MAINTENANCE

SECTION MA

MA

CONTENTS

PERIODIC MAINTENANCE

The following charts show the normal maintenance schedule Under severe driving conditions, additional or more frequent maintenance will be required. Refer to "Maintenance under severe driving conditions".

The periodic maintenance schedule is repeated beyond the last mileage and period shown.

EMISSION CONTROL SYSTEM MAINTENANCE

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Periodic maintenance should be performed at number of miles, kilometers or months, whichever comes first	Miles x 1,000	15	30	45	60	
	(Kilometers x 1,000)	(24)	(48)	(72)	(96)	
	Months	12	24	36	48	
Drive belts			I		I	MA-8
Air cleaner filter			R		R	MA-8
Vapor lines			I*		I*	MA-8
Fuel lines (hoses, piping, connections, etc)			I*		I*	MA-9
Fuel filter			See NOTE (1)*			MA-9
Engine coolant			R		R	MA-10
Engine oil	Except turbocharged engine		Replace every 7,500 miles (12,000 km) or 6 months			MA-11
	Turbocharged engine		Replace every 5,000 miles (8,000 km) or 6 months			MA-11
Engine oil filter			Replace at the first oil change and then every second oil change			MA-11
Spark plugs			R		R	MA-12, 13
Ignition wires			I*		I*	MA-13
Idle rpm (Except turbocharged engine)		I*	I*	I*	I*	MA-14
Exhaust gas sensor			I		I	MA-15, 16

NOTE:

(1) If vehicle is operated under extremely adverse weather conditions or in areas where ambient temperatures are either extremely low or extremely high, the filters might become clogged. In such an event, replace them immediately.

(2) Maintenance items and intervals with "*" are recommended by NISSAN MOTOR CO., LTD. Other maintenance items and intervals are required.

Abbreviations A = Adjust
R = Replace
I = Inspect Correct or replace if necessary

CHASSIS AND BODY MAINTENANCE

MAINTENANCE OPERATION Periodic maintenance should be performed at number of miles, kilometers or months whichever comes first	Miles x 1,000 (Kilometers x 1 000) Months	MAINTENANCE INTERVAL 15 (24) 12	 30 (48) 24	 45 (72) 36	 60 (96) 48	Reference page
Brake lines & hoses		I	I	I	I	MA-26
Brake pads & discs		I	I	I	I	MA-27
Brake fluid			R		R	MA-26
Manual and automatic transmission & differential gear oil		I	I	I	I	MA-18, 19, 20
Power steering lines & hoses		I	I	I	I	MA-34
Steering gear & linkage, & suspension parts		I	I	I	I	MA-21, 22, 23, 34
Steering linkage ball joints & front suspension ball joints					I	MA-21, 34
Propeller shaft(s)			I		I	MA-20
Locks, hinges & hood latch		L	L	L	L	MA-35
Front wheel bearing grease			I		I	MA-22
Exhaust system		I	I	I	I	MA-17
Seat belts, buckles, retractors, anchors & adjuster		I	I	I	I	MA-35

Abbreviations A = Adjust
R = Replace
I = Inspect Correct or replace if necessary

MAINTENANCE UNDER SEVERE DRIVING CONDITIONS

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

Severe driving conditions

A – Repeated short distance driving
B – Extensive idling
C – Driving in dusty conditions
D – Driving in extremely low or high ambient temperatures
E – Towing a trailer
F – Driving in areas using road salt or other corrosive materials
G – Driving on rough and/or muddy roads
H – Driving in high humidity areas or in mountainous areas

Driving condition	Maintenance item	Maintenance operation	Maintenance interval
C	Air cleaner filter	R	More frequently
A B C E	Engine oil (Except turbo-charged engine)	R	Every 3,000 miles (5,000 km) or 3 months
	Engine oil (Turbocharged engine)	R	Every 2,500 miles (4,000 km) or 3 months
A B C E	Engine oil filter	R	At the first oil change and then every second oil change
A C E F G	Brake pads & discs	I	Every 7,500 miles (12,000 km) or 6 months
H	Brake fluid	R	Every 15,000 miles (24,000 km) or 12 months
E G	Manual and automatic transmission & differential gear oil	R	Every 30,000 miles (48 000 km) or 24 months
G	Steering gear & linkage, & suspension parts	I	Every 7,500 miles (12 000 km) or 6 months
C D F G	Steering linkage ball joints & front suspension ball joints	I	Every 7,500 miles (12,000 km) or 6 months
F	Locks, hinges & hood latch	I	Every 7,500 miles (12,000 km) or 6 months
A E F G	Exhaust system	I	Every 7,500 miles (12,000 km) or 6 months

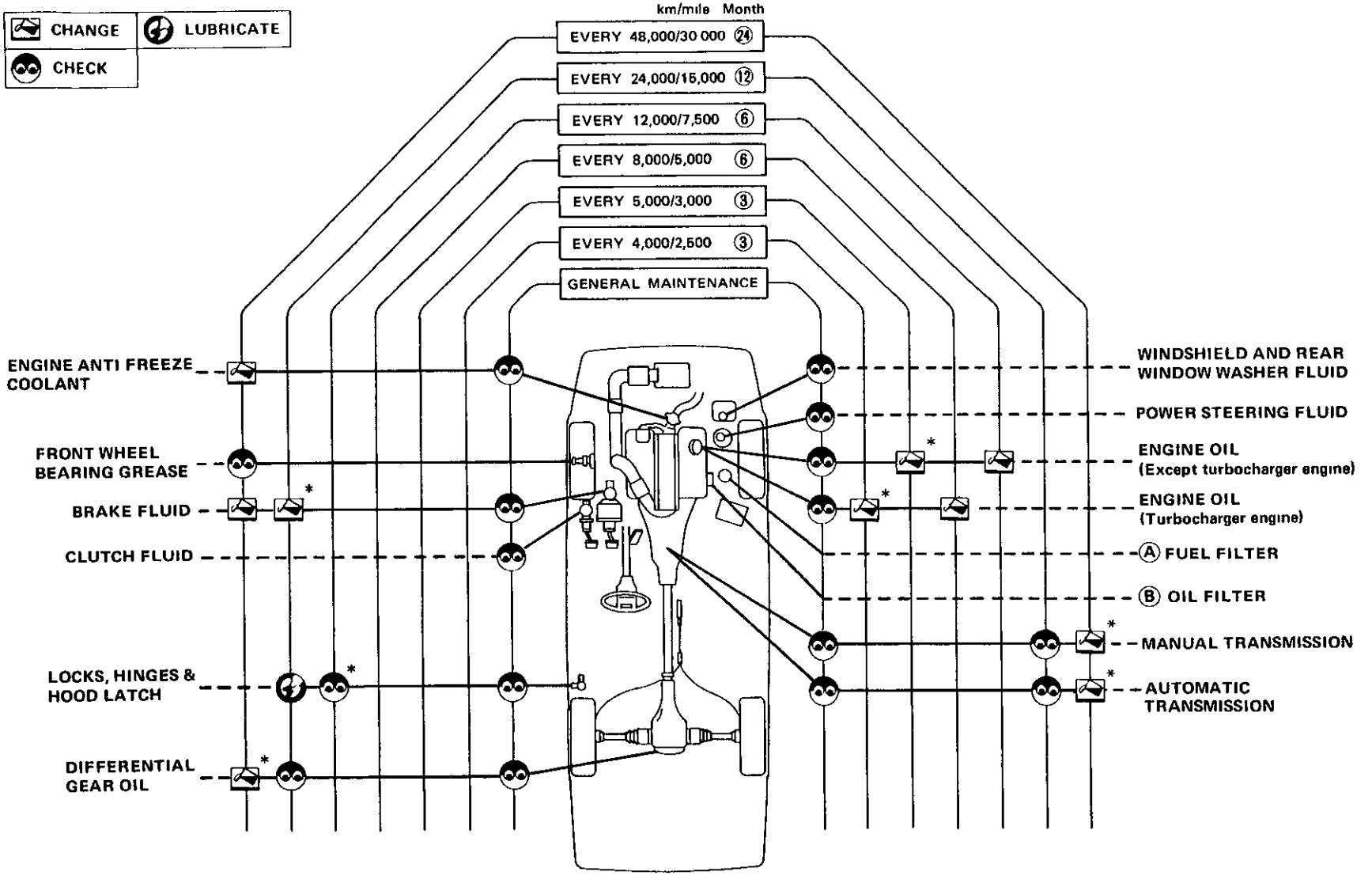
Maintenance operations I = Inspect Correct or replace if necessary R = Replace

General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform the checks and inspections themselves or they can have their NISSAN/DATSUN dealers do them for a nominal charge.

Item	Reference item in MA section
OUTSIDE THE VEHICLE	
Tires Check the pressure with a gauge periodically when at a service station, including the spare, and adjust to the specified pressure if necessary. Check carefully for damage, cuts or excessive wear.	• **CHECKING TIRE CONDITION**
Wheel nuts When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	• **TIRE REPLACEMENT** **Wheel nut**
Tire rotation Tires should be rotated every 24,000 km (15,000 miles).	• **TIRE ROTATION**
Wheel alignment and balance If the vehicle should pull to either side while driving on a straight and level road, or if you detect uneven or abnormal tire wear, there may be a need for wheel alignment. If the steering wheel or seat vibrates at normal highway speeds, wheel balancing may be needed.	• **CHECKING TIRE CONDITION** **Abnormal tire wear** • **CHECKING WHEEL ALIGNMENT** • **WHEEL INSPECTION**
Windshield glass Check for abrasions or scratches	–
Windshield wiper blades Check for cracks or wear if they do not wipe properly	–
Doors and engine hood Check that all doors and the engine hood operate smoothly as well as the trunk lid and back hatch. Also ensure, that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released.	• **LUBRICATING LOCKS, HINGES AND HOOD LATCH**
INSIDE THE VEHICLE	
The maintenance items listed here should be checked on a regular basis, such as when performing periodic maintenance, cleaning the vehicle, etc.	
Lights Make sure that the headlights, stop lights, tail lights, turn signal lights, and other lights are all operating properly and installed securely. Also check headlight aim.	–
Warning lights and buzzers/chimes Make sure that all warning lights and buzzers/chimes are operating properly	–
Horn Make sure it operates properly	–
Windshield wiper and washer Check that the wipers and washer operate properly and that the wipers do not streak	–

Item	Reference item in MA section
Windshield defroster Check that the air comes out of the defroster outlets properly and in sufficient quantity when operating the heater or air conditioner	–
Rear view mirror Make sure that it is secure	–
Sun visors Make sure that they can be moved freely and are secure	–
Steering wheel Check that it has the specified free play Be sure to check for changes in the steering condition, such as excessive free play, hard steering or strange noises	**Specification** **Free play Less than 35 mm (1 38 in)**
Seats Check front seat position controls such as seat adjusters, seatback recliner, etc to ensure they operate smoothly and that all latches lock securely in every position Check that *the head restraints move up and down smoothly and* that the locks (if so equipped) hold securely in all latched positions Check that the latches lock securely for folding-down rear seatbacks	–
Seat belts Check that all parts of the seat belt system e g buckles, anchors and retractors operate property and smoothly Check the belt webbing for cuts, fraying, wear or damage	• **INSPECTING SEAT BELTS, BUCKLES, ANCHORS, RETRACTORS AND ADJUSTER**
Accelerator pedal Check the pedal for smooth operation and make sure the pedal does not catch or require uneven effort	–
Clutch pedal Make sure the pedal operates smoothly and check that it has the proper free travel	• **ADJUSTING CLUTCH PEDAL HEIGHT AND FREE PLAY**
Brakes Check that the brake does not pull the vehicle to one side when applied	–
Brake pedal Check the pedal for smooth operation and make sure it has the proper distance under it when depressed fully Check the brake booster function	• **CHECKING BRAKE PEDAL DEPRESSED HEIGHT** • **CHECKING BRAKE BOOSTER FUNCTION**
Parking brake Check that the lever has the proper travel and confirm that your vehicle is held securery on a fairly steep hill with only the parking brake applied	• **CHECKING PARKING BRAKE**
Automatic transmission "Park" mechanism Check that the lock release button on the selector lever operates properly and smoothly On a fairly steep hill check that your vehicle is held securely with the selector lever in the "P" position without applying any brakes	–
UNDER THE HOOD AND VEHICLE The maintenance items listed here should be checked periodically e g *each time you check the engine oil or refuel*	

Item	Reference item in MA section
Windshield washer fluid Check that there is adequate fluid in the tank	–
Engine coolant level Check the coolant level when the *engine is cold*	–
Radiator and hoses Check the front of the radiator and clean off any dirt, insects, leaves, etc , that may have accumulated Make sure the hoses have no cracks, deformation, rot or loose connections	–
Brake and clutch fluid levels Make sure that the brake and clutch fluid levels are between the "MAX" and "MIN" lines on the reservoir	• CHECKING CLUTCH FLUID LEAKS • INSPECTING BRAKE LINES & HOSES
Engine drive belts Make sure that no belt if frayed, worn, cracked or oily	• CHECKING AND ADJUSTING DRIVE BELT
Engine oil level Check the level on the dipstick after parking *the vehicle on a level spot and turning off the engine*	–
Power steering fluid level Check the level on the dipstick when the fluid is cold and the engine is turned off	• CHECKING POWER STEERING FLUID LEVEL
Automatic transmission fluid level Check the level on the dipstick after putting the selector level in "P" with the engine idling	• CHECKING AUTOMATIC TRANSMISSION FLUID LEVEL
Exhaust system Make sure there are no loose supports, cracks or holes If the sound of the exhaust seems unusual or there is a smell of exhaust fumes, immediately locate the trouble and correct it	• INSPECTING EXHAUST SYSTEM
Underbody The underbody is frequently exposed to corrosive substances such as those used on icy roads or to control dust It is very important to remove these substances, otherwise rust will form on the floor pan, frame, fuel lines and around the exhaust system. At the end of winter, the underbody should be thoroughly flushed with plain water, being careful to clean those areas where mud and dirt can easily accumulate.	–
Fluid leaks Check under the vehicle for fuel, oil, water or other fluid leaks after the vehicle has been parked for a while. Water dripping from the air conditioner after use is normal. If you should notice any leaks or gasoline fumes are evident, check for the cause and correct it immediately.	• CHECKING CLUTCH FLUID LEAKS • INSPECTING MANUAL TRANSMISSION OIL • INSPECTING AUTOMATIC TRANSMISSION FLUID • INSPECTING DIFFERENTIAL GEAR OIL • INSPECTING FRONT AXLE AND SUSPENSION PARTS • INSPECTING REAR AXLE AND SUSPENSION PARTS • INSPECTING BRAKE LINES & HOSES • CHECKING POWER STEERING LINE & HOSES



* Maintenance under severe driving conditions

(A) If vehicle is operated under extreme adverse wheather conditions or in areas where ambient temperatures are either extremely low or extremely high, the filter might become clogged In such an event, replace the filter immediately

(B) Replace at the first oil change After that, replace oil filter every second engine oil change

SMA824A

Checking Drive Belts

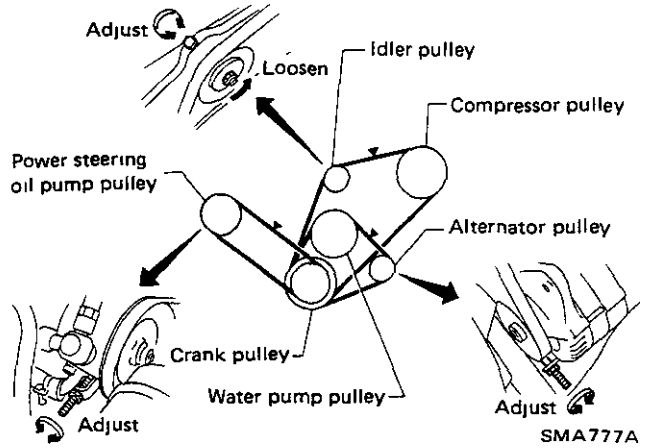
1 Inspect for cracks, fraying, wear or oil adhesion. Replace if necessary.

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

2 Check drive belt deflections by pushing middle between pulleys.

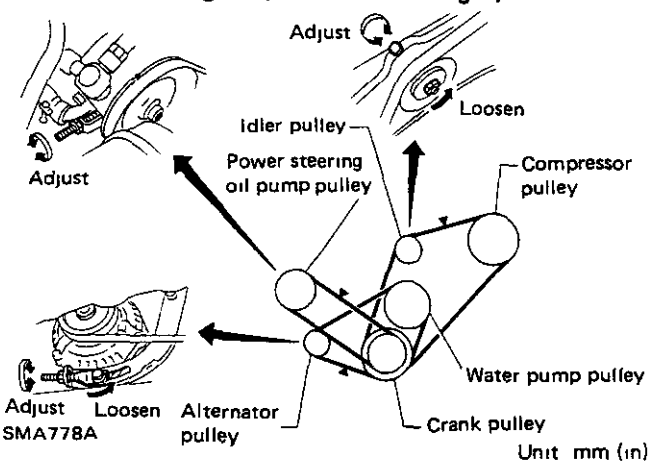
Adjust if belt deflections exceed the limit.

- **VG30E engine (without turbocharger)**



SMA777A

- **VG30ET engine (with turbocharger)**



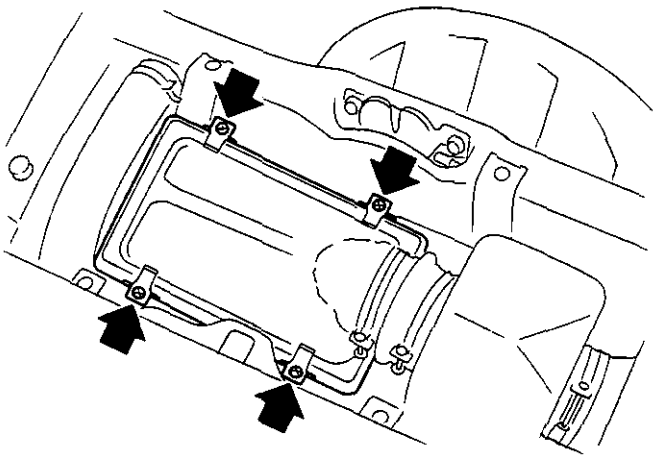
SMA778A

Unit: mm (in)

		Used belt deflection		Set deflection of new belt
		Limit	Adjusted deflection	
Alternator	VG30E	12 (0.47)	6 - 8 (0.24 - 0.31)	5 - 7 (0.20 - 0.28)
	VG30ET	11 (0.43)	6 - 9 (0.24 - 0.35)	5 - 8 (0.20 - 0.31)
Air conditioner compressor		16 (0.63)	9 - 11 (0.35 - 0.43)	7 - 9 (0.28 - 0.35)
Power steering oil pump		21 (0.83)	13 - 16 (0.51 - 0.63)	10 - 13 (0.39 - 0.51)
Applied pushing force		98 N (10 kg, 22 lb)		

Replacing Air Cleaner Filter

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



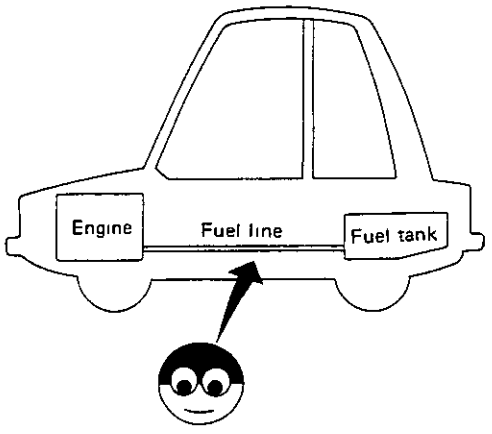
SMA779A

Checking Vapor Lines

1. Visually inspect vapor lines for proper attachment, cracks, damage, loose connections, chafing and deterioration.
2. Check vacuum relief valve for clogging, sticking, etc.

Checking Fuel System

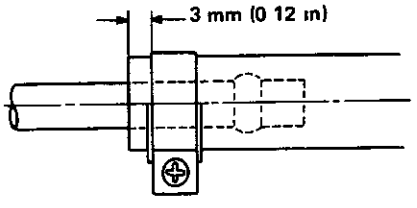
Check fuel lines and tank for proper attachment, leaks, cracks, damage, loose connections, chafing and deterioration

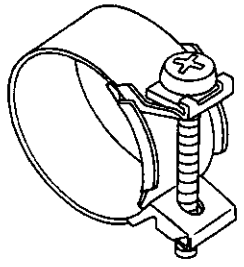


SMA803A

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





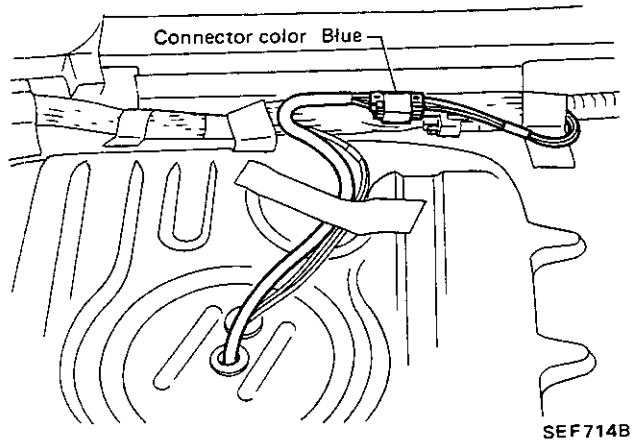
Fuel hose clamps
1 0 - 1.5 N m
(0 10 - 0.15 kg-m,
0 7 - 1 1 ft-lb)

SMA804A

Replacing Fuel Filter

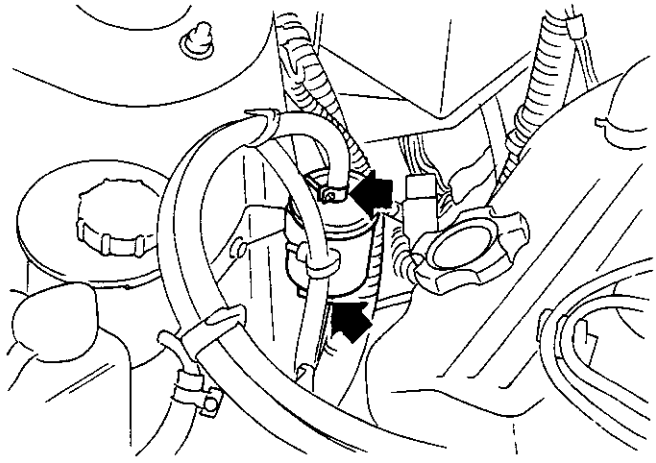
Before removing fuel filter, release fuel pressure from fuel line to eliminate danger.

1 Start engine
2 Remove luggage floor mat
3. Disconnect fuel pump harness connector with engine running



SEF714B

4. After engine stalls, crank engine two or three times to make sure that pressure is released
5 Turn ignition switch off and connect fuel pump harness connector
6 Loosen fuel hose clamps



SMA780A

7 Replace fuel filter.

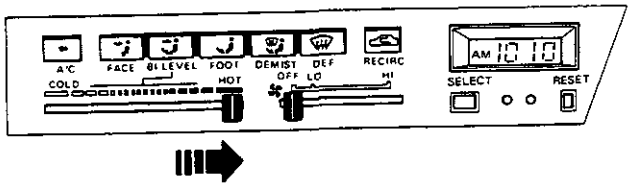
- **Do not reuse fuel hose clamps.**
- **Be careful not to spill fuel over engine compartment. Place a rag to absorb fuel.**
- **Use high pressure type fuel filter. Do not use a synthetic resinous fuel filter.**

Changing Engine Coolant

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

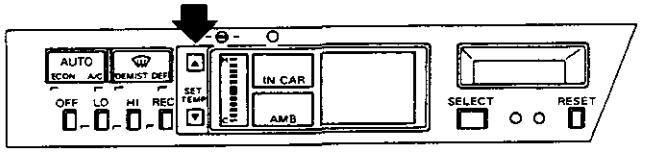
1 Before draining engine coolant

1) Except auto air conditioner equipped models
Slide temperature control lever to "HOT" position



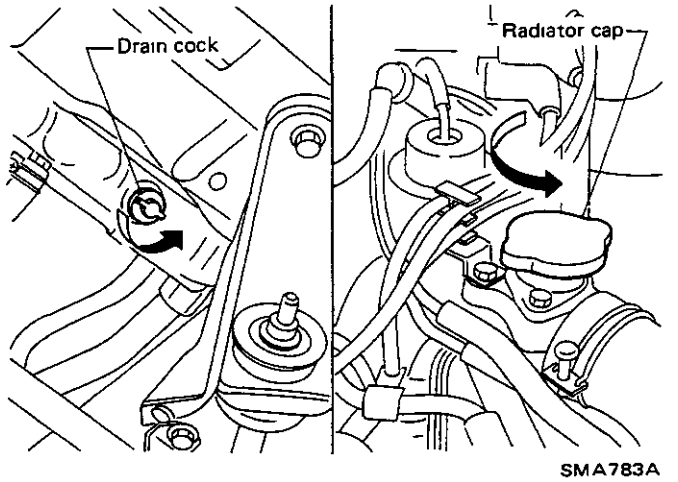
SMA781A

2) Auto air conditioner equipped models
Turn ignition switch "ON" and set temperature at maximum
Then turn ignition switch "OFF".



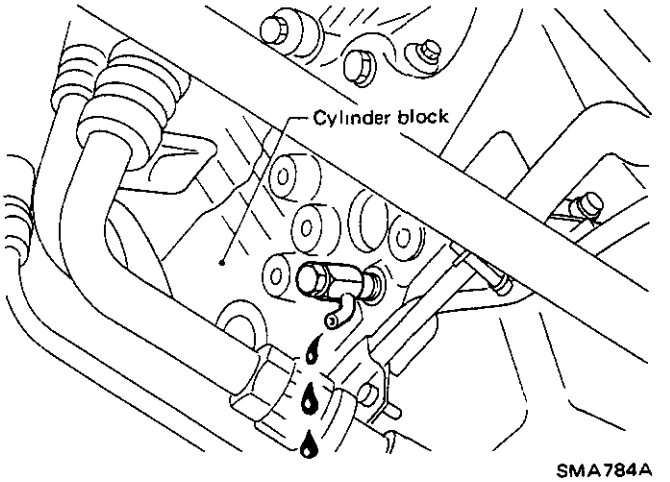
SMA782A

2 Open radiator cap and drain plug to drain engine coolant.



SMA783A

3 Open drain plug on right side of cylinder block to drain coolant from cylinder block.



SMA784A

4 Close drain plug and drain cock securely Then, fill radiator with water and warm up engine
5 Stop engine and wait until it cools down.
6. Repeat procedure from step 2 through step 5 two or three times.
7 Drain water and fill radiator and engine with new coolant up to filler opening Follow instructions attached to anti-freeze container for mixing ratio of anti-freeze to water.

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

8. Fill reservoir tank up to "MAX" level Then close radiator cap.
9. Run the engine at approximately 2,000 rpm for about one minute.
10. Stop the engine and after it cools down, refill the radiator and engine with coolant up to the filler opening. Fill the reservoir tank with coolant up to "MAX" level.

Coolant capacity:
VG30E engine
10.5 ℓ (11-1/8 US qt, 9-1/4 Imp qt)
VG30ET engine
11.0 ℓ (11-5/8 US qt, 9-5/8 Imp qt)

Changing Engine Oil and Oil Filter

1 Warm up engine, and check for oil leakage from engine components
2 Change engine oil and oil filter

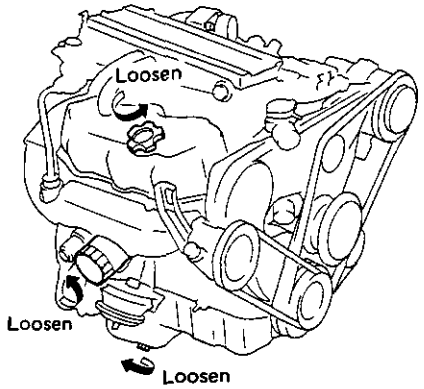
Oil capacity:

With oil filter

4.0 ℓ (4-1/4 US qt, 3-1/2 Imp qt)

Without oil filter

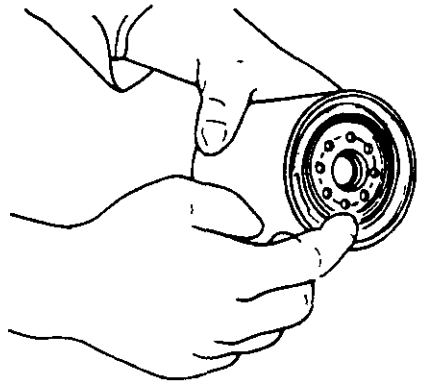
3.3 ℓ (3-1/2 US qt, 2-7/8 Imp qt)



SMA785A

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

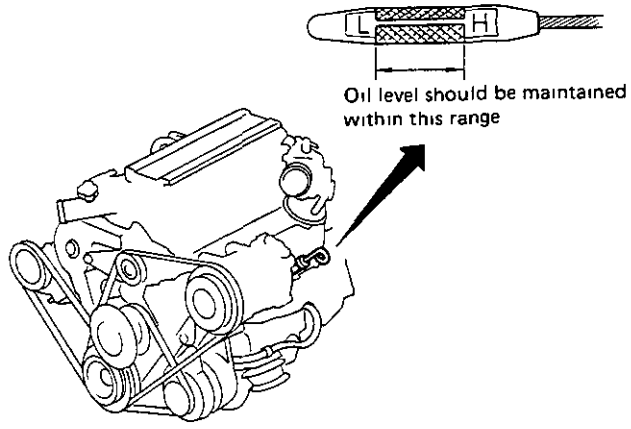
a. Be careful not to burn yourself as engine oil is hot.
b. Be sure to clean drain plug and install with washer.
c. Before installing new oil filter, wipe oil filter mounting surface on cylinder block, and smear a little engine oil on rubber seal of oil filter.



SMA010

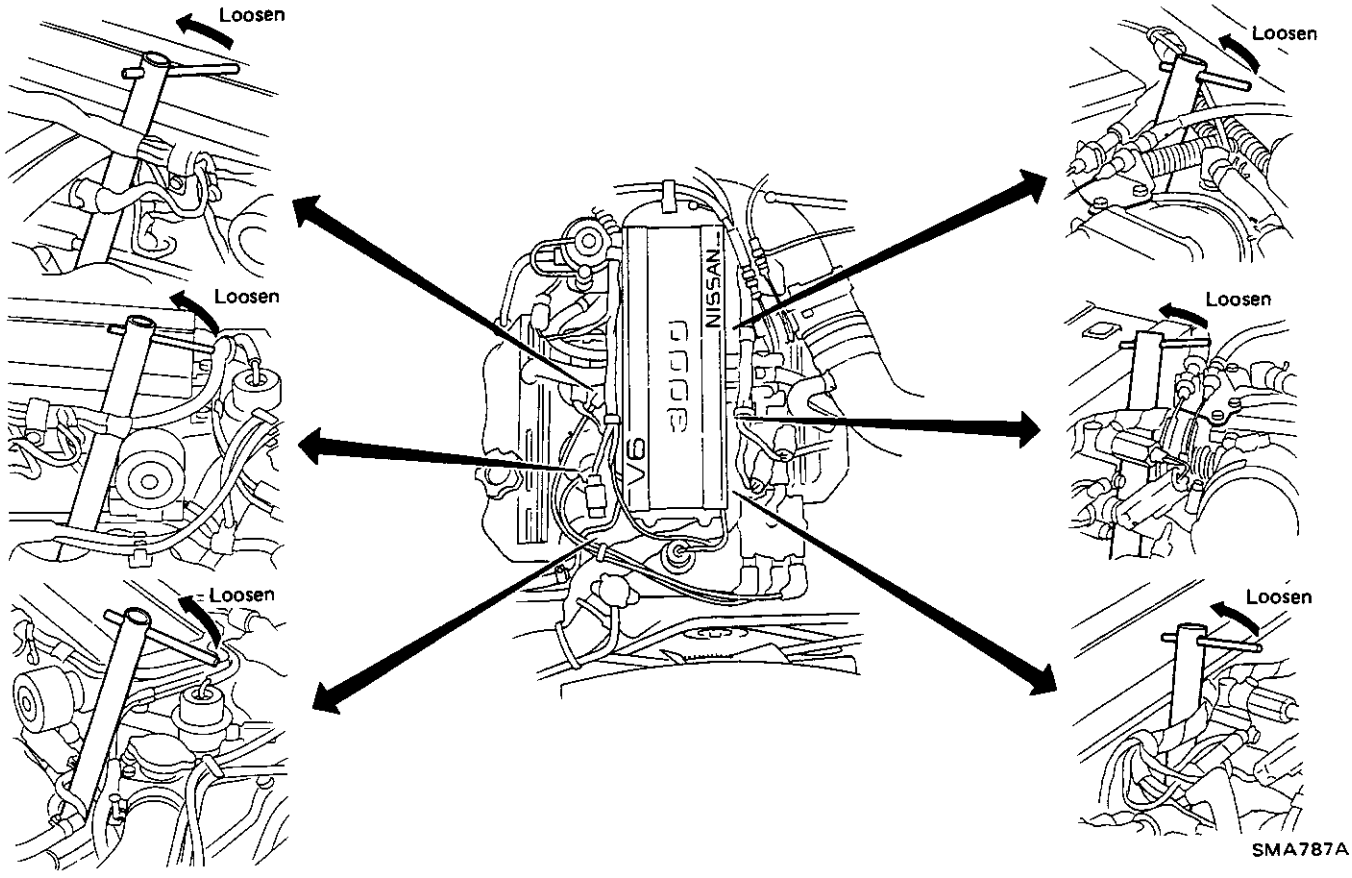
d. When installing oil filter, DO NOT use a wrench to tighten the filter.
Hand-tighten ONLY
e. Use recommended engine oil.

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

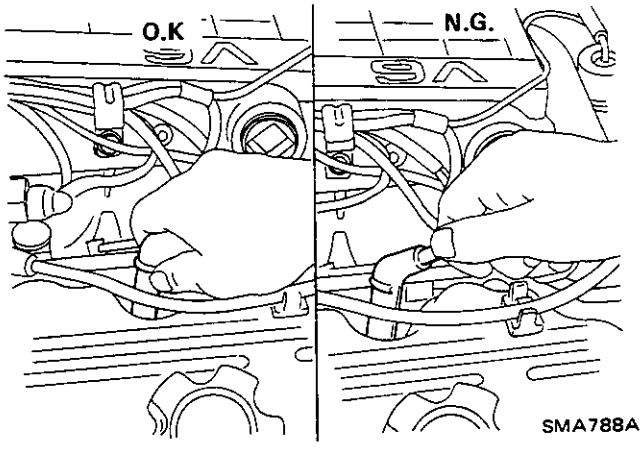


SMA786A

CHECKING AND REPLACING SPARK PLUGS

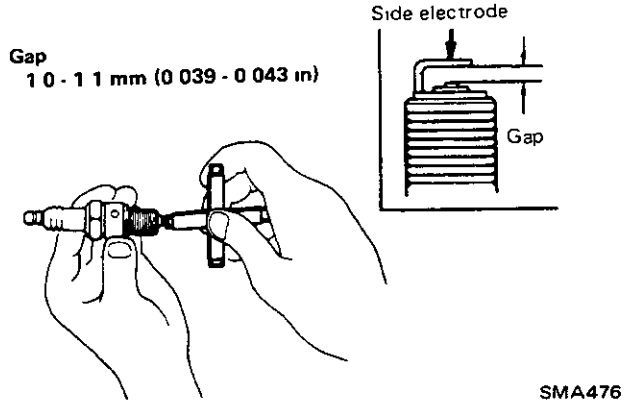


1 Disconnect spark plug wire at boot Do not pull on the wires



2. Remove spark plugs with spark plug wrench.
3. After cleaning spark plugs, inspect insulator for cracks or chips, gasket for damage or deterioration and electrode for wear and burning. If they are excessively worn, replace with new spark plugs.

4. Check spark plug gap



	VG30E	VG30ET
Standard type	BCPR6ES-11	BCPR6E-11
Hot type	BCPR5ES-11	BCPR5E-11
Cold type	BCPR7ES-11	BCPR7E-11

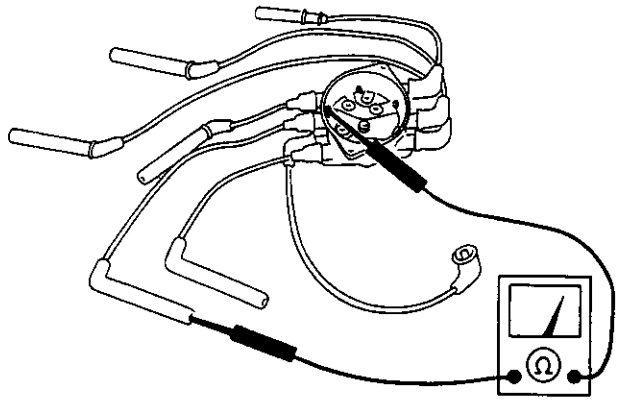
Checking and Replacing Spark Plugs (Cont'd)

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

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

Checking Ignition Wires

1. Check the high tension wires for cracks, damage, burned terminals and proper fit
2. Measure the resistance of the high tension wires, by shaking it and checking for intermittent brakes



SMA789A

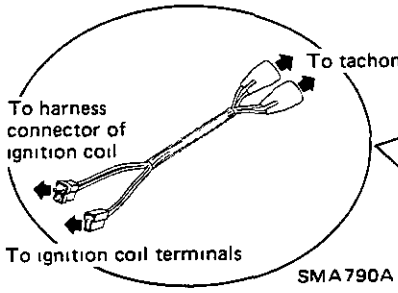
Checking Idle Speed (VG30E engine)

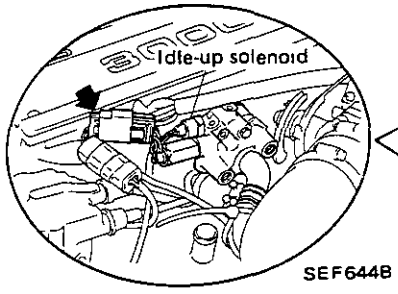
Preparation

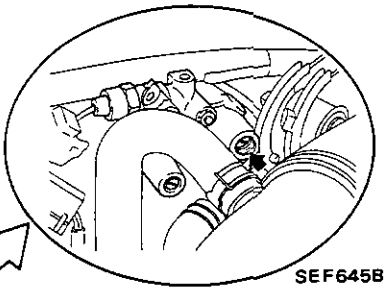
- Engage parking brake and lock both front and rear wheels with wheel chocks.
- Turn off air conditioner and headlamps.
- Keep front wheels straight ahead.

WARNING:

a. Depress brake pedal while accelerating the engine to prevent forward surge of vehicle.
b. Inspection should be carried out while shift lever is in "D" position on automatic transmission equipped models.
c. After inspection and adjustment have been made, shift the lever to "N" or "P" position.







START

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

Stop engine and attach adapter harness between ignition coil primary winding terminals and harness connector Then set tachometer to adapter harness

Run engine at about 2,000 rpm for about 2 minutes under no-load

Disconnect idle up solenoid harness connector and race engine two or three times under no-load, then run engine at idle speed

Check idle speed

M/T and A/T (in "D" position)
700±50 rpm at sea level
650±50 rpm at high altitude condition

O K / N G

Adjust idle speed by turning idle speed adjusting screw

Stop engine and connect idle up solenoid harness connector

Disconnect adapter harness connector and connect ignition coil harness connector to ignition coil

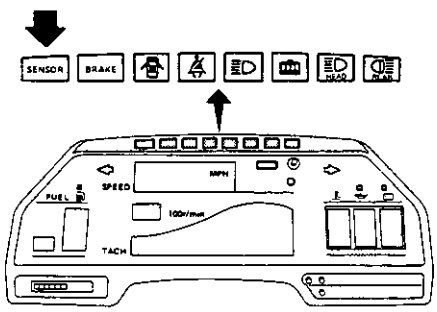
END

Checking Exhaust Gas Sensor

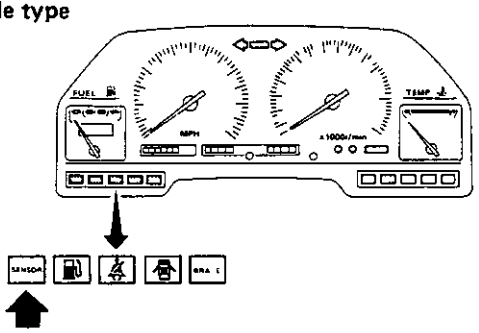
48,000 km (30,000 miles) OR 24 MONTHS SERVICE

Exhaust gas sensor should be checked after 48,000 km (30,000 miles) or 24 months of operation
After vehicle has been operated for 48,000 km (30,000 miles), exhaust gas sensor warning lamp will come on to indicate that sensor should be inspected

Digital type

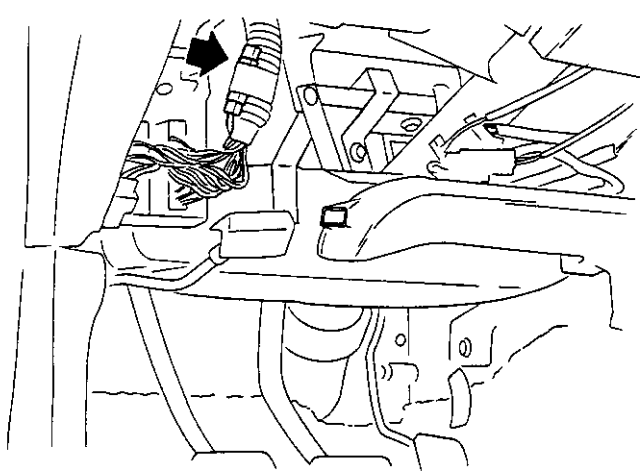


Needle type



SMA791A

After inspection, disconnect warning lamp harness connector so that warning lamp will not come on thereafter.



SMA792A

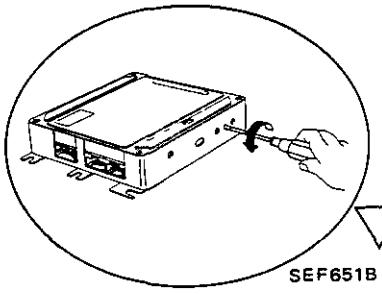
Checking Exhaust Gas Sensor (Cont'd)

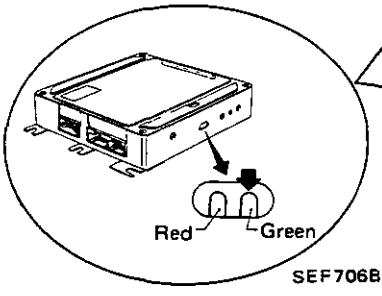
Preparation

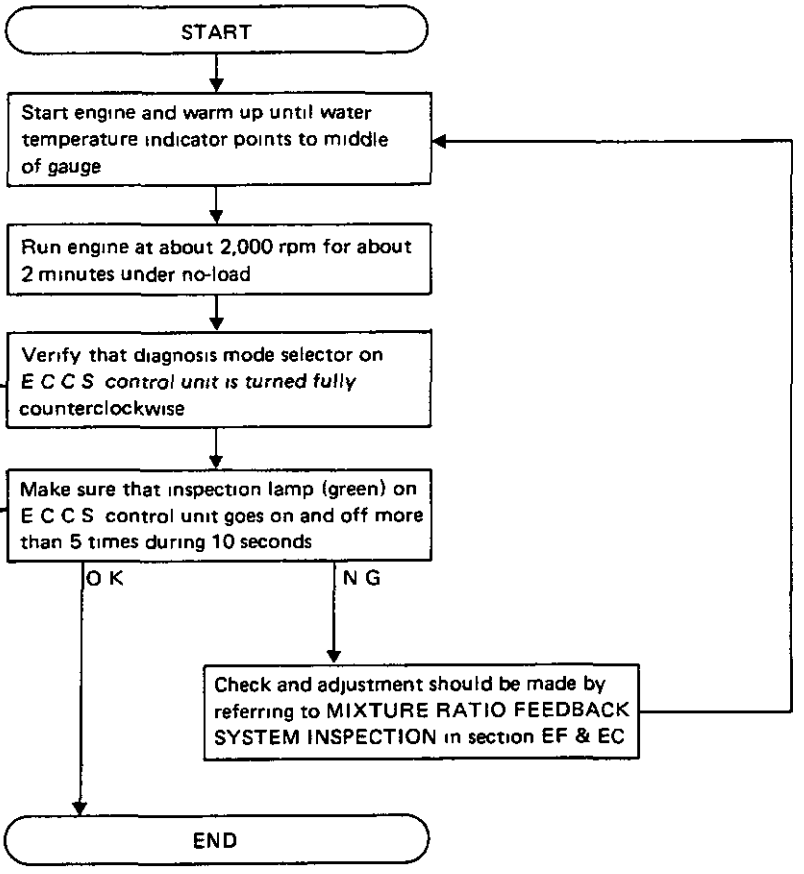
When checking exhaust gas sensor, make sure that the following are in good order

- Battery
- Engine oil and coolant levels
- *E C C S. components*
- E.C C S. harness and connectors
- Hoses
- Oil filler cap and oil level gauge

Checking procedure

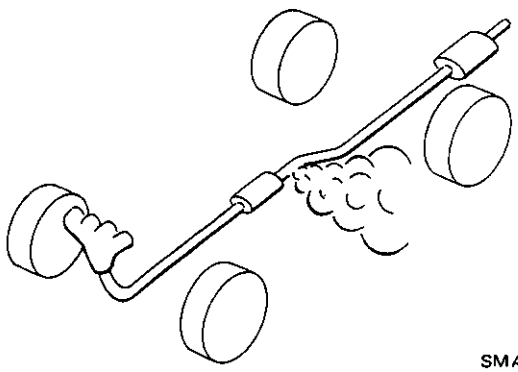






Checking Exhaust System

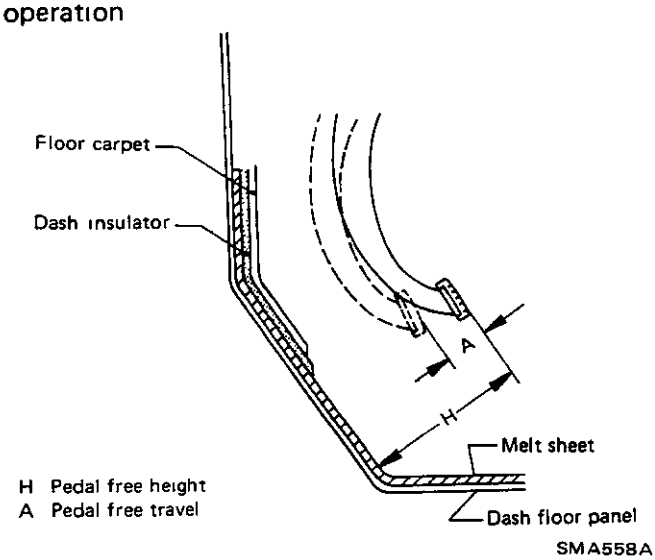
Check exhaust pipes, muffler and mounting for proper attachment, leaks, cracks, damage, loose connections, chafing and deterioration



SMA211A

Checking Clutch Operation

Check clutch pedal height, free travel and smooth operation



H Pedal free height
A Pedal free travel

SMA558A

Pedal free height "H":
195 - 205 mm (7.68 - 8.07 in)
Pedal free travel "A":
1 - 3 mm (0.04 - 0.12 in)

If necessary, adjust clutch pedal free height and pedal free travel. Refer to section CL

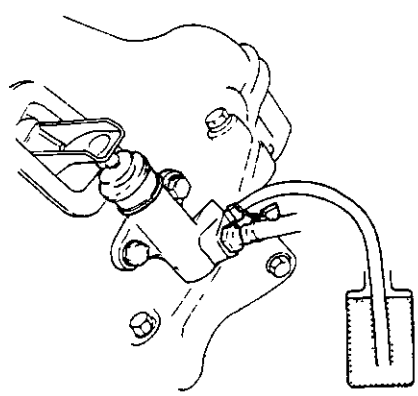
Checking Clutch Fluid Level

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

Changing Clutch Fluid

- **Refill with recommended brake fluid "DOT 3"**
- **Do not reuse drained brake fluid**
- **Be careful not to splash brake fluid on painted areas.**

1 Drain the fluid in the air bleeder valve

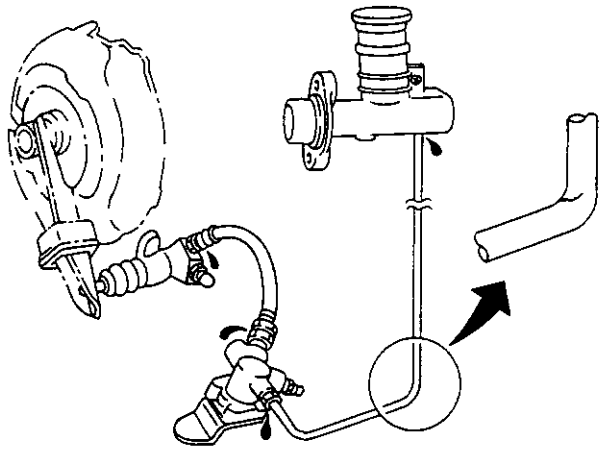


SCL009

2 Refill until the new fluid comes out in the air bleeder valve
Use same procedure as in bleeding hydraulic system to refill the fluid
Refer to section CL

Checking Clutch System

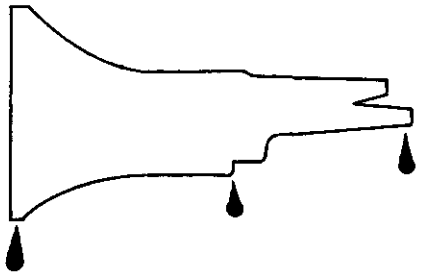
Check clutch fluid lines for proper attachment, leaks, chafing, deterioration, etc



SMA741A

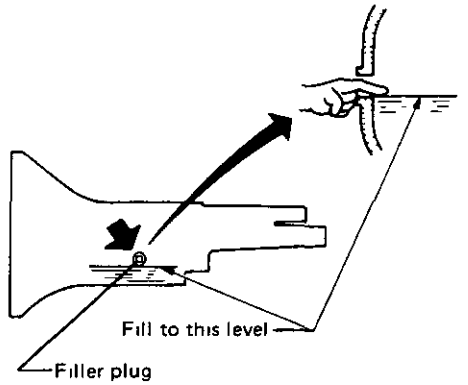
Checking M/T Oil

1. Check manual transmission for signs of leakage



SMA429A

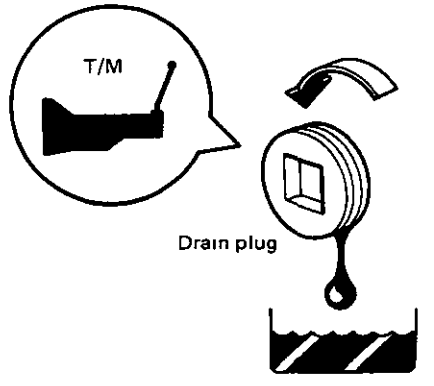
2 Check oil level



SMA103

Never start engine while checking oil level.

Changing M/T Oil



SMA255A

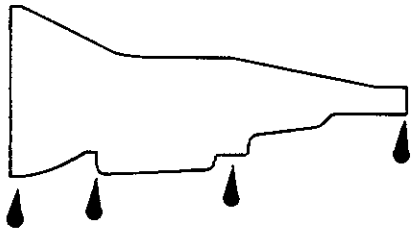
Oil capacity:

FS5W71C and BW T-5 (FS5R90A)

1.9 Liters (4 US pt, 3-3/8 Imp pt)

Checking A/T Fluid

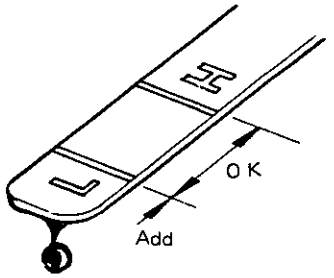
1 Check automatic transmission for signs of leakage



SMA430A

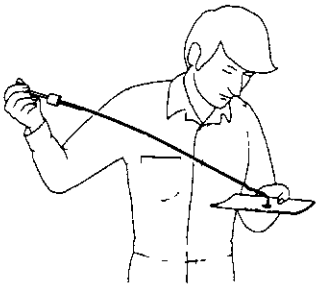
2 Check under following conditions
(1) Place selector lever in "P" (PARK) position and idle engine
(2) Maintain fluid temperature at 50 to 80°C (122 to 176°F)
(3) Add oil, if necessary

Use only A/T fluid having "DEXRON"

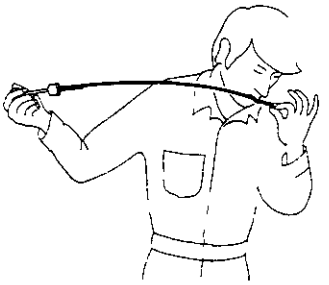


SMA559A

3 Check automatic 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



Check fluid for contamination



Check fluid for smell

SMA107

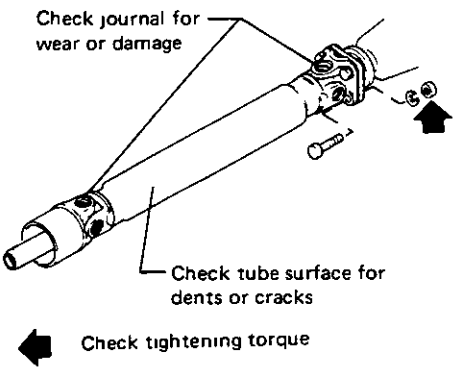
Changing A/T Fluid

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

Oil capacity:
7.0 liters (7-3/8 US qt, 6-1/8 Imp qt)

Checking Propeller Shaft

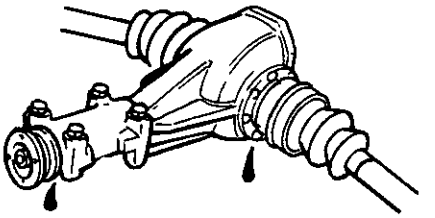
Check propeller shaft for damage, looseness or grease leakage.



SMA269

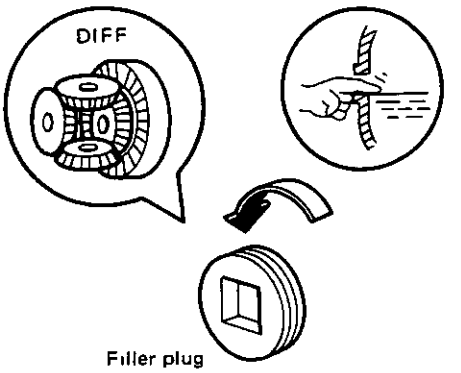
Checking Differential Gear Oil

1 Check differential carrier for signs of oil leakage



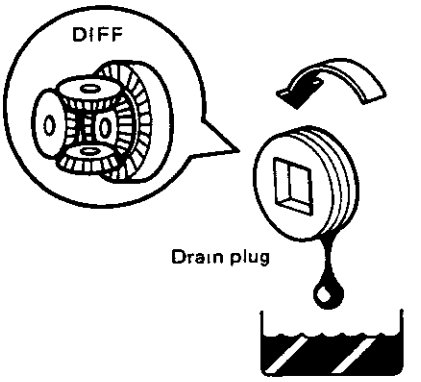
SMA432A

2 Check oil level.



SMA257A

Changing Differential Gear Oil



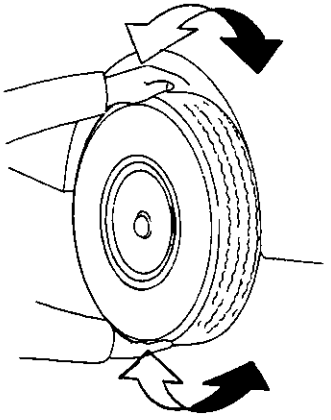
SMA363A

Oil capacity
1.3 Liters (2-3/4 US pt, 2-1/4 Imp pt)

Checking Front Axle and Front Suspension Parts

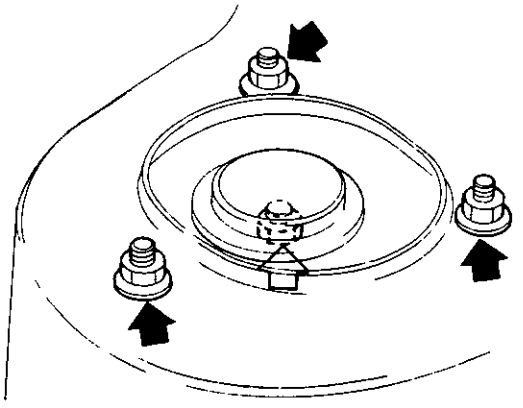
- Check axle and suspension parts for looseness, wear or damage.

(1) Shake each front wheel

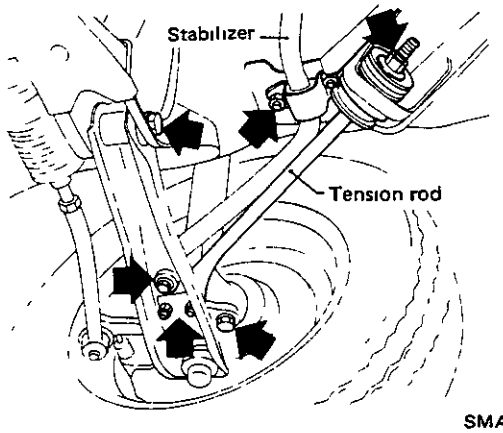


SMA525A

(2) Retighten all nuts and bolts to the specified torque
Refer to section FA for tightening torque



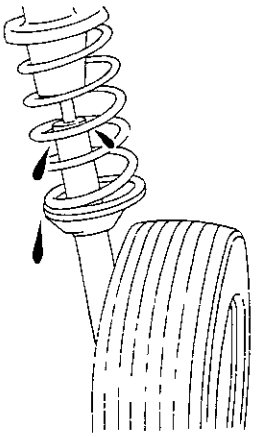
SMA614



SMA615

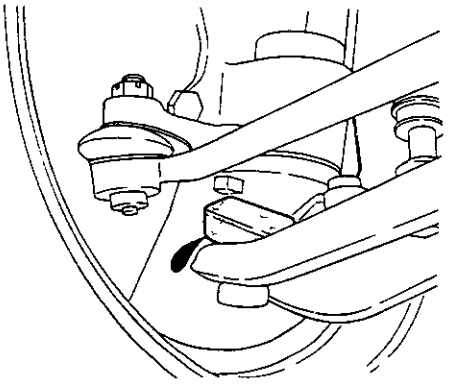
(3) Check axle and suspension parts for wear, cracks or damage.

- Check strut (Shock absorber) for oil leakage or damage



SMA113

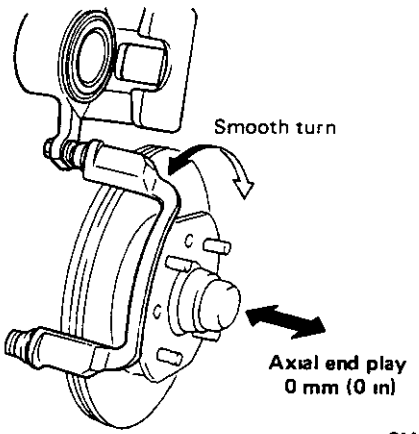
- Check suspension ball joint for grease leakage and ball joint dust cover for damage



SMA723A

Checking Front Wheel Bearing Grease

- Check that wheel bearings operate smoothly, as well as axial end play and grease leakage



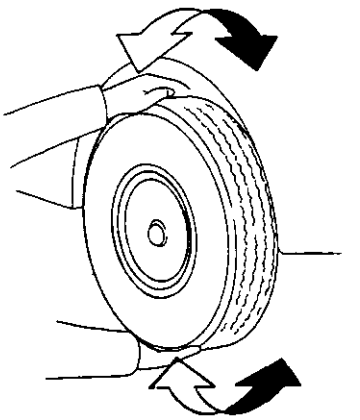
SMA724A

If necessary, adjust wheel bearing preload Refer to section FA.

Checking Rear Axle and Rear Suspension Parts

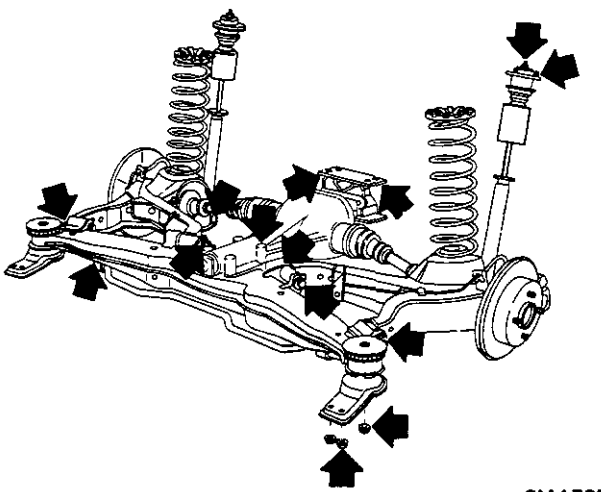
- Check axle and suspension parts for looseness, wear or damage

(1) Shake each rear wheel



SMA525A

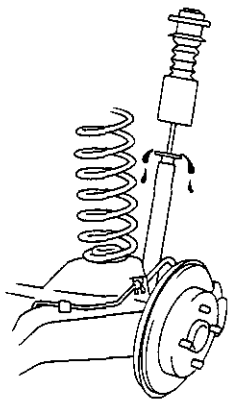
(2) Retighten all nuts and bolts to the specified torque.
Refer to section RA for tightening torque.



SMA725A

Checking Rear Axle and Rear Suspension Parts (Cont'd)

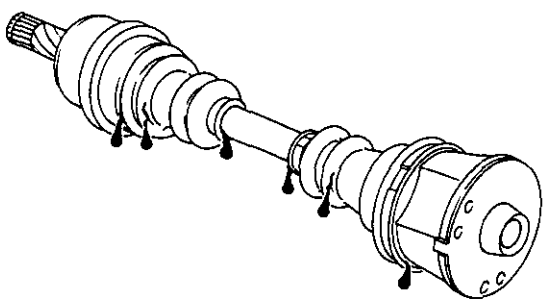
(3) Check axle and suspension parts for wear, cracks or damage
- Check shock absorber for oil leakage or damage



SMA726A

Checking Drive Shaft

Check boot and drive shaft for cracks, wear, damage or grease leakage.



SMA743A

Checking Front Wheel Alignment

PRELIMINARY INSPECTION

- 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 vehicle height (Unladen).
  The vehicle must be on a level surface both fore and aft, and transversely.
- Repair or replace the damaged portion or parts

"Unladen"
Fuel tank, radiator and engine oil tank all full
Spare tire, jack, hand tools, mats in position

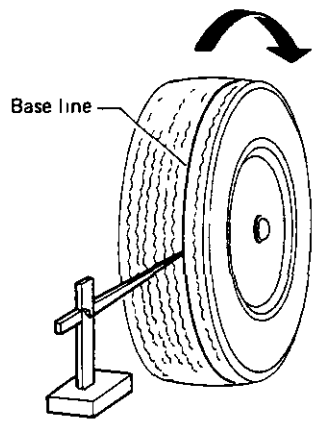
CAMBER, CASTER AND KINGPIN INCLINATION

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

Camber:
–35' to 55'
Caster:
5°50' - 7°30'
Kingpin inclination:
12°15' - 13°45'

TOE-IN

1 Mark a base line across the tread

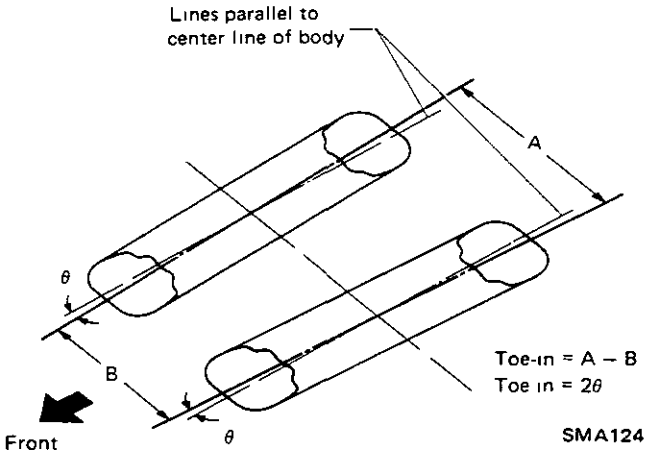


SMA123

After lowering front of vehicle, move it up and down to eliminate friction.

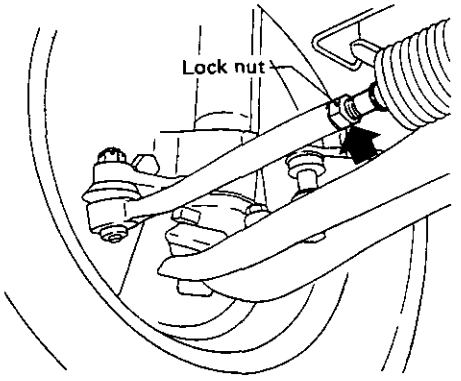
Checking Front Wheel Alignment (Cont'd)

2 Measure toe-in

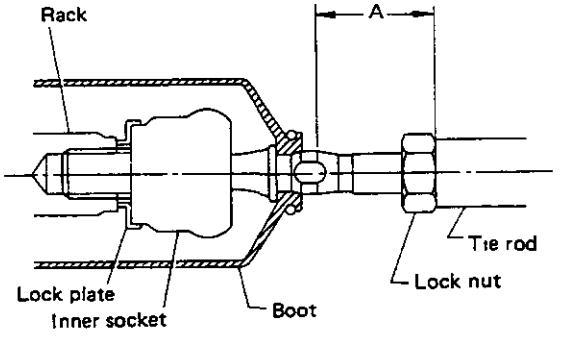


Toe-in:
1 - 3 mm (0.04 - 0.12 in)
6' - 16'

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

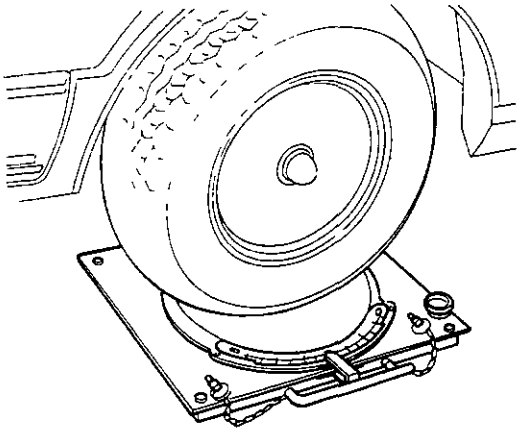


"A" standard dimension:
37.5 mm (1.476 in)



FRONT WHEEL TURNING ANGLE

- Rotate steering wheel all the way right and left, measure turning angle on inner wheel

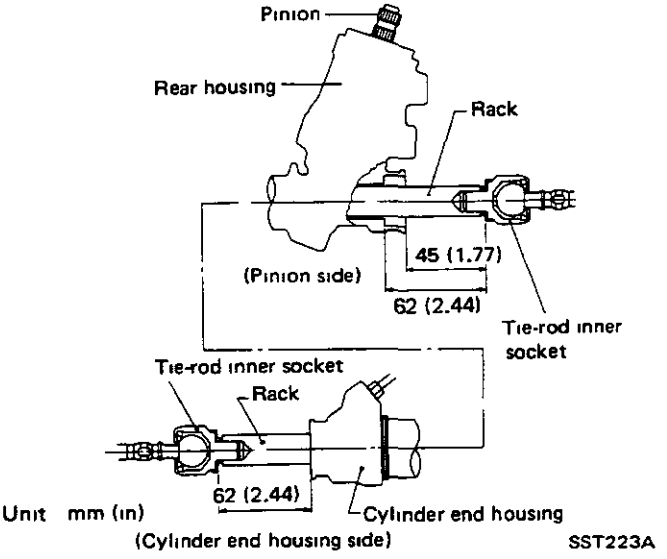


Turning angle:
Full turns
Inside
35° - 39°
Outside
27° - 31°
Toe-out turn (Inside/Outside):
22°30'/20°

- If it is not within specification, check rack stroke.

Refer to section ST

Rack stroke



Checking Rear Wheel Alignment

PRELIMINARY INSPECTION

- Tire pressure.
- Wheel bearing axial play
- Shock absorber operation.
- Tighten each rear axle and suspension part
- Measure vehicle height (Unladen)
  The vehicle must be on a level surface both fore and aft, and laterally
- Repair or replace the damaged portion or parts

"Unladen"

Fuel tank, radiator and engine oil tank all full
Spare tire, jack, hand tools, mats in position

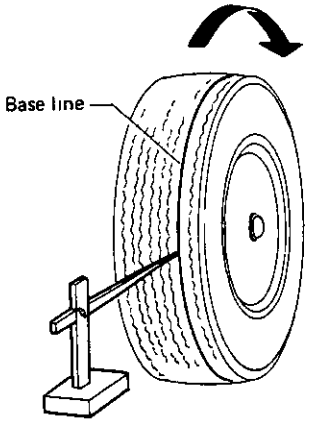
CAMBER

Camber is preset at factory and cannot be adjusted

Camber:
–1°55′ to –25′

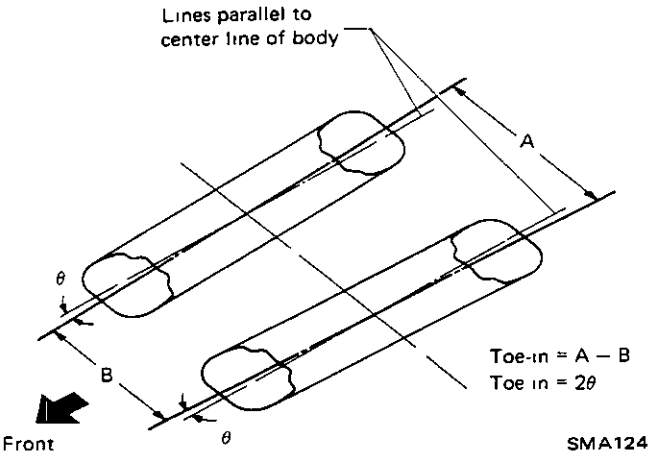
TOE-IN

1. Mark a base line across the tread



SMA123

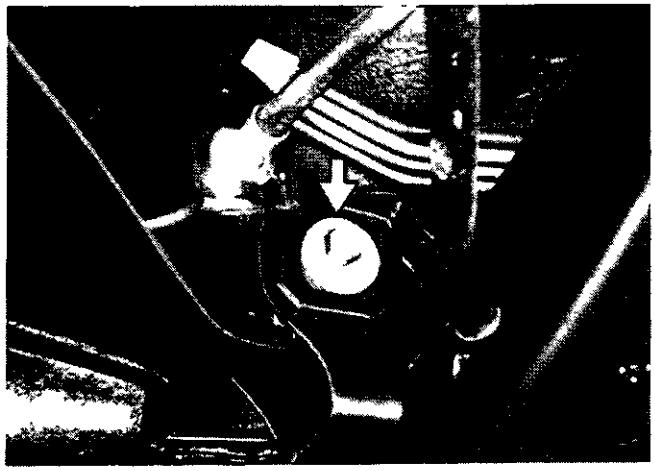
2 Measure toe-in

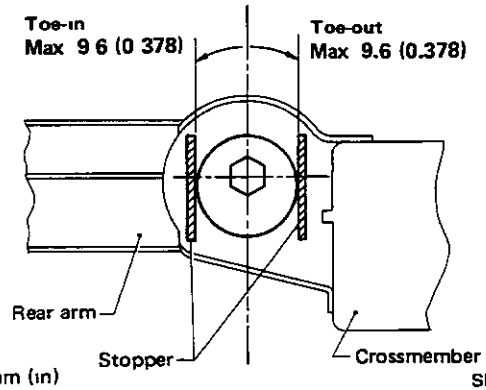


SMA124

Toe-in:
–2 to 2 mm (–0.08 to 0.08 in)

3 Toe-in can be adjusted by inside of rear arm bushing pins





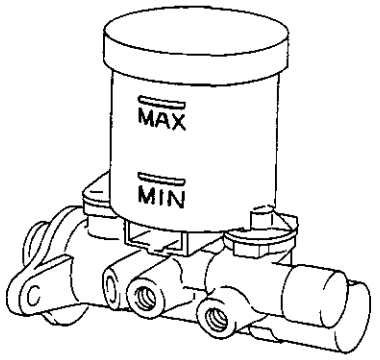
Unit mm (in)

SMA745A

When performing toe adjustment, always set the cams in the same position on the right and left rear arm bushing pins.

Checking Brake Fluid Level and Leaks

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

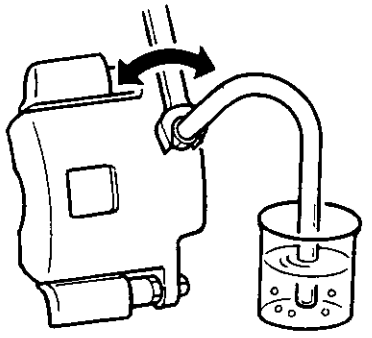


SMA730A

Changing Brake Fluid

- Refill with recommended brake fluid "DOT 3".
- Do not reuse drained brake fluid.
- Be careful not to splash brake fluid on painted areas.

1 Drain brake fluid in each air bleeder valve.

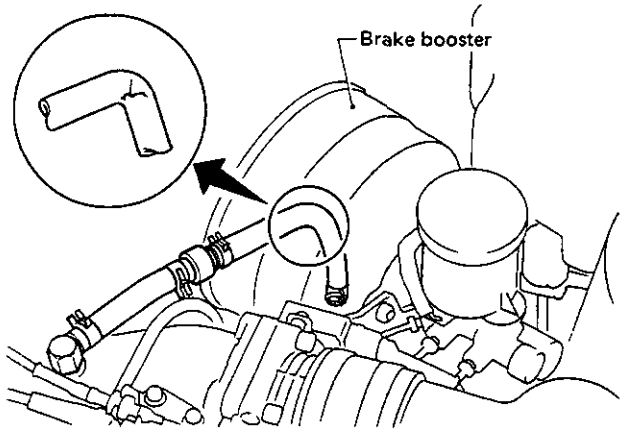


SMA261A

2 Refill until new brake fluid comes out of each air bleeder valve
Use same procedure as in bleeding hydraulic system to refill brake fluid
Refer to section BR

Checking Brake Booster Vacuum Hoses, Connections and Check Valve

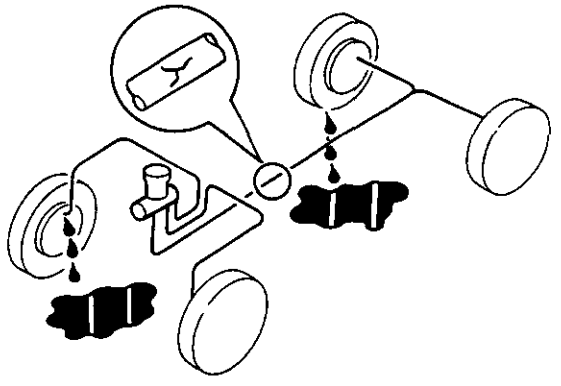
Check vacuum lines connections and check valve for proper attachment, air tightness, chafing and deterioration



SMA731A

Checking Brake System

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

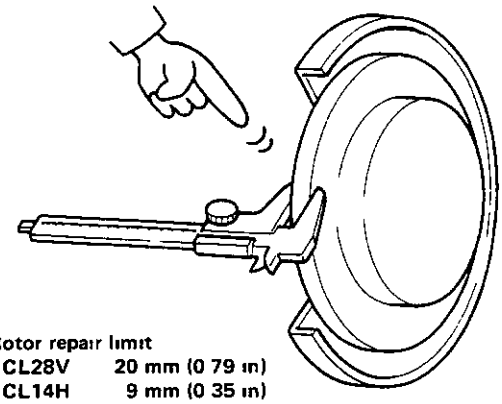


SMA732A

Checking Disc Brake

Check condition of disc brake components

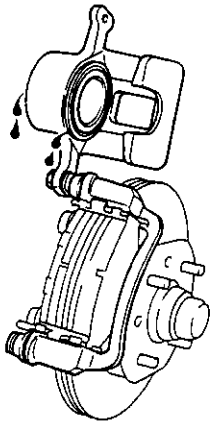
Rotor Condition and thickness



Rotor repair limit
CL28V 20 mm (0 79 in)
CL14H 9 mm (0 35 in)

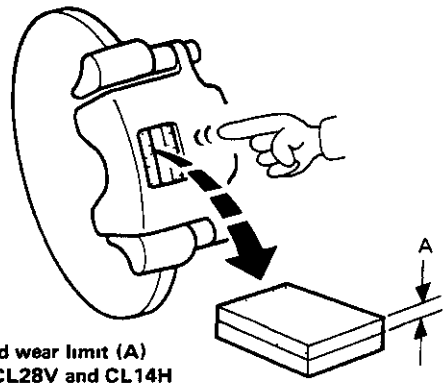
SMA733A

Caliper Operation and leakage



SMA734A

Pad Wear or damage

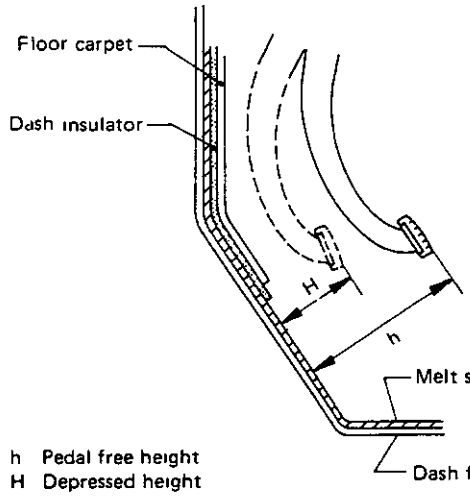


Pad wear limit (A)
CL28V and CL14H
2 0 mm (0 079 in)

SMA364A

Checking Foot Brake Pedal Operation

- Check brake pedal free height, depressed height and smooth operation



h Pedal free height
H Depressed height

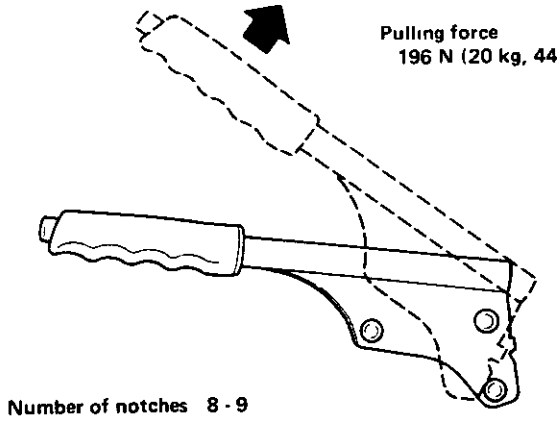
SMA537A

Pedal free height "h":
M/T model 182 - 192 mm (7.17 - 7.56 in)
A/T model 184 - 194 mm (7.24 - 7.64 in)
Depressed height "H":
More than 90 mm (3.54 in)

If necessary, adjust pedal heights
Refer to section BR

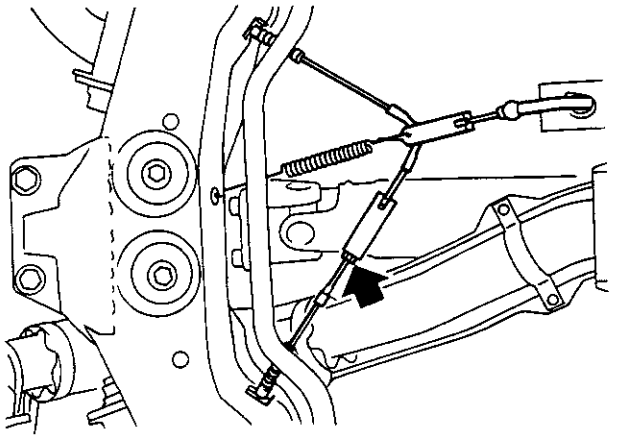
Checking Parking Brake

Pull lever with specified amount of force
Check lever stroke and smooth operation



SMA436

2 Use adjuster to adjust lever stroke



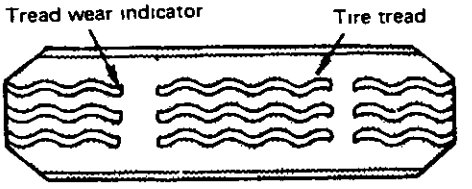
SMA735A

3 Bend parking brake warning lamp switch plate down so that brake warning light comes on when ratchet at parking brake lever is pulled one notch and goes out when fully released

Checking Tire Condition

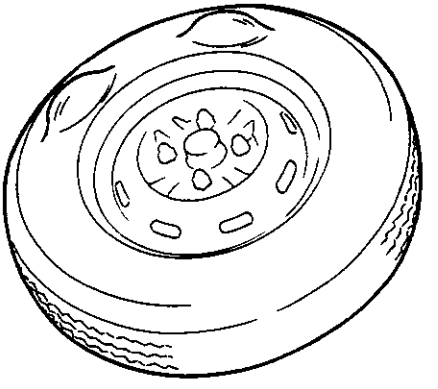
TIRE CONDITION

- When tires wear and tread wear indicators appear, replace them with new ones



WH024

- Check tread and side walls for cracks, holes, separation or damage.



SMA539A

- Tire valves for air leakage

TIRE INFLATION

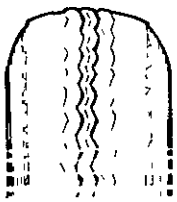
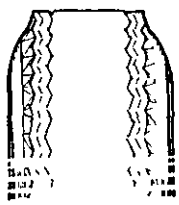
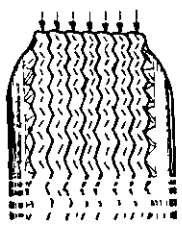
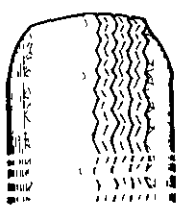
Tire pressure should be measured when tire is cold.

Tire pressure should be set to the specifications on the tire placard located in the vehicle.

Checking Tire Condition (Cont'd)

Abnormal tire wear

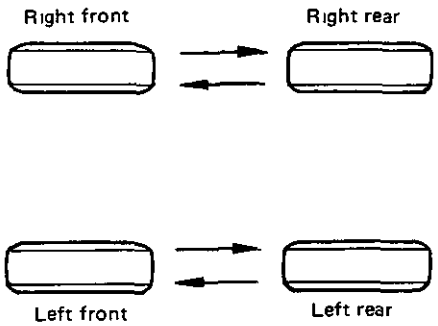
Correct abnormal tire wear according to the chart shown below

Condition	Probable cause	Corrective action
 Shoulder wear	• Underinflation (both sides wear) • Incorrect wheel camber (one side wear) • Hard cornering • Lack of rotation	• Measure and adjust pressure • Repair, or replace axle and suspension parts • Reduce speed • Rotate tires
 Center wear	• Overinflation • Lack of rotation	• Measure and adjust pressure • Rotate tires
Feathered edge  Toe-in or toe out wear	• Incorrect toe	• Adjust toe in
 Uneven wear	• Incorrect camber or caster • Malfunctioning *suspension* • Unbalanced wheel • Out of round brake drum • Other mechanical conditions • Lack of rotation	• Repair, or replace axle and suspension parts • Repair replace or, *if necessary*, reinstall • Balance or replace • Correct or replace • *Correct or replace* • Rotate tires

SMA068

Tire Rotation

Radial Tire



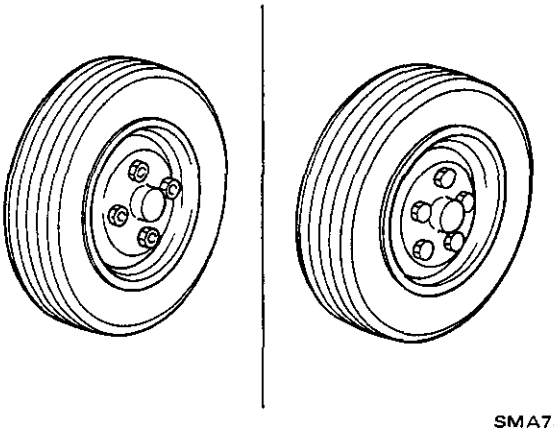
4 WHEELS

SMA736A

Tire Replacement

CAUTION.

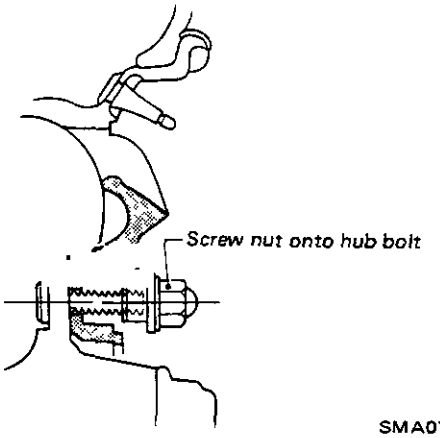
- **Different types of tires, such as bias, bias belted and radial tires, must not be mixed under any circumstances**
- **When replacing a tire, use a tire of the same size**
- Do not use tires and wheels other than those recommended
- Do not mix tires of different brands or tread patterns
- When replacing standard tires with those tires *of an optional recommended size and of* different diameter, the speedometer must be recalibrated
- To install wheel, tighten wheel nuts in criss-cross fashion



SMA737A

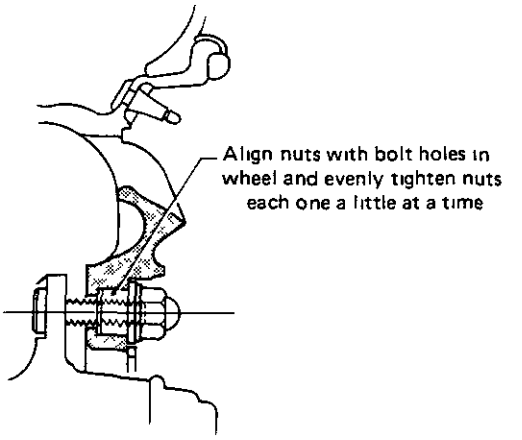
- To install an aluminum wheel, proceed as follows

(1) Snugly tighten all 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

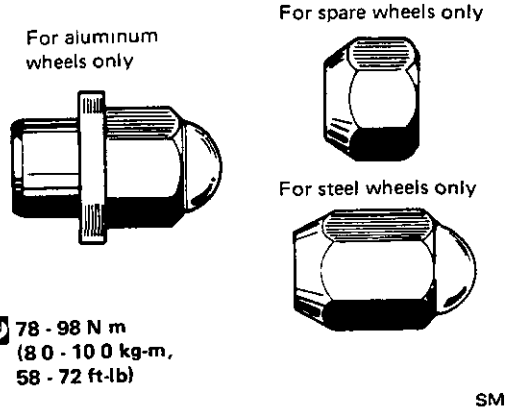
(3) Tighten wheel nuts evenly with a wheel wrench in criss-cross fashion

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).
Replace if necessary.

Wheel Nut

CAUTION

- Three types of wheel nuts are used, one is designed for use with steel wheels, one for use with aluminum wheels, and one for use with spare wheels. Do not mix different types of wheel nuts.
- Be careful not to smear threaded portion of bolt and nut as well as seat of nut with oil or grease.



SMA438

Tire Repair

CAUTION

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

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

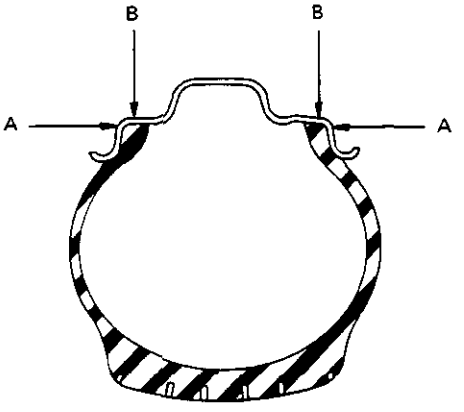
WARNING:

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 40 psi (275 kPa). 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

- Check wheel rim (expecially rim flange and bead seat) for rust, distortion, cracks or other damage
- Examine wheel rim for lateral and radial runout, using dial gauge

Lateral runout (A) and radial runout (B)
Steel wheel .. Less than
1.0 mm (0.039 in)
Aluminum wheel . Less than
0.5 mm (0.020 in)
Difference between right and left lateral runout·
Steel wheel .. Less than
0.5 mm (0.020 in)
Aluminum wheel Less than
0.2 mm (0.008 in)

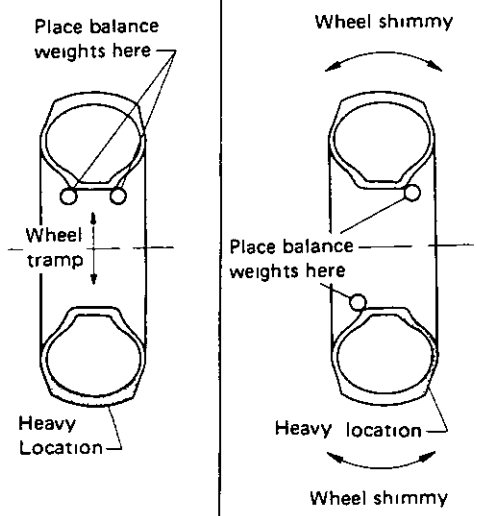


SMA074

- Replace wheel when any of the following problems occurs.
  a Bent, dented or heavily rusted
  b Elongated bolt holes
  c Excessive lateral or radial runout
  d. Air leaks through welds
  e Wheel nuts will not stay tight

Balancing Wheels

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



SMA075

Spare Tire

This model is equipped with the Space Saver Spare tire or the Foldable Spare tire
The spare tire is designed for emergency use only
It is stored in a deflated condition
An inflator (canister or air pump) has been provided to inflate the spare
The spare tire can be used repeatedly for emergency situations However, the canister must be replaced after each inflation
Be sure to obtain the proper size canister for spare tire size

CAUTION:
The spare tire is restricted in driving speed up to a maximum of 80 km/h (50 MPH) for short distances and emergency use only.

INFLATION WITH APPROVED INFLATOR

1 Before changing tire, carefully read the caution and directions affixed on both the inflator and the spare tire
2 Remove the uninflated spare tire and the inflator from rear compartment

WARNING·
Do not inflate at this point.

3 Jack up front or rear of vehicle as required and remove the damaged tire Then mount the uninflated spare tire to the axle (Tighten wheel nuts slightly)

On aluminum wheels equipped vehicles be sure to use spare wheel nuts in the tool bag
The wheel nuts for aluminum wheels must not be used on the spare tire wheel to avoid the wheel coming off the axle and causing personal injury.

4 Using Canister
(1) With tire valve at 6 o'clock position, inflate the spare tire with the canister Place tire canister on the tire inflaction valve and push squarely until gas can be heard entering the tire It takes about 3 minutes

WARNING:
The metal parts of the canister become extremely cold during inflation and can cause frost bite. Therefore, avoid contact with the metal, use a glove or other means of protection.

Spare Tire (Cont'd)

(2) To ensure complete emptying of the canister, hold the canister in position for one minute after sound stops

a If temperature is below −10°C (14°F), the canister must be warmed on the windshield defroster for five to ten minutes to provide tire inflation

b. In cold weather, the tire may not look fully inflated Therefore, drive slowly for the first mile, as the tire temperature rises the pressure will increase.

Using Air Compressor

(1) Remove the valve cap from the spare tire and securely connect the air pump hose in its place

(2) Connect the power cord plug of the air pump to the cigarette lighter socket The spare tire may be inflated to the recommended pressure 28 psi (200 kPa) in about 6 minutes Adjust the tire pressure per the tire placard with tire pressure gauge

If the air pump operation is slow, run the engine while the air pump is operating In this case, remove jack with the spare tire attached to the axle.

WARNING:

- **Do not run the engine in closed space or with the car being jacked up**
- **Do not touch the air pump with the bare hands while it is operating for it may become quite hot.**

(3) *Disconnect the power cord plug from socket* Check the tire for air leakage, and then securely install and tighten the valve cap

5 Lower car and fully tighten wheel nuts

Do not install the wheel cover on the spare tire

DEFLATION

1 Deflate tire by depressing button on tire inflation valve or by removing valve core

WARNING.

To avoid personal injury, do not inhale the gas which is vented while the tire is deflating.

2 Flatten tire The spare tire becomes folded gradually while deflating

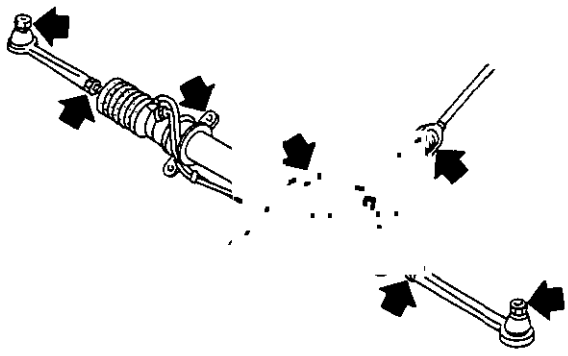
3 Store tire in rear compartment

REPAIR

Only qualified tire experts are authorized to dismount the spare tire from its rim or repair it in any way Improper service can result in serious personal injury

Contact authorized B.F. Goodrich dealers (for *Space Saver Spare tire) or authorized Bridgestone* or DATSUN dealers (for Foldable Spare tire) if service is required.

Checking Steering Gear and Linkage



SMA738A

- Steering gear

(1) Check gear housing and boots for looseness, damage or grease leakage

(2) Check connection with steering column for looseness

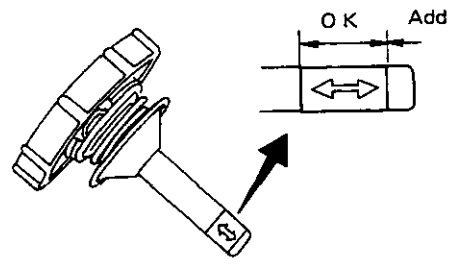
- Steering linkage

(1) Check ball joint, dust cover and other component parts for looseness, wear, damage or grease leakage

(2) Check any missing parts (cotter pins, washer, etc.)

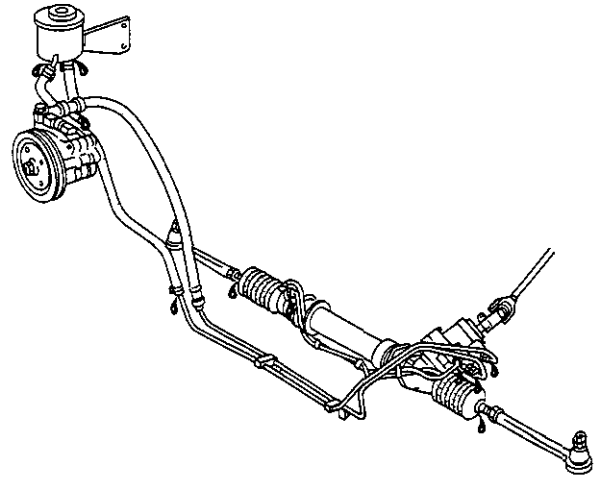
Checking Power Steering System Fluid and Lines

- Check fluid level, when the fluid is cold



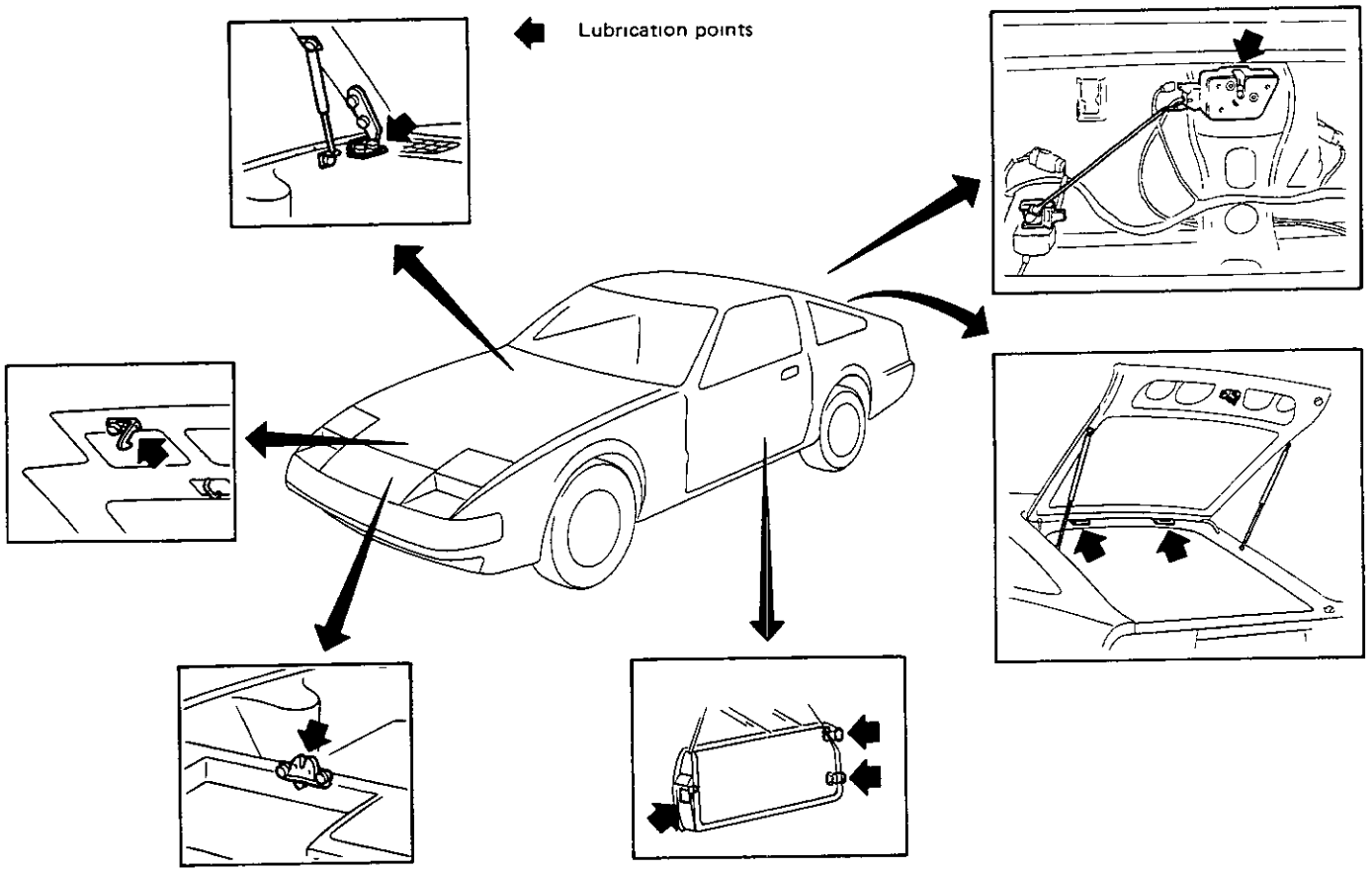
SMA750A

- Check lines for proper attachment, leaks, cracks, damage, loose connections, chafing and deterioration



SMA739A

LUBRICATING LOCKS, HINGES AND HOOD LATCHES



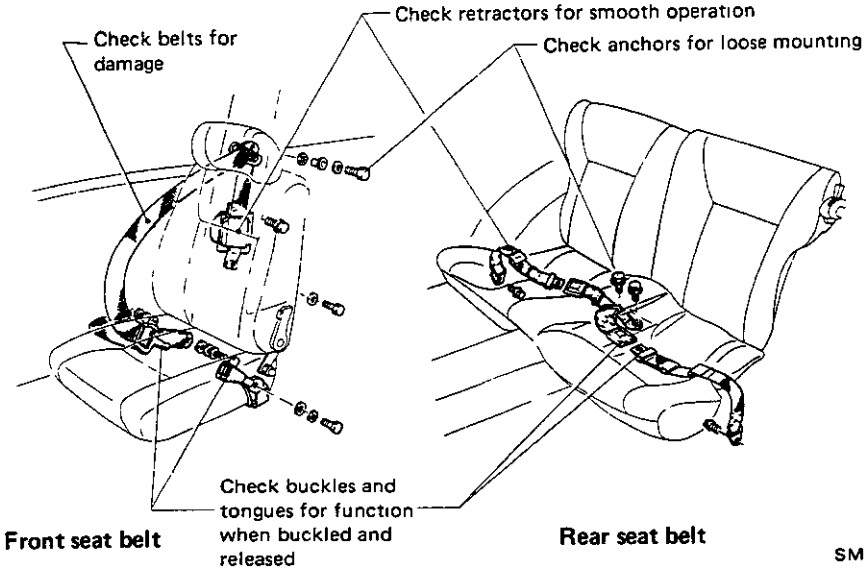
SMA707A

CHECKING SEAT BELTS, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS

CAUTION

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

Anchor bolt
24 - 31 N m
(2 4 - 3 2 kg-m, 17 - 23 ft-lb)



SMA443

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

Engine Maintenance

INSPECTION AND ADJUSTMENT

Drive belt deflection

Unit: mm (in)

		Used belt deflection		Set deflection of new belt
		Limit	Adjusted deflection	
Alternator	VG30E	12 (0.47)	6 - 8 (0.24 - 0.31)	5 - 7 (0.20 - 0.28)
	VG30ET	11 (0.43)	6 - 9 (0.24 - 0.35)	5 - 8 (0.20 - 0.31)
Air conditioner compressor		16 (0.63)	9 - 11 (0.35 - 0.43)	7 - 9 (0.28 - 0.35)
Power steering oil pump		21 (0.83)	13 - 16 (0.51 - 0.63)	10 - 13 (0.39 - 0.51)
Applied pushing force		98 N (10 kg, 22 lb)		

Oil capacity

Unit: ℓ (US qt, Imp qt)

	VG30E & VG30ET
With oil filter	4.0 (4-1/4, 3-1/2)
Without oil filter	3.3 (3-1/2, 2-7/8)

Coolant capacity

Unit: ℓ (US qt, Imp qt)

	Coolant capacity
VG30E	10.5 (11-1/8, 9-1/4)
VG30ET	11.0 (11-5/8, 9-5/8)

Spark plug

	VG30E	VG30ET
Standard type	BCPR6ES-11	BCPR6E-11
Hot type	BCPR5ES-11	BCPR5E-11
Cold type	BCPR7ES-11	BCPR7E-11
Plug gap	1.0 - 1.1 mm (0.039 - 0.043 in)	

Ignition timing and idle speed

Unit: B.T.D.C. degree/rpm

		M/T	A/T (in "D" position)
VG30E	At sea level	20±2°/700±50	20±2°/700±50
	At high altitude condition	20±2°/650±50	20±2°/650±50
VG30ET		20 ± 2°/700 ± 50	20 ± 2°/650 ± 50

TIGHTENING TORQUE

Unit	N·m	kg-m	ft-lb
Oil pan drain plug	29 - 39	3.0 - 4.0	22 - 29
Spark plug	20 - 29	2.0 - 3.0	14 - 22
Fuel hose clamps	1.0 - 1.5	0.10 - 0.15	0.7 - 1.1

Chassis and Body Maintenance

INSPECTION AND ADJUSTMENT

Clutch

Unit: mm (in)

Pedal height "H"	195 - 205 (7.68 - 8.07)
Pedal free play "A"	1 - 3 (0.04 - 0.12)

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)	6.86 - 14.61 (0.7 - 1.49, 1.54 - 3.29)
With used parts	N (kg, lb)	1.67 - 7.75 (0.17 - 0.79, 0.37 - 1.74)
Wheel alignment (Unladen) Camber	degree	−35′ to 55′
Caster	degree	5°50′ - 7°30′
Kingpin inclination	degree	12°15′ - 13°45′
Toe-in	mm (in)	1 - 3 (0.04 - 0.12)
	degree	6′ - 16′
Side lip (Reference data)	mm/m (in/ft)	Out 3 (0.036) - In 3 (0.036)
Standard side rod length "A"	mm (in)	37.5 (1.476)
Front wheel turning angle Toe-out turns Inner wheel/Outer wheel	degree	22°30′/20°
Full turns Inner wheel	degree	35° - 39°
Outer wheel	degree	27° - 31°

* On power steering models, wheel turning force (at circumference of steering wheel) of 98 - 147 N (10 - 15 kg, 22 - 33 lb) with engine at idle

Rear axle and rear suspension

Camber	degree	−1°55′ to −25′
Toe-in	mm (in)	−2 to 2 (−0.08 to 0.08)

Brake

Unit mm (in)

Pad wear limit	CL28V	2.0 (0.079)
	CL14H	2.0 (0.079)
Rotor repair limit	CL28V	20 (0.79)
	CL14H	9.0 (0.354)
Pedal free height "h"		
M/T model		182 - 192 (7.17 - 7.56)
A/T model		184 - 194 (7.24 - 7.64)
Pedal depressed height [Under force of 490 N (50 kg, 110 lb) with engine running]		More than 90 (3.54)
Parking brake [at pulling force 196 N (20 kg, 44 lb)]		
Number of notches		8 - 9

Wheel and tire

Tire inflation

Proper tire pressures are shown on the tire placard affixed to the driver's side center pillar of vehicle.

Spare tire C78-14	Do not use in excess of 80 km/h (50 MPH)
	28 psi (200 kPa)
Tire pressure should be checked when tires are COLD	
Wheel rim lateral and radial runout mm (in)	Less than 1.0 (0.039)*1 0.5 (0.020)*2
Difference between right and left lateral runout mm (in)	Less than 0.5 (0.020)*1 0.2 (0.008)*2
Wheel balance (Maximum allowable unbalance at rim flange) gr (oz)	10 (0.35)
Tire balancing weight gr (oz)	5 - 60 (0.18 - 2.12) Spacing 5 (0.18)

*1 Steel wheel *2 Aluminum wheel

TIGHTENING TORQUE

Unit	N·m	kg-m	ft-lb
Clutch			
Pedal stopper lock nut	9.1 - 11.8	0.93 - 1.2	6.7 - 8.7
Clutch switch lock nut	12 - 15	1.2 - 1.5	9 - 11
Master cylinder push rod lock nut	8 - 12	0.8 - 1.2	5.8 - 8.7
Manual transmission			
Drain and filler plugs			
FS5W71C	25 - 34	2.5 - 3.5	18 - 25
FS5R90A	20 - 34	2.0 - 3.5	14 - 25
Differential carrier			
Drain and filler plugs	39 - 59	4 - 6	29 - 43
Front axle and front suspension			
Side rod lock nut	14 - 17	1.4 - 1.7	10 - 12
Brake			
Air bleeder valve	7 - 9	0.7 - 0.9	5.1 - 6.5
Stop lamp switch lock nut	12 - 15	1.2 - 1.5	9 - 11
Brake booster input rod lock nut	16 - 22	1.6 - 2.2	12 - 16
Wheel and tire			
Wheel nut	78 - 98	8.0 - 10.0	58 - 72

SPECIAL SERVICE TOOL

Tool number (Kent-Moore No)	Tool name
EG11150000 (—)	Ignition coil adapter harness