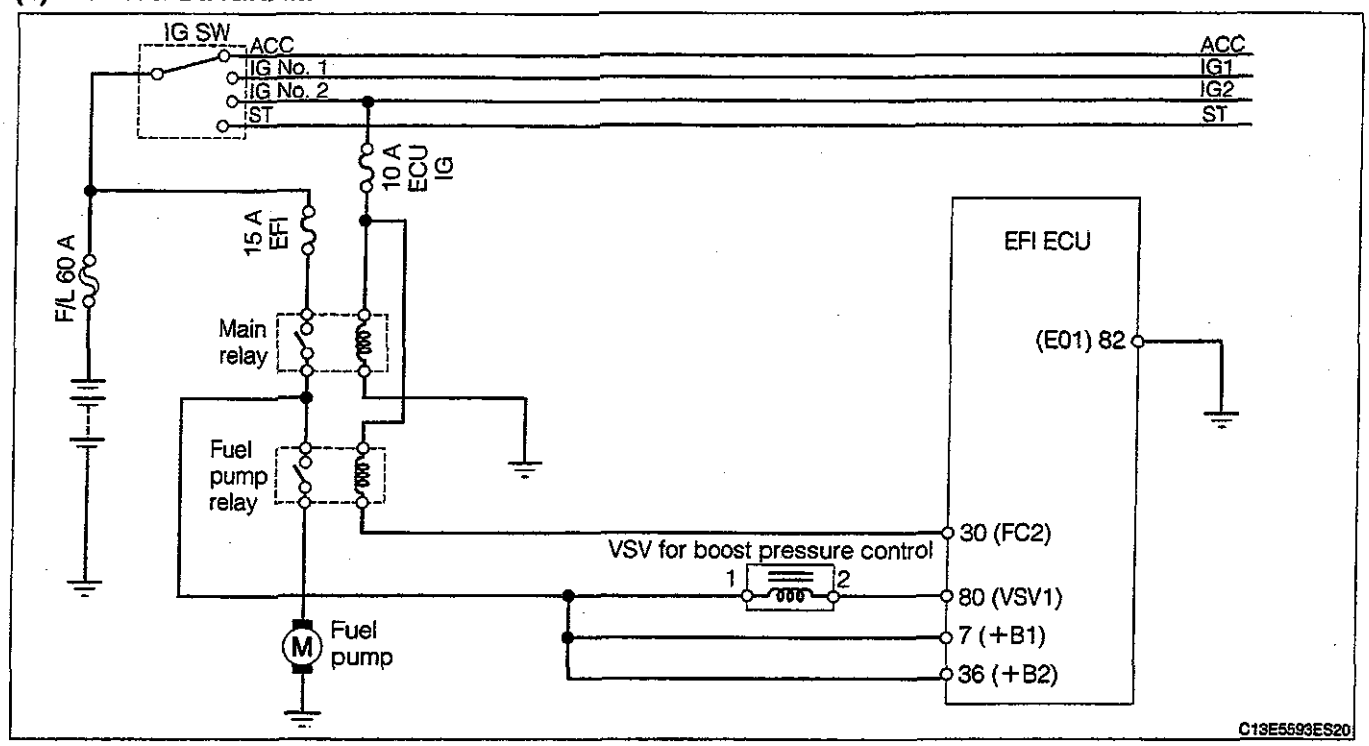
➤3. Unit check of EFI fuse.

1.Remove the EFI fuse from the relay block.
2.Check continuity of the EFI fuse.
SPECIFIED VALUE: Continuity should exist.
3.Are the check results OK?
YES: Check or replace the EFI ECU.
NO: Replace the EFI fuse.

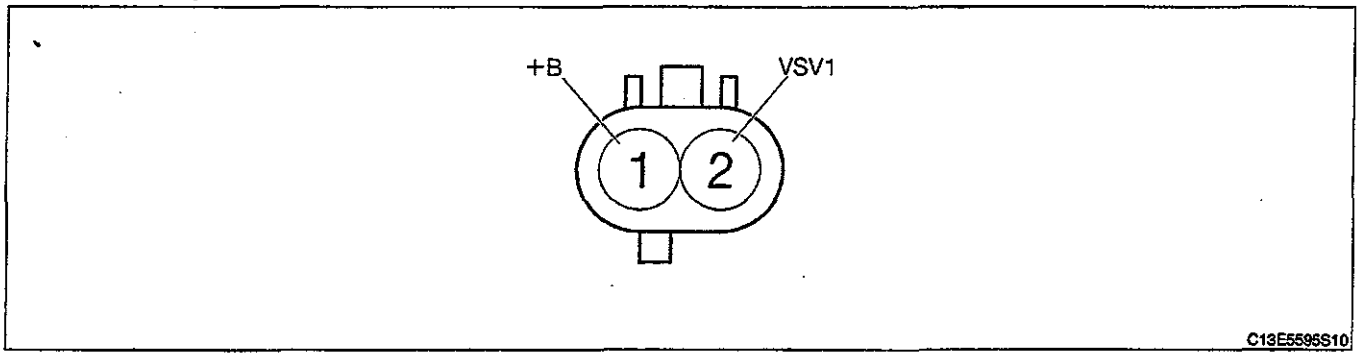


1-12-28

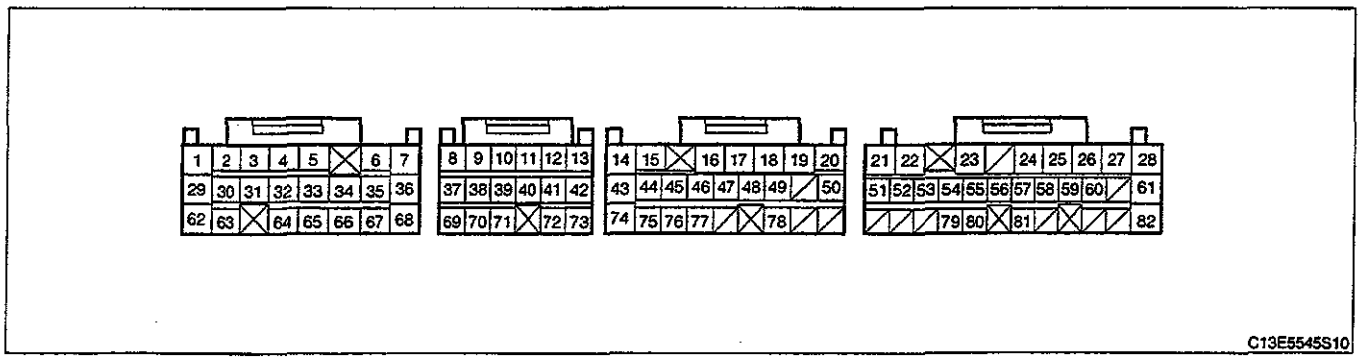
(1) WIRING DIAGRAM



VSV for boost pressure control wire harness side



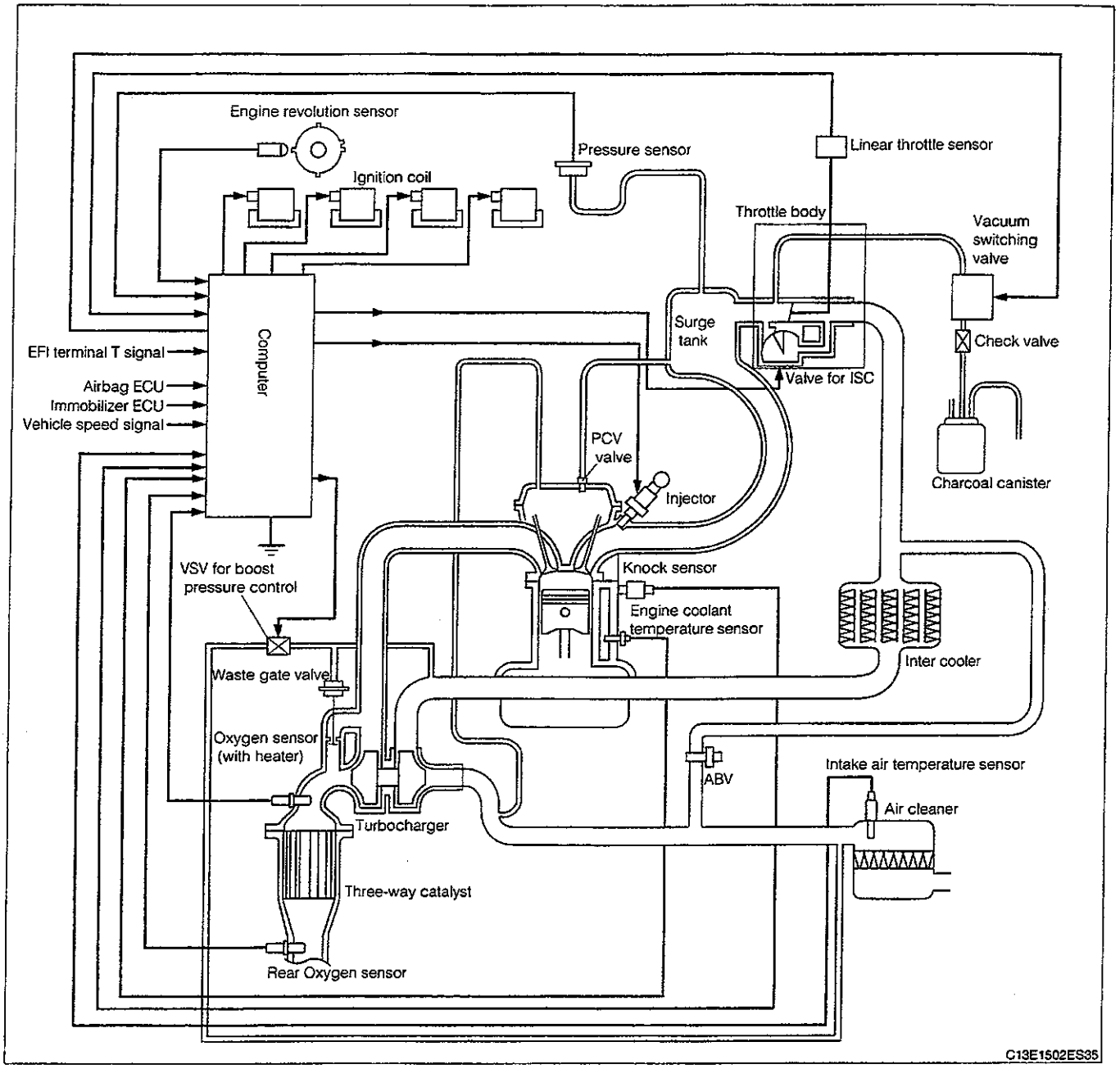
EFI ECU wire harness side



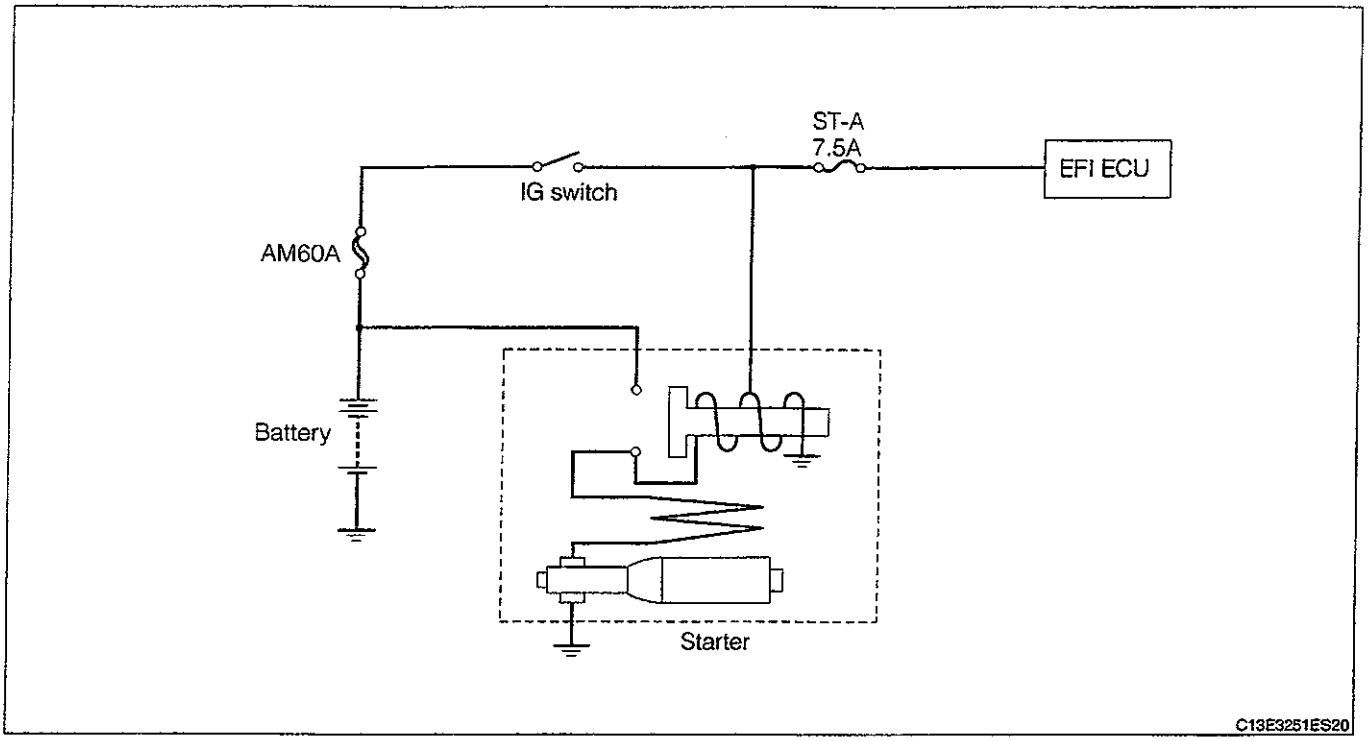
(2) CIRCUIT DESCRIPTION

1. The computer controls the supercharging pressure according to the input from the pressure sensors, the vehicle speed signals and the engine revolution speed.
2. This control is carried out by changing the pressure of the actuator chamber of the waste gate valve through the duty control over turning ON and OFF of VSV. The control is classified into two methods: All closed control and the feedback control.

For Aus Specifications



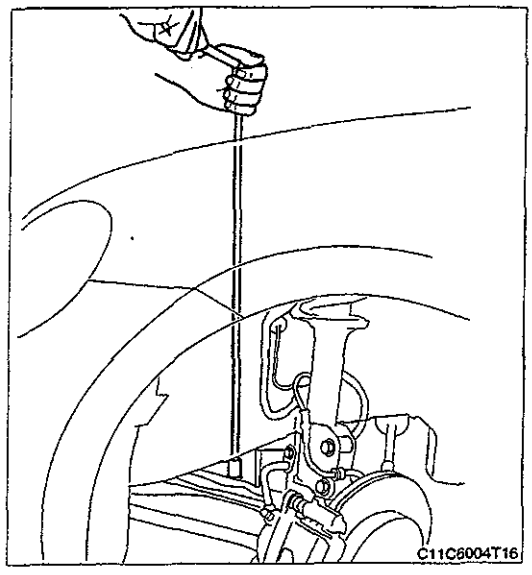
JB
1 STARTING SYSTEM
1-1 SYSTEM DIAGRAM



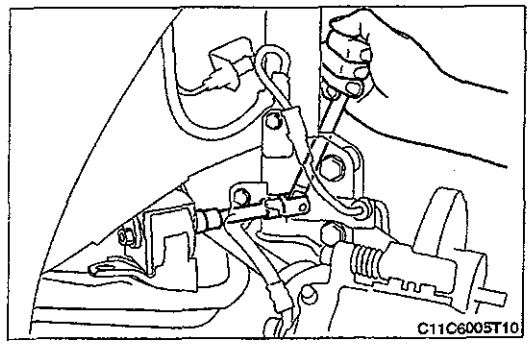
NOTE

- As for the bolts at the front side of the vehicle, it is advisable to carry out the work from around the battery carrier that was removed in the work prior to removal, using a long extension bar.

4.Lift up the engine assembly and transaxle assembly, using the garage jack.



5.Remove the engine mounting lower left insulator from the engine mounting left bracket.



2-1-5 INSPECTION

(1) ENGINE MOUNTING LOWER LEFT INSULATOR

Replace any insulator that exhibits cracks, fluid leakage or a flattened condition.

2-1-6 POINTS OF INSTALLATION

(1) ENGINE MOUNTING LOWER LEFT INSULATOR

1.Install the engine mounting lower left insulator to the frame assembly.

2.Fit the engine mounting left bracket into the engine mounting lower left insulator, while adjusting the position of the transaxle assembly, using a garage jack. Temporarily tighten the bolts.

3.After the garage jack has been lowered fully, securely tighten the bolts connecting the engine mounting lower left insulator with the engine mounting left bracket, with the engine mounting lower left insulator in a loaded state.

2-1-7 OPERATION AFTER INSTALLATION

1.Install the front disc wheels LH.

TIGHTENING TORQUE: 103.0±14.7N·m{1050±150kgf·cm}

2.Lift down the vehicle.

3.Install the battery carrier support and battery carrier subassembly No.2.

4.Install the battery.

12.Turn the steering wheel clockwise until the turning radius gauge points 20 °.
13.Turn the adjusting screws for caster angle and kingpin angle of the gauge so that each bubble come at 0° .
14.Turn the steering wheel counterclockwise until the turning radius gauge points 20 °.
15.Read the graduation of the bubble center position at the caster angle measuring gauge and kingpin angle measuring gauge.
SPECIFIED VALUE:

Vehicle model	L880RK	
	KMVZW	KMVZQ
Caster angle	3°40′±1°	3°32′±1°
Kingpin angle	12°16′±1°	11°55′±1°

16.Check the caster angle and kingpin inclination angle (left wheel).
NOTE
- **This is a non-adjustable type, in which the camber, caster and kingpin inclination angle have already been adjusted to the specified values.**

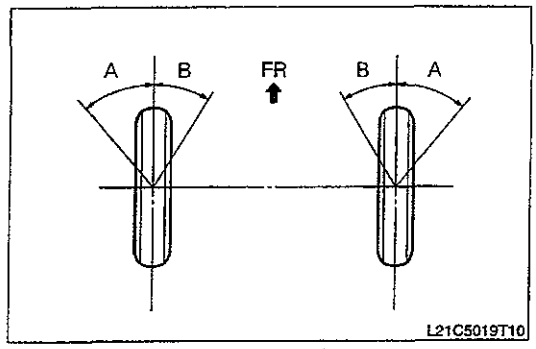
17.Remove the gauge and SST.

(5) WHEEL TURNING ANGLE

① CHECK

Turn the steering wheel fully to the right and to the left. At this time, check the wheel turning angle.
SPECIFIED VALUE:

Vehicle model	L880RK	
	KMVZW	KMVZQ
In(A)	36°25' ±2°	37°00' ±2°
Out(B)	31°30' ±2°	31°48' ±2°



② ADJUSTMENT

If there is a difference in turning angle between the right and left sides, or the turning angle deviates from the standard value, check and adjust the toe-in.

(6) FRONT SIDE SLIP

① CHECK

NOTE
- **Even when the side slip value is within the range of the specified value, if there is any abnormality, be sure to check and adjust the above items.**

Check the side slip with a side slip tester.
SPECIFIED VALUE: In 5 mm - out 5 mm

TO INDEX

C2 REAR SUSPENSION

REAR SHOCK ABSORBER AND
REAR COIL SPRING (2WD) ---------- C2 - 1
REMOVAL AND INSTALLATION-------- C2 - 1
DISPOSAL ---------- C2 - 4
REAR SUSPENSION ARM (2WD)------- C2 - 5
REMOVAL AND INSTALLATION-------- C2 - 5
REAR STABILIZER BAR ---------- C2 - 8
REMOVAL AND INSTALLATION-------- C2 - 8

1 TIRE PUNCTURE REPAIR AGENT

1-1 DRAINING

1-1-1 BRIEF DESCRIPTION

When you repair or replace a tire for which the repair tire kit (tire puncture emergency repair set) has been used, it is necessary to drain any repair agent remaining inside the tire.

1-1-2 ARTICLE TO BE PREPARED

Lubricant,adhesive,others

Empty repair agent bottle(with cap),Vinyl hose

1-1-3 ITEMS TO BE OBSERVED

CAUTION

- Care must be exercised not to allow the repair agent to flow from the tire during the operation.

1-1-4 DRAINING PROCEDURE

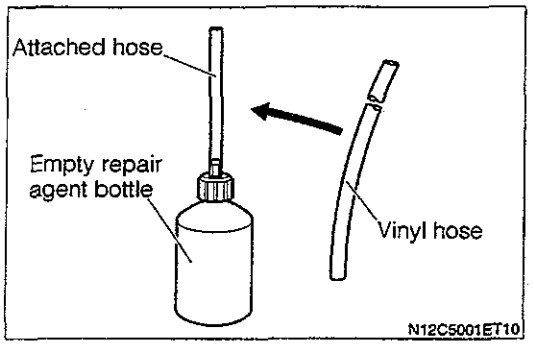
1.Take out the tire from the vehicle that has undergone the puncture emergency repair.

2.Drop the bead to the inside of the rim.

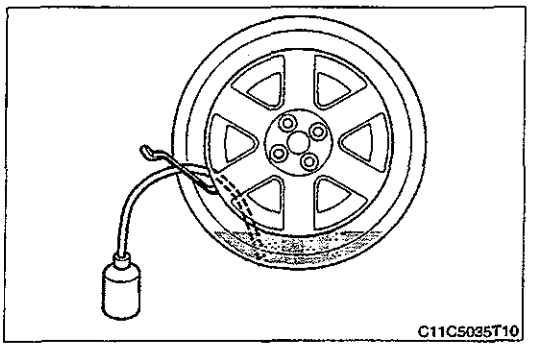
NOTE

- If any difficulty is encountered in dropping the bead from the rim, pour detergent solvent diluted with water into between the bead and the rim.

3.Detach the attached hose from the empty repair agent bottle. Install a prepared vinyl hose with an inner diameter ϕ 7 to 8 mm and a length of about 600 mm.



4.With the tire erected, insert a tool, etc. into between the bead and the rim to make a gap. Insert a vinyl hose into the gap so that the tip-end of the vinyl hose may be submerged into the repair agent liquid.

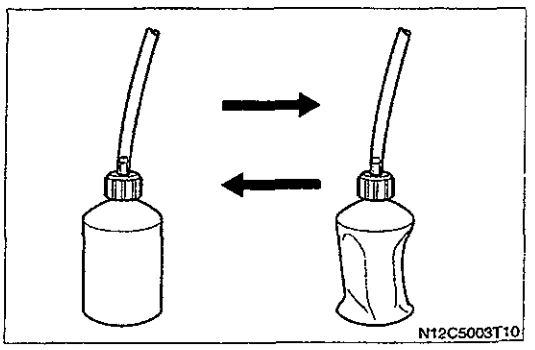


5.Squeeze the empty repair agent bottle so as to push out the inner air so as to suck the repair agent.

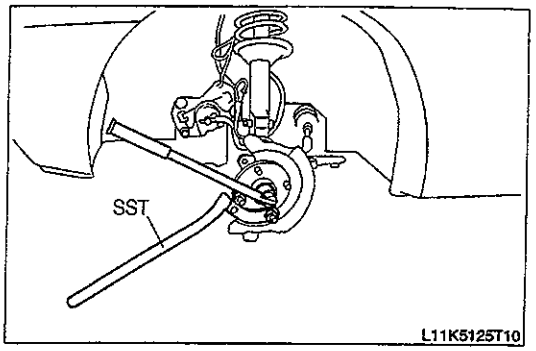
NOTE

- Put the tire on a bench, etc. so that the tire may be set at a higher level than the repair agent bottle. This will make the work more easily.

6.Repeat the operation in Step 5 until it is no longer possible to suck the repair agent, by changing the position of the vinyl hose.



(2) Remove the nut, using the SST.
SST: 09511-87202-000

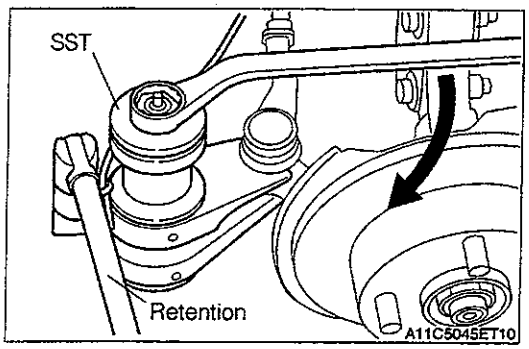


(2) TIE ROD END S/A

1.Disconnect the tie rod end S/A from the steering knuckle, using the SST.
SST: 09628-00011-000

CAUTION

- When the SST is to be installed, install a dummy nut to the threaded section of the tie rod end so that the threaded section may not be damaged.
  Hang the SST, using a cord.

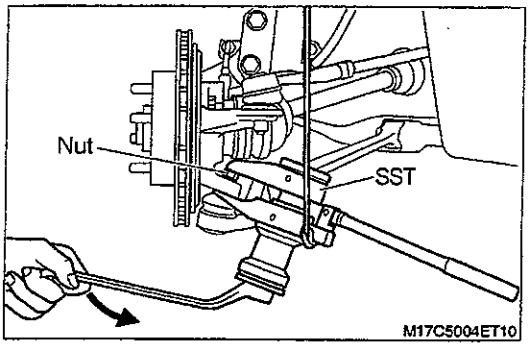


(3) SUSPENSION LOWER ARM S/A

1.Remove the lower arm ball joint, using the SST.
SST: 09628-00011-000

CAUTION

- When the SST is to be installed, install a dummy nut to the threaded section of the lower arm so that the threaded section may not be damaged.
- .Hang the SST, using a cord.

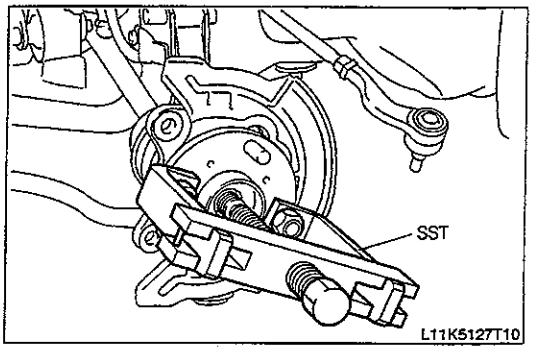


(4) FRONT DRIVE SHAFT

1.Disconnect the front axle hub S/A with steering knuckle from the drive shaft, using the SST.
SST: 09510-87301-000

CAUTION

- Hang the drive shaft by means of wire or the like.



(5) FRONT AXLE HUB

1.Remove the front axle hub S/A with steering knuckle from the shock absorber.

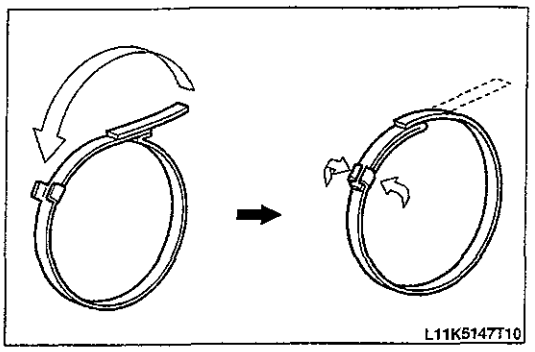
CAUTION

- The bolt is a nonreusable part.

2.Remove the front axle hub S/A.

(1) Secure the front axle hub S/A with steering knuckle in a vice by means of the bolt that was used to attach the steering knuckle to the shock absorber.

2.Bend and assemble the boot band in the sequence indicated in the figure.



(2) INBOARD JOINT TRIPOD S/A

1.Assemble the boot (inboard side) and boot band to the front axle shaft.

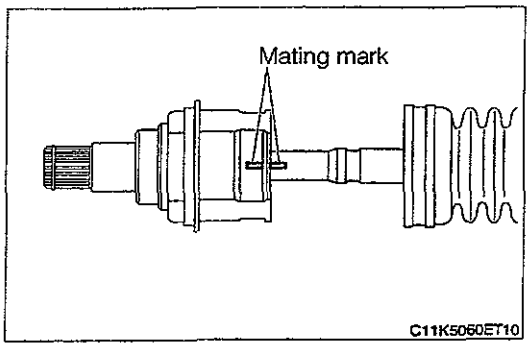
CAUTION

- **Do not fail to install the boot band in place.**

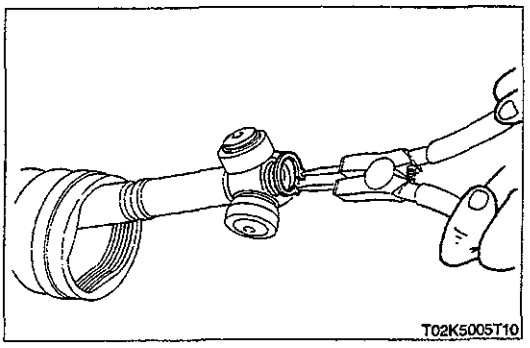
2.Assemble the inboard joint tripod Ay, aligning the mate marks with the drive shaft.

CAUTION

- **Assemble the inboard joint tripod Ay, starting from the chamfered section at the spline.**
- **When the brass bar is used for driving, be sure to apply the brass bar to the boss section of the tripod, not to the roller section.**



3.Install the shaft snap ring, using a snap ring expander.

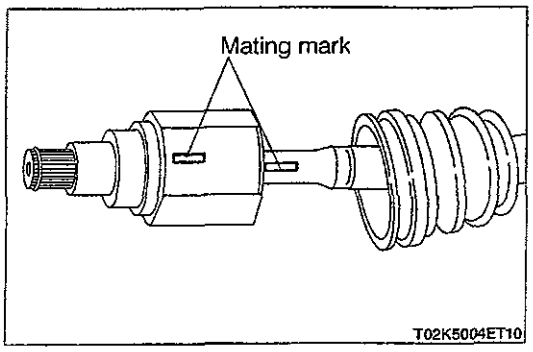


(3) FRONT AXLE INBOARD JOINT S/A

1.Fill the front axle inboard joint S/A with the grease furnished in the boot set. Assemble the front axle inboard joint S/A, aligning with the mate mark with the drive shaft.

NOTE

- **Filling amount 90±10g**



③ NO-BOOSTER OPERATION CHECK

1. With the engine in a stopped state, set the value of the pressure gauge (negative pressure gauge) to zero. At this time, check the relationship between the pedal applying force and the hydraulic pressure.

SPECIFIED VALUE:

Pedal applying force [N {kgf}]	98{10}	294{30}
Fluid pressure [MPa {kgf/cm²}]	0.21{2.1}	2.35{24.0}

2. Start the engine. Set the reading of the pressure gauge (negative pressure gauge) to 60.0kPa(450mmHg). After stopping the engine, check the hydraulic pressure of the master cylinder for each pedal applying force.

SPECIFIED VALUE:

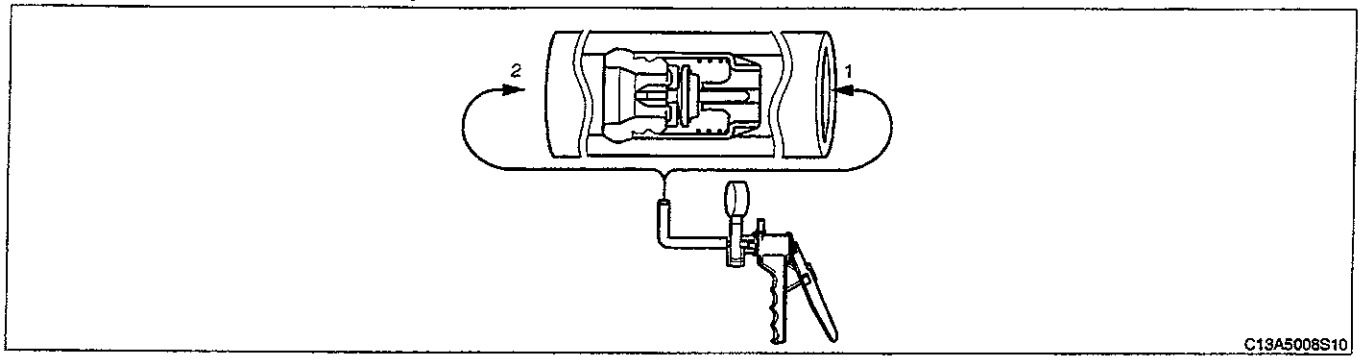
Pedal applying force [N {kgf}]	49{5}	98{10}	147{15}	196{20}
Fluid pressure [MPa {kgf/cm²}]	1.91{19.5}	4.16{42.4}	6.47{66.0}	6.98{71.2}

4-1-4 INSPECTION

(1) CHECK VALVE (VACUUM HOSE)

1.Ensure that there is air continuity from the booster side to the engine. Furthermore, ensure that there is no air continuity from the engine to the booster side.

2.Replace the vacuum hose Ay in case that the above condition is not satisfied.



1: Engine side
2: Booster side

(2) BRAKE BOOSTER PUSH ROD

Check and adjust the brake booster push rod clearance.
Refer to Page E1-6.

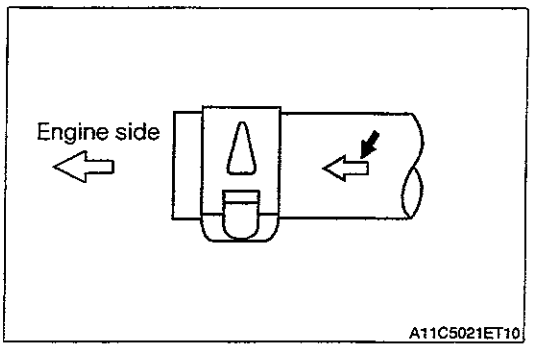
4-1-5 POINTS OF INSTALLATION

(1) VACUUM HOSE

Install the vacuum hose.

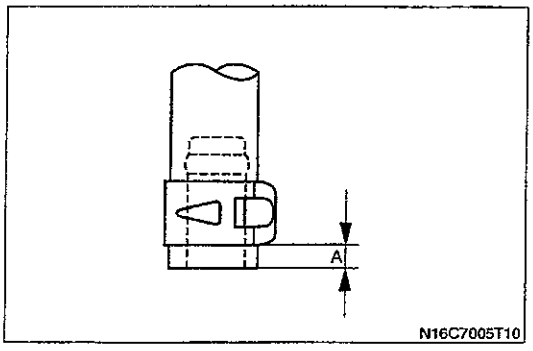
CAUTION

- Make sure that the vacuum hose is connected in the correct direction. Ensure that the paint of "ENGINE ←" comes at the intake manifold side of the engine. If the print mark has been erased, check air continuity and carry out the installation in such a way that air continuity exists from the booster side to the intake manifold side.



CAUTION

- Be sure to insert the vacuum hose up to the stopper surface of the union. Moreover, install the clip so that the dimension A indicated in the figure may become 2 to 5.5 mm.



8 REAR BRAKE DRUM

8-1 REMOVAL AND INSTALLATION

WARNING

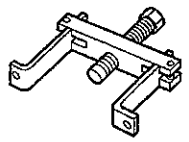
- Keep the position of the jack-up point to avoid causing serious accident due to inclining of the vehicle.

CAUTION

- Care must be exercised so that no brake fluid may adhere to the paint surface. If brake fluid is adhered to the paint surface, immediately wipe it out and wash it with water.
- Care must be exercised so that no oil, grease, etc. may adhere to the sliding surface between the brake lining and the brake drum.

8-1-1 ARTICLES TO BE PREPARED

SST

Shape	Part No.	Part name
	09510-87301-000	Puller, axle shaft

Instrument

Torque wrench

Lubricant,adhesive,others

Brake fluid(DOT3),Brake grease,Three Bond1212,MP grease,Three Bond1104

8-1-2 OPERATION BEFORE REMOVAL

1.Jack up the vehicle.
2.Remove the rear wheel.
3.Disconnect the brake tube from the brake wheel cylinder assembly.

1-1-5 POINTS OF INSTALLATION

(1) ABS actuator

1.Install the ABS actuator to the ABS actuator bracket with the flange bolt turning prevention section facing upward.

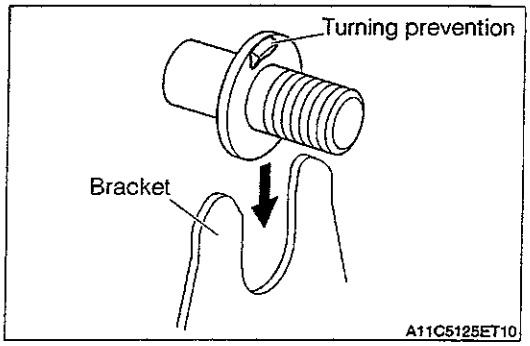
2.Using the SST, install the brake tube to the brake actuator assembly.

CAUTION

- **Temporarily tighten the union nut until the flare section of the tube closely contacts with the seat. After that, tighten the nut to the specified torque.**

TIGHTENING TORQUE: 15.2±2.4N·m
{155±25kgf·cm}

SST: 09023-00100-000



1-1-6 OPERATION AFTER INSTALLATION

1.Perform air bleeding of the brake system.

CAUTION

- **After completion of the air bleeding of the brake system, check that no air has been admitted once again.**

2.Check for brake fluid leakage.

3.Replenish the reservoir tank with brake fluid up to the MAX line.

4.Remove the fender.
Refer to Page I1-23.

5.Install the disc wheels.
TIGHTENING TORQUE: 103.0±14.7N·m {1050±150kgf·cm}

6.Lift down the vehicle.

7.Install the negative terminal of the battery.

4-9-3 CANCELING METHOD OF DIAGNOSIS

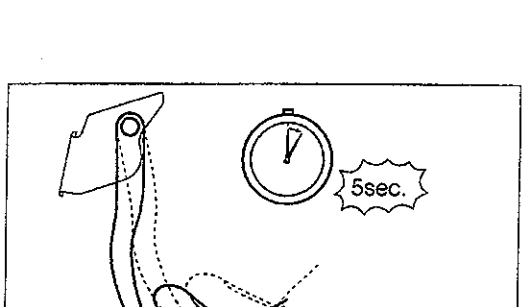
The diagnosis of this system has a backup that uses an EEPROM (non−volatile ROM). Hence, the diagnosis code is stored in memory even if the power is cut off. Therefore, the following method is the only way the diagnosis code can be deleted.

1.Stop the vehicle.

2.Short the terminal T of the ECU of DLC with the terminal E, using the SST. Then, turn ON the ignition SW.

SST: 09991-87404-000
09991-87403-000

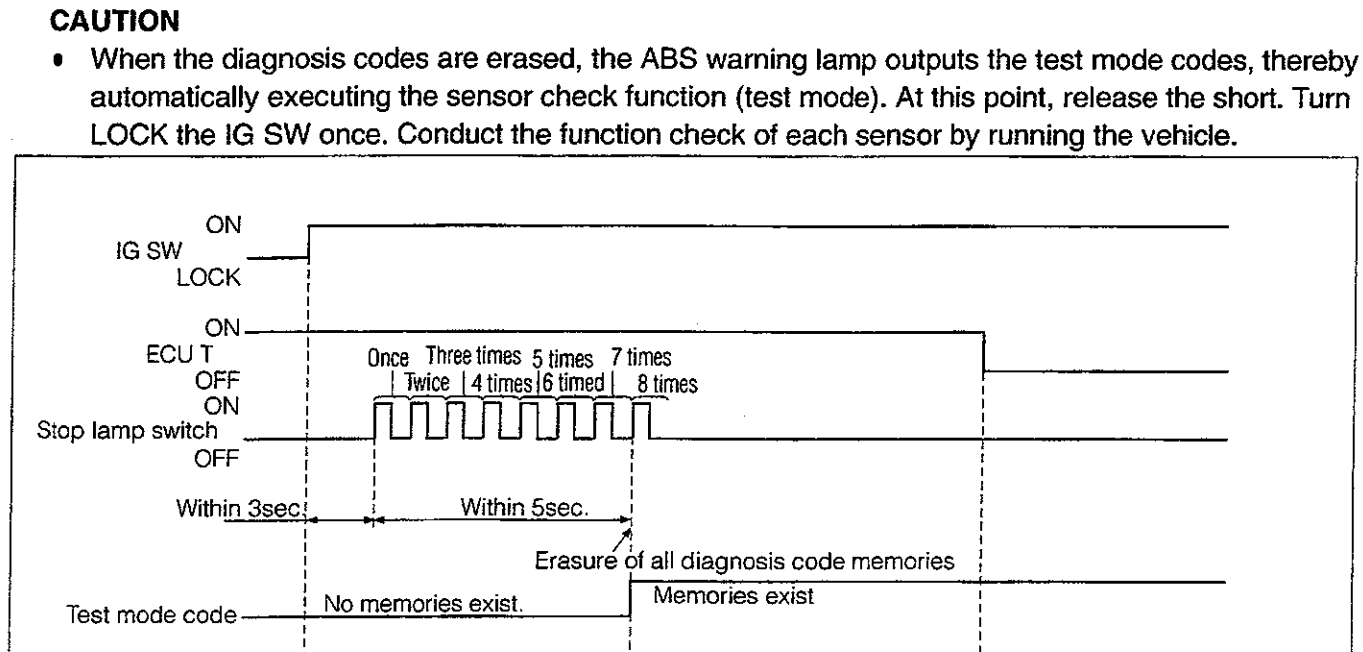
3.Repeat turning ON and OFF the stop lamp SW at least eight times for five seconds by depressing the brake pedal. (If the codes have not been erased, repeat this operation again.)



4.Release the terminal T of the ECU of DLC and terminal E.

CAUTION

- **When the diagnosis codes are erased, the ABS warning lamp outputs the test mode codes, thereby automatically executing the sensor check function (test mode). At this point, release the short. Turn LOCK the IG SW once. Conduct the function check of each sensor by running the vehicle.**



4-14 TROUBLE SHOOTING ACCORDING TO MALFUNCTION PHENOMENA

4-14-1 WITH THE IG SWITCH TURNED ON , THE WARNING LAMP ILLUMINATES AT ALL TIMES.

(1) CHECKING POINTS

If the ABS warning lamp remain illuminated, most likely the causes are that malfunctioning components are detected by means of diagnosis functions, open wire in the ABS warning lamp lighting circuit or malfunctioning ABS actuator.

(2) CHECKING METHOD

➤1. Confirm the diagnosis code

1.The indication of diagnosis code output is performed by means of the ABS warning lamp.
Refer to Page E3-12.

2.After the IG SW has been turned ON, confirm the lighting state of the ABS warning lamp.
SPECIFIED VALUE: Abnormality code is outputted.

If OK, perform a trouble-shooting corresponding to the diagnosis code table.
Refer to Page E3-15.

If it is NG, go to ➤2.

➤2. Confirmation of connector fitting state

1.After the IG SW has been set to the [LOCK] position, disconnect the connector of the ABS actuator. Again connect the connector.
2.After the IG SW has been turned ON, confirm the lighting state of the ABS warning lamp.
SPECIFIED VALUE: Abnormality code is outputted.

If OK, perform a trouble-shooting corresponding to the diagnosis code table.
Refer to Page E3-15.

If it is NG, go to ➤3.

➤3. Confirm the diagnosis code
SPECIFIED VALUE: Indicates normal code or goes out.

If OK
· Low voltage abnormal (Normal code indicated).
· ABS actuator malfunctioning (extinguished)
If it is NG, go to ➤4.

➤4. Check of engine fuse
SPECIFIED VALUE: Normal

If it is OK, go to ➤5 .
If NG, replace the engine fuse system and check the engine fuse system.

1-1-2 Check of distance to the floor panel when the clutch is disengaged

1.Check and adjust the clutch pedal height.

2.With the engine idling, pull the parking brake lever fully. Then, move the shift lever to the 1st gear position and slowly release the pedal. Check the distance between the pedal at a moment immediately before the clutch is engaged and the position when the clutch pedal is depressed fully to the floor.

SPECIFIED VALUE: 20 mm or more (Reserve travel)

(4) CLUTCH DISC AY

1.Install the clutch disc Ay.

(1) Thinly apply Clutch grease to the hub inside (the spline section) of the clutch disc assembly.

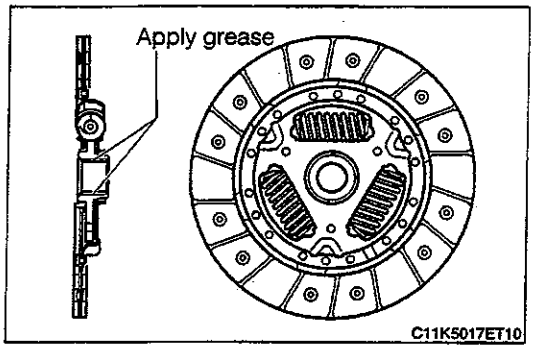
CAUTION

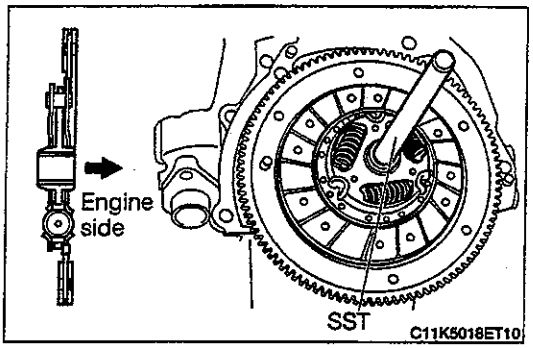
- **As regards the grease applying direction, grease should be applied from the clutch cover side. Be sure to apply grease as thinly as possible so that the excessive grease may not ooze out to the flywheel side.**

LUBRICANT: Clutch grease

(2) Install the clutch disc assembly to the flywheel by centering it, using the SST.

SST: 09301-87501-000





(5) CLUTCH COVER AY

1.Install the clutch cover assembly while aligning it with the knock pin of the flywheel. While preventing the flywheel from turning, using the SST, tighten the bolts to the specified torque.

SST: 09210-87701-000

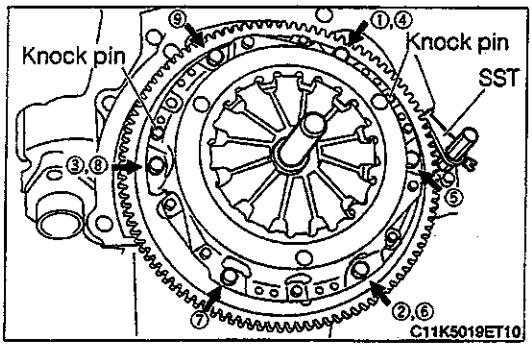
CAUTION

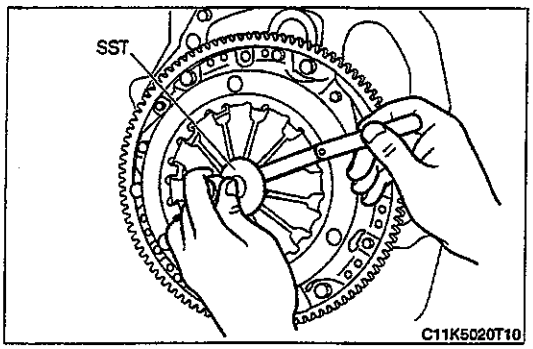
- **The bolts should be tightened in the following sequence: ① Temporary tightening, ② to ⑨ Tightening securely.**

2.Check the diaphragm spring section for unevenness in height, using the SST.

SST: 09302-87701-000

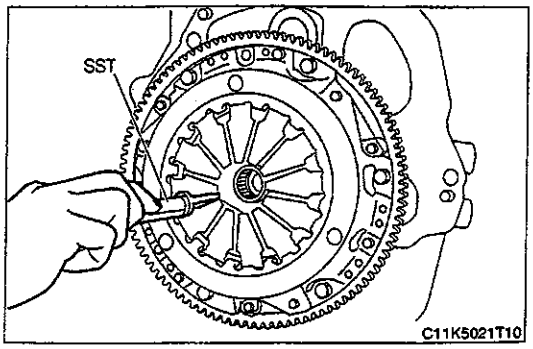
ALLOWABLE LIMIT: 0.7mm





3.If the above check has revealed that the unevenness exceeds the limit, correct the unevenness in height, using the SST.

SST: 09333-00013-000



6 SHIFT LEVER

6-1 REMOVAL AND INSTALLATION

WARNING

- Do not carry out the operation while the exhaust pipe is still hot, for there is a possibility of getting scalded.

6-1-1 ARTICLES TO BE PREPARED

Tool

Snap ring pliers

Instrument

Torque wrench

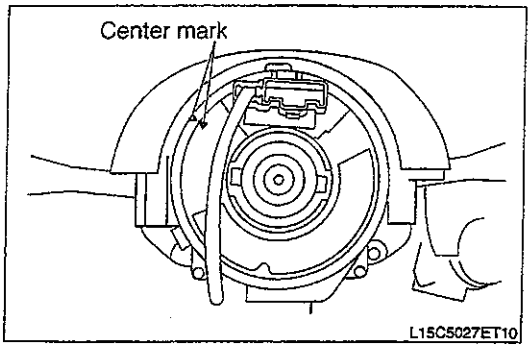
Lubricant,adhesive,others

MP grease

6-1-2 OPERATION BEFORE REMOVAL

1.When the support No.2 is riveted with the extension rod S/A, remove the exhaust pipe.
Refer to Page B4-2.

(2) Make about three turns in the clockwise direction from the position where the spiral cable S/A is locked and align the center mark from this position.

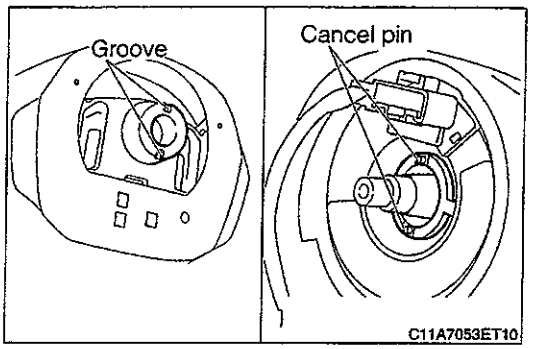


(2) STEERING WHEEL S/A

1.Install the steering wheel S/A to the steering shaft.

CAUTION

- As for the installation of the steering wheel S/A, install the steering wheel S/A deeply and positively. Turn it two or three times clockwise and counterclockwise so that the canceling pin of the turn signal switch S/A (at the spiral cable S/A side) is accurately aligned with the assembling groove of the steering wheel S/A.



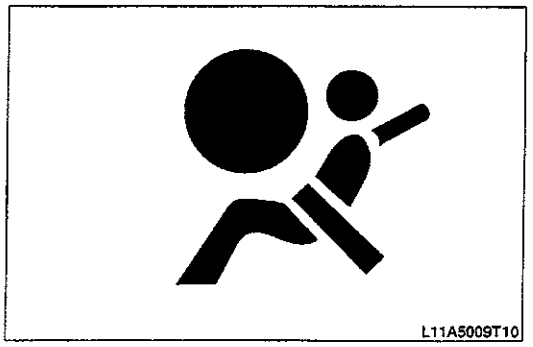
1-1-5 OPERATION AFTER INSTALLATION

1.Install the horn pad subassembly.
Refer to Page H1-7.

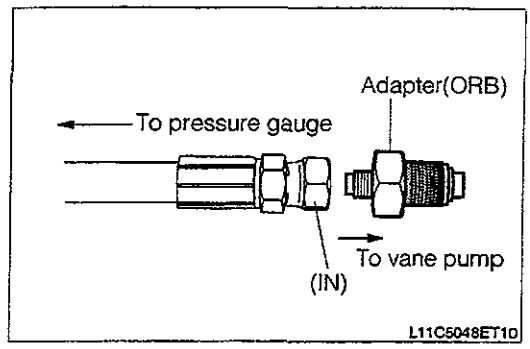
2.Confirm the steering wheel center position.

3.Install the negative negative terminal of the battery.

4.Turn ON the ignition switch. Ensure that the airbag warning lamp is illuminated for about six seconds and, then, it goes out.



CAUTION
- Install the pressure gauge valve in the full open state.
- Install the adapter (ORB) to connect the pressure gauge IN side (hose) and the vane pump (union) with the seal tape applied to the screw area.

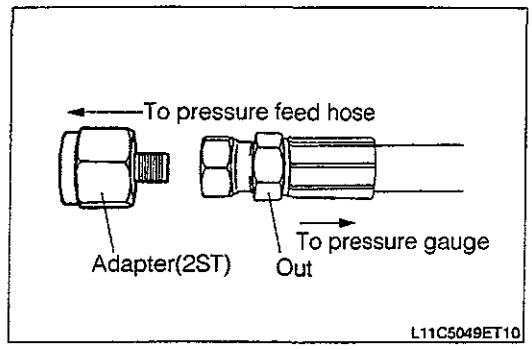


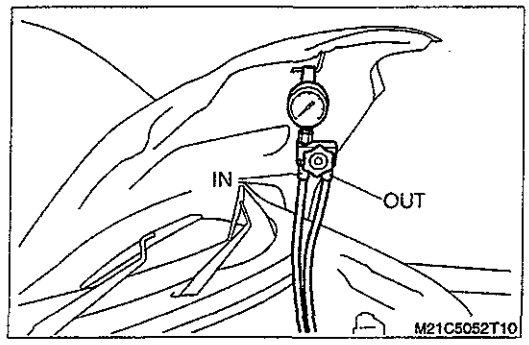
CAUTION
- Install the adapter (2ST) to connect the pressure gauge OUT side (hose) and the pressure feed hose (IN side).

4.Perform air bleeding.
Refer to Page G2-6.

5.Check the fluid level.
Refer to Page G2-2.

6.Start the engine.





(2) CHECK OF HYDRAULIC PRESSURE GENERATED IN THE VANE PUMP

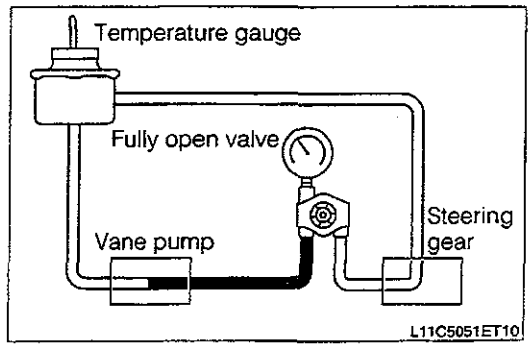
1.Insert the oil temperature gauge into the reserve tank to measure the oil temperature.
SPECIFIED VALUE: 55°C

2.Close the pressure gauge valve at idle speed and measure the hydraulic pressure generated in the vane pump.

CAUTION
- If the valve is closed at length during measurements, oil temperature will excessively go up, affecting the vane pump. Therefore do not close the valve exceeding 10 sec.

SPECIFIED VALUE: 5.4−5.9MPa{55−60 kgf/cm^2}

3.If the hydraulic pressure is low, the vane pump shall be replaced.



3-1-7 OPERATION AFTER INSTALLATION

1.Install the shift & select shaft and extension rod to the transmission.
Refer to Page F2-8.

2.Install the exhaust pipe.
Refer to Page B4-2.

3.Connect the connector of the rear O_2 sensor.
4.Install the front floor center brace S/A.
Refer to Page I1-32.

5.Install the front wheels. (RH, LH)
TIGHTENING TORQUE: 103.0±14.7N·m{1050±150kgf·cm}

6.Lift down the vehicle.
7.Install the universal joint at the steering gear side of the steering column assembly.
Refer to Page G1-4.

8.Install the steering shaft dust cover.
9.Install the dust cover retainer.
TIGHTENING TORQUE: 5.4±1.5N·m{55±15kgf·cm}

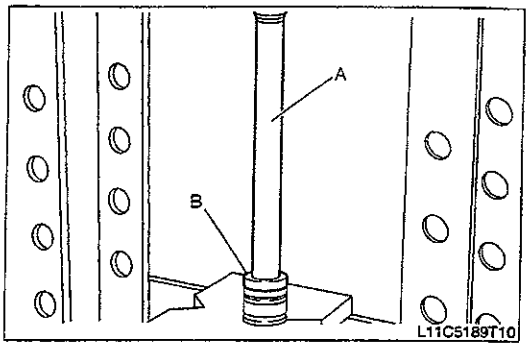
10.Place the carpet near the steering column hole.
11.Install the foot rest.
12.Install the power steering reserve tank to the power steering reservoir bracket.
13.Install the A/C suction hose to the power steering reservoir bracket.
14.Bleed after filling the power steering fluid.
Refer to Page G2-6.

15.Check the proper operation of the power steering gear Ay.
16.Install the engine upper cover S/A.
TIGHTENING TORQUE: 8.0±1.6N·m{80±16kgf·cm}

17.Check and adjust the front wheel alignment.
Refer to Page C1-1.

3-2-6 POINTS OF ASSEMBLY

(1) POWER STEERING RACK BUSH S/A



1.Apply power steering fluid all over the new type S oil seal. Use the SST to press fit into the power steering rack bush.

CAUTION

- Ensure that press fit orientation for the oil seal is correct.
- Use care not to damage the oil seal due to the excessive overload during press fitting.

SST: 09950-70010-000
09630-24014-000

LUBRICANT: Power steering fluid

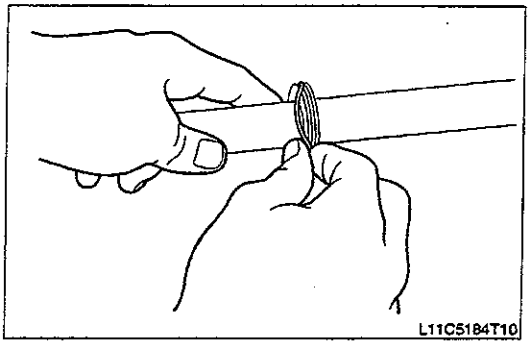
2.Apply power steering fluid all over the new O-ring and install it to the ring groove of the power steering rack bush.

CAUTION

- Use care not to twist or damage an O-ring.

LUBRICANT: Power steering fluid

(2) POWER STEERING RACK S/A

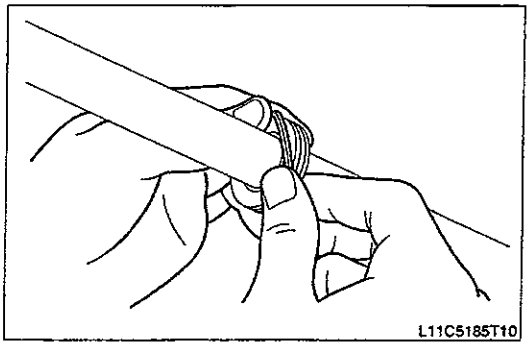


1.Apply power steering fluid all over the new O-ring. Finger the ring to enlarge and install it to the ring groove of the power steering rack bush.

CAUTION

- Use care not to twist or damage an O-ring.

LUBRICANT: Power steering fluid

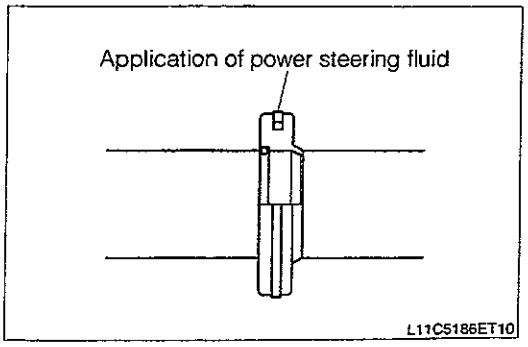


2.Apply power steering fluid all over the new seal ring No.2. Finger the ring to enlarge and install it to the ring groove of the power steering rack.

CAUTION

- Do not twist or damage the seal ring No.2.

LUBRICANT: Power steering fluid

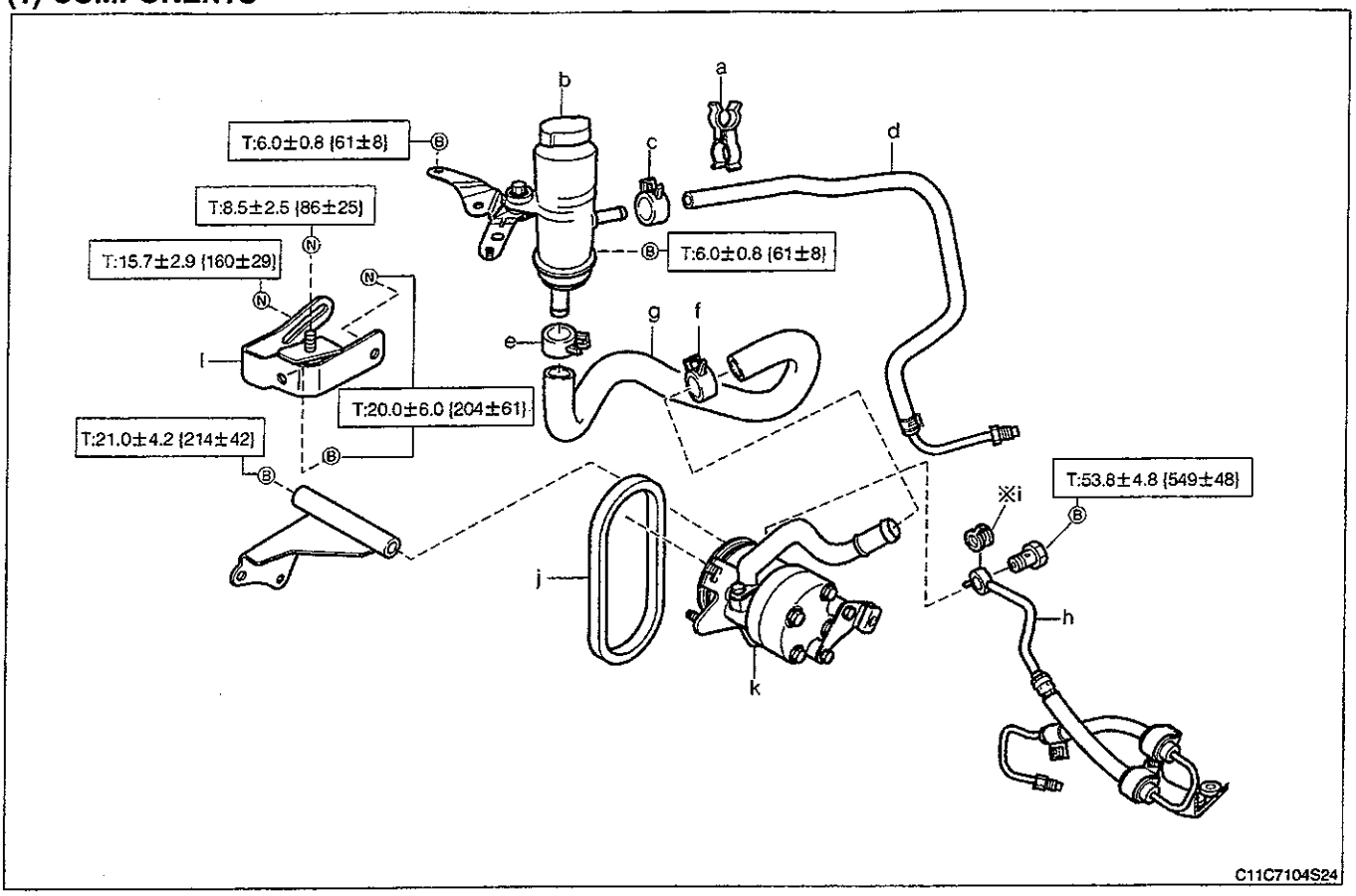


3.After installation, reapply the power steering fluid to the ring groove.

LUBRICANT: Power steering fluid

4-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



※:Non - reusable parts
Unit:N;m{kgf·cm}

(2) REMOVAL PROCEDURES

1 a Clamp
2 b Reservoir Ay, oil
3 c Clip
4 d Hose, return
5 e Clip
6 f Clip
7 g Hose, oil reservoir to pump
8 h Hose,pressure feed
9 i Gasket
10 j Belt, V
▼ 11 k Pump Ay,vane
▼ 12 l Stay,intake manifold, No.2

(3) INSTALLATION PROCEDURES

▲ 1 l Stay,intake manifold, No.2
▲ 2 k Pump Ay,Vane
3 h Hose,pressure feed
4 i Gasket
▲ 5 g Hose, oil reservoir to pump
6 f Clip
7 e Clip
▲ 8 d Hose, return
9 c Clip
10 b Reservoir Ay, oil
▲ 11 a Clamp
▲ 12 j Belt, V

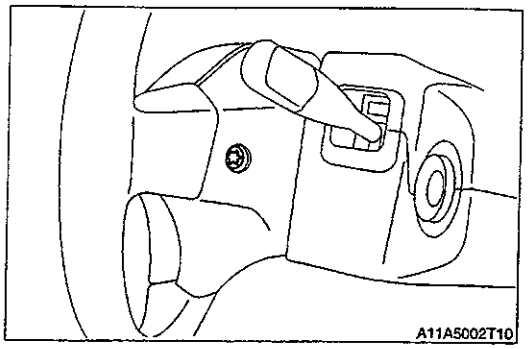
2-1-4 POINTS OF REMOVAL

(1) HORN PAD S/A

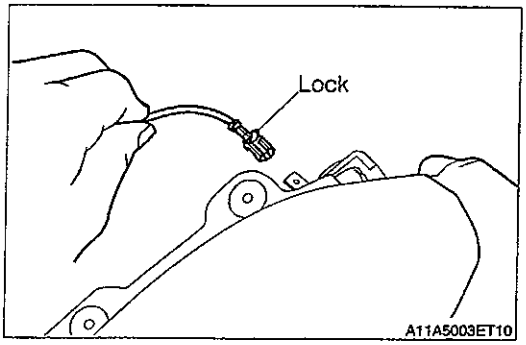
1.Loosen the right and left torx bolts provided at the side of the horn pad S/A as much as possible.

CAUTION

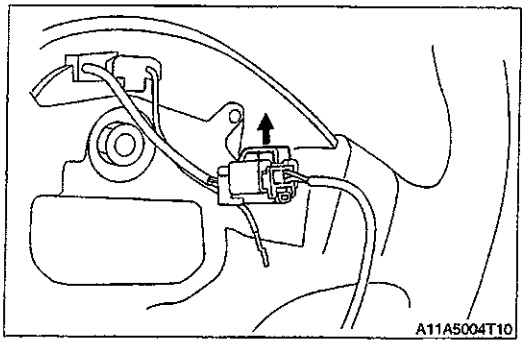
- Remove the horn pad S/A slowly, for the airbag harness and horn harness are wired.



2.Remove the horn connector (except for the MOMO steering).

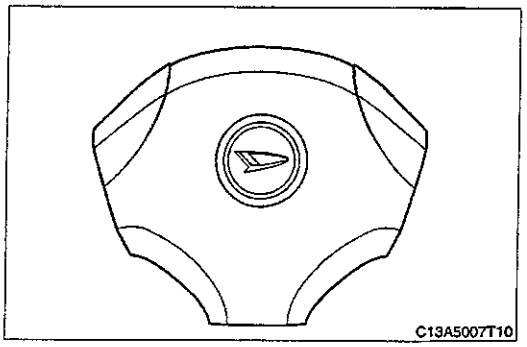


3.Before removing the air bag connector, pull the white double lock portion upward.



CAUTION

- When placing the horn pad S/A, be sure to face the deploying surface upward.
- Store the horn pad S/A in a place where it will not drop.



2-1-5 INSPECTION

(1) CHECK OF HORN PAD S/A

1.When the following cases have occurred, perform visual checks or system checks. If there are any faulty parts, replace them.

(1) Case where the vehicle is damaged, including minor collisions where the airbag has not been deployed.

(2) Case where problems have been found out by the diagnosis check

4 SRS AIRBAG (FRONT PASSENGER SEAT SIDE)

4-1 REMOVAL AND INSTALLATION

4-1-1 ARTICLES TO BE PREPARED

Instrument

Torque wrench

4-1-2 OPERATION BEFORE REMOVAL

1.After the IG SW has been set to [LOCK] position, remove the negative terminal of the battery.

CAUTION

- It should be noted that the memory of the computers of other systems (engine control, etc.) and the radio will be erased at the same time when the cable is disconnected from the negative terminal of the battery.

2.Wait at least 60 seconds.

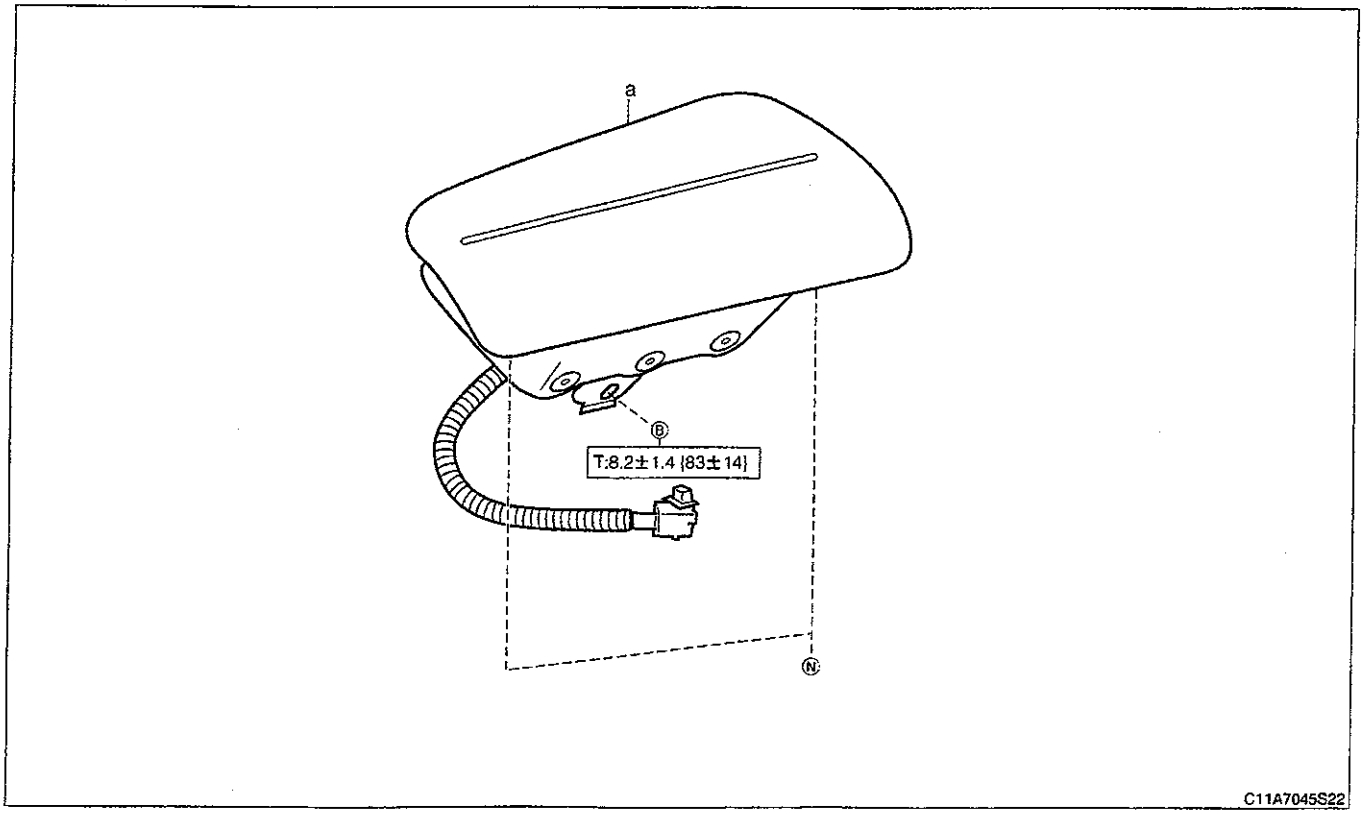
CAUTION

- The SRS airbag system is provided with a backup condenser (for the squib). Therefore, about 60 seconds are necessary for the backup condenser to discharge after the negative terminal of the battery is removed. (Natural discharge)
- If you begin the operation before 60 seconds pass, there is a danger that the airbag is mistakenly deployed.

3.Remove the instrument panel box assembly.

4-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS

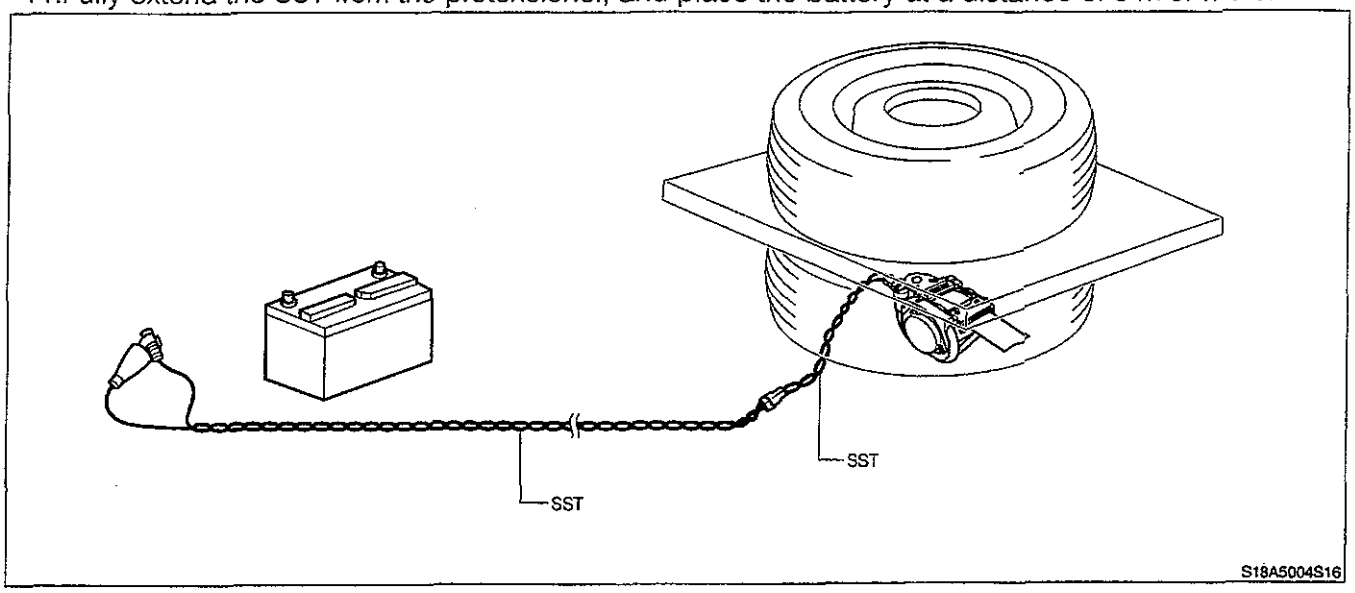


Unit:N·m{kgf·cm}

(2) REMOVAL AND INSTALLATION PROCEDURES

▼ ▲ 1 a Airbag Ay, instrument panel passenger

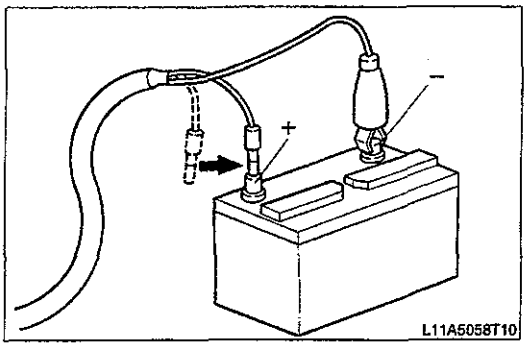
8.With the SST connector locking button locked, connect the SST to the pretensioner.
9.Place the pretensioner on the ground with its connector side facing upward. Place a tyre with a disc wheel on it.
10.Place a steel plate (with the thickness of t=1−2mm) on top of the tire equipped with the disk wheel. Again place another tire equipped with the disk wheel on top of the plate.
11.Fully extend the SST from the pretensioner, and place the battery at a distance of 5 m or more.



12.When safety around the vehicle is assured, connect the SST (airbag deployment wire) to the battery [with the alligator clip on battery side, and the terminal on side] and deploy the pretensioner.

WARNING

- Before deployment operation, it is absolutely necessary to ensure nobody is in and around the vehicle.
- Before deployment operation, it is absolutely necessary to alert people around in a loud voice.

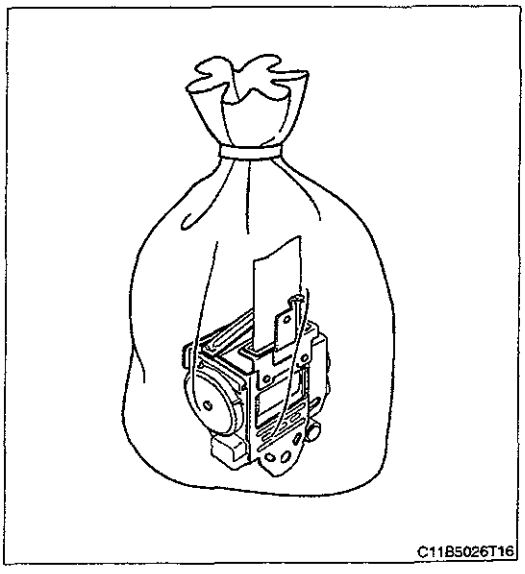


5-2-7 Scrapping of pretensioner

Put the activated pretensioner in a strong and clear plastic bag, seal and scrap it.

WARNING

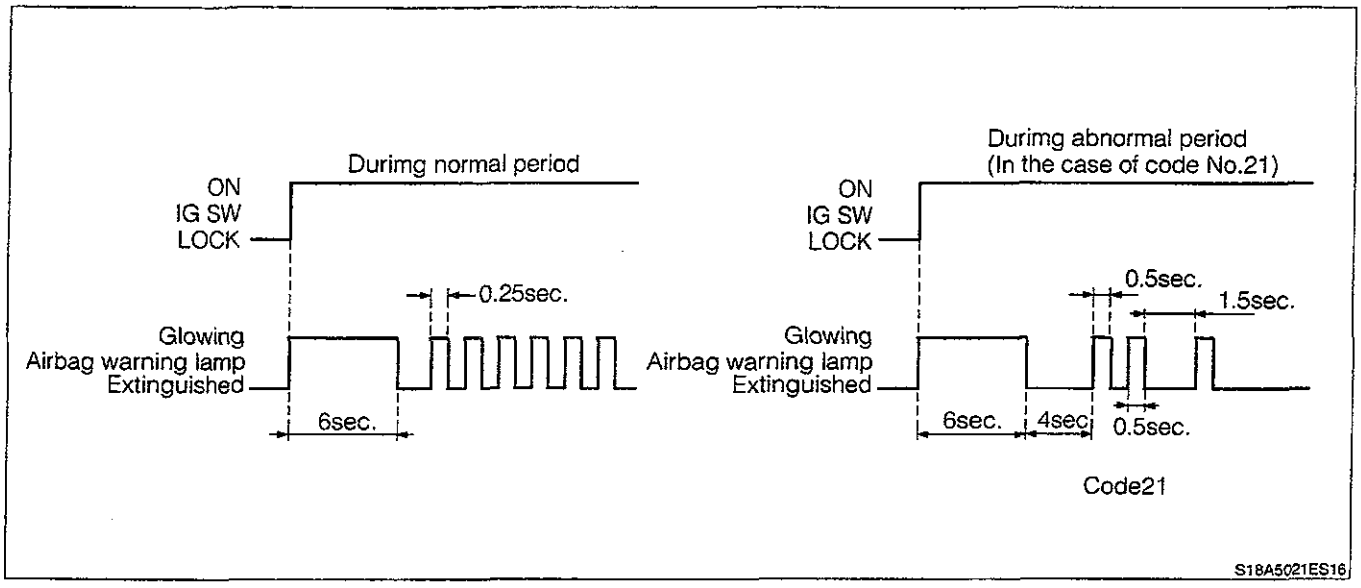
- The temperature of the pretensioner that has been actuated is a few hundred °C at some sections. Therefore, leave it at least 30 minutes after it is actuated.
- Do not splash water on the actuated pretensioner.
- When handling the actuated pretensioner, wear dust protective goggles and gloves.
- After completion of the operation, be sure to wash your hands with water.
- Never scrap the undeployed pretensioner.



3.The airbag warning lamp inside the combination meter flashes, thus indicating the malfunction code.

NOTE

- When the check terminals are shorted, warning lamps other than the airbag warning lamp will flash. But this does not indicate system malfunction.
- All the malfunction codes memorized are shown repeatedly in the sequence of malfunction number, starting from the smallest number.
- When there is one malfunction code, the malfunction code is indicated again after a pause of four second. When there are more than one code, the codes are shown starting from the smaller number with a pause of 2.5 seconds made between each code indication. When all codes have been shown, after a pause of 4 seconds, the codes are again indicated one by one from the smaller one.



➤3.Confirm the diagnosis code

1.After the IG SW has been set to [LOCK] position, remove the negative terminal of the battery. Leave the engine under this state for 60 seconds or more.

WARNING

- If you begin the operation before 60 seconds pass, there is a danger that the airbag is mistakenly deployed.

CAUTION

- When the negative terminal of the battery is disconnected, the memory of some systems will be erased. Record the memory contents of each system, as required, and set the memory again after completion of the operation.

2.Install the steering wheel pad assembly.

3.Install the negative terminal of the battery. With the IG SW set to [ON] position, erase the diagnosis codes. Then, check the diagnosis code.

SPECIFIED VALUE: Diagnosis code No.12 is not outputted. (Other codes may be outputted.)

If not outputted, a normal state has been restored. Erase the diagnosis code. Then, wait for a little while.

If outputted, replace the steering wheel pad Ay.

➤4.Check short between the steering roll connector and the airbag computer

1.After the IG SW has been set to [LOCK] position, disconnect the vehicle harness side connector of the steering roll connector.

2.After the IG SW has been set to [ON] position, check to see if short exists in the harness between the steering roll connector and the airbag computer.

(1) Vehicle harness roll connector side connector 1(AD−) - body earth

SPECIFIED VALUE: 0 V (No continuity with +B)

If it is OK, go to step ➤5.

If it is NG, replace the vehicle harness and connector.

➤5.Check short in the steering roll connector

1.Set the IG SW to [LOCK] position.

2.With the IG SW set to [ON] position, check to see if short exists in the steering roll connector.

(1) Between steering roll connector pad side connector 1(AD+) and body earth

SPECIFIED VALUE: 0 V (No continuity with +B)

If it is OK, a normal state has been restored. Erase the diagnosis code. Then, wait for a little while.

If it is NG, replace the steering roll connector.

7-9-9 DIAGNOSIS CODE No.54(FRONT PASSENGER SEAT AIRBAG SQUIB CIRCUIT SYSTEM)

(1) DIAGNOSTIC CODE OUTPUT CONDITIONS

When open wires take place in the harness between the front passenger's seat airbag and the airbag computer.

(2) CHECKING POINTS

Is there abnormality in the harness and connector between the front passenger's seat airbag and the airbag computer?

(3) CHECKING METHOD

➤1.Check continuity between the front passenger seat airbag unit and the airbag computer

1.After the IG SW has been set to [LOCK] position, remove the negative terminal of the battery. Leave the engine under this state for 60 seconds or more.

WARNING

- If you begin the operation before 60 seconds pass, there is a danger that the airbag is mistakenly deployed.

CAUTION

- When the negative terminal of the battery is disconnected, the memory of some systems will be erased. Record the memory contents of each system, as required, and set the memory again after completion of the operation.

2.Disconnect the connectors from the airbag computer and the front passenger seat airbag unit. Check to see if open wire exists in the harness between the front passenger seat airbag unit and the airbag computer.

(1) Between front passenger's seat airbag unit vehicle side connector 1(AP+) and airbag computer vehicle side connector 24(AP+)

(2) Between front passenger's seat airbag unit vehicle side connector 2(AP−) and airbag computer vehicle side connector 23(AP−)

SPECIFIED VALUE: Continuity exists

If it is OK, go to step ➤2.
If it is NG, replace the vehicle harness and connector.

➤2.Confirm the diagnosis code

1.Short between the front passenger seat airbag vehicle side connectors 1(AP+) and 2(AP−). Connect the connector to the airbag computer.

2.Install the negative terminal of the battery. With the IG SW set to [ON] position, erase the diagnosis codes. Then, check the diagnosis code.

SPECIFIED VALUE: Diagnosis code No.54 is not outputted. (Other codes may be outputted.)

If not outputted, proceed to ➤3.
If outputted, replace the airbag computer.

➤3.Confirm the diagnosis code

1.After the IG SW has been set to [LOCK] position, remove the negative terminal of the battery. Leave the engine under this state for 60 seconds or more.

WARNING

- If you begin the operation before 60 seconds pass, there is a danger that the airbag is mistakenly deployed.

CAUTION

- When the negative terminal of the battery is disconnected, the memory of some systems will be erased. Record the memory contents of each system, as required, and set the memory again after completion of the operation.

2.Connect the connector to the front passenger seat belt.

3.Install the negative terminal of the battery. With the IG SW set to [ON] position, erase the diagnosis codes. Then, check the diagnosis code.

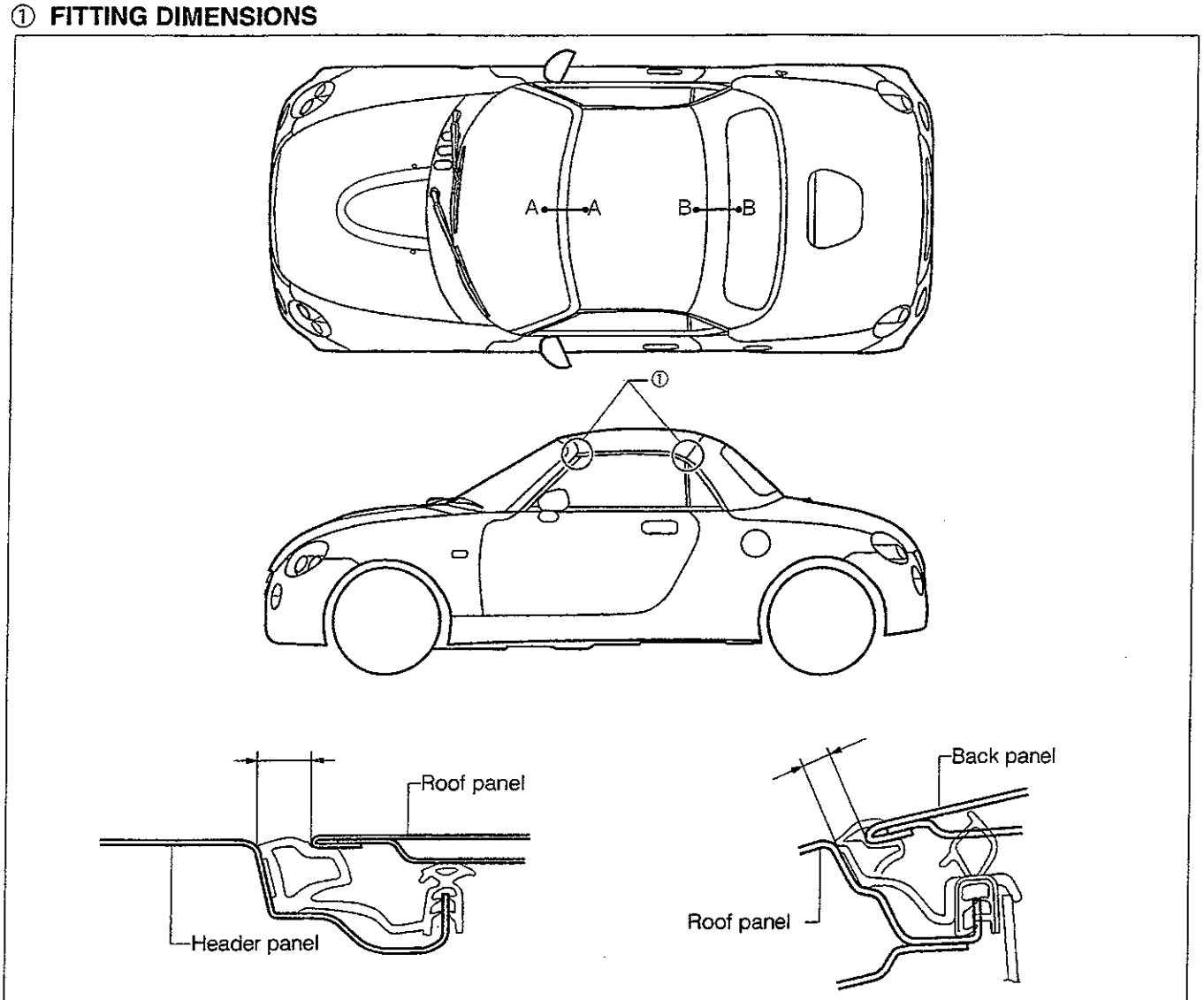
SPECIFIED VALUE: Diagnosis code No.71 is not outputted. (Other codes may be outputted.)

If not outputted, a normal state has been restored. Erase the diagnosis code and see how the system works for a while.

If outputted, replace the front passenger seat seat belt.

(5) ROOF

① FITTING DIMENSIONS



FITTING DIMENSIONS OF ROOF PANEL

Measuring point		Specified gap	Stagger	Difference between right and left	Deviation value
A–A	Roof×Header panel	7.0±1.5	0±1.0	–	–
B–B	Roof×Back panel	7.0±1.5	0±1.0	–	–
①	Roof×Header panel stagger Roof×Back panel stagger	–	0±1.0	–	–

Unit : mm

2-3 DISASSEMBLING AND ASSEMBLING(LOCK-RELATED)

2-3-1 ARTICLES TO BE PREPARED

Lubricant, adhesive, others

MP grease,Butyl tape,Protective tape

2-3-2 OPERATION BEFORE DISASSEMBLY

1.Remove the front door service hole cover.
Refer to Page I1-15.

7 FLOOR BRACE

7-1 REMOVAL AND INSTALLATION

7-1-1 ARTICLES TO BE PREPARED

Instrument

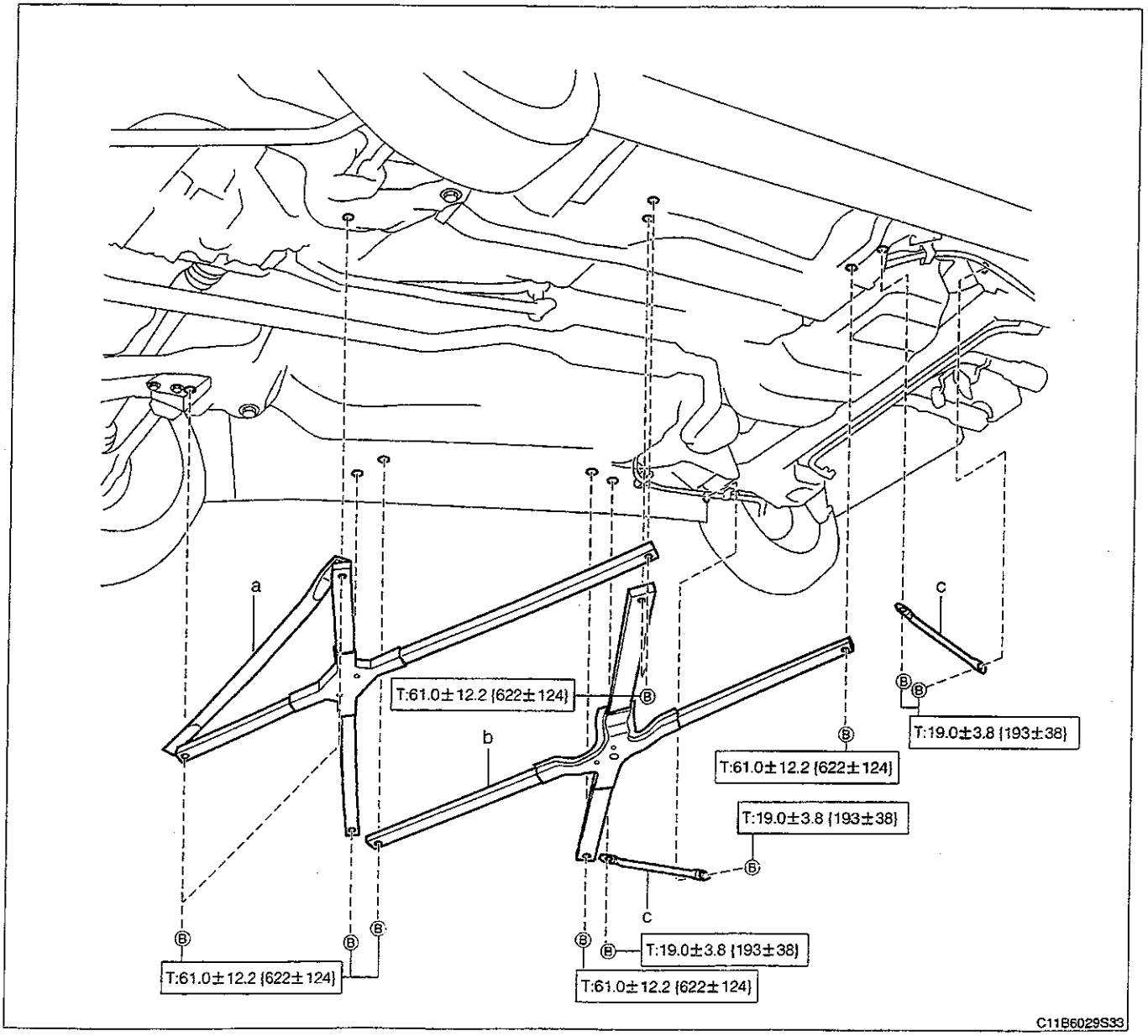
Torque wrench

7-1-2 OPERATION BEFORE REMOVAL

1.Lift up the vehicle.

7-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



Unit:N·m{kgf/cm}

(2) REMOVAL AND INSTALLATION PROCEDURES

1 a Brace, FR floor center
2 b Brace, FR floor side member
3 c Brace, floor corner, RH/LH

7-1-4 OPERATION AFTER INSTALLATION

1.Lift down the vehicle.

13-1-3 OPERATION AFTER INSTALLATION

1.Install the lower back trim.
2.Install the luggage component trim cover, RH.
3.Install the tonneau cover holder RH.
Refer to Page I2-37.

4.Install the center floor side member RH/LH.
Refer to Page I2-29.

5.Install the back panel trim.
Refer to Page I2-28.

6.Install the rear console box.

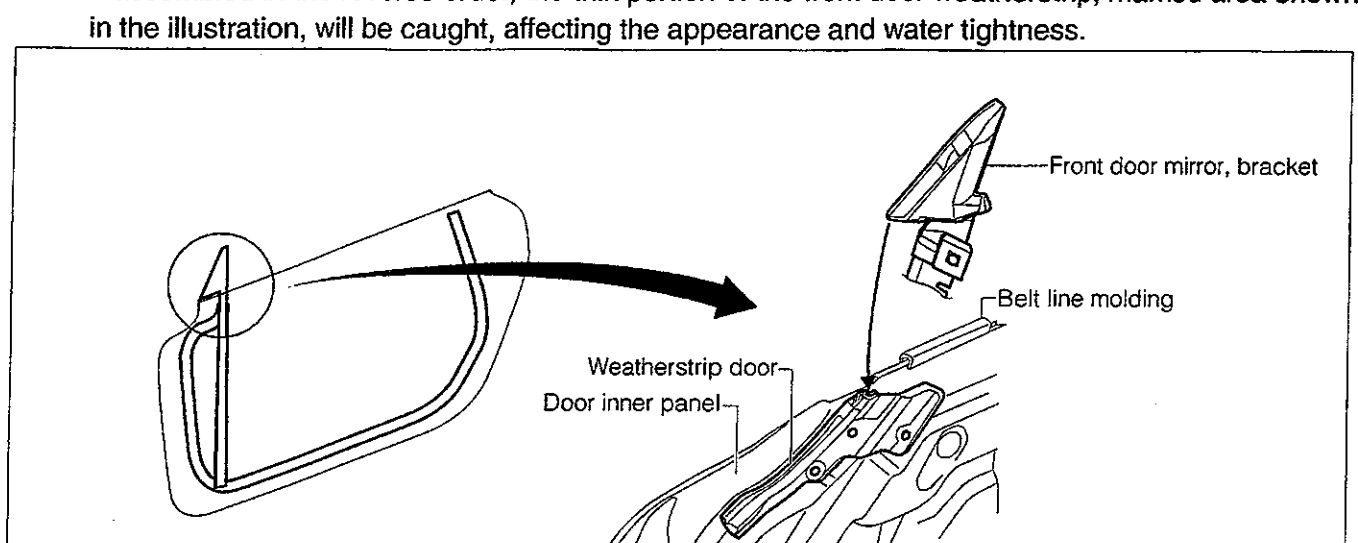
6-1-3 POINTS OF INSTALLATION

(1) FRONT DOOR WEATHERSTRIP RH/LH

1.First assemble the front door weatherstrip, and then assemble front door mirror bracket.

CAUTION

- If assembled in the reverse order, the thin portion of the front door weatherstrip, marked area shown in the illustration, will be caught, affecting the appearance and water tightness.



(2) FRONT DOOR NO.2 WEATHERSTRIP RH/LH

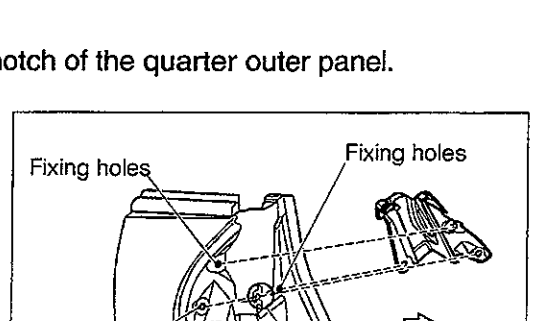
1.Fix the weatherstrip with three clips on the panel.

CAUTION

- Securely fix the hook shape portion of the panel into the notch of the quarter outer panel.

6-1-4 OPERATION AFTER INSTALLATION

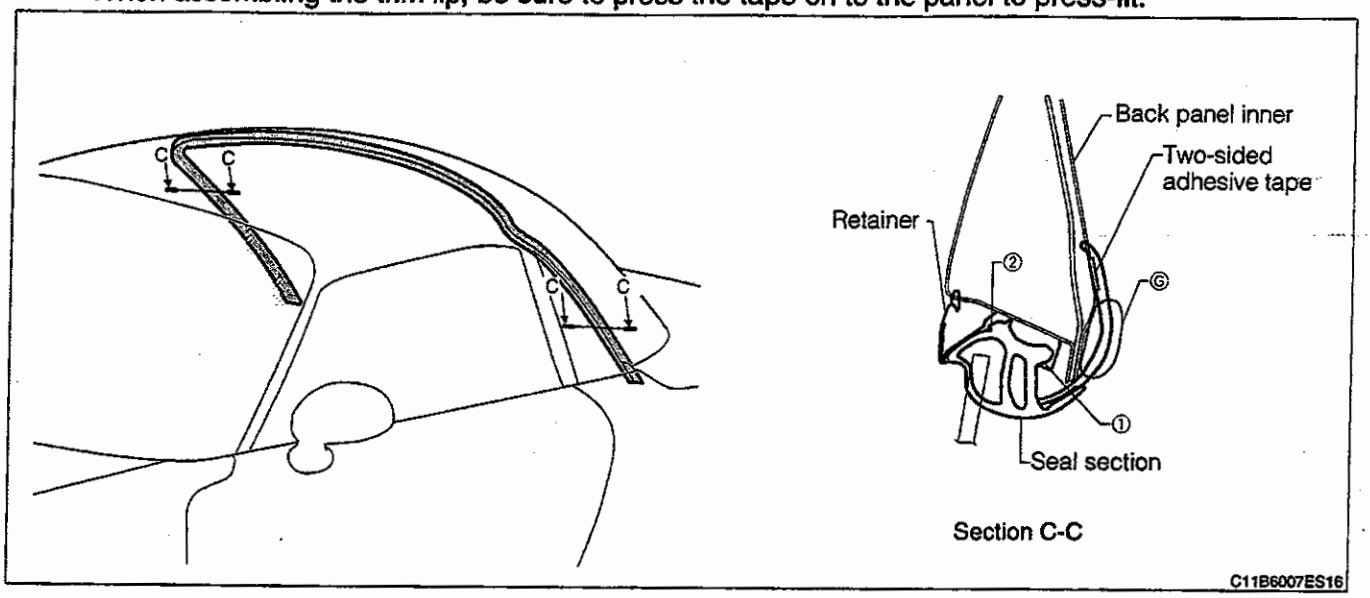
1.Install the front door mirror bracket.
<RefCode=B110>



6.Insert the section hook ① into the retainer.
7.Press the seal surface to assemble the hook ② to the retainer.
8.Peel-off the backing sheet of the double-faced adhesive, while pressing the trim lip onto the back panel inner.

CAUTION

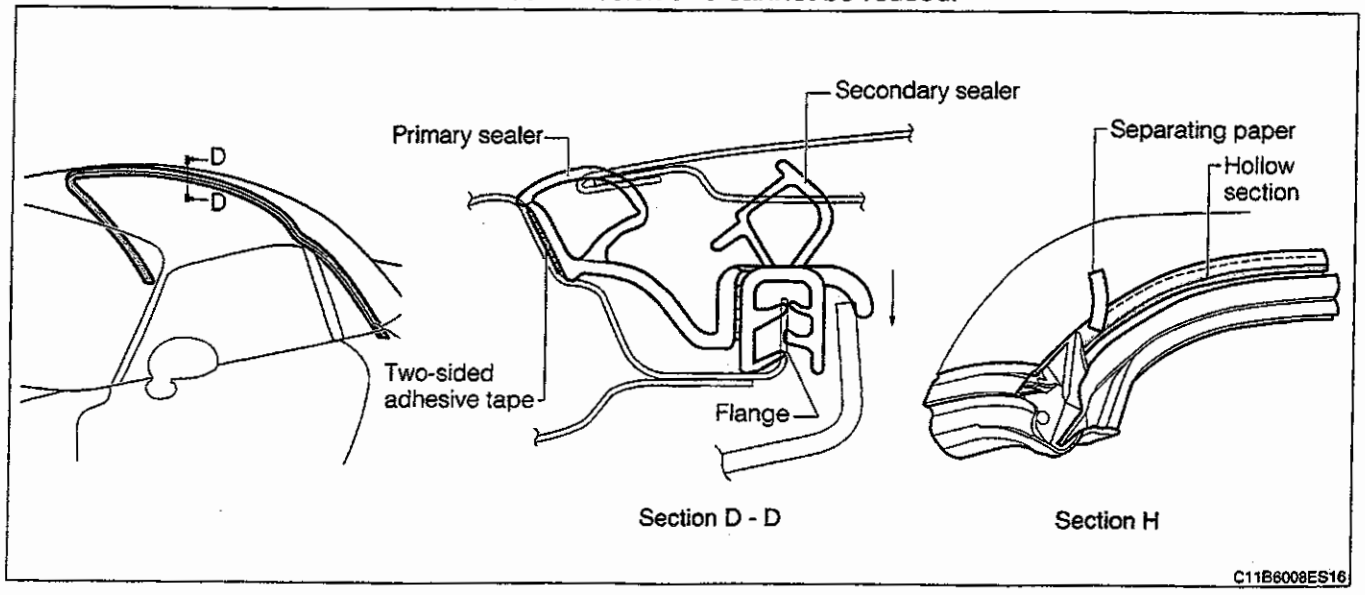
- **Assemble the trim lip, being careful not to create excessive sagging in the lip G of the trim lip.**
- **When assembling the trim lip, be sure to press the tape on to the panel to press-fit.**



9.Install the secondary seal to the panel flange.
10.When applying the primary seal, peel-off the backing sheet of the double-faced adhesive, while pressing the outer surface of the primary seal.

CAUTION

- **When assembling the weatherstrip to the panel flange, securely insert all the way into the panel.**
- **When applying the primary seal, press the outer surface of the primary seal and remove the backing sheet of the double-faced adhesive.**
- **After the primary seal is applied, press the outer surface to press-fit.**
- **If the double-faced adhesive needs correction due to misalignment, the part shall be replaced, as the double-faced adhesive will lose adhesion and cannot be reused.**



13 FRONT SEAT OUTER BELT

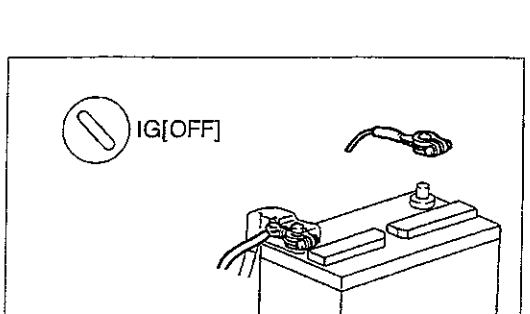
13-1 REMOVAL AND INSTALLATION

13-1-1 ARTICLES TO BE PREPARED

Instrument

Torque wrench

13-1-2 OPERATION BEFORE REMOVAL



1.Disconnect the battery negative terminal.

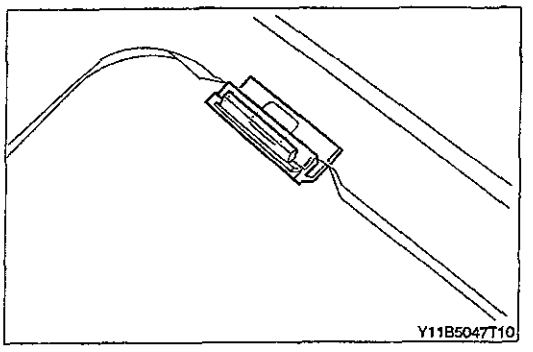
CAUTION

- It should be noted that the memories of the computers (Engine control etc.) of other systems or radio settings are erased at the same time when the battery negative terminal is disconnected.
- Before starting the operation, set the ignition switch to OFF position (LOCK) and disconnect the battery negative terminal. Wait at least 60 seconds.

2.Remove quarter trim upper panel.

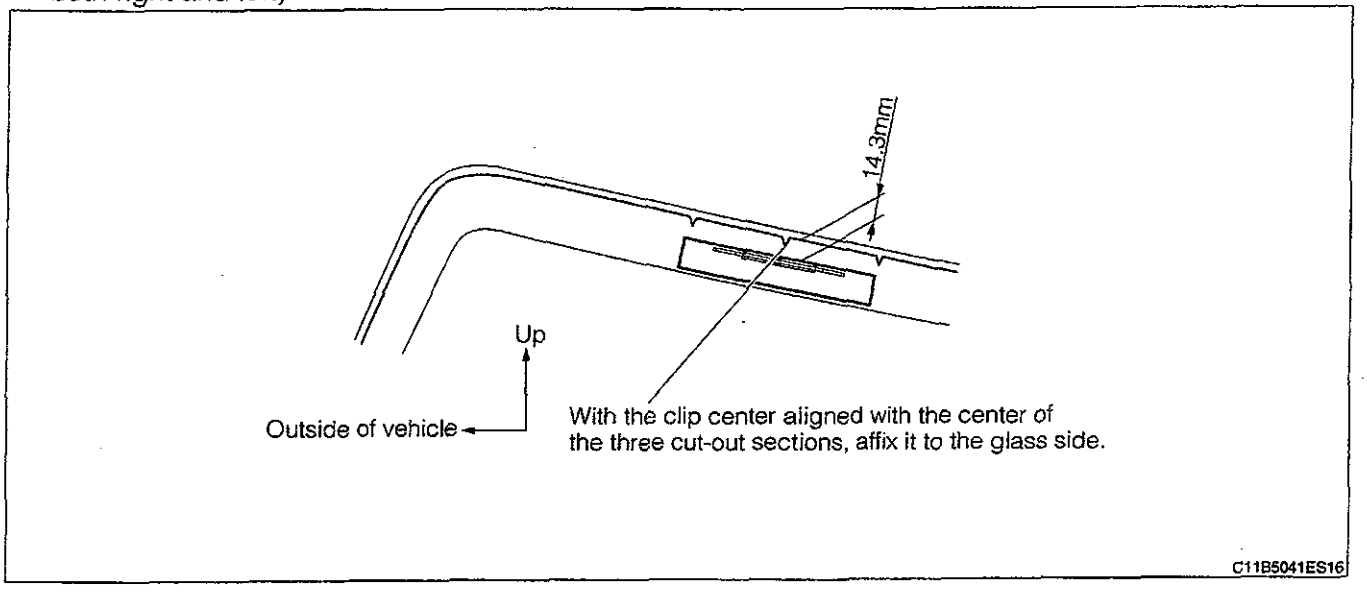
Refer to Page I2-28.

3.Attach the windshield glass stopper No.2 to the body hook section. (Two sections at both right and left.)



(2) WINDSHIELD GLASS STOPPER No.1

1.Affix the windshield glass stopper No.1 to the position shown at the figure below. (Two sections at both right and left)

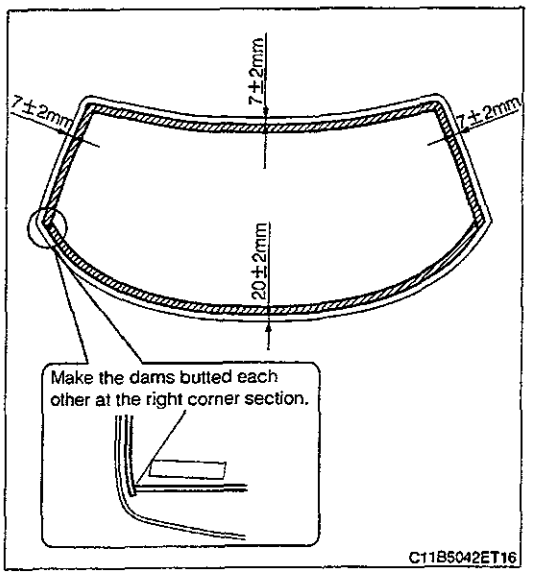


(3) WINDSHIELD GLASS ADHESIVE DAM

1.Affix the window glass adhesive dam to a position as indicated in the right figure.

CAUTION

- **Attach the lower edge linearly, using the white-punched mark of the windshield glass as a guide.**



➤2.CONTINUITY CHECK OF POWER WINDOW LOCK SWITCH

1.Disconnect the connectors from the window lock switch and power window ECU.

2.Check the harness between the window lock switch and the power window ECU.

(1) Vehicle harness side connector 5 of window lock switch—Vehicle harness side connector 37.

(2) Vehicle harness side connector 4 of window lock switch— Ignition switch (IG1).

SPECIFIED VALUE: Continuity exists.

If it OK, go to ➤3.

If it is NG, replace the harness. Also, replace the connector.

➤3.POWER WINDOW LOCK SWITCH UNIT CHECK

1.Perform the unit check of the window lock switch.

Refer to Page I3-16.

If it OK, go to ➤4.

If it is NG, replace the power window lock switch.

➤4.CONTINUITY CHECK THE POWER SUPPLY CIRCUIT OF POWER WINDOW ECU

1.Disconnect the connectors from the power window ECU.

2.Check the power supply circuit of the power window ECU and ground circuit.

(1) Vehicle harness side connector 14(+B1), 25 (+B2) of power window ECU —Battery (+) terminal

(2) Vehicle harness side connector 5(IG) of power window ECU — Ignition switch (IG1).

(3) Vehicle harness side connector 48(RE), 47(ECU E) of power window ECU — Body ground.

SPECIFIED VALUE: Continuity exists.

If it OK, go to ➤5.

If it is NG, repair the power supply circuit and ground circuit.

➤5. CONTINUITY CHECK BETWEEN POWER WINDOW ECU — DRIVER'S SEAT POWER WINDOW SWITCH

1.Disconnect the connectors from the power window ECU and passenger's seat power window switch.

2.Check the harness between the power window ECU and the passenger's seat power window switch.

(1) Vehicle harness side connector 30 of power window ECU — Vehicle harness side connector 1 of passenger's seat power window switch.

(2) Vehicle harness side connector 31 of power window ECU — Vehicle harness side connector 3 of passenger's seat power window switch.

(3) Vehicle harness side connector 35 of power window ECU — Vehicle harness side connector 4 of passenger's seat power window switch.

SPECIFIED VALUE: Continuity exists.

If it OK, go to ➤6.

If it is NG, replace the harness. Also, replace the connector.

➤6.DRIVER SEAT SW UNIT CHECK

1.Check of the passenger's seat unit check.

Refer to Page I3-16.

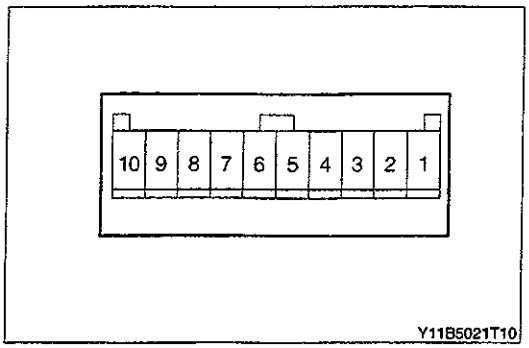
If it OK, go to ➤7.

If NG, replace the front passenger seat switch.

7-5 UNIT CHECK

7-5-1 MIRROR SW

1.While operating the switch, check continuity between terminals.



Right/Left Switching SW Mirror operation

SW section

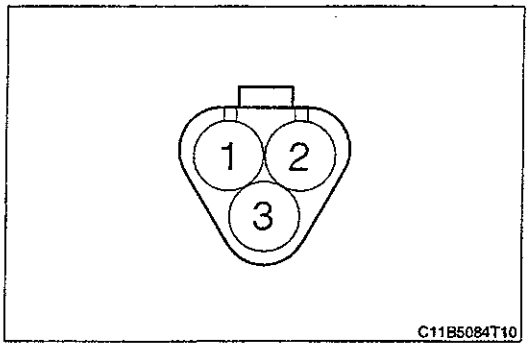
○—○: Continuity should exist

Switching		Terminal No. ⑧	⑥	⑦	③	②	④	⑤
LH	Up	○					○	
			○	○				
	Down	○	○	○			○	
	OFF							
	Left	○						○
			○	○				
	Right	○	○	○				○
OFF	Up			○				○
	Down	○						○
	OFF							
	Left			○			○	
	Right	○					○	
RH	Up	○			○			
			○	○				
	Down	○	○	○	○			
	OFF							
	Left	○				○		
			○	○				
	Right	○	○	○		○		

Y11B5019EL27

7-5-2 CHECK OF OPERATION OF ACTUATOR SECTION

1.Apply the battery voltage to each terminal. Check the operation.



○—○:Connection

Operating direction	Connection	Battery ⊕	Battery ⊖	③	②	①
Up		○		○		
			○			○
Down		○				○
			○	○		
Left		○			○	
			○			○
Right		○				○
			○		○	

C11B5088EL12

1-7-3 ITC INPUT/OUTPUT SIGNAL CHECK

(1) CHECKING METHOD

1.With the SST, check the voltage, pulses and continuity between the terminals.
SST: 09842-97401-000

SPECIFIED VALUES FOR INPUT/OUTPUT SIGNALS

Check system	Terminal	Condition	Specified value	Reference value (Example of measured value)
Power supply	⑲+B−⑭ E1	At all times	Battery voltage	12.8V
Ignition switch	⑳IG1−⑭ E1	IG SW "OFF"	About 0V	0V
		IG SW "ON"	Battery voltage	12.5V
Room lamp	㉑CRL−⑭ E1	All door "OPEN"	About 0V	0V
		All door "CLOSE"	Battery voltage	12.6V
Hazard lamp	⑯CHR−⑭ E1	Hazard SW "OFF"	About 0V	0V
		Hazard SW "ON"	Pulse generation	※
Key switch	⑩KEY−⑭ E1	Key SW "OFF"	About 0V	0V
		Key SW "ON"	Battery voltage	12.7V
Door lock motor	⑮LKM−㉒ULM	When door control SW "LOCK" is operated	Battery voltage	12 - 14V
	㉒ULM−⑮LKM	When door control SW "UNLOCK" is operated	Battery voltage	12 - 14V
Door control switch	⑥LKS−⑭E1−Body ground	Door control SW "LOCK"	Continuity exists	Continuity exists
	②UKS−Body ground	Door control SW "UNLOCK"	Continuity exists	Continuity exists
Courtesy switch	①DCS−⑭ E1	All door "OPEN" at all times	Continuity exists	Continuity exists
		All doors "OPEN" at all time	No continuity exists	No continuity exists
Airbag ECU communication	③CS1−⑭ E1	IG SW "ON"	Pulse generation	※
Self diagnosis switch	⑤T −⑭E1	When terminal T is released	Voltage	4.5V
		When terminal T is shorted	About 0V	0V
Ground	⑭E1−Body ground	At all times	Continuity exists	Continuity exists

※: See the oscilloscope waveforms of the next paragraph.

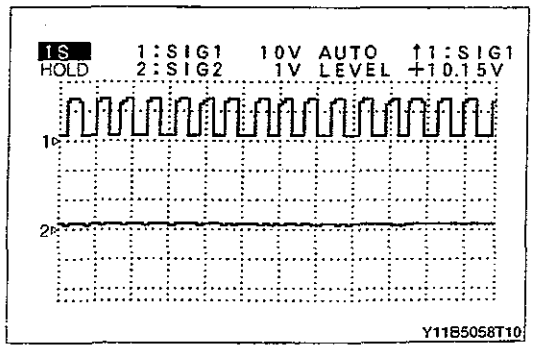
(2) OSCILLOSCOPE WAVEFORMS

① OUTLINE

Waveforms measured by the oscilloscope function of diagnosis tester (DS-21) are shown below as reference.

Hazard lamp system waveform

1.Measuring terminals : ⑯CHR−⑭ E1
2.Measuring conditions : Hazard switch "ON"
3.Measuring range : 10V (Voltage axis), 1S (Time axis)



➤14. CHECK OF RECEVER CONDITION

1.Conduct the continuity check and voltage check between each terminal of the receiver vehicle harness side connector and the body ground.

RECEIVER TERMINAL NAME AND CHECK REQUIREMENTS

Terminal No.	Check items	Check conditions	Standard
1	Continuity	Body ground and short	Continuity exists
2	Not used terminal	Visual confirmation	Is a blank terminal.
3	Signal	(1) Waveform at the time when the "LOCK" switch of the transmitter is pressed	Refer to the keyless signal system waveform
		(2) Waveform at the time when the "UNLOCK" switch of the transmitter is pressed	Refer to the keyless signal system waveform
4	Not used terminal	Visual confirmation	Is a blank terminal.
5	Voltage	Battery voltage check	At all times 10−16V

NOTE

- For the connector shape of the receiver, refer to the vehicle harness side connector terminal arrangement diagram.
- For the keyless signal system waveform, refer to the unit check.

Refer to Page I4-13.

Refer to Page I4-25.

If it is OK, replace the receiver or the transmitter.

If it is NG, replace the vehicle side harness or connector, or replace the ITC ECU.

1-6-2 KEYLESS FUNCTION (REMOTE CONTROL) WILL NOT OPERATE (CASE WHERE THERE IS NEW OR NORMAL TRANSMITTER)

CAUTION

- It should be noted that the memories of the computers (Engine control computer etc.) of other systems or radio settings are erased at the same time when the battery negative terminal is disconnected.

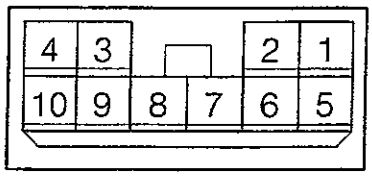
➤1. VEHICLE CONDITIONS

1.Put the vehicle in an initial registration condition.

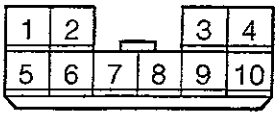
Refer to Page I4-15.

Go to ➤2.

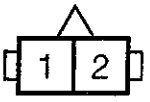
1-3 ARRANGEMENT OF VEHICLE HARNESS SIDE CONNECTOR TERMINALS



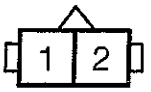
Immobilizer ECU



Immobilizer ECU
<Vehicle harness side>



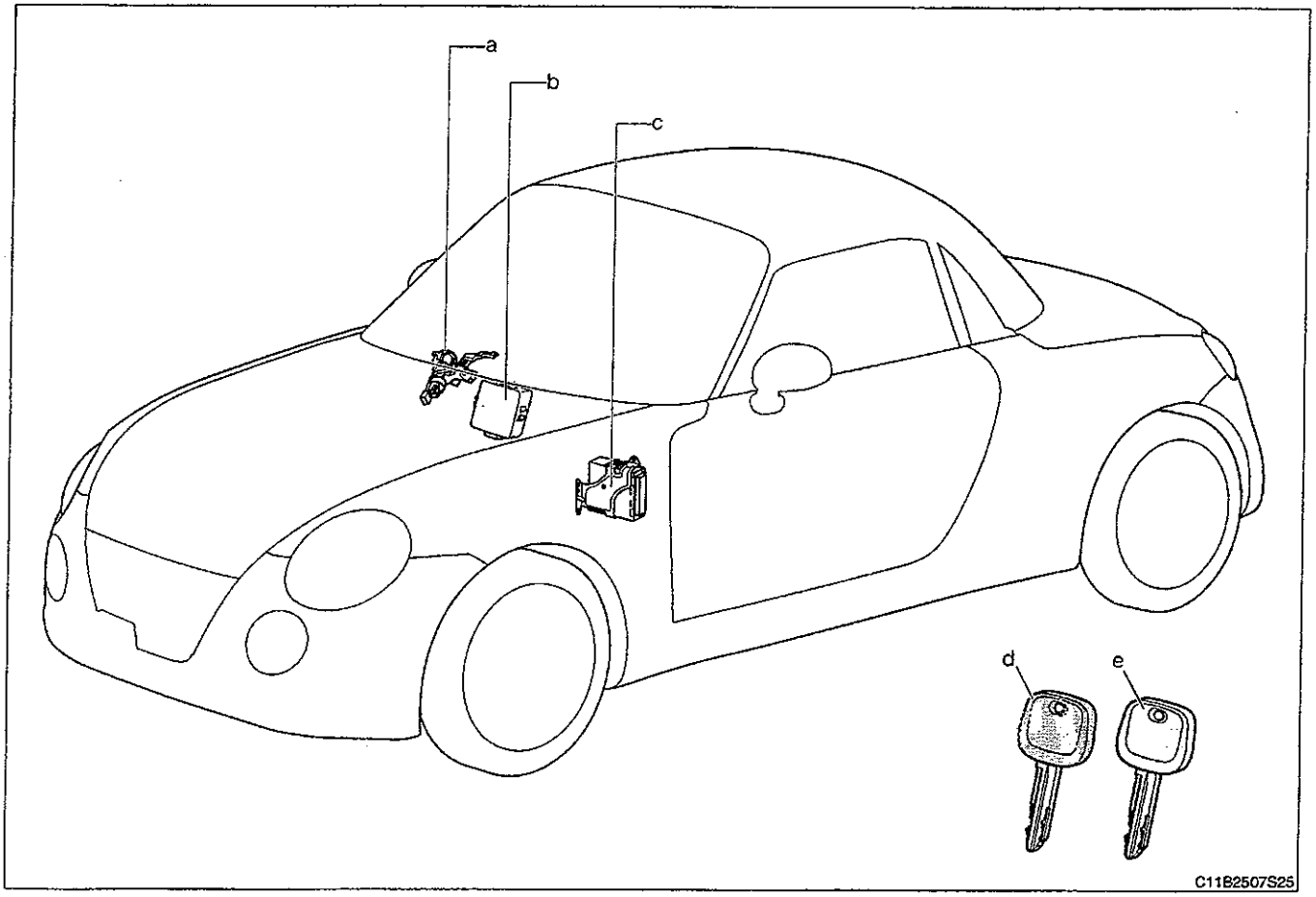
<Key SW(Connector color:black)>



<Immobilizer coil(Connector color:white)>

C11B6511ES16

1-4 LOCATION OF COMPONENTS



C11B2507S25

code	Part name	code	Part name
a	Steering column upper W/switch bracket	d	Master key (Grip section "black")
b	Immobilizer ECU	e	Sub key (Grip section "gray")
c	EFI ECU	–	–

3 TRANSPONDER KEY COIL(IMMOBILIZER COIL)

3-1 REMOVAL AND INSTALLATION

3-1-1 OPERATION BEFORE REMOVAL

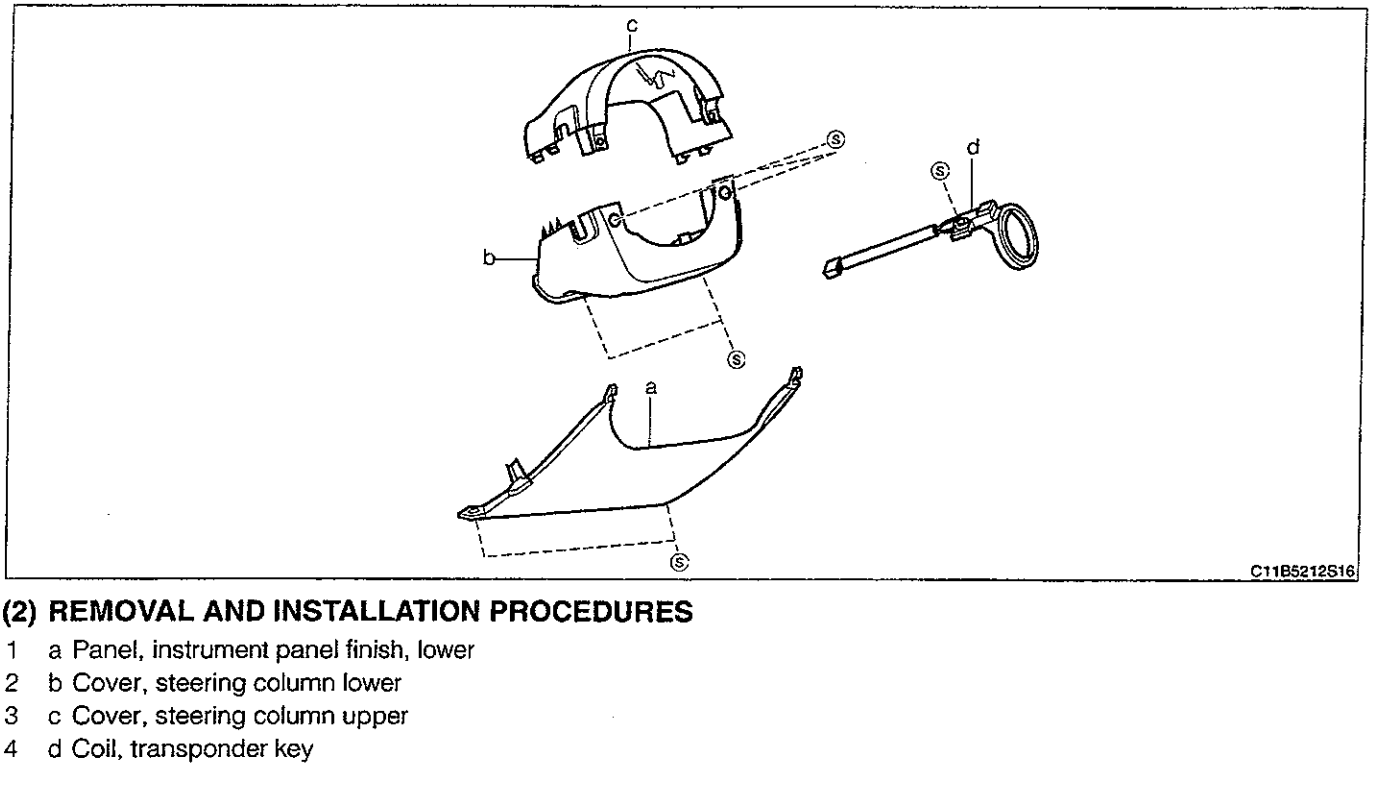
1.Disconnect the battery negative terminal.

CAUTION

- It should be noted that the memories of the computers (Engine control computer etc.) of other systems or radio settings are erased at the same time when the battery negative terminal is disconnected.

3-1-2 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



(2) REMOVAL AND INSTALLATION PROCEDURES

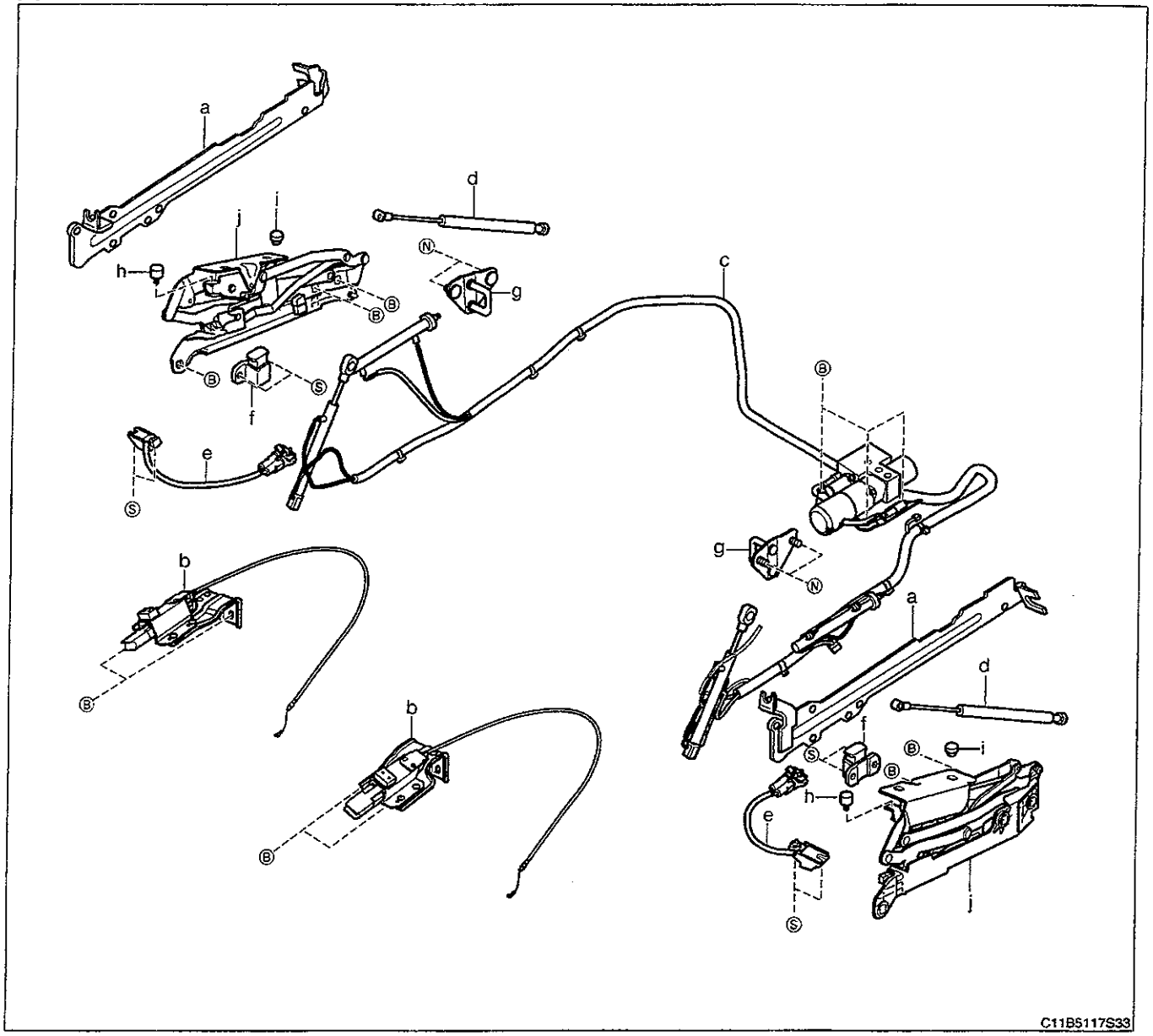
1 a Panel, instrument panel finish, lower
2 b Cover, steering column lower
3 c Cover, steering column upper
4 d Coil, transponder key

3-1-3 OPERATION AFTER INSTALLATION

1.Connect the battery negative terminal.

4-1-2 DISASSEMBLY AND ASSEMBLY PROCEDURES

(1) COMPONENTS



(2) DISASSEMBLING AND ASSEMBLING PROCEDURE

- ▼ 1 a Cover luggage compartment door hinge, RH/LH
- ▼ 2 b Stay Ay, removable roof, RH/LH
- ▼ ▲ 3 c Power supply Ay
- ▼ 4 d Stay Ay, luggage door
- 5 e Switch, luggage door closer
- 6 f Switch, luggage lock closer
- ▼ ▲ 7 g Striker Ay, luggage compartment door
- ▼ ▲ 8 h Cushion, luggage compartment door
- 9 i Cushion, luggage compartment door,No.2
- ▼ ▲ 10 j Hinge Ay, luggage compartment door
- ▼ ▲ 11 j Hinge Ay, luggage compartment door

9 METAL TOP ROOF CONTROL COMPUTER AY(POWER WINDOW ECU)

9-1 REMOVAL AND INSTALLATION

CAUTION

- Be careful not to drop the computer or give great impacts to it.
- If the computer dropped or was subjected to great impacts, replace it with a new one even if there is no abnormality in its external appearance.

9-1-1 ARTICLES TO BE PREPARED

TOOL: Clip remover

9-1-2 OPERATION BEFORE REMOVAL

1.Disconnect the battery negative terminal.

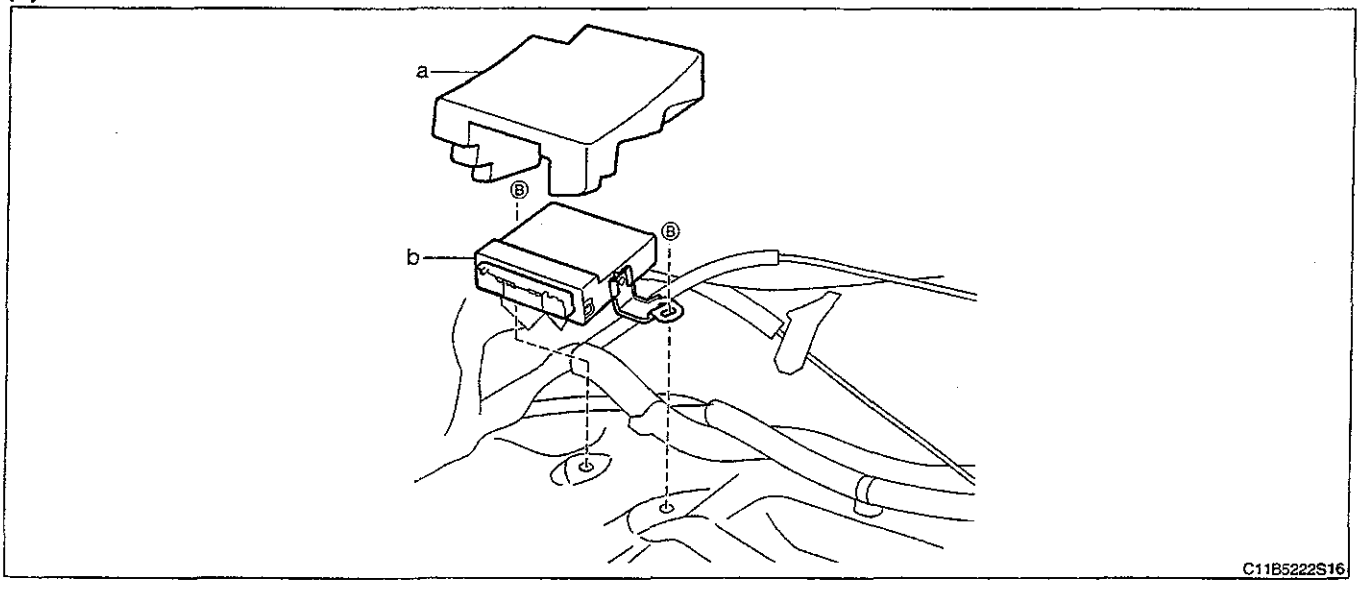
CAUTION

- It should be noted that the memories of the computers (engine control computer etc.) of other systems or radio settings are erased at the same time when the battery negative terminal is disconnected.

2.Remove the luggage compartment cover RH.

9-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



(2) REMOVAL AND INSTALLATION PROCEDURES

1 a Cover, computer
2 b Computer Ay, metal top roof control

9-1-4 INSPECTION

(1) COMPUTER EXTERNAL APPEARANCE CHECK

1.Replace the computer with a new one in the following cases.
(1) Case where the computer has deformation, abrasion, cracks or breakage.

9-1-5 OPERATION AFTER INSTALLATION

1.Install the luggage compartment door cover RH.
2.Connect the battery negative terminal.

(1) WORK PROCEDURE FROM HALF WAY STOPPAGE OF THE ROOF

1.The roof stops.

2.Be sure to disconnect the battery negative terminal.

CAUTION

- The vehicle harnesses are used to connect the SST (for battery supply voltage). If the operation is carried out without removing the battery negative terminal, connect will occur.

3.Make the trunk lid fully open at the front by hand.

4.Remove the connector (8P) leading to the side latch motor located at the left/front of the trunk lid. Connect the SST. (sub wire)

Refer to Page I5-28.

5.Fully close the trunk lid by hand.

6.Connect the SST terminal to the battery and unlock the side latch.

NOTE

- Battery connection terminal: 4 (SLDM+ /⊕terminal) , 1 (SLDM− /battery negative terminal)

7.While holding the forward end of the trunk lid, lift the rear end so that the trunk lid opens at the rear.

CAUTION

- The luggage link can be opened both in front and to the rear when the sliding hook is disengaged from the pin. If the luggage link is moved in this condition, the link might be disassembled or damaged. When opening the trunk lid to the rear, hold the front end of the door and carefully do so by preventing the door from opening in front.

8.Push the sliding hooks at both right and left of the luggage link as far as they will go.

9.Perform the troubleshooting.

10.With the trunk lid opening at the rear, pull the sliding hooks at both right and left of the luggage link to disengage them from the pin.

CAUTION

- The luggage link can be opened both in front and to the rear when the sliding hook is disengaged from the pin. If the link is moved in front while opening to the rear, the link might be disassembled or damaged. Therefore, care should be taken not to move the link in front.

11.Close the trunk lid. (Confirm that the SST is connected to the connector (8P) leading to the side latch motor)

Refer to Page I5-28.

12.With the trunk lid held at both right and left, connect the SST terminal to the battery and lock the side latch.

NOTE

- Battery connection terminal: 4 (SLDM+ / ⊕terminal) , 1 (SLDM− / battery negative terminal)

13.With the trunk lid opening at the front, remove the SST. Reinstall the connector leading to the side latch motor and connect the battery.

14.Set the ignition key to the "ON" position. Operate the roof open/close switch in the close direction to fully close the roof.

15.Press the trunk lid open switch and make the trunk lid open at the rear. Press the open switch again for at least ten seconds. Then, within two seconds, press the open switch again to initialize the side latch.

	Part name		Part name
a	Combination meter (vehicle speed signal)	j	Trunk lid open switch
b	Warning buzzer	k	FR door regulator motor LH
c	Roof lock SW RH	l	Quarter window regulator Ay LH
d	Quarter window regulator Ay RH	m	Luggage partition SW
e	Roof lock SW LH	n	Opening cover SW
f	FR door regulator motor RH	o	Power window ECU
g	Warning lamp	p	Roof ECU
h	Roof open/close SW	q	Trunk lid courtesy SW
i	Parking brake SW	–	–

➤3.CHECK OF CONDITIONS OF HYDRAULIC SYSTEM AND EACH OPERATING SECTION

1.Check that there is no oil leakage. Also, check the hydraulic hose for breakage and bending.
2.Check that no obstacle is present on the operating path of the roof, back panel and trunk lid.
3.Check that the roof, back panel and trunk lid exhibit no seizure.
4.Check that the sliding sections of the roof link and luggage link exhibit no abnormal resistance.
5.Check to see if the cable of the roof stay is operating.
6.Check to see if the cylinder is operating.

NOTE

- If the active top is not operated for several week, the hydraulic pressure of the active top will drop. When the active top is actuated, it will take a little time until the hydraulic pressure is built up, even though you can hear an operating sound.
  Then, when you operate the active top, it can operate normally, only requiring an ordinary operating time. The aforesaid phenomena are not showing a malfunction.

If it is OK (there is no abnormality at the hydraulic system side.), the system is functioning normally.
If it is NG (there is an abnormality at the hydraulic system side.), repair the malfunctioning sections among the sections that have been checked above.

11-9-5 DIAGNOSIS CODE No.15(ROOF OPERATED TIME OUT)

➤1.OPERATION CHECK OF ROOF

1.Check the operating condition of the roof.

NOTE

- It is assumed that the trunk lid operates.

If the roof operates normally, proceed to ➤4.
If the trunk lid operates and the roof fails to operate normally, proceed to ➤2.

➤2.CONFIRMATION OF ROOF OPERATIONAL ENVIRONMENT

1.Have you ever operated the roof at low temperature or at low voltage?
If YES, proceed to➤3.
If NO, proceed to➤4.

➤3.OPERATION CHECK OF ROOF WITH TRUNK LID OPENED

1.Manually move the trunk lid to a fully-opened position. (open at the front)
2.Confirm the condition at the time when the roof open switch is operated.
SPECIFIED VALUE: The roof operates.

If OK, the system is satisfactory.

NOTE

- There are cases where the operation becomes slow at a low temperature or with a low voltage.

If it is NG, proceed to ➤4.

11-9-14 DIAGNOSIS CODE No.42 (LOW-TEMPERATURE OPERATION PROHIBITED)

➤1.CHECK OF ROOF OPEN SWITCH OPERATION

1.Check the opening operation of the roof at −10°C or above under a condition where it is not frozen.
SPECIFIED VALUE: Ensure that there is no abnormality.

If OK, the system is satisfactory.

NOTE

- The operation stops due to low temperature.

If it is NG, replace of the roof ECU.

11-9-15 DIAGNOSIS CODE No.43 (TRUNK LID OPEN SWITCH SYSTEM)

➤1.TRUNK LID OPEN SW UNIT CHECK

1.Perform the unit check of the trunk lid open switch.
Refer to Page I5-100.

If it is OK, go to ➤2.
If it is NG, replace of the trunk lid open SW.

➤2.CHECK SHORT BETWEEN TRUNK LID OPEN SW AND POWER WINDOW ECU & ROOF ECU

1.Disconnect the connector from between the trunk lid open switch and the power window ECU & roof ECU.
2.Ensure that no continuity exists between the following terminals of the trunk lid open switch and power window ECU & roof ECU.
(1) Vehicle harness side connector 40 (TRLID) of power window ECU − Body ground.
(2) Harness side connector 25 of roof ECU − Body ground.
SPECIFIED VALUE: No continuity exists.

If OK, the system is satisfactory..

NOTE

- Because the switch has been pushed continuously for 30 seconds or more.

If it is NG, repair the harness and connector.

11-9-16 DIAGNOSIS CODE No.44/45(ROOF ECU POWER SUPPLY SYSTEM)

CAUTION

- The diagnosis code No. 44 means the drop of supply voltage to the roof ECU, whereas the diagnosis code No. 45 denotes excessive supply voltage to the roof ECU.
- Since the low-voltage error and over-voltage error are not caused by malfunctions of the ECU, it is not necessary to replace the ECU.

➤1.BATTERY VOLTAGE CHECK

1.Measure the battery voltage with the engine in a stopped state.
SPECIFIED VALUE: 10−14V.

If it is OK, go to ➤2.
If it is NG, replace of the battery.

11-10-2 THE ROOF WILL NOT OPEN

➤1.VISUAL CHECK OF DOOR & QUARTER WINDOW

1.Check the door and quarter window operation.
SPECIFIED VALUE: It operates properly.

CAUTION
- Check the quarter window by operating the roof open/close switch.

If it is OK, go to ➤2.
If it is NG, proceed to the troubleshooting of the power window.
Refer to Page I3-12.

Refer to Page I5-95.

➤2.ROOF LOCK OPERATION CHECK

1.Check the illuminating condition of the roof warning lamp when the roof lock is released one at a time.
SPECIFIED VALUE: Warning lamp goes on.

CAUTION
- The check should be conducted with the roof fully closed.
- The check should be conducted for each of the right and left sides at a time.

If it is OK, go to ➤3.
If it is NG, check the roof lock switch, harness and roof lock switch lever.
Refer to Page I5-67.

Refer to Page I5-68.

➤3.CHECK OF THE ROOF OPEN/CLOSE SWITCH OPERATION

1.Check the illuminating condition of the roof warning lamp when the roof open/close switch is operated in an opening direction.
SPECIFIED VALUE: The warning lamp flashes.

If it is NG, go to ➤4.
If it is OK, check the following switches and harnesses.
(1) Opening cover SW and harness.
Refer to Page I5-66.

(2) Luggage partition SW and harness.
Refer to Page I5-66.

(3) Trunk lid courtesy SW and harness.
Refer to Page I5-66.

(4) Center latch half lock SW and harness.
Refer to Page I5-66.

➤13.CHECK CONTINUITY BETWEEN TRUNK LID COURTESY SWITCH AND ROOF ECU

1.Disconnect the connectors of the trunk lid courtesy SW and roof ECU.

2.Check the harness between the trunk lid courtesy switch and the roof ECU.

(1) Vehicle harness side connector 1 of trunk lid courtesy switch — Vehicle harness side connector 8 (LSW) of roof ECU.

(2) Vehicle harness side connector 2 of trunk lid courtesy switch — Vehicle harness side connector 19 (GND LSW) of roof ECU.

SPECIFIED VALUE: Continuity exists.

If it is OK, go to ➤14.
If it is NG, repair the harness and connector.

➤14.UNIT CHECK OF TRUNK LID COURTESY SW

1.Perform the unit check of the trunk lid courtesy switch.
Refer to Page I5-101.

If it is OK, go to ➤15.
If it is NG, replace the trunk lid courtesy SW.

➤15.CHECK CONTINUITY BETWEEN SIDE LATCH SENSOR AND ROOF ECU

1.Separate connector at the side latch sensor and roof ECU.

2.Check the harness between the side latch sensor and roof ECU.

(1) Vehicle harness side connector 1 of side latch sensor RH — Vehicle harness side connector 9 (SENSC) of roof ECU.

(2) Vehicle harness side connector 2 of side latch sensor RH — Vehicle harness side connector 7 (RIL) of roof ECU.

(3) Vehicle harness side connector 1 of side latch sensor LH — Vehicle harness side connector 9 (SENSC) of roof ECU.

(4) Vehicle harness side connector 2 of side latch sensor LH — Vehicle harness side connector 6 (LEL) of roof ECU.

SPECIFIED VALUE: Continuity exists.

If it is OK, go to ➤16.
If it is NG, repair the harness and connector.

➤16.SIDE LATCH SENSOR RH/LH UNIT CHECK

1.Perform the unit check of the side latch sensor.
Refer to Page I5-99.

CAUTION

- Perform the check both at the right and left.

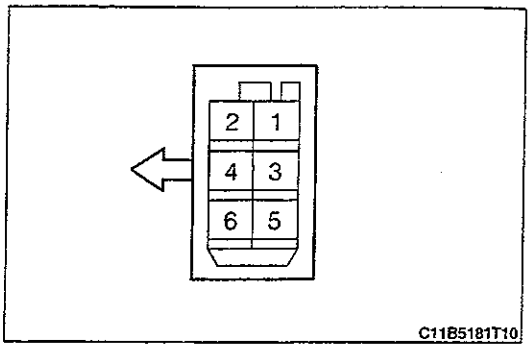
If it is OK, go to ➤17.
If it is NG, replace of the side latch sensor.

11-11 UNIT CHECK

11-11-1 CENTER LATCH

1."LOCK" and "UNLOCK" the latch to check continuity between the connector terminal ④ and ③.

Position of the center latch	Continuity
LOCK	No continuity exists
UNLOCK	Continuity exists



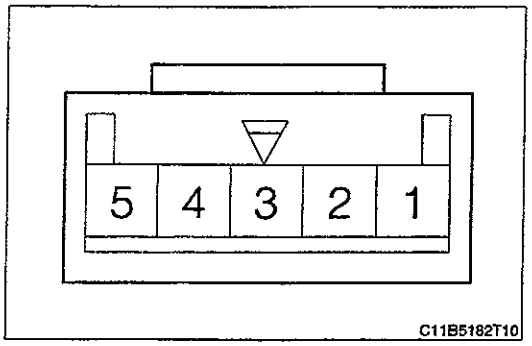
2.Check proper operation of the motor when battery voltage is applied between the connector terminals ② and ⑥.

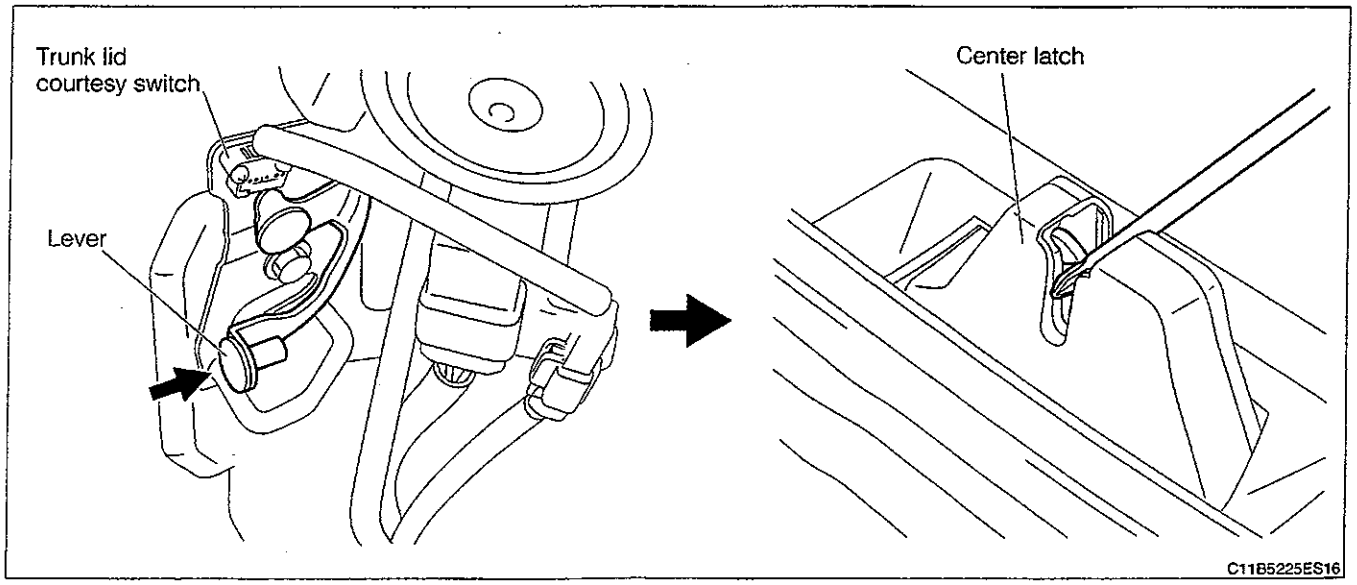
Check condition	Motor rotating direction
Battery +→terminal② Battery −→terminal⑥	Right turn
Battery +→terminal⑥ Battery −→terminal②	Left turn

11-11-2 SIDE LATCH MOTOR

(1) PULSE OUTPUT CHECK

1.Measure pulse between the connector terminals ② and ③ when pressing the center latch using a screwdriver while pushing the trunk lid courtesy switch lever.



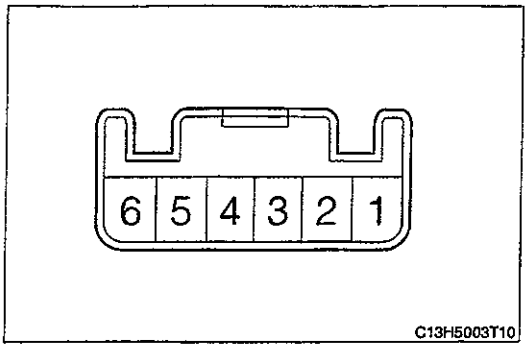


1-3-3 REAR FOG LAMP SWITCH

1.Check continuity between terminals when the rear fog lamp switch is turned ON.

SPECIFIED VALUE:

Switch condition	Terminal No.	Standard
ON	3 - 4	Continuity exists.

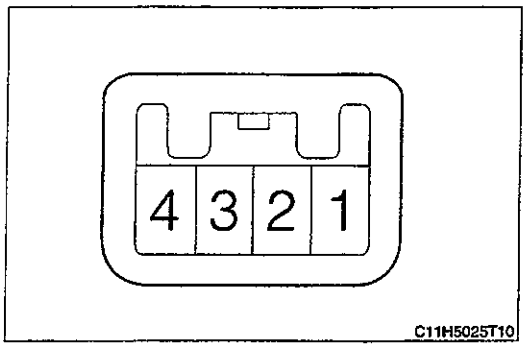


1-3-4 HAZZARD SWITCH

1.Check continuity between terminals when the hazzard switch is turned ON.

SPECIFIED VALUE:

Switch condition	Terminal No.	Standard
ON	2 - 3	Continuity exists.



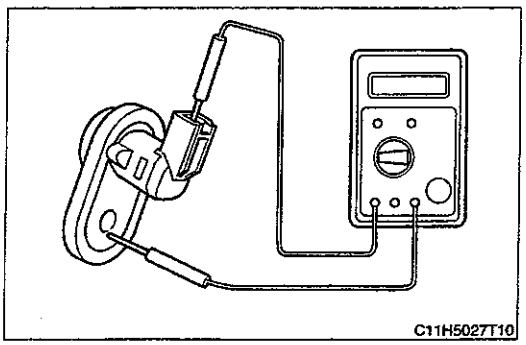
1-3-5 COURTESY SWITCH

1.With the courtesy switch shaft extended, check continuity between the switch side connector terminal and the switch body.

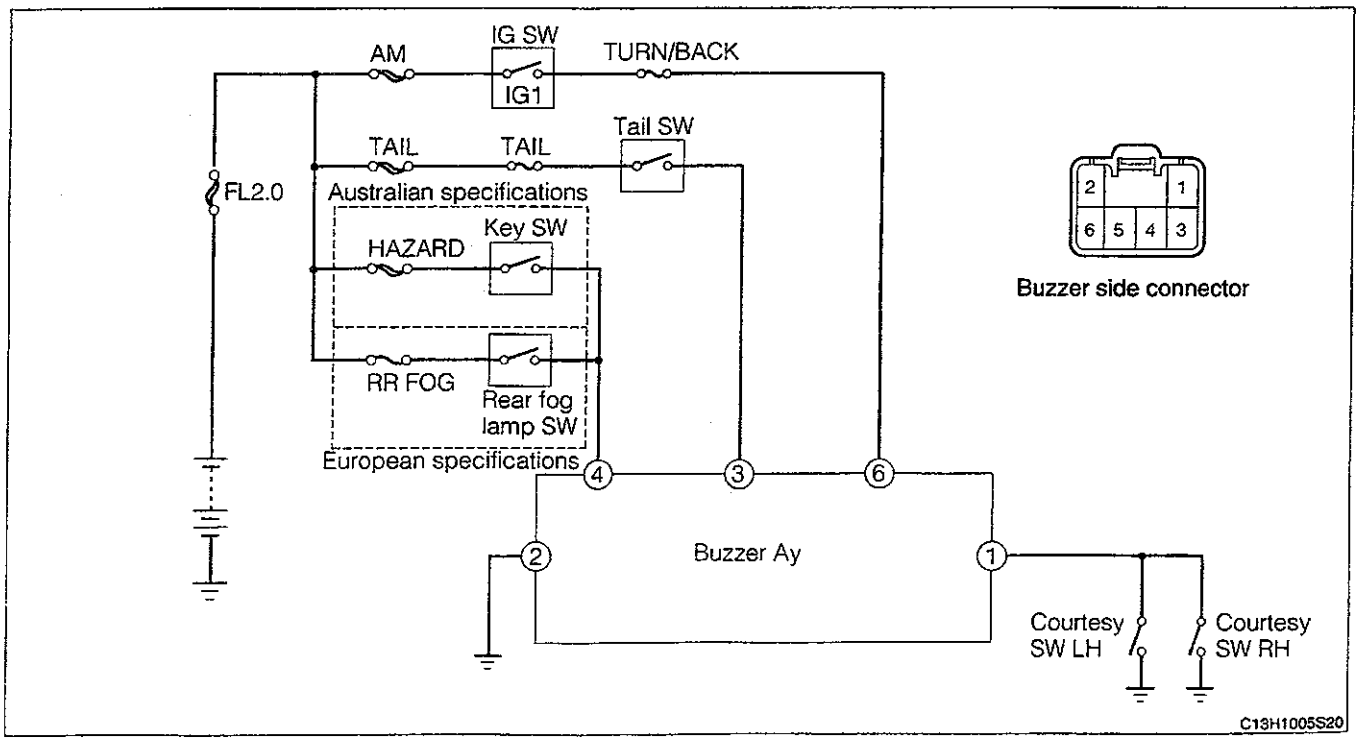
SPECIFIED VALUE: Continuity exists.

2.With the shaft retracted, perform continuity check.

SPECIFIED VALUE: No continuity exists.



1-3-6 REAR FOG LAMP ON & LIGHT ON WARNING BUZZER, KEY REMAINING-STATE & LIGHT ON WARNING BUZZER

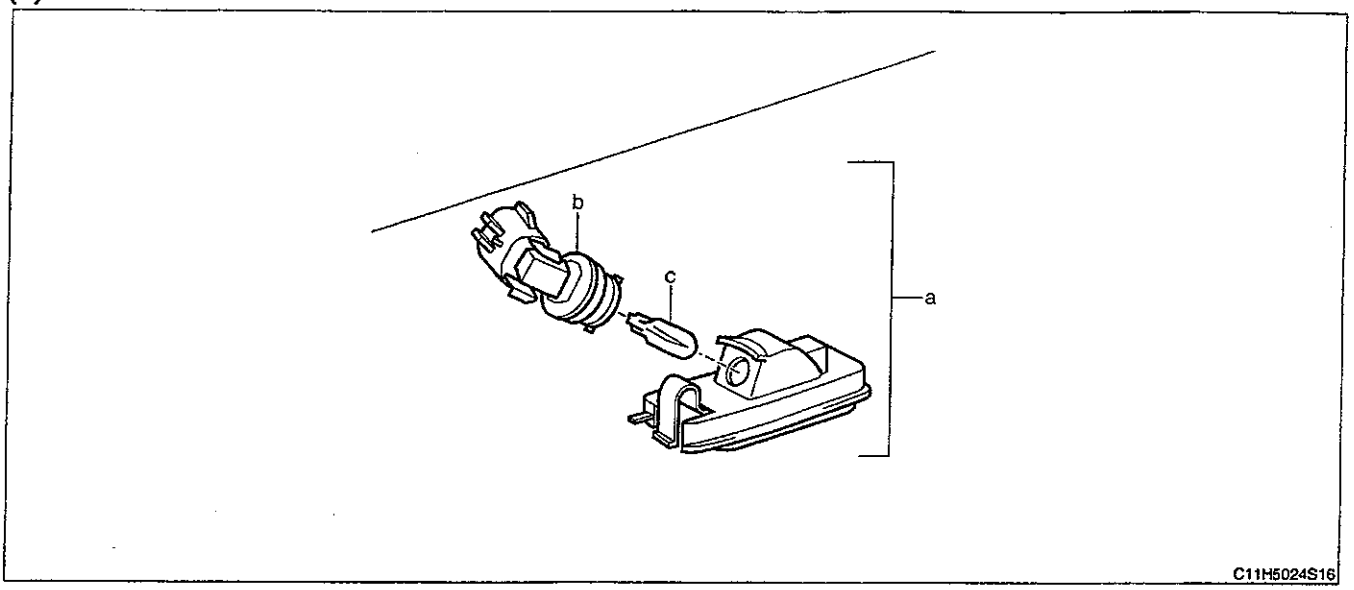


14 LICENSE PLATE LAMP BULB

14-1 REMOVAL AND INSTALLATION

14-1-1 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



(2) REMOVAL AND INSTALLATION PROCEDURES

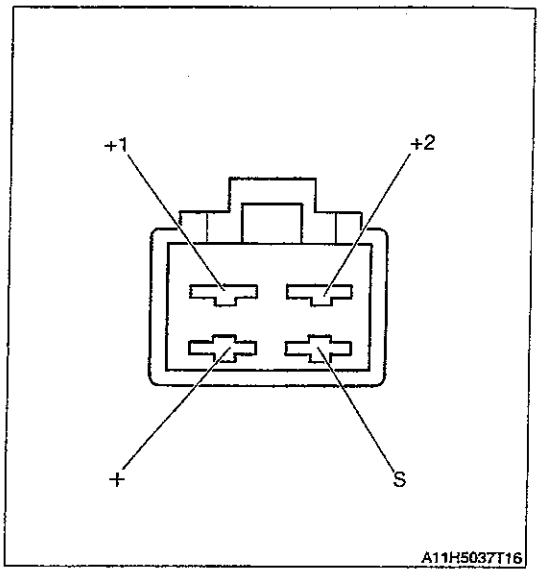
1 a Lamp Ay, licence plate
2 b Socket
3 c Bulb (license plate lamp)

2-1-2 INSPECTION

(1) WIPER MOTOR AND BRACKET AY

① LOW OPERATION CHECK

1.Connect the earth of the wiper motor to the negative (−) terminal of the battery.
2.Connect the (+1) terminal to the battery (+) terminal. Ensure that the motor operates at a low speed.



② HIGH OPERATION CHECK

1.Connect the earth of the wiper motor to the negative (−) terminal of the battery.
2.Connect the (+2) terminal to the battery (+) terminal. Ensure that the motor operates at a high speed.

③ OPERATION CHECK FOR AUTOMATIC STOP POSITION

1.In the LO operation check, while operating the wiper motor at a low speed, remove the terminal (+1) from the positive (+) terminal of the battery, thereby stopping the motor crank at a position other than the automatic stop position.
2.After shorting the terminal (+1) with the terminal (S), connect the terminal (+) to the positive (+) terminal of the battery. At this time, ensure that the motor operates again at the low speed and that the crank stops at the automatic stop position.

2-1-3 POINTS OF INSTALLATION

(1) WIPER LINK PACKING

1.Be very careful not to inadvertently leave the wiper link packing disconnected, for example, after the removal/installation of the cowl top ventilator louver or front wiper link assembly.

CAUTION

- **If it should be left disconnected, water may get to the link joint sections, resulting in an operating malfunction.**

(2) FRONT WIPER BLADE

1.When assembling the front wiper blade to the front wiper arm, take into consideration the following blade length as they differ in length between the right and left.

Wiper blade dimensions

	Driver's seat side	Front passenger seat side
Blade length (mm)	450	400

2 COMBINATION METER

2-1 DISASSEMBLING AND ASSEMBLING

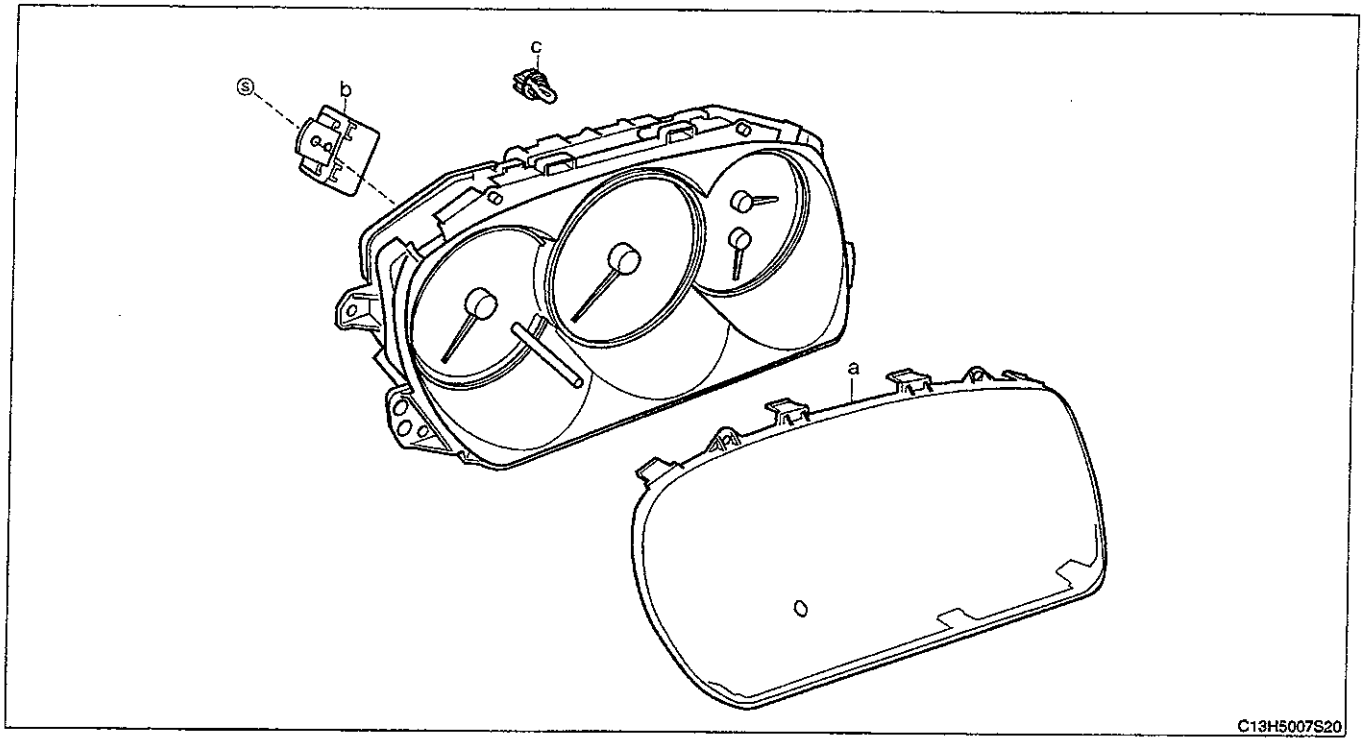
2-1-1 OPERATION BEFORE DISASSEMBLY

1.Lower the steering column as far as it will go.
2.Remove the instrument cluster finish panel.
Refer to Page I2-22.

3.Remove the combination meter.

2-1-2 DISASSEMBLY AND ASSEMBLY PROCEDURES

(1) COMPONENTS



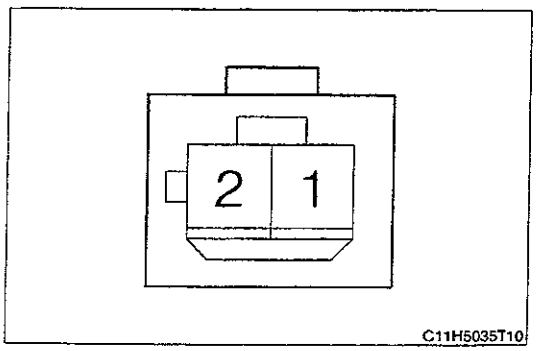
(2) DISASSEMBLING AND ASSEMBLING PROCEDURE

1 a Glass, combination meter
2 b Buzzer Ay
3 c Bulb, w/socket

2-1-3 INSPECTION

(1) BUZZER AY

1.Ensure that the buzzer sounds when the terminal 1 is connected to the battery negative terminal; the terminal 2 to the battery positive terminal.



3 HEATER CONTROL PANEL

3-1 REMOVAL AND INSTALLATION

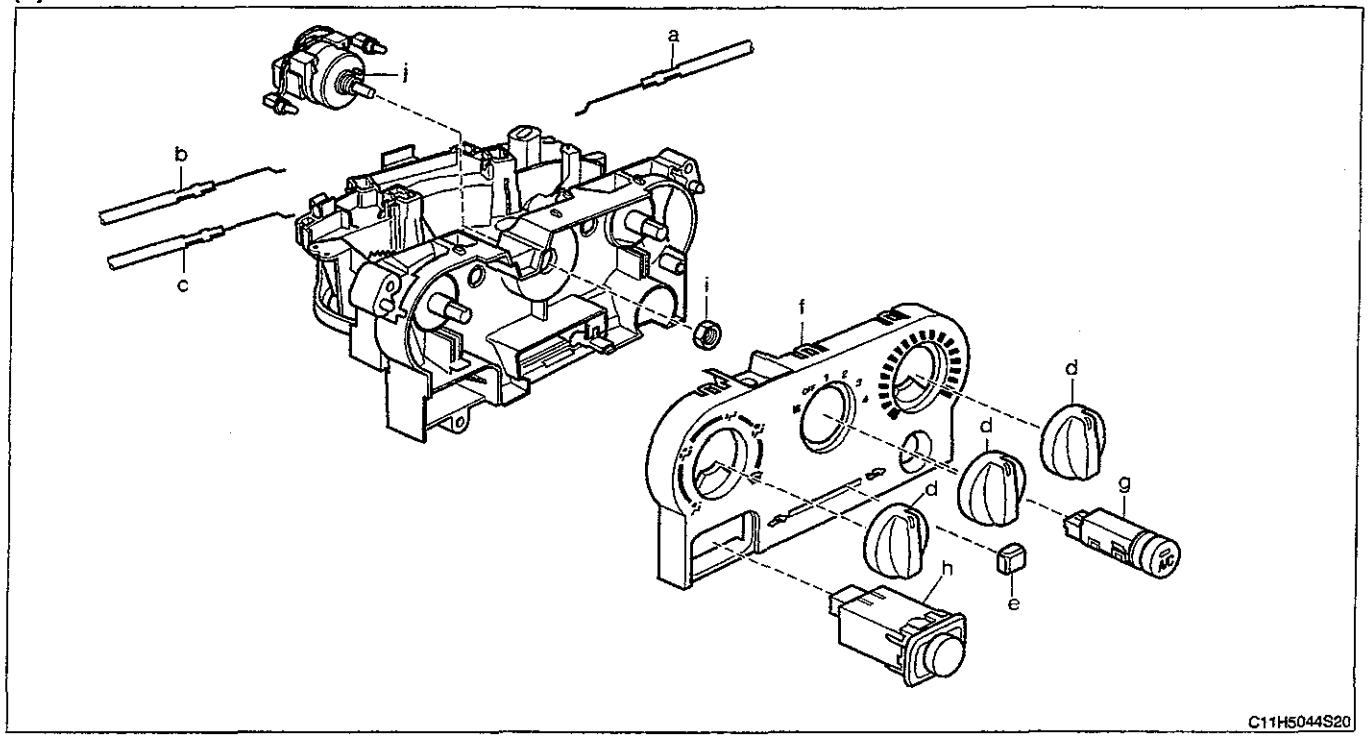
3-1-1 ARTICLES TO BE PREPARED

Tool

Snap ring pliers

3-1-2 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



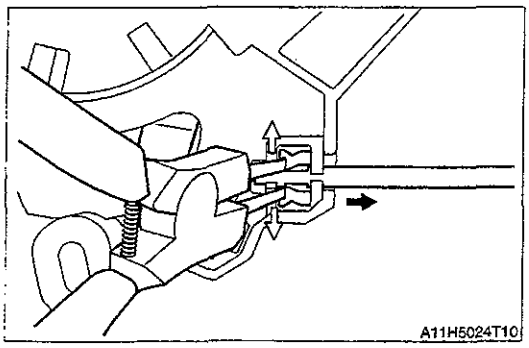
(2) REMOVAL AND INSTALLATION PROCEDURES

▼ ▲ 1 a Cable S/A, defroster damper control
▼ ▲ 2 b Cable S/A, temperature damper control
▼ ▲ 3 c Cable S/A, air inlet damper control
4 d Knob S/A, control
5 e Knob, heater control lever
6 f Plate, heater control name
7 g Switch Ay, air conditioner control
8 h Lamp Ay, telltale
9 i Nut, heater blower switch
10 j Switch, heater blower

3-1-3 POINTS OF REMOVAL

(1) DAMPER CONTROL CABLE S/A

1. In cases where the damper control cable subassembly is removed from the heater control panel, perform the removal operation, while opening the pawl section of the cable clip, using snap ring pliers, as indicated in the figure.

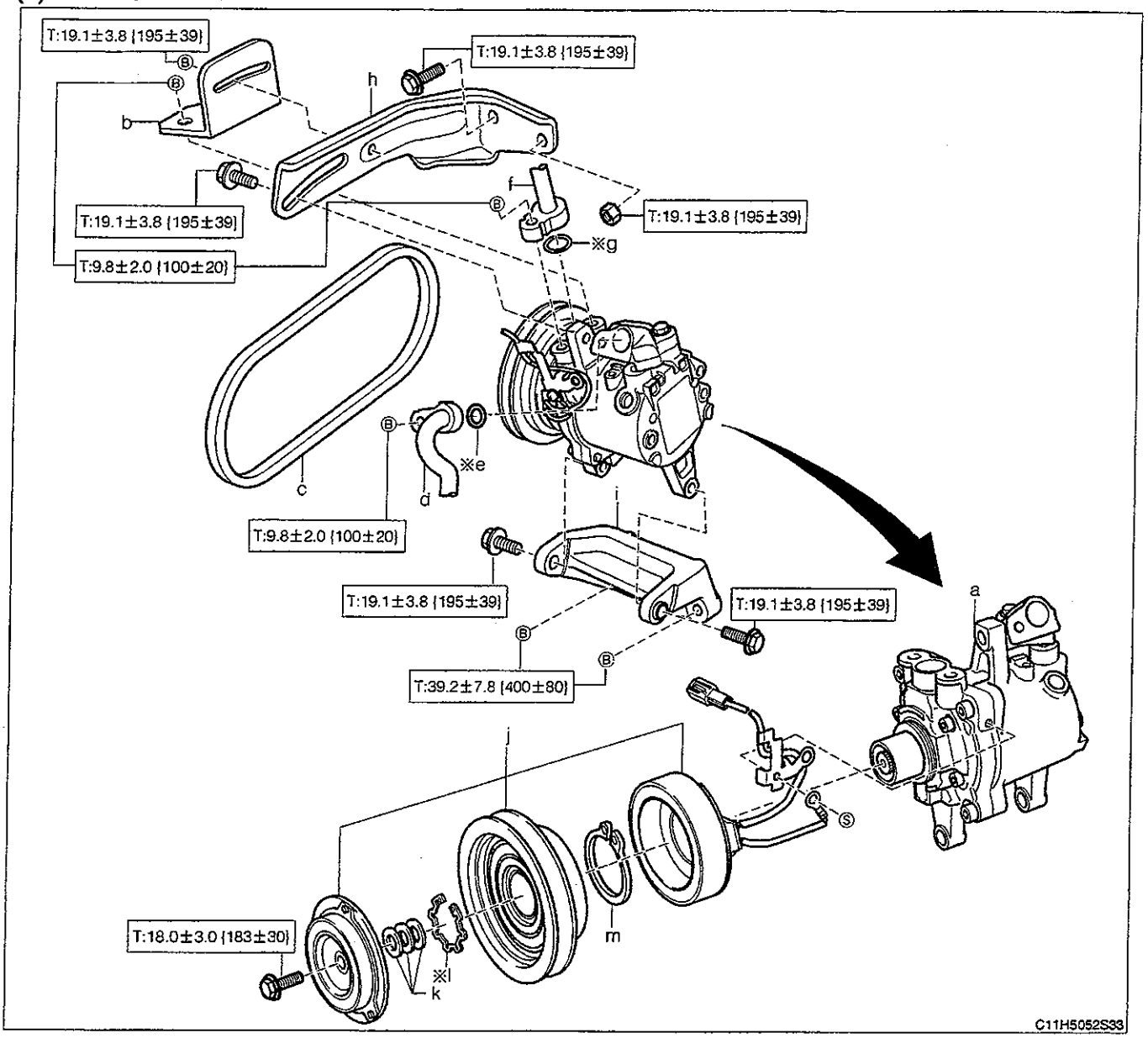


CAUTION

- The cable at the heater control panel side is of a pawl securing type. Therefore, there is the possibility that, if the pawl is opened forcibly, the securing force becomes weak, thus becoming unable to secure the cable again. Hence, be sure to use snap ring pliers.

6-1-3 REMOVAL AND INSTALLATION PROCEDURES

(1) COMPONENTS



※:Non - reusable parts

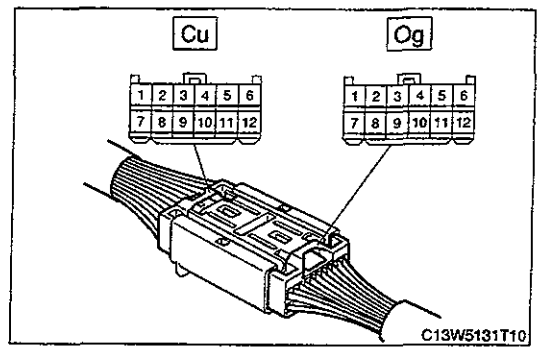
Unit:N·m{kgf·cm}

(2) REMOVAL PROCEDURES

	1	a	COMPRESSOR AY	8	h	Bar, adjusting
▼	2	b	Stay,compressor	9	i	Bracket, compressor mounting
	3	c	Belt, V (air conditioner)	▼ 10	j	Clutch Ay, magnet
	4	d	Hose, discharge	11	k	Washer, plate
	5	e	O-ring	12	l	Ring, snap
	6	f	Hose, suction	13	m	Ring, snap
	7	g	O-ring			

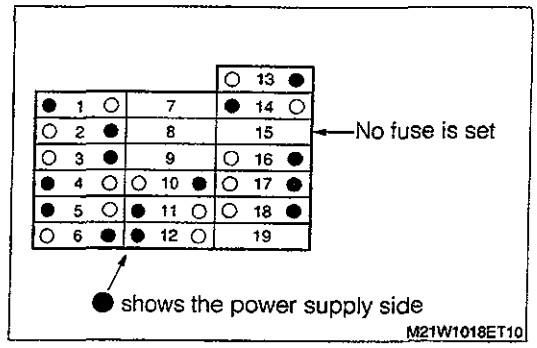
4.WIRE TO WIRE JUNCTION CONNECTOR (W to W J/C)

(1) This connector is a junction connector in which a shorting pin shorts two connectors. The connector diagram of the W to W J/C is given at the right figure.



5.FUSE BLOCK, RELAY BLOCK

(1) The position of each fuse is indicated when the fuse block or relay block is viewed from the front. The ●mark indicates the power supply plus side of the fuse and the ○mark indicates the power supply minus side of the fuse. No fuse is provided where no ● ○ mark is provided.

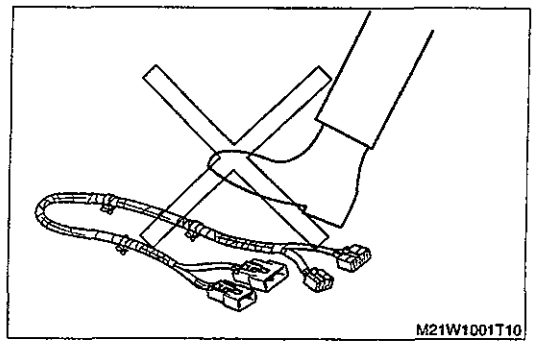


3 HANDLING INSTRUCTIONS

3-1 HANDLING OF HARNESS AND CONNECTOR

1.When assembling the wire harness, do not pull or step on the connectors. Be careful not to allow the harness to be damaged by burrs or edges.

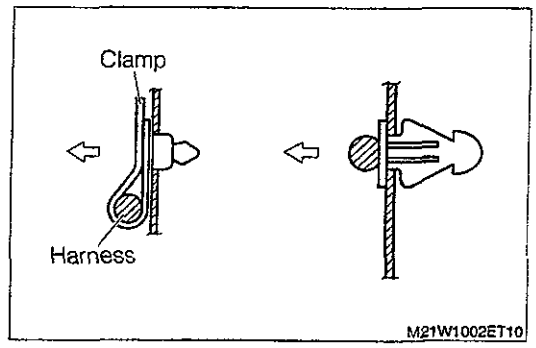
2.When installing the harness, be careful not to allow the harness to wind or twist.



3.Ensure that the clamp section of the resin clamp has been inserted into the body hole.

CAUTION

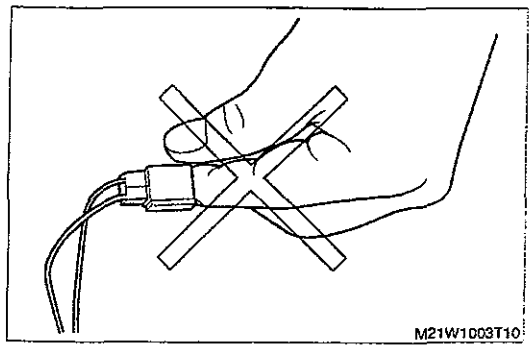
- **Ensure that the clamp section cannot be pulled out by lightly pulling it.**

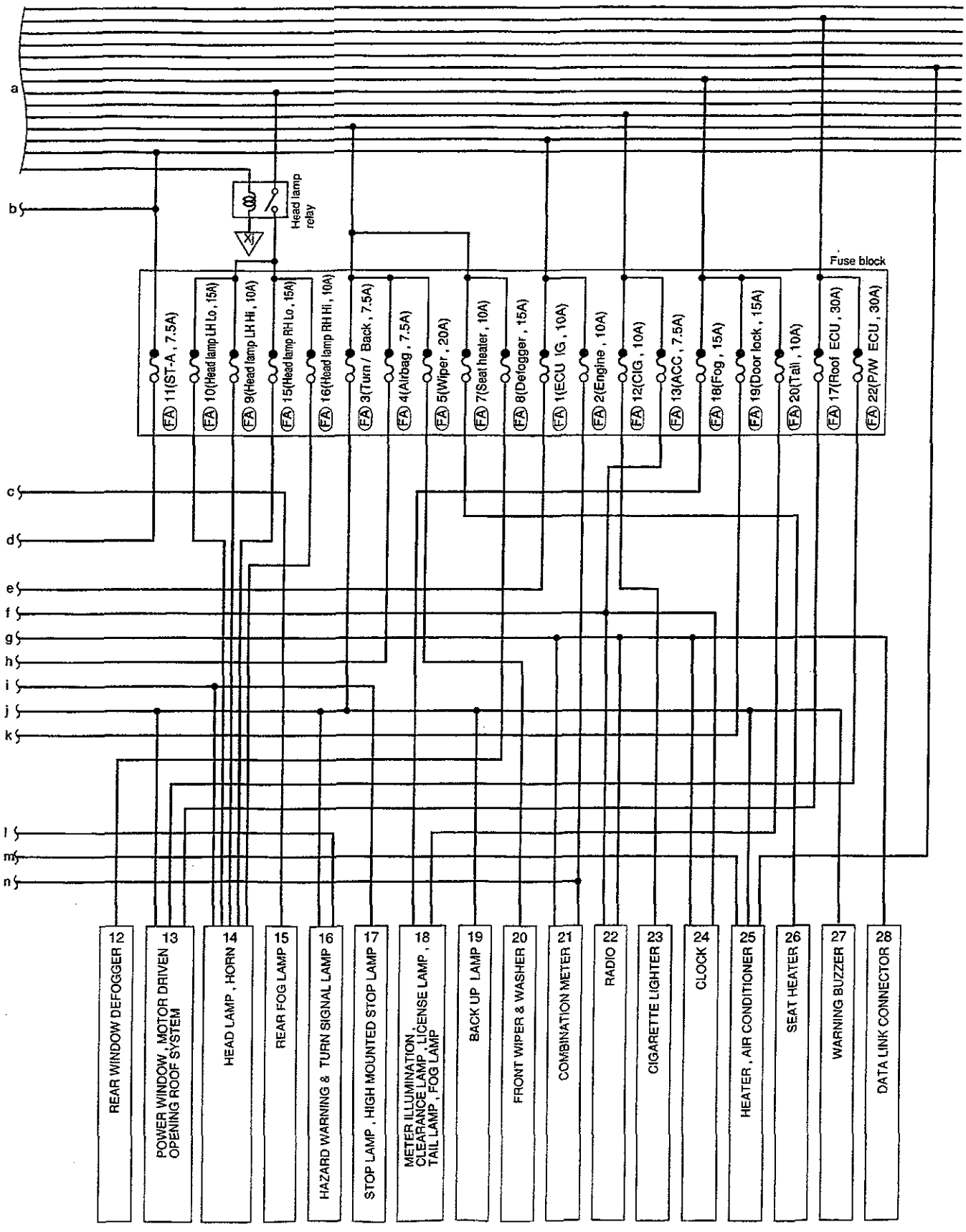


4.Never touch the terminal of connector directly by hand.

5.Modification of wire harness.The wire diameter and capacity of each harness have been determined to assure the normal operation of the electrical system. Hence, do not take power for accessories carelessly through the original wiring harness. Failure to observe this caution may cause system malfunction or fire.

6.When a band type resin clamp is used, never use tools, such as pliers or radio pliers.

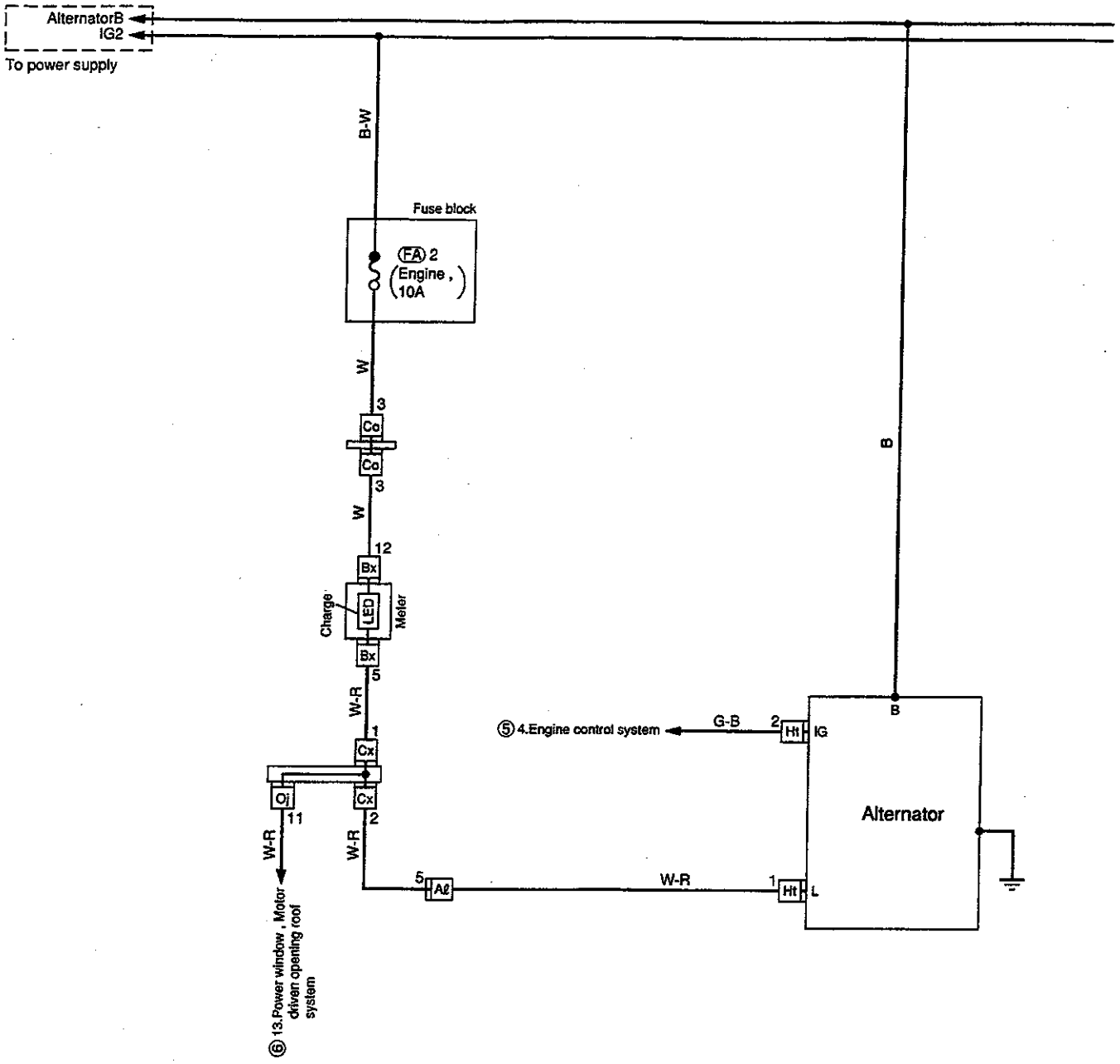


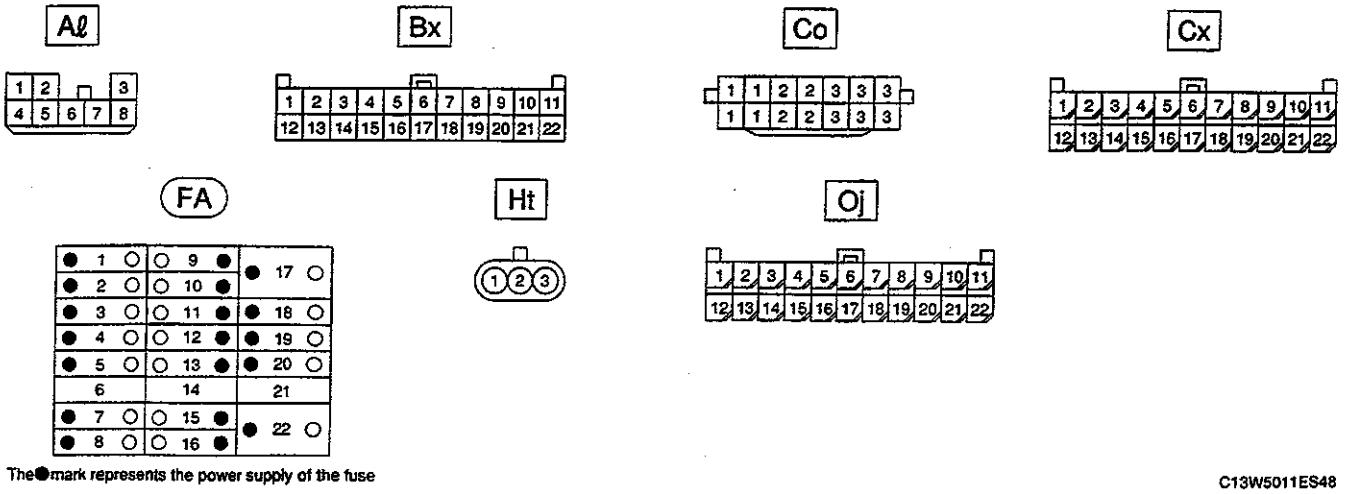


C13W5002ES48

TO INDEX TO NEXT SECTION

3 CHARGING SYSTEM





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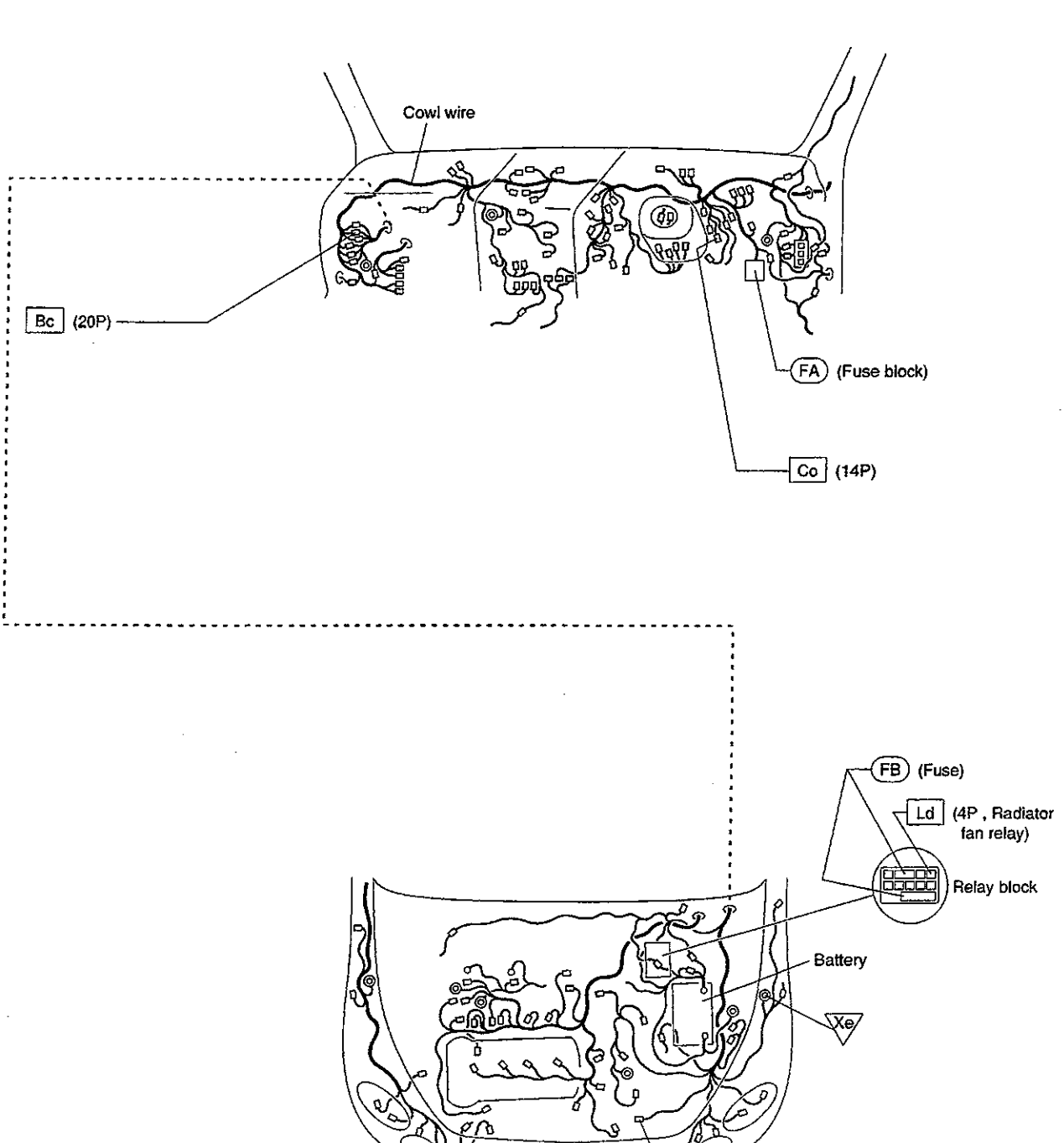

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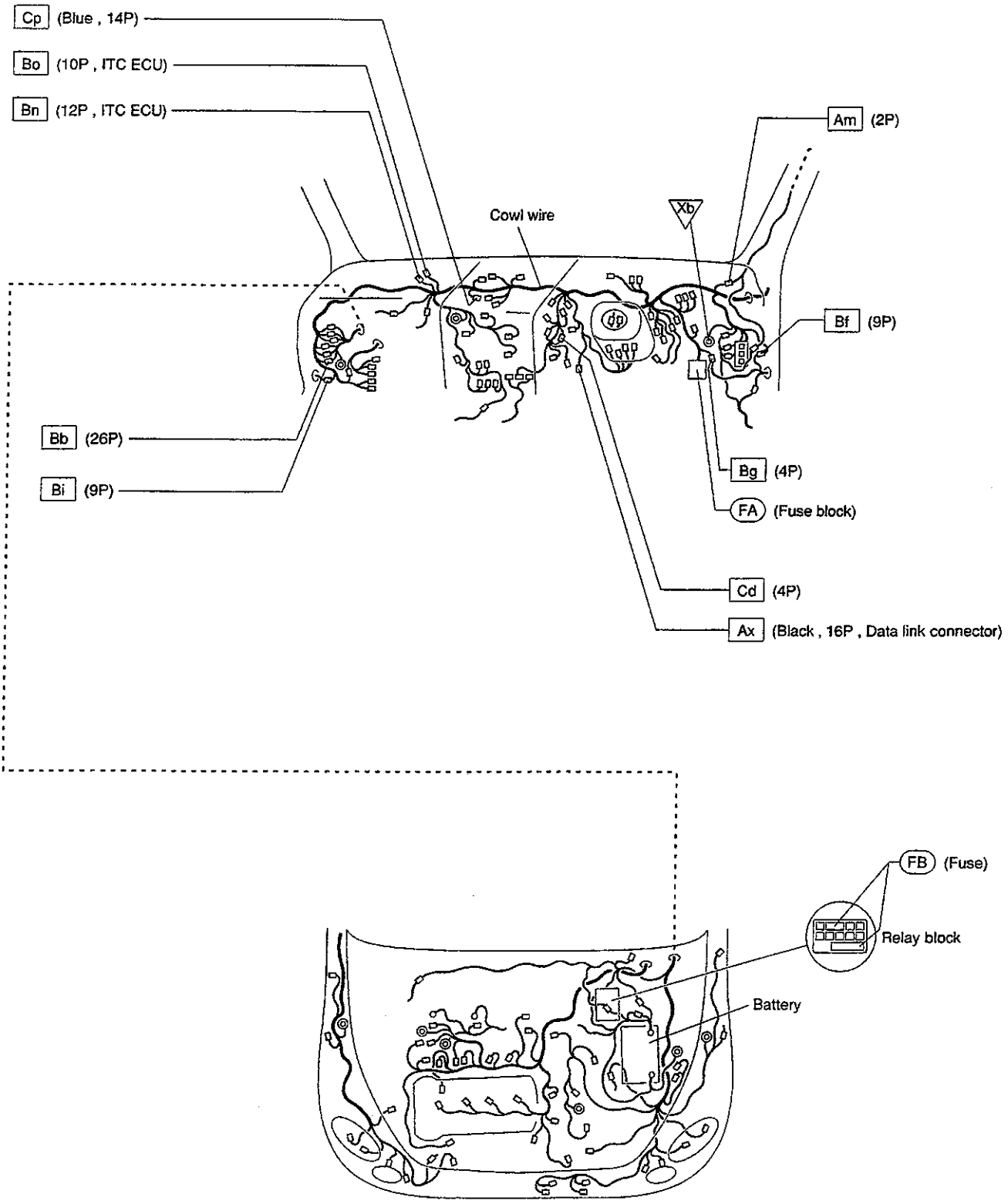

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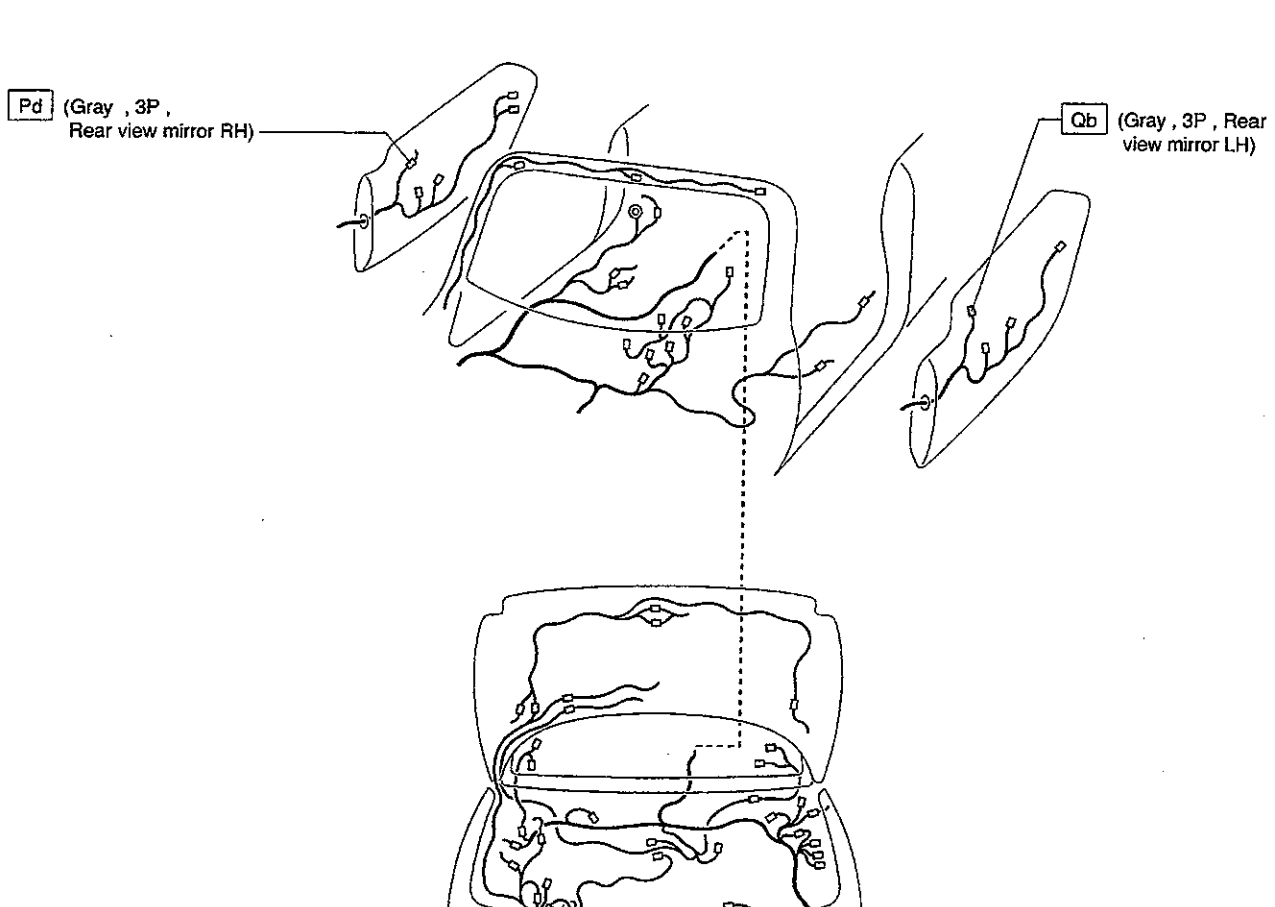

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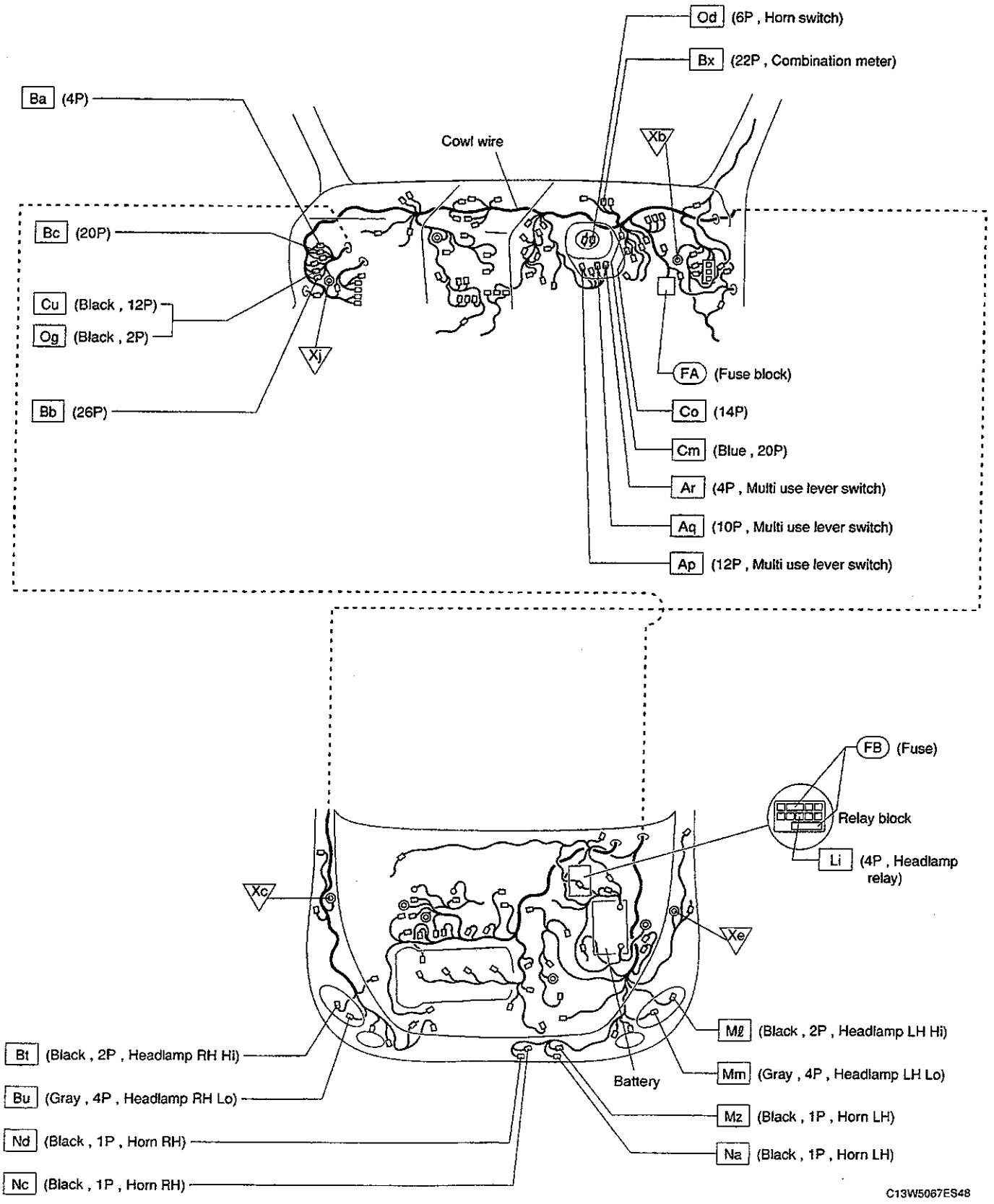
Od (6P , Horn switch)
Bx (22P , Combination meter)
Ba (4P)
Cowl wire
Xb
Bc (20P)
Cu (Black , 12P)
Og (Black , 2P)
Xj
Bb (26P)
FA (Fuse block)
Co (14P)
Cm (Blue , 20P)
Ar (4P , Multi use lever switch)
Aq (10P , Multi use lever switch)
Ap (12P , Multi use lever switch)
FB (Fuse)
Relay block
Li (4P , Headlamp relay)
Xc
Xe
Bt (Black , 2P , Headlamp RH Hi)
Bu (Gray , 4P , Headlamp RH Lo)
Nd (Black , 1P , Horn RH)
Nc (Black , 1P , Horn RH)
Battery
Mℓ (Black , 2P , Headlamp LH Hi)
Mm (Gray , 4P , Headlamp LH Lo)
Mz (Black , 1P , Horn LH)
Na (Black , 1P , Horn LH)
C13W5067ES48

(MEMO)