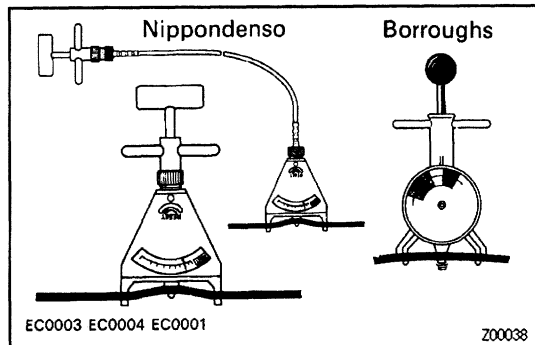
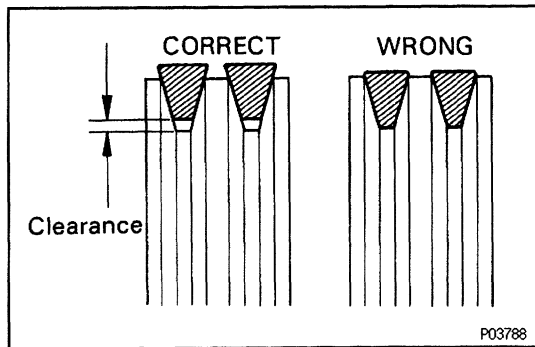




MAINTENANCE OPERATIONS

MA03X-01

Cold Engine Operations

1. INSPECT DRIVE BELTS

- (a) Visually check the belt for cracks, oil contamination or wear. Check that the belt does not touch the bottom of the pulley groove.
If necessary, replace the drive belt.

- (b) Using a belt tension gauge, measure the drive belt tension.

Belt tension gauge:

Nippondenso BTG – 20 (95506-00020)

Borroughs No.BT-33-73F

Drive belt tension:

Generator

New belt

125 ± 25 lbf

Used belt

80 ± 20 lbf

A/C compressor

New belt

125 ± 25 lbf

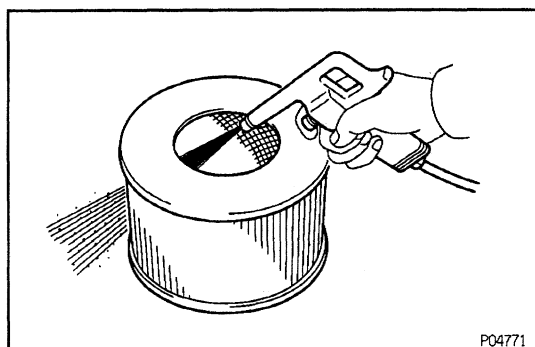
Used belt

80 ± 20 lbf

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 installing a new belt, run the engine for about 5 minutes and recheck the belt tension.



2. INSPECT AIR FILTER

- (a) Visually check that the air cleaner element is not excessively dirty, damaged or oily.

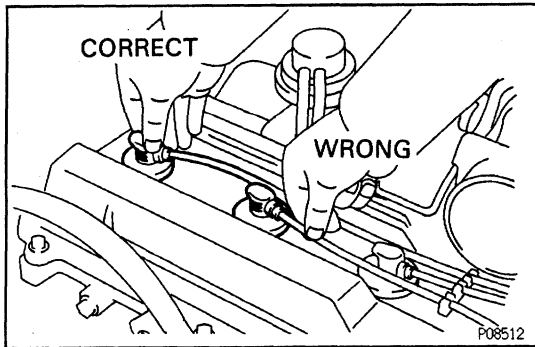
If necessary, replace the air cleaner element.

- (b) Clean the element with compressed air.

First blow from the inside thoroughly, then blow off the outside of the element.

3. REPLACE AIR FILTER

Replace the air cleaner element with a new one.

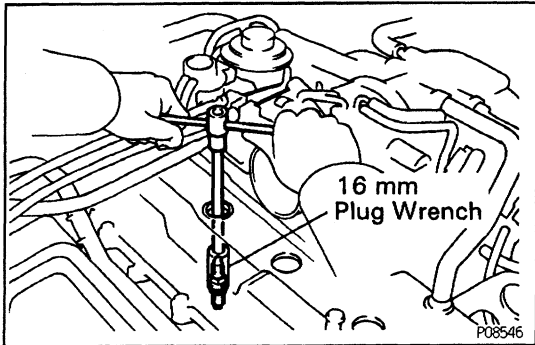


4. REPLACE SPARK PLUGS

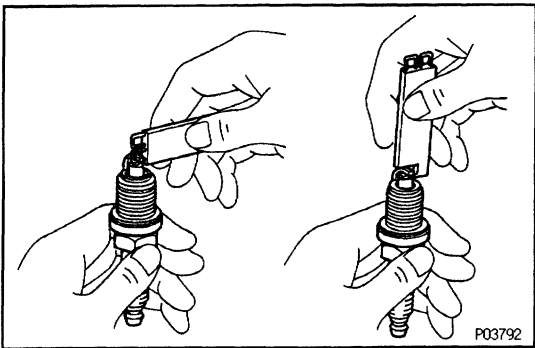
(a) Disconnect the high – tension cords at the rubber boot.

DO NOT pull on the cords.

NOTICE: Pulling on or bending the cords may damage the conductor inside.



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



(c) Check the electrode gap of new spark plugs.

Correct electrode gap:

0.8 mm (0.031 in.)

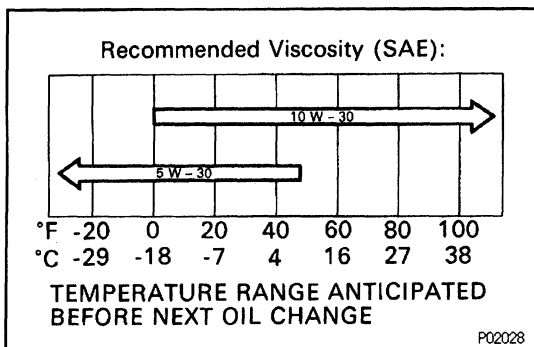
Recommended spark plugs:

K16R-U for ND

BKR5EYA for NGK

NOTICE: 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.



5. REPLACE ENGINE OIL AND OIL FILTER

(SEE page [EG-355](#))

Oil grade:

API grade SG or SH, Energy- ConservingII or ILSAC multigrade engine oil. Recommended viscosity is as shown in the illustration.

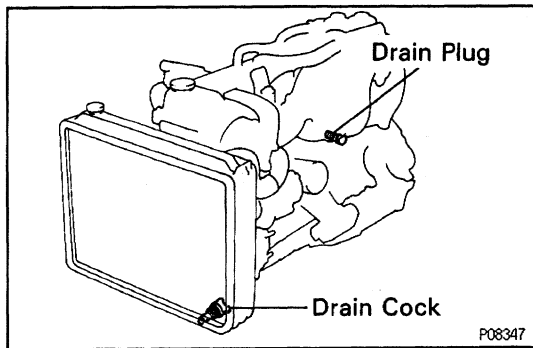
Drain and refill capacity:

w/ Oil filter change

7.4 liters (7.8 US qts, 6.5 Imp. qts)

w/o Oil filter change

6.9 liters (7.3 US qts, 6.1 Imp. qts)



6. REPLACE ENGINE COOLANT

(SEE PAGE [EG-329](#))

- (a) Drain the coolant from the radiator drain cock and engine drain plug. (Engine drain plug at the left of engine block.)
- (b) Close the drain cock and plug.
- (c) Fill the system with coolant.

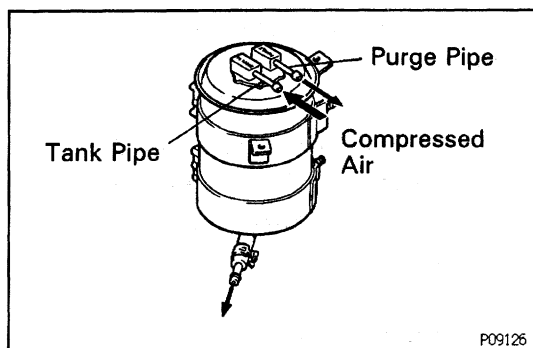
HINT:

- Use a good brand of ethylene-glycol base coolant and mix it according to the manufacturer's instructions.
- Using coolant which includes more than 50% ethylene-glycol (but not more than 70%) is recommended.

NOTICE:

- **Do not use alcohol type coolant.**
- **The coolant should be mixed with demineralized water or distilled water.**

Coolant capacity (w/ Front heater and rear heaters):
14.2 liters (15.0 US qts, 12.4 Imp. qts)

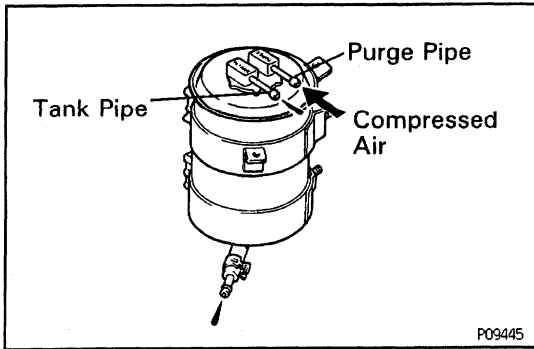


7. NEW YORK AND CALIFORNIA ONLY:

INSPECT CHARCOAL CANISTER

(See page [EG-178](#))

- (a) Visually inspect the canister case.
 - (b) Check for clogged each pipe and stuck check valve.
 - (1) Using low pressure compressed air (4.71 kpa (48 gf/cm², 0.68 psi)) blow into tank pipe and check that air flows without resistance from the other pipes.
 - (2) Blow air (4.71 kpa (48 gf/cm², 0.68 psi)) into the purge pipe and check that air does not flow from the other pipes.
- If a problem is found, replace the charcoal canister.

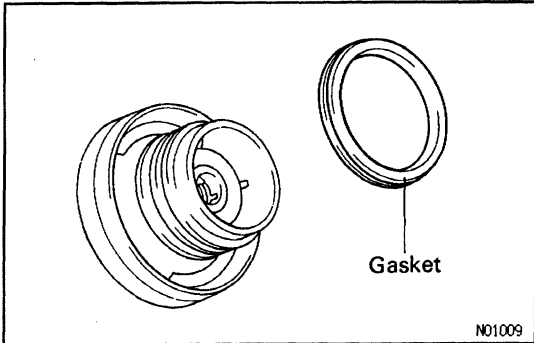


(c) Clean the filter in the canister.

Clean the filter by blowing 294 kPa (3 kgf/cm², 43 psi) of compressed air into the tank pipe while holding the purge pipe closed.

NOTICE:

- Do not attempt to wash the canister.
- No activated carbon should come out.



8. REPLACE GASKET IN FUEL TANK CAP

(a) Remove the old gasket from the tank cap.

NOTICE: Do not damage the tank cap.

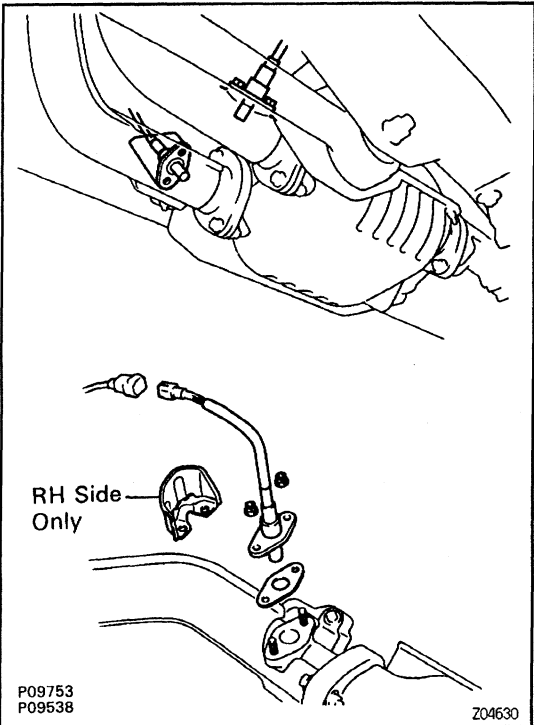
(b) Install a new gasket by hand.

(c) Check the cap for damage or cracks.

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

9. INSPECT FUEL LINES AND CONNECTIONS

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



10. INSPECT EXHAUST PIPES AND MOUNTINGS

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

11. EXCEPT NEW YORK AND CALIFORNIA:

REPLACE HEATED OXYGEN SENSORS

(a) Disconnect the heated oxygen sensor connector.

(b) Remove the 2 nuts, heat insulator (RH side only), heated oxygen sensor and gasket from the front exhaust pipe.

(c) Install a new gasket, the heated oxygen sensor and heat insulator (RH side only) with the 2 nuts.

Torque: 20 N-m (200 kgf-cm, 14 ft-lbf)

(d) Inspect the heated oxygen sensor operation.

(See page [EG-315](#))

12. ADJUST VALVE CLEARANCE (See page [EG-14](#))

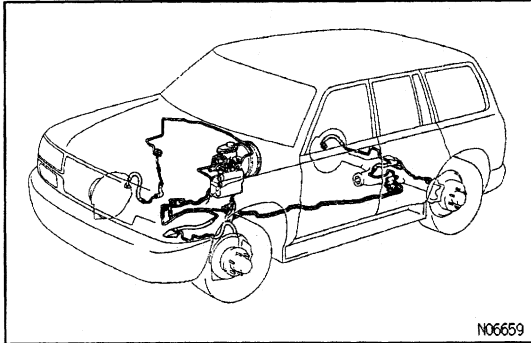
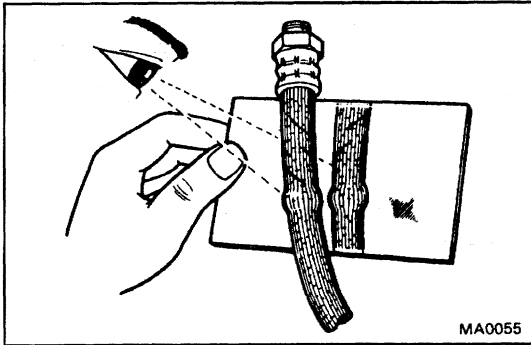
Valve clearance (Cold):

Intake

0.15-0.25 mm (0.006-0.010 in.)

Exhaust

0.25-0.35 mm (0.010-0.014 in.)



BRAKES

13. INSPECT BRAKE LINE PIPES AND HOSES

HINT: Check in a well-lighted area. Check the entire circumference and length of the brake hoses using a mirror, as required. Turn the front wheels fully right or left before checking the front brake.

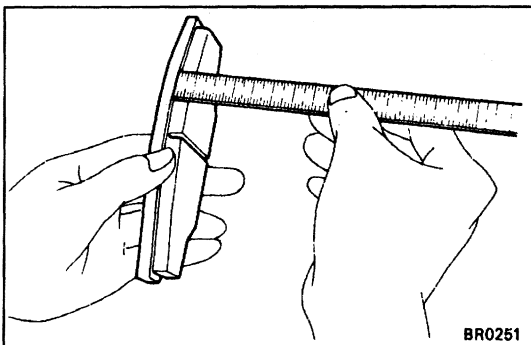
(a) Check all brake lines and hoses for:

- Damage
- Wear
- Deformation
- Cracks
- Corrosion
- Leaks
- Bends
- 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.



14. INSPECT BRAKE PADS AND DISCS

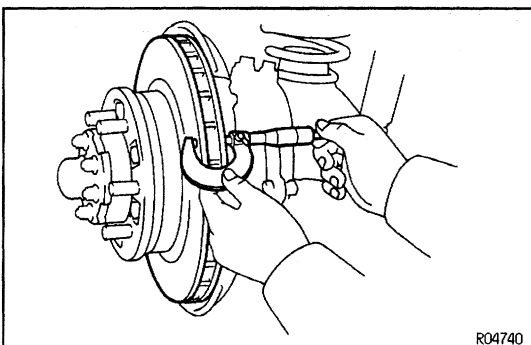
(SEE PAGE [BR-20](#))

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

Minimum pad thickness:

4.0 mm (0.157 in.) for front

1.0 mm (0.039 in.) for rear

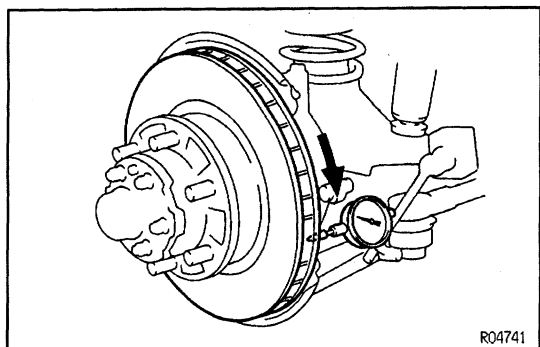


(b) Check the disc for wear.

Minimum disc thickness:

30.0 mm (1.181 in.) for front

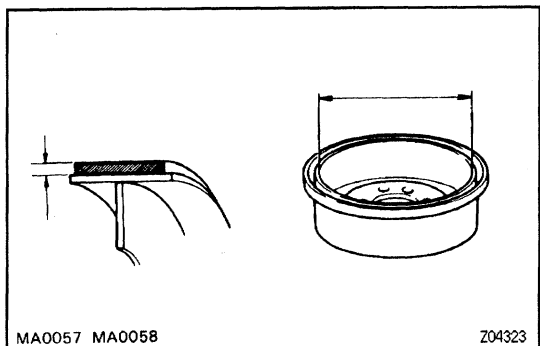
16.0 mm (0.630 in.) for rear



(c) Check the disc for runout.

Maximum disc runout:

0.15 mm (0.0058 in.)



15. INSPECT REAR BRAKE LININGS AND DRUMS (SEE PAGE BR-27)

(a) Check the lining – to – drum contact condition and lining wear.

Minimum lining thickness:

1.5 mm (0.059 in.)

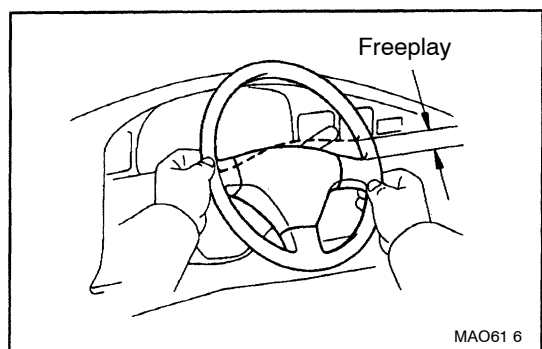
(b) Check the brake drums for scoring or wear.

Maximum drum inside diameter:

297.0 mm (11.693 in.)

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

NOTICE: Do not use compressed air to clean the brake parts.



CHASSIS

MA041-01

16. INSPECT STEERING LINKAGE AND DUST COVERS

(a) Check the steering wheel freeplay.

Maximum steering wheel freeplay:

40 mm (1.57 in.)

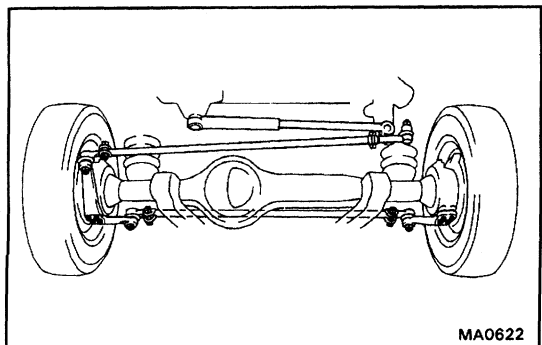
With the vehicle stopped and the front wheels pointed straight ahead, rock the steering wheel gently back and forth with light finger pressure.

(b) Check the steering linkage for looseness or damage.

Check that:

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

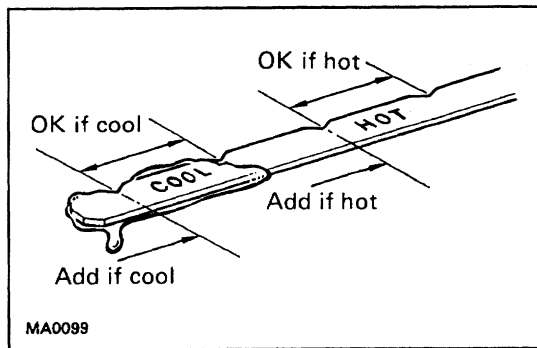
(c) Inspect the dust cover for damage.



17. INSPECT STEERING GEAR HOUSING OIL

Check the steering gear housing for oil leakage.

If leakage is found, check for cause and repair.



18. CHECK OIL LEVEL IN AUTOMATIC

TRANSMISSION, TRANSFER AND DIFFERENTIAL OIL

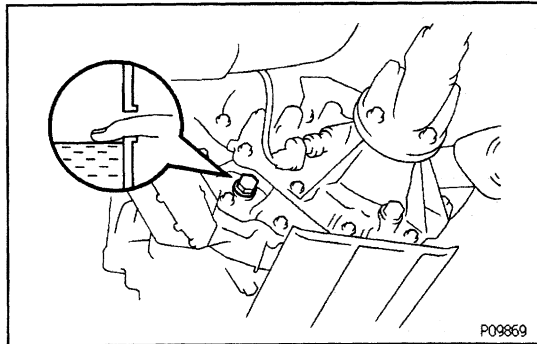
(a) Automatic transmission:

Check the automatic transmission fluid level.

If leakage is found, check for cause and repair.

Transmission fluid:

ATF DEXRON® II



(b) Transfer:

Remove the filler plug and feel inside the hole with your finger. Check that the oil comes to within 5 mm (0.20 in.) of the bottom edge of the hole.

If the level is low, add oil until it begins to run out of the filler hole.

Oil grade:

API GL-4 or GL-5

Viscosity:

SAE 75w-90

(c) Differential:

Remove the filler plug and feel inside the hole with your finger. Check that the oil comes to within 5 mm (0.20 in.) of the bottom edge of the hole.

If the level is low, add oil until it begins to run out of the filler hole.

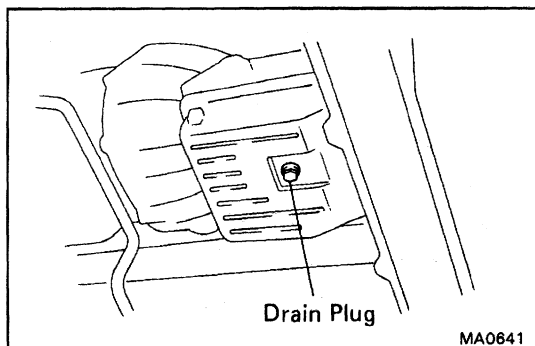
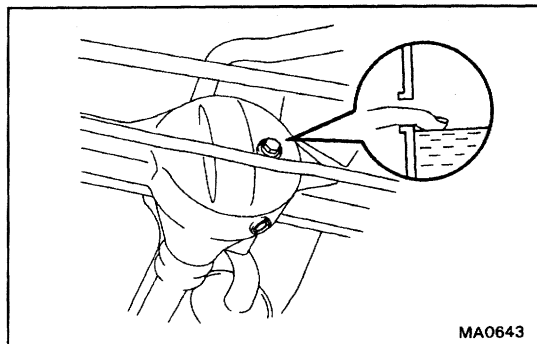
Oil grade:

API GL-5 hypoid gear oil

Viscosity:

Above -18° C (0° F) SAE 90

Below -18° C (0° F) SAE 80W - 90 or 80W



19. REPLACE AUTOMATIC TRANSMISSION FLUID

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

(b) Reinstall the drain plug securely.

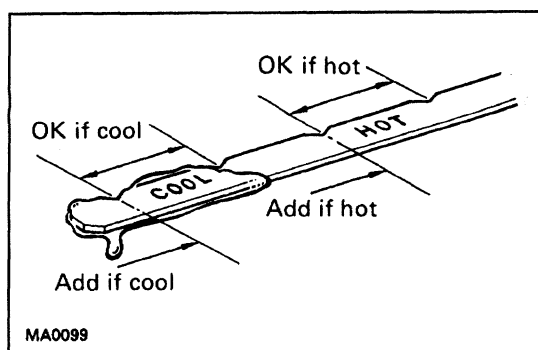
(c) With the engine "OFF", add new fluid through the dipstick tube.

Fluid:

ATFDEXRON®II

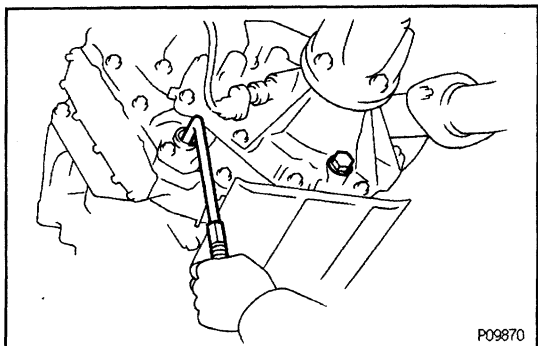
Drain and refill capacity (Reference):

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



- (d) Start the engine and shift the selector into all positions from "P" through "L", and then shift into "P".
- (e) With the engine idling, check the fluid level. Add fluid up to the "COOL" level on the dipstick.

NOTICE: Do not overfill.



20. REPLACE TRANSFER AND DIFFERENTIAL OIL

- (a) Remove the drain plug and drain the oil.
- (b) Reinstall the drain plug securely.
- (c) Add new oil until it begins to run out of the filler hole.

Oil grade and viscosity:

See item 18.(b) and (c).

Oil capacity:

Transfer oil (w/ ABS)

1.3 liters (1.4 US qts, 1.1 Imp. qts)

Transfer oil (w/o ABS)

1.7 liters (1.8 US qts, 1.5 Imp. qts)

Front differential oil (w/o Differential lock)

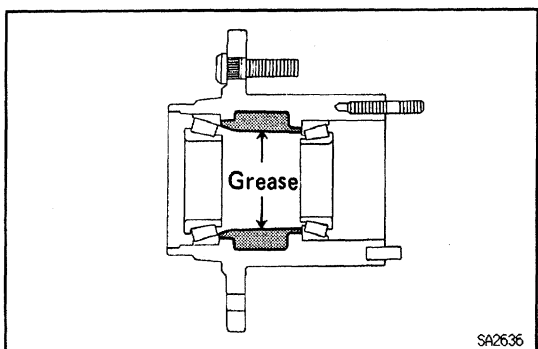
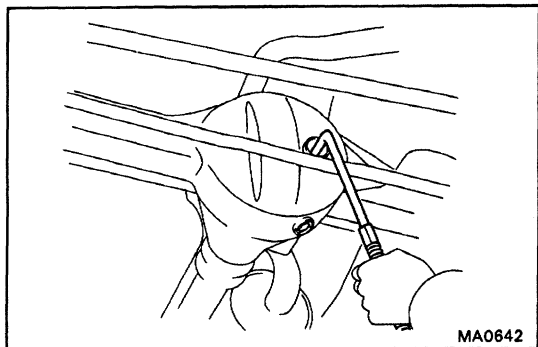
2.8 liters (3.0 US qts, 2.5 Imp. qts)

Front differential oil (w/ Differential lock)

2.65 liters (2.8 US qts, 2.3 Imp. qts)

Rear differential oil

3.25 liters (3.4 US qts, 2.9 Imp. qts)



21. REPACK FRONT WHEEL BEARINGS

- (a) Change the front wheel bearing grease.
 - Remove the front axle hub and bearings.
 - Wash the inner and outer bearings, and check for damage.
 - Remove the grease from the axle hub and check the inner and outer bearing races for damage.
 - Pack the bearings and axle hubs with lithium base multipurpose grease.

Grease grade:

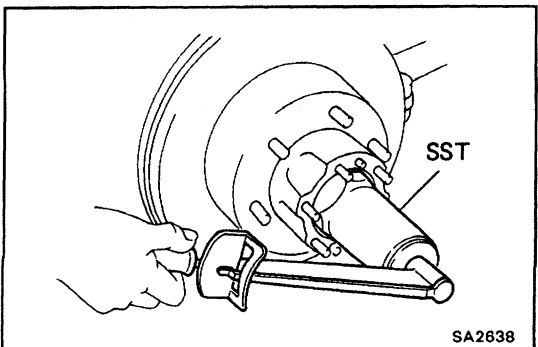
Lithium base multipurpose grease (NLGf No.2)

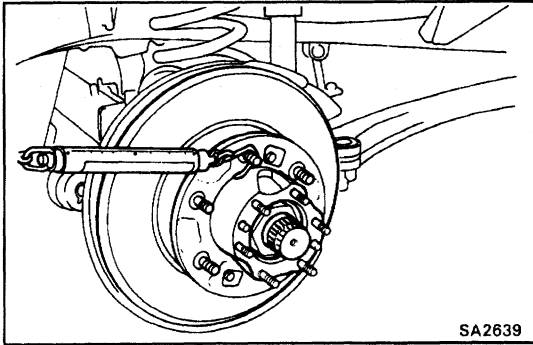
- (b) Install the inner bearing and oil seal into the axle hub.
- (c) Install the axle hub, outer bearing and thrust washer, and adjust the wheel bearing preload.

- Using SST, torque the adjusting nut.
SST 09607-60020

Torque: 59 N-m (600 kgf-cm, 43 ft-lbf)

- Turn the hub right and left 2 or 3 times to allow the bearing to settle.





- Using SST, loosen the adjusting nut until it can be turned by hand.

SST 09607-60020

- Using a spring tension gauge, measure the frictional force of the oil seal at the hub bolt.

Using SST, retighten the adjusting nut.

SST 09607-60020

Torque:

4.0 – 6.8 N-m (40 – 70 kgf-cm, 35 – 60 in.-M)

- Check that the bearing has no freeplay.
- Using a spring tension gauge, check the preload.

Preload (starting):

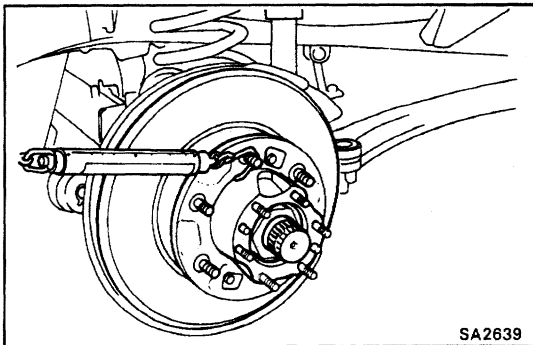
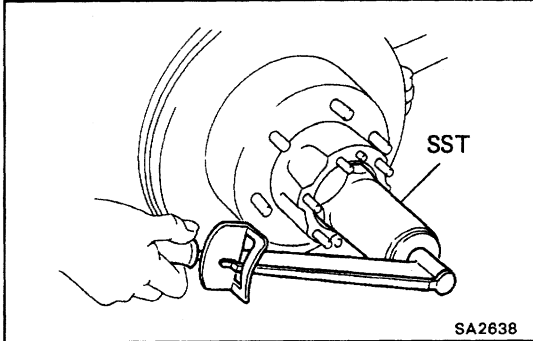
27 – 56 N (2.8 – 5.7 kgf, 6.2 – 12.6 lbf)

- (d) Install a new lock washer and the lock nut.

- (e) Using SST, torque the lock nut.

SST 09607-60020

Torque: 64 N-m (650 kgf-cm, 47 ft-lbf)

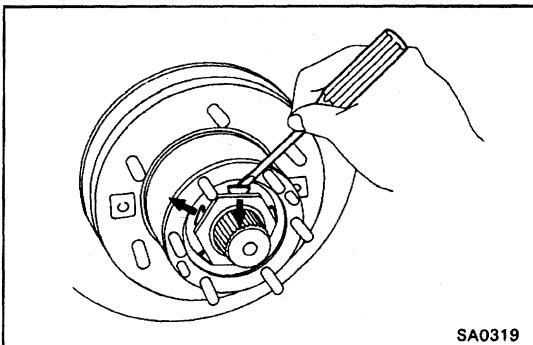


- (f) Using a spring tension gauge, recheck the preload.

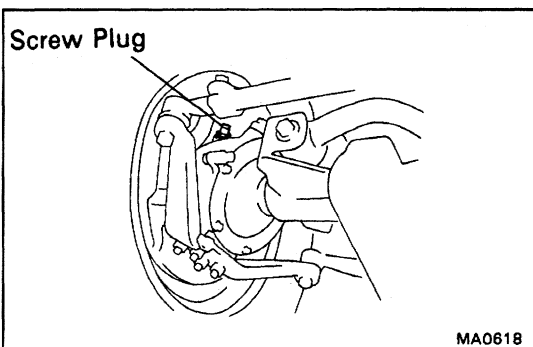
Preload (starting):

27 – 56 N (2.8 – 5.7 kgf, 6.2 – 12.6 lbf)

If not within specification, adjust with the adjusting nut.



- (g) Secure the lock nut by bending one of the lock washer teeth outward and the other lock washer teeth inward.



22. LUBE STEERING KNUCKLE CHASSIS AND PROPELLER SHAFT

- (a) Remove the screw plug from each steering knuckle and repack with lubricant.

Steering knuckle grease:

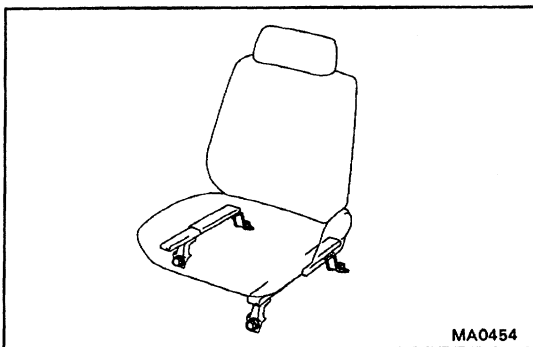
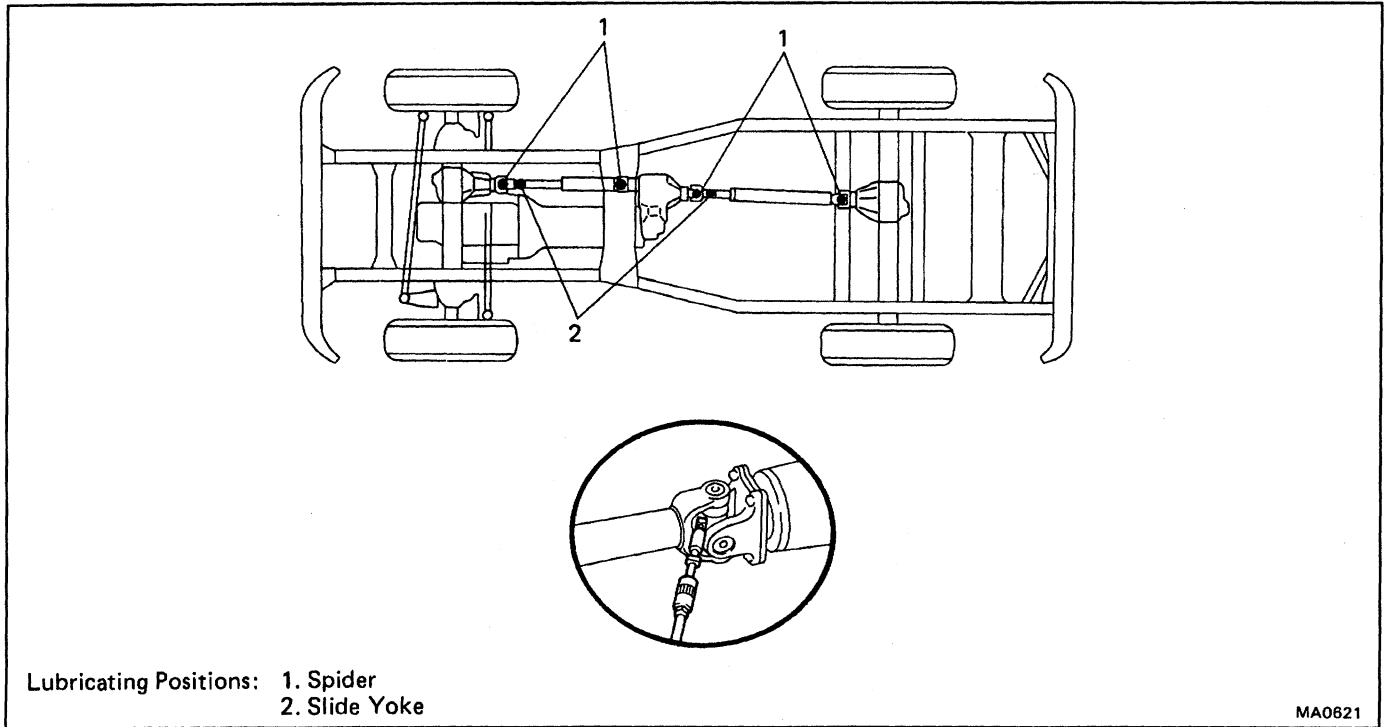
Molybdenum disulphide lithium base chassis grease (NLGI No.2)

- (b) Reinstall the 2 screw plugs.

- (c) Lubricate chassis components, referring to the lubrication chart. Before pumping in grease, wipe off any mud and dust on the grease fitting.

Grease grade:

Lithium base chassis grease (NLGI No.2)



23. TIGHTEN BOLTS AND NUTS ON CHASSIS AND BODY

- (a) Tighten the following parts:

- Front seats mounting bolts

Torque: 37 N-m (380 kgf-cm, 27 ft-lbf)

- (b) In addition to the scheduled maintenance items, check for loose or missing bolts and nuts of the following.

- Steering system
- Drive train
- Suspension system
- Fuel tank mounts
- Engine mounts, etc.

24. 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 lock operate properly
Doors close properly
- Back 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

- 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.

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

- Steering wheel
- Shift lever knob
- All switch knobs
- Door handles
- Seats