

# SECTION MA

## MAINTENANCE

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# PREPARATION

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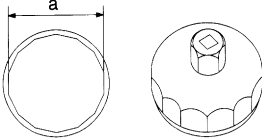
## PREPARATION

### PREPARATION

#### Special Service Tool

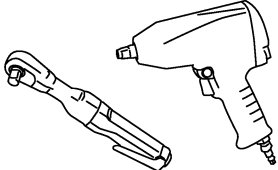
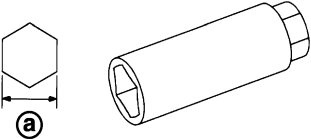
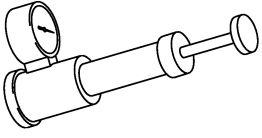
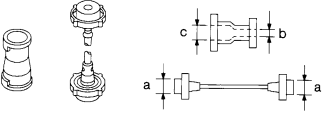
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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
KV10115801 (J38956) Oil filter wrench	Removing and installing oil filter <b>a: 64.3 mm (2.531 in)</b>
 <p>S-NT375</p>	

#### Commercial Service Tool

INFOID:000000008289624

Tool name (Kent-Moore No.)	Description
Power tool ( — )	Loosening nuts and bolts
 <p>PBIC0190E</p>	
Spark plug wrench ( — )	Removing and installing spark plug <b>a : 14 mm (0.55 in)</b>
 <p>JPBA0399ZZ</p>	
Radiator cap tester ( — )	Checking radiator and radiator cap
 <p>PBIC1982E</p>	
Radiator cap tester adapter ( — )	Adapting radiator cap tester to radiator cap and water outlet (front) filler neck <b>a: 28 (1.10) dia.</b> <b>b: 31.4 (1.236) dia.</b> <b>c: 41.3 (1.626) dia.</b> Unit: mm (in)
 <p>S-NT564</p>	

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## GENERAL MAINTENANCE

< PERIODIC MAINTENANCE >

### PERIODIC MAINTENANCE

#### GENERAL MAINTENANCE

##### Explanation of General Maintenance

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General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform checks and inspections themselves or have their **INFINITI** retailers 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-53</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 7,500 miles (12,000 km).	<a href="#">MA-26</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-50</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 INFINITI Warranty Information Booklet.	<a href="#">FSU-7</a> (2WD) <a href="#">FSU-26</a> (AWD) <a href="#">RSU-6</a> <a href="#">MA-26</a>
<b>Windshield</b>	Clean the windshield on a regular basis. Check the windshield at least every six months for cracks or other damage. Repair as necessary.	—
<b>Windshield wiper blades</b>	Check for cracks or wear if they do not wipe properly.	—
<b>Doors and engine hood</b>	Check that all doors and the engine hood operate smoothly as well as the back door, trunk lid and glass hatch. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check lubrication frequently.	<a href="#">MA-32</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-32</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-7</a> <a href="#">BR-13</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-3</a>
<b>Automatic transmission “Park” mechanism</b>	Check that the lock release button on the selector lever operates properly and smoothly. 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-7</a>
<b>Radiator and hoses</b>	Check the front of the radiator and clean off any dirt, insects, leaves, etc., that may have accumulated. Make sure the hoses have no cracks, deformation, deterioration or loose connections.	—
<b>Brake fluid level</b>	Make sure that the brake fluid level is between the “MAX” and “MIN” lines on the reservoir.	<a href="#">MA-28</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-3</a>
<b>Engine drive belts</b>	Make sure that no belt is frayed, worn, cracked or oily.	<a href="#">MA-12</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>Power steering fluid level and lines</b>	Check the level on the dipstick with the engine off. Check the lines for improper attachment, leaks, cracks, etc.	<a href="#">MA-30</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="#">MA-21</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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Two different maintenance schedules are provided, and should be used, depending upon the conditions in which the vehicle is mainly operated. **After 60,000 miles (96,000 km) or 48 months, continue the periodic maintenance at the same mileage/time intervals.**

Schedule 1	Follow Periodic Maintenance Schedule 1 if the driving habits frequently include one or more of the following driving conditions: <ul style="list-style-type: none"> <li>Repeated short trips of less than 5 miles (8 km).</li> <li>Repeated short trips of less than 10 miles (16 km) with outside temperatures remaining below freezing.</li> <li>Operating in hot weather in stop-and-go "rush hour" traffic.</li> <li>Extensive idling and/or low speed driving for long distances, such as police, taxi or door-to-door delivery use.</li> <li>Driving in dusty conditions.</li> <li>Driving on rough, muddy, or salt spread roads.</li> <li>Towing a trailer, using a camper or a car-top carrier.</li> </ul>	Emission Control System Maintenance	<a href="#">MA-6</a>
		Chassis and Body Maintenance	
Schedule 2	Follow Periodic Maintenance Schedule 2 if none of driving conditions shown in Schedule 1 apply to the driving habits.	Emission Control System Maintenance	<a href="#">MA-8</a>
		Chassis and Body Maintenance	

### Schedule 1

INFOID:000000008289627

### EMISSION CONTROL SYSTEM

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary. [ ]: At the mileage intervals only

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.50 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Drive belt	NOTE (1)									<a href="#">MA-12</a>
Air cleaner filter	NOTE (2)								[R]	<a href="#">MA-17</a>
EVAP vapor lines									I*	<a href="#">MA-20</a>
Fuel lines									I*	<a href="#">MA-17</a>
Fuel filter	NOTE (3)									—
Engine coolant*	NOTE (4)(5)									<a href="#">MA-12</a>
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-17</a>
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent.)		R	R	R	R	R	R	R	R	<a href="#">MA-18</a>
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (168,000 km).								<a href="#">MA-19</a>
Intake & exhaust valve clearance*	NOTE (6)									<a href="#">EM-11</a>

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Drive belt	NOTE (1)								I*	<a href="#">MA-12</a>
Air cleaner filter	NOTE (2)								[R]	<a href="#">MA-17</a>
EVAP vapor lines									I*	<a href="#">MA-20</a>
Fuel lines									I*	<a href="#">MA-17</a>

# PERIODIC MAINTENANCE

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MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, which- ever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Fuel filter	NOTE (3)									—
Engine coolant*	NOTE (4)(5)									<a href="#">MA-12</a>
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-17</a>
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent.)		R	R	R	R	R	R	R	R	<a href="#">MA-18</a>
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (168,000 km).								<a href="#">MA-19</a>
Intake & exhaust valve clear- ance*	NOTE (6)									<a href="#">EM-11</a>

### NOTE:

(1) After 60,000 miles (96,000 km) or 48 months, inspect every 15,000 miles (24,000 km) or 12 months. Replace the drive belts if found damaged or if the auto belt tensioner reading reaches the maximum limit.

(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% anti-freeze 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) Periodic maintenance is not required. However, if valve noise increases, inspect valve clearance.

\* Maintenance items and intervals with “\*\*” are recommended by INFINITI 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

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, which- ever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.50 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Brake lines & cables					I				I	<a href="#">MA-28</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-29</a>
Brake fluid					R				R	<a href="#">MA-28</a>
Automatic transmission fluid	NOTE (1)									—
Transfer fluid & differential gear oil	NOTE (2)				I				I	<a href="#">MA-21</a> <a href="#">MA-24</a> <a href="#">MA-25</a>
Steering gear & linkage, axle & suspension parts			I		I		I		I	<a href="#">MA-29</a> <a href="#">MA-30</a>
Tire rotation	NOTE (3)									<a href="#">MA-4</a> <a href="#">MA-26</a>
Propeller shaft and drive shaft boots (AWD models)			I		I		I		I	<a href="#">MA-22</a> <a href="#">MA-23</a> <a href="#">MA-23</a> <a href="#">MA-31</a>
Exhaust system			I		I		I		I	<a href="#">MA-21</a>
In-cabin microfilter					R				R	<a href="#">VTL-10</a>

# PERIODIC MAINTENANCE

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MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Brake lines & cables					I				I	<a href="#">MA-28</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-29</a>
Brake fluid					R				R	<a href="#">MA-28</a>
Automatic transmission fluid	NOTE (1)									—
Transfer fluid & differential gear oil	NOTE (2)				I				I	<a href="#">MA-21</a> <a href="#">MA-24</a> <a href="#">MA-25</a>
Steering gear & linkage, axle & suspension parts			I		I		I		I	<a href="#">MA-29</a> <a href="#">MA-30</a>
Tire rotation	NOTE (3)									<a href="#">MA-4</a> <a href="#">MA-26</a>
Propeller shaft and drive shaft boots (AWD models)			I		I		I		I	<a href="#">MA-22</a> <a href="#">MA-23</a> <a href="#">MA-23</a> <a href="#">MA-31</a>
Exhaust system			I		I		I		I	<a href="#">MA-21</a>
In-cabin microfilter					R				R	<a href="#">VTL-10</a>

## NOTE:

(1) Automatic transmission fluid is maintenance-free.

(2) If towing a trailer, using a camper or a car-top carrier, or driving on rough or muddy roads, change (not just inspect) fluid /oil at every 30,000 miles (48,000 km) or 24 months.

(3) Refer to "Tire rotation" under the "General maintenance" heading earlier in this section.

## Schedule 2

INFOID:000000008289628

## EMISSION CONTROL SYSTEM

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary. [ ]: At the mileage intervals only

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Drive belt	NOTE (1)								I*	<a href="#">MA-12</a>
Air cleaner filter					[R]				[R]	<a href="#">MA-17</a>
EVAP vapor lines					I*				I*	<a href="#">MA-20</a>
Fuel lines					I*				I*	<a href="#">MA-17</a>
Fuel filter	NOTE (2)									—
Engine coolant*	NOTE (3)(4)									<a href="#">MA-12</a>
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-17</a>
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent.)		R	R	R	R	R	R	R	R	<a href="#">MA-18</a>
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (168,000 km).								<a href="#">MA-19</a>
Intake & exhaust valve clearance*	NOTE (5)									<a href="#">EM-11</a>

## NOTE:

(1) After 60,000 miles (96,000 km) or 48 months, inspect every 15,000 miles (24,000 km) or 12 months. Replace the drive belts if found damaged or if the auto belt tensioner reading reaches the maximum limit.

(2) Maintenance-free item. For service procedures, refer to FL section.



# PERIODIC MAINTENANCE

## < PERIODIC MAINTENANCE >

(3) 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.

(4) Use only Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent with proper mixture ratio of 50% anti-freeze 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.

(5) Periodic maintenance is not required. However, if valve noise increases, inspect valve clearance.

\* Maintenance items and intervals with “\*” are recommended by INFINITI 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

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Brake lines & cables			I		I		I		I	<a href="#">MA-28</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-29</a>
Brake fluid					R				R	<a href="#">MA-28</a>
Automatic transmission fluid	NOTE (1)									—
Transfer fluid & differential gear oil			I		I		I		I	<a href="#">MA-21</a> <a href="#">MA-24</a> <a href="#">MA-25</a>
Steering gear & linkage, axle & suspension parts					I				I	<a href="#">MA-29</a> <a href="#">MA-30</a>
Tire rotation	NOTE (2)									<a href="#">MA-4</a> <a href="#">MA-26</a>
Propeller shaft and drive shaft boots (AWD models)			I		I		I		I	<a href="#">MA-22</a> <a href="#">MA-23</a> <a href="#">MA-23</a> <a href="#">MA-31</a>
Exhaust system					I				I	<a href="#">MA-21</a>
In-cabin microfilter			R		R		R		R	<a href="#">VTL-10</a>

### NOTE:

(1) Automatic transmission fluid maintenance-free.

(2) Refer to “Tire rotation” under the “General maintenance” heading earlier in this section.

# RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

## RECOMMENDED FLUIDS AND LUBRICANTS

### Fluids and Lubricants

INFOID:000000008289629

		Capacity (Approximate)			Recommended Fluids/Lubricants
		US measure	Imp measure	Liter	
Engine oil Drain and refill	With oil filter change	5-1/8 qt	4-1/4 qt	4.9	<ul style="list-style-type: none"> <li>Engine oil with API Certification Mark*<sup>1</sup>, *<sup>2</sup></li> <li>Viscosity SAE 5W-30</li> </ul>
	Without oil filter change	4-7/8 qt	4 qt	4.6	
Dry engine (Overhaul)		6 qt	5 qt	5.7	
Cooling system	With reservoir tank	9-1/8 qt	7-5/8 qt	8.6	Pre-diluted Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent
	Reservoir tank	7/8 qt	3/4 qt	0.8	
Automatic transmission fluid		9-3/4 qt* <sup>8</sup>	8-1/8 qt* <sup>8</sup>	9.2* <sup>8</sup>	Genuine NISSAN Matic S ATF * <sup>3</sup>
Differential gear oil	Front	1-3/8 pt	1-1/8 pt	0.65	Genuine NISSAN Differential Oil Hypoid Super GL-5 80W-90 or API GL-5, Viscosity SAE 80W-90 * <sup>4</sup>
	Rear	3 pt	2-1/2 pt	1.40	
Transfer fluid		2-1/8 pt	1-3/4 pt	1.0	Genuine NISSAN Matic J ATF* <sup>5</sup>
Power steering fluid (PSF)		1-1/8 qt	7/8 qt	1.0	Genuine NISSAN PSF or equivalent* <sup>6</sup>
Brake fluid		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid* <sup>7</sup> or equivalent DOT 3 (US FMVSS No.116)
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)
Windshield washer fluid		—	—	—	Genuine NISSAN Windshield Washer Concentrate Cleaner & Antifreeze or equivalent
Fuel recommendation		—	—	—	Refer to <a href="#">GL-32, "Fuel"</a> .

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

\*2: INFINITI recommends Genuine NISSAN Ester Oil available an INFINITI retailer.

\*3: Using automatic transmission fluid other than Genuine NISSAN Matic S ATF will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the INFINITI new vehicle limited warranty.

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

\*5: Using transfer fluid other than Genuine NISSAN Matic J ATF will cause deterioration in driveability and transfer durability, and may damage the transfer, which is not covered by the INFINITI new vehicle limited warranty.

\*6: DEXRON™ VI type ATF may also be used.

\*7: Available in mainland U.S.A. through an INFINITI retailer.

\*8: The fluid capacity is the reference value.

### Engine Oil Recommendation

INFOID:000000008289630

NISSAN recommends the use of an energy conserving oil in order to improve fuel economy.

Select only engine oils that meet the American Petroleum Institute (API) certification and International Lubricant Standardization and Approval Committee (ILSAC) certification and SAE viscosity standard. These oils have the API certification mark on the front of the container. Oils which do not have the specified quality label should not be used as they could cause engine damage.



# RECOMMENDED FLUIDS AND LUBRICANTS

## < PERIODIC MAINTENANCE >

1. API certification mark

2. API service symbol

### Anti-Freeze Coolant Mixture Ratio

INFOID:000000008289631

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:**

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

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# ENGINE MAINTENANCE

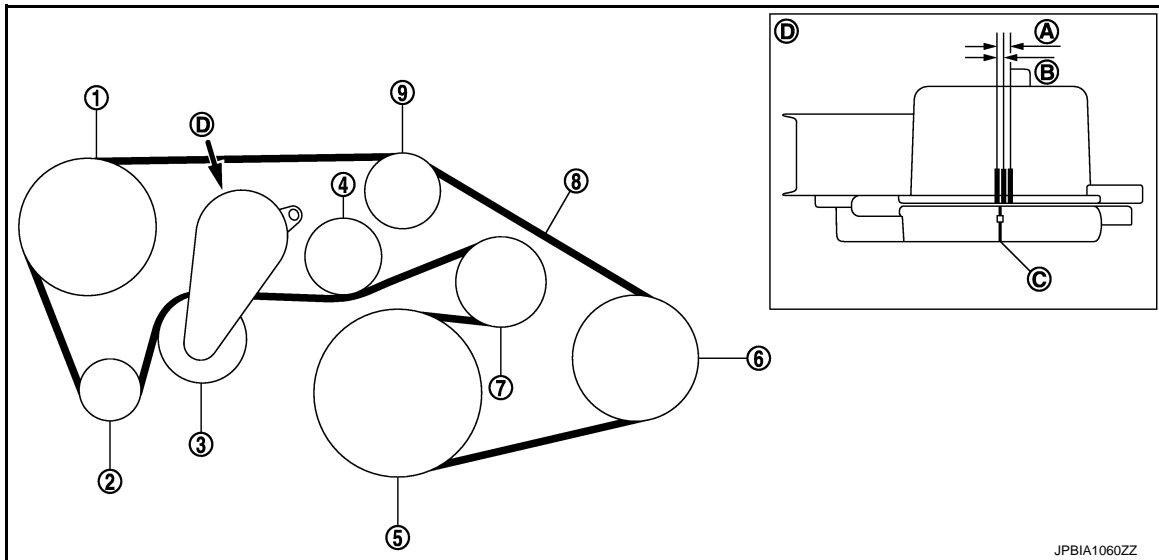
< PERIODIC MAINTENANCE >

## ENGINE MAINTENANCE

### DRIVE BELT

#### DRIVE BELT : Exploded View

INFOID:000000008749682



- |                            |   |                              |
|----------------------------|---|------------------------------|
| 1. Power steering oil pump | 2. Alternator                             | 3. Drive belt auto-tensioner |
| 4. Idler pulley            | 5. Crankshaft pulley                      | 6. A/C compressor            |
| 7. Idler pulley            | 8. Drive belt                             | 9. Idler pulley              |
| A. Possible use range      | B. Range when new drive belt is installed | C. Indicator                 |
| D. View D                  |   |                              |

#### DRIVE BELT : Checking

INFOID:000000008289633

#### **WARNING:**

**Be sure to perform this step when engine is stopped.**

- Check that the indicator (C) (notch on fixed side) of drive belt auto-tensioner is within the possible use range (A).

#### **NOTE:**

- Check the drive belt auto-tensioner indication when the engine is cold.
- When new drive belt is installed, the indicator (notch on fixed side) should be within the range (B) in the figure.
- Visually check entire drive belt for wear, damage or cracks.
- If the indicator (notch on fixed side) is out of the possible use range or belt is damaged, replace drive belt.

#### DRIVE BELT : Tension Adjustment

INFOID:000000008289634

Refer to [MA-33. "DRIVE BELTS : Drive Belt"](#).

### ENGINE COOLANT

#### ENGINE COOLANT : Draining

INFOID:000000008289635

#### **WARNING:**

- **Never change engine coolant when the engine is hot to avoid being scalded.**
- **Wrap a thick cloth around radiator cap and carefully remove radiator cap. First, turn radiator cap a quarter of a turn to release built-up pressure. Then turn radiator cap all the way.**

# ENGINE MAINTENANCE

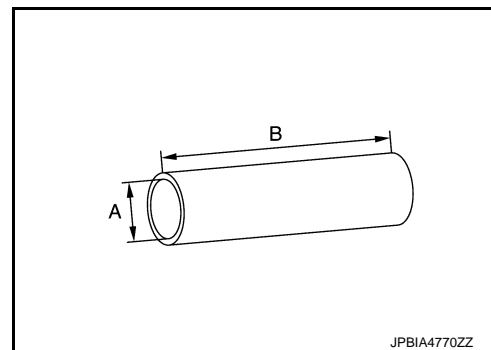
## < PERIODIC MAINTENANCE >

1. Connect drain hose.

### NOTE:

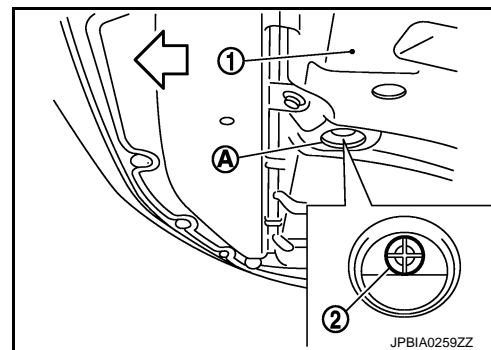
Use a general-purpose hose with the dimensions shown in the figure.

- A :  $\phi$  15 - 16 mm (0.59 - 0.63 in)  
B : 145 mm (5.71 in)



2. Open radiator drain plug (2) at the bottom of radiator, and then remove radiator cap.

- 1 : Engine under cover  
A : Radiator drain plug hole  
⇐ : Vehicle front



When draining all of engine coolant in the system, open water drain plugs on cylinder block. Refer to [EM-79, "Setting"](#).

3. Remove reservoir tank if necessary, and drain engine coolant and clean reservoir tank before installing.
4. Check drained engine coolant for contaminants such as rust, corrosion or discoloration. If contaminated, flush the engine cooling system. Refer to [CO-9, "Flushing"](#).
5. Disconnect drain hose.

## ENGINE COOLANT : Refilling

INFOID:000000008289636

### CAUTION:

- Do not reuse O-rings.
- 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-10, "Fluids and Lubricants"](#).

1. Remove engine cover. Refer to [EM-25, "Exploded View"](#).
2. Install reservoir tank if removed, and radiator drain plug.

### CAUTION:

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

**Tightening torque** : Refer to [CO-13, "Exploded View"](#).

If water drain plugs on cylinder block are removed, close and tighten them. Refer to [EM-122, "Disassembly and Assembly"](#).

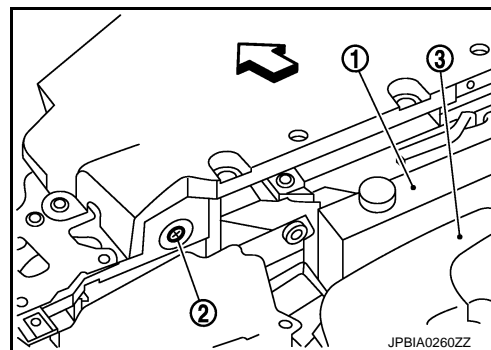
3. Check that each hose clamp has been firmly tightened.

# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

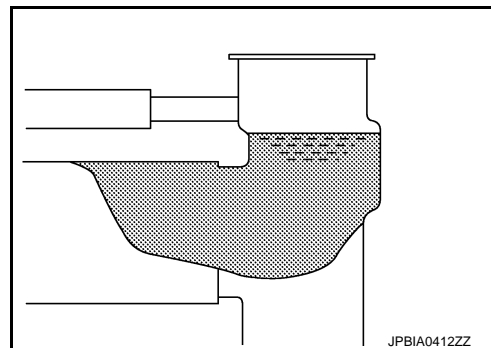
4. Remove air relief plug (2) on radiator left side.

- 1 : Reservoir tank  
3 : Engine cover  
⇐ : Vehicle front



5. Fill radiator, and reservoir tank if removed, to specified level.  
• Pour engine coolant through engine coolant filler neck slowly of less than 2 ℓ (2-1/8 US qt, 1-3/4 Imp qt) a minute to allow air in system to escape.

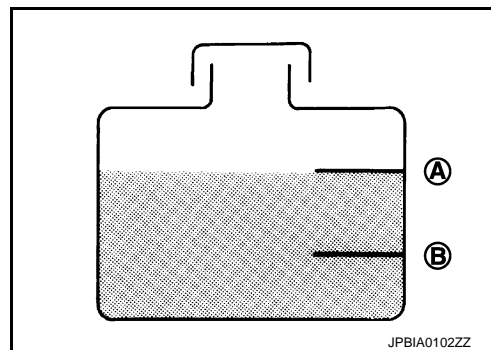
Engine coolant capacity  
(With reservoir tank at  
“MAX” level) : Refer to [CO-26, "Periodical Maintenance Specification"](#).



6. Refill reservoir tank to “MAX” level line with engine coolant.

- A : MAX  
B : MIN

Reservoir tank engine coolant capacity  
(At “MAX” level) : Refer to [CO-26, "Periodical Maintenance Specification"](#).



7. When engine coolant overflows air relief hole on radiator, install air relief plug with new O-ring.

Tightening torque : Refer to [CO-13, "Exploded View"](#).

8. Repeat step 5.  
9. Install radiator cap.  
10. Warm up engine until opening thermostat. Standard for warming-up time is approximately 10 minutes at 3,000 rpm.  
• Check thermostat opening condition by touching radiator hose (lower) to see a flow of warm water.  
**CAUTION:**  
**Watch water temperature gauge so as not to overheat engine.**  
11. Stop the engine and cool down to less than approximately 50°C (122°F).  
• Cool down using fan to reduce the time.  
• If necessary, refill radiator up to filler neck with engine coolant.  
12. Refill reservoir tank to “MAX” level line with engine coolant.  
13. Repeat steps 9 through 12 two or more times with radiator cap installed until engine coolant level no longer drops.  
14. Check cooling system for leakage with engine running.  
15. Warm up the engine, and check for sound of engine coolant flow while running engine from idle up to 3,000 rpm with heater temperature controller set at several position between “COOL” and “WARM”.  
• Sound may be noticeable at heater unit.  
16. Repeat step 15 three times.

# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

17. If sound is heard, bleed air from cooling system by repeating step 5, and steps from 9 to 16 until engine coolant level no longer drops.
18. Check that the reservoir tank cap is tightened.

## ENGINE COOLANT : Flushing

INFOID:000000008289637

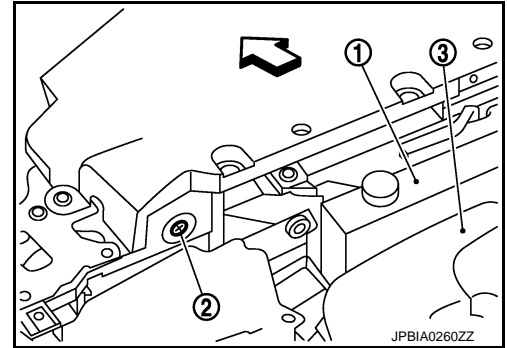
1. Install reservoir tank if removed, and radiator drain plug.  
**CAUTION:**  
Be sure to clean drain plug and install with new O-ring.

**Tightening torque** : Refer to [CO-13, "Exploded View"](#).

If water drain plugs on cylinder block are removed, close and tighten them. Refer to [EM-122, "Disassembly and Assembly"](#).

2. Remove air relief plug (2) on radiator.

- 1 : Reservoir tank  
3 : Engine cover  
⇐ : Vehicle front



3. Fill radiator with water until water spills from the air relief hole, then close air relief plug. Fill radiator and reservoir tank with water and reinstall radiator cap.

**Tightening torque** : Refer to [CO-13, "Exploded View"](#).

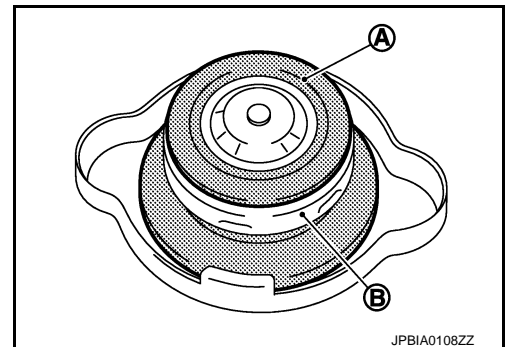
4. Run the engine and warm it up to normal operating temperature.
5. Rev the engine two or three times under no-load.
6. Stop the engine and wait until it cools down.
7. Drain water from the system. Refer to [CO-7, "Draining"](#).
8. Repeat steps 1 through 7 until clear water begins to drain from radiator.
9. Check that the reservoir tank cap is tightened.

## RADIATOR CAP

### RADIATOR CAP : Inspection

INFOID:000000008289638

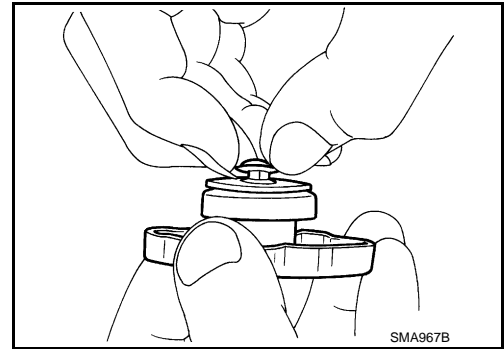
- Check valve seat of radiator cap.
- Check if valve seat (A) is swollen to the extent that the edge of the metal plunger (B) cannot be seen when watching it vertically from the top.
- Check if valve seat has no soil and damage.



# ENGINE MAINTENANCE

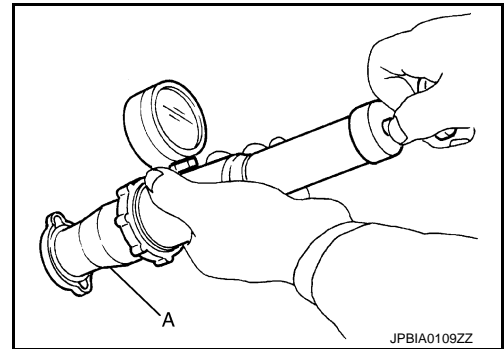
## < PERIODIC MAINTENANCE >

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



- Check radiator cap relief pressure.
- When connecting radiator cap to the radiator cap tester (commercial service tool) and the radiator cap tester adapter (commercial service tool) (A), apply engine coolant to the cap seal surface.

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



- Replace radiator cap if there is an unusualness related to the above three.

### **CAUTION:**

**When installing radiator cap, thoroughly wipe out the water outlet (front) filler neck to remove any waxy residue or foreign material.**

## RADIATOR

### RADIATOR : Inspection

INFOID:000000008289639

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

- Be careful not to bend or damage radiator fins.
  - When radiator is cleaned without removal, remove all surrounding parts such as radiator cooling fan assembly and horns. Then tape harness and connectors to prevent water from entering.
1. Apply water by hose to the back side of the radiator core vertically downward.
  2. Apply water again to all radiator core surfaces once per minute.
  3. Stop washing if any stains no longer flow out from radiator.
  4. Blow air into the back side of radiator core vertically downward.
    - 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).
  5. Blow air again into all the radiator core surfaces once per minute until no water sprays out.

## FUEL LINES



# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

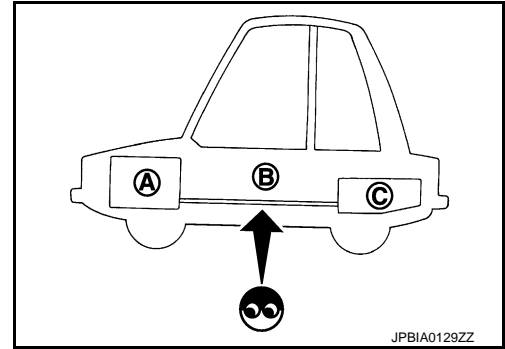
### FUEL LINES : Inspection

INFOID:000000008289640

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

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

- If necessary, repair or replace damaged parts.



### AIR CLEANER FILTER

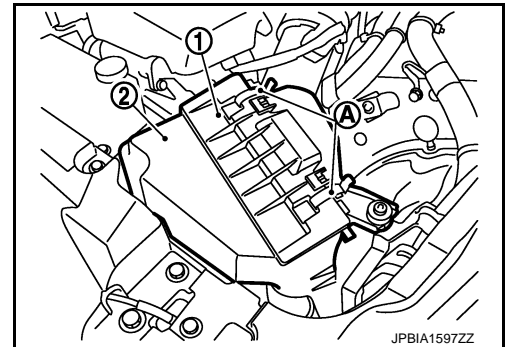
### AIR CLEANER FILTER : Removal and Installation

INFOID:000000008289641

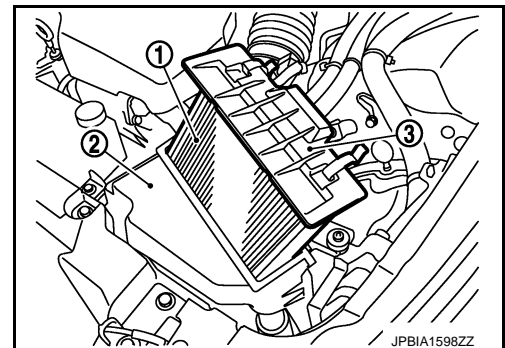
#### REMOVAL

1. Unhook clips (A).

- 1 : Holder  
2 : Air cleaner case



2. Remove holder (3) from air cleaner case (2), and then remove air cleaner filter (1) from holder.



#### INSTALLATION

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

- Install the air cleaner filter by aligning the seal with the notch of air cleaner case.

### ENGINE OIL

### ENGINE OIL : Draining

INFOID:000000008289642

#### 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 leakage from engine components. Refer to [LU-7, "Inspection"](#).
2. Stop the engine and wait for 10 minutes.
3. Loosen oil filler cap.

# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

4. Remove undercover with power tool.
5. Remove drain plug and then drain engine oil.

## ENGINE OIL : Refilling

INFOID:000000008289643

1. Install drain plug with new washer. Refer to [EM-82, "2WD : Exploded View"](#) (2WD models) or [EM-85, "AWD : Exploded View"](#) (AWD models).

### CAUTION:

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

2WD models

**Tightening torque** : Refer to [EM-82, "2WD : Exploded View"](#).

AWD models

**Tightening torque** : Refer to [EM-85, "AWD : Exploded View"](#).

2. Refill with new engine oil.  
**Engine oil specification and viscosity:** Refer to [MA-10, "Fluids and Lubricants"](#).

**Engine oil capacity** : Refer to [MA-33, "ENGINE OIL : Periodical Maintenance Specification"](#).

### CAUTION:

- When filling engine oil, never pull out oil level gauge.
  - The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.
  - Always use 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 leakage.
  4. Stop the engine and wait for 10 minutes.
  5. Check the engine oil level. Refer to [LU-7, "Inspection"](#).

## OIL FILTER

### OIL FILTER : Removal and Installation

INFOID:000000008289644

#### REMOVAL

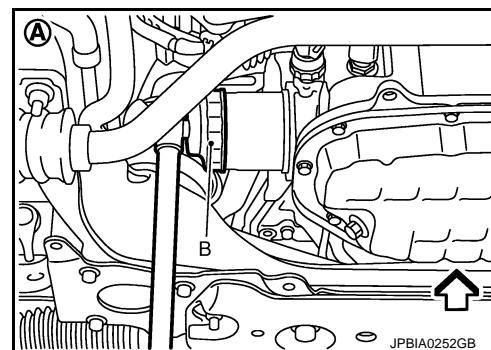
### CAUTION:

- Oil filter is provided with relief valve. Use genuine NISSAN oil filter or equivalent.
- Never get burned when engine and engine oil may be hot.
- When removing, prepare a shop cloth to absorb any engine oil leakage or spillage.
- Never allow engine oil to adhere to drive belt.
- Completely wipe off any engine oil that adheres to engine and vehicle.

1. Remove engine undercover, using a power tool.
2. Using oil filter wrench [SST: KV10115801 (J-38956)] (B), remove oil filter.

A : 2WD models

⇐ : Engine front

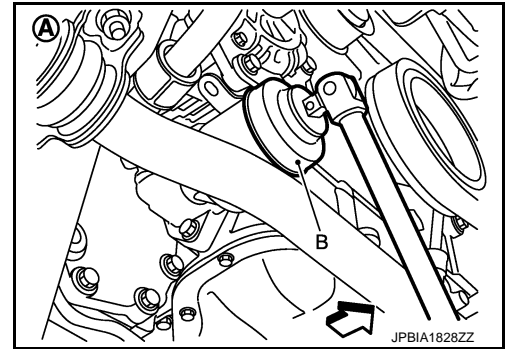


# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

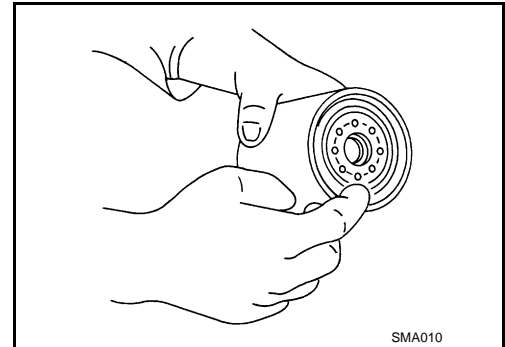
A : AWD models

↶ : Engine front



### INSTALLATION

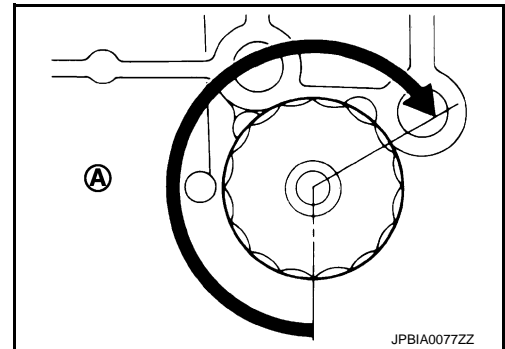
1. Remove foreign materials adhering to oil filter installation surface.
2. Apply engine oil to the oil seal contact surface of new oil filter.



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:000000008289645

### INSPECTION AFTER INSTALLATION

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

### SPARK PLUG

### SPARK PLUG : Removal and Installation

INFOID:000000008289646

### REMOVAL

1. Remove engine cover, using a power tool. Refer to [EM-25, "Exploded View"](#).
2. Remove air duct (RH and LH). Refer to [EM-27, "Exploded View"](#).
3. Remove electric throttle control actuator. Refer to [EM-29, "Exploded View"](#).
4. Remove ignition coil. Refer to [EM-47, "Exploded View"](#).

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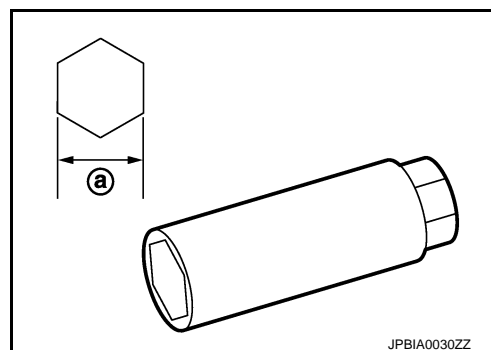
MA

# ENGINE MAINTENANCE

## < PERIODIC MAINTENANCE >

5. Remove spark plug with a spark plug wrench (commercial service tool).

a : 14 mm (0.55 in)



## INSTALLATION

Installation is the reverse order of removal.

## SPARK PLUG : Inspection

INFOID:000000008289647

## INSPECTION AFTER REMOVAL

Use the standard type spark plug for normal condition.

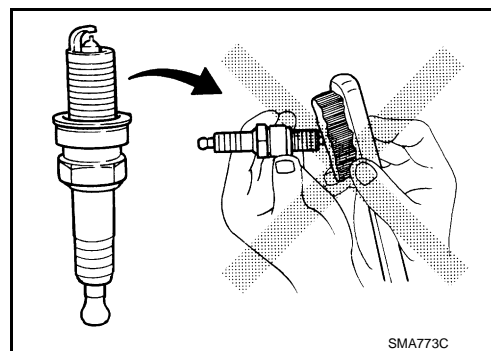
**Spark plug (Standard type) :** Refer to [MA-33, "SPARK PLUG : Spark Plug"](#).

### CAUTION:

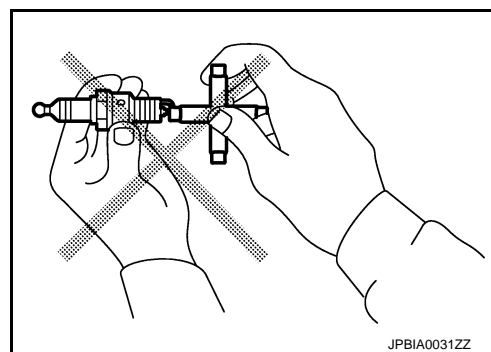
- Never drop or shock spark plug.
- Never use a wire brush for cleaning.
- If plug tip is covered with carbon, spark plug cleaner may be used.

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

**Cleaning time:** Less than 20 seconds



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



## EVAP VAPOR LINES

## EVAP VAPOR LINES : Inspection

INFOID:000000008289648

1. Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration. Refer to [EC-631, "Inspection"](#).
2. Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc.  
Refer to [EC-353, "Component Inspection"](#).

# CHASSIS MAINTENANCE

< PERIODIC MAINTENANCE >

## CHASSIS MAINTENANCE

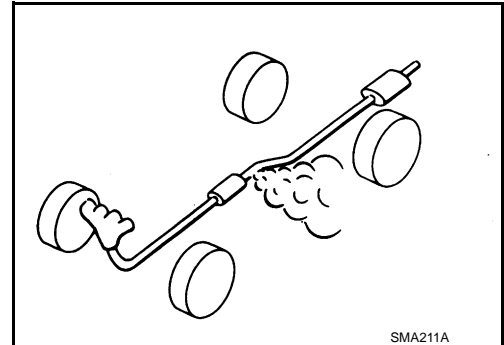
### EXHAUST SYSTEM

#### EXHAUST SYSTEM : Inspection

INFOID:000000008289649

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

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



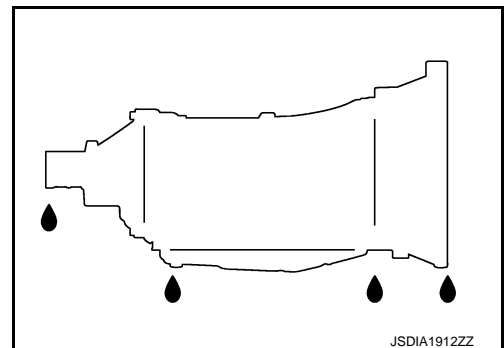
### A/T FLUID

#### A/T FLUID : Inspection

INFOID:000000008289650

#### FLUID LEAKAGE

- Check transmission surrounding area (oil seal and plug etc.) for fluid leakage.
- If anything is found, repair or replace damaged parts and adjust A/T fluid level. Refer to [TM-175, "Adjustment"](#).



### TRANSFER FLUID

#### TRANSFER FLUID : Inspection

INFOID:000000008289651

#### FLUID LEAKAGE

Check transfer surrounding area (oil seal, drain plug, and filler plug etc.) for fluid leakage.

#### FLUID LEVEL

1. Remove filler plug (1) and gasket. Then check that fluid is filled up from mounting hole for the filler plug.

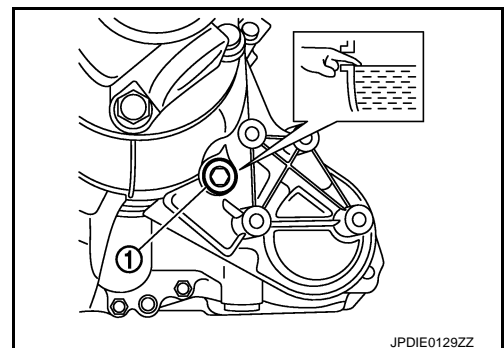
**CAUTION:**

**Never start engine while checking fluid level.**

2. Set a new gasket onto filler plug, and install it on transfer and tighten to the specified torque. Refer to [DLN-65, "Exploded View"](#).

**CAUTION:**

**Never reuse gasket.**



#### TRANSFER FLUID : Draining

INFOID:000000008289652

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

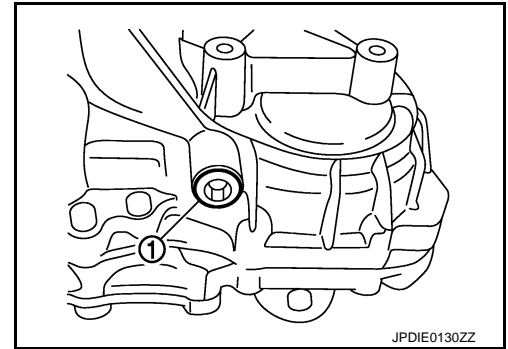
# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

2. Stop the engine, and remove the drain plug (1) to drain the transfer fluid.
3. Set a new gasket onto the drain plug, and install it on the transfer and tighten to the specified torque. Refer to [DLN-65, "Exploded View"](#).

### **CAUTION:**

**Never reuse gasket.**



INFOID:000000008289653

## TRANSFER FLUID : Refilling

1. Remove filler plug (1) and gasket. Then fill fluid up to mounting hole for the filler plug.

**Fluid and viscosity**

**: Refer to [MA-10, "Fluids and Lubricants"](#).**

**Fluid capacity**

**: Refer to [DLN-84, "General Specifications"](#).**

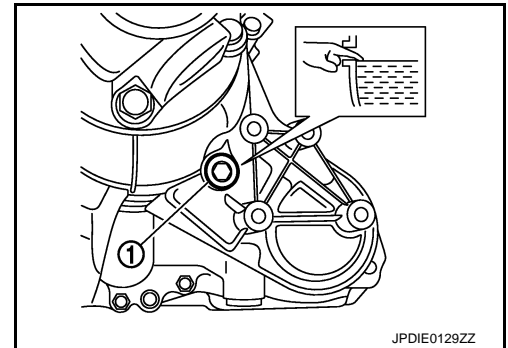
### **CAUTION:**

**Carefully fill the fluid. (Fill up for approximately 3 minutes.)**

2. Leave the vehicle for 3 minutes, and check the fluid level again.
3. Set a new gasket onto filler plug, and install it on transfer and tighten to the specified torque. Refer to [DLN-65, "Exploded View"](#).

### **CAUTION:**

**Never reuse gasket.**



## FRONT PROPELLER SHAFT: 2S56A

## FRONT PROPELLER SHAFT: 2S56A : Inspection

INFOID:000000008289654

### APPEARANCE AND NOISE

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

### VIBRATION

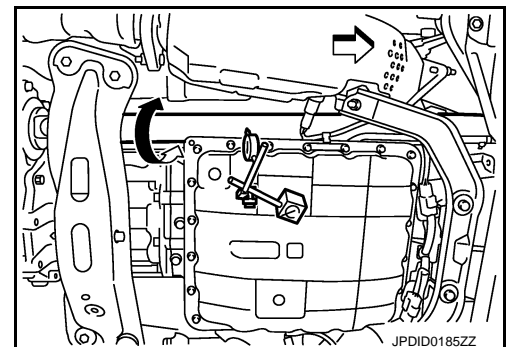
If vibration is present at high speed, inspect propeller shaft runout first.

1. With a dial indicator, measure propeller shaft runout at runout measuring points by rotating final drive companion flange with hands.

↩ : Vehicle Front

**Propeller shaft runout**

**: Refer to [DLN-91, "Propeller Shaft Runout"](#).**



# CHASSIS MAINTENANCE

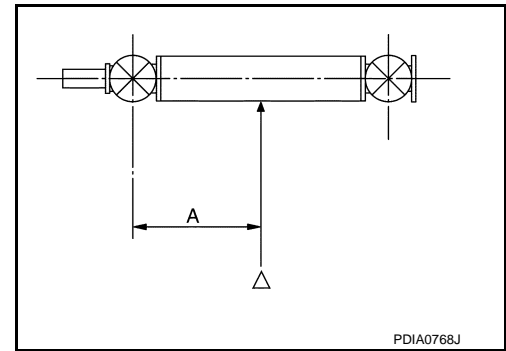
## < PERIODIC MAINTENANCE >

- Propeller shaft runout measuring point (Point “△”)

### Dimension

**A: 381.5 mm (15.02 in)**

2. If runout still exceeds specifications, separate propeller shaft at final drive companion flange; then change the phase between companion flange and propeller shaft by the one bolt hole at a time and install propeller shaft.
3. Check runout again. If runout still exceeds specifications, replace propeller shaft assembly.
4. Check the vibration by driving vehicle.



## REAR PROPELLER SHAFT: 3S80A-R

### REAR PROPELLER SHAFT: 3S80A-R : Inspection

INFOID:000000008289655

### APPEARANCE AND NOISE

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

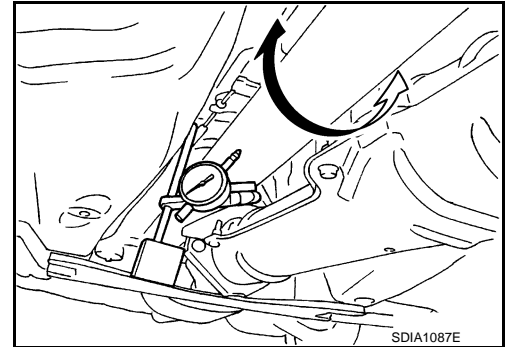
### VIBRATION

If vibration is present at high speed, inspect propeller shaft runout first.

1. With a dial indicator, measure propeller shaft runout at runout measuring points by rotating final drive companion flange with hands.

### Propeller shaft runout

: Refer to [DLN-100, "Propeller Shaft Runout"](#).



- Propeller shaft runout measuring point (Point “△”)

↔ : Vehicle Front

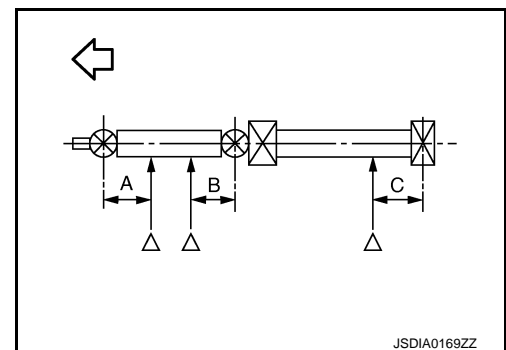
### Dimension

**A: 192 mm (7.56 in)**

**B: 172 mm (6.77 in)**

**C: 172 mm (6.77 in)**

2. If runout still exceeds specifications, separate propeller shaft at final drive companion flange; then change the phase between companion flange and propeller shaft by the one bolt hole at a time and install propeller shaft.
3. Check runout again. If runout still exceeds specifications, replace propeller shaft assembly.
4. Check the vibration by driving vehicle.



## REAR PROPELLER SHAFT: 3F80A-1VL107

### REAR PROPELLER SHAFT: 3F80A-1VL107 : Inspection

INFOID:000000008289656

### APPEARANCE AND NOISE

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

### VIBRATION

If vibration is present at high speed, inspect propeller shaft runout first.

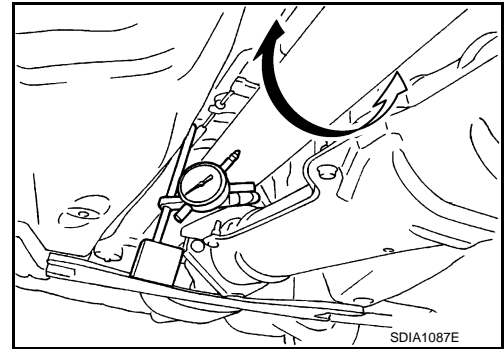
# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

1. With a dial indicator, measure propeller shaft runout at runout measuring points by rotating final drive companion flange with hands.

**Propeller shaft runout**

**: Refer to [DLN-109, "Propeller Shaft Runout"](#).**



- Propeller shaft runout measuring point (Point "Δ")

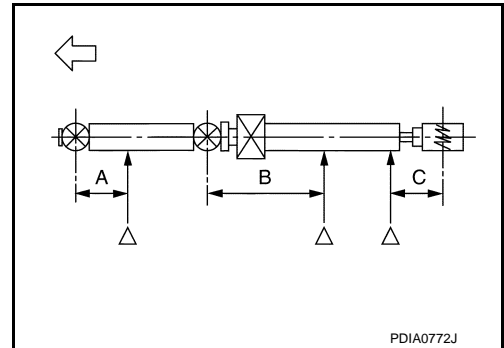
⇐ : Vehicle Front

**Dimension**

**A: 162 mm (6.38 in)**

**B: 245 mm (9.65 in)**

**C: 185 mm (7.28 in)**



2. If runout still exceeds specifications, separate propeller shaft at final drive companion flange or transfer companion flange; then change the phase between companion flange and propeller shaft by the one bolt hole at a time and install propeller shaft.
3. Check runout again. If runout still exceeds specifications, replace propeller shaft assembly.
4. Check the vibration by driving vehicle.

## FRONT DIFFERENTIAL GEAR OIL: F160A

### FRONT DIFFERENTIAL GEAR OIL: F160A : Inspection

INFOID:000000008289657

#### OIL LEAKAGE

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

#### OIL LEVEL

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

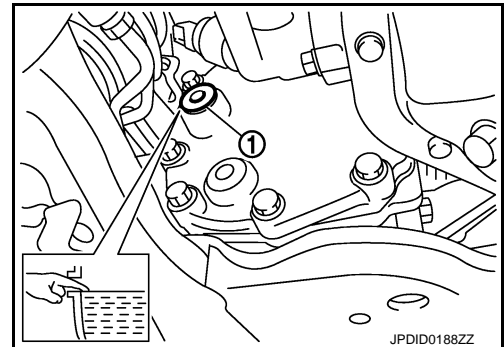
**CAUTION:**

**Never start engine while checking oil level.**

- Set a gasket on filler plug and install it on final drive assembly. Refer to [DLN-122, "Exploded View"](#).

**CAUTION:**

**Never reuse gasket.**



### FRONT DIFFERENTIAL GEAR OIL: F160A : Draining

INFOID:000000008289658

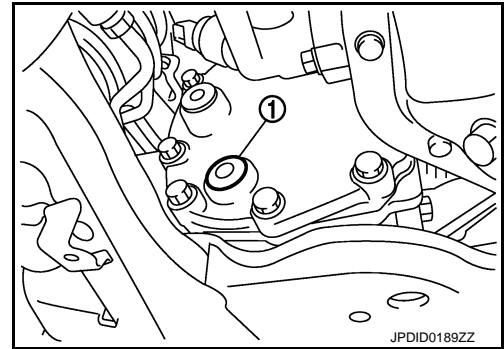
1. Stop engine.



# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

2. Remove drain plug (1) and drain gear oil.
3. Set a gasket on drain plug and install it to final drive assembly and tighten to the specified torque. Refer to [DLN-122, "Exploded View"](#).  
**CAUTION:**  
**Never reuse gasket.**



## FRONT DIFFERENTIAL GEAR OIL: F160A : Refilling

INFOID:000000008289659

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

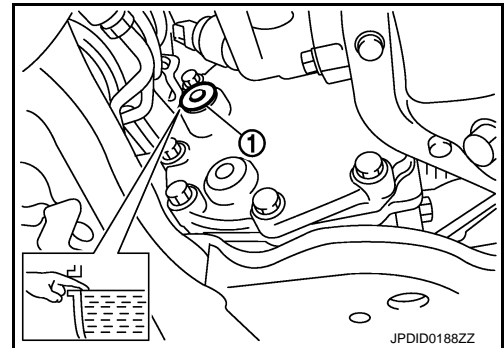
**Oil grade and Viscosity** : Refer to [MA-10, "Fluids and Lubricants"](#).

**Oil capacity** : Refer to [DLN-147, "General Specifications"](#).

2. After refilling oil, check oil level. Set a gasket to filler plug, then install it to final drive assembly. Refer to [DLN-122, "Exploded View"](#).

**CAUTION:**

**Never reuse gasket.**



## REAR DIFFERENTIAL GEAR OIL: R200

## REAR DIFFERENTIAL GEAR OIL: R200 : Inspection

INFOID:000000008289660

### OIL LEAKAGE

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

### OIL LEVEL

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

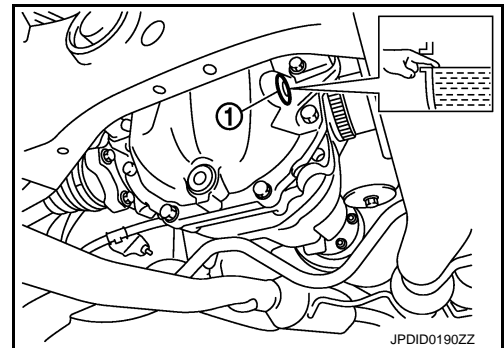
**CAUTION:**

**Never start engine while checking oil level.**

- Set a gasket on filler plug and install it on final drive assembly. Refer to [DLN-176, "2WD : Exploded View"](#) (2WD), [DLN-188, "AWD : Exploded View"](#) (AWD).

**CAUTION:**

**Never reuse gasket.**



## REAR DIFFERENTIAL GEAR OIL: R200 : Draining

INFOID:000000008289661

1. Stop engine.

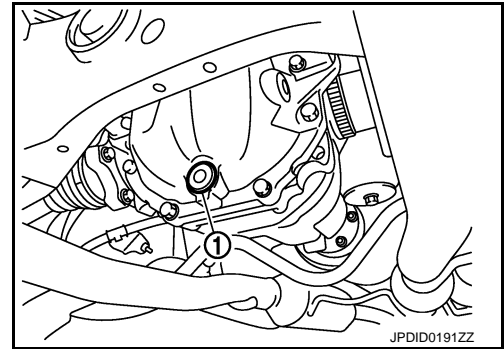
# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

2. Remove drain plug (1) and drain gear oil.
3. Set a gasket on drain plug and install it to final drive assembly and tighten to the specified torque. Refer to [DLN-176. "2WD : Exploded View"](#) (2WD), [DLN-188. "AWD : Exploded View"](#) (AWD).

### **CAUTION:**

**Never reuse gasket.**



## REAR DIFFERENTIAL GEAR OIL: R200 : Refilling

INFOID:000000008289662

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

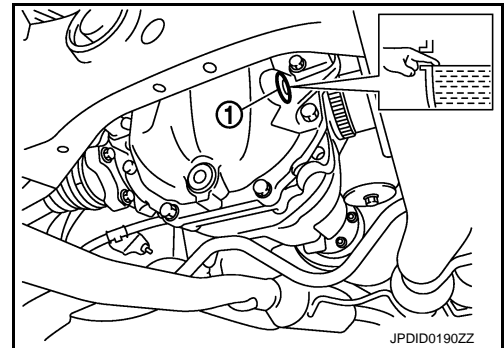
**Oil grade and viscosity** : Refer to [MA-10. "Fluids and Lubricants"](#).

**Oil capacity** : Refer to [DLN-217. "General Specification"](#).

2. After refilling oil, check oil level. Set a gasket to filler plug, then install it to final drive assembly. Refer to [DLN-176. "2WD : Exploded View"](#) (2WD), [DLN-188. "AWD : Exploded View"](#) (AWD).

### **CAUTION:**

**Never reuse gasket.**



## WHEELS (BONDING WEIGHT TYPE)

## WHEELS (BONDING WEIGHT TYPE) : Adjustment

INFOID:000000008289663

### BALANCING WHEELS (BONDING WEIGHT TYPE)

#### Preparation Before Adjustment

Using releasing agent, remove double-faced adhesive tape from the road wheel.

### **CAUTION:**

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

#### Wheel Balance Adjustment

If a tire balance machine has adhesion balance weight mode settings and drive-in weight mode setting, select and adjust a drive-in weight mode suitable for road wheels.

1. Set road wheel on tire balance machine using the center hole as a guide. Start the tire balance machine.
2. When inner and outer unbalance values are shown on the tire balance machine indicator, multiply outer unbalance value by 5/3 to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value above and install to the designated outer position of, or at the designated angle in relation to the road wheel.

### **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 road wheel.

# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

- a. Indicated unbalance value  $\times 5/3$  = balance weight to be installed

**Calculation example:**

23 g (0.81 oz)  $\times 5/3$  = 38.33 g (1.35 oz)  $\Rightarrow$  37.5 g (1.32 oz) balance weight (closer to calculated balance weight value)

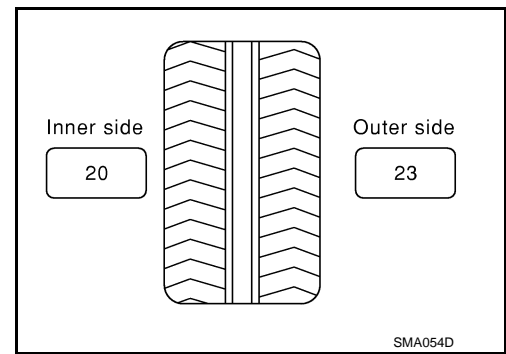
**NOTE:**

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

**Example:**

36.2  $\Rightarrow$  35 g (1.23 oz)

36.3  $\Rightarrow$  37.5 g (1.32 oz)

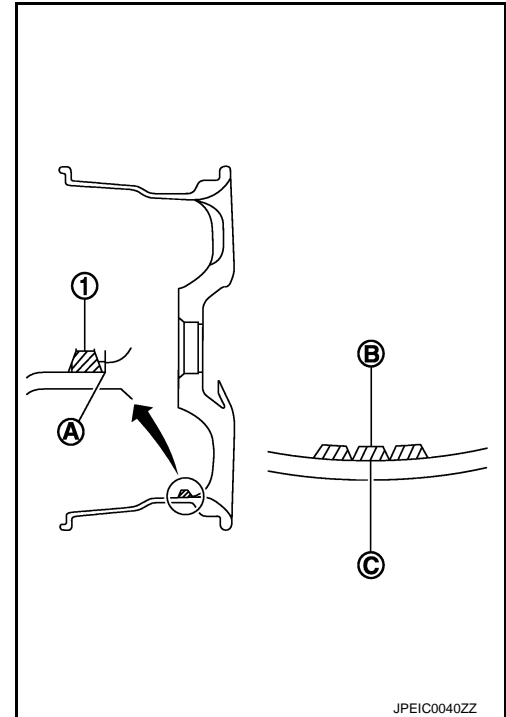


- b. Installed balance weight in the position.

- When installing balance weight (1) to road wheels, set it into the grooved area (A) on the inner wall of the road wheel as shown in the figure so that the balance weight center (B) is aligned with the tire balance machine indication position (angle) (C).

**CAUTION:**

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



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

**CAUTION:**

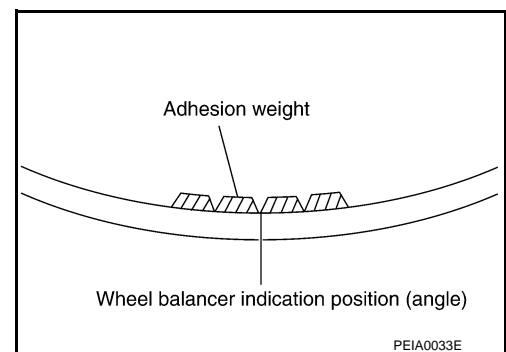
**Do not install one balance weight sheet on top of another.**

- Start the tire balance machine again.
- Install drive-in balance weight on inner side of road wheel in the tire balance machine indication position (angle).

**CAUTION:**

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

- Start the tire balance machine. Make sure that inner and outer residual unbalance values are 5 g (0.17 oz) each or below.
- If either residual unbalance value exceeds 5 g (0.17 oz), repeat installation procedures.



**Limit**

**Dynamic (At flange):** Refer to [MA-33, "ROAD WHEEL : Road Wheel"](#).

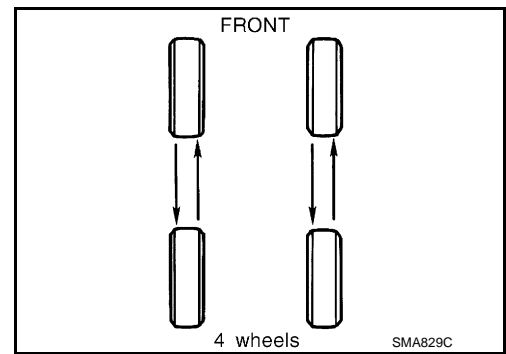
**Static (At flange):** Refer to [MA-33, "ROAD WHEEL : Road Wheel"](#).

## TIRE ROTATION

# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

- Follow the maintenance schedule for tire rotation service intervals. Refer to [MA-4, "Explanation of General Maintenance"](#).
  - When installing the wheel, tighten wheel nuts to the specified torque. Refer to [WT-48, "Exploded View"](#).
- CAUTION:**
- Do not include the T-type spare tire when rotating the tires.
  - When installing wheels, 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 wheel nut at torque exceeding the criteria for preventing strain of disc rotor.
  - Use NISSAN genuine wheel nuts for aluminum wheels.
- Perform the ID registration, after tire rotation. Refer to [WT-21, "Work Procedure"](#).

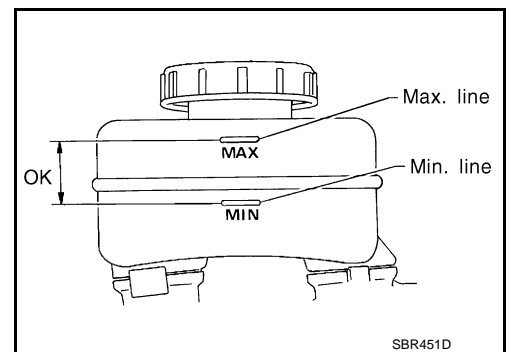


## BRAKE FLUID LEVEL AND LEAKS

### BRAKE FLUID LEVEL AND LEAKS : Inspection

INFOID:000000008289664

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

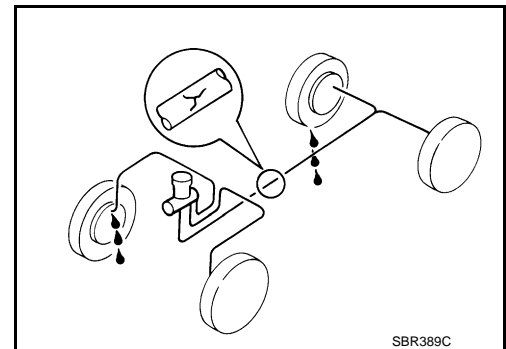


## BRAKE LINES AND CABLES

### BRAKE LINES AND CABLES : Inspection

INFOID:000000008289665

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

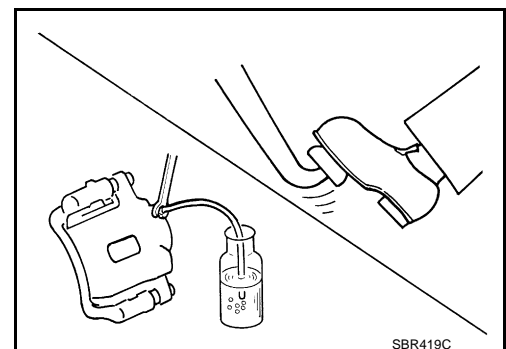


## BRAKE FLUID

### BRAKE FLUID : Changing

INFOID:000000008289666

- Drain brake fluid from each bleed valve.
- Refill until new brake fluid comes out from each bleed valve. Use same procedure as in bleeding hydraulic system to refill brake fluid. Refer to [BR-11, "Bleeding Brake System"](#).
  - Refill with recommended Genuine NISSAN Super Heavy Duty Brake Fluid or equivalent DOT 3 (US FMVSS No. 116). Refer to [MA-10, "Fluids and Lubricants"](#).
  - Never reuse drained brake fluid.
  - Be careful not to splash brake fluid on painted areas.



## DISC BRAKE

# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

### DISC BRAKE : Inspection

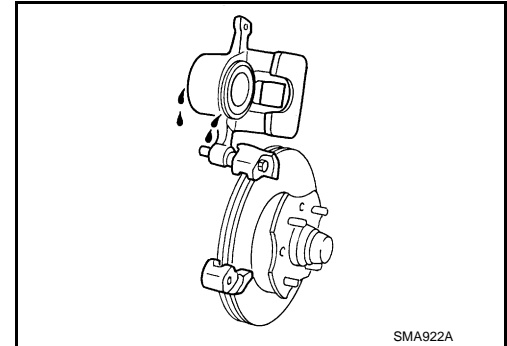
INFOID:000000008289667

#### DISC ROTOR

Check condition, wear, and damage.

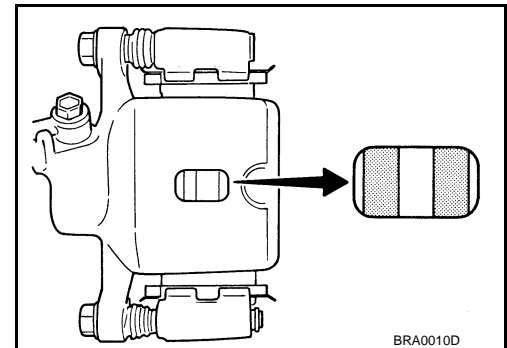
#### CALIPER

- Check for leakage.



#### BRAKE PAD

- Check for wear or damage.



### DISC BRAKE : Front Disc Brake

INFOID:000000008289668

Unit: mm (in)

Item		Limit
Brake pad	Wear thickness	2.0 (0.079)
	Wear thickness	26.0 (1.024)
Disc rotor	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout (with it attached to the vehicle)	0.035 (0.0014)

### DISC BRAKE : Rear Disc Brake

INFOID:000000008289669

Unit: mm (in)

Item		Limit
Brake pad	Wear thickness	2.0 (0.079)
	Wear thickness	14.0 (0.551)
Disc rotor	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout (with it attached to the vehicle)	0.055 (0.0022)

## STEERING GEAR AND LINKAGE

### STEERING GEAR AND LINKAGE : Inspection

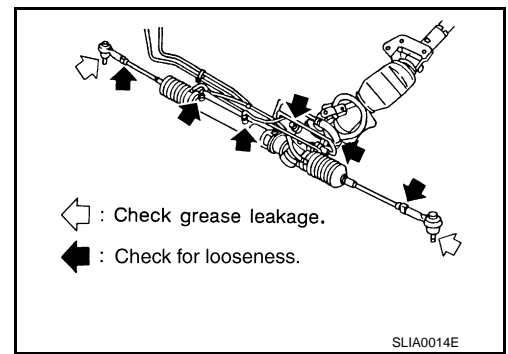
INFOID:000000008289670

#### STEERING GEAR

# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

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



## STEERING LINKAGE

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

## POWER STEERING FLUID AND LINES

### POWER STEERING FLUID AND LINES : Inspection

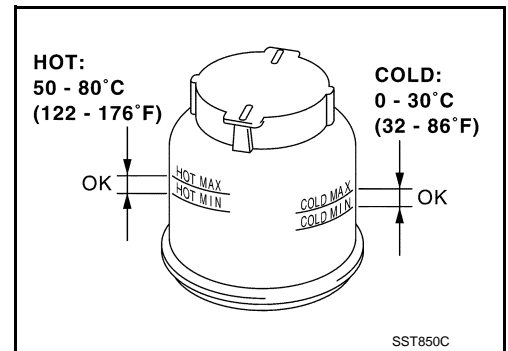
INFOID:000000008289671

Check fluid level in reservoir tank with engine off.

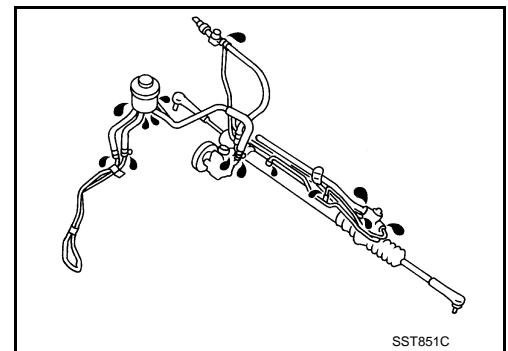
Use "HOT" range at fluid temperatures of 50 to 80°C (122 to 176°F) or "COLD" range at fluid temperatures of 0 to 30°C (32 to 86°F).

#### CAUTION:

- Do not overfill.
- Recommended fluid is Genuine NISSAN PSF or equivalent. Refer to [MA-10, "Fluids and Lubricants"](#).



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



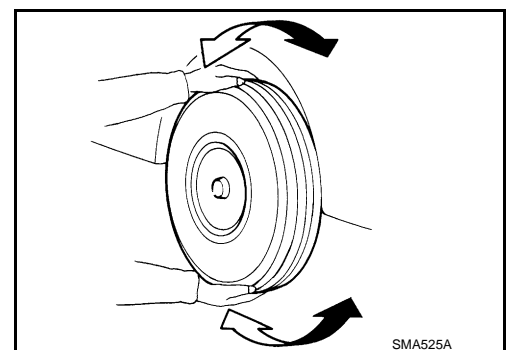
## AXLE AND SUSPENSION PARTS

### AXLE AND SUSPENSION PARTS : Inspection

INFOID:000000008289672

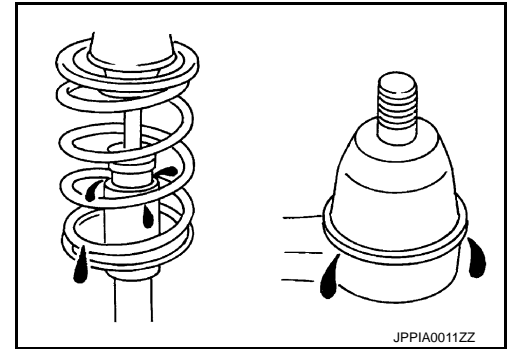
Check front and rear axle and suspension parts for excessive play, cracks, wear or other damage.

- 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.



# CHASSIS MAINTENANCE

## < PERIODIC MAINTENANCE >

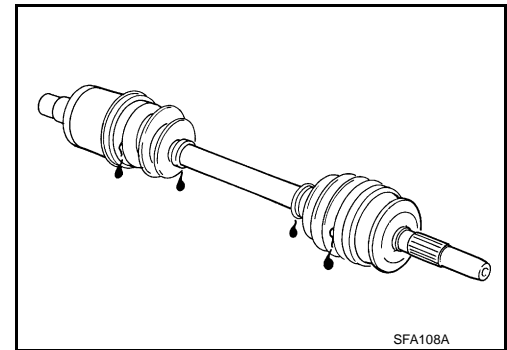


## DRIVE SHAFT

### DRIVE SHAFT : Inspection

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

INFOID:000000008289673



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MA

## BODY MAINTENANCE

< PERIODIC MAINTENANCE >

### BODY MAINTENANCE

#### LOCKS, HINGES AND HOOD LATCH

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

INFOID:000000008289674

For hood and hood lock illustration.

- Hood: Refer to [DLK-224, "HOOD ASSEMBLY : Exploded View"](#).
- Hood lock: Refer to [DLK-254, "Exploded View"](#).

For door and door lock illustration.

- Front door: Refer to [DLK-236, "DOOR ASSEMBLY : Exploded View"](#).
- Front door lock: Refer to [DLK-257, "DOOR LOCK : Exploded View"](#).
- Rear door: Refer to [DLK-241, "DOOR ASSEMBLY : Exploded View"](#).
- Rear door lock: Refer to [DLK-263, "DOOR LOCK : Exploded View"](#).

For back door and back door lock illustration.

- Back door: Refer to [DLK-246, "BACK DOOR ASSEMBLY : Exploded View"](#).
- Back door lock: Refer to [DLK-268, "Exploded View"](#).

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

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

INFOID:000000008289675

For front seat belt illustration. Refer to [SB-6, "SEAT BELT RETRACTOR : Exploded View"](#).

For rear seat belt illustration. Refer to [SB-11, "SEAT BELT RETRACTOR : Exploded View"](#).

#### **CAUTION:**

- **After any collision, inspect all seat belt assemblies, including retractors and other attached hardware (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-4, "SEAT BELT RETRACTOR : Inspection"](#), [SB-9, "SEAT BELT RETRACTOR : 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



## SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### DRIVE BELTS

#### DRIVE BELTS : Drive Belt

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#### DRIVE BELT

Tension of drive belt	Belt tension is not necessary, as it is automatically adjusted by drive belt auto-tensioner.
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### ENGINE COOLANT

#### ENGINE COOLANT : Periodical Maintenance Specification

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#### ENGINE COOLANT CAPACITY (APPROXIMATELY)

Unit: ℓ (US qt, Imp qt)

Engine coolant capacity [With reservoir tank ("MAX" level)]	8.6 (9-1/8, 7-5/8)
Reservoir tank engine coolant capacity (At "MAX" level)	0.8 (7/8, 3/4)

### ENGINE OIL

#### ENGINE OIL : Periodical Maintenance Specification

INFOID:0000000008289678

#### ENGINE OIL CAPACITY (APPROXIMATELY)

Unit: ℓ (US qt, Imp qt)

Drain and refill	With oil filter change	4.9 (5-1/8, 4-1/4)
	Without oil filter change	4.6 (4-7/8, 4)
Dry engine (Overhaul)		5.7 (6, 5)

### SPARK PLUG

#### SPARK PLUG : Spark Plug

INFOID:0000000008289679

#### SPARK PLUG

Unit: mm (in)

Make	DENSO
Standard type	FXE22HR11
Gap (Nominal)	1.1 (0.043)

### ROAD WHEEL

#### ROAD WHEEL : Road Wheel

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#### ALUMINUM WHEEL (CONVENTIONAL)

Item		Limit
Runout	Axial runout	Less than 0.3 mm (0.012 in)
	Radial runout	
Allowable unbalance	Dynamic (At flange)	Less than 5 g (0.17 oz) (one side)
	Static (At flange)	Less than 10 g (0.35 oz)

#### STEEL WHEEL (FOR EMERGENCY USE)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### < SERVICE DATA AND SPECIFICATIONS (SDS)

Item		Limit
Runout	Axial runout (Average)	Less than 1.5 mm (0.059 in)
	Radial runout (Average)	