

MAINTENANCE

SECTION MA

MA

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PRECAUTIONS AND PREPARATION

Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

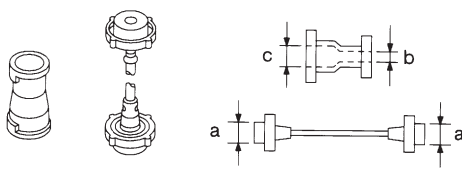
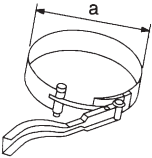
The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER” used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The SRS composition which is available to NISSAN MODEL Y61 is as follows (The composition varies according to the destination.):

Driver air bag module (located in the center of the steering wheel), front passenger air bag module (located on the instrument panel on passenger side), seat belt pre-tensioner, a diagnosis sensor unit, warning lamp, wiring harness and spiral cable.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. Spiral cable and wiring harnesses covered with yellow insulation either just before the harness connectors or for the complete harness are related to the SRS.

Special Service Tools

Tool number Tool name	Description
EG17650301 Radiator cap tester adapter	<div style="text-align: center;">  </div> <p style="text-align: right;">Adapting radiator cap tester to radiator filler neck</p> <p style="text-align: right;">a: 28 (1.10) dia. b: 31.4 (1.236) dia. c: 41.3 (1.626) dia. Unit: mm (in)</p> <p style="text-align: left;">NT564</p>
KV10113600 Fuel filter wrench Oil filter wrench	<div style="text-align: center;">  </div> <p style="text-align: right;">Removing fuel filter Removing oil filter</p> <p style="text-align: right;">a: Max. 100 mm (3.94 in) dia.</p> <p style="text-align: left;">NT553</p>

PRE-DELIVERY INSPECTION ITEMS

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

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

UNDER HOOD — engine off

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

ON INSIDE AND OUTSIDE

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

UNDER BODY

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

ROAD TEST

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

ENGINE OPERATING AND HOT

- Adjust idle mixture and speed (and ignition timing*1)
- Automatic transmission/transaxle fluid level
- Engine idling and stop knob operation (Diesel only)

FINAL INSPECTION

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

*1: Not required on models with a direct ignition system

☒: Not applicable to this model.

GENERAL MAINTENANCE

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 dealers do them.

Item	Reference pages
OUTSIDE THE VEHICLE	
The maintenance items listed here should be performed from time to time, unless otherwise specified.	
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.	—
Windshield wiper blades Check for cracks or wear if they do not wipe properly.	—
Doors and engine hood Check that all doors, the engine hood, the trunk lid and back door operate properly. Also ensure that all latches lock securely. Lubricate hinges, latches, rollers and links if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check for lubrication frequently.	MA-27
Tire rotation Tires should be rotated every 5,000 km (3,000 miles) for 4WD models.	MA-25
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 chimes Make sure that all warning lights and chimes are operating properly.	—
Steering wheel Check for change in the steering conditions, such as excessive free play, hard steering or strange noises. Free play: Less than 35 mm (1.38 in)	—
Seat belts Check that all parts of the seat belt system (e.g. buckles, anchors, adjusters and retractors) operate properly and smoothly, and are installed securely. Check the belt webbing for cuts, fraying, wear or damage.	MA-27
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.	
Windshield washer fluid Check that there is adequate fluid in the tank.	—
Engine coolant level Check the coolant level when the engine is cold.	MA-14, 15
Engine oil level Check the level after parking the vehicle on a level spot and turning off the engine.	MA-13, 14
Brake and clutch fluid level Make sure that the brake and clutch fluid levels are between the "MAX" and "MIN" lines on the reservoir.	MA-20, 23
Battery Check the fluid level in each cell. It should be between the "MAX" and "MIN" lines.	—

PERIODIC MAINTENANCE

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

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

Engine Oil & Minor Service

Annual driving distance below 30,000 km (18,000 miles)

Abbreviations: R = Replace, I = Inspect and correct or replace as necessary.

MAINTENANCE OPERATION											
Perform either at number of kilometers (miles) or months, whichever comes first.	km x 1,000	10	20	30	40	50	60	70	80	90	Reference page
	(Miles x 1,000)	(6)	(12)	(18)	(24)	(30)	(36)	(42)	(48)	(54)	
	Months	6	12	18	24	30	36	42	48	(54)	
Underhood and under vehicle											
Engine oil (Use API CD oil)★		R	R	R	R	R	R	R	R	R	MA-14
Engine oil filter★		R	R	R	R	R	R	R	R	R	MA-14
Drive belts		I	I	I	I	I	I	I	I	I	MA-12

NOTE: Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.

Annual driving distance over 30,000 km (18,000 miles)

Abbreviations: R = Replace, I = Inspect and correct or replace as necessary.

MAINTENANCE OPERATION											
Perform either at number of kilometers (miles) or months, whichever comes first.	km x 1,000	10	20	30	40	50	60	70	80	90	Reference page
	(Miles x 1,000)	(6)	(12)	(18)	(24)	(30)	(36)	(42)	(48)	(54)	
	Months	6	12	18	24	30	36	42	48	(54)	
Underhood and under vehicle											
Engine oil (Use API CD oil)★		R	R	R	R	R	R	R	R	R	MA-14
Engine oil filter★		R	R	R	R	R	R	R	R	R	MA-14
Drive belts		I	I	I	I	I	I	I	I	I	MA-12

NOTE: Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.

PERIODIC MAINTENANCE

Engine and Emission Control Service

Annual driving distance below 30,000 km (18,000 miles)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, A = Adjust. []: At the specified mileage only

MAINTENANCE OPERATION	MAINTENANCE INTERVAL										Reference page
	km x 1,000	10	20	30	40	50	60	70	80	90	
Perform either at number of kilometers (miles) or months, whichever comes first.	(Miles x 1,000)	(6)	(12)	(18)	(24)	(30)	(36)	(42)	(48)	(54)	
	Months	6	12	18	24	30	36	42	48	54	

Underhood and under vehicle

Engine anti-freeze coolant (Ethylene glycol base, LLC)	See NOTE (2)										R	MA-14
Cooling system			I		I		I					MA-16
Fuel lines					I				I			MA-17
Fuel filter						R					R	MA-16
Air cleaner filter (Viscous paper type)★						R					R	MA-18
Intake & exhaust valve clearance			A		A		A		A			*1
Injection nozzles	See NOTE (3)											MA-18
Timing belts for camshaft and injection pump											[R]	*2

NOTE: (1) Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.

(2) First replace at 80,000 km (48,000 miles) or 48 months, then every 60,000 km (36,000 miles) or 36 months.

(3) If engine power decreases, black smoke is emitted or engine noise increases, check and, if necessary, adjust the fuel injection nozzle’s starting pressure and the fuel spray pattern.

*1: “VALVE CLEARANCE”, RD in EM section

*2: “TIMING BELT” RD in EM section

Annual driving distance over 30,000 km (18,000 miles)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, A = Adjust.

MAINTENANCE OPERATION	MAINTENANCE INTERVAL										Reference page
	km x 1,000	10	20	30	40	50	60	70	80	90	
Perform either at number of kilometers (miles) or months, whichever comes first.	(Miles x 1,000)	(6)	(12)	(18)	(24)	(30)	(36)	(42)	(48)	(54)	

Underhood and under vehicle

Engine anti-freeze coolant (Ethylene glycol base, LLC)	See NOTE (2)										R	MA-14
Cooling system				I			I					MA-16
Fuel lines								I				MA-17
Fuel filter									R			MA-16
Air cleaner filter (Viscous paper type)★											R	MA-18
Intake & exhaust valve clearance				A			A			A		*1
Injection nozzles	See NOTE (3)											MA-18
Timing belts for camshaft and injection pump											R	*2

NOTE: (1) Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.

(2) First replace at 90,000 km (54,000 miles), then every 60,000 km (36,000 miles).

(3) If engine power decreases, black smoke is emitted or engine noise increases, check and, if necessary, adjust the fuel injection nozzle’s starting pressure and the fuel spray pattern.

*1: “VALVE CLEARANCE”, RD in EM section

*2: “TIMING BELT”, RD in EM section

PERIODIC MAINTENANCE

Chassis and Body Services

Annual driving distance below 30,000 km (18,000 miles)

Abbreviations: R = Replace, I = Inspect, and correct or replace as necessary, L = Lubricate, T = Tighten.

[]: At the specified mileage only

MAINTENANCE OPERATION Perform either at number of kilometers (miles) or months, whichever comes first.	MAINTENANCE INTERVAL										Reference page
	km x 1,000	10	20	30	40	50	60	70	80	90	
	(Miles x 1,000)	(6)	(12)	(18)	(24)	(30)	(36)	(42)	(48)	(54)	
	Months	6	12	18	24	30	36	42	48	54	
CHASSIS AND BODY	Underhood and under vehicle										
Brake & clutch fluid (For level & leaks)★		I		I		I		I		I	MA-23, 20
Brake fluid★					R				R		MA-24
Brake booster vacuum hoses, connections & check valve				I				I			MA-24
Power steering fluid & lines (For level & leaks)		I		I		I		I			MA-26
Brake & clutch systems		I		I		I		I			MA-24, 20
Manual transmission oil (For leaks)		I		I		I		I			MA-20
Manual transmission oil								[R]			MA-20
Transfer fluid		I		I		R		I			MA-21
Limited slip differential (LSD) gear oil (For level & leaks)★*1		I		I		R		I			MA-22
Steering gear & linkage, axle & suspension parts, propeller shaft & exhaust system★		I		I		I		I			MA-26, 20 *2
Greasing points of propeller shaft		L		L		L		L			MA-21
Drive shafts & steering damper★		I		I		I		I			*3
Body mounting bolts & nuts		T		T		T		T			*4
	Outside and Inside										
Wheel alignment (If necessary, rotate & balance wheels)		I		I		I		I			MA-25, *5
Brake pads, discs & other brake components★		I		I		I		I			MA-24
Front wheel bearing grease		I		R		I		R			MA-22
Axle joint in knuckle flange				L				L			MA-23
Free running hub grease		I		I		I		I			MA-23
Headlamp aiming		I		I		I		I			*6
Foot brake, parking brake & clutch (For free play, stroke & operation)		I		I		I		I			*7
Ventilation air filter				R				R		R	*8
Body corrosion						Annually					MA-28
Air bag system						See NOTE (1)					*9

NOTE: (1) Inspect after 10 years, then every 2 years.

(2) Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".

*1: Including differential gear with differential lock

*2: "Front Axle and Front Suspension Parts" in FA section, "Rear Axle and Rear Suspension Parts" in RA section

*3: "FRONT AXLE — Drive Shaft" in FA section

*4: "CAB BODY" in BT section

*5: "Front Wheel Alignment" in FA section

*6: "Aiming Adjustment" in EL section

*7: "Brake Pedal and Bracket" in BR section, "Adjusting Clutch Pedal" in CL section

*8: "Ventilation air filter" in HA section

*9: "Maintenance Items" in RS section

PERIODIC MAINTENANCE

Chassis and Body Services (Cont'd)

Annual driving distance over 30,000 km (18,000 miles)

Abbreviations: R = Replace. I = Inspect, and correct or replace as necessary, L = Lubricate, T = Tighten.

MAINTENANCE OPERATION	MAINTENANCE INTERVAL										Reference page
	km x 1,000	10	20	30	40	50	60	70	80	90	
	(Miles x 1,000)	(6)	(12)	(18)	(24)	(30)	(36)	(42)	(48)	(54)	
CHASSIS AND BODY											
Underhood and under vehicle											
Brake & clutch fluid (For level & leaks)★				I			I			I	MA-23, 20
Brake fluid★							R				MA-24
Brake booster vacuum hoses, connections & check valve							I				MA-24
Power steering fluid & lines (For level & leaks)				I			I			I	MA-26
Brake & clutch systems				I			I			I	MA-24, 20
Manual transmission oil (For leaks)				I			I			I	MA-20
Manual transmission oil										R	MA-20
Transfer fluid				I			R			I	MA-21
Limited slip differential (LSD) gear oil (For level & leaks)★*1				I			R			I	MA-22
Steering gear & linkage, axle & suspension parts, propeller shaft & exhaust system★				I			I			I	MA-26, 20 *2
Geasing points of propeller shaft				L			L			L	MA-21
Drive shafts & steering damper★				I			I			I	*3
Body mounting bolts & nuts				T			T			T	*4
Outside and Inside											
Wheel alignment (If necessary, rotate & balance wheels)				I			I			I	MA-25, *5
Brake pads, discs & other brake components★				I			I			I	MA-24
Front wheel bearing grease				I			R			I	MA-22
Axle joint in knuckle flange							L				MA-23
Free running hub grease				I			I			I	MA-23
Headlamp aiming				I			I			I	*6
Foot brake, parking brake & clutch (For free play, stroke & operation)				I			I			I	*7
Ventilation air filter						R				R	*8
Body corrosion							Annually				MA-28
Air bag system							See NOTE (1)				*9

NOTE: (1) Inspect after 10 years, then every 2 years.

(2) Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".

*1: Including differential gear with differential lock

*2: "Front Axle and Front Suspension Parts" in FA section, "Rear Axle and Rear Suspension Parts" in RA section

*3: "FRONT AXLE — Drive Shaft" in FA section

*4: "CAB BODY" in BT section

*5: "Front Wheel Alignment" in FA section

*6: "Aiming Adjustment" in EL section

*7: "Brake Pedal and Bracket" in BR section, "Adjusting Clutch Pedal" in CL section

*8: "Ventilation air filter" in HA section

*9: "Maintenance Items" in RS section

PERIODIC MAINTENANCE

Maintenance Under Severe Driving Conditions

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

Severe driving conditions

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

Maintenance operation: Check = Check and correct or replace as necessary.

Driving condition	Maintenance item	Maintenance operation	Maintenance interval		Reference page
			Annual driving distance below 30,000 km (18,000 miles)	Annual driving distance over 30,000 km (18,000 miles)	
A B C D	Engine oil & oil filter	Replace	Every 3 months or 5,000 km (3,000 miles)	Every 5,000 km (3,000 miles)	MA-13, 14
A	Air cleaner filter Viscous paper type	Replace	Every 30,000 km (18,000 miles) or 18 months	Every 30,000 km (18,000 miles)	MA-18
A E	Fuel filter	Replace	Every 20,000 km (12,000 miles) or 12 months	Every 30,000 km (18,000 miles)	MA-16
. F	Brake fluid	Replace			MA-24
. . . C H	Limited slip differential (LSD) gear oil*3	Replace	Every 30,000 km (18,000 miles) or 18 months	Every 30,000 km (18,000 miles)	MA-22
. G H	Steering gear & linkage, axle & suspension parts & propeller shaft & exhaust system	Check			MA-26, 21, 23 *1
. G H J	Greasing points of propeller shafts	Lubricate	Every 10,000 km (6,000 miles) or 6 months	Every 15,000 km (9,000 miles)	MA-21
. . . C H	Drive shafts & steering damper	Check			*1
A . . C G H I	Brake pads, discs & other brake components	Check			MA-24
. J	Front wheel bearing grease & free-running hub grease	Check			*2, MA-23

*1: "Front Axle and Front Suspension Parts" in FA section, "Rear Axle and Rear Suspension" in RA section

*2: "Front Wheel Alignment" in FA section

*3: Including differential gear with differential lock

Maintenance for off-road driving

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

- ▲ Brake pads and discs
- ▲ Brake lining and drums
- ▲ Brake lines and hoses
- ▲ Wheel bearing grease and free-running hub grease
- ▲ Differential, transmission and transfer oil
- ▲ Steering linkage
- ▲ Propeller shafts and front drive shafts
- ▲ Air cleaner filter
- ▲ Clutch housing (Check water entry. Refer to MA-21.)

RECOMMENDED FLUIDS AND LUBRICANTS

Fluids and Lubricants

	Capacity (Approximate)		Recommended Fluids/Lubricants	
	Liter	Imp measure		
Engine oil (Refill)				
With oil filter	6.4	5-5/8 qt		
Without oil filter	5.8	5-1/8 qt		
Cooling system (with reservoir tank)				
With front heater	RHD	11.8	Anti-freeze coolant (Ethylene glycol base)	
	LHD	11.6		
With rear heater	RHD	12.9		
	LHD	12.7		
Manual transmission	FS5R30A	5.1	9 pt	API GL-4, Viscosity SAE 75W-90 only
Differential carrier gear oil (without limited slip differential)	—	—	—	API GL-5*1
Differential carrier gear oil (with limited slip differential)	—	—	—	Gear Oil Hypoid LSD (Part No.: KLD31-14002) or equivalent*2
Transfer fluid				
TX12A	1.9	1-5/8 qt		Genuine Nissan ATF or equivalent*3 or API GL-4*1
Power steering fluid	Refill to the proper oil level according to the instructions in the "Do-it-yourself operations" section			Type DEXRON™III or equivalent
Brake and clutch fluid				DOT3 or DOT4*5 (US FMVSS No. 116)
Multi-purpose grease	—	—	—	NLGI No. 2 (Lithium soap base)
Propeller shaft grease	—	—	—	NLGI No. 2 (Molybdenum disulphide lithium soap base)
Air conditioning system refrigerant	—	—	—	HFC-134a (R-134a)
Air conditioning system lubricants	—	—	—	Nissan A/C System Oil Type S or exact equivalent

*1: For further details, see "SAE viscosity number".

*2: API GL-5, SAE 140 and 10% volume of LSD Friction Modifier (Part No.: 38469-C6000) is an equivalent.

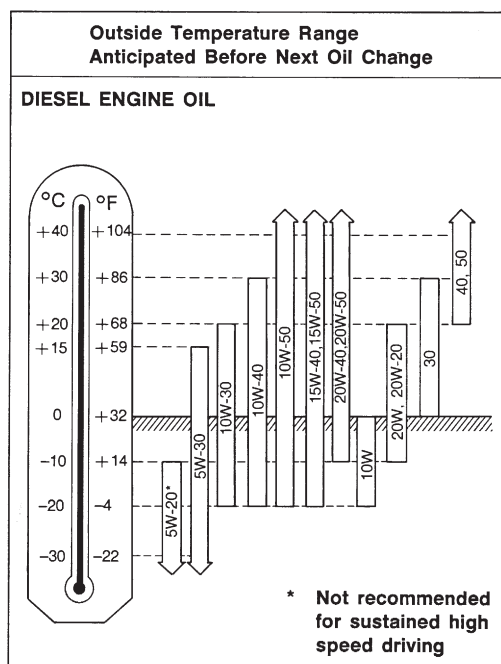
*3: For more information regarding suitable fluids, contact a Nissan dealer for correct brands of DEXRON™III ATF.

*4: If CCMC oils are not available, API CD may be used. However, CCMC oils are strongly recommended if at all possible.

*5: Never mix different types of fluids (DOT3 and DOT4).

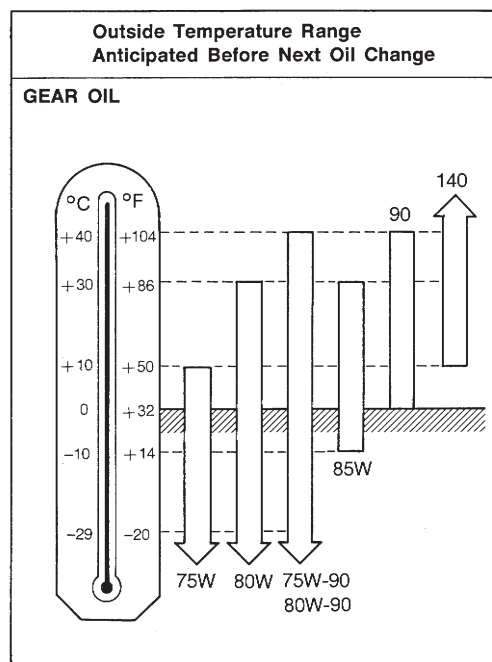
RECOMMENDED FLUIDS AND LUBRICANTS

SAE Viscosity Number



T10006

- For cold areas:
10W-30 is preferable for ambient temperature above -20°C (-4°F).
On turbocharger models, 5W-20 is not recommended. Use 5W-30 only below 0°C (32°F).
- For hot and warm areas:
20W-40 and 20W-50 are suitable.



T10003

- For cold and warm areas:
75W-90 for transfer and 80W-90 for differential are preferable.
- For hot areas:
90 is suitable for ambient temperatures below 40°C (104°F).

RECOMMENDED FLUIDS AND LUBRICANTS

Anti-freeze Coolant Mixture Ratio

The engine cooling system is filled at the factory with a high-quality, year-round, anti-freeze coolant solution. The anti-freeze solution contains rust and corrosion inhibitors. Therefore, additional cooling system additives are not necessary.

CAUTION:

When adding or replacing coolant, be sure to use only an ethylene glycol anti-freeze with the proper mixture ratio. See the following examples:

Outside temperature down to		Anti- freeze	Soft water
°C	°F		
-15	5	30%	70%
-35	-30	50%	50%

The use of other types of coolant solutions may damage your cooling system.

ENGINE MAINTENANCE


Checking Tightening Torque

Checking should be performed while engine is cold.


MANIFOLD BOLTS AND NUTS

Intake and exhaust manifolds:


M10

: 25 - 29 N·m (2.6 - 3.0 kg-m, 19 - 22 ft-lb)

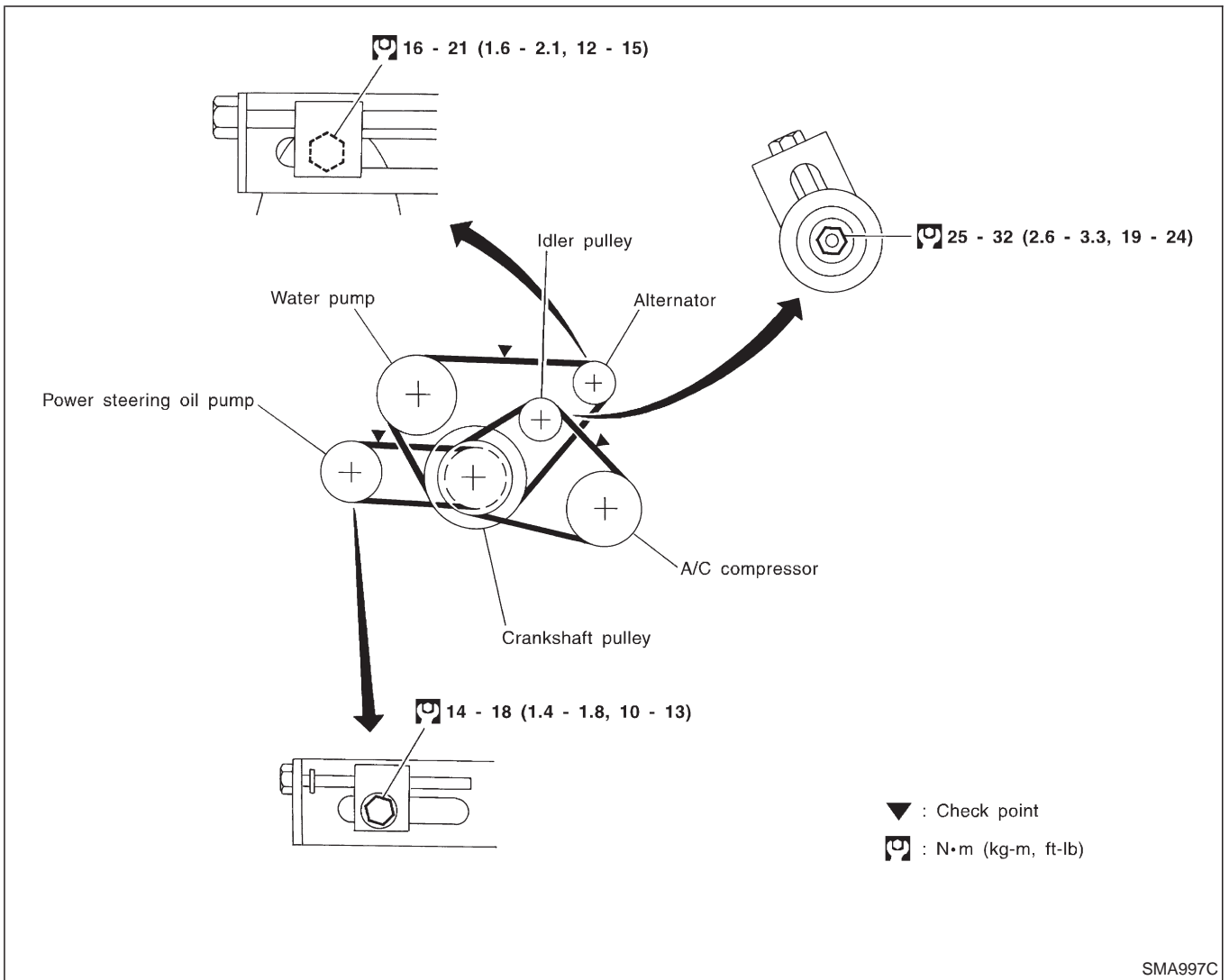
M8

: 16 - 20 N·m (1.6 - 2.0 kg-m, 12 - 14 ft-lb)

Nut

: 16 - 20 N·m (1.6 - 2.0 kg-m, 12 - 14 ft-lb)

Checking Drive Belt



ENGINE MAINTENANCE

Checking Drive Belt (Cont'd)

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

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

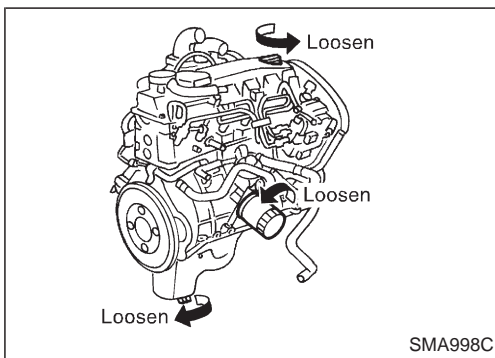
2. Check drive belt deflection by pushing on the belt midway between pulleys.

Adjust if belt deflections exceed the limit.

Unit: mm (in)

	Used belt deflection		Deflection of new belt
	Limit	Deflection after adjustment	
Alternator	17 (0.67)	12 - 14 (0.47 - 0.55)	9 - 11 (0.35 - 0.43)
Air conditioner compressor	11 (0.43)	7 - 9 (0.28 - 0.35)	6 - 8 (0.24 - 0.31)
Power steering oil pump	14 (0.55)	10 - 12 (0.39 - 0.47)	9 - 11 (0.35 - 0.43)
Applied pushing force	98 N (10 kg, 22 lb)		

Check drive belt deflections when engine is cold.



Changing Engine Oil

WARNING:

- Be careful not to burn yourself, as engine oil is hot.
 - Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.
1. Warm up engine, and check for oil leakage from engine components.
 2. Remove oil filler cap and drain plug.
 3. Drain oil and fill with new engine oil.

Oil grade: CCMC PD1 or PD2

Viscosity:

See "RECOMMENDED FLUIDS AND LUBRICANTS", MA-9.

Refill oil capacity (approximate):

Without oil filter change

6.4 ℓ (5-5/8 Imp qt)

With oil filter change

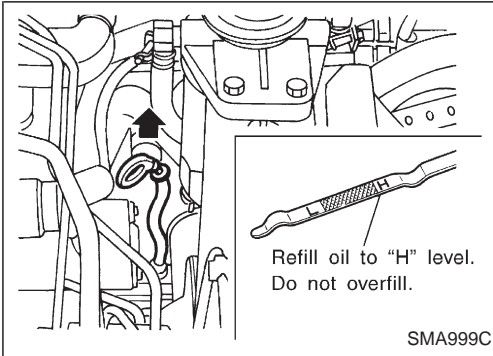
5.8 ℓ (5-1/8 Imp qt)

CAUTION:

- Be sure to clean and install oil pan drain plug with washer.
Drain plug:
 ⚙️: 29 - 39 N·m (3.0 - 4.0 kg·m, 22 - 29 ft·lb)
- The refill capacity changes depending on the oil temperature and drain time; use these valves as a reference and be certain to check with the dipstick when changing the oil.

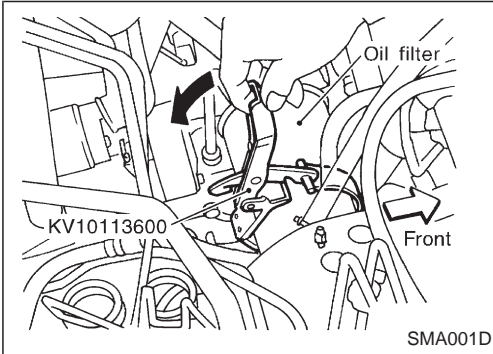
ENGINE MAINTENANCE

Changing Engine Oil (Cont'd)



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

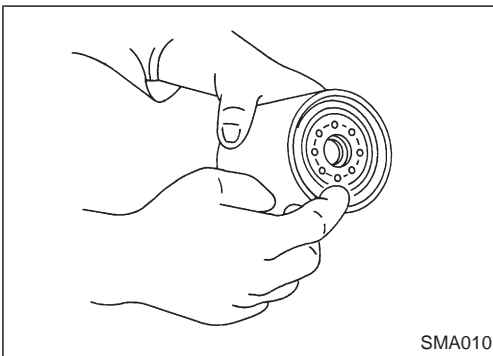
Changing Engine Oil Filter



1. Remove oil filter with Tool.

WARNING:

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



2. Clean oil filter mounting surface on cylinder block. Coat rubber seal of new oil filter with engine oil.
3. Screw in the oil filter until a slight resistance is felt, then tighten an additional 2/3 of a turn.
4. Add engine oil.

Refer to Changing Engine Oil.

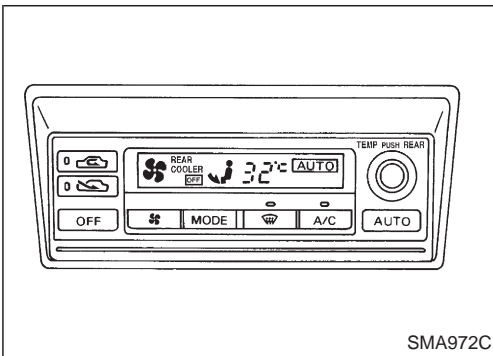
- Clean excess oil from engine.

Changing Engine Coolant

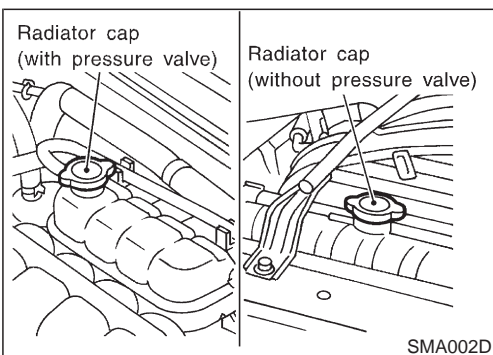
WARNING:

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

—DRAINING ENGINE COOLANT—



1. Move heater TEMP control knob all the way to HOT.
2. Open radiator drain plug at the bottom of radiator.

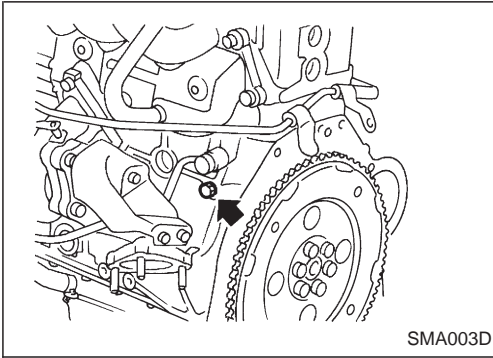


3. Remove radiator filler cap. Remove reservoir tank, drain coolant, then clean reservoir tank. Install it temporarily.

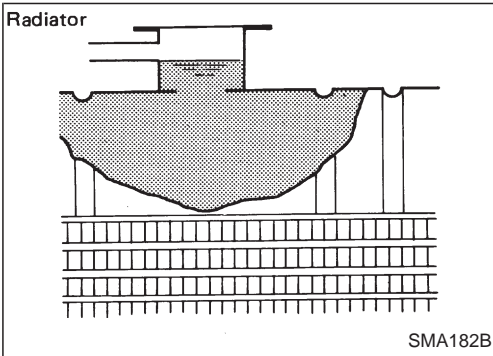
- Be careful not to allow coolant to contact drive belts.

ENGINE MAINTENANCE

Changing Engine Coolant (Cont'd)



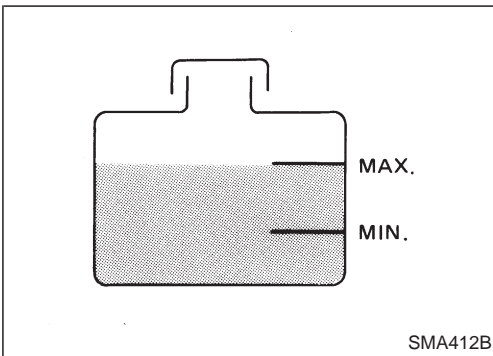
4. Remove cylinder block drain plug located at left rear of cylinder block.
5. Drain coolant and install reservoir tank, cylinder block drain plug and radiator drain plug.
6. Fill radiator with water and warm up engine.
7. Stop engine and wait until it cools down.
8. Repeat step 2 through step 7 two or three times.
9. Drain water.



—REFILLING ENGINE COOLANT—

10. Install reservoir tank, radiator drain plug, and cylinder block drain plugs.
- **Apply sealant to the thread of cylinder block drain plug.**
Cylinder block drain plug:
⚙️: 34 - 44 N·m (3.5 - 4.5 kg-m, 25 - 33 ft-lb)
11. Fill radiator and reservoir tank with coolant up to the MAX level and install radiator cap.

For coolant mixture ratio, refer to MA-11.



Coolant capacity (With reservoir tank): ℓ (Imp qt)

RHD models

Without rear heater 11.8 (10-3/8)

With rear heater 12.9 (11-3/8)

LHD models

Without rear heater 11.6 (10-1/4)

With rear heater 12.7 (11-1/8)

Reservoir tank capacity (for MAX level):

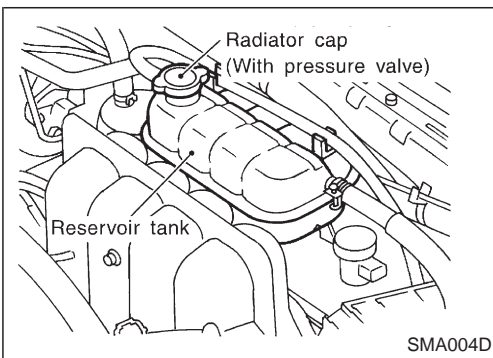
1.2 ℓ (1-1/8 Imp qt)

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

12. Warm up engine to normal operating temperature.
13. Run engine at 2,000 rpm for 10 seconds and return to idle speed.
- Repeat 2 or 3 times.

Watch coolant temperature gauge so as not to overheat the engine.

14. Stop engine and cool it down.
- Cool down using a fan to reduce the time.
15. Remove the radiator filler cap and check coolant level.
- If necessary, refill radiator up to filler neck with coolant.
16. Refill reservoir tank to Max line with coolant.
17. Repeat step 12 through step 16 two or more times.
18. Warm up engine, and check for sound of coolant flow while running engine from idle up to 2,000 rpm with heater temperature control set at several positions between COOL and HOT.
- Sound may be noticeable at heater water cock.
19. If sound is heard, bleed air from cooling system by repeating steps 12 through 16 until coolant level no longer drops.
- **Clean excess coolant from engine.**



ENGINE MAINTENANCE

Checking Cooling System

CHECKING HOSES AND CLAMPS

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

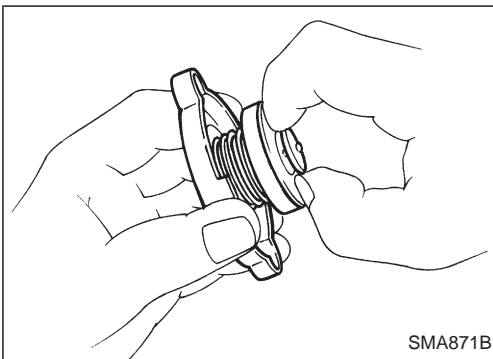
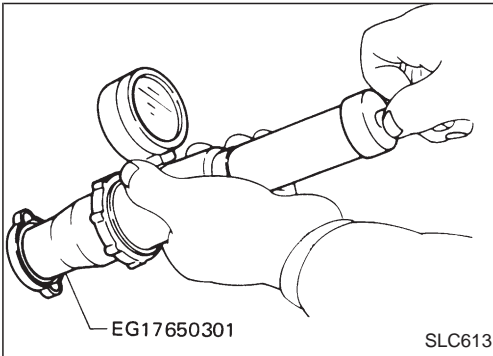
CHECKING RADIATOR CAP

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

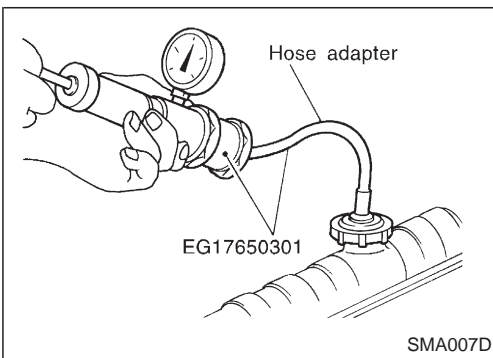
Radiator cap relief pressure:

78 - 98 kPa

(0.78 - 0.98 bar, 0.8 - 1.0 kg/cm², 11 - 14 psi)



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



CHECKING COOLING SYSTEM FOR LEAKS

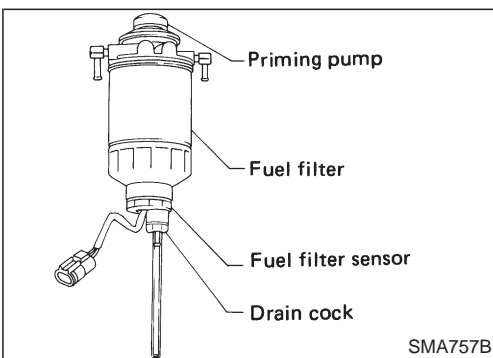
Apply pressure to the cooling system with cap tester to check for leakage.

Testing pressure:

98 kPa (0.98 bar, 1.0 kg/cm², 14 psi)

CAUTION:

Use of higher pressure than the specified value may cause damage to radiator.



Checking and Replacing Fuel Filter and Draining Water

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

CHECKING FUEL FILTER

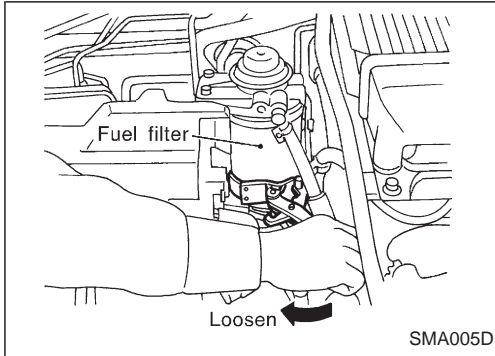
Check fuel filter for fuel leakage, damage and other abnormal signs.

REPLACING FUEL FILTER

1. Disconnect harness connector and drain fuel.

ENGINE MAINTENANCE

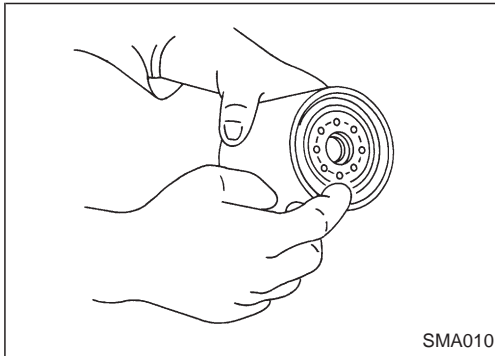
Checking and Replacing Fuel Filter and Draining Water (Cont'd)



2. Remove fuel filter using band-type filter wrench.
Remove fuel filter and fuel filter sensor.

CAUTION:

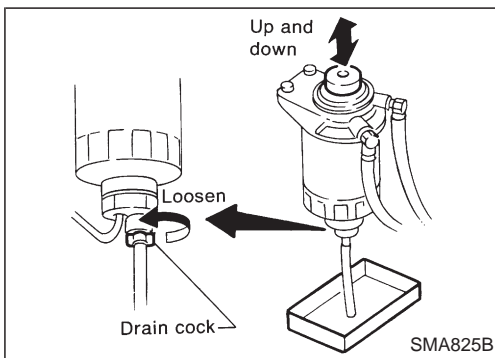
Remove fuel filter without spilling fuel. If spilt, wipe off immediately. Be specially careful not to spill fuel on engine mount insulator.



3. Wipe clean fuel filter mounting surface on fuel filter bracket and smear a little fuel on rubber seal of fuel filter.
4. Screw fuel filter on until a slight resistance is felt, then tighten an additional more than 2/3 of a turn.
5. Install fuel filter sensor to new fuel filter.
6. Bleed air from fuel line.

Refer to Bleeding Fuel System in EC section.

7. Start engine and check for leaks.



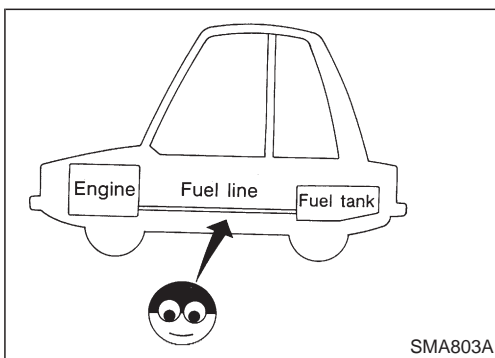
DRAINING WATER

1. Drain water as follows.
Loosen drain cock and drain water.

Loosening drain cock 4 to 5 turns causes water to start draining. Do not remove drain cock by loosening it excessively.

If water does not drain properly, move the priming pump up and down.

2. Bleed air.



Checking Fuel Lines

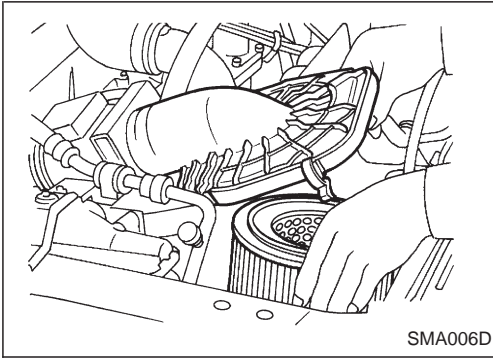
Check fuel lines and tank for proper attachment, leaks, cracks, damage, loose connections, chafing and deterioration.

CAUTION:

Keep clean parts with compressed air when assembling.

ENGINE MAINTENANCE

Cleaning and Replacing Air Cleaner Filter



VISCOUS PAPER TYPE

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

Checking Injection Nozzle

WARNING:

When using nozzle tester, be careful not to allow diesel fuel sprayed from nozzle to come into contact with your hand or body, and make sure that your eyes are properly protected.

1. Install nozzle to injection nozzle tester and bleed air from flare nut.
2. Check initial injection pressure by pumping tester handle one full stroke per second.

Initial injection pressure:

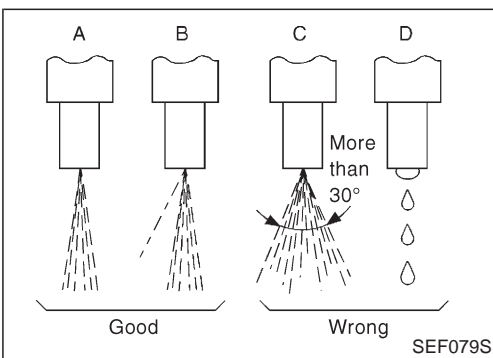
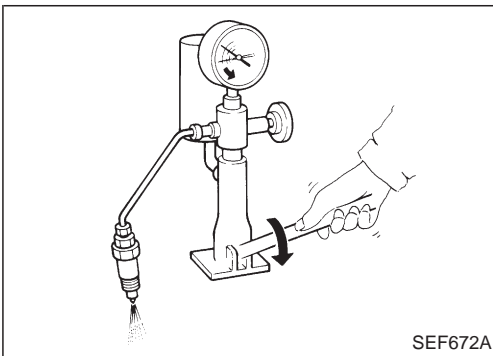
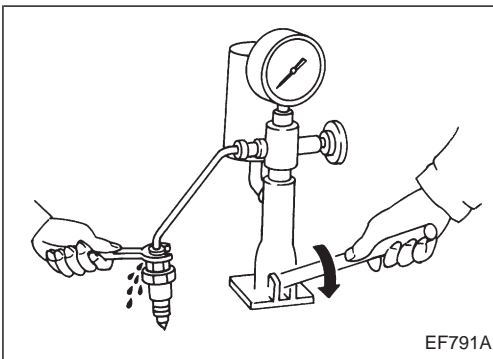
Used nozzle

More than 14,220 kPa
(142.2 bar, 145 kg/cm², 2,062 psi)

New nozzle

14,711 - 15,495 kPa
(147.1 - 155.0 bar, 150 - 158 kg/cm²,
2,133 - 2,247 psi)

- Always check initial injection pressure before installing new nozzle.



3. Check spray pattern by pumping tester handle one full stroke per second.
 - a. If main spray angle is within 30 degrees as shown, injection nozzle is good.
 - b. It is still normal even if a thin stream of spray deviates from main spray (pattern B).
4. If initial injection pressure or injection nozzle is not normal, adjust or clean injection nozzle.
5. Test again. If it is not corrected, replace nozzle.


Refer to EC section for injection pressure adjustment, cleaning and replacement.

ENGINE MAINTENANCE


Checking Injection Nozzle (Cont'd)

6. Install all injection nozzles with Tool and securely connect fuel spill tube and delivery tubes.
7. Bleed air from fuel system and check for fuel leakage with engine running.


Injection nozzle to cylinder head:

: 59 - 69 N·m (6.0 - 7.0 kg-m, 43 - 51 ft-lb)

Spill tube nut:

: 39 - 49 N·m (4.0 - 5.0 kg-m, 29 - 36 ft-lb)

Injection tube:

: 20 - 25 N·m (2.2 - 2.5 kg-m, 16 - 18 ft-lb)

Checking Idle Speed

Inspection should be carried out with gears in "Neutral" and with air conditioner and other electrical loads off.

1. Warm up engine until engine coolant temperature indicator points to the middle of gauge.
2. Attach a diesel tachotester's pick-up to No. 1 fuel injection tube.
3. Race engine two or three times and check idle speed.

Idle speed:

Unit: rpm

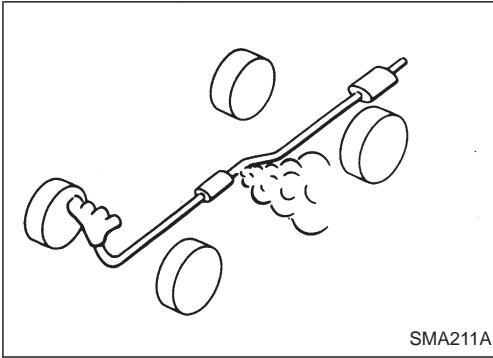
MT

750⁺⁵⁰₀

Timing Belt Replacement

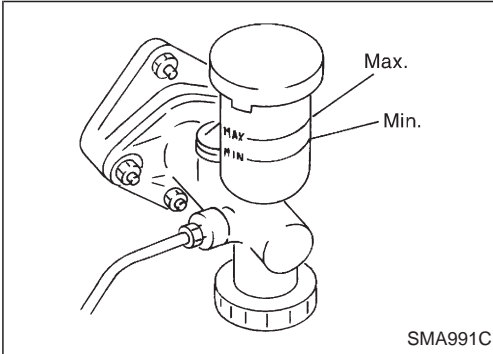
Refer to EM section.

CHASSIS AND BODY MAINTENANCE



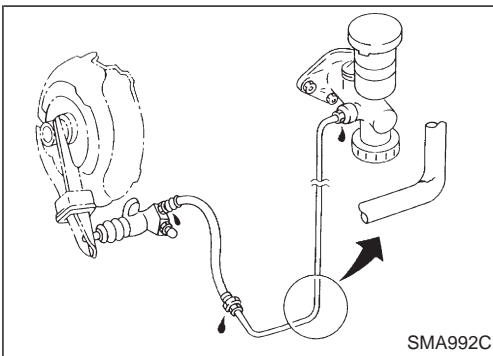
Checking Exhaust System

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



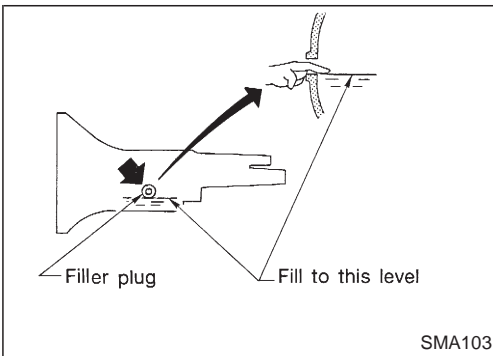
Checking Clutch Fluid Level and Leaks

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



Checking Clutch System

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




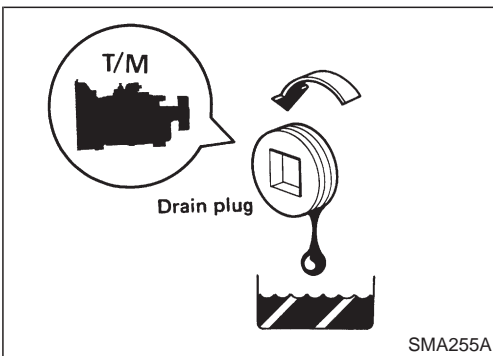
Checking M/T Oil Level and Leaks

Never start engine while checking oil level.

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

Filler plug:

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



Changing M/T Oil

Oil grade:

API GL-4. Refer to "RECOMMENDED FLUIDS AND LUBRICANTS", MA-9.


Oil capacity:

FS5R50B 3.8 liters (6-3/4 Imp pt)

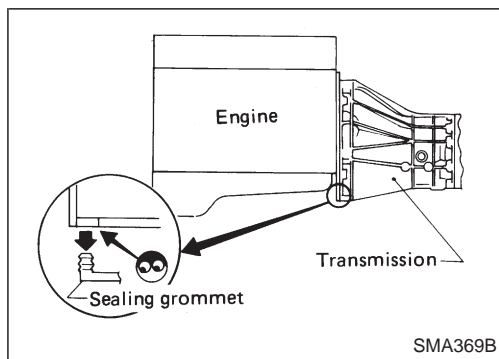
Refill 2.9 liters (5-1/8 Imp pt)

FS5R30A 5.1 liters (9 Imp pt)

Drain plug:

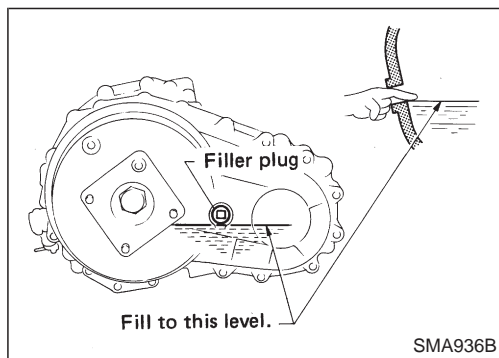
: 25 - 34 N·m (2.5 - 3.5 kg·m, 18 - 25 ft·lb)

CHASSIS AND BODY MAINTENANCE



Checking Water Entry

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



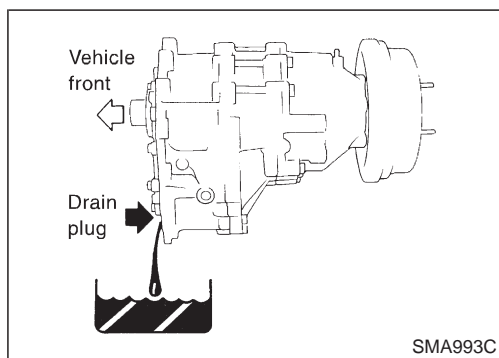
Checking Transfer Fluid Level

Never start engine while checking fluid level.

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

Filler plug:

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



Changing Transfer Fluid

Fluid grade:

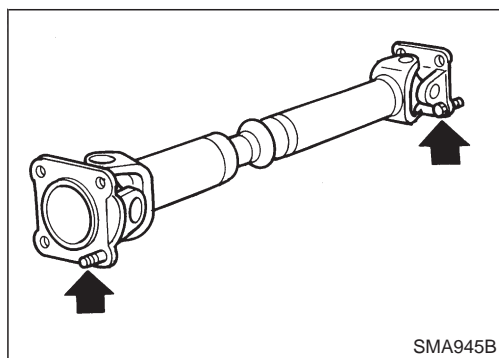
Genuine Nissan ATF or equivalent or API GL-4.
Refer to "RECOMMENDED FLUIDS AND LUBRICANTS", MA-9.

Fluid capacity:

1.9 liters (1-5/8 Imp qt)

Drain plug:

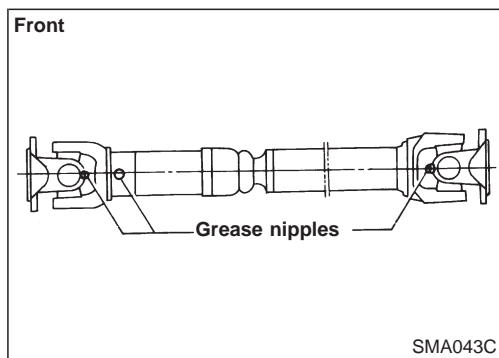
: 25 - 34 N·m (2.5 - 3.5 kg-m, 18 - 25 ft-lb)



Checking Propeller Shaft

Check propeller shaft for damage, looseness or grease leakage.

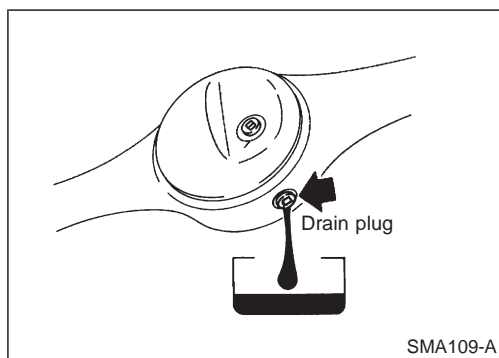
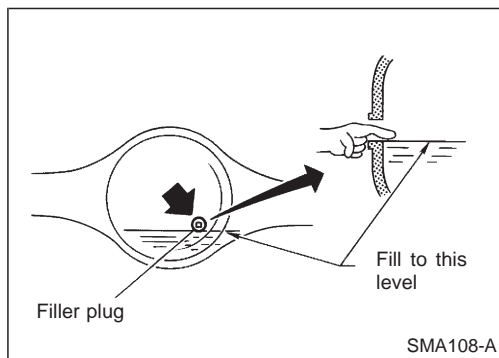
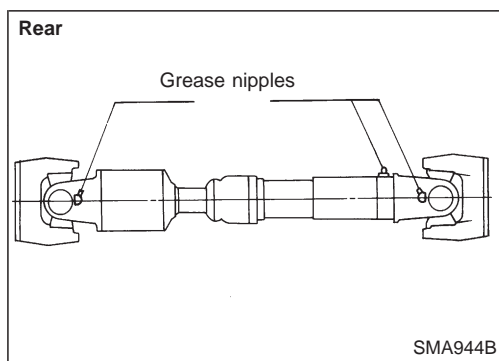
Tightening torque: Refer to PD section.



Greasing Nipples of Propeller Shafts

Apply multi-purpose grease to nipples of propeller shafts.

CHASSIS AND BODY MAINTENANCE



Checking Differential Gear Oil

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

Filler plug:

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

Changing Differential Gear Oil

Oil capacity:

Front

5.4 liters (9-1/2 Imp pt)

Rear

H233B (Without diff. lock)

2.4 liters (4-1/4 Imp pt)

H233B (With diff. lock)

3.0 liters (5-1/4 Imp pt)

H260 (Without diff. lock)

4.7 liters (8-1/4 Imp pt)

H260 (With diff. lock)

3.7 liters (6-1/2 Imp pt)

Drain plug:

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

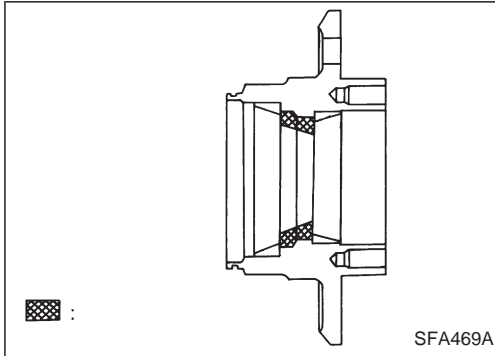
Limited-slip differential gear

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

Checking Front Wheel Bearing Grease

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

CHASSIS AND BODY MAINTENANCE

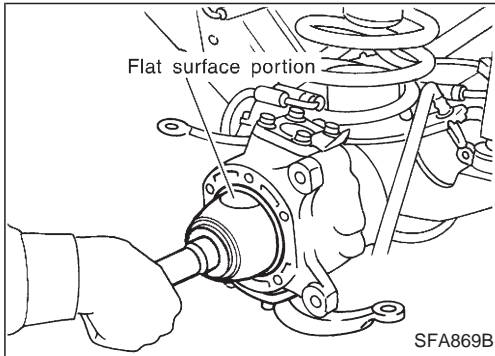


Repacking Front Wheel Bearing and Axle Joint Grease

FRONT WHEEL BEARING GREASE

Apply multi-purpose grease sparingly to the following parts:

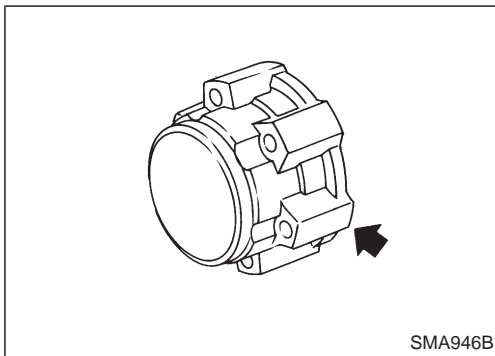
- Threaded portion of spindle
- Contact surface between wheel bearing washer and outer wheel bearing
- Grease seal lip
- Wheel hub (as shown at the left)



AXLE JOINT GREASE

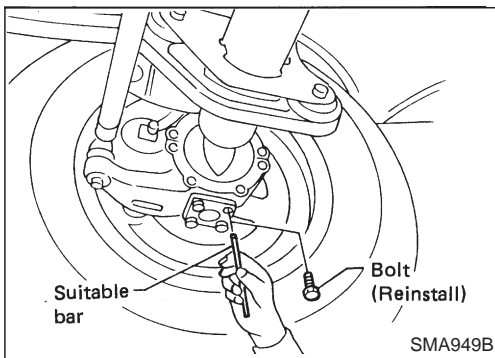
- Drain approximately 2 liters (1-3/4 Imp qt) of differential oil.
- Remove knuckle spindle.
- Slightly pull out axle and repack axle joint with recommended grease.

Refer to FA section.



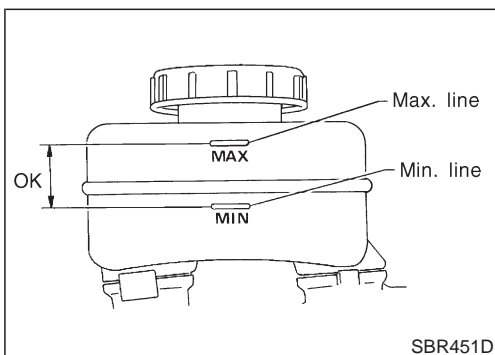
Checking Free-running Hub Grease

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



Checking Water Entry in Knuckle Flange

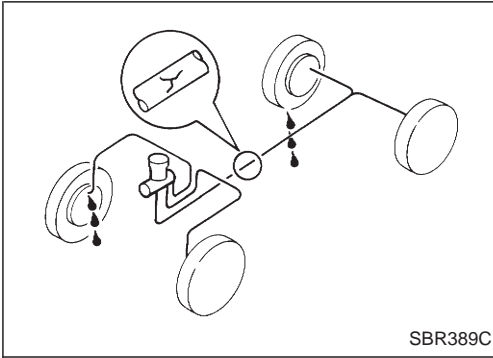
- Check for water entry in knuckle flange by removing one bolt of lower knuckle flange bearing cap and probing with a suitable thin bar.
- After checking, be sure to reinstall the bolt to a tightening torque of 30 to 40 N·m (3.1 to 4.1 kg-m, 22 to 30 ft-lb).



Checking Brake Fluid Level and Leaks

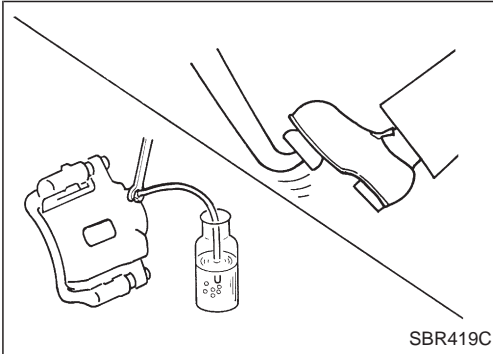
If fluid level is extremely low, check brake system for leaks.

CHASSIS AND BODY MAINTENANCE



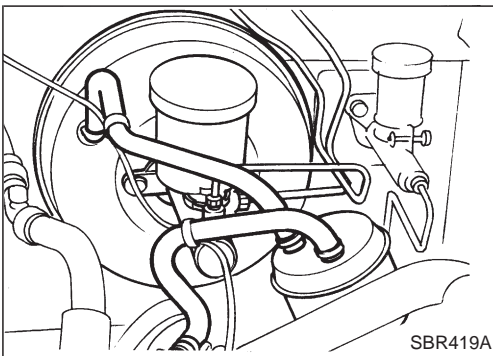
Checking Brake System

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



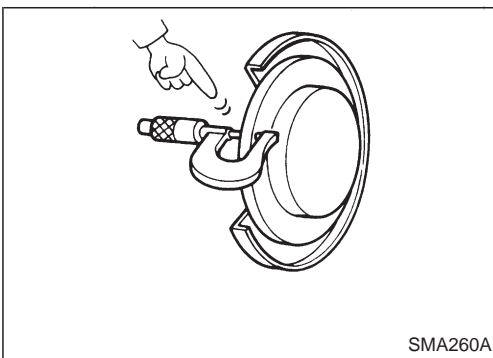
Changing Brake Fluid

1. Drain brake fluid from each air bleeder valve.
 2. Refill until new brake fluid comes out from each air bleeder valve. Use same procedure as in bleeding hydraulic system to refill brake fluid. Refer to BR section.
- Refill with recommended brake fluid.
 - Never reuse drained brake fluid.
 - Be careful not to splash brake fluid on painted areas.



Checking Brake Booster, Vacuum Hoses, Connections and Check Valve

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



Checking Disc Brake

ROTOR

Check condition and thickness.

Standard thickness:

CL36VE
32.0 mm (1.260 in)

CL18VF
18.0 mm (0.709 in)

Minimum thickness:

CL36VE
30.0 mm (1.181 in)

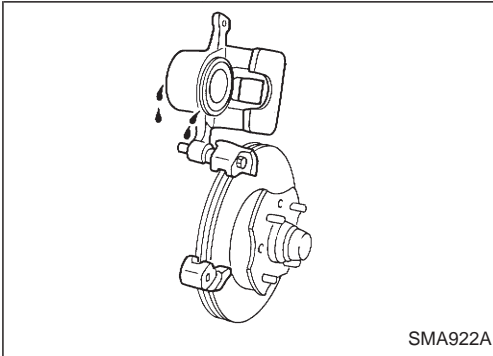
CL18VF
16.0 mm (0.630 in)

CHASSIS AND BODY MAINTENANCE

Checking Disc Brake (Cont'd)

CALIPER

Check for leakage.



PAD

Check for wear or damage.

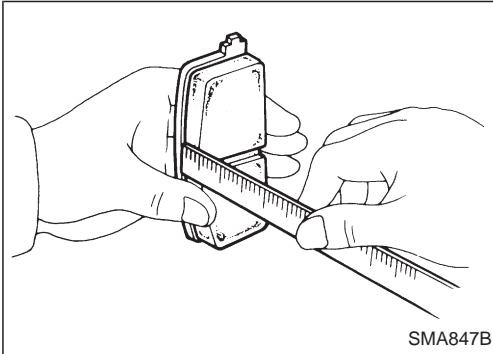
Standard thickness:

Front 12.0 mm (0.472 in)

Rear 10.0 mm (0.394 in)

Minimum thickness:

2.0 mm (0.079 in)



Balancing Wheels


Adjust wheel balance using the road wheel center.

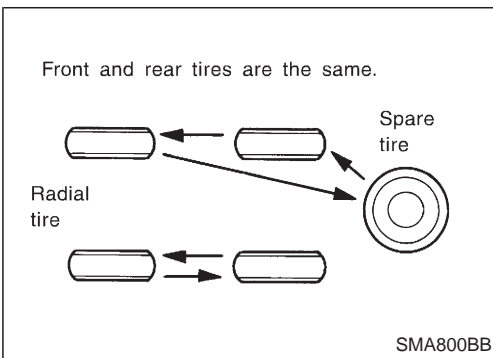
Wheel balance (Maximum allowable unbalance):

Refer to SDS, MA-29.

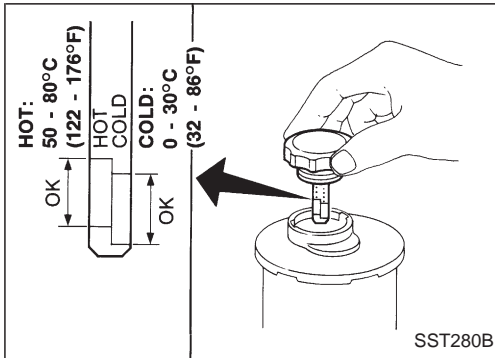
Tire Rotation

Wheel nuts:

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



CHASSIS AND BODY MAINTENANCE

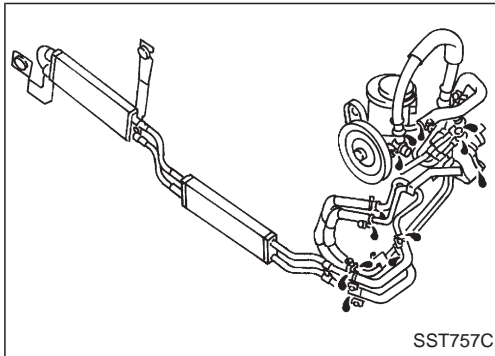


Checking Power Steering Fluid and Lines

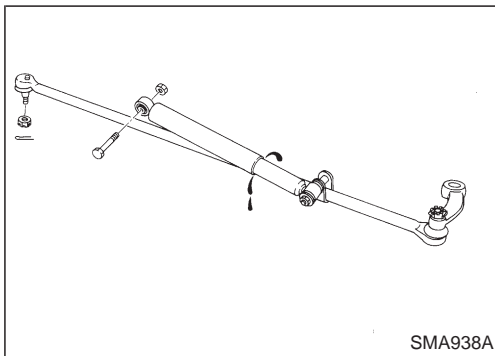
- Check fluid level with engine off.
- Check fluid level with dipstick on reservoir cap. Use “HOT” range at fluid temperatures of 50 to 80°C (122 to 176°F). Use “COLD” range at fluid temperatures of 0 to 30°C (32 to 86°F).

CAUTION:

- Do not overfill.
- Recommended fluid is Automatic Transmission Fluid type “DEXRON™III” or equivalent.



- Check lines for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration.
- Check rack boots for accumulation of power steering fluid.



Checking Steering Damper

Check steering damper for damage and oil leakage.

Checking Steering Gear Box and Linkage

STEERING GEAR

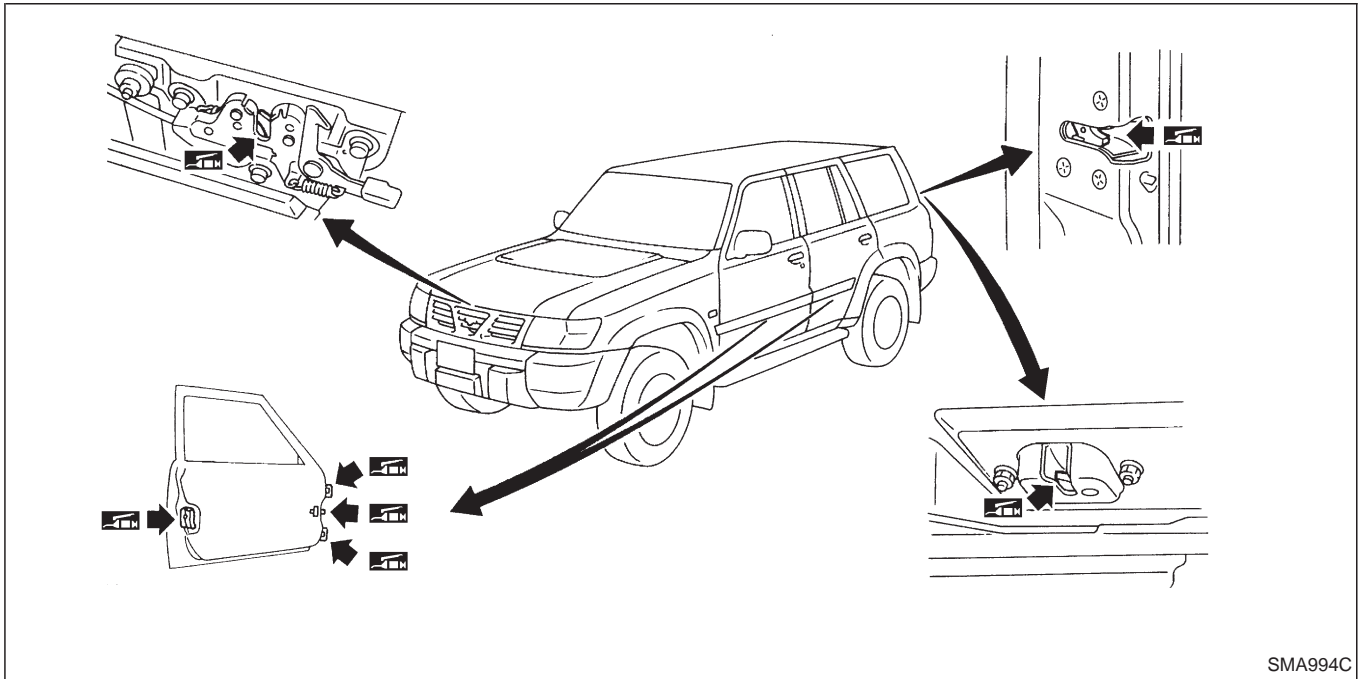
- Check gear housing and boots for looseness, damage or grease leakage.
- Check connection with steering column for looseness.

STEERING LINKAGE

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

CHASSIS AND BODY MAINTENANCE

Lubricating Locks, Hinges and Hood Latches



SMA994C


Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters

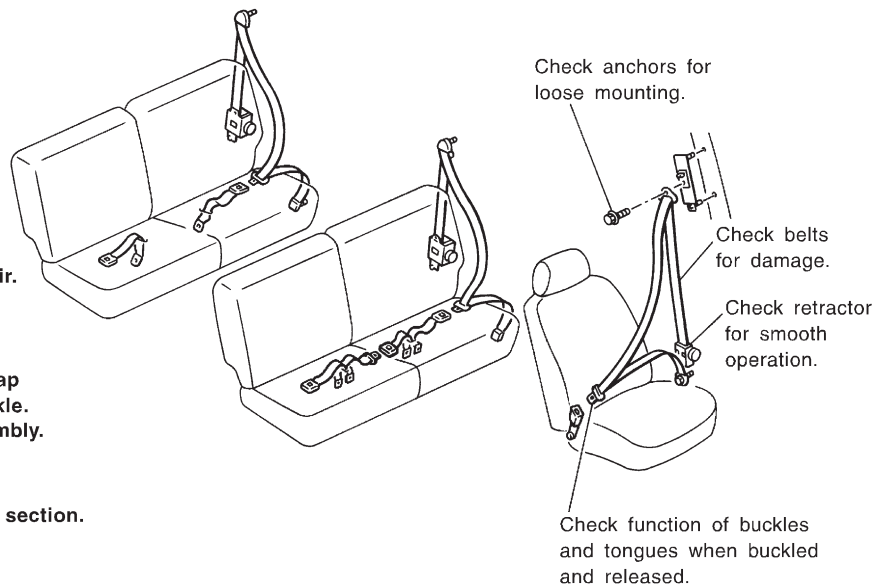
CAUTION:

- After any collision, inspect all seat belt assemblies, including retractors and other attached hardware. Nissan recommends to replace all seat belt assemblies in use during a collision, unless not damaged and properly operating after minor collision. Also inspect seat belt assemblies not in use during a collision, and replace if damaged or improperly operating.
- If any component of seat belt assembly is questionable, do not repair. Replace as seat belt assembly.
- If webbing is cut, frayed, or damaged, replace belt assembly.
- Do not spill drinks, oil etc. on inner lap belt buckle. Never oil tongue and buckle.
- Use a NISSAN genuine seat belt assembly.

For seat belt pre-tensioner, refer to RS section.

Anchor bolt

 43 - 55 N·m (4.4 - 5.6 kg-m, 32 - 41 ft-lb)



SMA995C

CHASSIS AND BODY MAINTENANCE

Checking Body Corrosion

Visually check the body sheet metal panel for corrosion, paint damage (scratches, chipping, rubbing, etc.) or damage to the anti-corrosion materials. In particular, check the following locations.

Hemmed portion

Hood front end, door lower end, trunk lid rear end, etc.

Panel joint

Side sill of rear fender and center pillar, rear wheel housing of rear fender, around strut tower in engine compartment, etc.

Panel edge

Trunk lid opening, sunroof opening, fender wheelarch flange, fuel filler lid flange, around holes in panel, etc.

Parts contact

Waist molding, windshield molding, bumper, etc.

Protectors

Damage or condition of mudguard, fender protector, chipping protector, etc.

Anti-corrosion materials

Damage or separation of anti-corrosion materials under the body.

Drain holes

Condition of drain holes at door and side sill.

When repairing corroded areas, refer to the Corrosion Repair Manual.

SERVICE DATA AND SPECIFICATIONS (SDS)

Engine Maintenance

INSPECTION AND ADJUSTMENT

Drive belt deflection

Unit: mm (in)

Drive belts	Used belt deflection		Deflection of new belt
	Limit	Deflection after adjustment	
Alternator			
With air conditioner compressor	17 (0.67)	12 - 14 (0.47 - 0.55)	9 - 11 (0.35 - 0.43)
Without air conditioner compressor	11 (0.43)	7 - 9 (0.28 - 0.35)	6 - 8 (0.24 - 0.31)
Power steering oil pump	14 (0.55)	10 - 12 (0.39 - 0.47)	9 - 11 (0.35 - 0.43)
Applied pushing force	98 N (10 kg, 22 lb)		

Engine oil capacity (Refill capacity)

Unit: ℓ (Imp qt)

With oil filter change	6.4 (5-5/8)
Without oil filter change	5.8 (5-1/8)

Coolant capacity (Refill capacity)

With reservoir tank

Unit: ℓ (Imp qt)

	With rear heater	Without rear heater
RHD	12.9 (11-3/8)	11.8 (10-3/8)
LHD	12.7 (11-1/8)	11.6 (10-1/4)
Reservoir tank	2.4 (2-1/8)	

Chassis and Body Maintenance

INSPECTION AND ADJUSTMENT

Wheel balance

Maximum allowable unbalance	Dynamic (At rim flange)	10 (0.35) (one side)
	g (oz)	
	Static	20 (0.71)
	g (oz)	