

|                                 |                             |                   |
|---------------------------------|-----------------------------|-------------------|
| 4. Engine right mounting        | 14. Dynamic damper          | ⊗ : Do not reuse. |
| 5. Engine left mounting bracket | 15. Mounting member cushion |                   |

## Engine Assembly Removal and Installation

S6RW0C1406014

### Removal

- 1) Relieve fuel pressure according to "Fuel Pressure Relief Procedure in Section 1G".
- 2) Disconnect negative and positive cables at battery.
- 3) Disconnect ECM connectors.
- 4) Remove battery and battery tray with ECM.
- 5) Remove right and left side engine under covers.
- 6) Remove water pump and generator drive belt referring to "Water Pump and Generator Drive Belt Removal and Installation in Section 1J".
- 7) Drain engine oil.
- 8) Drain transaxle oil.
- 9) Drain transfer oil (4WD model).
- 10) Drain coolant.
- 11) Remove air cleaner assembly referring to "Air Cleaner Assembly Removal and Installation".
- 12) With hose connected, detach A/C compressor from its bracket referring to "Compressor Assembly Removal and Installation in Section 7B".

### **⚠ CAUTION**

**Suspend removed A/C compressor at a place where no damage will be caused during removal and installation of engine assembly.**

- 13) Remove condenser cooling fan from radiator referring to "Condenser Cooling Fan Removal and Installation in Section 7B".

- 14) Disconnect the following electric wires/connectors and each clamps.

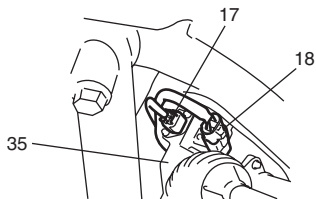
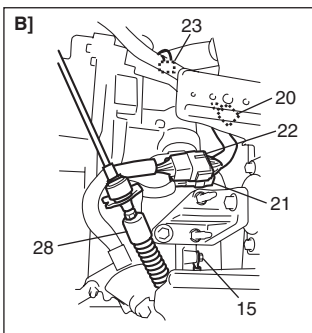
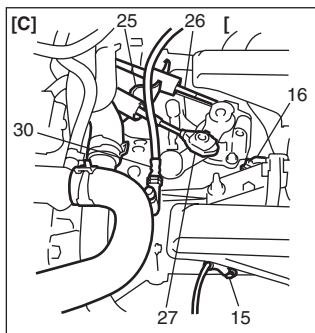
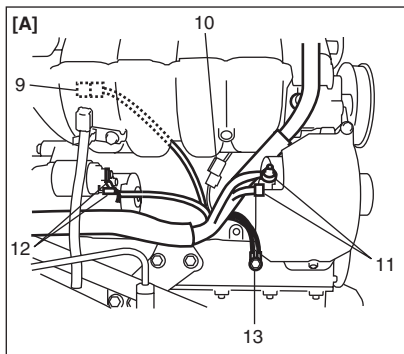
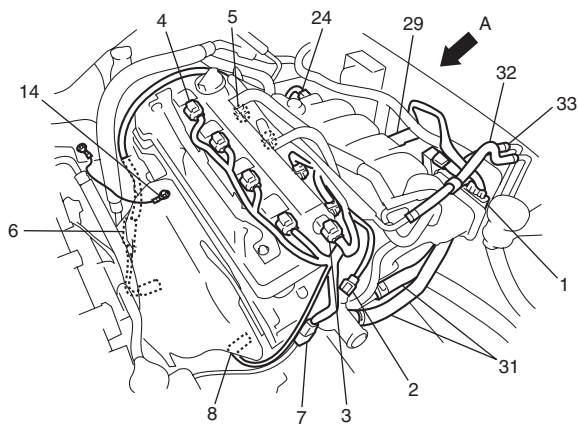
- Electric throttle body (1)
- ECT sensor (2)
- CMP sensor (3)
- Ignition coil assembly (4)
- Injector (5)
- HO2S (6)
- A/F sensor (7)
- Engine oil pressure switch (8)
- CKP sensor (9)
- Knock sensor (10)
- Generator (11)
- Starting motor (12)
- Ground terminal (13) from cylinder block
- Ground terminal (14) from exhaust manifold
- Battery ground cable (15) from transaxle
- Back-up light switch (16) (M/T model)
- Torque sensor (17)
- P/S motor (18)
- Output shaft speed sensor (VSS) (20) (A/T model)
- Solenoid valve (21) (A/T model)
- Transmission range sensor (22) (A/T model)
- Input shaft speed sensor (23) (A/T model)
- IMT sensor (24)

- 15) Disconnect the following cables, and remove control cable bracket (25).

- Gear select control cable (26) (M/T model)
- Gear shift control cable (27) (M/T model)
- A/T select cable with select cable bracket (28) (A/T model)

16) Disconnect the following hoses.

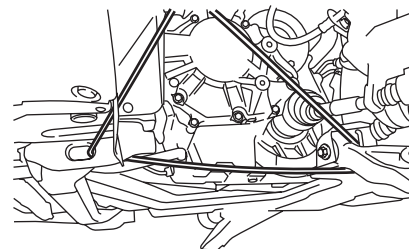
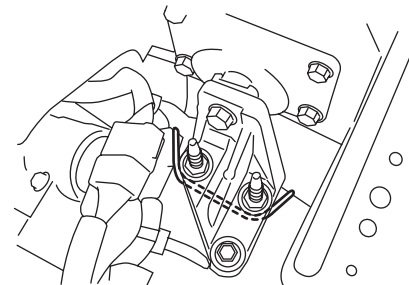
- Brake booster hose (29) from intake manifold
- Radiator inlet and outlet hoses from radiator
- Heater inlet and outlet hoses (31) from heater core
- Fuel feed hose (32) from fuel feed pipe
- Purge hose (33) from purge valve
- Clutch hose (30) from transaxle (M/T model)
- A/T fluid cooler hoses (A/T model)



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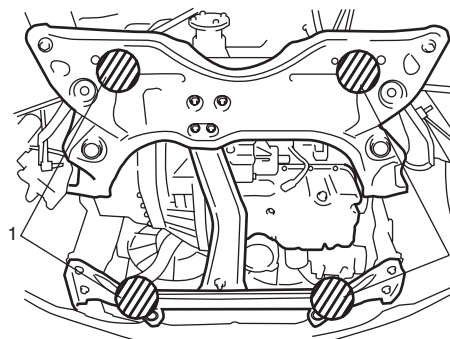
|                |                       |
|----------------|-----------------------|
| [A]: View A    | [C]: M/T model        |
| [B]: A/T model | 35. Steering gear box |

- 17) Disconnect right and left drive shaft joints from differential gear referring to "Front Drive Shaft Assembly Removal and Installation in Section 3A".
- 18) Remove exhaust center pipe referring to "Exhaust System Components in Section 1K".
- 19) Disconnect propeller shaft from transfer referring to "Propeller Shaft Assembly Removal and Installation in Section 3D" (4WD model).
- 20) Disconnect steering lower shaft from pinion shaft referring to "Steering Lower Shaft Removal and Installation in Section 6B".
- 21) Fix radiator to body with rope in order to avoid the radiator fall off when front lower cross member lowered.
- 22) Fix transaxle to suspension frame with rope in order to avoid the engine assembly inclines when engine assembly lowered.



I7RW01140072-02

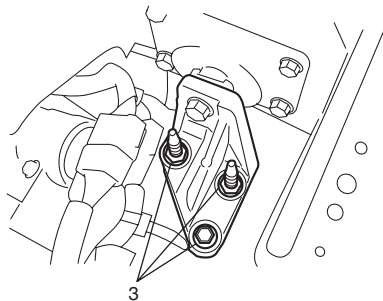
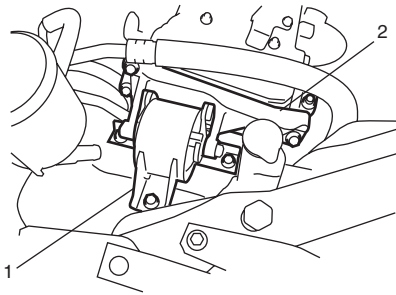
- 23) Support front suspension frame and front lower cross member using jack at hatched parts (1) indicated in figure.



I7RW01140073-01

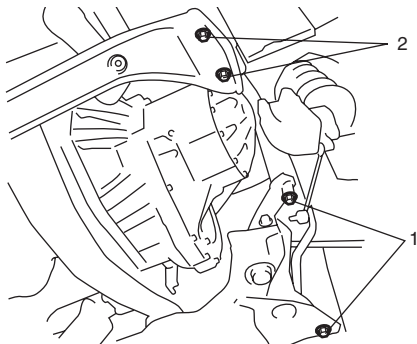
## 1D-17 Engine Mechanical:

- 24) Remove engine right mounting (1), engine right mounting No.1 bracket (2) and engine left mounting bracket bolt and nuts(3).



I7RW01140034-01

- 25) Remove suspension frame mounting bolts (1) and front lower cross member bolts (2).



I5RW0A140014-01

- 26) Lower engine with transaxle, front suspension frame, front lower cross member, transfer (4WD model) and steering gear case.

### **⚠ CAUTION**

**Before lowering engine, in order to avoid damage to A/C compressor, make clearance by rising it.**

- 27) Disconnect steering gear case from suspension frame referring to "Steering Gear Case Assembly Components in Section 6C", if necessary.  
28) Disconnect transfer.  
29) Disconnect transaxle from engine.  
30) Remove clutch cover and clutch disk referring to "Clutch Cover, Clutch Disc and Flywheel Removal and Installation in Section 5C", if necessary (M/T model).

## Installation

- 1) Install clutch cover and clutch disk referring to "Clutch Cover, Clutch Disc and Flywheel Removal and Installation in Section 5C", if necessary (M/T model).
- 2) Connect transaxle to engine referring to "Manual Transaxle Unit Dismounting and Remounting in Section 5B" or "Automatic Transaxle Unit Dismounting and Remounting in Section 5A", if removed.
- 3) Connect transfer to suspension frame referring to "Transfer Dismounting and Remounting in Section 3C", if removed (4WD model).
- 4) Connect steering gear case to suspension frame referring to "Steering Gear Case Assembly Components in Section 6C", if removed.
- 5) Lift engine with transaxle, front suspension frame, front lower cross member, transfer (4WD model) and steering gear case into engine compartment with jack.

### **⚠ CAUTION**

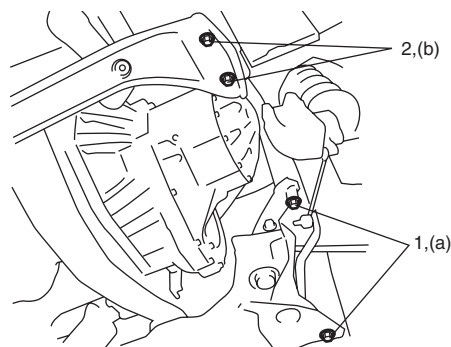
**Before lifting engine, in order to avoid damage to A/C compressor, make clearance by rising it.**

- 6) Tighten suspension frame mounting bolts and front lower cross member bolts, and then tighten bolts to specified torque.

### **Tightening torque**

**Suspension frame mounting bolt (a): 150 N·m (15.0 kgf-m, 108.5 lb-ft)**

**Front lower cross member bolt (b): 55 N·m (5.5 kgf-m, 40.0 lb-ft)**



I5RW0A140016-01

- 7) Install engine right mounting, engine right mounting No.1 bracket and engine left mounting bracket, and then tighten bolts and nuts to specified torque referring to "Engine Mountings Components".
- 8) Remove jack.
- 9) Connect steering lower shaft to pinion shaft referring to "Steering Lower Shaft Removal and Installation in Section 6B".
- 10) Connect propeller shaft referring to "Propeller Shaft Assembly Removal and Installation in Section 3D" (4WD model).
- 11) Install exhaust center pipe referring to "Exhaust System Components in Section 1K".
- 12) Connect right and left drive shaft joints to differential gear referring to "Front Drive Shaft Assembly Removal and Installation in Section 3A".
- 13) Reverse disconnected hoses, cables and electric wires for connection noting the following. Tighten bolts and nuts to specified torque.

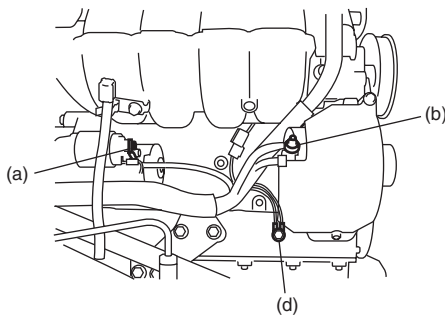
#### Tightening torque

**Starting motor terminal nut (a): 11 N·m (1.1 kgf-m, 8.0 lb-ft)**

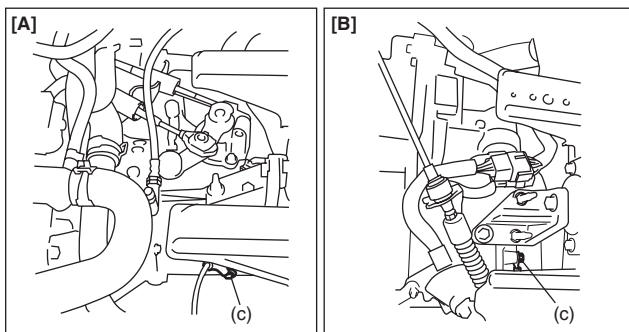
**Generator terminal nut (b): 5 N·m (0.5 kgf-m, 4.0 lb-ft)**

**Battery ground bolt (c): 25 N·m (2.5 kgf-m, 18.0 lb-ft)**

**Ground terminal bolt (d): 11 N·m (1.1 kgf-m, 8.0 lb-ft)**



- 14) Install condenser cooling fan to radiator referring to "Condenser Cooling Fan Removal and Installation in Section 7B".
- 15) Install A/C compressor to its bracket (if removed) referring to "Compressor Assembly Removal and Installation in Section 7B".
- 16) Install air cleaner assembly referring to "Air Cleaner Assembly Removal and Installation".
- 17) Check to ensure that all removed parts are back in place. Reinstall any necessary parts which have not been reinstalled.
- 18) Refill coolant referring to "Cooling System Flush and Refill in Section 1F".
- 19) Refill transfer oil referring to "Transfer Oil Change in Section 3C" (4WD model).
- 20) Refill transaxle oil referring to "Manual Transaxle Oil Change in Section 5B" or "A/T Fluid Change in Section 5A".
- 21) Refill engine oil referring to "Engine Oil and Filter Change in Section 1E".
- 22) Install water pump and generator drive belt referring to "Water Pump and Generator Drive Belt Removal and Installation in Section 1J".
- 23) Install right and left side engine under covers.
- 24) Install battery and battery tray with ECM.
- 25) Connect ECM connectors.
- 26) Connect negative and positive cable at battery.
- 27) Verify that there is no fuel leakage, coolant leakage, oil leakage and exhaust gas leakage at each connection.



I7RW01140035-04

[A]: M/T model

[B]: A/T model