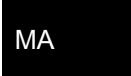


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**MAINTENANCE**

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# PRECAUTIONS

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## PRECAUTION

### PRECAUTIONS

#### Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000010255983

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

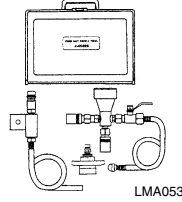
### PREPARATION

#### Special Service Tool

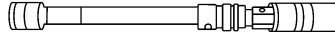
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The actual shapes of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
KV991J0070 (J-45695-A) Coolant refill tool	Refilling engine cooling system
— (J-48891) 14 mm spark plug socket	Removing and installing spark plug



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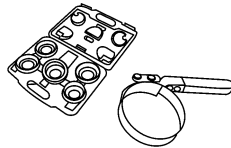
#### Commercial Service Tool

INFOID:0000000010255955

Tool name	Description
Power tool	Loosening nuts, screws and bolts
— (223-50000) Oil filter wrench assortment	Removing oil filter



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# GENERAL MAINTENANCE

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## PERIODIC MAINTENANCE

### GENERAL MAINTENANCE

#### Explanation of General Maintenance

INFOID:000000009794690

General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform the checks and inspections themselves or 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-65</a>
<b>Wheel nuts</b>	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	—
<b>Tire rotation</b>	Tires should be rotated every 5,000 miles (8,000 km). If the vehicle is equipped with different sized tires in the front and rear, tires cannot be rotated.	<a href="#">WT-57</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-61</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-7</a> <a href="#">RSU-6</a> <a href="#">WT-57</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. 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 lubrication frequently.	<a href="#">MA-39</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.	—

#### 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>	—

## 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="#">MA-40</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-15</a> <a href="#">BR-10</a>
<b>Parking brake</b>	Check that the lever or the 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-4</a>
<b>CVT P (Park) position mechanism</b>	On a fairly steep hill check that the vehicle is held securely with the selector lever 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.	<a href="#">CO-12</a>
<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-69</a>
<b>Engine drive belts</b>	Make sure that no belt is frayed, worn, cracked or oily.	<a href="#">EM-13</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-7</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-13</a>
Air cleaner filter	NOTE (2)						R	<a href="#">EM-16</a>
EVAP vapor lines			I*				I*	<a href="#">EC-495</a>
Fuel lines			I*				I*	<a href="#">FL-5</a>
Fuel filter	NOTE (3)							—

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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="#">CO-8</a>
Engine oil		R	R	R	R	R	R	<a href="#">LU-7</a>
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent)		R	R	R	R	R	R	<a href="#">LU-11</a>
Spark plugs (Iridium-tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km)						<a href="#">EM-17</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 1.4 mm (0.055 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

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MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
		Miles x 1,000 (km x 1,000)	50 (80)	55 (88)	60 (96)	65 (104)	70 (112)	75 (120)	80 (128)	85 (136)
Perform either at number of miles, kilometers or months, whichever comes first.	Months	60	66	72	78	84	90	96	102	108
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		MAINTENANCE INTERVAL						Reference Page
		Miles x 1,000 (km x 1,000)	95 (152)	100 (160)	105 (168)	110 (176)	115 (184)	
Perform either at number of miles, kilometers or months, whichever comes first.	Months	114	120	126	132	138	90	
Brake line & cables			I		I		I	<a href="#">MA-35</a>
Brake pads, rotors & other brake components ★			I		I		I	<a href="#">MA-36</a> <a href="#">MA-37</a>
Brake fluid ★			R				R	<a href="#">MA-35</a>
CVT fluid	NOTE (1)		I		I		I	<a href="#">MA-27</a>
Transfer oil & differential gear oil	NOTE (2)		I		I		I	<a href="#">MA-30</a>
Steering gear and linkage, axle and suspension parts ★			I				I	<a href="#">MA-38</a> <a href="#">MA-39</a>
Tire rotation	NOTE (3)							<a href="#">MA-32</a>
Propeller shaft (AWD) & drive shaft boots★			I		I		I	<a href="#">DLN-98</a> <a href="#">MA-39</a>
Exhaust system★			I				I	<a href="#">MA-27</a>
In-cabin microfilter				R			R	<a href="#">VTL-5</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 an 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 tower 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.

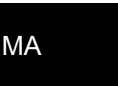
### MAINTENANCE UNDER SEVERE DRIVING CONDITIONS

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

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## 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="#">BR-16</a>
Brake pads, rotors	Inspect	Every 5,000 miles (8,000 km) or 6 months	<a href="#">BR-11</a> <a href="#">BR-11</a> <a href="#">BR-13</a> <a href="#">BR-13</a>
Steering gear & linkage, axle & suspension parts	Inspect	Every 5,000 miles (8,000 km) or 6 months	<a href="#">MA-38</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-31</a> <a href="#">MA-39</a>
Exhaust system	Inspect	Every 5,000 miles (8,000 km) or 6 months	<a href="#">MA-27</a>

# RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

## RECOMMENDED FLUIDS AND LUBRICANTS

### Fluids and Lubricants

INFOID:000000009794696

		Capacity (Approximate)			Recommended Fluids/Lubricants
		Liter	US measure	Imp measure	
Fuel		55 ℓ	14-1/2 gal	12-1/8 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91)
Engine oil Drain and refill	With oil filter change	4.6 ℓ	4-7/8 qt	4 qt	Genuine NISSAN engine oil* <sup>1</sup> Engine oil with API Certification Mark* <sup>1</sup> Viscosity SAE 0W-20* <sup>2</sup>
	Without oil filter change	4.3 ℓ	4-1/2 qt	3-3/4 qt	
Dry engine (Overhaul)		5.3 ℓ	5-5/8 qt	4-5/8 qt	
Cooling system	With reservoir tank	7.3 ℓ	7-3/4 qt	6-3/8 qt	Pre-diluted Genuine NISSAN Long Life Anti-freeze/Coolant (blue) or equivalent
	Reservoir tank	0.75 ℓ	3/4 qt	5/8 qt	
CVT fluid		7.9 ℓ	8-3/8 qt	7 qt	Genuine NISSAN CVT Fluid NS-3 * <sup>3</sup>
Differential gear oil		0.55 ℓ	1-1/8 pt	1 pt	Genuine NISSAN Differential Oil Hypoid Super GL-5 80W-90 or API GL-5, Viscosity SAE 80W-90 * <sup>4</sup>
Transfer oil		0.31 ℓ	5/8 pt	1/2 qt	Genuine NISSAN Differential Oil Hypoid Super GL-5 80W-90 or API GL-5, Viscosity SAE 80W-90
Brake fluid		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid* <sup>5</sup> or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)
Windshield washer fluid		5.45 ℓ	5-3/4 qt	4-3/4 qt	Genuine NISSAN Windshield Washer Concentrate Cleaner & Antifreeze or equivalent
Air conditioning system refrigerant		0.50 kg	1.10 lb	1.10 lb	HFC-134a (R-134a) * <sup>6</sup>
Air conditioning system oil		110 m ℓ	3.7 fl oz	3.9 fl oz	A/C System Oil Type S (DH-PS) * <sup>6</sup>

\*1: For additional information, see "Engine Oil Recommendation".

\*2: As an alternative to this recommended oil, SAE 5W-30 conventional petroleum based oil may be used and meet all specifications and requirements necessary to maintain the New Vehicle Limited Warranty

\*3: Use only Genuine NISSAN CVT Fluid NS-3. Using transmission fluid other than Genuine NISSAN CVT Fluid NS-3 will damage the CVT, which is not covered by the NISSAN new vehicle limited warranty.

\*4: For hot climates, viscosity SAE 90 is suitable for ambient temperatures above 0°C (32°F).

\*5: Available in mainland U.S.A. through a NISSAN dealer.

\*6: For further information, see "Air conditioning specification label" found under the hood.

### Engine Oil Recommendation

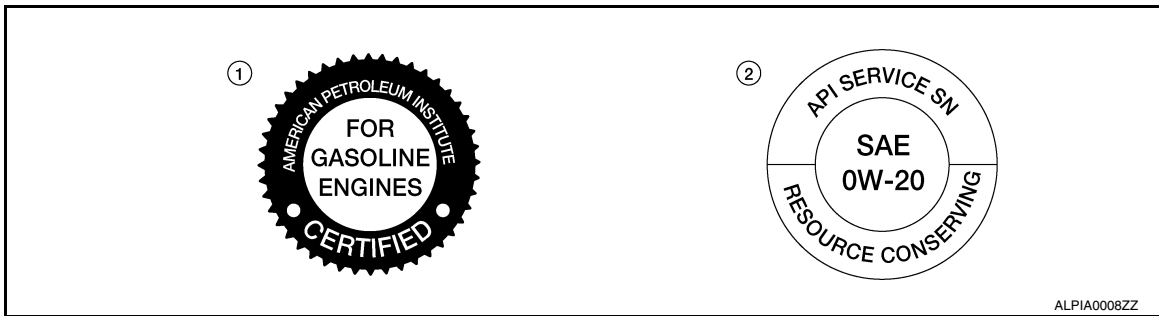
INFOID:000000009794697

NISSAN recommends the use of an resource 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.

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# RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >



1. API certification mark

2. API service symbol

## Anti-Freeze Coolant Mixture Ratio

INFOID:000000009794698

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 turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by turning it all the way.
- The radiator is equipped with a pressure type radiator cap. To prevent engine damage, use only a genuine NISSAN radiator cap.

### **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 you operate your vehicle, 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-fill coolant.

# ENGINE MAINTENANCE

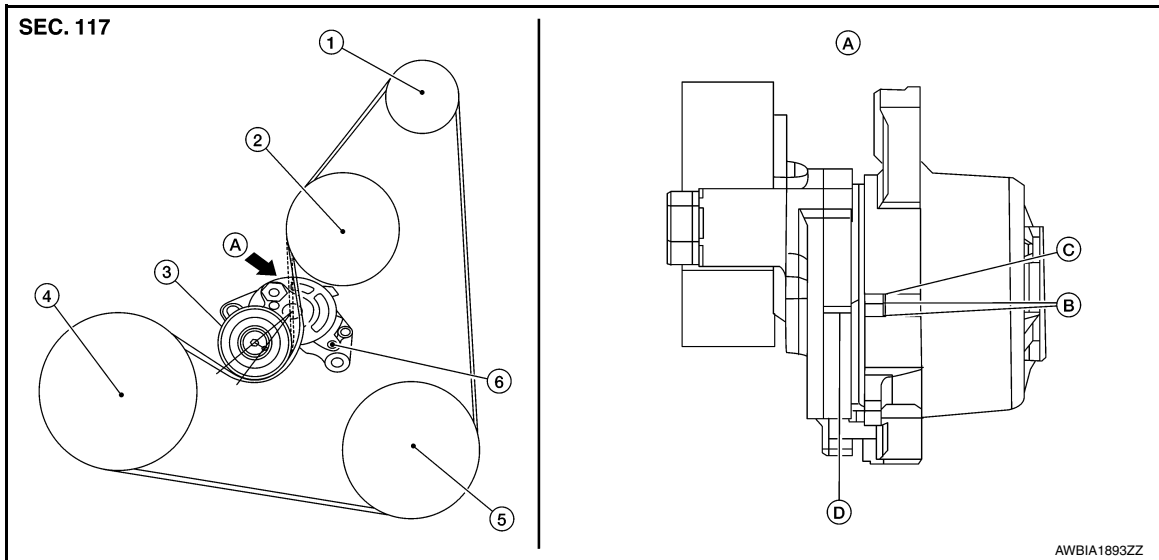
< PERIODIC MAINTENANCE >

## ENGINE MAINTENANCE

### DRIVE BELTS

#### DRIVE BELTS : Exploded View

INFOID:000000010365338



- |                      |                          |                              |
|----------------------|--------------------------|------------------------------|
| 1. Generator pulley  | 2. Water pump pulley     | 3. Drive belt auto-tensioner |
| 4. Crankshaft pulley | 5. A/C compressor pulley | 6. Drive belt retainer boss  |
| A. View A            | B. New drive belt range  | C. Possible use range        |
| D. Indicator (notch) |                          |                              |

#### DRIVE BELTS : Checking

INFOID:000000010365339

##### **WARNING:**

**Inspect the drive belt only when the engine is stopped.**

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:000000010365340

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

#### DRIVE BELTS : Removal and Installation

INFOID:000000010365341

##### REMOVAL

1. Remove wheel and tire (RH) using a power tool.
2. Remove engine under cover. Refer to [EXT-37, "ENGINE UNDER COVER : Removal and Installation"](#)
3. Remove fender protector side cover. Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).

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# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

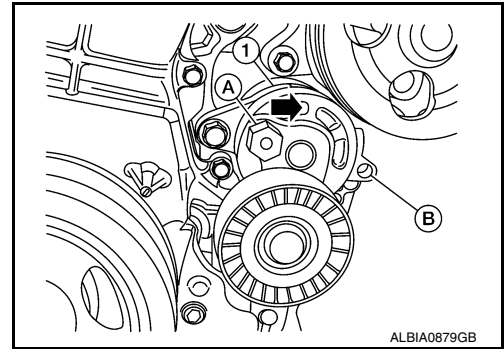
- Securely hold the hexagonal part (A) of drive belt auto-tensioner (1) using suitable tool, and move in the direction of arrow (loosening direction of tensioner).
- Insert a rod approximately 6 mm (0.24 in) in diameter through the rear of the drive belt auto-tensioner into retaining boss (B) to lock drive belt auto-tensioner pulley.

**WARNING:**

Avoid placing hand in a location where pinching may occur if the holding tool accidentally comes off.

**NOTE:**

Leave drive belt auto-tensioner pulley arm locked until drive belt is installed again.



- Loosen drive belt from drive belt auto-tensioner and then remove it from the other pulleys.
- Installation of remaining components is in the reverse order of removal.

## INSTALLATION

Installation is in the reverse order of removal.

- Install the drive belt onto all of the pulleys except for the drive belt auto-tensioner. Then install the drive belt onto drive belt auto-tensioner last.

**CAUTION:**

- Confirm belts are completely set on the pulleys.
- Check for engine oil and engine coolant. Be sure they are not adhered to the drive belt and each pulley groove.

- Release the drive belt auto-tensioner and apply tension to drive belt.

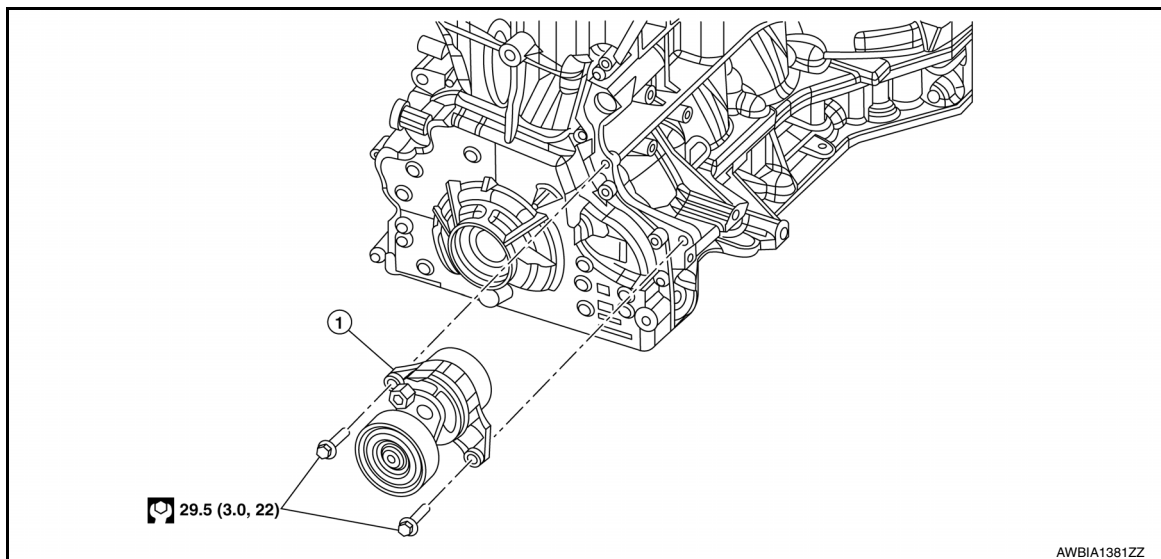
**WARNING:**

Avoid placing hand in a location where pinching may occur if the holding tool accidentally comes off.

- Turn crankshaft pulley clockwise several times to equalize tension between each pulley.
- Confirm the indicator is within the possible use range. Refer to [MA-13. "DRIVE BELTS : Checking"](#).
- Install wheel and tire (RH). Refer to [WT-57. "Adjustment"](#).

## DRIVE BELTS : Removal and Installation of Drive Belt Auto-tensioner

INFOID:000000010365342



1. Drive belt auto-tensioner

## REMOVAL

**CAUTION:**

The complete drive belt auto-tensioner must be replaced as a unit, including the pulley.

# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

1. Remove the drive belt. Refer to [MA-13. "DRIVE BELTS : Removal and Installation"](#).
2. Remove the drive belt auto-tensioner.

### INSTALLATION

Installation is in the reverse order of removal.

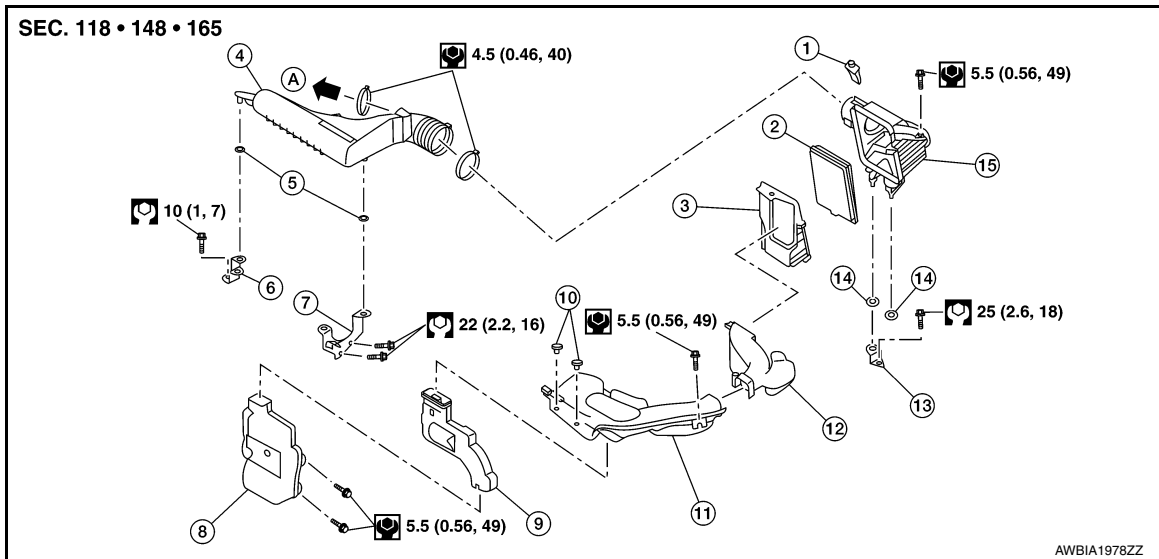
#### **CAUTION:**

**Install the drive belt auto-tensioner carefully so not to damage the water pump pulley.**

### AIR CLEANER FILTER

#### AIR CLEANER FILTER : Exploded View

INFOID:000000010365345



- |                             |                       |                              |
|-----------------------------|-----------------------|------------------------------|
| 1. Mass air flow sensor     | 2. Air cleaner filter | 3. Air cleaner case (lower)  |
| 4. Air duct assembly        | 5. Grommet            | 6. Resonator bracket (front) |
| 7. Resonator bracket (rear) | 8. Resonator          | 9. Air duct                  |
| 10. Mounting clip           | 11. Air duct assembly | 12. Air duct assembly        |
| 13. Air cleaner bracket     | 14. Grommet           | 15. Air cleaner case (upper) |
- A. To Electric throttle control actuator

#### AIR CLEANER FILTER : Removal and Installation

INFOID:000000010365346

### CHANGING THE AIR CLEANER FILTER

1. Remove air duct assembly from air cleaner case (upper).
2. Open the air cleaner case.
3. Remove the air cleaner filter.
4. Install a new air cleaner filter.
5. Close the air cleaner case.
6. Secure the air cleaner case clips.

### INSPECTION AFTER REMOVAL

Examine the air cleaner filter for stains, clogging, or damage.

- Remove dirt and foreign objects (such as dead leaves) on air cleaner filter surface and inside cleaner case.
- If clogging or damage is observed, replace the air cleaner filter.

#### **CAUTION:**

**Do not clean the viscous paper type air cleaner filter by blowing as there is a risk of deterioration of its performance.**

### MAINTENANCE INTERVAL

Refer to [MA-7. "Introduction of Periodic Maintenance"](#).

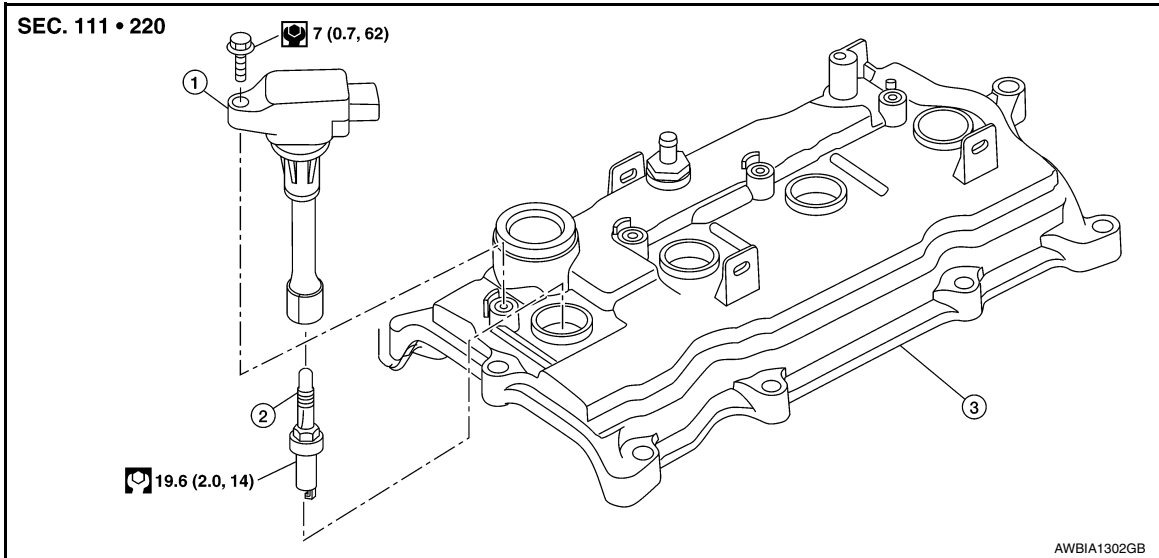
# ENGINE MAINTENANCE

< PERIODIC MAINTENANCE >

## SPARK PLUG

### SPARK PLUG : Exploded View

INFOID:000000010365347



1. Ignition coil

2. Spark plug

3. Rocker cover

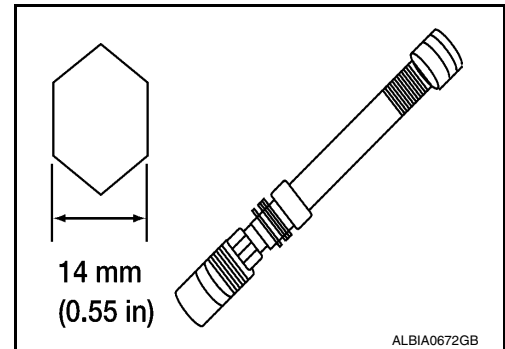
### SPARK PLUG : Removal and Installation

INFOID:000000010365348

#### REMOVAL

1. Remove air duct assembly.
2. Remove ignition coil. Refer to [EM-36. "Exploded View"](#).
3. Remove spark plug using Tool.

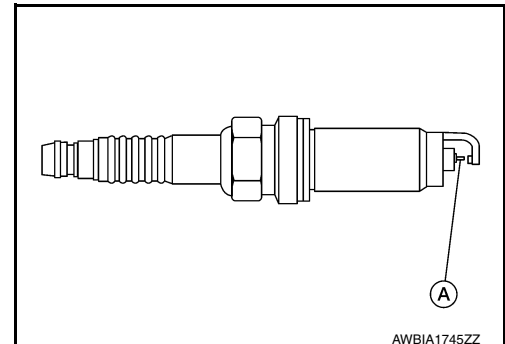
**Tool number** : — (J-48891)



#### INSPECTION AFTER REMOVAL

Visually check the electrode for dirt and wear and the insulator for burning.

(A) : Iridium alloy

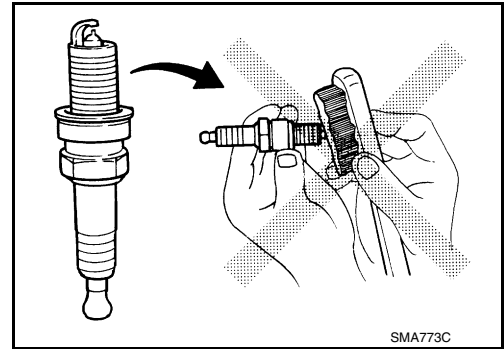




# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

- Do not use a wire brush for cleaning the spark plugs. Replace as necessary.



- If plug is covered with carbon, a spark plug cleaner may be used.

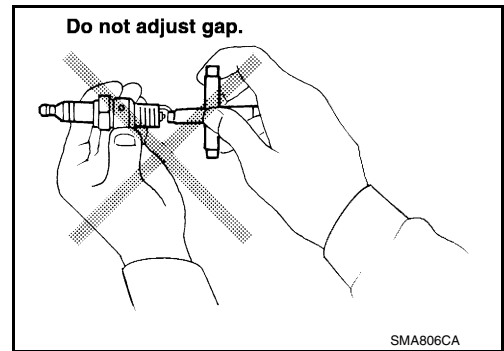
**Cleaner air pressure : less than 588 kPa (6 kg/cm<sup>2</sup>, 85 psi)**

**Cleaning time : less than 20 seconds**

- Checking and adjusting plug gap is not required between change intervals. If the gap is out of specification, replace the spark plug.

**CAUTION:**

**Do not drop or shock plug.**



## INSTALLATION

Installation is in the reverse order of removal.

Standard type*	DENSO
	FXE20HE11C
Gap (nominal)	1.1 mm (0.043 in)

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

## ENGINE OIL

### ENGINE OIL : Inspection

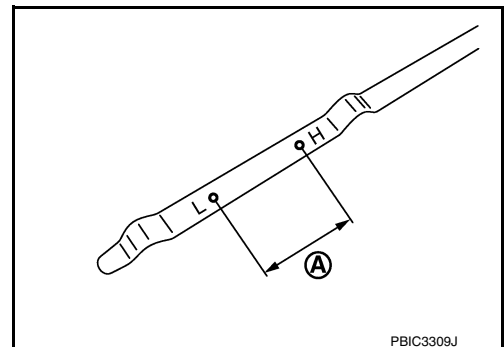
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### ENGINE OIL LEVEL

**NOTE:**

Before starting engine, put vehicle horizontally and check the engine oil level. If engine is already started, stop it and allow 5 minutes before checking.

- Pull out oil level gauge and wipe it clean.
- Insert oil level gauge and check the engine oil level is within the range (A) as shown.
- If it is out of range, adjust it.



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# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

### ENGINE OIL APPEARANCE

- Check engine oil for white milky appearance or excessive contamination.
- If engine oil becomes turbid and white, 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 temperature sensor
- Oil level sensor
- Oil level gauge assembly O-ring.
- Crankshaft position sensor
- Camshaft position sensors
- Oil cooler
- Oil pan (upper and lower)
- Oil pan drain plug
- Oil pressure switch
- Oil filter
- Intake valve timing intermediate lock control solenoid valve
- Intake valve timing control solenoid valve
- Exhaust valve timing control solenoid valve
- Front cover
- Mating surface between cylinder head and camshaft bracket
- Mating surface between cylinder block and cylinder head
- Mating surface between cylinder head and rocker cover
- Crankshaft oil seals (front and rear)

### OIL PRESSURE CHECK

#### **WARNING:**

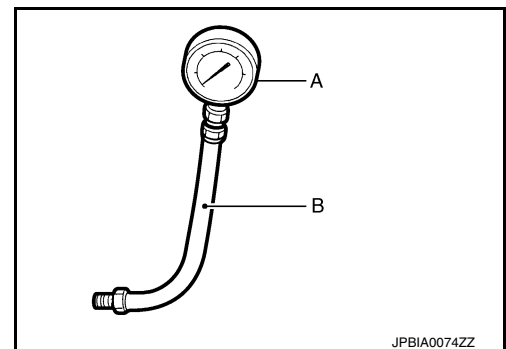
- **Be careful not to get burn yourself, as engine oil may be hot.**
- **When checking engine oil pressure, CVT shift lever should be in "P" position. Be sure to apply parking brake.**

1. Check the engine oil level.
2. Remove fender protector side cover (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).
3. Disconnect harness connector at oil pressure switch and remove oil pressure switch using suitable tool.

#### **CAUTION:**

**Never drop or shock oil pressure switch.**

4. Install suitable tools (A/B).



5. Start the engine and warm it up to normal operating temperature.
6. Check the engine oil pressure with engine running under no-load.

#### **NOTE:**

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

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

7. After the inspections, install oil pressure switch as follows:
  - a. Remove old liquid gasket adhering to oil pressure switch and engine.
  - b. Apply liquid gasket and tighten oil pressure switch to the specification.

# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

Use Genuine RTV Silicone Sealant or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).

**Tightening torque** : Refer to [EM-92, "Exploded View"](#).

8. Check engine oil level.
9. After warming up engine, check that there are no engine oil leaks with the engine running.
10. Install fender protector side cover (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).

## ENGINE OIL : Draining

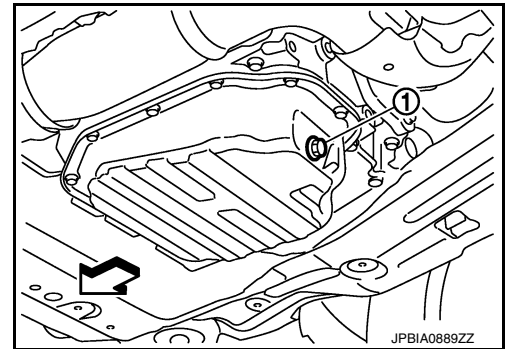
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### WARNING:

- Be careful not to get burn yourself, as engine oil may be hot.
- Prolonged and repeated contact with used engine oil may cause skin cancer. Try to avoid direct skin contact with used engine oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.

1. Warm up the engine, and check for engine oil leaks from engine components. Refer to [MA-17, "ENGINE OIL : Inspection"](#).
2. Stop the engine and wait for 10 minutes.
3. Loosen oil filler cap.
4. Remove drain plug (1) and then drain engine oil.

⇐ : Front



## ENGINE OIL : Refilling

INFOID:000000010365352

1. Install drain plug with new drain plug washer. Refer to [EM-32, "Exploded View"](#).

### CAUTION:

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

**Tightening torque** : Refer to [EM-32, "Exploded View"](#).

2. Refill with new engine oil.  
**Engine oil specification and viscosity:** Refer to [MA-11, "Engine Oil Recommendation"](#).

**Engine oil capacity** : Refer to [LU-17, "Oil Capacity"](#).

### CAUTION:

- The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.
- Always use oil level gauge to determine the proper amount of engine oil in engine.

3. Warm up the engine and check area around drain plug and oil filter for engine oil leaks.
4. Stop the engine and wait for 5 minutes.
5. Check the engine oil level. Refer to [MA-17, "ENGINE OIL : Inspection"](#).

## OIL FILTER

### OIL FILTER : Removal and Installation

INFOID:000000010365355

#### REMOVAL

1. Remove fender protector side cover (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).

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# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

2. Drain engine oil. Refer to [MA-19. "ENGINE OIL : Draining"](#).
3. Remove oil filter using suitable tool (A)..

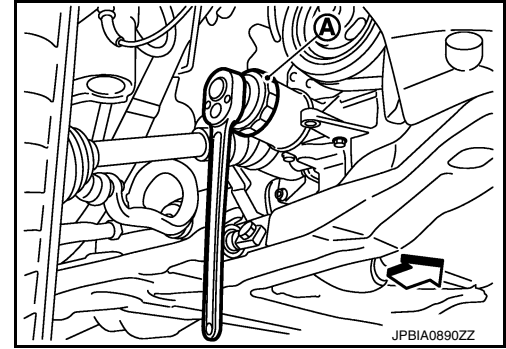
↔ : Front

### WARNING:

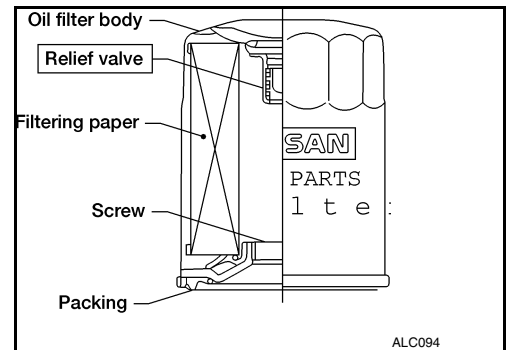
Be careful not to burn yourself, as engine oil may be hot.

### CAUTION:

- When removing, prepare a shop cloth to absorb any engine oil leaks or spills.
- Do allow engine oil to adhere to drive belt.
- Completely wipe off any engine oil that adheres to engine and vehicle.

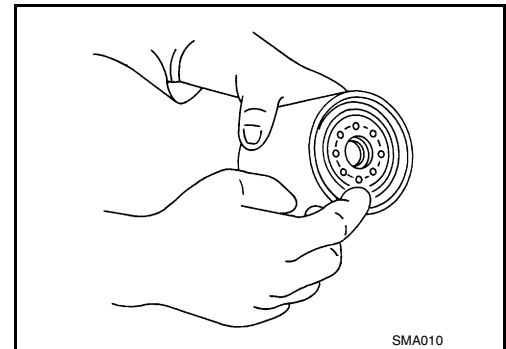


- Oil filter is provided with relief valve. Use genuine NISSAN oil filter or equivalent.



## INSTALLATION

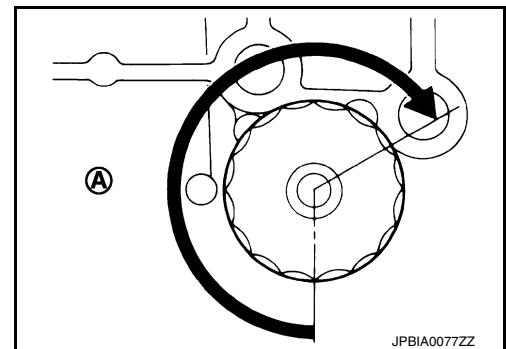
1. Remove foreign materials adhering to oil filter installation surface.
2. Apply new engine oil to the oil seal contact surface of new oil filter.



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

### Oil filter:

 : 17.7 N·m (1.8 kg·m, 13 ft·lb)



## OIL FILTER : Inspection

INFOID:000000010365356

## INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to [MA-17. "ENGINE OIL : Inspection"](#).
2. Start the engine, and check that there is are no leaks of engine oil.

# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

- Stop the engine and wait for at least 5 minutes.
- Check the engine oil level, and adjust the level (if necessary). Refer to [MA-17, "ENGINE OIL : Inspection"](#).

## ENGINE COOLANT

### ENGINE COOLANT : Inspection

INFOID:000000010365360

#### LEVEL

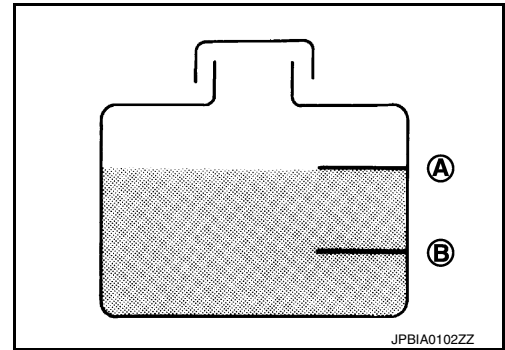
- Check that the reservoir tank engine coolant level is within the "MIN" to "MAX" when the engine is cool.

- (A) : MAX
- (B) : MIN

- Adjust the engine coolant level if necessary.

#### CAUTION:

Refill Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent in its quality mixed with water (distilled or demineralized). Refer to [MA-11, "Fluids and Lubricants"](#).



#### CHECKING COOLING SYSTEM FOR LEAKS

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

Testing pressure : Refer to [CO-25, "Radiator"](#).

#### WARNING:

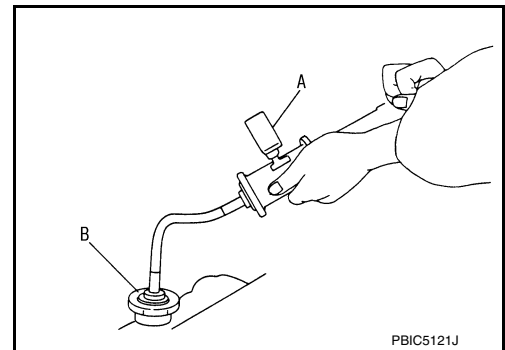
Do not remove the radiator cap when the engine is hot. Serious burns could occur from high-pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly push down and turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by pushing it down and turning it all the way.

#### CAUTION:

- Perform this step when the engine is cold.
- Do not spill engine coolant on drivebelt.
- Higher test pressure than specified may cause radiator damage.

#### NOTE:

- If engine coolant decreases, replenish radiator with engine coolant. Refer to [MA-11, "Fluids and Lubricants"](#).
- If anything is found, repair or replace damaged parts.



### ENGINE COOLANT : Draining

INFOID:000000010365361

#### WARNING:

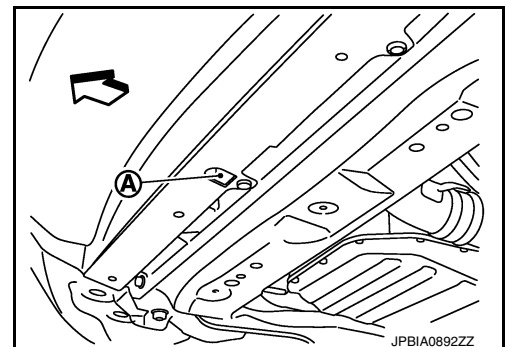
Do not remove radiator cap when engine is hot. Serious burns could occur from high pressure engine coolant escaping the radiator. Wrap a thick cloth around the cap. Slowly push down and turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by pushing it down and turning it all the way.

- Open radiator drain plug at the bottom of radiator, and then remove radiator cap.

- (A) : Radiator drain plug hole
- ↔ : Vehicle front

#### CAUTION:

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



# ENGINE MAINTENANCE

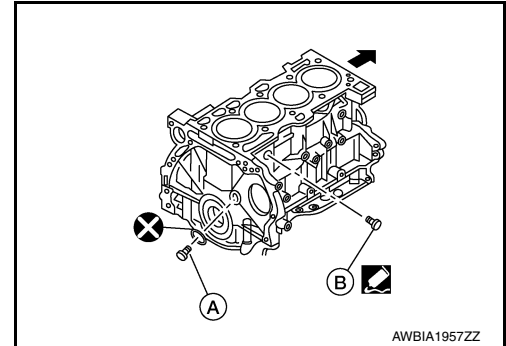
## < PERIODIC MAINTENANCE >

2. 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 engine coolant out of the heater core.
3. When draining all of the engine coolant in the system, remove the reservoir tank and drain the engine coolant, then clean the reservoir tank before installation.

### CAUTION:

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

4. When draining all of the engine coolant in the system for engine removal or repair, remove the engine coolant drain plugs (A/B) from the cylinder block.



5. Check the drained engine coolant for contaminants such as rust, corrosion or discoloration. If the engine coolant is contaminated, flush the engine cooling system. Refer to [MA-24. "ENGINE COOLANT : Flushing"](#).

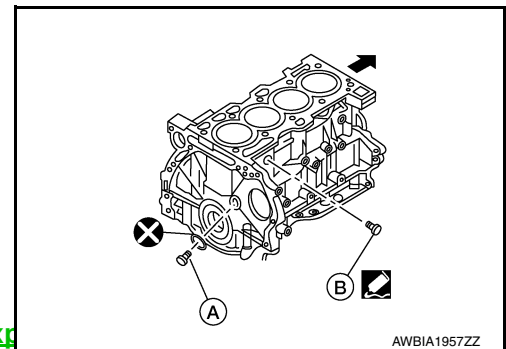
## ENGINE COOLANT : Refilling

INFOID:000000010365362

### CAUTION:

- Do not put additive such as waterleak preventive, since it may cause cooling waterway clogging.
- When refilling use Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent in its quality mixed with water (distilled or demineralized). Refer to [MA-11. "Fluids and Lubricants"](#).

1. Install the radiator drain plug. Install the reservoir tank and cylinder block drain plug, if removed for a total system drain or for engine removal or repair.
  - The radiator must be completely empty of coolant and water.
  - Apply sealant to the threads of the cylinder block drain plug.
  - Use recommended coolant or equivalent. Refer to [MA-11. "Fluids and Lubricants"](#).



- |                               |  |
|-------------------------------|--|
| Radiator drain plug           | : Refer to <a href="#">CO-13. "Exp</a> |
| Cylinder block drain plug (A) | : 53.9 Nm (5.5 kg-m, 40 ft-lb)         |
| Cylinder block drain plug (B) | : 9.8 N·m (1.0 kg-m, 87 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.

# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

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 (with reservoir tank)** : Refer to [CO-25, "Periodical Maintenance Specification"](#).

### 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)

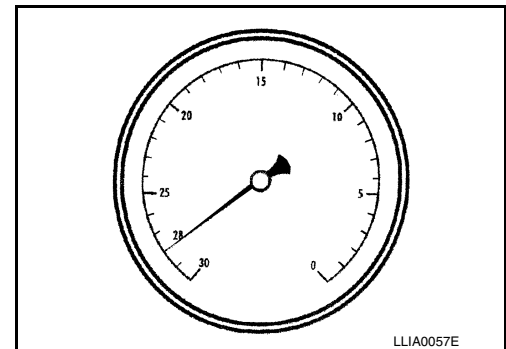
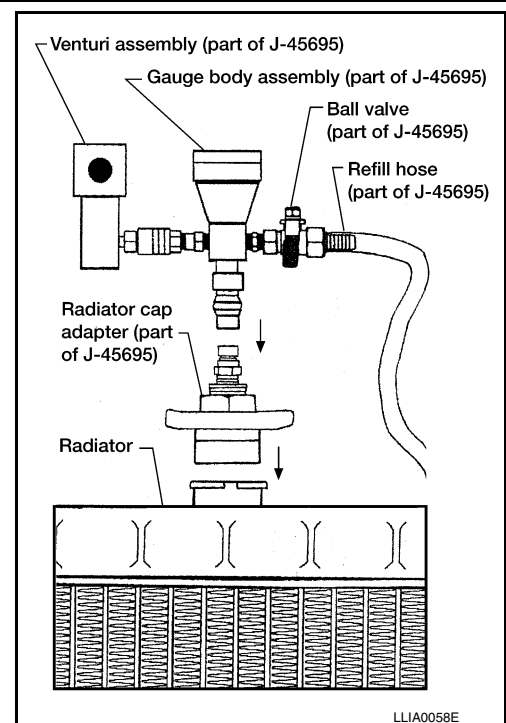
### CAUTION:

**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.

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



9. 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.
10. 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.**

11. Remove the Tool from the radiator neck opening.
12. 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.



# ENGINE MAINTENANCE

< PERIODIC MAINTENANCE >

## ENGINE COOLANT : Flushing

INFOID:000000010365363

1. Install reservoir tank, if removed, and radiator drain plug.

**CAUTION:**

- Be sure to clean drain plug.
- Do not reuse O-ring.

**Radiator drain plug** : Refer to [CO-13, "Exploded View"](#).

- If water drain plugs on cylinder block are removed, close and tighten them. Refer to [EM-92, "Exploded View"](#).
2. Run the engine and warm it up to normal operating temperature.
  3. Rev the engine two or three times under no-load.
  4. Stop the engine and wait until it cools down.
  5. Drain water from the system. Refer to [MA-21, "ENGINE COOLANT : Draining"](#).
  6. Repeat steps 1 through 5 until clear water begins to drain from radiator.

## RADIATOR CAP

### RADIATOR CAP : Inspection

INFOID:000000010365367

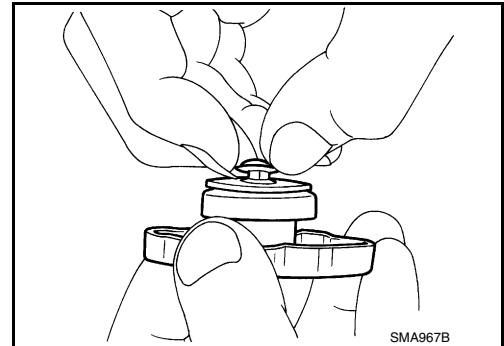
#### CHECKING RADIATOR CAP

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.

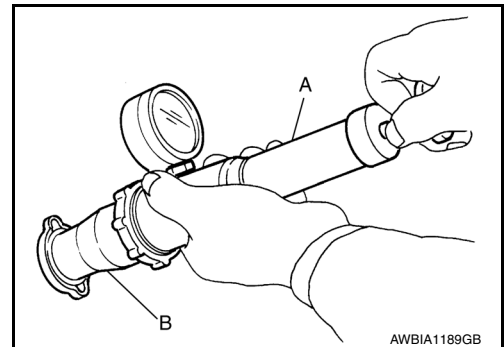
2. Pull the negative-pressure valve to open it and check that it closes completely when released.
  - Check that there is no dirt or damage on the valve seat of the radiator cap negative-pressure valve.
  - Check that there are no abnormalities in the opening and closing conditions of the negative-pressure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



3. Check radiator cap relief pressure using suitable tool (A/B).

**Standard** : Refer to [CO-25, "Radiator"](#).

- Apply water or engine coolant to the cap seal surface before connecting the radiator cap to the tester.
- 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.



## RADIATOR

### RADIATOR : Inspection

INFOID:000000010365365

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

**CAUTION:**

- Be careful not to bend or damage radiator fins.



# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

- When radiator is cleaned without removal, remove all surrounding parts such as radiator cooling fan assembly and horns. Then tape harness and harness 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 engine coolant leaks. Repair as necessary.

## FUEL LINES

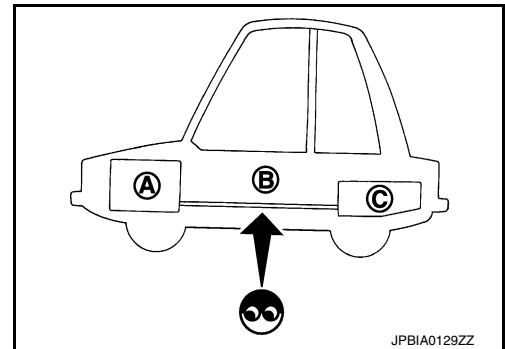
### FUEL LINES : Inspection

INFOID:000000010365368

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.



## EVAP VAPOR LINES

### EVAP VAPOR LINES : Inspection

INFOID:000000010365369

#### CAUTION:

- Do not use compressed air or a high pressure pump.
- Do not exceed 4.12 kPa (0.042 kg/cm<sup>2</sup>, 0.6 psi) of pressure in EVAP system.

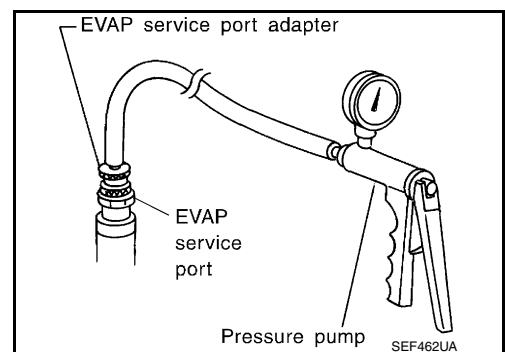
#### NOTE:

- Do not start engine.
- Improper installation of EVAP service port adapter [commercial service tool: (J-41413-OBDD)] to the EVAP service port may cause a leak.

### 1. EVAP LEAK CHECK

Ⓜ With CONSULT

1. Install EVAP service port adapter [commercial service tool: (J-41413-OBDD)] and pressure pump to EVAP service port.



2. Turn ignition switch ON.
3. Select the "EVAP SYSTEM CLOSE" in "WORK SUPPORT" mode of "ENGINE" using 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: (J-41413-OBDD)] and hose with pressure pump.

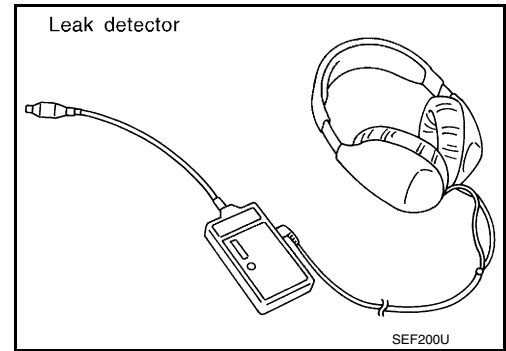
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MA

# ENGINE MAINTENANCE

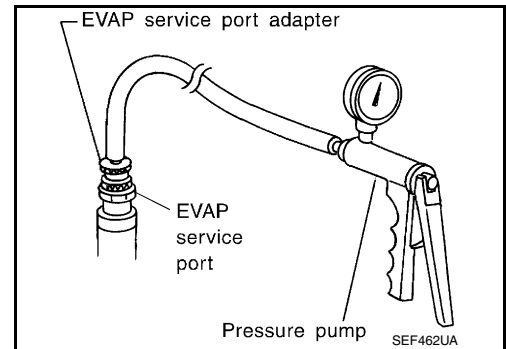
## < PERIODIC MAINTENANCE >

7. Locate the leak using a leak detector [commercial service tool: (J-41416)]. Refer to [EC-53, "EVAPORATIVE EMISSION SYSTEM : System Description"](#).



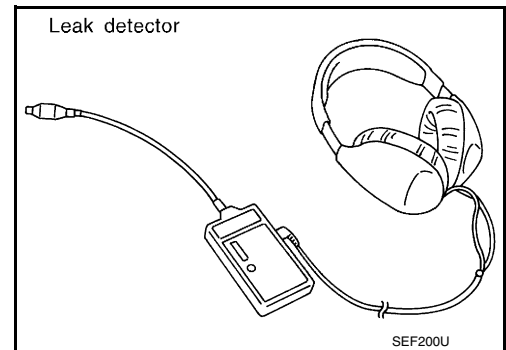
### ⊗ Without CONSULT

1. Install EVAP service port adapter [commercial service tool: (J-41413-OB)] 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 leak, 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: (J-41413-OB)] and hose with pressure pump.
5. Locate the leak using a leak detector [commercial service tool: (J-41416)]. Refer to [EC-53, "EVAPORATIVE EMISSION SYSTEM : System Description"](#).

>> INSPECTION END



# CHASSIS MAINTENANCE

< PERIODIC MAINTENANCE >

## CHASSIS MAINTENANCE

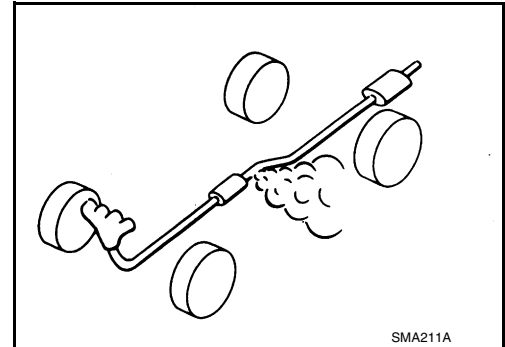
### EXHAUST SYSTEM

#### EXHAUST SYSTEM : Inspection

INFOID:0000000010365370

Check exhaust pipes, muffler, and mounting for improper attachment, leakage, cracks, damage or deterioration.

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



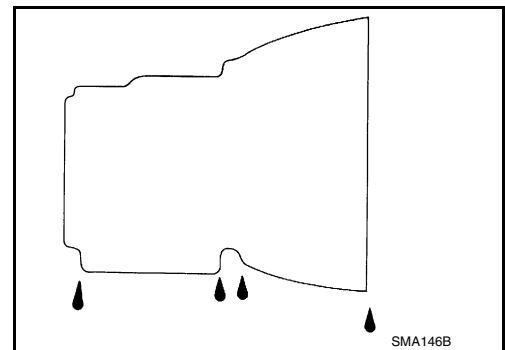
### CVT FLUID

#### CVT FLUID : Inspection

INFOID:0000000010365371

#### 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-29. "CVT FLUID : Adjustment"](#).



#### CVT FLUID : Replacement

INFOID:0000000010365372

**Recommended fluid and fluid capacity** : Refer to [TM-226. "General Specification"](#).

#### **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-205. "Exploded View"](#).
6. Install the drain plug to oil pan.

#### **CAUTION:**

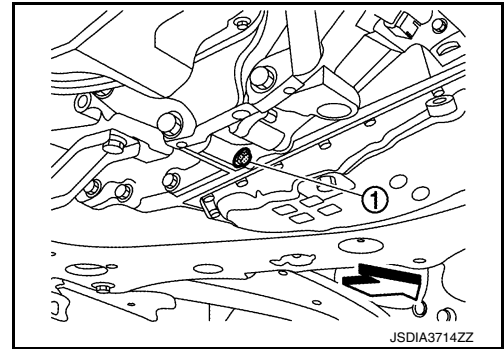
**Drain plug gasket use the old one.**

# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

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 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 "L", 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-205, "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.

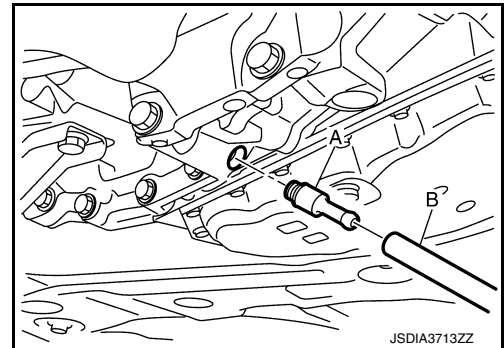
27. Start the engine.

28. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "L", 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).



# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

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-205, "Exploded View"](#).  
**CAUTION:**  
**Never reuse O-ring.**
33. Lift down the vehicle.
34. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
35. Select "CONFORM CVTF DETERIORATION".
36. Select "Erase".
37. Stop the engine.

## CVT FLUID : Adjustment

INFOID:000000010365373

**Recommended fluid and fluid capacity : Refer to [TM-226, "General Specification"](#).**

### **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 "L", and shift it to the "P" position.

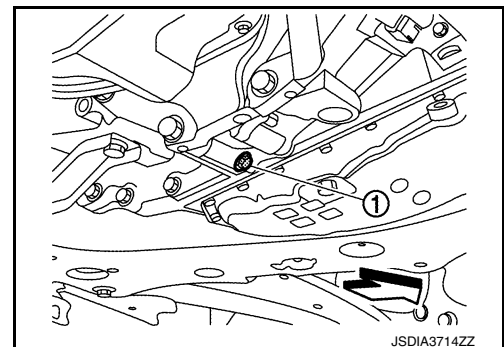
### **NOTE:**

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



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# CHASSIS 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 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-205, "Exploded View"](#).

**CAUTION:**

**Never reuse O-ring.**

14. Lift down the vehicle.

15. Stop the engine.

## TRANSFER OIL

### TRANSFER OIL : Inspection

INFOID:000000010365374

#### 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-89, "Exploded View"](#).

**CAUTION:**

**Do not reuse gasket.**

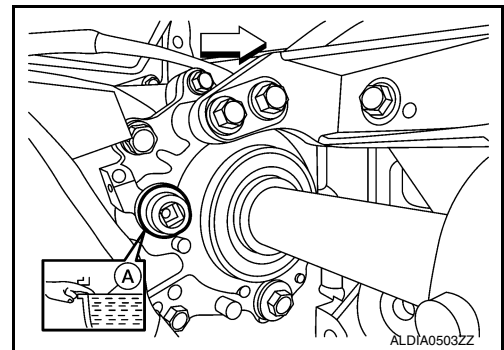
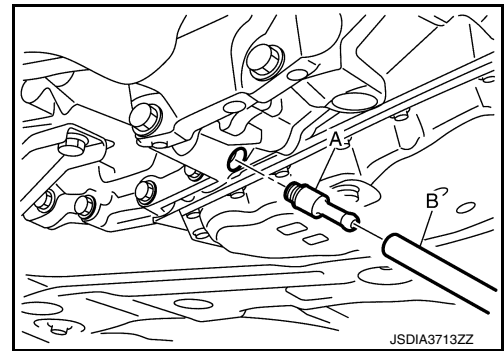
### TRANSFER OIL : Draining

INFOID:000000010365375

**CAUTION:**

**Do not start engine while working.**

1. Run the vehicle to warm up the transfer unit sufficiently.



# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

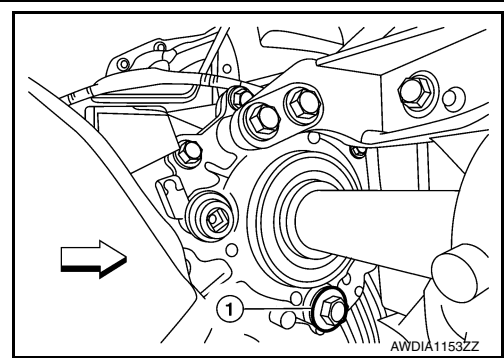
2. Stop the engine and remove drain plug (1) and gasket and drain the transfer oil.

← : Front

3. Set a new gasket onto drain plug, and install it in the transfer and tighten to specified torque. Refer to [DLN-89, "Exploded View"](#).

**CAUTION:**

**Do not reuse gasket.**



INFOID:000000010365376

## 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 near the filler plug hole.

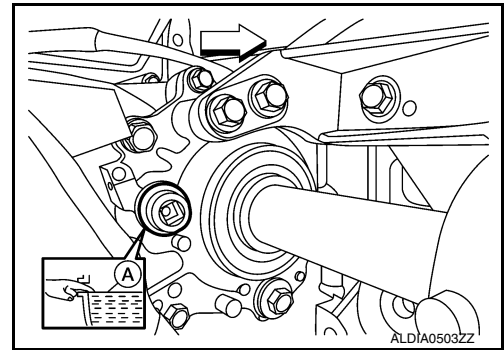
← : Front

**Transfer oil grade and viscosity**

**Transfer oil capacity**

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

: Refer to [DLN-93, "General Specifications"](#).



3. Set a new gasket onto filler plug, and install it in the transfer and tighten to specified torque. Refer to [DLN-89, "Exploded View"](#).

**CAUTION:**

**Do not reuse gasket.**

## REAR PROPELLER SHAFT

### REAR PROPELLER SHAFT : Inspection

INFOID:000000010365377

#### 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 electric controlled coupling of final drive; 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-101, "Inspection"](#).

## REAR DIFFERENTIAL GEAR OIL

### REAR DIFFERENTIAL GEAR OIL : Inspection

INFOID:000000010365378

#### OIL LEAKS

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

#### OIL LEVEL



# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

- Remove filler plug (1) and check oil level from filler plug mounting hole as shown.

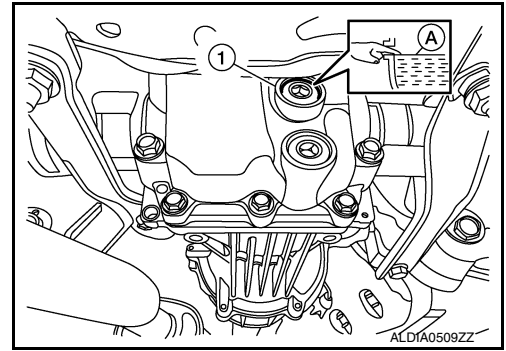
**CAUTION:**

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

- Set a new gasket on filler plug and install it on final drive assembly. Refer to [DLN-124, "Exploded View"](#).

**CAUTION:**

**Do not reuse gasket.**



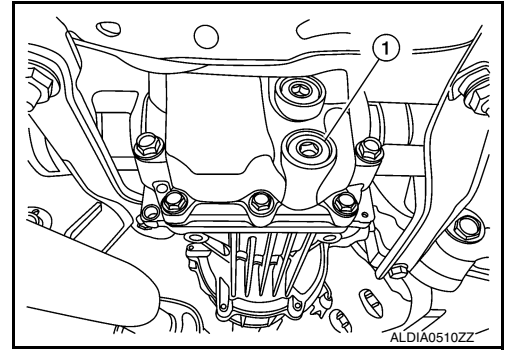
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## REAR DIFFERENTIAL GEAR OIL : Draining

1. Stop engine.
2. Remove drain plug (1) and drain gear oil.
3. Set a new gasket on drain plug and install it to final drive assembly and tighten to the specified torque. Refer to [DLN-124, "Exploded View"](#).

**CAUTION:**

**Do not reuse gasket.**



INFOID:000000010365380

## REAR DIFFERENTIAL GEAR OIL : Refilling

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

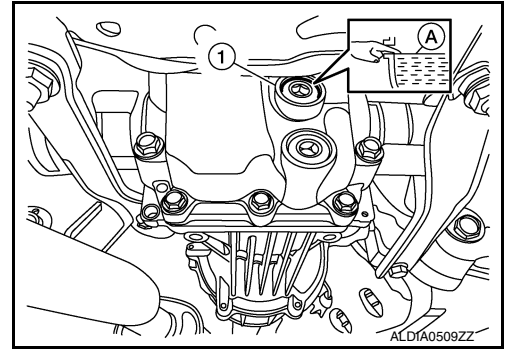
**Oil grade and viscosity** : Refer to [MA-11, "Fluids and Lubricants"](#).

**Oil capacity** : Refer to [DLN-141, "General Specifications"](#).

2. After refilling oil, check oil level. Set a new gasket to filler plug, then install it to final drive assembly. Refer to [DLN-124, "Exploded View"](#).

**CAUTION:**

**Do not reuse gasket.**



INFOID:000000010365381

## WHEELS

### WHEELS : Inspection

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



# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

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

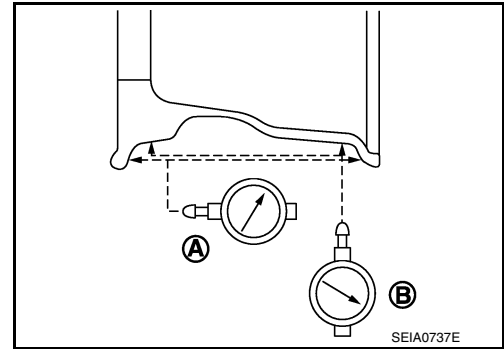
### Limit

**Axial Runout (A)**

Refer to [WT-65, "Wheel"](#).

**Radial Runout (B)**

Refer to [WT-65, "Wheel"](#).



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## WHEELS : Adjustment

### 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.

1. Set wheel and tire on balancer machine using the center hole as a guide. Start the balancer machine.
2. 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.

- a. 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)

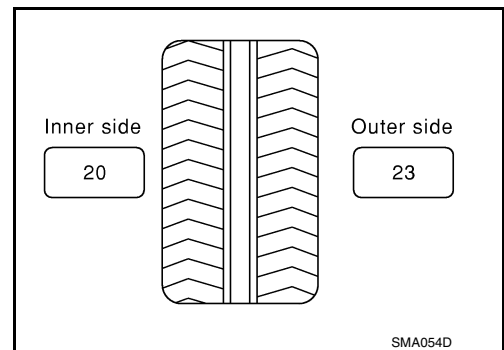
#### NOTE:

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 MAINTENANCE

## < PERIODIC MAINTENANCE >

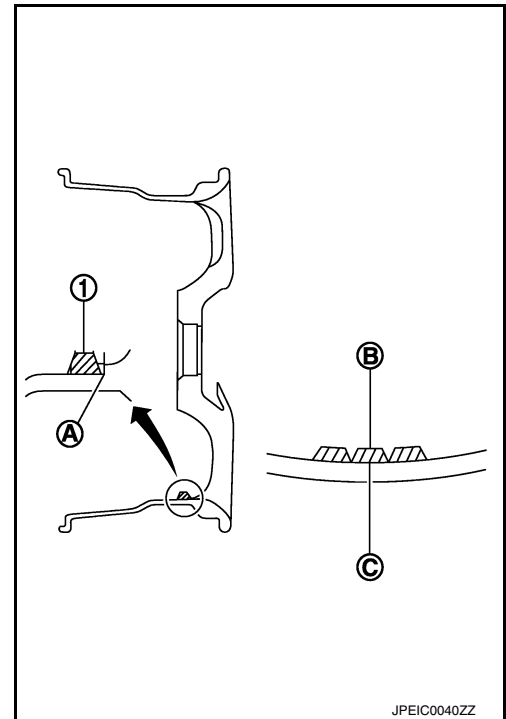
3. Install balance weight in the position shown.

**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.

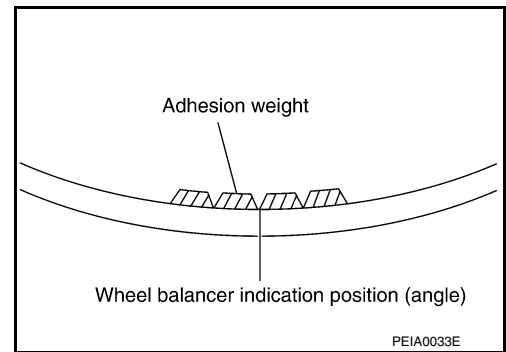
6. Install balance weight on inner side of wheel and tire in the balancer machine indication position (angle).

**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-65, "Wheel"</a> .	

## TIRE ROTATION

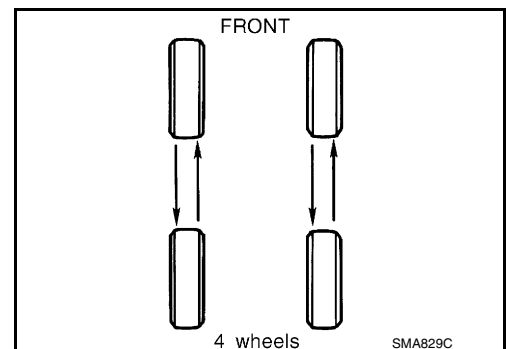
- Follow the maintenance schedule for tire rotation service intervals. Refer to [MA-7, "Introduction of Periodic Maintenance"](#).
- Rotate the wheels and tires front to back in the pattern as shown.
- When installing the wheel, tighten wheel nuts to the specified torque. [MA-7, "Introduction of Periodic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

**WARNING:**

- Do not include the spare tire (if equipped) 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.
- Use Genuine NISSAN wheel nuts.



# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

**Wheel nut tightening torque** : [WT-65, "Wheel"](#)

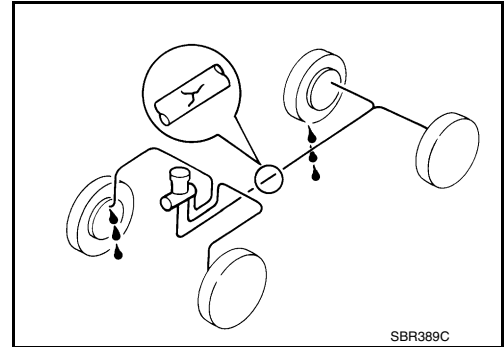
- Perform the ID registration after tire rotation. Refer to [WT-21, "Work Procedure"](#).

## BRAKE LINES AND CABLES

### BRAKE LINES AND CABLES : Inspection

INFOID:000000009794732

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



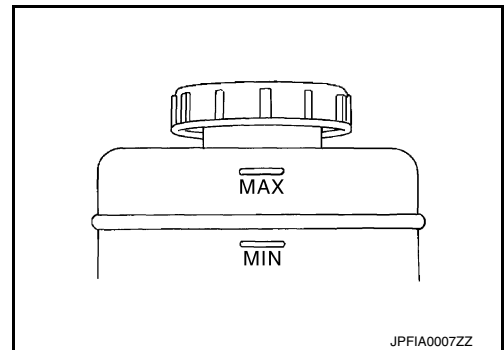
## BRAKE FLUID

### BRAKE FLUID : Inspection

INFOID:000000010365383

#### BRAKE FLUID LEVEL

- Make sure that the brake fluid level in the reservoir tank is between the MAX and MIN lines.
- Visually check around the 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.

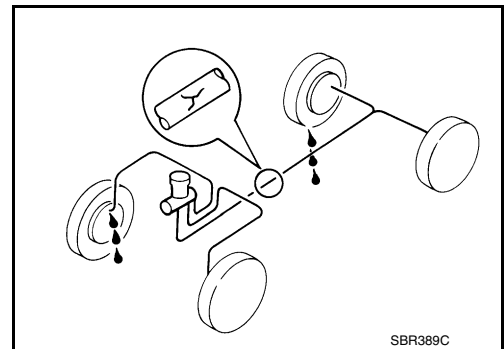


#### BRAKE LINE

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 FLUID : Drain and Refill

INFOID:000000010365384

**CAUTION:**

- 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-75, "Removal and Installation \(Battery\)"](#).

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# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

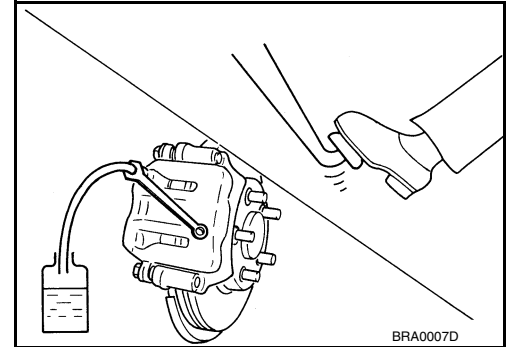
- Refill brake system with new brake fluid. Refer to [MA-11, "Fluids and Lubricants"](#).
- Do not reuse drained brake fluid.

### DRAINING

1. Turn ignition switch OFF and disconnect ABS actuator and electric unit (control unit) connector or negative battery terminal. Refer to [PG-75, "Removal and Installation \(Battery\)"](#).
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 tank, and refill with new brake fluid.

#### **CAUTION:**

**Do not reuse drained brake fluid.**

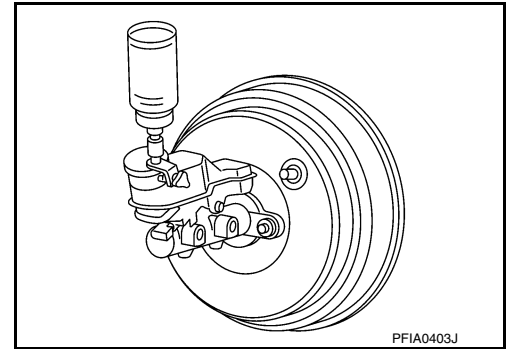
2. Refill the brake system as follows:
  - Depress the brake pedal.
  - Loosen bleeder valve.
  - Slowly depress brake pedal to 2/3 of the brake pedal full stroke.
  - Tighten bleeder valve.
  - Release brake pedal.

Repeat this operation at intervals of two or three seconds until all old brake fluid is discharged. Add new brake fluid frequently.

#### **CAUTION:**

**Do not allow master cylinder reservoir tank 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"](#).



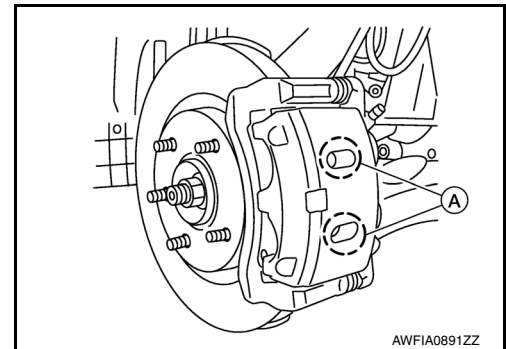
### FRONT BRAKE

#### FRONT BRAKE : Inspection

INFOID:000000010365386

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

**Wear thickness** : Refer to [BR-55, "Front Disc Brake"](#).



#### FRONT BRAKE : Inspection

INFOID:000000010365387

### APPEARANCE

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

### RUNOUT

# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

1. Check the wheel bearing axial end play before the inspection. Refer to [FAX-7, "Inspection"](#)(FWD) or [FAX-38, "Inspection"](#)(AWD).
2. Secure the disc brake rotor to the wheel hub and bearing with wheel nuts at two wheel nut locations.
3. Inspect the runout with a dial gauge, measured at 10 mm (0.39 in) inside the disc brake rotor edge.

**Runout** : Refer to [BR-55, "Front Disc Brake"](#).

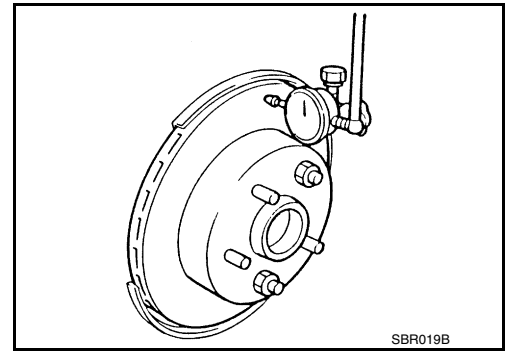
4. Find the installation position with a minimum runout by shifting the disc brake rotor-to-wheel hub and bearing installation position by one hole at a time if the runout exceeds the limit value.
5. Refinish the disc brake rotor if the runout is outside the limit even after performing the above operation.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

**Tool number** : 38-PFM92

### CAUTION:

- Check in advance that the thickness of the disc brake 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 brake rotor.

**Wear thickness** : Refer to [BR-55, "Front Disc Brake"](#).

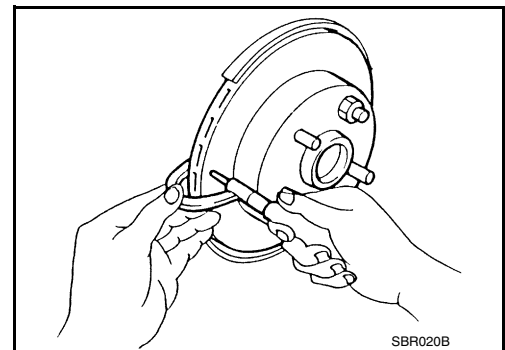


## THICKNESS

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

**Wear thickness** : Refer to [BR-55, "Front Disc Brake"](#).

**Thickness variation** : Refer to [BR-55, "Front Disc Brake"](#).



## REAR BRAKE

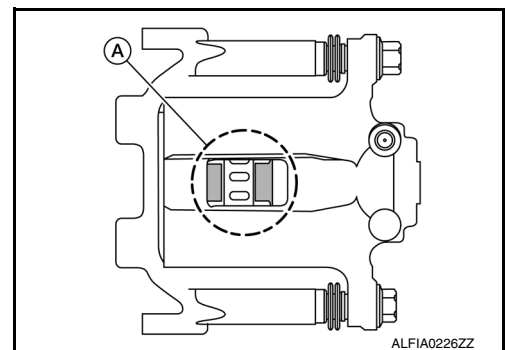
### REAR BRAKE : Inspection

INFOID:000000010365388

### 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-55, "Rear Disc Brake"](#).



### REAR BRAKE : Inspection

INFOID:000000010365389

Appearance

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# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

Check surface of disc brake 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"](#)(FWD) or [RAX-14. "Inspection"](#)(AWD).
2. Secure the disc brake rotor to the wheel hub and bearing with wheel nuts at two wheel nut locations.
3. Measure the runout with a dial gauge 10 mm (0.39 in) from the disc brake rotor edge.

**Runout** : Refer to [BR-55. "Rear Disc Brake"](#).

4. Find the installation position with a minimum runout by shifting the disc brake 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 brake 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 brake 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 brake rotor.

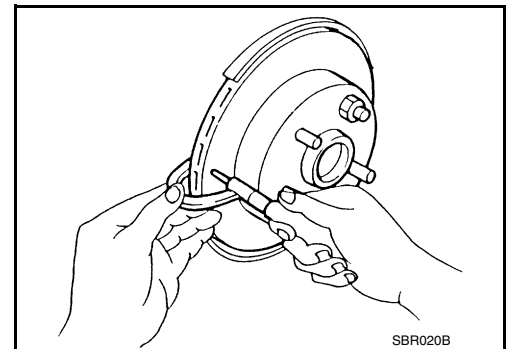
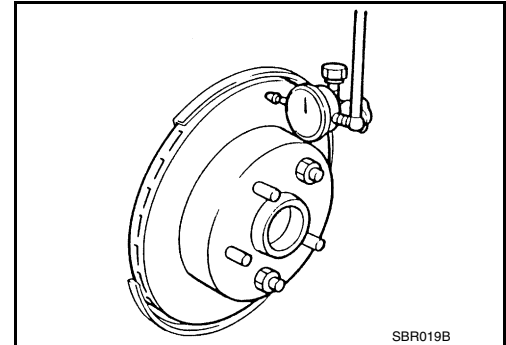
**Wear thickness** : Refer to [BR-55. "Rear Disc Brake"](#).

### Thickness

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

**Minimum thickness** : Refer to [BR-55. "Rear Disc Brake"](#).

**Thickness variation** : Refer to [BR-55. "Rear Disc Brake"](#).



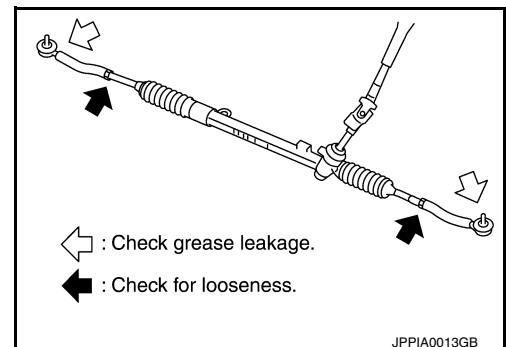
## STEERING GEAR AND LINKAGE

### STEERING GEAR AND LINKAGE : Inspection

INFOID:000000009794737

#### STEERING GEAR

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



#### STEERING LINKAGE

# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

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

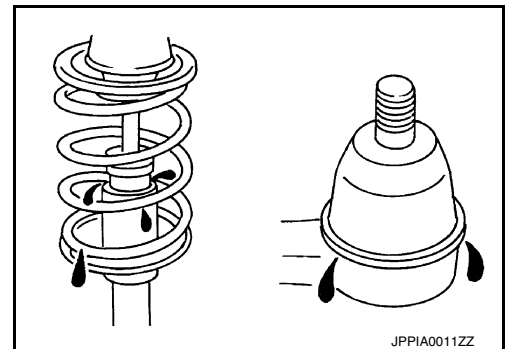
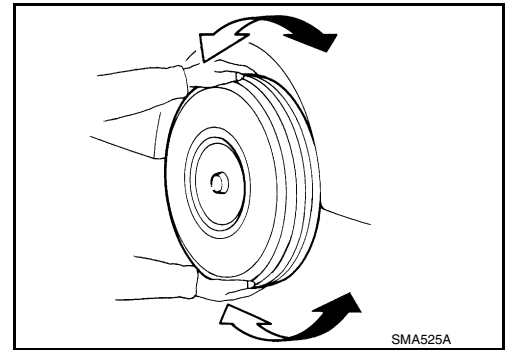
### AXLE AND SUSPENSION PARTS

#### AXLE AND SUSPENSION PARTS : Inspection

INFOID:000000009794738

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.

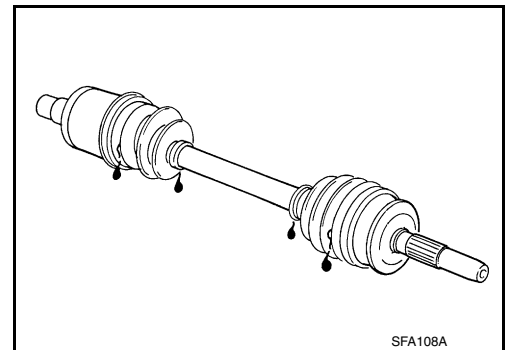


### DRIVE SHAFT

#### DRIVE SHAFT : Inspection

INFOID:000000009794739

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



### LOCKS, HINGES AND HOOD LATCH

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

INFOID:000000009794740

#### WITH INTELLIGENT KEY SYSTEM

For hood and hood lock illustration.

- Hood: Refer to [DLK-233, "Exploded View"](#).
- Hood lock control: Refer to [DLK-233, "Exploded View"](#).

For front door and front door lock illustration.

- Front door: Refer to [DLK-240, "Exploded View"](#).
- Front door lock: Refer to [DLK-256, "Exploded View"](#).
- Rear door: Refer to [DLK-244, "Exploded View"](#).
- Rear door lock: Refer to [DLK-260, "Exploded View"](#).

For back door and back door lock illustration.

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# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

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- Back door: Refer to [DLK-248, "Exploded View"](#).
- Back door lock: Refer to [DLK-263, "Exploded View"](#).

### WITHOUT INTELLIGENT KEY SYSTEM

For hood and hood lock illustration.

- Hood: Refer to [DLK-350, "Exploded View"](#).
- Hood lock control: Refer to [DLK-370, "Exploded View"](#).

For front door and front door lock illustration.

- Front door: Refer to [DLK-357, "Exploded View"](#).
- Front door lock: Refer to [DLK-377, "Exploded View"](#).
- Rear door: Refer to [DLK-361, "Exploded View"](#).
- Rear door lock: Refer to [DLK-377, "Exploded View"](#).

For back door and back door lock illustration.

- Back door: Refer to [DLK-365, "Exploded View"](#).
- Back door lock: Refer to [DLK-380, "Exploded View"](#).

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

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

INFOID:00000009794741

For front seat belt illustration. Refer to [SB-8, "Exploded View"](#).

For rear seat belt illustration. Refer to [SB-12, "Exploded View"](#).

#### **CAUTION:**

- **After any collision, inspect all seat belt assemblies, including retractors and other attached hardwares (i.e. anchor bolt, guide rail set). Nissan recommends to replace all seat belt assemblies in use during a collision, unless not damaged and properly operating after minor collision. Also inspect seat belt assemblies not in use during a collision, and replace if damaged or improperly operating.**  
**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.**
- **Never oil tongue and buckle.**
- **Use a genuine NISSAN seat belt assembly.**

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