

**DATSUN****Model S110 Series**

# SECTION MA

**MA**

## MAINTENANCE

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## PRE-DELIVERY INSPECTION ITEMS

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

### 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 reservoir fluid level

### ON INSIDE AND OUTSIDE

- 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 mouldings, 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
- Head light aiming
- Tighten wheel nuts
- Tire pressures
- Check front wheels for toe-in
- Install clock/voltmeter fuse

### UNDER BODY

- Manual transmission and differential gear oil level
- Brake and fuel lines for leaks
- Tighten bolts and nuts of steering linkage and gear box
- Tighten suspension bolts and nuts

### ROAD TEST

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

### ENGINE OPERATING AND HOT

- Adjust idle mixture, speed and ignition timing
- Automatic transmission fluid level

### FINAL INSPECTION

- Install necessary parts (outside mirror, wheel covers, seat belts, mat or carpet)
- 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 list the periodic maintenance servicing required to ensure quality engine performance and good mechanical condition in DATSUN.

The first 1,000 km (600 miles) of service is one of the most important service periods and is vital to ensure the optimum condition.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL										Reference page
Periodic maintenance should be performed either at number of kilometers (miles) or months, whichever comes first	Number of kilometers in thousands	1	10	20	30	40	50	60	70	80		
	(Number of miles in thousands)	10 (6)	18	12	118	24	130	136	142	148		
	Number of months	—	6	12	18	24	30	36	42	48		

## UNDERHOOD MAINTENANCE

Torque check cylinder head bolts, manifolds & exhaust tube nuts		X											MA-6
Adjust intake & exhaust valve clearance		X		X		X		X		X		X	MA-6
Check drive belts for cracks, fraying, wear & tension		X		X		X		X		X		X	MA-7
Change engine oil (Use API SE oil)	(1)		X	X	X	X	X	X	X	X	X	X	MA-7
Change oil filter	(1)		X	X	X	X	X	X	X	X	X	X	MA-7
Change engine anti-freeze coolant (Ethylene glycol base)						X					X		MA-8
Change engine coolant (Soft water)			X	X	X	X	X	X	X	X	X	X	MA-8
Check cooling system hoses & connections				X		X		X		X		X	MA-8
Check & adjust idle rpm & mixture ratio (Check mixture ratio only on models bound for areas affected by emission regulations)		X	X	X	X	X	X	X	X	X	X	X	MA-12
Replace fuel filter						X					X		MA-15
Check fuel lines (Hoses, piping, connections, etc.)						X					X		MA-15
Replace air cleaner filter (Viscous paper type)	(2)					X					X		MA-16
Check & replace distributor breaker point	Check		X		X		X		X		X		MA-11
	Replace			X		X		X		X		X	
Adjust ignition timing			X	X	X	X	X	X	X	X	X	X	MA-12
Check & replace spark plugs	Check		X		X		X		X		X		MA-10
	Replace			X		X		X		X		X	
Check ignition wiring						X					X		MA-10
Check positive crankcase ventilation (P.C.V.) system				X		X		X		X		X	MA-16
Check brake, clutch, automatic transmission & steering gear fluid or oil level & leaks			X	X	X	X	X	X	X	X	X	X	MA-24, 25, 29, 35
Change brake fluid				X		X		X		X		X	MA-29
Check brake booster vacuum hoses, connections & check valve						X					X		MA-29
Check air conditioning system hoses, connections & refrigerant leaks				X		X		X		X		X	MA-37, 38

## UNDER VEHICLE MAINTENANCE

Check brake, clutch, fuel & exhaust systems for proper attachment, leaks chafing, abrasion, deterioration, etc.			X	X	X	X	X	X	X	X	X	X	MA-24, 29
Check level & change oil in manual transmission & differential gear	Check		X	X	X		X	X	X				MA-24, 25
	Change					X					X		
Check steering gear box & linkage, suspension parts & propeller shaft for damaged, loose & missing parts	(3)	X		X		X		X		X		X	MA-25, 28, 35

## OUTSIDE AND INSIDE MAINTENANCE

Check tire condition		X											MA-30
Check wheel alignment. If necessary, rotate & balance wheels				X		X		X		X		X	MA-27, 31, 33
Check disc brake pads & brake components for wear, deterioration & leaks	(4)		X	X	X	X	X	X	X	X	X	X	MA-29
Check brake drums, linings & other components for wear, deterioration & leaks	(5)			X		X		X			X		MA-29
Check front wheel bearing grease						X					X		MA-26
Lubricate locks, hinges & hood latch	(4)		X	X	X	X	X	X	X	X	X	X	MA-36
Check seat belts, buckles, retractors, anchors & adjuster				X		X		X		X		X	MA-36
Check foot brake, parking brake & clutch for free play, stroke & operation			X	X	X	X	X	X	X	X	X	X	MA-24, 30

The above charts 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.

Check: Check, correct and replace if necessary.

NOTE: (1) Under the following severe driving conditions, change engine oil and filter either every 5,000 km (3,000 miles) or 3 months, whichever comes first.

• Driving mainly short distances • City driving • Driving under dusty conditions

(2) Under dusty driving conditions, replace element every 20,000 km (12,000 miles) or 12 months, whichever comes first.

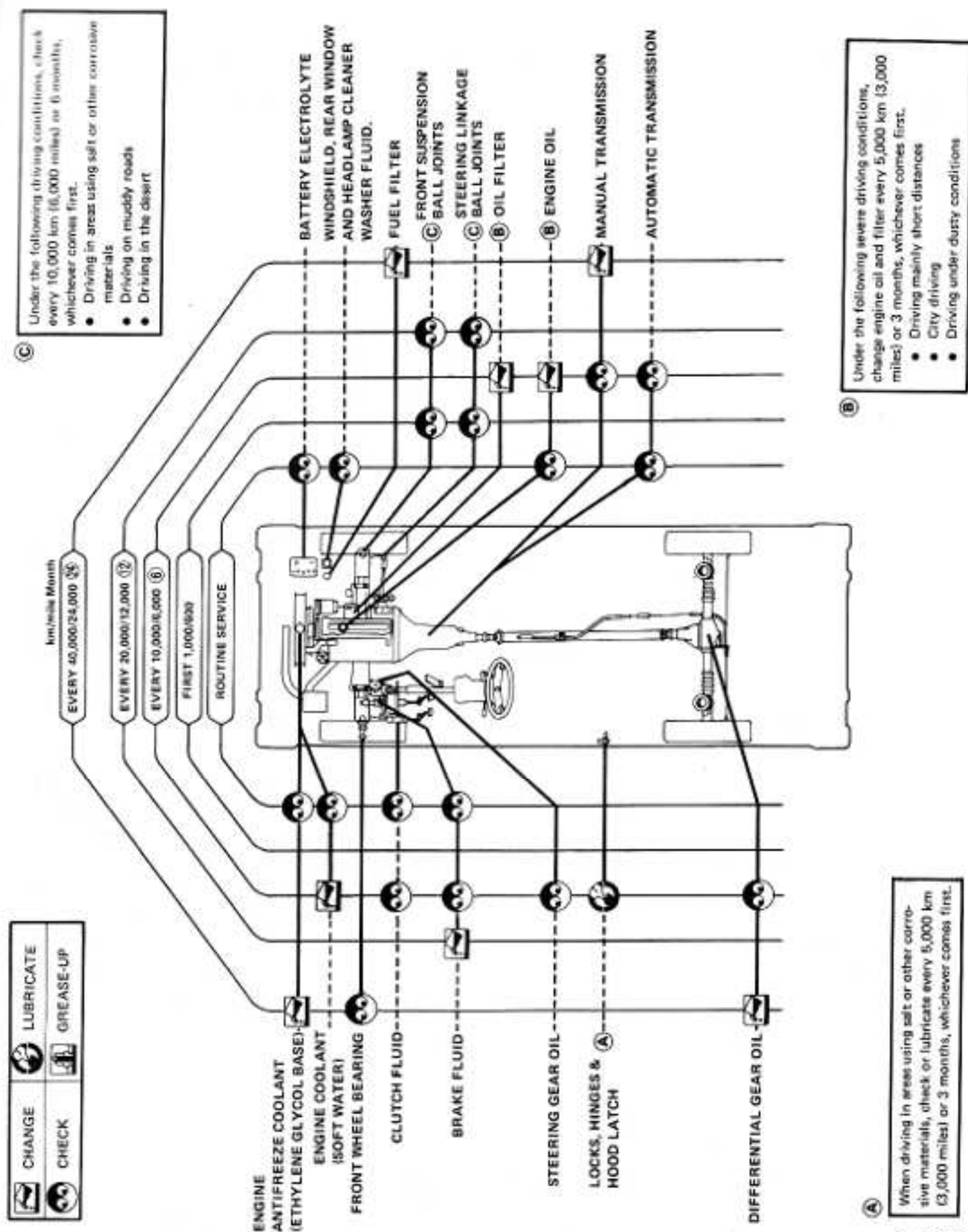
(3) Under the following driving conditions, check every 10,000 km (6,000 miles) or 6 months, whichever comes first.

• Driving in areas using salt or other corrosive materials • Driving on muddy roads • Driving in the desert

(4) When driving in areas using salt or other corrosive materials, check or lubricate every 5,000 km (3,000 miles) or 3 months, whichever comes first.

(5) When driving in areas using salt or other corrosive materials, check every 10,000 km (6,000 miles) or 6 months, whichever comes first.

## LUBRICATION CHART



## RECOMMENDED FUEL AND LUBRICANTS

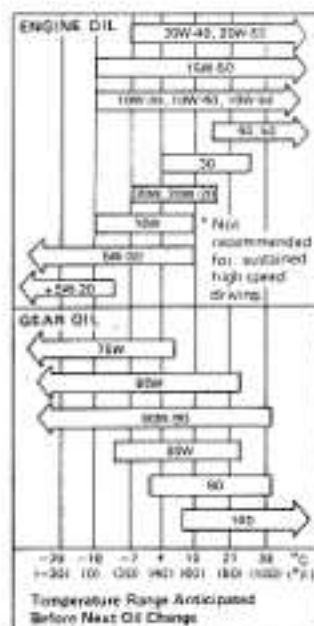
### FUEL

Use gasoline with a research octane rating of at least 88.

### LUBRICANTS

Lubricant		Specifications	Remarks
Gasoline engine oil		API SE	Further details, refer to recommended SAE viscosity chart.
Gear oil	Transmission and steering	API GL-4	
	Differential	API GL-5	
Automatic T/M fluid		Type DEXRON	—
Multi-purpose grease		NLGI No. 2	Lithium soap base
Brake and clutch fluid		DOT 3	US FMVSS No. 116
Anti-freeze		—	Ethylene glycol base

### SAE VISCOSITY NUMBER



## APPROXIMATE REFILL CAPACITIES

			Liter	Imp measure
Fuel tank			60	13-1/4 gal
Coolant	With reservoir	With heater	9.5	8-3/8 qt
		Without heater	8.8	7-3/4 qt
	Without reservoir	With heater	7.1	6-1/4 qt
		Without heater	6.4	5-5/8 qt
Engine oil		With oil filter	4.3	3-3/4 qt
		Without oil filter	3.8	3-3/8 qt
Transmission	M/T	4-speed	1.5	2-5/8 pt
		5-speed	2.0	3-1/2 pt
	A/T		5.5	4-7/8 qt
Differential carrier			1.1	2 pt
Steering gear			0.28	1/2 pt
Windshield washer tank			2.0	1-3/4 qt
Air condi- tioning system	Compressor oil	L.H.D.	0.27	9.5 fl oz
		R.H.D.	0.25	8.8 fl oz
	Refrigerant		0.9 - 1.1 kg	2.0 - 2.4 lb

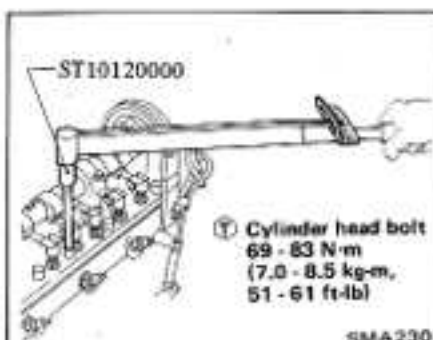
## ENGINE MAINTENANCE

## BASIC MECHANICAL SYSTEM

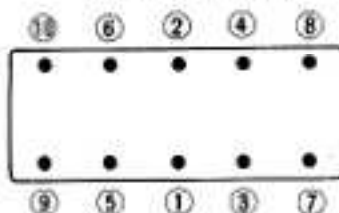
## CHECKING TORQUE OF CYLINDER HEAD BOLTS, MANIFOLD AND EXHAUST TUBE NUTS

## Cylinder head bolt

1. Start engine and warm up engine until water temperature indicator points to the middle of gauge, then stop engine.
2. Remove valve rocker cover.
3. Using Tool, tighten cylinder head bolts according to the order shown in figure, starting with the center and moving toward the ends.



## Tightening sequence



4. Install valve rocker cover.

## Manifold and exhaust tube nut

## WARNING:

You should not check the exhaust system until it has been cooled off. Otherwise, you may burn yourself.

## TIGHTENING TORQUE:

Unit		N·m	kg-m	ft-lb
Manifold	M8	15 - 25	1.5 - 2.5	11 - 18
	M10	34 - 44	3.5 - 4.5	25 - 33
Exhaust tube		20 - 25	2.0 - 2.5	14 - 18

## ADJUSTING INTAKE AND EXHAUST VALVE CLEARANCE

Adjustment should be made while engine is hot.

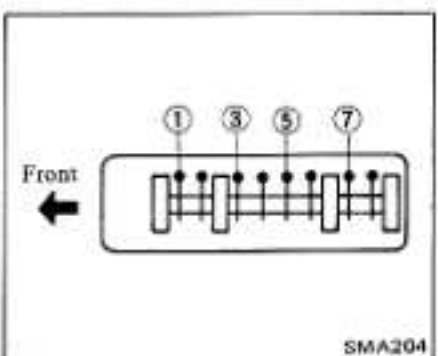
1. Start engine and warm up engine until water temperature indicator points to the middle of gauge, then stop engine.

Adjustment cannot be made while engine is in operation.

2. Remove valve rocker cover.
3. Set so that high point of No. 1 cam lobe points above,



Adjust clearance of half of the valves. Adjust only ①, ③, ⑤ and ⑦ valves.

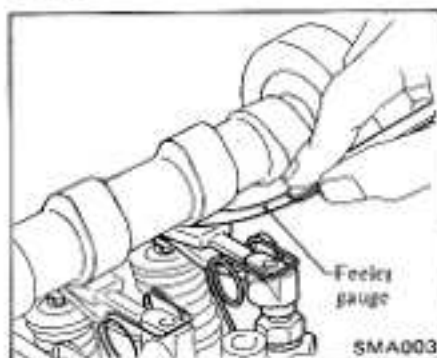


## Valve clearance (Hot)

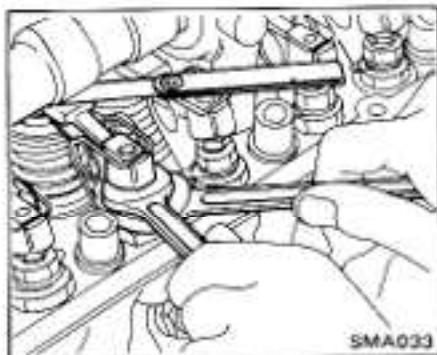
Intake . . . ③ ⑦ : 0.25 mm  
(0.010 in)

Exhaust . . . ① ⑤ : 0.30 mm  
(0.012 in)

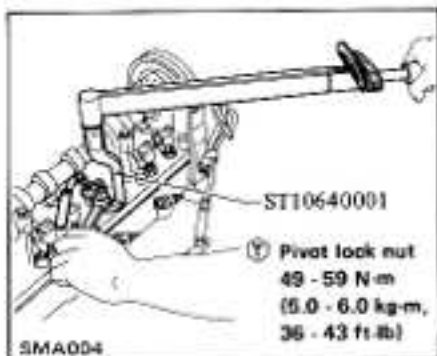
- (1) Using feeler gauge, measure clearance between cam lobe and valve rocker.



- (2) If the clearance is not specified value, loosen pivot lock nut and turn valve rocker pivot to provide proper clearance.



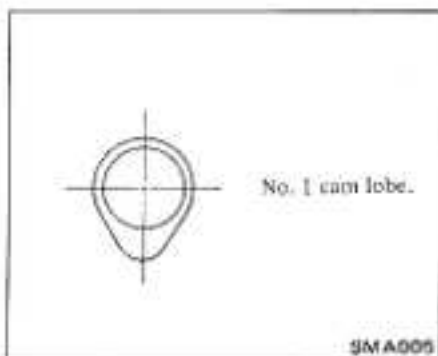
- (3) Hold valve rocker pivot and tighten pivot lock nut using Tool.



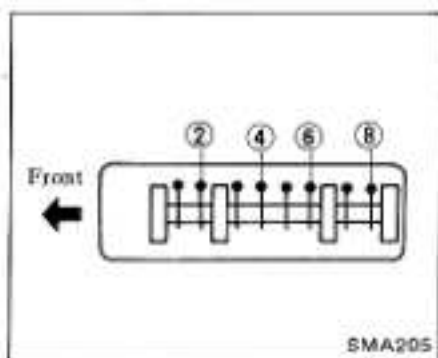
(4) Recheck clearance

Feeler gauge should move with a very slight drag.

4. Turn crankshaft and set so that high point of No. 1 cam lobe points down.



Adjust ②, ④, ⑥, and ⑧ valves, using same procedure as for Step 3.



Valve clearance (Hot)

Intake ... ② ⑥ : 0.25 mm  
(0.010 in)

Exhaust ... ④ ⑧ : 0.30 mm  
(0.012 in)

5. Install valve rocker cover.

CHECKING AND ADJUSTING DRIVE BELTS

1. Visually inspect for cracks or damage.

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

2. Check belt tension by pushing.

The belts should deflect by the specified amount.

Drive belt deflection:

8 - 12 mm  
(0.31 - 0.47 in)

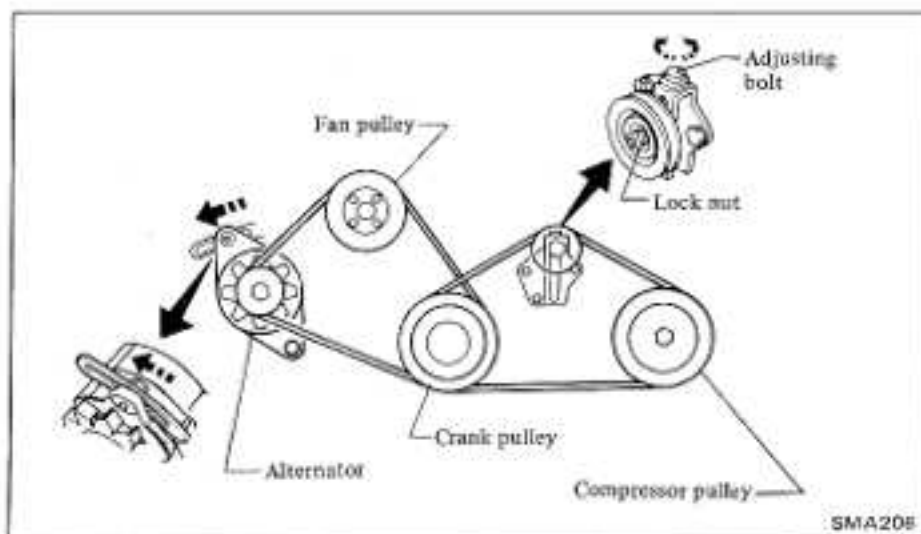
Pushing force:

98 N (10 kg, 22 lb)

3. Adjust belt tension as follows:

Fan and alternator belt

1. Loosen the upper and lower alternator securing bolts until the alternator can be moved slightly.



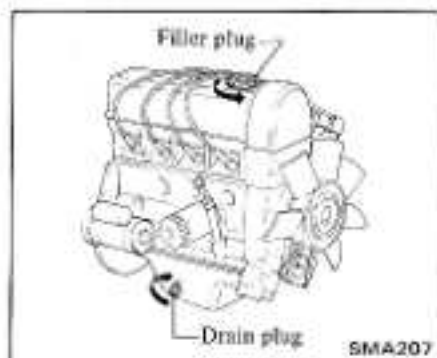
CHANGING ENGINE OIL AND OIL FILTER

1. Start engine and warm up engine until water temperature indicator points to the middle of gauge, then stop engine.

2. Remove oil filler cap and oil pan drain plug, and allow oil to drain.

WARNING:

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

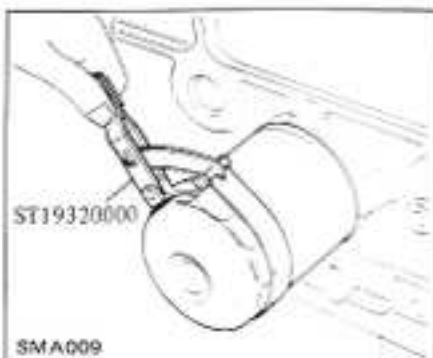


- A milky oil indicates the presence of cooling water. Isolate the cause and take corrective measure.
- An oil with extremely low viscosity indicates dilution with gasoline.

3. Clean and install oil pan drain plug with washer.

① : Oil pan drain plug  
20 - 29 N·m  
(2.0 - 3.0 kg·m,  
14 - 22 ft·lb)

4. Using Tool, remove oil filter.



5. Wipe oil filter mounting surface with a clean rag.
6. Smear a little engine oil on rubber gasket of new oil filter.



7. Install new oil filter. Hand-tighten **ONLY**. DO NOT use a wrench to tighten the filter.
8. Refill engine with new engine oil, referring to RECOMMENDED LUBRICANTS.

Check oil level with dipstick.

Oil capacity:

Unit: liters (Imp qt)

With oil filter	4.3 (3-3/4)
Without oil filter	3.8 (3-3/8)

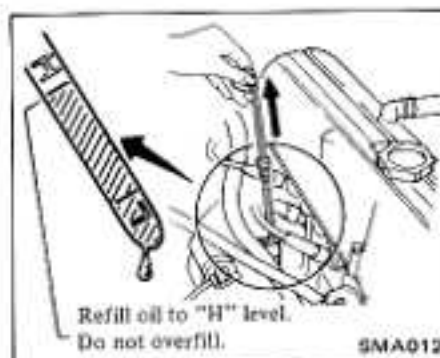


9. Start engine. Check area around drain plug and oil filter for any sign of oil leakage.

If any leakage is evident, these parts have not been properly installed.

10. Run engine until water temperature indicator points to the middle of gauge. Then stop engine and wait several minutes. Check oil level with dipstick. If necessary, add engine oil.

When checking oil level, park the car on a level surface.



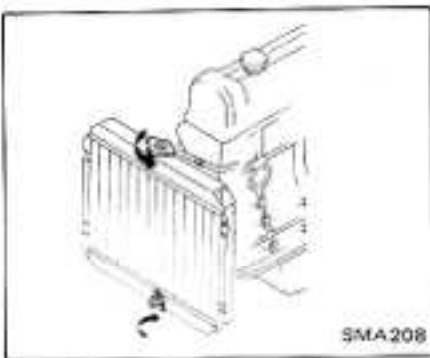
## CHANGING ENGINE COOLANT

### WARNING:

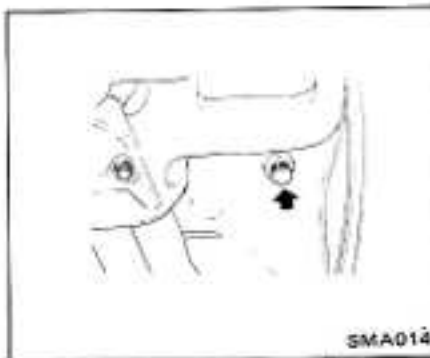
To avoid the danger of being scalded, never attempt to change the coolant when the engine is hot.

When changing engine coolant, on heater equipped models, set heater "TEMP" control lever at fully "HOT" position.

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



2. Remove cylinder block drain plug located at left rear of cylinder block.



3. Drain coolant completely. Then flush cooling system.

4. Close drain cock and plug.
5. Fill radiator with coolant. When using anti-freeze coolant, mix the anti-freeze coolant with water, observing instructions attached to anti-freeze container.

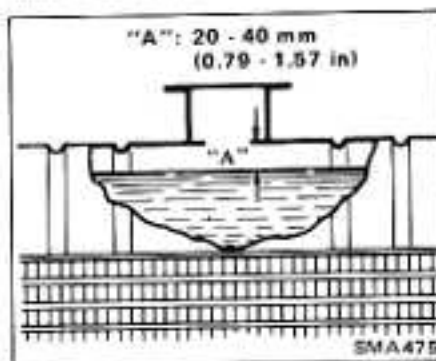
Cooling water capacity:

Unit: liters (Imp qt)

With coolant reservoir	9.5 (8-3/8)
Without coolant reservoir	7.1 (6-1/4)

Without coolant reservoir

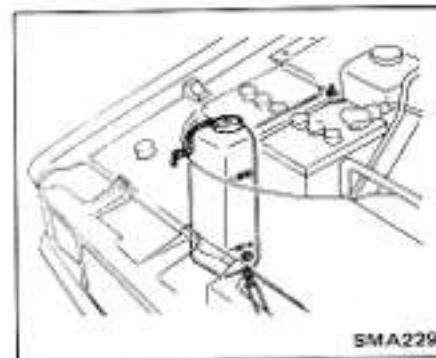
- (1) Fill radiator with coolant at "A" mm (in) below the bottom of the radiator filler neck.



- (2) Run engine for a few minutes. If necessary, add coolant.

With coolant reservoir

- (1) Fill radiator with coolant up to filler opening.
- (2) Run engine for a few minutes. If necessary, add coolant.
- (3) Fill reservoir tank with coolant up to "MAX" level.



6. Check drain cock and plug for any sign of leakage.

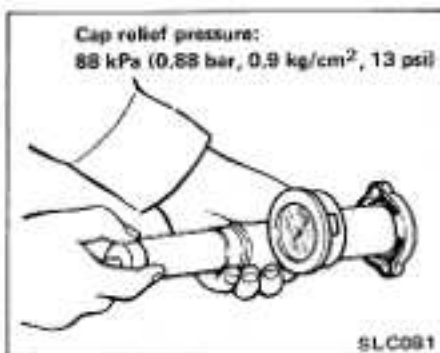
## CHECKING COOLING SYSTEM, HOSES AND CONNECTIONS

Check hoses and fittings for loose connections or deterioration. Retighten or replace if necessary.

### Checking radiator cap

Using cap tester, check the radiator cap relief pressure.

If the pressure gauge drops rapidly and excessively, replace the radiator cap.



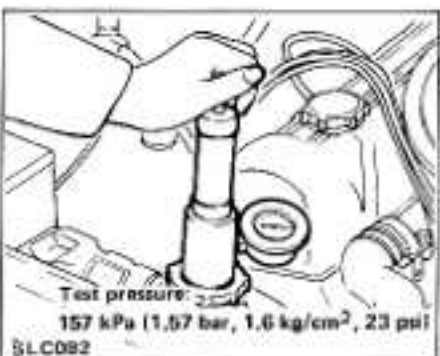
### Checking cooling system for leaks

Attach pressure tester and pump tester to the specified pressure.

Check for drop in pressure.

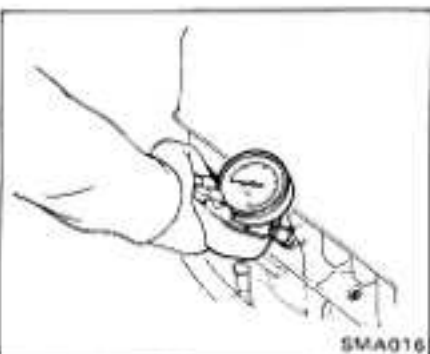
If the pressure drops, check for leaks from hoses, radiator, or water pump.

If no external leaks are found, check heater core, block and head.



## CHECKING ENGINE COMPRESSION PRESSURE

1. Warm up engine until water temperature indicator points to the middle of gauge, then stop engine.
2. Disconnect all spark plugs.
3. Disconnect cold start valve and all injector harness connectors.
4. Properly attach a compression tester to spark plug hole in cylinder being tested.



5. Depress accelerator pedal to open throttle valve fully.
  6. Crank engine and read gauge indication.
- Run engine at about 350 rpm.
  - Engine compression measurement should be made as quickly as possible.

Compression pressure:

Unit: kPa (bar, kg/cm², psi)/at rpm

Standard	1,177 (11.77, 12.0, 171)/350
Minimum	883 (8.83, 9.0, 128)/350

7. Cylinder compression in cylinders should not be less than 80% of the highest reading.

If cylinder compression in one or more cylinders is low, pour a small quantity of engine oil into cylinders through the spark plug holes and retest compression.

- If adding oil helps the compression pressure, chances are that piston rings are worn or damaged.
- If pressure stays low, valve may be sticking or seating improperly.

- If cylinder compression in any two adjacent cylinders is low, and if adding oil does not help the compression, there is leakage past the gasketed surface. Oil and water in combustion chambers can result from this problem.

## IGNITION AND FUEL SYSTEM

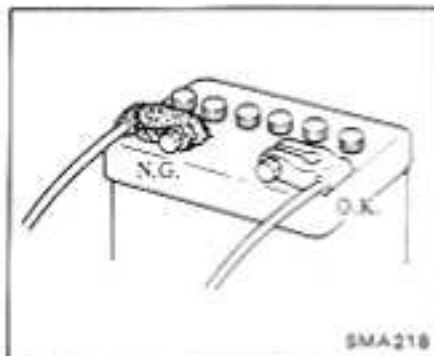
### CHECKING BATTERY

#### WARNING:

Do not expose the battery to flames or electrical sparks. Hydrogen gas generated by battery action is explosive. Do not allow battery fluid to come in contact with skin, eyes, fabrics, or painted surfaces. If the acid contacts the eyes, skin or clothing, immediately flush with water for 15 minutes and seek medical attention. In freezing weather, run the engine for a while after adding distilled water, to make sure that the water mixes properly with the fluid. Otherwise the water may freeze and damage the battery.

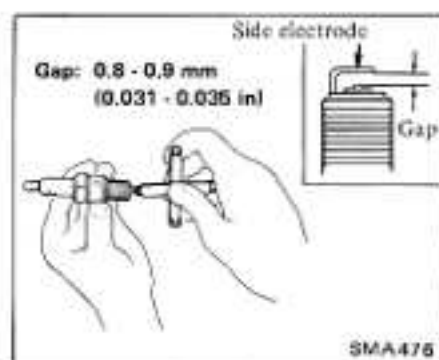
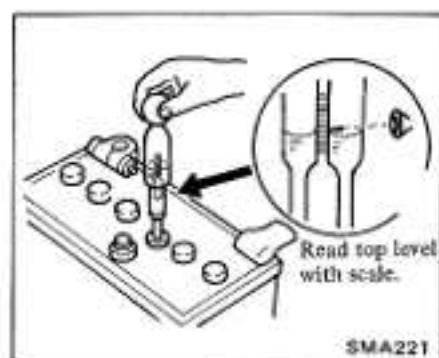
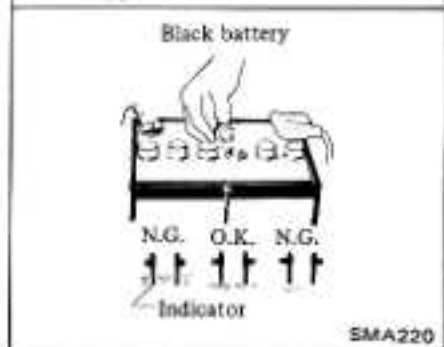
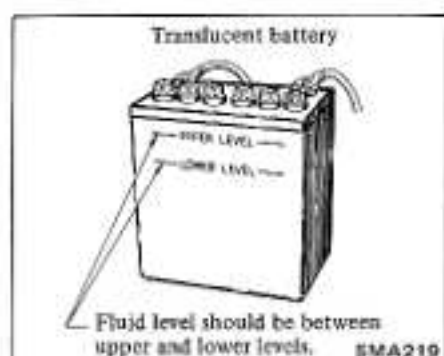
#### Visual check

1. Rusted battery support.
2. Loose terminal connections.
3. Rusted or deteriorated terminals.
4. Damaged or leaking battery.



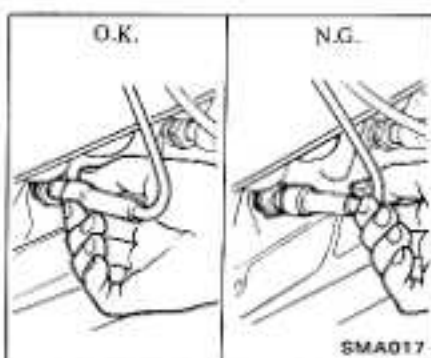
### Checking electrolyte level

Check the fluid level in each filler. If necessary, add only distilled water. Do not overfill.



### CHECKING AND REPLACING SPARK PLUGS

1. Disconnect spark plug wire at boot. Do not pull on the wires.



### Spark plug:

	Except Europe	Europe
Standard type	BP5ES L46PW	BPR5ES*
Hot type	BP4E L47PW	BPR4ES*
Cold type	BP6ES L45PW BP7ES L44PW	BPR6ES* BPR7ES*

\*: Resistor built-in type

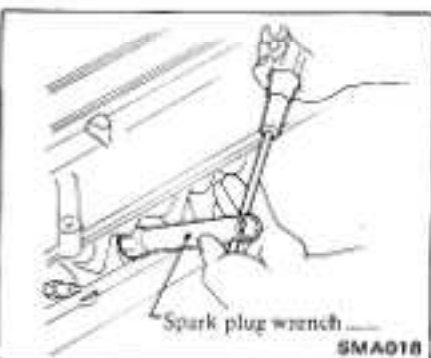
5. Install spark plugs. Reconnect high tension cables according to Nos. indicated on them.

ⓘ : Spark plug  
15 - 20 N-m  
(1.5 - 2.0 kg-m,  
11 - 14 ft-lb)

### Checking electrolyte gravity

1. Place the hydrometer in the cell. Be sure the float is not in contact with the cylinder wall.
2. Take in enough electrolyte into the hydrometer to allow the float to suspend freely between the top and bottom of the cylinder.
3. Check the reading.

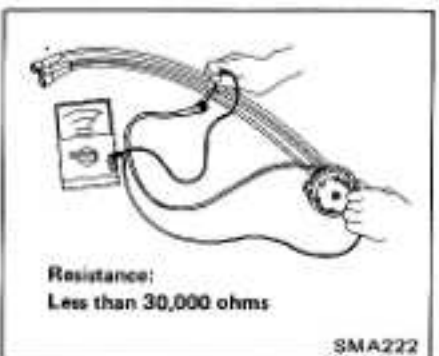
2. Remove spark plugs with spark plug wrench.



### CHECKING IGNITION WIRING

1. Visually check wiring for cracks, and damaged and burned terminals.
2. Using an ohmmeter, measure the resistance between cable terminal on the spark plug side and corresponding electrode inside cap.

Shake the wire while measuring resistance to check for intermittent brakes.



3. Clean plugs in sand blast cleaner. And inspect insulator for cracks or chips. If they are excessively worn, replace with new spark plugs.

4. Using feeler gauge, check spark plug gap.

If it is not within specified range, set gap by bending side electrode.

	Permissible value	Fully charged value [at 20°C (68°F)]
Frigid climate	Over 1.22	1.28
Tropical climate	Over 1.18	1.24
Other climates	Over 1.20	1.26

# CHECKING AND REPLACING DISTRIBUTOR BREAKER POINTS

## Visual check

1. Inspect points for excessive burning or pitting.

Replace points if necessary.

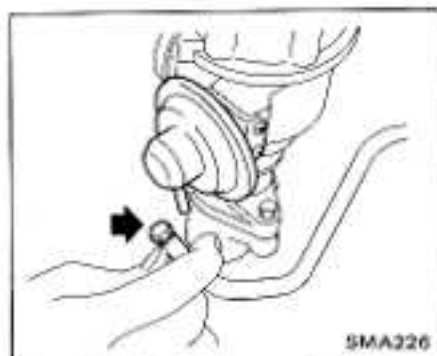
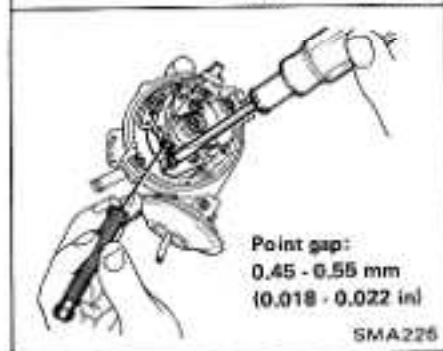
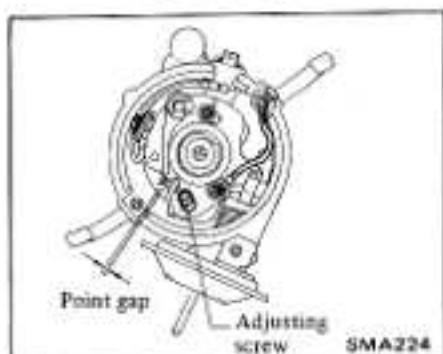
2. Use a point file to clean contact area and remove scale from points. Filing is done for cleaning purposes only.

Do not attempt to remove all roughness.

## Checking point gap

Check point gap with a feeler gauge.

If necessary, adjust gap.



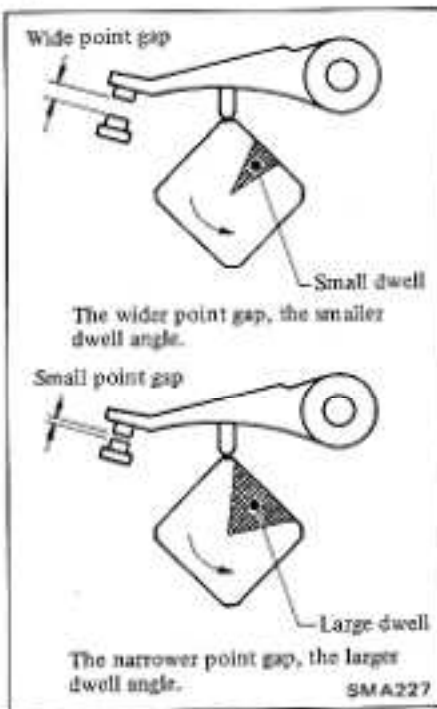
3. Start engine and warm up engine until water temperature indicator points to the middle of gauge.

4. Run engine at idle speed and measure dwell angle.

Dwell angle:

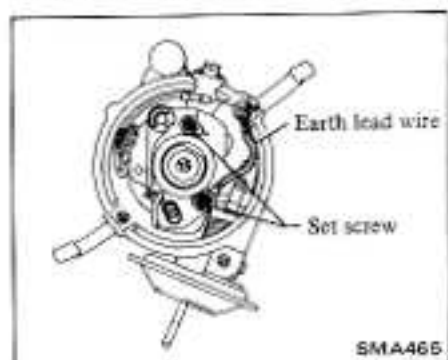
49° - 55°

5. If dwell angle is not within the specified value, turn off engine and adjust point gap.

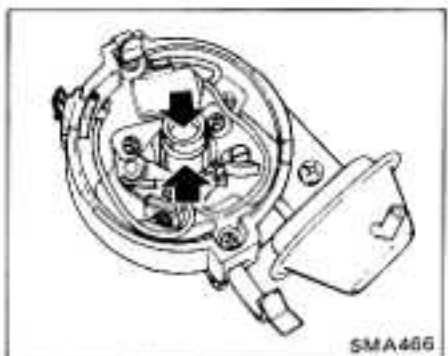


## Replacing distributor breaker point

1. Remove earth lead wire and set screws and then remove breaker point.



2. Install new breaker point. Apply grease to distributor cam and head.



3. Check point gap and dwell angle. Adjust if necessary.

## Checking dwell angle

1. Connect dwell meter.
2. Disconnect distributor vacuum hose from distributor vacuum controller, and plug hose with proper plug.

6. Recheck dwell angle.
7. Repeat this procedure until specified point gap and dwell angle are obtained. If dwell angle is not within the specified value when point gap is correct, cam lobe is worn. Replace cam.

## CHECKING AND ADJUSTING IDLE RPM AND IGNITION TIMING

### Preparation

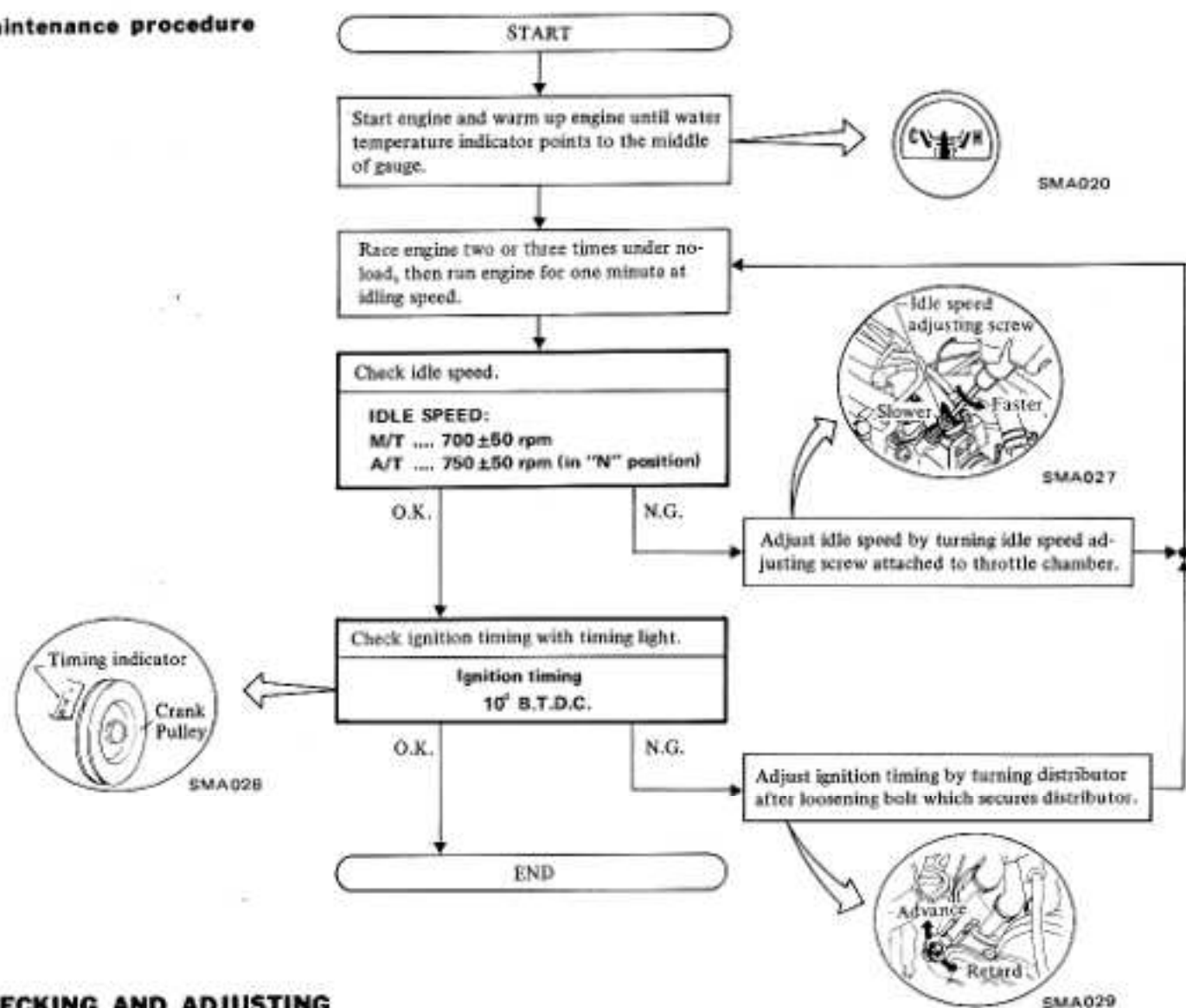
1. Inspection should be carried out while shift lever is in "Neutral" position. Be sure to engage parking brake

and to lock both front and rear wheels with wheel chocks.

2. On air conditioner equipped

models, inspections should be carried out while the air conditioner is "OFF".

### Maintenance procedure



## CHECKING AND ADJUSTING MIXTURE RATIO

### CAUTION:

Idle mixture ratio is adjusted at factory and requires no further adjustment. If it becomes necessary to adjust it, proceed with the following steps.

### Preparation

1. When checking mixture ratio, make sure that the following parts are in good order.

- Battery
- Ignition system
- Engine oil and coolant levels
- Fuses
- EFI component parts
- EFI harness connectors
- Vacuum hoses
- Air intake system (Oil filler cap, oil level gauge, etc.)
- Valve clearance, engine compression

2. Inspection should be carried out while shift lever is in "Neutral" position. Be sure to engage parking brake and to lock both front and rear wheels with wheel chocks.

3. On air conditioner equipped models, inspection should be carried out while air conditioner is "OFF".

4. Before disconnecting and connecting EFI component parts harness connectors, ensure that ignition switch is in "OFF" position.

# Maintenance procedure (With "CO"-meter)

## Note:

- When measuring "CO"%, insert probe into tail pipe more than 0.4 m (16 in).
- Use "CO"-meter after it is fully warmed up.



- When adjusting idle "CO"%, at high altitude, adjust to obtain following values.

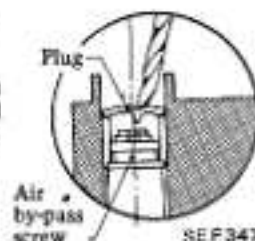
Altitude	Idle "CO" %
600 - 1,200 m (2,000 - 4,000 ft)	2.3%
1,200 - 1,800 m (4,000 - 6,000 ft)	3.5%
Above 1,800 m (6,000 ft)	4.8%

- When adjusting "CO"%, remove blind plug from air flow meter. After adjustment, install the plug on air flow meter.

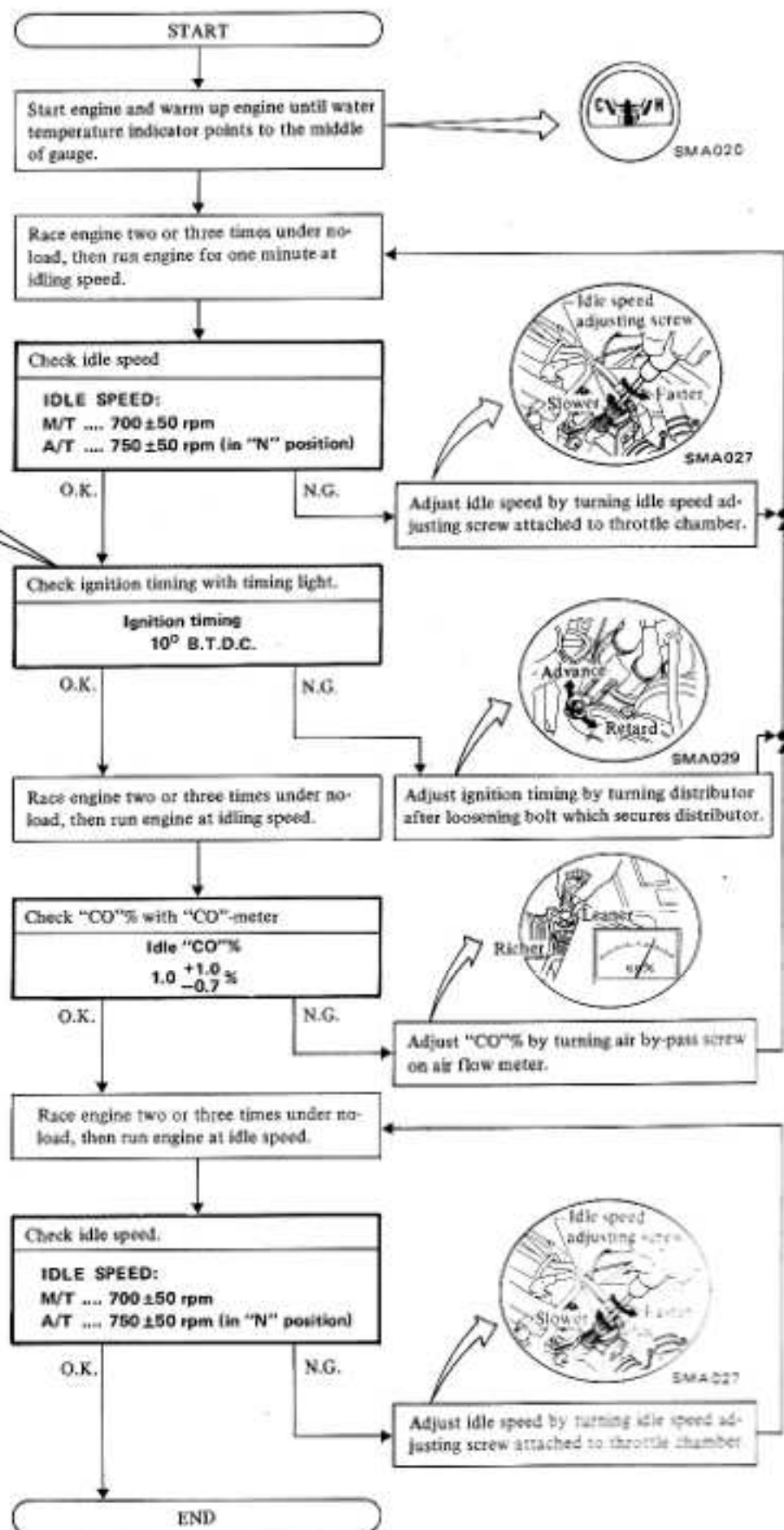
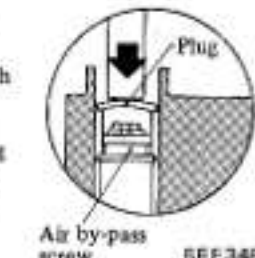
Except Europe models: Rubber plug.  
Europe models: Steel plug (furnished at servicing)

## - Steel plug -

Removal:  
Drill a hole in steel plug and remove steel plug.



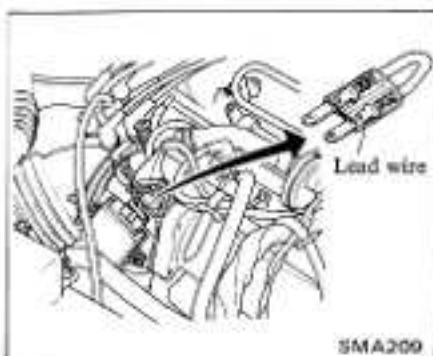
Installation:  
Insert new steel plug with its convex side up. Tap steel plug with suitable bar, thereby installing steel plug.



# Maintenance procedure (Without "CO"-meter)

Altitude of measured point;  
Less than 600 m (2,000 ft)

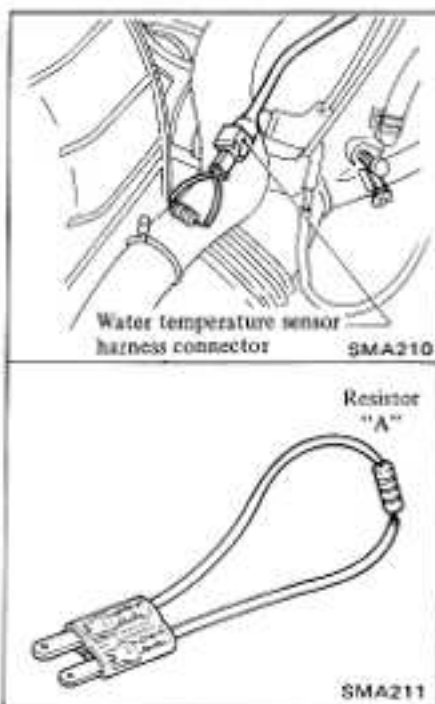
1. Adjust idle speed and ignition timing.
2. Turn ignition switch to "OFF" position.
3. Disconnect throttle valve switch harness connector.
4. Connect a lead wire between terminals Nos. 3 and 18 of throttle valve switch harness connector.



Make lead wire as follows:  
Use flat plate terminals 3 mm (0.12 in) wide, 0.8 mm (0.031 in) thick as male terminals. Place flat plate terminals parallel with each other and keep distance between inside faces 2 mm (0.08 in). Solder lead wire to each terminal and wrap insulation tape around soldered portion.

Altitude of measured point;  
Between 600 m (2,000 ft) to  
1,800 m (6,000 ft)

1. Adjust idle speed and ignition timing.
2. Turn ignition switch to "OFF" position.
3. Disconnect water temperature sensor harness connector.
4. Connect resistor between terminals of water temperature sensor harness connector.



When adjusting "CO"%, select proper setting corresponding to altitude as mixture ratio varies according to altitude. Accordingly, resistor should be made to suit measured altitude.

Altitude at measured point m (ft)	Resistance "A" $\Omega$
600 - 1,200 (2,000 - 4,000)	900
1,200 - 1,800 (4,000 - 6,000)	600

Make lead wire as follows:

- 1) Use flat plate terminals 3 mm (0.12 in) wide, 0.8 mm (0.031 in) thick as male terminals. Place flat plate terminals parallel with each other and keep distance between inside faces 2 mm (0.08 in).
  - 2) Solder lead wire to terminals.
  - 3) Solder resistor to side opposite to terminal and wrap insulation tape around soldered portion.
- 
5. Warm up engine sufficiently, race engine two or three times under no-load, then run engine at idle speed.
  6. Adjust mixture ratio with engine speed set at maximum by turning air by-pass screw.

When adjusting mixture ratio, remove blind plug from air flow meter. After adjustment, install the plug on air flow meter.

Europe models: Steel plug (furnished at servicing)... Refer to page MA-13. Except Europe models: Rubber plug.

7. Turn off engine and remove resistor. Then reconnect water temperature sensor harness connector.
8. Check idle speed. If necessary, adjust it to specifications.

Altitude of measured point;  
More than 1,800 m (6,000 ft)

1. Adjust idle speed and ignition timing.
2. Warm up engine sufficiently, race engine two or three times under no-load, then run engine at idling speed.
3. Adjust mixture ratio with engine speed set at maximum by turning air by-pass screw.

When adjusting mixture ratio, remove blind plug from air flow meter. After adjustment, install the plug on air flow meter.

Europe models: Steel plug (furnished at servicing)... Refer to page MA-13. Except Europe models: Rubber plug.

4. Check idle speed. If necessary, adjust it to specifications.

5. Warm up engine sufficiently, race engine two or three times under no-load, then run engine at idling speed.
6. Adjust mixture ratio with engine speed set at maximum by turning air by-pass screw.

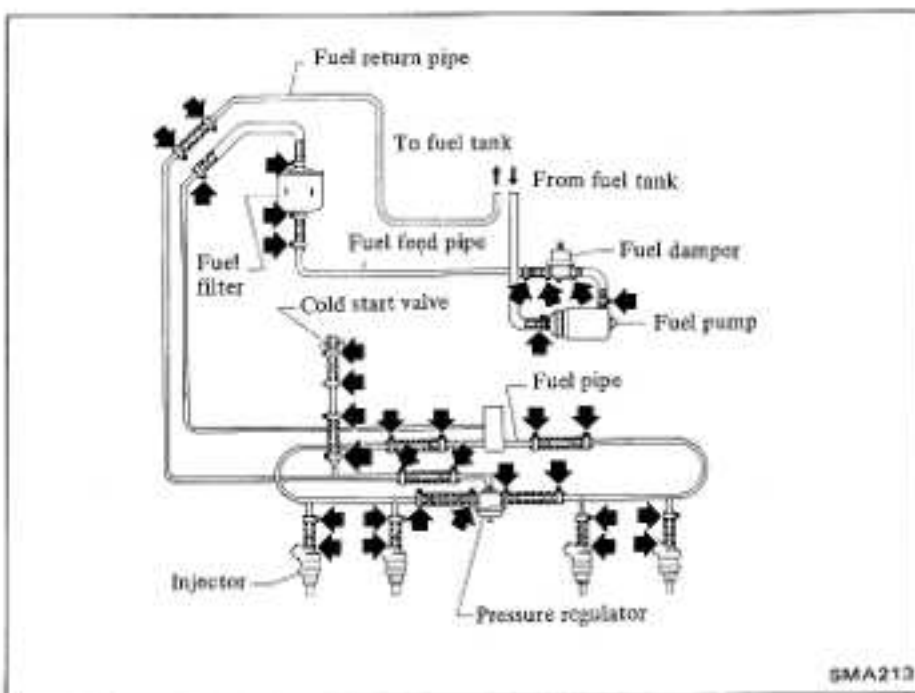
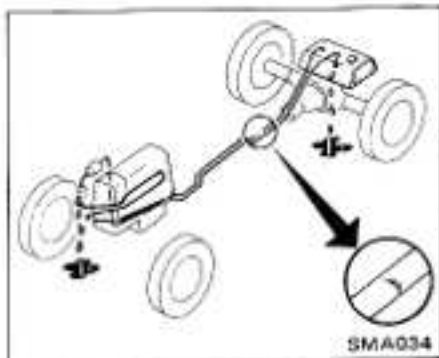
When adjusting mixture ratio, remove blind plug from air flow meter. After adjustment, install the plug on air flow meter.

Europe models: Steel plug (furnished at servicing)... Refer to page MA-13. Except Europe models: Rubber plug.

7. Turn off engine and remove lead wire and connect the connector back to throttle valve switch.
8. Check idle speed. If necessary, adjust it to specifications.

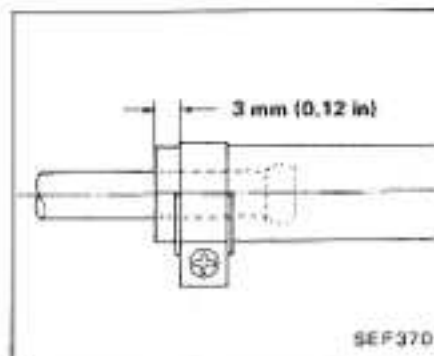
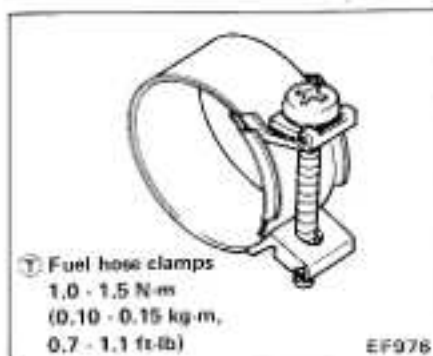
# CHECKING FUEL LINES (Hoses, piping, connections, etc.)

1. Check fuel line for leaks, particularly around connection of fuel pipe and fuel hose.
2. Retighten loose connections and replace any damaged or deformed parts.



## CAUTION:

- a. Do not reuse fuel hose clamp after loosening.
- b. Tighten high pressure rubber hose clamp so that clamp end is 3 mm (0.12 in) from hose end or screw position (wider than other portions of clamp) is flush with hose end. Tightening torque specifications are the same for all rubber hose clamps. When tightening hose clamp, ensure that screw does not come into contact with adjacent parts.



## REPLACING FUEL FILTER

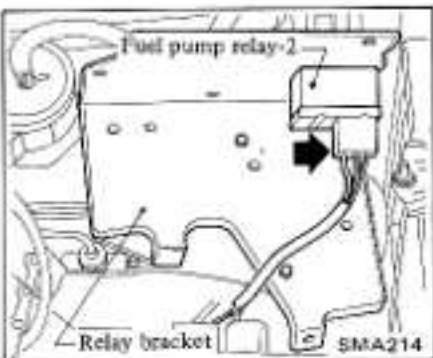
The fuel filter is designed especially for use with the EFI system. It should be replaced as an assembly.

1. Follow the procedure below to reduce fuel pressure to zero.

## CAUTION:

Before disconnecting fuel hose, release fuel pressure from fuel line to eliminate danger.

- (1) Start the engine.
- (2) Disconnect the harness connector of fuel pump relay-2 while the engine is running.

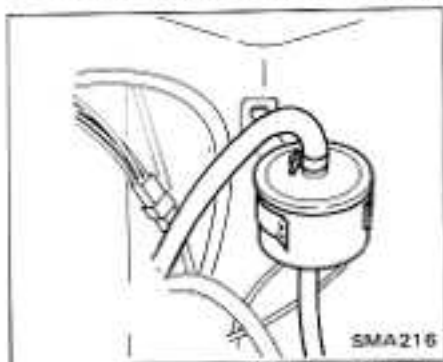


- (3) After engine stall, crank the engine twice or three times.
- (4) Turn the ignition switch "OFF".
- (5) Reconnect the harness connector of fuel pump relay-2.

2. Unfasten clamps securing fuel hoses to the outlet and inlet sides of fuel filter, and disconnect fuel hoses.

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

3. Remove fuel filter from bracket.



4. To install fuel filter, reverse the order of removal.

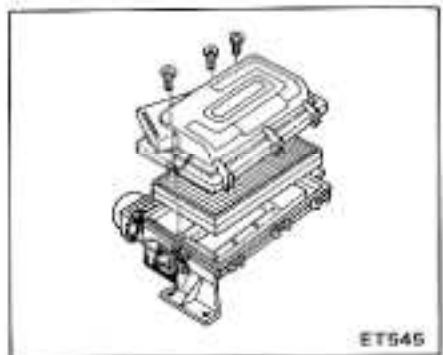
## REPLACING AIR CLEANER FILTER

The viscous paper type air cleaner filter does not require any cleaning operation between renewal.

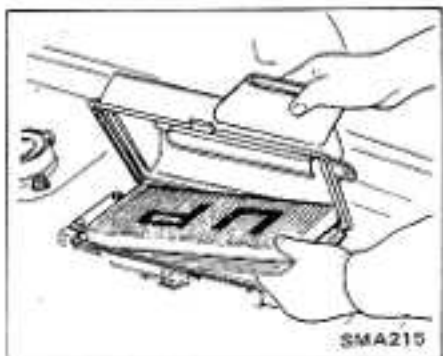
### CAUTION:

Brushing or blasting operation can cause a clogged filter. This in turn reduces air intake efficiency, resulting in poor engine performance.

Remove air cleaner cover and remove air cleaner filter.



Install new air cleaner filter with "UP" mark facing upward.



## EMISSION CONTROL SYSTEM

### CHECKING POSITIVE CRANKCASE VENTILATION (P.C.V.) SYSTEM

#### Checking P.C.V. valve

With engine running at idle, remove the ventilator hose from P.C.V. valve. If the valve is working, a hissing noise will be heard as air passes through the valve and a strong vacuum should be felt immediately when a finger is

placed over valve inlet.

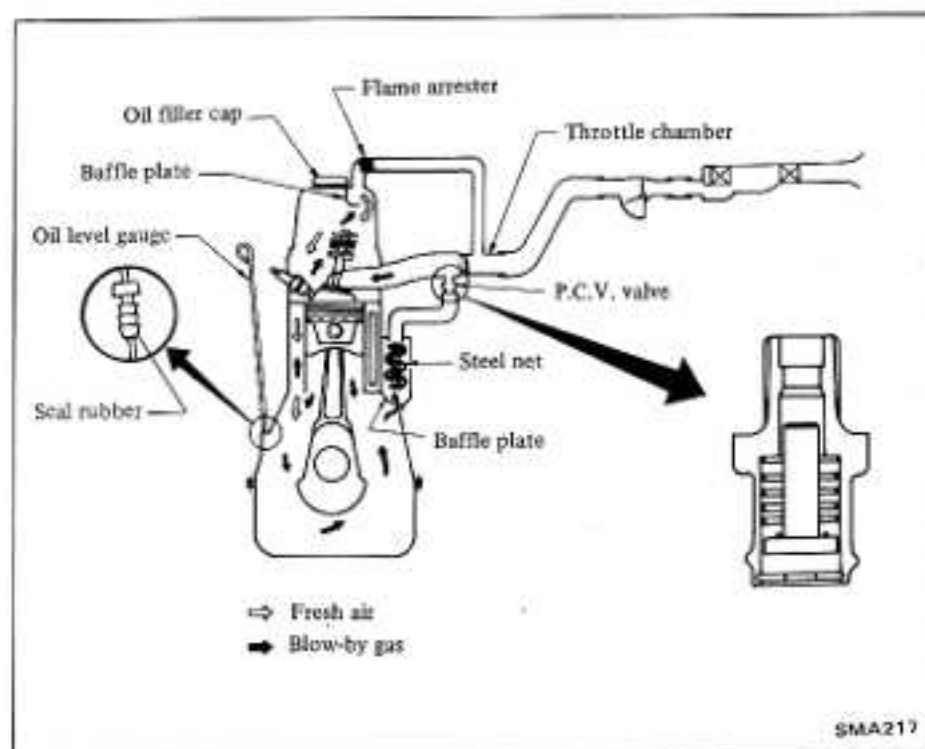
If not, replace with a new one.

#### 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 free of obstructions, replace.

Ensure that flame arrester is securely inserted in hose between throttle chamber and rocker cover.



# MINOR TROUBLE DIAGNOSES AND CORRECTIONS

Condition	Probable cause	Corrective action
<b>CANNOT CRANK ENGINE OR SLOW CRANKING</b>	Improper grade oil.	Replace with proper grade oil.
	Partially discharged battery.	Charge battery.
	Malfunctioning battery.	Replace.
	Loose fan belt.	Adjust.
	Trouble in charging system.	Inspect.
	Wiring connection trouble in starting circuit.	Correct.
	Malfunctioning ignition switch.	Repair or replace.
	Malfunctioning starter motor.	Repair or replace.

(Trouble-shooting procedure on starting circuit)  
Switch on the starting motor with headlights "ON".

When headlights go off or dim considerably,

- Check battery.
- Check connection and cable.
- Check starter motor.

When headlights stay bright,

- Check wiring connection between battery and starter motor.
- Check ignition switch.
- Check starting motor.

## ENGINE WILL CRANK NORMALLY BUT WILL NOT START

In this case, the following trouble cases may exist, but in many cases ignition system or fuel system is in trouble.

*Ignition system in trouble*

*Fuel system in trouble*

*Valve mechanism does not work properly*

*Low compression*

(Trouble-shooting procedure)

Check spark plug firstly by following procedure.

Disconnect high tension cable from one spark plug and hold it about 10 mm (0.39 in) from the engine metal part and crank the engine.

Good spark occurs.

- Check spark plug.
- Check ignition timing.
- Check fuel system.
- Check revolution trigger signal.
- Check cylinder compression.

No spark occurs.

Very high current.

Check the current flow in primary circuit.  
Inspect primary circuit for short.  
Check breaker point operation.

Low or no current.

Check for loose terminal or disconnection in primary circuit. Check for burned points.

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Condition	Probable cause	Corrective action
Ignition system in trouble	Malfunctioning distributor point. Improper point gap. Malfunctioning condenser. Leak at rotor cap and rotor. Malfunctioning spark plug. Improper ignition timing. Malfunctioning ignition coil. Disconnection of high tension cable. Loose connection or disconnection in primary circuit.	Repair or replace. Adjust. Replace. Clean or replace. Clean, adjust plug gap or replace. Adjust. Replace. Replace. Repair or replace.
<b>ENGINE CRANKS NORMALLY BUT WILL NOT START</b>  Fuel system malfunction	Lack of fuel. Damaged electronic fuel injection harness or relay. Malfunctioning fuel pump (Listen to operating sound). Damaged control unit. Seized injector (Listen to operating sound). Seized cold start valve. Malfunctioning air flow meter. Damaged water temp. sensor. Malfunctioning pressure regulator. Dirty fuel filter. Dirty or clogged fuel pipe.	Supply. Replace. Replace. Replace. Replace. Replace. Replace. Replace. Replace. Replace. Clean.
Low compression  (Trouble-shooting procedure) Add small quantity of engine oil through plug hole, and then measure cylinder compression. Compression increases. Compression does not change.	Incorrect spark plug tightening or damaged gasket. Improper grade engine oil or low viscosity. Incorrect valve clearance. Compression leak from valve seat. Sticky valve stem. Weak or damaged valve springs. Compression leak at cylinder head gasket. Sticking or defective piston ring. Worn piston ring or cylinder.	Tighten to normal torque or replace gasket. Replace with proper grade oil. Adjust. Lap valves. Correct or replace valve and valve guide. Replace valve springs. Replace gasket. Replace piston rings. Overhaul engine.  Trouble in cylinder or piston ring. Compression leaks from valve, cylinder head or head gasket.

Condition	Probable cause	Corrective action
<b>UNSTABLE ENGINE IDLING</b> Ignition system	Incorrect idle adjustment. Malfunctioning ignition system (spark plug, high tension cable, distributor, ignition coil, etc.) Incorrect basic ignition timing.	Adjust. Replace.  Adjust.
Engine mechanical system in trouble	Loose manifold and cylinder head bolts. Incorrect valve clearance.	Retighten bolts. Adjust.
Fuel system malfunction	Clogged air cleaner filter. Damaged manifold gaskets. Intake air leakage at following points: Dipstick Oil filler cap Blow-by hoses Intake air duct—air flow meter to throttle chamber.  Damaged electronic fuel injection harness. Seized injector (Listen to operating sound). Malfunctioning air regulator (During warm-up driving only). Damaged control unit. Damaged water temp. sensor. Malfunctioning throttle valve switch. Irregular fuel pressure.	Replace filter. Replace gasket. Repair or replace.  Replace. Replace. Replace.  Replace. Replace. Repair or replace. Replace pressure regulator if necessary.
<b>HIGH ENGINE IDLE SPEED</b>	Binding accelerator linkage. Malfunctioning air regulator.  Incorrect adjustment of idle speed adjusting screw. Throttle valve is opened excessively at idle. Malfunctioning F.I.C.D.	Check and correct accelerator linkage. Replace. For inspection procedures for air regulator, refer to engine fuel section.  Correct.  Replace throttle chamber. Adjust.
<b>ENGINE POWER NOT UP TO NORMAL</b>		
Low compression		Previously mentioned.
Ignition system in trouble	Incorrect ignition timing. Malfunctioning spark plugs. Worn distributor points.	Adjust. Clean, adjust or replace plugs. Dress, or replace points. Also check condenser.

For inspection procedures for electronic fuel injection system components, refer to Engine Fuel Section.

Condition	Probable cause	Corrective action
<b>ENGINE POWER BELOW NORMAL</b>		
<b>Fuel system malfunction</b>	Throttle valve does not open fully. Damaged electronic fuel injection harness. Seized injector (Listen to operating sound). Malfunctioning air flow meter. Malfunctioning throttle valve switch. Irregular fuel pressure. Clogged fuel pipe. Dirty or clogged fuel filter. Fuel pump will not work properly.	Adjust. Replace. Replace. Replace. Repair or replace. Replace pressure regulator if necessary. Replace if necessary. Replace. Replace.
<b>Air intake system malfunction</b>	Clogged air cleaner filter. Air leaking from manifold gasket. Intake air leakage at following points: Dipstick Oil filler cap Blow-by hoses Intake air duct—air flow meter to throttle chamber etc.	Replace filter. Replace gasket. Repair or replace.
<b>Overheating</b>	Insufficient coolant. Loose fan belt. Worn or damaged fan belt. Malfunctioning thermostat. Malfunctioning water pump. Clogged or leaky radiator. Malfunctioning radiator filler cap. Air in cooling system. Improper engine oil grade. Incorrect ignition timing. Malfunctioning thermostat.	Replenish. Adjust fan belt. Replace. Replace. Replace. Flush, repair or replace. Replace. Retighten each part of cooling system. Replace with proper grade oil. Adjust. Replace.
<b>Others</b>	Improper octane fuel. Improper tire pressure. Dragging brake. Clutch slipping.	Replace with specified octane fuel. Inflate to specified pressure. Adjust. Adjust.
<b>NOISY ENGINE</b>		
<b>Car knocking</b>	Overloaded engine. Carbon knocking. Timing knocking. Fuel knocking. Preignition (misusing of spark plug).	Use right gear in driving. Disassemble cylinder head and remove carbon. Adjust ignition timing. Use specified octane fuel. Use specified spark plug.

Condition	Probable cause	Corrective action
<b>Mechanical knocking</b>		
Crankshaft bearing knocking.	This strong dull noise increases when engine is accelerated. To locate the place, cause a misfire in each cylinder. If the noise stops by the misfire, this cylinder generates the noise.	This is caused by worn or damaged bearings, or unevenly worn crankshaft. Renew bearings and adjust or change crankshaft. Check lubrication system.
Connecting rod bearing knocking.	This is a little higher-pitched noise than the crankshaft knocking, and also increases when engine is accelerated. Cause a misfire in each cylinder and if the noise diminishes almost completely, this crankshaft bearing generates the noise.	Same as the case of crankshaft bearings.
Piston and cylinder noise.	When you hear an overlapping metallic noise which increases its magnitude with the revolution of engine and which decreases as engine is warmed up, this noise is caused by piston and cylinder. To locate the place, cause a misfire in each cylinder.	This may cause an abnormal wearing of cylinder and lower compression which in turn will cause a lower out-put power and excessive consumption of oil.  Overhaul engine.
Piston pin noise.	This noise is heard at each highest and lowest dead end of piston. To locate the place, cause a misfire on each cylinder.	This may cause a wear on piston pin, or piston pin hole. Renew piston and piston pin assembly.
Water pump noise.	This noise may be caused by worn or damaged bearings, or by the uneven surface of sliding parts.	Replace water pump with a new one.
Others.	An improper adjustment of valve clearance. Noise of timing chain.  An excessive end-play on crankshaft. Wear on clutch pilot bushing.  This noise will be heard when clutch is disengaged.	Adjust. Adjust the tension of chain or replace chain guide and/or tensioner.  Disassemble engine and renew main bearing.  Renew bushing and adjust transmission main drive shaft.
<b>ABNORMAL COMBUSTION</b> (backfire, after fire run-on etc.)		
<b>Improper ignition timing</b>	Improper ignition timing. Improper heat range of spark plugs.	Adjust ignition timing. Use specified spark plugs.
<b>Fuel system malfunction</b>	Intake air leakage at following points: Dipstick Oil filler cap Blow-by hoses Intake air duct—air flow meter to throttle chamber, etc.	Repair or replace.

Condition	Probable cause	Corrective action
Fuel system malfunction	Damaged electronic fuel injection harness. Damaged control unit. Malfunctioning air flow meter. Damaged water temp. sensor.	Replace. } Replace. } For inspection procedures for Replace. } electronic fuel injection sys- Replace. } tem components, refer to Engine Fuel Section.
Defective cylinder head, etc.	Improperly adjusted valve clearance. Excess carbon in combustion chamber. Damaged valve spring (backfire, after fire).	Adjust. Remove cylinder head and get rid of carbon. Replace it with a new one.
Others		Check for loose vacuum hoses. Replace if necessary.
<b>EXCESSIVE OIL CONSUMPTION</b>		
Oil leakage	Loose oil drain plug. Loose or damaged oil pan gasket. Loose or damaged chain cover gasket. Damaged oil seal in front and rear of crankshaft. Loose or damaged rocker cover gasket.  Improper tightening of oil filter.  Loose or damaged oil pressure sending unit.  Cylinder and piston wear. Improper location of piston ring or reversely assembled piston ring. Damaged piston rings.  Worn piston ring groove and ring. Fatigue of valve oil seal lip. Worn valve stem.	Tighten it. Renew gasket or tighten it. Renew gasket or tighten it. Renew oil seal.  Renew gasket or tighten it (but not too much). Renew gasket and tighten it with the proper torque. Renew oil pressure switch or tighten it.  Overhaul cylinder and renew piston. Remount piston rings.  Renew rings. Repair or renew piston and cylinder. Renew piston and piston ring. Replace seal lip with a new one. Renew valve or guide.
Others	Inadequately quality of engine oil. Engine overheat.	Use the designated oil. Previously mentioned.
<b>POOR FUEL ECONOMY</b>		
Fuel system malfunction	Fuel leakage. Damaged electronic fuel injection harness. Damaged control unit. Malfunctioning air flow meter. Damaged air temperature sensor. Malfunctioning throttle valve switch.	Repair or replace. Replace. } Replace. } For inspection procedures for Replace. } electronic fuel injection sys- Replace. } tem components, refer to Replace. } Engine Fuel Section.

Condition	Probable cause	Corrective action
Fuel system malfunction	Fuel leakage at injector or cold start valve. Fuel leakage at rubber fuel hose. Irregular fuel pressure.	Replace damaged part. Repair or replace. Replace pressure regulator if necessary.
Others	Exceeding idling revolution.	Adjust it to the specified idle rpm.  Repair or tighten the connection of fuel pipes.
<b>TROUBLE IN OTHER FUNCTIONS</b>		
Decreased oil pressure	Inadequate oil quality. Overheat. Malfunctioning oil pump regulator valve. Functional deterioration of oil pump. Blocked oil filter. Increased clearance in various sliding parts.	Use the designated oil. Previously mentioned. Disassemble oil pump and repair or renew it. Repair or replace it with a new one. Renew it. Disassemble and replace the worn parts with new ones.
Excessive wear on the sliding parts	Blocked oil strainer. Malfunctioning oil pressure switch.  Oil pressure decreases. Damaged quality or contamination of oil.  Air leakage from air intake duct. Damaged air cleaner. Overheat or overcool. Improper fuel mixture.	Clean it. Replace it with a new one.  Previously mentioned. Exchange the oil with proper one and change element. Repair or replace. Change element. Previously mentioned. Check the fuel system.
Scuffing of sliding parts	Decrease of oil pressure. Insufficient clearances. Overheat. Improper fuel mixture.	Previously mentioned. Readjust to the designated clearances. Previously mentioned. Check the fuel system.

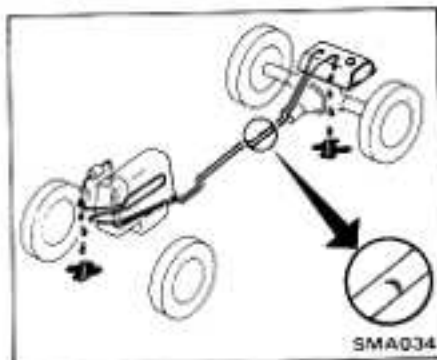
## CHASSIS AND BODY MAINTENANCE

### ENGINE CONTROL, FUEL AND EXHAUST SYSTEMS

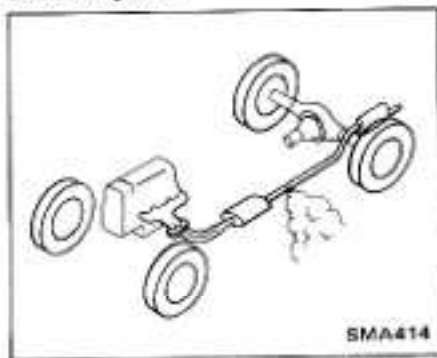
#### CHECKING FUEL AND EXHAUST SYSTEM

Check fuel and exhaust systems for condition, connections and leaks.

##### Fuel system

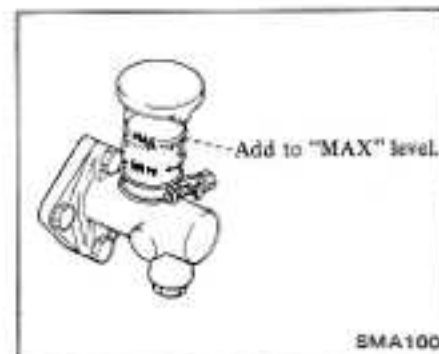


##### Exhaust system



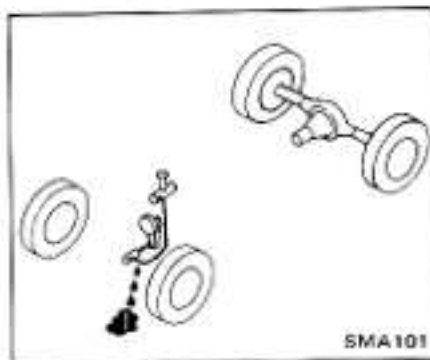
### CLUTCH

#### CHECKING CLUTCH FLUID LEVEL AND LEAKS



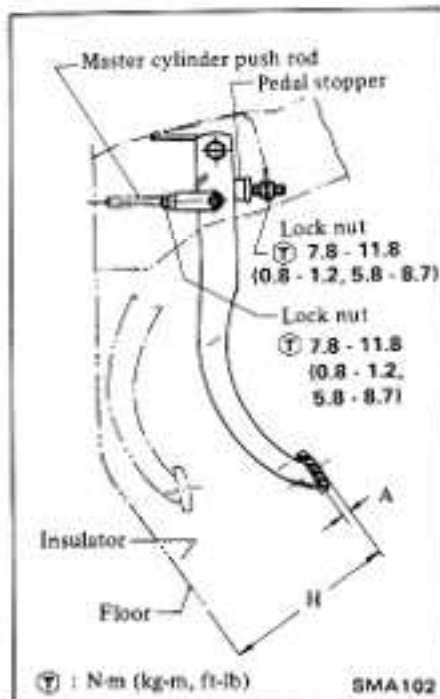
#### CHECKING CLUTCH SYSTEM

Check clutch system for proper attachment, leaks, chafing, abrasion, deterioration, etc.



#### CHECKING CLUTCH PEDAL HEIGHT AND FREE PLAY

Check clutch pedal height and free play. Adjust if necessary.



Pedal height "H":

L.H. Drive

168 - 174 mm (6.61 - 6.85 in)

R.H. Drive

155 - 161 mm (6.10 - 6.34 in)

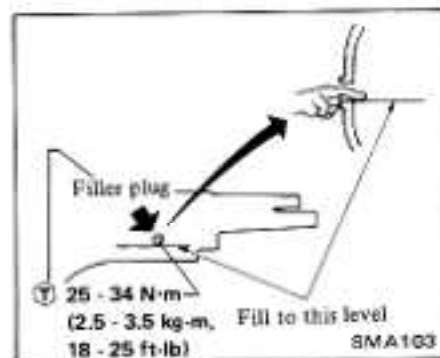
1. Adjust pedal height with pedal stopper. Then tighten lock nut.
2. Adjust pedal free play with master cylinder push rod. Then tighten lock nut.

- a. Pedal free play means the following total measured at position of pedal pad.
  - Play due to clevis pin and clevis pin hole in pedal lever.
  - Play due to piston and piston rod.
- b. Depress and release clutch pedal over its entire stroke to ensure that the clutch linkage operates smoothly without squeak noise, interference and binding.

### MANUAL TRANSMISSION

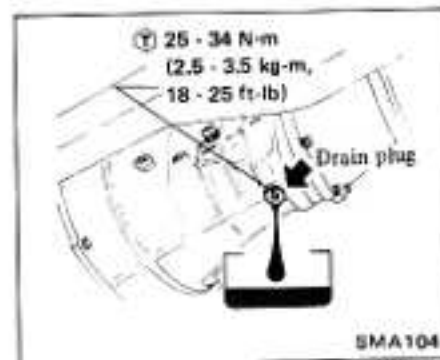
#### CHECKING MANUAL TRANSMISSION OIL LEVEL

Never start engine while checking oil level.

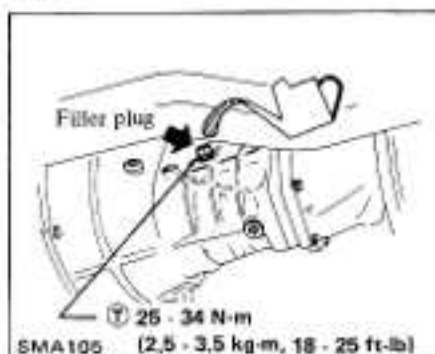


#### CHANGING MANUAL TRANSMISSION OIL

1. Drain oil completely.



2. Refill transmission and check oil level.



Oil capacity:

4-speed

1.5 liters (2-5/8 Imp pt)

5-speed

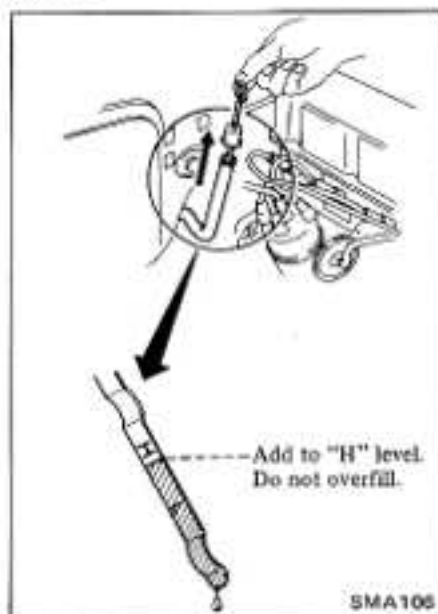
2.0 liters (3-1/2 Imp pt)

## AUTOMATIC TRANSMISSION

### CHECKING AUTOMATIC TRANSMISSION FLUID LEVEL

1. Check under following conditions.
  - (1) Place selector lever in "P" (PARK) position and idle engine.
  - (2) Maintain fluid temperature at 50 to 80°C (122 to 176°F).
2. Add oil, if necessary.

Use only automatic transmission fluid having "DEXRON" identifications in 3N71B automatic transmission.

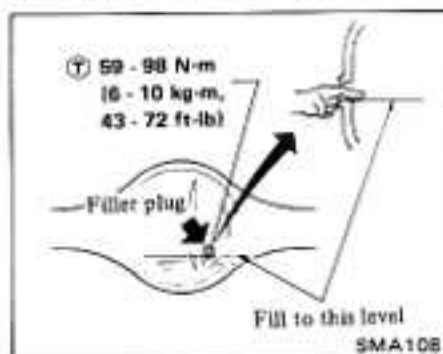


### CHECKING AUTOMATIC TRANSMISSION FLUID CONDITION

Check fluid for contamination to determine condition of automatic transmission. If fluid is very dark or smells burned, the frictional material (clutches, band, etc.) may need replacement.

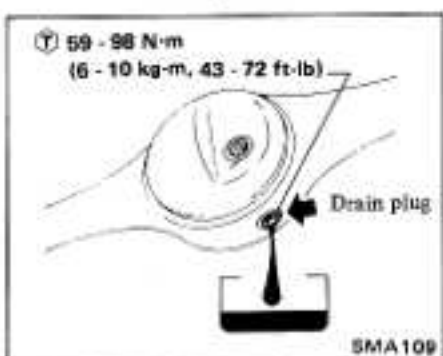


### CHECKING DIFFERENTIAL CARRIER OIL LEVEL

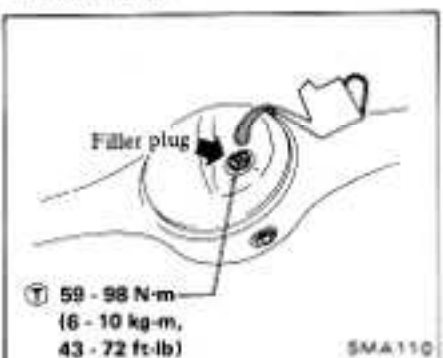


### CHANGING DIFFERENTIAL CARRIER OIL

1. Drain oil completely.



2. Refill differential carrier and check oil level.



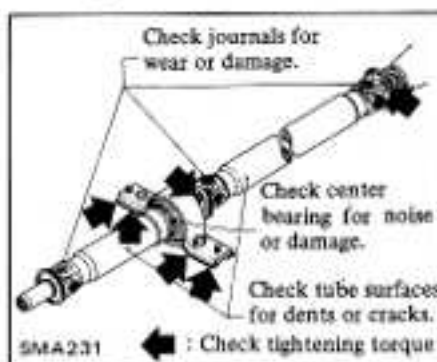
Oil capacity:

1.1 liters (2 Imp pt)

## PROPELLER SHAFT AND DIFFERENTIAL CARRIER

### CHECKING PROPELLER SHAFT

Check propeller shaft, replace if necessary.



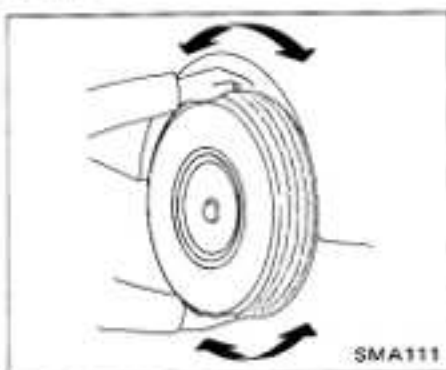
## FRONT AXLE AND FRONT SUSPENSION

### CHECKING FRONT AXLE AND SUSPENSION PARTS

1. Block rear wheels with chocks and raise front of car, and then support it with safety stand. Refer to Lifting

Points and Towing (Section GI).

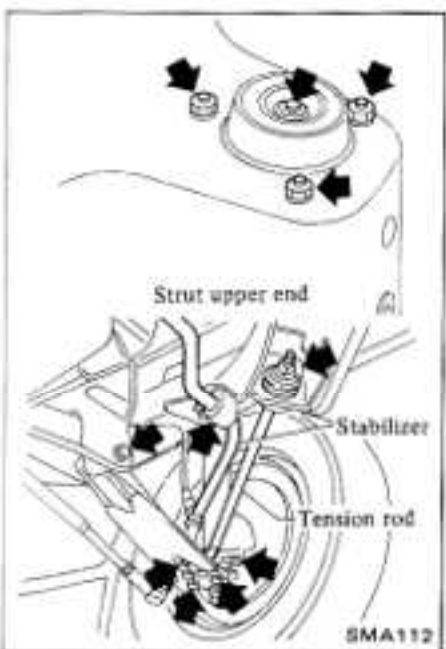
2. Shake each front wheel by holding upper and lower surfaces of tires as shown.



Check suspension parts for looseness, wear, or damage.

Retighten all loose nuts and bolts to the specified torque. Refer to Section FA for tightening torque.

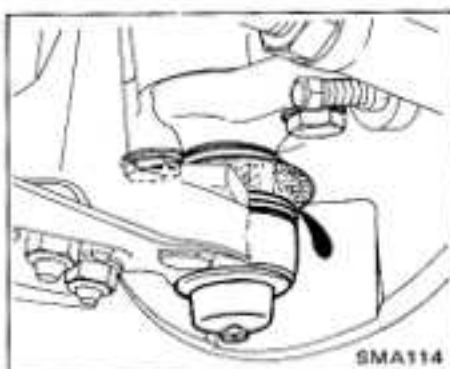
Replace all worn parts as described under Front Suspension (Section FA).



3. Check strut (Shock absorber) for oil leakage or damage.



4. Check suspension ball joint for grease leakage and ball joint dust cover for damage.



5. Remove wheel and tire assembly.  
6. Check front axle parts for crack or damage.

Replace worn parts.  
Refer to Front Axle (Section FA).

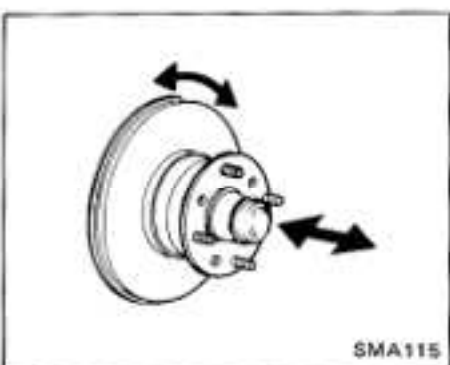
7. Remove brake pads.

Refer to section BR.

8. Check wheel bearing.

If there is any axial end play or if wheel bearing does not smoothly turn, adjust bearing to specifications.

Replace worn or damaged bearings.  
Refer to Front Axle (Section FA).

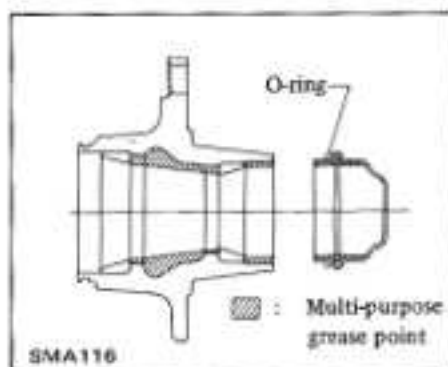


### ADJUSTING WHEEL BEARING PRELOAD

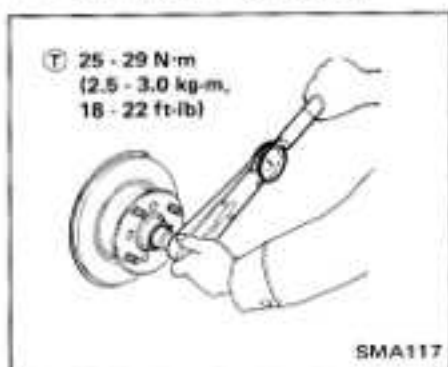
After wheel bearing has been replaced or front axle has been re-assembled be sure to adjust wheel bearing preload as described below.

1. Before adjustment, thoroughly clean all parts to prevent possible entry of dirt.
2. Apply recommended multi-purpose grease sparingly to the following parts.

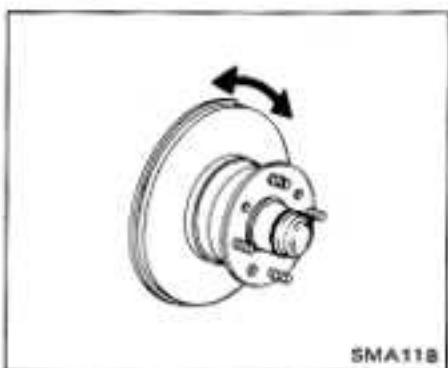
- Threaded portion of spindle.
- Contact surface between wheel bearing washer and outer wheel bearing.
- Hub, hub cap and O-ring.
- Grease seal lip.



3. Tighten wheel bearing nut.

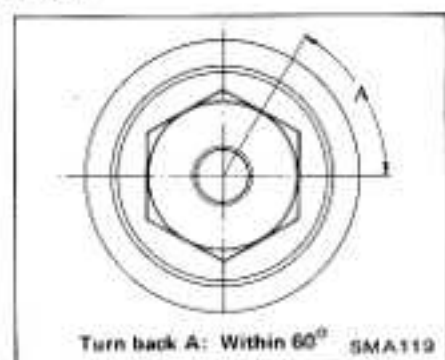


4. Turn wheel hub several times in both directions to seat wheel bearing correctly.

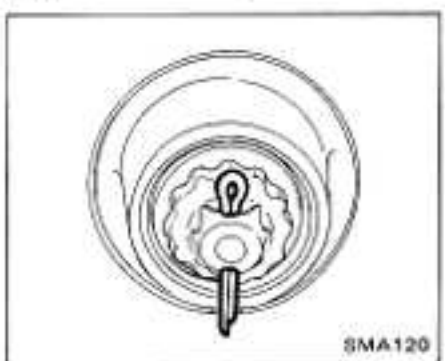


5. Again tighten wheel bearing nut.

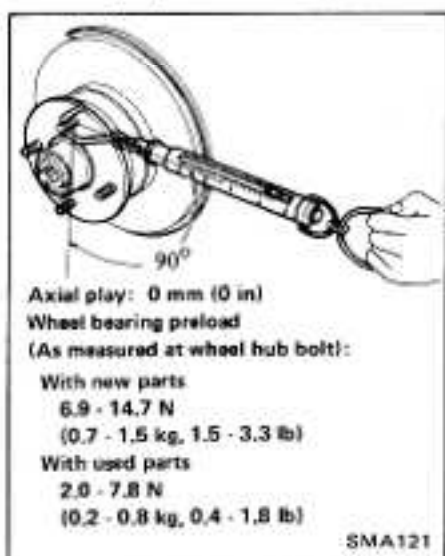
6. Turn back wheel bearing nut within  $60^\circ$ .



7. Fit adjusting cap and new cotter pin.

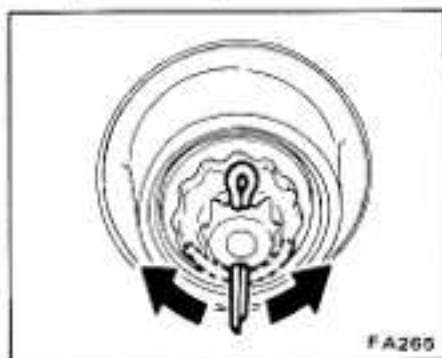


8. Measure wheel bearing preload and axial play.



Repeat above procedures until correct starting torque is obtained.

9. Spread cotter pin.



10. Install hub cap with new O-ring.

## CHECKING WHEEL ALIGNMENT

Before checking front wheel alignment, be sure to make a preliminary inspection of all front end parts.

- Tire pressure
- Wheel bearing axial play
- Suspension ball joint
- Steering gear housing looseness at frame
- Steering linkage and connections
- Shock absorber operation
- Tighten each front axle and suspension parts.
- Measure car height (when not loaded)
- Repair or replace the damaged portion or parts.

## Camber, caster and kingpin inclination

Camber, caster and kingpin inclination are preset at the factory and cannot be adjusted.

If camber, caster or kingpin inclination alignment is not within specifications, check pertinent parts.

Repair or replace as necessary.

Camber:

-40' - 50'

Caster:

1°45' - 3°15'

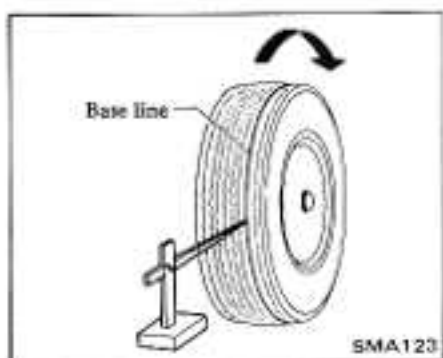
Kingpin inclination:

7°25' - 8°55'

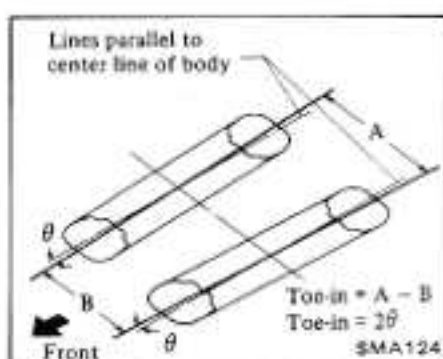
## Toe-in

Measure toe-in, and make necessary adjustments. Use the following procedure when making adjustments.

1. Raise front of car and mark a base line across the tread of left and right wheels.



2. Set wheels in a straight-ahead position, and then lower front of car.
3. Measure toe-in and make necessary adjustments.



Toe-in (Unladen):

0 - 2 mm (0 - 0.08 in)

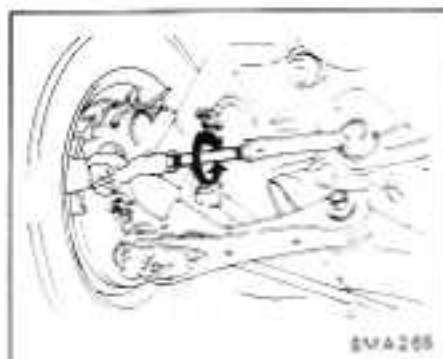
0' - 12' (On both sides)

Side slip (Reference data)

Out 1 mm - In 1 mm/m

(Out 0.012 in - In 0.012 in/ft)

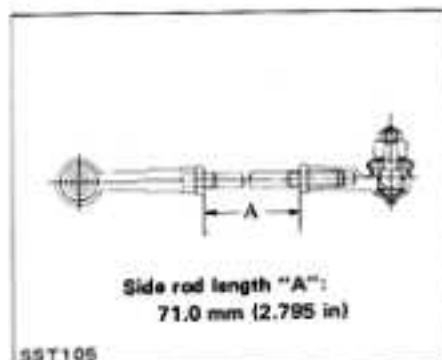
Toe-in can be adjusted by varying the length of steering side rods.



#### "Unladen"

- Fuel tank, radiator and engine oil tank all full.
- Spare tire, jack, hand tools, mats in position.
- All tires inflated to specified pressure.
- All accumulation of mud, dirt and road deposits removed from chassis and underbody.

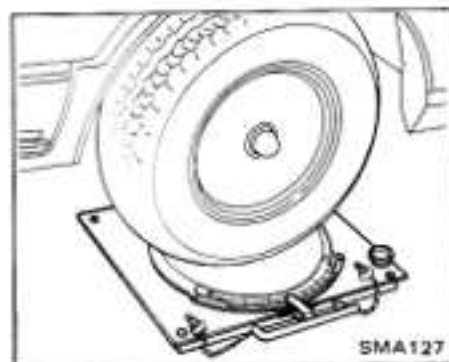
If side rods have been disassembled, set the distance between lock nuts to the specified value "A" prior to reassembling.



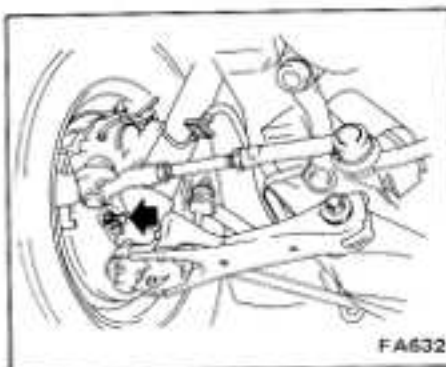
- Lock side rod bar lock nut so that ball joint on outer socket is  $77^\circ$  with respect to that on inner socket.
  - Make sure that adjusting bar is screwed in each socket at least 25 mm (0.98 in).
4. After correct toe-in has been obtained, tighten side rod bar lock nuts.
- Ⓙ: 78 - 98 N·m  
(8.0 - 10.0 kg-m,  
58 - 72 ft-lb)

#### Front wheel turning angle

- Set wheels in straight ahead position and then move car forward until front wheels rest on turning radius gauge properly.



- Remove stopper pin of turning radius gauge and then fully rotate steering wheel to the right and left; measure turning angle on inner wheel and make necessary adjustments.



#### Front wheel turning angle:

Toe-out turns (When inner wheel  $20^\circ$ )

Outer wheel  $18.7^\circ$

Full turns

Inner wheel  $33^\circ - 35^\circ$

Outer wheel  $27^\circ - 29^\circ$

Turning angle of outer wheel will automatically be set by adjusting turning angle of inner wheel to specified values.

- After adjustment, lock adjusting lock nut.

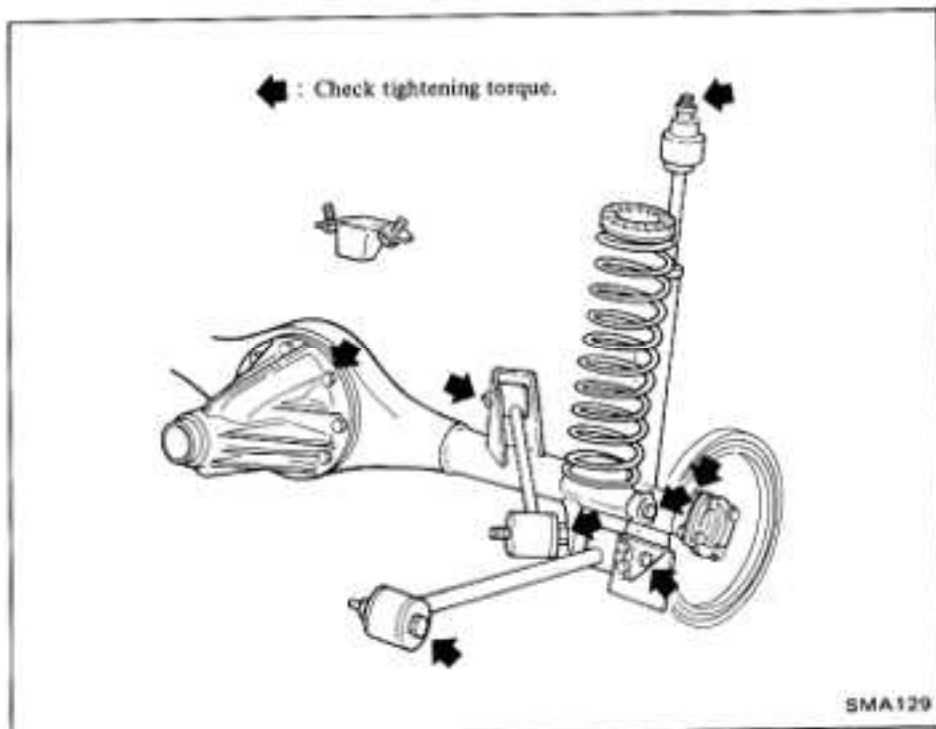
## REAR AXLE AND REAR SUSPENSION

### CHECKING REAR AXLE AND SUSPENSION PARTS

Check rear axle and suspension parts for looseness, wear or damage.

Retighten all loose nuts and bolts to the specified torque. Refer to Section RA for tightening torque.

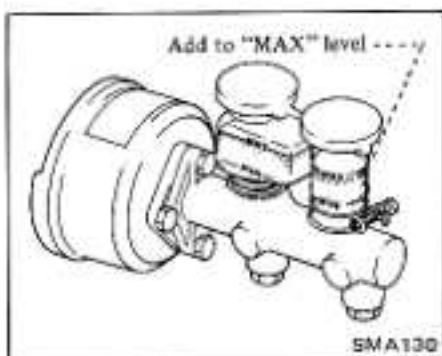
Replace all worn parts as instructed under Rear Suspension (Section RA).



Z·ONE·DATSUN

# BRAKE SYSTEM

## CHECKING BRAKE FLUID LEVEL AND LEAKS



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

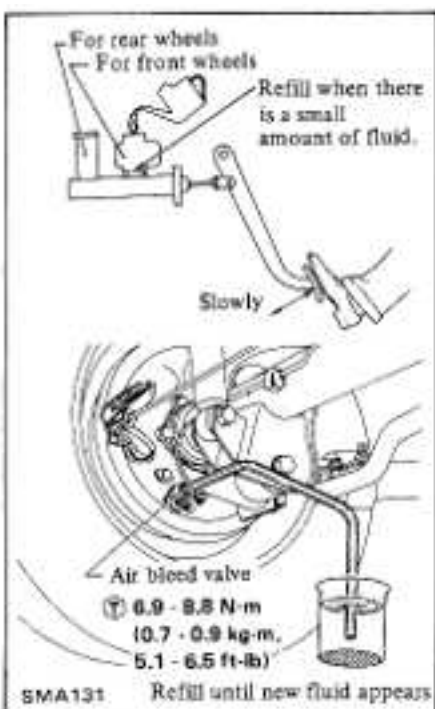
## CHANGING BRAKE FLUID

1. Change brake fluid.

Use same procedure as in air bleeding to change brake fluid in system. This operation should be done for one wheel at a time. Refer to Section BR.

### CAUTION:

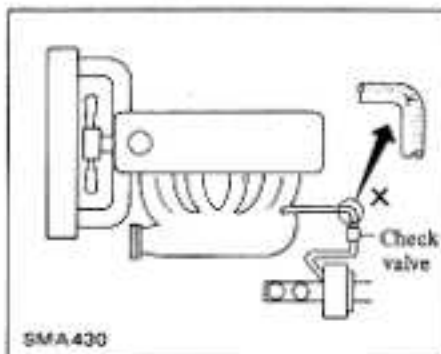
Never reuse brake fluid because its characteristic is changed by oxidation as well as contains the foreign material and dirt.



2. Check brake fluid level.
3. Check for leaks.

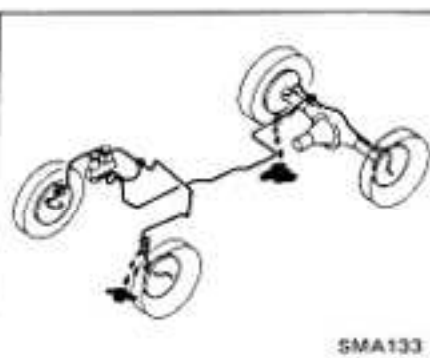
## CHECKING BRAKE BOOSTER VACUUM HOSES, CONNECTIONS AND CHECK VALVE

1. Check condition of vacuum hoses and connections.
2. Check vacuum hoses and check valve for air tightness.



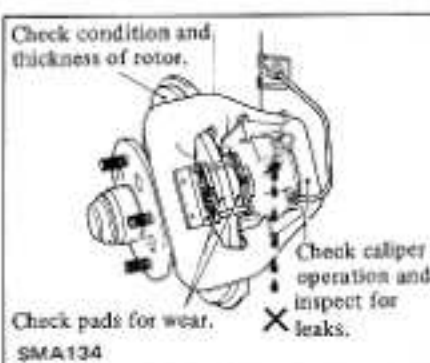
## CHECKING BRAKE SYSTEM

1. Check brake system for proper attachment, leaks, chafing, abrasion, deterioration, etc.

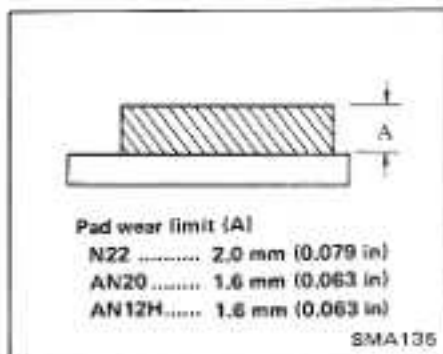


## CHECKING DISC BRAKE

1. Check condition of disc brake components.



## Pad wear limit

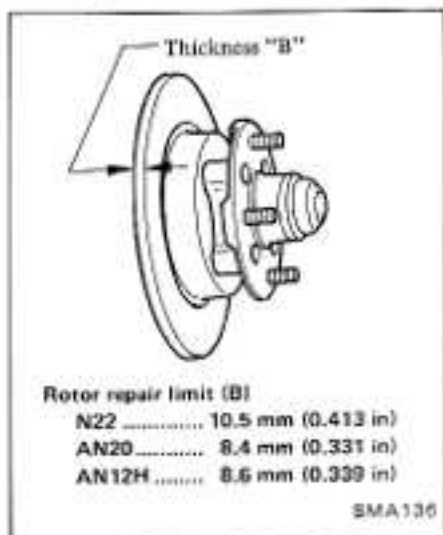


Pad wear limit (A)

N22	2.0 mm (0.079 in)
AN20	1.6 mm (0.063 in)
AN12H	1.6 mm (0.063 in)

Refer to Section BR for pad replacement.

## Rotor repair limit

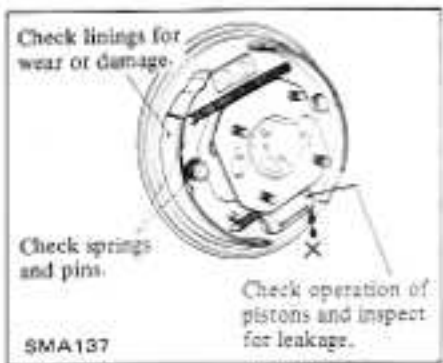


Rotor repair limit (B)

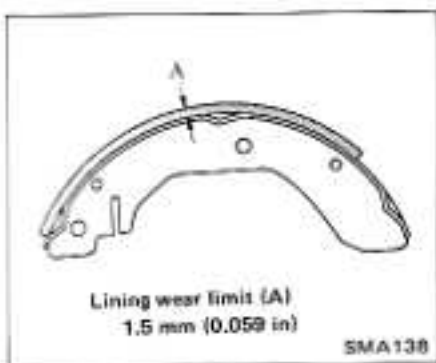
N22	10.5 mm (0.413 in)
AN20	8.4 mm (0.331 in)
AN12H	8.6 mm (0.339 in)

## CHECKING DRUM BRAKE

1. Check condition of drum brake components.

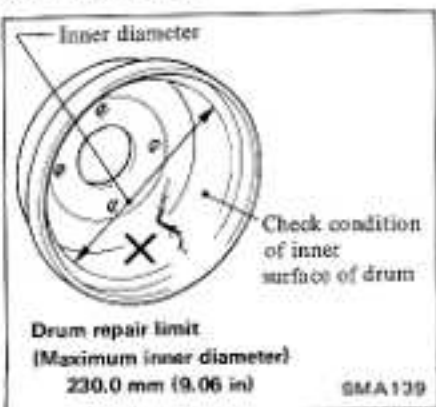


### Lining wear limit



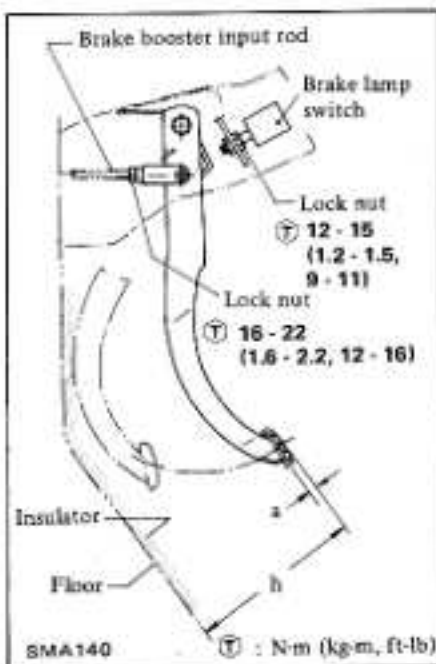
Refer to Section BR for shoe re-  
placement.

### Drum repair limit



### CHECKING FOOT BRAKE

1. Check brake pedal free height and free play.  
Adjust if necessary.



### Pedal free height "H":

155 - 161 mm (6.10 - 6.34 in)

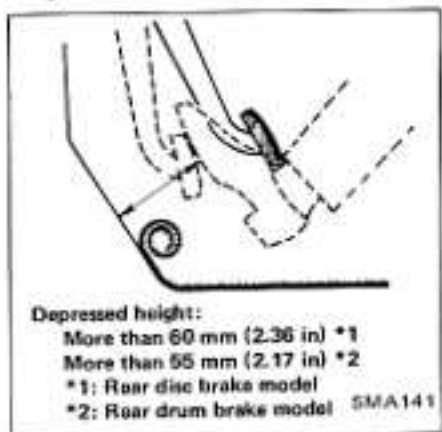
### Pedal free play "A":

1 - 5 mm (0.04 - 0.20 in)

- (1) Adjust pedal free height with brake lamp switch. Then tighten lock nut.
- (2) Adjust pedal free play with brake booster input rod. Then tighten lock nut.

Pedal free play means the following total measured at position of pedal pad.

- Play due to clevis pin and clevis pin hole in pedal lever.
  - Play due to piston and piston rod.
2. Check brake pedal depressed height.

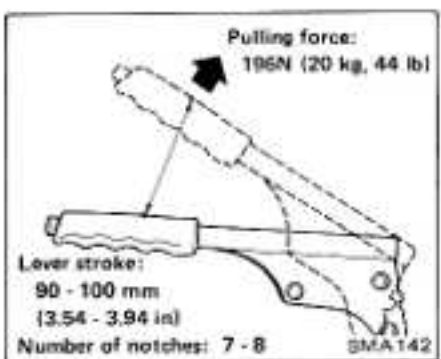


If depressed height is below the specified value, check brake system for leaks, accumulation of air or any abnormality regarding component parts (master cylinder, adjuster, etc.), and make the necessary repairs.

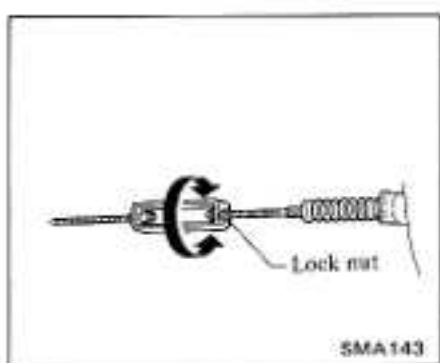
### CHECKING PARKING BRAKE

1. Pull lever with specified amount of force.

Measure lever stroke in a straight line at center of grip.



2. Use adjuster to adjust lever stroke.



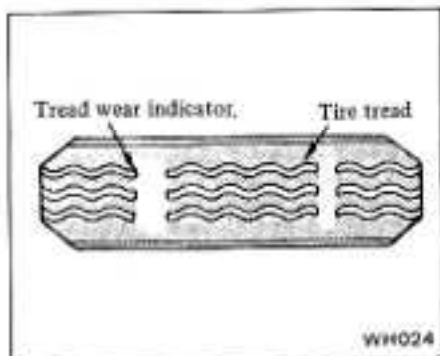
3. Bend parking brake warning lamp switch plate down so that brake warning light comes on when ratchet at parking brake lever is moved back one notch and goes out when returned to its original position.

## WHEEL AND TIRE

### CHECKING TIRE CONDITION

#### Tire condition

1. Tires are provided with "tread wear indicator" at six places around tire circumference, indicating 1.6 mm (1/16 in) tread depth. When tires wear and then marks appear, replace them with new ones.



2. Remove pebbles, glass or any other foreign material embedded in tire treads.
3. Check tread and side walls for cracks, holes, separation or damage.
4. Check tire valves for air leakage.

#### Tire inflation

1. Check tire pressure. If necessary, adjust it to the specified value indicated in the label attached to the car, also found in Owner's Manual or S.D.S.

Tire pressure should be measured when tire is cold.



2. After inflating tires, valves should be checked for leakage. Whenever tire pressure is checked, be sure to tighten valve caps firmly by hand to keep dust and water out.

### Abnormal tire wear

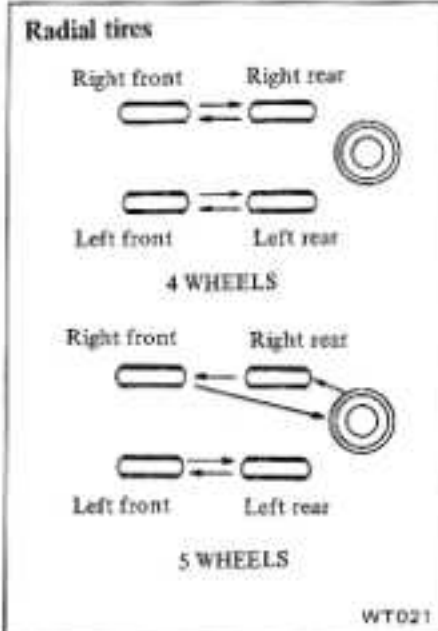
Correct abnormal tire wear according to the chart shown below.

Condition	Probable cause	Corrective action
<p>Shoulder wear</p>	<ul style="list-style-type: none"> <li>Underinflation (both sides wear)</li> <li>Incorrect wheel camber (one side wear)</li> <li>Hard cornering</li> <li>Lack of rotation</li> </ul>	<ul style="list-style-type: none"> <li>Measure and adjust pressure.</li> <li>Repair, or replace axle and suspension parts.</li> <li>Reduce speed.</li> <li>Rotate tires.</li> </ul>
<p>Center wear</p>	<ul style="list-style-type: none"> <li>Overinflation</li> <li>Lack of rotation</li> </ul>	<ul style="list-style-type: none"> <li>Measure and adjust pressure.</li> <li>Rotate tires.</li> </ul>
<p>Feathered edge</p> <p>Toe-in or toe-out wear</p>	<ul style="list-style-type: none"> <li>Incorrect toe</li> </ul>	<ul style="list-style-type: none"> <li>Adjust toe-in.</li> </ul>
<p>Uneven wear</p>	<ul style="list-style-type: none"> <li>Incorrect camber or caster</li> <li>Malfunctioning suspension</li> <li>Unbalanced wheel</li> <li>Out-of-round brake drum</li> <li>Other mechanical conditions</li> <li>Lack of rotation</li> </ul>	<ul style="list-style-type: none"> <li>Repair, or replace axle and suspension parts.</li> <li>Repair, replace or, if necessary, reinstall.</li> <li>Balance or replace.</li> <li>Correct or replace.</li> <li>Correct or replace.</li> <li>Rotate tires.</li> </ul>

SMA068

### TIRE ROTATION

- Tires tend to wear unevenly and become unbalanced after a certain running distance. Uneven tire wear often results in tire noise which is attributed to rear axle gears, bearing, etc. Front tires also tend to wear unevenly because of improperly aligned front wheels.
- Accordingly, to equalize tire wear, it is necessary to rotate tires periodically.



### TIRE REPLACEMENT

#### CAUTION:

Different types of tires, such as bias, bias belted and radial tires, must not be mixed under any circumstances. Mixed use of different types of tires can adversely affect car handling and may cause driver to lose control.

- When replacing a worn or damaged tire, use a replacement tire of the same size and load carrying capacity as that with which the car was equipped when manufactured. The use of different size and/or load capacity tires will not only shorten tire service life but may also result in a serious accident.
- Do not use tires and wheels other than those recommended, and do not mix tires of different brand or tread patterns.

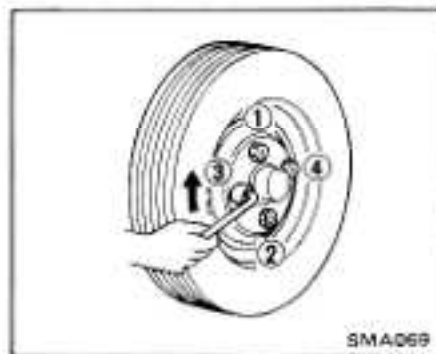
The use of tires and wheels other than those recommended or the mixed use of tires of different brands or tread patterns can adversely affect the ride, braking, handling, ground clearance, body-to-tire clearance, and speedometer calibration.

- c. It is recommended that new tires be installed in pairs on the same axle. When replacing only one tire, it should be paired with the most tread, to equalize braking traction.
  - d. When replacing original tires with those tires of an optional recommended size and of different diameter, the speedometer must be recalibrated.
1. To replace a tire with a jack in a safe manner, refer to Lifting Points (Section GI) for jacking up.

**WARNING:**

Never get under car while it is supported only by jack.  
Always use safety stands to support side member of body construction when you must get beneath car.

2. To install wheel, tighten wheel nuts in criss-cross fashion.



SMA069

**Aluminum wheel**

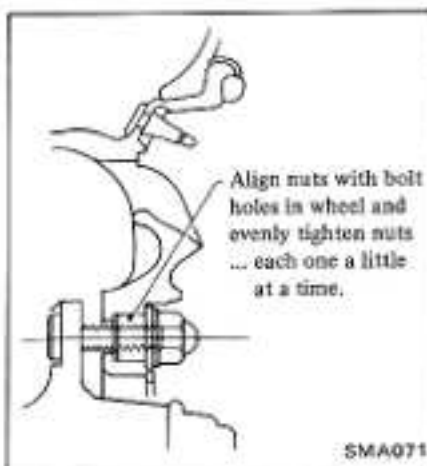
To install an aluminum wheel, proceed as follows:

1. Snugly tighten four nuts after the wheel is positioned.



SMA070

2. Slightly pull the wheel back to properly align the nuts with bolt holes in the wheel, and tighten the nuts as much as possible with your fingers.



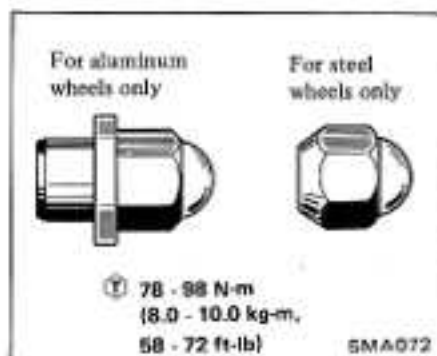
SMA071

3. Tighten wheel nuts evenly with a wheel wrench in criss-cross fashion.

Be sure to check the wheel nuts for tightness, after the aluminum wheel has been run for the first 1,000 km (600 miles) (also in case of repairing flat tires, tire rotation, etc.). Retighten if necessary.

**Wheel nut****CAUTION:**

Two types of wheel nuts are used; one is designed for use with steel wheel and the other for use with aluminum wheel. Do not mix different types of wheel nuts.



Be careful not to smear threaded portion of bolt and nut, and seat of nut with oil or grease.

**T-TYPE SPARE TIRE (Size T135/70D16)**

The T-type spare tire is designed for emergency use only.

The spare tire can be used repeatedly for emergency situations.

**Precautions when using T-type spare tire**

- Periodically check tire inflation pressure, and always keep it at 4.2 kg/cm<sup>2</sup> (412 kPa, 4.12 bar, 60 psi).
- Do not drive car at speed faster than 80 km/h (50 MPH).
- The T-type spare tire is designed only for temporary use as a spare. Dismount it and keep it as a spare as soon as the standard tire repair has been completed.
- Do not enter into an automatic car-wash with the T-type spare tire fitted.
- Do not attach a tire chain.
- Do not use the T-type spare tire on other cars.
- Do not make a sharp turn, or apply the brake suddenly while driving.
- As soon as the tread wear indicator becomes visible, replace the tire with a new one.
- Mounting and dismounting to and from the road wheel can be carried out in the same manner as any ordinary tire.
- Use of wheel balance is unnecessary.

### CAUTION:

If the car is equipped with aluminum wheels, be sure to use the wheel nuts for steel wheel on the T-type spare tire wheel. Never use the wheel nuts for aluminum wheel on the spare tire wheel.

The spare tire wheel may come off the axle and cause personal injury if the wheel nuts for aluminum wheels are used on the spare tire wheel.

## TIRE REPAIR

Inspect tire, following the procedure shown below. If any defect is present, repair or replace as necessary.

1. Apply soapy solution or submerge tire and wheel or tube in water after inflating it to specified pressure.
2. Inspect for leaks.
3. Specially inspect for leaks around valve or wheel rim and along tread.
4. Note bead and rim where leakage occurs. Wipe water away from any area which leaks air bubbles and then mark place with chalk.
5. Remove object which caused puncture and seal the point.

- a. When repairing a puncture, use a tire repair kit furnished by any tire dealer, following instructions provided with kit.
- b. If a puncture is too large or there is some damage to tire fabric, repair should be carried out by authorized tire dealer.

6. Discard when any of the following problems occurs:

- Broken or damaged bead wire.
- Ply or tread separation.
- Worn fabric damage on tubeless tire.
- Cracked or damaged side wall.
- Tires with tread wear indicator showing, etc.

### CAUTION:

When replacing tire, take extra care not to damage tire bead, rim-flange and bead seat.

Do not use tire irons to force beads away from wheel rim-flange; that is, always use tire replacement device whenever tire is removed.

7. Install tire, noting the following items:

- a. Install valve core and inflate to proper pressure. Check the locating rings of the tire to be sure they show around the rim flanges on both sides.
- b. Check valves for leakage after inflating tires.
- c. Be sure to tighten valve caps firmly by hand.

### WARNING:

When, while tire is being inflated, bead snaps over safety hump, it might break. Thus, to avoid serious personal injury, never stand over tire when inflating it. Never inflate to a pressure greater than 2.8 kg/cm<sup>2</sup> (275 kPa, 2.75 bar, 40 psi). If beads fail to seat at that pressure, deflate the tire, lubricate it again, and then reinflate it. If the tire is overinflated, the bead might break, possibly resulting in serious personal injury.

## WHEEL INSPECTION

Inspect wheel, taking care of the following points, in order to ensure satisfactory steering condition as well as maximum tire life. If any defect is present, repair or replace as necessary.

1. Check wheel rim, especially rim flange and bead seat, for rust, distortion, cracks or other faults which might cause air leaks. Function of tubeless tire depends on a good seal between tire bead and wheel rim.
2. Thoroughly remove rust, dust, oxidized rubber or sand from wheel rim.

Rim bead seats should be cleaned with the following.

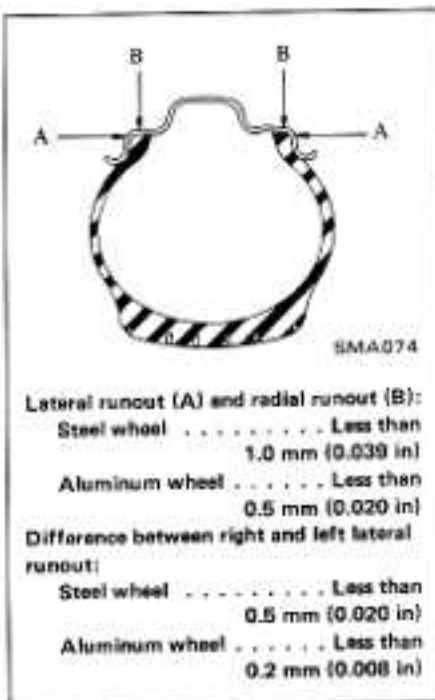
Steel wheel:

Wire brush, coarse steel wool, etc.

Aluminum wheel:

Neutral detergent, cloth, etc.

3. Examine wheel rim for lateral and radial runout, using dial gauge.



4. Replace wheel when any of the following problems occurs.

- Bent, dented or heavily rusted
- Elongated bolt holes
- Excessive lateral or radial runout
- Air leaks through welds
- Wheel nuts will not stay tight

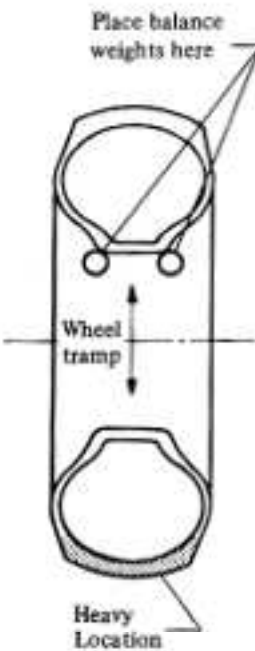
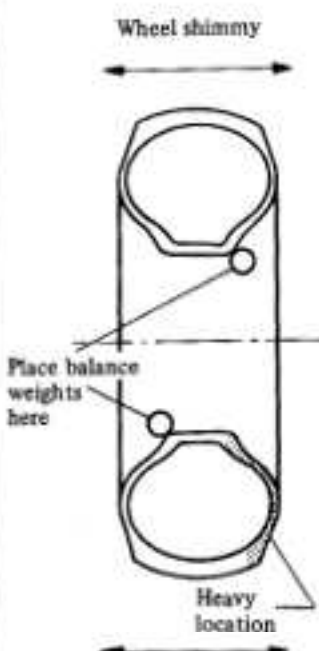
## Wheel balance

Inspect wheel and tire for wheel balance and correct it if unbalance is present, taking the following points into consideration.

1. Correct unbalance when the symptom of unbalance appears as wheel tramps and wheel shimmy.
2. Balance wheel and tire both statically and dynamically.

**Balancing wheels****WARNING:**

When balancing wheel and tire on the car, be sure to observe the equipment manufacturers instructions carefully.

Cause	Wheel static unbalance	Wheel dynamic unbalance
Symptom of unbalance	Wheel tramp Wheel shimmy	Wheel shimmy
Corrective action	Balance statically 	Balance dynamically 

SMA075



Maximum allowable unbalance at rim flange:

10 g (0.35 oz)

Balance weight:

10 - 60 g (0.35 - 2.12 oz)

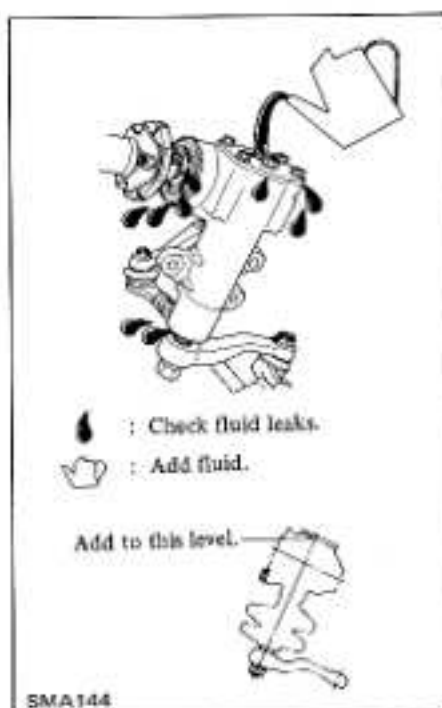
at 10 g (0.35 oz) interval

SMA076

- Be sure to place correct balance weights on inner edge of rim.
- Do not put more than two weights on each side.
- Two types of balance weights are used; one is designed for use with steel wheel and the other for use with aluminum wheel. Do not mix different types of balance weights.
- Properly rebalance the wheel and tire whenever puncture is repaired.

# STEERING SYSTEM

## CHECKING STEERING GEAR OIL LEVEL AND LEAKS



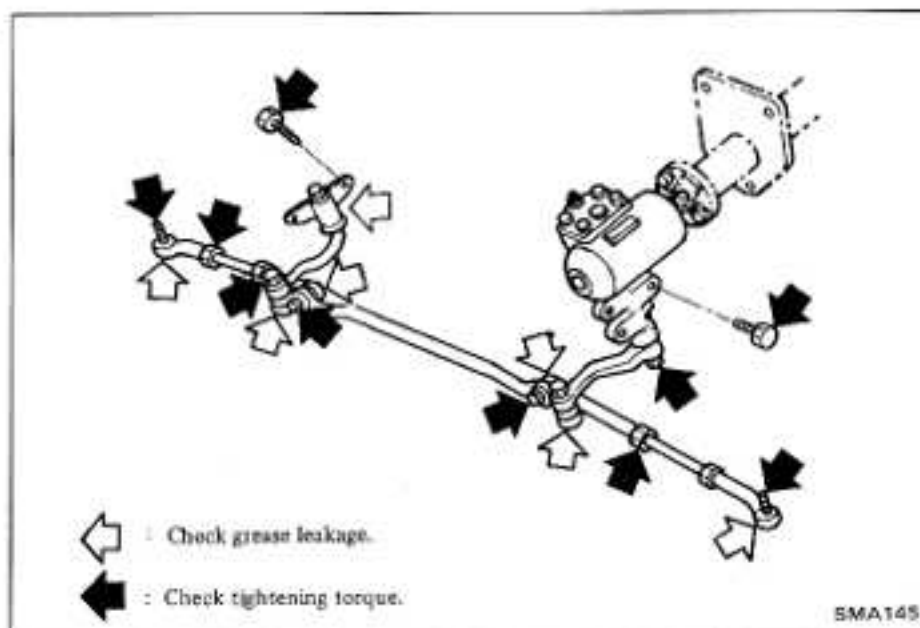
## CHECKING STEERING GEAR BOX AND LINKAGE

### Steering gear box

- Check parts for looseness, wear or damage. Retighten if necessary. Refer to Section ST for tightening torque.

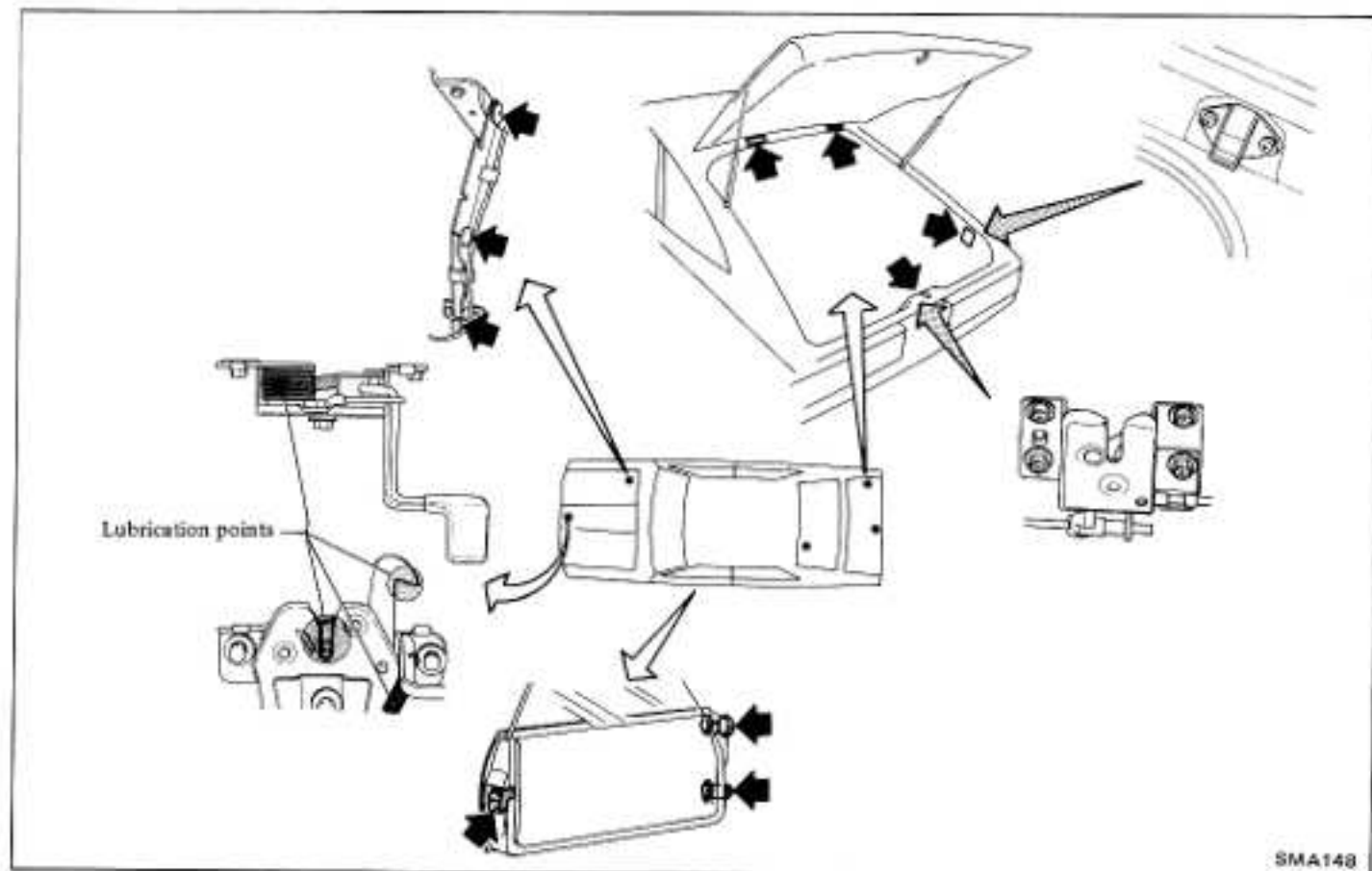
### Steering linkage

- Check parts for looseness, wear or damage. Retighten if necessary. Refer to Section ST for tightening torque.
- Check ball joints and idler arm for grease leakage.
- Check for any missing parts (cotter pins, washer, etc.).

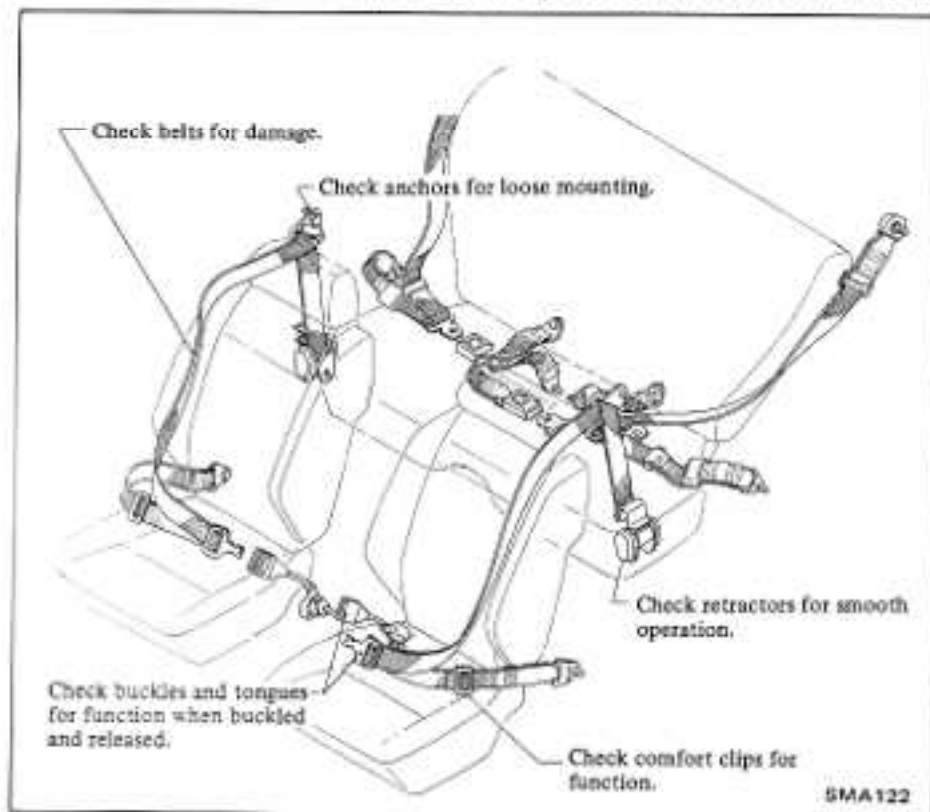


## BODY

### LUBRICATING LOCKS, HINGES AND HOOD LATCH



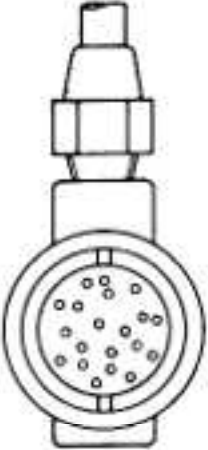
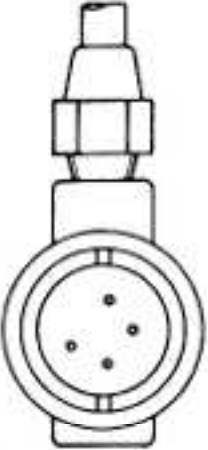
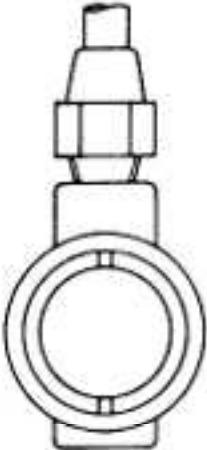
### CHECKING SEAT BELTS, BUCKLES, ANCHORS AND ADJUSTER



# HEATER AND AIR CONDITIONER

## CHECKING AIR CONDITIONER REFRIGERANT LEVEL

1. Open doors fully.
2. Start the engine.
3. Set air conditioner switch to "ON" position.
4. Set temperature lever to maximum cold position.
5. Set blower to maximum speed.
6. Check sight glass after the lapse of about five minutes. Judge according to the following table.

Amount of refrigerant	Almost no refrigerant	Insufficient	Suitable	Too much refrigerant
Check item				
Temperature of high pressure and low pressure lines.	Almost no difference between high pressure and low pressure side temperature.	High pressure side is warm and low pressure side is fairly cold.	High pressure side is hot and low pressure side is cold.	High pressure side is abnormally hot.
State in sight glass.	Bubbles flow continuously. Bubbles will disappear and something like mist will flow when refrigerant is nearly gone.  AC256	The bubbles are seen at intervals of 1 - 2 seconds.  AC257	Almost transparent. Bubbles may appear when engine speed is raised and lowered. No clear difference exists between these two conditions.  AC258	No bubbles can be seen.
Pressure of system.	High pressure side is abnormally low.	Both pressure on high and low pressure sides are slightly low.	Both pressures on high and low pressure sides are normal.	Both pressures on high and low pressure sides are abnormally high.
Repair.	Stop compressor immediately and conduct an overall check.	Check for gas leakage, repair as required, replenish and charge system.		Discharge refrigerant from service valve of low pressure side.

a. The bubbles seen through the sight glass are influenced by the ambient temperature. Since the bubbles are hard to show up in comparatively low temperatures below 20°C (68°F), it is possible that a slightly larger amount of refrigerant would be filled, if supplied according to the sight glass. Be sure to recheck

the amount when it exceeds 20°C (68°F). In higher temperature the bubbles are easy to show up.

b. When the screen in the receiver drier is clogged, the bubbles will appear even if the amount of refrigerant is normal. In this case, the outlet side pipe of the receiver drier becomes considerably cold.

## CHECKING COMPRESSOR DRIVE BELT

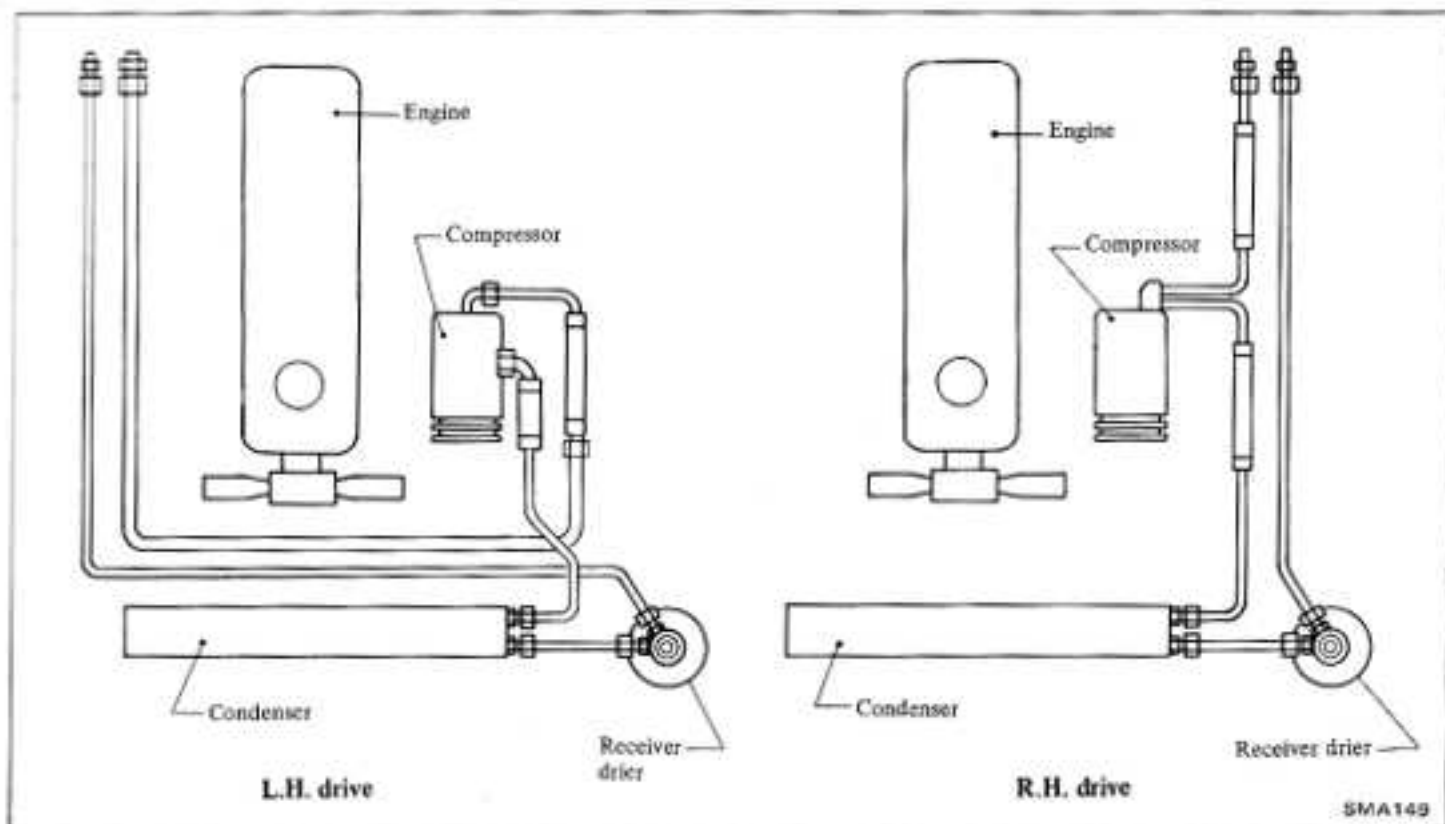
Refer to Engine Maintenance for inspection and adjustment.

**CHECKING HOSES AND PIPES**

Check heater and air conditioner for damaged hoses or pipes due to interference or friction with adjoining parts. If damage is minor, repair

those affected hose or pipes. If damage is major and if there is the possibility of encountering holes, replace the affected parts.

Carefully check hoses and pipes, especially those located close to moving parts or sharp edge of panel.

**CHECKING AIR CONDITIONER REFRIGERANT LEAKS**

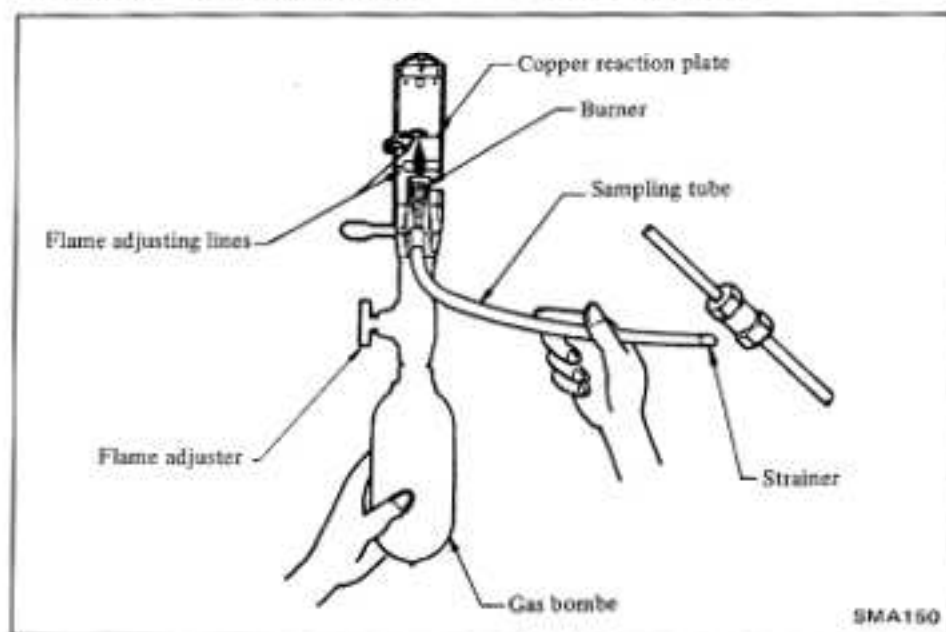
Conduct a leak test with halide or electric leak detector whenever leakage of refrigerant is suspected and when conducting service operations which are accompanied by disassembly or loosening of connection fittings.

**Major check points**

- (1) Compressor
  - Compressor shaft seal (rotate the compressor by hand)
  - Flexible hose connections
  - Front and rear head gaskets
  - Service valve
- (2) Condenser
  - Condenser pipe fitting
  - Condenser inlet and outlet pipe connections
- (3) Refrigerant lines
  - Flared section of high pressure and low pressure flexible hoses.
  - Line connections

- (4) Evaporator housing
  - Inlet and outlet line connections

- Expansion valve
- Suction throttle valve



The following information and cautions should be kept in mind when

checking for leakage.

- If a halide leak detector is used, determine whether or not there is gas

leaking by the color of the flame, as indicated in the chart below.

	Propane type	Butane type
NO LEAK	Greenish blue	Pale blue
SMALL LEAK	Yellow	Bright blue
LARGE LEAK	Purple	Vivid green

#### WARNING:

- Never inhale the fumes produced by combustion of refrigerant gas since they are toxic.
- Never use halide torch in a place where combustible or explosive gas is present.

- Since refrigerant gas is heavier than air, small leaks can be easily detect-

ed by placing sampling tube directly below the check point.

- If any trace of oil is noted at and around connection fittings, it is a sure indication that refrigerant is leaking.

If a gas leak is detected, proceed as follows:

- Check torque on the connection fitting and, if too loose, tighten to the

proper torque. Check for gas leakage with a leak detector.

2. If leakage continues even after the fitting has been retightened, discharge refrigerant from system, disconnect the fittings, and check its seating face for damage. Always replace even if damage is slight.

3. Check compressor oil and add oil if required.

4. Charge refrigerant and recheck for gas leaks. If no leaks are found, evacuate and charge system.

#### OFF-SEASON MAINTENANCE

Even in the off-season, turn the compressor for 10 minutes at least once a month by running the engine at idling rpm.

## SERVICE DATA AND SPECIFICATIONS

### ENGINE MAINTENANCE INSPECTION AND ADJUSTMENT

#### Basic mechanical system

Valve clearance mm (in)	Hot	Intake	0.25 (0.010)
		Exhaust	0.30 (0.012)
	Cold <sup>A</sup>	Intake	0.17 (0.007)
		Exhaust	0.24 (0.009)
Drive belt deflection [Applied pushing force 98 N (10 kg, 22 lb)]		mm (in)	8 - 12 (0.31 - 0.47)
Radiator cap relief pressure kPa (bar, kg/cm <sup>2</sup> , psi)			88 (0.88, 0.9, 13)
Cooling system leakage test pressure kPa (bar, kg/cm <sup>2</sup> , psi)			157 (1.57, 1.6, 23)
Compression pressure kPa (bar, kg/cm <sup>2</sup> , psi)/rpm	Standard		1,177 (11.77, 12.0, 171)/350
	Minimum		883 (8.83, 9.0, 128)/350

\*: These values are measured when engine is cold and ambient temperature is 20°C (68°F). After checking valve clearance while engine is cold, also check them when engine is hot to see if they remain within the specified range. If they do not, readjust them.

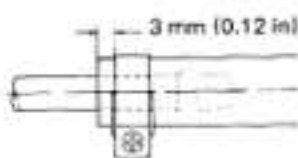
#### Ignition and fuel system

Battery	Type		Europe	Except Europe	
			Optional	Standard	
			N50Z		N40
	Voltage V		12		
	Capacity AH		60		40
Electrolyte gravity		Other climates	Tropical climate	Frigid climate	
(At 20°C (68°F))	Permissive value	Over 1.20	Over 1.18	Over 1.22	
	Fully charged value	1.26	1.24	1.26	
Spark plug	Type		Standard type	Hot type	Cold type
	Except Europe		BP5ES L46PW	BP4E L47PW	BP6ES L45PW BP7ES L44PW
	Europe		BP5ES L46PW	BP4ES L47PW	BP6ES L45PW BP7ES L44PW
			(Resistor built-in type)		
	Gap mm (in)		0.8 - 0.9 (0.031 - 0.035)		

Ignition wiring	Resistance $\Omega$	Less than 30,000
Distributor	Point gap mm (in)	0.45 - 0.55 (0.018 - 0.022)
	Dwell angle degree	49° - 55°
Ignition timing and speed degree/rpm	M/T	10° B.T.D.C./700 $\pm$ 50
	A/T	10° B.T.D.C./750 $\pm$ 50
"CO" % at idling speed		1.0 $\pm$ 1.0 -0.7 %

## TIGHTENING TORQUE

Unit		N·m	kg·m	ft·lb
Cylinder head bolt		69 - 83	7.0 - 8.5	51 - 61
Manifold	M8	15 - 25	1.5 - 2.5	11 - 18
	M10	34 - 44	3.5 - 4.5	25 - 33
Exhaust tube		20 - 25	2.0 - 2.5	14 - 18
Pivot lock nut		49 - 59	5.0 - 6.0	36 - 43
Oil pan drain plug		20 - 29	2.0 - 3.0	14 - 22
Spark plug		15 - 20	1.5 - 2.0	11 - 14
Fuel hose clamp		1.0 - 1.5	0.10 - 0.15	0.7 - 1.1



Fuel hose clamping position.

EF336A

CHASSIS AND BODY  
MAINTENANCE

## INSPECTION AND ADJUSTMENT

## Clutch

Unit: mm (in)

Pedal height "H"	L.H.D.	168 - 174 (6.61 - 6.85)
	R.H.D.	155 - 161 (6.10 - 6.34)
Pedal free play "A"		1 - 5 (0.04 - 0.20)

## Front axle and front suspension

Axial play	mm (in)	0 (0)
Wheel bearing preload (As measured at wheel hub bolt)	With new parts N (kg, lb)	6.9 - 14.7 (0.7 - 1.5, 1.5 - 3.3)
	With used parts N (kg, lb)	2.0 - 7.8 (0.2 - 0.8, 0.4 - 1.8)
Wheel alignment		
Camber	degree	-40' - 50'
Caster	degree	1°45' - 3°15'
Kingpin inclination	degree	7°25' - 8°55'
Toe-in (Unladen)		0 - 2 mm (0 - 0.08 in) 0' - 12' (On both sides)
Side slip (Reference data)		Out 1 mm - In 1 mm/m (Out 0.012 in - In 0.012 in/ft)
Standard side rod length "A"	mm (in)	71.0 (2.80)
Front wheel turning angle		
Toe-out turns (When inner wheel is 20°)	degree	18.7°
Outer wheel		
Full turns	degree	
Inner wheel		33° - 35°
Outer wheel		27° - 29°

## Brake system

Unit: mm (in)

Disc brake	Pad wear limit (Minimum thickness)	N22	2.0 (0.079)
		AN20	1.6 (0.063)
		AN12H	1.6 (0.063)
	Rotor repair limit (Minimum thickness)	N22	10.5 (0.413)
		AN20	8.4 (0.331)
		AN12H	8.6 (0.339)
Drum brake	Lining wear limit (Minimum thickness)		1.5 (0.059)
	Drum repair limit (Maximum inner diameter)		230.0 (9.06)
Pedal height "h"			155 - 161 (6.10 - 6.34)
Pedal free play "a"			1 - 5 (0.04 - 0.20)
Pedal depressed height			More than 60 (2.36) *1 More than 55 (2.17) *2
Parking brake			
Lever stroke [at pulling force: 196N (20 kg, 44 lb)]			90 - 100 (3.54 - 3.94)
Number of notches			7 - 8

\*1: Rear disc brake models

\*2: Rear drum brake models

# Wheel and tire

Recommended cold tire inflation pressure		
Tire size	165SR14	2.0 kg/cm <sup>2</sup> (196 kPa, 1.96 bar, 28 psi)
	185/70SR14	2.0 kg/cm <sup>2</sup> (196 kPa, 1.96 bar, 28 psi)
	Spare tire T135/70D16	Do not use in excess of 80 km/h (50 MPH)
		4.2 kg/cm <sup>2</sup> (412 kPa, 4.12 bar, 60 psi)

Tire pressure should be checked when tires are COLD.

Wheel rim lateral and radial runout	mm (in)	Less than 1.0 (0.039) *1 Less than 0.5 (0.020) *2
Difference between right and left lateral runout	mm (in)	Less than 0.5 (0.020) *1 Less than 0.2 (0.008) *2
Wheel balance (Maximum allowable unbalance at rim flange)	gr (oz)	10 (0.35)
Tire balancing weight	gr (oz)	10 - 60 (0.35 - 2.12) Spacing 10 (0.35)

\*1: Steel wheel

\*2: Aluminum wheel

# TIGHTENING TORQUE

Unit	N·m	kg·m	ft·lb
Clutch Pedal stopper lock nut	7.8 - 11.8	0.8 - 1.2	5.8 - 8.7
Master cylinder push rod lock nut	7.8 - 11.8	0.8 - 1.2	5.8 - 8.7
Manual transmission Drain and filler plugs	25 - 34	2.5 - 3.5	18 - 25
Propeller shaft and dif- ferential carrier Differential carrier drain and filler plugs	59 - 98	6 - 10	43 - 72
Front axle and front suspension Wheel bearing nut	25 - 29	2.5 - 3.0	18 - 22
Side rod lock nut	78 - 98	8.0 - 10.0	58 - 72
Brake system Air bleed valve	6.9 - 8.8	0.7 - 0.9	5.1 - 6.5
Brake 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
Wheel and tire Wheel nut	78 - 98	8.0 - 10.0	58 - 72

# SPECIAL SERVICE TOOLS

Tool number	Tool name
ST10120000	Cylinder head bolt wrench
ST10640001	Pivot adjuster
ST19320000	Oil filter wrench



