SERVICE MANUAL

DATSUN 280Z
MODEL S30 SERIES



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.

WARNING:
a. Place wheel chocks in front of front wheels and in rear of rear wheel.
b. Be sure to hoist engine and jack up transmission in a safe manner.
c. 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 procedure below 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 cold start valve harness connector.
(3) Using two jumper wires shown in illustration, connect each terminal to battery positive and negative terminals.
(4) Release pressure in fuel system by connecting other terminals of jumper wires to cold start valve connector for two or three seconds.

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

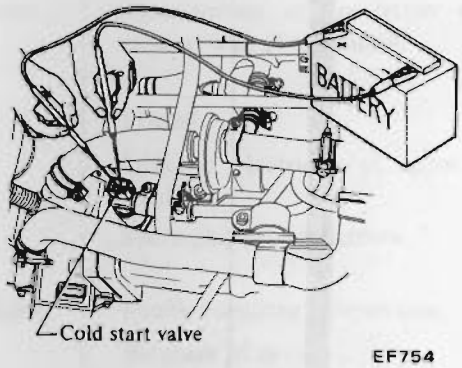


Fig. ER-1 Releasing pressure in fuel system

Note: Fender covers should be used to prevent damaging car body.

2. Disconnect battery ground cable.
3. 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 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.

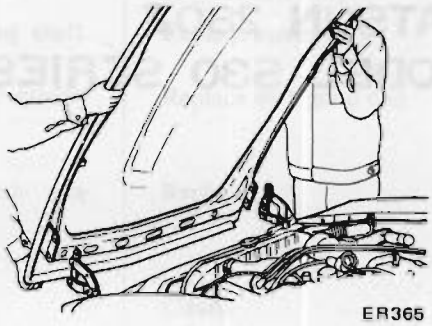
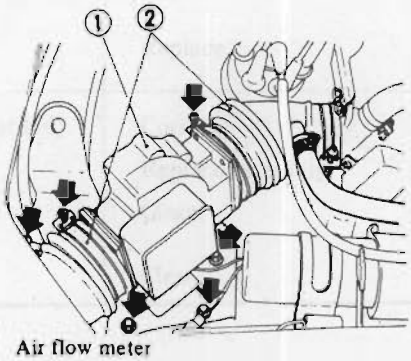


Fig. ER-2 Removing hood

4. Drain engine coolant.
5. Disconnect upper and lower hoses from radiator.

- On automatic transmission models:
  1) Remove splashboard.
  2) Disconnect oil cooler hoses from oil cooler installed at lower end of radiator.

6. Remove air duct clamps and remove air flow meter. See Figure ER-3.



1 Air flow meter
2 Air duct

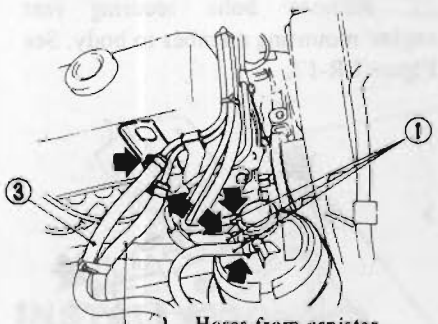
Fig. ER-3 Removing air flow meter

- 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 nut and adjusting bolt.
2) Remove compressor retaining bolts and move compressor toward fender to facilitate removal of engine.
3) Disconnect hoses to vacuum connector and fast idle actuator.

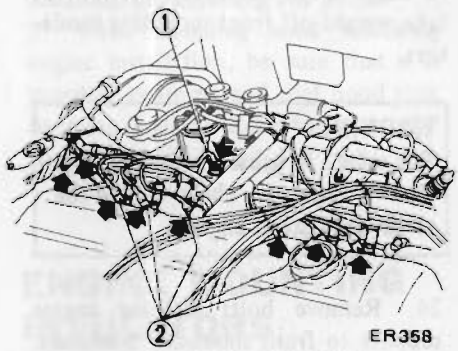
7. Remove air cleaner.
8. Disconnect hoses ① from canister and remove canister. See Figure ER-4.
9. Disconnect fuel return hose ② and fuel charge hose ③. See Figure ER-4.



1 Hoses from canister
2 Fuel return hose
3 Fuel charge hose
ER357

Fig. ER-4 Removing canister and disconnecting fuel hoses

10. Remove radiator and shroud (if so equipped).
11. Disconnect accelerator linkage and wire for electric fuel injector. See Figure ER-5.

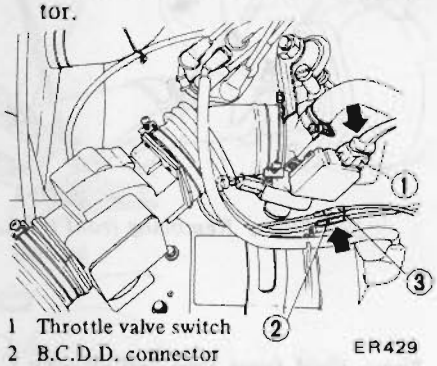


1 Accelerator linkage
2 Fuel injector connector
ER358

Fig. ER-5 Disconnecting accelerator linkage

12. Disconnect the following cables, connectors, wires and hoses:

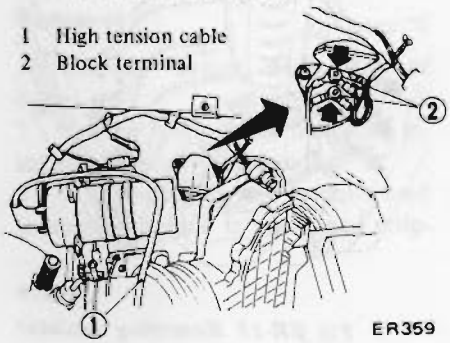
- Engine ground cable at engine connection end
- Wires to starter motor and alternator
- Wire to throttle valve switch, B.C.D.D. solenoid valve connector, and distributor condenser connector.



1 Throttle valve switch
2 B.C.D.D. connector
3 Distributor condenser connector
ER429

Fig. ER-6 Disconnecting wire for throttle valve switch and B.C.D.D. solenoid valve

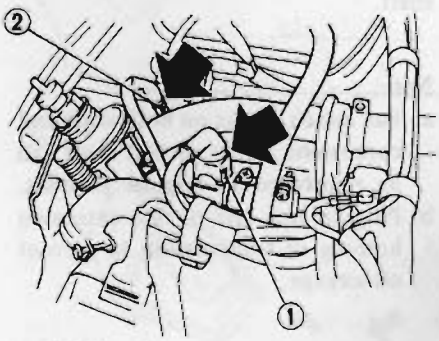
- High tension wire (between ignition coil and distributor). See Figure ER-7.
- Wire to block terminal distributor harness. See Figure ER-7.



1 High tension cable
2 Block terminal
ER359

Fig. ER-7 Disconnecting wire for block terminal

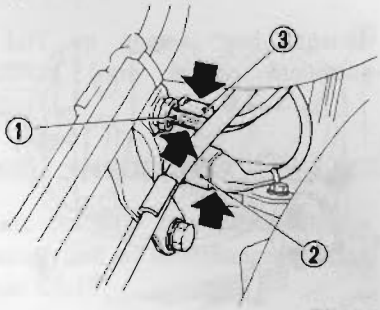
- Wire for cold start valve and air regulator. See Figure ER-8.



1 Cold start valve connector
2 Air regulator connector
ER360

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

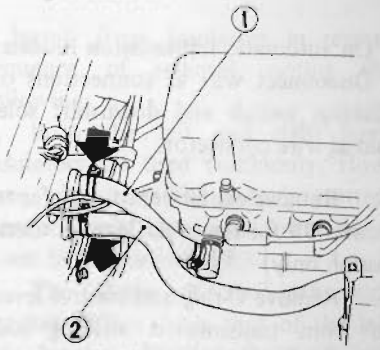
- Wire to thermostat housing. See Figure ER-9.



1 Thermal transmitter connector
2 Thermotime switch connector
3 Water temperature sensor connector
ER361

Fig. ER-9 Disconnecting wire for thermostat housing

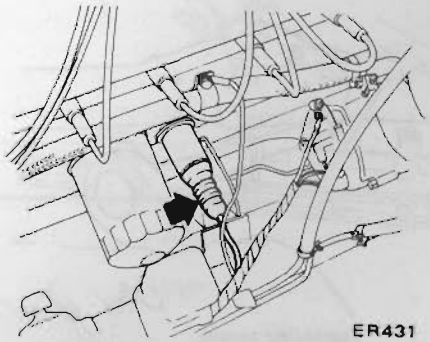
- Heater inlet and outlet hoses. See Figure ER-10.



1 Heater inlet hose
2 Heater outlet hose
ER430

Fig. ER-10 Disconnecting heater inlet and outlet hoses

- Vacuum hose to Master-Vac at intake manifold.
- Wires for oil pressure sending unit.

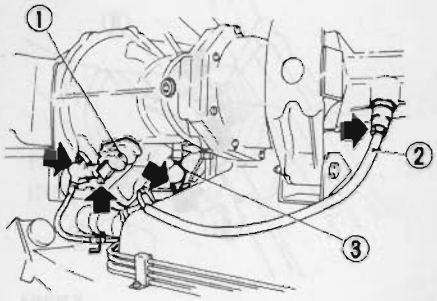


ER431

Fig. ER-11 Disconnecting wire for oil pressure sending nut

13. Remove clutch operating cylinder (Manual transmission models). See Figure ER-12.
14. Disconnect speedometer cable from rear extension housing and wire

for back-up lamp switch. See Figure ER-12.



ER364

1 Clutch operating cylinder
Tightening torque:
2.5 to 3.0 kg-m (18 to 22 ft-lb)
2 Speedometer cable
3 Wire for back-up lamp switch

Fig. ER-12 Removing clutch operating cylinder

- On automatic transmission models:

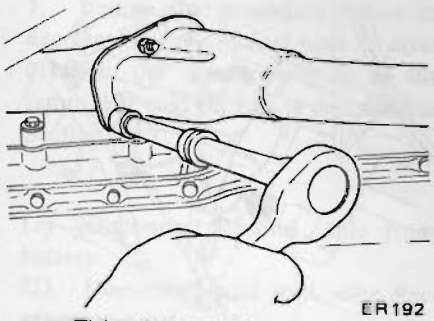
Disconnect wire at connections of inhibitor switch and downshift solenoid at wire connector.

15. Remove center console. Refer to Section BF 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)

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

17. Disconnect exhaust front tube from exhaust manifold. See Figure ER-13.

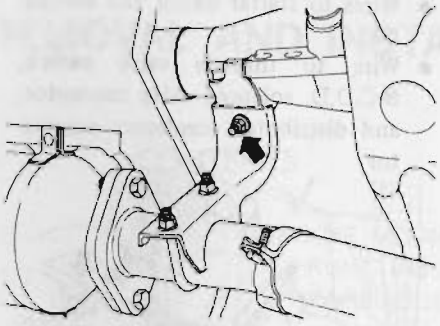


ER192

Tightening torque:
4.6 to 6.1 kg-m (33 to 44 ft-lb)

Fig. ER-13 Disconnecting exhaust front tube

18. Remove front tube bracket from rear extension housing. See Figure ER-14.

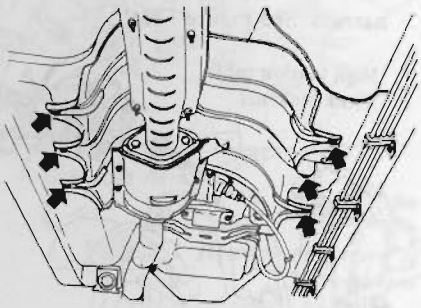


ER253

Fig. ER-14 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-15.



ER276

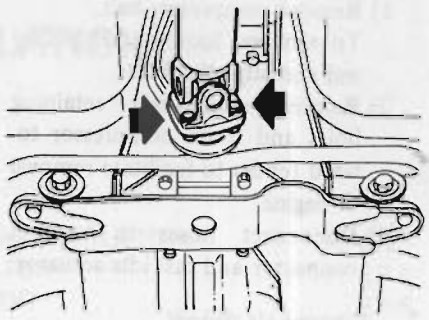
Fig. ER-15 Removing insulator

20. Remove propeller shaft.

Remove four bolts on the differential carrier side and withdraw propeller shaft.

Note:

a. **Put match marks on both shaft and companion flange so that shaft can be reinstalled in original position.**
b. **Plug up rear end of rear extension housing of transmission to prevent oil leakage.**



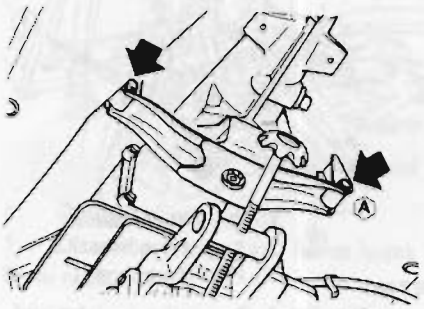
ER193

Tightening torque:
3.5 to 4.5 kg-m (25 to 33 ft-lb)

Fig. ER-16 Removing propeller shaft

21. Support transmission with jack.

22. Remove bolts securing rear engine mounting member to body. See Figure ER-17.



ER194

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

Fig. ER-17 Removing rear engine mounting member

23. Connect suitable wire or chain to engie slingers and raise engine to take weight off front mounting insulators.

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

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-18.

CAUTION:
When raising engine, be especially careful not to knock it against adjacent parts.

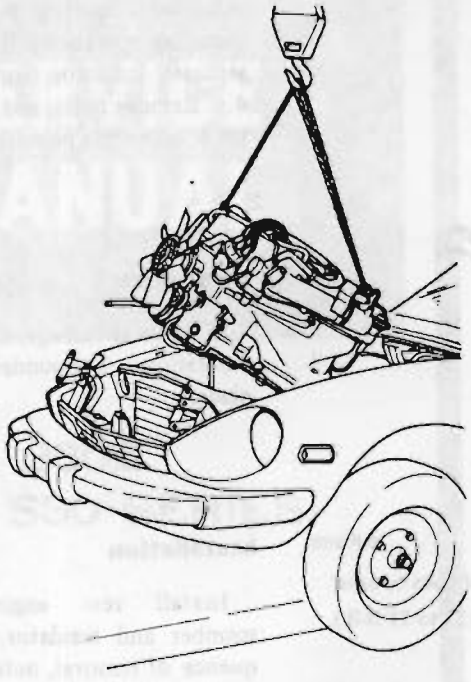


Fig. ER-18 Removing engine

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.
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-19.

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-19.
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-19.

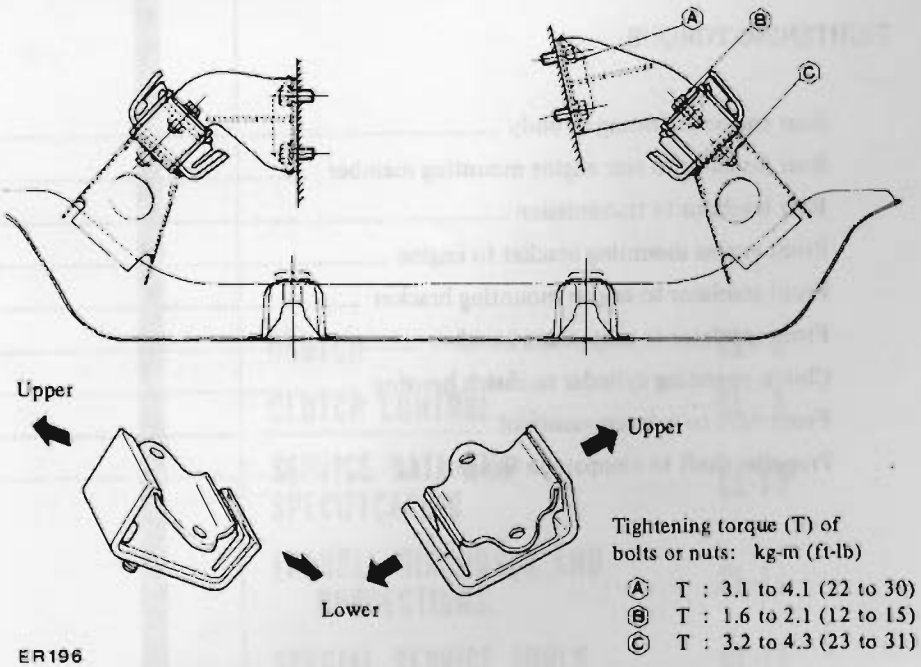
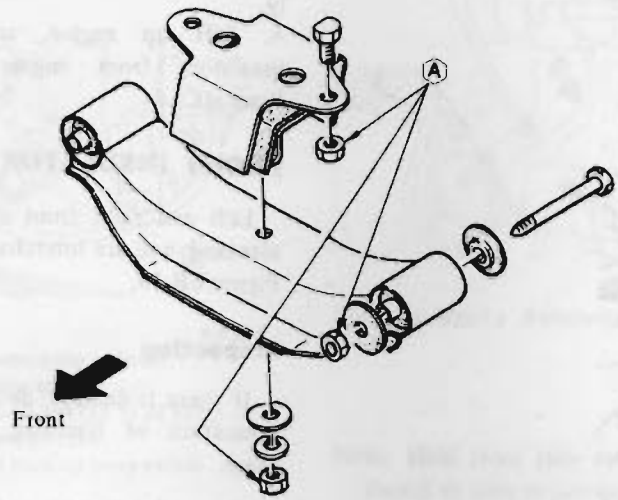


Fig. ER-19 Sectional view of front engine mounting, and front insulator

REAR INSULATOR



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

Fig. ER-20 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-20.
2. Carefully arrange the front and rear directions of rear engine mounting member and insulator when installing. See Figure ER-20.

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	4.6 to 6.1 (33 to 44)
Propeller shaft to companion flange	3.5 to 4.5 (25 to 33)