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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:000000008507141

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 3 minutes before performing any service.

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# PREPARATION

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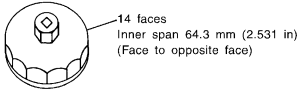
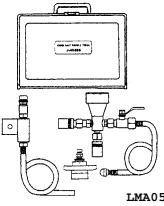
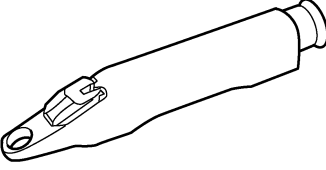
## PREPARATION

### PREPARATION

#### Special Service Tool


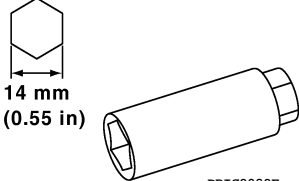
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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
KV10115801 (J-38956) Oil filter wrench   <p>14 faces Inner span 64.3 mm (2.531 in) (Face to opposite face)</p> <p>S-NI772</p>	Removing and installing oil filter
KV991J0070 (J-45695) Coolant Refill Tool   <p>LMA053</p>	Refilling engine cooling system
— (J-23688) Engine coolant refractometer   <p>WBIA0539E</p>	Checking concentration of ethylene glycol in engine coolant

#### Commercial Service Tool

INFOID:000000008507143

Tool name	Description
Power tool   <p>PIIB1407E</p>	Loosening nuts, screws and bolts
Spark plug wrench   <p>14 mm (0.55 in)</p> <p>PBIC2982E</p>	Removing and installing spark plug

# GENERAL MAINTENANCE

< PERIODIC MAINTENANCE >

## PERIODIC MAINTENANCE

### GENERAL MAINTENANCE FOR USA AND CANADA

#### FOR USA AND CANADA : Explanation of General Maintenance

INFOID:000000008507144

General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform checks and inspections themselves or have their NISSAN dealers do them.

#### OUTSIDE THE VEHICLE

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

Item		Reference page
<b>Tires</b>	Check the pressure with a gauge often and always prior to long distance trips. Adjust the pressure in all tires, including the spare, to the pressure specified. Check carefully for damage, cuts or excessive wear.	<a href="#">MA-36</a>
<b>Wheel nuts</b>	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	<a href="#">MA-36</a>
<b>Tire rotation</b>	Tires should be rotated every 7,500 miles (12,000 km).	<a href="#">MA-36</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="#">MA-36</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-18, WT-56</a>
<b>Windshield</b>	Clean the windshield on a regular basis. Check the windshield at least every six months for cracks or other damage. Repair as necessary.	—
<b>Windshield wiper blades</b>	Check for cracks or wear if they do not wipe properly.	—
<b>Doors and engine hood</b>	Check that all doors and the engine hood operate smoothly as well as the back door, trunk lid and glass hatch. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check for lubrication frequently.	<a href="#">MA-43</a>
<b>Lamps</b>	Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps and other lamps are all operating properly and installed securely. Also check headlamp aim. Clean the headlamps on a regular basis.	<a href="#">EXL-139</a>

#### INSIDE THE VEHICLE

The maintenance items listed here should be checked on a regular basis, such as when performing periodic maintenance, cleaning the vehicle, etc.

Item		Reference page
<b>Warning lamps and chimes</b>	Make sure that all warning lamps and chimes are operating properly.	—
<b>Windshield wiper and washer</b>	Check that the wipers and washer operate properly and that the wipers do not streak.	—
<b>Windshield defroster</b>	Check that the air comes out of the defroster outlets properly and in sufficient quantity when operating the heater or air conditioner.	—
<b>Steering wheel</b>	Check that it has the specified play. Check for changes in the steering condition, such as excessive play, hard steering or strange noises. <b>Free play: Less than 35 mm (1.38 in)</b>	<a href="#">ST-44</a>

## GENERAL MAINTENANCE

### < PERIODIC MAINTENANCE >

Item		Reference page
<b>Seats</b>	Check seat position controls such as seat adjusters, seatback recliner, etc. to make sure they operate smoothly and that all latches lock securely in every position. Check that the head restraints move up and down smoothly and that the locks (if equipped) hold securely in all latched positions. Check that the latches lock securely for folding-down rear seatbacks.	—
<b>Seat belts</b>	Check that all parts of the seat belt system (e.g., buckles, anchors, adjusters and retractors) operate properly and smoothly and are installed securely. Check the belt webbing for cuts, fraying, wear or damage.	<a href="#">MA-43</a>
<b>Accelerator pedal</b>	Check the pedal for smooth operation and make sure the pedal does not catch or require uneven effort. Keep the floor mats away from the pedal.	—
<b>Brakes</b>	Check that the brake does not pull the vehicle to one side when applied.	—
<b>Brake pedal and booster</b>	Check the pedal for smooth operation and make sure it has the proper distance under it when depressed fully. Check the brake booster function. Be sure to keep the floor mats away from the pedal.	<a href="#">BR-20</a> , <a href="#">BR-31</a>
<b>Parking brake</b>	Check that the lever or pedal has the proper travel and make sure that the vehicle is held securely on a fairly steep hill when only the parking brake is applied.	<a href="#">PB-7</a>
<b>CVT P (Park) position mechanism</b>	On a fairly steep hill check that the vehicle is held securely with the shift selector in the P (Park) position without applying any brakes.	—

### UNDER THE HOOD AND VEHICLE

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

Item		Reference page
<b>Windshield washer fluid</b>	Check that there is adequate fluid in the tank.	—
<b>Engine coolant level</b>	Check the coolant level when the engine is cold.	<a href="#">MA-20</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-38</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-89</a>
<b>Engine drive belts</b>	Make sure that no belt is frayed, worn, cracked or oily.	<a href="#">MA-20</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="#">MA-25</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-41</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-30</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.	—

### FOR MEXICO

# GENERAL MAINTENANCE

< PERIODIC MAINTENANCE >

## FOR MEXICO : General Maintenance

INFOID:000000008945493

General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform the checks and inspections themselves or they can have their **NISSAN** dealers do them.

### OUTSIDE THE VEHICLE

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

	Item	Reference page
<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 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-43</a>
<b>Lamps</b>	Clean the headlamps on a regular basis. Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly installed securely. Also check the aim of the headlamps.	—
<b>Tires</b>	Check the pressure with a gauge often and always prior to long distance trips. Adjust the pressure in all tires, including the spare, to the pressure specified. Check carefully for damage, cuts or excessive wear.	<a href="#">WT-64</a>
<b>Tire rotation</b>	In the case that Two-Wheel Drive (2WD) and front & rear tires are same size; Tires should be rotated every 10,000 km (6,000 miles). Tires marked with directional indicators can only be rotated between front and rear. Make sure that the directional indicators point in the direction of wheel rotation after the tire rotation is completed. In the case that Four-Wheel Drive (4WD) and front & rear tires are same size; Tires should be rotated every 5,000 km (3,000 miles). Tires marked with directional indicators can only be rotated between front and rear. Make sure that the directional indicators point in the direction of wheel rotation after the tire rotation is completed. In the case that front tires are different size from rear tires; Tires cannot be rotated. However, the timing for tire rotation may vary according to your driving habits and the road surface conditions.	<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-60</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.	<a href="#">FSU-5</a>
<b>Windshield</b>	Clean the windshield on a regular basis. Check the windshield at least every six months for cracks or other damage. Repairs necessary.	—
<b>Wiper blades</b>	Check for cracks or wear if not functioning correctly.	—

### 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>Accelerator pedal</b>	Check the pedal for smooth operation and make sure that the pedal does not catch or require uneven effort. Keep the floor mats away from the pedal.	—
<b>Brake pedal</b>	Check the pedal for smooth operation and make sure that it attains the proper distance from the floor mat when depressed fully. Check the brake booster function. Be sure to keep the floor mats away from the pedal.	<a href="#">BR-7</a>
<b>Parking brake</b>	Check the parking brake operation regularly. Check that the lever (if equipped) or the pedal (if equipped) has the proper travel. Also 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>

## GENERAL MAINTENANCE

### < PERIODIC MAINTENANCE >

Item	Reference page
<b>Seat belts</b>  Check that all parts of the seat belt system (for example, 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-43, "SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS : Inspection"</a>
<b>Steering wheel</b>  Check for changes in the steering condition, such as excessive play, hard steering or strange noises. Check that it has the specified play. <b>Free play: Less than 35 mm (1.38 in)</b>	—
<b>Warning lamps and chimes</b>  Make sure that all warning lamps and chimes are operating properly.	—
<b>Windshield defogger</b>  Check that the air comes out of the defogger outlets properly and in good quantity when operating the heater or air conditioner.	—
<b>Windshield wiper and washer</b>  Check that the wipers and washer operate properly and that the wipers do not streak.	—

### UNDER THE HOOD AND VEHICLE

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

Item	Reference page
<b>Battery</b>  Except for maintenance free battery; Check the fluid level in each cell. It should be between the "UPPER" and "LOWER" lines. Vehicles operated in high temperatures or under severe conditions require frequent checks of the battery fluid level.	<a href="#">PG-85</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>Engine coolant level</b>  Check the coolant level when the engine is cold. Make sure that the coolant level is between the "MAX" and "MIN" lines on the reservoir.	<a href="#">CO-10</a>
<b>Engine drive belt(s)</b>  Make sure that drive belt(s) is/are not frayed, worn, cracked or oily.	<a href="#">EM-12</a>
<b>Engine oil level</b>  Check the level after parking the vehicle (on a level ground) and turning off the engine.	<a href="#">LU-8</a>
<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 if fuel fumes are evident, check for cause and have it corrected immediately.	—
<b>Power steering fluid level and lines</b>  Check the level when the fluid is cold, with the engine off. Check the lines for proper attachment, leaks, cracks, etc.	<a href="#">ST-18</a>
<b>Windshield washer fluid</b>  Check that there is adequate fluid in the reservoir tank.	—



# PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

## PERIODIC MAINTENANCE FOR USA AND CANADA

### FOR USA AND CANADA : Introduction of Periodic Maintenance

INFOID:000000008507145

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, a vehicle or using a car-top carrier.</li> </ul>	Emission Control System Maintenance	<a href="#">MA-9</a>
		Chassis and Body Maintenance	<a href="#">MA-9</a>
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-11</a>
		Chassis and Body Maintenance	<a href="#">MA-11</a>

### FOR USA AND CANADA : Schedule 1

INFOID:000000008507146

#### EMISSION CONTROL SYSTEM MAINTENANCE

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6)	7.50 (12)	11.25 (18)	15 (24)	18.75 (30)	22.5 (36)	26.25 (42)	30 (48)	
Drive belts	NOTE (1)									<a href="#">MA-20</a>
Air cleaner filter	NOTE (2)								[R]	<a href="#">MA-25</a>
EVAP vapor lines									I*	<a href="#">MA-29</a>
Fuel lines									I*	<a href="#">MA-24</a>
Fuel filter	NOTE (3)									—
Engine coolant *	NOTE (4), (5)									<a href="#">MA-20</a>
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-26</a>
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent.)		R	R	R	R	R	R	R	R	<a href="#">MA-26</a>
Spark plugs (Iridium-tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km).								<a href="#">MA-28</a>
Intake & exhaust valve clearance *	NOTE (7)									<a href="#">EM-18</a>

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54)	37.5 (60)	41.25 (66)	45 (72)	48.75 (78)	52.5 (84)	56.25 (90)	60 (96)	
Drive belts	NOTE (1)								I*	<a href="#">MA-20</a>
Air cleaner filter	NOTE (2)								[R]	<a href="#">MA-25</a>
EVAP vapor lines									I*	<a href="#">MA-29</a>

# PERIODIC MAINTENANCE

## < PERIODIC MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
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	
Fuel lines									I*	<a href="#">MA-24</a>
Fuel filter	NOTE (3)									—
Engine coolant*	NOTE (4), (5)									<a href="#">MA-20</a>
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-26</a>
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent.)		R	R	R	R	R	R	R	R	<a href="#">MA-26</a>
Spark plugs (Iridium-tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km).								<a href="#">MA-28</a>
Intake & exhaust valve clearance*	NOTE (7)									<a href="#">EM-18</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 drive belt auto-tensioner 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) When adding or replacing coolant, be sure to use only Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent. Genuine NISSAN Long Life Antifreeze Coolant (blue) is pre-diluted to provide antifreeze protection to -34° F (-37° C). If additional freeze protection is needed due to weather where the vehicle is operated, add Genuine NISSAN Long Life Antifreeze/Coolant (blue) concentrate following the directions on the container. If an equivalent coolant other than Genuine NISSAN Long Life Antifreeze/Coolant (blue) is used, follow the coolant manufacturer's instructions to maintain minimum antifreeze protection to -34° F (-37° C). The use of other types of coolant solutions other than Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent may damage the engine cooling system.

(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								Reference Page
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	
Brake lines & cables					I				I	<a href="#">MA-39</a>
Brake fluid					R				R	<a href="#">MA-39</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-40</a> , <a href="#">MA-40</a> , <a href="#">MA-40</a> , <a href="#">MA-40</a>
CVT fluid	NOTE (1)				I				I	<a href="#">MA-16</a>
Transfer oil & differential gear oil	NOTE (2)				I				I	<a href="#">MA-16</a>
Steering gear and linkage, axle & suspension parts			I		I		I		I	<a href="#">MA-41</a>
Tire rotation	NOTE (3)									<a href="#">MA-36</a>
Exhaust system			I		I		I		I	<a href="#">MA-30</a>

# PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
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 shaft boots & propeller shaft (AWD models)			I		I		I		I	<a href="#">MA-42</a>
In-cabin microfilter					R				R	<a href="#">MA-30</a>

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
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-39</a>
Brake fluid					R				R	<a href="#">MA-39</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-40</a> , <a href="#">MA-40</a> , <a href="#">MA-40</a> , <a href="#">MA-40</a>
CVT fluid	NOTE (1)				I				I	<a href="#">TM-187</a>
Transfer oil & differential gear oil	NOTE (2)				I				I	<a href="#">MA-16</a>
Steering gear and linkage, axle & suspension parts			I		I		I		I	<a href="#">MA-41</a>
Tire rotation	NOTE (3)									<a href="#">MA-36</a>
Exhaust system			I		I		I		I	<a href="#">MA-30</a>
Drive shaft boots & propeller shaft (AWD models)			I		I		I		I	<a href="#">MA-42</a>
In-cabin microfilter					R				R	<a href="#">MA-39</a>

**NOTE:**

- (1) Use only Genuine NISSAN CVT fluid (NS-3). If towing a trailer, using a camper or a car-top carrier, or driving on rough or muddy roads, inspect CVT fluid deterioration at NISSAN dealer every 60,000 miles (96,000 km), then change the CVT fluid NS-3 if necessary. And if the inspection is not performed, change (not just inspect) CVT fluid NS-3 every 60,000 miles (96,000 km). 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.
- (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.

## FOR USA AND CANADA : Schedule 2

INFOID:000000008507147

## EMISSION CONTROL SYSTEM MAINTENANCE

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
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 belts	NOTE (1)								I*	<a href="#">MA-20</a>
Air cleaner filter					[R]				[R]	<a href="#">MA-25</a>
EVAP vapor lines					I*				I*	<a href="#">MA-29</a>
Fuel lines					I*				I*	<a href="#">MA-24</a>
Fuel filter	NOTE (2)									—
Engine coolant *	NOTE (3), (4)									<a href="#">MA-20</a>
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-26</a>

# PERIODIC MAINTENANCE

## < PERIODIC MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
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	
Engine oil filter [Use genuine NISSAN engine oil filter or equivalent.]		R	R	R	R	R	R	R	R	<a href="#">MA-25</a>
Spark plugs (Iridium-tipped type)	NOTE (5)	Replace every 105,000 miles (168,000 km).								<a href="#">MA-28</a>
Intake & exhaust valve clearance *	NOTE (6)									<a href="#">EM-18</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 drive belt auto-tensioner reaches the maximum limit.

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

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

(5) Replace spark plug when the spark plug gap exceeds 1.4 mm (0.055 in) even if within specified periodic replacement mileage.

(6) 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								Reference Page
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 and cables			I		I		I		I	<a href="#">MA-39</a>
Brake fluid					R				R	<a href="#">MA-39</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-40</a> , <a href="#">MA-40</a> , <a href="#">MA-40</a> , <a href="#">MA-40</a>
CVT fluid	NOTE (1)		I		I		I		I	<a href="#">TM-187</a>
Transfer oil & differential gear oil			I		I		I		I	<a href="#">MA-16</a>
Steering gear and linkage, axle & suspension parts					I				I	<a href="#">MA-41</a>
Tire rotation	NOTE (2)									<a href="#">MA-36</a>
Exhaust system					I				I	<a href="#">MA-30</a>
Drive shaft boots & propeller shaft (AWD models)			I		I		I		I	<a href="#">MA-42</a>
In-cabin microfilter			R		R		R		R	<a href="#">MA-30</a>

**NOTE:**

(1) 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.

# PERIODIC MAINTENANCE

## < PERIODIC MAINTENANCE >

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

## FOR MEXICO

### FOR MEXICO : Introduction of Periodic Maintenance

INFOID:000000008945498

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference page
Perform either at number of kilometers (miles) or months, whichever comes first.	km x 1,000 (Miles x 1,000) Months	10 (6) 6	20 (12) 12	30 (18) 18	40 (24) 24	50 (30) 30	60 (36) 36	70 (42) 42	80 (48) 48	
<b>Underhood and under vehicle</b>										
Intake & exhaust valve clearance	See NOTE (1)									<a href="#">EM-18</a>
Drive belt	See NOTE (2)				I				I	<a href="#">EM-12</a>
Engine oil (Use recommended oil.)★		R	R	R	R	R	R	R	R	<a href="#">LU-8</a>
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent.)★		R	R	R	R	R	R	R	R	<a href="#">LU-10</a>
Engine coolant	See NOTE (3)				E				E	<a href="#">CO-10</a>
Cooling system					I				I	<a href="#">CO-10</a>
Fuel lines					I				I	<a href="#">FL-5</a>
Air cleaner filter (Viscous paper type)★					R				R	<a href="#">EM-15</a>
Positive crankcase ventilation (PCV) system					I				I	<a href="#">EC-459</a>
Fuel filter (In-tank type)	See NOTE (4)									—
Spark plugs (Iridium-tipped type)	See NOTE (5)	Replace every 100,000 km (60,000 miles)								<a href="#">EM-16</a>
EVAP vapor lines (With carbon canister)					I				I	<a href="#">EC-457</a>

#### NOTE:

- Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".
- (1) Periodic maintenance is not required. However, if valve noise increases, check valve clearance.
- (2) Replace the drive belt if found damaged or if the drive belt auto-tensioner reading reaches the maximum limit.
- (3) Use Genuine NISSAN Engine Coolant or equivalent in its quality, in order to avoid possible aluminum corrosion within the engine cooling system caused by the use of non-genuine engine coolant. Check and correct the engine coolant mixture ratio every 40,000 km (24,000 miles) or 24 months. First replacement interval is 160,000 km (96,000 miles) or 96 months. After first replacement, replace every 80,000 km (48,000 miles) or 48 months.
- (4) Maintenance-free item. For service procedures, refer to FL section.
- (5) Replace spark plug when the spark plug gap exceeds 1.4 mm (0.055 in) even if within specified periodic replacement mileage.

### CHASSIS AND BODY MAINTENANCE

# PERIODIC MAINTENANCE

## < PERIODIC MAINTENANCE >

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

MAINTENANCE OPERATION	km x 1,000 (Miles x 1,000) Months	MAINTENANCE INTERVAL								Refer- ence page
		10 (6)	20 (12)	30 (18)	40 (24)	50 (30)	60 (36)	70 (42)	80 (48)	
Perform either at number of kilometers (miles) or months, whichever comes first.		6	12	18	24	30	36	42	48	
<b>Underhood and under vehicle</b>										
Brake line & cables			I		I		I		I	<a href="#">MA-39</a>
Brake fluid (For level & leaks)			I		I		I		I	<a href="#">BR-8</a>
Brake fluid★					R				R	<a href="#">BR-16</a>
Exhaust system					I				I	<a href="#">EX-4</a>
Power steering fluid & lines (For level & leaks)			I		I		I		I	<a href="#">ST-18</a>
CVT fluid (For level & leaks)	See NOTE (1)		I		I		I		I	<a href="#">TM-187</a>
Transfer gear oil (For level & leaks)			I		I		I		I	<a href="#">DLN-69</a>
Rear differential gear oil (For level & leaks)★			I		I		I		I	<a href="#">DLN-113</a>
Propeller shaft & drive shafts★			I		I		I		I	<a href="#">DLN-100</a> , <a href="#">RAX-6</a>
Steering gear & linkage, axle & suspension parts★					I				I	<a href="#">ST-23</a> , <a href="#">FSU-5</a>
<b>Outside and inside</b>										
Wheel alignment (If necessary, rotate & balance wheels)			I		I		I		I	<a href="#">WT-57</a> ,
Brake pads, rotors, drums & linings★			I		I		I		I	<a href="#">BR-11</a> , <a href="#">BR-11</a> , <a href="#">BR-13</a> , <a href="#">BR-13</a> , <a href="#">BR-13</a>
Seat belts, buckles, retractors, anchors & adjusters			I		I		I		I	<a href="#">SB-7</a>
Foot brake & parking brake (For free play, stroke & operation)			I		I		I		I	<a href="#">PB-4</a> , <a href="#">PB-6</a>
Air conditioner filter★			R		R		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 (NS-3). If towing a trailer, using a camper or a car-top carrier or driving on rough or muddy roads, inspect CVT fluid deterioration at NISSAN dealers every 100,000 km (60,000 miles), then change CVT fluid NS-3 if necessary. And if the inspection is not performed, change (not just inspect) CVT fluid NS-3 every 100,000 km (60,000 miles).

### MAINTENANCE UNDER SEVERE DRIVING CONDITIONS

The maintenance intervals shown on the preceding pages are for normal operating conditions. If the vehicle is mainly operated under severe driving conditions as shown below, more frequent maintenance must be performed on the following items as shown in the table.

#### Severe driving conditions

- A — Driving under dusty conditions
- B — Repeatedly driving short distances
- C — Towing a trailer or caravan
- D — Extensive idling
- E — Driving in extremely adverse weather conditions or in areas where ambient temperatures are either extremely low or extremely high
- F — Driving in high humidity or mountainous areas
- G — Driving in areas using salt or other corrosive areas

# PERIODIC MAINTENANCE

## < PERIODIC MAINTENANCE >

- H — Driving on rough and/or muddy roads or in the desert  
 I — Driving with frequent use of braking or in mountainous areas  
 J — Frequent driving in water

Maintenance operation: Inspect = Inspect. Correct or replace if necessary.

Driving condition										Maintenance item	Maintenance operation	Maintenance interval	Reference page
A	.	.	.	.	.	.	.	.	.	Air cleaner filter (Viscous paper type)	Replace	More frequently	<a href="#">EM-15</a>
A	B	C	D	.	.	.	.	.	.	Engine oil & engine oil filter	Replace	Every 5,000 km (3,000 miles) or 3 months	<a href="#">LU-9</a> , <a href="#">LU-10</a>
.	.	.	.	.	F	.	.	.	.	Brake fluid	Replace	Every 20,000 km (12,000 miles) or 12 months	<a href="#">BR-16</a>
.	.	C	.	.	.	.	H	.	.	Rear differential gear oil	Replace	Every 40,000 km (24,000 miles) or 24 months	<a href="#">DLN-113</a>
.	.	.	.	.	.	G	H	.	.	Propeller shaft & drive shafts	Inspect	Every 10,000 km (6,000 miles) or 6 months	<a href="#">DLN-100</a> , <a href="#">RAX-6</a>
.	.	.	.	.	.	G	H	.	.	Steering gear & linkage, axle & suspension parts	Inspect	Every 20,000 km (12,000 miles) or 12 months	<a href="#">ST-23</a> , <a href="#">FAX-7</a>
A	.	C	.	.	.	G	H	I	.	Brake pads, rotors, drums & linings	Inspect	Every 10,000 km (6,000 miles) or 6 months	<a href="#">BR-11</a> , <a href="#">BR-11</a> , <a href="#">BR-13</a> , <a href="#">BR-13</a>
A	.	.	.	.	.	.	.	.	.	Air conditioner filter	Replace	More frequently	<a href="#">MA-30</a>

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# RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

## RECOMMENDED FLUIDS AND LUBRICANTS FOR USA AND CANADA

FOR USA AND CANADA : Fluids and Lubricants

INFOID:000000008507148

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Metric	US measure	Imp measure	
Fuel		74.0 ℓ	19-1/2 gal	16-1/4 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91)
Engine oil Drain and refill	With oil filter change	4.8 ℓ	5-1/8 qt	4-1/4 qt	<ul style="list-style-type: none"> <li>• Engine oil with API Certification Mark *1*2</li> <li>• Viscosity SAE 5W-30 *1*2</li> </ul>
	Without oil filter change	4.5 ℓ	4-3/4 qt	4 qt	
	Dry engine (Overhaul)	5.1 ℓ	5-3/8 qt	4-1/2 qt	
Cooling system (with reservoir at MAX level)		9.8 ℓ	10-3/8 qt	8-5/8 qt	Pre-diluted Genuine NISSAN Long Life Antifreeze/ Coolant (blue) or equivalent
CVT fluid		8.8 ℓ	9-1/4 qt	7-3/4 qt	Genuine NISSAN CVT Fluid NS-3 *3
Differential gear oil	Rear	0.5 ℓ	1 pt	7/8 pt	Genuine NISSAN Differential Oil Hypoid Super Semi-synthetic API GL-5, Viscosity SAE 75W-90*4
Transfer fluid		0.31 ℓ	5/8 pt	1/2 pt	Genuine NISSAN Differential Oil Hypoid Super GL-5 80W-90 or API GL-5 Viscosity SAE 80W-90
Power steering fluid (PSF)		—	—	—	Genuine NISSAN E-PSF or equivalent *5
Brake fluid		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid *6 or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)
Windshield washer fluid		4.6 ℓ	1-1/4 gal	1 gal	Genuine NISSAN Windshield Washer Concentrate Cleaner & Antifreeze or equivalent
Air conditioning system refrigerant		0.85 ± 0.05 kg	1.87 ± 0.1 lb	1.87 ± 0.1 lb	HFC-134a (R-134a) *7
Air conditioning system oil		180 m ℓ	6.1 fl oz	6.3 fl oz	A/C System Oil Type S (DH-PS) *7

\*1: For further details, see "Engine Oil Recommendation".

\*2: NISSAN recommends Genuine NISSAN Ester Oil available at a NISSAN dealer.

**\*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: The use of differential gear oil other than specified may cause vehicle malfunctions and result in non-warranty vehicle repairs.

\*5: The use of power steering fluid other than Genuine NISSAN E-PSF will prevent the power steering system from operating properly.

\*6: Available in mainland USA through a NISSAN dealer.

\*7: For further information, see "Air conditioning specification label" found under the hood.

## FOR USA AND CANADA : Engine Oil Recommendation

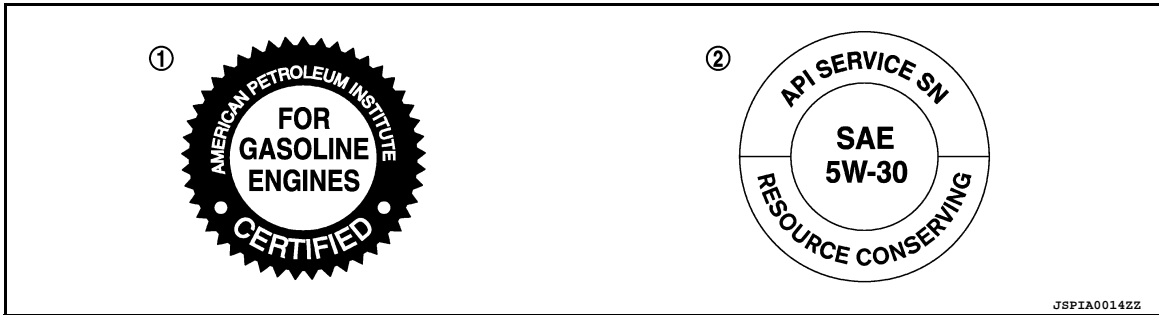
INFOID:000000008507149

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

## FOR USA AND CANADA : Engine Coolant Mixture Ratio

INFOID:000000008507150

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

## FOR MEXICO

## FOR MEXICO : Fluids and Lubricants

INFOID:000000008945521

		Capacity (Approximate)		Recommended Fluids/Lubricants
		Liter	Imp measure	
Fuel		74.0 ℓ	16-1/4 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91)
Engine oil Drain and refill	With oil filter change	4.8	4-1/4 qt	Genuine NISSAN engine oil*1 API grade SL, SM or SN*1
	Without oil filter change	4.5	4 qt	
	Dry engine (engine over-haul)	5.1	4-1/2 qt	ILSAC grade GF-2, GF-3, GF-4 or GF-5*1 Viscosity SAE 10W-30
Cooling system (with reservoir at MAX level)		9.8	8-3/8 qt	Genuine NISSAN Engine Coolant (blue) or equivalent*2
Reservoir tank		0.8	3/4 qt	
CVT fluid		8.2	7-1/4 qt	Genuine NISSAN CVT fluid NS-3*4

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# RECOMMENDED FLUIDS AND LUBRICANTS

## < PERIODIC MAINTENANCE >

		Capacity (Approximate)		Recommended Fluids/Lubricants
		Liter	Imp measure	
Differential gear oil	Rear	0.55	1 pt	Genuine NISSAN Diff Oil Hypoid Super Semi-synthetic GL-5 75W-90*3
Transfer oil		0.31	1/2 pt	Genuine NISSAN Differential Oil Hypoid Super GL-5 80W-90 or API GL-5, Viscosity SAE 80W-90
Power steering fluid (PSF)		—	—	Genuine NISSAN E-PSF or equivalent*5
Brake fluid		—	—	Genuine NISSAN Brake Fluid or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	NLGI No. 2 (Lithium soap base)
Windshield washer fluid		4.6 ℓ	1 gal	Genuine NISSAN Windshield Washer Concentrate Cleaner & Antifreeze or equivalent
Air conditioning system refrigerant		0.85 ± 0.05 kg	1.87 ± 0.1 lb	HFC-134a (R-134a) *6
Air conditioning system oil		180 m ℓ	6.3 fl oz	A/C System Oil Type S (DH-PS) *6

\*1: For additional information, see “SAE Viscosity Number”.

\*2: Use Genuine NISSAN Engine Coolant (blue) or equivalent in its quality, in order to avoid possible aluminum corrosion within the engine cooling system caused by the use of non-genuine engine coolant.

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

\*3: Use Genuine NISSAN Diff Oil Hypoid Super Semi-synthetic GL-5. Using differential gear oil other than Genuine NISSAN Diff Oil Hypoid Super Semi-synthetic GL-5 will damage the differential gear, which is not covered by warranty.

\*4: 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 warranty.

\*5: The use of power steering fluid other than Genuine NISSAN E-PSF will prevent the power steering system from operating properly.

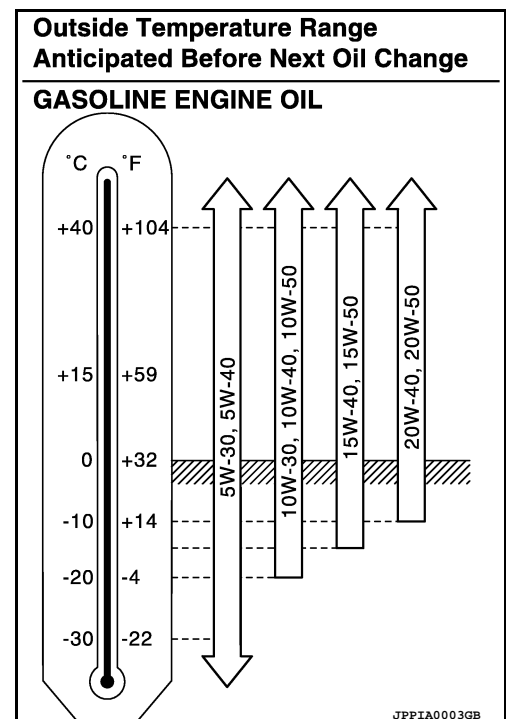
\*6: For further information, see “Air conditioning specification label” found under the hood.

## FOR MEXICO : SAE Viscosity Number

INFOID:000000008945522

### GASOLINE ENGINE

- 10W-30 is preferable.
- 5W-30 is also preferable and will improve fuel economy.
- If 10W-30 or 5W-30 is not available, select the viscosity, from the chart, that is suitable for the outside temperature range.



# RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

## FOR MEXICO : Engine Coolant Mixture Ratio

INFOID:000000008945523

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

**CAUTION:**

- When adding or replacing coolant, be sure to use only Genuine NISSAN Engine Coolant or equivalent in its quality with the proper mixture ratio. See the examples shown right. The use of other types of engine coolant may damage the engine cooling system.

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

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

SMA089D

Mixed coolant specific gravity

Unit: specific gravity

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

**WARNING:**

Do not remove the radiator cap when the engine is hot. Serious burns could be caused by high pressure fluid escaping from the radiator. Wait until the engine and radiator cool down.

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# ENGINE MAINTENANCE (VQ35DE)

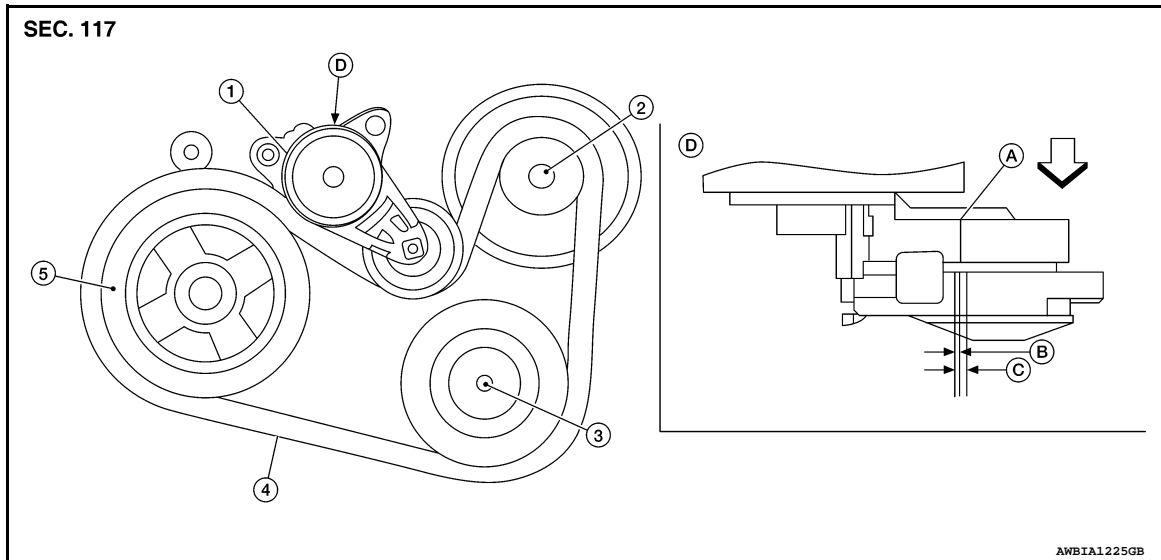
< PERIODIC MAINTENANCE >

## ENGINE MAINTENANCE (VQ35DE)

### DRIVE BELTS

#### DRIVE BELTS : Checking Drive Belts

INFOID:000000008507151



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

#### **WARNING:**

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

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

#### **NOTE:**

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

#### DRIVE BELTS : Tension Adjustment

INFOID:000000008507152

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

### ENGINE COOLANT

#### ENGINE COOLANT : System Inspection

INFOID:000000008507153

#### **WARNING:**

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

#### CHECKING COOLING SYSTEM HOSES

Check hoses for the following:

- Improper attachment
- Leaks
- Cracks

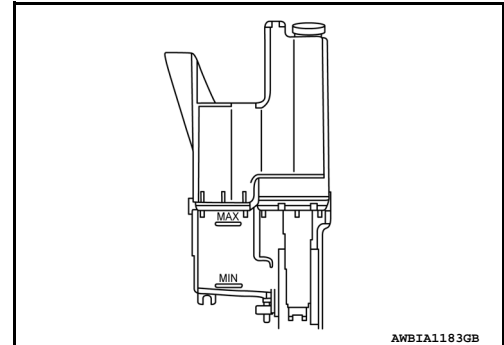
# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

- Damage
- Loose connections
- Chafing
- Deterioration

### CHECKING RESERVOIR LEVEL

- Check the reservoir tank coolant level when the engine is cool.
- Adjust coolant level if necessary to ensure that the coolant level is within the MIN to MAX range.



### ENGINE COOLANT : Changing Engine Coolant

INFOID:000000008507154

#### **WARNING:**

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

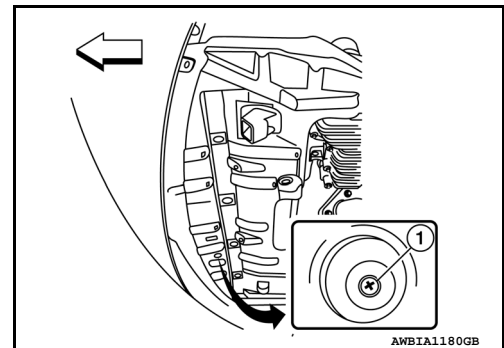
### DRAINING ENGINE COOLANT

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

#### **CAUTION:**

**Do not allow the coolant to contact the drive belt.**

← : Front

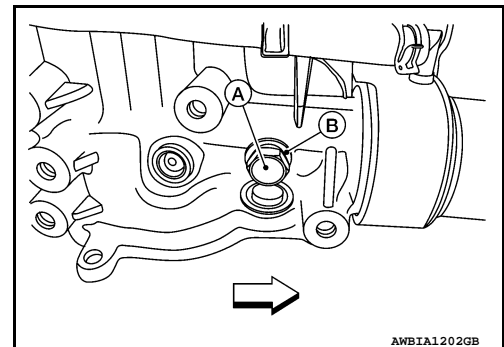


2. Remove water drain plug (A) and copper sealing washer (B).

#### **CAUTION:**

**Do not reuse copper sealing washers.**

← : Engine front



3. For a complete cooling system drain, remove the reservoir tank and drain the coolant, and then clean the reservoir tank before installation.

#### **CAUTION:**

**Do not allow the coolant to contact the drive belt.**

## ENGINE MAINTENANCE (VQ35DE)

### < PERIODIC MAINTENANCE >

- When performing a complete cooling system drain, remove the water drain plug (B), connector bolt (C), and copper sealing washer (A) on the cylinder block.

**CAUTION:**

**Do not reuse copper sealing washers.**

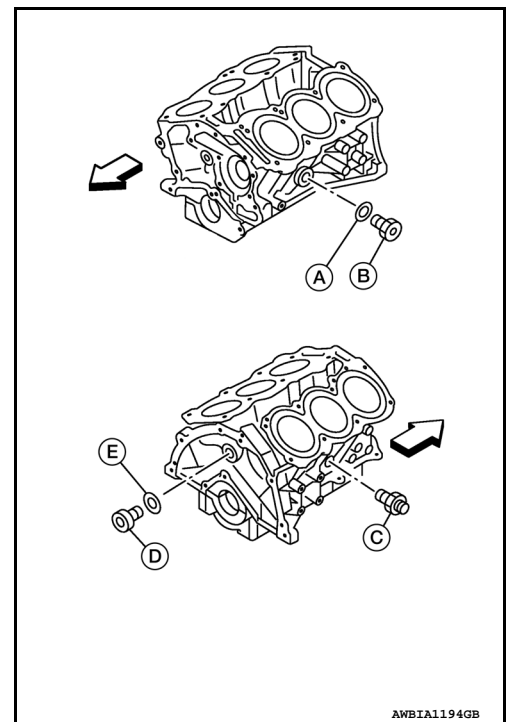
**NOTE:**

- For Canada, water drain plug (B) is a block heater, not a drain plug.
- Remove water drain plug (D) and copper sealing washer (E) during engine overhaul.

**CAUTION:**

**Do not reuse copper sealing washers.**

⇐ : Engine front



- Check the drained coolant for contaminants such as rust, corrosion or discoloration.
  - If contaminated, flush the engine cooling system. Refer to FLUSHING COOLING SYSTEM.

### REFILLING ENGINE COOLANT

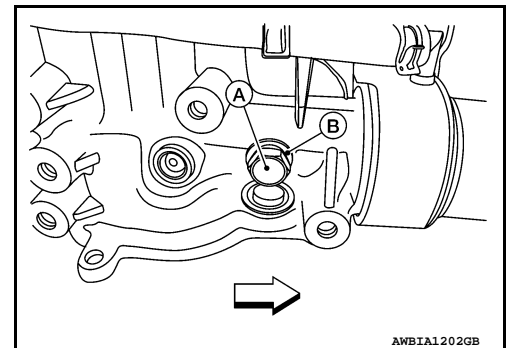
- Install the radiator drain plug and the reservoir tank, (if removed).
- Install the water drain plug (A) and copper sealing washer (B). Tighten water drain plug to specification.

**CAUTION:**

**Do not reuse copper sealing washers.**

⇐ : Engine front

**Water drain plug (A) : 12.3 N·m (1.3 kg·m, 9.0 ft·lb)**



# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

3. Install the cylinder block drain plugs (if removed).
  - Apply sealant to the thread of the water drain plug (B), connector bolt (C), (if removed).

**CAUTION:**

**Do not reuse copper sealing washers.**

⇐ : Engine front

**NOTE:**

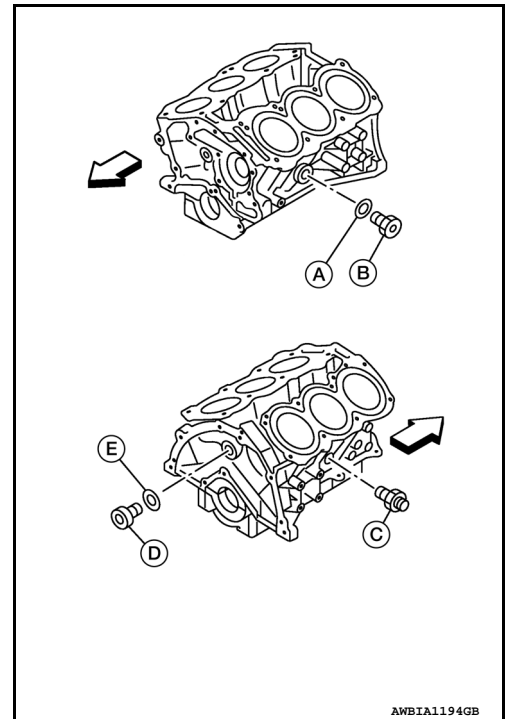
- For Canada, water drain plug (B) in is a block heater, not a water drain plug.
- Install copper sealing washers (E) and (A), (if removed).
- Use Genuine High Performance Thread Sealant or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).
- Tighten each plug and connector bolt to specifications.

**Water drain plug (B) (except Canada) : 62.0 N·m (6.3 kg-m, 46 ft-lb)**

**Block heater (B) (Canada) : 39 N·m (4.0 kg-m, 29 ft-lb)**

**Connector Bolt (C) : 27.0 N·m (2.8 kg-m, 20 ft-lb)**

**Water drain plug (D) : 78.0 N·m (8.0 kg-m, 58 ft-lb)**

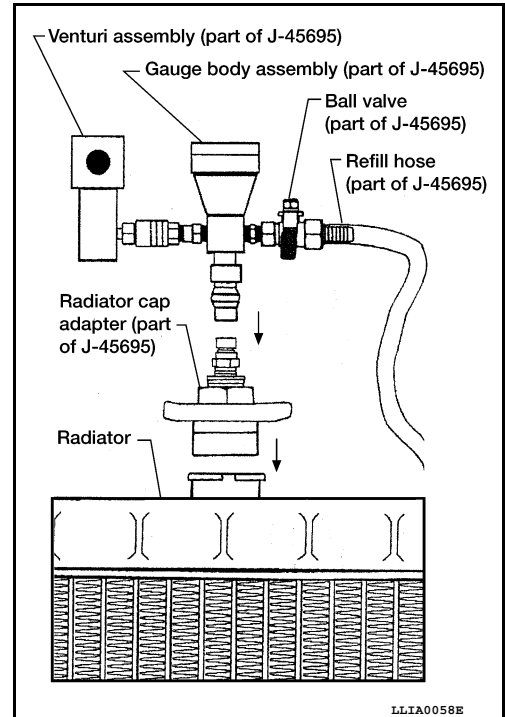


4. If disconnected, reattach the upper radiator hose at the engine side.
5. Set the vehicle heater controls to the full HOT and heater ON position. Turn the vehicle ignition ON with the engine OFF as necessary to activate the heater mode.
6. Install the Tool by installing the radiator cap adapter onto 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)**

7. 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 the specified coolant or equivalent. Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants" \(United States and Canada\)](#) or [MA-17, "FOR MEXICO : Fluids and Lubricants" \(Mexico\)](#).

**Coolant capacity (with reservoir tank) : Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants" \(United States and Canada\)](#) or [MA-17, "FOR MEXICO : Fluids and Lubricants" \(Mexico\)](#).**



8. 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.**

9. 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. Rising coolant will be visible in the refill hose. After the refill hose is full of coolant, close the ball valve. This will purge air trapped in the refill hose.

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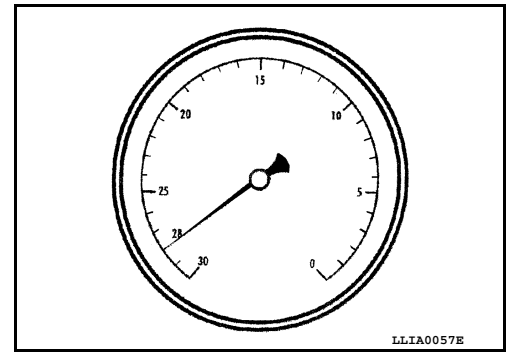
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## ENGINE MAINTENANCE (VQ35DE)

### < PERIODIC MAINTENANCE >

10. Continue to draw the vacuum until the gauge reaches 28 inches of vacuum. The gauge may not reach 28 inches in high altitude locations. Refer to the following table for expected vacuum readings.

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



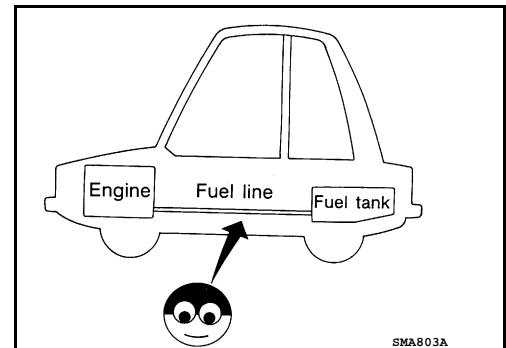
11. When the vacuum gauge has reached the specified amount, disconnect the air hose and wait 20 seconds to see if the system loses vacuum. If the vacuum level drops, perform necessary repairs to the system and repeat steps 6 - 8 to bring the vacuum to the specified amount. Recheck for leaks.
12. Place 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 prevent air from being inadvertently drawn into the cooling system.**
13. Remove the Tool from the radiator neck opening and install the radiator cap.
14. Fill the cooling system reservoir tank to the specified level. Run the engine to warm up the cooling system and top up the system as necessary.

## FUEL LINES

### FUEL LINES : Inspection

INFOID:000000008507155

Inspect fuel lines, filler cap and tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration. Repair or replace damaged parts as necessary.



## AIR CLEANER FILTER

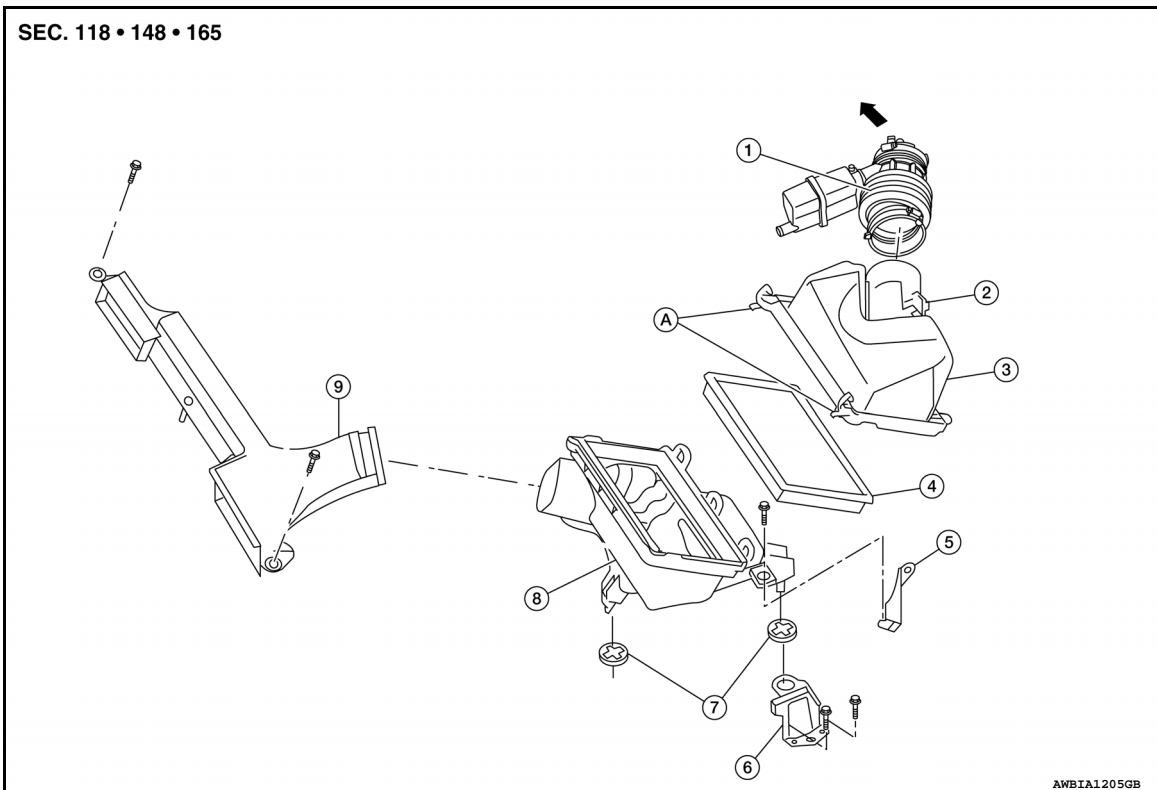


# ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

## AIR CLEANER FILTER : Removal and Installation

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

### REMOVAL

#### CAUTION:

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

#### NOTE:

Replace the air filter per the periodic maintenance schedule or as necessary. Refer to [MA-9, "FOR USA AND CANADA : Introduction of Periodic Maintenance"](#) (United States and Canada) [MA-13, "FOR MEXICO : Introduction of Periodic Maintenance"](#) (Mexico).

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

### INSTALLATION

Installation is in the reverse order of removal.

### ENGINE OIL

### ENGINE OIL : Inspection

INFOID:000000008507157

### OIL LEVEL

#### NOTE:

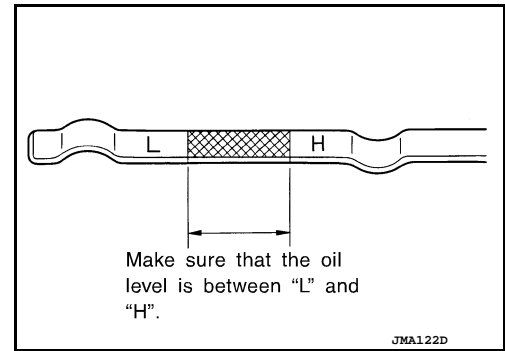
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# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

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



## ENGINE OIL : Changing Engine Oil

INFOID:000000008507158

### WARNING:

- Be careful not to burn yourself, as the 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 oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.

1. Position the vehicle so it is level on the hoist.
2. Warm up the engine and check for oil leaks from the engine.
3. Stop engine and wait for 10 minutes.
4. Remove the oil pan drain plug and oil filler cap.
5. Drain the engine oil.
6. Install the oil pan drain plug with a new washer and refill the engine with new engine oil.

**Oil specification and viscosity** : Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants" \(United States and Canada\)](#) or [MA-17, "FOR MEXICO : Fluids and Lubricants" \(Mexico\)](#).

**Oil pan drain plug** : 34.3 N-m (3.5 kg-m, 25 ft-lb)

### CAUTION:

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

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

### CAUTION:

Do not overfill the engine with engine oil.

## OIL FILTER

### OIL FILTER : Removal and Installation

INFOID:000000008507159

#### REMOVAL

1. Drain engine oil. Refer to [LU-9, "Changing Engine Oil"](#).
2. Remove front fender protector side cover (RH). Refer to [EXT-28, "FENDER PROTECTOR : Exploded View"](#).

# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

3. Remove the oil filter using Tool (A) as shown.

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

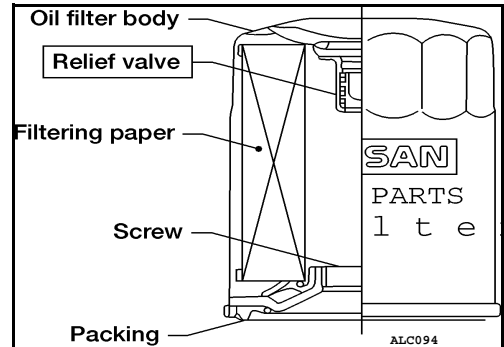
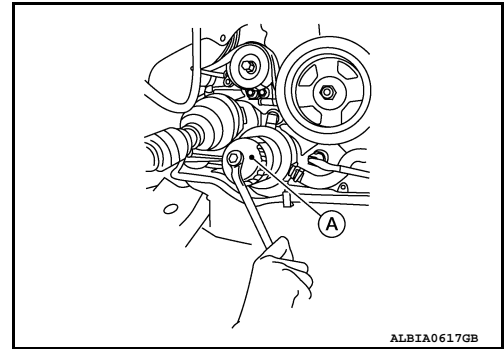
**WARNING:**

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

**CAUTION:**

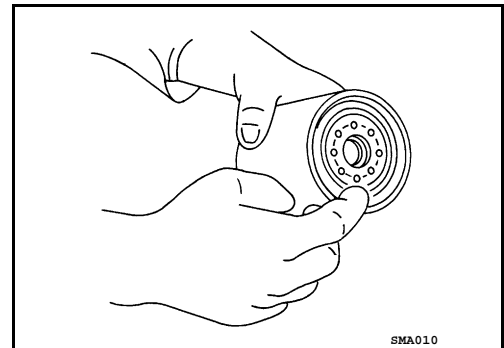
- When removing, prepare a shop cloth to absorb any oil leaks or spills.
- Do not allow engine oil to adhere to the drive belts.
- Completely wipe off any oil that adheres to the engine and the vehicle.

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



## INSTALLATION

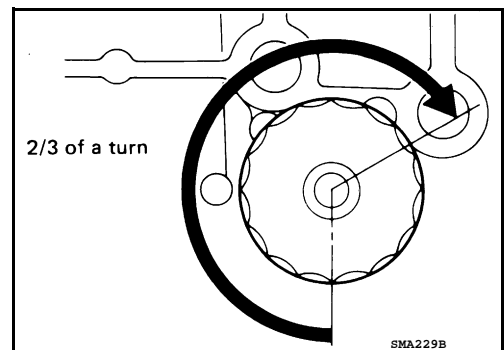
1. Remove foreign materials adhering to the oil filter installation surface.
2. Apply clean engine oil to the oil seal contact surface of the new oil filter.



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

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

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



4. Refill the engine with new engine oil. Refer to [LU-9. "Changing Engine Oil"](#).
5. Check the oil level and add engine oil as necessary. Refer to [LU-8. "Inspection"](#).
6. After warming up the engine, check for engine oil leaks.
7. Install front fender protector side cover (RH). Refer to [EXT-28. "FENDER PROTECTOR : Exploded View"](#).

## SPARK PLUG

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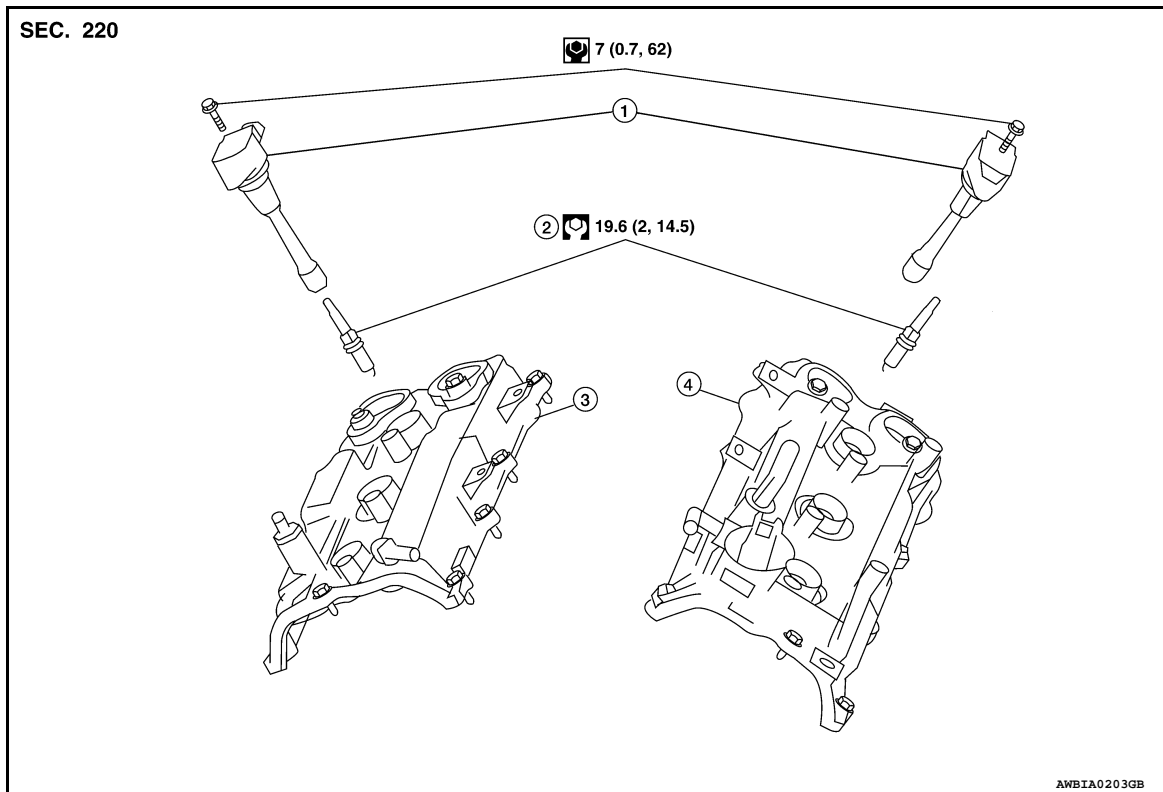
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# ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

## SPARK PLUG : Exploded View

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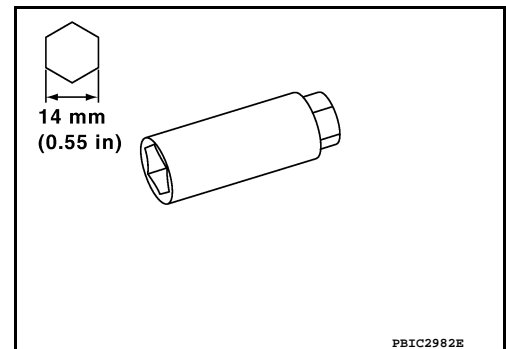
- 1. Ignition coil
- 2. Spark plug
- 3. Rocker cover (RH)
- 4. Rocker cover (LH)

## SPARK PLUG : Removal and Installation

INFOID:000000008507161

### REMOVAL

1. Remove the ignition coil. Refer to [EM-42. "Removal and Installation \(LH\)"](#) (LH) and [EM-42. "Removal and Installation \(RH\)"](#) (RH).
2. Remove the spark plug with a suitable spark plug wrench.



### INSPECTION AFTER REMOVAL

# ENGINE MAINTENANCE (VQ35DE)

## < PERIODIC MAINTENANCE >

Use the standard type spark plug for normal condition.

**Spark plug** : Refer to [EM-134, "Spark Plug"](#).

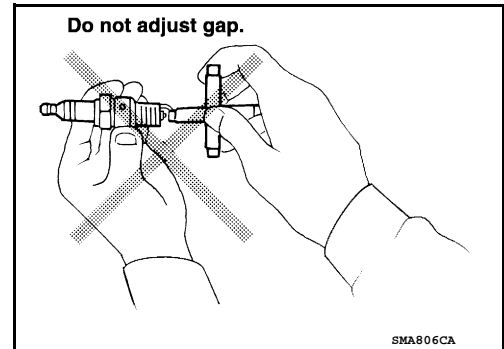
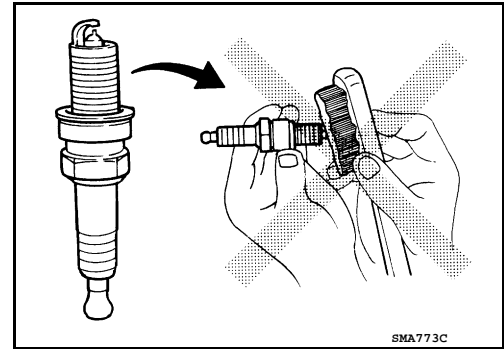
### CAUTION:

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

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

**Cleaning time** : less than 20 seconds

- Spark plug gap adjustment is not required between replacement intervals.
- Measure spark plug gap. When it exceeds the limit, replace spark plug even if it is within the specified replacement mileage. Refer to [EM-134, "Spark Plug"](#).



## INSTALLATION

Installation is in the reverse order of removal.

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

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

## EVAP VAPOR LINES

### EVAP VAPOR LINES : Inspection

INFOID:000000008507162

1. Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration.
2. Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc.

# CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

## CHASSIS AND BODY MAINTENANCE

### IN-CABIN MICROFILTER

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

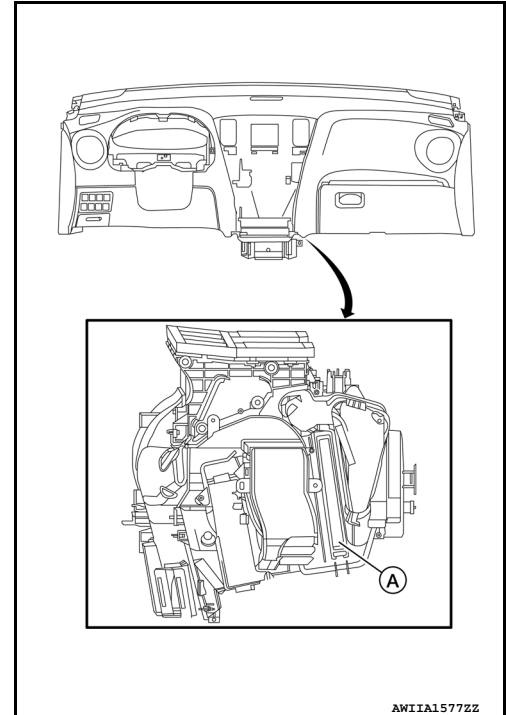
INFOID:000000008507163

#### REMOVAL

1. Release the in-cabin microfilter cover tab (A) and remove the cover from under the (RH) side of the instrument panel.

**CAUTION:**

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



2. Remove the in-cabin microfilter.

**CAUTION:**

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

#### INSTALLATION

Installation is in the reverse order of removal.

**CAUTION:**

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

**NOTE:**

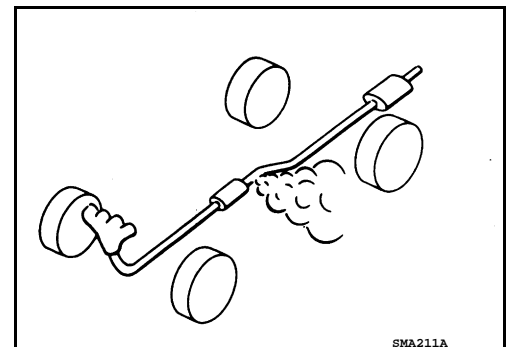
The in-cabin microfilter is marked with an air flow arrow. The end of the microfilter with the arrow should face the passenger side of the vehicle. The arrow should point towards the rear of the vehicle.

### EXHAUST SYSTEM

#### EXHAUST SYSTEM : Inspection

INFOID:000000008507164

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



### CVT FLUID

# CHASSIS AND BODY MAINTENANCE

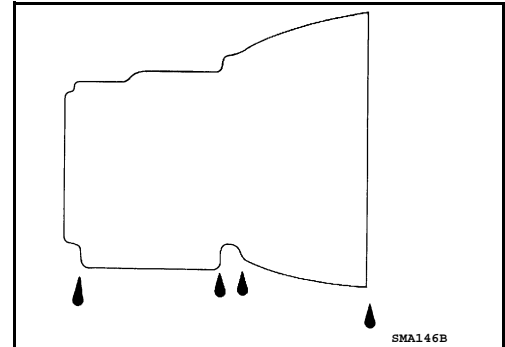
< PERIODIC MAINTENANCE >

## CVT FLUID : Inspection

INFOID:000000009014074

### 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-32. "CVT FLUID : Adjustment"](#).



## CVT FLUID : Replacement

INFOID:000000009014185

- CVT fluid** : Refer to [TM-222. "General Specification"](#).  
**Fluid capacity** : Refer to [TM-222. "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.

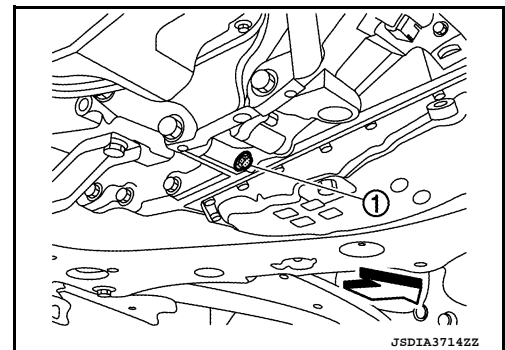
1. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
2. Select "FLUID TEMP" and confirm that the CVT fluid temperature is 40°C (104°F) or less.
3. Check that the selector lever is in the "P" position, then completely engage the parking brake.
4. Lift up the vehicle.
5. Remove the drain plug and drain the CVT fluid from the oil pan. Refer to [TM-199. "Exploded View"](#).
6. Install the drain plug to oil pan.

### CAUTION:

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

7. Remove the overflow plug ① from converter housing.

← : Vehicle front



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

### CAUTION:

**Tighten the charging pipe by hand.**

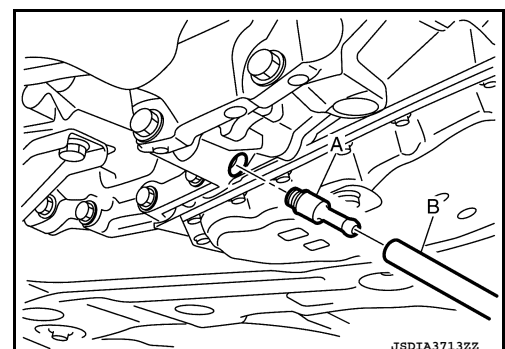
9. Install the ATF changer hose (B) to the charging pipe.

### CAUTION:

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

10. Fill approximately 3 liter (2-5/8 Imp qt) of the CVT fluid.
11. Remove the ATF changer hose and charging pipe, then install the overflow plug.

### NOTE:



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## CHASSIS AND BODY MAINTENANCE

### < PERIODIC MAINTENANCE >

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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-199, "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).
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-199, "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:000000009014076

**CVT fluid** : Refer to [TM-222, "General Specification"](#).

**Fluid capacity** : Refer to [TM-222, "General Specification"](#).

**CAUTION:**

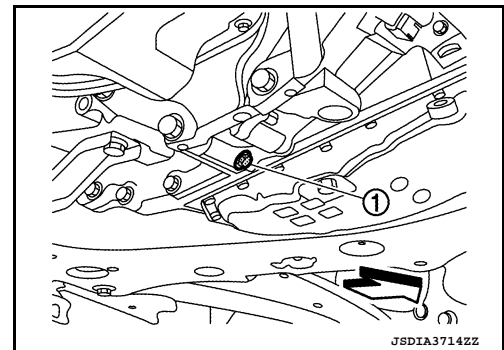


# CHASSIS AND BODY MAINTENANCE

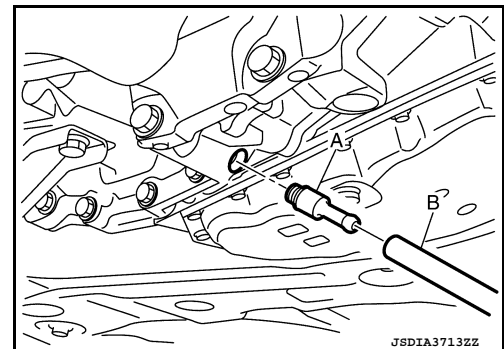
## < PERIODIC MAINTENANCE >

- 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



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-199. "Exploded View"](#).  
**CAUTION:**  
**Never reuse O-ring.**
14. Lift down the vehicle.
15. Stop the engine.



## TRANSFER OIL

### TRANSFER OIL : Inspection

#### OIL LEAKS

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

#### OIL LEVEL

# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

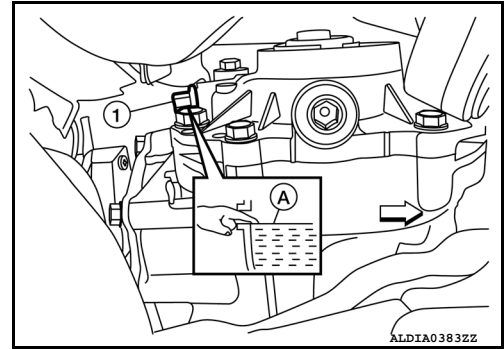
### CAUTION:

Do not start engine while checking oil level.

1. Remove filler plug (1).

⇐ : Front

2. Oil level (A) should be level with bottom of filler plug hole. Add oil if necessary. Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada) or [MA-17, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).
3. Clean threads of filler plug (1) and transfer case.
4. Apply sealant to the threads of the filler plug (1) and install it. Tighten to specified torque. Refer to [DLN-76, "Exploded View"](#). Use **Genuine Silicone RTV Sealant or equivalent**. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).



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## TRANSFER OIL : Draining

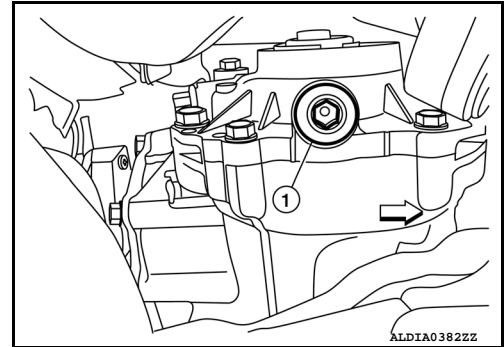
### CAUTION:

Do not start engine while checking oil level.

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

⇐ : Front

3. Clean threads of drain plug (1) and transfer case.
4. Apply sealant to the threads of the drain plug (1) and install it. Tighten to specified torque. Refer to [DLN-76, "Exploded View"](#). Use **Genuine Silicone RTV Sealant or equivalent**. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).



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INFOID:000000008507169

## TRANSFER OIL : Refilling

### CAUTION:

Do not start engine while checking oil level.

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

⇐ : Front

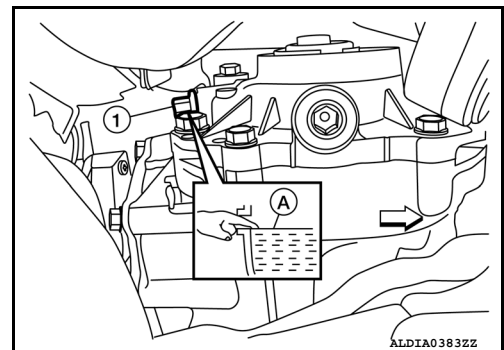
**Oil grade and viscosity**

: Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada) or [MA-17, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).

**Oil capacity**

: Refer to [DLN-96, "General Specifications"](#).

3. Clean threads of filler plug (1) and transfer case.
4. Apply sealant to the threads of the filler plug (1), and install it. Tighten to specified torque. Refer to [DLN-76, "Exploded View"](#). Use **Genuine Silicone RTV Sealant or equivalent**. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).



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# CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

## REAR DIFFERENTIAL GEAR OIL

### REAR DIFFERENTIAL GEAR OIL : Inspection

INFOID:000000008507170

#### OIL LEAKS

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

#### OIL LEVEL

##### **CAUTION:**

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

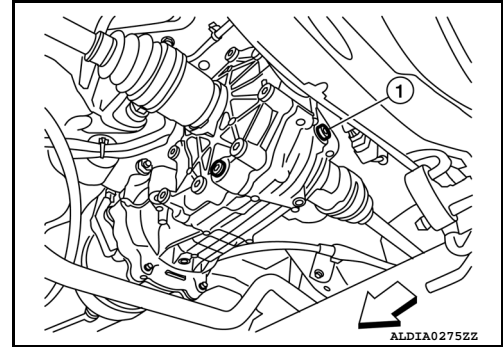
1. Remove and discard filler plug (1).

##### **CAUTION:**

**Do not reuse filler plug.**

← : Front

2. oil level should be level with the bottom of filler plug hole. add oil if necessary. refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada) or [MA-17, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).
3. install filler plug (1) and tighten to specified torque. refer to [DLN-123, "Exploded View"](#).



### REAR DIFFERENTIAL GEAR OIL : Draining

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##### **CAUTION:**

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

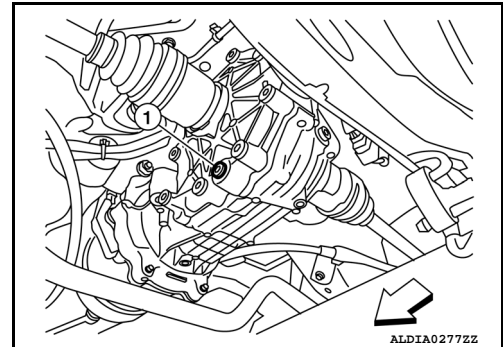
1. Remove and discard drain plug (1), and drain gear oil.

##### **CAUTION:**

**Do not reuse drain plug.**

← : Front

2. Install drain plug (1) and tighten to specified torque. Refer to [DLN-123, "Exploded View"](#).



### REAR DIFFERENTIAL GEAR OIL : Refilling

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##### **CAUTION:**

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

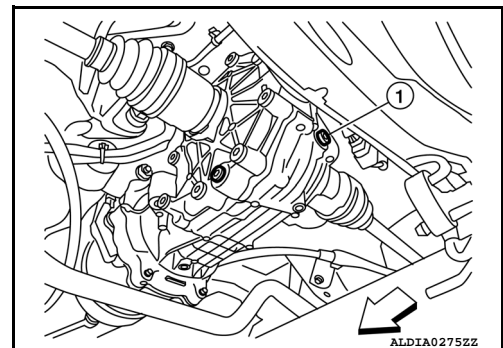
1. Remove and discard filler plug (1).

##### **CAUTION:**

**Do not reuse filler plug.**

← : Front

2. Fill with new oil to the specified level near the filler plug hole.



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# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

**Oil grade and viscosity** : Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada) or [MA-17, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).

**Oil capacity** : Refer to [DLN-128, "General Specification"](#).

3. Install filler plug (1) and tighten to specified torque. Refer to [DLN-123, "Exploded View"](#).

## PROPELLER SHAFT

### PROPELLER SHAFT : Inspection

INFOID:000000008507173

#### APPEARANCE AND NOISE INSPECTION

- Inspect the propeller shaft tube for dents or cracks. If damaged, replace the propeller shaft assembly.
- Check bearings for noise or damage. If damaged, replace as necessary.

## WHEELS

### WHEELS : Inspection

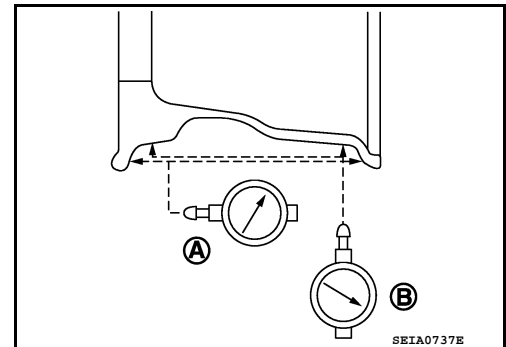
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1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.
3. Remove tire from wheel and mount wheel on a tire balance machine.

#### **CAUTION:**

**DO NOT use center hole cone-type clamping machines to hold the wheel assembly 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 assembly during servicing.**

- a. Set dial indicator as shown.
- b. Check runout, if the lateral runout (A) or radial runout (B) exceeds the limit, replace wheel.



**Lateral runout (A)** Refer to [WT-64, "Road Wheel"](#)

**Radial runout (B)** Refer to [WT-64, "Road Wheel"](#)

### WHEELS : Adjustment

INFOID:000000008507175

#### BALANCING WHEELS (ADHESIVE WEIGHT TYPE)

##### Preparation Before Adjustment

Remove inner and outer balance weights from the road wheel. 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 all traces of releasing agent from the road wheel.**

##### Wheel Balance Adjustment

# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

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

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

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

**Calculation example:**

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

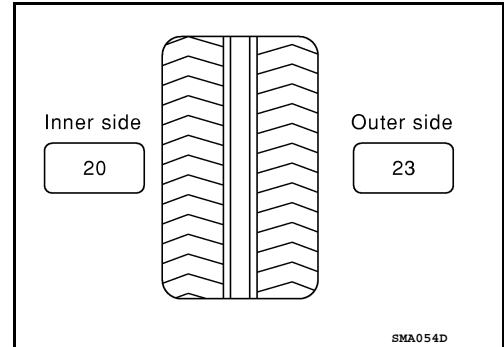
**NOTE:**

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

**Example:**

37.4  $\Rightarrow$  35 g (1.23 oz)

37.5  $\Rightarrow$  40 g (1.41 oz)



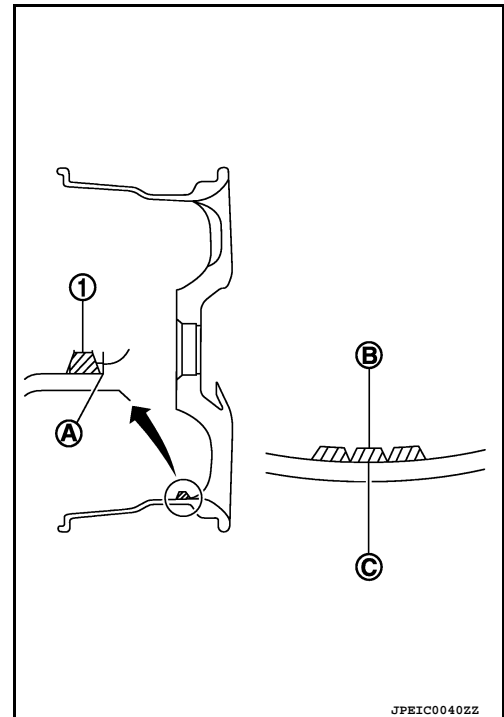
- Install balance weight in the position shown.

**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 road wheel.
- When installing balance weight (1) to road wheel, set it into the grooved area (A) on the inner wall of the road wheel 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.



- 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.

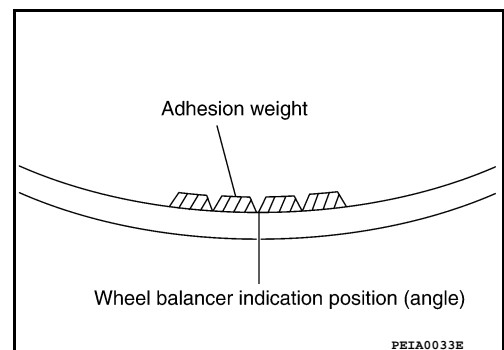
- Start balancer machine again.
- Install balance weight on inner side of road wheel in the balancer machine indication position (angle).

**CAUTION:**

Do not install more than two balance weights.

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

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



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# CHASSIS AND BODY MAINTENANCE

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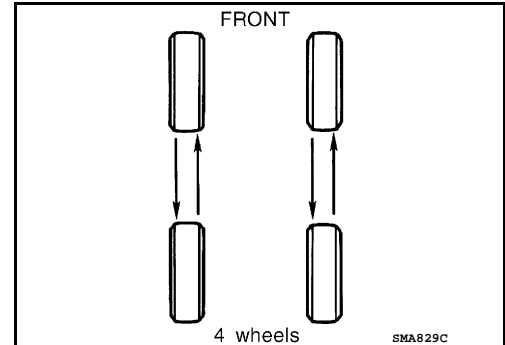
Wheel balance	Dynamic (At flange)	Static (At flange)
Maximum allowable imbalance	Refer to <a href="#">WT-64, "Road Wheel"</a> .	

### TIRE ROTATION

- Follow the maintenance schedule for tire rotation service intervals. Refer to [MA-9, "FOR USA AND CANADA : Introduction of Periodic Maintenance"](#).
- When installing the wheel, tighten wheel nuts to the specified torque.

#### CAUTION:

- Do not include the 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.



**Wheel nut tightening : 113 N-m (12 kg-m, 83 ft-lb) torque**

- Perform the ID registration after tire rotation. Refer to [WT-29, "Description"](#).

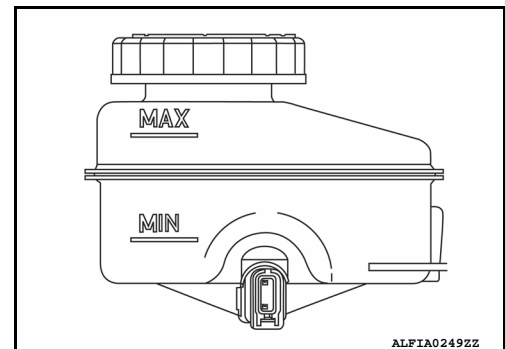
### BRAKE FLUID LEVEL AND LEAKS

#### BRAKE FLUID LEVEL AND LEAKS : Inspection

INFOID:000000008507176

#### BRAKE FLUID LEVEL

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

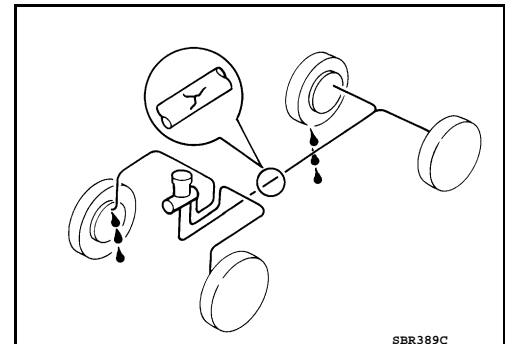


#### BRAKE LINE

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

#### CAUTION:

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



### BRAKE LINES AND CABLES

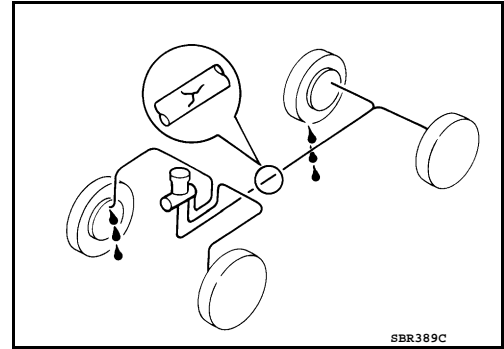
# CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

## BRAKE LINES AND CABLES : Inspection

INFOID:000000008507177

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



## BRAKE FLUID

### BRAKE FLUID : Drain and Refill

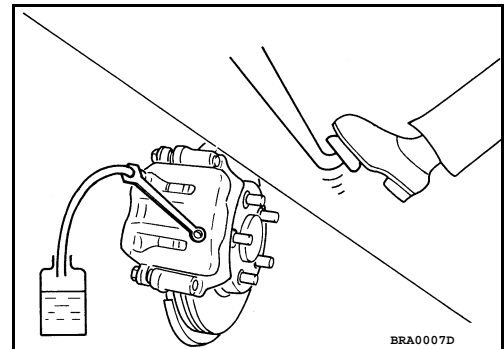
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#### CAUTION:

- 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-89, "Removal and Installation"](#).
- Refill brake system with new brake fluid. Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada) or [MA-17, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).
- 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-89, "Removal and Installation"](#).
2. Connect a vinyl tube to bleeder valve.
3. Depress brake pedal, loosen bleeder valve, and gradually remove brake fluid.



#### REFILLING

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

#### CAUTION:

**Do not reuse drained brake fluid.**

2. Refill the brake system as follows:

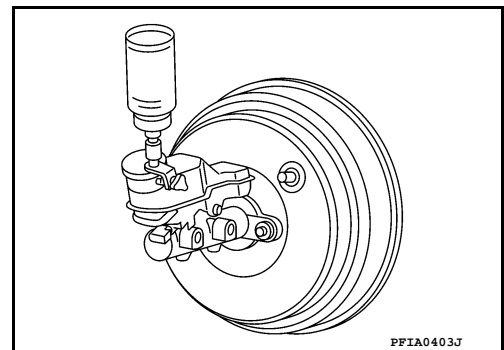
- Depress the brake pedal.
- Loosen bleeder valve.
- Slowly depress brake pedal to 2/3 of the brake pedal full stroke.
- Tighten bleeder valve.
- Release brake pedal.

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

#### CAUTION:

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

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



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# CHASSIS AND BODY MAINTENANCE

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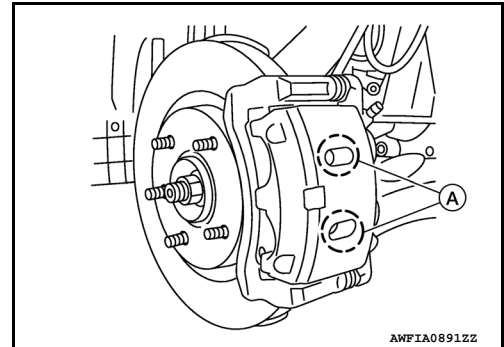
## FRONT BRAKE

### FRONT BRAKE : Inspection of Pad

INFOID:000000008507179

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

**Wear thickness** : Refer to [BR-49, "Front Disc Brake"](#).



### FRONT BRAKE : Inspection of Rotor

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#### VISUAL

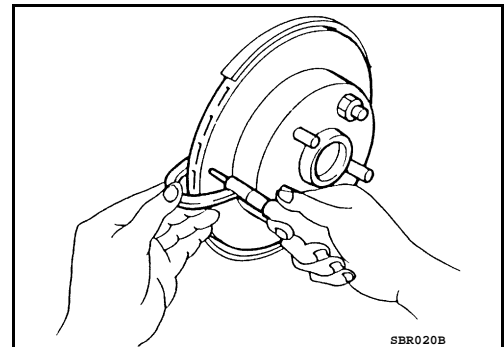
Check surface of disc rotor for uneven wear, cracks or damage. Replace if any abnormal conditions exist.

#### THICKNESS

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

**Wear thickness** : Refer to [BR-49, "Front Disc Brake"](#).

**Thickness variation** : Refer to [BR-49, "Front Disc Brake"](#).



## REAR BRAKE

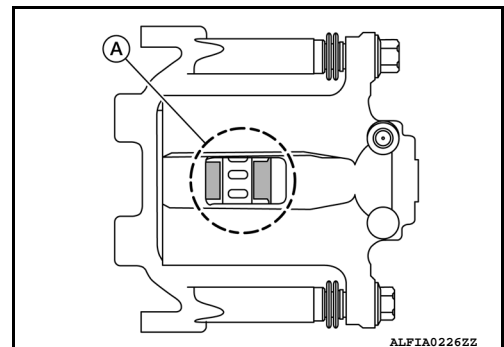
### REAR BRAKE : Inspection of Pad

INFOID:000000008507181

#### 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-49, "Rear Disc Brake"](#).



### REAR BRAKE : Inspection of Rotor

INFOID:000000008507182

#### VISUAL

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

#### THICKNESS

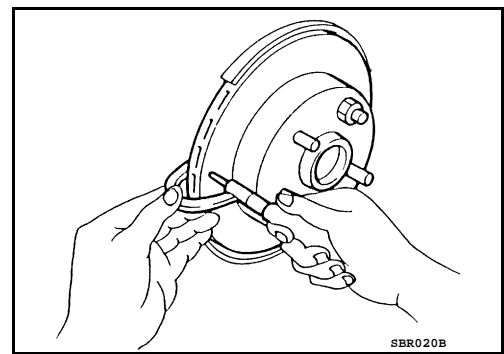


# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

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

- Wear thickness** : Refer to [BR-49, "Rear Disc Brake"](#).
- Thickness variation** : Refer to [BR-49, "Rear Disc Brake"](#).



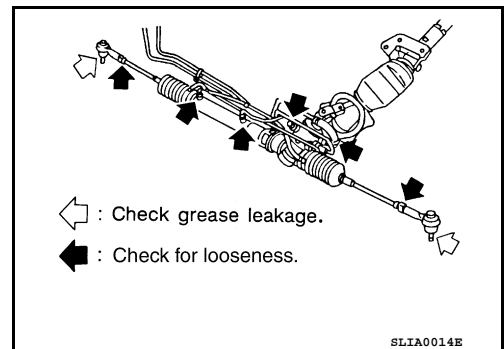
## STEERING GEAR AND LINKAGE

### STEERING GEAR AND LINKAGE : Inspection

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#### STEERING GEAR

- 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

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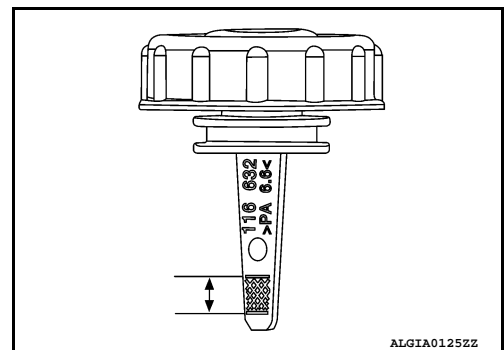
#### FLUID LEVEL

Check power steering fluid level at the scale on reservoir tank cap indicator.

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

#### **CAUTION:**

- **Do not overfill.**
- **Do not reuse used power steering fluid.**
- **Recommended power steering fluid is Genuine NISSAN E-PSF or equivalent. Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada) or [MA-17, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).**



#### FLUID LEAKAGE

# CHASSIS AND BODY MAINTENANCE

## < PERIODIC MAINTENANCE >

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

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

**CAUTION:**

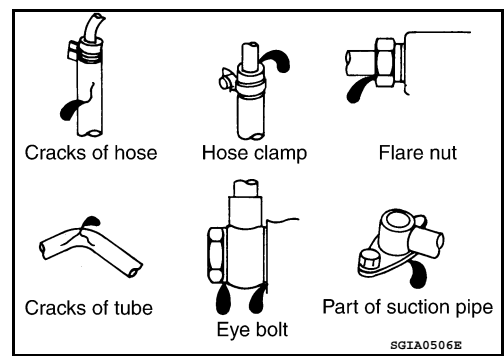
**Do not hold steering wheel in a locked position for more than 10 seconds. Damage to power steering oil pump may occur.**

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

**CAUTION:**

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

5. If power steering fluid leakage from the power steering oil pump is noticed, repair connection or replace power steering oil pump. Refer to [ST-51, "Removal and Installation"](#).
6. Check steering gear boots for accumulation of power steering fluid. Power steering fluid indicates a leak from the power steering gear, replace as necessary. Refer to [ST-48, "Removal and Installation - 2WD"](#) (FWD) or [ST-49, "Removal and Installation - 4WD"](#) (AWD).



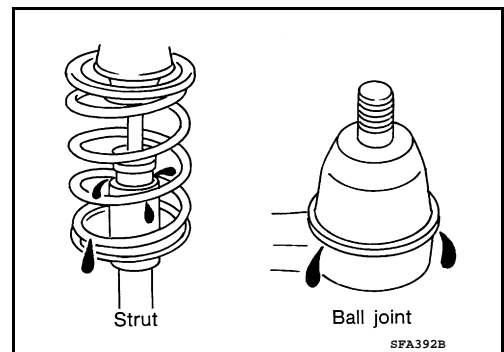
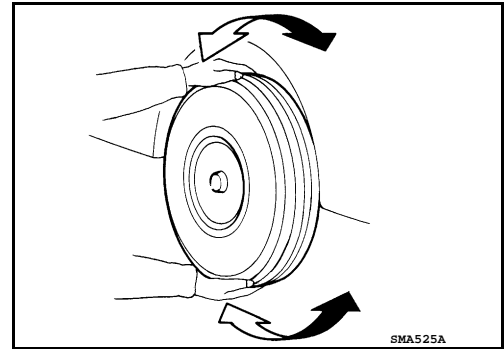
## AXLE AND SUSPENSION PARTS

### AXLE AND SUSPENSION PARTS : Inspection

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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

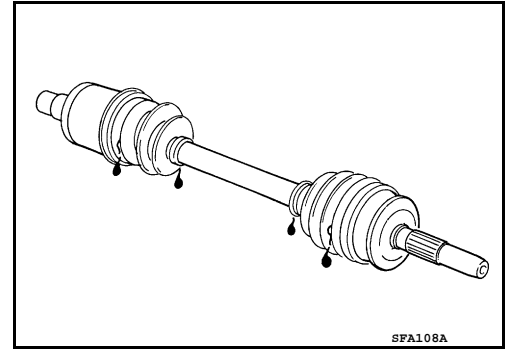
## CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

### DRIVE SHAFT : Inspection

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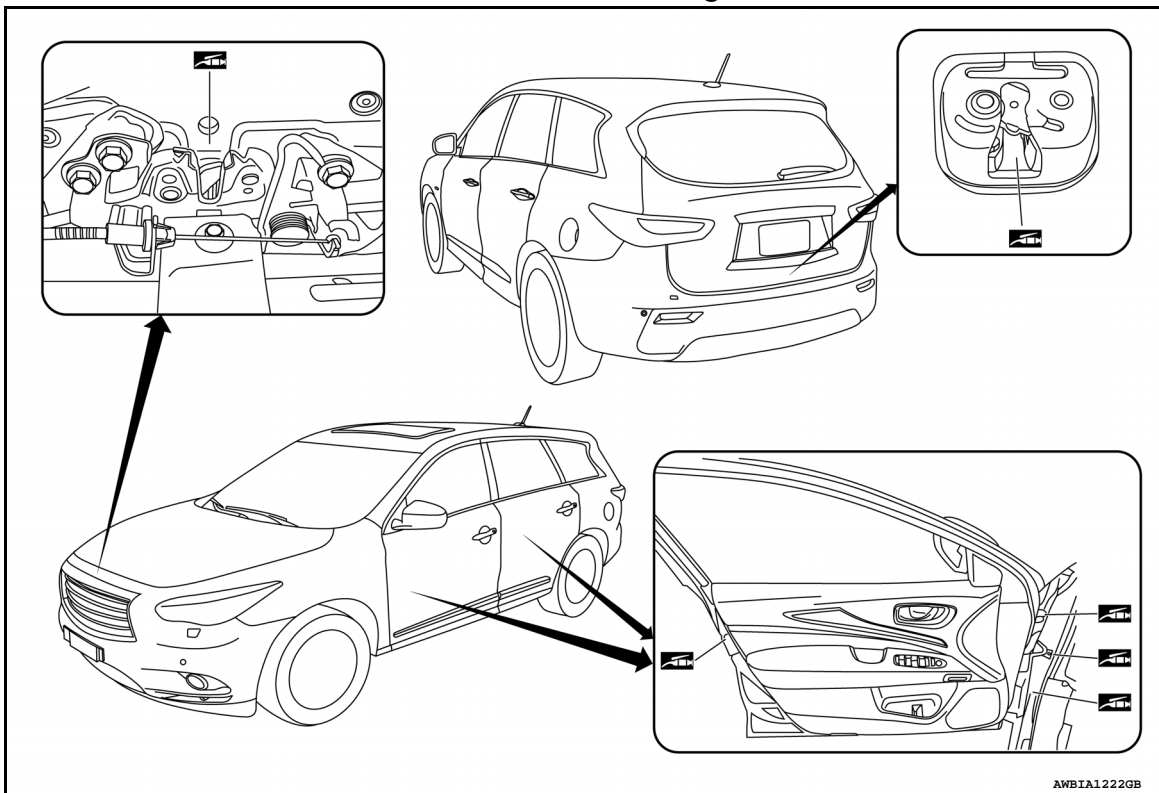
Check boot and drive shaft for cracks, wear, damage and grease leakage.



### LOCKS, HINGES AND HOOD LATCH

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

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

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

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For details, refer to [SB-3. "Inspection"](#) in SB section.

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

#### **CAUTION:**

- **After any collision, inspect all seat belt assemblies, including retractors and other attached hardware (i.e., anchor bolt, guide rail set). NISSAN recommends replacing all seat belt assemblies in use during a collision, unless not damaged and properly operating after minor collision. Also inspect seat belt assemblies not in use during a collision and replace if damaged or improperly operating.**
- **Seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision where the driver and passenger air bags are deployed.**

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## CHASSIS AND BODY MAINTENANCE

### < PERIODIC MAINTENANCE >

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