

# MAINTENANCE

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**MA****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 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	15	20	30	40	45	50	60	
	Maintenance items		Km x 1,000	16	24	32	48	64	72	80	96	
			Months	12	18	24	36	48	54	60	72	
ENGINE	Valve clearance*						A				A	MA-7 (item 13)
	Drive belts <sup>(1)</sup>						I				I	MA-4 (item 1)
	Engine oil and oil filter*		R			R	R	R		R	R	MA-5 (item 6)
	Engine coolant <sup>(2)</sup>										R	MA-5 (item 7)
	Exhaust pipes and mountings						I				I	MA-7 (item 11)
FUEL	Idle speed	22R-E engine <sup>(3)</sup>	A				A				A	MA-8 (item 14)
	Idle speed and fast idle speed	22R engine <sup>(4)</sup>					A					MA-8 (item 14) MA-9 (item 15)
	Air filter*						R				R	MA-5 (item 5)
	Fuel lines and connections						I				I	MA-7 (item 10)
	Fuel filler cap gasket										R	MA-7 (item 9)
IGNITION	Spark plugs**						R				R	MA-4 (item 2)
EVAP	Charcoal canister	Calif. only									I	MA-6 (item 8)
EXHAUST	Oxygen sensor* <sup>(5)</sup>	Fed. 22R-E engine only									R	MA-7 (item 12)
BRAKES	Brake linings and drums				I		I		I		I	MA-11 (item 1)
	Brake pads and discs				I		I		I		I	MA-11 (item 18)
	Brake line pipes and hoses				I		I		I		I	MA-11 (item 16)
CHASSIS	Steering linkage				I		I		I		I	MA-11 (item 19)
	Ball joints and dust covers (RN 2WD)				I		I		I		I	MA-12 (item 21)
	Automatic transmission <sup>(6)</sup> , manual transmission, transfer (RN 4WD), differential and steering gear box <sup>(6)</sup> oil				I		I		I		I	MA-12 (item 20) MA-12 (item 22) MA-13 (item 23)
	Front wheel bearing grease						R				R	MA-14 (item 26)
	Steering knuckle and chassis grease (RN 4WD)				R		R		R		R	MA-14 (item 27)
	Propeller shaft grease (RN 4WD) <sup>(7)</sup>				R		R		R		R	MA-14 (item 27)
	Bolts and nuts on chassis and body				I		I		I		I	MA-16 (item 28)

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

★ For vehicles sold in California

\* For vehicles sold outside California

### 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) After 30,000 miles (48,000 km) or 36 months, adjust every 30,000 miles (48,000 km) or 36 months.
- (4) Adjustment at 30,000 miles (48,000 km) or 36 months only
- (5) Replace at 60,000 miles (96,000 km) or 72 months only.
- (6) Inspect the automatic transmission and steering gear box for oil leakage only.
- (7) If the propeller shaft has been immersed in water, it should be re-greased within 24 hours.

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

- Pulling a trailer
- Repeated short trips
- Driving on rough and/or muddy roads
- Driving on dusty roads
- Driving in extremely cold weather and/or on salted roads

## SEVERE CONDITION SCHEDULE

System	Service interval (Odometer reading or months, whichever comes first)	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	7.5	10	15	20	22.5	25	30	35	37.5	40	45	50	52.5	55	60			
	Maintenance items	Km x 1,000	8	12	16	24	32	36	40	48	56	60	64	72	80	84	88	96			
		Months	6	9	12	18	24	27	30	36	42	45	48	54	60	63	66	72			
ENGINE	Valve clearance*									A								A	MA-7 (item 13)		
	Drive belts <sup>(1)</sup>									I								I	MA-4 (item 1)		
	Engine oil and oil filter*		R			R	R	R		R	R	R		R	R	R		R	MA-5 (item 6)		
	Engine coolant <sup>(2)</sup>																	R	MA-5 (item 7)		
	Exhaust pipes and mountings						I				I				I			I	MA-7 (item 11)		
FUEL	Idle speed	22R-E engine <sup>(3)</sup>				A					A							A	MA-8 (item 14)		
	Idle speed and fast idle speed	22R engine <sup>(4)</sup>									A								MA-8 (item 14) MA-9 (item 15)		
	Air filter* <sup>(9)</sup>		I			I	I	I		I	R	I		I	I	I		I	R	MA-5 (item 4, 5)	
	Fuel lines and connections										I							I	MA-7 (item 10)		
	Fuel filler cap gasket																	R	MA-7 (item 9)		
IGNITION	Spark plugs* *										R							R	MA-4 (item 2)		
	Ignition wiring and distributor cap* *										(5)										
EVAP	Charcoal canister	Calif. only																I	MA-6 (item 8)		
EXHAUST	Oxygen sensor* <sup>(6)</sup>	Fed. 22R-E engine only																R	MA-7 (item 12)		
BRAKES	Brake linings and drums				I		I		I		I		I		I		I	I	MA-11 (item 17)		
	Brake pads and discs				I		I		I		I		I		I		I	I	MA-11 (item 18)		
	Brake line pipes and hoses						I				I				I			I	MA-11 (item 16)		
CHASSIS	Steering linkage <sup>(10)</sup>				I		I		I		I		I		I		I	I	MA-11 (item 19)		
	Ball joints and dust covers (RN 2WD)				I		I		I		I		I		I		I	I	MA-12 (item 21)		
	Automatic transmission <sup>(7)</sup> , manual transmission, transfer (RN 4WD), differential and steering gear box <sup>(7)</sup> oil						R				R				R			R	MA-12 (item 20) MA-13 (item 24) MA-14 (item 25)		
	Front wheel bearing grease										R							R	MA-14 (item 26)		
	Steering knuckle and chassis grease (RN 4WD)				R		R		R		R		R		R		R	R	MA-14 (item 27)		
	Propeller shaft grease (RN 4WD) <sup>(8)</sup>				R		R		R		R		R		R		R	R	MA-14 (item 27)		
	Bolts and nuts on chassis and body <sup>(10)</sup>				I		I		I		I		I		I		I	I	MA-16 (item 28)		

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### NOTE:

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- (3) After 30,000 miles (48,000 km) or 36 months, adjust every 30,000 miles (48,000 km) or 36 months.
- (4) Adjustment at 30,000 miles (48,000 km) or 36 months only.
- (5) In areas where road salt is used, inspect and clean each year just after the snow season.
- (6) Replace at 60,000 miles (96,000 km) or 72 months only.
- (7) Inspect the automatic transmission and steering gear box for oil leakage only.
- (8) If the propeller shaft has been immersed in water, it should be re-greased within 24 hours.
- (9) Applicable when operating mainly on dusty roads. If not, follow the normal condition schedule.
- (10) Applicable when operating mainly on rough and/or muddy roads. If not, follow the normal condition schedule.

# MAINTENANCE OPERATIONS

## ENGINE

### Cold Engine Operations

#### 1. INSPECT DRIVE BELTS

- (a) Visually check the drive 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.

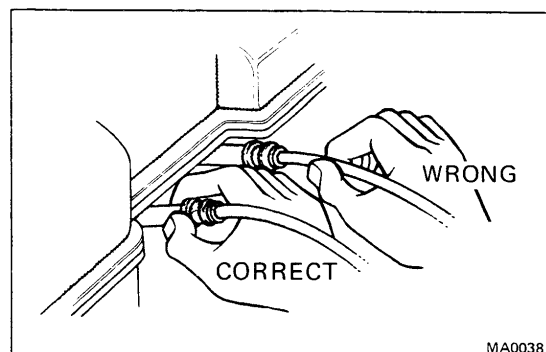
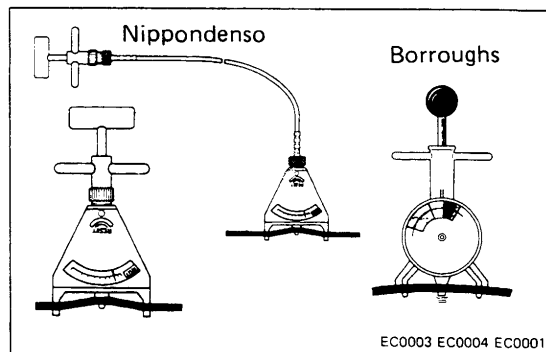
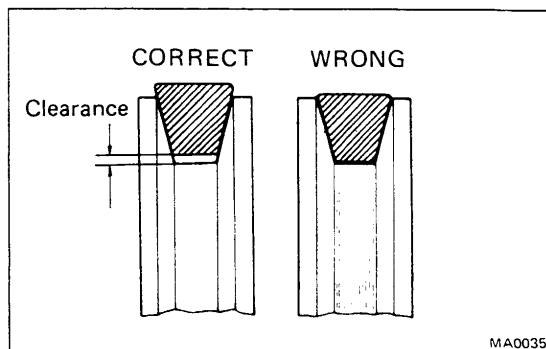
- (b) Using a belt tension gauge, check the drive belt tension.

Belt tension gauge:

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

**Drive belt tension: Used belt  $80 \pm 20$  lb**  
**New belt  $125 \pm 25$  lb**

If necessary, adjust the drive belt tension.



#### 2. REPLACE SPARK PLUGS

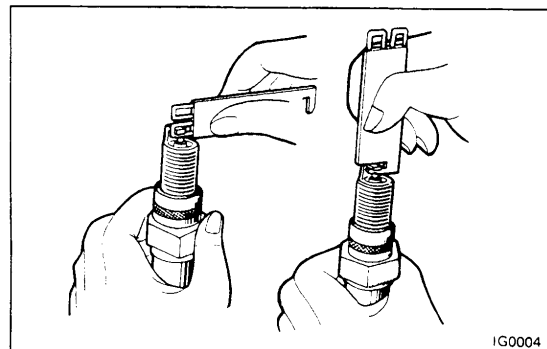
- (a) Disconnect the spark plug wires at the boot. DO NOT pull on the wires.
- (b) Remove the spark plugs.

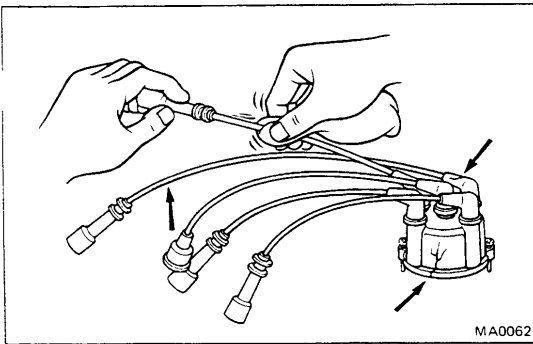
- (c) Set the gap on the new plugs.

**Gap: 0.8 mm (0.031 in.)**

Recommended spark plugs:

ND	W16EXR-U
NGK	BPR5EY

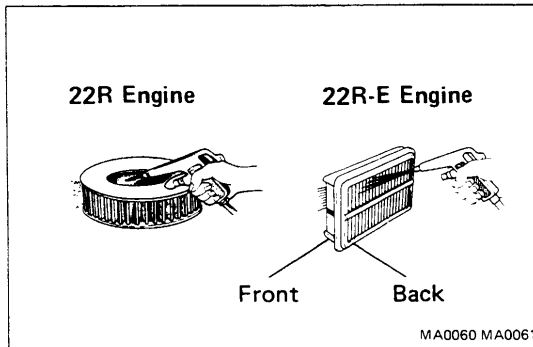




### 3. INSPECT IGNITION WIRING AND DISTRIBUTOR CAP

- Remove the distributor cap with the wire.
- Clean the distributor cap and wires with a clean cloth.
- Visually inspect the wiring for cracks or damage.
- Visually inspect the cap for cracks, carbon tracks or wear.

**NOTE:** In areas where road salt is used, inspection and cleaning should be performed each year just after the snow season.



### 4. INSPECT AIR FILTER

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

**NOTE:** Oiliness may indicate a stuck PCV valve.

If necessary, replace the air cleaner element.

- Clean the element with compressed air.

First blow from inside (or back side) thoroughly, then blow off the outside (or front side) of the element.

### 5. REPLACE AIR FILTER

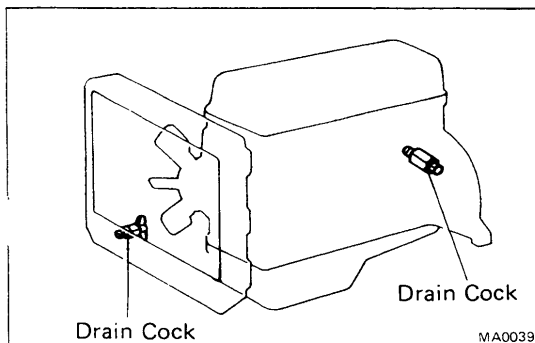
Replace the used air cleaner element with a new one.

### 6. REPLACE ENGINE OIL AND OIL FILTER

(See page LU-3)

**Oil grade:** API grade SF or SF/CC multigrade, fuel-efficient and recommended viscosity oil.

**Engine oil capacity (Drain and refill with oil filter change):** 4.6 liters (4.9 US qts, 4.0 Imp. qts)



### 7. REPLACE ENGINE COOLANT

- Drain the coolant from the radiator and engine drain cocks. (Engine drain is at left rear of engine block.)
- Close the drain cocks.
- Fill system with coolant.

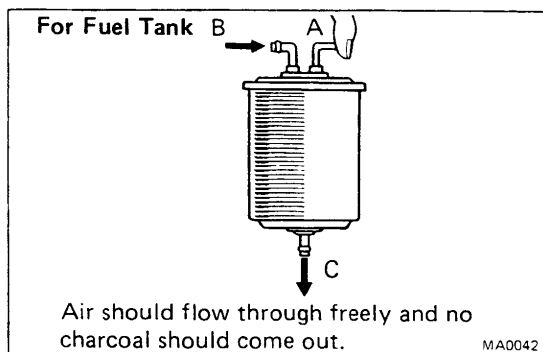
**Coolant capacity (w/heater or air conditioner):**  
8.4 liters (8.9 US qts, 7.4 Imp. qts)

Use a good brand of ethylene-glycol base coolant, mixed according to the manufacturers instruction.

## 8. CALIFORNIA VEHICLES ONLY: INSPECT CHARCOAL CANISTER

### A. 22R-E ENGINE

- (a) Disconnect the hoses to the charcoal canister.  
Label hoses for correct installation.



- (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.

NOTE: Do not attempt to wash the charcoal.

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

### B. 22R ENGINE

- (a) Inspect the fuel tank and carburetor charcoal canisters.

For Fuel Tank

- (b) Disconnect the hoses to the fuel tank charcoal canister. Label hoses for correct installation.
- (c) 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.

NOTE: Do not attempt to wash the charcoal.

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

For Carburetor

- (e) Disconnect the hoses to the carburetor charcoal canister located below the battery. Label hoses for correct installation.

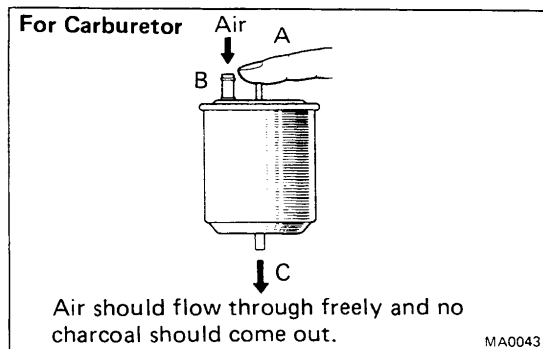
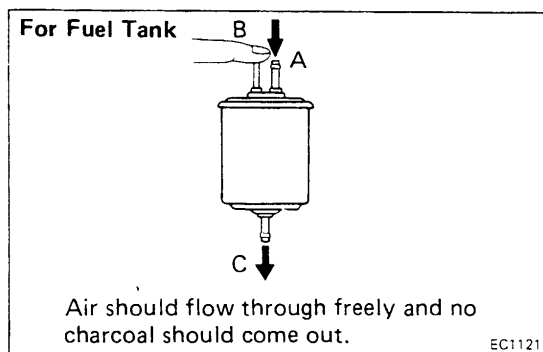
- (f) Plug pipe A with your finger and blow compressed air (3 kg/cm<sup>2</sup>, 43 psi or 294 kPa) through pipe B (Outer vent control valve side).

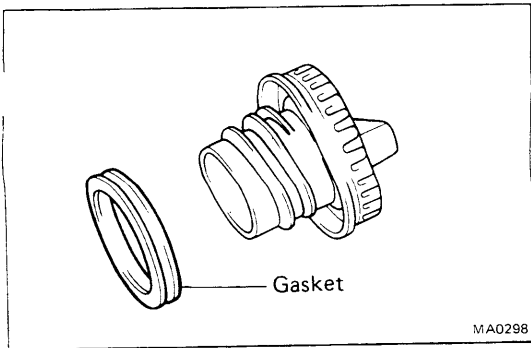
- Check that air comes out of the bottom pipe C without resistance.
- Check that no activated charcoal comes out.

If necessary, replace the charcoal canister.

NOTE: Do not attempt to wash the charcoal.

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





## 9. REPLACE GASKET IN FUEL FILLER CAP

- Remove the old gasket (O-ring) from the fuel filler 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.

## 10. INSPECT FUEL LINES AND CONNECTIONS

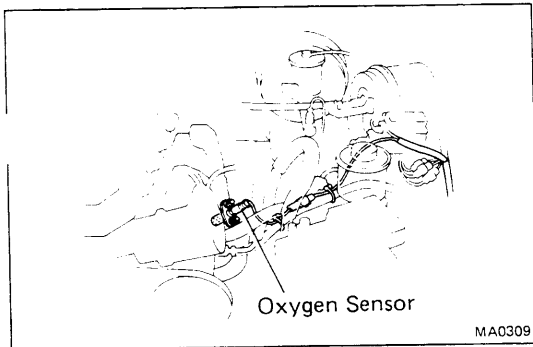
(22R Engine: See page FU-30)

(22R-E Engine: See page FI-53)

Visually inspect the fuel lines for cracks, leakage or loose connections.

## 11. INSPECT EXHAUST PIPES AND MOUNTINGS

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



## 12. FEDERAL 22R-E ENGINE ONLY: REPLACE OXYGEN SENSOR

- Disconnect the oxygen sensor wiring connector.
- Remove the oxygen sensor and gasket from the exhaust manifold.
- Install the new gasket and oxygen sensor to the exhaust manifold.

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

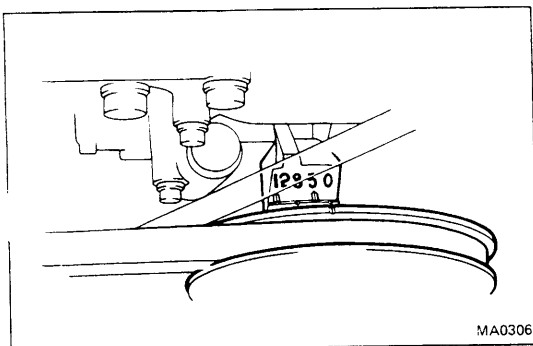
- Inspect oxygen sensor operation.  
Inspect feed back control.  
(See page FI-69)

## Hot Engine Operations

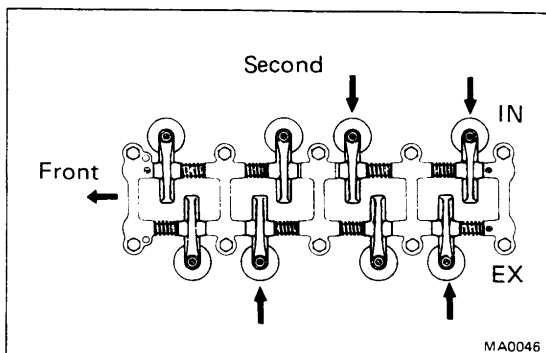
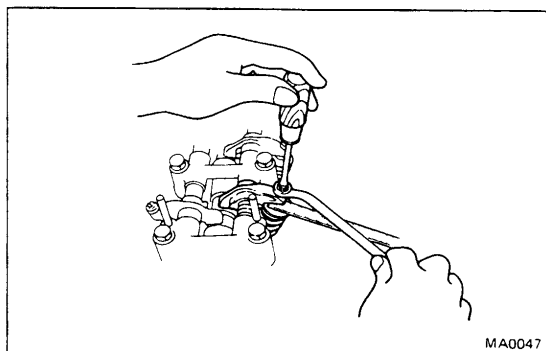
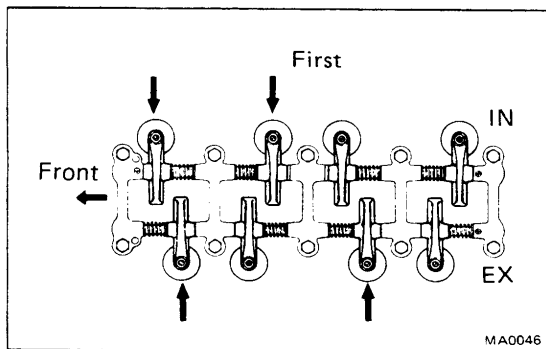
### 13. ADJUST VALVE CLEARANCE

- Warm up the engine to normal operating temperature.
- Stop the engine and remove the valve cover.
- Set No. 1 cylinder to TDC/compression.
  - Turn the crankshaft with a wrench to align the timing marks at TDC. Set the groove on the pulley to the 0 position.
  - Check that the rocker arms on No. 1 cylinder are loose and rockers on No. 4 are tight.

If not, turn the crankshaft one complete revolution and align marks as above.







- (d) Adjust the clearance of half of the valves.
- Adjust only those valves indicated by arrows.

**Valve clearance:** Intake 0.20 mm (0.008 in.)  
Exhaust 0.30 mm (0.012 in.)

- Use a feeler gauge to measure 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 clearance. The feeler gauge should move with a very slight drag.

- (e) Turn the crankshaft one complete revolution (360°) and align timing marks in the manner mentioned above. Adjust only the valves indicated by arrows.
- (f) Reinstall the valve cover.
- (g) Reinstall the air cleaner (22R engine).

## 14. ADJUST IDLE SPEED

### A. 22R-E ENGINE

#### (a) Preparation

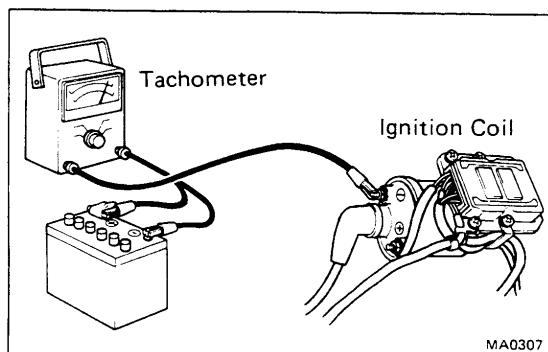
- Air cleaner installed
- All pipes and hoses of air intake system connected
- All vacuum lines connected (i. e., SC, EGR systems, etc.)
- EFI system wiring connectors fully plugged
- Engine at normal operating temperature
- Accessories switched off
- Transmission in N range

#### (b) Connect a tachometer to the engine.

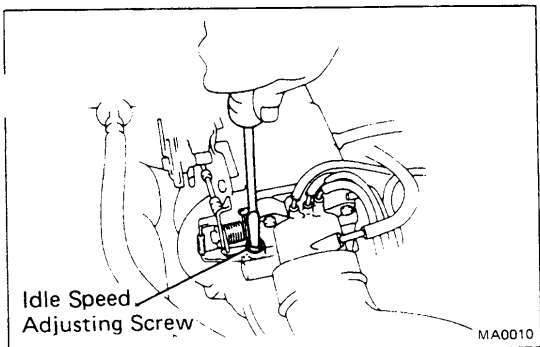
Connect the tachometer positive (+) terminal to the ignition coil negative (—) terminal.

#### CAUTION:

1. NEVER allow the tachometer terminal to touch ground as it could result in damage to the igniter and/or ignition coil.
2. As some tachometers are not compatible with this ignition system, it is recommended that you consult with the manufacturer.







- (c) Race the engine at 2,500 rpm for about 2 minutes.
- (d) Set the idle speed by turning the IDLE SPEED ADJUSTING SCREW.

**Idle speed: 750 rpm**

- (e) Remove the tachometer.

## B. 22R ENGINE

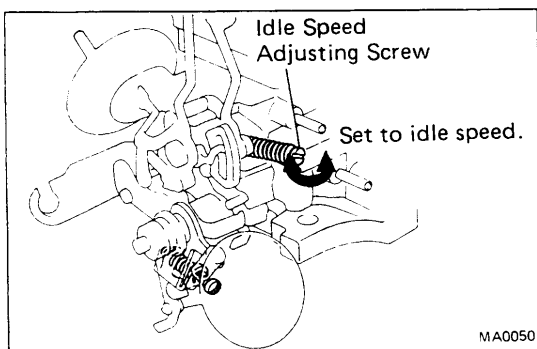
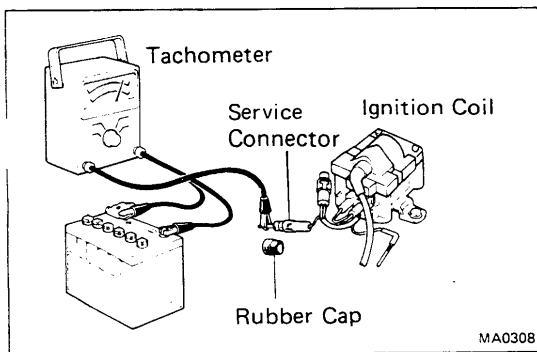
### (a) Preparation

- Air cleaner installed
- Choke valve fully open
- Accessories switched off
- All vacuum lines connected (i.e., AS, EGR systems, etc.)
- Transmission in N range
- Engine idling at normal operating temperature

- (b) Connect a tachometer to the engine. Remove the rubber cap and connect the tachometer positive (+) terminal to the service connector at the igniter.

### CAUTION:

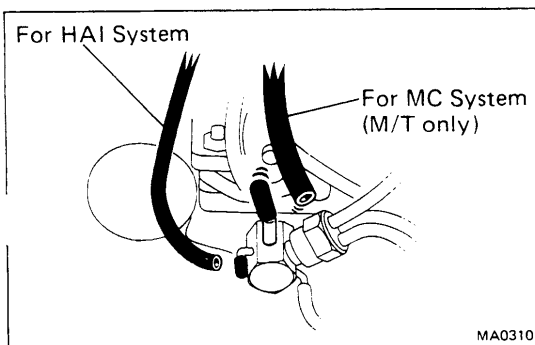
1. **NEVER** allow the tachometer terminal to touch ground as it could result in damage to the igniter and/or ignition coil.
2. As some tachometers are not compatible with this ignition system, it is recommended that you consult with the manufacturer.



- (c) Set the idle speed by turning the IDLE SPEED ADJUSTING SCREW.

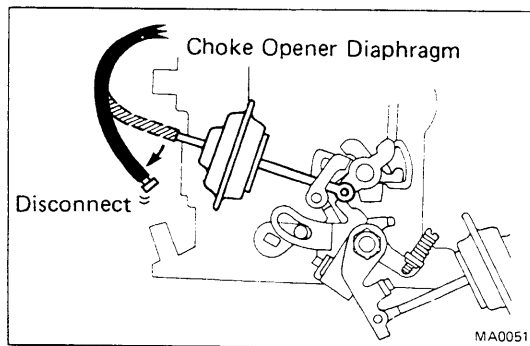
**Idle speed: 700 rpm M/T  
750 rpm A/T**

**NOTE:** Leave the tachometer connected for further adjustment.

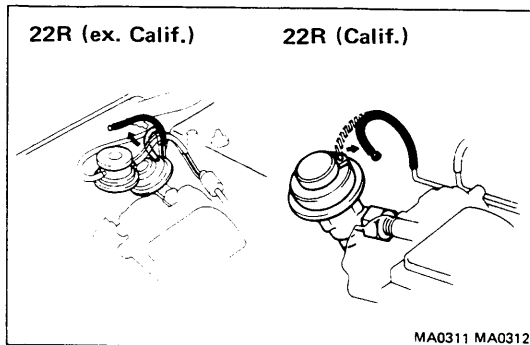


## 15. 22R ENGINE ONLY: ADJUST FAST IDLE SPEED

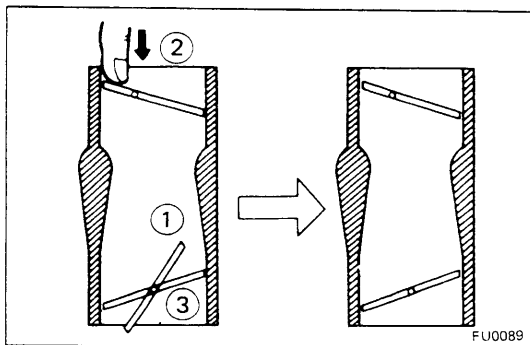
- (a) Stop the engine and remove the air cleaner.
- (b) Plug the hose connections for HAI system and MC system (w/M/T only) to prevent rough idling.



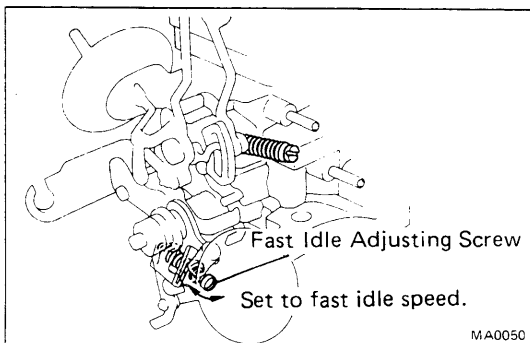
- (c) Disconnect the hose from the choke opener diaphragm and plug the hose end.  
This will shut off the choke opener system.



- (d) Disconnect the hose from the EGR valve.  
This will shut off the EGR system.



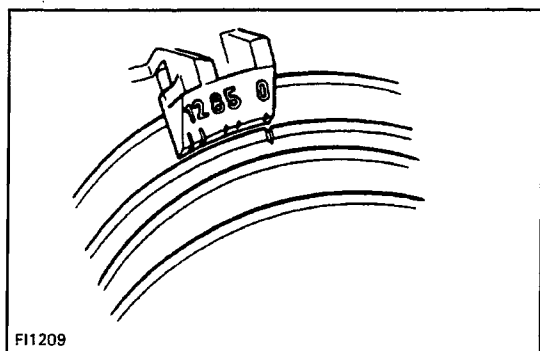
- (e) Set the fast idle cam.  
While holding the throttle valve slightly open, push the choke valve closed, and hold it closed as you release the throttle valve.
- (f) Start the engine, but do NOT touch the accelerator pedal.



- (g) Set the fast idle speed by turning the fast idle adjusting screw.

**Fast idle speed: 2,600 rpm**

- (h) Reconnect the vacuum hoses to the proper locations.
- (i) Reinstall the air cleaner.
- (j) Stop the engine and remove the tachometer.



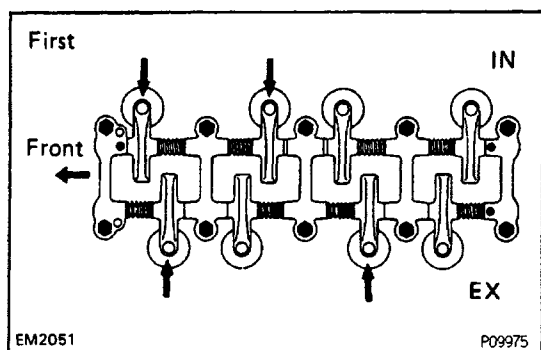
## Hot Engine Operations

### 14. (22R-E ENGINE)

#### ADJUST VALVE CLEARANCE

- (a) Warm up the engine to normal operating temperature.
- (b) Stop the engine and remove the cylinder head cover.
- (c) Set No.1 cylinder to TDC/compression.
  - Turn the crankshaft with a wrench to align the timing marks at TDC. Set the groove on the pulley to the "O" position.
  - Check that the rocker arms on No.1 cylinder are loose and rocker arms on No.4 cylinder are tight.

If not, turn the crankshaft one complete revolution and align marks as above.



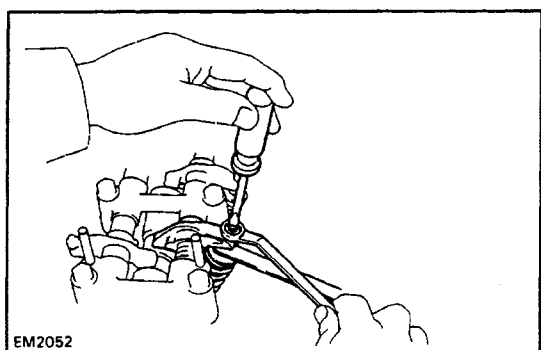
- (d) Adjust the clearance of half of the valves.

- Adjust only the valves indicated by arrows.

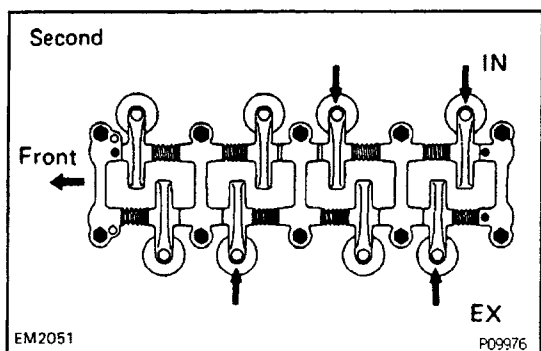
#### Valve clearance:

**Intake 0.20 mm (0.008 in.)**

**Exhaust 0.30 mm (0.012 in.)**



- Use a thickness gauge to measure 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 clearance. The thickness— gauge should move with a very slight drag.



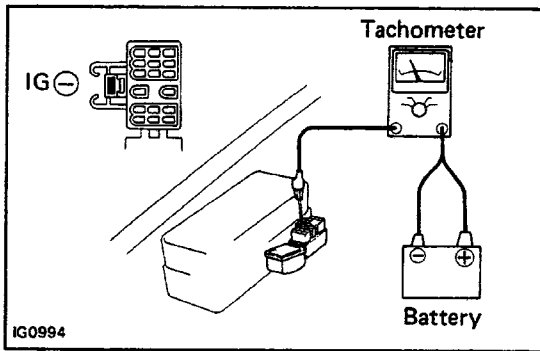
- (e) Turn the crankshaft one complete revolution (360°) and align timing marks in the manner mentioned above. Adjust only the valves indicated by arrows.

- (f) Reinstall the cylinder head cover.

### 16. ADJUST IDLE SPEED

- (a) Preparation

- Install air cleaner
- Connect all pipes and hoses of air intake system



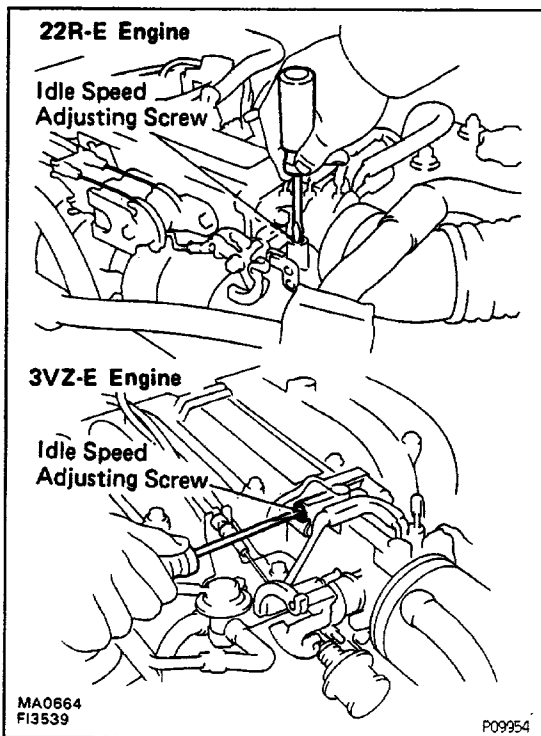
- Connect all vacuum lines (i.e., EVAP, EGR system, etc.)
- Make sure all MFI system wiring connectors are fully connected
- Engine should be at normal operating temperature
- Switch off accessories
- Set transmission in neutral

(b) Connect a tachometer– to the engine

Connect the tachometer– test probe to the iG E) terminal of the DLC1.

**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 approx. 2 minutes.

(d) Set the idle speed by turning the idle speed adjusting screws.

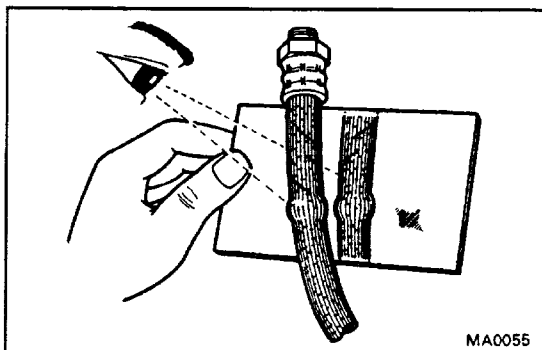
**Idle speed:**

**22R–E 4WD A/T 850 rpm**

**Ex. 4WD A/T 750 rpm**

**3VZ–E 800 rpm**

(e) Remove the tachometer.



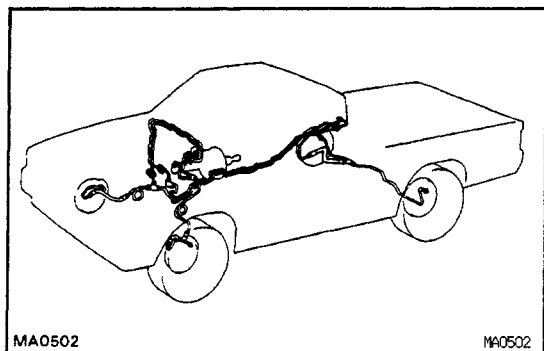
## BRAKES

### 16. INSPECT BRAKE LINE PIPES AND HOSES

**HINT:** 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.

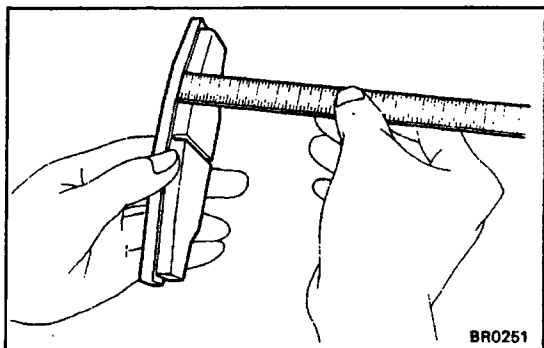
(a) Check all brake lines and hoses for:

- Damage



- 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.



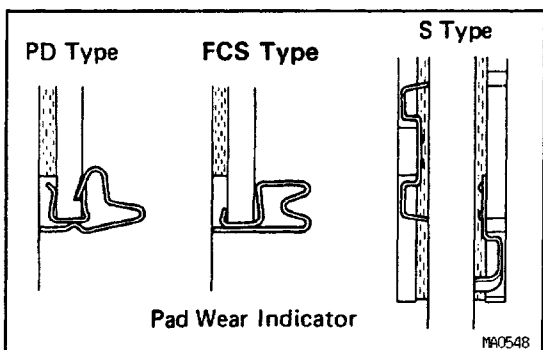
## 17. INSPECT FRONT BRAKE PADS AND DISCS

(See BR section)

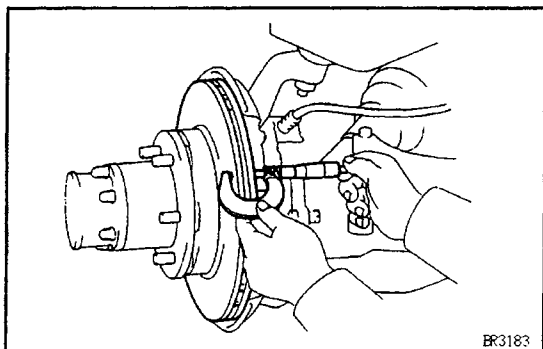
- (a) Check the thickness of the disc brake pad and check for irregular wear.

**Minimum lining thickness:**

**1.0 mm (0.039 in.)**



HINT: If a squealing or scraping noise occurs from the brake 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.

**Minimum disc thickness:**

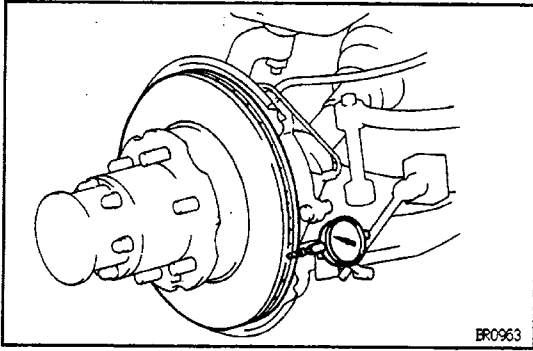
**2WD FS17 type 21.0 mm (0.827 in.)**

**FS18 type 20.0 mm (0.787 in.)**

**PD60 type 23.0 mm (0.906 in.)**

**PD66 type 28.0 mm (1.102 in.)**

**4WD S 12 + 12 Type 18.0 mm (0.790 in.)**

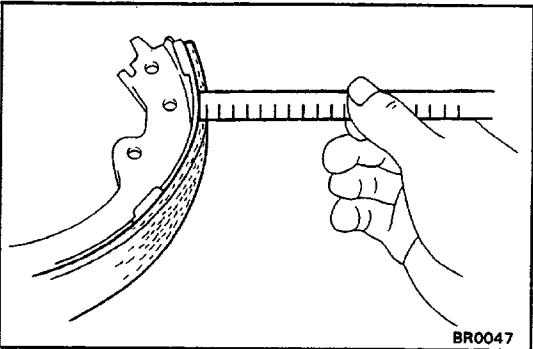


(c) Check the disc for runout.

**Minimum disc runout:**

**Ex. C & C 0.09 mm (0.0035 in.)**

**C & C 0.12 mm (0.0047 in.)**



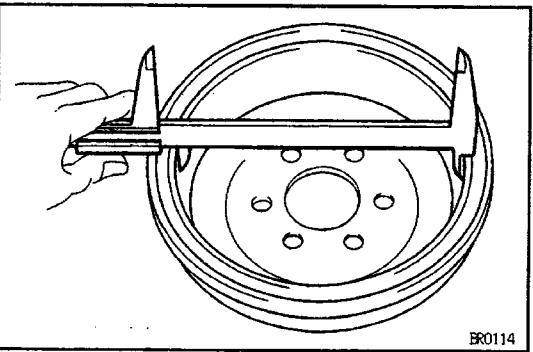
## 18. INSPECT REAR BRAKE LININGS AND DRUMS

(See BR section)

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

**Minimum lining thickness:**

**1.0 mm (0.0039 in.)**



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

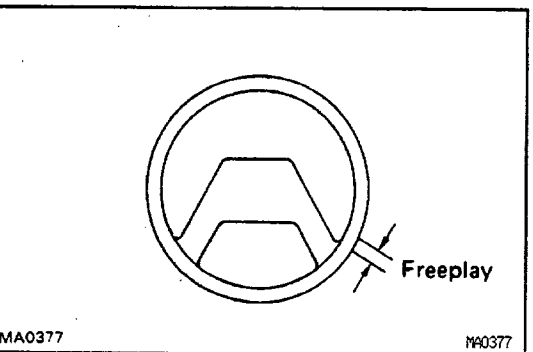
**Maximum drum inside diameter:**

**2WD 256.0 mm (10.079 in.)**

**4WD 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

### 19. INSPECT STEERING LINKAGE

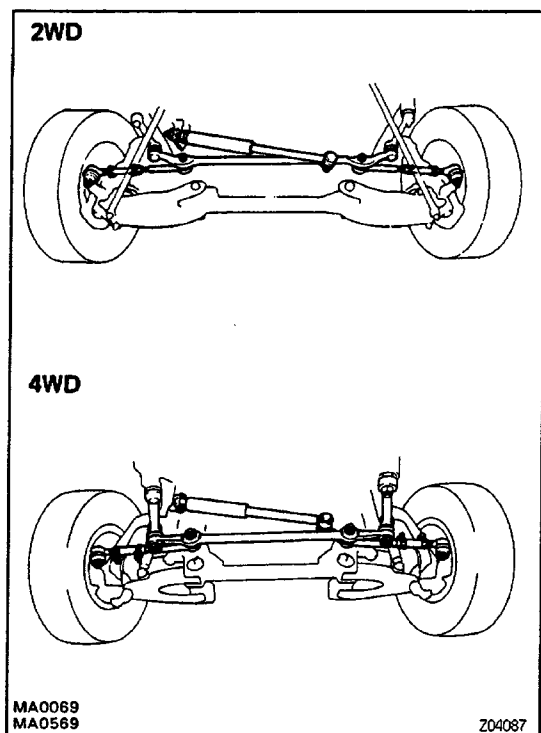
(a) Check the steering wheel freeplay.

**Maximum:**

**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.

If incorrect, adjust or repair.



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

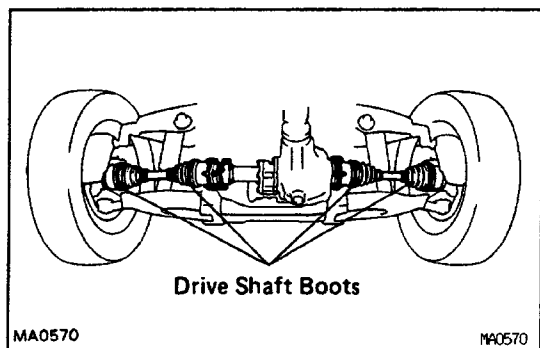
**Check that:**

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

**20. INSPECT STEERING GEAR HOUSING**

Check the steering gear housing for oil leaks.

If leakage is found, check for cause and repair.



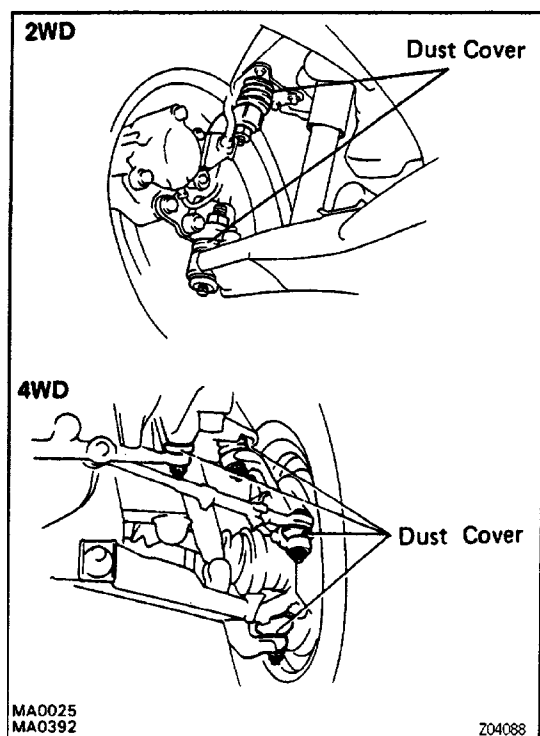
**21. (4WD)**

**INSPECT DRIVE SHAFT BOOTS**

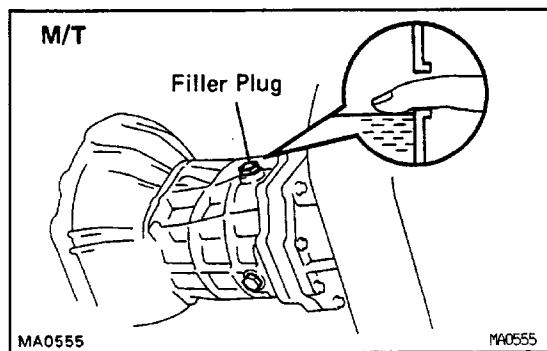
Inspect the drive shaft boots for clamp looseness, grease leakage or damage.

**22. INSPECT BALL JOINTS AND DUST COVERS**

- Inspect the ball joints for excessive looseness.  
(See SA section)
- Inspect the dust cover for damage.





**23. (2WD)****CHECK OIL LEVEL IN MANUAL TRANSMISSION, AUTOMATIC TRANSMISSION AND DIFFERENTIAL**

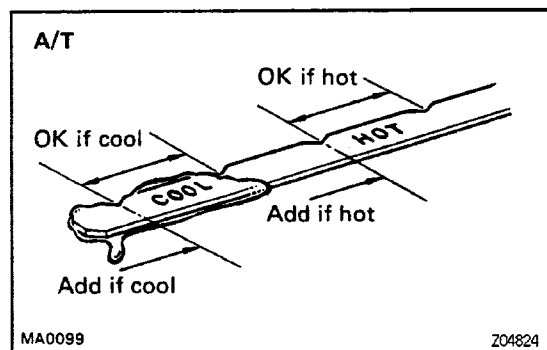
Remove the filler plug and feel inside the hole with your finger. Check that the oil comes to within 5 mm (0.20 in.) of the bottom edge of the hole. If the level is low, add oil until it begins to run out of the filler hole.

**Transmission oil (M/T) –****Oil grade:**

**API GL-4 or GL-5**

**Viscosity:**

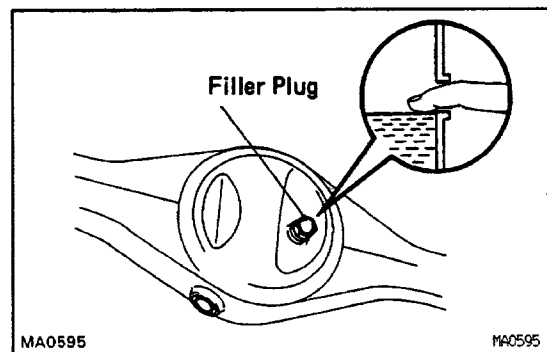
**SAE 75W-90**



Check the automatic transmission for oil leakage. If leakage is found, check for cause and repair.

**Transmission fluid (A/T):**

**ATF DEXRON® II**



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.

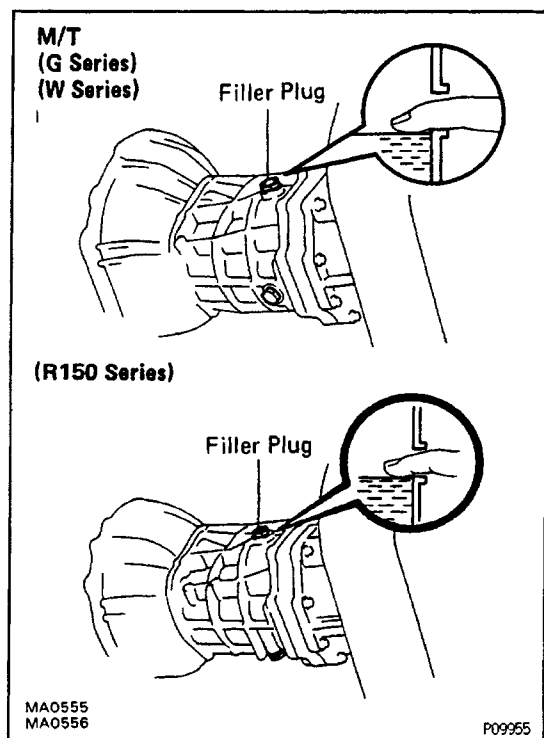
**Differential oil – –****Oil grade:**

**AN GL-5 hypoid gear oil**

**Viscosity:**

**Above -18 °C (0 °F) SAE 90**

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

**24. (4WD)****CHECK OIL LEVEL IN MANUAL TRANSMISSION, AUTOMATIC TRANSMISSION, TRANSFER AND DIFFERENTIAL**

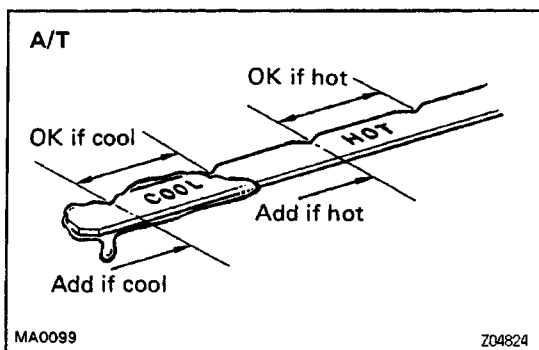
Remove the filler plug and feel inside the hole with your finger. Check that the oil comes to within 5 mm (0.20 in.) of the bottom edge of the hole. If the level is low, add oil until it begins to run out of the filler hole.

**Transmission oil (M/T) –****Oil grade:**

**API GL-4 or GL-5**

**Viscosity:**

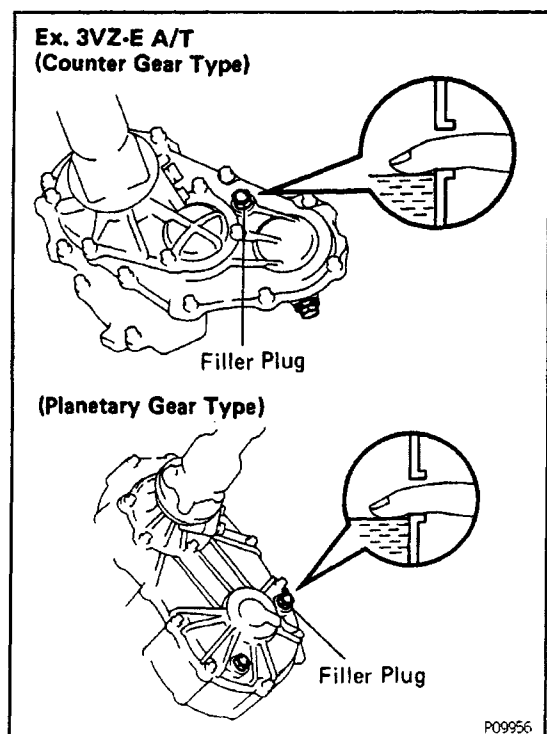
**SAE 75W-90**



Check the automatic transmission for oil leakage. If leakage is found, check for cause and repair.

**Transmission fluid (A/T):**

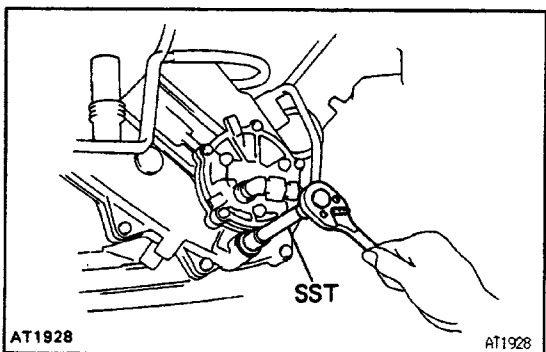
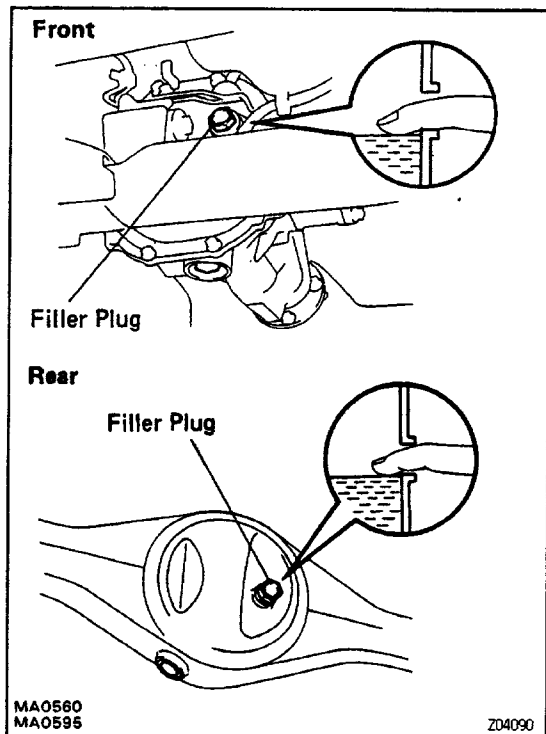
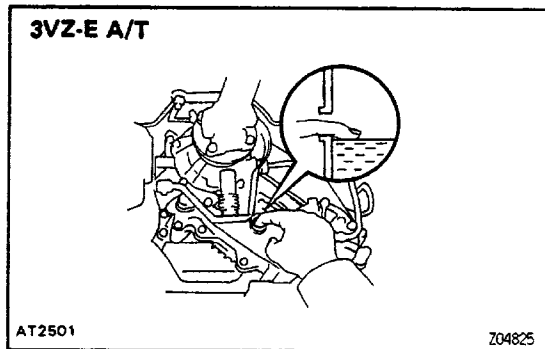
**ATF DEXRON® II**



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.

**Transfer oil (Ex. 3vZ – E A/T) –****Oil grade: AN GL-4 or GL-5****Viscosity: SAE 75W-90****Transfer fluid (3VZ– E A/T):**

**ATF DEXRON® II**



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.

**Differential oil –**

**Standard differential**

**Oil grade:**

API GL-5 hypoid gear oil

**Viscosity:**

Above  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) SAE 90

Below  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) SAE 80W – 90 or 80W

**A.D.D.**

**Oil grade:**

Toyota 'GEAR OIL SUPER' oil or hypoid gear oil API GL-5

**Viscosity:**

SAE 75W-90

**25. REPLACE MANUAL TRANSMISSION. TRANSFER (4 WD) AND DIFFERENTIAL OIL**

(a) (Transfer)

Remove the transfer cover.

(b) Using SST (A340H Transfer), remove the drain plug and drain the oil.

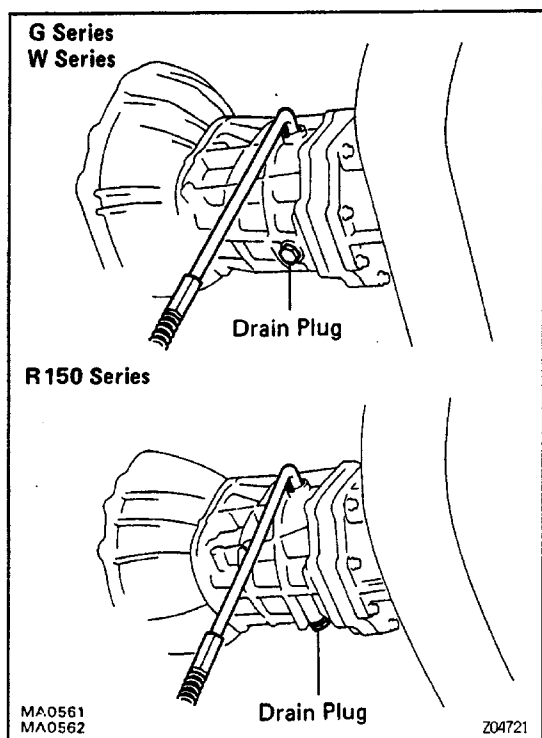
SST 09043-38100

(c) Reinstall drain plug securely.

(d) Add new oil until it begins to run out of the filler hole.

**Oil grade and viscosity:**

See pages MA -16 to 18

**Oil capacity:****Transmission –****2WD**

W55 2.6 liters (2.7 US qts, 2.3 Imp. qts)

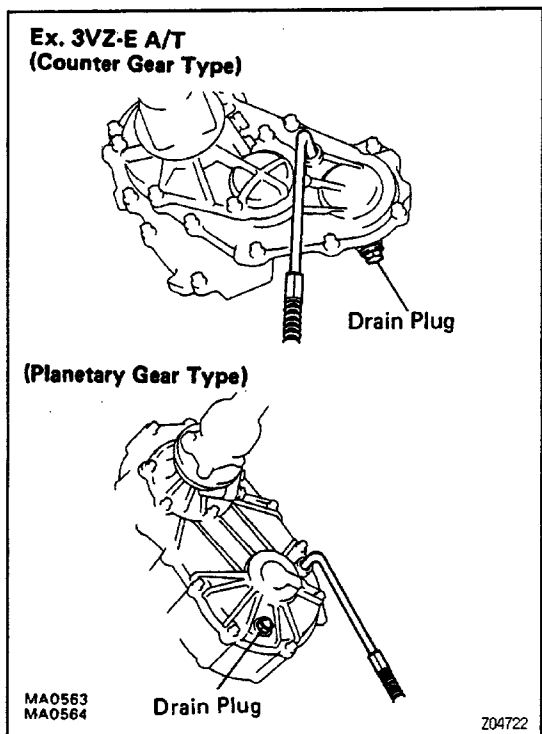
R150 3.0 liters (3.2 US qts, 2.6 Imp. qts)

**4WD**

G58 3.9 liters (4.1 US qts, 3.4 Imp. qts)

W56 2.9 liters (3.1 US qts, 2.5 Imp. qts)

RI 50F 3.0 liters (3.2 US qts, 2.6 Imp. qts)

**Transfer –****Counter Gear Type**

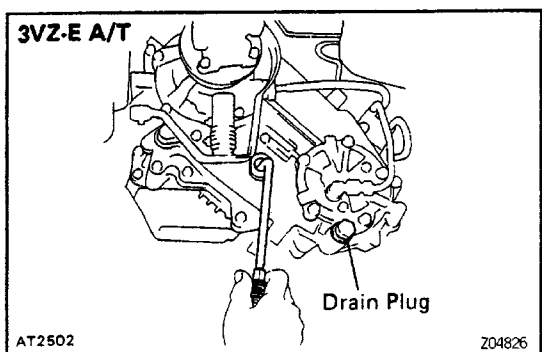
1.6 liters (1.7 US qts, 1.4 Imp. qts)

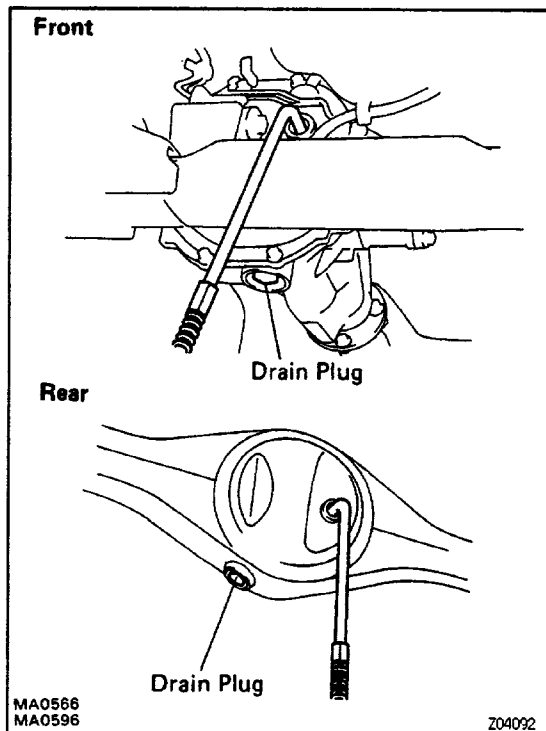
**Planetary Gear Type**

1.1 liters (1.2 US qts, 1.0 Imp. qts)

**A340H**

0.8 liters (0.8 US qts, 0.7 Imp. qts)



**Differential –****2WD**

7.5 in. 1.35 liters (1.4 US qts, 1.2 Imp. qts)

8.0 in. 1.8 liters (1.9 US qts, 1.6 Imp. qts)

**4WD****Front Standard differential**

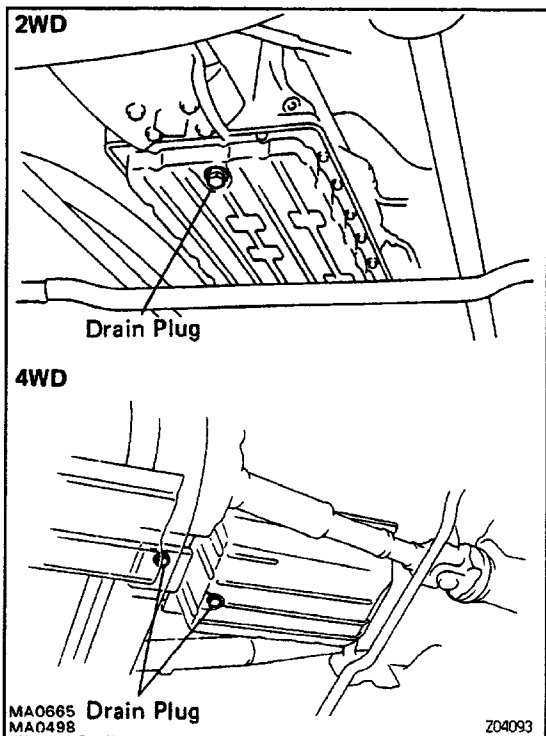
1.6 liters (1.7 US qts, 1.4 Imp. qts)

**A.D.D.**

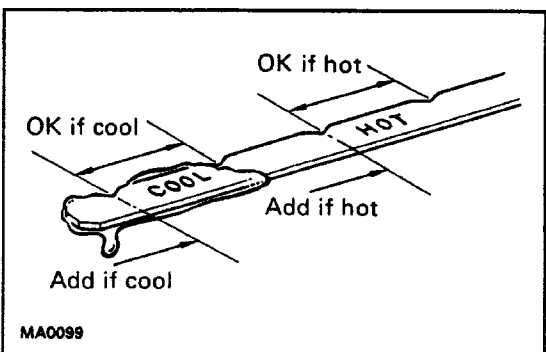
1.86 liters (2.0 US qts, 1.6 Imp. qts)

**Rear**

2.2 liters 2.3 US qts, 1.9 Imp. qts)

**26. REPLACE AUTOMATIC TRANSMISSION FLUID**

- Remove the drain plug(s) and drain the fluid.
- Reinstall the drain plug(s) securely.
- With the engine OFF, add new fluid through the dipstick tube.

**Fluid:****ATP DEXRON® II****Drain and refill capacity:****2WD****A43D 2.4 liters (2.5 US qts, 2.1 Imp. qts)****A340E 1.6 liters (1.7 US qts, 1.4 Imp. qts)****4WD****A340H 4.5 liters (4.8 US qts, 4.0 Imp. qts)****A340F 2.0 liters (2.1 US qts, 1.8 Imp. qts)**

- Start the engine and shift the selector into all positions from "P" through "L" and then shift into "P".

- (A340H)

Shift the transfer lever position: H2→H4→L4 and L4→H4→H2.

- With the engine idling, check the fluid level.

Add fluid up to the cool level on the dipstick.

- (g) Check that the fluid level is in the "HOT" range at the normal operating temperature (70 – 80 °C or 158 – 176 °F) and add as necessary.

**NOTICE: Do not overfill.**

## **27. REPACK FRONT WHEEL BEARINGS AND THRUST BUSH**

- (a) Change the front wheel bearing grease.

(See SA section)

### **2WD –**

**Grease grade:**

**Lithium base multipurpose grease (NLGI No.2)**

**Wheel bearing friction preload (at starting):**

**5.9–18N(0.6–1.8kgf, 1.3–4.0lbf)**

### **4WD –**

**Grease grade:**

**Lithium base multipurpose grease (NLGI No.2)**

**Wheel bearing friction preload (at starting):**

**27 – 55 N (2.8 – 5.6 kgf, 6.2 – 12.3 lbf)**

- (b) Repack the drive shaft thrust bush grease.

(See SA section)

## **28. (4WD)**

### **LUBRICATE PROPELLER SHAFT**

Lubricate propeller shaft, referring to the lubrication chart. Before pumping in grease, wipe off any mud and dust on the grease fitting.

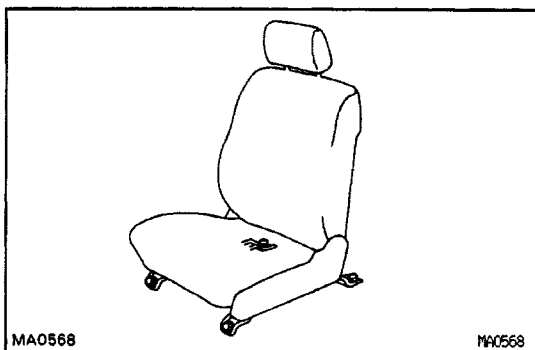
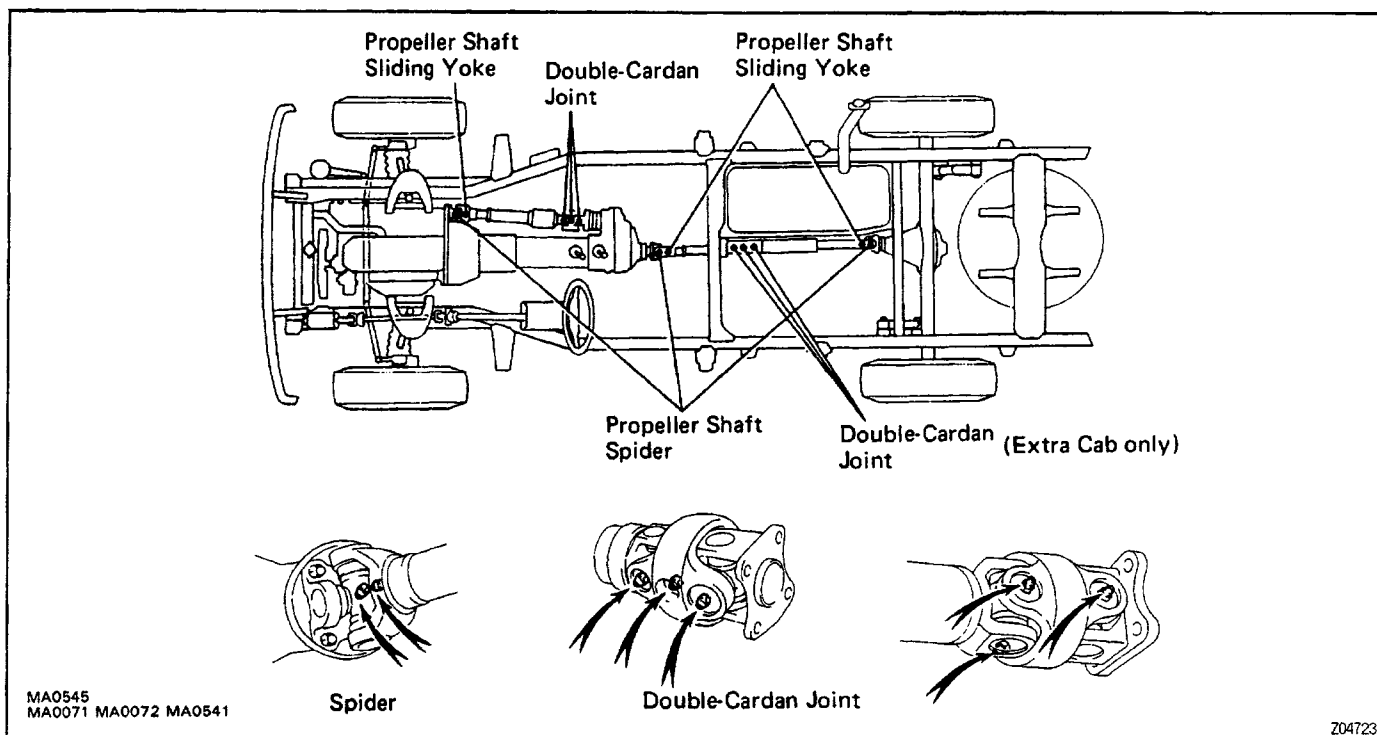
**Grease grade:**

**Propeller shaft (ex. Double–cardan joint) –**

**Lithium base chassis grease (NLGI No.2)**

**Double–cardan joint – Molybdenum disulphide**

**Lithium base chassis grease (NLGI No.2)**

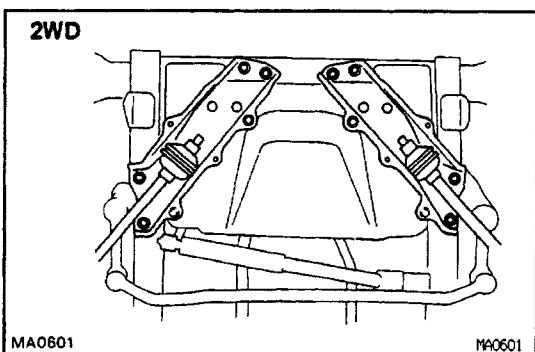


## 29. TIGHTEN BOLTS AND NUTS ON CHASSIS AND BODY

Tighten the following parts:

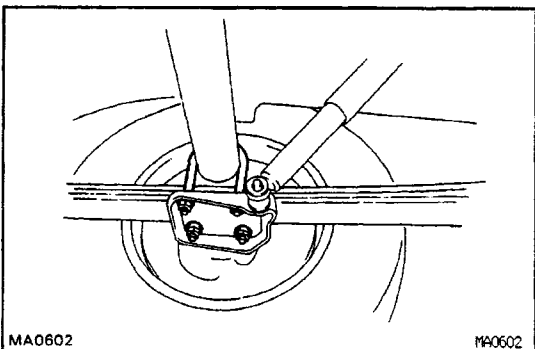
- Seat mounting bolts

**Torque: 37 N–m (375 kgf–cm, 27 ft–lbf)**



- Strut bar bracket-to-frame mounting bolts (2 WD)

**Torque: 52 N–m (530 kgf–cm, 38 ft–lbf)**



- Leaf spring U – bolt mounting nuts

**Torque:**

**2WD 0.5 ton 147 N–m (1,500 kgf–cm, 108 ft–lbf)**

**Others 123 N–m (1,250 kgf–cm, 90 ft–lbf)**

**Under Severe Conditions:**

In addition to the above maintenance items, check for loose or missing bolts and nuts on the following.

- Steering system
- Drive train



- Suspension system
- Fuel tank mounts
- Engine mounts, etc.

### 30. FINAL INSPECTION

(a) Check operation of body parts:

- Hood  
Auxiliary catch operates properly
- Hood locks securely when closed  
Doors  
Door locks operate properly
- Doors close properly  
Seats
- Seat adjusts easily and locks securely in any positions  
Seat backs lock securely at any angle  
Fold-down seat backs lock securely

(b) Road test

- Engine and chassis parts do not have abnormal noises.
- Vehicle does not wander or pull to one side.
- Brakes work properly and do not drag.

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

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