SERVICE MANUAL

DATSUN 280Z
MODEL S30 SERIES

NISSAN

NISSAN MOTOR CO., LTD.
TOKYO, JAPAN

SECTION ER

ENGINE REMOVAL & INSTALLATION

ER

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ENGINE REMOVAL AND INSTALLATION

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REMOVAL

It is much easier to remove engine and transmission as a single unit than to remove them separately. After removal, engine can be separated from transmission assembly.

But, take note of the following points. There are two types of exhaust systems—one for California models, with a catalytic converter as an emission device, and the other for non-California models without catalytic converter. In the California models the component parts of exhaust system become hotter than those of the non-California models. Therefore, you should not remove the engine until the exhaust system has completely cooled off.

Otherwise, you may burn yourself and/or fire may break out in fuel line.

1. Follow the below procedure to decrease pressure in fuel hose to zero. (This is the same operation as the removal of cold start valve described in Section EF.)
(1) Disconnect ground cable from battery.
(2) Disconnect ground lead wire (black) from fuel pump.
(3) Disconnect lead wire from S terminal of starter motor.
(4) Remove two screws securing cold start valve to intake manifold, and remove cold start valve.
(5) Connect ground cable to battery.
(6) Put cold start valve in a container of min. 20 cc (1.22 cu in) capacity. Turn ignition switch to START position, and release fuel line pressure. See Figure ER-1.

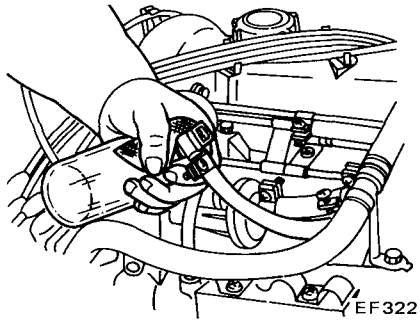


Fig. ER-1 Fuel injection from cold start valve

(7) To install cold start valve, reverse the removal procedure.

Notes:
a. Be sure to hoist engine and jack up transmission in a safe manner.
b. Fender covers should be used to prevent damaging car body.

2. Disconnect battery ground cable.
3. Remove hood as follows:
(1) Mark hood hinge locations on hood to facilitate proper reinstallation.
(2) Support hood by hand and remove bolts securing it to hood hinge, taking care not to let hood slip when bolts are removed.
(3) Remove hood from hood hinge with the help of an assistant. See Figure ER-2.

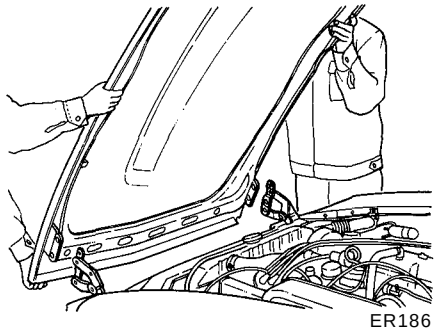
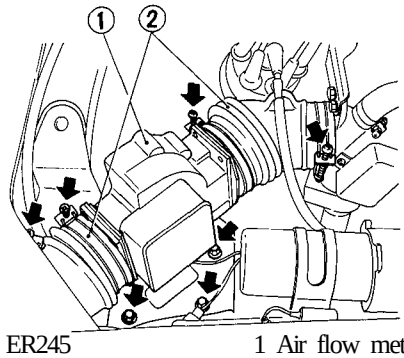


Fig. ER-2 Removing hood

4. Drain radiator coolant and engine oil.
5. Disconnect upper and lower hoses from radiator.
6. Remove air flow meter. See Figure ER-3.
7. Remove air duct clamps (rubber hose). See Figure ER-3.



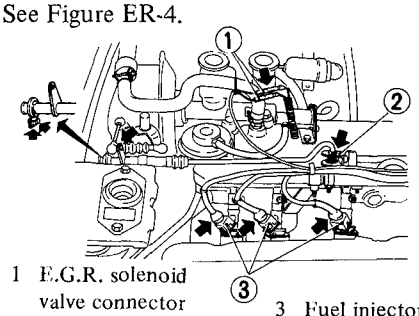
1 Air flow meter
2 Air duct

Fig. ER-3 Removing air flow meter

8. Remove air cleaner.
9. Disconnect hoses from canister and remove canister.
10. Remove radiator and shroud (if so equipped).

Notes:
On automatic transmission models:
a. Remove splash board.
b. Disconnect oil cooler hoses from oil cooler installed at lower end of radiator.
c. Disconnect vacuum hose.

11. Disconnect accelerator linkage. See Figure ER-4.

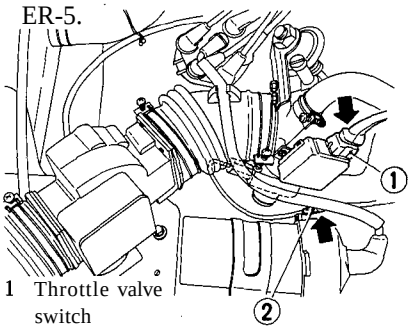


1 E.G.R. solenoid valve connector
2 Accelerator linkage
3 Fuel injector connector

Fig. ER-4 Disconnecting accelerator linkage

12. Disconnect the following cables, wires and hoses:

- Engine ground cable at engine connection end
- Wires to starter motor
- Wire for E.G.R. solenoid valve and electric fuel injector. See Figure ER-4.
- Wire to throttle valve switch and B.C.D.D. solenoid valve. See Figure ER-5.

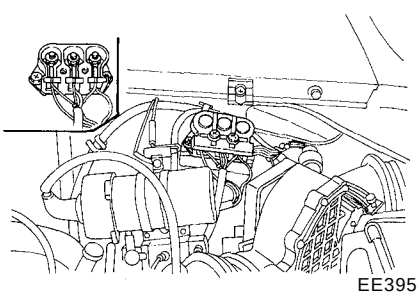


1 Throttle valve switch
2 B.C.D.D. connector

ER247

Fig. ER-5 Disconnecting wire for throttle valve switch and B.C.D.D. solenoid valve

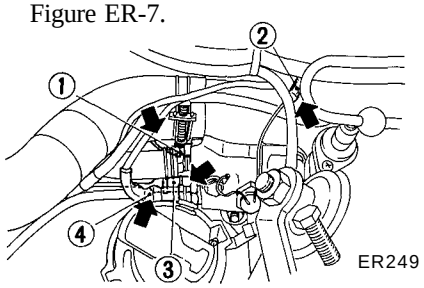
- High tension cable (between ignition coil and distributor)
- Wire to block terminal distributor harness. See Figure ER-6.



EE395

Fig. ER-6 Disconnecting wire for block terminal

- Wire to thermostat housing. See Figure ER-7.

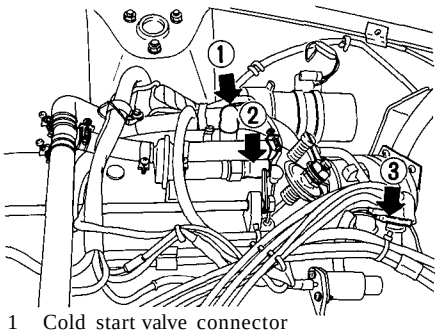


ER249

1 Temp gauge switch connector
2 Water temperature switch connector
3 Thermotime switch connector
4 Water temperature sensor connector

Fig. ER-7 Disconnecting wire for thermostat housing

- Wire for vacuum cutting solenoid (Manual transmission models), cold start valve and air regulator. See Figure ER-8.

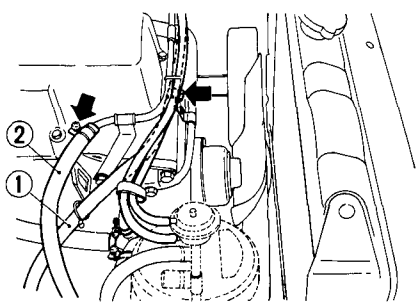


1 Cold start valve connector
2 Air regulator connector
3 Vacuum cutting solenoid valve connector

ER250

Fig. ER-8 Disconnecting wire for cold start valve and regulator

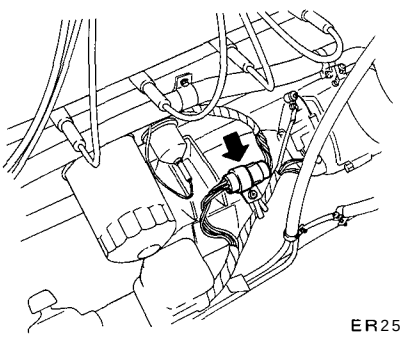
- Fuel return hose (J) and fuel charge hose (§). See Figure ER-9.



ER251

Fig. ER-9 Disconnecting fuel hoses

- Heater inlet and outlet hoses
- Vacuum hose to Master-Vac at intake manifold
- Wires to alternator
- Wires for oil pressure switch, back-up lamp switch, neutral switch and top detecting switch. See Figure **ER-10.**

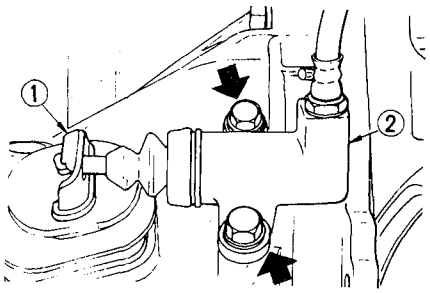


ER252

Fig. ER-10 Disconnecting connector

Note:
On automatic transmission models:
Disconnect wire at connections of inhibitor switch and downshift solenoid at wire connector.

13. Remove clutch operating cylinder (Manual transmission models). See Figure ER-11.



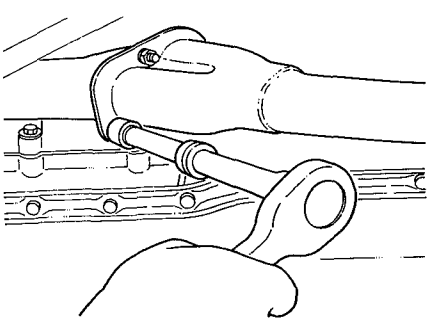
ER191

1 Withdrawal lever
2 Clutch operating cylinder

Tightening torque:
2.5 to 3.0 kg-m (18 to 22 ft-lb)

Fig. ER-11 Removing clutch operating cylinder

14. Disconnect speedometer cable from rear extension housing.
15. Remove center console. Refer to Section BF (Page BF-27) for removal. (Manual transmission only)
16. Remove C-ring and control lever pin from transmission striking rod guide, and remove control lever. (Manual transmission only)
(1) For car equipped with automatic transmission, disconnect selector range lever.
17. Disconnect exhaust front tube from exhaust manifold. See Figure ER-12.

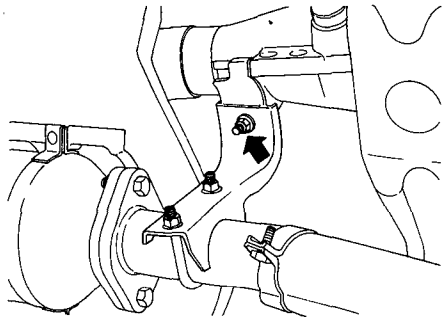


Tightening torque:
2.0 to 2.5 kg-m (14 to 18 ft-lb)

ER192

Fig. ER-12 Disconnecting exhaust front tube

18. Remove front tube bracket from rear extension housing. See Figure ER-13.

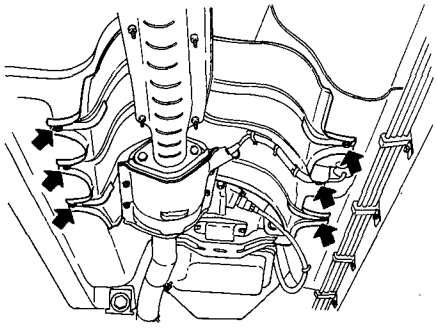


ER253

Fig. ER-13 Removing front tube bracket

Note: Hold front tube end up with a thread or wire to prevent tube from falling.

19. Remove bolts securing insulator and put it on exhaust tube. See Figure **ER-14.**

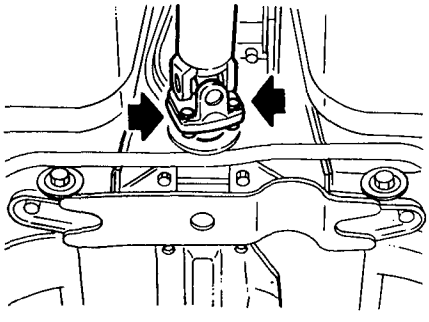


ER254

Fig. ER-14 Removing insulator

20. Remove propeller shaft.

Remove four bolts on the differential carrier side, withdraw propeller shaft, and seal end of rear extension housing to prevent oil leakage. See Figure ER-15.



Tightening torque:
ER193 2.5 to 3.2 kg-m (18 to 23 ft-lb)

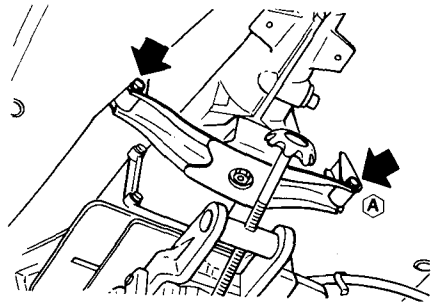
Fig. ER-15 Removing propeller shaft

Note: Put match marks on both shaft and companion flange so that shaft can be reinstalled in original position.

21. Support transmission with jack.
22. Remove bolts securing rear engine mounting member to body. See Figure ER-16.

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

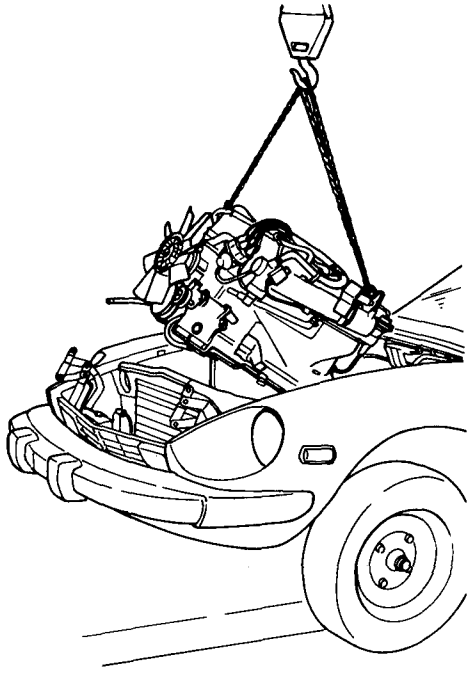
23. Connect suitable wire or chain to engine slingers and raise engine to take weight off front mounting insulators.
24. Remove bolts securing engine support to front mounting insulators.
25. Raise engine and transmission, and remove from car as a single unit. See Figure ER-17.



Tightening torque:
® 3.2 to 4.3 kg-m (23 to 31 ft-lb)

ER194

Fig. ER-16 Removing rear engine mounting member



ER255

Fig. ER-17 Removing engine

INSTALLATION

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

1. When installing, first secure rear engine mounting member to body.
2. Refer to applicable section when installing and adjusting any parts.
3. When installing hood following engine installation, be sure that it is properly centered and that hood lock operates securely. Refer to Section BF for Adjustment.

ENGINE MOUNTING INSULATORS

Three insulators are used to mount the engine and transmission; two located at left and right front ends of the cylinder block and one at the transmission rear extension housing.

Replace insulator if it shows signs of separation or deterioration.

Be sure to keep insulator free from oil or grease.

Removal

1. Suspend engine with wire or chain.
2. Loosen front engine mounting insulator upper nuts (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 nuts completely.
4. Lift up engine, and separate insulators from engine mounting brackets.

FRONT INSULATOR

Left and right front insulators are identical, and are interchangeable. See Figure ER-18.

Inspection

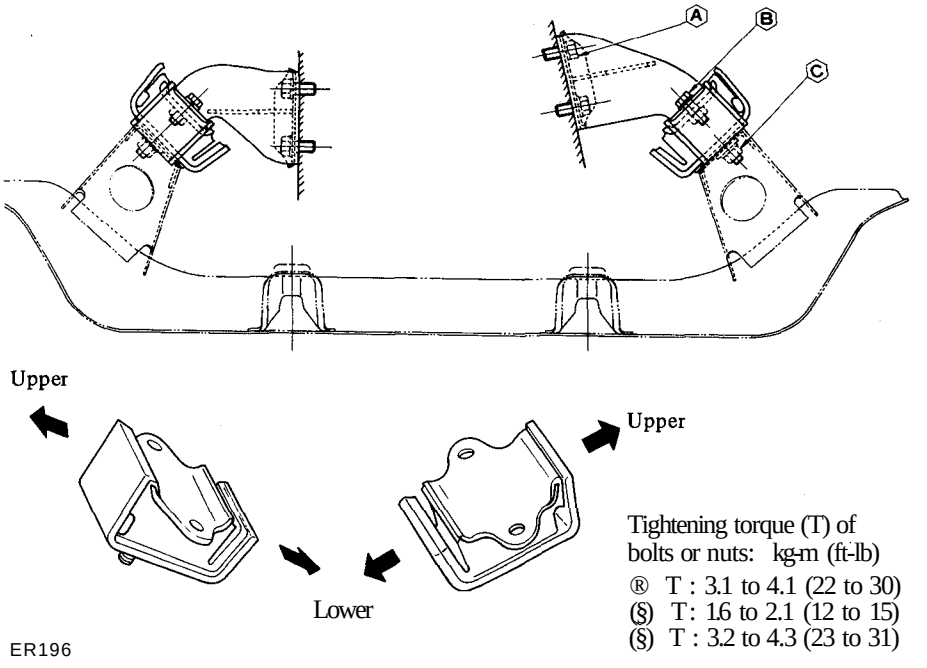
If there is damage, deterioration or separation of bounded surface, replace.

Installation

Install front insulators in reverse sequence 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. See Figure ER-18.

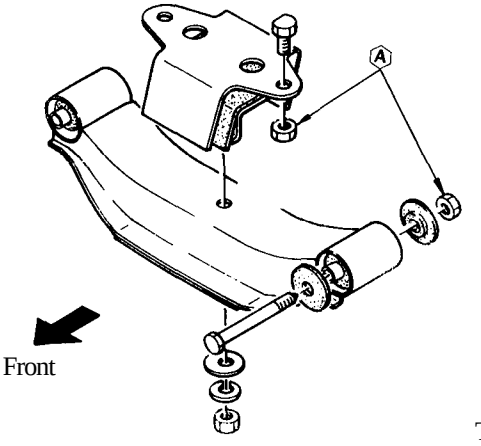
2. The shape of the right side bracket differs from that of the left side bracket. Tighten the bolts and nuts correctly and securely. See Figure ER-18.



Tightening torque (T) of bolts or nuts: kg-m (ft-lb)
® T : 3.1 to 4.1 (22 to 30)
(§) T : 1.6 to 2.1 (12 to 15)
(§) T : 3.2 to 4.3 (23 to 31)

Fig. ER-18 Sectional view of front engine mounting, and front insulator

REAR INSULATOR



Tightening troque of bolts or nuts:
® 3.2 to 4.3 kg-m (23 to 31 ft-lb)

Fig. ER-19 Rear engine mounting and rear insulator

Removal

1. Support transmission with a jack or suitable stand so that engine does not drop down.

2. Remove rear engine mounting member installation bolts.

3. Engine mounting member is provided with openings for removing and installing operations. Remove nuts and separate insulator from transmission.
4. 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. As for tightening torque, see Figure ER-19.
2. Carefully arrange the front and rear directions of rear engine mounting member and insulator when installing. See Figure ER-19.

SERVICE DATA AND SPECIFICATIONS

TIGHTENING TORQUE	kg-m (ft-lb)
Rear engine mounting to body	3.2 to 4.3 (23 to 31)
Rear insulator to rear engine mounting member	3.2 to 4.3 (23 to 31)
Rear insulator to transmission	3.2 to 4.3 (23 to 31)
Front engine mounting 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	2.5 to 3.0 (18 to 22)
Front tube to exhaust manifold	2.0 to 2.5 (14 to 18)
Propeller shaft to companion flange	2.5 to 3.2 (18 to 23)