

DATSUN 280ZX Model S130 Series



SECTION ER

ENGINE REMOVAL & INSTALLATION

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ENGINE REMOVAL AND INSTALLATION

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ER

4 Drain engine coolant.
7 Remove hood as follows:

CAUTION: To prevent injury to you and prevent damage to body.

- (1) Mark hood hinge locations on hood to facilitate proper reinstallation.
- (2) Support hood with hand and remove bolts securing it to hood hinge taking care not to slip when bolts are removed.



Fig. ER-4 Removing Hood

1. Follow the procedure below to reduce fuel pressure to zero:

CAUTION: Before disconnecting fuel hose release fuel pressure from fuel line to eliminate danger.

- (1) Disconnect ground cable from battery.
- (2) Disconnect cold start valve harness connector.
- (3) Using two jumper wires shown in illustration, connect each terminal to cold start valve connector.
- (4) Release pressure in fuel system by connecting other terminals of jumper wires to battery positive and negative terminals for a few seconds.

CAUTION: Be careful to keep both terminals separate in order to avoid short circuit.

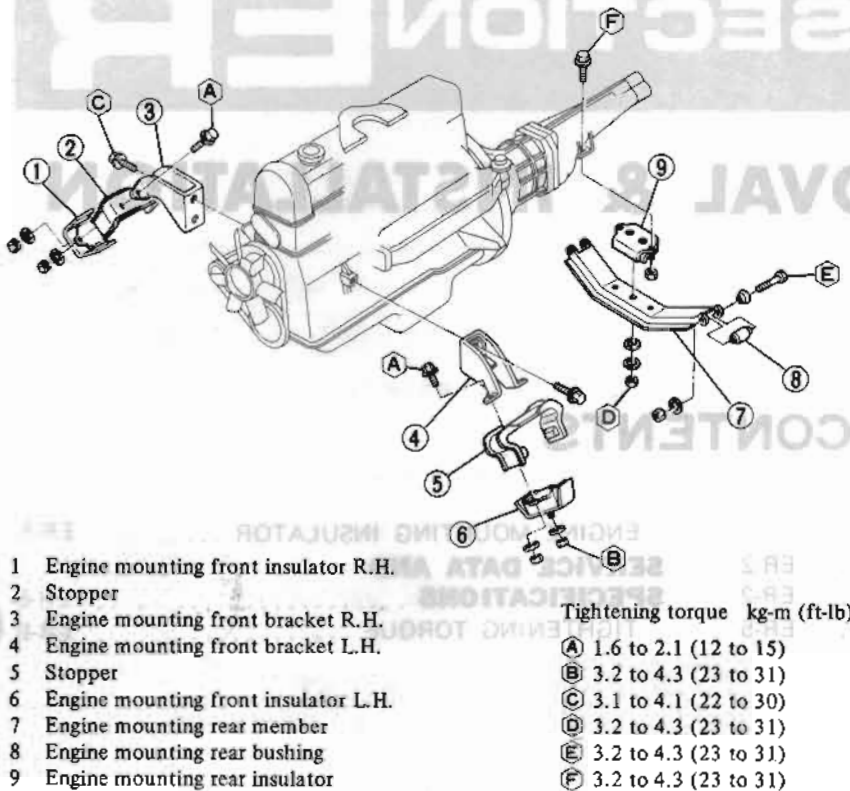
It is much easier to remove engine and transmission as a single unit than to remove only engine from the engine compartment. After removal, the engine can be separated from the transmission assembly and clutch assembly.

WARNING:

- a. Place wheel chocks in front of front wheels and in rear of rear wheels.
- b. Be sure to hold engine in a safe manner.
- c. You should not remove engine until exhaust system has completely cooled off. Otherwise, you may burn yourself and/or the car body.

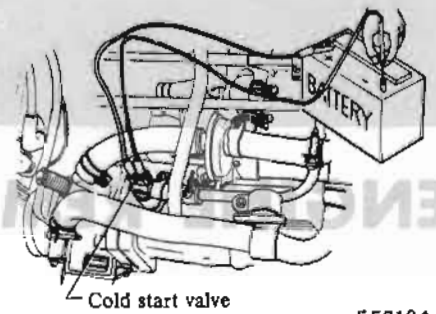
Note: Fender covers should be used to protect car body.

ENGINE REMOVAL AND INSTALLATION



ER468

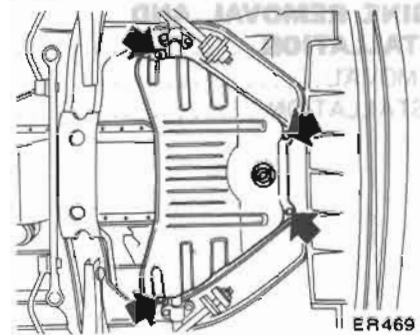
Fig. ER-1 Engine Mounting



EF212A

Fig. ER-2 Reducing Fuel Pressure

2. Disconnect battery ground cable from battery terminal.
3. Remove engine lower splash board.



ER469

Fig. ER-3 Removing Splash Board

REMOVAL

It is much easier to remove engine and transmission as a single unit than to remove only engine from the engine compartment. After removal, the engine can be separated from the transmission assembly and clutch assembly.

WARNING:

- a. Place wheel chocks in front of front wheels and in rear of rear wheels.
- b. Be sure to hoist engine in a safe manner.
- c. You should not remove engine until exhaust system has completely cooled off. Otherwise, you may burn yourself and/or fire may break out in fuel line.

Note: Fender covers should be used to protect car body.

1. Follow the procedure below to reduce fuel pressure to zero.

CAUTION:

Before disconnecting fuel hose, release fuel pressure from fuel line to eliminate danger.

- (1) Disconnect ground cable from battery.
- (2) Disconnect cold start valve harness connector.
- (3) Using two jumper wires shown in illustration, connect each terminal to cold start valve connector.
- (4) Release pressure in fuel system by connecting other terminals of jumper wires to battery positive and negative terminals for a few seconds.

CAUTION:

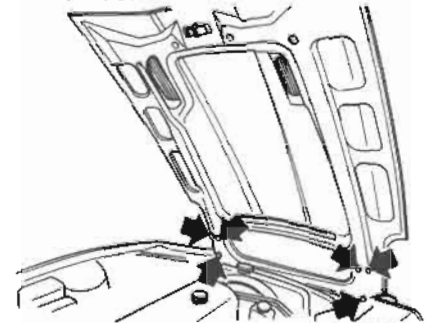
Be careful to keep both terminals separate in order to avoid short circuit.

4. Drain engine coolant.
5. Remove hood as follows:

CAUTION:

Have an assistant help you so as to prevent damage to body.

- (1) Mark hood hinge locations on hood to facilitate proper reinstallation.
- (2) Support hood with hand and remove bolts securing it to hood hinge, taking care not to let hood slip when bolts are removed.



ER470

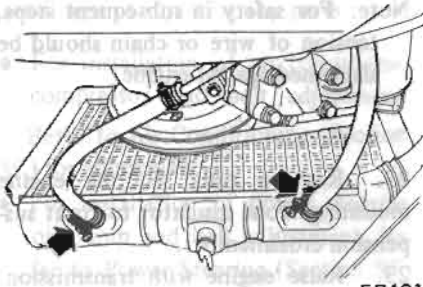
Fig. ER-4 Removing Hood

Engine Removal & Installation

- (3) Remove hood assembly.
6. Disconnect radiator upper and lower hose.
7. Remove radiator upper and lower shrouds.

On automatic transmission models:

Disconnect oil cooler hoses at oil cooler installed at the lower end of radiator and drain automatic transmission fluid.



ER121

Fig. ER-5 Removing Oil Cooler Hoses

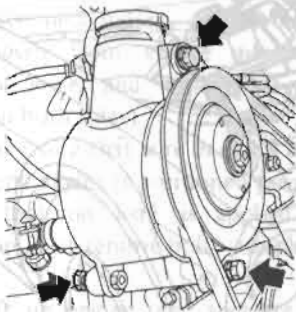
8. Remove reservoir tank hose from radiator and then remove radiator.
9. On power steering equipped models:

Note: Never drain power steering oil while work is being performed.

- (1) Remove oil pump belt. To remove, loosen idler pulley lock nut and adjusting bolt.

Refer to Power Steering Gear and Oil Pump (Section ST) for removal and installation.

- (2) Remove oil pump retaining bolts and fasten oil pump to hood ledge with suitable wire to facilitate removal of engine.



ST713

Fig. ER-6 Removing Oil Pump

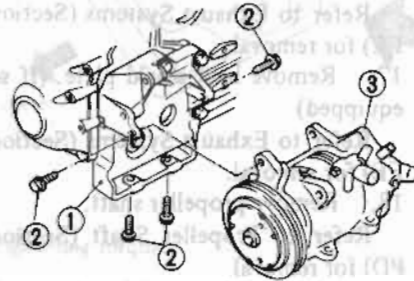
10. On air conditioner equipped models:

Note: Never discharge gas from compressor while work is being performed.

- (1) Remove compressor belt. To remove, loosen idler pulley lock nut and adjusting bolt.

Refer to Air Conditioning (Section AC) for removal.

- (2) Remove compressor retaining bolts and fasten compressor to hood ledge with suitable wire to facilitate removal of engine.

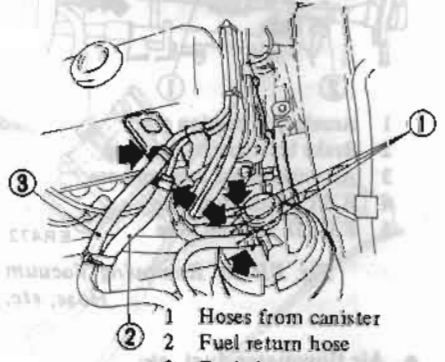


- 1 Compressor bracket
 - 2 Compressor retaining bolt
 - 3 Compressor
- ER443

Fig. ER-7 Removing Compressor Away from Engine

11. Disconnect following cables, wires, harness and hoses at the engine connection end.

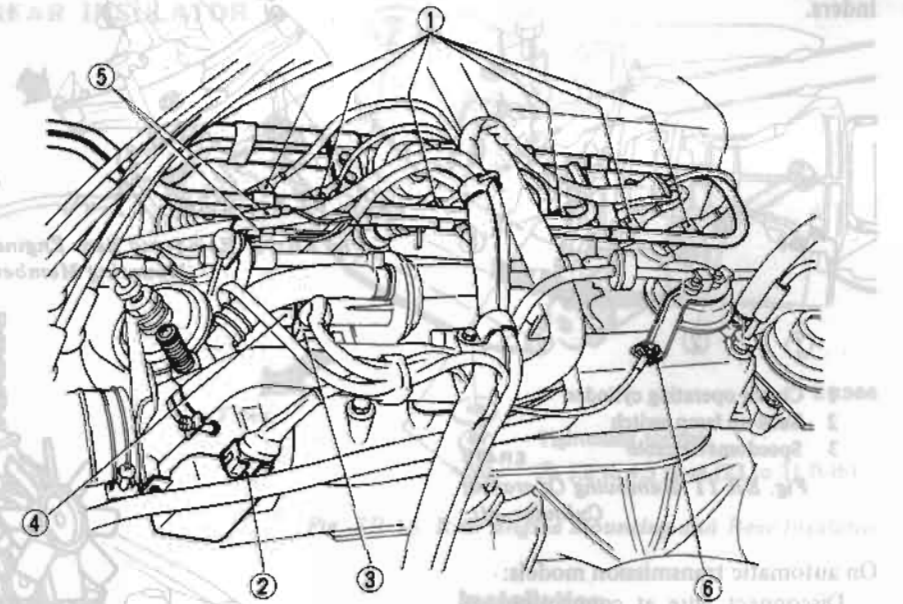
- Wire to alternator.
- Wire to oil pressure sending unit.
- Wire and cable to starter motor.
- Wire to auxiliary cooling fan (If so equipped)
- Heater inlet and outlet hoses.
- Fuel hoses and canister hoses.



ER357

Fig. ER-8 Removing Fuel Hose

- E.F.I. harness and connector.



- 1 Injector connector
- 2 Throttle valve switch connector
- 3 Cold start valve connector

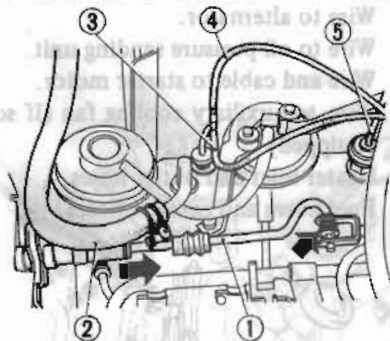
- 4 Air regulator connector
 - 5 E.F.I. sub-harness connector
 - 6 Engine ground
- ER471

Fig. ER-9 Removing E.F.I. Harness

- High tension cable (Between ignition coil and distributor).
- Harness to distributor.
- Wires to thermal transmitter and water temp. sensing switch.

- F.I.C.D. vacuum hose (Air conditioner equipped model).
- A.S.C.D. vacuum hose (If so equipped)
- Vacuum hose to intake manifold.

- Brake booster vacuum hose at intake manifold.
- Accelerator torsion shaft.



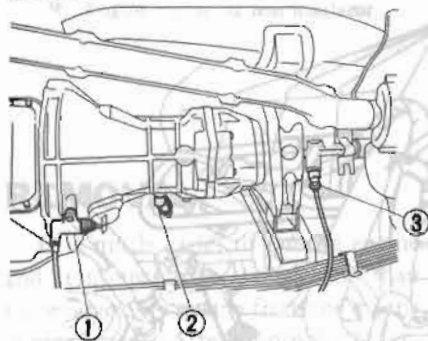
- 1 Accelerator torsion shaft
- 2 Brake booster vacuum hose
- 3 Air conditioner vacuum hose
- 4 A.S.C.D. vacuum hose
- 5 F.I.C.D. vacuum hose

ER472

Fig. ER-10 Removing Vacuum Hose, etc.

- Air flowmeter duct, etc.

12. Disconnect speedometer cable from rear extension housing and wire for back-up lamp switch.
13. Remove clutch operating cylinders.



- 1 Clutch operating cylinder
- 2 Back-up lamp switch
- 3 Speedometer cable

ER473

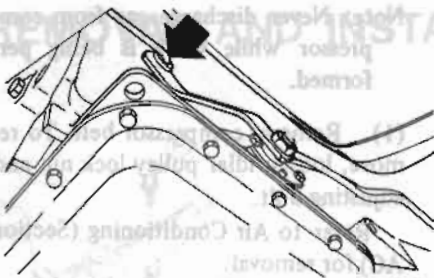
Fig. ER-11 Removing Operating Cylinder, etc.

On automatic transmission models:

Disconnect wire at connections of inhibitor switch and downshift solenoid at wire connector.

14. Remove control lever boot from center console.
15. Remove C-ring and control lever pin from transmission striking rod guide, and remove control lever. (Manual transmission only)

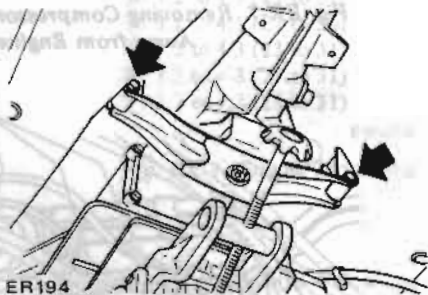
For car equipped with automatic transmission, disconnect range selector rod.



ER445

Fig. ER-12 Disconnecting Selector Rod

16. Remove exhaust front tube. Refer to Exhaust Systems (Section FE) for removal.
17. Remove heat shield plate. (If so equipped)
- Refer to Exhaust Systems (Section FE) for removal.
18. Remove propeller shaft. Refer to Propeller Shaft (Section PD) for removal.
19. Support transmission with jack.
20. Remove nuts securing rear engine mounting member to body.



ER194

Fig. ER-13 Removing Rear Engine Mounting Member

CAUTION:

In this operation, care should always be taken to prevent the unit from hitting any adjacent parts.

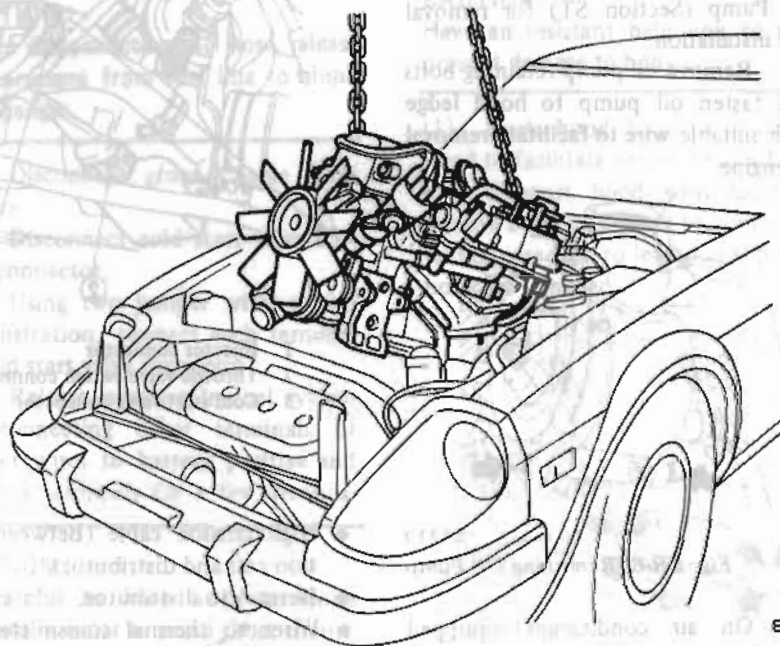
21. Connect suitable wires of hoist to engine slingers.

Note: For safety in subsequent steps, tension of wire or chain should be slackened against engine.

22. Remove nuts securing engine mounting front insulator to front suspension crossmember.
23. Raise engine with transmission, and remove it from car.

CAUTION:

- a. Before raising engine together with transmission, make sure that all hoses and wires connected thereto are disconnected or removed.
- b. When raising engine, be especially careful not to knock it against adjacent parts.



ER475

Fig. ER-14 Lifting Engine

INSTALLATION

Install in the reverse order of removal, observing the following:

Note: When installing, be sure to check that electrical harnesses are connected correctly.

1. When installing, first secure rear engine mounting member to body.
2. Refer to applicable section when installing and adjusting any parts.

- For installation of air conditioner compressor and belt adjustment. Refer to Air Conditioning (Section AC) for adjustment.
- For installation of power steering oil pump and belt adjustment. Refer to Power Steering (Section ST) for adjustment.

3. When installing exhaust front tube on exhaust manifold, be sure to use new gasket.
4. When installing hood following engine installation, be sure that it is properly centered and that hood lock operates securely. Refer to Hood (Section BF) for adjustment.
5. Add enough engine coolant.
6. On automatic transmission models, add the same amount of automatic transmission fluid as was drained.

ENGINE MOUNTING INSULATOR

FRONT INSULATOR

Removal

1. Disconnect battery ground cable.
2. Loosen front engine mounting insulator lower and upper nuts and bolts (on both sides).
3. Make sure that wire or chain used to suspend engine is positioned properly so that no load is applied to insulators, and remove bolts completely.
4. Lift up engine, and separate insulators from engine mounting brackets.

Inspection

If there is damage, deterioration or

separation of bounded surface, replace.

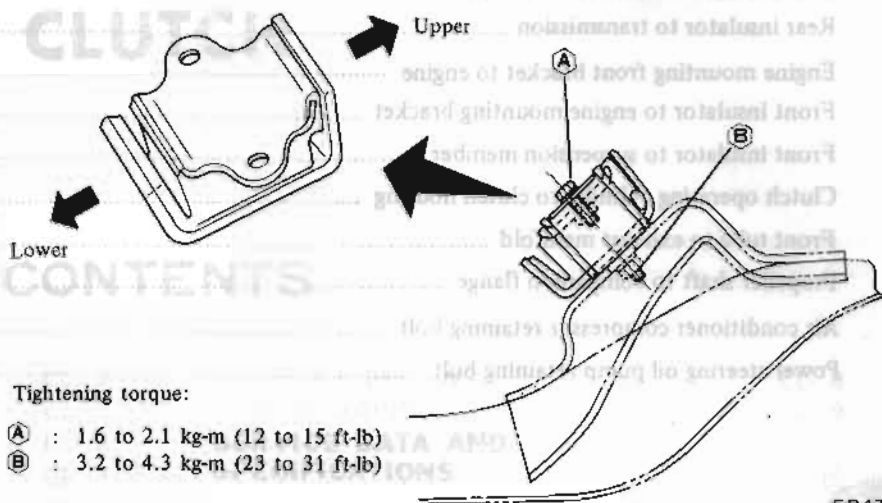
Installation

Install front insulators in reverse order of removal, noting the following:

1. Both the left and right front

insulators are used commonly. However, when installing them, pay attention to their upper and lower directions.

2. The shape of the right side bracket differs from that of the left side bracket. Tighten the bolts and nuts correctly and securely.



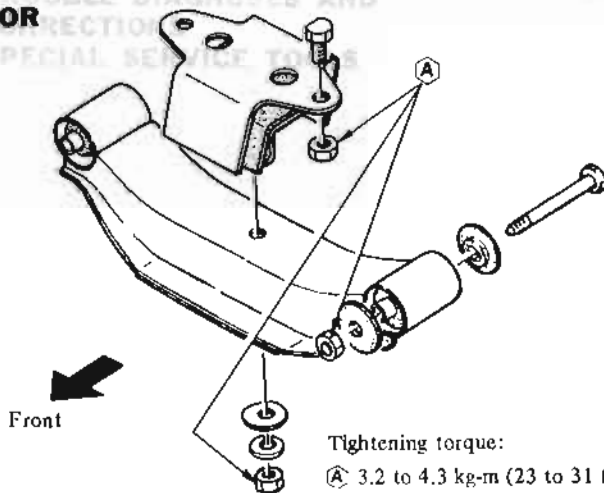
Tightening torque:

- Ⓐ : 1.6 to 2.1 kg-m (12 to 15 ft-lb)
- Ⓑ : 3.2 to 4.3 kg-m (23 to 31 ft-lb)

ER476

Fig. ER-15 Front Engine Mounting Insulator

REAR INSULATOR



Tightening torque:

- Ⓐ 3.2 to 4.3 kg-m (23 to 31 ft-lb)

ER366

Fig. ER-16 Rear Engine Mounting and Rear Insulator

Removal

1. Support transmission with jack.
2. Remove rear engine mounting member insulator bolts.
3. Remove bolts, and separate insulator from engine mounting member.

Inspection

If there is damage, deterioration or separation of bounded surface, replace.

Installation

Install rear engine mounting member and insulator in reverse sequence of removal, noting the following:

1. Tighten nuts and bolts correctly and securely.
2. Carefully arrange the front and rear directions of rear engine mounting member and insulator when installing.

SERVICE DATA AND SPECIFICATIONS

TIGHTENING TORQUE

| | kg-m (ft-lb) |
|---|-----------------------|
| Engine mounting rear member to body | 3.2 to 4.3 (23 to 31) |
| Rear insulator to engine mounting rear member | 3.2 to 4.3 (23 to 31) |
| Rear insulator to transmission | 3.2 to 4.3 (23 to 31) |
| Engine mounting front bracket to engine | 3.1 to 4.1 (22 to 30) |
| Front insulator to engine mounting bracket | 1.6 to 2.1 (12 to 15) |
| Front insulator to suspension member | 3.2 to 4.3 (23 to 31) |
| Clutch operating cylinder to clutch housing | 3.1 to 4.1 (22 to 30) |
| Front tube to exhaust manifold | 4.6 to 6.1 (33 to 44) |
| Propeller shaft to companion flange | 3.5 to 4.5 (25 to 33) |
| Air conditioner compressor retaining bolt | 4.5 to 5.5 (33 to 40) |
| Power steering oil pump retaining bolt | 1.9 to 2.6 (14 to 19) |

Fig. ER-18 Front Engine Mounting Insulator

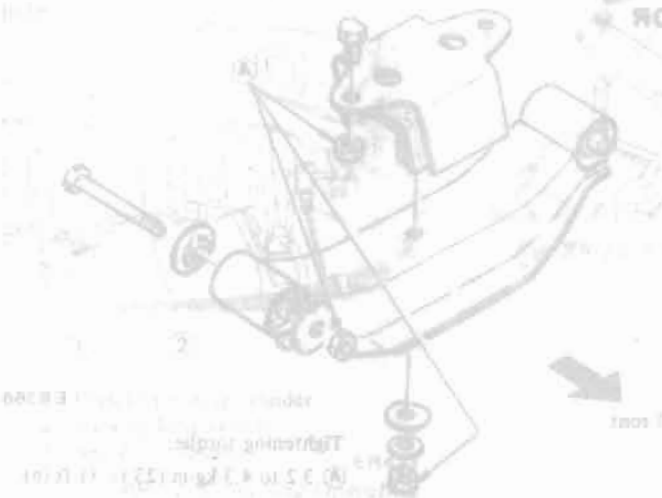
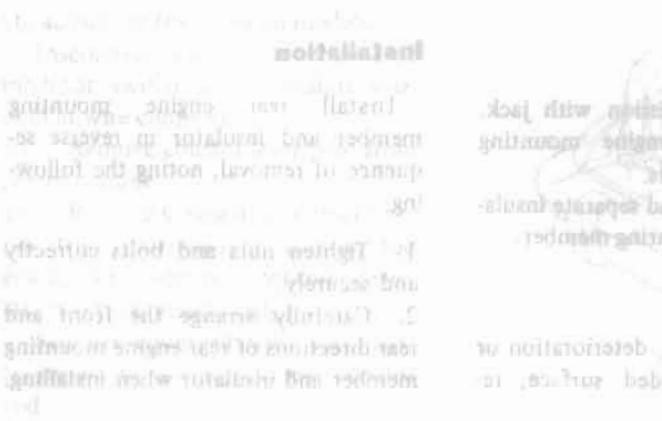


Fig. ER-19 Rear Engine Mounting and Rear Insulator



REAR INSULATOR

ENGINE MOUNTING INSULATOR

FRONT INSULATOR

Removal

1. Disconnect battery cables and drain.
2. Loosen front drain valve and insulator lower and upper nuts and bolts on both sides.
3. Make sure that wire or chain does not contact engine in repositioned position so that no load is applied to manifold and remove both completely.
4. Lift up engine and separate it from engine mounting plate.

Inspection

If there is damage, deterioration or separation of bonded surfaces, replace.