

**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”

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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

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Tool number Tool name	Description
KV10115801 Oil filter wrench <div style="text-align: center;"> </div> <div style="text-align: center;">S-NT375</div>	Removing oil filter (VQ40DE engine models) <b>a: 64.3 mm (2.531 in)</b>
EG17650301 Radiator cap tester adapter <div style="text-align: center;"> </div> <div style="text-align: center;">S-NT564</div>	Adapting radiator cap tester to radiator cap and radiator filler neck <b>a: 28 (1.10) dia.</b> <b>b: 31.4 (1.236) dia.</b> <b>c: 41.3 (1.626) dia.</b> Unit: mm (in)

### Commercial Service Tools

GLS0005H

Tool name	Description
Spark plug wrench <div style="text-align: center;"> </div> <div style="text-align: center;">S-NT047</div>	Removing and installing spark plug (VQ40DE engine models)
Fuel filter wrench <div style="text-align: center;"> </div> <div style="text-align: center;">PBIC0519E</div>	Removing fuel filter (YD25DDTi engine model)
Radiator cap tester <div style="text-align: center;"> </div> <div style="text-align: center;">PBIC1982E</div>	Checking radiator and reservoir tank cap

# DESCRIPTION

## DESCRIPTION

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### Pre-Delivery Inspection Items

GLS00051

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 (Diesel only)
- Fuel filter for water or dusts (Diesel only), 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 conditioner (If applicable)
- Remove wiper blade protectors (If applicable)

#### UNDER BODY

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

#### ROAD TEST

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

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## DESCRIPTION

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- Squeaks and rattles

### **ENGINE OPERATING AND HOT**

- Adjust idle speed
- 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

- : Not applicable to this model

# GENERAL MAINTENANCE

## GENERAL MAINTENANCE

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### General Maintenance

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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
<b>Tires</b> 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.	—
<b>Windshield wiper blades</b> Check for cracks or wear if not functioning correctly.	—
<b>Doors and engine hood</b> 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.	<a href="#">MA-47</a> , <a href="#">BL-11</a>
<b>Tire rotation</b> 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.	<a href="#">MA-42</a>

#### 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
<b>Lamps</b> 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.	—
<b>Warning lamps and chimes</b> Make sure that all warning lamps and buzzers/chimes are operating properly.	—
<b>Steering wheel</b> Check that it has the specified play. Check for changes in the steering conditions, such as excessive free play, hard steering or strange noises. <b>Free play: Less than 35 mm (1.38 in)</b>	—
<b>Seat belts</b> 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.	<a href="#">MA-48</a>

#### 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
<b>Windshield washer fluid</b> Check that there is adequate fluid in the tank.	—
<b>Engine coolant level</b> Check the coolant level when the engine is cold.	<a href="#">MA-17</a> (VQ40DE)
	<a href="#">MA-27</a> (YD25DDTi)
<b>Engine oil level</b> Check the level after parking the vehicle (on level ground) and turning off the engine.	<a href="#">MA-20</a> (VQ40DE)
	<a href="#">MA-33</a> (YD25DDTi)
<b>Brake and clutch fluid levels</b> Make sure that the brake and clutch fluid levels are between the "MAX" and "MIN" lines on the reservoir.	<a href="#">MA-36</a> , <a href="#">MA-43</a>
<b>Battery</b> Check the fluid level in each cell. It should be between the "MAX" and "MIN" lines.	—

# PERIODIC MAINTENANCE (EXCEPT FOR EUROPE)

## PERIODIC MAINTENANCE (EXCEPT FOR EUROPE)

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### Periodic Maintenance (Except for Europe)

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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 (VQ40DE GASOLINE ENGINE)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, C = Clean, E = Check and correct the engine coolant mixture ratio.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL									Reference page
	km x 1,000 (Miles x 1,000) Months	1 (0.6)	10 (6)	20 (12)	30 (18)	40 (24)	50 (30)	60 (36)	70 (42)	80 (48)	
<b>Engine compartment and under vehicle</b>											
Intake and exhaust valve clearance	See NOTE (1)										<a href="#">EM-83</a>
Drive belts	See NOTE (2)					I				I	<a href="#">MA-16</a>
Engine oil (Use recommended oil)★			R	R	R	R	R	R	R	R	<a href="#">MA-20</a>
Engine oil filter (Use genuine NISSAN part or equivalent)★			R	R	R	R	R	R	R	R	<a href="#">MA-22</a>
Engine coolant (Use NISSAN Genuine Engine Coolant or equivalent in its quality)	See NOTE (3)					E				R	<a href="#">MA-17</a>
Cooling system				I		I		I		I	<a href="#">MA-19</a>
Fuel lines						I				I	<a href="#">MA-20</a>
Air cleaner filter (Viscous paper type)★						R				R	<a href="#">MA-20</a>
Fuel filter (In-tank type)	See NOTE (4)										<a href="#">FL-10</a>
Spark plugs (Platinum-tipped type)		Replace every 100,000Km (60,000miles)									<a href="#">MA-23</a>
EVAP vapor lines (With carbon canister)						I				I	<a href="#">MA-24</a>

#### NOTE:

- ★ Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.
- (1) Periodic maintenance is not required. However, if valve noise increases, check valve clearance.
- (2) Replace the drive belts if found damaged or if the auto belt tensioner reading reaches the maximum limit.
- (3) Use NISSAN Genuine Engine Coolant, 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. After first replacement, replace every 40,000 km (24,000 miles) or 24 months.
- (4) Fuel filter is maintenance-free. For service procedures, refer to FL section.



# PERIODIC MAINTENANCE (EXCEPT FOR EUROPE)

## ENGINE AND EMISSION CONTROL MAINTENANCE (YD25DDTI DIESEL ENGINE)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, D = Check filter and drain water, E = Check and correct the engine coolant mixture ratio.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Refer- ence page
	km x 1,000 (Miles x 1,000) Months	10 (6) 6	20 (12) 12	30 (18) 18	40 (24) 24	50 (30) 30	60 (36) 36	70 (42) 42	80 (48) 48	
<b>Engine compartment and under vehicle</b>										
Intake & exhaust valve clearance	See NOTE(1)									<a href="#">EM-210</a>
Drive belts			I		I		I		I	<a href="#">MA-25</a>
Engine oil (Use recommended oil.)★	See NOTE(2)	Replace every 15,000Km (9,000 miles) or 12 months								<a href="#">MA-33</a>
Engine oil filter (Use genuine NISSAN part or equivalent)★	See NOTE(3)	Replace every 15,000Km (9,000 miles) or 12 months								<a href="#">MA-34</a>
Engine coolant (Use NISSAN Genuine Engine Coolant or equivalent in its quality)	See NOTE(4)				E				R	<a href="#">MA-27</a>
Cooling system			I		I		I		I	<a href="#">MA-29</a>
Fuel lines					I				I	<a href="#">MA-30</a>
Air cleaner filter (Dry paper type)★		Clean air cleaner filter every 5,000Km (3,000 miles) or 3 months								<a href="#">MA-33</a>
Air cleaner filter (Dry paper type)★ for replace					R				R	<a href="#">MA-33</a>
Fuel filter★		D	D	D	R	D	D	D	R	<a href="#">MA-32, MA-31</a>
Fuel injector	See NOTE(5)									<a href="#">EC-1113</a>

### 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) Use NISSAN Genuine Engine Coolant, 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. After first replacement, replace every 40,000 km (24,000 miles) or 24 months.
- (5) If engine power decreases, black exhaust smoke is emitted or engine noise increases, perform this maintenance item.

# PERIODIC MAINTENANCE (EXCEPT FOR EUROPE)

## CHASSIS AND BODY MAINTENANCE

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL									Reference page
		1 (0.6)	10 (6)	20 (12)	30 (18)	40 (24)	50 (30)	60 (36)	70 (42)	80 (48)	
Perform either at number of kilometers (miles) or months, whichever comes first.	km x 1,000 (Miles x 1,000) Months	-	6	12	18	24	30	36	42	48	
<b>Underhood and under vehicle</b>											
Brake, clutch & automatic transmission fluid (For level & leaks)★			I	I	I	I	I	I	I	I	<a href="#">MA-43</a> , <a href="#">MA-36</a> , <a href="#">MA-37</a>
Brake fluid★						R				R	<a href="#">MA-43</a>
Brake booster vacuum hoses, connections & check valve						I				I	<a href="#">BR-23</a>
Power steering fluid & lines (For level & leaks)			I*	I	I*	I	I*	I	I*	I	<a href="#">MA-45</a>
Brake, clutch & exhaust systems			I	I	I	I	I	I	I	I	<a href="#">MA-43</a> , <a href="#">MA-36</a> , <a href="#">MA-36</a>
Manual transmission gear oil (For leaks)			I*	I	I*	I	I*	I	I*	I	<a href="#">MA-36</a>
Transfer fluid (For level & leaks)			I	I	I	I	I	I	I	I	<a href="#">MA-39</a>
Differential gear oil (For level & leaks)★			I	I	I	I	I	I	I	I	<a href="#">MA-40</a> , <a href="#">MA-41</a> , <a href="#">MA-41</a> , <a href="#">MA-42</a>
Limited-slip differential (LSD) gear oil (For level & leaks or replace)★			I	I	I	R	I	I	I	R	<a href="#">MA-41</a> , <a href="#">MA-42</a>
Steering gear box & linkage, axle & suspension parts, propeller shaft & drive shafts ★				I		I		I		I	<a href="#">MA-45</a> , <a href="#">MA-46</a> , <a href="#">MA-40</a> , <a href="#">MA-46</a>
Body mountings		T		T		T		T		T	<a href="#">BL-100</a>
<b>Outside and inside</b>											
Wheel alignment (If necessary, rotate & balance wheels)				I		I		I		I	<a href="#">FSU-7</a> , <a href="#">RSU-7</a> , <a href="#">MA-42</a>
Brake pads, rotors & other brake components★			I	I	I	I	I	I	I	I	<a href="#">MA-44</a> , <a href="#">MA-43</a> , <a href="#">MA-44</a>
Brake linings, drums & other brake components★				I		I		I		I	<a href="#">MA-44</a>
Lock, hinges & hood latch★			L*	L	L*	L	L*	L	L*	L	<a href="#">MA-47</a> , <a href="#">BL-11</a>
Seat belts, buckles, retractors, anchors & adjuster				I		I		I		I	<a href="#">MA-48</a>
Foot brake, parking brake & clutch (For free play, stroke & operation)			I*	I	I*	I	I*	I	I*	I	<a href="#">BR-6</a> , <a href="#">PB-2</a> , <a href="#">CL-6</a>
Air conditioner filter★				R		R		R		R	<a href="#">MTC-94</a>

**NOTE:**

- ★ Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.
- \*: Models except for Australia

# PERIODIC MAINTENANCE (EXCEPT FOR EUROPE)

## 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

- 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
- J — Frequent driving in water

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

Driving condition										Maintenance item	Maintenance operation	Maintenance interval	Reference page	
A	.	.	.	.	.	.	.	.	.	Air cleaner filter	Viscous paper type	Replace	More frequently	<a href="#">MA-20</a> (VQ40DE)
											Dry paper type	Clean or Replace		<a href="#">MA-33</a> (YD25DDTi)
A	B	C	D	.	.	.	.	.	.	Engine oil & engine oil filter (Gasoline engine)	Replace	Every 5,000 km (3,000 miles) or 3 months	<a href="#">MA-20</a> , <a href="#">MA-22</a>	
A	B	C	D	.	.	.	.	.	.	Engine oil & engine oil filter (Diesel engine)	Replace	Every 7,500 km (4,500 miles) or 6 months	<a href="#">MA-33</a> <a href="#">MA-34</a>	
A	.	.	.	E	.	.	.	.	.	Fuel filter	Diesel engine	Check filter & drain water	Every 5,000 km (3,000 miles) or 3 months	<a href="#">MA-32</a>
												Replace	Every 20,000 km (12,000 miles) or 12 months	<a href="#">MA-31</a>
.	.	.	.	.	F	.	.	.	.	Brake fluid	Replace	Every 20,000 km (12,000 miles) or 12 months	<a href="#">MA-43</a>	
.	.	C	.	.	.	.	.	H	.	Differential gear oil	Replace	Every 40,000 km (24,000 miles) or 24 months	<a href="#">MA-41</a> , <a href="#">MA-42</a>	
.	.	C	.	.	.	.	.	H	.	Limited-slip differential (LSD) gear oil	Replace	Every 20,000 km (12,000 miles) or 12 months	<a href="#">MA-42</a>	
.	.	C	.	.	.	.	.	H	.	Automatic transmission fluid	Replace	Every 40,000 km (24,000 miles) or 24 months	<a href="#">MA-39</a>	
.	.	.	.	.	.	G	H	.	.	Steering gear box & linkage, axle & suspension parts, propeller shaft & drive shafts	Inspect	Every 10,000 km (6,000 miles) or 6 months	<a href="#">MA-45</a> , <a href="#">MA-46</a> , <a href="#">MA-40</a> , <a href="#">MA-46</a>	
A	.	C	.	.	.	G	H	I	.	Brake pads, rotors & other brake components	Inspect	Every 5,000 km (3,000 miles) or 3 months	<a href="#">MA-44</a> , <a href="#">MA-43</a> , <a href="#">MA-44</a>	
A	.	C	.	.	.	G	H	I	.	Brake linings, drums & other brake components	Inspect	Every 10,000 km (6,000 miles) or 6 months	<a href="#">MA-44</a>	



# RECOMMENDED FLUIDS AND LUBRICANTS

## RECOMMENDED FLUIDS AND LUBRICANTS

PPF:00000

### Fluids and Lubricants

GLS005K

			Capacity (Approximate)		Recommended Fluids/Lubricants
			Liter	Imp measure	
Engine oil Drain and refill	With oil filter change	VQ40DE	5.1	4-1/2 qt	<ul style="list-style-type: none"> <li>● Gasoline engine API grade SG, SH, SJ or SL*1 ILSAC grade GF-1, GF-2, GF-3, GF-4 or SG+*1</li> <li>● Diesel engine API grade CF-4*1, *2 JASO DH-1*1</li> </ul>
		YD25DDTi	7.6	6-5/8 qt	
	Without oil filter change	VQ40DE	4.8	4-1/4 qt	
		YD25DDTi	7.1	6-1/4 qt	
Dry engine (engine overhaul)		VQ40DE	6.3	5-1/2 qt	
		YD25DDTi	7.9	7 qt	
Cooling system (with reservoir)		VQ40DE	10.3	9-1/8 qt	● NISSAN Genuine Engine Coolant or equivalent in its quality*3
		YD25DDTi	10.2	9 qt	
Reservoir tank			0.8	3/4 qt	
Manual transmission gear oil	VQ40DE	2WD	3.98	7 pt	● API GL-4, Viscosity SAE 75W-85
		4WD	4.18	7-3/8 pt	
	YD25DDTi	2WD	3.99	7 pt	
		4WD	4.32	7-5/8 pt	
Transfer fluid	TX15B		2.0	1-3/4 qt	Genuine NISSAN ATF Matic Fluid D or equivalent*4
Differential gear oil	Front		0.85	1-1/2 pt	<ul style="list-style-type: none"> <li>● Standard differential gear: Gear Oil Hypoid LSD (Part No.: KLD31-8090403) or API GL-5, Viscosity SAE 80W-90*1</li> </ul>
	Rear		2.01	3-1/2 pt	<ul style="list-style-type: none"> <li>● Limited-slip differential (LSD) gear: for rear differential gear only Gear Oil Hypoid LSD (Part No. KLD31-8090403) or equivalent</li> </ul>
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			—	—	● DOT 3 (US FMVSS No. 116)
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 NISSAN Genuine Engine Coolant 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.**

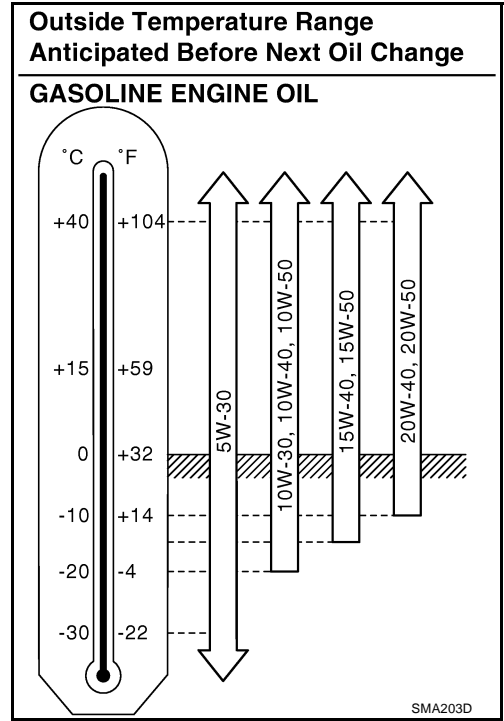
\*6: DEXRON™ III type ATF can be used.

# RECOMMENDED FLUIDS AND LUBRICANTS

GLS0005L

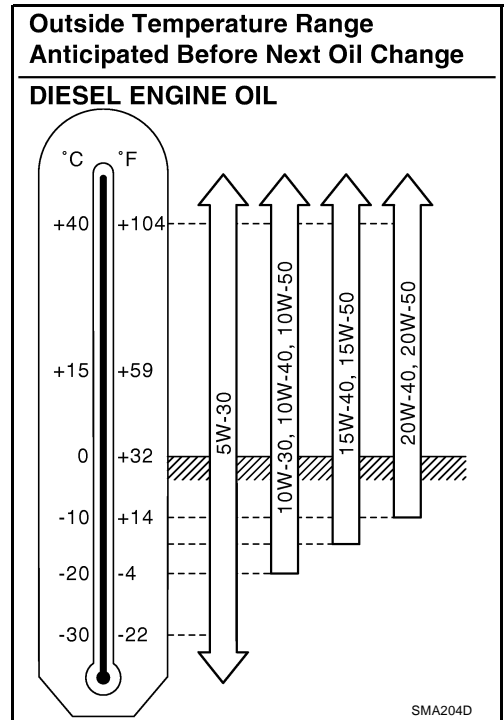
## SAE Viscosity Number GASOLINE ENGINE

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



## DIESEL ENGINE

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



# RECOMMENDED FLUIDS AND LUBRICANTS

## Engine Coolant Mixture Ratio

GLS0005M

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 **NIS-SAN Genuine Engine Coolant** or equivalent in its quality with the proper mixture ratio. See the examples shown right.

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.

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

SMA089D

### 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.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
MA  
M

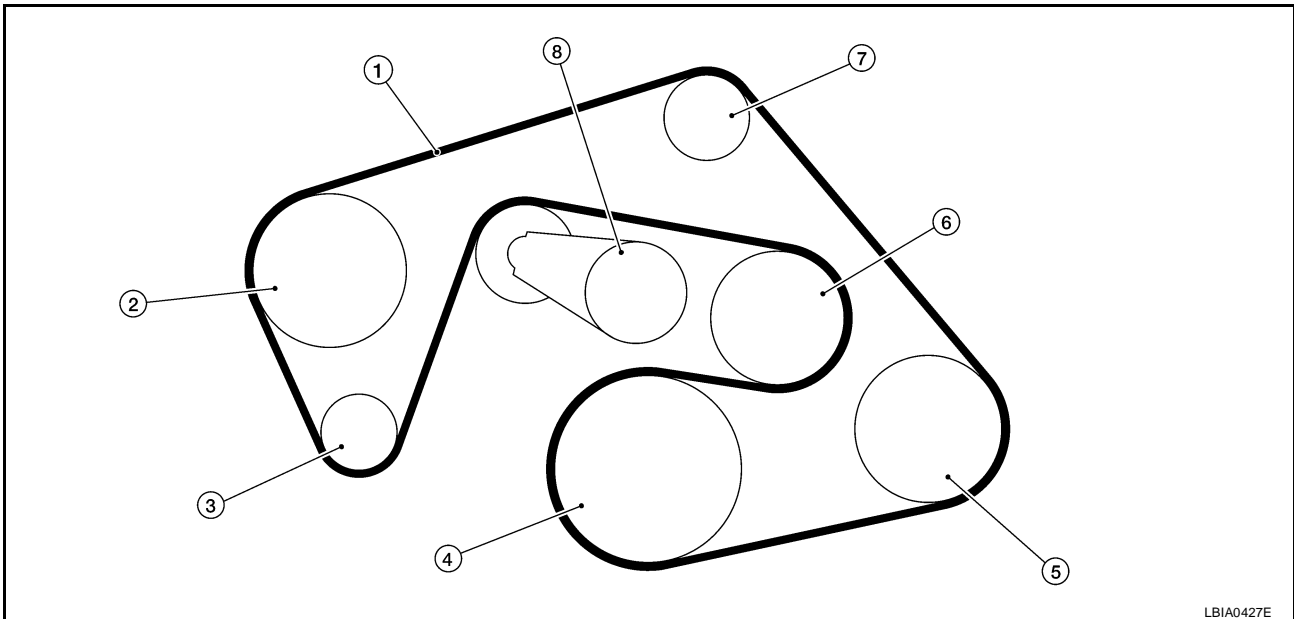
MA

## ENGINE MAINTENANCE (VQ40DE)

PFP:00100

### Checking Drive Belts

GLS0005N



- |                      |                                   |                       |
|----------------------|-----------------------------------|-----------------------|
| 1. Drive belt        | 2. Power steering oil pump pulley | 3. Alternator pulley  |
| 4. Crankshaft pulley | 5. A/C compressor pulley          | 6. Cooling fan pulley |
| 7. Idler pulley      | 8. Drive belt auto tensioner      |                       |

#### WARNING:

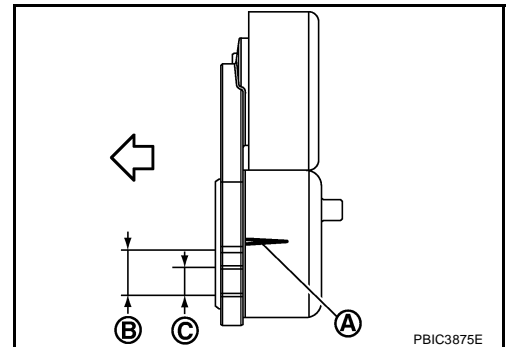
#### Be sure to perform when engine is stopped.

- Remove engine undercover front and air-duct-and-resonator-assembly when inspecting drive belt. Refer to [EI-15, "FRONT BUMPER"](#) and [EM-17, "AIR CLEANER AND AIR DUCT"](#).
- Make sure that indicator (A) of auto tensioner is within the allowable working range (between three line notches "B").

⇐ Engine front

#### NOTE:

- Check auto tensioner indication when engine is cold.
- When new drive belt is installed, the range should be (C).
- The indicator notch is located on the moving side of auto tensioner for alternator, water pump and A/C compressor belt, while it is found on the fixed side for power steering oil pump belt.
- Visually check drive belt for wear, damage or cracks.
- If the indicator is out of allowable working range or belt is damaged, replace drive belt.



### Tension Adjustment

GLS0005O

Belt tensioning is not necessary, as it is automatically adjusted by auto tensioner.



# ENGINE MAINTENANCE (VQ40DE)

GLS0005P

## Changing Engine Coolant

### WARNING:

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

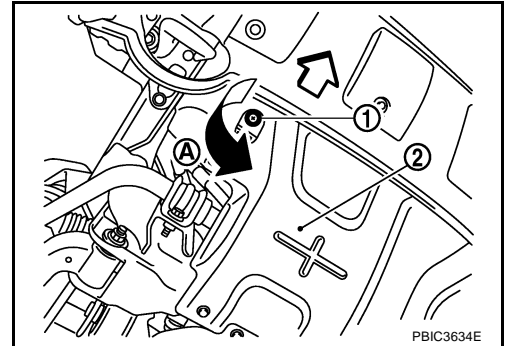
### DRAINING ENGINE COOLANT

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

2 : Engine under cover (front)

A : Loosen.

↔ : Vehicle front



### CAUTION:

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

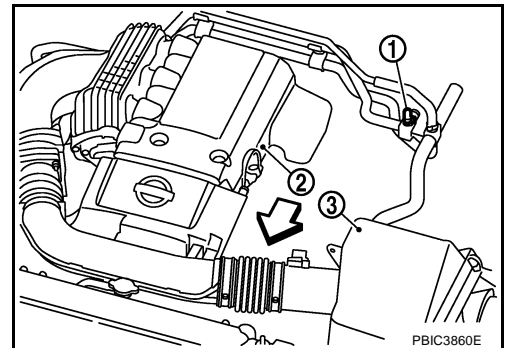
When drain all of engine coolant in the system, also performing the following steps.

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

2 : Engine cover

3 : Air cleaner case

↔ : Vehicle front



3. Open cylinder block drain plug. Refer to [EM-107, "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 the engine cooling system. Refer to [MA-18, "FLUSHING COOLING SYSTEM"](#).

### 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 plugs on cylinder block are removed, close and tighten them. Refer to [EM-107, "CYLINDER BLOCK"](#).
2. Make sure that each hose clamp has been firmly tightened.

# ENGINE MAINTENANCE (VQ40DE)

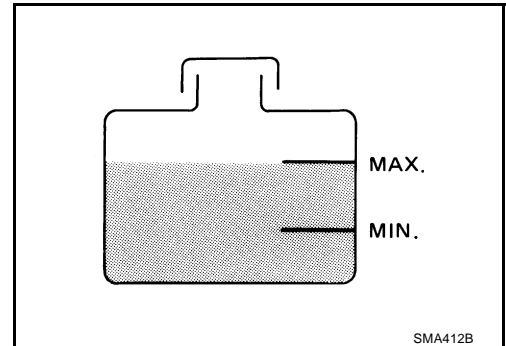
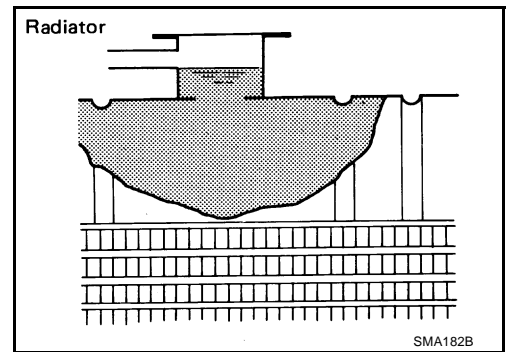
3. Fill radiator and reservoir tank to the specified level.

- 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 NISSAN Genuine Engine Coolant or equivalent in its quality. Refer to [MA-13, "RECOMMENDED FLUIDS AND LUBRICANTS"](#).

**Engine coolant capacity  
(with reservoir tank at "MAX" level)**  
: Approx. 10.3 ℓ (9 - 1/8 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 engine.

6. Stop engine and cool down to less than approximately 50°C (122°F).
- Cool down using 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.
11. Repeat step 10 three times.
12. If sound is heard, bleed air from cooling system by repeating step 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-17, "DRAINING ENGINE COOLANT"](#).
6. Repeat steps 1 through 5 until clear water begins to drain from radiator.

## Checking Cooling System

### WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator.

Wrap a thick cloth around the cap. Slowly turn it a quarter of a turn to release built-up pressure. Carefully remove radiator cap by turning it all the way.

### CHECKING COOLING SYSTEM HOSES

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

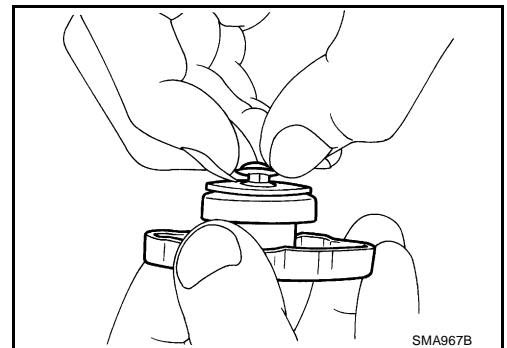
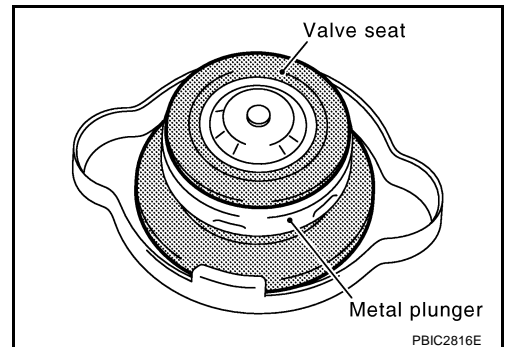
### CHECKING RADIATOR

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 electrical connectors to prevent water from entering.
1. Apply water by hose to the back side of radiator core vertically downward.
  2. Apply water again to all radiator core surfaces 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 downward.
    - Use compressed air lower than 490 kPa (4.9 bar, 5 kg/cm<sup>2</sup>, 71 psi) and keep distance more than 30 cm (11.8 in).
  5. Blow air again into all the radiator core surfaces 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.
- 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.



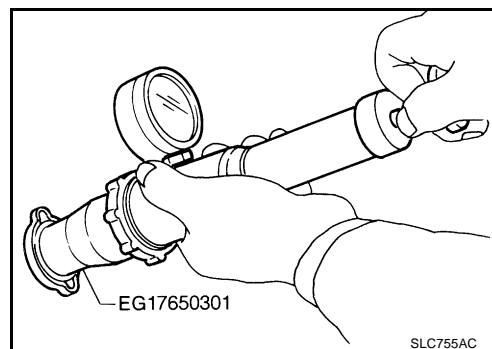
## ENGINE MAINTENANCE (VQ40DE)

- Check reservoir tank cap relief pressure.

**Standard** : 98.2 - 117.8 kPa (0.98 - 1.18 bar, 1.0 - 1.2 kg/cm<sup>2</sup> , 14 - 17 psi)

**Limit** : 59 kPa (0.59 bar, 0.6 kg/cm<sup>2</sup> , 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.

### 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) [special service tool: EG17650301].

**Testing pressure:**

157 kPa (1.57 bar, 1.6 kg/cm<sup>2</sup> , 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.

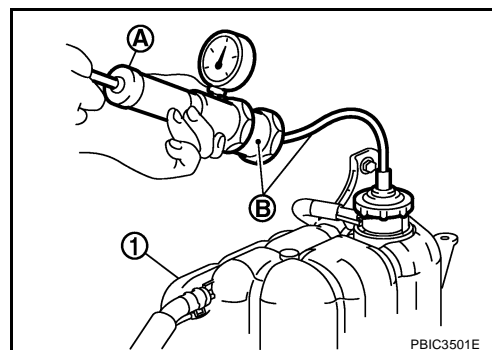
### CAUTION:

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.

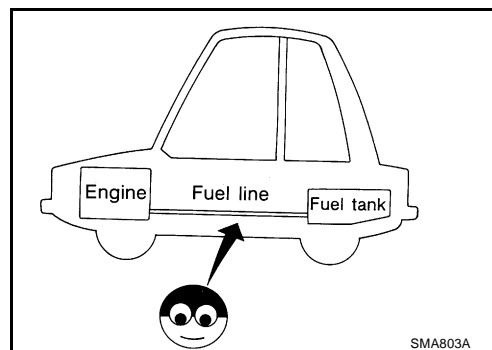
- If anything is found, repair or replace damaged parts.



### Checking Fuel Lines

Inspect fuel lines, fuel filler cap and fuel tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration.

If necessary, repair or replace damaged parts.



### Changing Air Cleaner Filter VISCIOUS PAPER TYPE

The viscous paper type filter does not need cleaning between replacement intervals. Refer to [MA-8, "PERIODIC MAINTENANCE \(EXCEPT FOR EUROPE\)"](#).

### Changing Engine Oil

### WARNING:

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

## ENGINE MAINTENANCE (VQ40DE)

- **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-7, "ENGINE OIL LEAKAGE"](#).
  2. Stop engine and wait for 10 minutes.
  3. Loosen oil filler cap and then remove drain plug.
  4. Drain engine oil.
  5. Install drain plug with new washer. Refer to [EM-28, "OIL PAN AND OIL STRAINER"](#).

**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-13, "RECOMMENDED FLUIDS AND LUBRICANTS"](#).

**Engine oil capacity (Approximate):**

Unit: ℓ (Imp qt)

Drain and refill	With oil filter change	5.1 (4-1/2)
	Without oil filter change	4.8 (4-1/4)
Dry engine (Overhaul)		6.3 (5-1/2)

**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-7, "ENGINE OIL LEVEL"](#).

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# ENGINE MAINTENANCE (VQ40DE)

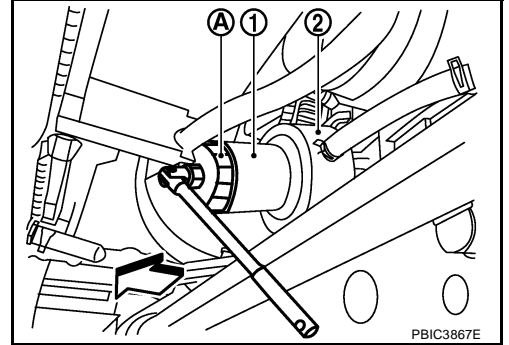
GLS0005U

## Changing Oil Filter REMOVAL

1. Remove engine undercover front and engine undercover middle. Refer to [EI-15, "FRONT BUMPER"](#) .
2. Using the oil filter wrench [SST: KV10115821] (A), remove oil filter (1).

2 : Oil cooler

← : Vehicle front



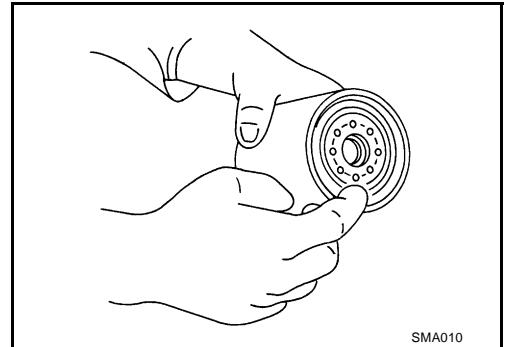
### CAUTION:

- 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 adheres to engine and vehicle.
- Oil filter is provided with relief valve. Use Genuine Nissan Oil Filter or equivalent.

## INSTALLATION

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

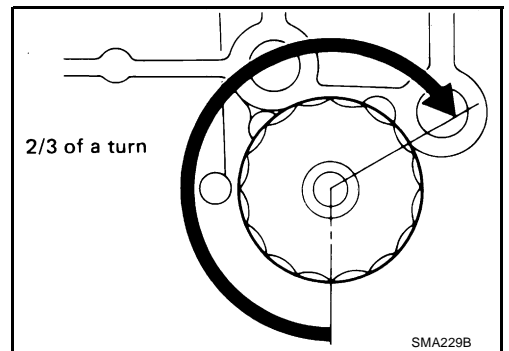
**Use Genuine Nissan Oil Filter or equivalent.**



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-7, "ENGINE OIL"](#) .
2. Start engine, and check there is no leaks of engine oil.
3. Stop engine and wait for 10 minutes.
4. Check the engine oil level and add engine oil. Refer to [LU-7, "ENGINE OIL"](#) .

# ENGINE MAINTENANCE (VQ40DE)

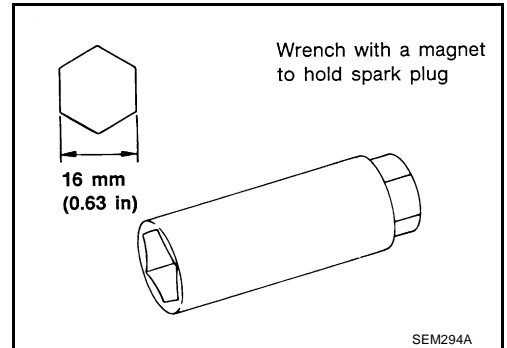
GLS0005V

## Changing Spark Plugs (Platinum-Tipped Type) REMOVAL

1. Remove ignition coil. Refer to [EM-33, "IGNITION COIL"](#) .
2. Remove spark plug using spark plug wrench (commercial service tool).

**CAUTION:**

**Do not drop or shock it.**



## INSPECTION AFTER REMOVAL

**Use standard type spark plug for normal condition.**

Hot type spark plug is suitable when fouling occurs with standard type spark plug under conditions such as:

- Frequent engine starts
- Low ambient temperatures

Cold type spark plug is suitable when spark plug knock occurs with standard type spark plug under conditions such as:

- Extended highway driving
- Frequent high engine revolution

Make	NGK
Standard type	PLFR5A-11
Hot type	PLFR4A-11
Cold type	PLFR6A-11

**Gap (Nominal) : 1.1 mm (0.043 in)**

**CAUTION:**

- Do not drop or shock spark plug.
- Do not use wire brush for cleaning.
- If plug tip is covered with carbon, spark plug cleaner may be used.

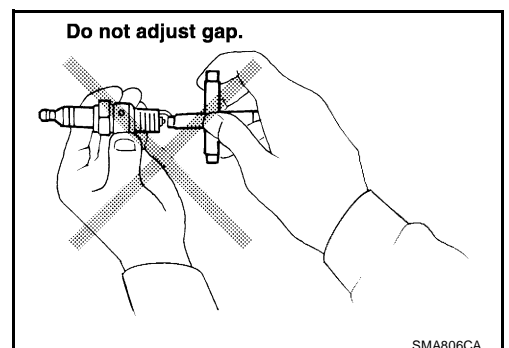
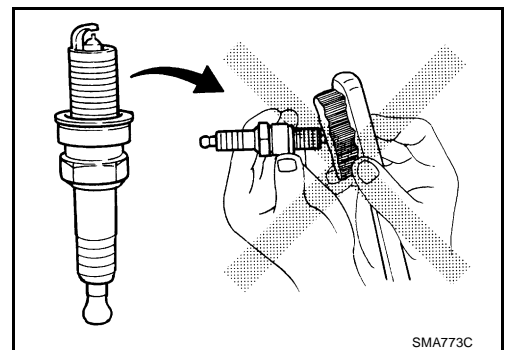
**Cleaner air pressure:**

**Less than 588 kPa (6 kg/cm<sup>2</sup> , 85 psi)**

**Cleaning time:**

**Less than 20 seconds**

- Checking and adjusting plug gap is not required between change intervals.



# ENGINE MAINTENANCE (VQ40DE)

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## INSTALLATION

Installation is the reverse order of removal.

### Spark plug:

 : 24.5 N·m (2.5 kg-m, 18 ft-lb)

## Checking EVAP Vapor Lines

GLS0005W

1. Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration.
2. Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc.  
Refer to [EC-37, "EVAPORATIVE EMISSION SYSTEM"](#) (for Australia), [EC-594, "EVAPORATIVE EMISSION SYSTEM"](#) (except for Australia).



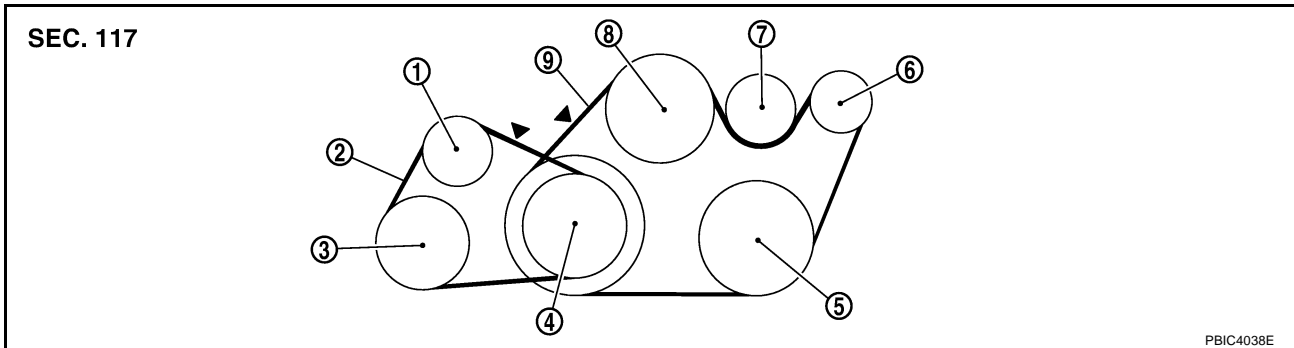
# ENGINE MAINTENANCE (YD25DDTI)

## ENGINE MAINTENANCE (YD25DDTI)

PPF:00100

### Checking Drive Belts

GLS005X



- |                      |  |  |
|----------------------|--|--|
| 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)<br>Dummy pulley (Models without A/C) | 6. Alternator  |
| 7. Idler pulley      | 8. Water pump pulley   | 9. A/C compressor, alternator and<br>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:**

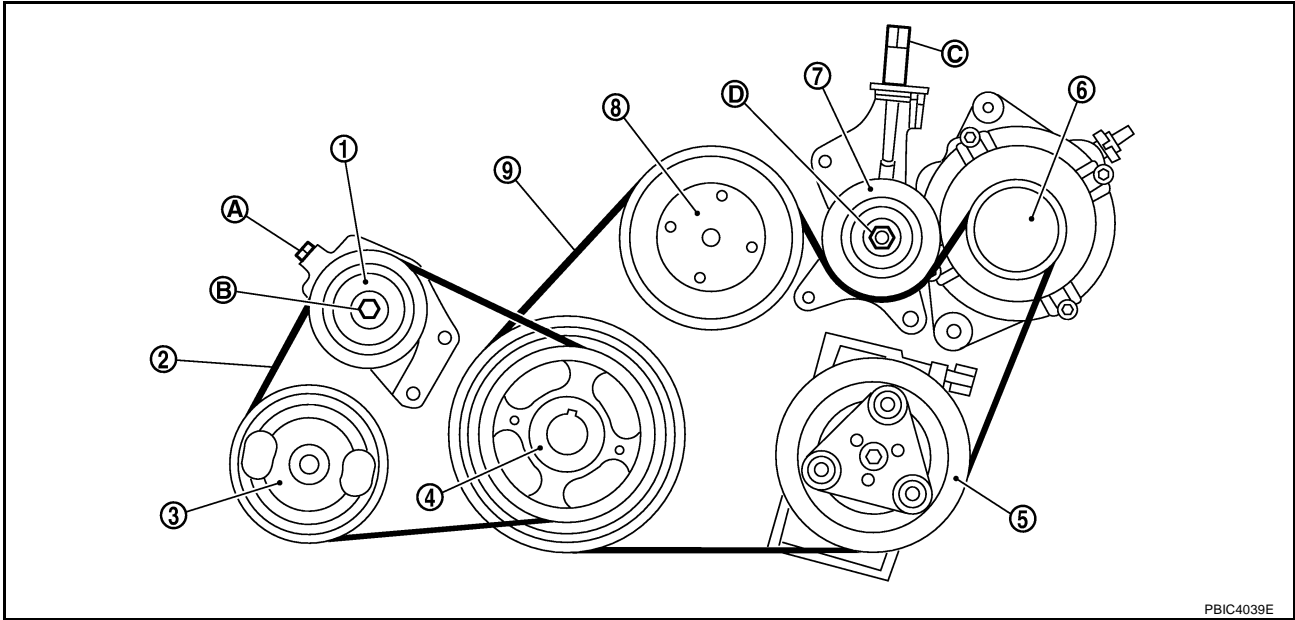
- **When checking belt deflection immediately after installation, first adjust it to the specified value. Then, after turning crankshaft two turns or more, re-adjust to the specified value to avoid variation in deflection between pulleys.**
- **Tighten idler pulley lock nut by hand and measure deflection 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.

## Tension Adjustment



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)<br>Dummy pulley (Models without A/C) | 6. Alternator  |
| 7. Idler pulley          | 8. Water pump pulley   | 9. A/C compressor, alternator and<br>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

1. Remove undercover.
2. Loosen idler pulley lock nut (B).
3. Turn adjusting bolt (A) to adjust. Refer to [MA-25, "Checking Drive Belts"](#) .
4. Tighten idler pulley lock nut (B).

#### Nut B:

🔧 : 28.0 N·m (2.9 kg·m, 21 ft·lb)

# ENGINE MAINTENANCE (YD25DDTI)

## 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-26, "Tension Adjustment"](#) .
3. Tighten lock nut (D).

### Nut D:

 : 45.0 N·m (4.6 kg·m, 33 ft·lb)

## Changing Engine Coolant

GLS0005Z

### 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.

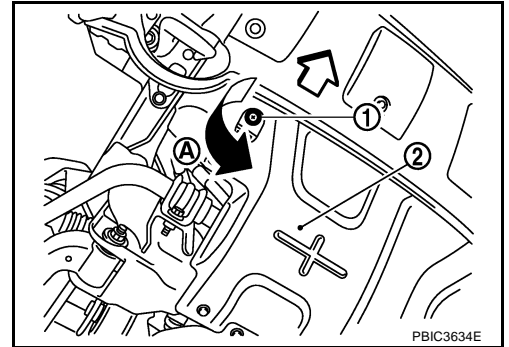
## DRAINING ENGINE COOLANT

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

2 : Engine under cover (front)

A : Loosen.

 : Vehicle front



### CAUTION:

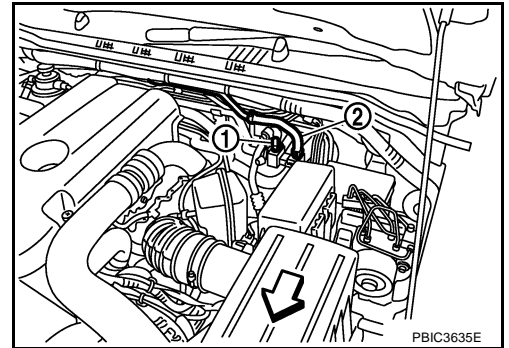
Be careful not to allow engine coolant to contact drive belts.

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

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

2 : Water hose (from reservoir tank)

 : Vehicle front



3. Open cylinder block drain plug. Refer to [EM-254, "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-28, "FLUSHING COOLING SYSTEM"](#) .

## 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-254, "CYLINDER BLOCK"](#) .
2. Make sure that each hose clamp has been firmly tightened.

# ENGINE MAINTENANCE (YD25DDTI)

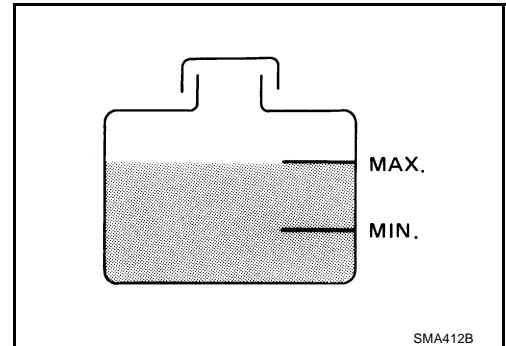
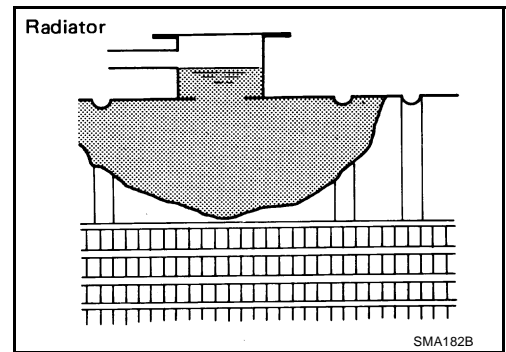
3. Fill radiator and reservoir tank to the specified level.

- 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 NISSAN Genuine Engine Coolant or equivalent in its quality. Refer to [MA-13, "RECOMMENDED FLUIDS AND LUBRICANTS"](#)

**Engine coolant capacity  
(with reservoir tank at "MAX" level)**  
: 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.
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.
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-27, "DRAINING ENGINE COOLANT"](#).
6. Repeat steps 1 through 5 until clear water begins to drain from radiator.

## Checking Cooling System

### WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator. 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.

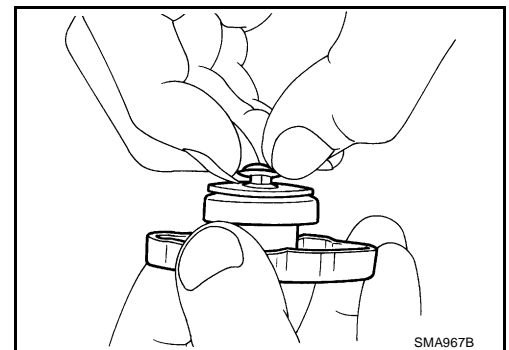
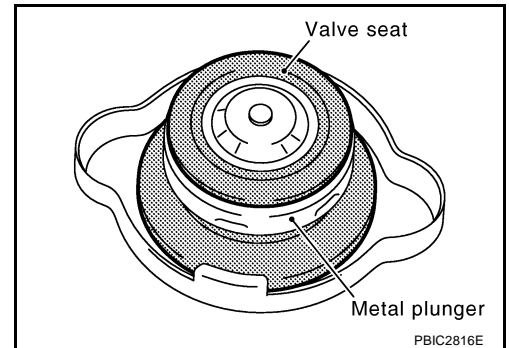
### CHECKING RADIATOR

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/cm<sup>2</sup> , 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.
- 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.



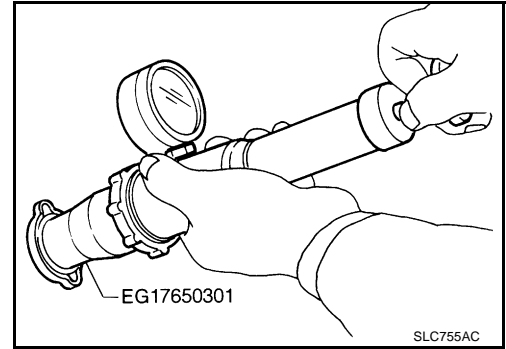
# ENGINE MAINTENANCE (YD25DDTI)

- Check reservoir tank cap relief pressure.

**Standard** : 98.2 - 117.8 kPa (0.98 - 1.18 bar, 1.0 - 1.2 kg/cm<sup>2</sup> , 14 - 17 psi)

**Limit** : 59 kPa (0.59 bar, 0.6 kg/cm<sup>2</sup> , 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.

## 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) [special service tool: EG17650301].

**Testing pressure:**

**157 kPa (1.57 bar, 1.6 kg/cm<sup>2</sup> , 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.

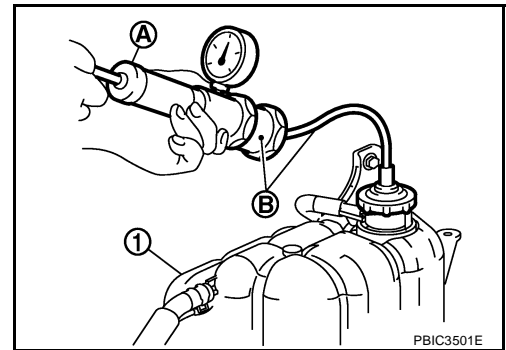
## CAUTION:

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.

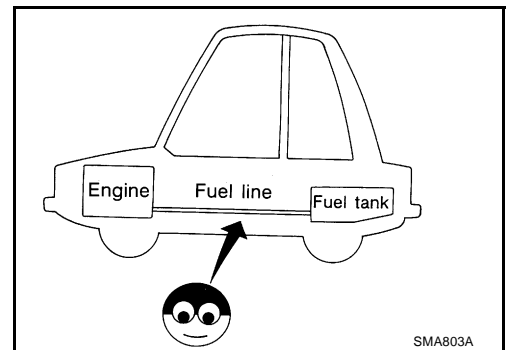
- If anything is found, repair or replace damaged parts.



## Checking Fuel Lines

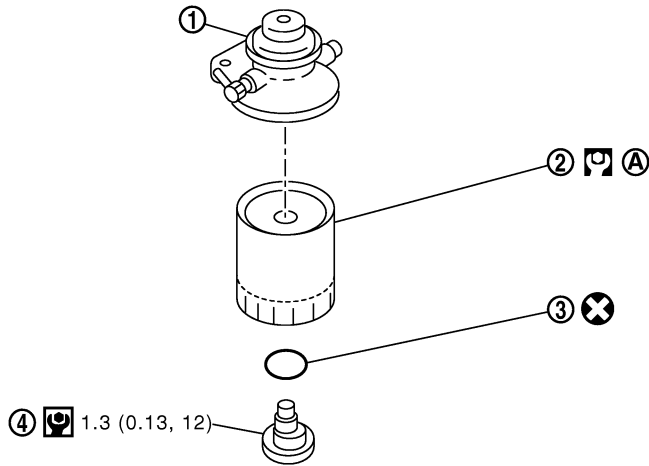
GLS00061

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.



## Changing Fuel Filter

SEC. 164



: N•m (kg-m, in-lb)

: N•m (kg-m, ft-lb)

PBIC3369E

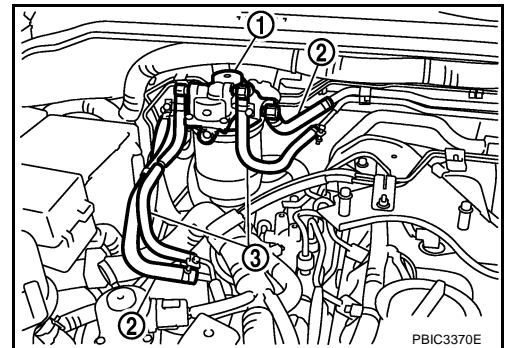
- 1. Fuel filter bracket
- 2. Fuel filter
- 3. O-ring
- 4. Drain plug
- A. Refer to text.

- 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)

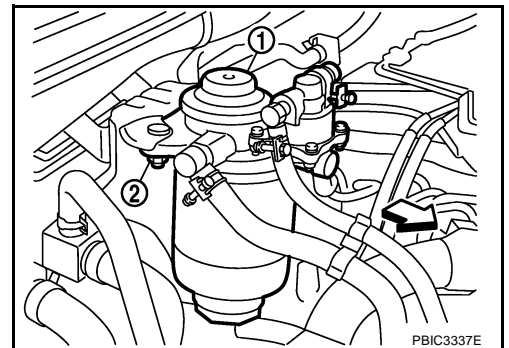
**CAUTION:**  
Plug the pipe to prevent fuel from draining.



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.



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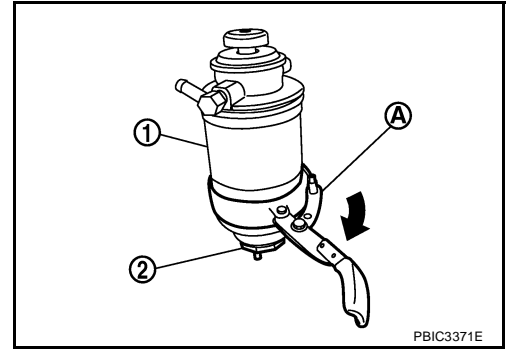
M

# ENGINE MAINTENANCE (YD25DDTI)

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

B : Loosen.

- Turn fuel filter (1) upside down to drain fuel.
- 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)

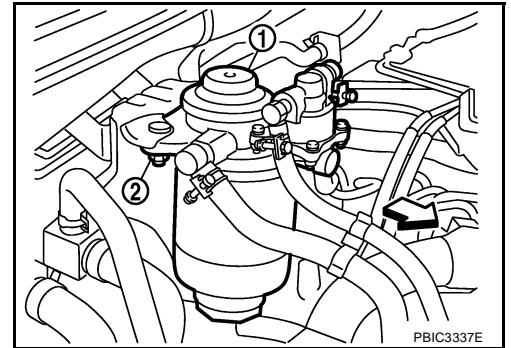
 : 13.5 N·m (1.4 kg·m, 10 ft·lb)

- 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-17, "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.

## Draining Water from Fuel Filter

- Prepare a tray (A) under the drain plug (1).
- 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.
- Replace O-ring on drain plug with new one.
  - After draining, close drain plug to specified torque.

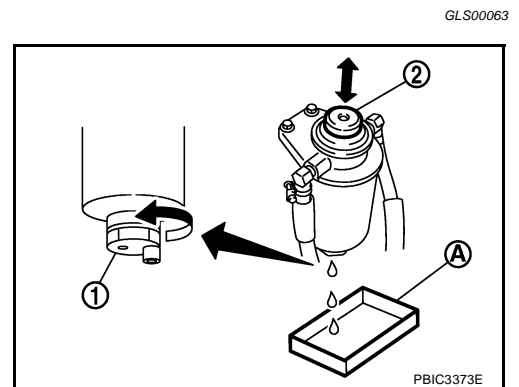
### Drain plug

 : 1.3 N·m (0.13 kg·m, 12 in·lb)

### CAUTION:

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

- Bleed air in fuel piping. Refer to [FL-17, "Air Bleeding"](#).
- Start engine and make sure there is no fuel leakage.





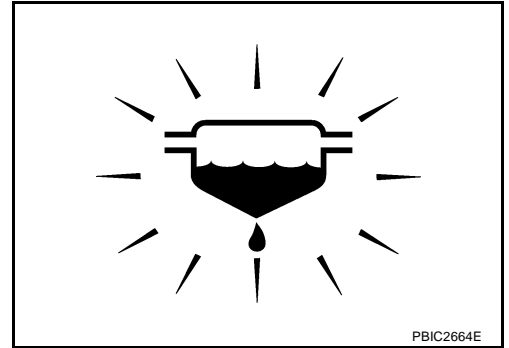
# ENGINE MAINTENANCE (YD25DDTI)

## Draining Water from Sedimentor

GLS00064

### CAUTION:

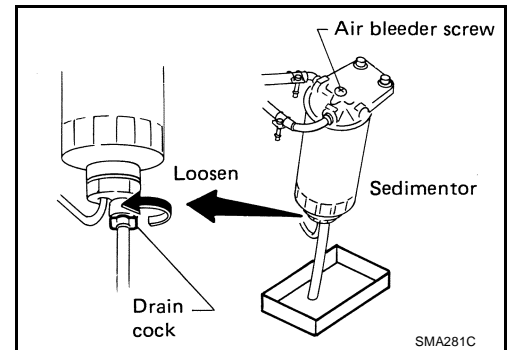
- Drain water from sedimentor when fuel filter warning lamp turns on as follows:



1. Prepare a tray under the drain plug.
2. Loosen air bleeder screw of the sedimentor.
3. Loosen drain cock and drain water.

### CAUTION:

- Loosening drain cock four to five turns causes water to start draining. Do not remove drain cock by loosening it excessively.
- 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.



4. After draining, close drain cock by hand.

### CAUTION:

If drain cock is tightened excessively, it may be damaged and fuel will leak. Do not use tools to tighten drain cock.

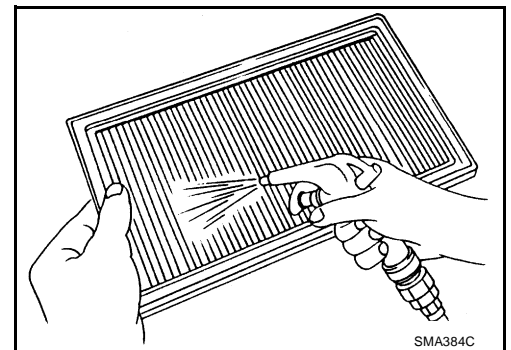
5. Bleed air in fuel piping. Refer to [FL-17, "Air Bleeding"](#).
6. Start engine and make sure there is no fuel leakage.

## Changing Engine Air Cleaner Filter DRY PAPER TYPE

GLS00065

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 \(EXCEPT FOR EUROPE\)"](#).



## Changing Engine Oil

GLS00066

### WARNING:

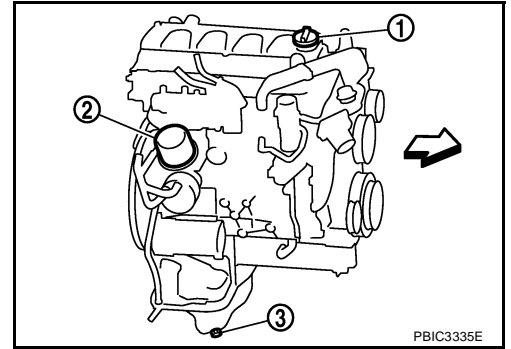
- Be careful not to burn yourself, as the engine oil is hot.
  - Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used engine oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.
1. Warm up engine, put vehicle horizontally and check for engine oil leakage from engine components. Refer to [LU-20, "ENGINE OIL LEAKAGE"](#).
  2. Stop engine and wait for 10 minutes.

# ENGINE MAINTENANCE (YD25DDTI)

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-180, "OIL PAN AND OIL STRAINER"](#) .

**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-13, "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-20, "ENGINE OIL LEVEL"](#) .

## Changing Oil Filter

### REMOVAL

1. Place a pan to catch the engine oil under the lower part of drain hose outlet before removing oil filter.
2. 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.

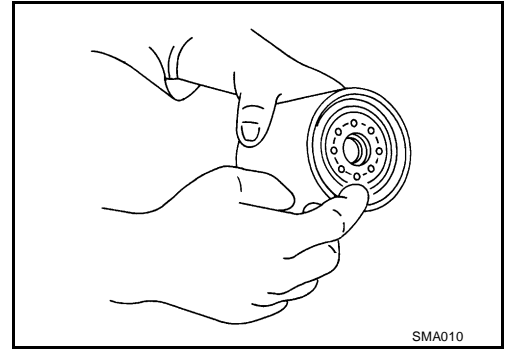
### INSTALLATION

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.

GLS00067

# ENGINE MAINTENANCE (YD25DDTI)

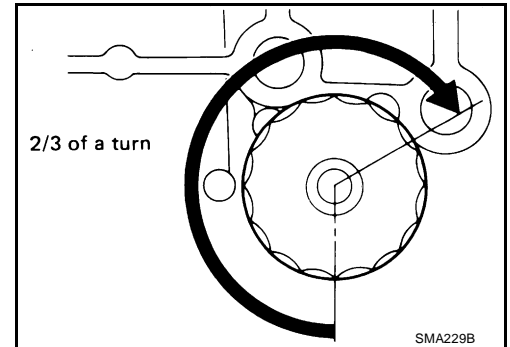
Use Genuine NISSAN Oil Filter or equivalent.



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-20, "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-20, "ENGINE OIL"](#).

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# CHASSIS AND BODY MAINTENANCE

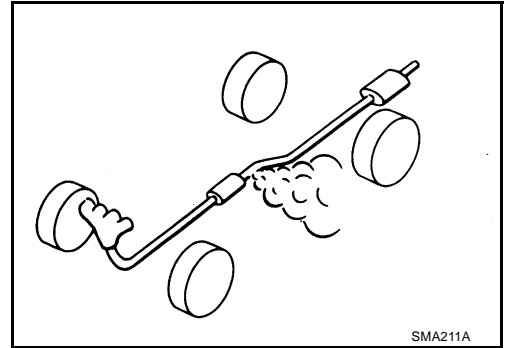
## CHASSIS AND BODY MAINTENANCE

PFP:00100

### Checking the Exhaust System

GLS00040

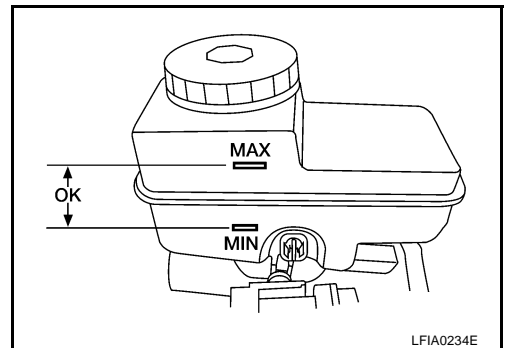
Check exhaust pipes, muffler and mounting for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration.



### Checking Clutch Fluid Level and Leaks

GLS0004P

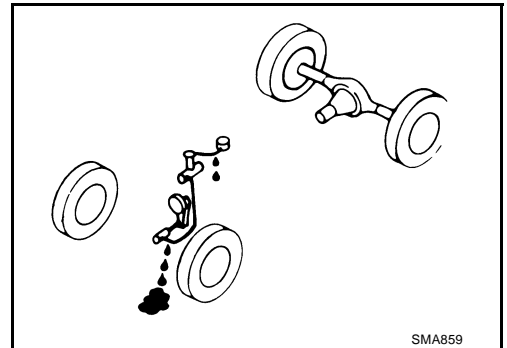
If fluid level is extremely low, check clutch system for leaks.



### Checking Clutch System

GLS0004Q

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



### Checking M/T Oil

GLS0004R

Check for oil leakage.

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

## Changing M/T Oil

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-13, "Fluids and Lubricants"](#) .

**Oil capacity:**

**VQ engine models**

**2WD models:**                    **Approx. 3.98 ℓ (7 Imp pt)**

**4WD models:**                   **Approx. 4.18 ℓ (7 - 3/8 Imp pt)**

**YD engine models**

**2WD models:**                   **Approx. 3.99 ℓ (7 Imp pt)**

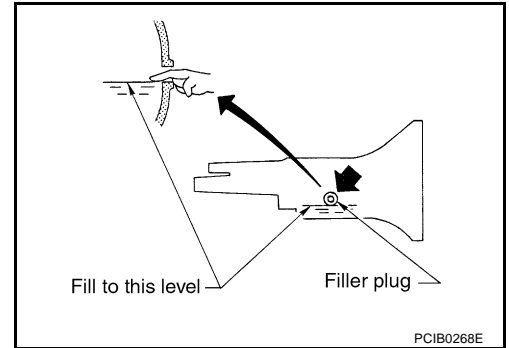
**4WD models:**                   **Approx. 4.32 ℓ (7 - 5/8 Imp pt)**

**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

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:**

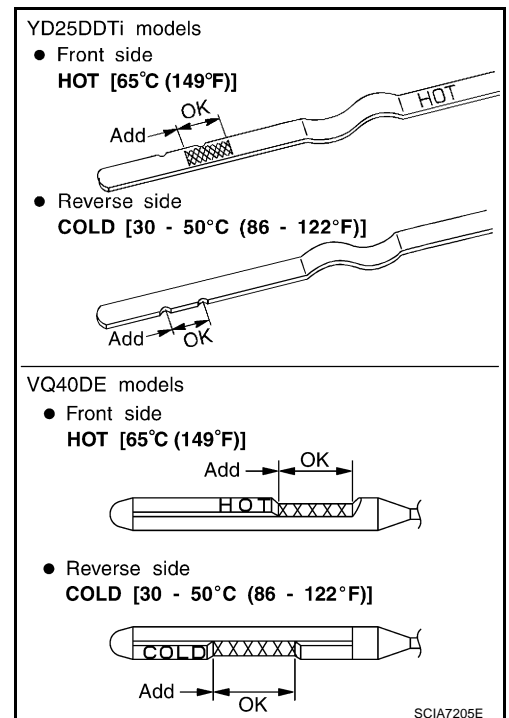
**To check A/T fluid level, insert A/T fluid level gauge until the cap contacts the end of A/T fluid charging pipe, with A/T fluid level gauge reversed from the normal attachment conditions.**

- 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.**

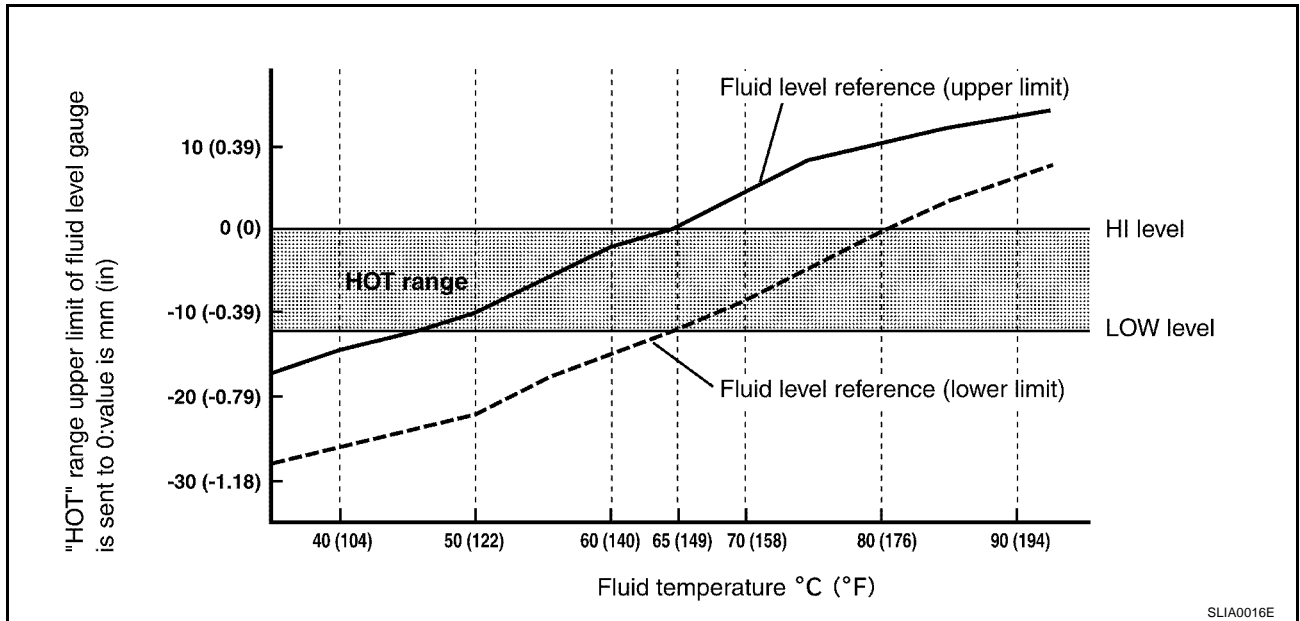
5. Drive vehicle for approximately 5 minutes in urban areas.
6. Make the A/T fluid temperature approximately 65°C (149°F).



# 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.

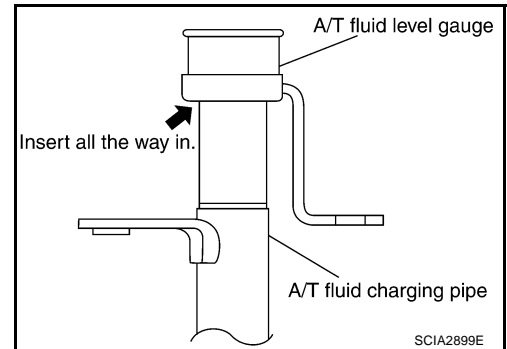


- a. Connect CONSULT-II to data link connector. Refer to [AT-84, "CONSULT-II SETTING PROCEDURE"](#).
- b. Select "MAIN SIGNALS" in "DATA MONITOR" mode for "A/T" with CONSULT-II.
- c. Read the value of "ATF TEMP 1".
7. Recheck A/T fluid level at A/T fluid temperatures of approximately 65°C (149°F) using "HOT" range on A/T fluid level gauge.

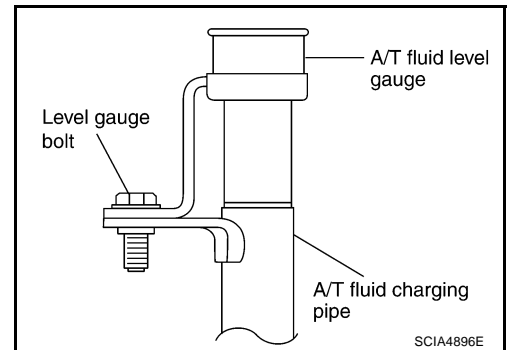
**CAUTION:**

- 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.

8. 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-40, "RADIATOR"](#) (for YD25DDTi engine) or [CO-13, "RADIATOR"](#) (for VQ40DE engine).



9. Install the removed A/T fluid level gauge into A/T fluid charging pipe.
10. Tighten level gauge bolt to the specified torque. Refer to [AT-254, "COMPONENTS"](#) (for YD25DDTi engine) or [AT-258, "COMPONENTS"](#) (for VQ40DE engine).



# CHASSIS AND BODY MAINTENANCE

## Changing A/T Fluid

GLS0004U

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.**

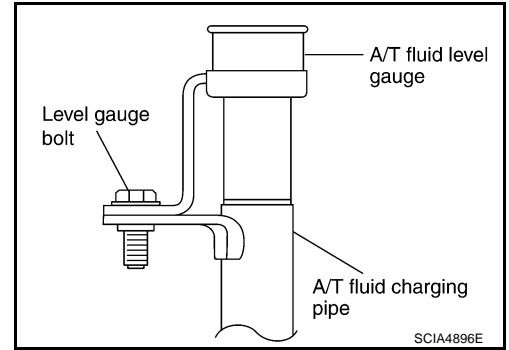
7. Tighten drain plug to the specified torque. Refer to [AT-224, "COMPONENTS"](#).
8. Refill with new ATF. Always refill same volume with drained ATF.
  - To replace the ATF, pour in new ATF at A/T fluid charging pipe with the engine idling and at the same time drain the old ATF from A/T fluid cooler 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-37, "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-254, "COMPONENTS"](#) (for YD2DDTi engine) or [AT-258, "COMPONENTS"](#) (for VQ40DE engine).



## Checking Transfer Fluid

### FLUID LEAKAGE AND FLUID LEVEL

GLS0004V

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.

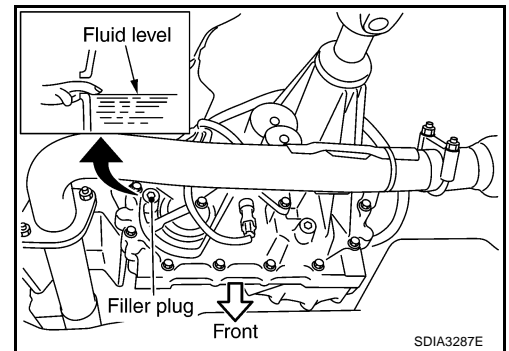
**CAUTION:**

**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-117, "COMPONENTS"](#).

**CAUTION:**

**Do not reuse gasket.**



# CHASSIS AND BODY MAINTENANCE

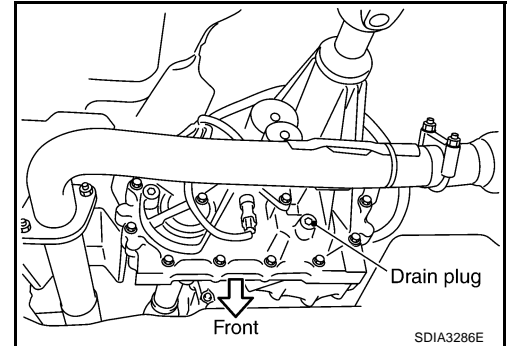
GLS0004W

## Changing Transfer Fluid DRAINING

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-117, "COMPONENTS"](#) .

**CAUTION:**

**Do not reuse gasket.**



## FILLING

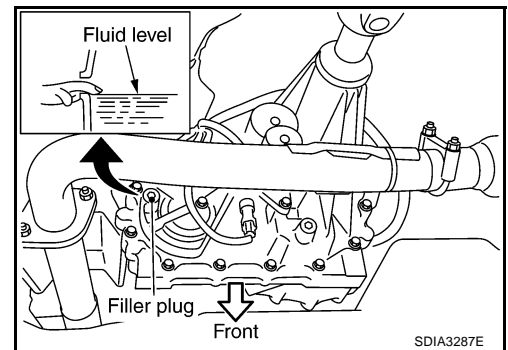
1. Remove the filler plug and gasket.
2. Fill the transfer with new fluid until the fluid level reaches the specified limit near the filler plug hole.

**Fluid grade:** Refer to [MA-13, "Fluids and Lubricants"](#) .

**Fluid capacity:** Refer to [MA-13, "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-117, "COMPONENTS"](#) .

**CAUTION:**

**Do not reuse gasket.**

## Checking Propeller Shaft

GLS0004X

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)

GLS0004Y

**CAUTION:**

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

## 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.

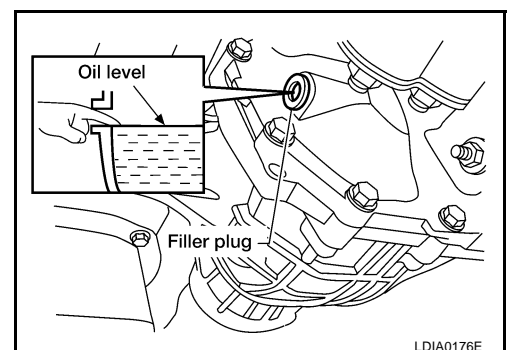
**CAUTION:**

**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)

GLS0004Z

### CAUTION:

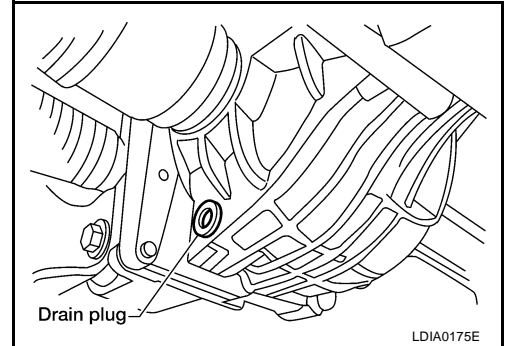
If using the vehicle for towing, the final drive oil must be replaced as specified. Refer to [MA-8, "PERIODIC MAINTENANCE \(EXCEPT FOR EUROPE\)"](#).

### 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-13, "Fluids and Lubricants"](#).

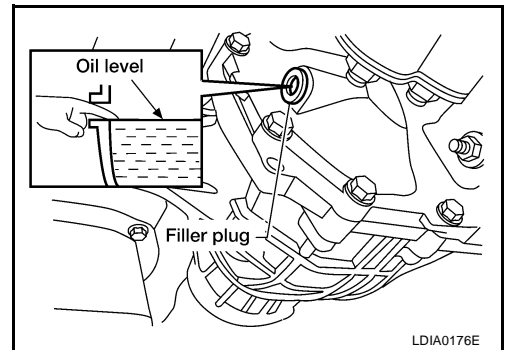
#### Oil capacity:

Refer to [MA-13, "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)

GLS00050

### CAUTION:

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

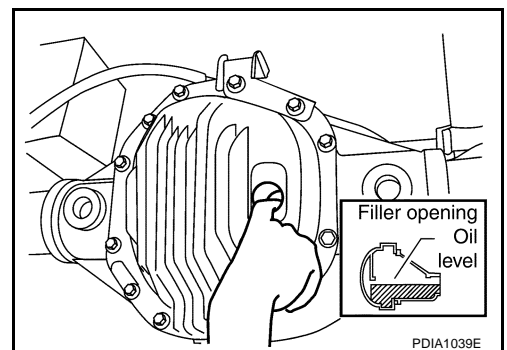
### OIL LEAKAGE AND OIL LEVEL

- 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"](#) (WITHOUT LIMITED SLIP DIFFERENTIAL) and [RFD-48, "COMPONENTS"](#) (WITH LIMITED SLIP DIFFERENTIAL).



# CHASSIS AND BODY MAINTENANCE

## Changing Rear Final Drive Oil (Rear Differential Gear Oil)

GLS00051

### CAUTION:

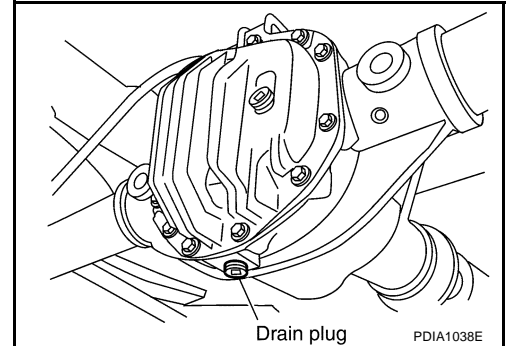
If using the vehicle for towing, the final drive oil must be replaced as specified. Refer to [MA-8, "PERIODIC MAINTENANCE \(EXCEPT FOR EUROPE\)"](#) .

### 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"](#) (WITHOUT LIMITED SLIP DIFFERENTIAL) and [RFD-48, "COMPONENTS"](#) (WITH LIMITED SLIP 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.

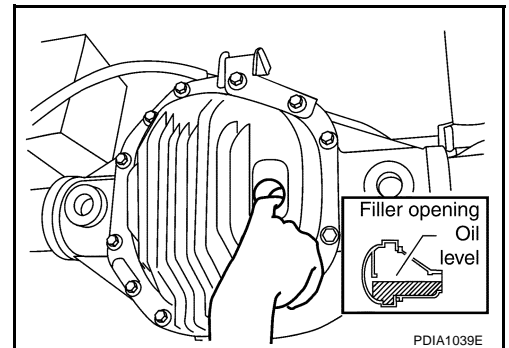
**Oil grade:** Refer to [MA-13, "Fluids and Lubricants"](#) .

**Oil capacity:** Refer to [MA-13, "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"](#) (WITHOUT LIMITED SLIP DIFFERENTIAL) and [RFD-48, "COMPONENTS"](#) (WITH LIMITED SLIP DIFFERENTIAL).

### CAUTION:

Do not reuse gasket.



## Balancing Wheels

GLS00052

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

## Tire Rotation

GLS00053

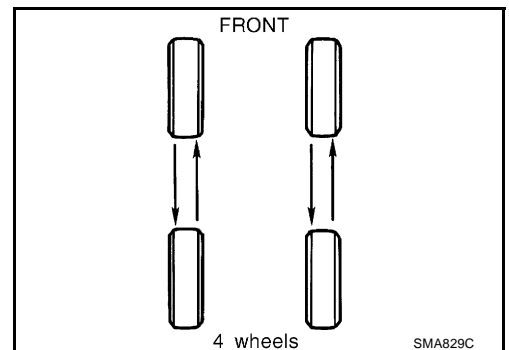
1. Rotate the tires on each side from front to back as shown, using power tool.

**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.



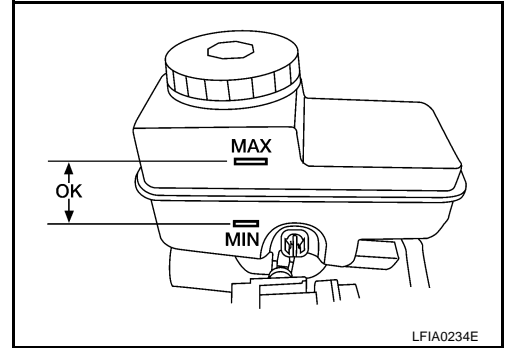
2. Adjust the tire pressure to specification. Refer to [WT-6, "Tire"](#) .
3. After the tire rotation, retighten the wheel nuts after the vehicle has been driven for 1,000 km (600 miles), and also after a wheel and tire have been installed such as after repairing a flat tire

# CHASSIS AND BODY MAINTENANCE

## Checking Brake Fluid Level and Leaks

GLS00054

- 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

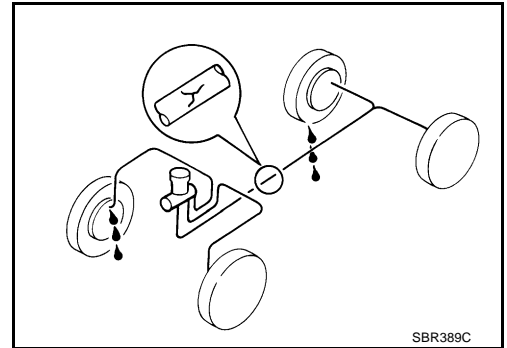
GLS00055

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.



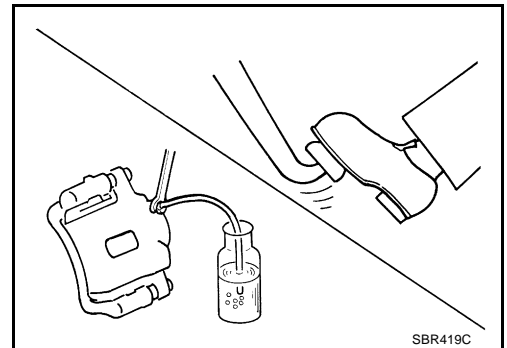
## Changing Brake Fluid

GLS00056

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 (US FMVSS No. 116). Refer to [MA-13, "RECOMMENDED FLUIDS AND LUBRICANTS"](#) .
- Never reuse drained brake fluid.
- Be careful not to splash brake fluid on painted areas.



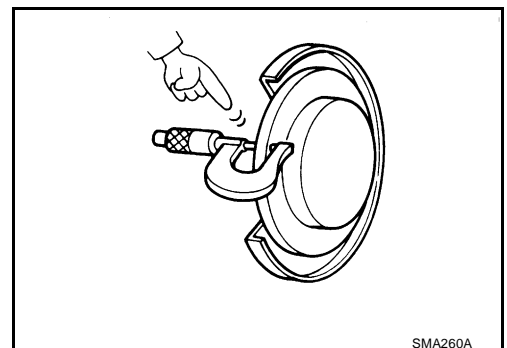
## Checking Disc Brake ROTOR

GLS0005E

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

**Standard thickness : 28.0 mm (1.102 in)**

**Repair limit thickness : 26.0 mm (1.024 in)**

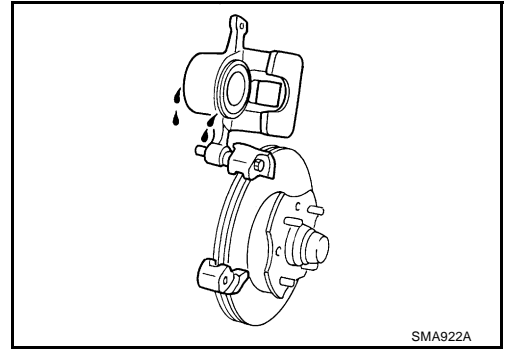


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# CHASSIS AND BODY MAINTENANCE

## CALIPER

Check for any fluid leakage. Repair as necessary.

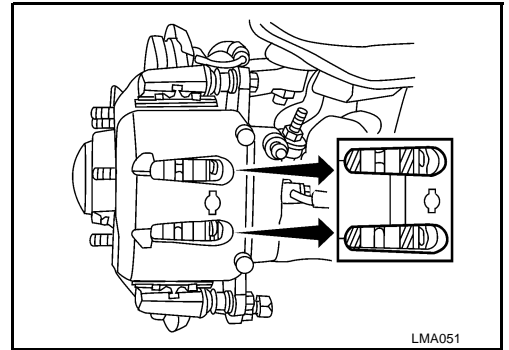


## PAD

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)**

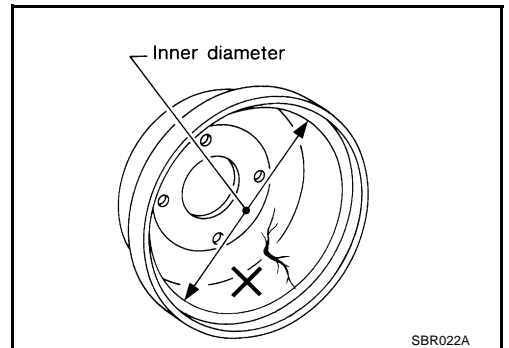


## Checking Drum Brake DRUM

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

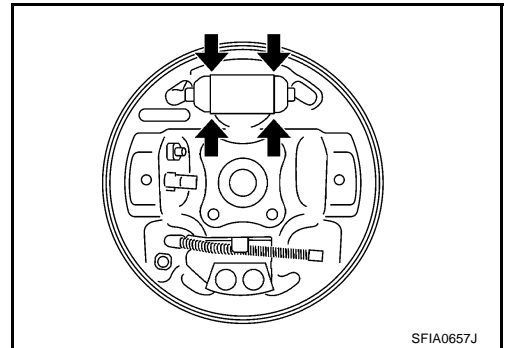
**Standard inner diameter : 295 mm (11.61 in) dia.**

**Repair limit inner diameter : 296.5 mm (11.67 in) dia.**



## WHEEL CYLINDER

- Check for leakage.



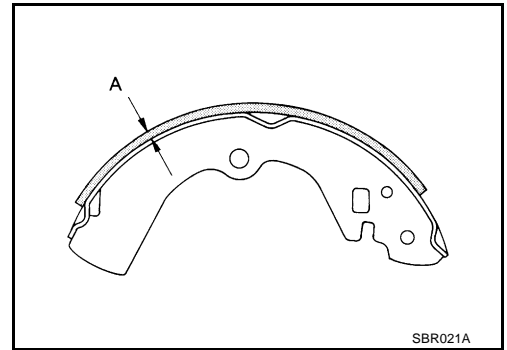
# CHASSIS AND BODY MAINTENANCE

## LINING

- Check for lining thickness.

**Standard thickness** : 5.5 mm (0.22 in)

**Repair limit thickness** : 1.5 mm (0.66 in)

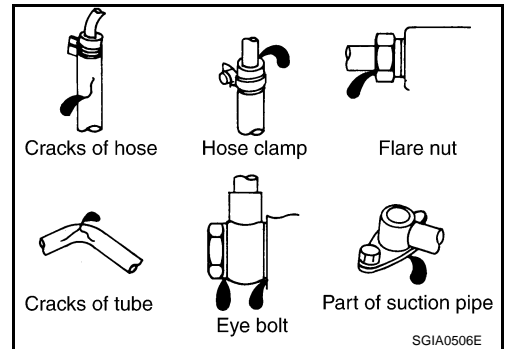


GLS00059

## 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.

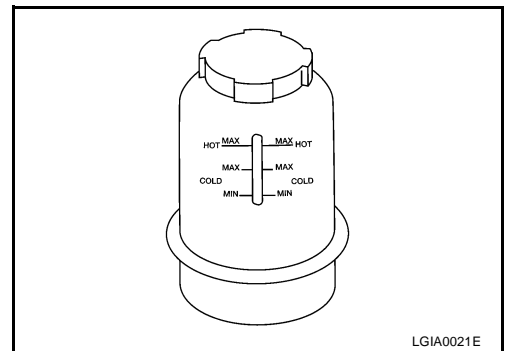
## Checking Power Steering Fluid and Lines

### 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).

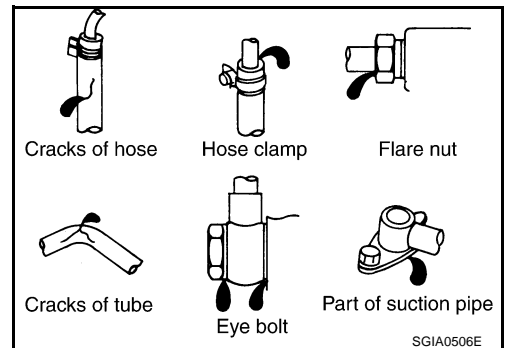
### CAUTION:

- Do not overfill.
- Fill with the recommended fluid or equivalent. Refer to [MA-13, "Fluids and Lubricants"](#)



### CHECKING LINES

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



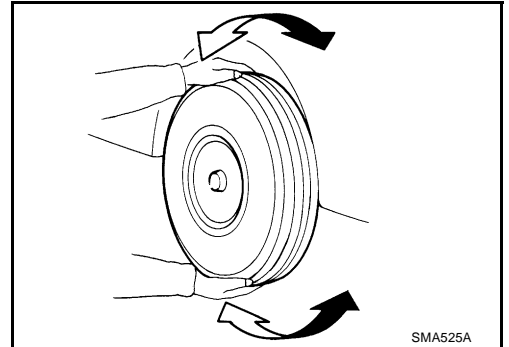
# CHASSIS AND BODY MAINTENANCE

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

GLS0005B

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

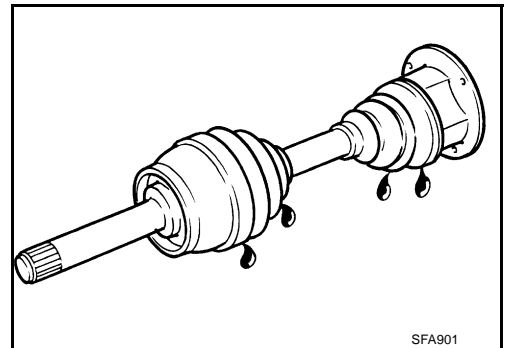
- Shake each wheel to check for excessive play.
- Rotate each wheel to check for abnormal noise.
- Check axle and suspension nuts and bolts for looseness.



- 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

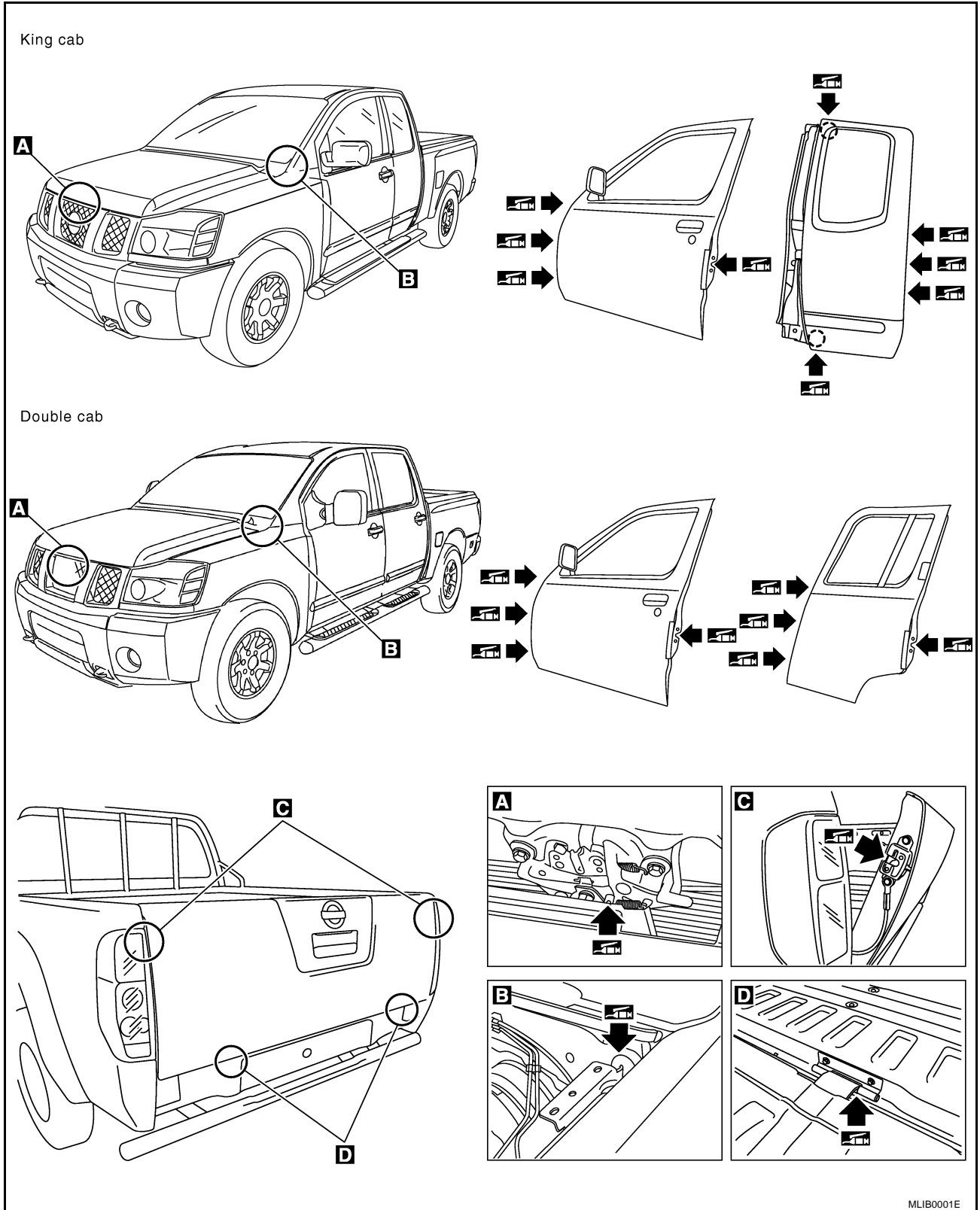
Check the boots and drive shaft for cracks, wear, damage, and grease leakage.



# CHASSIS AND BODY MAINTENANCE

## Lubricating Locks, Hinges and Hood Latches

GLS0005C



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MLIB0001E

- Lubricate the locations shown. Refer to [MA-13, "Fluids and Lubricants"](#) .

# CHASSIS AND BODY MAINTENANCE

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

GLS0005D

Check the seat belt buckles, webbing, retractors, anchors and adjusters. Replace any seat belt assembly as necessary. Refer to [SB-7, "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.



# SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

PPF:00030

### Standard and Limit BELT DEFLECTION

GLS0005F

#### VQ40DE

Tensions of drive belts	Auto-adjustment by auto-tensioner
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#### YD25DDTi

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/cm<sup>2</sup>, 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)

#### VQ40DE

Unit: ℓ (Imp qt)

Engine coolant capacity (With reservoir tank at "MAX" level)	10.3 (9-1/8)
Reservoir tank coolant capacity (At "MAX" level)	0.8 (3/4)

#### YD25DDTi

Unit: ℓ (Imp qt)

Engine coolant capacity (With reservoir tank at "MAX" level)	10.2 (9)
Reservoir tank coolant capacity (At "MAX" level)	0.8 (3/4)

### ENGINE OIL CAPACITY (APPROXIMATE)

#### VQ40DE

Unit: ℓ (Imp qt)

Drain and refill	With oil filter change	5.1 (4-1/2)
	Without oil filter change	4.8 (4-1/4)
Dry engine (Overhaul)		6.3 (5-1/2)

#### YD25DDTi

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)

### SPARK PLUG (VQ40DE)

Make	NGK
Standard type	PLFR5A-11
Hot type	PLFR4A-11
Cold type	PLFR6A-11
Spark plug gap (nominal)	mm (in) 1.1 (0.043)

# SERVICE DATA AND SPECIFICATIONS (SDS)

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