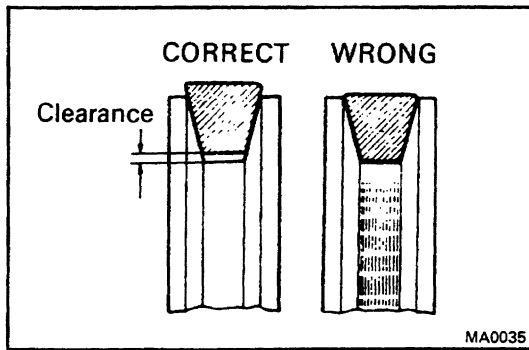




MAINTENANCE OPERATIONS ENGINE

Cold Engine Operations

1. INSPECT DRIVE BELTS

- (a) Visually check the belt for cracks, oiliness 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, 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 100 ± 20 lb

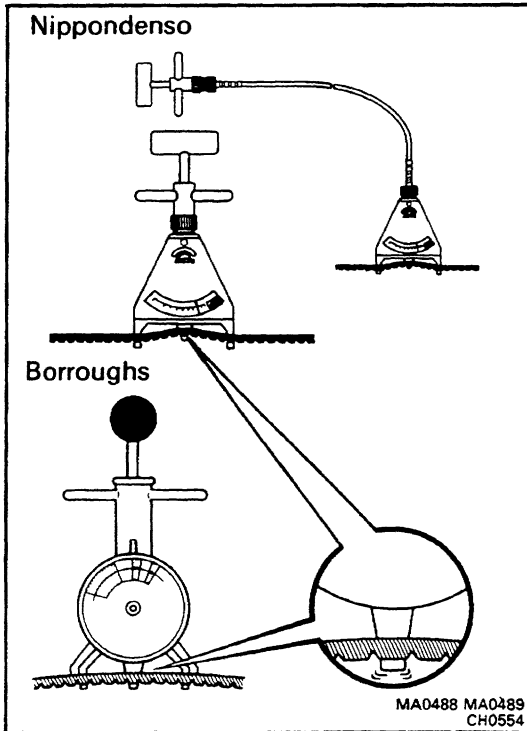
New belt 145 ± 25 lb

PS Pump Used belt 100 ± 20 lb

(Air Pump) New belt 145 ± 25 lb

A/C Used belt 80 ± 20 lb

New belt 125 ± 25 lb



If necessary, adjust the drive belt tension.

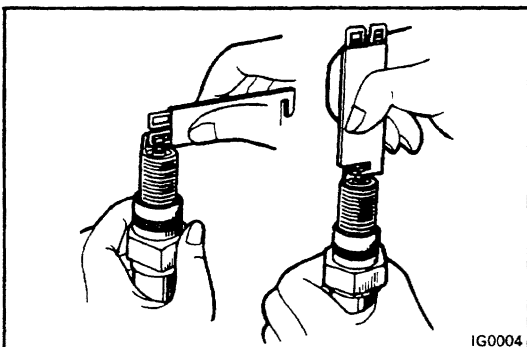
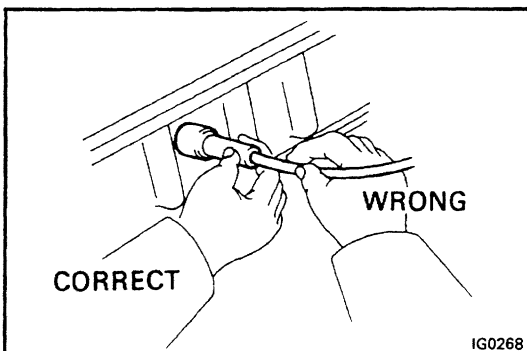
HINT:

- When checking the tension, be sure the gauge is on the belt protrusion. (ex. A/C drive belt).
- "New belt" refers to a belt which has been used for 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 then recheck the tension.

2. REPLACE SPARK PLUGS

- (a) Disconnect the high-tension cords of the spark plug at the boot. Do not pull on the cords.

- (b) Remove the spark plugs.

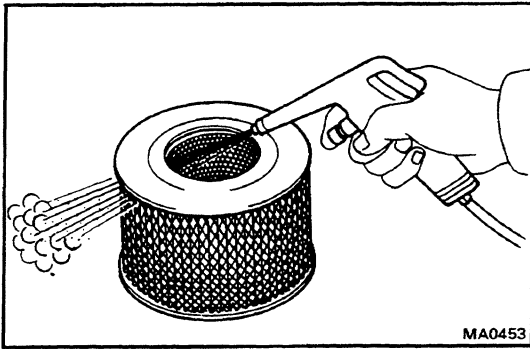


- (c) Set the gap on the new plugs.

Correct electrode gap: 1.1 mm (0.043 in.)

Recommended spark plugs: ND W 16EXR-U11

NGK BPR5EY 11



3. 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 inside thoroughly, then blow off the outside of the element.

4. REPLACE AIR FILTER

Replace the used air cleaner element with a new one.

5. REPLACE ENGINE OIL AND OIL FILTER

(See page [LU-5](#))

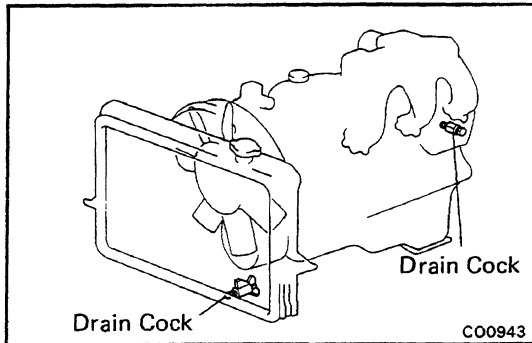
Oil grade: API grade SG multigrade, fuel-efficient and recommended viscosity oil.

Engine oil capacity:

Drain and refill

w/ Oil filter change

7.8 liters (8.2 US qts, 7.0 Imp. qts)



6. REPLACE ENGINE COOLANT

- (a) Drain the coolant from radiator and engine drain cocks.
- (b) Close the drain cocks.
- (c) Fill the system with coolant.

Coolant capacity:

w/ Front heater

17.5 liters (18.5 US qts, 15.4 Imp. qts)

w/ Front and rear heaters

19.5 liters (20.6 US qts, 17.2 Imp. qts)

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

NOTICE:

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

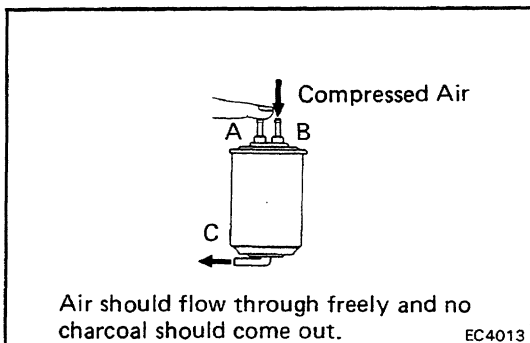
7. CALIFORNIA VEHICLES ONLY:

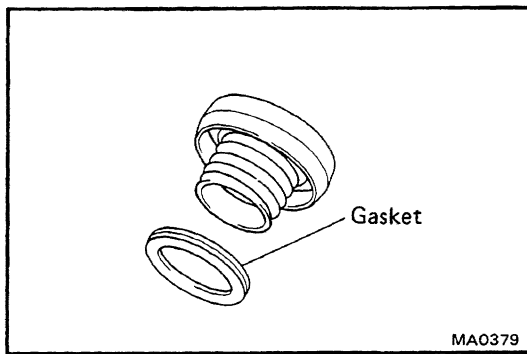
INSPECT CHARCOAL CANISTER

- (a) Disconnect the hoses to the charcoal canister. Label the hoses for correct reinstallation.
- (b) Plug pipe A with your finger and blow compressed air (3 kg/cm², 42 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.

HINT: Do not attempt to wash the charcoal.

- (c) Connect the hoses to the charcoal canister.





8. REPLACE GASKET IN FUEL TANK CAP

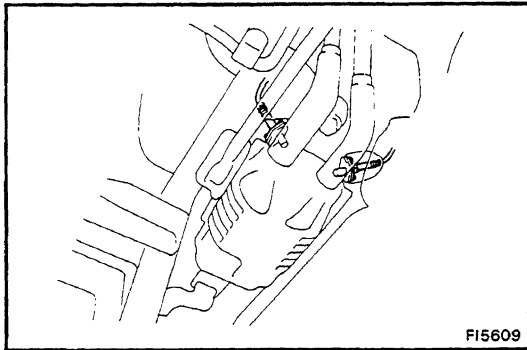
- Remove the old gasket (O-ring) from the tank cap.
Do not damage the cap.
- Install the new gasket by hand.
- Inspect the cap for damage or cracks.
- Install the cap and check the torque limiter.

9. INSPECT FUEL LINES AND CONNECTIONS

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

10. INSPECT EXHAUST PIPES AND MOUNTINGS

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



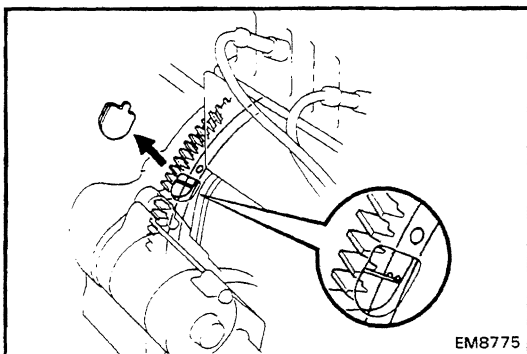
11. EXCEPT CALIFORNIA VEHICLES:

REPLACE OXYGEN SENSORS

- Disconnect the oxygen sensor connector.
- Remove the two nuts, heat insulator, oxygen sensor and gasket from the exhaust manifold.
- Install new gasket, oxygen sensor and heat insulator with the two nuts.

Torque: 200 kg-cm (14 ft-lb, 20 N-m)

- Inspect the oxygen sensor operation.
(See page [FI-80](#))



Hot Engine Operations

12. ADJUST VALVE CLEARANCE

- Warm up the engine to normal operating temperature.
- Stop the engine and remove the cylinder head cover.
- Set No.1 cylinder to TDC/compression.

- Align the TDC mark of the drive plate with the timing pointer by turning the crankshaft clockwise with a wrench.
- Check that the rocker arms on the No. 1 cylinder are loose and rocker arms on the No. 6 are tight.

If not, turn the crankshaft one revolution (360°) and align the mark as above.

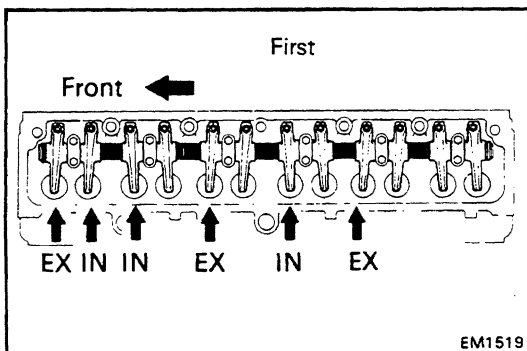
- Adjust the clearance of half of valves.

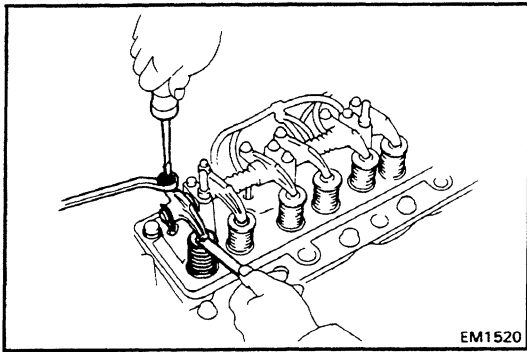
- Adjust only those valves indicated by arrows.

Valve clearance (Hot):

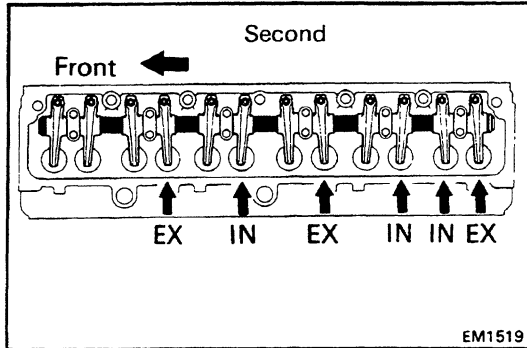
Intake 0.20 mm (0.008 in.)

Exhaust 0.35 mm (0.014 in.)

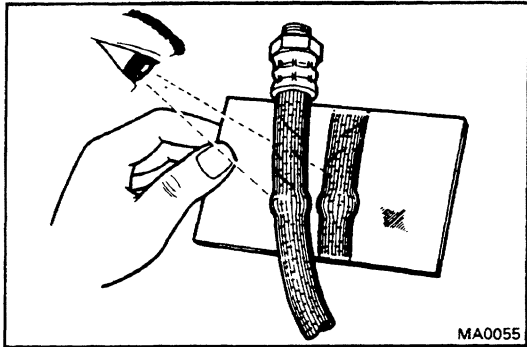




- Using a thickness gauge, measure the valve clearance between the valve stem and rocker arm.
- Loosen the lock nut and turn the adjusting screw to set the proper clearance. Hold the adjusting screw in position and tighten the lock nut.
- Recheck the valve clearance. The thickness gauge should slide with a very slight drag.



- Turn the crankshaft pulley one revolution (360°) and align the mark as above. Adjust only the valves indicated by arrows.
- Reinstall the cylinder head cover.

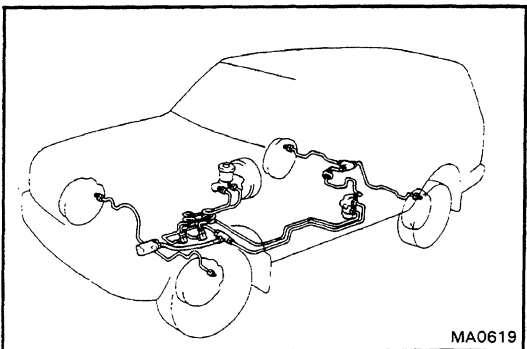


BRAKES

13. 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.

- Check all brake lines and hoses for:
 - Damage
 - Corrosion
 - Wear
 - Leaks
 - Deformation
 - Bends
 - Cracks
 - Twists
- Check all clamps for tightness and connections for leakage.
- Check that the hoses and lines are clear of sharp edges, moving parts and the exhaust system.
- Check that the lines installed in grommets pass through the center of the grommets.



14. INSPECT REAR BRAKE LININGS AND DRUMS

- Check the lining-to drums contact condition and lining wear.

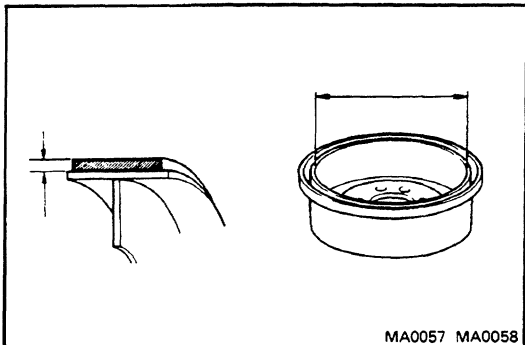
Minimum lining thickness: 1.5 mm (0.059 in.)

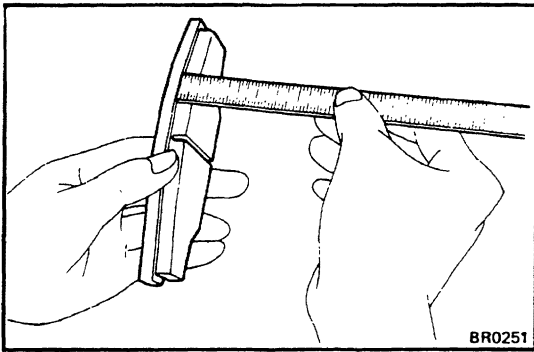
- Check the brake drum for scoring or wear.

**Maximum drum inside diameter:
297.0 mm (11.693 in.)**

- Clean the brake parts with a damp cloth.

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

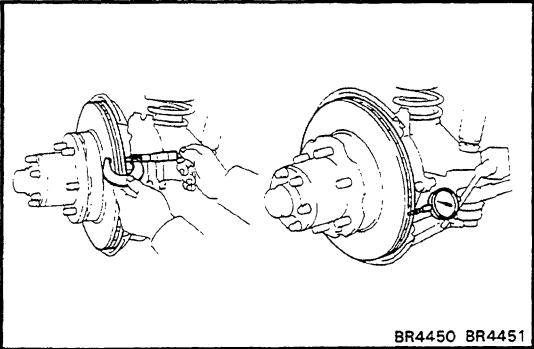




15. INSPECT FRONT BRAKE PADS AND DISCS

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

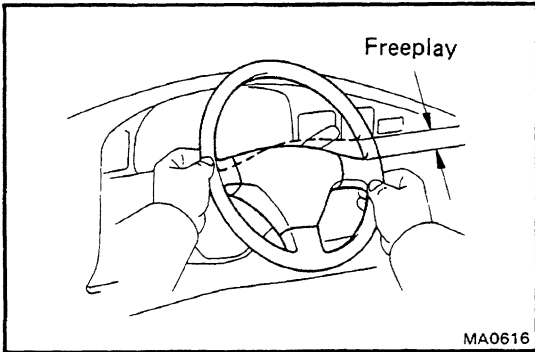
Minimum pad thickness: 4.0 mm (0.157 in.)



- (b) Check the disc for wear or runout.

Minimum disc thickness: 23.0 mm (0.906 in.)

Maximum disc runout: 0.15 mm (0.0059 in.)



CHASSIS

16. INSPECT STEERING LINKAGE AND DUST COVERS

- (a) Check the steering wheel freeplay.

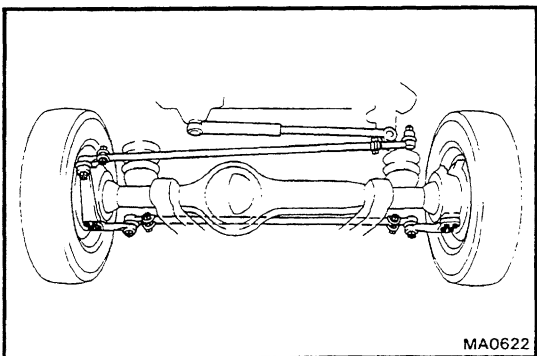
**Maximum steering wheel freeplay:
40 mm (1.57 in.)**

With the vehicle stopped and 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 and relay ends do not have excessive play.
- Dust seals and boots are not damaged.

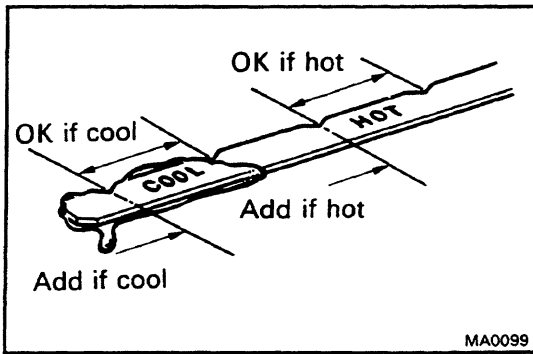
- (c) Inspect the dust cover for damage.



17. INSPECT STEERING GEAR HOUSING OIL

Check the steering gear box 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

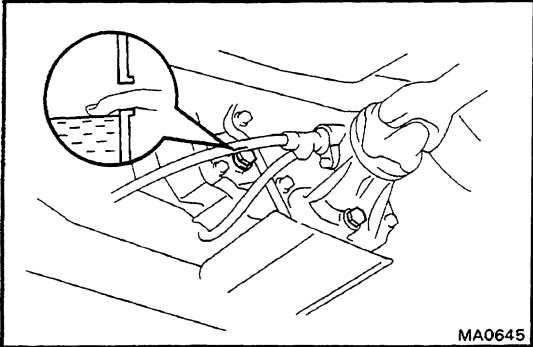
(0.20 in.) of the bottom edge of the hole.

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

Transfer oil:

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 the filler hole.

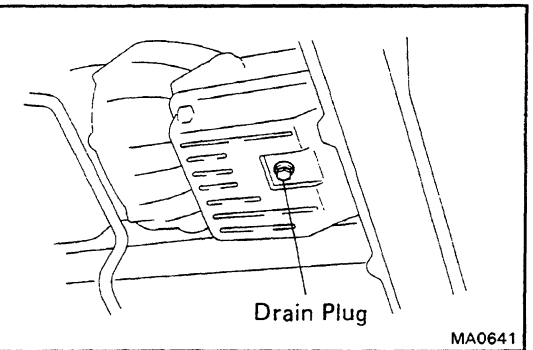
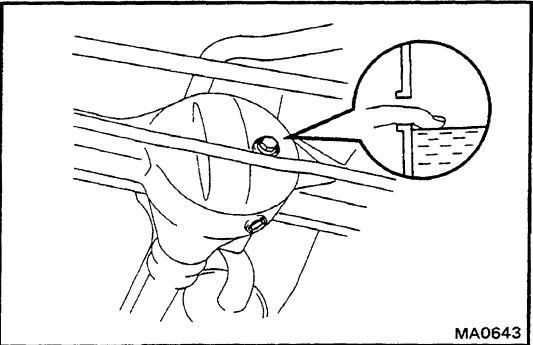
Differential oil:

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.

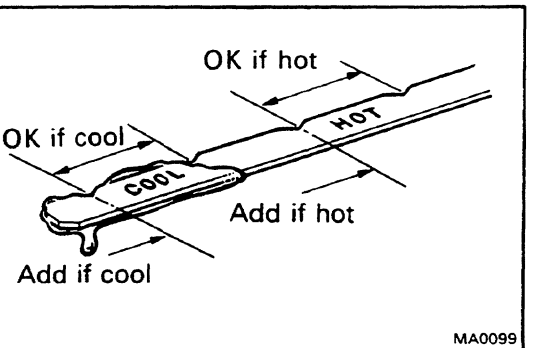
(b) Reinstall the drain plug securely.

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

Fluid: ATF DEXRON® II

Drain and refill capacity (Reference):

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

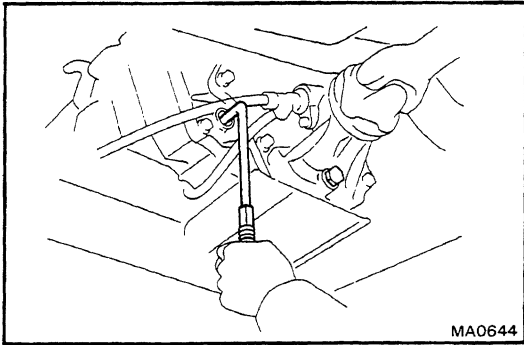


(d) Start the engine and shift the selector into all positions from "P" through "L", and then shift into "P".

(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

- Remove the drain plug and drain the oil.
- Reinstall drain plug securely.
- Add new oil until it begins to run out of the filter hole.

Oil grade and viscosity: See page [MA-9](#)

Oil capacity:

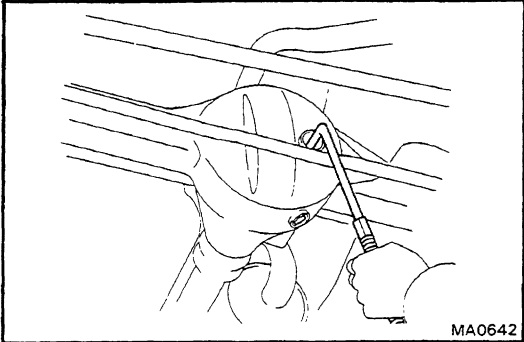
Transfer oil

2.1 liters (2.2 US qts, 1.8 Imp. qts)

Differential oil

Front 2.6 liters (2.7 US qts, 2.3 Imp. qts)

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



21. REPACK FRONT WHEEL BEARINGS

- 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 (NLGI No.2)

- Install the inner bearing and oil seal into the axle hub.
- 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: 600 kg-cm (43 ft-lb, 59 N-m)

- Turn the hub right and left two or three 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

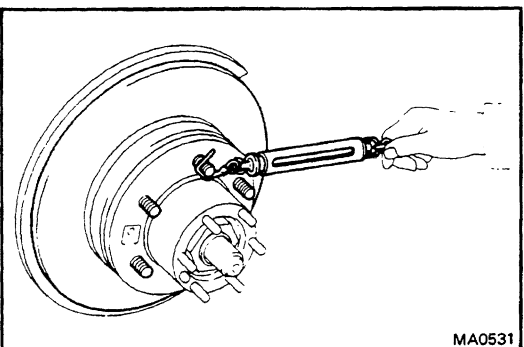
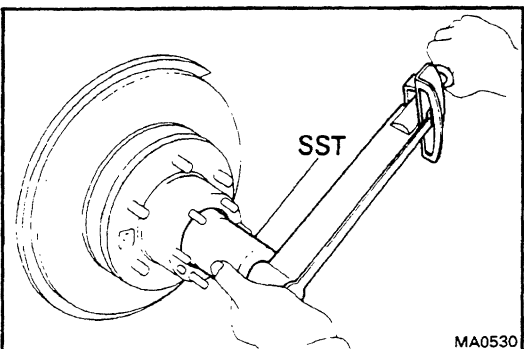
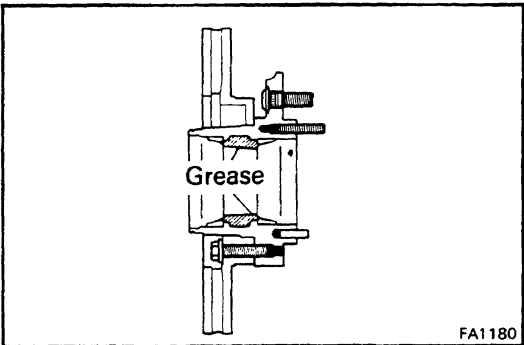
Torque:

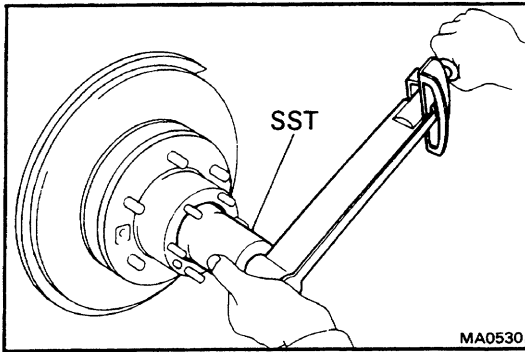
40 – 70 kg-cm (35 – 60 in.-lb, 4.0 – 6.8 N-m)

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

Preload (starting): 2.8 – 5.7 kg

(6.2–12.6 lb, 27–56 N)



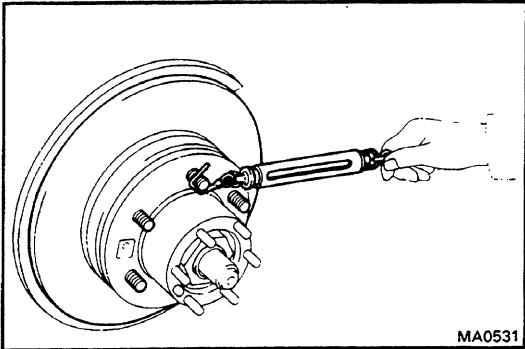


(d) Install a new lock washer and the lock nut.

(e) Using SST, torque the lock nut.

SST 09607-60020

Torque: 650 kg-cm (47 ft-lb, 64 N-m)

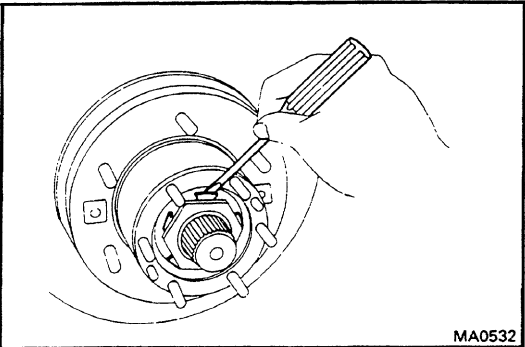


(f) Using a spring tension gauge, recheck the preload.

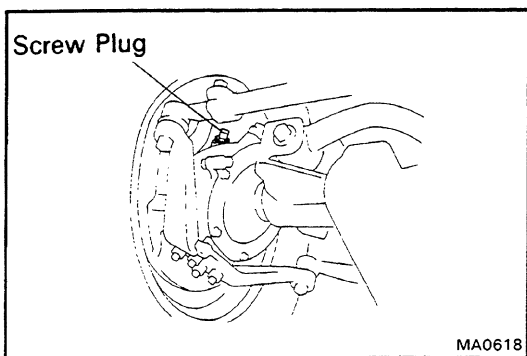
Preload (starting): 2.8 – 5.7 kg

(6.2–12.6 lb, 27–56 N)

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 PROPPELLER SHAFT

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

Steering knuckle grease:

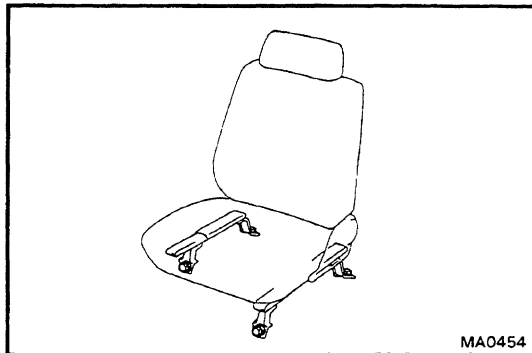
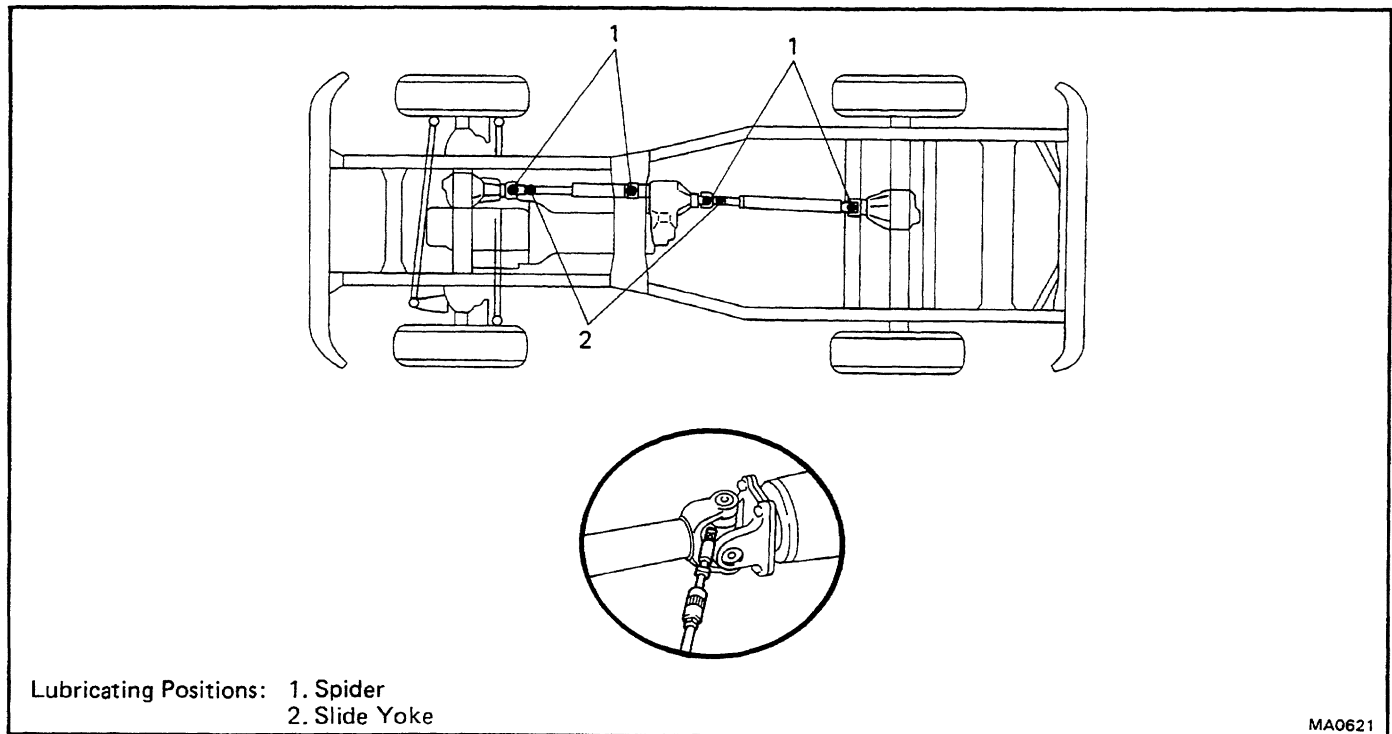
Molybdenum disulphide lithium base chassis grease (NLG1 No. 2)

(b) Reinstall the two 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: 380 kg-cm (27 ft-lb, 37 N-m)

(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 locks operate properly
Doors close 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