MAINTENANCE

M

GENERAL NOTES:

- Every service item in the periodic maintenance list must be performed.
- Failure to do even one item can cause the engine to run poorly and increase exhaust emissions.

MAINTENANCE SCHEDULE

Maintenance operations: A = Check and/or adjust if necessary;
R = Replace, change or lubricate;
I = Inspect and correct or replace if necessary

NORMAL CONDITION SCHEDULE

System	Service interval (Odometer reading or months, whichever comes first) / Maintenance items	Maintenance services beyond 60,000 miles (96,000 km) should be performed at the same intervals shown in each maintenance schedule.						See page (item No.)
		Miles x 1,000	10	20	30	40	50	60	
		Km x 1,000	16	32	48	64	80	96	
		Months	12	24	36	48	60	72	
ENGINE	Drive belts(1)				I			I	MA-4 (item 2)
	Engine oil and oil filter*		R	R	R	R	R	R	MA-5 (item 6)
	Engine coolant(2)							R	MA-5 (item 7)
	Exhaust pipes and mountings				I			I	MA-6 (item 11)
FUEL	Air filter*				R			R	MA-5 (item 4)
	Fuel line and connections				I			I	MA-6 (item 10)
	Fuel filler cap gasket							R	MA-6 (item 9)
IGNITION	Spark plugs (Platinum tipped)							R	MA-5 (item 3)
EVAP	Charcoal canister							I	MA-6 (item 8)
BRAKES	Brake lining and drums			I		I		I	MA-8 (item 14)
	Brake pads and discs (Front and rear)			I		I		I	MA-7 (item 13)
	Brake line pipes and hoses			I		I		I	MA-7 (item 12)
CHASSIS	Steering linkage			I		I		I	MA-8 (item 15)
	Ball joints and dust covers			I		I		I	MA-9 (item 17)
	Automatic transmission, manual transmission, differential (ex. LSD) and steering gear housing oil(3)			I		I		I	MA-9 (item 18) MA-8 (item 16)
	Limited slip differential (LSD) oil (4)			I		R		I	MA-9 (item 19)
	Front and rear (IRS only) wheel bearings grease (4)					R			MA-10 (item 21)
	Bolts and nuts on chassis and body			I		I		I	MA-11 (item 22)

Maintenance services indicated by a star (*) is required under the terms of the Emission Control Systems Warranty. S
Owner's Guide for complete warranty information.

NOTE:

(1) After 60,000 miles (96,000 km) or 72 months, inspect every 10,000 miles (16,000 km) or 12 months.

(2) After 60,000 miles (96,000 km) or 72 months, replace every 30,000 miles (48,000 km) or 36 months.

(3) Inspect the steering gear housing for oil leakage only.

(4) Change every 40,000 miles (64,000 km) or 48 months.

Follow the severe condition schedule if vehicle is operated mainly under one or more of the following severe conditions:

- Towing a trailer, using a camper or car top carrier.
- Operating on dusty, rough, muddy or salt spread roads.
- Repeat short trips less than 5 miles (8 km) and outside temperatures remain below freezing.
- Extensive idling such as police, taxi or door-to-door delivery use.

SEVERE CONDITION SCHEDULE

System	Service interval (Odometer reading or months, whichever comes first) / Maintenance items	Maintenance services beyond 60,000 miles (96,000 km) should be performed at the same intervals shown in each maintenance schedule.												See page (item No.)
	Miles x 1,000	5	10	15	20	25	30	35	40	45	50	55	60	
	Km x 1,000	8	16	24	32	40	48	56	64	72	80	88	96	
	Months	6	12	18	24	30	36	42	48	54	60	66	72	
Engine	Timing belt	(1) R												MA-4 (item 1)
	Drive belts[2]						I						I	MA-4 (item 2)
	Engine oil and oil filter*	R	R	R	R	R	R	R	R	R	R	R	R	MA-5 (item 6)
	Engine coolant[3]												R	MA-5 (item 7)
	Exhaust pipes and mountings			I			I			I			I	MA-6 (item 11)
FUEL	Air filter*[4]	I	I	I	I	I	R	I	I	I	I	I	R	MA-5 (item 4 or 5)
	Fuel line and connections						I						I	MA-6 (item 10)
	Fuel filler cap gasket												R	MA-6 (item 9)
IGNITION	Spark plugs (Platinum tipped)												R	MA-5 (item 3)
EVAP	Charcoal canister												I	MA-6 (item 8)
BRAKES	Brake linings and drums		I		I		I		I		I		I	MA-8 (item 14)
	Brake pads and discs (Front and rear)		I		I		I		I		I		I	MA-7 (item 13)
	Brake line pipes and hoses				I				I				I	MA-7 (item 12)
CHASSIS	Steering linkage		I		I		I		I		I		I	MA-8 (item 15)
	Ball joints and dust covers		I		I		I		I		I		I	MA-9 (item 17)
	Automatic transmission, manual transmission, differential and steering gear housing oil[5]				R				R				R	MA-9 (item 19) MA-10 (item 20) MA-8 (item 16)
	Front and rear (IRS only) wheel bearings grease[6]								R					MA-10 (item 21)
	Bolts and nuts on chassis and body[7]		I		I		I		I		I		I	MA-11 (item 22)

Maintenance services indicated by a star (*) is required under the terms of the Emission Control Systems Warranty. See Owner's Guide for complete warranty information.

NOTE:

(1) For the vehicles frequently idled for extensive periods and/or driven for long distance at low speeds such as taxi, police and door-to-door delivery, it is recommended to change at 60,000 miles (96,000 km).
(2) After 60,000 miles (96,000 km) or 72 months, inspect every 10,000 miles (16,000 km) or 12 months.
(3) After 60,000 miles (96,000 km) or 72 months, replace every 30,000 miles (48,000 km) or 36 months.
(4) Applicable when operating mainly on dusty roads. If not, follow the normal condition schedule.
(5) Inspect the steering gear housing for oil leakage only.
(6) Change every 40,000 miles (64,000 km) or 48 months.
(7) Applicable when operating mainly on rough and/or muddy roads. If not, follow the normal condition schedule.

MAINTENANCE OPERATIONS

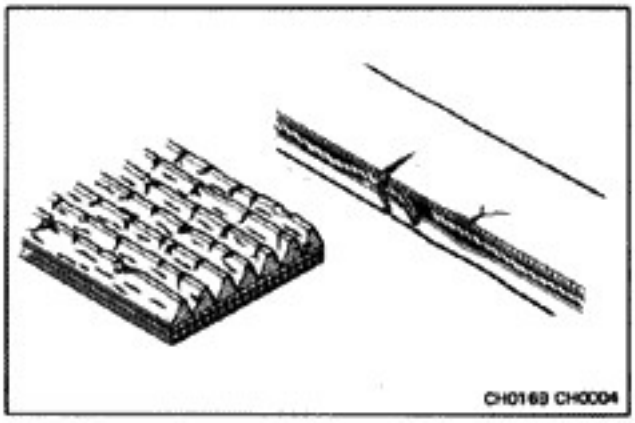
ENGINE

Cold Engine Operations

1. **REPLACE TIMING BELT**

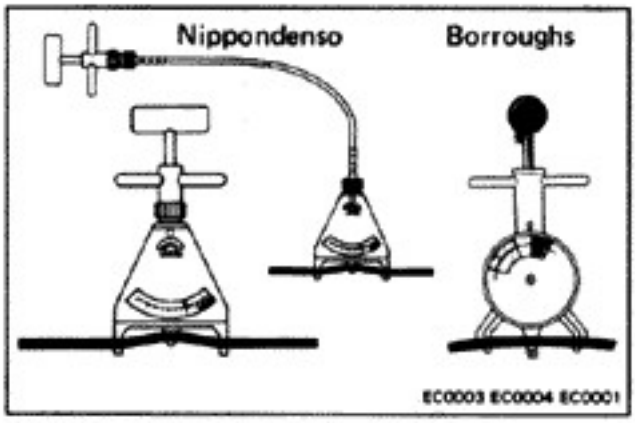
   (a) Remove the timing belt.
   (See pages EM-11 to 13)

   (b) Install the timing belt.
   (See pages EM-15 to 17)



2. **INSPECT V-RIBBED TYPE DRIVE BELT (ALTERNATOR) AND CONVENTIONAL TYPE DRIVE BELTS (PS PUMP AND A/C COMPRESSOR)**

   (a) Visually check the belt for separation of the adhesiv rubber above and below the core, core separatio from the belt side, severed core, separation of the ri from the adhesive rubber, cracking or separation o the ribs, torn or worn ribs or cracks in the inne ridges of the ribs. Conventional type only: Chec that the belt does not touch the bottom of the pulle groove.
   If necessary, replace the drive belt.



   (b) Using a belt tension gauge, check the drive bel tension.

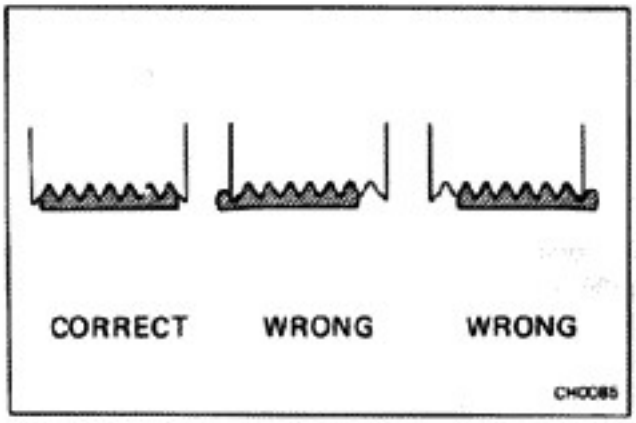
Belt tension gauge:
Nippondenso BTG-20 (95506-00020) or
Borroughs No. BT-33-73F

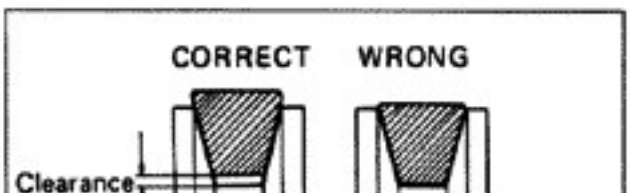
Drive belt tension:

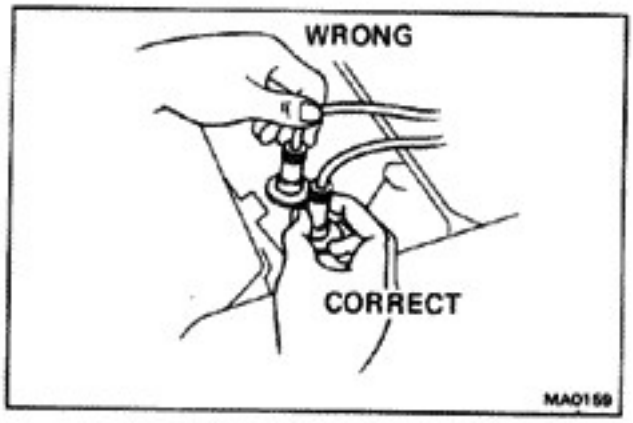
V-ribbed type	**Used belt**	**135 ± 20 lb**
	New belt	**170 ± 10 lb**
Conventional type	**Used belt**	**80 ± 20 lb**
	New belt	**125 ± 25 lb**

If necessary, adjust the drive belt tension.

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



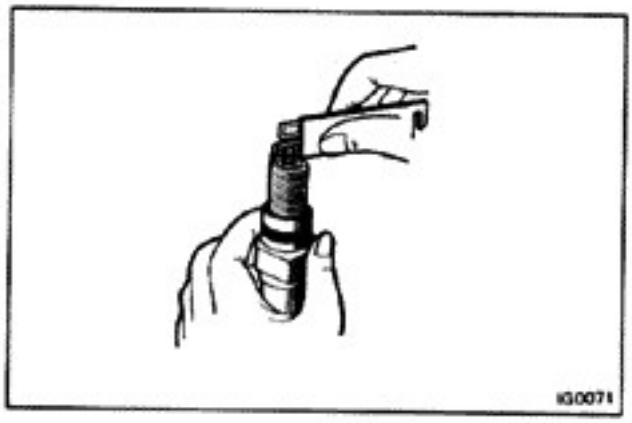




3. REPLACE SPARK PLUGS (PLATINUM TIPPED)

(a) Disconnect the spark plug wires at the boot. DO NOT pull on the wires.

(b) Remove the spark plugs.



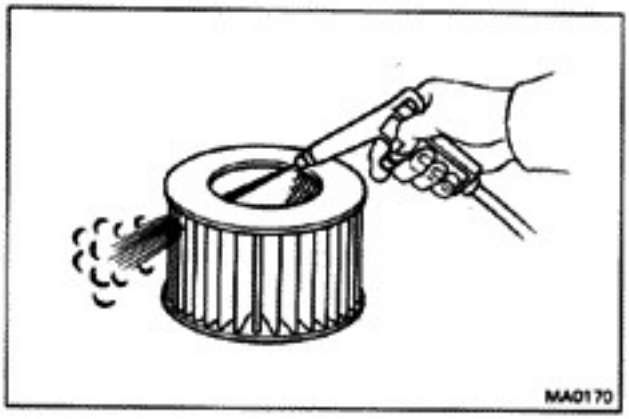
(c) Check the gap on the new plugs.

Gap: 1.1 mm (0.043 in.)

Recommended spark plugs:

ND	P16R
NGK	BPR5EP11

NOTE: 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 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.

6. REPLACE ENGINE OIL AND OIL FILTER

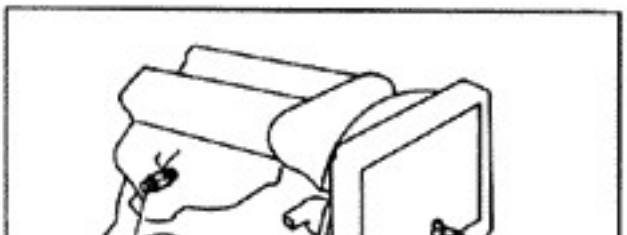
(See page LU-3)

Engine oil grade:

API grade SF or SF/CC, multigrade viscosity and fuel-efficient oil

Engine oil capacity (Drain and refill with oil filter change):

5.1 liters (5.4 US qts, 4.5 Imp. qts)

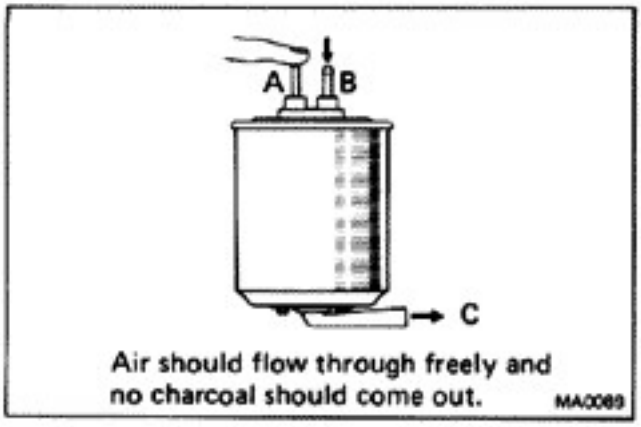


7. REPLACE ENGINE COOLANT

(a) Drain the coolant from the radiator and engine drain cocks. (Engine drain is at right rear of engine block.)

(b) Close the drain cocks.

(c) Fill system with coolant.



Air should flow through freely and no charcoal should come out. MA0069

8. INSPECT CHARCOAL CANISTER

(a) Disconnect the hoses to the charcoal canister locate near the rear exhaust manifold. Label the hoses fo correct installation.

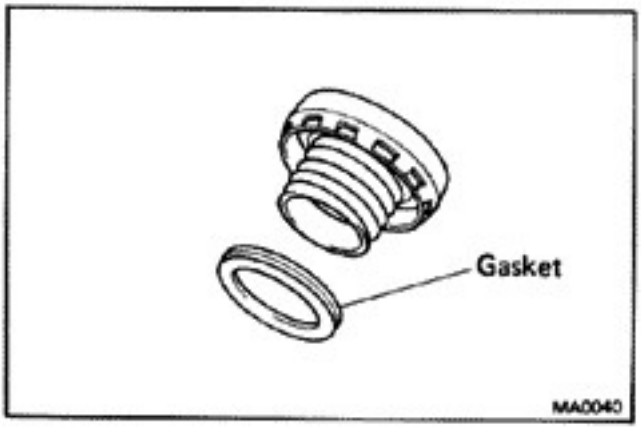
(b) Plug pipe A with your finger and blow compresse air (3 kg/cm², 43 psi or 294 kPa) through pipe B (fu tank side).

- Check that air comes out of the bottom pipe without resistance.
- Check that no activated charcoal comes out.

If necessary, replace the charcoal canister.

NOTE: Do not attempt to wash the charcoal.

(c) Connect the hoses to the charcoal canister.



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9. REPLACE GASKET IN FUEL FILLER CAP

(a) Remove the old gasket (O-ring) from the fuel fille cap. Do not damage the cap.

(b) Install the new gasket by hand.

(c) Inspect the cap for damage or cracks.

(d) Install the cap and check the torque limiter.

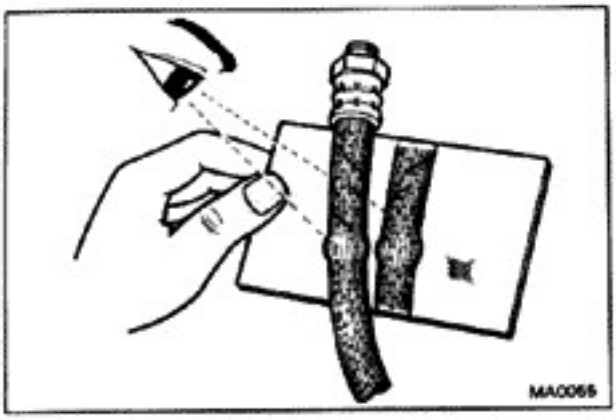
10. INSPECT FUEL LINES AND CONNECTIONS

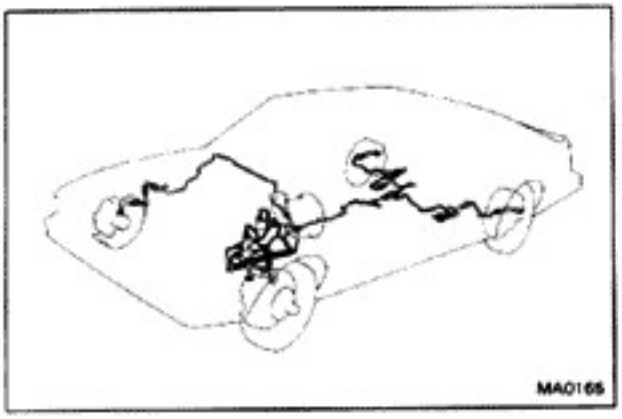
(See page FI-57)

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

11. INSPECT EXHAUST PIPES AND MOUNTINGS

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





BRAKES

12. INSPECT BRAKE LINE PIPES AND HOSES

NOTE: Inspect 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.

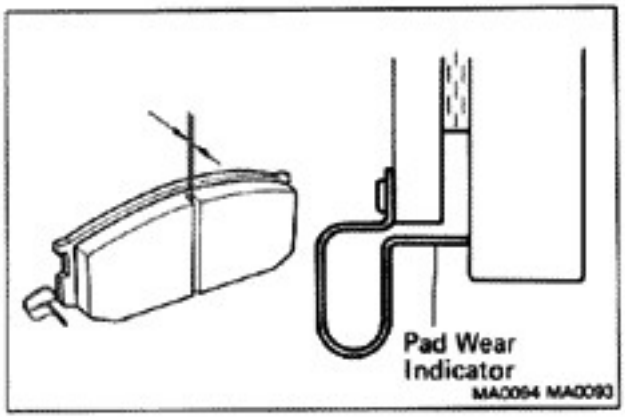
(a) Check all brake lines and hoses for:

- Damage
- Corrosion
- Wear
- Leaks
- 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.



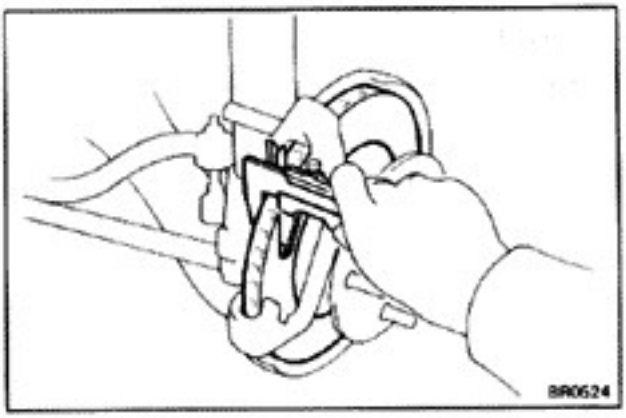
13. INSPECT FRONT AND REAR BRAKE PADS AND DISCS

(Front: See page BR-14, Rear: See page BR-20)

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

Minimum pad thickness: 3.0 mm (0.118 in.)

NOTE: 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.

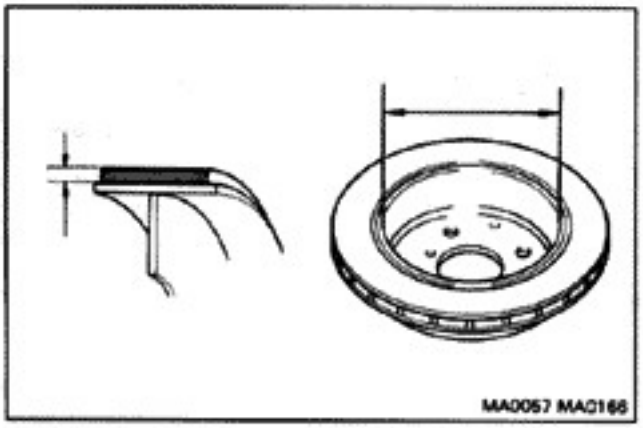


(b) Check the disc for wear or runout.

Minimum disc thickness:

Front 19.0 mm (0.748 in.)
Rear 17.0 mm (0.669 in.)

Maximum disc runout: 0.15 mm (0.0059 in.)



14. **INSPECT PARKING BRAKE LININGS AND DRUM**
(See page BR-26)

(a) Check the lining-to-drums contact condition and l
ing wear.

Minimum lining thickness: 1.0 mm (0.039 in.)

(b) Check the brake drums for scoring or wear.

Maximum drum inside diameter: 168 mm (6.61 in.)

(c) Clean the brake parts with a damp cloth.

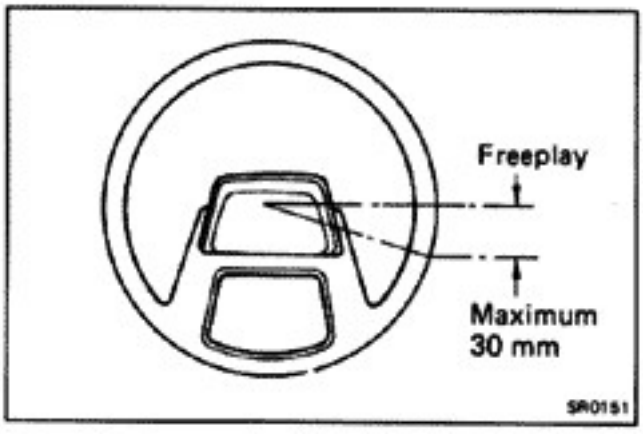
NOTE: Do not use compressed air to clean the bra
parts.

(d) Bed down the parking brake shoes and drum. Wh
performing the road test in item 24, do the followi

- Drive the vehicle at about 30 mph (50 km/h) o
safe, level and dry road.
- With the parking brake release button pushed
pull on the lever with 20 lb (9 kg, 88 N) of force
- Drive the vehicle for about 1/4 mile (400 mete
in this condition.
- Repeat this procedure 2 or 3 times.
- Check parking brake lever travel.

If necessary, adjust the parking brake.

CHASSIS

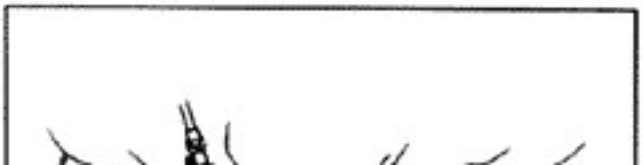


15. **INSPECT STEERING LINKAGE**

(a) Check that the steering wheel freeplay.

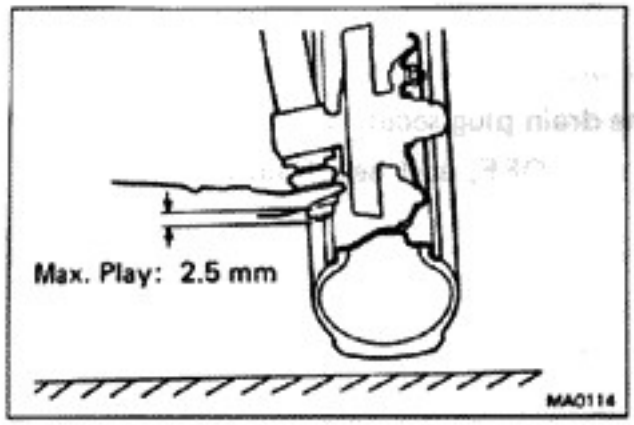
Maximum steering wheel freeplay: 30 mm (1.18 in.)

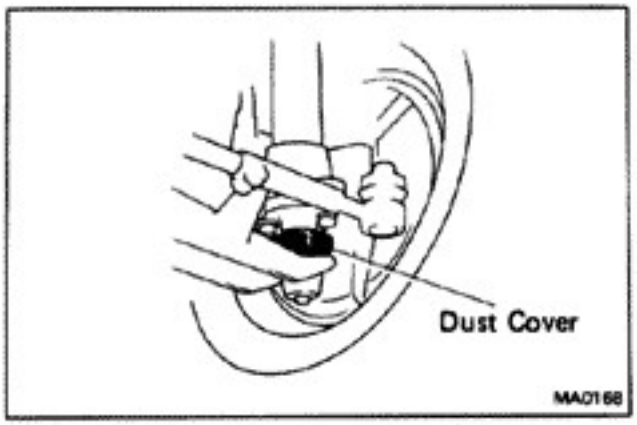
With the vehicle stopped and pointed straight ahea
rock the steering wheel gently back and forth wi
light finger pressure.



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

- Tie rod ends so not have excessive play.





17. INSPECT BALL JOINTS AND DUST COVERS

(a) Inspect the ball joints for excessive looseness.

- Jack up the front of the vehicle and place wood blocks with a height of 180 – 200 mm (7.09 7.87 in.) under the front tires.
- Lower the jack until there is about half a load the front coil springs. Place stands under the vehicle for safety.
- Make sure the front wheels are in a straightforward position, and block them with chocks.
- Using a lever, pry up the end of the lower arm, a check the amount of play.

Maximum ball joint vertical play: 2.5 mm (0.098 in.)

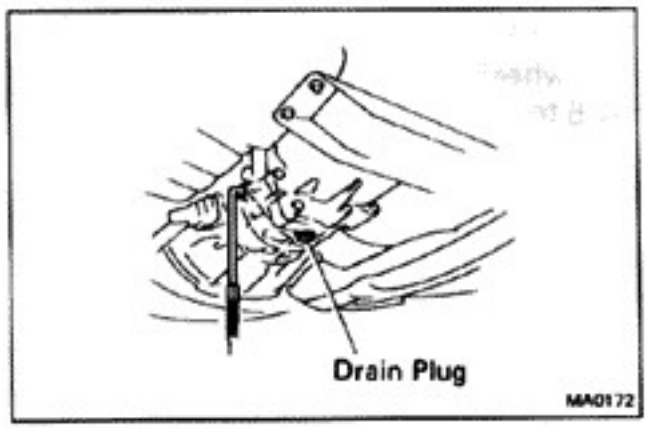
If excessive play is found, replace the ball joints.

(b) Inspect the dust cover for damage.

18. CHECK AUTOMATIC TRANSMISSION OR MANUA TRANSMISSION AND DIFFERENTIAL OIL

Visually check the automatic transmission or manual tra mission and differential for oil leakage.

If leakage is found, check for cause and repair.



19. REPLACE MANUAL TRANSMISSION AND DIFFERENTIAL OIL

(a) Remove the drain plug and drain the oil.

(b) Reinstall the drain plug.

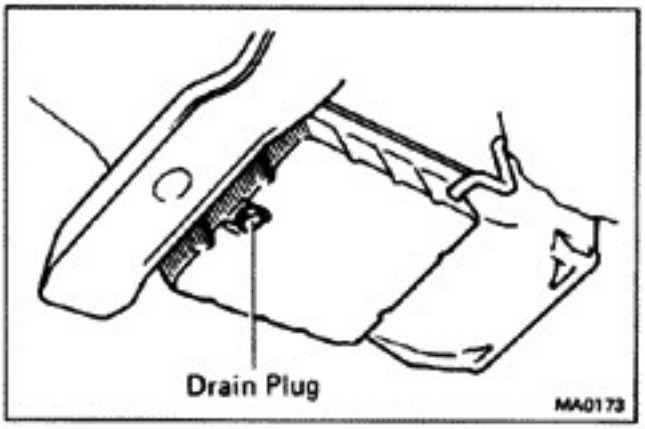
(c) Add new oil until it begins to run out of the fil hole.

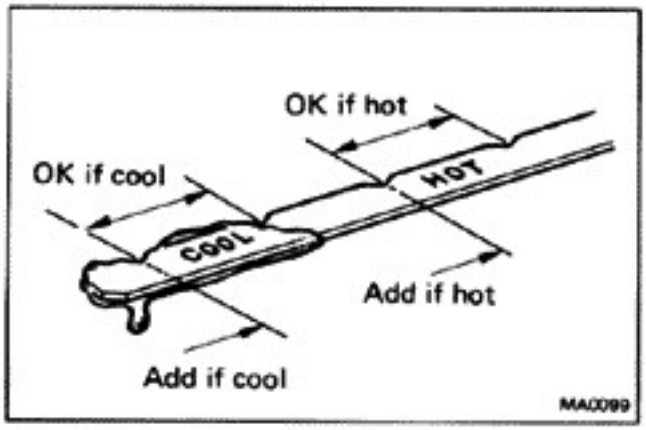
Transmission oil –

Oil grade:	**API GL-4 or GL-5**
Viscosity:	**SAE 75W-90 or 80W-90**
Capacity:	**2.4 liters (2.5 US qts, 2.1 Imp. qts)**

Differential oil –

Oil grade:	**API GL-5 hypoid gear oil or for LSD (LSD only)**
Viscosity:	**Above –18°C (0°F) SAE 90**
	Below –18°C (0°F) SAE 80W-90 or 80W





20. REPLACE AUTOMATIC TRANSMISSION FLUID

(a) Remove the drain plug and drain the fluid.

(b) Reinstall the drain plug securely.

(c) With the engine OFF, add new fluid through the d stick tube.

Fluid: ATF DEXRON® II

Drain and refill capacity:
2.4 liters (2.5 US qts, 2.1 Imp. qts)

Dry fill capacity:
6.5 liters (6.9 US qts, 5.7 Imp. qts)

(d) Start the engine and shift the selector into all po tions from "P" through "L", and then shift into "

(e) With the engine idling, check the fluid level.
Add fluid up to the "COOL" level on the dipstick.

CAUTION: Do not overfill.

SEE PAGES FA-6 to 9

21. REPACK FRONT AND REAR (IRS ONLY) WHEEL BEARINGS

(a) Change the front wheel bearing grease.
(See pages FA-6 to 9)

Grease grade: Multipurpose grease (NLGI No. 2)

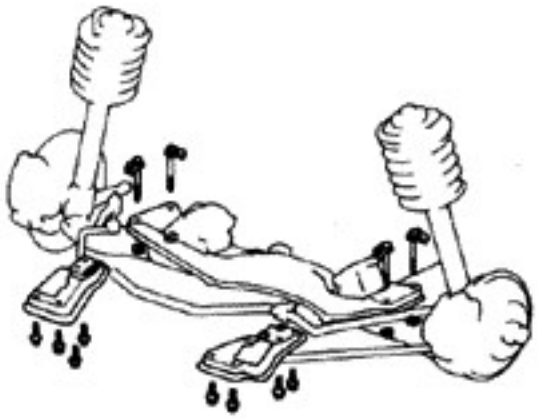
Front wheel bearing friction preload (while turning):
0 – 1,050 g (0 – 2.3 lb, 0 – 10 N)
In addition to oil seal frictional force

SEE PAGES RA-5 to 11

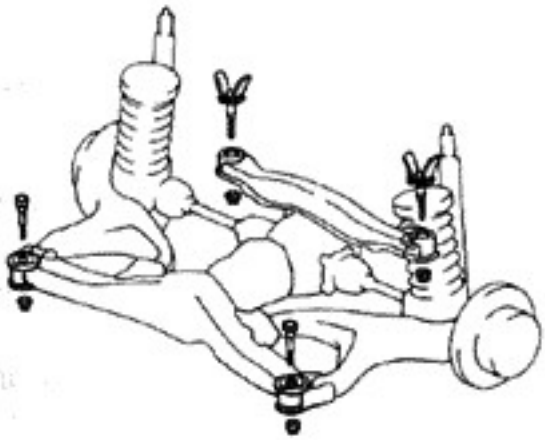
(b) IRS Type Rear Axle

Change the rear wheel bearing grease.
(See pages RA-5 to 11)

Front Suspension



Rear Suspension



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MA0195

22. TIGHTEN BOLTS AND NUTS ON CHASSIS AND BODY

Tighten the following parts:

- Front seat mountings bolts

Torque: 375 kg-cm (27 ft-lb, 37 N·m)

- Front suspension member-to-body mounting bolts and nuts

Torque: 800 kg-cm (58 ft-lb, 78 N·m)

- Rear suspension member-to-body mounting bolts and nuts

Torque: 1,200 kg-cm (87 ft-lb, 118 N·m)

- Strut bar bracket-to-body mounting bolts

Torque: 425 kg-cm (31 ft-lb, 42 N·m)

23. FINAL INSPECTION

(a) Check the operation of the body parts:

- Hood
  Auxiliary catch operates properly
  Hood locks securely when closed
- Front doors
  Door locks operate properly
  Doors close properly
- Lift back door
  Door lock operates properly
- Seats
  Seat adjusts easily and locks securely at any position
  Front seat back locks securely at any position
  Folding-down rear seat backs lock securely

(b) Road test

- Check the engine and chassis for abnormal noises.
- Check that the vehicle does not wander or pull to one side
- Check that the brakes work properly and do not drag.
- Perform bedding down of the parking brake shoes and drum. (See page MA-8)

(c) Be sure to deliver a clean car and especially check:

- Steering wheel
- Shift lever knob
- All switch knobs

GENERAL MAINTENANCE

These are the maintenance and inspection items which are considered to be the owner's responsibility. They can be performed by the owner or he can have them done at a service shop. These items include those which should be checked on a daily basis, those which, in most cases, do not require (special) tools and those which are considered to be reasonable for the owner to perform.
Items and procedures for general maintenance are as follows.

OUTSIDE VEHICLE

1. TIRES

(a) Check the pressure with a gauge. If necessary, adjust.

(b) Check for cuts, damage or excessive wear.

2. WHEEL NUTS

When checking the tires, check the nuts for looseness or for missing nuts. If necessary, tighten them.

3. TIRE ROTATION

It is recommended that tires be rotated every 7,500 miles (12,000 km).

4. WINDSHIELD WIPER BLADES

Check for wear or cracks whenever they do not wipe clean. If necessary, replace.

5. FLUID LEAKS

(a) Check underneath for leaking fuel, oil, water or other fluid.

(b) If you smell gasoline fumes or notice any leak, have the cause found and corrected.

6. DOORS AND ENGINE HOOD

(a) Check that all doors including the trunk lid, back door and tailgate operate smoothly, and that all latches lock securely.

(b) Check that the engine hood secondary latch secures the hood from opening when the primary latch is released.

INSIDE VEHICLE

8. WARNING LIGHTS AND BUZZERS

Check that all warning lights and buzze function properly.

9. HORN

Check that it is working.

10. WINDSHIELD GLASS

Check for scratches, pits or abrasions.

11. WINDSHIELD WIPER AND WASHER

(a) Check operation of the wipers and washe

(b) Check that the wipers do not streak.

12. WINDSHIELD DEFROSTER

Check that air comes out from the defrost outlet when operating the heater or air cond tioner.

13. REAR VIEW MIRROR

Check that it is mounted securely.

14. SUN VISORS

Check that they move freely and are mounte securely.

15. STEERING WHEEL

Check that it has specified freeplay. Be ale for changes in steering condition, such as ha steering, excessive freeplay or strange noise.

16. SEATS

(a) Check that all front seat controls such seat adjusters, seatback recliner, etc. o erate smoothly.

(b) Check that all latches lock securely any position.

(c) Check that the locks hold securely any latched position.

(d) Check that the head restraints move u and down smoothly and that the loc hold securely in any latched position.

(e) For folding-down rear seat backs, chec that the latches lock securely.

17. SEAT BELTS

(a) Check that the seat belt system such buckles, retractors and anchors opera

18. ACCELERATOR PEDAL

Check the pedal for smooth operation and uneven pedal effort or catching.

19. CLUTCH PEDAL (See page CL-3)

Check the pedal for smooth operation.
Check that the pedal has the proper freeplay.

20. BRAKE PEDAL (See page BR-6)

(a) Check the pedal for smooth operation.
(b) Check that the pedal has the proper reserve distance and freeplay.
(c) Check the brake booster function.

21. BRAKES

At a safe place, check that the brakes do not pull to one side when applied.

22. PARKING BRAKE (See page BR-8)

(a) Check that the lever has the proper travel.
(b) On a safe incline, check that vehicle is held securely with only the parking brake applied.

23. AUTOMATIC TRANSMISSION "PARK" MECHANISM

(a) Check the lock release button of the selector lever for proper and smooth operation.
(b) On a safe incline, check that vehicle is held securely with the selector lever in "P" position and all brakes released.

UNDER HOOD

24. WINDSHIELD WASHER FLUID

Check that there is sufficient fluid in the tank.

25. ENGINE COOLANT LEVEL

Check that the coolant level is between the "FULL" and "LOW" lines on the see-through reservoir.

26. RADIATOR AND HOSES

(a) Check that the front of the radiator is clean and not blocked with leaves, dirt or bugs.
(b) Check the hoses for cracks, links, rot or loose connections.

27. BATTERY ELECTROLYTE LEVEL

28. BRAKE AND CLUTCH FLUID LEVELS

(a) Check that the brake fluid level is near the upper level line on the see-through reservoir.
(b) Check that the clutch fluid level is up to the top of the narrow neck of the see-through reservoir.

29. ENGINE DRIVE BELTS

Check all drive belts for fraying, cracks, wear or oiliness.

30. ENGINE OIL LEVEL

Check the level on the dipstick with the engine turned off.

31. POWER STEERING FLUID LEVEL

Check the level on the dipstick.
The level should be in the "HOT" or "COLD" range depending on the fluid temperature.

32. AUTOMATIC TRANSMISSION FLUID LEVEL

(a) Park the vehicle on a level surface.
(b) With the engine idling and the parking brake applied, shift the selector into all positions from "P" to "L", and then shift into "P".
(c) Pull out the dipstick and wipe off the fluid with a clean rag. Re-insert the dipstick and check that the fluid level is in the "HOT" range.
(d) Perform this check with the fluid at normal driving temperature (70 – 80°C or 158 – 176°F).

NOTE: Wait about 30 minutes before checking the fluid level after extended driving at high speeds, in hot weather, in heavy traffic or with a trailer.

33. EXHAUST SYSTEM

Visually inspect for cracks, holes or loose supports.
If any change in the sound of the exhaust or smell of the exhaust fumes is noticed, have the cause located and corrected.