## MAINTENANCE OPERATIONS ENGINE

# Cold Engine Operations

- **1. REPLACE TIMING BELT** 
  - (a) Remove the timing belt.

(See pages EM-41 to EM-45)

(b) Install the timing belt.

(See pages EM-49 to EM-53)

## 2. INSPECT DRIVE BELT

(a) Visually check the belt for excessive wear, frayed cords etc.

If necessary, replace the drive belt.

HINT: Cracks on the rib side of a belt are considered acceptable. If the belt has chunks missing from the ribs, it should be replaced.

- (b) Using a belt tension gauge, check the drive belt tension.
- Belt tension gauge:

Nippondenso BTG-20 (95506-00020) or Borroughs No. BT-33-73F

Drive belt tension:

Alternator Used belt 115  $\pm$  20 lb

New belt 175  $\pm$  5 lb

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PS and/or A/C Used belt 90 \pm 20 lb New belt 165 \pm 25 lb
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If necessary, adjust the drive belt tension. HINT:

- "New belt" refers to a belt which has been used less than 5 minutes on a running engine.
- "Used belt" refers to a belt which has been used on a running engine for 5 minutes or more.
- After replacing the drive belt, check that it fits properly in the ribbed grooves, especially in the places difficult to see.
- After installing a new belt, run the engine for about 5 minutes and then recheck the tension.

## 3. REPLACE SPARK PLUGS

- (a) Remove the plug cord cover.
- (b) Disconnect the spark plug cords at the boot. DO NOT pull on the cords.











(c) Using a plug wrench (16 mm), remove the spark plugs.



(d) Check the gap on the new plugs.
Gap: 0.8 mm (0.031 in.)
Recommended spark plugs:
ND PK20R8
NGK BKR6EP8

HINT: If adjusting the gap of a new plug, bend only the base of the ground electrode. Do not touch the tip. Never attempt to adjust the gap on a used plug.

#### 4. INSPECT AIR FILTER (a) Visually check that

- (a) Visually check that the air cleaner element is not excessively dirty, damaged or oily.
- (b) Clean the element with compressed air.First blow from the back side thoroughly. Then blow off the front side of the element.

## 5. REPLACE AIR FILTER

Replace 'the air cleaner element with a new one.



Back

Front



## 6. REPLACE ENGINE OIL AND OIL FILTER

(See page LU-7)

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Oil grade: API grade SG

Engine oil capacity (Drain and refill with oil filter change): 3.7 liters (3.9 US qts, 3.3 lmp. qts)

## 7. REPLACE ENGINE COOLANT

## (See page CO-5)

- (a) Drain the coolant from the radiator and engine drain cocks. (Engine drain cock is on the left next to the oil filter.)
- (b) Close the drain cocks.
- (c) Fill the system with coolant.

Coolant capacity (w/ Heater):

6.0 liters (6.3 US qts, 5.3 Imp. qts)

Use a good brand of ethylene–glycol type coolant, mixed according to the manufacturer's instructions.

Using coolant which includes more than 50% ethyleneglycol (but not more than 70%) is recommended.



#### 8. INSPECT CHARCOAL CANISTER

- (a) Disconnect the hoses from the charcoal canister located below the air intake chamber. Label the hoses for correct reinstallation.
- (b) Plug pipe A with your finger and blow compressed air (3 kg/cm<sup>2</sup>, 43 psi or 294 kPa) through pipe B (fuel tank side).
- Check that air comes out of the bottom pipe C without resistance.
- Check that no activated charcoal comes out.

If necessary, replace the charcoal canister.

#### NOTICE: Do not attempt to wash the charcoal.

(c) Connect the hoses to the charcoal canister.



## 9. REPLACE GASKET IN FUEL TANK CAP

- (a) Remove the old gasket (O-ring) from the fuel tank cap. Do not damage the cap.
- (b) Install a new gasket by hand.
- (c) Inspect the cap for damage or cracks.
- (d) Install the cap and check the torque limiter.



## **10. INSPECT FUEL LINES AND CONNECTIONS**

Visually inspect the fuel lines for cracks, leakage, loose connections, deformation or tank band looseness.

#### **11. INSPECT EXHAUST PIPE AND MOUNTINGS**

Visually inspect the pipes, hangers, and connections for severe corrosion, leaks or damage.

#### **12. ADJUST VALVE CLEARANCE**

HINT: Check and adjust the valve clearance while the engine is cold.

- (a) Remove the cylinder head covers.
- (b) Measure and adjust valve clearance. (See page EM-22)

Valve clearance (Cold):

Intake 0.15 - 0.25 mm (0.006 - 0.010 in.)

- Exhaust 0.20 0.30 mm (0.008 0.012 in.)
- (c) Reinstall the cylinder head covers.

## **Hot Engine Operation**

#### 13. ADJUST IDLE SPEED

- (a) Preparation
- Air cleaner installed
- All pipes and hoses of air intake system connected
- All vacuum lines connected (i.e., EVAP, EGR systems, etc.)
- EFI system wiring connectors fully plugged
- Engine at normal operating temperature
- Accessories switched OFF
- Transmission in "N" range .
- (b) Connect a tachometer to the engine.

Connect the tachometer positive (+) terminal to the terminal IG (–) of the check connector.

#### NOTICE:

- NEVER allow the tachometer terminal to touch ground as it could result in damage to the igniter and/or ignition coil.
- As some tachometers are not compatible with this ignition system, we recommend that you confirm the compatibility of your unit before use.
- (c) Race the engine at 2,500 rpm for about 2 minutes.
- (d) Set the idle speed by turning the IDLE SPEED ADJUST-ING SCREW.

#### Idle speed (w/ Cooling fan OFF): 800 rpm

(e) Remove the tachometer.









# BRAKES

## 14. INSPECT BRAKE LINE PIPES AND HOSES

HINT: Inspect them in a well–lighted area. Inspect the entire circumference and length of the brake hoses using a mirror as required. Turn the front wheels fully right or left before inspecting the front brake.

(a) Check all brake lines and hoses for:

- DamageWear
- Corrosion
- Deformation
- Bends
- Cracks
- Twists
- (b) Check all clamps for tightness and connections for leakage.
- (c) Check that the hoses and lines are clear of sharp edges, moving parts and the exhaust system.
- (d) Check that the lines installed in grommets pass through the center of the grommets.

# 15. INSPECT FRONT AND REAR BRAKE PADS AND DISCS (Front: See page BR–20, Rear: See page BR–34)

(a) Check the thickness of the disc brake pads and check for irregular wear.

Minimum pad thickness: 1.0 mm (0.039 in.)



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HINT: If a squealing or scraping noise occurs from the front or rear brakes during driving, check the pad wear indicator. If there are traces of the indicator contacting the disc rotor, the disc pad should be replaced.



(b) Check the disc for wear or runout.
Minimum disc thickness:
Front 21.0 mm (0.827 in.)
Rear 8.0 mm (0.315 in.)
Maximum disc runout:
Front 0.09 mm (0.0035 in.)
Rear 0.10 mm (0.0039 in.)



## CHASSIS 16. INSPECT STEERING LINKAGE

(a) Check the steering wheel freeplay.

Maximum steering wheel freeplay: 30 mm (1.18 in.) With the vehicle stopped and pointed straight ahead, rock the steering wheel gently back and forth with light finger pressure.



(b) Check the steering linkage for looseness and damage. Check that:

- Tie rod ends do not have excessive play.
- Dust seals and boots are not damaged.
- Boot clamps are not loose.

#### **17. INSPECT STEERING GEAR HOUSING OIL**

Check the steering gear housing for oil leakage.



## **18. INSPECT DRIVE SHAFT BOOTS**

Inspect the drive shaft boots for clamp looseness, grease leakage or damage.



#### **19. INSPECT BALL JOINTS AND DUST COVERS**

(a) Inspect the ball joints for excessive looseness. (See page SA-32)

#### Maximum ball joint vertical play: 0 mm (0 in.)

If excessive play is found, replace the ball joints. (b) Inspect the dust cover for damage.



## 20. CHECK TRANSAXLE AND DIFFERENTIAL OIL

Visually check the transaxle and differential for oil leakage. If leakage is found, check for the cause and repair.

- 21. REPLACE MANUAL TRANSAXLE (TRANSMISSION AND DIFFERENTIAL) OIL
  - (a) Remove the LH engine under cover.
  - (b) Remove the drain plug and drain the oil.
  - (c) Reinstall the drain plug securely.
  - (d) Add new oil until it begins to run out of the filler hole.
  - Transaxle oil (M/T and differential):
  - Oil grade API GL-4 or GL-5
  - Viscosity SAE 75W–90
  - Capacity 2.6 liters (2.7 US qts, 2.3 Imp. qts)

22. TIGHTEN BOLTS AND NUTS ON CHASSIS AND BODY

- Tighten the following parts:
- Front seat mounting bolts
  - Torque: 375 kg–cm (27 ft–lb, 37 N–m)

- Engine mounting center member-to-body mounting bolts. Torque: 620 kg-cm (45 ft-lb, 61 N-m)
- Front suspension crossmember-to-body mounting bolt. Torque: 2,100 kg-cm (152 ft-lb, 206 N-m)

Rear Suspension member-to-body mounting bolt.
 Torque: 760 kg-cm (55 ft-lb, 75 N-m)



#### **23. FINAL INSPECTION**

- (a) Check the operation of the body parts:
- Hood Auxiliary catch operates properly Hood locks securely when closed
- Front and rear doors
   Door locks operate properly
   Door closes properly
- Luggage compartment door
   Door lock operates properly
  - Seats Seat adjusts easily and locks securely in any position Front seat back locks securely in any position Folding-down rear seat backs lock securely
- (b) Road test

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- Check the engine and chassis for abnormal noise.
- Check that the vehicle does not wander or pull to one side.
- Check that the brakes work properly and do not drag. (c) Be sure to deliver a clean car and especially check:
- Steering wheel
- Shift lever knob
- All switch knobs
- Door handles
- Seats