

# MAINTENANCE

# SECTION MA


MA

## CONTENTS

PREPARATION .....	MA- 2
PRE-DELIVERY INSPECTION ITEMS .....	MA- 3
MAINTENANCE SCHEDULE .....	MA- 4
RECOMMENDED LUBRICANTS .....	MA- 8
ENGINE MAINTENANCE .....	MA-10
CHASSIS AND BODY MAINTENANCE .....	MA-31
SERVICE DATA AND SPECIFICATIONS (S.D.S.) .....	MA-42

## PREPARATION

### SPECIAL SERVICE TOOL

Tool number Tool name	Description
EG17650301 Radiator cap tester adapter	 <p data-bbox="1034 501 1348 555">Adapting radiator cap tester to radiator filler neck</p>

## PRE-DELIVERY INSPECTION ITEMS

Shown below are Pre-delivery Inspection Items required for the new vehicle. It is recommended that necessary items other than those listed here be added, paying due regard to the conditions in each country.

Perform applicable items on each model. Consult text of this section for specifications.

### UNDER HOOD — engine off

- Radiator coolant level and coolant hose connections for leaks
- Battery fluid level, specific gravity and conditions of battery terminals
- Drive belts tension
- Fuel filter for water or dusts, and fuel lines and connections for leaks
- Engine oil level and oil leaks
- Clutch and brake reservoir fluid level and fluid lines for leaks
- Windshield and rear window washer and headlamp cleaner reservoir fluid level
- Power steering reservoir fluid level and hose connections for leaks

### ON INSIDE AND OUTSIDE

- Remove front spring/strut spacer (If applicable)
- Operation of all instruments, gauges, lights and accessories
- Operation of horn(s), wiper and washer
- Steering lock for operation
- Check air conditioner for gas leaks
- Front and rear seats, and seat belts for operation
- All moldings, trims and fittings for fit and alignment
- All windows for operation and alignment
- Hood, trunk lid, door panels for fit and alignment
- Latches, keys and locks for operation
- Weatherstrips for adhesion and fit
- Headlamp aiming
- Tighten wheel nuts (Inc. inner nuts if applicable)
- Tire pressure (Inc. spare tire)
- Check front wheels for toe-in
- Install clock/voltmeter/room lamp fuse (If applicable)
- Install deodorizing filter to air purifier (If applicable)
- Remove wiper blade protectors (If applicable)

### UNDER BODY

- Manual transmission/transaxle, transfer and differential gear oil level
- Brake and fuel lines and oil/fluid reservoirs for leaks
- Tighten bolts and nuts of steering linkage and gear box, suspension, propeller shafts and drive shafts
- Tighten rear body bolts and nuts (Models with wooden bed only)

### ROAD TEST

- Clutch operation
- Parking brake operation
- Service brake operation
- Automatic transmission/transaxle shift timing and kickdown
- Steering control and returnability
- Engine performance
- Squeaks and rattles

### ENGINE OPERATING AND HOT

- Adjust idle mixture and speed, and ignition timing
- Automatic transmission/transaxle fluid level
- Engine idling and stop knob operation (Diesel only)

### FINAL INSPECTION

- Install necessary parts (outside mirror, wheel covers, seat belts, mat, carpet or mud flaps)
- Inspect for interior and exterior metal and paint damage
- Check for spare tire, jack, tools (wheel chock), and literature
- Wash, clean interior and exterior

## MAINTENANCE SCHEDULE

The following tables show the normal maintenance schedule. Depending upon weather and atmospheric conditions, varying road surfaces, individual driving habits and vehicle usage, additional or more frequent maintenance may be required.

Periodic maintenance beyond the last period shown on the tables requires similar maintenance.

MAINTENANCE OPERATION	km x 1,000 (Miles x 1,000)	MAINTENANCE INTERVAL										Reference page	
		1 (0.6)	10 (6)	20 (12)	30 (18)	40 (24)	50 (30)	60 (36)	70 (42)	80 (48)			
	Months	-	6	12	18	24	30	36	42	48			
<b>ENGINE AND EMISSION CONTROL MAINTENANCE</b>													
<b>Underhood and under vehicle</b>													
											Gasoline	Diesel	
Torque check manifolds, exhaust tube & carburetor fixing nuts*1		X									MA-10	MA-21	
Adjust intake & exhaust valve clearances		X	X			X	X		X	X	MA-10	MA-21	
Check drive belts for cracks, fraying, wear & tension		X	X			X	X		X	X	MA-11	MA-22	
Change engine anti-freeze coolant (Ethylene glycol base, L.L.C.)							X			X	MA-12	MA-23	
Change engine coolant (Soft water)*1			X	X	X	X	X	X	X	X	MA-12	MA-23	
Check cooling system			X			X			X	X	MA-13	MA-24	
Check fuel lines							X			X	MA-13	MA-26	
Clean & replace air cleaner filter (Dry paper type)*1	Clean*		X	X	X		X	X	X	X	MA-14	MA-26	
	Replace*						X			X	MA-14	MA-26	
Replace air cleaner filter (Viscous paper type)*							X			X	MA-14	MA-26	
Check cyclone pre-air cleaner*							X			X	MA-15	MA-27	
Change engine oil (Use API SE or SF oil.) & oil filter*			X	X	X	X	X	X	X	X	MA-15, 16		
Check & adjust idle rpm & mixture ratio (Check mixture ratio only on models bound for areas affected by emission regulations.)		X	X*1	X	X*1	X	X*1	X	X*1	X	EF & EC-36		
Adjust ignition timing			X*1	X	X*1	X	X*1	X	X*1	X			
Replace fuel filter*							X			X	MA-14		
Check & replace distributor breaker point	Check*1		X		X		X		X	X	MA-16		
	Replace			X		X		X		X	MA-16		
Check & replace spark plugs	Check*1		X		X		X		X	X	MA-17		
	Replace			X		X		X		X	MA-17		
Check ignition wires							X			X	MA-18		
Check choke mechanism (Choke plate & linkage)*2				X		X		X		X	MA-18		
Check positive crankcase ventilation (P.C.V.) system				X		X		X		X	MA-18		
Replace P.C.V. filter*							X			X	MA-19		
Check vacuum hoses & connections				X		X		X		X	MA-19		
Check automatic temperature control air cleaner				X		X		X		X	MA-19		
Check vapor lines (Hoses, connections, etc.) (Australia & Gulf standard models only)							X			X	MA-19		
Check E.G.R. control system (Gulf standard models with A/T only)				X		X		X		X	MA-20		
Check fuel filter & drain water*2			X	X	X		X	X	X	X	MA-25		
Replace fuel filter*							X			X	MA-25		
Change engine oil (Use API CC or CD oil.)*			Every 5,000 km (3,000 miles) or 3 months									MA-22	
Change oil filter*			X	X	X	X	X	X	X	X	MA-23		
Check nozzle			See NOTE (1).									MA-27	
Check idling speed			X		X		X		X	X	MA-28		
Drain oil & lubricate diaphragm (Governor chamber for injection pump)*1			X	X	X	X	X	X	X	X	MA-23		

**NOTE: (1)** If engine power decreases, black exhaust smoke is emitted or engine noise increases, check and, if necessary, adjust the fuel injection nozzle's starting pressure and the fuel spray pattern.

**(2)** Maintenance items with "\*" should be performed more frequently according to "Maintenance under severe driving conditions".

Check: Check. Correct or replace if necessary.

\*1: Non-Australia models only

\*2: Australia models only

## MAINTENANCE SCHEDULE

MAINTENANCE OPERATION Perform either at number of kilometers (miles) or months, whichever comes first.	km x 1,000 (Miles x 1,000) Months	MAINTENANCE INTERVAL										Reference page
		1	10	20	30	40	50	60	70	80		
		(0.6)	(6)	(12)	(18)	(24)	(30)	(36)	(42)	(48)		
<b>CHASSIS AND BODY MAINTENANCE</b>												
<b>Underhood</b>												
Check brake, clutch, automatic transmission & steering gear fluid or oil level & for leaks*		X	X	X	X	X	X	X	X	X		MA-31, 32, 36, 39
Change brake fluid*					X					X		MA-37
Check brake booster vacuum hoses, connections & check valve					X					X		MA-37
Check power steering fluid & lines		X	X	X	X	X	X	X	X	X		MA-39
<b>Under vehicle</b>												
Check brake, clutch, exhaust systems for proper attachment, leaks, cracks, chafing, abrasion, deterioration, etc.		X	X	X	X	X	X	X	X	X		MA-31, 36
Check oil level & change oil in manual transmission, transfer & differential gear	Check	X	X	X		X	X	X				MA-31, 33, 34
	Change					X				X		MA-31, 33, 35
Grease greasing points of steering linkage & propeller shafts*		X	X	X	X	X	X	X	X	X		MA-34, 40
Check steering gear box & linkage, axle & suspension parts & propeller shaft for damaged, loose & missing parts & lubrication*		X	X	X	X	X	X	X	X	X		MA-33, 39 & FA-6, RA-5
Check steering damper			X		X		X		X			MA-40
Retighten body mountings		X		X		X		X		X		BF-48
<b>Outside and inside</b>												
Check wheel alignment. If necessary, rotate & balance wheels			X		X		X		X			MA-38, 39 & FA-9
Check brake pads, discs & other brake components for wear, deterioration & leaks*		X	X	X	X	X	X	X	X	X		MA-37
Check brake linings, drums & other brake components for wear, deterioration & leaks*			X		X		X		X			MA-38
Check front wheel bearing grease & free-running hub grease*			X				X					MA-35
Repack front wheel bearing & front axle joint grease, & check free-running hub grease						X				X		MA-35
Lubricate locks, hinges & hood latch*		X	X	X	X	X	X	X	X	X		MA-41
Check seat belts, buckles, retractors, anchors & adjuster			X		X		X		X			MA-41
Check foot brake, parking brake & clutch for free play, stroke & operation		X	X	X	X	X	X	X	X	X		CL-5 & BR-8

**NOTE: Maintenance items with "\*" should be performed more frequently according to "Maintenance under severe driving conditions".**

Check: Check. Correct or replace if necessary.

## MAINTENANCE SCHEDULE

### MAINTENANCE UNDER SEVERE DRIVING CONDITIONS

The maintenance intervals shown on the preceding pages are for normal operating conditions. If the vehicle is mainly operated under severe driving conditions as shown below, more frequent maintenance is required to be performed on the following items as shown in the table.

#### Severe driving conditions

- A — Driving under dusty conditions
- B — Driving repeatedly short distances
- C — Towing a trailer
- D — Extensive idling
- E — Driving in extremely adverse weather conditions or in areas where ambient temperatures are either extremely low or extremely high
- F — Driving in high humidity areas or in mountainous areas
- G — Driving in areas using salt or other corrosive materials
- H — Driving on rough and/or muddy roads or in the desert
- I — Frequent driving in water

Driving condition	Maintenance item	Maintenance operation	Maintenance interval	Reference page	
				Gasoline	Diesel
A . . . . .	Air cleaner filter				
	Dry paper type	Clean	More frequently	MA-14	MA-26
	All types	Replace		MA-14	MA-26
	Cyclone pre-air cleaner	Check		MA-15	MA-27
P.C.V. filter	Replace	MA-19		—	
A B C D . . . . .	Engine oil				
	Gasoline engine	Replace	Every 5,000 km (3,000 miles) or 3 months	MA-15	—
	Diesel engine	Replace	More frequently	—	MA-22
A B C D . . . . .	Engine oil filter	Replace	Every 5,000 km (3,000 miles) or 3 months	MA-16	MA-23
A . . . . . E . . . . .	Fuel filter	Replace	Every 20,000 km (12,000 miles) or 12 months	MA-14	MA-25
. . . . . F . . . . .	Brake fluid	Replace		MA-37	
. . . . . C . . . . . H . . . . .	Automatic transmission fluid	Replace	Every 40,000 km (24,000 miles) or 24 months	MA-33	
. . . . . G H . . . . .	Steering gear & linkage, axle & suspension parts & propeller shafts	Check	Every 5,000 km (3,000 miles) or 3 months	MA-33, 39 & FA-6, RA-5	
A B C . . . . . G H . . . . .	Brake pads, discs & other brake components	Check		MA-37	
A B C . . . . . G H . . . . .	Brake linings, drums & other brake components	Check	Every 10,000 km (6,000 miles) or 6 months	MA-38	
. . . . . G H I . . . . .	Greasing points of steering linkage & propeller shafts	Lubricate		MA-34, 40	
. . . . . I . . . . .	Front wheel bearing grease & free-running hub grease	Check	Every 5,000 km (3,000 miles) or 3 months	MA-35, 36	
. . . . . G . . . . .	Lock, hinges & hood latch	Lubricate		MA-41	

Maintenance operation: Check = Check. Correct or replace if necessary.

## **MAINTENANCE SCHEDULE**

---

### **Maintenance for off-road driving**

Whenever you drive off-road through sand, mud or water as deep as the wheel hub, more frequent maintenance may be required of the following items:

- ▲ Brake pads and discs
- ▲ Brake lining and drums
- ▲ Brake lines and hoses
- ▲ Wheel bearing grease and free-running hub grease
- ▲ Differential, transmission and transfer oil
- ▲ Steering linkage
- ▲ Propeller shafts
- ▲ Air cleaner filter
- ▲ Clutch housing and knuckle flange (Check water entry. Refer to MA-32 & 36.)

## RECOMMENDED LUBRICANTS

### Lubricants

	Capacity (Approximate)		Recommended lubricants
	Liter	Imp measure	
<b>Engine oil (Refill)</b>			
<b>With oil filter</b>			
TB42	8.2	7-1/4 qt	Gasoline engine: API SE or SF*1
TD42	9.2	8-1/8 qt	
<b>Without oil filter</b>			
TB42	7.7	6-3/4 qt	Diesel engine: API CC or CD*1
TD42	8.0	7 qt	
<b>Cooling system (With reservoir tank)</b>			
<b>With heater</b>			
TB42   M/T	13.9	12-1/4 qt	Anti-freeze coolant (Ethylene glycol base) or soft water
TB42   A/T	13.6	12 qt	
TD42   M/T	13.6	12 qt	
<b>Without heater</b>			
TB42   M/T	13.3	11-3/4 qt	Anti-freeze coolant (Ethylene glycol base) or soft water
TB42   A/T	13.0	11-1/2 qt	
TD42   M/T	12.8	11-1/4 qt	
<b>Cooling system</b>	13	11-1/2 qt	Anti-freeze coolant (Ethylene glycol base) or soft water
<b>Injection pump diaphragm oil</b>	—	—	Cod liver oil or BOSCH 0L36V1
<b>Manual transmission gear oil</b>	3.9	6-7/8 pt	API GL-4*1
<b>Transfer oil</b>	2.2	2 qt	
<b>Steering gear oil</b>	0.5	7/8 pt	
<b>Differential carrier gear oil</b>			
<b>Front</b>			
H233B	5.4	4-3/4 qt (Except for Pickup)	Standard differential: API GL-5*1 Limited-slip differential: Gear oil hypoid L.S.D. (Part No.: KLD31-14002) or equivalent*2
	4.3	3-3/4 qt (Pickup)	
<b>Rear</b>			
H233B	2.1	1-7/8 qt	Standard differential: API GL-5*1 Limited-slip differential: Gear oil hypoid L.S.D. (Part No.: KLD31-14002) or equivalent*2
H260	4.7	4-1/8 qt	
<b>Automatic transmission fluid</b>	8.5	7-1/2 qt	Type DEXRON™
<b>Power steering fluid</b>	0.9 - 1.0	3/4 - 7/8 qt	
<b>Brake and clutch fluid</b>	—	—	DOT3 (US FMVSS No. 116)
<b>Multi-purpose grease</b>	—	—	NLGI No. 2 (Lithium soap base)
<b>Front axle joint grease</b>	—	—	NLGI No.2 (Molybdenum disulphide lithium soap base)
<b>Auto free-running hub grease</b>	—	—	Nissan genuine grease (Part No.: KRC19-00025) or equivalent

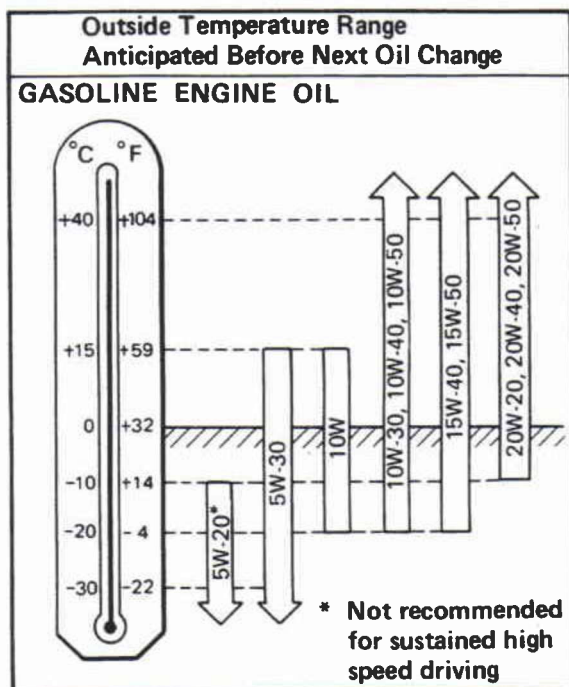
\*1: For further details, see "SAE Viscosity Number".

\*2: API GL-5, SAE 140 and 10% volume of L.S.D. friction modifier (Part No.: 38469-C6000) or equivalent.

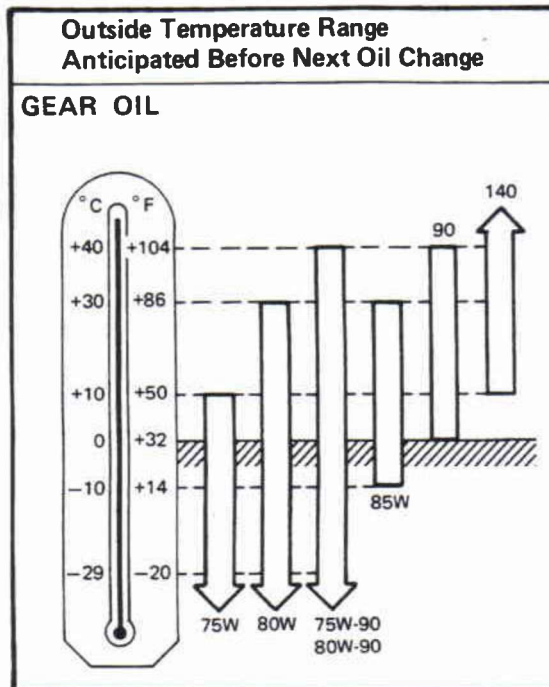


## RECOMMENDED LUBRICANTS

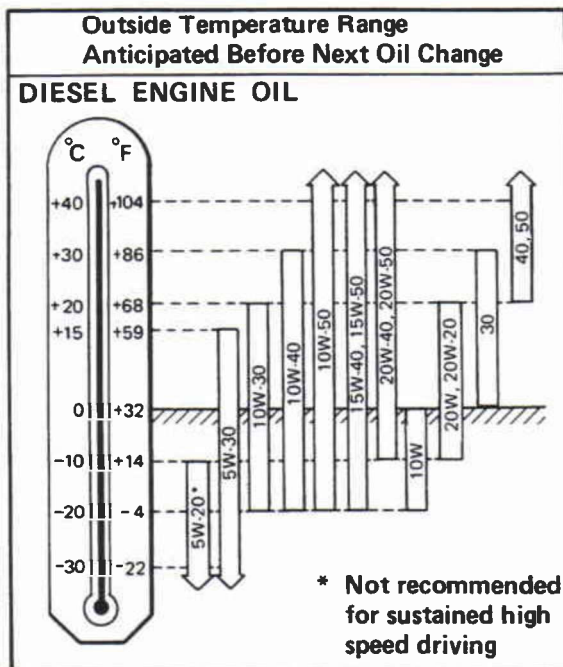
### SAE Viscosity Number



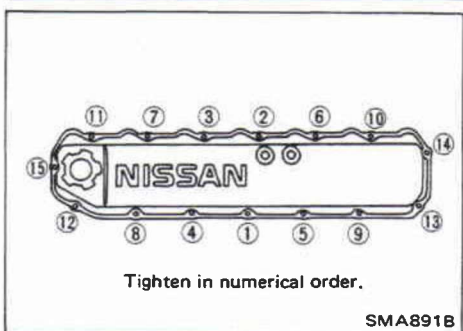
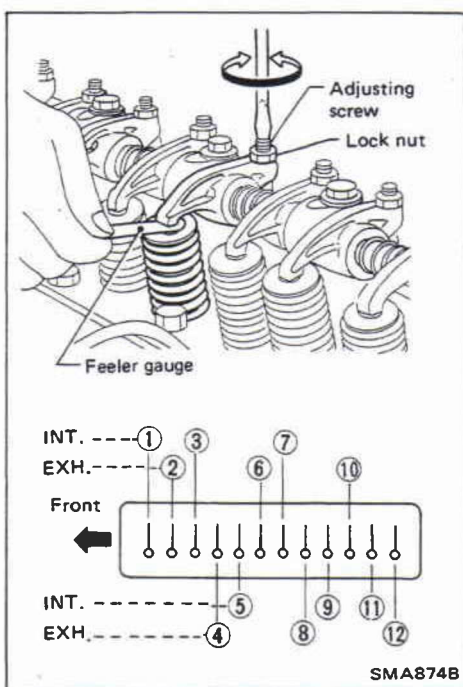
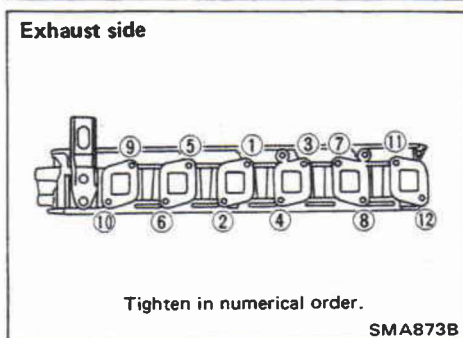
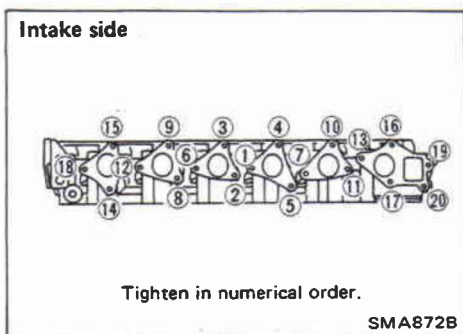
- For warm and cold areas: 10W-30 is preferable for ambient temperatures above  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ).
- For hot areas: 20W-40 and 20W-50 are suitable.



- For warm and cold areas: 75W-90 for transmission of gasoline engine model and transfer, 80W-90 for differential carrier and 90 for transmission of diesel engine model are preferable.
- For hot areas: 90 is suitable for ambient temperatures below  $40^{\circ}\text{C}$  ( $104^{\circ}\text{F}$ ).



- For cold areas: 10W-30 is preferable.
- For hot and warm areas: 20W-40 and 20W-50 are suitable.



### Checking Tightening Torque

- Checking should be performed while engine is cold.

### MANIFOLD BOLTS AND NUTS

☐: Intake manifold

16 - 19 N·m (1.6 - 1.9 kg-m, 12 - 14 ft-lb)

☐: Exhaust manifold

27 - 31 N·m (2.8 - 3.2 kg-m, 20 - 23 ft-lb)

### EXHAUST TUBE NUTS

☐: 43 - 50 N·m (4.4 - 5.1 kg-m, 32 - 37 ft-lb)

### CARBURETOR NUTS

☐: 16 - 19 N·m (1.6 - 1.9 kg-m, 12 - 14 ft-lb)

### Adjusting Intake and Exhaust Valve Clearance

Adjustment should be made while engine is warm but not running.

1. Set No. 1 cylinder at top dead center on its compression stroke, and adjust valve clearances ①, ②, ③, ⑥, ⑦ and ⑩.
2. Set No. 6 cylinder at top dead center on its compression stroke, and adjust valve clearances ④, ⑤, ⑧, ⑨, ⑪ and ⑫.

#### Valve clearance:

Intake ①, ③, ⑤, ⑦, ⑨ and ⑪

0.38 mm (0.015 in)

Exhaust ②, ④, ⑥, ⑧, ⑩ and ⑫

0.38 mm (0.015 in)

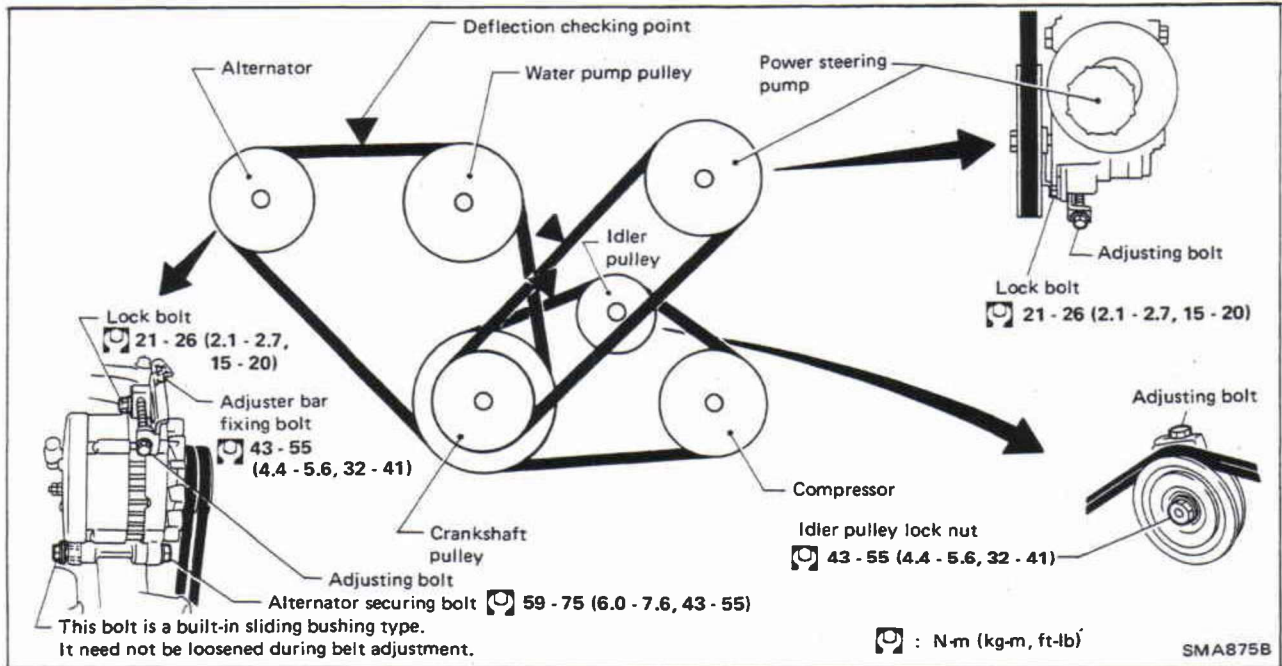
#### Adjusting screw lock nuts

☐: 16 - 22 N·m (1.6 - 2.2 kg-m, 12 - 16 ft-lb)

- Tighten rocker cover bolts in numerical order.

☐: 1 - 3 N·m (0.1 - 0.3 kg-m, 0.7 - 2.2 ft-lb)

Checking Drive Belts



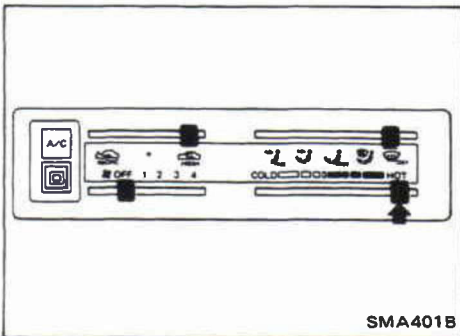
1. Inspect for cracks, fraying, wear or oil adhesion. If necessary, replace with a new one.
  2. Inspect drive belt deflections by pushing on the belt midway between pulleys.
- Adjust if belt deflections exceed the limit.**

**Belt deflection:**

Unit: mm (in)

	Used belt deflection		Set deflection of new belt
	Limit	Adjusted deflection	
Alternator	16 (0.63)	13 - 15 (0.51 - 0.59)	10 - 12 (0.39 - 0.47)
Air conditioner compressor	11 (0.43)	8 - 10 (0.31 - 0.39)	6 - 8 (0.24 - 0.31)
Power steering oil pump	19 (0.75)	15 - 17 (0.59 - 0.67)	14 - 16 (0.55 - 0.63)
Applied pushing force	98 N (10 kg, 22 lb)		

**Inspect drive belt deflections when engine is cold.**

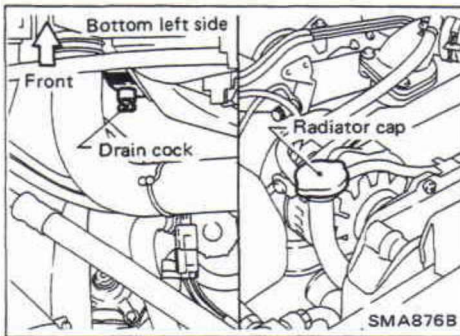


**Changing Engine Coolant**

**WARNING:**

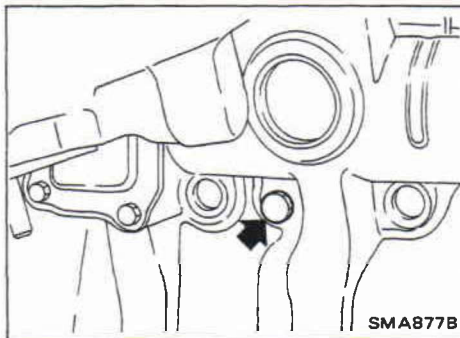
To avoid being scalded, never change the coolant when the engine is hot.

1. Move heater "TEMP" control lever all the way to "HOT" position.



2. Open drain cock at the bottom of radiator, and remove radiator cap.

● Be careful not to allow coolant to contact drive belts.



3. Remove cylinder block drain plug.

4. Close drain cock and tighten drain plug securely.

5. Fill radiator with water and warm up engine.

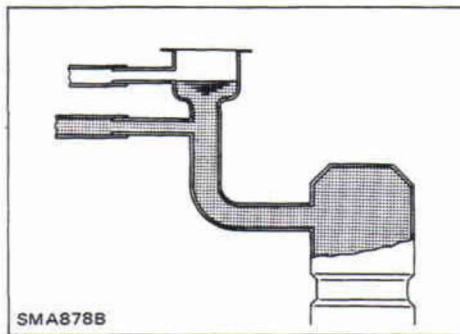
6. Stop engine and wait until it cools down.

7. Repeat step 2 through step 6 until clear water begins to drain from radiator.

8. Drain water.

● Apply sealant to the thread of drain plug.

⌚: 34 - 44 N·m (3.5 - 4.5 kg·m, 25 - 33 ft·lb)



9. Fill radiator with coolant up to specified level.

Follow instructions attached to anti-freeze container for mixing ratio of anti-freeze to water.

**Coolant capacity (With reservoir tank): liter (Imp qt)**

**With heater**

M/T 13.9 (12-1/4)

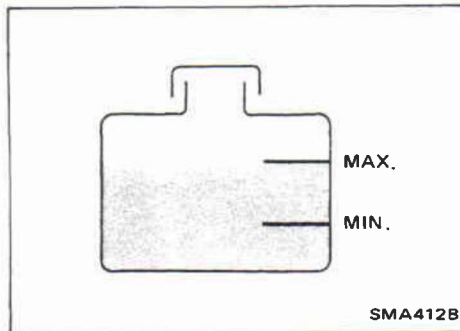
A/T 13.6 (12)

**Without heater**

M/T 13.3 (11-3/4)

A/T 13.0 (11-1/2)

Pour coolant through coolant filler neck slowly to allow air in system to escape.



10. Remove reservoir tank, drain coolant, then clean reservoir tank.

11. Fill reservoir tank with coolant up to "MAX" level.

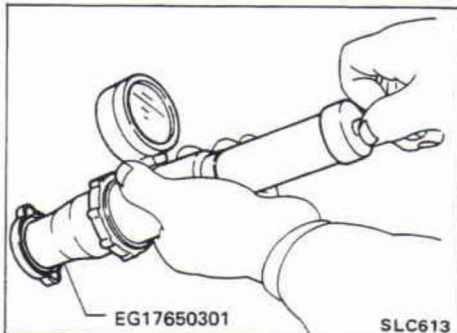
12. Run engine and warm it up.

13. Stop engine and cool it down, then add coolant as necessary.

## Checking Cooling System

### CHECKING HOSES

Check hoses for proper attachment and for leaks, cracks, damage, loose connections, chafing and deterioration.



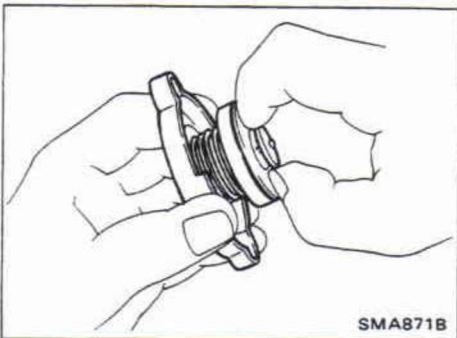
### CHECKING RADIATOR CAP

Apply pressure to radiator cap with cap tester to see if it is satisfactory.

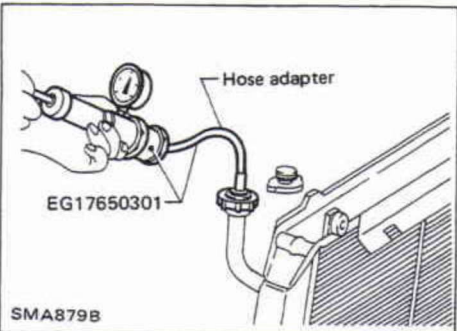
**Radiator cap relief pressure:**

**78 - 98 kPa**

**(0.78 - 0.98 bar, 0.8 - 1.0 kg/cm<sup>2</sup>, 11 - 14 psi)**



Pull the negative-pressure valve to open it. Check that it closes completely when released.



### CHECKING COOLING SYSTEM FOR LEAKS

Apply pressure to the cooling system with cap tester to check for leakage.

**Testing pressure:**

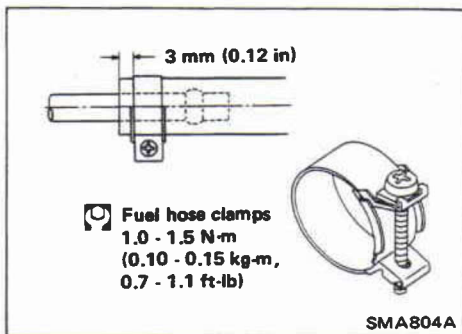
**98 kPa (0.98 bar, 1.0 kg/cm<sup>2</sup>, 14 psi)**

#### CAUTION:

**Higher pressure than the specified value may cause damage to radiator.**

## Checking Fuel Lines

Inspect fuel lines and tank for proper attachment and for leaks, cracks, damage, loose connections, chafing and deterioration. If necessary, repair or replace faulty parts.



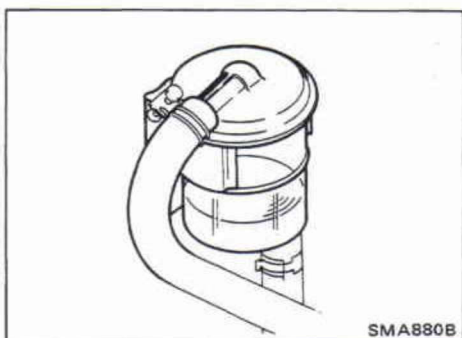
**Checking Fuel Lines (Cont'd)**

**CAUTION:**

Tighten high-pressure rubber hose clamp so that clamp end is 3 mm (0.12 in) from hose end.

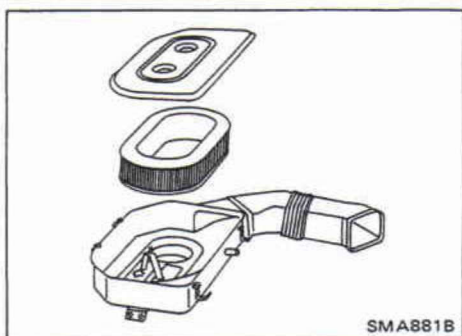
Tightening torque specifications are the same for all rubber hose clamps.

Ensure that screw does not contact adjacent parts.



**Changing Fuel Filter**

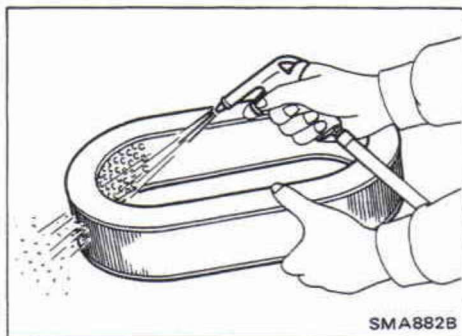
Be careful not to spill fuel over engine compartment. Place a shop towel to absorb fuel.



**Cleaning and Changing Air Cleaner Filter**

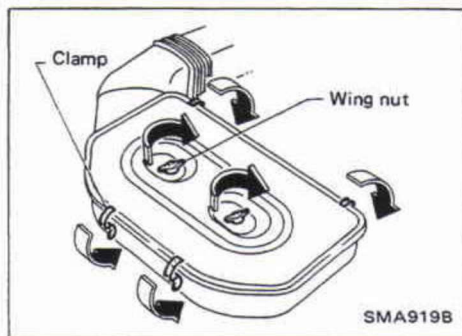
**Viscous paper type**

The viscous paper type filter does not need cleaning between renewals.

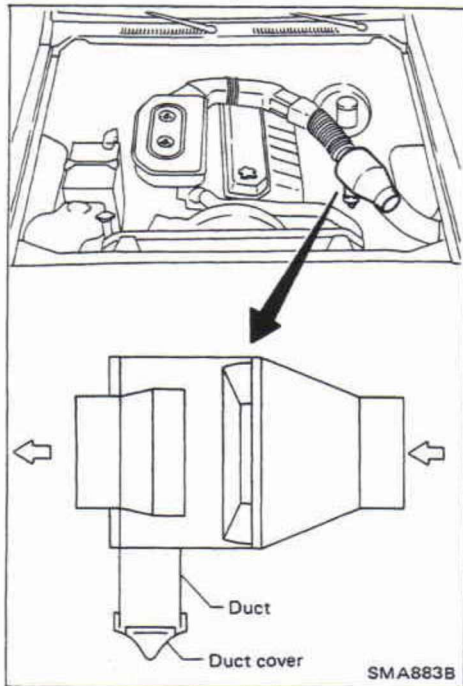


**Dry paper type**

It is necessary to clean the element or replace it at the recommended intervals, more often under dusty driving conditions.

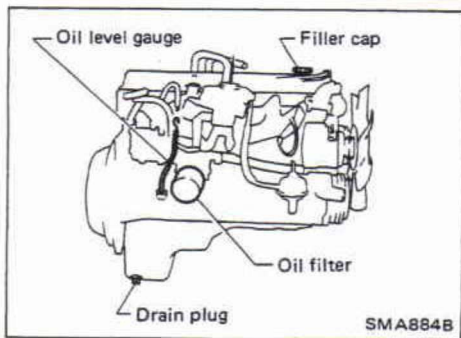


To properly tighten wing nuts, position clamps at four places and tighten wing nuts until they touch air cleaner. Then tighten them three more turns.



**Checking Cyclone Pre-air Cleaner**

Remove dust cover and check duct for dust clogging. Clean away any dust.



**Changing Engine Oil**

**WARNING:**

**Be careful not to burn yourself, as the engine oil is hot.**

1. Warm up engine, and check for oil leakage from engine components.
2. Remove drain plug and oil filler cap.
3. Drain oil and refill with new engine oil.

**Refill oil capacity (Approximate):**

Unit: liter (1mp qt)

With oil filter change	8.2 (7-1/4)
Without oil filter change	7.7 (6-3/4)

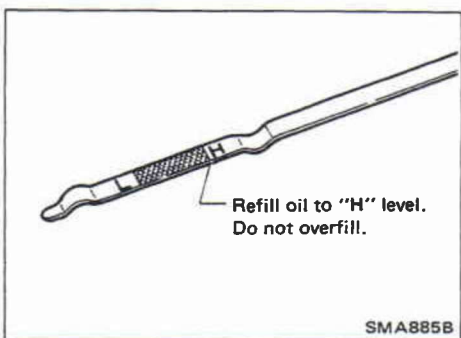
**CAUTION:**

- Be sure to clean drain plug and install with new washer.

: Drain plug

29 - 39 N·m (3.0 - 4.0 kg-m, 22 - 29 ft-lb)

- Use recommended engine oil.



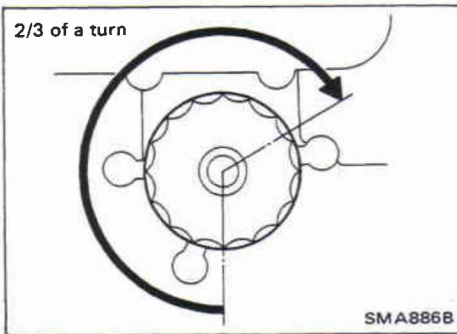
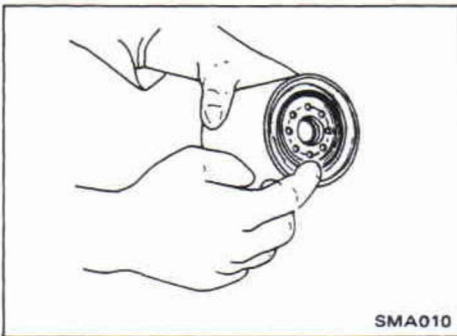
4. Check oil level.
5. Start engine and check area around drain plug and oil filter for oil leakage.
6. Run engine for a few minutes, then turn it off. After several minutes, check oil level.

**Changing Oil Filter**

1. Remove oil filter with a suitable tool.

**WARNING:**

**Be careful not to burn yourself, as the engine and the engine oil are hot.**



2. Before installing new oil filter, clean the oil filter mounting surface on cylinder block, and coat the rubber seal of oil filter with a little engine oil.

3. Screw in the oil filter until a slight resistance is felt, then tighten additionally more than 2/3 turn.

4. Add engine oil.

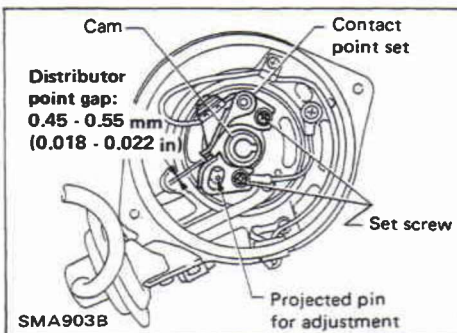
**Refer to Changing Engine Oil.**

**Checking and Changing Distributor Breaker Point**

**VISUAL CHECK**

1. Check points for excessive burning or pitting.
2. Use a point file to clean contact area and remove scale from points.

**Do not attempt to remove all roughness.**



**POINT GAP**

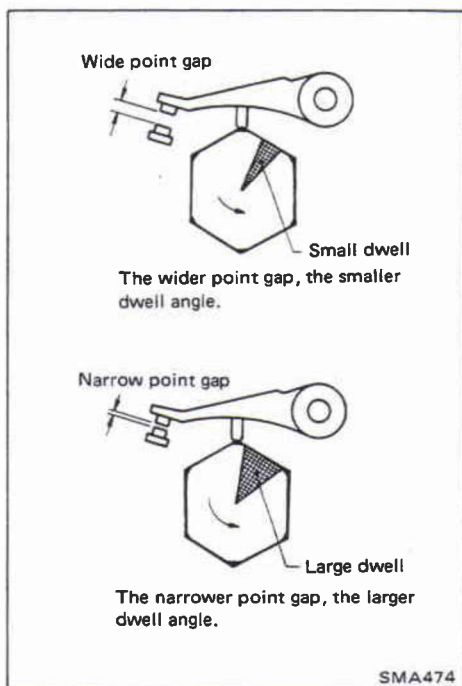
1. Set contact point on the nose of cam, and check point gap with oilless feeler gauge.

**Point gap:**

**0.45 - 0.55 mm (0.018 - 0.022 in)**

2. If out of specification, loosen contact point plate set screw and adjust point gap by pivoting projected pin.

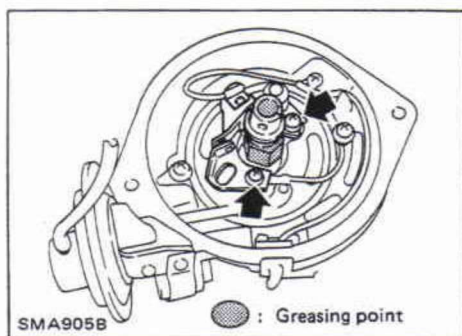




### Checking and Changing Distributor Breaker Point (Cont'd)

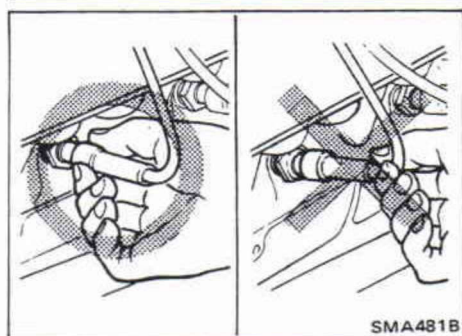
#### DWELL ANGLE

1. Start engine and warm it up.
2. Run engine at idle speed and measure dwell angle with a dwell meter.  
**Dwell angle: 34° - 40°**
3. If dwell angle is not within the specified value turn off engine and adjust point gap.
4. If dwell angle is not within the specified value when point gap is correct, cam lobe is worn. replace cam.



#### DISTRIBUTOR BREAKER POINT

1. Install new set and adjust point gap and dwell angle.
2. Apply the specified grease to cam and cam head.



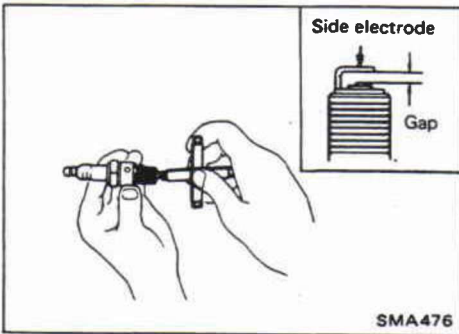
### Checking and Changing Spark Plugs

1. Disconnect ignition wires from spark plugs at boot. Do not pull on the wire.
2. Remove spark plugs with spark plug wrench.
3. Clean plugs in sand blast cleaner.
4. Check insulator for cracks or chips, gasket for damage or deterioration and electrode for wear and burning. If they are excessively worn away, replace with new spark plugs.

#### Spark plug:

Standard type	BP5ES
Hot type	BP4ES
Cold type	BP6ES, BP7ES

## Checking and Changing Spark Plugs (Cont'd)

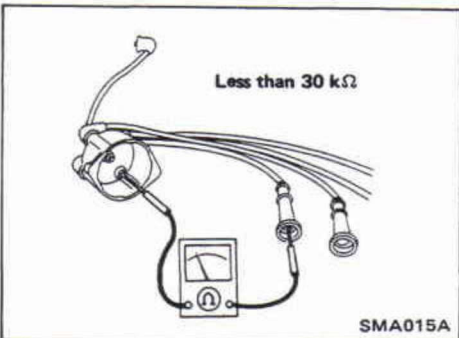


5. Check spark plug gap.  
Gap: 0.8 - 0.9 mm (0.031 - 0.035 in)
6. Install spark plugs. Reconnect ignition wires according to Nos. indicated on them.

: Spark plug

20 - 29 N·m (2.0 - 3.0 kg-m, 14 - 22 ft-lb)

## Checking Ignition Wires

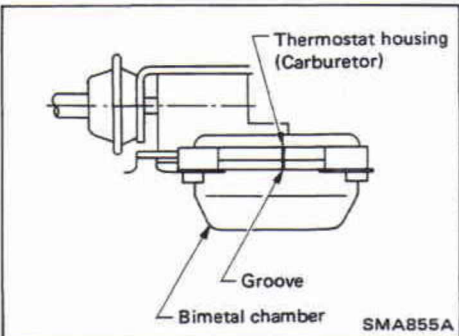


1. Inspect wires for cracks, damage, burned terminals and for improper fit.
2. Measure the resistance of wires and check for intermittent breaks by shaking them.

Resistance: Less than 30 kΩ

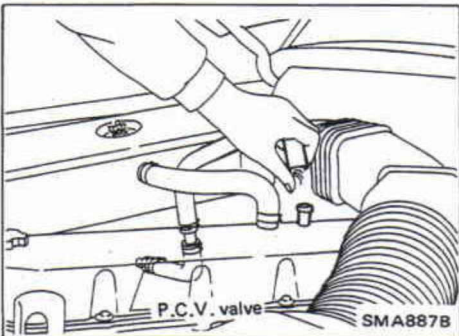
If it exceeds the limit, replace the ignition wire with a new one.

## Checking Choke Mechanism



1. When engine is shut off and cold, check choke valve and mechanism to make sure that they operate freely.
  - (1) Fully open throttle valve and insure that choke valve closes properly.
  - (2) Push choke valve and, check it for binding or unsmooth movement.
2. Check that bimetal cover index mark is set at the choke housing index mark.
3. Start engine and run it at idle. Check to see if choke valve gradually opens approaching full open as engine warms up.

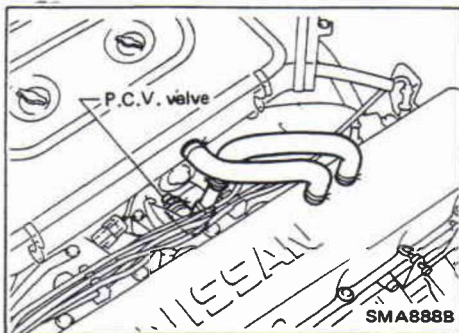
## Checking Positive Crankcase Ventilation (P.C.V.) System



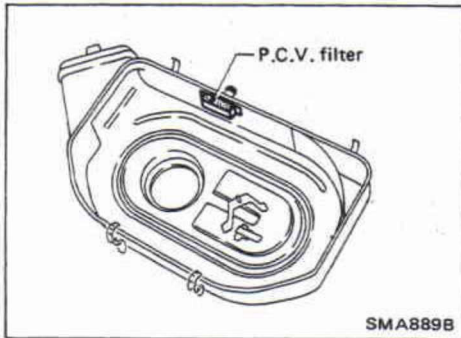
### CHECKING P.C.V. VALVE

With engine running at idle, remove ventilation hose from rocker cover; if valve is working properly, a hissing noise will be heard as air passes through it and a strong vacuum should be felt immediately when a finger is placed over valve inlet.

### CHECKING VENTILATION HOSES



1. Check hoses and hose connections for leaks.
2. Disconnect all hoses and clean with compressed air. If any hose cannot be freed of obstructions, replace.

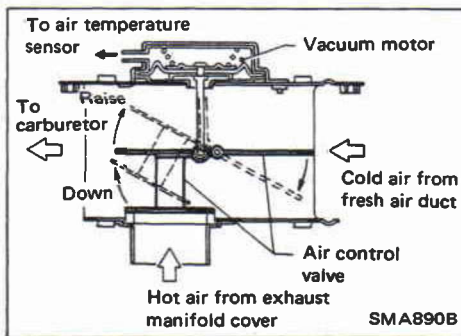


### Changing Positive Crankcase Ventilation (P.C.V.) Filter

Remove air cleaner cover and replace P.C.V. filter.

### Checking Vacuum Hoses and Connections

Check vacuum hoses for improper attachment and for leaks, cracks, damage, loose connections, chafing and deterioration.



### Checking Automatic Temperature Control (A.T.C.) Air Cleaner

Engine	Temperature	Air control valve position	Intake air temperature
Stopped	Any	Closed	—
Running	Low	Open	Hot
	High	Closed	Cold

1. Inspect vacuum hoses (Intake manifold to temperature sensor and vacuum motor) for secure connections.
2. Check each hose for cracks or distortion.
3. Check A.T.C. system for proper function.

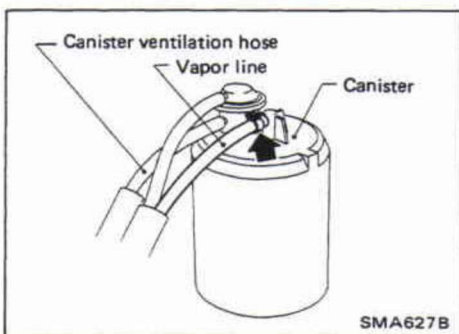
- Make sure that air control valve moves when engine is raced under no-load.
- Make sure that air control valve partially rises as engine warms up.

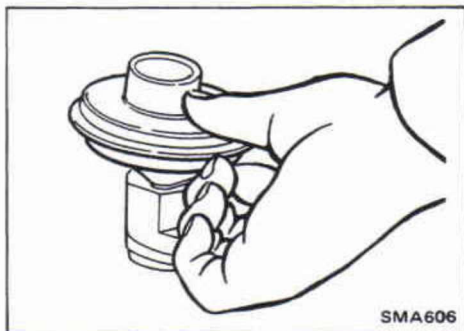
Refer to **AUTOMATIC TEMPERATURE CONTROL (A.T.C.) AIR CLEANER SYSTEM INSPECTION** in EF & EC section.

### Checking Vapor Lines

1. Visually inspect vapor lines for proper attachment and for cracks, damage, loose connections, chafing and deterioration.
2. Inspect vacuum relief valve of fuel tank filler cap for clogging, sticking, etc.

Refer to **EVAPORATIVE EMISSION CONTROL SYSTEM INSPECTION** in EF & EC section.



**Checking Exhaust Gas Recirculation (E.G.R.) Control System (Gulf standard A/T model)**

1. Start engine and warm it up sufficiently.
2. Make sure that the diaphragm of E.G.R. control valve moves with a finger when raising engine speed.  
If it does not move, check vacuum lines and T.V.V. valve.  
Refer to **EXHAUST GAS RECIRCULATION (E.G.R.) CONTROL SYSTEM INSPECTION** in EF & EC section.

**Checking Tightening Torque  
MANIFOLD BOLTS AND NUTS**

**Intake**

☞: 15 - 20 N·m (1.5 - 2.0 kg-m, 11 - 14 ft-lb)

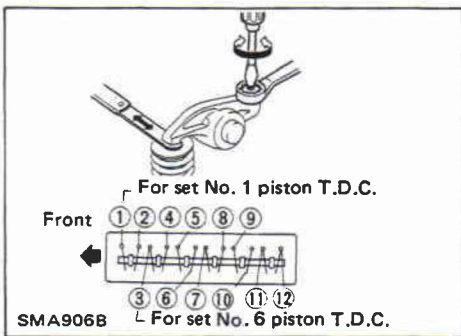
**Exhaust**

☞: 25 - 29 N·m (2.5 - 3.0 kg-m, 18 - 22 ft-lb)

Checking should be performed while engine is cold.

**EXHAUST TUBE NUTS**

☞: 43 - 50 N·m (4.4 - 5.1 kg-m, 32 - 37 ft-lb)



**Adjusting Intake and Exhaust Valve Clearance**

Adjustment should be made while engine is warm but not running.

1. Set No. 1 cylinder in top dead center on its compression stroke, and adjust valve clearance ①, ②, ④, ⑤, ⑧ and ⑨.
2. Set No. 6 cylinder in top dead center on its compression stroke, and adjust valve clearance ③, ⑥, ⑦, ⑩, ⑪ and ⑫.

**Valve clearance:**

**Intake ①, ③, ⑤, ⑦, ⑨ and ⑪**

**0.35 mm (0.014 in)**

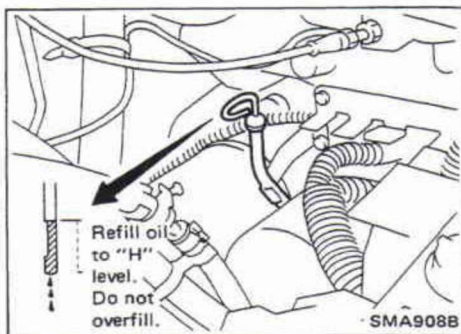
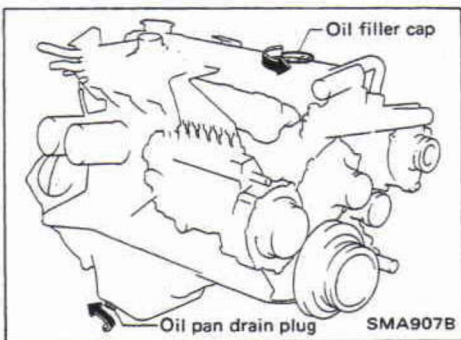
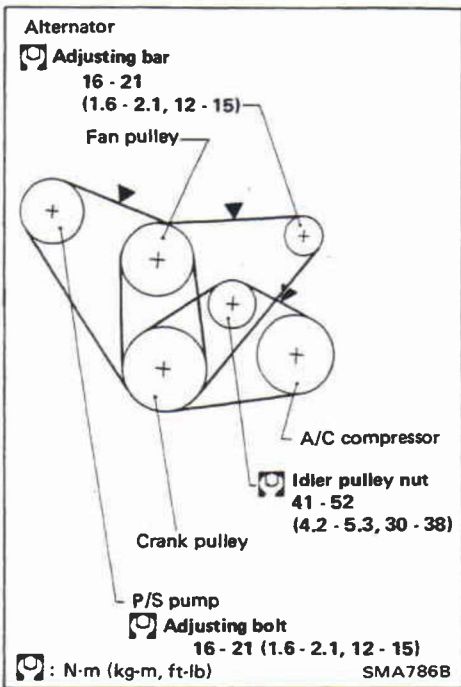
**Exhaust ②, ④, ⑥, ⑧, ⑩ and ⑫**

**0.35 mm (0.014 in)**

**Adjusting screw lock nuts**

☞: 15 - 20 N·m

(1.5 - 2.0 kg-m, 11 - 14 ft-lb)



**Checking Drive Belt**

1. Inspect for cracks, fraying, wear or oil adhesion. Replace if necessary.

**The belts should not touch the bottom of the pulley groove.**

2. Check drive belt deflection by pushing on the belt midway between pulleys.

**Adjust if belt deflections exceed the limit.**

Unit: mm (in)

	Used belt deflection		Set deflection of new belt
	Limit	Adjusted deflection	
Alternator	20 (0.79)	11 - 13 (0.43 - 0.51)	9 - 11 (0.35 - 0.43)
Air conditioner compressor	10.5 (0.413)	6 - 7 (0.24 - 0.28)	5 - 6 (0.20 - 0.24)
Power steering oil pump	20 (0.79)	11.5 - 13.0 (0.453 - 0.512)	10.5 - 11.5 (0.413 - 0.453)
Applied pushing force	98 N (10 kg, 22 lb)		

**Check drive belt deflections when engine is cold.**

**If engine is hot, check deflections after 30 minutes or more.**

**Changing Engine Oil**

1. Warm up engine, and check for oil leakage from engine components.

2. Remove oil filler cap and drain plug.

3. Drain oil and fill with new engine oil.

**Refill oil capacity (Approximate):**

**With oil filter change**

**9.2 ℓ (8-1/8 Imp qt)**

**Without oil filter change**

**8.0 ℓ (7 Imp qt)**

**WARNING:**

- Be careful not to burn yourself, as the engine oil may be hot.

- Be sure to clean and install oil pan drain plug with washer.

**: Drain plug**

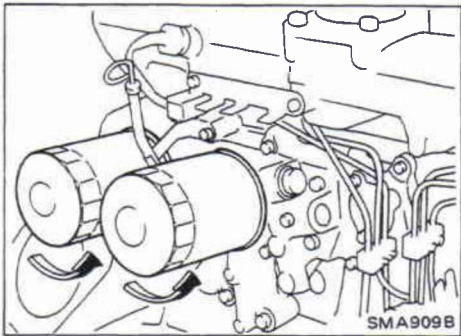
**54 - 59 N·m (5.5 - 6.0 kg·m, 40 - 43 ft·lb)**

- Use recommended engine oil. Refer to GI section.

4. Check oil level.

5. Start engine. Check area around drain plug and oil filter for any sign of oil leakage.

6. Run engine for a few minutes, then turn it off. After several minutes check oil level.

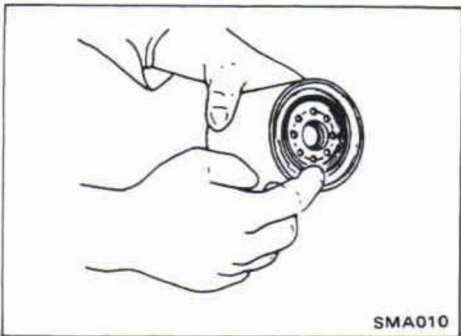


**Changing Oil Filter**

1. Remove oil filter with a suitable wrench.

**WARNING:**

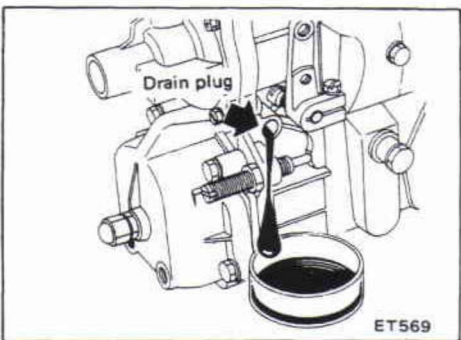
Be careful not to burn yourself as engine and engine oil is hot.



2. Before installing new oil filter, smear a little engine oil on rubber seal of oil filter and mounting surface on cylinder block.
3. Install oil filter.

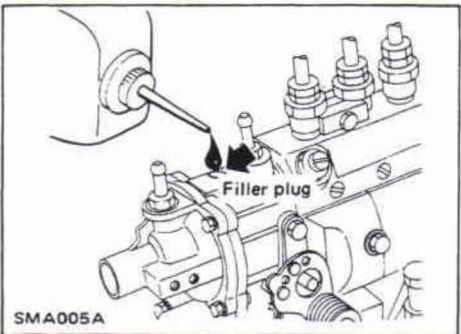
When installing oil filter, screw it in until a slight resistance is felt, then tighten an additional 2/3 turn or more.

4. Add engine oil.  
Refer to Changing Engine Oil.

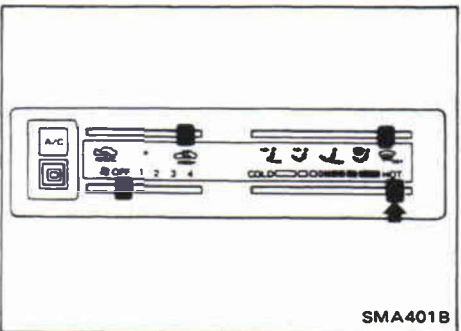


**Lubricating Injection Pump Governor Diaphragm (In-line type)**

1. Drain oil from governor chamber.



2. Lubricate governor diaphragm.  
Fill with three to four droplets of diaphragm oil.  
**Diaphragm oil**  
**OL36V1 or cod liver oil**



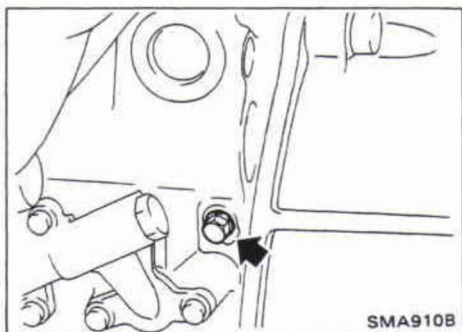
**Changing Engine Coolant**

**WARNING:**

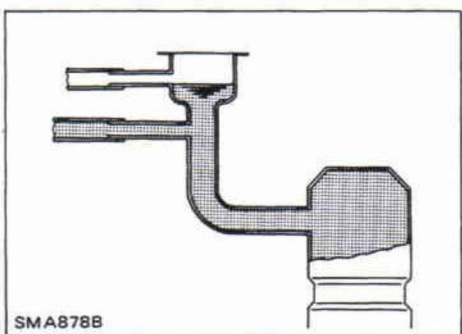
To avoid the danger of being scalded, never attempt to change the coolant when the engine is hot.

1. Set heater "TEMP" control lever all the way to "HOT" position.
2. Open drain cock at the bottom of radiator, and remove radiator cap.

**Changing Engine Coolant (Cont'd)**



3. Remove cylinder block water drain plug located at left rear of cylinder block.
4. Drain coolant and then tighten drain plug securely.  
**Cylinder block drain plug:**  
 $\square$ : 29 - 39 N-m (3.0 - 4.0 kg-m, 22 - 29 ft-lb)
5. Fill radiator with water and warm up engine.
6. Stop engine and wait until it cools down.
7. Repeat step 2 through step 5 two or three times.
8. Drain water.



9. Fill radiator with coolant up to filler opening. Follow instructions attached to anti-freeze container for mixing ratio of anti-freeze to water.

**Coolant capacity (With reservoir tank) (Approximate):**

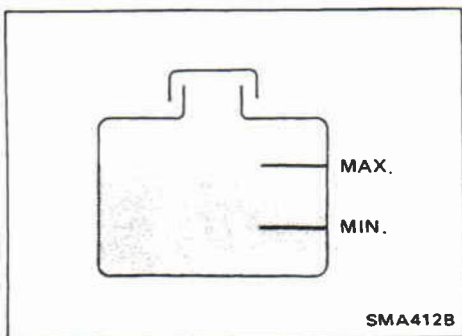
**With heater**

M/T 13.6 ℓ (12 Imp qt)

**Without heater**

M/T 12.8 ℓ (11-1/4 Imp qt)

**Slowly pour coolant through coolant filler neck to allow air in system to escape.**



10. Fill reservoir tank up to "MAX" level.
11. Run the engine at approximately 2,000 rpm for about one minute.
12. Stop engine and cool it down, then refill the radiator and the reservoir tank.

**Checking Cooling System**

**CHECKING HOSES**

Check hoses for proper attachment, leaks, cracks, damage, loose connections, chafing and deterioration.

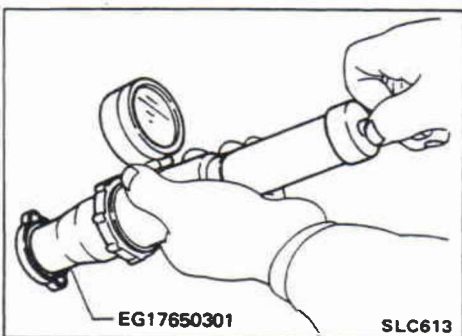
**CHECKING RADIATOR CAP**

Apply pressure to radiator cap by means of a cap tester to see if it is satisfactory.

**Radiator cap relief pressure:**

78 - 98 kPa

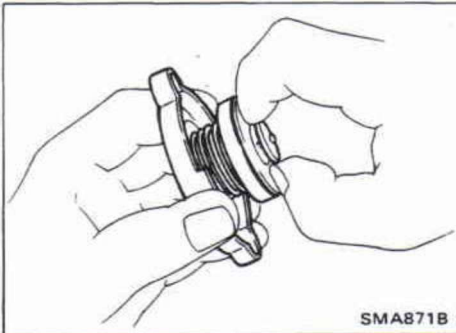
(0.78 - 0.98 bar, 0.8 - 1.0 kg/cm<sup>2</sup>, 11 - 14 psi)





**Checking Cooling System (Cont'd)**

Pull the negative-pressure valve to open it. Check that it closes completely when released.



**CHECKING COOLING SYSTEM FOR LEAKS**

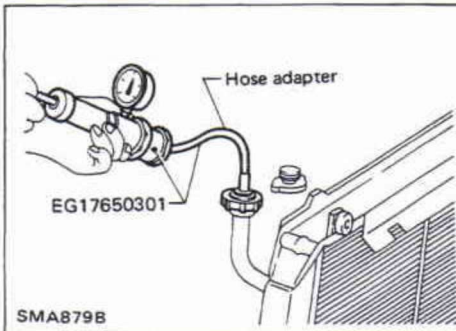
Apply pressure to the cooling system by means of a tester to check for leakage.

**Testing pressure:**

98 kPa (0.98 bar, 1.0 kg/cm<sup>2</sup>, 14 psi)

**CAUTION:**

Higher than the specified pressure may cause radiator damage.

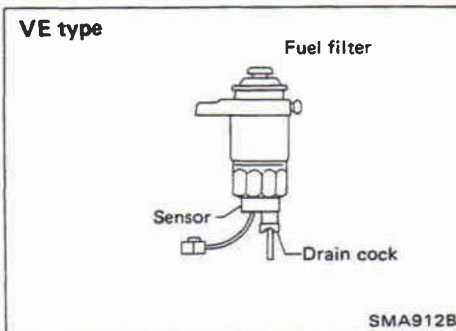
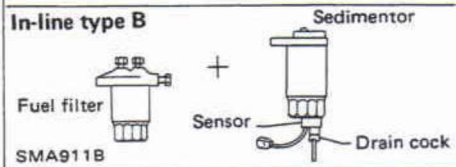
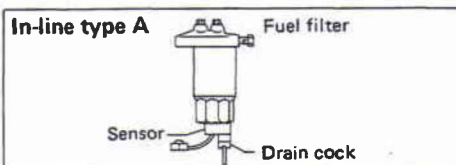


**Checking and Replacing Fuel Filter and Draining Water**

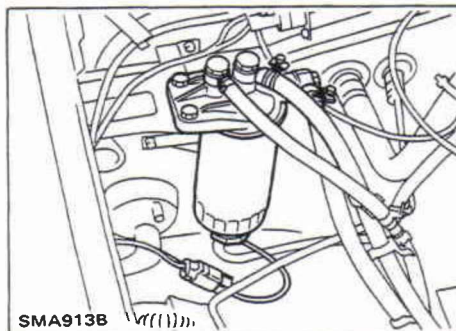
Be careful not to spill fuel in engine compartment. Place a rag to absorb fuel.

**REPLACING FUEL FILTER**

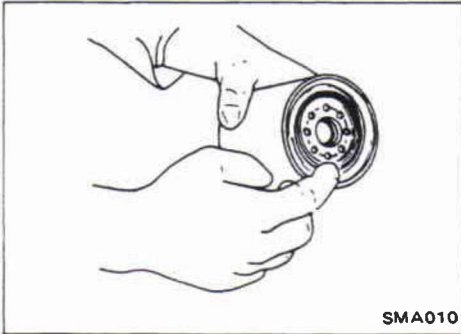
1. Remove fuel filter sensor and drain fuel.



2. Remove fuel filter, using suitable tool.

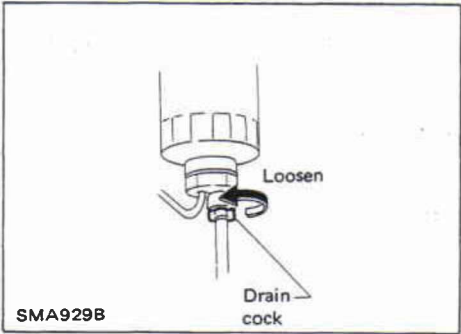


**Checking and Replacing Fuel Filter and Draining Water (Cont'd)**



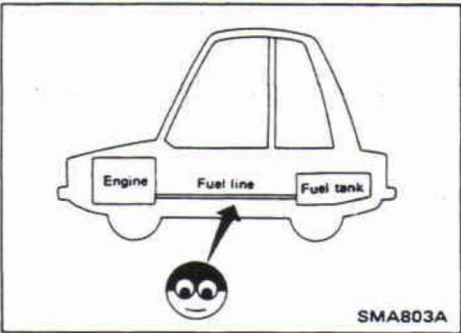
3. Wipe clean fuel filter mounting surface on fuel filter bracket and smear a little fuel on rubber seal of fuel filter.
4. Screw fuel filter on until a slight resistance is felt, then tighten an additional more than 2/3 turn.
5. Install fuel filter sensor to new fuel filter.
6. Bleed air from fuel line.  
**Refer to Bleeding Fuel System in EF & EC section.**
7. Start engine and check for leaks.

**DRAINING WATER (VE type only)**



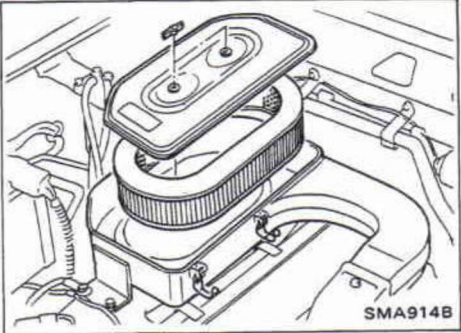
1. Loosen drain cock and drain water.  
**Loosening drain cock 4 to 5 turns causes water to start draining. Do not remove drain cock by loosening it excessively.**
2. Bleed air.  
**Refer to section EF & EC for fuel system bleeding instructions.**

**Checking Fuel Lines**

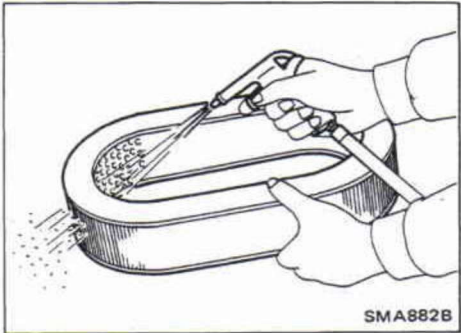


Check fuel lines and tank for proper attachment, leaks, cracks, damage, loose connections, chafing and deterioration.  
**CAUTION:**  
● Keep clean parts with compressed air when assembling.

**Cleaning and Changing Air Cleaner Filter**



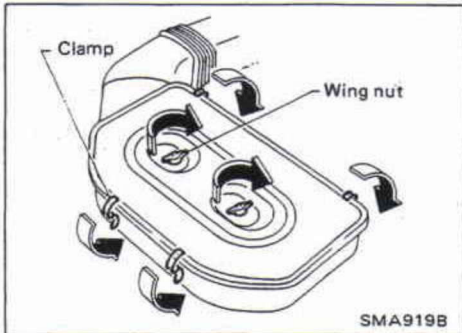
**Viscous paper type**  
The viscous paper type filter does not need cleaning between renewals.



**Dry paper type**  
It is necessary to clean the element or replace it at the recommended intervals, more often under dusty driving conditions.

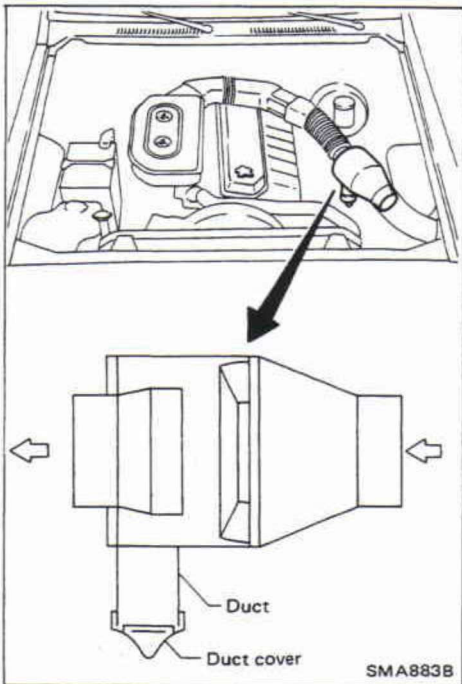
**Cleaning and Changing Air Cleaner Filter (Cont'd)**

To properly tighten wing nuts, position clamps at four places and tighten wing nuts until they touch air cleaner. Then tighten them three more turns.



**Checking Cyclone Pre-air Cleaner**

Remove dust cover and check duct for dust clogging. Clean away and dust.



**Checking Injection Nozzle**

**WARNING:**

When using nozzle tester, do not allow fuel sprayed from nozzle to contact your hand or body, and make sure that your eyes are properly protected with goggles.

1. Check initial injection pressure by pumping tester handle one time per second.

**Initial injection pressure:**

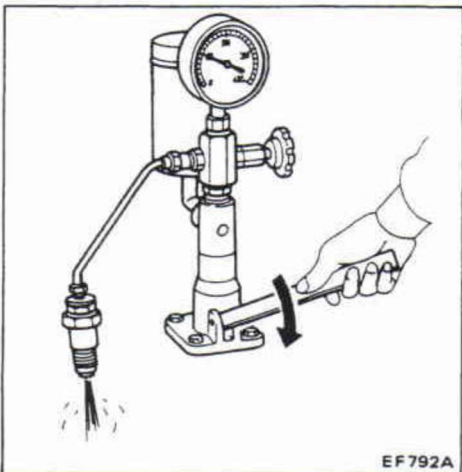
**Used nozzle**

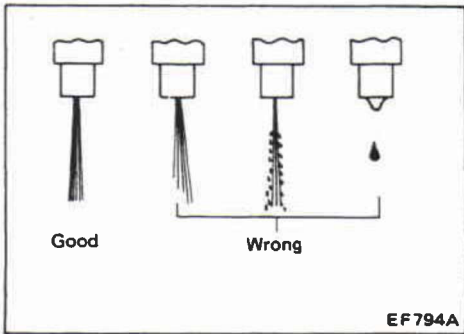
9,807 - 10,297 kPa  
 (98.1 - 103.0 bar, 100 - 105 kg/cm<sup>2</sup>,  
 1,422 - 1,493 psi)

**New nozzle**

10,297 - 11,278 kPa  
 (103.0 - 112.8 bar, 105 - 115 kg/cm<sup>2</sup>,  
 1,493 - 1,635 psi)

- Always check initial injection pressure before installing new nozzle.





**Checking Injection Nozzle (Cont'd)**

2. Check spray pattern by pumping tester handle 4 to 6 times or more per second.
  3. If spray pattern is not correct, clean injection nozzle tip or replace it.
- For details, refer to **INJECTION NOZZLE ASSEMBLY** in **EF & EC** section.

☐: Injection nozzle to cylinder head

54 - 64 N·m  
(5.5 - 6.5 kg-m, 40 - 47 ft-lb)

Spill tube nut

29 - 39 N·m  
(3.0 - 4.0 kg-m, 22 - 29 ft-lb)

Injection tube

20 - 25 N·m  
(2.0 - 2.5 kg-m, 14 - 18 ft-lb)

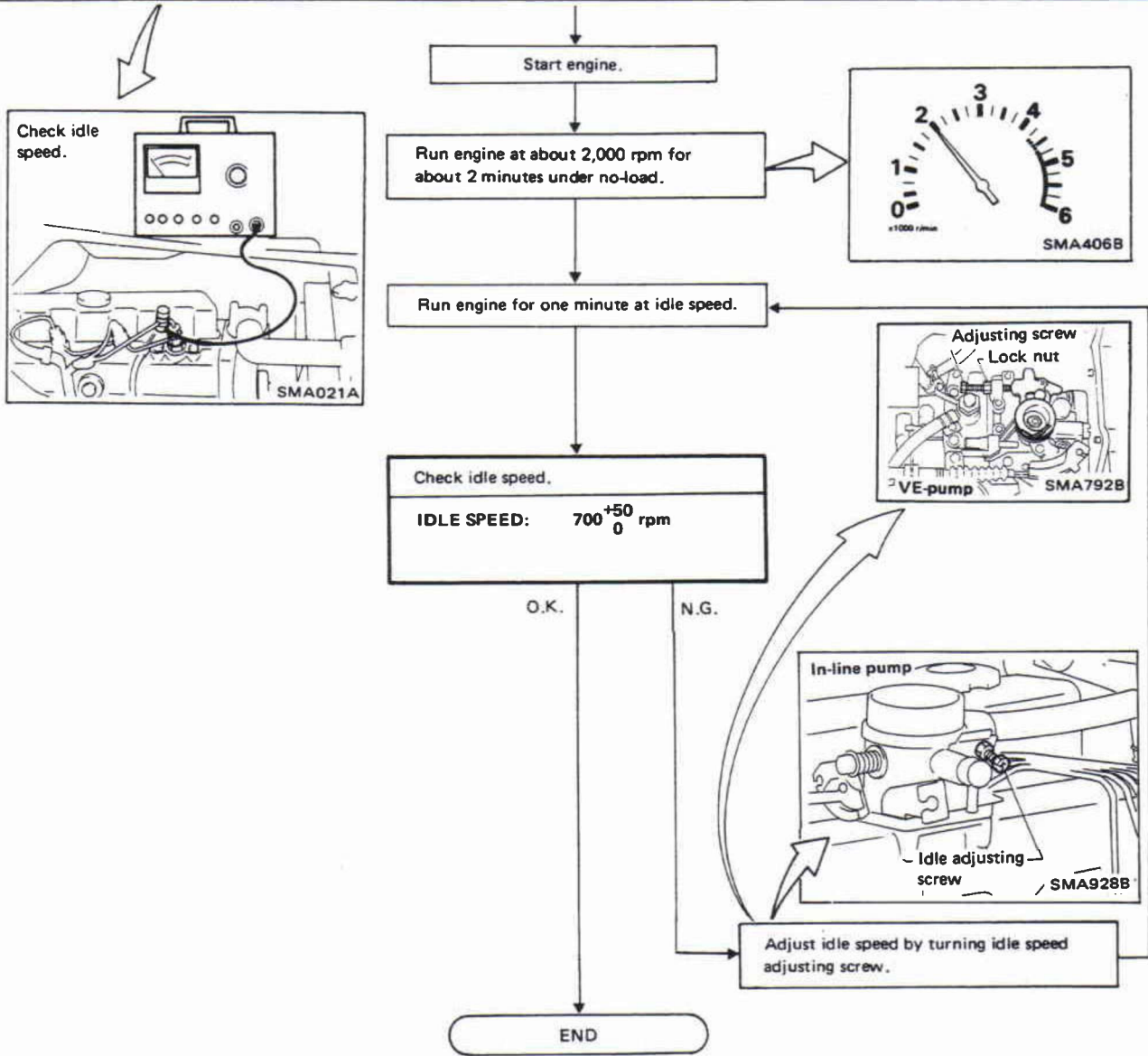
**Checking Idle Speed**

**Preparation**

1. Make sure that injection timing is correct.
2. Make sure that injection nozzles are in good condition.
3. Make sure that the following parts are in good condition.
  - Air cleaner clogging
  - Glow system
  - Engine oil and coolant levels
  - Valve clearance
  - Air intake system (Oil filler cap, oil level gauge, etc.)
4. Set shift lever in "Neutral" position. Engage parking brake and lock both front and rear wheels with wheel chocks.
5. Turn off air conditioner, lights and accessories.

Checking Idle Speed (Cont'd)

- Warm up engine until water temperature indicator points to middle of gauge.
  - Lights, heater fan and all accessories are off.
  - Attach tachometer's pick-up to No. 1 fuel injection tube.
- In order to take accurate reading of engine rpm, remove clamps that secure No. 1 fuel injection tube.

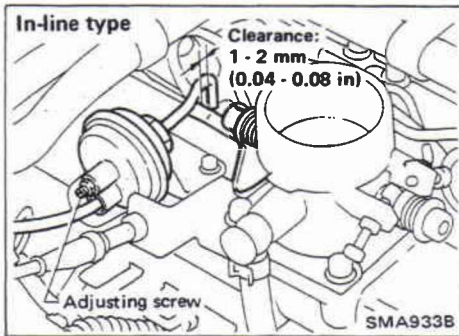
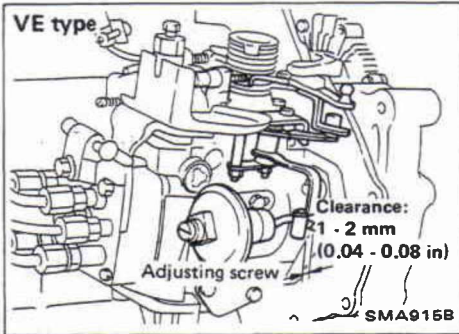


- Race engine two or three times and allow engine to return to idle speed. If idle speed is not within the specified range, check acceleration linkage for binding and correct it if necessary.

**Checking Idle Speed (Cont'd)**

**AIR CONDITIONER EQUIPPED MODEL**

1. Make certain that the clearance between the actuator idle control lever pin and the injection pump control lever is within the specified limits.
2. Adjust idle speed to specified rpm without the air conditioner operating.
3. Then check the idle speed when the air conditioner is operating and make sure it is correct.



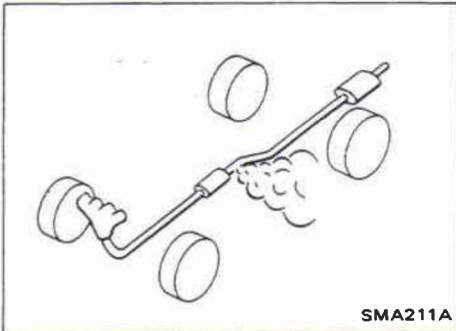
Unit: rpm

Idle speed (Air conditioner "ON")

850<sup>0</sup>  
-50

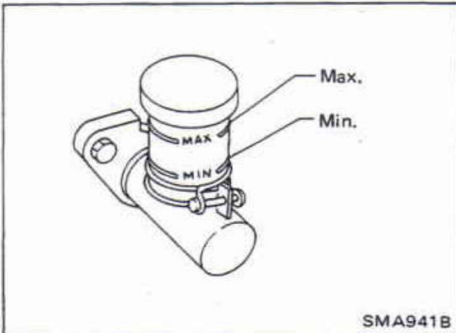
If not, adjust it by turning F.I.C.D. actuator stroke adjusting screw.

## CHASSIS AND BODY MAINTENANCE



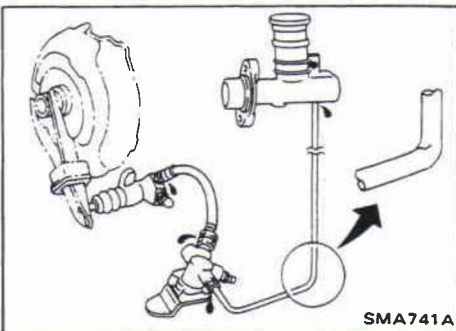
### Checking Exhaust System

Check exhaust pipes, muffler and mounting for improper attachment, leaks, cracks, damage, loose connections, chafing and deterioration.



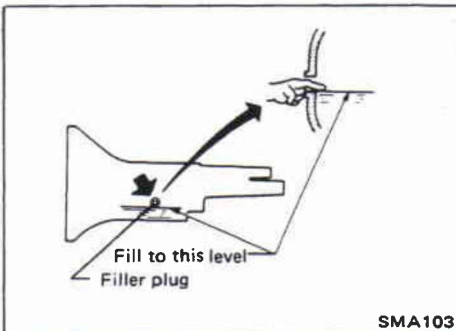
### Checking Clutch Fluid Level and Leaks

If fluid level is extremely low, check clutch system for leaks.



### Checking Clutch System

Check fluid lines and operating cylinder for improper attachment, cracks, damage, loose connections, chafing and deterioration.



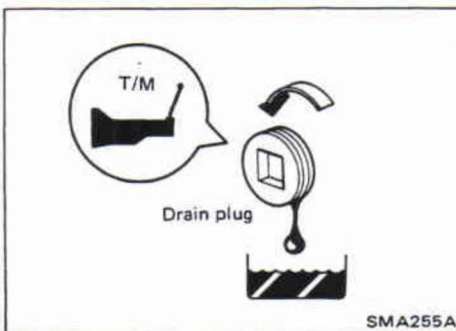
### Checking M/T Oil Level

Never start engine while checking oil level.

1. Check manual transmission for leakage.
2. Check oil level.

: Filler plug

25 - 34 N·m (2.5 - 3.5 kg-m, 18 - 25 ft-lb)



### Changing M/T Oil

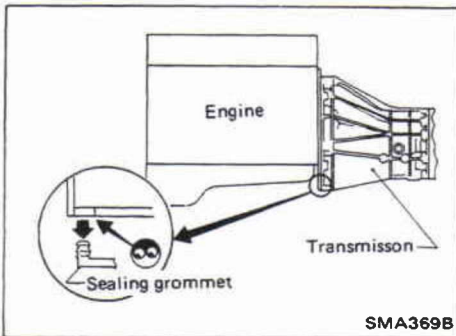
Oil capacity:

3.9 liters (6-7/8 Imp pt)

: Drain plug

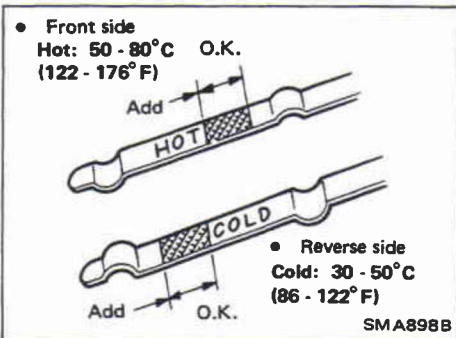
25 - 34 N·m (2.5 - 3.5 kg-m, 18 - 25 ft-lb)

## CHASSIS AND BODY MAINTENANCE



### Checking Water Entry

Check water entry in the clutch housing by removing the sealing grommet, whenever driving in deep water or mud.



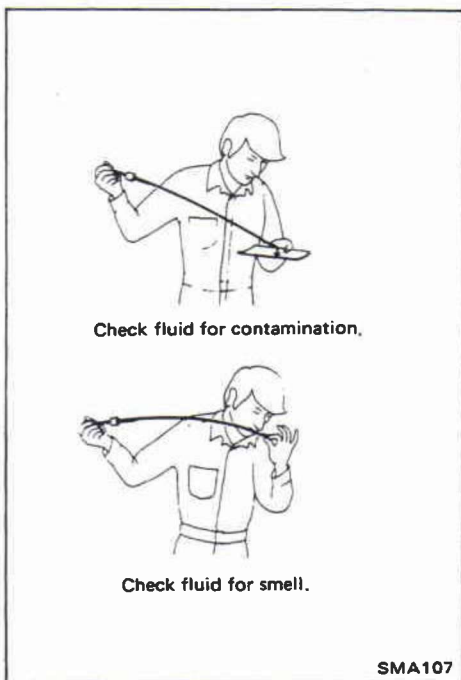
### Checking A/T Fluid Level

1. Check for fluid leakage.
2. Check fluid level.

Fluid level should be checked using "HOT" range on dipstick at fluid temperatures of 50 to 80°C (122 to 176°F) after vehicle has been driven approximately 5 minutes after engine is warmed up. But it can be checked at fluid temperatures of 30 to 50°C (86 to 122°F) using "COLD" range on dipstick for reference after engine is warmed up and before driving. However, fluid level must be rechecked using "HOT" range.

- (1) Park vehicle on level surface and set parking brake.
- (2) Start engine and then move selector lever through each gear range, ending in "P".
- (3) Check fluid level with engine idling.
- (4) Remove dipstick and wipe it clean with lint-free paper.
- (5) Re-insert dipstick into charging pipe as far as it will go.
- (6) Remove dipstick and note reading. If level is at low side of either range, add fluid to the charging pipe.

**Do not overfill.**



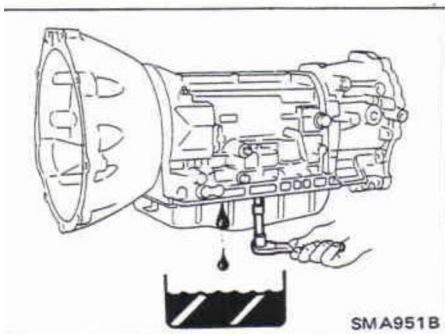
3. Check automatic fluid condition.

Check fluid for contamination. If fluid is very dark or smells burned, or contains the frictional material (clutches, band, etc.), check operation of A/T.

**Refer to section AT for checking operation of A/T.**



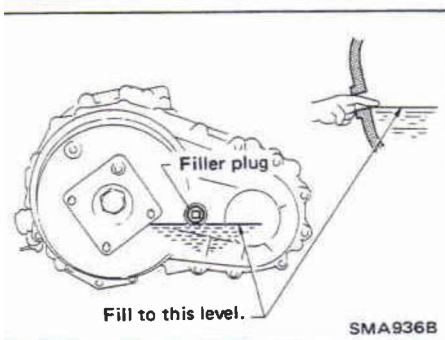
## CHASSIS AND BODY MAINTENANCE



### Changing A/T Fluid

1. Drain fluid by removing oil pan.
2. Replace gasket with new one.
3. Refill with fluid and then check fluid level.

**Oil capacity (With torque converter):**  
**8.5 liters (7-1/2 Imp qt)**



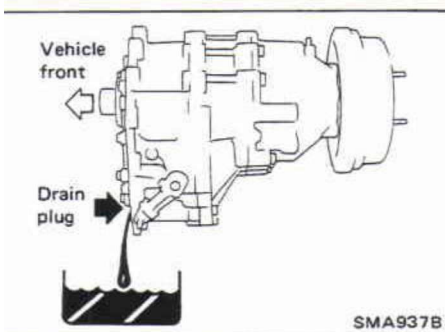
### Checking Transfer Oil Level

**Never start engine while checking oil level.**

1. Check transfer for leakage.
2. Check oil level.

: **Filler plug**

**25 - 34 N·m (2.5 - 3.5 kg-m, 18 - 25 ft-lb)**



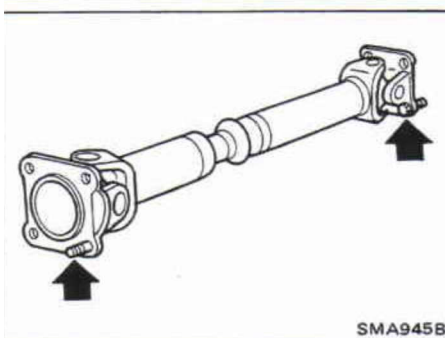
### Changing Transfer Oil

**Oil capacity:**

**2.2 liters (2 Imp qt)**

: **Drain plug**

**25 - 34 N·m (2.5 - 3.5 kg-m, 18 - 25 ft-lb)**

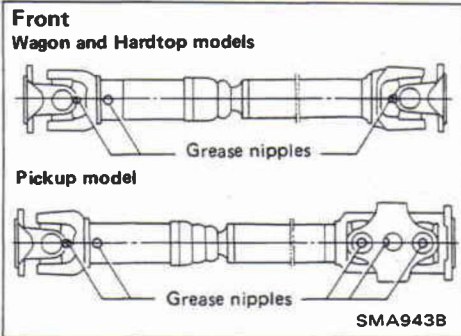


### Checking Propeller Shaft

Check propeller shaft for damage, looseness or grease leakage.

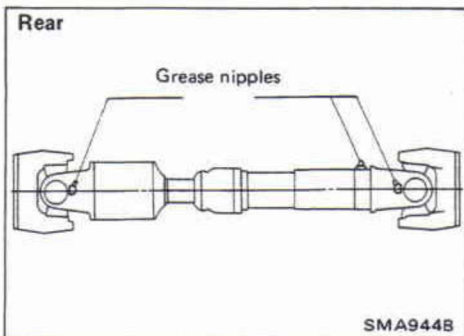
**Tightening torque: Refer to section PD.**

## CHASSIS AND BODY MAINTENANCE



### Greasing Nipples of Propeller Shafts

Apply multi-purpose grease to nipples of propeller shafts.

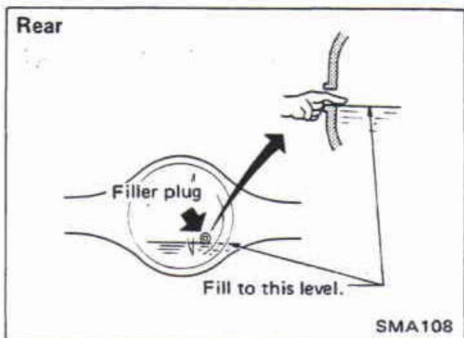
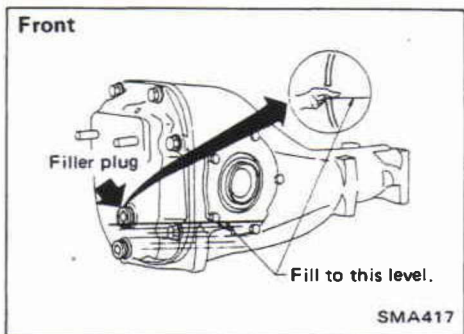


### Checking Differential Gear Oil

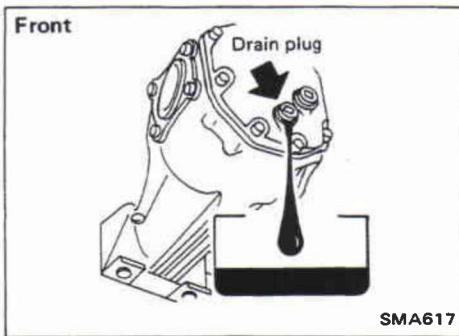
1. Check differential carrier for oil leakage.
2. Check oil level.

: Filler plug

59 - 98 N·m (6 - 10 kg·m, 43 - 72 ft·lb)



## CHASSIS AND BODY MAINTENANCE



### Changing Differential Gear Oil

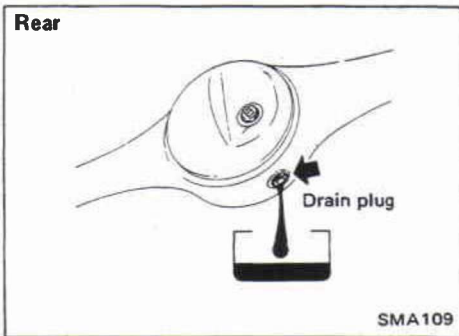
Oil capacity:

Front

H233B

5.4 liters (4-3/4 Imp qt) ... Except for Pickup

4.3 liters (3-3/4 Imp qt) ... For Pickup



Oil capacity:

Rear

H233B

2.1 liters (1-7/8 Imp qt)

H260

4.7 liters (4-1/8 Imp qt)

☐: Drain plug

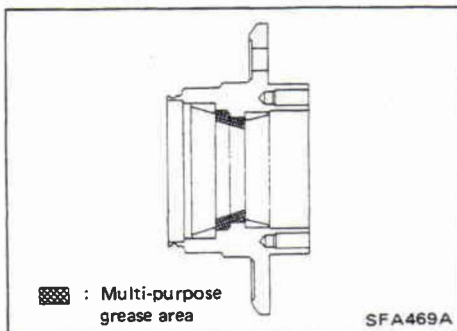
59 - 98 N·m (6 - 10 kg-m, 43 - 72 ft-lb)

### Limited-slip differential gear

- Use only approved or recommended limited-slip differential gear oil.
- Limited-slip differential identification.
  - (1) Lift both rear wheels off the ground.
  - (2) Turn one rear wheel by hand.
  - (3) If both rear wheels turn in the same direction simultaneously, vehicle is equipped with limited-slip differential.

### Checking Front Wheel Bearing Grease

- Check that wheel bearings operate smoothly.
- Check front wheel bearings for grease leakage and water or dust entry.
- Replace front wheel bearings or front wheel bearing grease if wheel bearings do not turn smoothly.



### Repacking Front Wheel Bearing and Axle Joint Grease

#### FRONT WHEEL BEARING GREASE

Apply multi-purpose grease sparingly to the following parts:

- Threaded portion of spindle
- Contact surface between wheel bearing washer and outer wheel bearing
- Grease seal lip
- Wheel hub (as shown at the left)

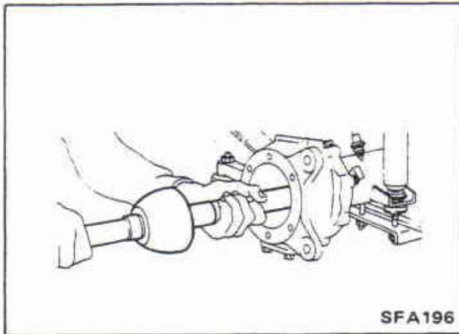
## CHASSIS AND BODY MAINTENANCE

### Repacking Front Wheel Bearing and Axle Joint Grease (Cont'd)

#### AXLE JOINT GREASE

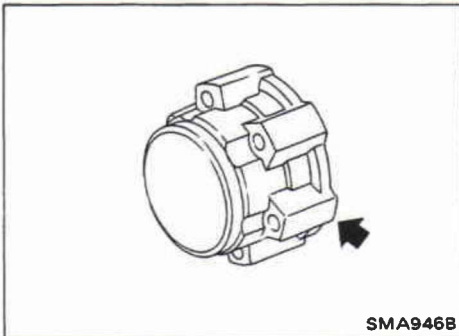
- Drain approximately 2 liters (1-3/4 Imp qt) of differential oil.
- Remove knuckle spindle.
- Slightly pull out axle and repack axle joint with recommended grease.

Refer to FA section.



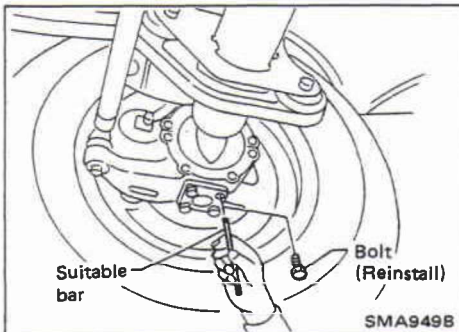
### Checking Free-running Hub Grease

Check free-running hub grease for leakage and water or dust entry.



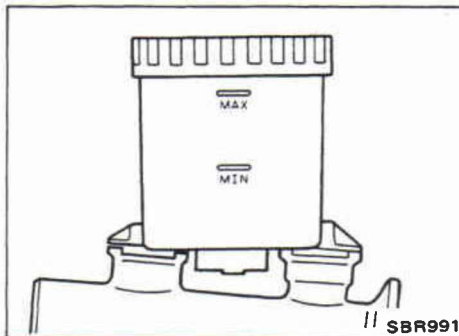
### Checking Water Entry in Knuckle Flange

- Check for water entry in knuckle flange by removing one bolt of lower knuckle flange bearing cap and probing with a suitable thin bar.
- After checking, be sure to reinstall the bolt to a tightening torque of 30 to 40 N·m (3.1 to 4.1 kg-m, 22 to 30 ft-lb).



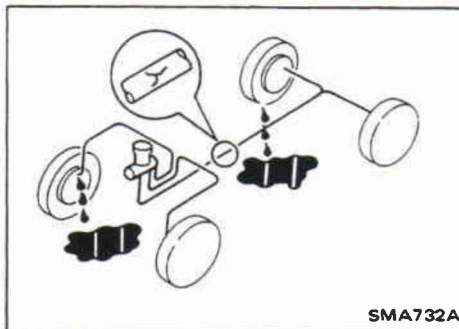
### Checking Brake Fluid Level and Leaks

If fluid level is extremely low, check brake system for leaks.

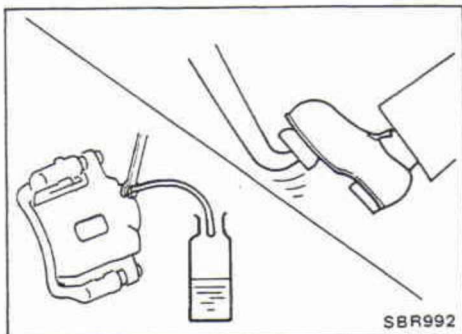


### Checking Brake System

Check brake fluid lines and parking brake cables for improper attachment, leaks, chafing, abrasion, deterioration, etc.



## CHASSIS AND BODY MAINTENANCE



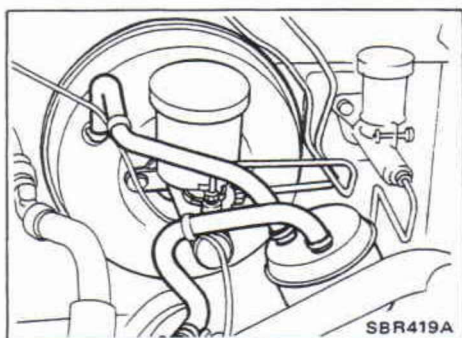
### Changing Brake Fluid

1. Drain brake fluid from each air bleeder valve.
2. Refill until new brake fluid comes out from each air bleeder valve.

Use same procedure as in bleeding hydraulic system to refill brake fluid.

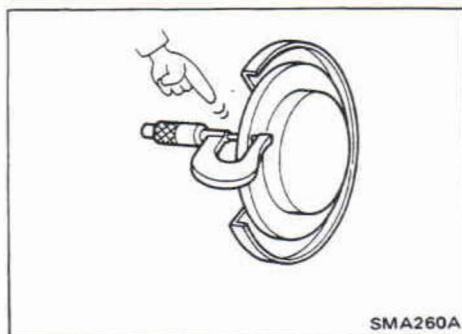
Refer to section BR.

- Refill with recommended brake fluid "DOT 3".
- Never reuse drained brake fluid.
- Be careful not to splash brake fluid on painted areas.



### Checking Brake Booster, Vacuum Hoses, Connections and Check Valve

Check vacuum lines, connections and check valve for improper attachment, air tightness, chafing and deterioration.



### Checking Disc Brake

Check condition of disc brake components.

#### ROTOR

Check condition and thickness.

**Standard thickness:**

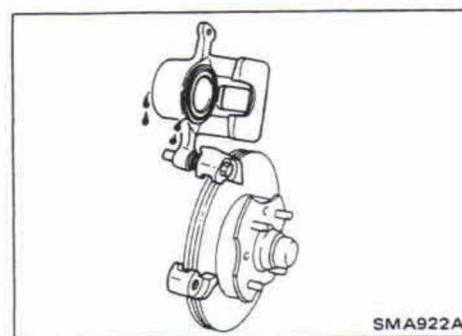
**CL36VA**  
22.0 mm (0.866 in)

**AD20VC**  
18.0 mm (0.709 in)

**Minimum thickness:**

**CL36VA**  
20.0 mm (0.787 in)

**AD20VC**  
16.0 mm (0.630 in)



#### CALIPER

Check operation and leakage.

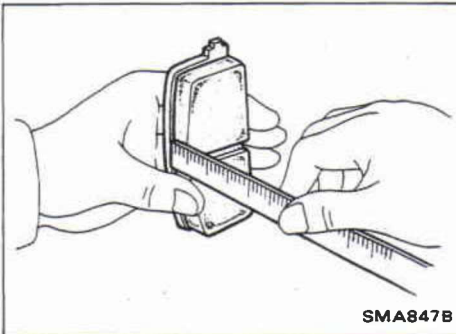
## CHASSIS AND BODY MAINTENANCE

### Checking Disc Brake (Cont'd)

#### PAD

Check wear or damage.

- Standard thickness:**  
11.0 mm (0.433 in)
- Minimum thickness:**  
2.0 mm (0.079 in)

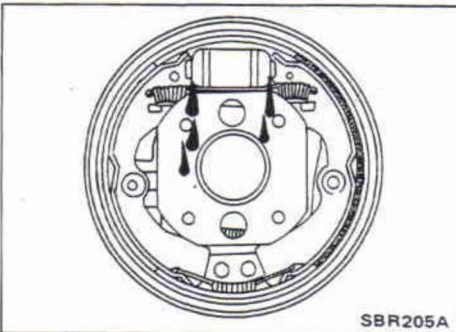


### Checking Drum Brake

Check condition of drum brake components.

#### WHEEL CYLINDER

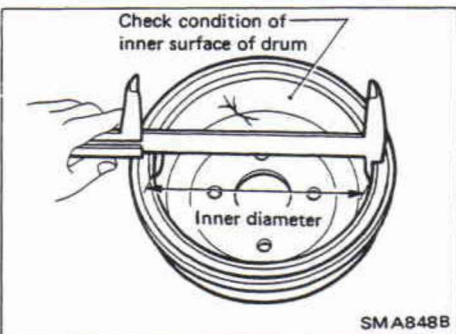
Check operation and leakage.



#### DRUM

Check condition and inner surface.

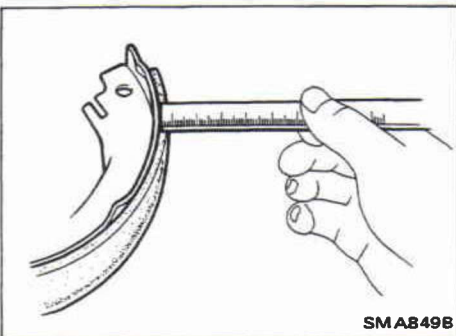
- Standard diameter:**  
295 mm (11.61 in)
- Drum repair limit (Inner diameter):**  
296.5 mm (11.67 in)



#### LINING

Check wear or damage

- Standard thickness:**  
6.1 mm (0.240 in)
- Lining wear limit (Minimum thickness):**  
1.5 mm (0.059 in)

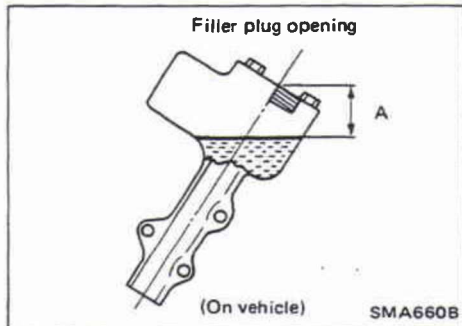
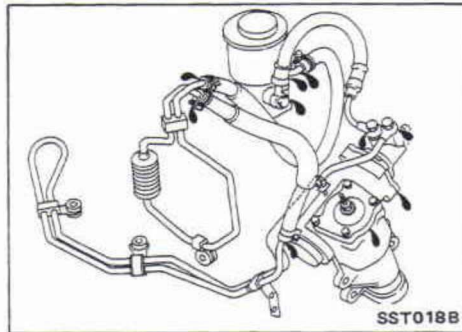
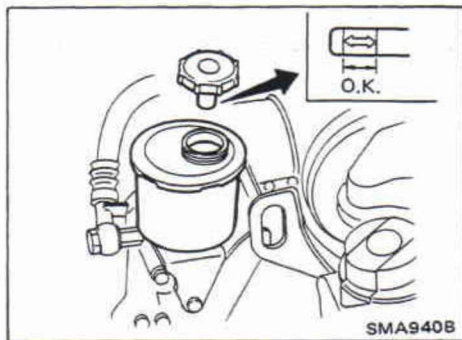
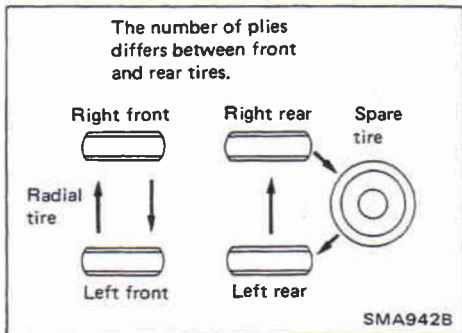
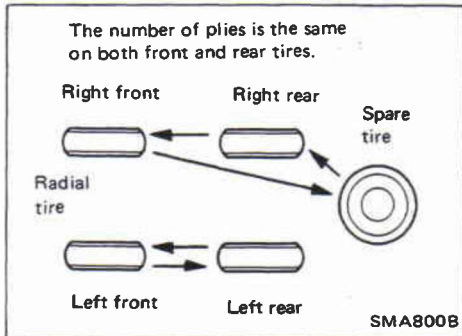


### Balancing Wheels

Adjust wheel balance using the road wheel center.

- Maximum allowable unbalance at rim flange:**  
10 g (0.35 oz)
- Tire balancing weight:**  
5 - 60 g (0.18 - 2.12 oz)
- Spacing 5 g (0.18 oz)**

## CHASSIS AND BODY MAINTENANCE



### Tire Rotation

: Wheel nuts

118 - 147 N·m (12 - 15 kg-m, 87 - 108 ft-lb)

### Checking Power Steering System Fluid and Lines

- Check fluid level, when the fluid is cold.
- Check lines for improper attachment, leaks, cracks, damage, loose connections, chafing and deterioration.

### Checking Steering Gear Oil Level and Leaks

- Check steering gear for oil level and leakage.
- Check oil level.

Oil level:

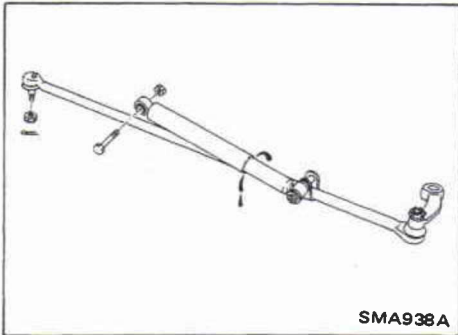
Distance "A"

37 mm (1.46 in) or less

Be careful not to overflow gear oil when filling up.

## CHASSIS AND BODY MAINTENANCE

---



### Checking Steering Damper

Check steering damper for damage and oil leakage.

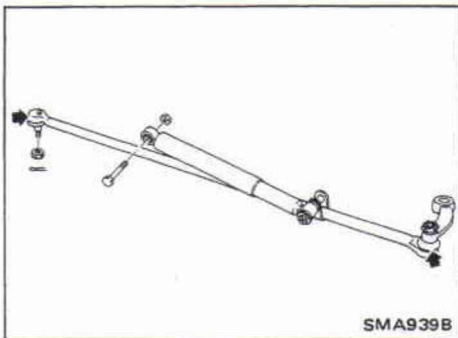
### Checking Steering Gear Box and Linkage

#### STEERING GEAR

- Check gear housing and boots for looseness, damage or grease leakage.
- Check connection with steering column for looseness.

#### STEERING LINKAGE

- Check ball joint, dust cover and other component parts for looseness, wear, damage or grease leakage.



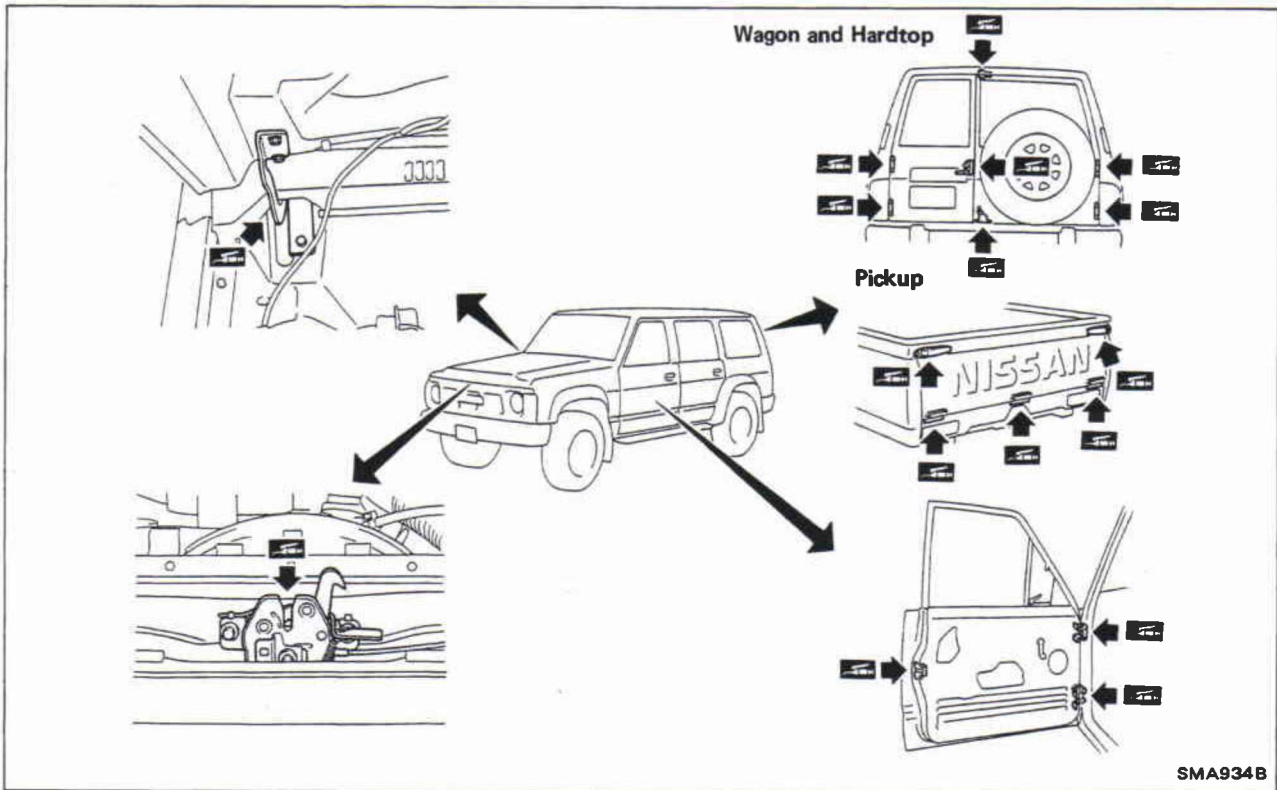
### Greasing Steering Linkage

Apply multi-purpose grease to greasing points using suitable grease nipples.



## CHASSIS AND BODY MAINTENANCE


### Lubricating Hood Latches, Locks and Hinges

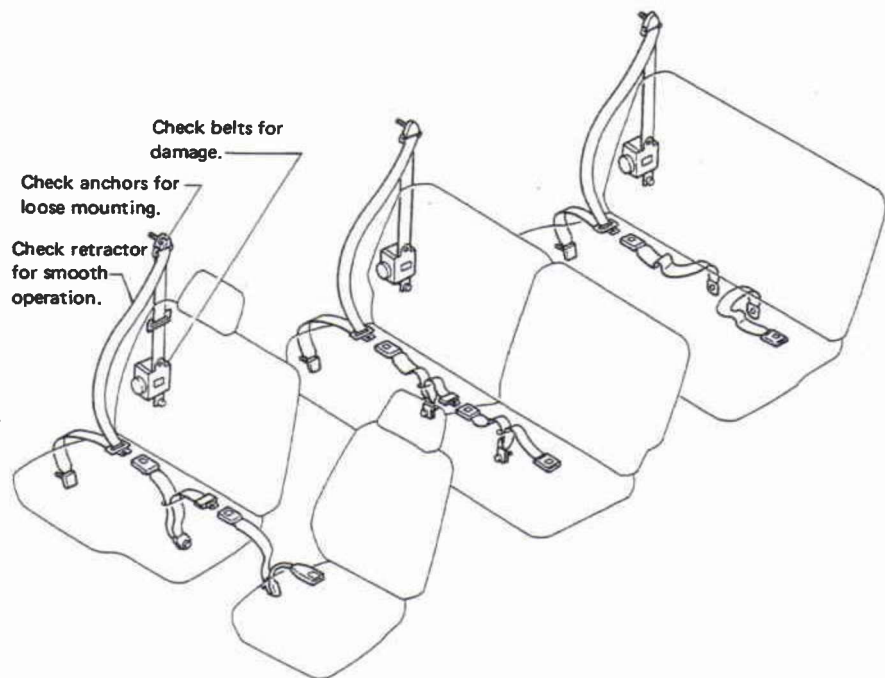


### Checking Seat Belts, Buckles, Retractors, Anchors and Adjuster

#### CAUTION:

1. If the vehicle is collided or overturned, replace the entire belt assembly, regardless of nature of accident.
2. If the condition of any component of a seat belt is questionable, do not have seat belt repaired, but replaced as a belt assembly.
3. If webbing is cut, frayed, or damaged, replace belt assembly.
4. Do not spill drinks, oil, etc. on inner lap belt buckle. Never oil tongue and buckle.
5. Use a NISSAN genuine seat belt assembly.

 Anchor bolt  
35.8 - 45.6 N·m  
(3.65 - 4.65 kg·m, 26.4 - 33.6 ft·lb)



**Engine Maintenance**

**INSPECTION AND ADJUSTMENT**

**Drive belt deflection**

Unit: mm (in)

	Used belt deflection		Set deflection of new belt
	Limit	Adjusted deflection	
Alternator	16 (0.63)	13 - 15 (0.51 - 0.59)	10 - 12 (0.39 - 0.47)
Air conditioner compressor	11 (0.43)	8 - 10 (0.31 - 0.39)	6 - 8 (0.24 - 0.31)
Power steering oil pump	19 (0.75)	15 - 17 (0.59 - 0.67)	14 - 16 (0.55 - 0.63)
Applied pushing force	98 N (10 kg, 22 lb)		

**Oil capacity (Refill capacity)**

Unit: ℓ (Imp qt)

With oil filter change	8.2 (7-1/4)
Without oil filter change	7.7 (6-3/4)

**Cooling system check**

Unit: kPa (bar, kg/cm<sup>2</sup>, psi)

Cooling system testing pressure	98 (0.98, 1.0, 14)
Radiator cap relief pressure	78 - 98 (0.78 - 0.98, 0.8 - 1.0, 11 - 14)

**Coolant capacity (With reservoir tank)**

Unit: ℓ (Imp qt)

With heater	
M/T	13.9 (12-1/4)
A/T	13.6 (12)
Without heater	
M/T	13.3 (11-3/4)
A/T	13.0 (11-1/2)

**Spark plug**

Standard type	BP5ES
Hot type	BP4ES
Cold type	BP6ES, BP7ES
Plug gap	0.8 - 0.9 mm (0.031 - 0.035 in)

**Valve clearance (Hot)**

Unit: mm (in)

Intake	0.38 (0.015)
Exhaust	0.38 (0.015)

**Ignition timing and idle speed**

	M/T	A/T (in "D" position)
Ignition timing B.T.D.C. degree	10° ± 1°	
Idle speed rpm	650 ± 50	

**Distributor**

Point gap	mm (in)	0.45 - 0.55 (0.018 - 0.022)
Dwell angle	degree	34° - 40°

**Mixture ratio**

	M/T	A/T (in "D" position)
Idle CO %	1.5 ± 0.5	

**Engine Maintenance (Cont'd)**

**TIGHTENING TORQUE**

Unit	N-m	kg-m	ft-lb
Intake manifold bolts and nuts	16 - 19	1.6 - 1.9	12 - 14
Exhaust manifold bolts and nuts	27 - 31	2.8 - 3.2	20 - 23
Exhaust tube nuts	43 - 50	4.4 - 5.1	32 - 37
Carburetor nuts	16 - 19	1.6 - 1.9	12 - 14
Valve rocker adjusting nuts	16 - 22	1.6 - 2.2	12 - 16
Rocker cover screw	1 - 3	0.1 - 0.3	0.7 - 2.2
Alternator adjusting lock bolt	21 - 26	2.1 - 2.7	15 - 20
Alternator adjusting bar fixing bolt	43 - 55	4.4 - 5.6	32 - 41
Alternator securing bolt	59 - 75	6.0 - 7.6	43 - 55
Power steering pump adjusting lock bolt	21 - 26	2.1 - 2.7	15 - 20
Idler pulley lock nut	43 - 55	4.4 - 5.6	32 - 41
Cylinder block drain plug	34 - 44	3.5 - 4.5	25 - 33
Air cleaner wing nuts	After wing nuts touch air cleaner, tighten them three more turns.		
Oil pan drain plug	29 - 39	3.0 - 4.0	22 - 29
Spark plug	20 - 29	2.0 - 3.0	14 - 22
Distributor securing bolt	13 - 16	1.3 - 1.6	9 - 12

# SERVICE DATA AND SPECIFICATIONS (S.D.S.)

TD42

## Engine Maintenance (Cont'd)

### INSPECTION AND ADJUSTMENT

#### Drive belt deflection

Unit: mm (in)

	Used belt deflection		Set deflection of new belt
	Limit	Adjusted deflection	
Alternator	20 (0.79)	11 - 13 (0.43 - 0.51)	9 - 11 (0.35 - 0.43)
Air conditioner compressor	10.5 (0.413)	6 - 7 (0.24 - 0.28)	5 - 6 (0.20 - 0.24)
Power steering oil pump	20 (0.79)	11.5 - 13.0 (0.453 - 0.512)	10.5 - 11.5 (0.413 - 0.453)
Applied pushing force	98 N (10 kg, 22 lb)		

Inspect drive belt deflections when engine is cold.  
If engine is hot, check deflections in 30 minutes or more.

#### Injection nozzle

Injection pressure kPa (bar, kg/cm <sup>2</sup> , psi)	
Used nozzle	9,807 - 10,297 (98.1 - 103.0, 100 - 105, 1,422 - 1,493)
New nozzle	10,297 - 11,278 (103.0 - 112.8, 105 - 115, 1,493 - 1,635)

#### Oil capacity (Refill capacity)

Unit: ℓ (Imp qt)

With oil filter change	9.2 (8-1/8)
Without oil filter change	8.0 (7)

#### Coolant capacity (With reservoir tank)

Unit: ℓ (Imp qt)

With heater M/T	13.6 (12)
Without heater M/T	12.8 (11-1/4)

#### Valve clearance (Hot)

Intake and exhaust	mm (in)	0.35 (0.014)
--------------------	---------	--------------

#### Idle speed

		F.I.C.D. OFF	F.I.C.D. ON
Idle speed	rpm	700 <sup>+50</sup> <sub>0</sub>	850 <sup>0</sup> <sub>-50</sub>

#### Cooling system

Radiator cap relief pressure kPa (bar, kg/cm <sup>2</sup> , psi)	78 - 98 (0.78 - 0.98, 0.8 - 1.0, 11 - 14)
---	--

Cooling system leakage testing pressure kPa (bar, kg/cm <sup>2</sup> , psi)	98 (0.98, 1.0, 14)
--	--------------------

### TIGHTENING TORQUE

Unit	N-m	kg-m	ft-lb
Intake manifold nut/bolt	15 - 20	1.5 - 2.0	11 - 14
Exhaust manifold nut	25 - 29	2.5 - 3.0	18 - 22
Alternator adjusting bar bolt	16 - 21	1.6 - 2.1	12 - 15
Idler pulley nut (A/C compressor)	41 - 52	4.2 - 5.3	30 - 38
P/S oil pump adjusting lock bolt	16 - 21	1.6 - 2.1	12 - 15
Oil pan drain plug	54 - 59	5.5 - 6.0	40 - 43
Injection nozzle to cylinder head	54 - 64	5.5 - 6.5	40 - 47
Spill tube nut	29 - 39	3.0 - 4.0	22 - 29
Injection tube flare nut	20 - 25	2.0 - 2.5	14 - 18
Valve clearance adjusting screw lock nut	15 - 20	1.5 - 2.0	11 - 14
Rocker cover screw	1 - 2	0.1 - 0.2	0.7 - 1.4
Cylinder block drain plug	29 - 39	3.0 - 4.0	22 - 29
Air cleaner wing nuts	After wing nuts touch air cleaner, tighten them three more turns.		

## SERVICE DATA AND SPECIFICATIONS (S.D.S.)

### Chassis and Body Maintenance

#### INSPECTION AND ADJUSTMENT

##### Clutch

Unit: mm (in)	
Pedal height "H"	202 - 212 (7.95 - 8.35)
Pedal free play "A"	1.0 - 3.0 (0.039 - 0.118)

#### Front axle and front suspension

##### Wheel bearing preload

Wheel bearing axial end play mm (in)	0 - 0.08 (0 - 0.0031)
Wheel bearing lock nuts Tightening torque N-m (kg-m, ft-lb)	167 - 196 (17 - 20, 123 - 145)
Retightening torque after untightened N-m (kg-m, ft-lb)	3 - 5 (0.3 - 0.5, 2.2 - 3.6)
Measured starting force At wheel hub bolt N (kg, lb)	A
Turning adjusting nut in tight- ening direction and measuring starting force At wheel hub bolt N (kg, lb)	B
Calculated wheel bearing preload; B - A At wheel hub bolt N (kg, lb)	0 - 18.6 (0 - 1.9, 0 - 4.2)

#### Front wheel alignment (Unladen\*1)

Applied model	Hardtop	Wagon	Pickup
Camber degree	0° - 1°		
Caster degree	2°20' - 3°20'	2°05' - 3°05'	2°50' - 3°50'
Kingpin inclination degree	7° - 8°		
Toe-in mm (in) degree			
Radial tire 10R15-6PRLT	-2 to 0 (-0.08 to 0) -9' to 0'		-
215/80R16 107Q, 7.50R16	0 - 2 (0 - 0.08) 0' - 9'		
Bias tire	1 - 3 (0.04 - 0.12) 9' - 18'		
Front wheel turning angle (full turn) degree			
Inside	30° - 32°	28° - 30°	
Outside	27° - 29°	28° - 30°	

\*1: Tankful of fuel, radiator coolant and engine oil full.  
Spare tire, jack, hand tools, mats in designated position.

## SERVICE DATA AND SPECIFICATIONS (S.D.S.)

### Chassis and Body Maintenance (Cont'd)

#### Brake

		Unit: mm (in)
<b>Disc brake</b>		
<b>Pad</b>		
Standard thickness	CL36VA	11.0 (0.433)
	AD20VC	11.0 (0.433)
Minimum thickness	CL36VA	2.0 (0.079)
	AD20VC	2.0 (0.079)
<b>Rotor</b>		
Standard thickness	CL36VA	22.0 (0.866)
	AD20VC	18.0 (0.709)
Minimum thickness	CL36VA	20.0 (0.787)
	AD20VC	16.0 (0.630)
<b>Drum brake</b>		
<b>Drum</b>		
Standard inner diameter		295.0 (11.61)
Repair limit		296.5 (11.67)
<b>Lining</b>		
Standard thickness		6.1 (0.240)
Repair limit		1.5 (0.059)
<b>Pedal free height</b>		
A/T		202 - 212 (7.95 - 8.35)
M/T		192 - 202 (7.56 - 7.95)
Pedal depressed height		120 (4.72) or more
<b>Parking brake</b>		
Number of notches [at pulling force 196 N (20 kg, 44 lb)]		7 - 9

#### Wheel and tire

Wheel balance (Maximum allowable unbalance at rim flange)      gr (oz)	10 (0.35)
Tire balancing weight      gr (oz)	5 - 60 (0.18 - 2.12) Spacing 5 (0.18)

#### TIGHTENING TORQUE

Unit	N-m	kg-m	ft-lb
<b>Clutch</b>			
Pedal stopper lock nut	16 - 22	1.6 - 2.2	12 - 16
Master cylinder push rod lock nut	8 - 11	0.8 - 1.1	5.8 - 8.0
<b>Manual transmission</b>			
Drain and filler plugs	25 - 34	2.5 - 3.5	18 - 25
<b>Transfer</b>			
Drain and filler plugs	25 - 34	2.5 - 3.5	18 - 25
<b>Differential carrier</b>			
Drain and filler plugs			
Front	39 - 59	4 - 6	29 - 43
Rear	59 - 98	6 - 10	43 - 72
<b>Front axle and front suspension</b>			
Tie-rod lock nut	25 - 28	2.5 - 2.9	18 - 21
<b>Brake</b>			
Air bleeder valve	7 - 9	0.7 - 0.9	5.1 - 6.5
Stop lamp switch lock nut	12 - 15	1.2 - 1.5	9 - 11
Brake booster input rod lock nut	16 - 22	1.6 - 2.2	12 - 16
<b>Wheel and tire</b>			
Wheel nut	118 - 147	12 - 15	87 - 108