

**SECTION MA**  
**MAINTENANCE**

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# PREPARATION

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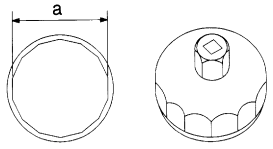
## PREPARATION

### PREPARATION

#### Special Service Tool

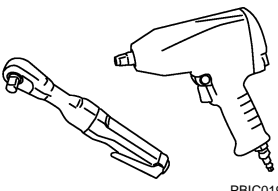
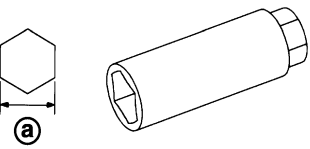
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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

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

#### Commercial Service Tool

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Tool name (Kent-Moore No.)	Description
Power tool ( — )  <p style="text-align: right;">PBIC0190E</p>	Loosening nuts and bolts
Spark plug wrench ( — )  <p style="text-align: right;">JPBIA0399ZZ</p>	Removing and installing spark plug a : 14 mm (0.55 in)

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MA

# GENERAL MAINTENANCE

< ON-VEHICLE MAINTENANCE >

## ON-VEHICLE MAINTENANCE

### GENERAL MAINTENANCE

#### Explanation General Maintenance

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General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform checks and inspections themselves or have their **INFINITI** 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, including the spare, at least once a month and always prior to a long distance trips. Adjust to the specified pressure if necessary. Check carefully for damage, cuts or excessive wear.	—
<b>Wheel nuts</b>	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	—
<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>Tire rotation</b>	Sport, Sport 6MT models: Tires cannot be rotated, as front tires are different size from rear tires and the direction of wheel rotation is fixed in each tire.	—
	Except Sport, Sport 6MT models: Tires should be rotated every 12,000 km (7,500 miles).	<a href="#">MA-30</a>
<b>Transmitter components in tire pressure monitoring system (TPMS)</b>	Replace grommet seal, valve core and cap of the transmitter in TPMS every tire replacement by reaching wear limit of tire.	<a href="#">WT-7</a>
<b>Wheel alignment and balance</b>	If the vehicle pulls 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-8</a> (2WD) <a href="#">FSU-28</a> (AWD) <a href="#">RSU-6</a> <a href="#">MA-30</a>
<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 trunk lid. 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-37</a>
<b>Lamps</b>	Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check headlamp aim. Clean the headlamps on a regular basis.	—

#### INSIDE THE VEHICLE

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

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

# GENERAL MAINTENANCE

## < ON-VEHICLE 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-37</a>
<b>Accelerator pedal</b>	Check the pedal for smooth operation and make sure the pedal does not catch or require uneven effort. Keep the floor mats away from the pedal.	—
<b>Brakes</b>	Check that the brake does not pull the vehicle to one side when applied.	—
<b>Brake pedal and booster</b>	Check the pedal for smooth operation and make sure it has the proper distance under it when depressed fully. Check the brake booster function. Be sure to keep the floor mats away from the pedal.	<a href="#">BR-7</a> <a href="#">BR-14</a>
<b>Clutch pedal</b>	Make sure the pedal operates smoothly and check that it has the proper free play.	<a href="#">CL-5</a>
<b>Parking brake</b>	Check that the pedal has the proper travel and make sure that the vehicle is held securely on a fairly steep hill when only the parking brake is applied.	<a href="#">PB-3</a> (PEDAL TYPE) <a href="#">PB-4</a> (LEVER TYPE)
<b>Automatic transmission "Park" mechanism</b>	Check that the lock release button on the selector lever operates properly and smoothly. On a fairly steep hill check that the vehicle is held securely with the selector lever in the P (Park) position without applying any brakes.	—

## UNDER THE HOOD AND VEHICLE

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

Item		Reference page
<b>Windshield washer fluid</b>	Check that there is adequate fluid in the tank.	—
<b>Engine coolant level</b>	Check the coolant level when the engine is cold.	<a href="#">CO-8</a>
<b>Radiator and hoses</b>	Check the front of the radiator and clean off any dirt, insects, leaves, etc., that may have accumulated. Make sure the hoses have no cracks, deformation, deterioration or loose connections.	—
<b>Brake and clutch fluid level</b>	Make sure that the brake and clutch fluid levels are between the "MAX" and "MIN" lines on the reservoir.	<a href="#">MA-33</a> <a href="#">MA-23</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-2</a>
<b>Engine drive belts</b>	Make sure that no belt is frayed, worn, cracked or oily.	<a href="#">MA-12</a>
<b>Engine oil level</b>	Check the level on the oil level gauge after parking the vehicle on a level spot and turning off the engine.	<a href="#">LU-7</a>
<b>Power steering fluid level and lines</b>	Check the level on the dipstick with the engine off. Check the lines for improper attachment, leaks, cracks, etc.	<a href="#">MA-35</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-20</a>
<b>Underbody</b>	The underbody is frequently exposed to corrosive substances such as those used on icy roads or to control dust. It is very important to remove these substances, otherwise rust will form on the floor pan, frame, fuel lines and around the exhaust system. At the end of winter, the underbody should be thoroughly flushed with plain water, being careful to clean those areas where mud and dirt can easily accumulate.	—
<b>Fluid leaks</b>	Check under the vehicle for fuel, oil, water or other fluid leaks after the vehicle has been parked for a while. Water dripping from the air conditioner after use is normal. If you should notice any leaks or gasoline fumes are evident, check for the cause and correct it immediately.	—

# PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

## PERIODIC MAINTENANCE

### Introduction of Periodic Maintenance

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Two different maintenance schedules are provided, and should be used, depending upon the conditions in which the vehicle is mainly operated. **After 60,000 miles (96,000 km) or 48 months, continue the periodic maintenance at the same mileage/time intervals.**

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

### Schedule 1

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### EMISSION CONTROL SYSTEM

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.50 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Drive belts	NOTE (1)									<a href="#">MA-12</a>
Air cleaner filter	NOTE (2)								[R]	<a href="#">MA-15</a>
EVAP vapor lines									I*	<a href="#">MA-18</a>
Fuel lines									I*	<a href="#">MA-15</a>
Fuel filter	NOTE (3)									—
Engine coolant	NOTE (4)									<a href="#">MA-12</a>
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-16</a>
Engine oil filter [Use part No. 15208 65F00 or equivalent.]		R	R	R	R	R	R	R	R	<a href="#">MA-16</a>
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km).								<a href="#">MA-18</a>
Intake & exhaust valve clearance*	NOTE (5)									<a href="#">EM-17</a>

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Drive belts	NOTE (1)								I*	<a href="#">MA-12</a>
Air cleaner filter	NOTE (2)								[R]	<a href="#">MA-15</a>
EVAP vapor lines									I*	<a href="#">MA-18</a>
Fuel lines									I*	<a href="#">MA-15</a>
Fuel filter	NOTE (3)									—

# PERIODIC MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Engine coolant	NOTE (4)								R*	<a href="#">MA-16</a>
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-16</a>
Engine oil filter [Use part No.15208 65F00 or equivalent.]		R	R	R	R	R	R	R	R	<a href="#">MA-16</a>
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km).								<a href="#">MA-18</a>
Intake & exhaust valve clearance*	NOTE (5)									<a href="#">EM-17</a>

**NOTE:**

- (1) After 60,000 miles (96,000 km) or 48 months, inspect every 15,000 miles (24,000 km) or 12 months. Replace the drive belts if found damaged or if the auto belt tensioner reading reaches the maximum limit.
- (2) If operating mainly in dusty conditions, more frequent maintenance may be required.
- (3) Maintenance-free item. For service procedures, refer to FL section.
- (4) After 60,000 miles (96,000 km) or 48 months, replace every 30,000 miles (48,000 km) or 24 months.
- (5) If valve noise increases, inspect valve clearance.

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

## CHASSIS AND BODY

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	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-33</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-34</a>
Automatic transmission fluid, manual transmission gear oil, transfer fluid & differential gear oil	NOTE (1)				I				I	<a href="#">MA-20</a> <a href="#">MA-22</a> <a href="#">MA-23</a> <a href="#">MA-27</a> <a href="#">MA-28</a> <a href="#">MA-29</a>
Steering gear & linkage, axle & suspension parts			I		I		I		I	<a href="#">MA-35</a> <a href="#">MA-36</a>
Tire rotation	NOTE (2)									<a href="#">MA-4</a> <a href="#">MA-30</a>
Drive shaft boots and propeller shaft (AWD models)			I		I		I		I	<a href="#">MA-36</a> <a href="#">MA-24</a> <a href="#">MA-26</a>
Exhaust system			I		I		I		I	<a href="#">MA-20</a>
In-cabin microfilter					R				R	<a href="#">VTI-21</a>
Stop lamp switch & ASCD cancel switch	NOTE (3)				I				I	<a href="#">BR-7</a>

# PERIODIC MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title	
		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
Perform at number of miles, kilometers or months, whichever comes first.											
Brake lines & cables					I					I	<a href="#">MA-33</a>
Brake pads & rotors			I		I		I			I	<a href="#">MA-34</a>
Automatic transmission fluid, manual transmission gear oil, transfer fluid & differential gear oil	NOTE (1)					I				I	<a href="#">MA-20</a> <a href="#">MA-22</a> <a href="#">MA-23</a> <a href="#">MA-27</a> <a href="#">MA-28</a> <a href="#">MA-29</a>
Steering gear & linkage, axle & suspension parts			I		I		I			I	<a href="#">MA-35</a> <a href="#">MA-36</a>
Tire rotation	NOTE (2)									<a href="#">MA-35</a> <a href="#">MA-36</a>	
Drive shaft boots and propeller shaft (AWD models)			I		I		I			I	<a href="#">MA-36</a> <a href="#">MA-24</a> <a href="#">MA-26</a>
Exhaust system			I		I		I			I	<a href="#">MA-20</a>
In-cabin microfilter					R					R	<a href="#">VTL-21</a>
Stop lamp switch & ASCD cancel switch	NOTE (3)				I					I	<a href="#">BR-7</a>

**NOTE:**

- (1) If towing a trailer, using a camper or a car-top carrier, or driving on rough or muddy roads, change (not just inspect) fluid (A/T, transfer)/oil at every 30,000 miles (48,000 km) or 24 months. **Using automatic transmission fluid other than Genuine NISSAN Matic J ATF will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the INFINITI new vehicle limited warranty.**
- (2) Refer to "Tire rotation" under the "General maintenance" heading earlier in this section.
- (3) Inspect the clearance between the brake pedal and the switches.

## Schedule 2

INFOID:000000000967298

## EMISSION CONTROL SYSTEM

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title	
		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
Perform at number of miles, kilometers or months, whichever comes first.											
Drive belts	NOTE (1)									I*	<a href="#">MA-12</a>
Air cleaner filter					[R]					[R]	<a href="#">MA-15</a>
EVAP vapor lines					I*					I*	<a href="#">MA-18</a>
Fuel lines					I*					I*	<a href="#">MA-15</a>
Fuel filter	NOTE (2)										—
Engine coolant	NOTE (3)									R*	<a href="#">MA-12</a>
Engine oil			R	R	R	R	R	R	R	R	<a href="#">MA-16</a>
Engine oil filter [Use part No. 15208 65F00 or equivalent.]			R	R	R	R	R	R	R	R	<a href="#">MA-16</a>
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km).								<a href="#">MA-18</a>	
Intake & exhaust valve clearance*	NOTE (4)										<a href="#">EM-17</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



# PERIODIC MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

damaged or if the auto belt tensioner reading reaches the maximum limit.

- (2) Maintenance-free item. For service procedures, refer to FL section.
- (3) After 60,000 miles (96,000 km) or 48 months, replace every 30,000 miles (48,000 km) or 24 months.
- (4) If valve noise increases, inspect valve clearance.

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

## CHASSIS AND BODY

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

MAINTENANCE OPERATION	Miles x 1,000 (km x 1,000) Months	MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
		7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Brake lines & cables			I		I		I		I	<a href="#">MA-33</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-34</a>
Automatic transmission fluid, manual transmission gear oil, transfer fluid & differential gear oil			I		I		I		I	<a href="#">MA-20</a> <a href="#">MA-22</a> <a href="#">MA-23</a> <a href="#">MA-27</a> <a href="#">MA-28</a> <a href="#">MA-29</a>
Steering gear & linkage, axle & suspension parts					I				I	<a href="#">MA-35</a> <a href="#">MA-36</a>
Tire rotation	NOTE (1)									<a href="#">MA-35</a> <a href="#">MA-36</a>
Drive shaft boots and propeller shaft (AWD models)			I		I		I		I	<a href="#">MA-36</a> <a href="#">MA-24</a> <a href="#">MA-26</a>
Exhaust system					I				I	<a href="#">MA-20</a>
In-cabin microfilter			R		R		R		R	<a href="#">VTL-21</a>
Stop lamp switch & ASCD cancel switch	NOTE (2)		I		I		I		I	<a href="#">BR-7</a>

**NOTE:**

- (1) Refer to "Tire rotation" under the "General maintenance" heading earlier in this section.
- (2) Inspect the clearance between the brake pedal and the switches.

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# RECOMMENDED FLUIDS AND LUBRICANTS

< ON-VEHICLE MAINTENANCE >

## RECOMMENDED FLUIDS AND LUBRICANTS

### Fluids and Lubricants

INFOID:000000000967299

		Capacity (Approximate)			Recommended Fluids/Lubricants
		US measure	Imp measure	Liter	
Engine oil Drain and refill	With oil filter change	5-1/8 qt	4-1/4 qt	4.9	<ul style="list-style-type: none"> <li>• Engine oil with API Certification Mark*1</li> <li>• Viscosity SAE 5W-30</li> </ul>
	Without oil filter change	4-7/8 qt	4 qt	4.6	
Dry engine (Overhaul)		5-3/4 qt	4-7/8 qt	5.5	
Cooling system	With reservoir tank	9-1/2 qt	7-7/8 qt	9.0	Genuine NISSAN Long Life Antifreeze/ Coolant or equivalent
	Reservoir tank	7/8 qt	3/4 qt	0.8	
Automatic transmission fluid		10-7/8 qt*7	9-1/8 qt*7	10.3*7	Genuine NISSAN Matic J ATF *2
Manual transmission gear oil		6-1/4	5-1/8 pt	2.93	Genuine NISSAN Manual Transmission Fluid (MTF) HQ Multi 75W-85 or API GL-4, Viscosity SAE 75W-85 or 75W-90
Differential gear oil	Front	1-3/8 pt	1-1/8 pt	0.65	Genuine NISSAN Differential Oil Hypoid Super GL-5 80W-90 or API GL-5, Viscosity SAE 80W-90 *3
	Rear	3 pt	2-1/2 pt	1.40	
Transfer fluid		2-5/8 pt	2-1/4 pt	1.25	Genuine NISSAN Matic D ATF (Continental U.S. and Alaska) or Canada NISSAN Automatic Transmission Fluid*4
Power steering fluid (PSF)		1-1/8 qt	7/8 qt	1.0	Genuine NISSAN 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		—	—	—	Genuine NISSAN Windshield Washer Concentrate Cleaner & Antifreeze or equivalent
Fuel recommendation		—	—	—	Refer to <a href="#">GI-29, "FUEL : Unleaded Premium Gasoline Recommended"</a> .

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

**\*2: Using automatic transmission fluid other than Genuine NISSAN Matic J ATF will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the INFINITI new vehicle limited warranty.**

\*3: For hot climates, viscosity SAE 90 is suitable for ambient temperatures above 0°C (32°F).

\*4: DEXRON™III/ MERCON™ or equivalent may also be used. Outside the continental United States and Alaska contact an INFINITI dealer for more information regarding suitable fluids, including recommended brand(s) of DEXRON™III/ MERCON™ automatic transmission fluid.

\*5: For Canada, NISSAN Automatic Transmission Fluid (ATF), DEXRON™ III/ MERCON™, or equivalent ATF may also be used.

\*6: Available in mainland U.S.A. through your INFINITI dealer.

\*7: The fluid capacity is the reference value. Check the fluid level with A/T fluid level gauge.

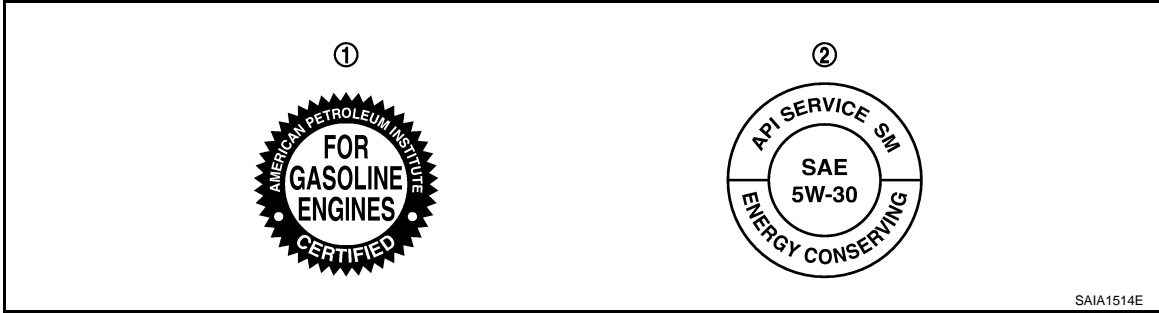
### Engine Oil Recommendation

INFOID:000000000967300

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

< ON-VEHICLE MAINTENANCE >



- 1. API certification mark
- 2. API service symbol

## Anti-Freeze Coolant Mixture Ratio

INFOID:000000000967301

The engine cooling system is filled at the factory with a high-quality, year-round, anti-freeze coolant solution. The anti-freeze solution contains rust and corrosion inhibitors. Therefore, additional cooling system additives are not necessary.

**CAUTION:**

**When adding or replacing coolant, be sure to use only Genuine NISSAN Long Life Antifreeze/ Coolant or equivalent with the proper mixture ratio of 50% anti-freeze and 50% demineralized water/distilled water.**

**Other types of coolant solutions may damage your cooling system.**

Outside temperature down to		Anti-freeze	Demineralized water or distilled water
°C	°F		
-35	-30	50%	50%

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# ENGINE MAINTENANCE

< ON-VEHICLE MAINTENANCE >

## ENGINE MAINTENANCE

### DRIVE BELTS

#### DRIVE BELTS : Checking

INFOID:000000000967302

#### **WARNING:**

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

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

#### **NOTE:**

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

#### DRIVE BELTS : Tension Adjustment

INFOID:000000000967303

Refer to [EM-141, "Drive Belt"](#).

### ENGINE COOLANT

#### ENGINE COOLANT : Draining

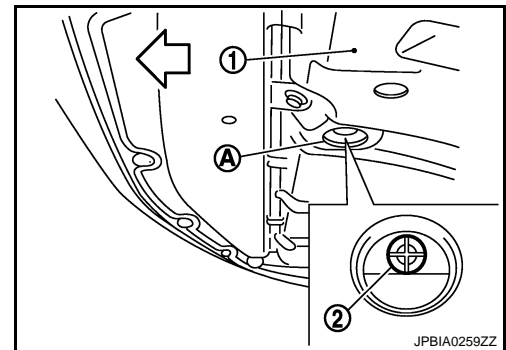
INFOID:000000000967304

#### **WARNING:**

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

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

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



**When draining all of engine coolant in the system, open water drain plugs on cylinder block. Refer to [EM-88, "Setting"](#).**

2. Remove reservoir tank as necessary, and drain engine coolant and clean reservoir tank before installing.
3. Check drained engine coolant for contaminants such as rust, corrosion or discoloration. If contaminated, flush the engine cooling system. Refer to [MA-14, "ENGINE COOLANT : Flushing"](#).

#### ENGINE COOLANT : Refilling

INFOID:000000000967305

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

#### **CAUTION:**

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

**Tightening torque** : Refer to [CO-14, "Exploded View"](#).

**If water drain plugs on cylinder block are removed, close and tighten them. Refer to [EM-114, "Exploded View"](#).**

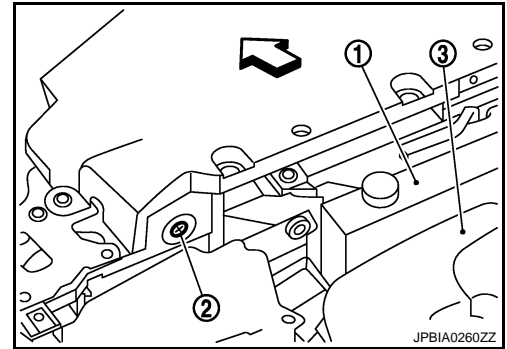
3. Make sure that each hose clamp has been firmly tightened.

# ENGINE MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

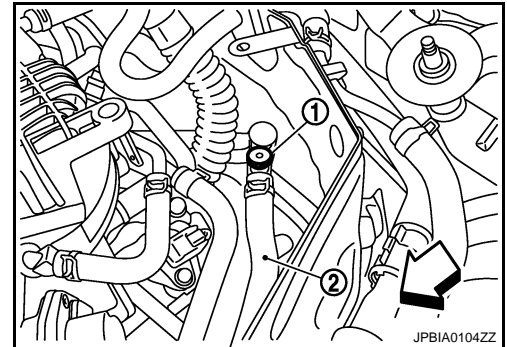
4. Remove air relief plug (2) on radiator left side.

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



5. Remove air relief plug (1) on heater hose.

- 2 : Heater hose
- ↔ : Vehicle front

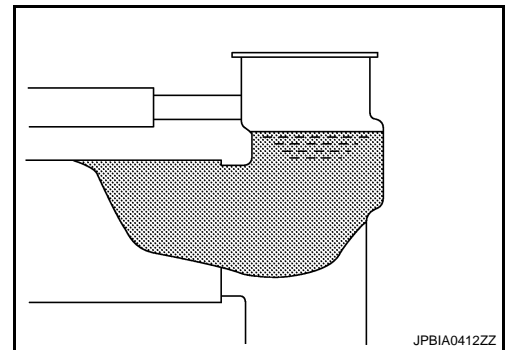


6. Fill radiator, and reservoir tank if removed, to specified level.

- Pour engine coolant through engine coolant filler neck slowly of less than 2 ℓ (2-1/8 US qt, 1-3/4 Imp qt) a minute to allow air in system to escape.
- Use Genuine NISSAN Long Life Antifreeze/Coolant or equivalent mixed with water (distilled or demineralized). Refer to [MA-10, "Fluids and Lubricants"](#).

**Engine coolant capacity  
(With reservoir tank at  
"MAX" level)**

**: Refer to [CO-26,](#)  
["Periodical Maintenance  
e Specification"](#).**



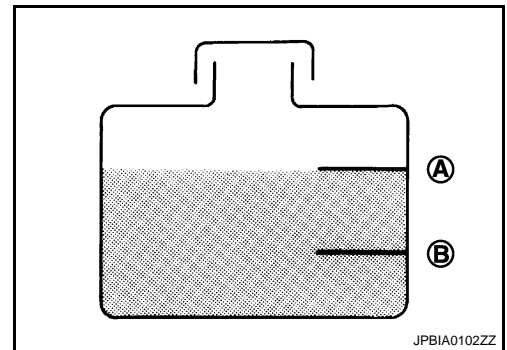
**Reservoir tank engine coolant capacity  
(At "MAX" level)**

**:Refer to [CO-26,](#)  
["Periodical Maintenance Specification"](#)**

- A : MAX
- B : MIN

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

**Tightening torque : Refer to [CO-14, "Exploded View"](#).**



8. Repeat step 6.

9. When engine coolant overflows air relief hole on heater hose, install air relief plug with new O-ring. Then refill radiator with engine coolant.

 : **1.2 N-m (0.12 kg-m, 11 in-lb)**

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# ENGINE MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

10. Install air cleaner case (LH). Refer to [EM-25. "Exploded View"](#).
11. Install radiator cap.
12. Warm up engine until opening thermostat. Standard for warming-up time is approximately 10 minutes at 3,000 rpm.
  - Make sure thermostat opening condition by touching radiator hose (lower) to see a flow of warm water.**CAUTION:**  
**Watch water temperature gauge so as not to overheat engine.**
13. Stop the engine and cool down to less than approximately 50°C (122°F).
  - Cool down using fan to reduce the time.
  - If necessary, refill radiator up to filler neck with engine coolant.
14. Refill reservoir tank to "MAX" level line with engine coolant.
15. Repeat steps 11 through 14 two or more times with radiator cap installed until engine coolant level no longer drops.
16. Check cooling system for leaks with engine running.
17. Warm up the engine, and check for sound of engine coolant flow while running engine from idle up to 3,000 rpm with heater temperature controller set at several position between "COOL" and "WARM".
  - Sound may be noticeable at heater unit.
18. Repeat step 17 three times.
19. If sound is heard, bleed air from cooling system by repeating step 6, and steps from 11 to 18 until engine coolant level no longer drops.
20. Check that the reservoir tank cap is tightened.

## ENGINE COOLANT : Flushing

INFOID:000000000967306

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

### **CAUTION:**

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

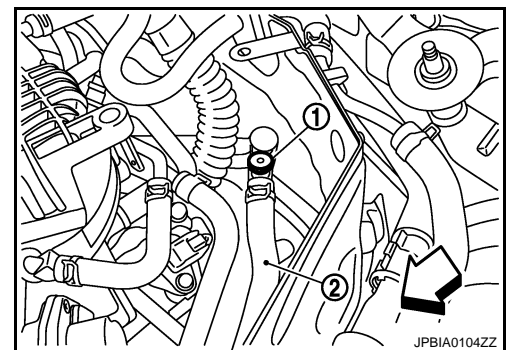
**Tightening torque** : Refer to [CO-14. "Exploded View"](#).

**If water drain plugs on cylinder block are removed, close and tighten them. Refer to [EM-88. "Setting"](#).**

2. Remove air relief plug (1) on heater hose.

2 : Heater hose

⇐ : Vehicle front

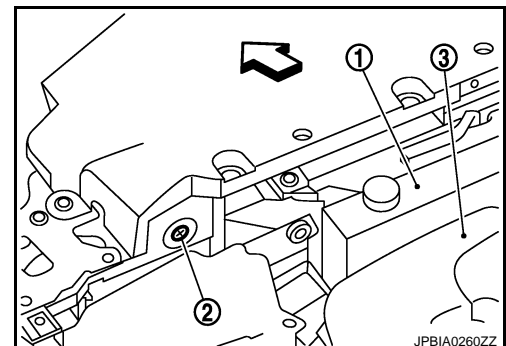


3. Remove air relief plug (2) on radiator.

1 : Reservoir tank

3 : Engine cover

⇐ : Vehicle front



4. Fill radiator with water until water spills from the air relief holes, then close air relief plugs. Fill radiator and reservoir tank with water and reinstall radiator cap.

# ENGINE MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

**Tightening torque** : Refer to [CO-14. "Exploded View"](#).

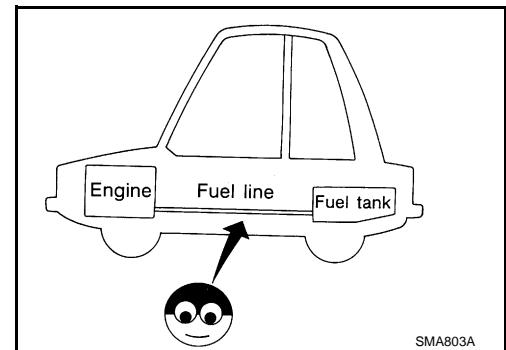
5. Run the engine and warm it up to normal operating temperature.
6. Rev the engine two or three times under no-load.
7. Stop the engine and wait until it cools down.
8. Drain water from the system. Refer to [MA-12. "ENGINE COOLANT : Draining"](#).
9. Repeat steps 1 through 8 until clear water begins to drain from radiator.
10. Check that the reservoir tank cap is tightened.

## FUEL LINES

### FUEL LINES : Inspection

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

INFOID:000000000967307



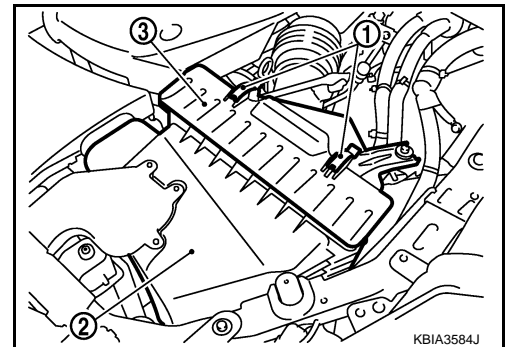
## AIR CLEANER FILTER

### AIR CLEANER FILTER : Removal and Installation

INFOID:000000000967308

#### REMOVAL

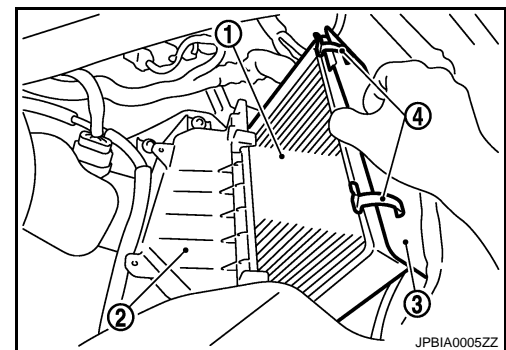
1. Unhook clips (1) and remove holder (3) from air cleaner case (2).



2. Remove air cleaner filter (1) from air cleaner case (2).

3 : Holder

4 : Clip



#### INSTALLATION

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

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

## ENGINE OIL

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# ENGINE MAINTENANCE

< ON-VEHICLE MAINTENANCE >

## ENGINE OIL : Draining

INFOID:000000000967309

### WARNING:

- Be careful not to get burn yourself, as engine oil may be hot.
  - Prolonged and repeated contact with used engine oil may cause skin cancer. Try to avoid direct skin contact with used engine oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.
1. Warm up the engine, and check for engine oil leakage from engine components. Refer to [LU-7, "Inspection"](#).
  2. Stop the engine and wait for 10 minutes.
  3. Loosen oil filler cap.
  4. Remove undercover with power tool.
  5. Remove drain plug and then drain engine oil.

## ENGINE OIL : Refilling

INFOID:000000000967310

1. Install drain plug with new washer. Refer to [EM-41, "Exploded View \(2WD\)"](#) or [EM-41, "Exploded View \(AWD\)"](#).

### CAUTION:

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

**Tightening torque** : Refer to [EM-41, "Exploded View \(2WD\)"](#).

2. Refill with new engine oil.  
**Engine oil specification and viscosity:** Refer to [MA-16, "ENGINE OIL : Refilling"](#)

**Engine oil capacity** : Refer to [LU-19, "Periodical Maintenance Specification"](#).

### CAUTION:

- When filling engine oil, do not pull out oil level gauge.
  - The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.
  - Always use oil level gauge to determine the proper amount of engine oil in engine.
3. Warm up the engine and check area around drain plug and oil filter for engine oil leakage.
  4. Stop the engine and wait for 10 minutes.
  5. Check the engine oil level. Refer to [LU-7, "Inspection"](#).

## OIL FILTER

### OIL FILTER : Removal and Installation

INFOID:000000000967311

#### REMOVAL

### CAUTION:

- Oil filter is provided with relief valve. Use Genuine NISSAN Oil Filter or equivalent.
  - Be careful not to get burned when engine and engine oil may be hot.
  - When removing, prepare a shop cloth to absorb any engine oil leakage or spillage.
  - Do not allow engine oil to adhere to drive belts.
  - Completely wipe off any engine oil that adheres to engine and vehicle.
1. Remove engine undercover with power tool.

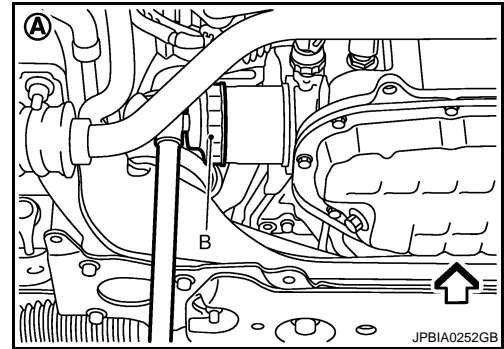


# ENGINE MAINTENANCE

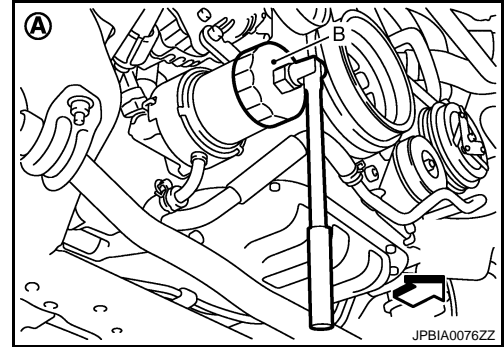
## < ON-VEHICLE MAINTENANCE >

- Using oil filter wrench [SST: KV10115801 (J38956)] (B), remove oil filter.

A : 2WD  
⇐ : Engine front

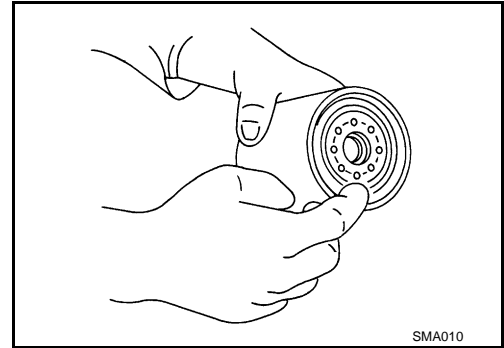


A : AWD  
⇐ : Engine front



## INSTALLATION

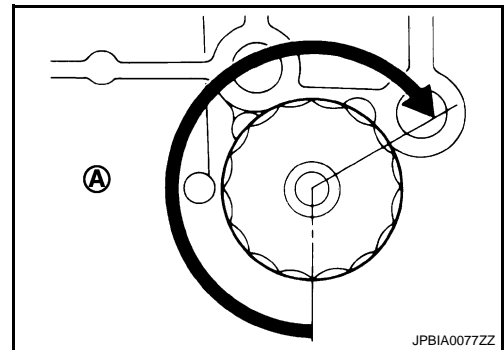
- Remove foreign materials adhering to oil filter installation surface.
- Apply engine oil to the oil seal contact surface of new oil filter.



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

### Oil filter:

: 17.7 N·m (1.8 kg·m, 13 ft·lb)



## OIL FILTER : Inspection

INFOID:000000000967312

### INSPECTION AFTER INSTALLATION

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

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# ENGINE MAINTENANCE

< ON-VEHICLE MAINTENANCE >

## SPARK PLUG

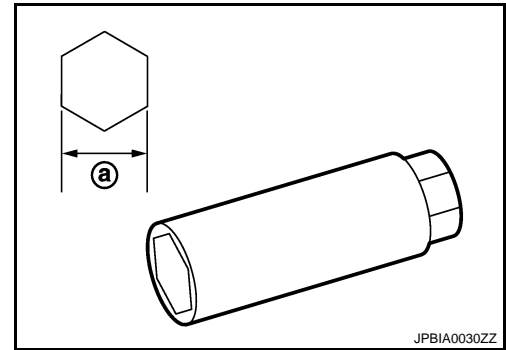
### SPARK PLUG : Removal and Installation

INFOID:000000000967313

#### REMOVAL

1. Remove engine cover with power tool. Refer to [EM-27, "Exploded View"](#).
2. Remove air cleaner case and air duct (RH and LH). Refer to [EM-25, "Exploded View"](#).
3. Remove electric throttle control actuator. Refer to [EM-30, "Exploded View"](#).
4. Remove ignition coil. Refer to [EM-45, "Removal and Installation"](#).
5. Remove spark plug with a spark plug wrench (commercial service tool).

a : 14 mm (0.55 in)



#### INSTALLATION

Installation is the reverse order of removal.

### SPARK PLUG : Inspection

INFOID:000000000967314

#### INSPECTION AFTER REMOVAL

Use the standard type spark plug for normal condition.

**Spark plug (Standard type) :** Refer to [EM-142, "Spark Plug"](#).

#### CAUTION:

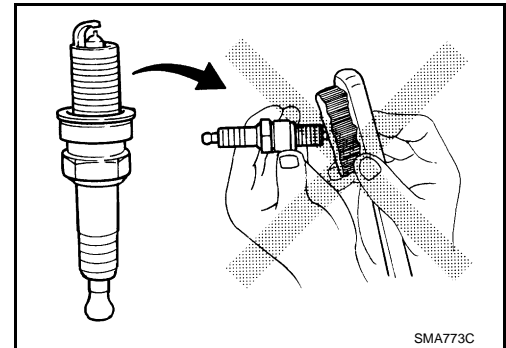
- Do not drop or shock spark plug.
- Do not use a wire brush for cleaning.
- If plug tip is covered with carbon, spark plug cleaner may be used.

**Cleaner air pressure:**

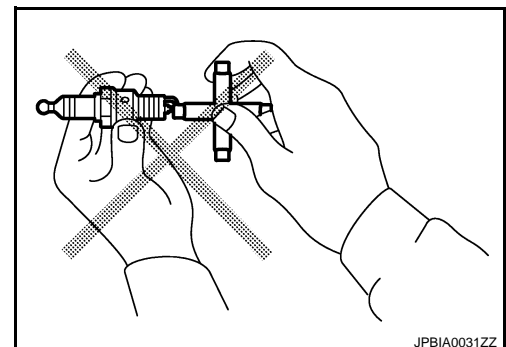
**Less than 588 kPa (6 kg/cm<sup>2</sup>, 85 psi)**

**Cleaning time:**

**Less than 20 seconds**



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



## EVAP VAPOR LINES

### EVAP VAPOR LINES : Inspection

INFOID:000000000967315

## ENGINE MAINTENANCE

### < ON-VEHICLE MAINTENANCE >

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1. Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration. A
2. Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc.  
**Refer to [EC-75. "System Diagram"](#).** B

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# CHASSIS MAINTENANCE

< ON-VEHICLE MAINTENANCE >

## CHASSIS MAINTENANCE

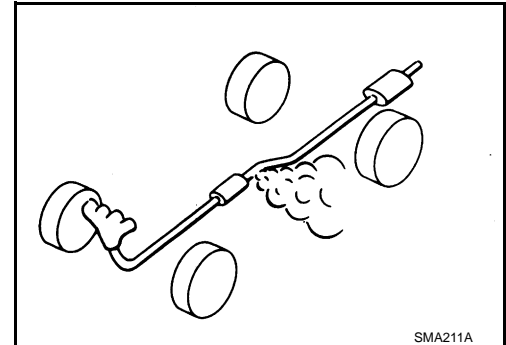
### EXHAUST SYSTEM

#### EXHAUST SYSTEM : Inspection

INFOID:000000000967316

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

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



### A/T FLUID

#### A/T FLUID : Inspection

INFOID:000000000967317

#### A/T FLUID LEAKAGE AND A/T FLUID LEVEL CHECK

1. Warm up engine.
2. Check for A/T fluid leakage.
3. Loosen the level gauge bolt.
4. Before driving, A/T fluid level can be checked at A/T fluid temperatures of 30 to 50°C (86 to 122°F) using “COLD” range on A/T fluid level gauge as follows.

- a. Park vehicle on level surface and set parking brake.
- b. Start engine and move selector lever through each gear position. Leave selector lever in “P” position.
- c. Check A/T fluid level with engine idling.
- d. Remove A/T fluid level gauge and wipe clean with lint-free paper.

**CAUTION:**

**When wiping away the A/T fluid level gauge, always use lint-free paper, not a cloth one.**

- e. Re-insert A/T fluid level gauge into A/T fluid charging pipe as far as it will go.

**CAUTION:**

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

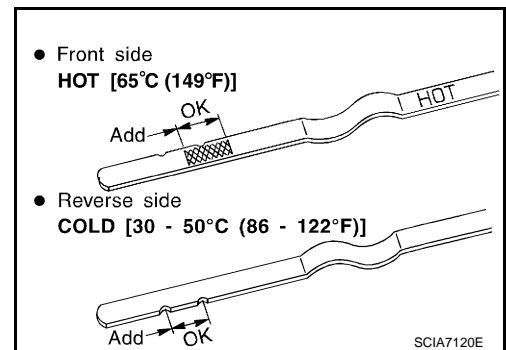
- f. Remove A/T fluid level gauge and note reading. If reading is at low side of range, add ATF to the A/T fluid charging pipe.

**CAUTION:**

**Do not overfill.**

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

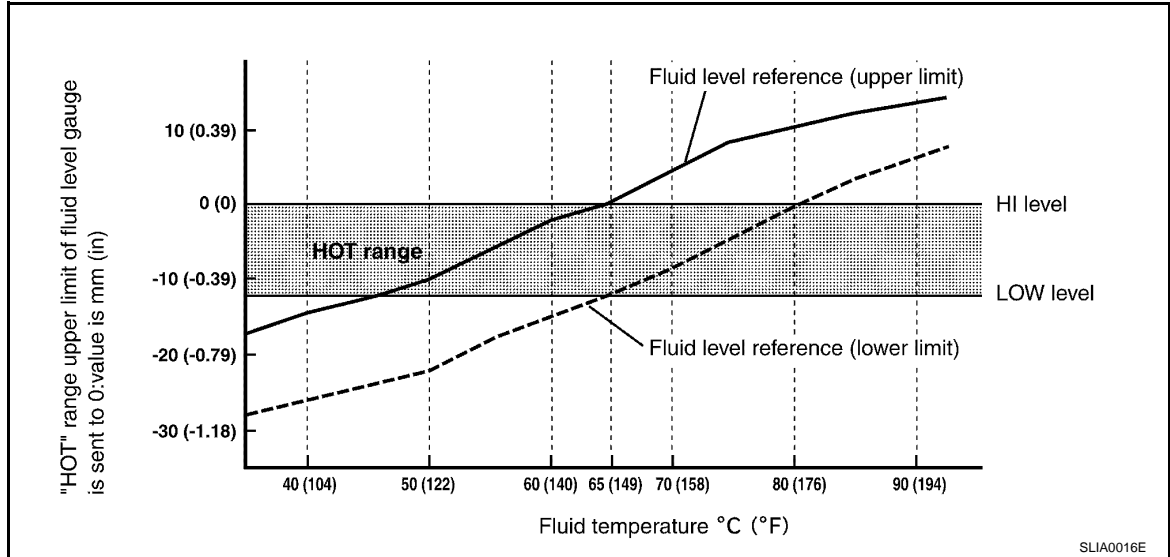
**NOTE:**



# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

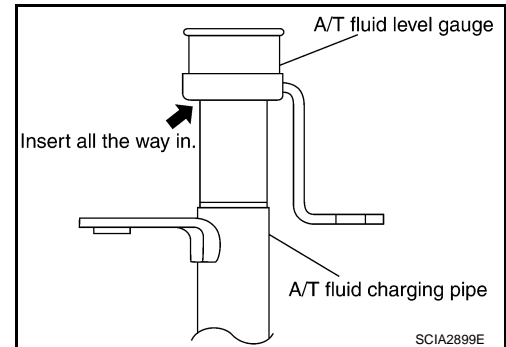
A/T fluid level will be greatly affected by temperature as shown in figure. Therefore, be certain to perform operation while checking data with CONSULT-III.



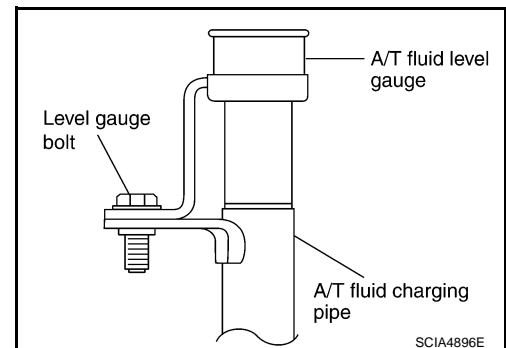
- Connect CONSULT-III to data link connector.
- Select "DATA MONITOR".
- Read out the value of "ATF TEMP 1".
- Re-check A/T fluid level at A/T fluid temperatures of approximately 65°C (149°F) using "HOT" range on A/T fluid level gauge.

### CAUTION:

- When wiping away the A/T fluid level gauge, always use lint-free paper, not a cloth one.
- To check A/T fluid level, insert the A/T fluid level gauge until the cap contacts the end of the A/T fluid charging pipe, with the A/T fluid level gauge reversed from the normal attachment conditions as shown.



- Install the removed A/T fluid level gauge in the A/T fluid charging pipe.
- Tighten level gauge bolt. Refer to [TM-275, "2WD : Exploded View"](#) (2WD), [TM-277, "AWD : Exploded View"](#) (AWD).



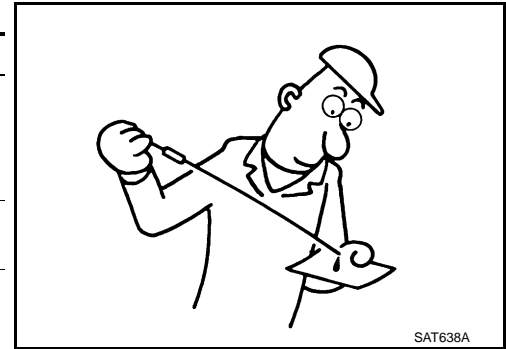
## A/T FLUID CONDITION CHECK

Check the A/T fluid condition.

# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

Fluid condition	Conceivable Cause	Required Operation
Varnished (viscous varnish state)	Clutch, brake scorched	Replace the ATF and check the A/T main unit and the vehicle for malfunctions (wire harnesses, cooler pipes, etc.)
Milky white or cloudy	Water in the fluid	Replace the ATF and check for places where water is getting in.
Large amount of metal powder mixed in	Unusual wear of sliding parts within A/T	Replace the ATF and check for improper operation of the A/T.

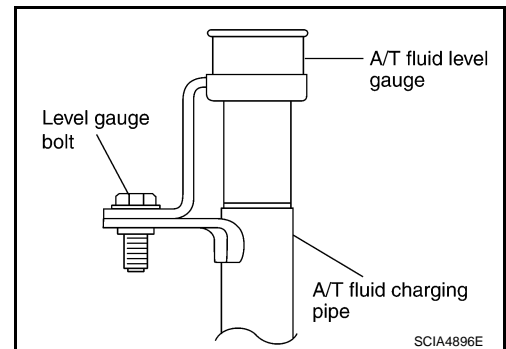


SAT638A

## A/T FLUID : Changing

INFOID:000000000967318

1. Warm up ATF.
2. Stop engine.
3. Loosen the level gauge bolt.
4. Drain ATF from drain plug and refill with new ATF. Always refill same volume with drained ATF.
  - To replace the ATF, pour in new ATF at the A/T fluid charging pipe with the engine idling and at the same time drain the old ATF from the radiator cooler hose return side.
  - When the color of the ATF coming out is about the same as the color of the new ATF, the replacement is complete. The amount of new ATF to use should be 30 to 50% increase of the stipulated amount.



SCIA4896E

**ATF** : Refer to [TM-353, "General Specification"](#).

**Fluid capacity** : Refer to [TM-353, "General Specification"](#).

### CAUTION:

- Use only Genuine NISSAN Matic J ATF. Do not mix with other ATF.
- Using ATF other than Genuine NISSAN Matic J ATF will cause deterioration in driveability and A/T durability, and may damage the A/T, which is not covered by the NISSAN new vehicle limited warranty.
- When filling ATF, take care not to scatter heat generating parts such as exhaust.
- Do not reuse drain plug gasket.

**Drain plug - tightening torque** : Refer to [TM-240, "Exploded View"](#).

5. Run engine at idle speed for 5 minutes.
6. Check A/T fluid level and condition. Refer to [MA-20, "A/T FLUID : Inspection"](#). If ATF is still dirty, repeat step 2. through 5.
7. Install the removed A/T fluid level gauge into A/T fluid charging pipe.
8. Tighten the level gauge bolt. Refer to [TM-275, "2WD : Exploded View"](#) (2WD), [TM-277, "AWD : Exploded View"](#) (AWD).

## M/T OIL

### M/T OIL : Inspection

INFOID:000000000967319

### LEAKAGE

- Check if oil is leaking from transmission or around it.

### LEVEL

# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

- Check oil level from filler plug mounting hole as shown in the figure.

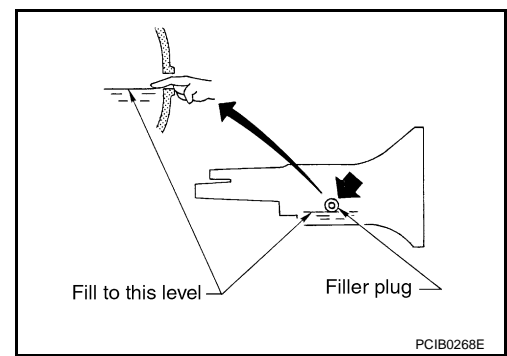
**CAUTION:**

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

- When screwing in filler plug, first screw into the transmission by hand, then tighten to the specified torque.

**CAUTION:**

**Do not reuse gasket.**



INFOID:000000000967320

## M/T OIL : Draining

1. Start the engine and warm up the transmission unit sufficiently.
2. After stopping engine, remove filler plug and drain plug to drain oil.
3. Set a gasket on drain plug and install it to transmission. Tighten drain plug to the specified torque.

**CAUTION:**

**Do not reuse gasket.**

## M/T OIL : Refilling

INFOID:000000000967321

1. Fill new oil into the transmission to the level of the filler plug mounting hole.

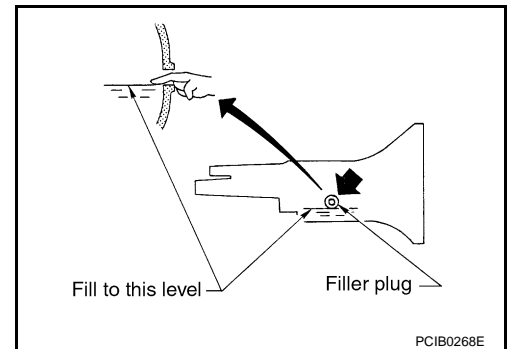
**Oil grade and viscosity** : Refer to [MA-10, "Fluids and Lubricants"](#).

**Oil capacity** : Refer to [TM-75, "General Specification"](#).

2. After refilling oil, check oil level.
3. Set a gasket on filler plug and then install it to transmission. Tighten filler plug to the specified torque.

**CAUTION:**

**Do not reuse gasket.**

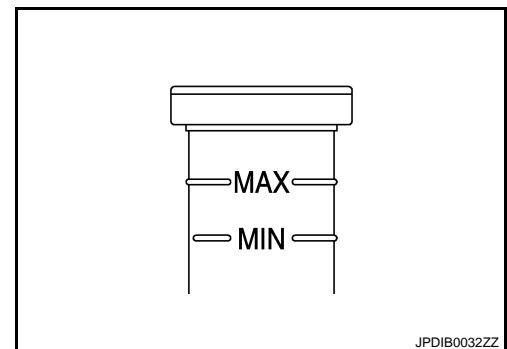


## CLUTCH FLUID

### CLUTCH FLUID : Inspection

INFOID:000000000967322

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



## TRANSFER FLUID

### TRANSFER FLUID : Inspection

INFOID:000000000967323

#### FLUID LEAKAGE

- Check if fluid is leaking from transfer or around it.

#### FLUID LEVEL

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O

# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

- Check fluid level from filler plug (1) mounting hole as shown in the figure.

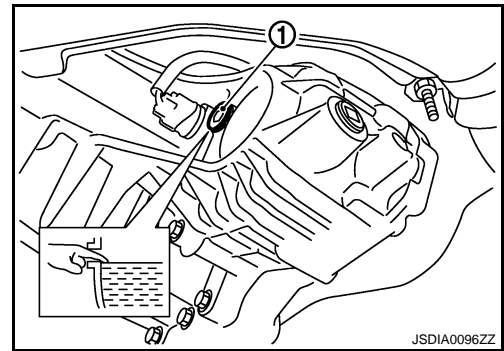
**CAUTION:**

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

- Before installing filler plug, set a new gasket. Install filler plug on transfer and tighten to the specified torque. Refer to [DLN-58, "Exploded View"](#).

**CAUTION:**

**Never reuse gasket.**



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INFOID:000000000967324

## TRANSFER FLUID : Draining

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

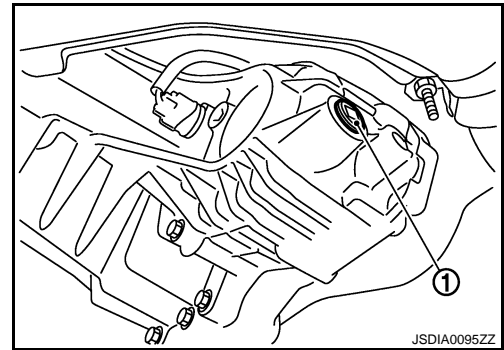
**CAUTION:**

**When draining fluid, protect exhaust tube flange with cover.**

3. Apply sealant to drain plug. Install drain plug on transfer and tighten to the specified torque. Refer to [DLN-58, "Exploded View"](#).
  - Use Genuine Silicone RTV or equivalent. Refer to [GI-15, "Recommended Chemical Products and Sealants"](#).

**CAUTION:**

**Remove old sealant adhering to mounting surfaces. Also remove any moisture, oil, or foreign material adhering to application and mounting surfaces.**



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## TRANSFER FLUID : Refilling

1. Remove filler plug (1) and add transfer fluid until fluid level reaches the specified limit near filler plug mounting hole.

**Fluid capacity**

**: Refer to [DLN-76, "General Specifications"](#).**

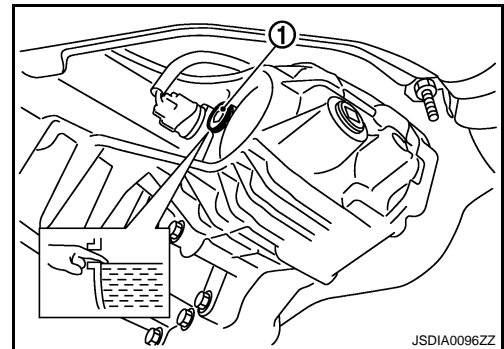
**CAUTION:**

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

2. Leave the vehicle for 3 minutes, and check the fluid level again.
3. Set a new gasket onto filler plug and install it on transfer and tighten to the specified torque. Refer to [DLN-58, "Exploded View"](#).

**CAUTION:**

**Never reuse gasket.**



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## FRONT PROPELLER SHAFT: 2S56A

### FRONT PROPELLER SHAFT: 2S56A : Inspection

INFOID:000000000967326

#### NOISE

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

#### VIBRATION

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



# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

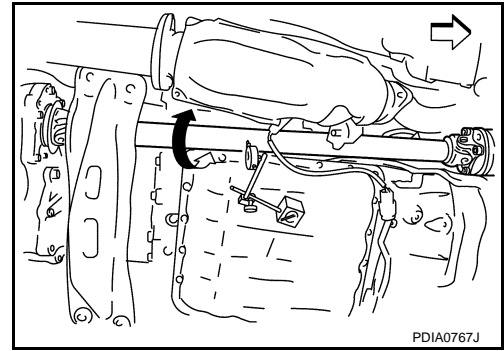
1. Measure propeller shaft runout at several points by rotating final drive companion flange with hands.

↔: Vehicle front

### Limit

**Propeller shaft runout** : Refer to [DLN-82, "Propeller Shaft Runout"](#).

2. If runout still exceeds specifications, separate propeller shaft at final drive companion flange; then rotate companion flange 90, 180, 270 degrees and install propeller shaft.
3. Check runout again. If runout still exceeds specifications, replace propeller shaft assembly.
4. Check the vibration by driving vehicle.

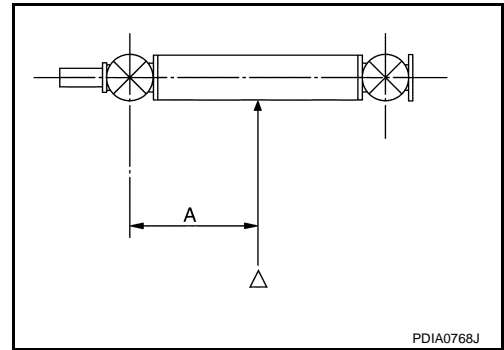


### RUNOUT MEASURING POINT

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

### Dimension

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



## REAR PROPELLER SHAFT: 3S80A

## REAR PROPELLER SHAFT: 3S80A : Inspection

INFOID:000000000967327

### NOISE

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

### VIBRATION

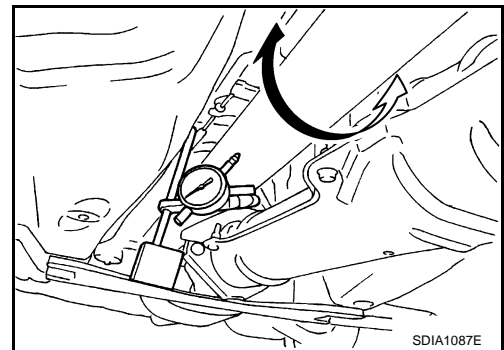
- If vibration is present at high speed, inspect propeller shaft runout first.

1. Measure propeller shaft runout at several points by rotating final drive companion flange with hands.

### Limit

**Propeller shaft runout** : Refer to [DLN-89, "Propeller Shaft Runout"](#).

2. If runout still exceeds specifications, separate propeller shaft at final drive companion flange; then rotate companion flange 90, 180, 270 degrees and install propeller shaft.
3. Check runout again. If runout still exceeds specifications, replace propeller shaft assembly.
4. Check the vibration by driving vehicle.



### RUNOUT MEASURING POINT

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O

MA

# CHASSIS MAINTENANCE

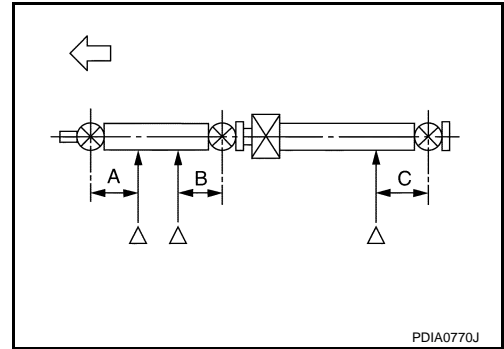
## < ON-VEHICLE MAINTENANCE >

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

↩: Vehicle front

**Dimension**

**A: 192 mm (7.56 in)**  
**B: 172 mm (6.77 in)**  
**C: 170 mm (6.69 in)**



## REAR PROPELLER SHAFT: 3S80A-R

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

INFOID:000000000967328

#### NOISE

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

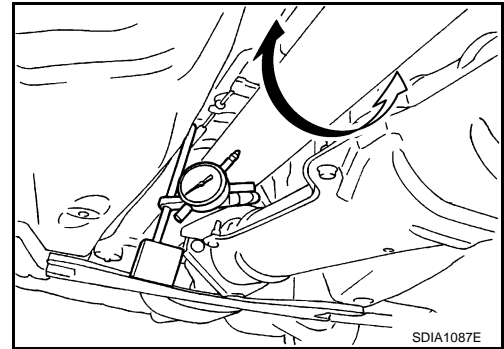
#### VIBRATION

- If vibration is present at high speed, inspect propeller shaft runout first.
1. Measure propeller shaft runout at several points by rotating final drive companion flange with hands.

**Limit**

**Propeller shaft runout : Refer to [DLN-97, "Propeller Shaft Runout"](#).**

2. If runout still exceeds specifications, separate propeller shaft at final drive companion flange; then rotate companion flange 120, 240 degrees and install propeller shaft.
3. Check runout again. If runout still exceeds specifications, replace propeller shaft assembly.
4. Check the vibration by driving vehicle.



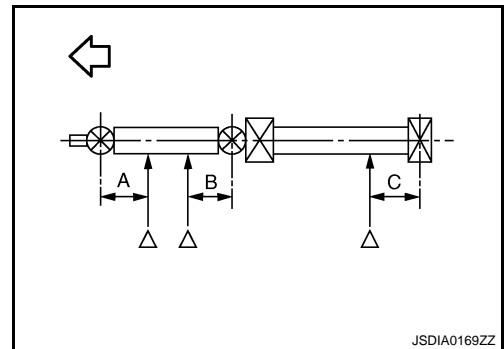
#### RUNOUT MEASURING POINT

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

↩: Vehicle front

**Dimension**

**A: 192 mm (7.56 in)**  
**B: 172 mm (6.77 in)**  
**C: 172 mm (6.77 in)**



## REAR PROPELLER SHAFT: 3S81A-1VL107

### REAR PROPELLER SHAFT: 3S81A-1VL107 : Inspection

INFOID:000000000967329

#### NOISE

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

#### VIBRATION

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

# CHASSIS MAINTENANCE

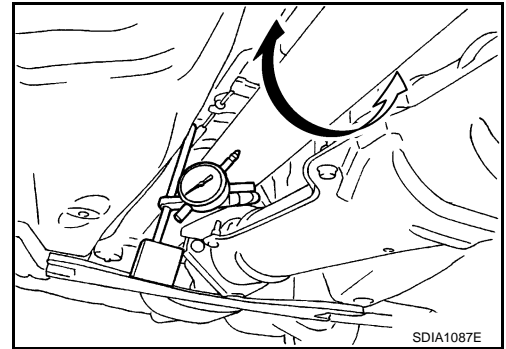
## < ON-VEHICLE MAINTENANCE >

1. Measure propeller shaft runout at several points by rotating final drive companion flange with hands.

### Limit

**Propeller shaft runout** : Refer to [DLN-105, "Propeller Shaft Runout"](#).

2. If runout still exceeds specifications, separate propeller shaft at final drive companion flange; then rotate companion flange 60, 120, 180, 240, 300 degrees and install propeller shaft.
3. Check runout again. If runout still exceeds specifications, replace propeller shaft assembly.
4. Check the vibration by driving vehicle.



## RUNOUT MEASURING POINT

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

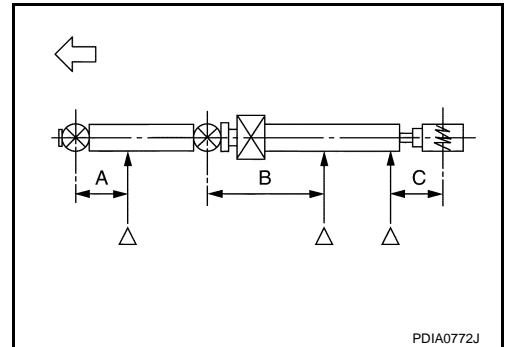
↔: Vehicle front

### Dimension

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

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

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



## FRONT DIFFERENTIAL GEAR OIL: F160A

### FRONT DIFFERENTIAL GEAR OIL: F160A : Inspection

INFOID:000000000967330

#### OIL LEAKAGE

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

#### OIL LEVEL

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

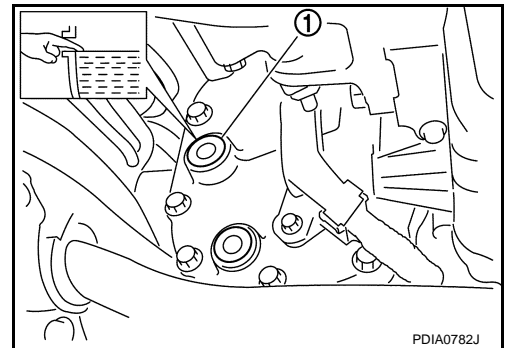
#### CAUTION:

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

- Set a gasket on filler plug (1) and install it on final drive assembly. Refer to [DLN-119, "Exploded View"](#).

#### CAUTION:

**Never reuse gasket.**



### FRONT DIFFERENTIAL GEAR OIL: F160A : Draining

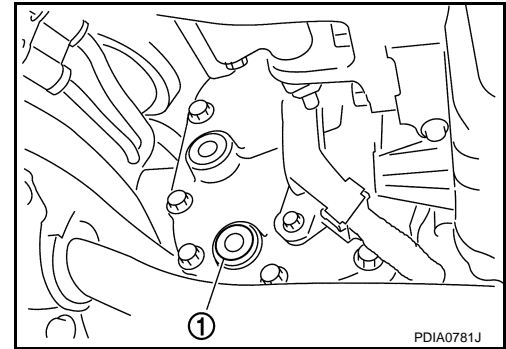
INFOID:000000000967331

1. Stop engine.

# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

2. Remove drain plug (1) and drain gear oil.
3. Set a gasket on drain plug (1) and install it to final drive assembly and tighten to the specified torque. Refer to [DLN-119, "Exploded View"](#).  
**CAUTION:**  
**Never reuse gasket.**



## FRONT DIFFERENTIAL GEAR OIL: F160A : Refilling

INFOID:000000000967332

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

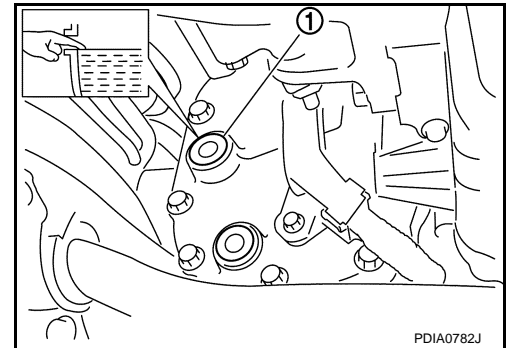
**Oil grade and Viscosity** : Refer to [MA-10, "Fluids and Lubricants"](#).

**Oil capacity** : Refer to [DLN-144, "General Specifications"](#).

2. After refilling oil, check oil level. Set a gasket to filler plug (1), then install it to final drive assembly. Refer to [DLN-119, "Exploded View"](#).

**CAUTION:**

**Never reuse gasket.**



## REAR DIFFERENTIAL GEAR OIL: R200

## REAR DIFFERENTIAL GEAR OIL: R200 : Inspection

INFOID:000000000967333

### OIL LEAKEGE

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

### OIL LEVEL

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

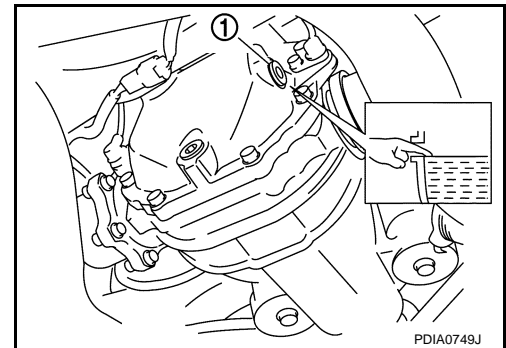
**CAUTION:**

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

- Set a gasket on filler plug (1) and install it on final drive assembly. Refer to [DLN-174, "2WD : Exploded View"](#) (2WD models), [DLN-186, "AWD : Exploded View"](#) (AWD models).

**CAUTION:**

**Never reuse gasket.**



## REAR DIFFERENTIAL GEAR OIL: R200 : Draining

INFOID:000000000967334

1. Stop engine.

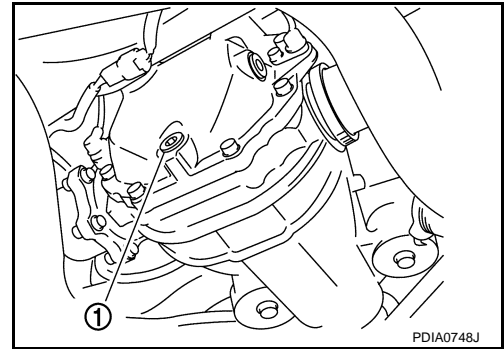
# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

2. Remove drain plug (1) and drain gear oil.
3. Set a gasket on drain plug (1) and install it to final drive assembly and tighten to the specified torque. Refer to [DLN-174. "2WD : Exploded View"](#) (2WD models), [DLN-186. "AWD : Exploded View"](#) (AWD models).

**CAUTION:**

**Never reuse gasket.**



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## REAR DIFFERENTIAL GEAR OIL: R200 : Refilling

INFOID:000000000967335

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

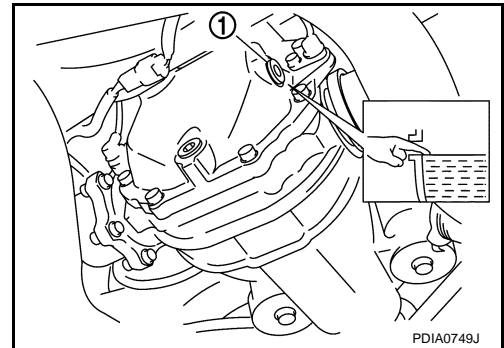
**Oil grade and Viscosity** : Refer to [MA-10. "Fluids and Lubricants"](#).

**Oil capacity** : Refer to [DLN-216. "General Specification"](#).

2. After refilling oil, check oil level. Set a gasket to filler plug (1), then install it to final drive assembly. Refer to [DLN-174. "2WD : Exploded View"](#) (2WD models), [DLN-186. "AWD : Exploded View"](#) (AWD models).

**CAUTION:**

**Never reuse gasket.**



PDIA0749J

## REAR DIFFERENTIAL GEAR OIL: R200V

## REAR DIFFERENTIAL GEAR OIL: R200V : Inspection

INFOID:000000000967336

### OIL LEAKAGE

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

### OIL LEVEL

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

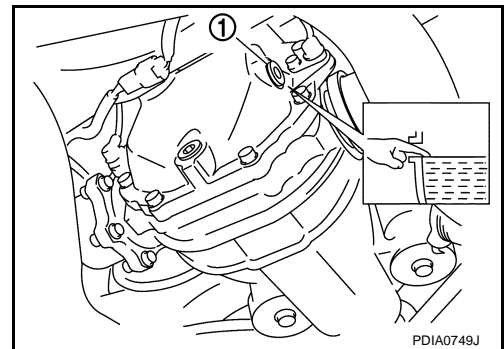
**CAUTION:**

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

- Set a gasket on filler plug (1) and install it on final drive assembly. Refer to [DLN-246. "M/T : Exploded View"](#) (M/T models), [DLN-258. "A/T : Exploded View"](#) (A/T models).

**CAUTION:**

**Never reuse gasket.**



PDIA0749J

## REAR DIFFERENTIAL GEAR OIL: R200V : Draining

INFOID:000000000967337

1. Stop engine.

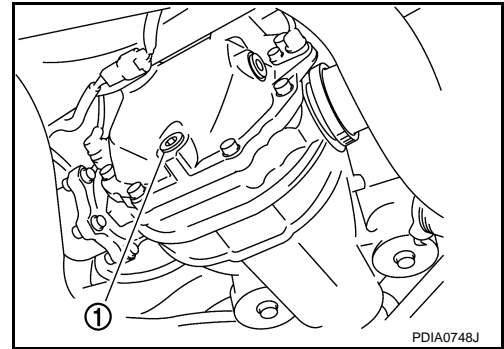
# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

2. Remove drain plug (1) and drain gear oil.
3. Set a gasket on drain plug (1) and install it to final drive assembly and tighten to the specified torque. Refer to [DLN-246, "M/T : Exploded View"](#) (M/T models), [DLN-258, "A/T : Exploded View"](#) (A/T models).

**CAUTION:**

**Never reuse gasket.**



PDIA0748J

## REAR DIFFERENTIAL GEAR OIL: R200V : Refilling

INFOID:000000000967338

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

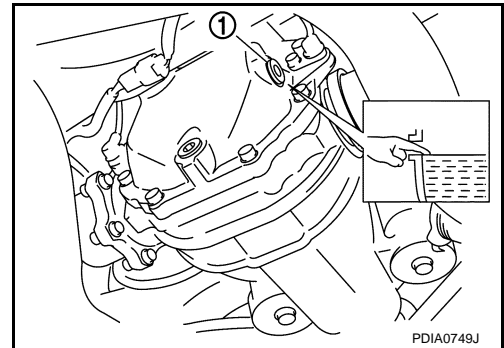
**Oil grade and Viscosity** : Refer to [MA-10, "Fluids and Lubricants"](#).

**Oil capacity** : Refer to [DLN-287, "General Specification"](#).

2. After refilling oil, check oil level. Set a gasket to filler plug (1), then install it to final drive assembly. Refer to [DLN-246, "M/T : Exploded View"](#) (M/T models), [DLN-258, "A/T : Exploded View"](#) (A/T models).

**CAUTION:**

**Never reuse gasket.**



PDIA0749J

## WHEELS (BONDING WEIGHT TYPE)

## WHEELS (BONDING WEIGHT TYPE) : Adjustment

INFOID:000000000967339

### BARANCING WHEELS (BONDING WEIGHT TYPE)

#### Preparation Before Adjustment

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

**CAUTION:**

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

#### Wheel Balance Adjustment

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

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

**CAUTION:**

- **Do not install the inner balance weight before installing the outer balance weight.**
- **Before installing the balance weight, be sure to clean the mating surface of the road wheel.**

# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

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

**Calculation example:**

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

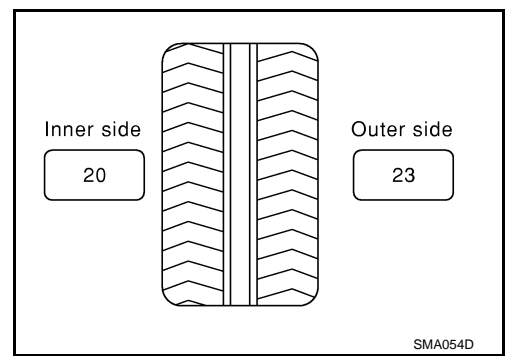
**NOTE:**

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

**Example:**

$36.2 \Rightarrow 35 \text{ g (1.23 oz)}$

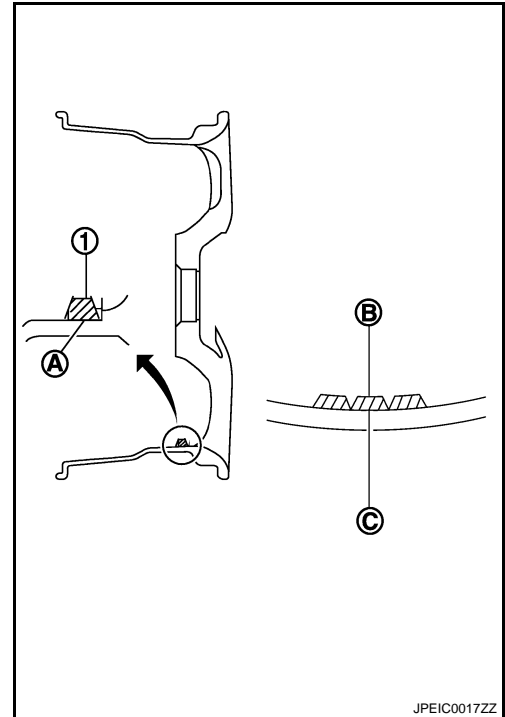
$36.3 \Rightarrow 37.5 \text{ g (1.32 oz)}$



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

**CAUTION:**

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



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

**CAUTION:**

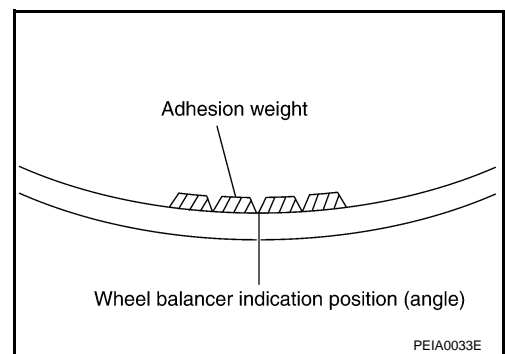
**Do not install one balance weight sheet on top another.**

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

**CAUTION:**

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

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



Wheel balance	Dynamic (At flange)	Static (At flange)
Maximum allowable unbalance	Refer to <a href="#">WT-95, "Road Wheel"</a> .	

## TIRE ROTATION (for 17 inch wheel models)



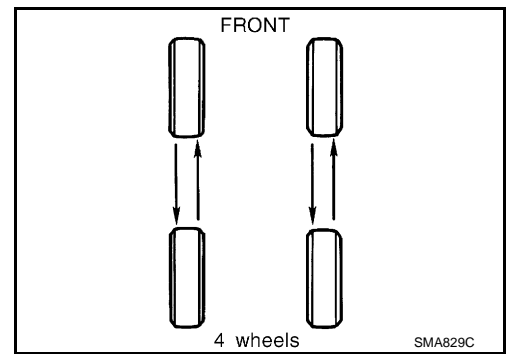
# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

- Follow the maintenance schedule for tire rotation service intervals. Refer to MA-XX PERIODIC MAINTENANCE.
- When installing the wheel, tighten wheel nuts to the specified torque.

### CAUTION:

- Do not include the T-type spare tire when rotating the tires.
- When installing wheels, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.
- Be careful not to tighten wheel nut at torque exceeding the criteria for preventing strain of disc rotor.



Wheel nuts tightening torque : Refer to [WT-95. "Road Wheel"](#).

- Perform the ID registration, after tire rotation. Refer to [WT-5. "ID REGISTRATION PROCEDURE : Special Repair Requirement"](#).

## TIRE ROTATION (for 18 inch wheel models)

- Tire cannot be rotated in vehicle, as front tire are different size from rear tire and the direction of wheel rotation is fixed in each tire.

Wheel nuts tightening torque : Refer to [WT-95. "Road Wheel"](#).

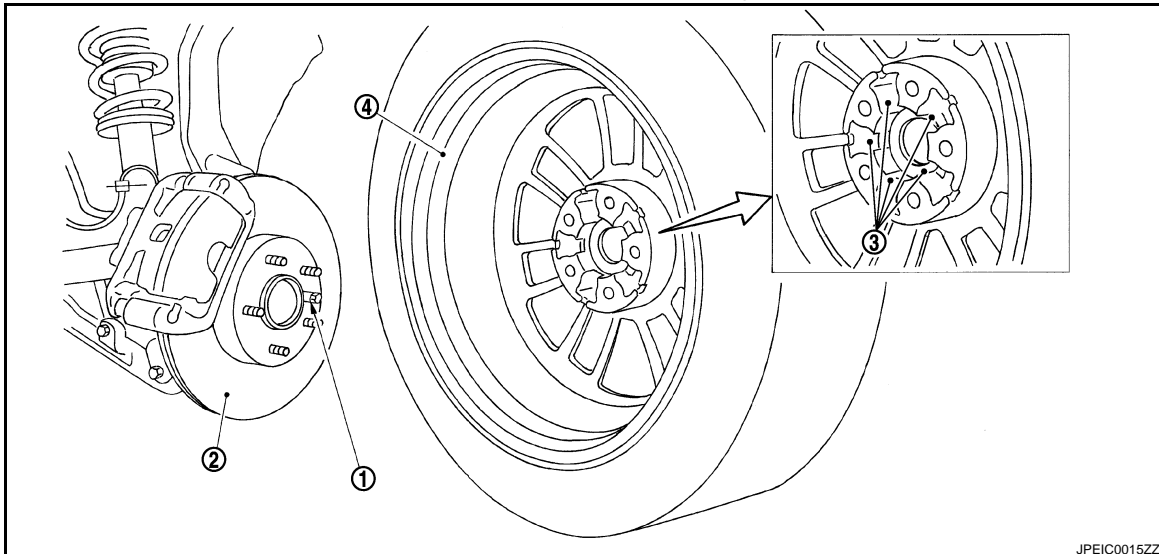
### CAUTION:

Do not include the T-type spare tire when rotating the tires.

Safety Device Preventing from Being Incorrectly installed

## FRONT BRAKE DISC ROTOR AND FRONT WHEEL

- Front and rear wheel size for this model differs, therefore special pin (1) has been installed on the front brake disc rotor (2). To accommodate this pin a hole (3) has been provided on the front wheel (4) (the rear wheel does not have this hole.) and in some case the rear wheel is being mistakenly installed on the front.



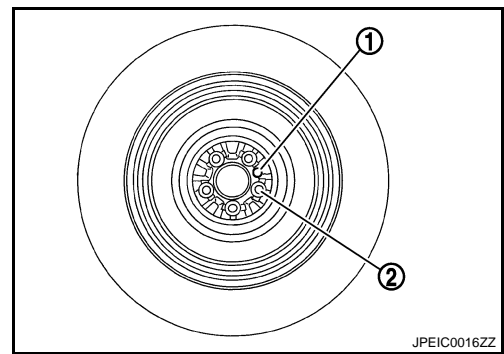
T-TYPE SPARE TIRE WHEEL



# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

- Regarding spare tire (for emergency) wheel, wrong assembly protection pin through hole (1) has been set in addition to regular bolt holes (2) in order to enable installation to front wheel.

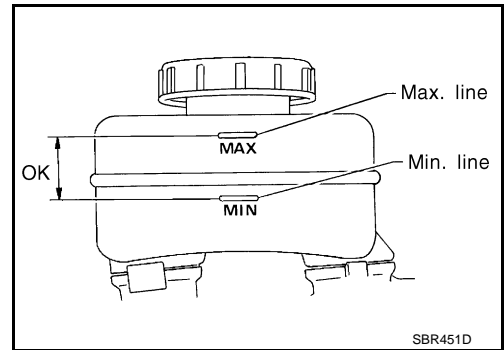


## BRAKE FLUID LEVEL AND LEAKS

### BRAKE FLUID LEVEL AND LEAKS : Inspection

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

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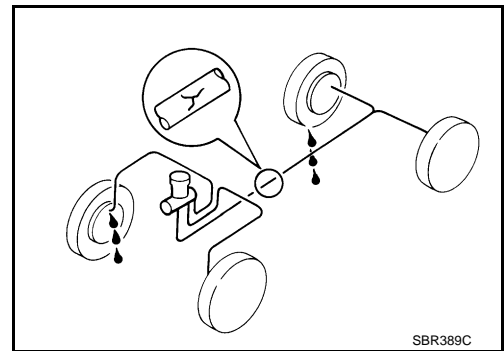


## BRAKE LINES AND CABLES

### BRAKE LINES AND CABLES : Inspection

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

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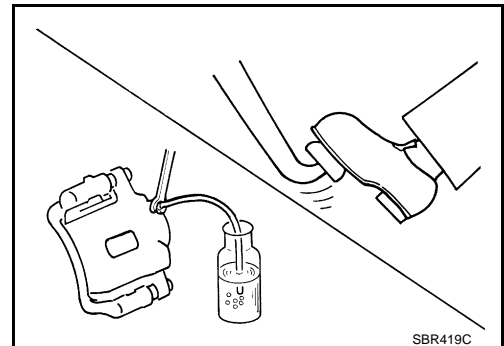


## BRAKE FLUID

### BRAKE FLUID : Changing

- Drain brake fluid from each bleed valve.
- Refill until new brake fluid comes out from each bleed valve. Use same procedure as in bleeding hydraulic system to refill brake fluid.  
Refer to [BR-12. "Bleeding Brake System"](#).
  - Refill with recommended Genuine Nissan Super Heavy Duty Brake Fluid or equivalent DOT 3 (US FMVSS No. 116). Refer to [MA-10. "Fluids and Lubricants"](#).
  - Never reuse drained brake fluid.
  - Be careful not to splash brake fluid on painted areas.

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## DISC BRAKE

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# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

### DISC BRAKE : Inspection

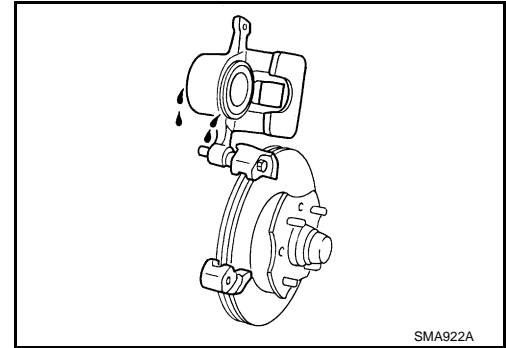
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#### DISC ROTOR

Check condition, wear, and damage.

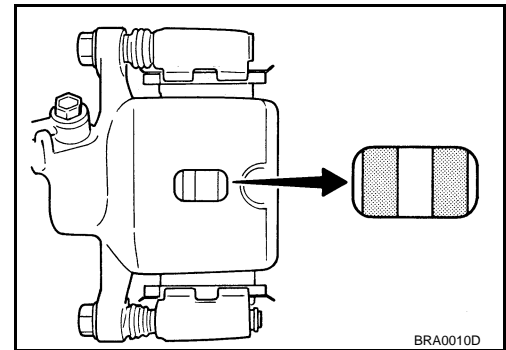
#### CALIPER

- Check for leakage.



#### BRAKE PAD

- Check for wear or damage.



### DISC BRAKE : Front Disc Brake

INFOID:000000000967344

#### FRONT CALIPER 1 PISTON TYPE

Unit: mm (in.)

Brake pad	Standard thickness	10.3 (0.406)
	Wear limit thickness	2.0 (0.079)
Disc rotor	Standard thickness	32.0 (1.260)
	Wear limit thickness	30.0 (1.181)
	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout limit (with it attached to the vehicle)	0.035 (0.0014)

#### FRONT CALIPER 2 PISTON TYPE

Unit: mm (in.)

Brake pad	Standard thickness	11.0 (0.433)
	Wear limit thickness	2.0 (0.079)
Disc rotor	Standard thickness	28.0 (1.102)
	Wear limit thickness	26.0 (1.024)
	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout limit (with it attached to the vehicle)	0.035 (0.0014)

### DISC BRAKE : Rear Disc Brake

INFOID:000000000967345

#### FRONT CALIPER 1 PISTON TYPE

# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

Unit: mm (in.)

Brake pad	Standard thickness	8.5 (0.335)
	Wear limit thickness	2.0 (0.079)
Disc rotor	Standard thickness	16.0 (0.631)
	Wear limit thickness	15.0 (0.591)
	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout limit (with it attached to the vehicle)	0.055 (0.0022)

## FRONT CALIPER 2 PISTON TYPE

Unit: mm (in.)

Brake pad	Standard thickness	8.5 (0.335)
	Wear limit thickness	2.0 (0.079)
Disc rotor	Standard thickness	16.0 (0.631)
	Wear limit thickness	14.0 (0.551)
	Thickness variation (measured at 8 positions)	0.015 (0.0006)
	Runout limit (with it attached to the vehicle)	0.055 (0.0022)

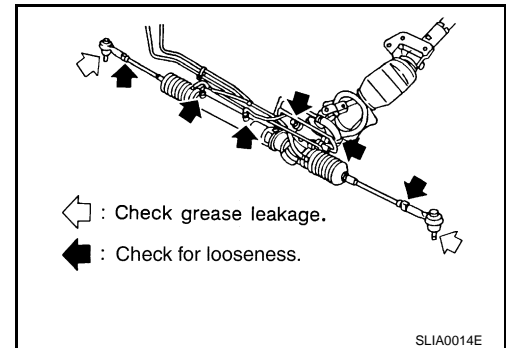
## STEERING GEAR AND LINKAGE

### STEERING GEAR AND LINKAGE : Inspection

INFOID:000000000967346

#### 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

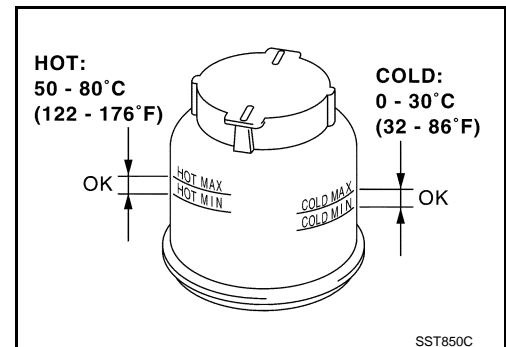
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Check fluid level in reservoir tank with engine off.

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

#### CAUTION:

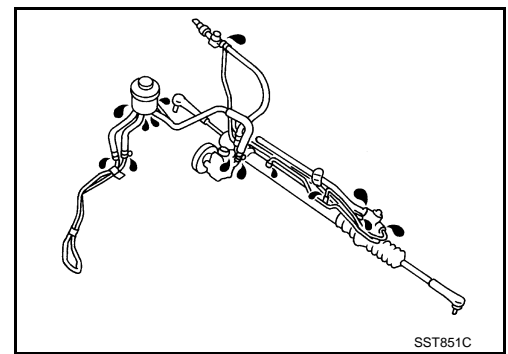
- Do not overfill.
- Recommended fluid is Genuine NISSAN PSF or equivalent. Refer to [MA-10, "Fluids and Lubricants"](#).



# CHASSIS MAINTENANCE

## < ON-VEHICLE MAINTENANCE >

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



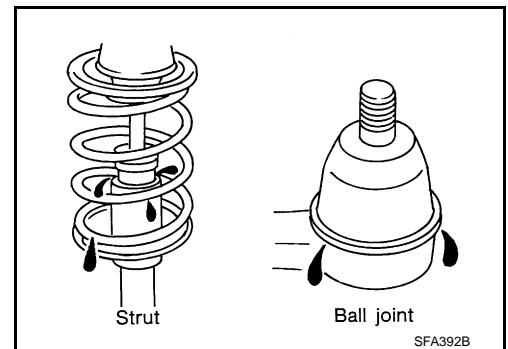
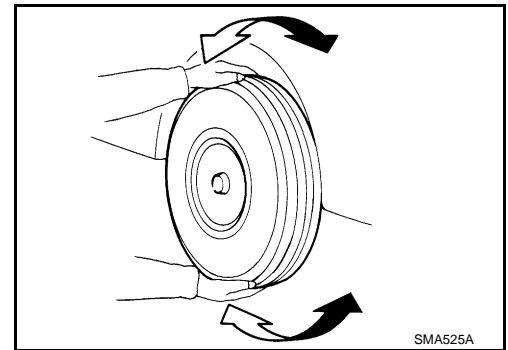
## AXLE AND SUSPENSION PARTS

### AXLE AND SUSPENSION PARTS : Inspection

INFOID:000000000967348

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

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

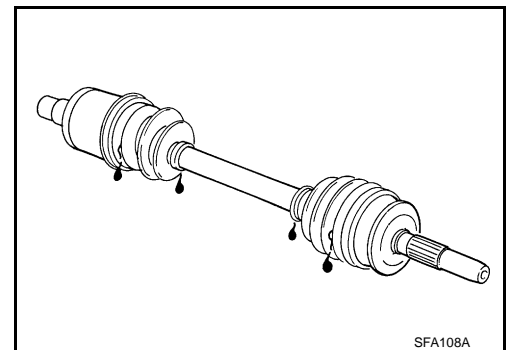


## DRIVE SHAFT

### DRIVE SHAFT : Inspection

INFOID:000000000967349

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



# BODY MAINTENANCE

< ON-VEHICLE MAINTENANCE >

## BODY MAINTENANCE

### LOCKS, HINGES AND HOOD LATCH

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

INFOID:000000000967350

For hood lock illustration. Refer to [DLK-190, "HOOD ASSEMBLY : Exploded View"](#) and [DLK-192, "HOOD LOCK CONTROL : Exploded View"](#).

For door lock illustration. Refer to [DLK-207, "FRONT DOOR LOCK : Exploded View"](#) and [DLK-209, "REAR DOOR LOCK : Exploded View"](#).

For trunk lid lock illustration. Refer to [DLK-215, "TRUNK LID LOCK : Exploded View"](#).

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

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

INFOID:000000000967351

For front seat belt illustration. Refer to [SB-5, "SEAT BELT RETRACTOR : Exploded View"](#).

For rear seat belt illustration. Refer to [SB-9, "SEAT BELT RETRACTOR : Exploded View"](#).

#### **CAUTION:**

- After any collision, inspect all seat belt assemblies, including retractors and other attached hardware (i.e. anchor bolt, guide rail set). Nissan recommends to replace all seat belt assemblies in use during a collision, unless not damaged and properly operating after minor collision. Also inspect seat belt assemblies not in use during a collision, and replace if damaged or improperly operating.

Seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision where the driver and passenger air bags are deployed.

- If any component of seat belt assembly is questionable, do not repair.

Replace as seat belt assembly.

- If webbing is cut, frayed, or damaged, replace belt assembly.
- Never oil tongue and buckle.
- Use a genuine NISSAN seat belt assembly.

For details, refer to [SB-3, "SEAT BELT RETRACTOR : Inspection"](#), [SB-8, "SEAT BELT RETRACTOR : Inspection"](#) in SB section.

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

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## SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### SERVICE DATA AND SPECIFICATIONS (SDS)

#### DRIVE BELTS

DRIVE BELTS : Drive Belt

INFOID:000000000967352

#### DRIVE BELT

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

ENGINE COOLANT : Periodical Maintenance Specification

INFOID:000000000967353

#### ENGINE COOLANT CAPACITY (APPROXIMATE)

Unit: ℓ (US qt, Imp qt)

Engine coolant capacity [With reservoir tank ("MAX" level)]	9.0 (9-1/2, 7-7/8)
Reservoir tank engine coolant capacity (At "MAX" level)	0.8 (7/8, 3/4)

### ENGINE OIL

ENGINE OIL : Periodical Maintenance Specification

INFOID:000000000967354

#### ENGINE OIL CAPACITY (APPROXIMATE)

Unit: ℓ (US qt, Imp qt)

Drain and refill	With oil filter change	4.9 (5-1/8, 4-1/4)
	Without oil filter change	4.6 (4-7/8, 4)
Dry engine (Overhaul)		5.5 (5-3/4, 4-7/8)

### SPARK PLUG

SPARK PLUG : Spark Plug

INFOID:000000000967355

#### SPARK PLUG

Unit: mm (in)

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

### ROAD WHEEL

ROAD WHEEL : Road Wheel

INFOID:000000000967356

Kind of wheel		Aluminum
Maximum radial runout limit	Lateral deflection	Less than 0.3 mm (0.012 in)
	Vertical deflection	
Maximum allowable unbalance limit	Dynamic (At flange)	Less than 5 g (0.17 oz) (one side)
	Static (At flange)	Less than 10 g (0.35 oz)
Wheel nuts tightening torque		108 N·m (11 kg·m, 80 ft·lb)