

SECTION **MA**
MAINTENANCE

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PRECAUTIONS

PRECAUTIONS

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

ELS001HP

The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

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/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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PREPARATION

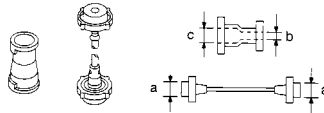
PREPARATION

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Special Service Tools

ELS001HQ

Tool number Tool name	Description
EG17650301 Radiator cap tester adapter	Adapting radiator cap tester to radiator cap and radiator filler neck a: 28 (1.10) dia. b: 31.4 (1.236) dia. c: 41.3 (1.626) dia. Unit: mm (in)

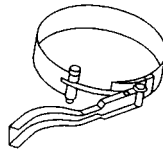


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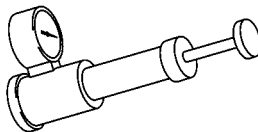
Commercial Service Tools

ELS001HR

Tool name	Description
Fuel filter wrench	Removing fuel filter
Radiator cap tester	Checking radiator and reservoir tank cap



PBIC0519E



PBIC1982E

DESCRIPTION

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Pre-Delivery Inspection Items

ELS001K2

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.

- ☐ Install vehicle protection kit
- ☐ Fit all accessories ordered (if applicable) (e.g. towbar, audio, navigation, air conditioner, styling kit)

UNDER HOOD — engine off

- ☐ Check coolant level and cooling system for leaks
- ☐ Charge battery and check terminals for condition
- ☐ Check drive belts tension
- ☐ Check fuel filter for water or dust (diesel only) and fuel system for leaks
- ☐ Check engine oil level and for oil leaks
- ☐ Check brake and clutch fluid levels and fluid lines for leaks
- ☐ Check and top up washer reservoirs
- ☐ Check power steering fluid level and fluid lines for leaks (if applicable)
- ☐ Check air conditioning system for gas leaks (if applicable)

ON INSIDE AND OUTSIDE

- ☐ Install transit fuse if removed for vehicle storage
- ☐ Check instruments, gauges, lamps, horn and accessories for operation
- ☐ Check wipers and washers for operation and adjustment
- ☐ Check interior and door mirrors and sun visors for operation
- ☐ Set radio code and set clock
- ☐ Check parking brake adjustment
- ☐ Check clutch pedal adjustment
- ☐ Check steering lock operation
- ☐ Check seat adjusters and seat belts for operation
- ☐ Check all windows for operation and alignment
- ☐ Check mouldings, trim and fittings for fit and alignment
- ☐ Check weatherstrips for fit and adhesion
- ☐ Check hood, trunk lid, door panels and fuel lid for fit and alignment
- ☐ Check latches, keys, remote key, door locks and remote trunk lid and fuel lid release for operation
- ☐ Check wheel nut torques
- ☐ Check tyre pressure (incl. spare tyre)
- ☐ Check tool kit and jack for operation
- ☐ Check automatic transmission/transaxle starter inhibitor (if applicable)
- ☐ Check sunroof for operation and alignment (if applicable)

UNDER BODY

- ☐ Check manual transmission/transaxle, differential and transfer box for oil level and oil leaks
- ☐ Tighten bolts and nuts steering linkage and gear box, axle/suspension parts, propeller and exhaust system
- ☐ Check brake and clutch lines, and oil/fluid reservoirs for leaks
- ☐ Remove front suspension spacer blocks (if applicable)
- ☐ Check body mounting torque (if applicable)

DESCRIPTION

ROAD TEST

- ☐ Check clutch operation
- ☐ Check foot brake operation
- ☐ Check parking brake operation
- ☐ Check steering operation, self-centering and steering wheel alignment
- ☐ Check engine performance
- ☐ Check for squeaks, rattles and noise from interior, suspension and brakes
- ☐ Check heating, ventilation and air conditioning operation
- ☐ Check radio, cassette and CD player operation
- ☐ Check odometer and trip meter operation and cancelling
- ☐ Check instruments for operation
- ☐ Check automatic transmission/transaxle shift pattern and kickdown operation (if applicable)
- ☐ Check cruise control and navigation system operation (if applicable)

ENGINE OPERATING AND HOT

- ☒ Check idle speed
- ☐ Check automatic transmission/transaxle oil level (if applicable)

FINAL INSPECTION

- ☐ Remove vehicle protection kit
- ☐ Fit interior mats and wheel covers
- ☐ Check for interior and exterior metal and paint damage
- ☐ Wash, clean interior and exterior

☒ : Not applicable to this model

GENERAL MAINTENANCE

GENERAL MAINTENANCE

PFP:00000

General Maintenance

ELS001HT

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 for a nominal charge.

OUTSIDE THE VEHICLE

The maintenance items listed here should be performed from time to time, unless otherwise specified.

Item		Reference page
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 not functioning correctly.	—
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 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-39 , BL-12
Tire rotation	Tires should be rotated every 10,000 km (6,000 miles) for 2WD models and every 5,000 km (3,000 miles) for 4WD models.	MA-34

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.

Item		Reference page
Lamps	Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check headlamp aim.	—
Warning lamps and chimes	Make sure that all warning lamps and buzzers/chimes are operating properly.	—
Steering wheel	Check that it has the specified play. Check for changes 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-40

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 page
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-19 (YD25DDTi)
Engine oil level	Check the level after parking the vehicle (on level ground) and turning off the engine.	MA-25 (YD25DDTi)
Brake and clutch fluid levels	Make sure that the brake and clutch fluid levels are between the “MAX” and “MIN” lines on the reservoir.	MA-28 , MA-35
Battery	Check the fluid level in each cell. It should be between the “MAX” and “MIN” lines.	—

PERIODIC MAINTENANCE

PERIODIC MAINTENANCE

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Periodic Maintenance

ELS001J9

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 AND EMISSION CONTROL MAINTENANCE (YD25DDTI DIESEL ENGINE)

(Annual Mileage <30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, D = Check filter and drain water

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform either at number of kilometers (miles) or months, whichever comes first.	km x 1,000 (Miles x 1,000) Months	30 (18) 24	60 (36) 48	90 (54) 72	120 (72) 96	
	Engine compartment and under vehicle					
Intake & exhaust valve clearance	See NOTE (1)					EM-66
Drive belts		I	I	I	I	MA-17
Engine oil (Use recommended oil.)★	See NOTE (2)	R	R	R	R	MA-25
Engine oil filter (Use NISSAN genuine part or equivalent)★	See NOTE (3)	R	R	R	R	MA-26
Engine anti-freeze coolant (Use Genuine NISSAN Anti-freeze Coolant (L250) or equivalent)	See NOTE (4)	I	I	I	I	MA-19
Cooling system		I	I	I	I	MA-21
Fuel lines		I	I	I	I	MA-23
Air cleaner filter (Dry paper type) ★			R		R	MA-25
Fuel filter★		D	R	D	R	MA-23
Fuel injector	See NOTE (5)					EM-44

NOTE:

- ★ Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.
- (1) If valve noise increases, check valve clearance.
- (2) Never use CG-4 oil.
- (3) Oil filter element assembly and O-ring seal are replacement parts.
- (4) First replace at 100,000 Km (60,000 miles)/60 months, then every 60,000Km (36,000 miles)/36 months. After first replacement, perform "I" (checking the mixture ratio and correcting the mixture ratio if necessary) at the middle of replacement interval.
- (5) If engine power decreases, black exhaust smoke is emitted or engine noise increases, perform this maintenance item.

PERIODIC MAINTENANCE

CHASSIS AND BODY MAINTENANCE (YD25DDTI DIESEL ENGINE)

(Annual Mileage <30,000 Km/year)

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform either at number of kilometers (miles) or months, whichever comes first.	km x 1,000 (Miles x 1,000) Months	30 (18) 24	60 (36) 48	90 (54) 72	120 (72) 96	
Underhood and under vehicle						
Headlamp aiming		I	I	I	I	LT-28
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	MA-35 , MA-28
Brake fluid★		R	R	R	R	MA-35
Brake booster vacuum hoses, connections & check valve		I	I	I	I	BR-22
Power steering fluid & lines (For level & leaks)		I	I	I	I	MA-37
Manual transmission gear oil (For leaks)		I	I	I	I	MA-28
Automatic transmission fluid (For level & leaks)★		I	I	I	I	MA-29
Transfer fluid (For level & leaks)		I	I	I	I	MA-31
Differential gear oil (For level & leaks or replace)★		I	I	I	I	MA-32 , MA-33
Limited-slip differential (LSD) gear oil (for level and leaks)★		I	I	I	I	MA-33
Limited-slip differential (LSD) gear oil (for replace)★			R*1		R*2	MA-34
Steering gear & linkage, axle & suspension parts, propeller shaft, drive shafts & exhaust system★		I	I	I	I	MA-37 , MA-38 , MA-32 , MA-38 , MA-28
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	FSU-7 , MA-34
Brake pads, rotors & other brake components★		I	I	I	I	MA-36 , MA-35 , MA-36
Brake linings, drums & other brake & components★		I	I	I	I	MA-37 , MA-36 , MA-36
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	BR-6 , PB-2 , CL-6
Air conditioner filter★		R	R	R	R	ATC-122 , MTC-101
Body corrosion	See NOTE (1)					MA-40

*1: Replace at 60,000 km (36,000 miles) or 24 months, whichever comes first.

*2: Replace at 120,000 km (72,000 miles) or 48 months, whichever comes first.

NOTE:

- (1) Inspect once per year.
- ★ Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.

PERIODIC MAINTENANCE

MAINTENANCE UNDER SEVERE DRIVING CONDITIONS

(Annual Mileage <30,000 Km/year)

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

A — Driving in dusty conditions

B — Repeatedly driving 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 or mountainous areas

G — Driving in areas using salt or other corrosive materials

H — Driving on rough and/or muddy roads or in the desert

I — Driving with frequent use of braking or in mountainous areas

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

Driving condition										Maintenance item	Maintenance operation	Maintenance interval	Reference page
A	.	.	.	.	.	.	.	.	Air cleaner filter	Clean	Every 5,000 km (3,000 miles) or 4 months	MA-25
										Replace	Every 30,000 km (18,000 miles) or 24 months		
A	B	C	D	.	.	.	.	.	Engine oil & engine oil filter	Replace	Every 15,000 km (9,000 miles) or 12 months	MA-25 , MA-26
A	.	.	.	E	.	.	.	.	Fuel filter	Check & drain water	Every 15,000 km (9,000 miles) or 12 months	MA-25
										Replace	Every 30,000 km (18,000 miles) or 24 months	MA-23	
.	.	.	.	.	F	.	.	.	Brake fluid	Replace	Every 15,000 km (9,000 miles) or 12 months	MA-35
.	.	C	.	.	.	.	H	.	Differential gear oil	Replace	Every 30,000 km (18,000 miles) or 24 months	MA-33 , MA-34
									Limited-slip differential (LSD) gear oil		Every 30,000 km (18,000 miles) or 12 months	MA-34	
.	.	C	.	.	.	.	H	.	Limited-slip differential (LSD) gear oil	Inspect (for level)	Every 15,000 km (9,000 miles) or 12 months	MA-33
.	.	C	.	.	.	.	H	.	Automatic transmission fluid	Replace	Every 30,000 km (18,000 miles) or 24 months	MA-31
.	.	.	.	.	.	G	H	.	Steering gear & linkage, axle & suspension parts, propeller shaft, drive shafts & exhaust system	Inspect	Every 15,000 km (9,000 miles) or 12 months	MA-37 , MA-38 , MA-32 , MA-38 , MA-28
A	.	C	.	.	.	G	H	I	Brake pads, rotors & other brake components	Inspect	Every 15,000 km (9,000 miles) or 12 months	MA-36 , MA-35 , MA-36	
A	.	C	.	.	.	G	H	I	Brake linings, drums & other brake components	Inspect	Every 15,000 km (9,000 miles) or 12 months	MA-37 , MA-36 , MA-36	
A	.	.	.	.	.	.	.	.	Air conditioner filter	Replace	Every 15,000 km (9,000 miles) or 12 months	ATC-122 , MTC-101

PERIODIC MAINTENANCE

ENGINE AND EMISSION CONTROL MAINTENANCE (YD25DDTI DIESEL ENGINE)

(Annual Mileage >30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, D = Check filter and drain water

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform at number of kilometers (miles) basis only.	km x 1,000 (Miles x 1,000)	30 (18)	60 (36)	90 (54)	120 (72)	
Engine compartment and under vehicle						
Intake & exhaust valve clearance	See NOTE (1)					EM-66
Drive belts		I	I	I	I	MA-17
Engine oil (Use recommended oil.)★	See NOTE (2)	R	R	R	R	MA-25
Engine oil filter (Use NISSAN genuine part or equivalent)★	See NOTE (3)	R	R	R	R	MA-26
Engine anti-freeze coolant (Use Genuine NISSAN Anti-freeze Coolant (L250) or equivalent)	See NOTE (4)	I	I	I	I	MA-19
Cooling system		I	I	I	I	MA-21
Fuel lines			I		I	MA-23
Air cleaner filter (Dry paper type) ★			R		R	MA-25
Fuel filter★		D	R	D	R	MA-23
Fuel injector	See NOTE (5)					EM-44

NOTE:

- ★ Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.
- (1) If valve noise increases, check valve clearance.
- (2) Never use CG-4 oil.
- (3) Oil filter element assembly and O-ring seal are replacement parts.
- (4) First replace at 100,000 Km (60,000 miles), then every 60,000Km (36,000 miles). After first replacement, perform "I" (checking the mixture ratio and correcting the mixture ratio if necessary) at the middle of replacement interval.
- (5) If engine power decreases, black exhaust smoke is emitted or engine noise increases, perform this maintenance item.

CHASSIS AND BODY MAINTENANCE (YD25DDTI DIESEL ENGINE)

(Annual Mileage >30,000 Km/year)

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform at number of kilometers (miles) basis only.	km x 1,000 (Miles x 1,000)	30 (18)	60 (36)	90 (54)	120 (72)	
Underhood and under vehicle						
Headlamp aiming		I	I	I	I	LT-28
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	MA-35 , MA-28
Brake fluid★			R		R	MA-35
Brake booster vacuum hoses, connections & check valve			I		I	BR-22
Power steering fluid & lines (For level & leaks)		I	I	I	I	MA-37
Manual transmission gear oil (For leaks)		I	I	I	I	MA-28
Automatic transmission fluid (For level & leeaks)★		I	I	I	I	MA-29
Transfer fluid (For level & leaks)		I	I	I	I	MA-31
Differential gear oil (For level & leaks or replace)★		I	I	I	I	MA-32 , MA-33

PERIODIC MAINTENANCE

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
	km x 1,000 (Miles x 1,000)	30 (18)	60 (36)	90 (54)	120 (72)	
Perform at number of kilometers (miles) basis only.						
Limited-slip differential (LSD) gear oil (for level and leaks or replace)★		I	R	I	R	MA-33 , MA-34
Steering gear & linkage, axle & suspension parts, propeller shaft, drive shafts & exhaust system★		I	I	I	I	MA-37 , MA-38 , MA-32 , MA-38 , MA-28
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	FSU-7 , MA-34
Brake pads, rotors & other brake components★		I	I	I	I	MA-36 , MA-35 , MA-36
Brake linings, drums & other brake components★		I	I	I	I	MA-37 , MA-36 , MA-36
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	BR-6 , PB-2 , CL-6
Air conditioner filter★		R	R	R	R	ATC-122 , MTC-101
Body corrosion	See NOTE (1)					MA-40

NOTE:

- (1) Inspect once per year.
- ★ Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.

PERIODIC MAINTENANCE

MAINTENANCE UNDER SEVERE DRIVING CONDITIONS

(Annual Mileage >30,000 Km/year)

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

A — Driving in dusty conditions

B — Repeatedly driving 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 or mountainous areas

G — Driving in areas using salt or other corrosive materials

H — Driving on rough and/or muddy roads or in the desert

I — Driving with frequent use of braking or in mountainous areas

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

Driving condition									Maintenance item	Maintenance operation	Maintenance interval	Reference page
A	.	.	.	.	.	.	.	.	Air cleaner filter	Clean	Every 5,000 km (3,000 miles)	MA-25
										Replace	Every 30,000 km (18,000 miles)	
A	B	C	D	.	.	.	.	.	Engine oil & engine oil filter	Replace	Every 15,000 km (9,000 miles)	MA-25 , MA-26
A	.	.	.	E	.	.	.	.	Fuel filter	Check & drain water	Every 15,000 km (9,000 miles)	MA-25
										Replace	Every 30,000 km (18,000 miles)	MA-23
.	.	.	.	.	F	.	.	.	Brake fluid	Replace	Every 30,000 km (18,000 miles)	MA-35
.	.	C	.	.	.	.	H	.	Differential gear oil	Replace	Every 30,000 km (18,000 miles)	MA-33 , MA-34
									Limited-slip differential (LSD) gear oil			MA-34
.	.	C	.	.	.	.	H	.	Limited-slip differential (LSD) gear oil	Inspect (for level)	Every 15,000 km (9,000 miles)	MA-33
.	.	C	.	.	.	.	H	.	Automatic transmission fluid	Replace	Every 60,000 km (36,000 miles)	MA-31
.	.	.	.	.	.	G	H	.	Steering gear & linkage, axle & suspension parts, propeller shaft, drive shafts & exhaust system	Inspect	Every 15,000 km (9,000 miles)	MA-37 , MA-38 , MA-32 , MA-38 , MA-28
A	.	C	.	.	.	G	H	I	Brake pads, rotors & other brake components	Inspect	Every 15,000 km (9,000 miles)	MA-36 , MA-35 , MA-36
A	.	C	.	.	.	G	H	I	Brake linings, drums & other brake components	Inspect	Every 15,000 km (9,000 miles)	MA-37 MA-36 , MA-36 ,
A	.	.	.	.	.	.	.	.	Air conditioner filter	Replace	Every 15,000 km (9,000 miles)	ATC-122 , MTC-101

RECOMMENDED FLUIDS AND LUBRICANTS

RECOMMENDED FLUIDS AND LUBRICANTS

PFP:00000

Fluids and Lubricants

ELS001JA

		Capacity (Approximate)		Recommended Fluids/Lubricants
		Liter	Imp measure	
Engine oil Drain and refill	With oil filter change	7.6	6-5/8 qt	<ul style="list-style-type: none"> ● Diesel engine API CF-4*1, *2 ACEA B1, B3, B4, B5*1
	Without oil filter change	7.1	6-1/4 qt	
Dry engine (engine overhaul)		7.9	7 qt	
Cooling system (with reservoir)	LHD models	9.9	8-3/4 qt	<ul style="list-style-type: none"> ● Genuine NISSAN Anti-freeze Coolant (L250) or equivalent in its quality*3
	RHD models	10.2	9 qt	
Reservoir tank		0.8	3/4 qt	
Manual transmission gear oil	2WD	3.99	7 pt	<ul style="list-style-type: none"> ● Genuine NISSAN gear oil or API GL-4, Viscosity SAE 75W-85 or 75W-90
	4WD	4.32	7-5/8 pt	
Transfer fluid		2.0	1-3/4 qt	<ul style="list-style-type: none"> ● Genuine NISSAN ATF or equivalent*4
Differential gear oil	Front	0.85	1-1/2 pt	<ul style="list-style-type: none"> ● Standard differential gear: Gear Oil Hypoid LSD (Part No.: KLD31-8090403) or API GL-5, Viscosity SAE 80W-90*1 ● Limited-slip differential (LSD) gear: Gear Oil Hypoid LSD (Part No. KLD31-8090403) or equivalent
	Rear	2.01	3-1/2 pt	
Automatic transmission fluid		10.3	9-1/8 qt	Genuine NISSAN ATF Matic Fluid J*5
Power steering fluid		—	—	Genuine NISSAN PSF or equivalent*6
Brake and clutch fluid		—	—	<ul style="list-style-type: none"> ● DOT 3 or DOT 4 (US FMVSS No. 116)*7
Multi-purpose grease		—	—	NLGI No. 2 (Lithium soap base)

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

*2: Never use API CG-4.

*3: Use Genuine NISSAN Anti-freeze Coolant (L250) or equivalent in its quality, in order to avoid possible aluminum corrosion within the engine cooling system caused by the use of non-genuine engine coolant.

Note that any repairs for the incidents within the engine cooling system while using non-genuine engine coolant may not be covered by the warranty even if such incidents occurred during the warranty period.

*4: Contact a Nissan dealership for more information regarding suitable fluids, including recommended brand(s) of DEXRON™ III/MERCON™ Automatic Transmission Fluid.

***5: Using automatic transmission fluid other than Genuine NISSAN ATF Matic Fluid J will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the warranty.**

*6: DEXRON™III type ATF can be used.

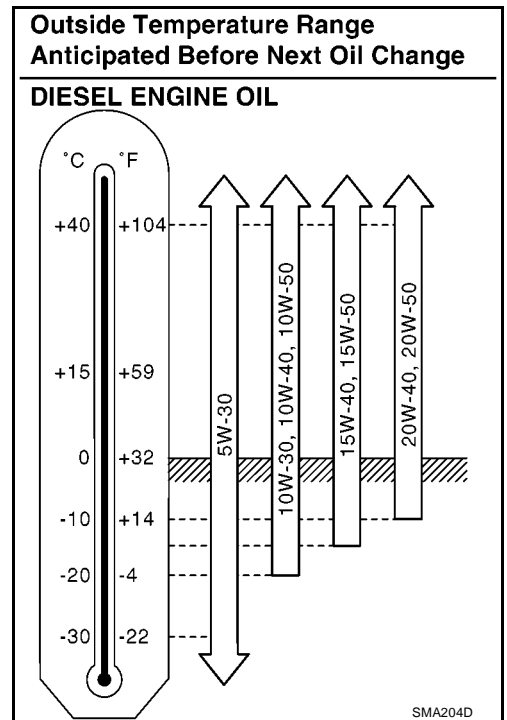
*7: Never mix different types of fluids (DOT 3 and DOT 4).

RECOMMENDED FLUIDS AND LUBRICANTS

SAE Viscosity Number DIESEL ENGINE

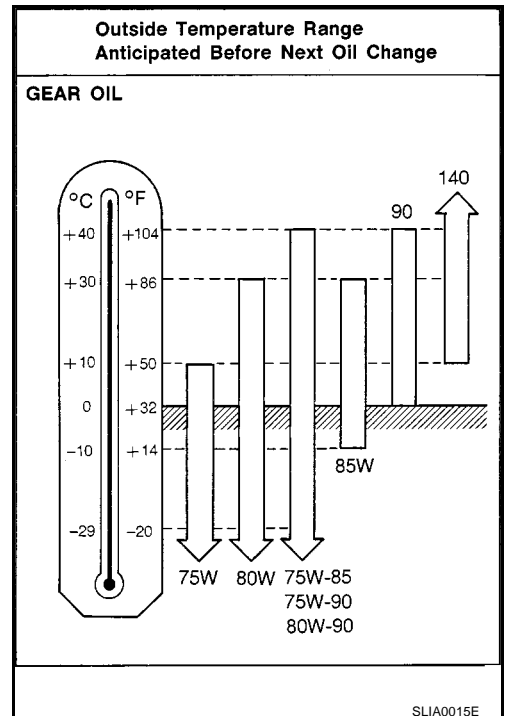
ELS001JB

- 5W-30 is preferable.
If 5W-30 is not available, select the viscosity, from the chart, that is suitable for the outside temperature range.



GEAR OIL

- For warm and cold areas: 80W-90 for the differential gear and 75W-85 for transmission gear are preferable.
- For hot areas: 90 is suitable for ambient temperatures below 40°C (104°F°).



RECOMMENDED FLUIDS AND LUBRICANTS

Engine Coolant Mixture Ratio

ELS001JC

The engine cooling system is filled at the factory with a high-quality, year-round and extended life engine coolant. The high quality engine coolant contains the specific solutions effective for the anti-corrosion and the anti-freeze function. Therefore, additional cooling system additives are not necessary.

CAUTION:

- When adding or replacing coolant, be sure to use only Genuine NISSAN Anti-freeze Coolant (L250) or equivalent in its quality. Because L250 is premixed type coolant.

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

- When checking the engine coolant mixture ratio by the coolant hydrometer, use the chart below to correct your hydrometer reading (specific gravity) according to coolant temperature.

Mixed coolant specific gravity

Unit: specific gravity

Engine coolant mixture ratio	Coolant temperature °C (°F)			
	15 (59)	25 (77)	35 (95)	45 (113)
30%	1.046 - 1.050	1.042 - 1.046	1.038 - 1.042	1.033 - 1.038
50%	1.076 - 1.080	1.070 - 1.076	1.065 - 1.071	1.059 - 1.065

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could be caused by high pressure fluid escaping from the radiator. Wait until the engine and radiator cool down.

Outside temperature down to		Composition	
°C	°F	Engine coolant (Concentrated)	Demineralized water or distilled water
-15	5	30%	70%
-35	-30	50%	50%

SMA089D

ENGINE MAINTENANCE

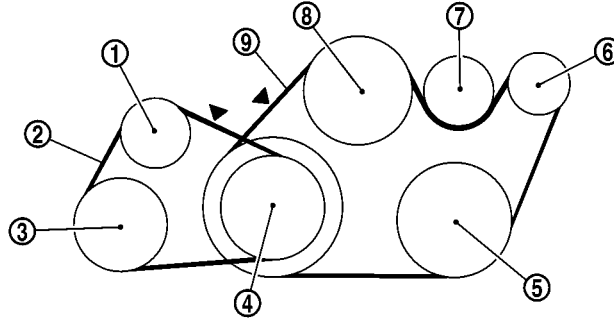
ENGINE MAINTENANCE

PFP:00000

Checking Drive Belts

ELS001JO

SEC. 117



PBIC4038E

- | | | |
|----------------------|--|--|
| 1. Idler pulley | 2. Power steering oil pump belt | 3. Power steering oil pump |
| 4. Crankshaft pulley | 5. A/C compressor (Models with A/C)
Dummy pulley (Models without A/C) | 6. Alternator |
| 7. Idler pulley | 8. Water pump pulley | 9. A/C compressor, alternator and
water pump belt |

- Before inspecting engine, make sure engine has cooled down; wait approximately 30 minutes after engine has been stopped.
- Visually inspect all belts for wear, damage or cracks on contacting surfaces and edge areas.
- Measure deflection at the marked point (▲).

CAUTION:

- When checking belt deflection immediately after installation, first adjust it to the specified value. Then, after turning crankshaft two turns or more, re-adjust to the specified value to avoid variation in deflection between pulleys.
- Tighten idler pulley lock nut by hand and measure deflection without looseness.

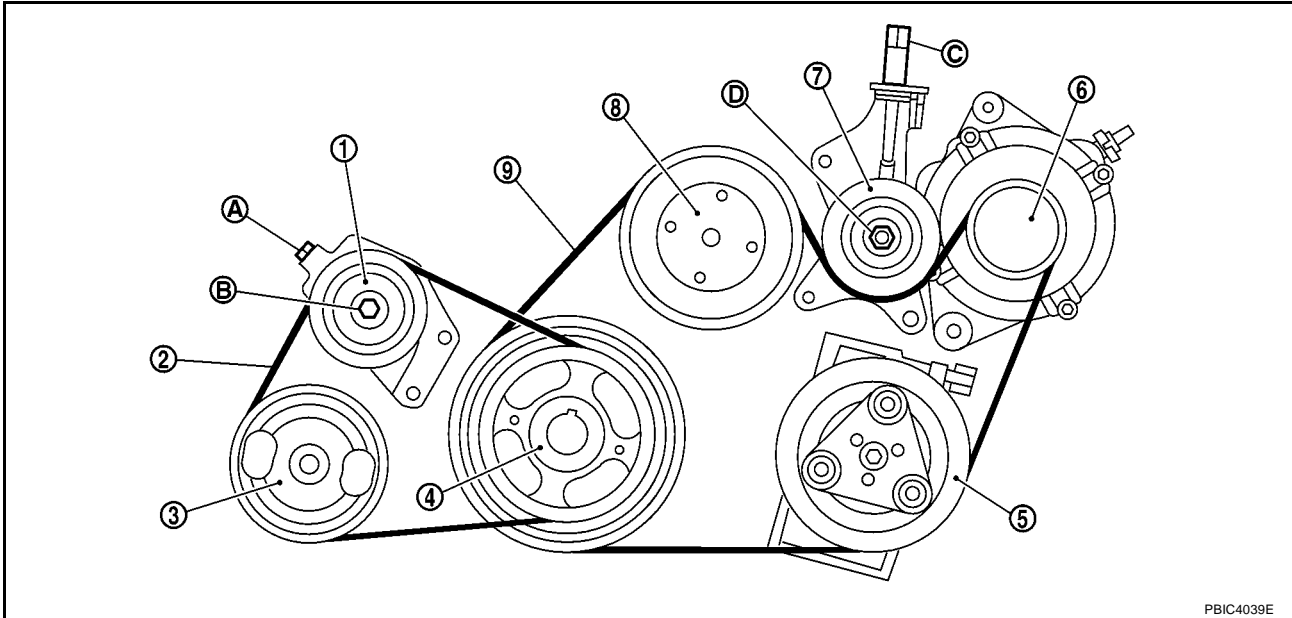
Belt Deflection:

Applied belt	Belt deflection with 98 N (10 kg, 22 lb) force applied* mm (in)		
	New	Adjusted	Limit for re-adjusting
A/C compressor, alternator and water pump belt	2.9 - 3.4 (0.114 - 0.134)	3.9 - 4.4 (0.154 - 0.173)	8.5 (0.335)
Power steering oil pump belt	4.6 - 5.4 (0.181 - 0.213)	7.1 - 7.7 (0.280 - 0.303)	11.3 (0.445)

*: When engine is cold.

Deflection Adjustment

ELS001JP



PBIC4039E

- | | | |
|--------------------------|--|--|
| 1. Idler pulley | 2. Power steering oil pump belt | 3. Power steering oil pump |
| 4. Crankshaft pulley | 5. A/C compressor (Models with A/C)
Dummy pulley (Models without A/C) | 6. Alternator |
| 7. Idler pulley | 8. Water pump pulley | 9. A/C compressor, alternator and
water pump belt |
| A. Adjusting bolt | B. Idler pulley lock nut | C. Adjusting nut |
| D. Idler pulley lock nut | | |

- Adjust belts with the parts shown below.

Applied belt	Belt adjustment method
Power steering oil pump belt	Adjusting bolt on idler pulley (A)
Alternator and water pump belt or A/C compressor, alternator and water pump belt	Adjusting nut on idler pulley (C)

CAUTION:

- When a new belt is installed as a replacement, adjust it to the specified value under “New” value because of insufficient adaptability with pulley grooves.
- If the belt deflection of the current belt is out of the “Limit for re-adjusting”, adjust to the “Adjusted” value.
- When checking belt tension immediately after installation, first adjust it to the specified value. Then, after turning crankshaft two turns or more, re-adjust it to the specified value to avoid variation in deflection between pulleys.
- Make sure the belts are fully fitted into the pulley grooves during installation.
- Handle with care to avoid smearing the belts with engine oil or engine coolant.
- Do not twist or bend the belts with strong force.

POWER STEERING OIL PUMP BELT

- Remove engine undercover front. Refer to [EI-15, "FRONT BUMPER"](#) .
- Loosen idler pulley lock nut (B).
- Turn adjusting bolt (A) to adjust. Refer to [MA-17, "Checking Drive Belts"](#) .
- Tighten idler pulley lock nut (B).

Nut B:

 : 28.0 N·m (2.9 kg-m, 21 ft-lb)

ENGINE MAINTENANCE

A/C COMPRESSOR, ALTERNATOR AND WATER PUMP BELT

1. Loosen idler pulley lock nut (D).
2. Turn adjusting nut (C) to adjust. Refer to [MA-18, "Deflection Adjustment"](#).
3. Tighten lock nut (D).

Nut D:

 : 45.0 N·m (4.6 kg-m, 33 ft-lb)

Changing Engine Coolant

ELS001JQ

WARNING:

- To avoid being scalded, do not change engine coolant when engine is hot.
- Wrap a thick cloth around cap and carefully remove radiator cap. First, turn radiator cap a quarter of a turn to release built-up pressure. Then turn the cap all the way.

DRAINING ENGINE COOLANT

1. Open radiator drain plug (1) at the bottom of radiator, and remove radiator cap.

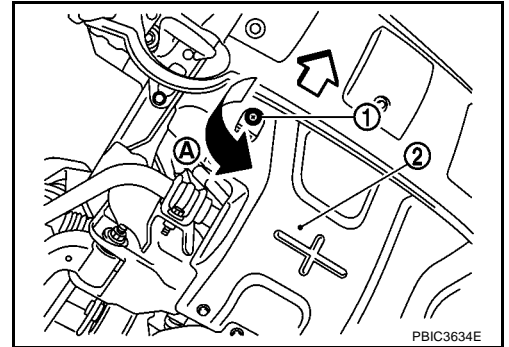
2 : Engine undercover front

A : Loosen.

 : Vehicle front

CAUTION:

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



When draining all engine coolant in the system, also perform the following steps.

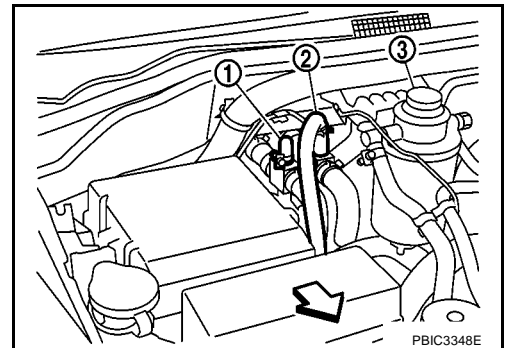
2. Remove air relief plug (1) on heater feed tube.

● LHD models

2 : Water hose (from reservoir tank)

3 : Fuel filter

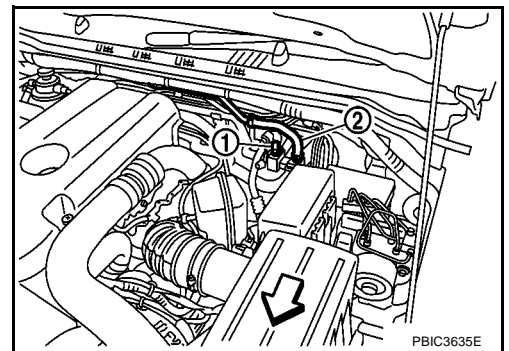
 : Vehicle front



● RHD models

2 : Water hose (from reservoir tank)

 : Vehicle front



3. Open cylinder block drain plug. Refer to [EM-110, "CYLINDER BLOCK"](#).
4. Remove reservoir tank, drain engine coolant, then clean reservoir tank.
5. Check drained engine coolant for contaminants such as rust, corrosion or discoloration. If contaminated, flush engine cooling system. Refer to [MA-21, "FLUSHING COOLING SYSTEM"](#).

ENGINE MAINTENANCE

REFILLING ENGINE COOLANT

1. Install reservoir tank, and radiator drain plug.

CAUTION:

Be sure to clean radiator drain plug and install with new O-ring.

Radiator drain plug:

 : 1.2 N·m (0.12 kg-m, 11 in-lb)

- If water drain plug on cylinder block is removed, close and tighten it. Refer to [EM-110, "CYLINDER BLOCK"](#).
2. Make sure that each hose clamp has been firmly tightened.
 3. Fill radiator and reservoir tank to the specified level.

- Pour engine coolant through engine coolant filler neck slowly of less than 2 ℓ (1-3/4 Imp qt) a minute to allow air in system to escape.
- Use Genuine NISSAN Anti-freeze Coolant (L250) or equivalent in its quality. Refer to [MA-14, "RECOMMENDED FLUIDS AND LUBRICANTS"](#)

Engine coolant capacity (with reservoir tank at "MAX" level)

LHD models

: Approx. 9.9 ℓ (8 - 3/4 Imp qt)

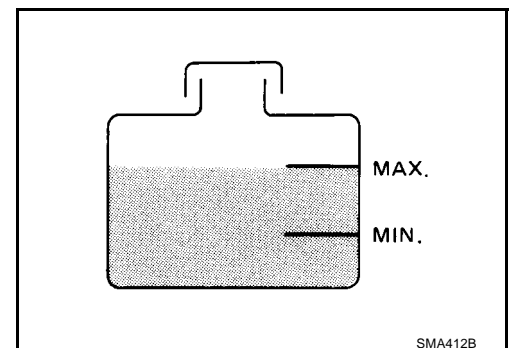
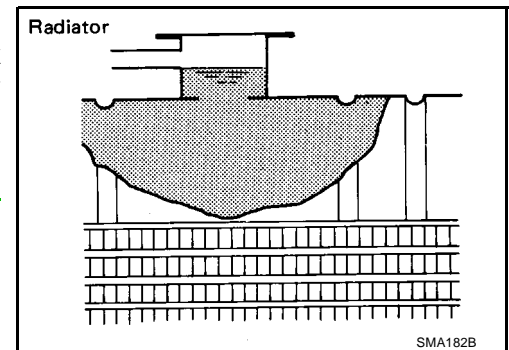
RHD models

: Approx. 10.2 ℓ (9 Imp qt)

Reservoir tank capacity (at "MAX" level)

: 0.8 ℓ (3/4 Imp qt)

- When engine coolant overflows air relief hole, install air relief plug.



4. Warm up engine to normal operating temperature without radiator cap and reservoir tank cap installed.
 - If engine coolant overflows radiator filler hole and reservoir tank filler hole, install radiator cap and reservoir tank cap.
5. Run engine at 3,000 rpm for 10 seconds and return to idle speed with radiator cap installed.
 - Repeat two or three times.

CAUTION:

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

6. Stop engine and cool down to less than approximately 50°C (122°F).
 - Cool down using a fan to reduce the time.
 - If necessary, refill radiator up to filler neck with engine coolant.
7. Refill reservoir tank to MAX level line with engine coolant.
8. Repeat steps 3 through 6 two or more times with radiator cap installed until engine coolant level no longer drops.
9. Check cooling system for leaks with engine running.
10. Warm up engine, and check for sound of engine coolant flow while running engine from idle up to 3,000 rpm with heater temperature controller set at several position between COOL and WARM.
 - Sound may be noticeable at heater unit.

ENGINE MAINTENANCE

11. Repeat step 10 three times.
12. If sound is heard, bleed air from cooling system by repeating steps 3 through 6 until engine coolant level no longer drops.

FLUSHING COOLING SYSTEM

1. Fill radiator with water until water spills from the air relief hole, then close air relief plug. Fill radiator and reservoir tank with water and reinstall radiator cap and reservoir tank cap.
2. Run engine and warm it up to normal operating temperature.
3. Rev engine two or three times under no-load.
4. Stop engine and wait until it cools down.
5. Drain water from the system. Refer to [MA-19, "DRAINING ENGINE COOLANT"](#).
6. Repeat steps 1 through 5 until clear water begins to drain from radiator.

Checking Cooling System

ELS001JR

WARNING:

Never remove the radiator cap and reservoir tank cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator and the reservoir tank. Wrap a thick cloth around the cap. Slowly turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by turning it all the way.

CHECKING COOLING SYSTEM HOSES

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

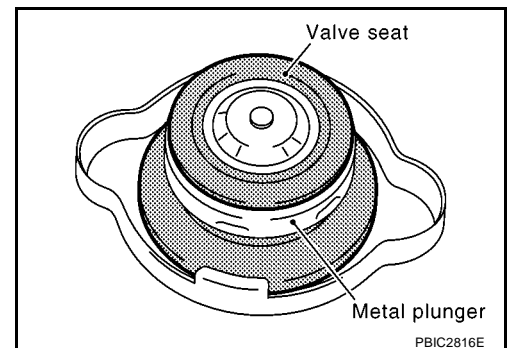
CHECKING RADIATOR

Check radiator for mud or clogging. If necessary, clean radiator as follows.

- Be careful not to bend or damage the radiator fins.
 - When radiator is cleaned without removal, remove all surrounding parts such as cooling fan, radiator shroud and horns. Then tape the harness and connectors to prevent water from entering.
1. Apply water by hose to the back side of the radiator core vertically downwards.
 2. Apply water again to all radiator core surface once per minute.
 3. Stop washing if any stains no longer flow out from the radiator.
 4. Blow air into the back side of radiator core vertically downwards.
 - Use compressed air lower than 490 kpa (4.9 bar, 5 kg/cm², 71psi) and keep distance more than 30 cm(11.8 in).
 5. Blow air again into all the radiator core surface once per minute until no water sprays out.

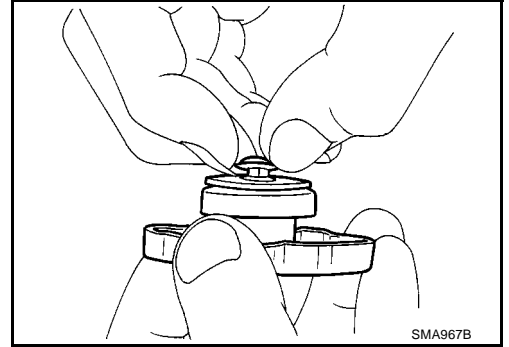
CHECKING RESERVOIR TANK CAP

- Inspect valve seat of reservoir tank cap.
 - Check if valve seat is swollen to the extent that the edge of the plunger cannot be seen when watching it vertically from the top.
 - Check if valve seat has no soil and damage.



ENGINE MAINTENANCE

- Pull negative-pressure valve to open it, and make sure that it is completely closed when released.
- Make sure that there is no dirt or damage on the valve seat of radiator cap negative-pressure valve.
- Make sure that there are no unusualness in the opening and closing conditions of negative-pressure valve.

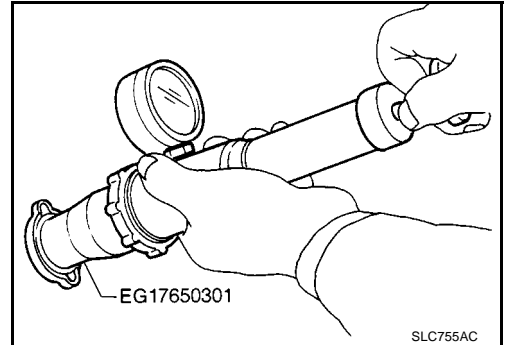


- Check reservoir tank cap relief pressure.

Standard : 98.2 - 117.8 kPa (0.98 - 1.18 bar, 1.0 - 1.2 kg/cm² , 14 - 17 psi)

Limit : 59 kPa (0.59 bar, 0.6 kg/cm² , 9 psi)

- When connecting reservoir tank cap to the radiator cap tester adapter (SST) and the radiator cap tester (Commercial service tool), apply engine coolant to the cap seal surface.



- Replace reservoir tank cap if there is an unusualness in negative pressure value, or if the relief pressure falls below the limit.

CAUTION:

When installing a radiator cap and reservoir tank cap, thoroughly wipe out the radiator and reservoir tank filler neck to remove any waxy residue or foreign material.

CHECKING RADIATOR SYSTEM FOR LEAKS

- To check for leaks of cooling system, apply pressure to the reservoir tank (1) with the radiator cap tester (commercial service tool) (A) and the radiator cap tester adapter (B) [SST: EG17650301].

Testing pressure:

157 kPa (1.57 bar, 1.6 kg/cm² , 23 psi)

WARNING:

Do not remove reservoir tank cap and/or radiator cap when engine is hot. Serious burns could occur from high pressure engine coolant escaping from reservoir tank and/or radiator.

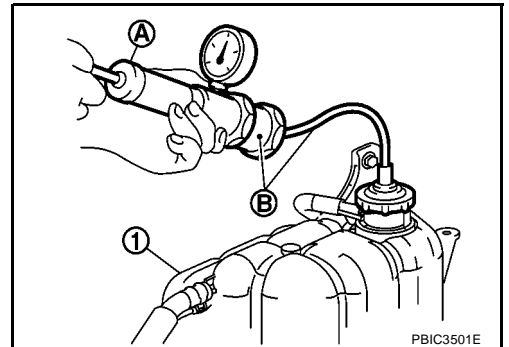
CAUTION:

Higher test pressure than specified may cause cooling system damage.

NOTE:

In a case that engine coolant decreases, replenish radiator and reservoir tank with engine coolant.

- If anything is found, repair or replace damaged parts.

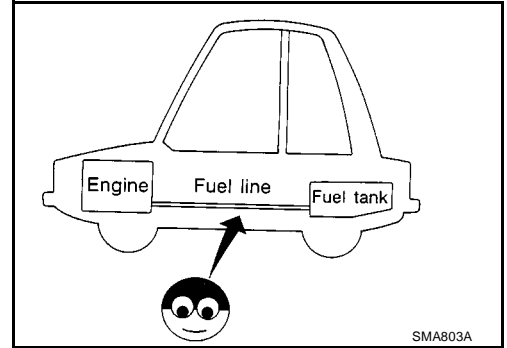


ENGINE MAINTENANCE

Checking Fuel Lines

ELS001JS

Inspect the fuel lines and fuel tank for improper mounting, leaks, cracks, damage, loose connections, chafing, or deterioration. As necessary, repair or replace any faulty parts.

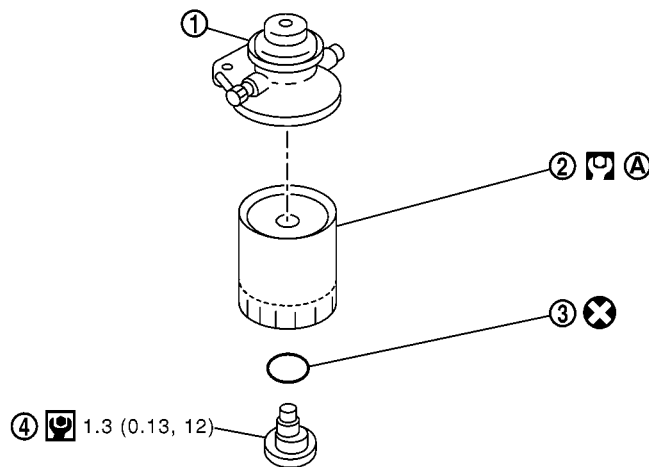


SMA803A

Changing Fuel Filter

ELS001JT

SEC. 164



PBIC3369E

1. Fuel filter bracket

2. Fuel filter

3. O-ring

4. Drain plug

A. Refer to text.

- Refer to [GI-10, "Components"](#) for symbol marks in the figure.

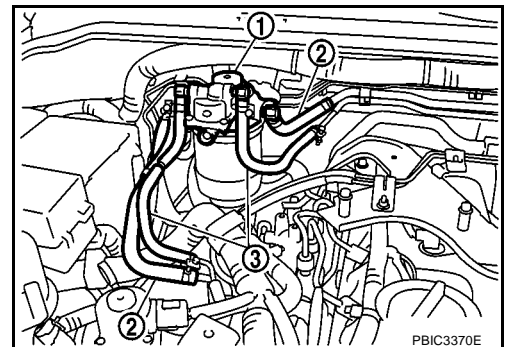
REMOVAL

1. Disconnect fuel hoses at fuel filter.

- 1 : Fuel filter
- 2 : Fuel hose (feed)
- 3 : Fuel hose (return)

CAUTION:

Plug the pipe to prevent fuel from draining.



PBIC3370E

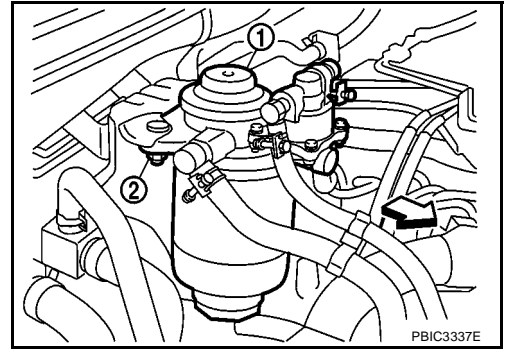
ENGINE MAINTENANCE

2. Loosen mounting nuts (2) and remove fuel filter (1).

⇐ : Vehicle front

CAUTION:

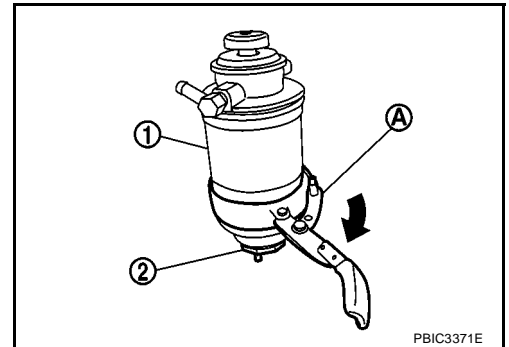
Do not splash fuel during removal. If fuel is splashed, immediately wipe it off.



3. Using band-type fuel filter wrench (A) (commercial service tool), remove fuel filter (1).

B : Loosen.

4. Turn fuel filter (1) upside down to drain fuel.
5. Remove drain plug (2) from fuel filter.



INSTALLATION

Note the following, and install in the reverse order of removal.

- Replace O-ring on drain plug with new one.
- Screw the fuel filter by hand until packing contacts sealing surface of fuel filter bracket. Then tighten it by turning approximately 2/3 turn.


Fuel filter (reference value)

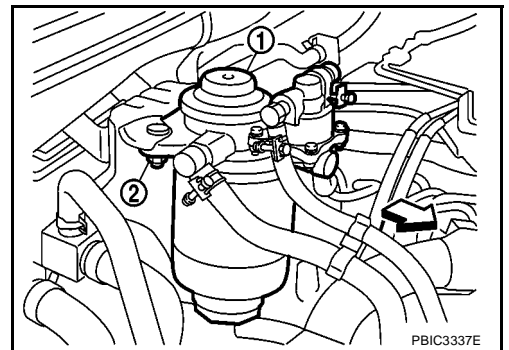
 : 13.5 N·m (1.4 kg-m, 10 ft-lb)

- Install fuel filter (1), and tighten mounting nuts (2) to the specified torque.

⇐ : Vehicle front

Fuel filter mounting nuts

 : 13.5 N·m (1.4 kg-m, 10 ft-lb)



- After installation, bleed air from fuel line. Refer to [FL-5, "Air Bleeding"](#) .

INSPECTION AFTER INSTALLATION

Make sure there is no fuel leakage at connections in the following steps.

- Start the engine and rev it up and make sure there is no fuel leakage at connections.

ENGINE MAINTENANCE

Draining Water from Fuel Filter

ELS001JU

1. Prepare a tray (A) under the drain plug (1).
2. Loosen drain plug (1), and operate priming pump (2) to drain water from fuel filter.

CAUTION:

- Water in filter is drained with fuel. Prepare larger capacity pan than fuel filter volume.
- Drained water is mixed with fuel. Prevent fuel from adhering to rubber parts such as engine mounting insulator.

3. Replace O-ring on drain plug with new one.
4. After draining, close drain plug to specified torque.

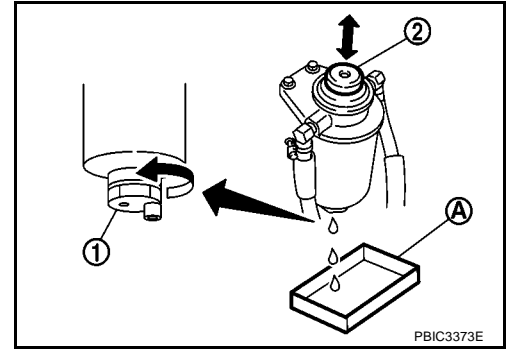
Drain plug

 : 1.3 N·m (0.13 kg-m, 12 in-lb)

CAUTION:

If drain plug is tightened excessively, it may be damaged and fuel will leak.

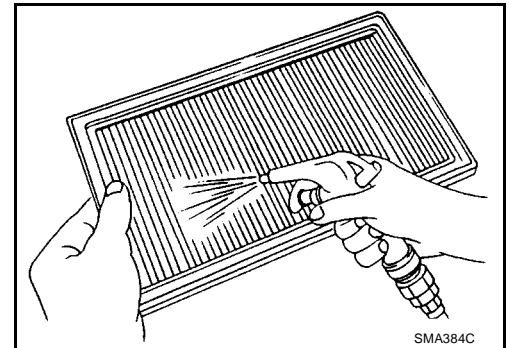
5. Bleed air in fuel piping. Refer to [FL-5, "Air Bleeding"](#).
6. Start engine and make sure there is no fuel leakage.



Changing Engine Air Cleaner Filter DRY PAPER TYPE

ELS001JW

It is necessary to clean the filter or replace it at the recommended intervals, more often under dusty driving conditions. Refer to [MA-8, "PERIODIC MAINTENANCE"](#).



Changing Engine Oil

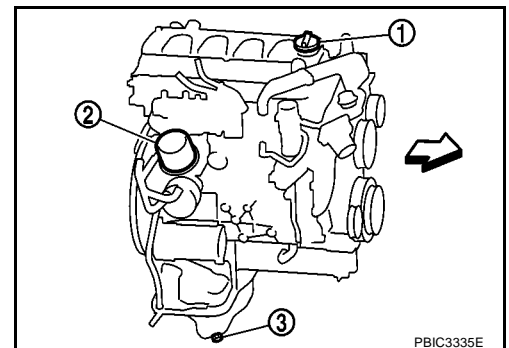
ELS001JX

WARNING:

- Be careful not to burn yourself, as the engine oil is hot.
 - Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used engine oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.
1. Warm up engine, put vehicle horizontally and check for engine oil leakage from engine components. Refer to [LU-5, "ENGINE OIL LEAKAGE"](#).
 2. Stop engine and wait for 10 minutes.
 3. Loosen oil filler cap (1) and then remove drain plug (3).

2 : Oil filter

⇐ : Engine front



4. Drain engine oil.
5. Install drain plug with new washer. Refer to [EM-36, "OIL PAN AND OIL STRAINER"](#).

ENGINE MAINTENANCE

CAUTION:

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

Oil pan drain plug:

 : 34.3 N·m (3.5 kg-m, 25 ft-lb)

6. Refill with new engine oil.

Engine oil specification and viscosity:

Refer to [MA-14, "RECOMMENDED FLUIDS AND LUBRICANTS"](#) .

Engine oil capacity (Approximate):

Unit: ℓ (Imp qt)

Drain and refill	With oil filter change	7.6 (6-5/8)
	Without oil filter change	7.1 (6-1/4)
Dry engine (Overhaul)		7.9 (7)

CAUTION:

- When filling engine oil, do not pull out oil level gauge.
 - The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.
 - Always use the oil level gauge to determine when the proper amount of engine oil is in the engine.
7. Warm up engine and check area around drain plug and oil filter for oil leakage.
 8. Stop engine and wait for 10 minutes.
 9. Check the engine oil level. Refer to [LU-5, "ENGINE OIL LEVEL"](#) .

Changing Oil Filter REMOVAL

ELS001JY

1. Remove engine undercover middle.
2. Place a pan to catch the engine oil under the lower part of drain hose outlet before removing oil filter.
3. Using the oil filter wrench, remove oil filter.

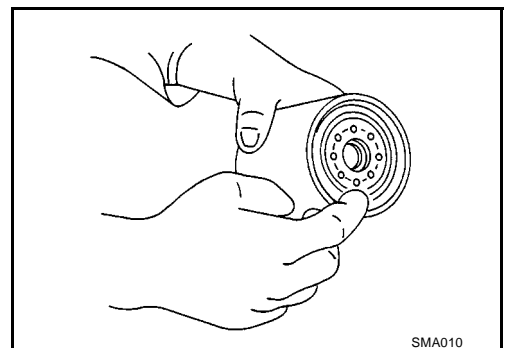
CAUTION:

- Be careful not to get burned when engine and engine oil are hot.
- When removing, prepare a shop cloth to absorb any engine oil leakage or spillage.
- Do not allow engine oil to adhere to drive belts.
- Completely wipe off any engine oil that adhere to engine and vehicle.
- Oil filter is provided with a relief valve. Use Genuine NISSAN Oil Filter or equivalent.

INSTALLATION

1. Remove foreign materials adhering to the oil filter installation surface.
2. Apply new engine oil to the oil seal circumference of new oil filter.

Use Genuine NISSAN Oil Filter or equivalent.



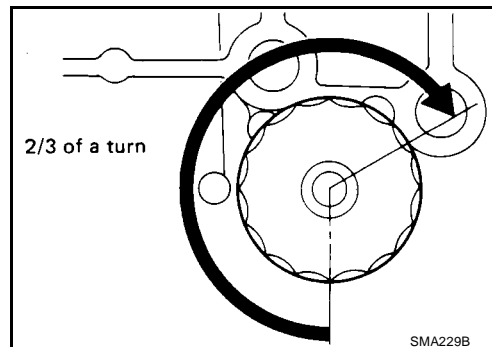
SMA010

ENGINE MAINTENANCE

3. Screw oil filter manually until it touches the installation surface, then tighten it by 2/3 turn. Or tighten to specification.

Oil filter:

 : 18 N·m (1.8 Kg-m, 13 ft-lb)



INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to [LU-5, "ENGINE OIL"](#).
2. Start engine, and check there is no leakage of engine oil.
3. Stop engine and wait for 10 minutes.
4. Check the engine oil level and add engine oil. Refer to [LU-5, "ENGINE OIL"](#).

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CHASSIS AND BODY MAINTENANCE

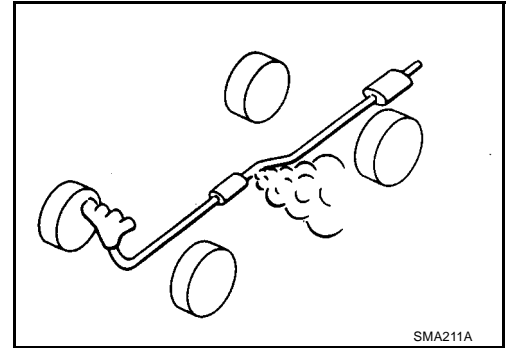
CHASSIS AND BODY MAINTENANCE

PFP:00100

Checking the Exhaust System

ELS001IJ

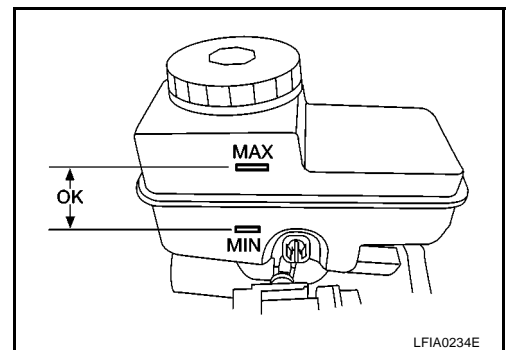
Check exhaust pipes, muffler and mounting for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration.



Checking Clutch Fluid Level and Leaks

ELS001IK

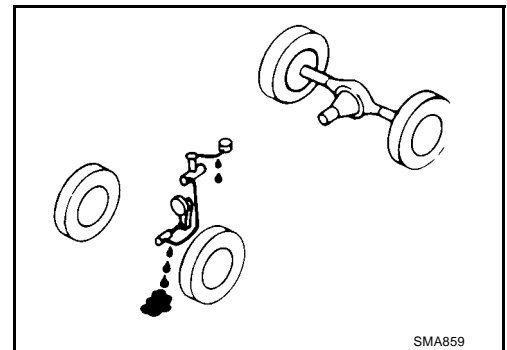
If fluid level is extremely low, check clutch system for leaks.



Checking Clutch System

ELS001IL

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



Checking M/T Oil

ELS001IM

Check for oil leakage.

(For details, refer to [MT-9, "Checking M/T Oil"](#) .)

CHASSIS AND BODY MAINTENANCE

Changing M/T Oil

ELS001IN

1. Drain oil from drain plug and refill with new gear oil.
(For details, refer to [MT-9, "Changing M/T Oil"](#) .)
2. Check oil level.

Oil grade and viscosity: Refer to [MA-14, "Fluids and Lubricants"](#) .

Oil capacity:

2WD models: Approx. 3.99 ℓ (7 Imp pt)

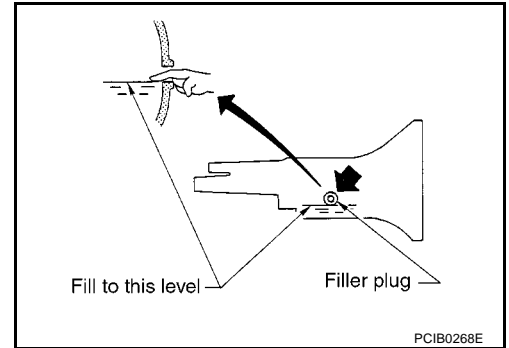
4WD models: Approx. 4.32 ℓ (7 - 5/8 Imp pt)

Filler plug and drain plug:

 : 34.5 N-m (3.5 kg-m, 25 ft-lb)

CAUTION:

Do not reuse gasket.



Checking A/T Fluid

ELS001JZ

1. Warm up engine.
2. Check for A/T fluid leakage.
3. Loosen level gauge bolt.
4. Before driving, A/T fluid level can be checked at A/T fluid temperatures of 30 to 50°C (86 to 122°F) using "COLD" range on A/T fluid level gauge as follows.
 - a. Park vehicle on level surface and set parking brake.
 - b. Start engine and move selector lever through each gear position. Leave selector lever in "P" position.
 - c. Check A/T fluid level with engine idling.
 - d. Remove A/T fluid level gauge and wipe clean with lint-free paper.

CAUTION:

When wiping away A/T fluid level gauge, always use lint-free paper, not a cloth one.

- e. Reinsert A/T fluid level gauge into A/T fluid charging pipe as far as it will go.

CAUTION:

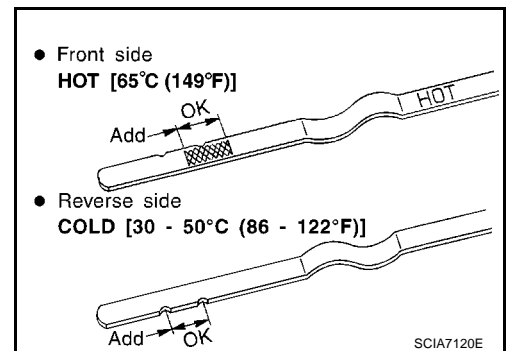
To check A/T fluid level, insert A/T fluid level gauge until the cap contacts the end of A/T fluid charging pipe, with A/T fluid level gauge reversed from the normal attachment conditions.

- f. Remove A/T fluid level gauge and note reading. If reading is at low side of range, add ATF to A/T fluid charging pipe.

CAUTION:

Do not overfill.

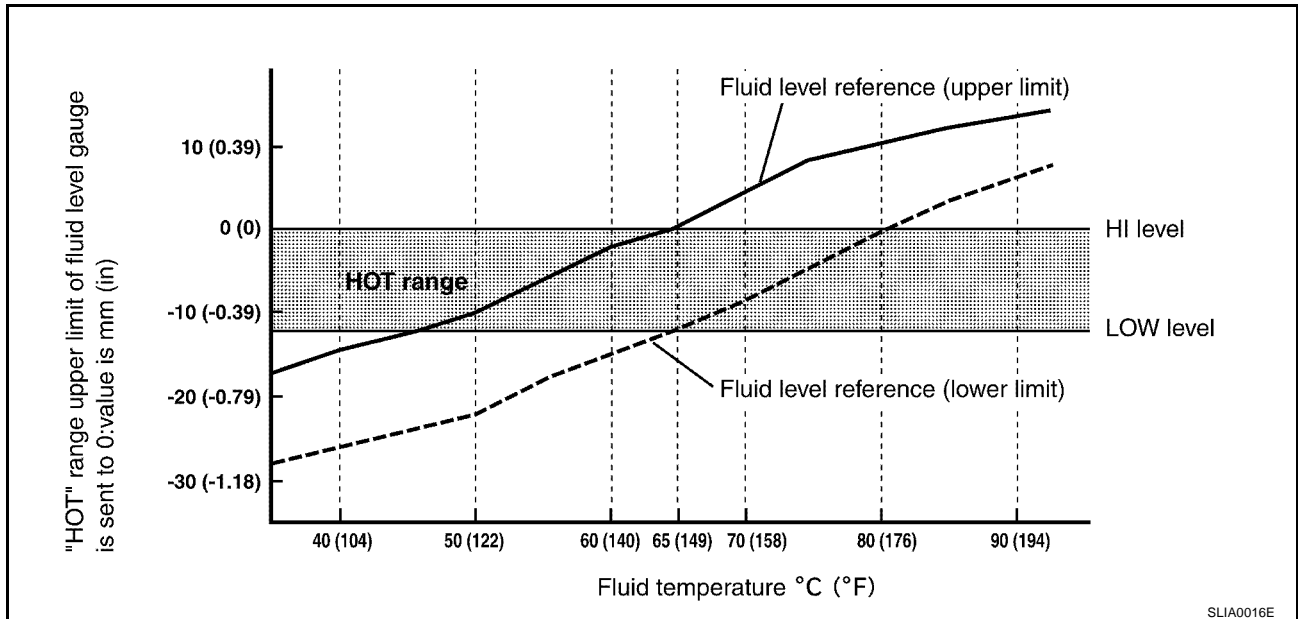
5. Drive vehicle for approximately 5 minutes in urban areas.
6. Make the A/T fluid temperature approximately 65°C (149°F).



CHASSIS AND BODY MAINTENANCE

NOTE:

A/T fluid level will be greatly affected by temperature as shown in figure. Therefore, be certain to perform operation while checking data with CONSULT-II.



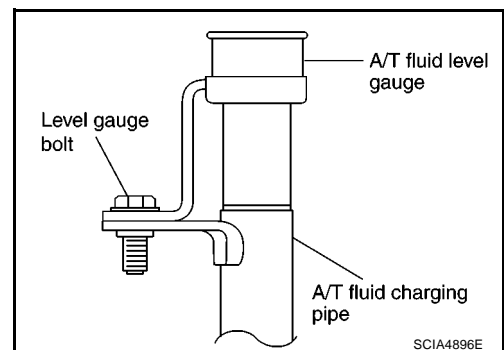
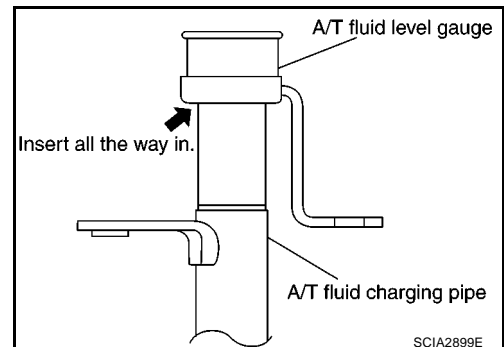
SLIA0016E

- Connect CONSULT-II to data link connector. Refer to [AT-79, "CONSULT-II SETTING PROCEDURE"](#).
- Select "MAIN SIGNALS" in "DATA MONITOR" mode for "A/T" with CONSULT-II.
- Read the value of "ATF TEMP 1".
- Recheck A/T fluid level at A/T fluid temperatures of approximately 65°C (149°F) using "HOT" range on A/T fluid level gauge.

CAUTION:

- When wiping away A/T fluid level gauge, always use lint-free paper, not a cloth one.
- To check A/T fluid level, insert A/T fluid level gauge until the cap contacts the end of A/T fluid charging pipe, with A/T fluid level gauge reversed from the normal attachment conditions as shown.

- Check A/T fluid condition.
 - If ATF is very dark or smells burned, check operation of A/T. Flush cooling system after repair of A/T.
 - If A/T fluid contains frictional material (clutches, bands, etc.), replace radiator and flush cooler line using cleaning solvent and compressed air after repair of A/T. Refer to [CO-11, "RADIATOR"](#).
- Install the removed A/T fluid level gauge into A/T fluid charging pipe.
- Tighten level gauge bolt to the specified torque. Refer to [AT-247, "COMPONENTS"](#).



Changing A/T Fluid

ELS001K0

1. Warm up ATF.
2. Stop engine.
3. Loosen level gauge bolt.
4. Remove A/T fluid level gauge.
5. Remove drain plug and drain ATF from drain hole.
6. Install drain plug gasket and drain plug to oil pan.

CAUTION:

Do not reuse drain plug gasket.

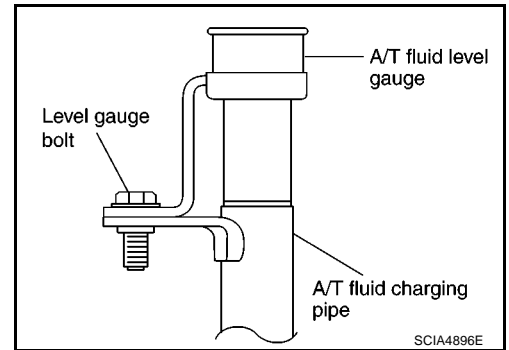
7. Tighten drain plug to the specified torque. Refer to [AT-218, "COMPONENTS"](#).
8. Refill with new ATF. Always refill same volume with drained ATF.
 - To replace the ATF, pour in new ATF at A/T fluid charging pipe with the engine idling and at the same time drain the old ATF from A/T fluid cooler hose return side.
 - When the color of the ATF coming out is about the same as the color of the new ATF, the replacement is complete. The amount of new ATF to use should be 30 to 50% increase of the specified amount.

ATF: **Genuine NISSAN ATF Matic Fluid J**

Fluid capacity: **10.3 ℓ (9-1/8 Imp qt)**

CAUTION:

- **Use only Genuine NISSAN ATF Matic Fluid J. Do not mix with other ATF.**
 - **Using ATF other than Genuine NISSAN ATF Matic Fluid J will cause deterioration in driveability and A/T durability, and may damage the A/T, which is not covered by the NISSAN new vehicle warranty.**
 - **When filling ATF, take care not to spillover heat generating parts such as exhaust.**
9. Run engine at idle speed for 5 minutes.
 10. Check A/T fluid level and condition. Refer to [MA-29, "Checking A/T Fluid"](#). If ATF is still dirty, repeat step 2 through 9.
 11. Install the removed A/T fluid level gauge into A/T fluid charging pipe.
 12. Tighten level gauge bolt to the specified torque. Refer to [AT-247, "COMPONENTS"](#).



Checking Transfer Fluid

FLUID LEAKAGE AND FLUID LEVEL

ELS001Q

1. Make sure that fluid is not leaking from the transfer assembly or around it.
2. Check fluid level from the filler plug hole as shown.

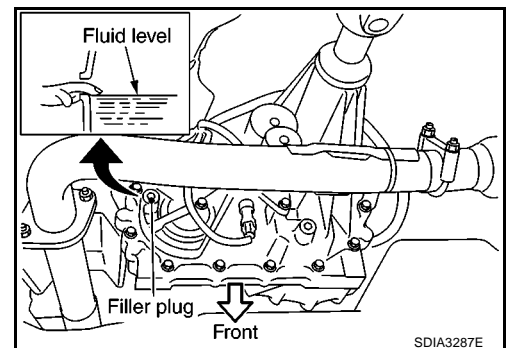
CAUTION:

Do not start engine while checking fluid level.

3. Install the filler plug with a new gasket to the transfer. Tighten to the specified torque. Refer to [TF-112, "COMPONENTS"](#).

CAUTION:

Do not reuse gasket.



CHASSIS AND BODY MAINTENANCE

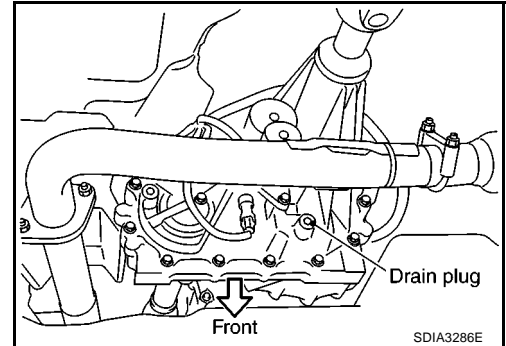
Changing Transfer Fluid DRAINING

ELS0011R

1. Stop engine.
2. Remove the drain plug and gasket and drain the fluid.
3. Install the drain plug with a new gasket to the transfer. Tighten to the specified torque. Refer to [TF-112, "COMPONENTS"](#).

CAUTION:

Do not reuse gasket.



FILLING

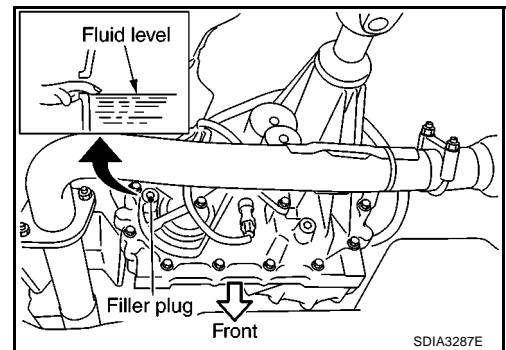
1. Remove the filler plug and gasket.
2. Fill the transfer with new fluid until the fluid level reaches the specified limit near the filler plug hole.

Fluid grade: Refer to [MA-14, "Fluids and Lubricants"](#).

Fluid capacity: Refer to [MA-14, "Fluids and Lubricants"](#).

CAUTION:

Carefully fill fluid. (Fill up for approx. 3 minutes)



3. Leave the vehicle for 3 minutes, and check fluid level again.
4. Install the filler plug with a new gasket to the transfer. Tighten to the specified torque. Refer to [TF-112, "COMPONENTS"](#).

CAUTION:

Do not reuse gasket.

Checking Propeller Shaft

ELS0011S

Check the front and rear propeller shafts for damage, dents, and cracks. Check the joints for looseness and any damage. Repair or replace as necessary. Refer to [PR-2, "NVH Troubleshooting Chart"](#).

Checking Front Final Drive Oil (Front Differential Gear Oil)

ELS0011T

CAUTION:

If using the vehicle for towing, the final drive oil must be replaced as specified. Refer to [MA-8, "PERIODIC MAINTENANCE"](#).

OIL LEAKAGE AND OIL LEVEL

- Make sure that oil is not leaking from the final drive assembly or around it.
- Check oil level from the filler plug hole as shown.

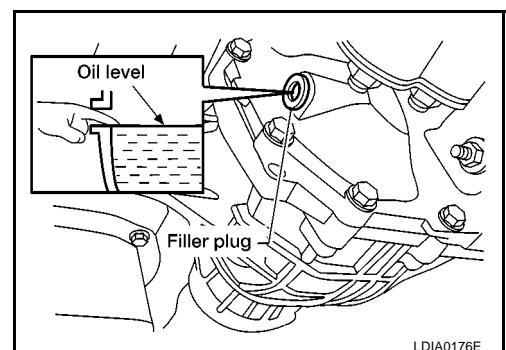
CAUTION:

Do not start engine while checking oil level.

- Install the filler plug with a new gasket on it to the final drive assembly. Tighten to the specified torque. Refer to [FFD-17, "COMPONENTS"](#).

CAUTION:

Do not reuse gasket.



CHASSIS AND BODY MAINTENANCE

Changing Front Final Drive Oil (Front Differential Gear Oil)

ELS001IU

CAUTION:

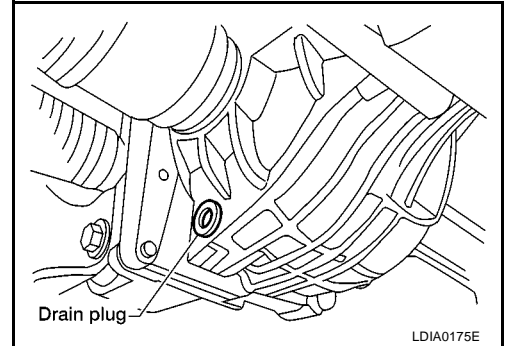
If using the vehicle for towing, the final drive oil must be replaced as specified. Refer to [MA-8, "PERIODIC MAINTENANCE"](#).

DRAINING

1. Stop the engine.
2. Remove the drain plug and gasket. Drain the gear oil.
3. Install the drain plug with a new gasket to the final drive assembly. Tighten to the specified torque. Refer to [FFD-17, "COMPONENTS"](#).

CAUTION:

Do not reuse gasket.



FILLING

1. Remove the filler plug and gasket. Fill with new gear oil until the oil level reaches the specified level near the filler plug hole.

Oil grade and Viscosity:

Refer to [MA-14, "Fluids and Lubricants"](#).

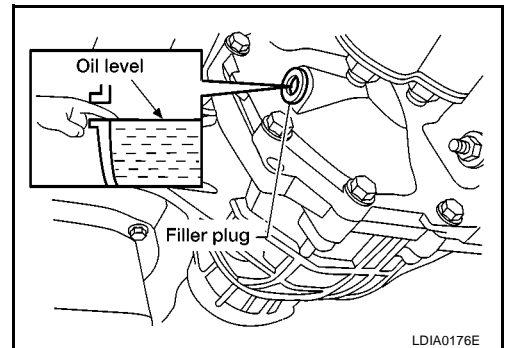
Oil capacity:

Refer to [MA-14, "Fluids and Lubricants"](#).

2. After refilling oil, check the oil level. Install the filler plug with a new gasket on it to the final drive assembly. Tighten to the specified torque. Refer to [FFD-17, "COMPONENTS"](#).

CAUTION:

Do not reuse gasket.



Checking Rear Final Drive Oil (Rear Differential Gear Oil)

ELS001IV

CAUTION:

If using the vehicle for towing, the final drive oil must be replaced as specified. Refer to [MA-8, "PERIODIC MAINTENANCE"](#).

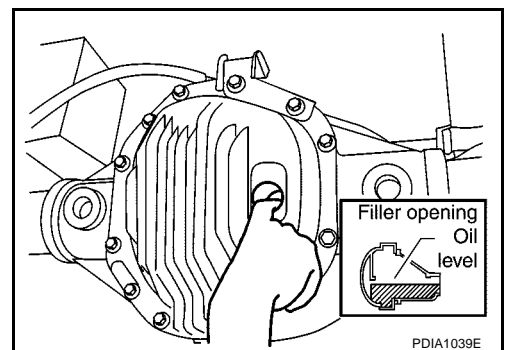
OIL LEAKAGE AND OIL LEVEL

- Make sure that oil is not leaking from the final drive assembly or around it.
- Check oil level from the filler plug hole as shown.

CAUTION:

Do not start engine while checking oil level.

- Apply sealant to filler plug. Install filler plug to final drive assembly and tighten to the specified torque. Refer to [RFD-15, "COMPONENTS"](#) (WITH LIMITED SLIP DIFFERENTIAL) and [RFD-82, "COMPONENTS"](#) (WITH ELECTRONIC LOCKING DIFFERENTIAL).



CHASSIS AND BODY MAINTENANCE

Changing Rear Final Drive Oil (Rear Differential Gear Oil)

ELS001IW

CAUTION:

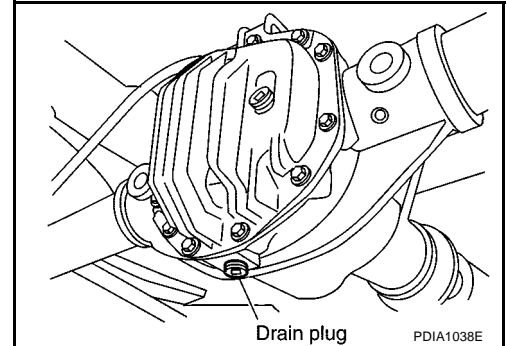
If using the vehicle for towing, the final drive oil must be replaced as specified. Refer to [MA-8, "PERIODIC MAINTENANCE"](#).

DRAINING

1. Stop the engine.
2. Remove the drain plug and gasket. Drain the gear oil.
3. Apply sealant to drain plug. Install drain plug to final drive assembly and tighten to the specified torque. Refer to [RFD-15, "COMPONENTS"](#) (WITH LIMITED SLIP DIFFERENTIAL) and [RFD-82, "COMPONENTS"](#) (WITH ELECTRONIC LOCKING DIFFERENTIAL).

CAUTION:

Do not reuse gasket.



FILLING

1. Remove the filler plug. Fill with new gear oil until oil level reaches the specified limit near filler plug hole.

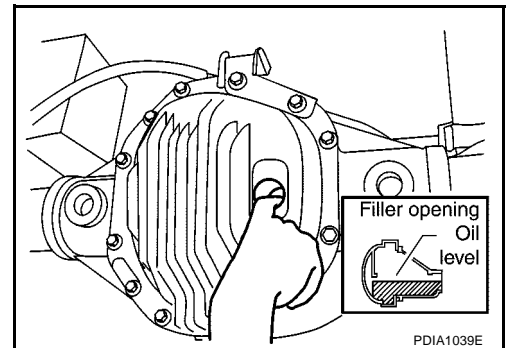
Oil grade: Refer to [MA-14, "Fluids and Lubricants"](#).

Oil capacity: Refer to [MA-14, "Fluids and Lubricants"](#).

2. After refilling oil, check oil level. Apply sealant to filler plug. Install filler plug to final drive assembly and tighten to the specified torque. Refer to [RFD-15, "COMPONENTS"](#) (WITH LIMITED SLIP DIFFERENTIAL) and [RFD-82, "COMPONENTS"](#) (WITH ELECTRONIC LOCKING DIFFERENTIAL).

CAUTION:

Do not reuse gasket.



Balancing Wheels

ELS001IX

Adjust the wheel balance using the road wheel center. Refer to [WT-6, "Road Wheel"](#).

Tire Rotation

ELS001IY

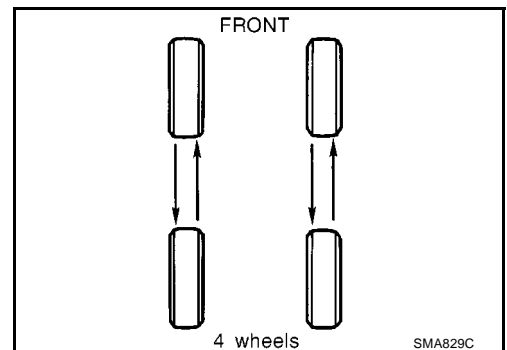
1. Rotate the tires on each side from front to back as shown, using power tool.

Wheel nuts : 98 - 127 N·m (10.0 - 12.9 kg-m, 73 - 93 ft-lb)

- Follow the maintenance schedule for tire rotation service intervals. Refer to [MA-7, "GENERAL MAINTENANCE"](#).
- Do not include the spare tire when rotating the tires.

CAUTION:

When installing wheels, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.



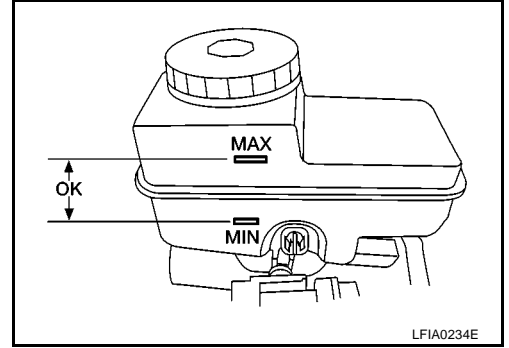
2. Adjust the tire pressure to specification. Refer to [WT-6, "Tire"](#).
3. After the tire rotation, retighten the wheel nuts after the vehicle has been driven for 1,000 km (600 miles), and also after a wheel and tire have been installed such as after repairing a flat tire

CHASSIS AND BODY MAINTENANCE

Checking Brake Fluid Level and Leaks

ELS001JZ

- Check the brake fluid level in the reservoir tank. It should be between the "MAX" and "MIN" lines on the reservoir tank.
- If the fluid level is extremely low, check the brake system.
- If the brake warning lamp comes on when the fluid is at the correct level, check the brake fluid level switch and the parking brake switch.



Checking Brake Lines and Cables

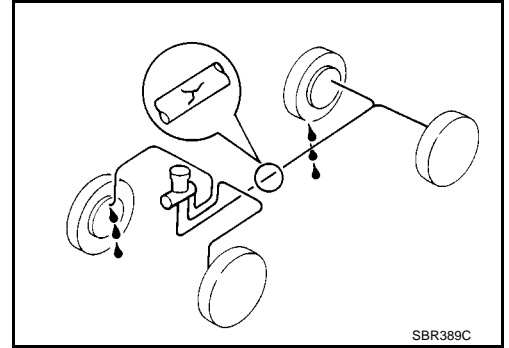
ELS001J0

1. Check the brake lines and hoses for cracks, deterioration, and other damage. Replace any damaged parts.

CAUTION:

If brake fluid leaks are visible around the brake line joints, retighten the joint, or replace damaged parts as necessary.

2. Check for brake fluid leaks by fully depressing brake pedal while engine is running.



Changing Brake Fluid

ELS001J1

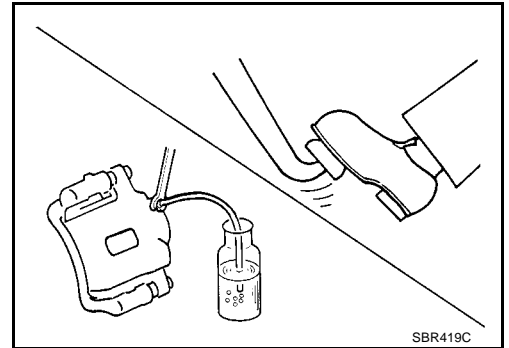
1. Drain brake fluid from each bleed valve.
2. Refill until new brake fluid comes out from each bleed valve. Use same procedure as in bleeding hydraulic system to refill brake fluid.

Refer to [BR-10, "BRAKE FLUID"](#).

- Refill with recommended DOT 3 or DOT 4 (US FMVSS No. 116).

Refer to [MA-14, "RECOMMENDED FLUIDS AND LUBRICANTS"](#).

- Never reuse drained brake fluid.
- Be careful not to splash brake fluid on painted areas.



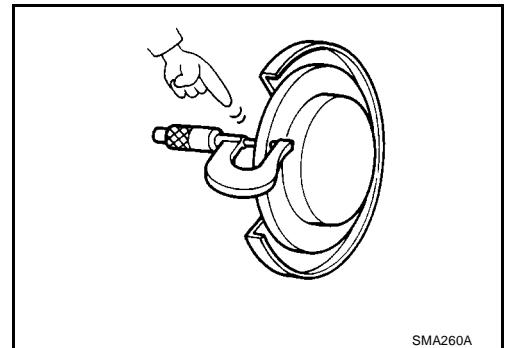
Checking Disc Brake ROTOR

ELS001J2

Check the condition of the rotor, and for any wear or damage. Repair or replace as necessary.

Standard thickness : 28.0 mm (1.12 in)

Repair limit thickness : 26.0 mm (1.024 in)

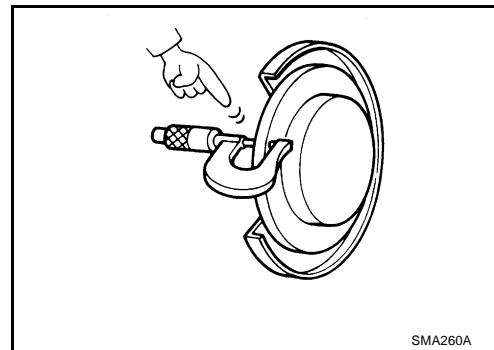


CHASSIS AND BODY MAINTENANCE

CALIPER

Check for any fluid leakage. Repair as necessary.

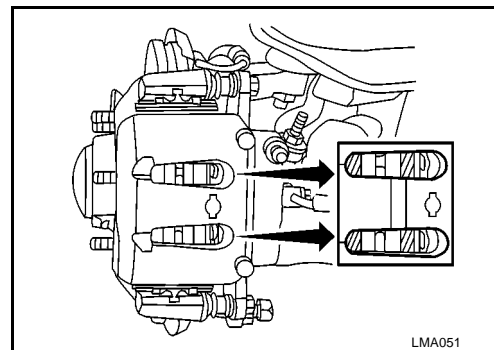
Standard thickness : 28.0 mm (1.12 in)
Repair limit thickness : 26.0 mm (1.024 in)



PAD

Check for any wear or damage. Repair or replace as necessary.

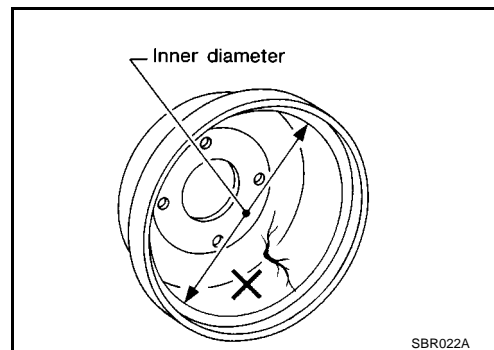
Standard thickness : 11.0 mm (0.43 in)
Repair limit thickness : 2.0 mm (0.08 in)



Checking Drum Brake DRUM

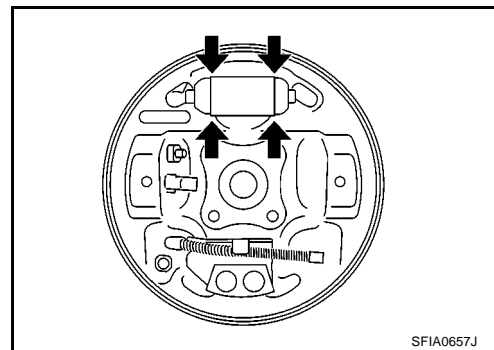
Check the condition of the drum, and for any wear or damage. Repair or replace as necessary.

Standard inner diameter : 295 mm (11.61 in) dia.
Repair limit inner diameter : 296.5 mm (11.67 in) dia.



WHEEL CYLINDER

- Check for leakage.



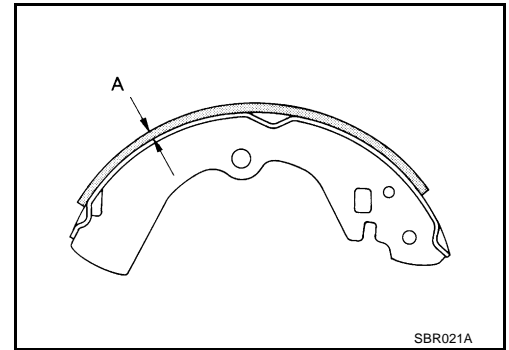
CHASSIS AND BODY MAINTENANCE

LINING

- Check for lining thickness.

Standard thickness : 5.5 mm (0.22 in)

Repair limit thickness : 1.5 mm (0.66 in)

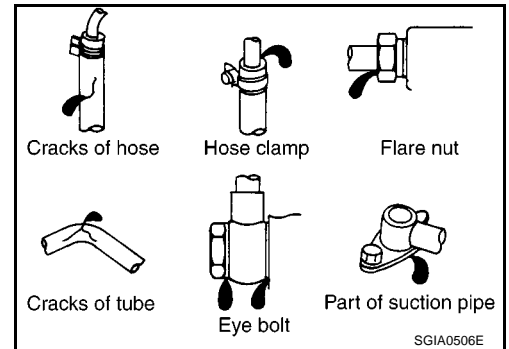


ELS001J3

Checking Steering Gear and Linkage

STEERING GEAR

- Check the steering gear housing for looseness, damage and oil leakage as shown.
- Check the steering column connections for looseness.



STEERING LINKAGE

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

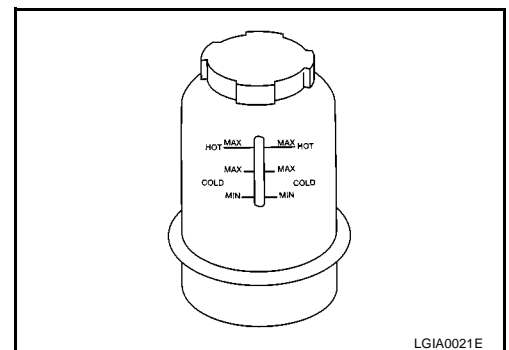
Checking Power Steering Fluid and Lines

CHECKING FLUID LEVEL

- Check the power steering fluid level with the engine off.
- Check fluid level on reservoir. 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).

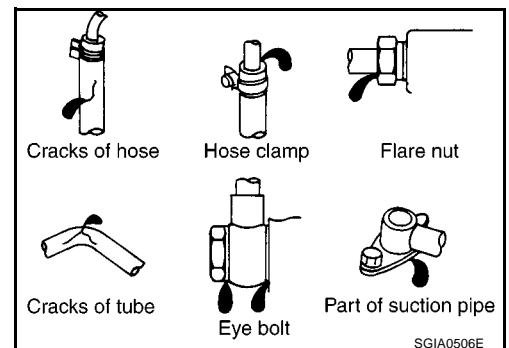
CAUTION:

- Do not overfill.
- Fill with the recommended fluid or equivalent. Refer to [MA-14, "Fluids and Lubricants"](#).



CHECKING LINES

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



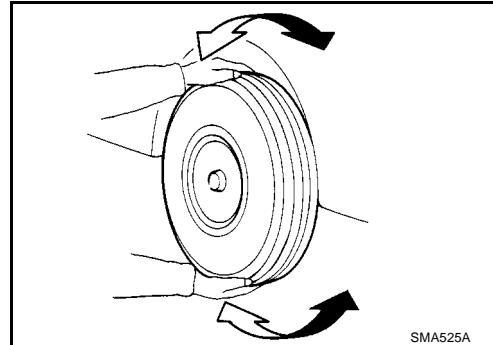
CHASSIS AND BODY MAINTENANCE

Checking Axle and Suspension Parts FRONT AND REAR AXLE AND SUSPENSION PARTS

ELS001J5

Check front and rear axle and suspension parts for excessive play, cracks, wear or other damage.

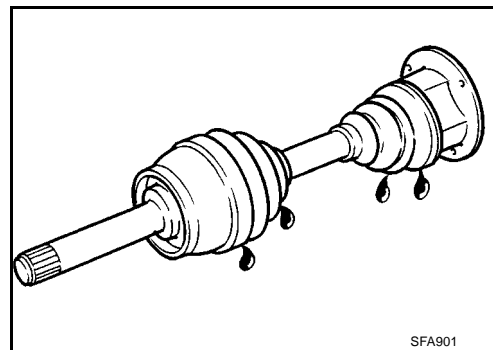
- Shake each wheel to check for excessive play.
- Rotate each wheel to check for abnormal noise.
- Check axle and suspension nuts and bolts for looseness.



- Check the strut and shock absorber for oil leakage or other damage.
- Check suspension ball joints for grease leakage and ball joint dust cover for cracks or other damage.

FRONT DRIVE SHAFT

Check the boots and drive shaft for cracks, wear, damage, and grease leakage.



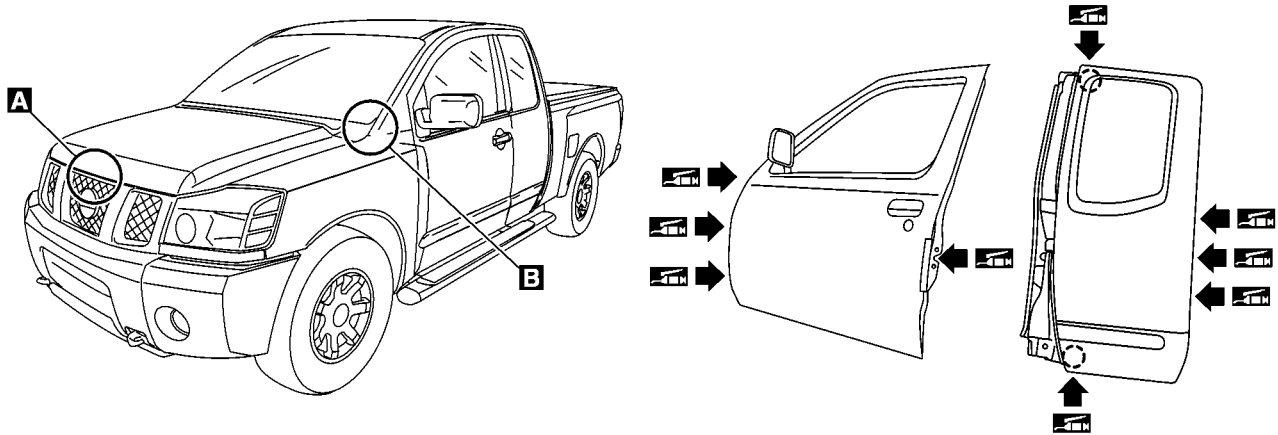
CHASSIS AND BODY MAINTENANCE

Lubricating Locks, Hinges and Hood Latches

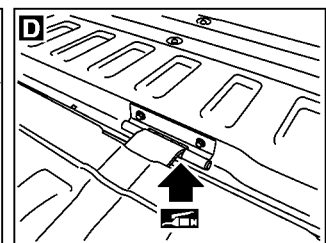
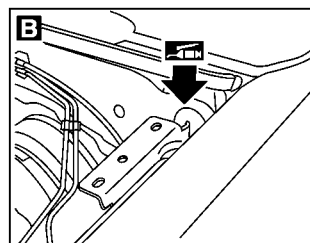
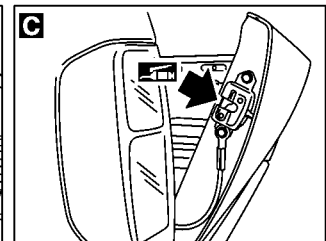
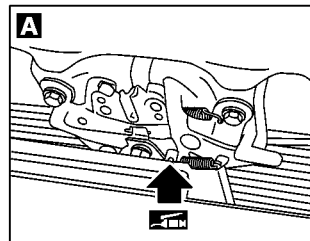
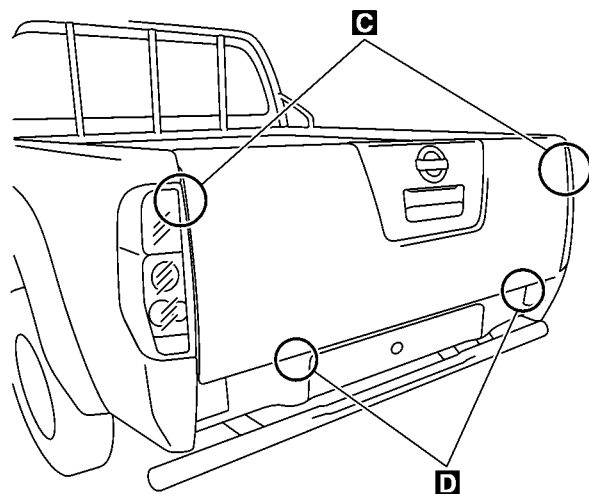
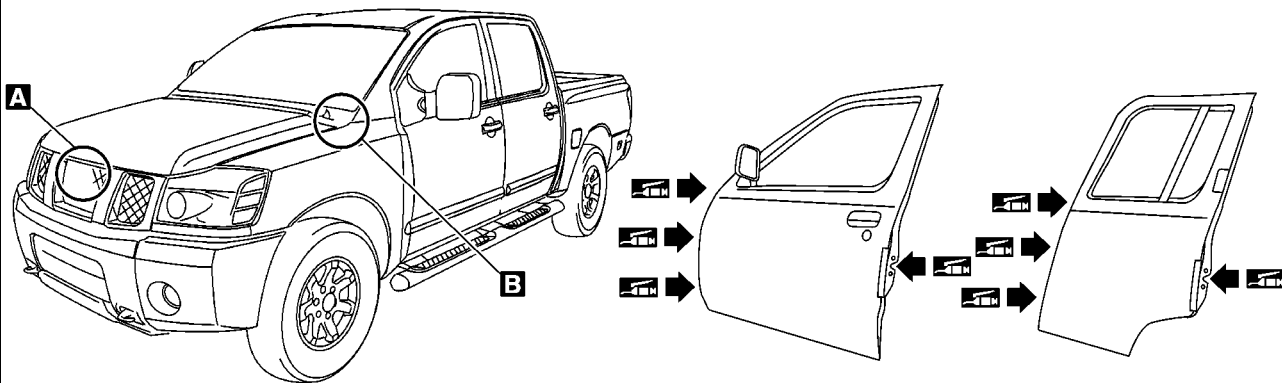
ELS001J6

A
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MA
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King cab



Double cab



MLIB0001E

- Lubricate the locations shown. Refer to [MA-14, "Fluids and Lubricants"](#) .

CHASSIS AND BODY MAINTENANCE

Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters

ELS001J7

Check the seat belt buckles, webbing, retractors, anchors and adjusters. Replace any seat belt assembly as necessary. Refer to [SB-11, "Seat Belt Inspection"](#).

- Check the seat belt anchors for loose mounting bolts, damage, or excessive wear.
- Check the seat belt webbing for any damage, cuts, fraying, or excessive wear.
- Check the retractor for smooth operation.
- Check the function of the buckles by inserting the seat belt tongue and checking for proper engagement of the buckle and press the button on the buckle to check for proper release of the seat belt tongue.

CAUTION:

- **After any collision, inspect all seat belt assemblies, including retractors and other attached components, such as the guide rail set. NISSAN recommends replacing all seat belt assemblies in use during a collision, unless they are not damaged and are inspected to confirm they are operating properly after a minor collision.**
Also inspect all seat belt assemblies that are not in use during a collision, and replace any components if damaged or not operating properly. The seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision where the driver and passenger air bags have been deployed.
- **If any component of the seat belt assembly is suspected of being damaged or not operating properly, do not repair the component. Replace the components as an assembly.**
- **If the seat belt webbing is cut, frayed, or damaged then replace the seat belt assembly.**
- **Never lubricate the seat belt buckle or tongue.**
- **When replacing any seat belt assembly always use a Genuine NISSAN seat belt assembly.**

Checking Body Corrosion

ELS001K3

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

HEMMED PANELS

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 wheel-arch flange, fuel filler lid flange, around holes in panel, etc.

PARTS CONTACT

Waist moulding, windshield moulding, 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)

SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

Standard and Limit BELT DEFLECTION

ELS001J8

Applied belt	Belt deflection with 98 N (10 kg, 22 lb) force applied* mm (in)		
	New	Adjusted	Limit for re-adjusting
A/C compressor, alternator and water pump belt	2.9 - 3.4 (0.114 - 0.134)	3.9 - 4.4 (0.154 - 0.173)	8.5 (0.335)
Power steering oil pump belt	4.6 - 5.4 (0.181 - 0.213)	7.1 - 7.7 (0.280 - 0.303)	11.3 (0.445)

*: When engine is cold.

RESERVOIR TANK

Unit: kPa (bar, kg/cm², psi)

Cap relief pressure	Standard	98.2 - 117.8 (0.98 - 1.18, 1.0 - 1.2, 14 - 17)
	Limit	59 (0.59, 0.6, 9)
Leakage test pressure		157 (1.57, 1.6, 23)

ENGINE COOLANT CAPACITY (APPROXIMATE)

Unit: ℓ (Imp qt)

Engine coolant capacity (With reservoir tank at "MAX" level)	LHD models	9.9 (8-3/4)
	RHD models	10.2 (9)
Reservoir tank coolant capacity (At "MAX" level)		0.8 (3/4)

ENGINE OIL CAPACITY (APPROXIMATE)

Unit: ℓ (Imp qt)

Drain and refill	With oil filter change	7.6 (6-5/8)
	Without oil filter change	7.1 (6-1/4)
Dry engine (Overhaul)		7.9 (7)

SERVICE DATA AND SPECIFICATIONS (SDS)
