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 MAINTENANCE

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# PRECAUTIONS

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## PRECAUTION

### PRECAUTIONS

#### Precaution 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 SR 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 SR 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.

#### PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

**WARNING:**

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least three minutes before performing any service.

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# PREPARATION

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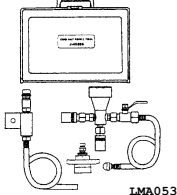
## PREPARATION

### PREPARATION

#### Special Service Tool


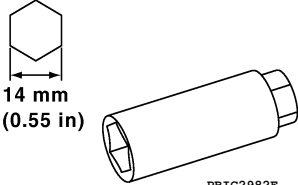
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The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
KV991J0070 (J-45695) Coolant Refill Tool <div style="text-align: center;">  <p>LMA053</p> </div>	Refilling engine cooling system

#### Commercial Service Tool

INFOID:000000011212571

Tool name	Description
Power tool <div style="text-align: center;">  <p>PIIB1407E</p> </div>	Loosening nuts, screws and bolts
Spark plug wrench <div style="text-align: center;">  <p>14 mm (0.55 in)</p> <p>PBIC2982E</p> </div>	Removing and installing spark plug

# GENERAL MAINTENANCE

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## PERIODIC MAINTENANCE

### GENERAL MAINTENANCE

#### Explanation of 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 checks and inspections themselves or have their NISSAN dealers do them.

#### 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 often and always prior to long distance trips. Adjust the pressure in all tires, including the spare, to the pressure specified. Check carefully for damage, cuts or excessive wear.	<a href="#">WT-64</a>
<b>Wheel nuts</b>	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	<a href="#">WT-68</a>
<b>Tire rotation</b>	Tires should be rotated every 5,000 miles (8,000 km).	<a href="#">WT-66</a>
<b>Tire pressure monitoring system (TPMS) transmitter components</b>	Replace the TPMS transmitter grommet seal, valve core and cap when the tires are replaced due to wear or age.	<a href="#">WT-69</a>
<b>Wheel alignment and balance</b>	If the vehicle should pull to either side while driving on a straight and level road or if you detect uneven or abnormal tire wear, there may be a need for wheel alignment. If the steering wheel or seat vibrates at normal highway speeds, wheel balancing may be needed. For additional information regarding tires, refer to "Important Tire Safety Information" (US) or "Tire Safety Information" (Canada) in the NISSAN Warranty Information Booklet.	<a href="#">FSU-25</a> , <a href="#">FSU-7</a>
<b>Windshield</b>	Clean the windshield on a regular basis. Check the windshield at least every six months for cracks or other damage. Repair as necessary.	—
<b>Windshield wiper blades</b>	Check for cracks or wear if they do not wipe properly.	—
<b>Doors and engine hood</b>	Check that all doors and the engine hood operate smoothly as well as the back door, trunk lid and glass hatch. Also make sure 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-40</a>
<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. Clean the headlamps on a regular basis.	<a href="#">EXL-128</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>Warning lamps and chimes</b>	Make sure that all warning lamps and chimes are operating properly.	—
<b>Windshield wiper and washer</b>	Check that the wipers and washer operate properly and that the wipers do not streak.	—
<b>Windshield defroster</b>	Check that the air comes out of the defroster outlets properly and in sufficient quantity when operating the heater or air conditioner.	—
<b>Steering wheel</b>	Check that it has the specified play. Check for changes in the steering condition, such as excessive play, hard steering or strange noises. <b>Free play: Less than 35 mm (1.38 in)</b>	<a href="#">ST-16</a>

## GENERAL MAINTENANCE

### < PERIODIC MAINTENANCE >

Item	Reference page	
<b>Seats</b>	Check seat position controls such as seat adjusters, seatback recliner, etc. to make sure they operate smoothly and that all latches lock securely in every position. Check that the head restraints move up and down smoothly and that the locks (if equipped) hold securely in all latched positions. Check that the latches lock securely for folding-down rear seatbacks.	—
<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="#">SB-5</a>
<b>Accelerator pedal</b>	Check the pedal for smooth operation and make sure the pedal does not catch or require uneven effort. Keep the floor mats away from the pedal.	—
<b>Brakes</b>	Check that the brake does not pull the vehicle to one side when applied.	—
<b>Brake pedal and booster</b>	Check the pedal for smooth operation and make sure it has the proper distance under it when depressed fully. Check the brake booster function. Be sure to keep the floor mats away from the pedal.	<a href="#">BR-20</a> , <a href="#">BR-32</a>
<b>Parking brake</b>	Check that the lever or pedal has the proper travel and make sure that the vehicle is held securely on a fairly steep hill when only the parking brake is applied.	<a href="#">PB-7</a>
<b>CVT P (Park) position mechanism</b>	On a fairly steep hill check that the vehicle is held securely with the shift selector in the P (Park) position without applying any brakes.	—

### UNDER THE HOOD AND VEHICLE

The maintenance items listed here should be checked periodically (e.g., each time you check the engine oil or refuel).

Item	Reference 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="#">CO-8</a>
<b>Radiator and hoses</b>	Check the front of the radiator and clean off any dirt, insects, leaves, etc., that may have accumulated. Make sure the hoses have no cracks, deformation, deterioration or loose connections.	—
<b>Brake fluid level</b>	Make sure that the brake fluid level is between the MAX and MIN lines on the reservoir.	<a href="#">BR-8</a>
<b>Battery</b>	Check the fluid level in each cell. It should be between the MAX and MIN lines. Vehicles operated in high temperatures or under severe conditions require frequent checks of the battery fluid level.	<a href="#">PG-77</a>
<b>Engine drive belts</b>	Make sure that no belt is frayed, worn, cracked or oily.	<a href="#">EM-14</a>
<b>Engine oil level</b>	Check the level on the oil level gauge after parking the vehicle on a level spot and turning off the engine.	<a href="#">LU-8</a>
<b>Power steering fluid level and lines</b>	Check the level on the dipstick with the engine off. Check the lines for improper attachment, leaks, cracks, etc.	<a href="#">ST-15</a>
<b>Exhaust system</b>	Make sure there are no loose supports, cracks or holes. If the sound of the exhaust seems unusual or there is a smell of exhaust fumes, immediately locate the trouble and correct it.	<a href="#">EX-4</a>
<b>Underbody</b>	The underbody is frequently exposed to corrosive substances such as those used on icy roads or to control dust. It is very important to remove these substances, otherwise rust will form on the floor pan, frame, fuel lines and around the exhaust system. At the end of winter, the underbody should be thoroughly flushed with plain water, being careful to clean those areas where mud and dirt can easily accumulate.	—
<b>Fluid leaks</b>	Check under the vehicle for fuel, oil, water or other fluid leaks after the vehicle has been parked for a while. Water dripping from the air conditioner after use is normal. If you should notice any leaks or gasoline fumes are evident, check for the cause and correct it immediately.	—

# PERIODIC MAINTENANCE

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## PERIODIC MAINTENANCE

### Introduction of Periodic Maintenance

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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

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
Perform either at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000)	5 (8)	10 (16)	15 (24)	20 (32)	25 (40)	30 (48)	35 (56)	40 (64)	45 (72)
	Months	6	12	18	24	30	36	42	48	48
Drive belts	NOTE (1)								I*	
Air cleaner filter	NOTE (2)						R			
EVAP vapor lines					I*				I*	
Fuel lines					I*				I*	
Fuel filter	NOTE (3)									
Engine coolant*	NOTE (4)(5)									
Engine oil		R	R	R	R	R	R	R	R	R
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent)		R	R	R	R	R	R	R	R	R
Spark plugs (Iridium-tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km)								
Intake & exhaust valve clearance*	NOTE (7)									

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
Perform either at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000)	50 (80)	55 (88)	60 (96)	65 (104)	70 (112)	75 (120)	80 (128)	85 (136)	90 (144)
	Months	60	66	72	78	84	90	96	102	108
Drive belts	NOTE (1)	I*		I*		I*		I*		I*
Air cleaner filter	NOTE (2)			R						R
EVAP vapor lines				I*				I*		
Fuel lines				I*				I*		
Fuel filter	NOTE (3)									
Engine coolant*	NOTE (4)(5)									
Engine oil		R	R	R	R	R	R	R	R	R
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent)		R	R	R	R	R	R	R	R	R
Spark plugs (Iridium-tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km)								
Intake & exhaust valve clearance*	NOTE (7)									

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference Page
Perform either at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000)	95 (152)	100 (160)	105 (168)	110 (176)	115 (184)	120 (192)	
	Months	114	120	126	132	138	144	
Drive belts	NOTE (1)		I*		I*		I*	<a href="#">EM-14</a>
Air cleaner filter	NOTE (2)						R	<a href="#">EM-17</a>
EVAP vapor lines			I*				I*	<a href="#">MA-23</a>
Fuel lines			I*				I*	<a href="#">MA-20</a>
Fuel filter	NOTE (3)							—

# PERIODIC MAINTENANCE

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MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference Page
	Miles x 1,000 (km x 1,000) Months	95 (152) 114	100 (160) 120	105 (168) 126	110 (176) 132	115 (184) 138	120 (192) 144	
Perform either at number of miles, kilometers or months, whichever comes first.								
Engine coolant*	NOTE (4)(5)							<a href="#">MA-16</a>
Engine oil		R	R	R	R	R	R	<a href="#">MA-21</a>
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent)		R	R	R	R	R	R	<a href="#">MA-22</a>
Spark plugs (Iridium-tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km)						<a href="#">MA-15</a>
Intake & exhaust valve clearance*	NOTE (7)							

### NOTE:

- (1) After 40,000 miles (64,000 km) or 48 months, inspect every 10,000 miles (16,000 km) or 12 months. Replace the drive belts if found damaged.
- (2) If operating mainly in dusty conditions, more frequent maintenance may be required.
- (3) Maintenance-free item. For service procedures, refer to FL section.
- (4) First replacement interval is 105,000 miles (168,000 km) or 84 months. After first replacement, replace every 75,000 miles (120,000 km) or 60 months.
- (5) Use only Genuine NISSAN Long Life Antifreeze / Coolant (blue) or equivalent with proper mixture ratio of 50% antifreeze and 50% demineralized or distilled water. Mixing any other type of coolant or the use of non-distilled water will reduce the life expectancy of the factory-fill coolant.
- (6) Replace spark plug when the spark plug gap exceeds 1.35 mm (0.053 in), even if within specified periodic replacement mileage.
- (7) Periodic maintenance is not required. However, if valve noise increases, inspect valve clearance.

\*: Maintenance items and intervals with “\*” are recommended by NISSAN for reliable vehicle operation. The owner need not perform such maintenance in order to maintain the emission warranty or manufacturer recall liability. Other maintenance items and intervals are required.

## CHASSIS AND BODY MAINTENANCE

Abbreviations: R= Replace. I = Inspect. Correct or replace if necessary.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
	Miles x 1,000 (km x 1,000) Months	5 (8) 6	10 (16) 12	15 (24) 18	20 (32) 24	25 (40) 30	30 (48) 36	35 (56) 42	40 (64) 48	45 (72) 54
Perform either at number of miles, kilometers or months, whichever comes first.										
Brake line & cables			I		I		I		I	
Brake pads, rotors★			I		I		I		I	
Brake fluid ★					R				R	
CVT fluid	NOTE (1)		I		I		I		I	
Transfer oil & differential gear oil	NOTE (2)		I		I		I		I	
Steering gear and linkage, axle and suspension parts ★					I				I	
Tire rotation	NOTE (3)									
Propeller shaft (AWD) & drive shaft boots★			I		I		I		I	
Exhaust system★					I				I	
In-cabin microfilter				R			R			R

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
	Miles x 1,000 (km x 1,000) Months	50 (80) 60	55 (88) 66	60 (96) 72	65 (104) 78	70 (112) 84	75 (120) 90	80 (128) 96	85 (136) 102	90 (144) 108
Perform either at number of miles, kilometers or months, whichever comes first.										
Brake line & cables		I		I		I		I		I
Brake pads, rotors ★		I		I		I		I		I
Brake fluid ★				R				R		



# PERIODIC MAINTENANCE

## < PERIODIC MAINTENANCE >

MAINTENANCE OPERATION	Miles x 1,000 (km x 1,000) Months	MAINTENANCE INTERVAL								
		50 (80) 60	55 (88) 66	60 (96) 72	65 (104) 78	70 (112) 84	75 (120) 90	80 (128) 96	85 (136) 102	90 (144) 108
Perform either at number of miles, kilometers or months, whichever comes first.										
CVT fluid	NOTE (1)	I		I		I		I		I
Transfer oil & differential gear oil	NOTE (2)	I		I		I		I		I
Steering gear and linkage, axle and suspension parts ★				I				I		
Tire rotation	NOTE (3)									
Propeller shaft (AWD) & drive shaft boots★		I		I		I		I		I
Exhaust system★				I				I		
In-cabin microfilter				R				R		R

MAINTENANCE OPERATION	Miles x 1,000 (km x 1,000) Months	MAINTENANCE INTERVAL						Reference Page
		95 (152) 114	100 (160) 120	105 (168) 126	110 (176) 132	115 (184) 138	120 (192) 90	
Perform either at number of miles, kilometers or months, whichever comes first.								
Brake line & cables			I		I		I	<a href="#">MA-34</a>
Brake pads, rotors★			I		I		I	<a href="#">MA-35</a> <a href="#">MA-36</a>
Brake fluid ★			R				R	<a href="#">MA-34</a>
CVT fluid	NOTE (1)		I		I		I	<a href="#">MA-26</a>
Transfer oil & differential gear oil	NOTE (2)		I		I		I	<a href="#">MA-29</a>
Steering gear and linkage, axle and suspension parts ★			I				I	<a href="#">MA-37</a> <a href="#">MA-39</a>
Tire rotation	NOTE (3)							<a href="#">MA-33</a>
Propeller shaft (AWD) & drive shaft boots★			I		I		I	<a href="#">MA-31</a> <a href="#">MA-39</a>
Exhaust system★			I				I	<a href="#">MA-25</a>
In-cabin microfilter				R			R	<a href="#">MA-25</a>

### NOTE:

- Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.
- (1) Use only Genuine NISSAN CVT fluid. If towing a trailer, using a camper or a car-top carrier, or driving on rough or muddy roads, inspect CVT fluid deterioration at a NISSAN dealer every 60,000 miles (96,000 km), then change CVT fluid if necessary. And if the inspection is not performed, change (not just inspect) CVT fluid every 60,000 miles (96,000 km).
- (2) If towing a trailer, using a camper or car-top carrier, or driving on rough or muddy roads, change (not just inspect) oil at every 20,000 miles (32,000 km) or 24 months.
- (3) Refer to "Tire rotation" under "GENERAL MAINTENANCE" heading earlier in this section.

### 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

- Repeated short trips of less than 5 miles (8 km)
- Repeated short trips of less than 10 miles (16 km) with outside temperatures remaining below freezing
- Operating in hot weather in stop-and-go "rush hour" traffic
- Extensive idling and/or low speed driving for long distances, such as police, taxi or door-to-door delivery use
- Driving in dusty conditions
- Driving on rough, muddy, or salt spread roads
- Towing a trailer, using a camper or a car-top carrier

## PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

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

Maintenance item	Maintenance operation	Maintenance interval	Reference page
Brake fluid	Replace	Every 10,000 miles (16,000 km) or 12 months	<a href="#">MA-34</a>
Brake pads, rotors	Inspect	Every 5,000 miles (8,000 km) or 6 months	<a href="#">MA-35</a> <a href="#">MA-36</a> <a href="#">MA-37</a>
Steering gear & linkage, axle & suspension parts	Inspect	Every 5,000 miles (8,000 km) or 6 months	<a href="#">MA-37</a> <a href="#">MA-39</a>
Propeller shaft (AWD) & drive shaft boots	Inspect	Every 5,000 miles (8,000 km) or 6 months	<a href="#">MA-39</a> <a href="#">MA-31</a>
Exhaust system	Inspect	Every 5,000 miles (8,000 km) or 6 months	<a href="#">MA-25</a>

# RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

## RECOMMENDED FLUIDS AND LUBRICANTS

### Fluids and Lubricants

INFOID:000000011212576

The following are approximate capacities, The actual refill capacities may be slightly different. When refilling, follow the procedures described elsewhere in this manual.

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Metric	US measure	Imp measure	
Fuel		71.9 ℓ	19 gal	15-7/8 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91)
Engine oil Drain and refill	With oil filter change	4.8 ℓ	5-1/8 qt	4-1/4 qt	Genuine NISSAN engine oil or equivalent <ul style="list-style-type: none"> <li>• Engine oil with API Certification Mark (For additional information, refer to "Engine Oil Recommendation".)</li> <li>• Viscosity SAE 0W-20</li> <li>• As an alternative to this recommended oil, SAE 5W-30 conventional petroleum oils may be used and meet all specifications and requirements necessary to maintain the New Vehicle Limited Warranty.</li> </ul>
	Without oil filter change	4.5 ℓ	4-3/4 qt	4 qt	
	Dry engine (Overhaul)	5.2 ℓ	5-1/2 qt	4-5/8 qt	
Cooling system (with reservoir at MAX level)		8.7 ℓ	9-1/4 qt	7-5/8 qt	Pre-diluted Genuine NISSAN Long Life Antifreeze/ Coolant (blue) or equivalent
CVT fluid		8.8 ℓ	9-1/4 qt	7-3/4 qt	Genuine NISSAN CVT Fluid NS-3 <b>(NISSAN recommends using Genuine NISSAN CVT Fluid NS-3 ONLY in NISSAN CVTs. Do not mix with other fluids. Using fluids that are not equivalent to Genuine NISSAN CVT Fluid NS-3 may damage the CVT. Damage caused by the use of fluids other than as recommended is not covered under NISSAN's New Vehicle Limited Warranty)</b>
Differential gear oil		0.5 ℓ	1 pt	7/8 pt	Genuine NISSAN Differential Oil Hypoid Super GL-5 80W-90 or equivalent (See a NISSAN dealer for service of synthetic oil.)
Transfer fluid		0.31 ℓ	5/8 pt	1/2 pt	
Power steering fluid (E-PSF)		1.0 ℓ	1-1/8 qt	7/8 qt	Genuine NISSAN E-PSF or equivalent (Use of a power steering fluid other than Genuine NISSAN E-PSF will prevent the power steering system from operating properly.)
Brake fluid		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid (Available in mainland U.S.A. through a NISSAN dealer.) or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)
Windshield washer fluid		4.6 ℓ	4-7/8 qt	4 qt	Genuine NISSAN Windshield Washer Concentrate Cleaner & Antifreeze or equivalent
Air conditioning system refrigerant		0.55 ± 0.03 kg	1.21 ± 0.11 lb	1.21 ± 0.11 lb	HFC-134a (R-134a) (For further information, see "Air conditioning specification label".)
Air conditioning system oil		100 mℓ	3.4 fl oz	3.5 fl oz	A/C System Oil Type ND-OIL8 (PAG) (For further information, see "Air conditioning specification label".)

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# RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

## Engine Oil Recommendation

INFOID:000000011212577

NISSAN recommends the use of an energy conserving oil in order to improve fuel economy. Select only engine oils that meet the American Petroleum Institute (API) certification and International Lubricant Standardization and Approval Committee (ILSAC) certification and SAE viscosity standard. These oils have the API certification mark on the front of the container. Oils which do not have the specified quality label should not be used as they could cause engine damage.



1. API certification mark

2. API service symbol

## Engine Coolant Mixture Ratio

INFOID:000000011212578

The engine cooling system is filled at the factory with a pre-diluted mixture of 50% Genuine NISSAN Long Life Antifreeze/Coolant (blue) and 50% water to provide year-round anti-freeze and coolant protection. The anti-freeze solution contains rust and corrosion inhibitors. Additional engine cooling system additives are not necessary.

### **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 push down and turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by pushing it down and turning it all the way.**

### **CAUTION:**

- When adding or replacing coolant, be sure to use only Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent. Genuine NISSAN Long Life Antifreeze/Coolant (blue) is pre-diluted to provide antifreeze protection to -34°F (-37°C). If additional freeze protection is needed due to weather where the vehicle is operated, add Genuine NISSAN long life Antifreeze/Coolant (blue) concentrate following the directions on the container. If an equivalent coolant other than Genuine NISSAN Long Life Antifreeze/Coolant (blue) is used, follow the coolant manufacturer's instructions to maintain minimum antifreeze protection to -34°F (-37°C). The use of other types of coolant solutions other than Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent may damage the engine cooling system.
- Mixing any other type of coolant other than Genuine NISSAN Long Life Antifreeze/Coolant (blue), including Genuine NISSAN Long Life Antifreeze/Coolant (green) or the use of non-distilled water will reduce the life expectancy of the factory filled coolant.

# ENGINE MAINTENANCE (VQ35DE)

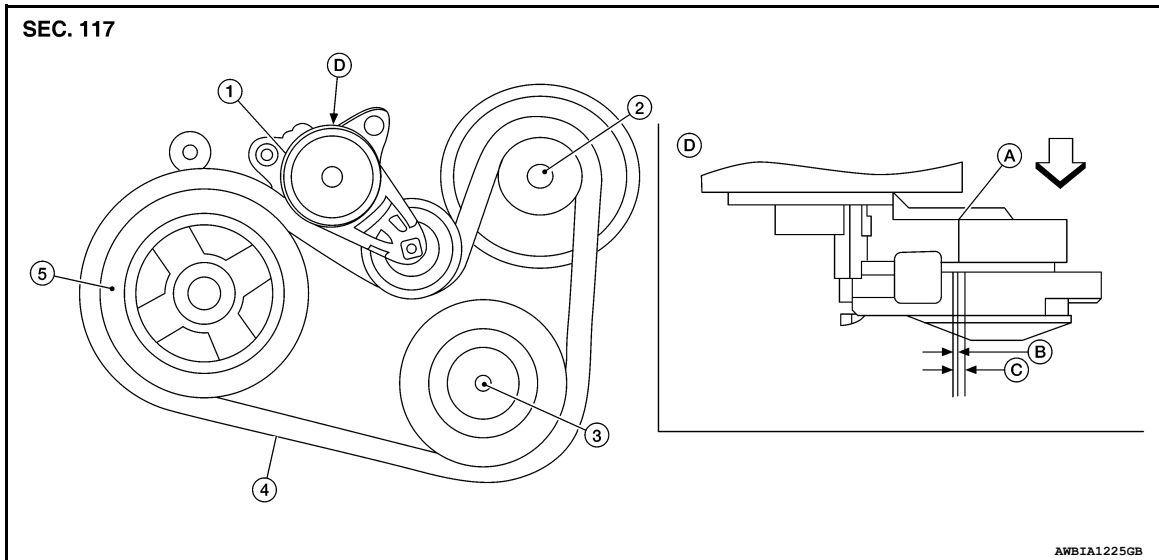
< PERIODIC MAINTENANCE >

## ENGINE MAINTENANCE (VQ35DE)

### DRIVE BELTS

#### DRIVE BELTS : Exploded View

INFOID:000000011592292



- |   |                       |                   |
|---|-----------------------|-------------------|
| 1. Drive belt auto-tensioner              | 2. Generator          | 3. A/C compressor |
| 4. Drive belt                             | 5. Crankshaft pulley  | A. Indicator      |
| B. Range when new drive belt is installed | C. Possible use range | D. View D         |
- ↶ Engine front

#### DRIVE BELTS : Checking Drive Belt

INFOID:000000011592293

#### **WARNING:**

**Inspect and check the drive belt with the engine off.**

1. Visually check entire drive belt for wear, damage or cracks.
2. Check that the drive belt auto-tensioner indicator is within the possible use range.

#### **NOTE:**

- When new drive belt is installed, the drive belt auto-tensioner indicator should be within the new drive belt range.
  - Check the drive belt auto-tensioner indicator when the engine is cold.
3. If the drive belt auto-tensioner indicator is out of the possible use range or belt is damaged, replace drive belt.

#### DRIVE BELTS : Tension Adjustment

INFOID:000000011592294

- Drive belt tension is automatically adjusted by the drive belt auto-tensioner.
- Drive belt tension is not manually adjustable.

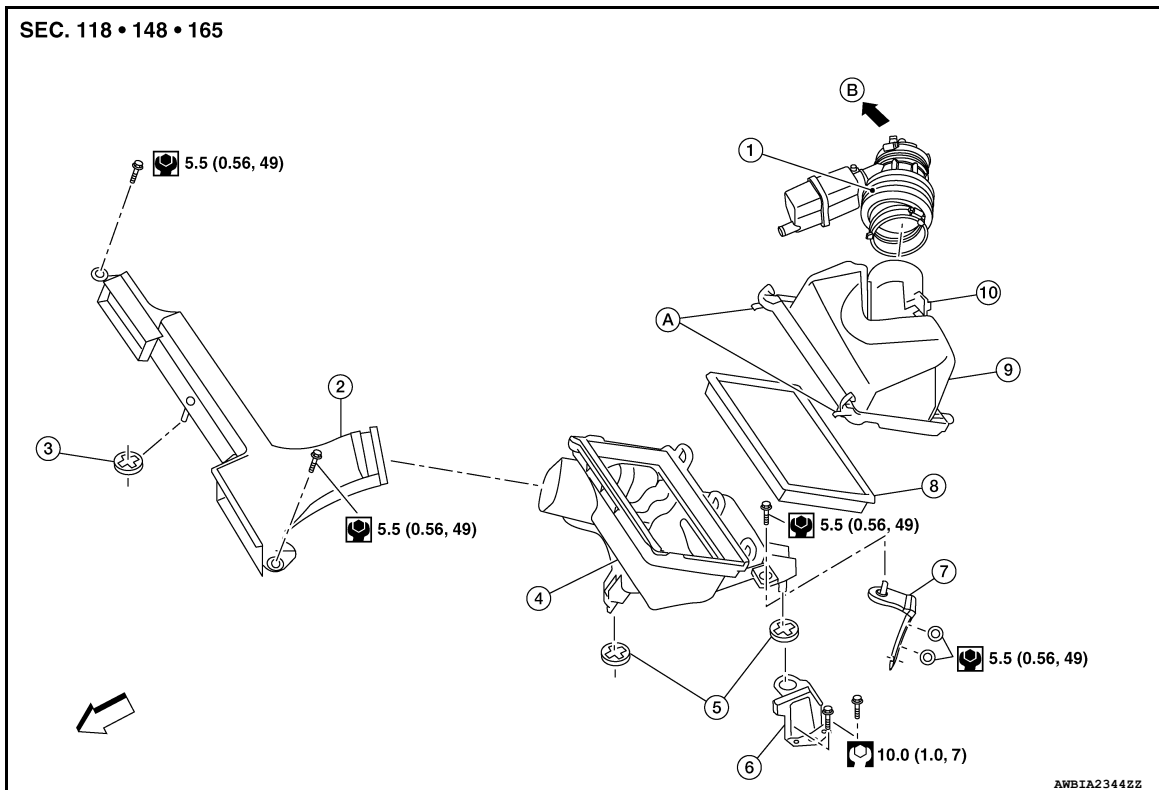
#### AIR CLEANER FILTER

# ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

## AIR CLEANER FILTER : Exploded View

INFOID:000000011592298



- |   |                                |  |
|---|--------------------------------|--|
| 1. Air duct hose and resonator assembly | 2. Front air duct              | 3. Grommet                                     |
| 4. Air cleaner case (lower)             | 5. Grommets                    | 6. Air cleaner case mounting bracket           |
| 7. Bracket                              | 8. Air cleaner filter          | 9. Air cleaner case (upper)                    |
| 10. Mass air flow sensor                | A. Air cleaner case side clips | B. To electric throttle control actuator clips |

⇐ Front

## AIR CLEANER FILTER : Removal and Installation

INFOID:000000011592299

### REMOVAL

#### **CAUTION:**

**It is not necessary to remove the front air duct to replace the air cleaner filter.**

#### **NOTE:**

Replace the air cleaner filter per the periodic maintenance schedule or as necessary. Refer to [MA-7. "Introduction of Periodic Maintenance"](#).

1. Unhook air cleaner case side clips and lift air cleaner case (upper).
2. Remove the air cleaner filter.

### INSTALLATION

Installation is in the reverse order of removal.

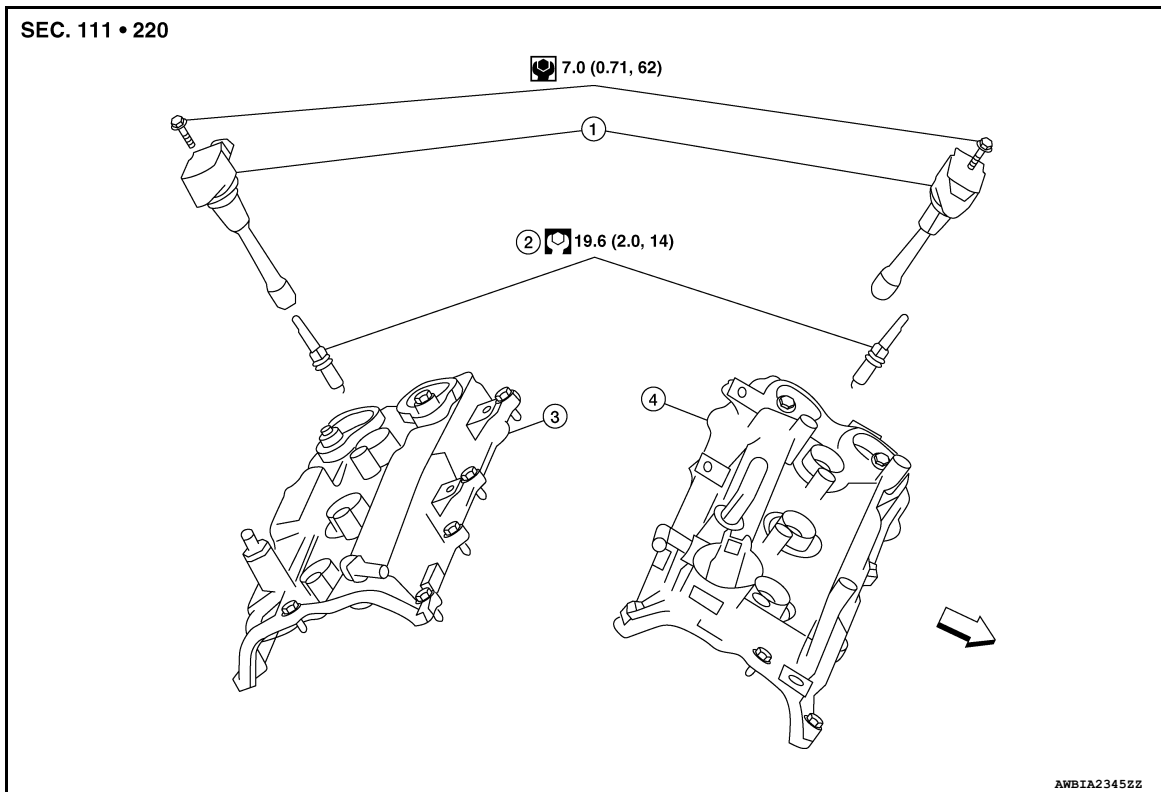
### SPARK PLUG

# ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

## SPARK PLUG : Exploded View

INFOID:000000011592300



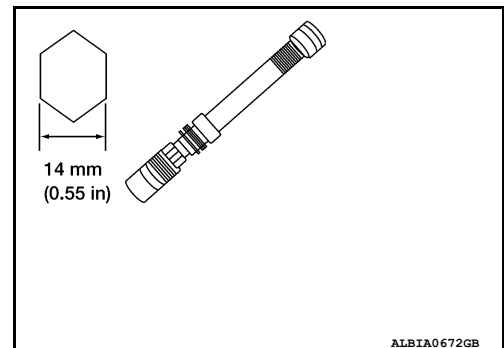
1. Ignition coil                      2. Spark plug                      3. Rocker cover (RH)  
4. Rocker cover (LH)                      ← Front

## SPARK PLUG : Removal and Installation

INFOID:000000011592301

### REMOVAL

1. Remove the ignition coil. Refer to [EM-44. "Removal and Installation \(bank 2\)"](#) and [EM-44. "Removal and Installation \(bank 1\)"](#).
2. Remove the spark plug with a suitable spark plug wrench.



### INSPECTION AFTER REMOVAL

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# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

Use the standard type spark plug for normal condition.

**Spark plug** : Refer to [EM-137, "Spark Plug"](#).

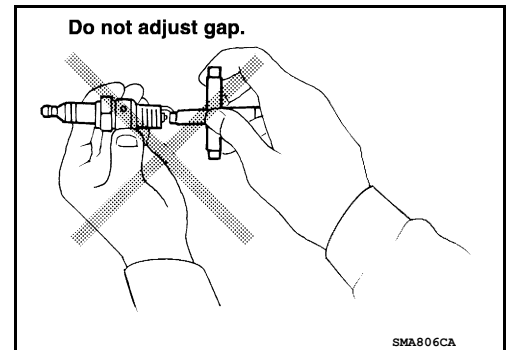
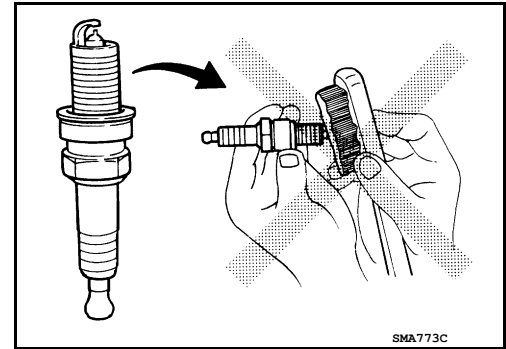
### CAUTION:

- Do not drop or shock spark plug. Discard spark plug if dropped.
- Do not use a wire brush for cleaning.
- If plug is covered with carbon, a 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

- Spark plug gap adjustment is not required between replacement intervals.
- Measure spark plug gap. When it exceeds the limit, replace spark plug even if it is within the specified replacement mileage. Refer to [EM-137, "Spark Plug"](#).



## INSTALLATION

Installation is in the reverse order of removal.

Make	DENSO
Standard type*	FXE22HR11
Gap (nominal)	1.1 mm (0.043 in)

\*: Always check with the Parts Department for the latest parts information.

## ENGINE COOLANT

### ENGINE COOLANT : System Inspection

INFOID:000000011592303

### 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 push down and turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by pushing it down and turning it all the way.**

### CHECKING COOLING SYSTEM HOSES

Check hoses for the following:

- Improper attachment
- Leaks
- Cracks
- Damage
- Loose connections
- Chafing
- Deterioration

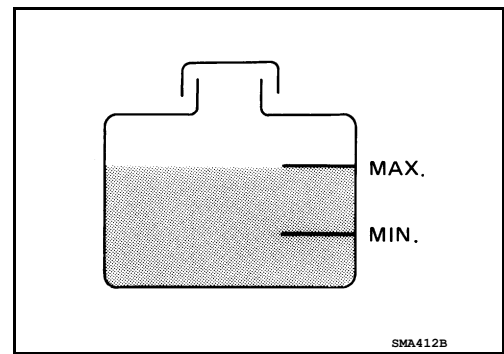
### CHECKING RESERVOIR LEVEL



# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

- Check if the reservoir tank coolant level is within MIN to MAX range when the engine is cool.
- Adjust coolant level if it is too much or too little.



## CHECKING COOLING SYSTEM FOR LEAKS

To check for leaks, apply pressure to the cooling system using suitable tool (A/B).

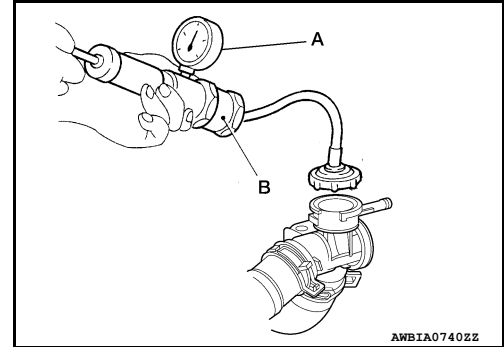
**Testing pressure** : Refer to [CO-26, "Radiator"](#).

### **WARNING:**

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

### **CAUTION:**

**Higher pressure than specified may cause radiator damage.**



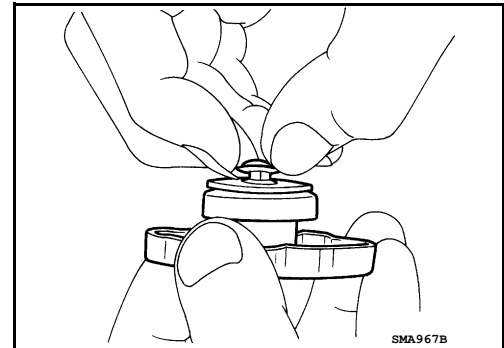
## CHECKING RADIATOR CAP

1. Inspect the radiator cap.
  - Replace the cap if the metal plunger cannot be seen around the edge of the black rubber gasket.
  - Replace the cap if deposits of waxy residue or other foreign material are on the black rubber gasket or the metal retainer.

### **NOTE:**

Thoroughly wipe out the radiator filler neck to remove any waxy residue or foreign material.

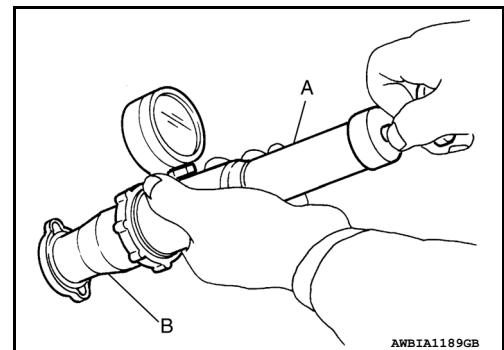
2. Pull the negative-pressure valve to open it and check that it closes completely when released.
  - Check that there is no dirt or damage on the valve seat of the radiator cap negative-pressure valve.
  - Check that there are no abnormalities in the opening and closing conditions of the negative-pressure valve.



3. Check radiator cap relief pressure using suitable tool.

**Standard** : Refer to [CO-26, "Radiator"](#).

- When connecting the radiator cap to the tester, apply water or coolant to the cap seal surface.
- Replace the radiator cap if there is an abnormality in the negative-pressure valve, or if the open-valve pressure is outside of the standard values.



## CHECKING RADIATOR

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

### **CAUTION:**

- **Be careful not to bend or damage the radiator fins.**

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# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

- When radiator is cleaned on-vehicle, remove surrounding parts in order to access the radiator core. Tape the harness and electrical connectors to prevent water from entering.
1. Spray water to the back side of the radiator core using a side to side motion from the top down.
  2. Stop spraying when debris no longer flows from radiator core.
  3. Blow air into the back side of radiator core using a side to side motion from the top down.
    - Use compressed air lower than 490 kPa (5 kg/cm<sup>2</sup>, 71 psi) and keep distance more than 30 cm (11.8 in).
  4. Continue to blow air until no water sprays out.
  5. Check for coolant leaks. Repair as necessary.

## ENGINE COOLANT : Changing Engine Coolant

INFOID:000000011592304

### 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 push down and turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by pushing it down and turning it all the way.

### DRAINING ENGINE COOLANT

1. Remove the front under cover. Refer to [EXT-40, "FRONT UNDER COVER : Removal and Installation"](#).
2. Open the radiator drain plug at the bottom of the radiator and remove the radiator filler cap. This is the only step required when partially draining the cooling system (radiator only).

#### CAUTION:

- Do not allow the coolant to contact the drive belts.
- Perform this step when engine is cold.

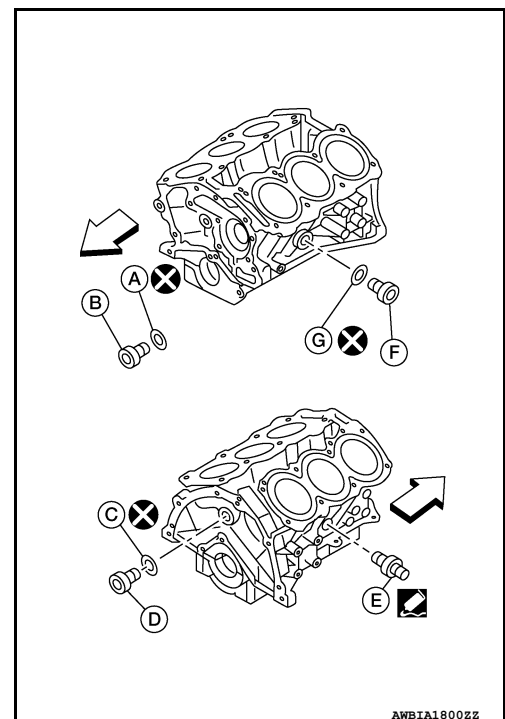
3. Follow this step for heater core removal/replacement only. Disconnect the upper heater hose at the engine side and apply moderate air pressure [103.46 kPa (1.055 kg/cm<sup>2</sup>, 15 psi) maximum air pressure] into the hose for 30 seconds to blow the excess coolant out of the heater core.
4. When draining all of the coolant in the system, remove the reservoir tank and drain the coolant, then clean the reservoir tank before installation.

#### CAUTION:

- Do not allow the coolant to contact the drive belts.
- Perform this step when engine is cold.

5. When draining all of the coolant in the system for engine removal or repair, open all of the drain plugs (A-F) on the cylinder block.
6. Check the drained coolant for contaminants such as rust, corrosion or discoloration.  
If the coolant is contaminated, flush the engine cooling system.

⇐ : Front



## REFILLING ENGINE COOLANT

# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

1. Install the radiator drain plug. If the cooling system was drained completely, install the reservoir tank and the cylinder block drain plugs.
  - The radiator must be completely empty of coolant and water.
  - Apply sealant to the threads of the cylinder block drain plug. Use Genuine High Performance Thread Sealant or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).

**CAUTION:**

Do not reuse copper sealing washers.

- Water drain plug (B) : 62.0 N·m (6.3 kg-m, 46 ft-lb)**
- Water drain plug (D) : 78.0 N·m (8.0 kg-m, 58 ft-lb)**
- Connector Bolt (E) : 27.0 N·m (2.8 kg-m, 20 ft-lb)**
- Water drain plug (F) : 6.0 N·m (0.61 kg-m, 53 in-lb)**

2. If disconnected, reattach the upper radiator hose at the engine side.
3. Set the vehicle heater controls to the full HOT and heater ON position. Turn the vehicle ignition ON with the engine OFF as necessary to activate the heater mode.
4. Install the Tool by installing the radiator cap adapter onto the radiator neck opening. Then attach the gauge body assembly with the refill tube and the venturi assembly to the radiator cap adapter.

**Tool number : KV991J0070 (J-45695)**

5. Insert the refill hose into the coolant mixture container that is placed at floor level. Make sure the ball valve is in the closed position.

• Use recommended coolant or equivalent.  
Refer to [MA-11, "Fluids and Lubricants"](#).

**Engine coolant capacity : Refer to CO-26, "Capacity".**  
**(with reservoir tank)**

**CAUTION:**

Do not use any cooling system additives such as radiator sealer. Additives may clog the cooling system and cause damage to the engine, transmission and/or cooling system.

6. Install an air hose to the venturi assembly, the air pressure must be within specification.

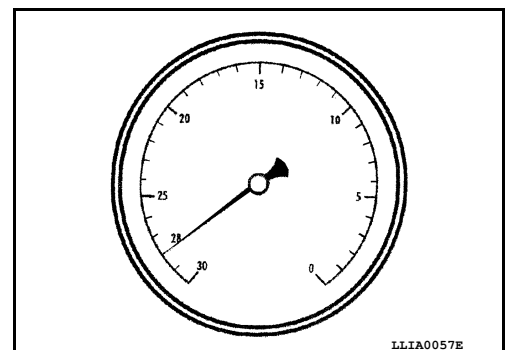
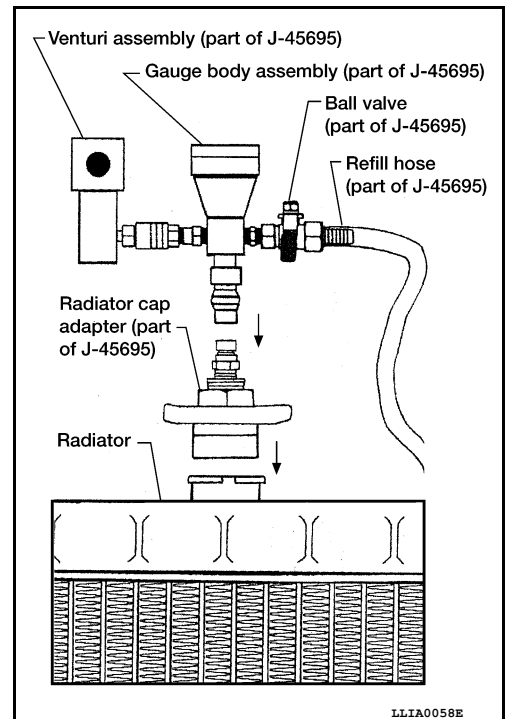
**Compressed air supply pressure : 549 - 824 kPa (5.6 - 8.4 kg/cm<sup>2</sup>, 80 - 119 psi)**

**CAUTION:**

The compressed air supply must be equipped with an air dryer.

7. The vacuum gauge will begin to rise and there will be an audible hissing noise. During this process open the ball valve on the refill hose slightly. Coolant will be visible rising in the refill hose. Once the refill hose is full of coolant, close the ball valve. This will purge any air trapped in the refill hose.
8. Continue to draw the vacuum until the gauge reaches 28 inches of vacuum. The gauge may not reach 28 inches in high altitude locations, use the vacuum specifications based on the altitude above sea level.

<b>Altitude above sea level</b>	<b>Vacuum gauge reading</b>
<b>0 - 100 m (328 ft)</b>	<b>: 28 inches of vacuum</b>
<b>300 m (984 ft)</b>	<b>: 27 inches of vacuum</b>
<b>500 m (1,641 ft)</b>	<b>: 26 inches of vacuum</b>
<b>1,000 m (3,281 ft)</b>	<b>: 24 - 25 inches of vacuum</b>



# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

- When the vacuum gauge has reached the specified amount, disconnect the air hose and wait 20 seconds to see if the system loses any vacuum. If the vacuum level drops, perform any necessary repairs to the system and repeat steps 6 - 8 to bring the vacuum to the specified amount. Recheck for any leaks.
- Place the coolant container (with the refill hose inserted) at the same level as the top of the radiator. Then open the ball valve on the refill hose so the coolant will be drawn up to fill the cooling system. The cooling system is full when the vacuum gauge reads zero.

### **CAUTION:**

**Do not allow the coolant container to get too low when filling, to avoid air from being drawn into the cooling system.**

- Remove the Tool from the radiator neck opening.
- Fill the cooling system reservoir tank to the specified level and install the radiator cap. Run the engine to warm up the cooling system and top up the system as necessary.
- Install the front under cover. Refer to [EXT-40. "FRONT UNDER COVER : Removal and Installation"](#).

## FLUSHING COOLING SYSTEM

- Fill the radiator from the filler neck above the radiator upper hose and reservoir tank with clean water and reinstall radiator filler cap.
- Run the engine until it reaches normal operating temperature.
- Rev the engine two or three times under no-load.
- Stop the engine and wait until it cools down.
- Drain the water from the system. Refer to [MA-18. "ENGINE COOLANT : Changing Engine Coolant"](#).
- Repeat steps 1 through 5 until clear water begins to drain from the radiator.

## FUEL LINES

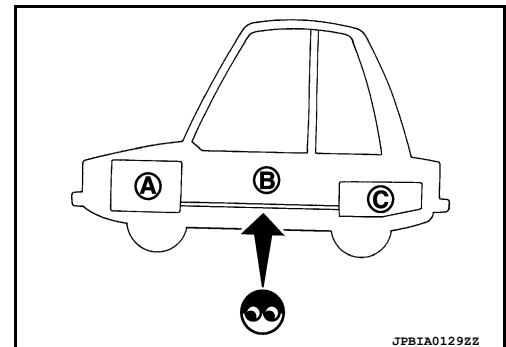
### FUEL LINES : Inspection

INFOID:000000011592305

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

- (A) : Engine
- (B) : Fuel line
- (C) : Fuel tank

If necessary, repair or replace damaged parts.



## ENGINE OIL

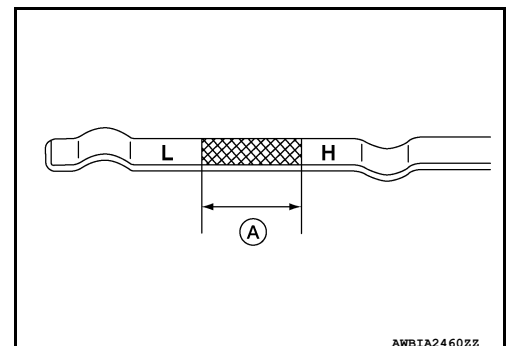
### ENGINE OIL : Inspection

INFOID:000000011592307

#### ENGINE OIL LEVEL

##### **NOTE:**

- Before starting the engine, check the engine oil level. If the engine is already started, stop it and allow 10 minutes before checking.
- Check that the engine oil level is within the range as indicated on the dipstick.
- If it is out of range (A), add engine oil as necessary until the dipstick indicates the correct level.



#### ENGINE OIL APPEARANCE

- Check engine oil for white milky appearance or excessive contamination.

# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

- If engine oil becomes milky, it is highly probable that it is contaminated with engine coolant. Repair or replace damaged parts.

### ENGINE OIL LEAKS

Check for engine oil leaks around the following areas:

- Oil pan
- Oil pan drain plug
- Oil pressure switch
- Oil filter
- Oil cooler
- Intake valve timing control cover
- Front timing chain cover
- Mating surface between cylinder block and cylinder head
- Mating surface between cylinder head and rocker cover
- Front oil seal
- Rear oil seal

### ENGINE OIL PRESSURE CHECK

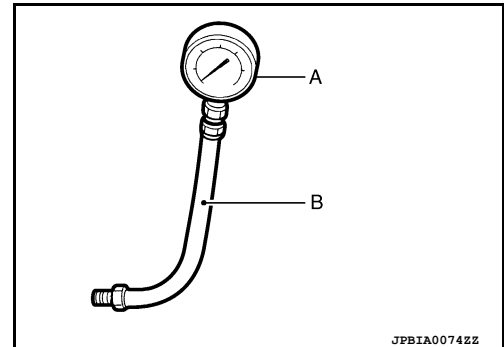
#### **WARNING:**

- **Be careful not to burn yourself, as engine oil may be hot.**
- **When checking engine oil pressure, shift selector position should be "P", and apply parking brake securely.**

1. Check the engine oil level. Refer to ENGINE OIL LEVEL.
2. Remove fender protector side cover. Refer to [EXT-36, "FENDER PROTECTOR : Exploded View"](#).
3. Disconnect oil pressure switch harness connector at the oil pressure switch. Remove oil pressure switch using suitable tool and install suitable tools (A/B).

#### **CAUTION:**

**Do not drop or shock oil pressure switch.**



4. Start the engine and warm it up to normal operating temperature.
5. Check oil pressure with engine running under no-load, using suitable tool.

#### **NOTE:**

- When engine oil temperature is low, engine oil pressure becomes high.
- If difference is extreme, check oil passage and oil pump for oil leaks.

**Engine oil pressure** : [LU-17, "Oil Pressure"](#)

6. After the inspections, install the oil pressure switch using suitable tool as follows:
  - a. Remove the old sealant adhering to oil pressure switch and engine.
  - b. Apply thread sealant and tighten the oil pressure switch to specification.  
**Use Genuine High Performance Thread Sealant, or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).**

**Oil pressure switch** : [EM-113, "Exploded View"](#)

- c. After warming up engine, make sure there are no engine oil leaks.
7. Install fender protector side cover. Refer to [EXT-36, "FENDER PROTECTOR : Exploded View"](#).

### ENGINE OIL : Changing Engine Oil

INFOID:000000011592308

#### **WARNING:**

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

# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

- **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. Position the vehicle so it is level on the hoist.
2. Warm up the engine and check for engine oil leaks from the engine.
3. Stop engine and wait for 10 minutes.
4. Remove the oil pan drain plug (1) and oil filler cap.

↶ : Front

5. Drain the engine oil.
6. Install the oil pan drain plug (1) with a new washer and refill the engine with new engine oil.

**Oil specification and viscosity** : Refer to [MA-12, "Engine Oil Recommendation"](#).

### CAUTION:

- Be sure to clean the oil pan drain plug and install with a new washer.
- The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only. Always use the dipstick to determine when the proper amount of oil is in the engine.

7. Warm up the engine and check around the oil pan drain plug and oil filter for oil leaks.
8. Stop engine and wait for 10 minutes.
9. Check the engine oil level using the oil level gauge.

### CAUTION:

**Do not overfill the engine with engine oil.**

## OIL FILTER

### OIL FILTER : Removal and Installation

INFOID:000000011592311

#### REMOVAL

1. Drain engine oil. Refer to [MA-21, "ENGINE OIL : Changing Engine Oil"](#).
2. Remove front fender protector side cover RH. Refer to [EXT-36, "FENDER PROTECTOR : Exploded View"](#).
3. Remove the oil filter using Tool (A) as shown.

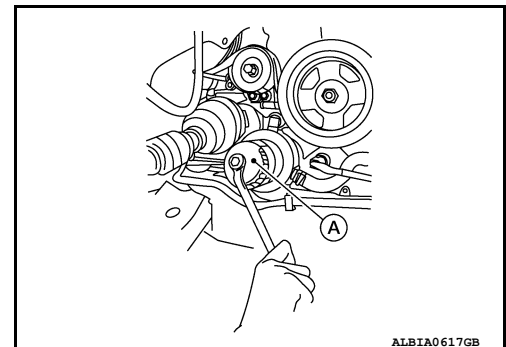
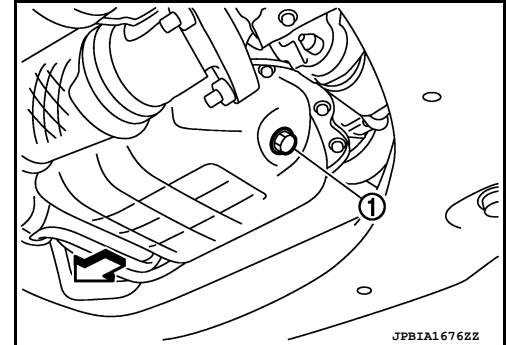
**Tool number (A)** : KV10115801 (J-38956)

### WARNING:

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

### CAUTION:

- When removing, prepare a shop cloth to absorb any engine oil leaks or spills.
- Do not allow engine oil to adhere to the drive belts.
- Completely wipe off any engine oil that adheres to the engine and the vehicle.

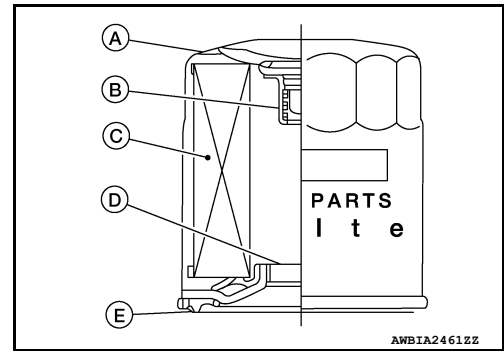


# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

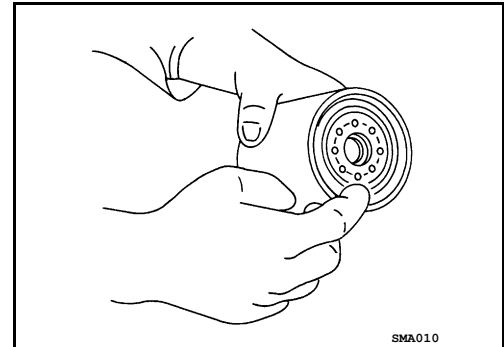
- The oil filter is provided with a relief valve. Use a Genuine NISSAN oil filter or equivalent.

- A. : Oil filter body
- B. : Relief valve
- C. : Filtering paper
- D. : Screw
- E. : Packing



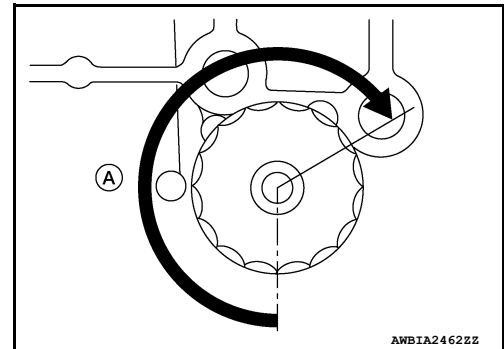
## INSTALLATION

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



3. Screw the oil filter manually until it touches the installation surface, then tighten it by turning another 2/3 turn.

**Oil filter : 18.0 N·m (1.8 kg-m, 13 ft-lb)**



4. Refill the engine with new engine oil. Refer to [MA-21, "ENGINE OIL : Changing Engine Oil"](#).
5. Check the engine oil level and add engine oil as necessary. Refer to [MA-20, "ENGINE OIL : Inspection"](#).
6. After warming up the engine, check for engine oil leaks.
7. Install front fender protector side cover RH. Refer to [EXT-36, "FENDER PROTECTOR : Exploded View"](#).

## EVAP VAPOR LINES

### EVAP VAPOR LINES : Work Procedure

INFOID:000000011592361

#### **CAUTION:**

- Never use compressed air or a high pressure pump.
- Never exceed 4.12 kPa (0.042 kg/cm<sup>2</sup>, 0.6 psi) of pressure in EVAP system.

#### **NOTE:**

- Do not start engine.
- Improper installation of EVAP service port adapter (commercial service tool) to the EVAP service port may cause a leakage.

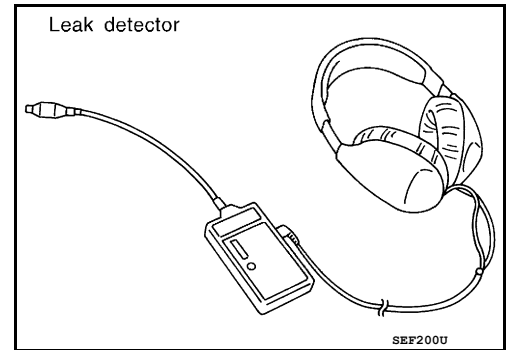
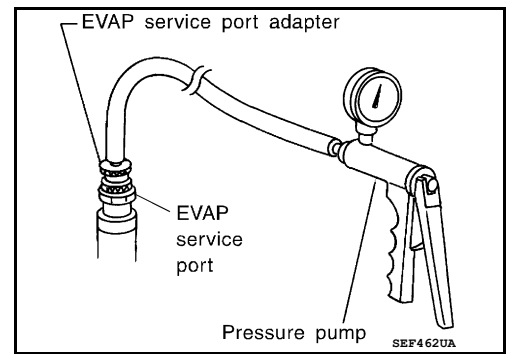
Ⓜ WITH CONSULT



## ENGINE MAINTENANCE (VQ35DE)

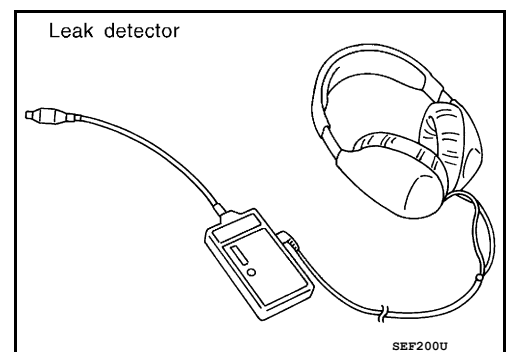
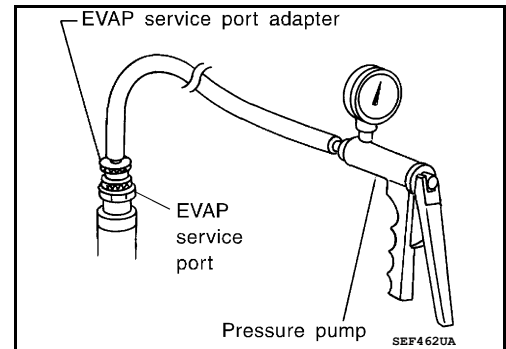
### < PERIODIC MAINTENANCE >

1. To locate the EVAP leakage, install EVAP service port adapter (commercial service tool) and pressure pump to EVAP service port.
2. Turn ignition switch ON.
3. Select the "EVAP SYSTEM CLOSE" of "WORK SUPPORT MODE" with CONSULT.
4. Touch "START". A bar graph (Pressure indicating display) will appear on the screen.
5. Apply positive pressure to the EVAP system until the pressure indicator reaches the middle of the bar graph.
6. Remove EVAP service port adapter (commercial service tool) and hose with pressure pump.
7. Locate the leakage using a leakage detector (commercial service tool). Refer to [EC-45, "EVAPORATIVE EMISSION SYSTEM : System Description"](#).



### ⊗ WITHOUT CONSULT

1. To locate the EVAP leakage, install EVAP service port adapter (commercial service tool) and pressure pump to EVAP service port.
2. Apply battery voltage between the terminals of EVAP canister vent control valve to make a closed EVAP system.
3. To locate the leakage, deliver positive pressure to the EVAP system until pressure gauge points reach 1.38 to 2.76 kPa (0.014 to 0.028 kg/cm<sup>2</sup>, 0.2 to 0.4 psi).
4. Remove EVAP service port adapter (commercial service tool) and hose with pressure pump.
5. Locate the leakage using a leak detector (commercial service tool). Refer to [EC-45, "EVAPORATIVE EMISSION SYSTEM : System Description"](#).





# CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

## CHASSIS AND BODY MAINTENANCE

### IN-CABIN MICROFILTER

#### IN-CABIN MICROFILTER : Removal and Installation

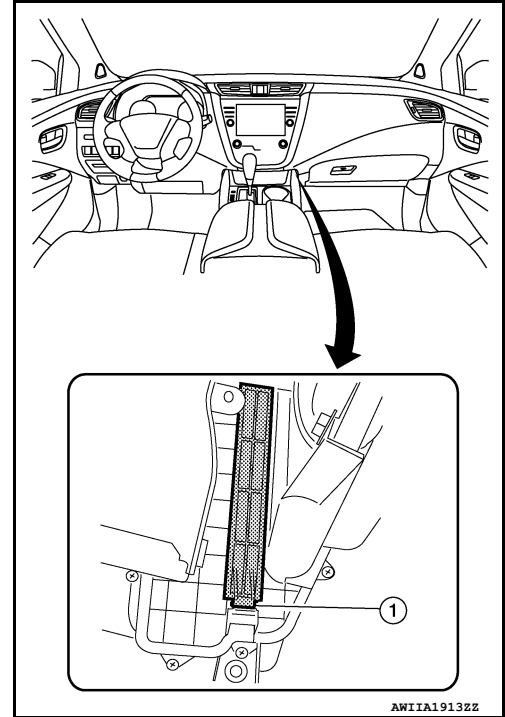
INFOID:000000011592394

#### REMOVAL

1. Remove center console side finisher (RH). Refer to [IP-19. "Exploded View"](#).
2. Remove glove box assembly. Refer to [IP-25. "Removal and Installation"](#).
3. Release the in-cabin microfilter cover tab (1) and remove the cover from under the RH side of the instrument panel.

**CAUTION:**

Use care when lifting up on the tab to avoid damaging it.



4. Remove the in-cabin microfilter.

**CAUTION:**

If the filter is deformed/damaged when removing, replace it with a new one. A deformed or damaged filter may affect the dust collecting performance.

#### INSTALLATION

Installation is in the reverse order of removal.

**CAUTION:**

When installing, handle the filter with extreme care to avoid deforming or damaging the filter.

**NOTE:**

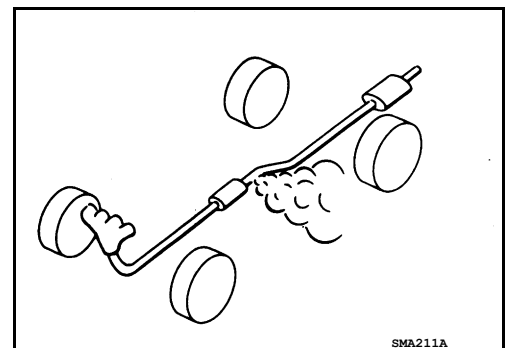
The in-cabin microfilter is marked with an air flow arrow. The end of the microfilter with the arrow should face the passenger side of the vehicle. The arrow should point towards the rear of the vehicle.

### EXHAUST SYSTEM

#### EXHAUST SYSTEM : Checking Exhaust System

INFOID:000000011592395

Check exhaust pipes, muffler and mounts for improper attachment, leaks, cracks, damage or deterioration. Repair or replace as necessary.



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# CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

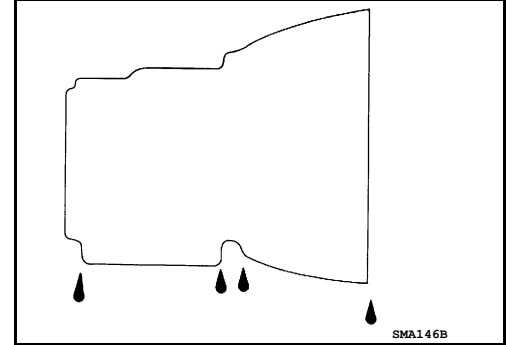
## CVT FLUID

### CVT FLUID : Inspection

INFOID:0000000011732707

#### FLUID LEAKAGE

- Check transaxle surrounding area (oil seal and plug etc.)for fluid leakage.
- If anything is found, repair or replace damaged parts and adjust CVT fluid level. Refer to [MA-28. "CVT FLUID : Adjustment"](#).



### CVT FLUID : Replacement

INFOID:0000000011732708

- CVT fluid** : Refer to [MA-11, "Fluids and Lubricants"](#).
- Fluid capacity** : Refer to [MA-11, "Fluids and Lubricants"](#).

#### CAUTION:

- Always use shop paper. Never use shop cloth.
- Replace a drain plug gasket with new ones at the final stage of the operation when installing.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.
- After replacement, always perform CVT fluid leakage check.

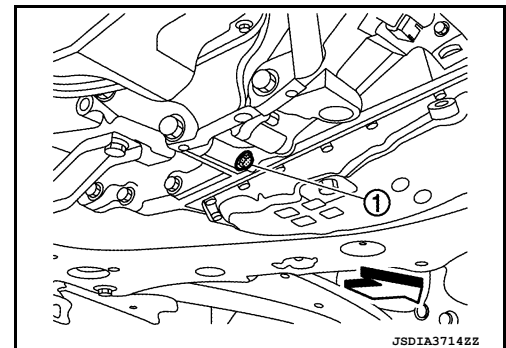
1. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
2. Select "FLUID TEMP" and confirm that the CVT fluid temperature is 40°C (104°F) or less.
3. Check that the selector lever is in the "P" position, then completely engage the parking brake.
4. Lift up the vehicle.
5. Remove the drain plug and drain the CVT fluid from the oil pan. Refer to [TM-202. "Exploded View"](#).
6. Install the drain plug to oil pan.

#### CAUTION:

**Drain plug gasket use the old one.**

7. Remove the overflow plug ① from converter housing.

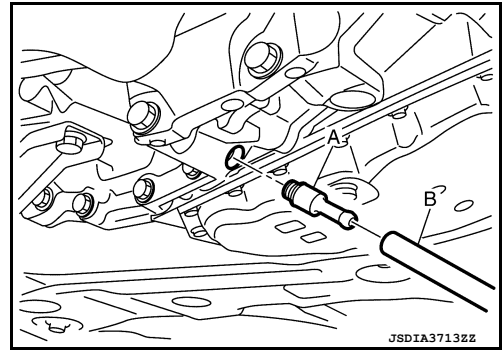
← : Vehicle front



## CHASSIS AND BODY MAINTENANCE

### < PERIODIC MAINTENANCE >

8. Install the charging pipe set (KV311039S0) (A) into the overflow plug hole.  
**CAUTION:**  
**Tighten the charging pipe by hand.**
9. Install the ATF changer hose (B) to the charging pipe.  
**CAUTION:**  
**Press the ATF changer hose all the way onto the charging pipe until it stops.**
10. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.
11. Remove the ATF changer hose and charging pipe, then install the overflow plug.  
**NOTE:**  
Perform this work quickly because CVT fluid leaks.
12. Lift down the vehicle.
13. Start the engine.
14. While depressing the brake pedal, shift the selector lever to the entire position from “P” to “D”, and shift it to the “P” position.  
**NOTE:**  
Hold the lever at each position for 5 seconds.
15. Check that the CONSULT “Data Monitor” in “FLUID TEMP” is 35°C (95°F) to 45°C (113°F).
16. Stop the engine.
17. Lift up the vehicle.
18. Remove the drain plug, and then drain CVT fluid from oil pan.
19. Repeat steps 8 to 18 (one time).
20. Tighten the drain plug to the specified torque. Refer to [TM-202. "Exploded View"](#).
21. Remove the overflow plug.
22. Install the charging pipe set (KV311039S0) into the overflow plug hole.  
**CAUTION:**  
**Tighten the charging pipe by hand.**
23. Install the ATF changer hose to the charging pipe.  
**CAUTION:**  
**Press the ATF changer hose all the way onto the charging pipe until it stops.**
24. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.
25. Remove the ATF changer hose and charging pipe, then install the overflow plug.  
**NOTE:**  
Perform this work quickly because CVT fluid leaks.
26. Lift down the vehicle.
27. Start the engine.
28. While depressing the brake pedal, shift the selector lever to the entire position from “P” to “D”, and shift it to the “P” position.  
**NOTE:**  
Hold the lever at each position for 5 seconds.
29. Check that the CONSULT “Data Monitor” in “FLUID TEMP” is 35°C (95°F) to 45°C (113°F).
30. Lift up the vehicle.
31. Remove the overflow plug and confirm that the CVT fluid is drained from the overflow plug hole.  
**CAUTION:**  
**Perform this work with the vehicle idling.**  
**NOTE:**  
If the CVT fluid is not drained, refer to “Adjustment” and refill with the CVT fluid.
32. When the flow of CVT fluid slows to a drip, tighten the overflow plug to the specified torque. Refer to [TM-202. "Exploded View"](#).  
**CAUTION:**  
**Never reuse O-ring.**
33. Lift down the vehicle.



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# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

34. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
35. Select "CONFORM CVTF DETERIORATION".
36. Select "Erase".
37. Stop the engine.

## CVT FLUID : Adjustment

INFOID:000000011732709

- CVT fluid** : Refer to [MA-11, "Fluids and Lubricants"](#).  
**Fluid capacity** : Refer to [MA-11, "Fluids and Lubricants"](#).

### CAUTION:

- During adjustment of the CVT fluid level, check CONSULT so that the oil temperature may be maintained from 35 to 45°C (95 to 113°F).
- During adjustment of the CVT fluid level, check that the engine speed is maintaining 500 rpm.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.

1. Check that the selector lever is in the "P" position, then completely engage the parking brake.
2. Start the engine.
3. Adjust the CVT fluid temperature to be approximately 40°C (104°F).

### NOTE:

The CVT fluid is largely affected by temperature. Therefore be sure to use CONSULT and check the "FLUID TEMP" under "TRANSMISSION" in "Data Monitor" while adjusting.

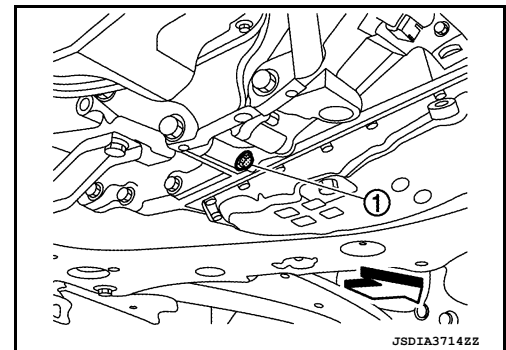
4. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "D", and shift it to the "P" position.

### NOTE:

Hold the lever at each position for 5 seconds.

5. Lift up the vehicle.
6. Check that there is no CVT fluid leakage.
7. Remove the overflow plug ① from converter housing.

← : Vehicle front



8. Install the charging pipe set (KV311039S0) (A) into the overflow plug hole.

### CAUTION:

**Tighten the charging pipe by hand.**

9. Install the ATF changer hose (B) to the charging pipe.

### CAUTION:

**Press the ATF changer hose all the way onto the charging pipe until it stops.**

10. Fill approximately 0.5 liter (1/2 US qt, 1/2 Imp qt) of the CVT fluid.

11. Remove the ATF changer hose from the charging pipe, and check that the CVT fluid drains out from the charging pipe. If it does not drain out, perform charging again.

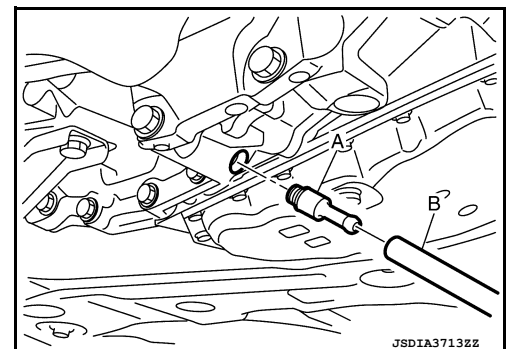
### CAUTION:

**Perform this work with the vehicle idling.**

12. When the flow of CVT fluid slows to a drip, remove the charging pipe from the converter housing.

13. Tighten the overflow plug to the specified torque. Refer to [TM-202, "Exploded View"](#).

### CAUTION:



# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

**Never reuse O-ring.**

14. Lift down the vehicle.
15. Stop the engine.

## TRANSFER OIL

### TRANSFER OIL : Inspection

INFOID:000000011732704

#### TRANSFER OIL LEAKS

Check that transfer oil is not leaking from transfer assembly or around it.

#### TRANSFER OIL LEVEL

##### **CAUTION:**

**Do not start engine while checking transfer oil level.**

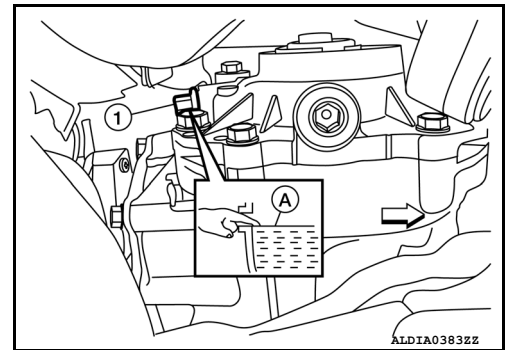
1. Remove filler plug (1) and gasket.

⇐ : Front

2. Transfer oil level (A) should be level with bottom of filler plug hole. Add transfer oil if necessary. Refer to [MA-11, "Fluids and Lubricants"](#).
3. Set a new gasket onto filler plug, and install it in the transfer and tighten to specified torque. Refer to [DLN-62, "Exploded View"](#).

##### **CAUTION:**

**Do not reuse gasket.**



INFOID:000000011732705

### TRANSFER OIL : Draining

##### **CAUTION:**

**Do not start engine while working.**

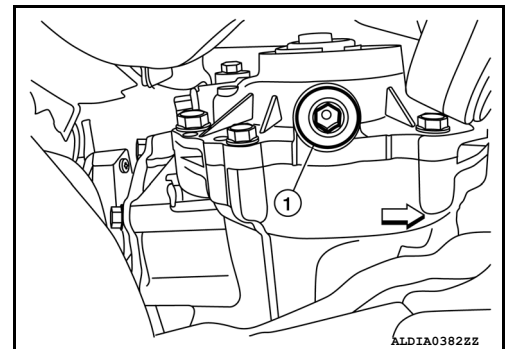
1. Run the vehicle to warm up the transfer unit sufficiently.
2. Stop the engine and remove drain plug (1) and gasket and drain the transfer oil.

⇐ : Front

3. Set a new gasket onto filler plug, and install it in the transfer and tighten to specified torque. Refer to [DLN-62, "Exploded View"](#).

##### **CAUTION:**

**Do not reuse gasket.**



INFOID:000000011732706

### TRANSFER OIL : Refilling

##### **CAUTION:**

**Do not start engine while checking transfer oil level.**

1. Remove filler plug (1).
2. Fill with new transfer oil to the specified level (A) near the filler plug hole.

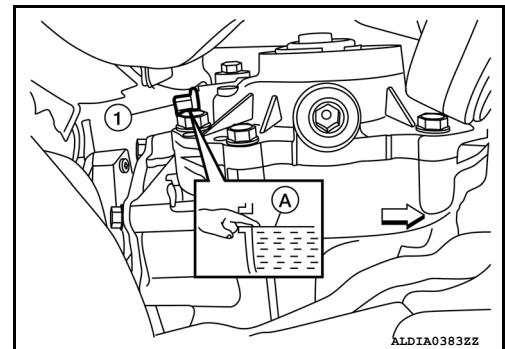
⇐ : Front

**Transfer oil grade and viscosity**

**Transfer oil capacity**

**: Refer to [MA-11, "Fluids and Lubricants"](#).**

**: Refer to [DLN-83, "General Specifications"](#).**



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# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

3. Set a new gasket onto filler plug, and install it in the transfer and tighten to specified torque. Refer to [DLN-62, "Exploded View"](#).  
**CAUTION:**  
**Do not reuse gasket.**

## REAR DIFFERENTIAL GEAR OIL

### REAR DIFFERENTIAL GEAR OIL : Inspection

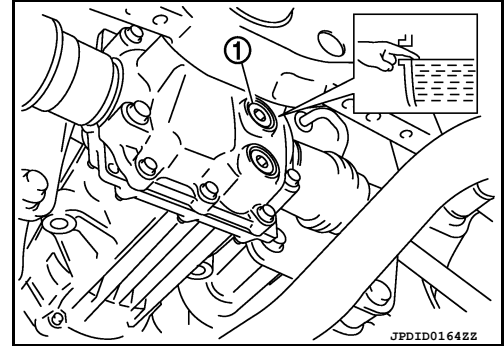
INFOID:000000011592403

#### OIL LEAKAGE

Make sure that oil is not leaking from final drive assembly or around it.

#### OIL LEVEL

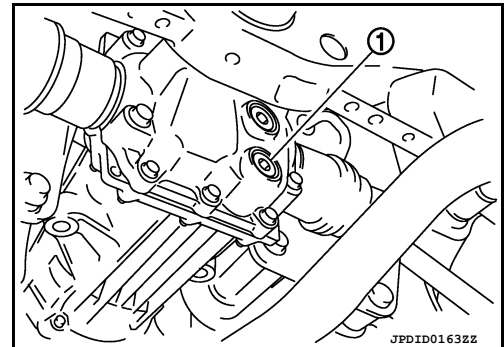
1. Check oil level from filler plug mounting hole as shown in the figure after removing filler plug (1) and gasket from final drive assembly.  
**CAUTION:**  
**Turn the ignition switch OFF while checking oil level.**
  - Oil level should be level with bottom of filler plug mounting hole. Add gear oil if necessary. Refer to [MA-30, "REAR DIFFERENTIAL GEAR OIL : Refilling"](#).
2. Set a gasket on filler plug and install it on final drive assembly.  
**CAUTION:**  
**Never reuse gasket.**
3. Tighten filler plug to the specified torque. Refer to [DLN-123, "Exploded View"](#).



### REAR DIFFERENTIAL GEAR OIL : Draining

INFOID:000000011592404

1. Turn the ignition switch OFF.
2. Remove drain plug (1) and gasket.
3. Drain gear oil.
4. Set a gasket on drain plug and install it to final drive assembly.  
**CAUTION:**  
**Never reuse gasket.**
5. Tighten drain plug to the specified torque. Refer to [DLN-123, "Exploded View"](#).



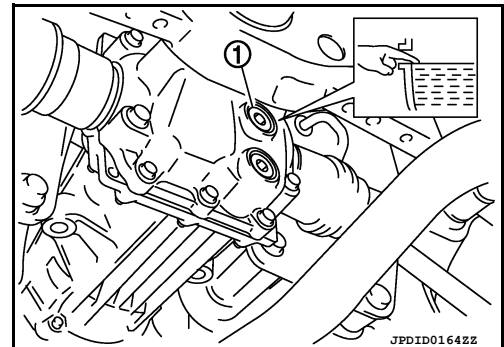
### REAR DIFFERENTIAL GEAR OIL : Refilling

INFOID:000000011592405

1. Remove filler plug (1) and gasket. Then fill with new gear oil until oil level reaches the specified level near filler plug mounting hole.

**Recommended** : Refer to [MA-11, "Fluids and Lubricants"](#).

2. Set a gasket on filler plug, and install it to final drive assembly.  
**CAUTION:**  
**Never reuse gasket.**
3. Tighten filler plug to the specified torque. Refer to [DLN-123, "Exploded View"](#).



## PROPELLER SHAFT

# CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

## PROPELLER SHAFT : Inspection

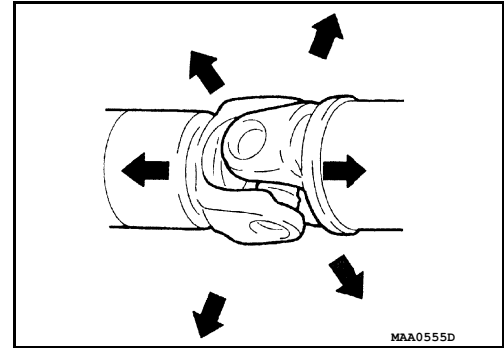
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### LOOSENESS OF CONNECTED PART

Check each fixing bolt and nut for looseness using torque wrench. For each tightening torque, refer to [DLN-89, "Exploded View"](#).

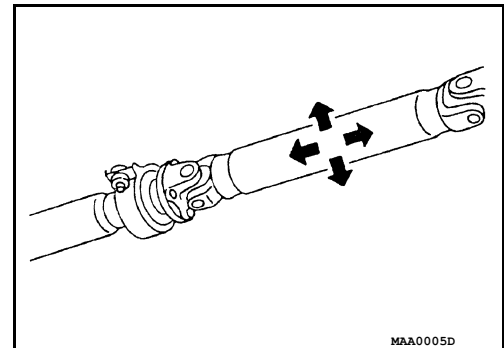
### BACKLASH OF JOINT PART

Move the joint of propeller shaft up and down and from side to side (axial direction of shaft and right angle to shaft) to check that the joint has no backlash. If the joint has a malfunction, remove propeller shaft and perform inspection.



### BACKLASH OF CENTER BEARING

Move the shaft near center bearing up and down and from side to side (axial direction of shaft and right angle to shaft) to check that the bearing has no backlash. If the bearing has a malfunction, remove propeller shaft and perform inspection.



### APPEARANCE AND NOISE

- Check the propeller shaft tube surface for dents or cracks. If malfunction is detected, replace propeller shaft assembly.
- If center bearing is noisy or damaged, replace propeller shaft assembly.

### VIBRATION

If vibration is present at high speed, adjust the propeller shaft phase first.

1. Check the propeller shaft for bend and damage. If damaged, replace propeller shaft assembly.
2. Perform a cruise test drive to check the propeller shaft for runout. If vibration occurs, separate propeller shaft at final drive companion flange; then change the phase between electric controlled coupling stud bolt and propeller shaft by the one bolt hole at a time and install propeller shaft.
3. If vibration is still detected, measure propeller shaft runout after removing it. Refer to [DLN-92, "Inspection"](#).

## WHEELS

### WHEELS : Inspection

INFOID:000000011592409

### WHEEL

1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.



# CHASSIS AND BODY MAINTENANCE

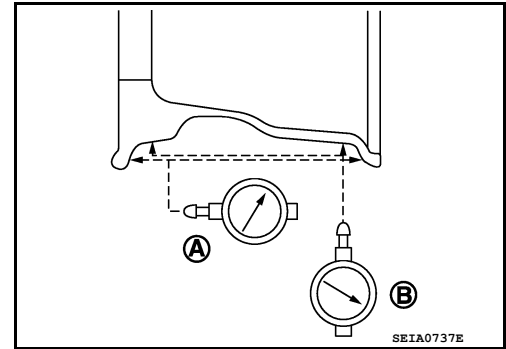
## < PERIODIC MAINTENANCE >

- Remove tire from wheel and mount wheel on a balancer machine.

**CAUTION:**

**DO NOT** use center hole cone-type clamping machines to hold the wheel during tire removal/installation or balancing or damage to the wheel paint, cladding or chrome may result. Use only rim-type or universal lug-type clamping machines to hold the wheel during servicing.

- Set dial indicator as shown.
- Check runout, if runout value exceeds the limit, replace wheel.



**Limit**

**Axial Runout (A)** Refer to [WT-74, "Wheel"](#).

**Radial Runout (B)** Refer to [WT-74, "Wheel"](#).

## WHEELS : Balancing Wheels

INFOID:000000011592410

### BALANCING WHEELS (ADHESIVE WEIGHT TYPE)

#### Preparation Before Adjustment

Remove inner and outer balance weights from the wheel. Using releasing agent, remove double-faced adhesive tape from the wheel and tire.

**CAUTION:**

- Be careful not to scratch the wheel and tire during removal.
- After removing double-faced adhesive tape, wipe clean all traces of releasing agent from the wheel and tire.

#### Wheel Balance Adjustment

**CAUTION:**

- **DO NOT** use center hole cone-type clamping machines to hold the wheel during tire removal/installation or balancing or damage to the wheel paint, cladding or chrome may result. Use only rim-type or universal lug-type clamping machines to hold the wheel during servicing.

- If a balancer machine has an adhesive weight mode setting, select the adhesive weight mode setting and skip Step 2 below. If a balancer machine only has the clip-on (rim flange) weight mode setting, follow Step 2 to calculate the correct size adhesive weight.

- Set wheel and tire on balancer machine using the center hole as a guide. Start the balancer machine.
- For balancer machines that only have a clip-on (rim flange) weight mode setting, follow this step to calculate the correct size adhesive weight to use. When inner and outer imbalance values are shown on the balancer machine indicator, multiply outer imbalance value by 5/3 (1.67) to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value above and install in to the designated outer position of or at the designated angle in relation to the wheel and tire.

- Indicated imbalance value  $\times 5/3$  (1.67) = balance weight to be installed

**Calculation example:**

$23 \text{ g (0.81 oz)} \times 5/3 (1.67) = 38.33 \text{ g (1.35 oz)} \Rightarrow 40 \text{ g (1.41 oz)}$   
balance weight (closer to calculated balance weight value)

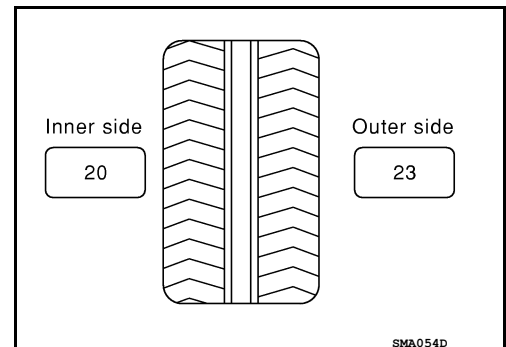
**NOTE:**

Note that balance weight value must be closer to the calculated balance weight value.

**Example:**

$37.4 \Rightarrow 35 \text{ g (1.23 oz)}$

$37.5 \Rightarrow 40 \text{ g (1.41 oz)}$





# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

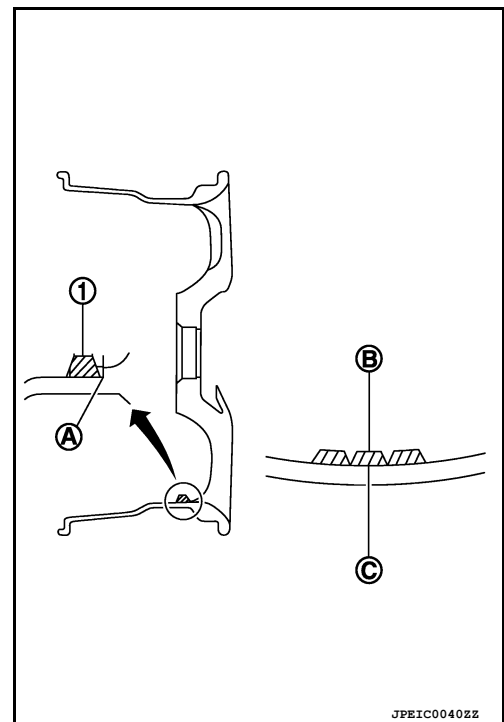
3. Install balance weight in the position shown.

**CAUTION:**

- Do not install the inner balance weight before installing the outer balance weight.
- Before installing the balance weight, be sure to clean the mating surface of the wheel and tire.
- When installing balance weight (1) to wheel and tire, set it into the grooved area (A) on the inner wall of the wheel and tire as shown so that the balance weight center (B) is aligned with the balancer machine indication position (angle) (C).

**CAUTION:**

- Always use Genuine NISSAN adhesive balance weights.
- Balance weights are non-reusable; always replace with new ones.
- Do not install more than three sheets of balance weights.



4. If calculated balance weight value exceeds 50 g (1.76 oz), install two balance weight sheets in line with each other as shown.

**CAUTION:**

**Do not install one balance weight sheet on top of another.**

5. Start balancer machine again.

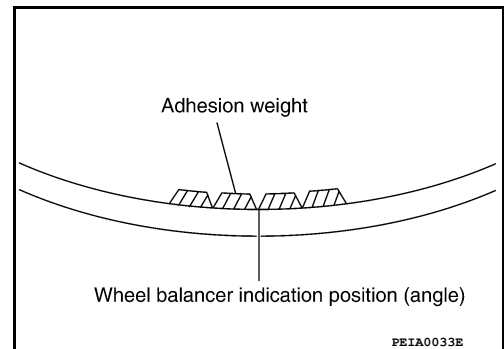
6. Install balance weight on inner side of wheel and tire in the balancer machine indication position (angle).

**CAUTION:**

**Do not install more than two balance weights.**

7. Start balancer machine. Make sure that inner and outer residual imbalance values are 5 g (0.17 oz) each or below.

8. If either residual imbalance value exceeds 5 g (0.17 oz), repeat installation procedures.



Wheel balance	Dynamic (At flange)	Static (At flange)
Maximum allowable imbalance	Refer to <a href="#">WT-74, "Wheel"</a> .	

## WHEELS : Rotation

INFOID:000000011592411

### TIRE ROTATION

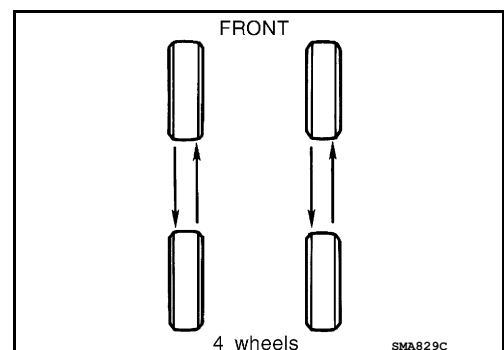
- Follow the maintenance schedule for tire rotation service intervals. Refer to [MA-7, "Introduction of Periodic Maintenance"](#).
- Rotate the wheels and tires front to back in the pattern as shown.
- When installing the wheel, tighten wheel nuts to the specified torque. Refer to [WT-68, "Exploded View"](#).

**WARNING:**

- Do not include the spare tire when rotating tires.
- After rotating tires, check and adjust the tire pressure.

**CAUTION:**

- When installing wheel nuts, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.
- Be careful not to tighten the wheel nuts to a torque exceeding specification to prevent strain on the disc brake rotor.



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L  
M  
N  
O

MA

# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

- Use Genuine NISSAN wheel nuts.

Wheel nut tightening torque : Refer to [WT-68, "Exploded View"](#).

- Perform the ID registration after tire rotation. Refer to [WT-25, "Work Procedure"](#).

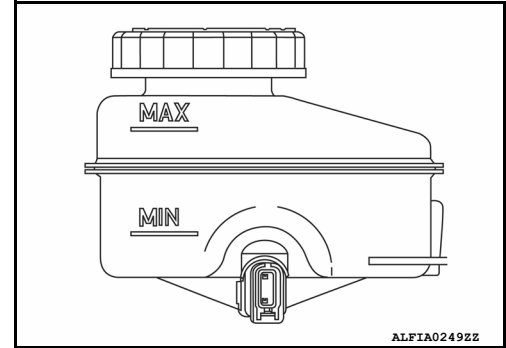
## BRAKE FLUID LEVEL AND LEAKS

### BRAKE FLUID LEVEL AND LEAKS : Inspection

INFOID:000000011592412

#### BRAKE FLUID LEVEL

- Make sure that the brake fluid level in the reservoir sub tank is between the MAX and MIN lines.
- Visually check around the reservoir sub tank and reservoir tank for brake fluid leakage.
- If the brake fluid level is excessively low, check the brake system for leakage.
- If brake warning lamp remains illuminated after parking brake pedal is released, check the brake system for brake fluid leakage.

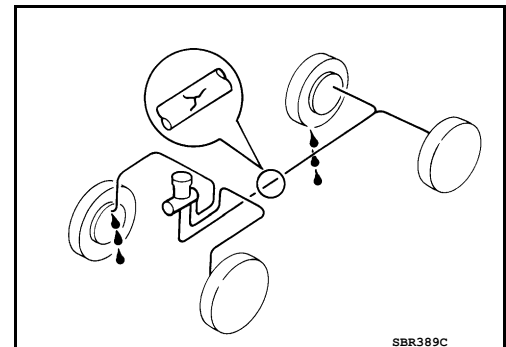


#### BRAKE LINE

1. Check brake line (tubes and hoses) for cracks, deterioration or other damage. Replace any damaged parts.
2. Check for brake fluid leakage by fully depressing brake pedal while engine is running.

**CAUTION:**

If brake fluid leakage occurs around joints, retighten or replace damaged parts as necessary.

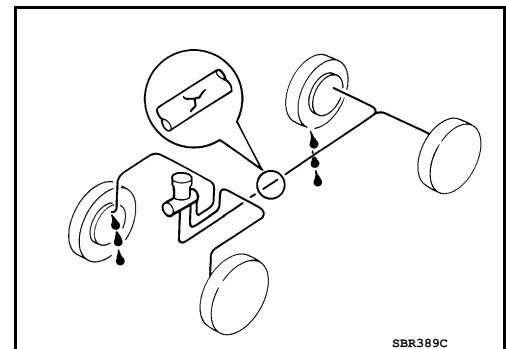


## BRAKE LINES AND CABLES

### BRAKE LINES AND CABLES : Inspection

INFOID:000000011212609

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



## BRAKE FLUID

### BRAKE FLUID : Drain and Refill

INFOID:000000011592413

**CAUTION:**

# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

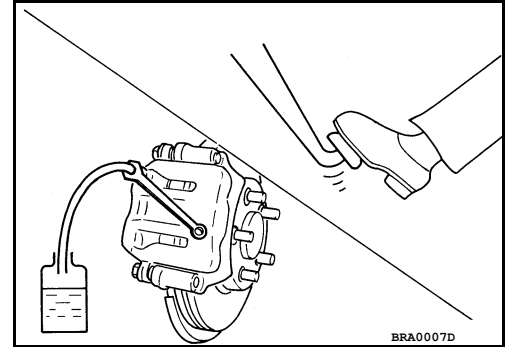
- Do not spill or splash brake fluid on painted surfaces. Brake fluid may damage paint. If brake fluid is splashed on painted areas, wash it away with water immediately.
- Prior to repair, turn the ignition switch OFF, disconnect the ABS actuator and electric unit (control unit) connector or negative battery terminal. Refer to [PG-86, "Removal and Installation"](#).
- Refill brake system with new brake fluid. Refer to [MA-11, "Fluids and Lubricants"](#).
- Do not reuse drained brake fluid.

## DRAINING

1. Turn ignition switch OFF and disconnect ABS actuator and electric unit (control unit) connector or negative battery terminal. Refer to [PG-86, "Removal and Installation"](#).
2. Connect a vinyl tube to bleeder valve.
3. Depress brake pedal, loosen bleeder valve, and gradually remove brake fluid.

### CAUTION:

Do not allow master cylinder reservoir tank to empty as this may cause damage to master cylinder internal components.



## REFILLING

1. Make sure no foreign material is in the reservoir sub-tank, and refill with new brake fluid.

### CAUTION:

Do not reuse drained brake fluid.

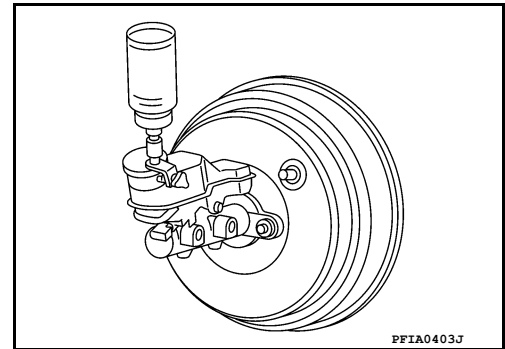
2. Refill the brake system as follows:
  - Depress the brake pedal.
  - Loosen bleeder valve.
  - Slowly depress brake pedal to 2/3 of the brake pedal full stroke.
  - Tighten bleeder valve.
  - Release brake pedal.

Repeat this operation at intervals of two or three seconds until all old brake fluid is discharged. Add new brake fluid to master cylinder reservoir sub tank frequently.

### CAUTION:

Do not allow master cylinder reservoir to empty as this may cause damage to master cylinder internal components.

3. Bleed the air out of the brake hydraulic system. Refer to [BR-16, "Bleeding Brake System"](#).



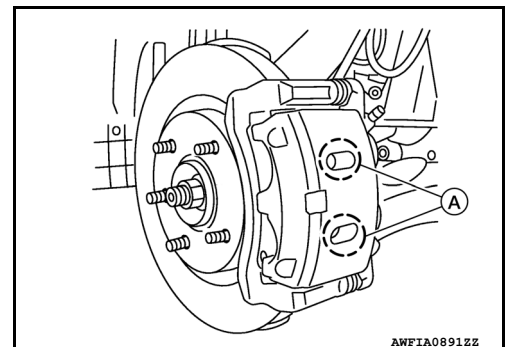
## FRONT BRAKE

### FRONT BRAKE : Inspection

INFOID:000000011592414

Check brake pad wear thickness from an inspection hole (A) on cylinder body. Check using a scale if necessary.

Wear thickness : Refer to [BR-53, "Front Disc Brake"](#).



# CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

## FRONT BRAKE : Inspection

INFOID:000000011592415

### APPEARANCE

Check surface of disc rotor for uneven wear, cracks or damage. Replace if any abnormal conditions exist.

### RUNOUT

1. Check the wheel bearing axial end play before the inspection. Refer to [FAX-6, "Inspection"](#).
2. Secure the disc rotor to the wheel hub and bearing with wheel nuts at two wheel nut locations.
3. Measure the runout using a dial gauge, measured at 10 mm (0.39 in) inside the disc edge.

**Runout** : Refer to [BR-53, "Front Disc Brake"](#).

4. Find the installation position with a minimum runout by shifting the disc rotor-to-wheel hub and bearing installation position by one hole at a time if the runout exceeds the limit value.
5. Refinish the disc rotor if the runout is outside the limit even after performing the above operation. When refinishing, use Tool.

**Tool number** : 38-PFM92

### CAUTION:

- Check in advance that the thickness of the disc rotor is wear thickness + 0.3 mm (0.012 in) or more.
- If the thickness is less than wear thickness + 0.3 mm (0.012 in), replace the disc rotor.

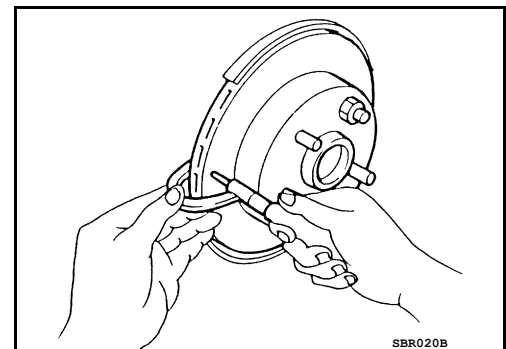
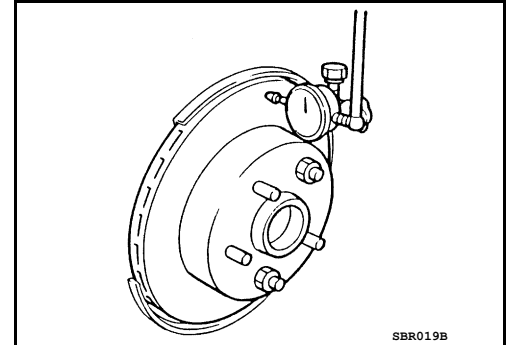
**Wear thickness** : Refer to [BR-53, "Front Disc Brake"](#).

### THICKNESS

Check the thickness of the disc rotor using a micrometer. Replace the disc rotor if the thickness is below the wear limit.

**Wear thickness** : Refer to [BR-53, "Front Disc Brake"](#).

**Thickness variation** : Refer to [BR-53, "Front Disc Brake"](#).



## REAR BRAKE

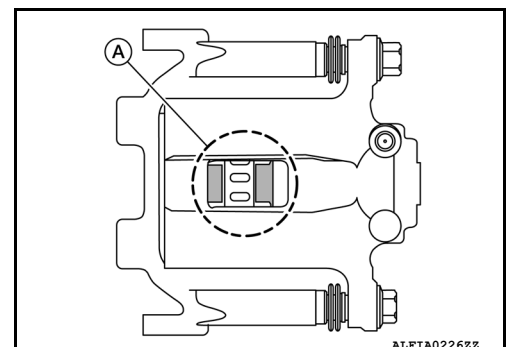
### REAR BRAKE : Inspection

INFOID:000000011592784

### INSPECTION

Check brake pad wear thickness from an inspection hole (A) on cylinder body. Check using a scale if necessary.

**Wear thickness** : Refer to [BR-54, "Rear Disc Brake"](#).



# CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

## REAR BRAKE : Inspection

INFOID:000000011592785

### Appearance

Check surface of disc rotor for uneven wear, cracks or damage. Replace if any abnormal conditions exist.

### Runout

1. Check the wheel bearing axial end play before the inspection. Refer to [RAX-6, "Inspection"](#).
2. Secure the disc rotor to the wheel hub and bearing with wheel nuts at two wheel nut locations.
3. Measure the runout using a dial gauge 10 mm (0.39 in) from the disc rotor edge.

**Runout** : Refer to [BR-54, "Rear Disc Brake"](#).

4. Find the installation position with a minimum runout by shifting the disc rotor-to-wheel hub and bearing installation position by one hole at a time if the runout exceeds the limit value.
5. Refinish the disc rotor if the runout is outside the limit even after performing the above operation. When refinishing, use Tool.

**Tool number** : 38-PFM92

### CAUTION:

- Check in advance that the thickness of the disc rotor is wear thickness + 0.3 mm (0.012 in) or more.
- If the thickness is less than wear thickness + 0.3 mm (0.012 in), replace the disc rotor.

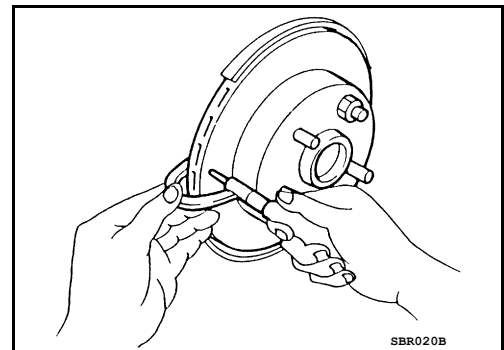
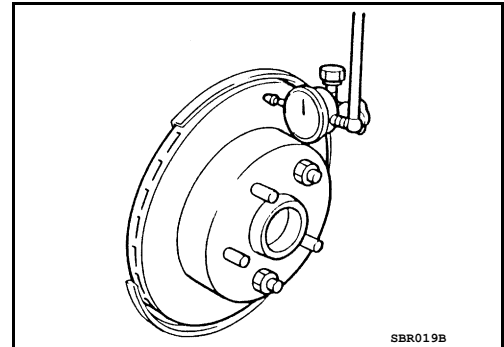
**Wear thickness** : Refer to [BR-54, "Rear Disc Brake"](#).

### Thickness

Check the thickness of the disc rotor using a micrometer. Replace the disc rotor if the thickness is below the minimum thickness.

**Wear thickness** : Refer to [BR-54, "Rear Disc Brake"](#).

**Thickness variation** : Refer to [BR-54, "Rear Disc Brake"](#).



## STEERING GEAR AND LINKAGE

### STEERING GEAR AND LINKAGE : Inspection

INFOID:000000011592786

### BOOT

Check boot for cracks. Replace if any damage is found.

### OUTER SOCKET AND INNER SOCKET

- Ball joint swinging torque

## CHASSIS AND BODY MAINTENANCE

### < PERIODIC MAINTENANCE >

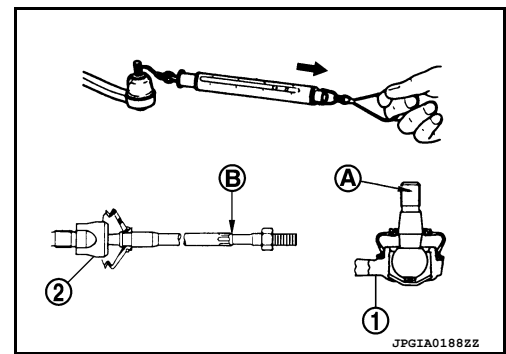
- Hook the Tool at the measuring point and pull the Tool. Make sure that the Tool reads the specified value when ball stud and inner socket start to move. Replace outer socket or steering gear assembly (inner socket) if they are outside the standard.

Measuring point of outer socket (1) : Ball stud upper side (A)

Measuring point of inner socket (2) : Point (B) as shown

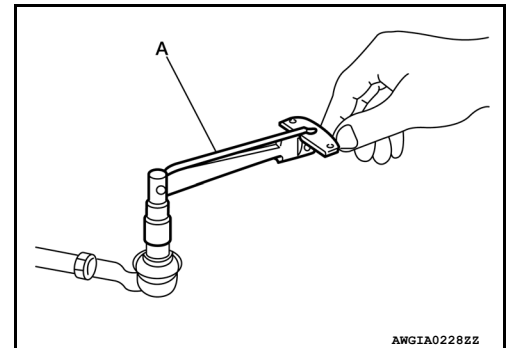
**Tool number** : — (J-44372)

**Swinging torque** : Refer to [ST-52, "Steering Gear"](#).



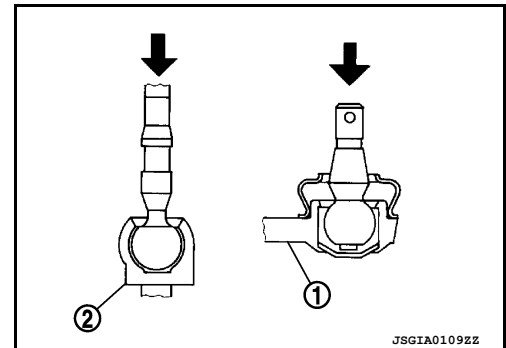
- Ball joint rotating torque
- Make sure that the reading is within the following specified range using suitable tool (A). Replace outer socket if the reading is outside the specification.

**Rotating torque** : Refer to [ST-52, "Steering Gear"](#).



- Ball joint axial end play
- Apply an axial load of 490 N (50 kg, 111 lb) to ball stud. Measuring the amount of stud movement using a suitable tool, make sure that the value is within specification. Replace outer socket (1) and inner socket (2) if the measured value is outside specification.

**Axial end play** : Refer to [ST-52, "Steering Gear"](#).



## POWER STEERING FLUID AND LINES

### POWER STEERING FLUID AND LINES : Inspection

INFOID:000000011592787

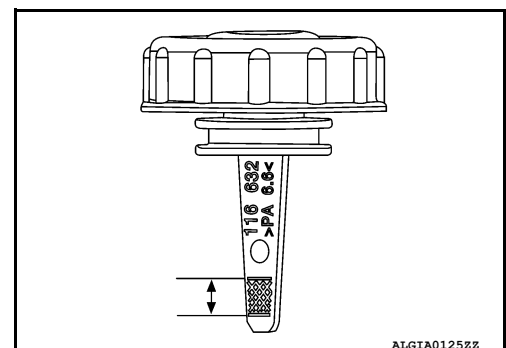
#### FLUID LEVEL

Verify proper power steering fluid level.

- Check power steering fluid level with engine stopped and the fluid temp between 0 – 30° C (32 – 86° F).
- Power steering fluid level should be within the range shown on the power steering reservoir cap indicator.

#### **CAUTION:**

- Do not overfill.
- Do not reuse used power steering fluid.
- Recommended power steering fluid is Genuine NISSAN E-PSF or equivalent. Refer to [MA-11, "Fluids and Lubricants"](#).



#### FLUID LEAKAGE

# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

Check the power steering hydraulic system for leaks, cracks, damage, loose connections, chafing or deterioration. Repair or replace as necessary.

1. Start engine and allow engine to idle.
2. Turn steering wheel right-to-left several times.
3. Hold steering wheel at each "lock" position for five seconds to check fluid leakage.

**CAUTION:**

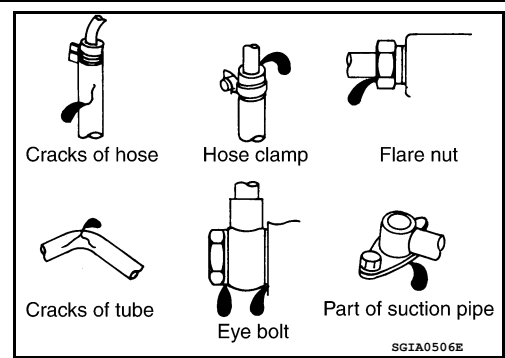
**Do not hold steering wheel in a locked position for more than 10 seconds. Damage to power steering oil pump may occur.**

4. If power steering fluid leakage at connections is noticed, loosen flare nut and retighten.

**CAUTION:**

**Do not over tighten flare nut as damage to O-ring and connection can occur.**

5. If power steering fluid leakage from the power steering oil pump is noticed, repair connection or replace power steering oil pump. Refer to [ST-38, "Removal and Installation"](#).
6. Check steering gear boots for accumulation of power steering fluid. Power steering fluid indicates a leak from the power steering gear, replace as necessary. Refer to [ST-42, "Removal and Installation - FWD"](#) (FWD) or [ST-44, "Removal and Installation - AWD"](#) (AWD).



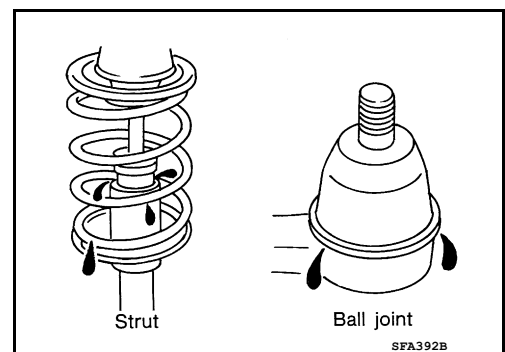
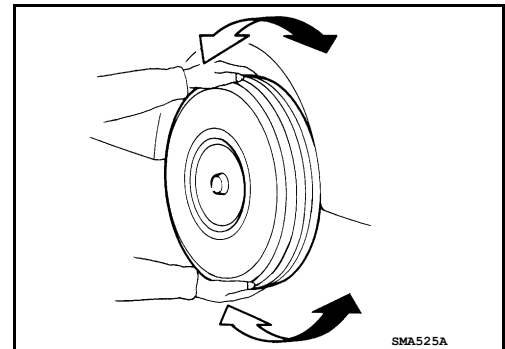
## AXLE AND SUSPENSION PARTS

### AXLE AND SUSPENSION PARTS : Inspection

INFOID:000000011212617

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

- Shake each wheel to check for excessive play.
- Check wheel bearings for smooth operation.
- Check axle and suspension nuts and bolts for looseness.
- Check strut (shock absorber) for oil leakage or other damage.
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks or other damage.



## DRIVE SHAFT

### DRIVE SHAFT : Inspection

INFOID:000000011592788

- Check drive shaft mounting point and joint for looseness and other damage.
- Check boot for cracks and other damage.

**CAUTION:**

**Replace entire drive shaft when noise or vibration occurs from drive shaft.**

### DRIVE SHAFT : Inspection

INFOID:000000011592789

Check the following items, and replace the parts as necessary.

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## CHASSIS AND BODY MAINTENANCE

### < PERIODIC MAINTENANCE >

- Check drive shaft mounting points and drive shaft joint for looseness and other damage.

#### **CAUTION:**

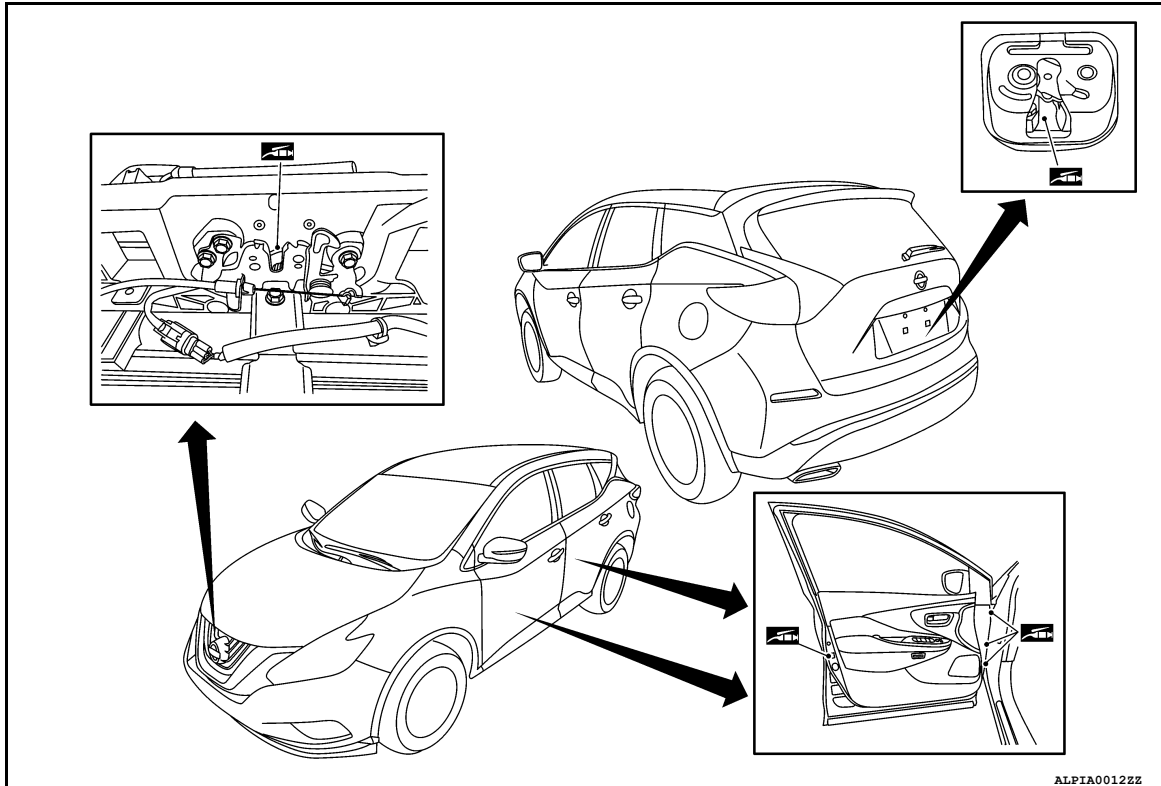
**Replace entire drive shaft when noise or vibration occurs from drive shaft.**

- Check boot for cracks and other damage.

### LOCKS, HINGES AND HOOD LATCH

#### LOCKS, HINGES AND HOOD LATCH : Lubricating

INFOID:000000011212619



### SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS

#### SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS : Inspection

INFOID:000000011212620

For details, refer to [SB-5. "Inspection"](#) in SB section.

- Check anchors for loose mounting.
- Check belts for damage.
- Check retractor for smooth operation.
- Check function of buckles and tongues when buckled and released.

#### **CAUTION:**

- **After any collision, inspect all seat belt assemblies, including retractors and other attached hardware (i.e., anchor bolt, guide rail set). NISSAN recommends replacing all seat belt assemblies in use during a collision, unless not damaged and properly operating after minor collision.**

**Also inspect seat belt assemblies not in use during a collision and replace if damaged or improperly operating.**

**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 are deployed.**

- **If any component of seat belt assembly is questionable, do not repair. Replace as seat belt assembly.**
- **If webbing is cut, frayed, or damaged, replace belt assembly.**
- **Do not oil tongue and buckle.**
- **Use a genuine NISSAN seat belt assembly.**