

**SECTION MA**  
**MAINTENANCE**

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# PRECAUTIONS

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## PRECAUTIONS

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### Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

ELS001N7

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS 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 SRS 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.**

# PREPARATION

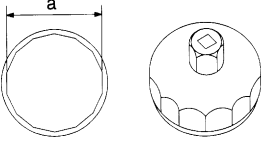
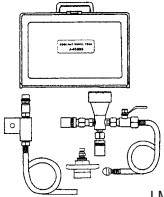
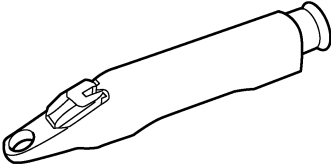
## PREPARATION

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### Special Service Tool

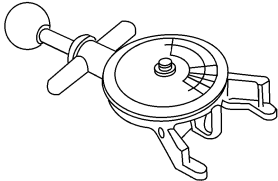
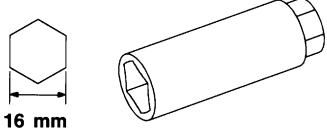
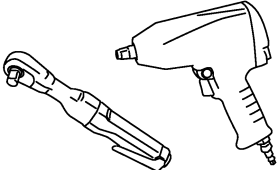
ELS001N8

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 cap wrench <div style="text-align: center;">  <p>NT375</p> </div>	Removing oil filter <b>a: 64.3 mm (2.531 in)</b>
KV991J0070 (J-45695) Coolant refill tool <div style="text-align: center;">  <p>LMA053</p> </div>	For refilling engine cooling system
KV991J0010 (J-23688) Engine coolant refractometer <div style="text-align: center;">  <p>WBIA0539E</p> </div>	Checking concentration of ethylene glycol in engine coolant

### Commercial Service Tool

ELS001N9

(Kent-Moore No.) Tool name	Description
(BT-3373-F) Belt tension gauge <div style="text-align: center;">  <p>AMA126</p> </div>	Checking drive belt tension
Spark plug wrench <div style="text-align: center;">  <p><b>16 mm (0.63 in)</b></p> <p>S-NT047</p> </div>	Removing and installing spark plugs
Power Tool <div style="text-align: center;">  <p>PBIC0190E</p> </div>	Loosening bolts and nuts

# GENERAL MAINTENANCE

## GENERAL MAINTENANCE

PFP:00000

### Explanation of General Maintenance

ELS001NA

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 including the spare, at least once a month and always prior to a long distance trip with a gauge. Adjust to the specified pressure if necessary. Check carefully for damage, cuts or excessive wear.	<a href="#">WT-33, "Tire"</a>
<b>Wheel nuts</b>	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	<a href="#">WT-7, "ROAD WHEEL TIRE ASSEMBLY"</a>
<b>Windshield</b>	Clean the windshield on a regular basis. Check windshield at least every six months for cracks or other damage. Repair as necessary.	<a href="#">GW-12</a>
<b>Tire rotation</b>	Tires should be rotated every 12,000 km (7,500 miles).	<a href="#">MA-27</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-6, "Front Wheel Alignment"</a> and <a href="#">MA-25, "Balancing Wheels (Bonding Weight Type)"</a>
<b>Windshield wiper blades</b>	Check for cracks or wear if they do not wipe properly. Replace as necessary.	—
<b>Doors and engine hood</b>	Check that all doors and the engine hood operate smoothly as well as the back 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-30</a>
<b>Lamps</b>	Make sure that the head lamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check head lamp aim. Clean the eclampsia on a regular basis.	<a href="#">LT-24, "Aiming Adjustment" (US)</a> , <a href="#">LT-36, "Aiming Adjustment" (Canada)</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. Be sure to check for changes in the steering condition, such as excessive play, hard steering or strange noises.	<a href="#">PS-7</a>
<b>Seats</b>	Check seat position controls such as seat adjusters, seat back 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 seat backs.	—
<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-30</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.	<a href="#">BR-27</a>

# GENERAL MAINTENANCE

Item		Reference page	
<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-6, "BRAKE PEDAL"</a> and <a href="#">BR-22, "BRAKE BOOSTER"</a>	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 with only the parking brake applied.	<a href="#">PB-4, "ADJUSTMENT"</a>	B
<b>Automatic transaxle "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" position without applying any brakes.	—	C

## 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.	—	E
<b>Engine coolant level</b>	Check the coolant level when the engine is cold.	<a href="#">MA-14</a>	F
<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.	—	G
<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-27</a>	H
<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="#">SC-4</a>	I
<b>Engine drive belts</b>	Make sure that no belt is frayed, worn, cracked or oily.	<a href="#">MA-11</a>	J
<b>Engine oil level</b>	Check the level on the dipstick after parking the vehicle on a level spot and turning off the engine.	<a href="#">MA-17</a>	K
<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-28</a>	MA
<b>Automatic transaxle fluid level</b>	Check the level on the dipstick after putting the selector lever in "P" with the engine idling.	<a href="#">MA-23</a>	M
<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-23</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

## PERIODIC MAINTENANCE

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### Introduction of Periodic Maintenance

ELS001NB

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	<a href="#">MA-7</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-8</a>
		Chassis and Body Maintenance	<a href="#">MA-8</a>

### Schedule 1

ELS001NC

#### EMISSION CONTROL SYSTEM MAINTENANCE

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-11</a>
Air cleaner filter	NOTE (2)								[R]	<a href="#">MA-17</a>
EVAP vapor lines									I*	<a href="#">MA-22</a>
Fuel lines									I*	<a href="#">MA-16</a>
Fuel filter	NOTE (3)									—
Engine coolant	NOTE (4)									<a href="#">MA-13</a>
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-17</a>
Engine oil filter (use part No. 15208 65F00 or equivalent.)		R	R	R	R	R	R	R	R	<a href="#">MA-18</a>
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).								<a href="#">MA-20</a>
Intake & exhaust valve clearance*	NOTE (5)									<a href="#">EM-87</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-11</a>
Air cleaner filter	NOTE (2)								[R]	<a href="#">MA-17</a>
EVAP vapor lines									I*	<a href="#">MA-22</a>
Fuel lines									I*	<a href="#">MA-16</a>
Fuel filter	NOTE (3)									-
Engine coolant	NOTE (4)								R*	<a href="#">MA-13</a>

# PERIODIC 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 oil		R	R	R	R	R	R	R	R	<a href="#">MA-17</a>
Engine oil filter (use part no. 15208 65F00 or equivalent).		R	R	R	R	R	R	R	R	<a href="#">MA-18</a>
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).								<a href="#">MA-20</a>
Intake & exhaust valve clearance*	NOTE (5)									<a href="#">EM-87</a>

(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.

(2) If operating mainly in dusty conditions, more frequent maintenance may be required.

(3) Maintenance-free item. For service procedures, go to the 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 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 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-27</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-27</a>
Automatic transaxle fluid	NOTE (1)				I				I	<a href="#">MA-24</a>
Steering gear & linkage, axle & suspension parts			I		I		I		I	<a href="#">MA-28, MA-29</a>
Tire rotation	NOTE (2)									<a href="#">MA-27</a>
Exhaust system			I		I		I		I	<a href="#">MA-23</a>
Front drive shaft boot			I		I		I		I	<a href="#">MA-30</a>
In-cabin microfilter					R				R	<a href="#">MA-23</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	
Brake lines & cables					I				I	<a href="#">MA-27</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-27</a>
Automatic transaxle fluid	NOTE (1)				I				I	<a href="#">MA-24</a>
Steering gear & linkage, axle & suspension parts			I		I		I		I	<a href="#">MA-28, MA-29</a>
Tire rotation	NOTE (2)									<a href="#">MA-27</a>
Exhaust system			I		I		I		I	<a href="#">MA-23</a>
Front drive shaft boots			I		I		I		I	<a href="#">MA-30</a>
In-cabin microfilter					R				R	<a href="#">MA-23</a>

(1) If towing a trailer, using a camper or a car-top carrier, or driving on rough or muddy roads, change (not just inspect) oil at every 30,000 miles (48,000 km) or 24 months. For 5 A/T models, using automatic transmission fluid other than Genuine NISSAN Matic Fluid K

# PERIODIC MAINTENANCE

ATF will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the NISSAN new vehicle limited warranty.

(2) Refer to [MA-4, "GENERAL MAINTENANCE"](#) .

## Schedule 2 EMISSION CONTROL SYSTEM MAINTENANCE

ELS001ND

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Drive belts	NOTE (1)								I*	<a href="#">MA-11</a>
Air cleaner filter					[R]				[R]	<a href="#">MA-17</a>
EVAP vapor lines					I*				I*	<a href="#">MA-22</a>
Fuel lines					I*				I*	<a href="#">MA-16</a>
Fuel filter	NOTE (2)									-
Engine coolant	NOTE (3)								R*	<a href="#">MA-13</a>
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-17</a>
Engine oil filter (Use part No. 15208 65F00 or equivalent.		R	R	R	R	R	R	R	R	<a href="#">MA-18</a>
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).								<a href="#">MA-20</a>
Intake & exhaust valve clearance*	NOTE (4)									<a href="#">EM-87</a>

(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.

(2) Maintenance-free item. For service procedures, go 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 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 Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Brake lines & cables			I		I		I		I	<a href="#">MA-27</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-27</a>
Automatic transaxle fluid	NOTE (1)		I		I		I		I	<a href="#">MA-23</a>
Steering gear & linkage, axle & suspension parts					I				I	<a href="#">MA-28, MA-29</a>
Tire rotation	NOTE (2)									<a href="#">MA-27</a>
Exhaust system					I				I	<a href="#">MA-23</a>
Front drive shaft boots			I		I		I		I	<a href="#">MA-30</a>
In-cabin microfilter			R		R		R		R	<a href="#">MA-23</a>

(1) For 5 A/T models, using automatic transmission fluid other than Genuine NISSAN Matic Fluid K ATF will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the NISSAN new vehicle limited warranty.

(2) Refer to [MA-4, "GENERAL MAINTENANCE"](#) .



# RECOMMENDED FLUIDS AND LUBRICANTS

PFP:00000

ELS001NE

## RECOMMENDED FLUIDS AND LUBRICANTS

### Fluids and Lubricants

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Metric	US measure	Imp measure	
Fuel		75.6 ℓ	20 gal	16 5/8 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91) *1
Engine oil Drain and refill	With oil filter change	4.0 ℓ	4 1/4 qt	3 1/2 qt	<ul style="list-style-type: none"> <li>● API Certification Mark *2</li> <li>● API grade SL, Energy Conserving *2</li> <li>● ILSAC grade GF-III *2</li> </ul>
	Without oil filter change	3.7 ℓ	3 7/8 qt	3 1/4 qt	
Dry engine (engine overhaul)		5.0 ℓ	5 1/4 qt	4 3/8 qt	
Cooling system	With reservoir at "MAX" level	10.5 ℓ	2 3/4 gal	2 3/8 gal	Genuine NISSAN Long Life Anti-freeze Coolant or equivalent
Automatic transaxle fluid (ATF)		7.4 ℓ	7 7/8 qt	6 1/2 qt	Genuine NISSAN Matic K ATF *3
Power steering fluid (PSF)		1.0 ℓ	2 1/8 pt	1 3/4 pt	Genuine NISSAN PSF or equivalent *4
Brake fluid		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid *5 or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	—	NLGI No. 2 (lithium soap base)
Brake grease		—	—	—	PBC (Poly Butyl Cuprysil) grease or silicone-based grease or equivalent
Windshield washer fluid		4.5 ℓ	1 1/4 gal	1 gal	Genuine NISSAN Windshield Washer Concentrate Cleaner & Anti-freeze or equivalent
Air conditioning system refrigerant		900 ± 50 g	1.98 ± 0.11 lb	1.98 ± 0.11 lb	HFC-134a (R-134a) *6
Air conditioning system oil		220 m ℓ	7.44 fl oz	7.7 fl oz	NISSAN A/C System Oil Type S or equivalent *6

\*1: Use unleaded regular gasoline with an octane rating of at least 87 AKI (Anti-Knock Index) number (Research octane number 91). For improved vehicle performance, NISSAN recommends the use of unleaded premium gasoline with an octane rating of at least 91 AKI number (Research octane number 96).

\*2: For further details, see "SAE Viscosity Number".

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

\*4: For Canada, NISSAN Automatic Transmission Fluid (ATF), DEXRON™ III / MERCON™ or equivalent ATF may also be used.

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

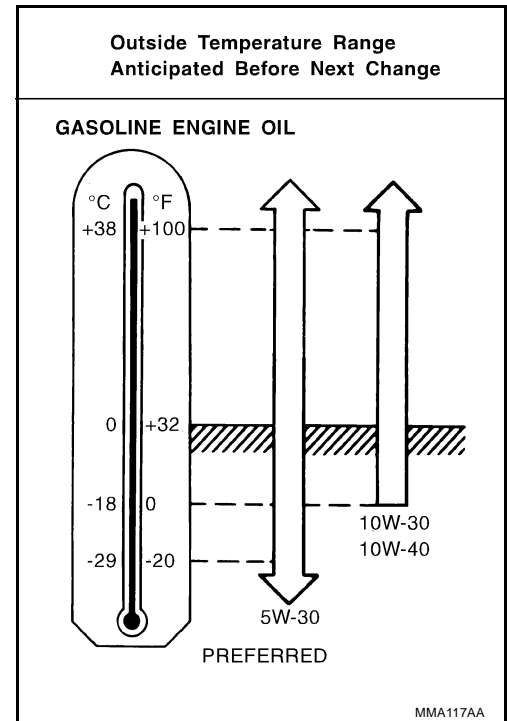
\*6: For further details, see "Air conditioner specification label".

# RECOMMENDED FLUIDS AND LUBRICANTS

ELS001NF

## SAE Viscosity Number GASOLINE ENGINE OIL

- SAE 5W-30 viscosity oil is preferred for all temperatures. SAE 10W-30 and 10W-40 viscosity oil may be used if the ambient temperature is above -18°C (0°F).
- Use of 5W-30 viscosity oil will increase fuel economy.



## ANTI-FREEZE COOLANT MIXTURE RATIO

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

For outside temperatures down to:		Anti-freeze coolant mixture ratio	
°C	°F	Genuine NISSAN Long Life Antifreeze coolant	Demineralized water or distilled water
-35°	-30°	50 %	50 %

### CAUTION:

- When adding or replacing coolant, be sure to use only Genuine NISSAN Long Life Anti-freeze coolant or equivalent with the proper mixture ratio of 50% anti-freeze and 50% demineralized water or distilled water.
- Other types of coolant solutions may damage your cooling system.

# ENGINE MAINTENANCE

## ENGINE MAINTENANCE

PFP:00000

### Drive Belts CHECKING DRIVE BELTS

ELS001NG

**WARNING:**

**Be sure to perform when the engine is not running.**

1. Inspect the belts for cracks, fraying, wear, or oil contamination. If necessary, replace the belts with new ones.
2. Inspect the belt deflection by applying 98 N (10 kg-f, 22 lb-f) on the belt midway between pulleys as shown.
3. Measure the belt tension using commercial service tool at the belt locations as shown.

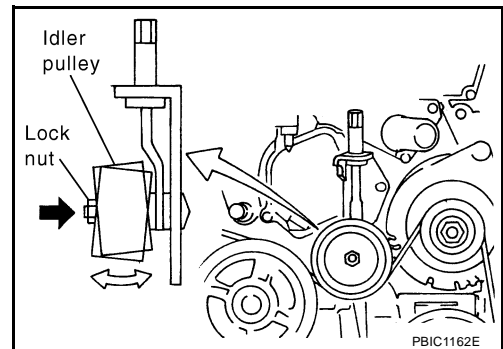
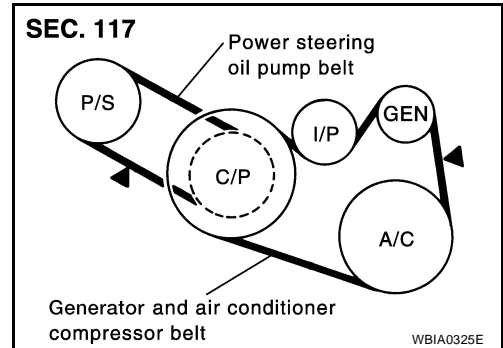
**Tool number : BT-3373-F**

**NOTE:**

- Inspect the belt deflection or tension when engine is cold.
- Adjust if the belt deflection exceeds the limit or if belt tension is not within specifications.

**CAUTION:**

- **When checking the belt deflection or tension immediately after installation, first adjust it to the specified value. Then, after turning the crankshaft two or more turns, readjust to the specified value to avoid variation in deflection between the pulleys.**
- **Tighten the idler pulley lock nut by hand and measure deflection or tension without looseness.**



### Belt Deflection and Tension

	Deflection adjustment		Unit: mm (in)	Tension adjustment*		Unit: N (kg-f, lb-f)
	Used belt		New belt	Used belt		New belt
	Limit	After adjustment		Limit	After adjustment	
Generator and air conditioner compressor	7 (0.28)	4.2 - 4.6 (0.17 - 0.18)	3.7 - 4.1 (0.15 - 0.16)	294 (30, 66)	730 - 818 (74.5 - 83.5, 164 - 184)	838 - 926 (85.5 - 94.5, 188 - 208)
Power steering pump	11 (0.43)	7.3 - 8.0 (0.29 - 0.30)	6.5 - 7.2 (0.26 - 0.28)	196 (20, 44)	495 - 583 (50.5 - 59.5, 111 - 131)	603 - 691 (61.5 - 70.5, 135.6 - 155.4)
Applied pushing force	98 N (10 kg-f, 22 lb-f)			—		

\*: If belt tension gauge cannot be installed at check points shown, check drive belt tension at different location on the belt.

# ENGINE MAINTENANCE

## TENSION ADJUSTMENT

### Belt Adjustment Method

Belt description	Belt tightening method for adjustment
Power steering oil pump belt	Adjusting bolt on power steering oil pump
Generator and air conditioner compressor belt	Adjusting bolt on idler pulley bracket

### CAUTION:

- When belt is replaced with a new one, adjust it to value for “New belt” to accommodate for insufficient adaptability with pulley grooves.
- When deflection or tension of belt being used exceeds “Used belt limit” adjust it to value for “After adjustment” of “Used belt”.
- When checking belt deflection or tension immediately after installation, first adjust it to the specification value. Then, after turning the crankshaft two turns or more, readjust to the specified value to avoid variation in deflection between pulleys.
- When installing belt, make sure that it is correctly engaged with pulley groove.
- Keep oil and water away from belt.
- Do not twist or bend belt excessively.

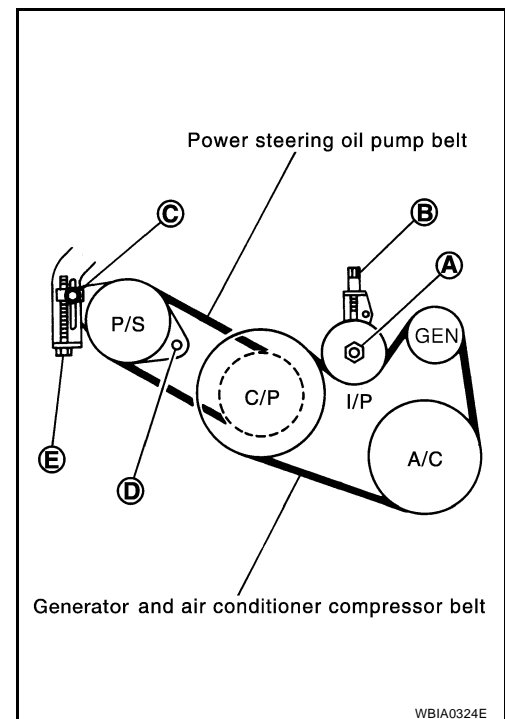
### Generator and Air Conditioner Compressor Belt

1. Remove engine undercover.
2. Loosen idler pulley lock nut “A” and adjust the belt by turning adjusting bolt “B”.
  - For specified belt deflection and tension, refer to [MA-11, "Drive Belts"](#).
3. Tighten lock nut “A”.

**Lock nut “A” : 34.8 N·m (3.5 kg-m, 26 ft-lb)**

4. Tighten adjusting bolt “B”.

**Adjusting bolt “B” : 5.4 N·m (0.55 kg-m, 48 in-lb)**



WBIA0324E

# ENGINE MAINTENANCE

## Power Steering Oil Pump Belt

1. Remove engine undercover.
2. Loosen adjusting bolt "C".
3. Loosen power steering oil pump bolt "D".

### NOTE:

Bolt head "D" is at the engine rear side.

4. Adjust the belt by turning the adjusting bolt "E".
  - For specified belt deflection and tension, refer to [MA-11, "Drive Belts"](#).

### NOTE:

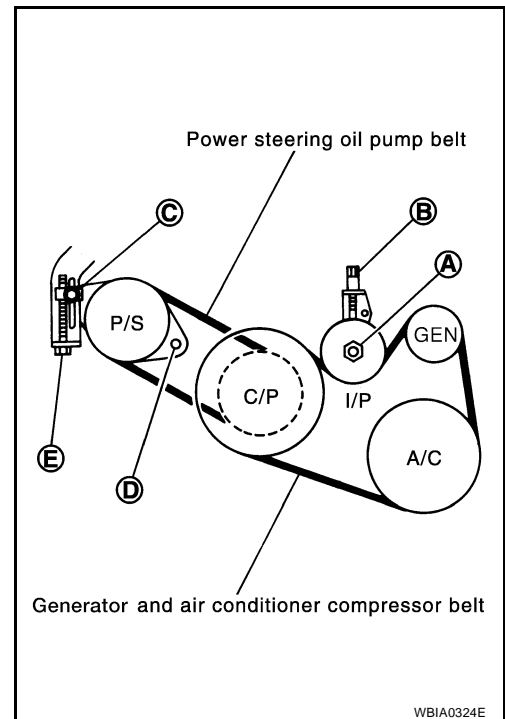
Adjusting bolt "E" is loosened with counterclockwise rotation.

5. Tighten adjusting bolt "C".

**Adjusting bolt "E" : 28.0 N-m (2.9 kg-m, 21 ft-lb)**

6. Tighten power steering oil pump bolt "D".

**Power steering pump bolt "D" : 43.2 N-m (4.4 kg-m, 32 ft-lb)**



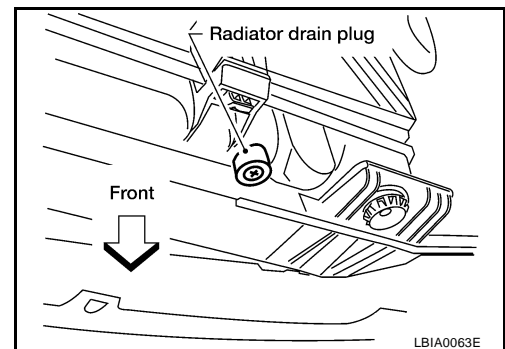
## Changing Engine Coolant

### WARNING:

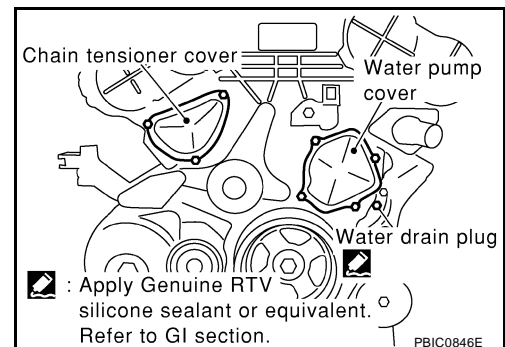
- To avoid being scalded, never change the coolant when the engine is hot.
- Wrap a thick cloth around cap and carefully remove the cap. First, turn the cap a quarter of a turn to release built-up pressure. Then turn the cap all the way.

## DRAINING ENGINE COOLANT

1. Remove engine undercover.
2. Open radiator drain plug at the bottom of radiator and remove the radiator filler cap. This is the only step required for a partial cooling system drain.
3. For a complete cooling system drain, remove the reservoir tank and drain the coolant, and then clean the reservoir tank before installation.
  - Do not allow coolant to spill on the drive belts.



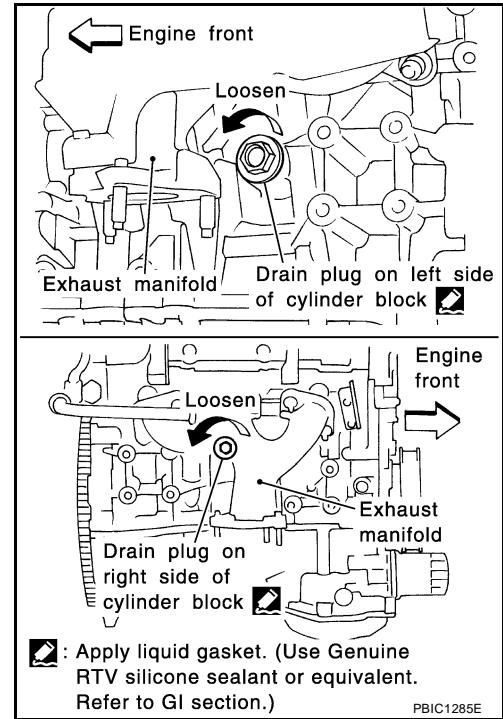
4. When performing a complete cooling system drain (to remove the engine or for engine repair), remove the cylinder block front drain plug and the cylinder block RH and LH drain plugs.



# ENGINE MAINTENANCE

## CAUTION:

If the vehicle is equipped with an engine block heater in place of the cylinder block LH drain plug, do not remove the engine block heater.



5. Check the drained coolant for contaminants such as rust, corrosion or discoloration.

- If contaminated, flush the engine cooling system. Refer to [MA-16, "FLUSHING COOLING SYSTEM"](#).

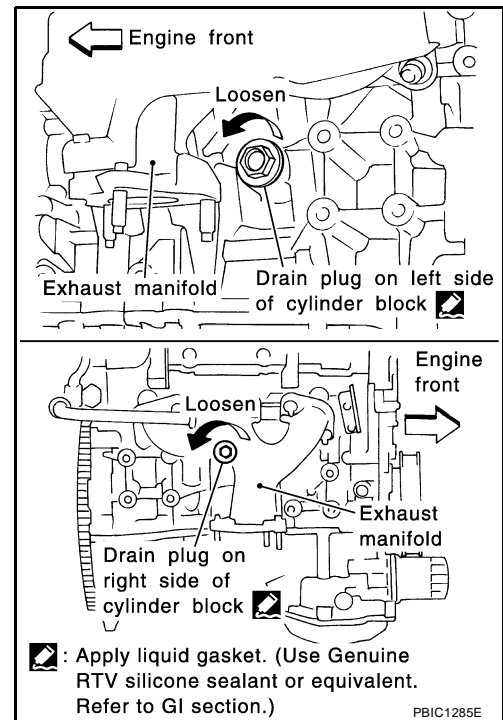
## REFILLING ENGINE COOLANT

1. Install the radiator drain plug. If the cooling system was drained completely, install the reservoir tank and the cylinder block drain plugs and tighten to specification.

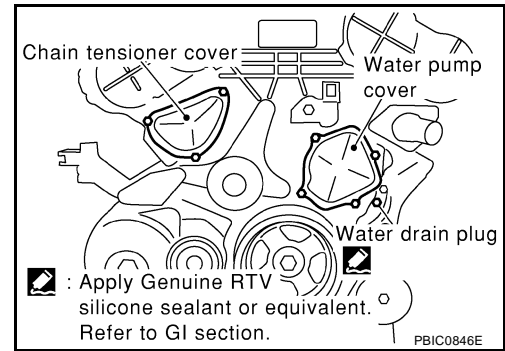
## CAUTION:

If the vehicle is equipped with an engine block heater in place of the cylinder block LH drain plug, do not remove the engine block heater.

- The radiator must be completely empty of coolant and water.
- Apply sealant to the threads of the cylinder block drain plugs. Use Genuine High Performance Thread Sealant or equivalent. Refer to [GI-46, "RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS"](#).



# ENGINE MAINTENANCE



- Radiator drain plug** : Refer to [CO-15, "RADIATOR"](#) .
- Cylinder block front drain plug** : Refer to [EM-118, "CYLINDER BLOCK"](#) .
- Cylinder block RH drain plug** : Refer to [EM-118, "CYLINDER BLOCK"](#) .
- Cylinder block LH drain plug** : Refer to [EM-118, "CYLINDER BLOCK"](#) .

2. If disconnected, reattach the upper radiator hose at the engine side.
3. Set the vehicle heater controls to the full HOT and heater ON position. Turn the vehicle ignition ON with the engine OFF as necessary to activate the heater mode.

4. Install the Tool by installing the radiator cap adapter onto the radiator neck opening. Then attach the gauge body assembly with the refill tube and the venturi assembly to the radiator cap adapter.

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

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

- Use Genuine NISSAN Long Life Anti-Freeze Coolant or equivalent, mixed 50/50 with distilled water or demineralized water.  
Refer to [MA-10, "ANTI-FREEZE COOLANT MIXTURE RATIO"](#) .

**Engine coolant capacity (with reservoir)** : Refer to [MA-9, "Fluids and Lubricants"](#) .

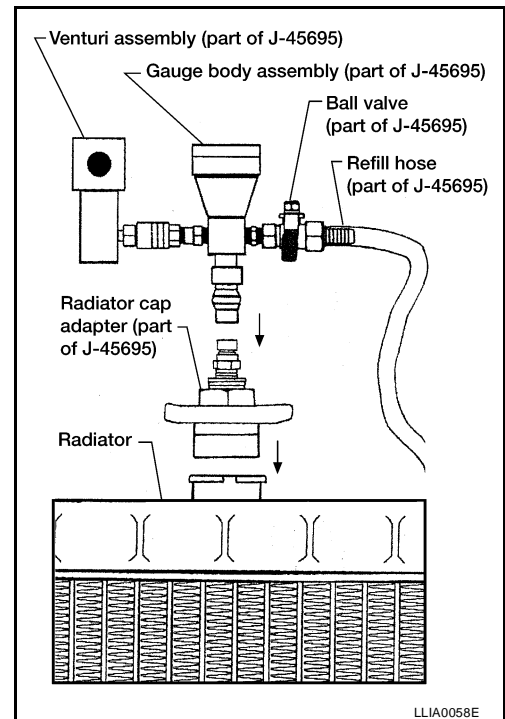
6. Install an air hose to the venturi assembly, the air pressure must be within specification.

**Compressed air supply pressure** : 5.7 - 8.5 kPa (5.6 - 8.4 kg/cm<sup>2</sup> , 80 - 120 psi)

**CAUTION:**

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

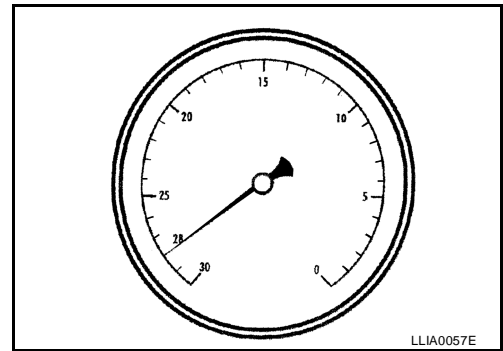
7. The vacuum gauge will begin to rise and there will be an audible hissing noise. During this process open the ball valve on the refill hose slightly. Coolant will be visible rising in the refill hose. Once the refill hose is full of coolant, close the ball valve. This will purge any air trapped in the refill hose.



# ENGINE MAINTENANCE

8. Continue to draw the vacuum until the gauge reaches 28 inches of vacuum. The gauge may not reach 28 inches in high altitude locations, refer to the vacuum specifications based on the altitude above sea level.

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



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

### CAUTION:

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

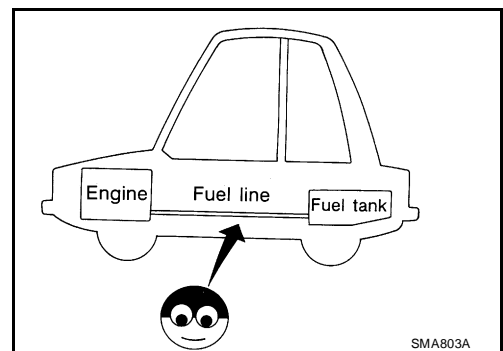
11. Remove the Tool from the radiator neck opening.
12. Fill the cooling system reservoir tank to the specified level, and install the radiator cap. Run the engine to warm up the cooling system and top up the system as necessary.

## FLUSHING COOLING SYSTEM

1. Fill the radiator from the filler neck above the radiator upper hose and reservoir tank with clean water and reinstall radiator filler cap.
2. Run the engine and warm it up to normal operating temperature.
3. Rev the engine two or three times under no-load.
4. Stop the engine and wait until it cools down.
5. Drain the water from the system. Refer to [MA-13, "DRAINING ENGINE COOLANT"](#).
6. Repeat steps 1 through 5 until clear water begins to drain from the radiator.

## Checking Fuel Lines

Inspect the fuel lines and fuel tank for improper hose attachment, leaks, cracks, damage, loose connections, chafing, or deterioration. If necessary, repair or replace faulty parts.



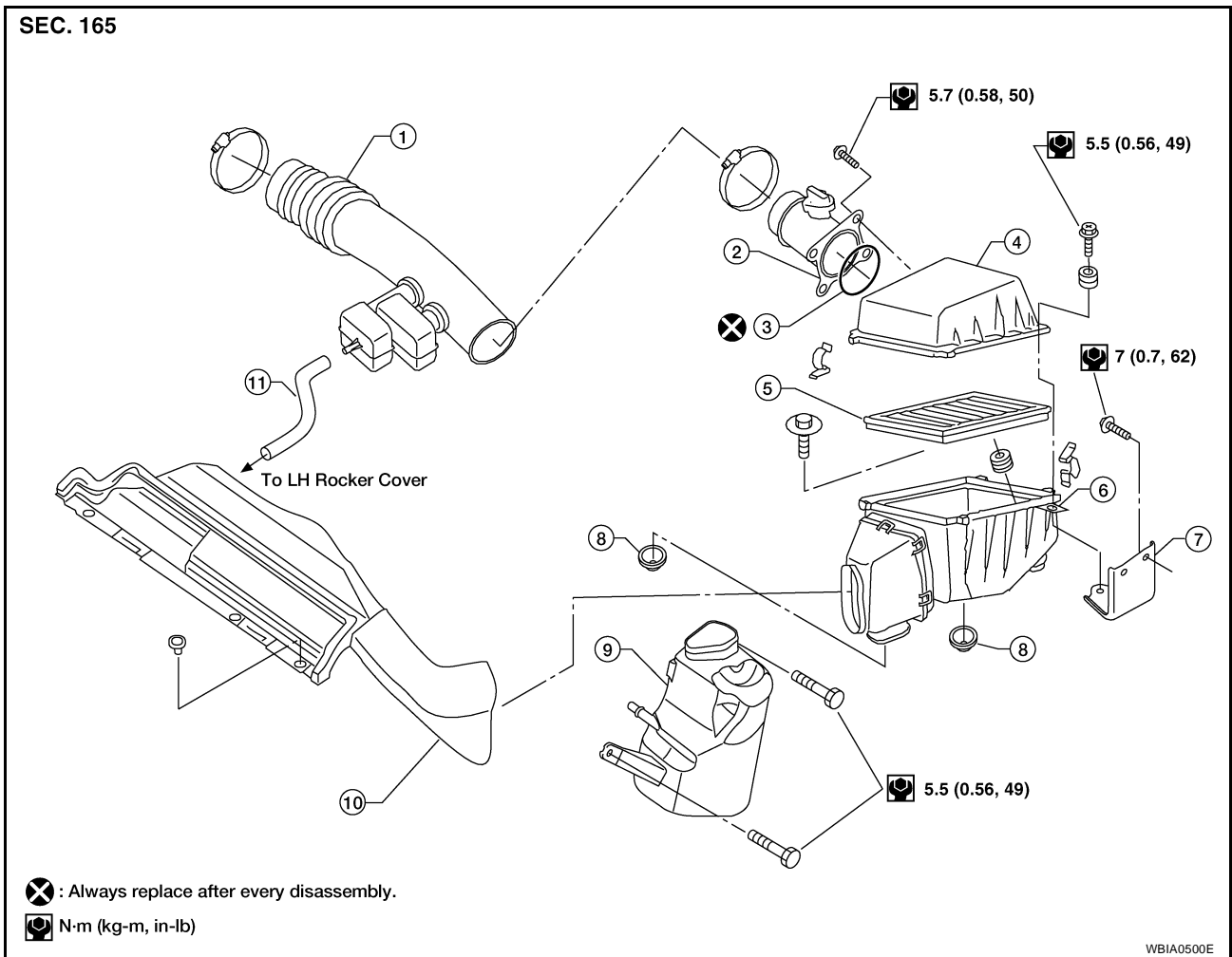


# ENGINE MAINTENANCE

ELS001NJ

## Changing Air Cleaner Filter VISCIOUS PAPER TYPE

SEC. 165



⊗ : Always replace after every disassembly.

⊙ N·m (kg·m, in·lb)

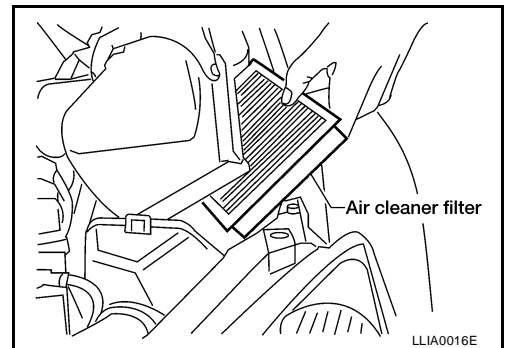
WBIA0500E

- |   |                         |                             |
|---|-------------------------|-----------------------------|
| 1. Air cleaner to electric throttle control actuator tube | 2. Mass air flow sensor | 3. O-ring                   |
| 4. Air cleaner case (upper)                               | 5. Air cleaner filter   | 6. Air cleaner case (lower) |
| 7. Air cleaner case bracket                               | 8. Grommet              | 9. Resonator (in fender)    |
| 10. Fresh air duct  | 11. PCV hose            |                             |

### NOTE:

The viscous paper type filter does not need cleaning between replacement intervals. Refer to [MA-6, "PERIODIC MAINTENANCE"](#).

1. Disconnect the tube clamp at the air cleaner to electric throttle control actuator tube at the mass air flow sensor.
2. Separate the mass air flow sensor from the air cleaner to electric throttle control actuator tube.
3. Unhook the air cleaner case side clips and remove the air cleaner case (upper).
4. Remove the air cleaner filter.
5. Install a new air cleaner filter.
6. Install the remaining components in the reverse order of removal.



## Changing Engine Oil

ELS001NK

### WARNING:

- Be careful not to burn yourself, as the engine oil is hot.

# ENGINE MAINTENANCE

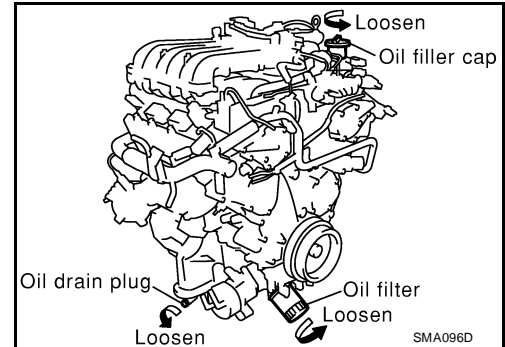
- Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.

1. Park the vehicle on a flat and level surface, then start the engine to warm up the oil.
2. Check for oil leaks from the engine.
3. Stop the engine and wait for 10 minutes.
4. Remove the oil drain plug and oil filler cap.
5. Drain the engine oil.
6. Install the oil drain plug.

**Oil pan drain plug** : Refer to [EM-30, "OIL PAN AND OIL STRAINER"](#) .

**CAUTION:**

- Clean the drain plug and install using a new washer.

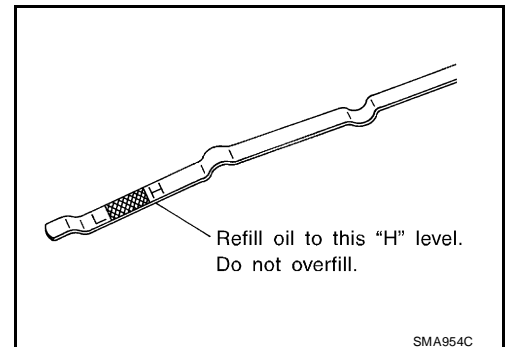


7. Refill the engine with new engine oil. Refer to [MA-9, "RECOMMENDED FLUIDS AND LUBRICANTS"](#) .

**CAUTION:**

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

8. Warm up the engine and check the oil drain plug and oil filter for oil leaks.
9. Stop engine and wait at least 10 minutes.
10. Check engine oil level. Refer to [LU-8, "ENGINE OIL LEVEL"](#) .



## Changing Oil Filter

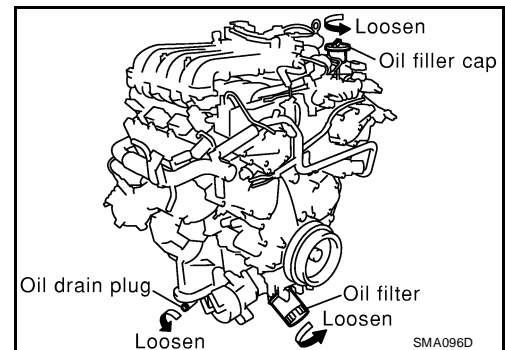
1. Remove the RH splash shield.
2. Remove the oil filter using Tool.

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

**CAUTION:**

- The oil filter is equipped with a relief valve. Use a Genuine NISSAN oil filter.
- Be careful not to get burned when the engine and engine oil are hot.
- When removing the oil filter, use 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.

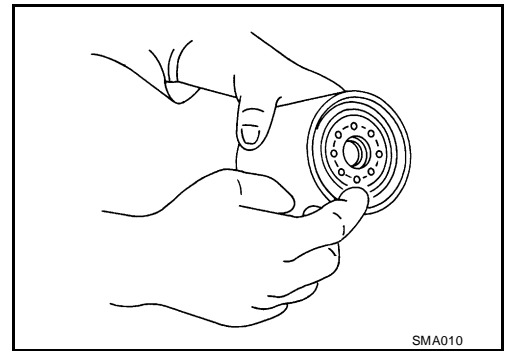
3. Remove any foreign material adhering to the oil filter installation surface on the oil cooler.



ELS001NL

# ENGINE MAINTENANCE

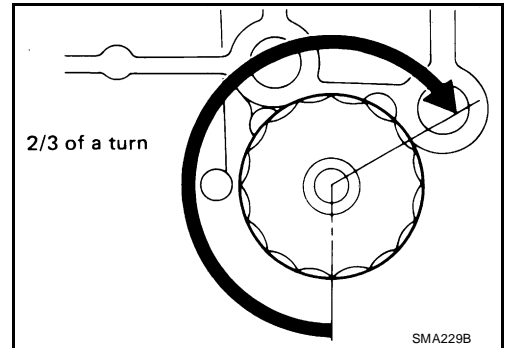
4. Apply engine oil to the oil seal contact surface of the new oil filter as shown.



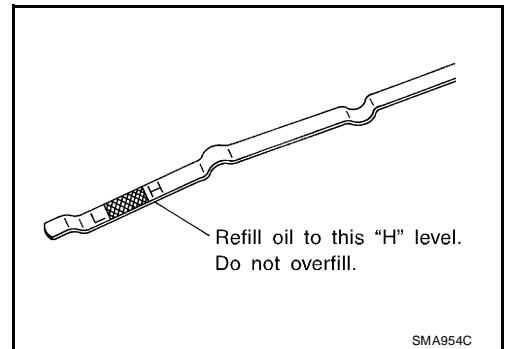
5. Screw the oil filter manually until it touches the installation surface, then tighten it by turning another 2/3 turn as shown. Or tighten to specification using Tool.

**Oil filter** : Refer to [LU-11, "OIL FILTER"](#) .

**Tool number** : [KV10115801 \(J-38956\)](#)



6. After warming up the engine, check for engine oil leaks.
7. Install the RH splash shield.
8. Check engine oil level and add engine oil as necessary. Refer to [LU-8, "ENGINE OIL LEVEL"](#) .



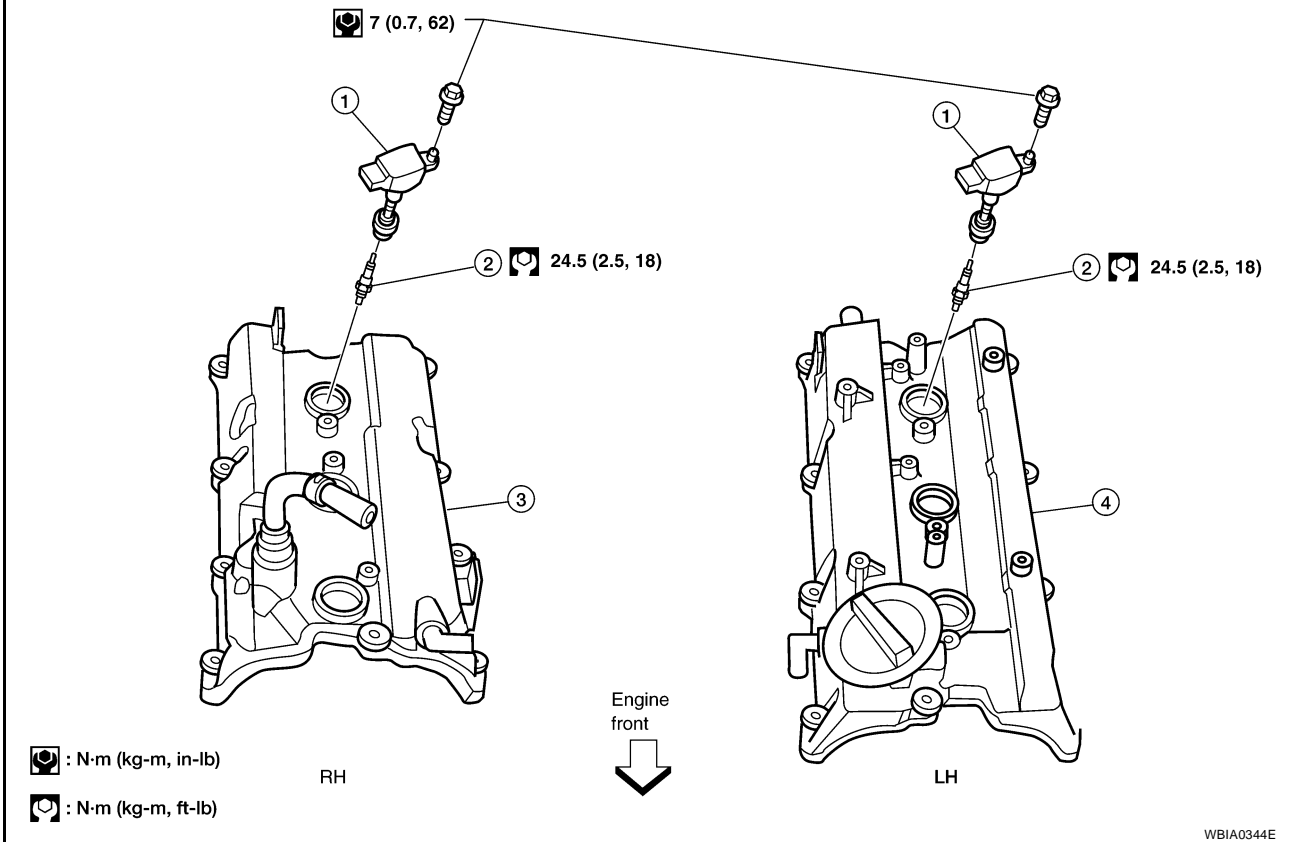
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# ENGINE MAINTENANCE

## Changing Spark Plugs (Platinum - Tipped Type)

ELS001NM

SEC. 111

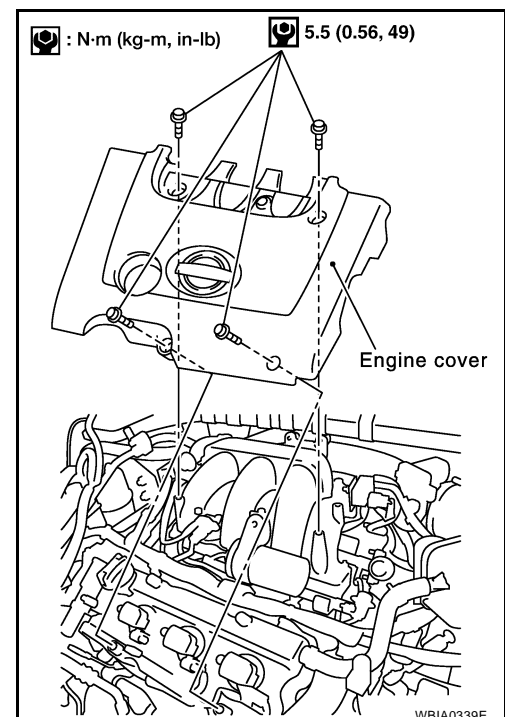


1. Ignition coil
2. Spark plug
3. Rocker cover (right bank)
4. Rocker cover (left bank)

### REMOVAL

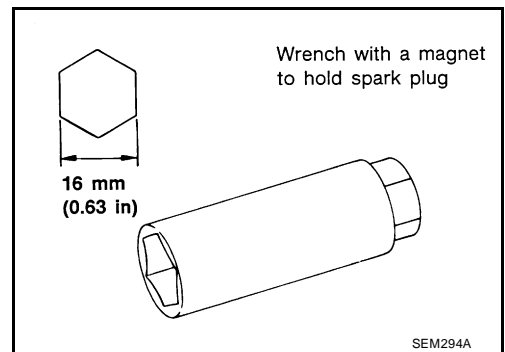
1. Remove the engine cover, using power tool.
2. Drain the engine coolant. Refer to [MA-13, "DRAINING ENGINE COOLANT"](#).
3. Disconnect the mass air flow sensor electrical connector and remove the air cleaner case (upper), mass air flow sensor and air cleaner to electric throttle control actuator tube. Refer to [EM-16, "Removal and Installation"](#).
4. Remove the intake manifold collector (upper), gasket, and electric throttle control actuator. Refer to [EM-18, "Removal and Installation"](#).
5. Remove the six ignition coils.

**CAUTION:**  
Do not shock them.



# ENGINE MAINTENANCE

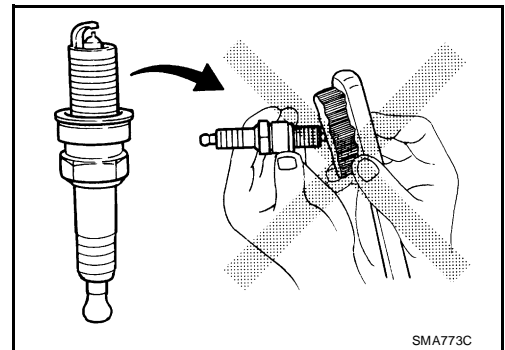
6. Remove the six spark plugs using a suitable tool.
- If replacing the spark plugs use the correct spark plug for maximum performance. Refer to [MA-20, "Changing Spark Plugs \(Platinum - Tipped Type\)"](#) .



## INSPECTION AFTER REMOVAL

### CAUTION:

- Do not use a wire brush for cleaning.
- Do not drop or shock spark plug.



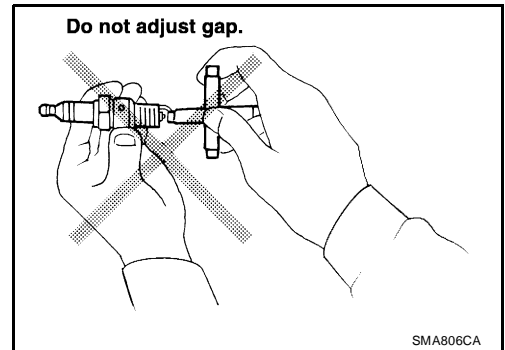
If plug tip is covered with carbon, a spark plug cleaner may be used.

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

**Cleaning time** : less than 20 seconds

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

**Gap (nominal)** : Refer to [EM-146, "SPARK PLUG"](#) .



## INSTALLATION

Installation is in the reverse order of removal.

- Use standard type spark plug for normal driving conditions. Refer to [EM-146, "SPARK PLUG"](#) .
- The hot type spark plug is suitable when fouling occurs with the standard type spark plug under conditions such as:
  - Frequent engine starts
  - Low ambient temperatures
- The cold type spark plug is suitable when engine spark knock occurs with the standard type spark plug under conditions such as:
  - Extended highway driving
  - Frequent high engine revolution

# ENGINE MAINTENANCE

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## Checking EVAP Vapor Lines

ELS001NN

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, and sticking.

## CHASSIS AND BODY MAINTENANCE

PFP:00100

### Changing In-cabin Microfilter

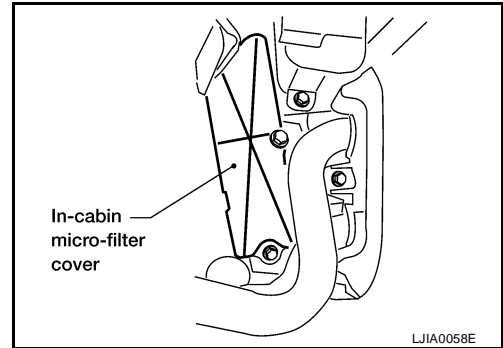
ELS001NO

1. Remove the glove box assembly. Refer to [IP-14, "Glove Box"](#)
2. Remove the three screws and remove the in-cabin microfilter cover.
3. Remove the in-cabin microfilters from the front heater and cooling unit assembly.
4. Install the in-cabin microfilters, replacing the two in-cabin microfilters with new filters, into the front heater and cooling unit assembly.

**CAUTION:**

**When installing the two new in-cabin microfilters make sure that the filters are facing in the direction indicated by the direction arrow for the air flow. The direction arrow is printed on the side of the in-cabin microfilters.**

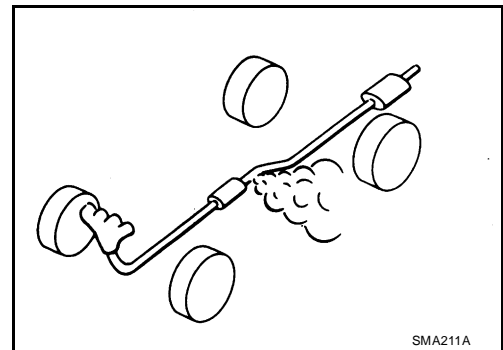
5. Install the in-cabin microfilter cover.
6. Install the glove box assembly. Refer to [IP-14, "Glove Box"](#).



### Checking Exhaust System

ELS001NP

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



### Checking A/T Fluid

ELS001NQ

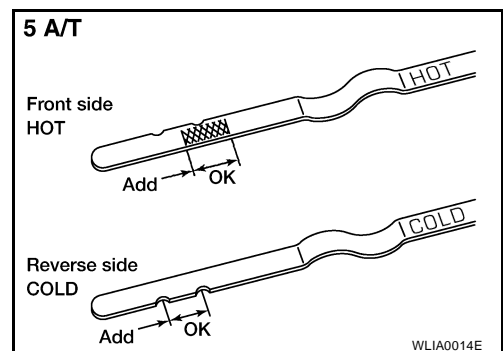
1. Warm up the engine.
2. Check for any transaxle fluid leaks.
3. Before driving, the fluid level can be checked at fluid temperature using the "COLD" range on the A/T fluid level gauge.

**Temperature range**

**COLD : 30° – 40° C (86° – 104° F)**

**HOT : 70° – 80° C (158° – 176° F)**

- a. Park the vehicle on a level surface and set parking brake.
- b. Start the engine and move the transaxle selector lever through each gear position. Leave the selector lever in the "P" park position.
- c. Check the fluid level with the engine idling.

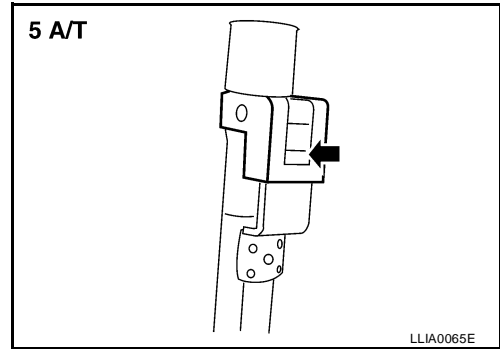


# CHASSIS AND BODY MAINTENANCE

## CAUTION:

Firmly fix the A/T fluid level gauge into the A/T fluid charging pipe using the attached stopper, this will provide an accurate reading on the gauge.

- d. Remove the A/T fluid level gauge and wipe it clean with a lint-free paper.
- e. Re-insert the A/T fluid level gauge into the charging pipe as far as it will go.
- f. Remove the A/T fluid level gauge and note the reading. If the reading is at or below the low side of the range, add the necessary specified A/T fluid through the A/T fluid charging pipe and then re-insert the A/T fluid level gauge.



## CAUTION:

- Do not overfill the transaxle.

- Firmly fix the A/T fluid level gauge into the A/T fluid charging pipe using the attached stopper, this will provide an accurate reading on the gauge, and will keep the gauge in position while driving.

4. Drive the vehicle for approximately 5 minutes at moderate speeds.
5. Re-check the fluid level at fluid temperatures using the "HOT" range on the A/T fluid level gauge.

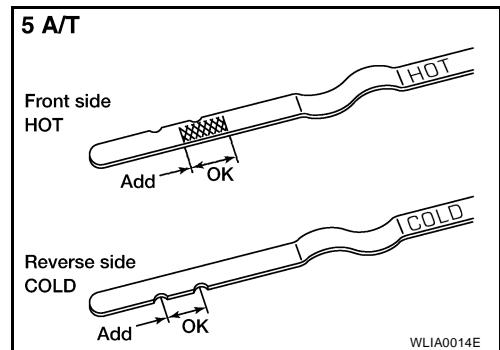
## CAUTION:

Firmly fix the A/T fluid level gauge into the A/T fluid charging pipe using the attached stopper, this will provide an accurate reading on the gauge, and will keep the gauge in position while driving.

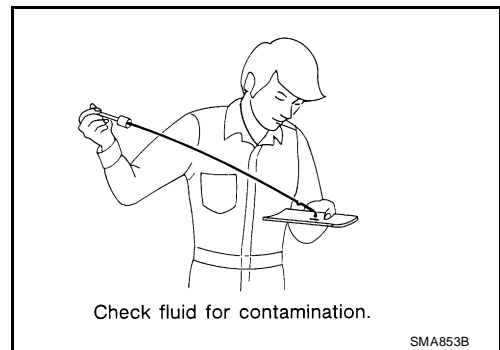
### Temperature range

**COLD** : 30° – 40° C (86° – 104° F)

**HOT** : 70° – 80° C (158° – 176° F)



6. Check the fluid for the following conditions:
  - If the fluid is very dark or smells burned, refer to the AT section for checking the operation of the transaxle. Flush the AT fluid cooling system after repairing the transaxle.
  - If the fluid contains frictional material (from the clutches or bands), remove the radiator and flush the cooler lines using a cleaning solvent and compressed air after completing repairs to the transaxle. Refer to [CO-15, "RADIATOR"](#).



## Changing A/T Fluid

ELS001NR

1. Run the engine to warm up the transaxle until the fluid is at full operating temperature "HOT".

### Temperature range

**COLD** : 30° – 40° C (86° – 104° F)

**HOT** : 70° – 80° C (158° – 176° F)

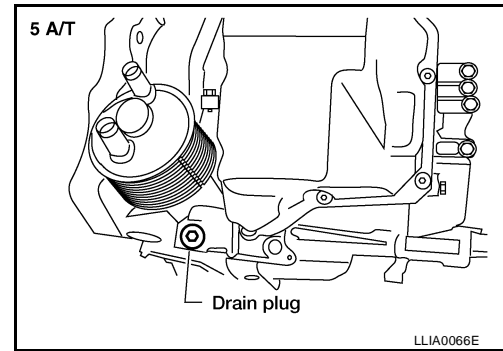
2. Stop the engine.
3. Remove the engine undercover.



# CHASSIS AND BODY MAINTENANCE

4. Drain the A/T fluid by removing the drain plug. Reinstall the drain plug to the specified tightness using a new drain washer.

**Drain plug** : Refer to [AT-240, "Components"](#) .



5. Refill the transaxle with new specified A/T fluid through the A/T fluid charging pipe. Always refill the transaxle with the same volume amount that was drained out.

**CAUTION:**

**Do not overfill the transaxle.**

**Fluid grade and capacity (with torque converter)** : Refer to [MA-9, "RECOMMENDED FLUIDS AND LUBRICANTS"](#) .

6. Run the engine at idle speed for five minutes.
7. Check fluid level and condition. Refer to [MA-23, "Checking A/T Fluid"](#) . If the fluid is still contaminated, repeat step 2 through 5.

## Balancing Wheels (Bonding Weight Type) PAX RUN FLAT TIRE AND WHEEL

ELS001NS

**CAUTION:**

- Servicing a PAX run flat tire and wheel requires special tire equipment and training. DO NOT service PAX run flat tire and wheel with conventional tire servicing equipment or damage to the tire and wheel will result.
- If a PAX run flat tire and wheel [or transmitter (pressure sensor)] requires service, and the proper servicing equipment is not available, then replace the complete PAX tire and wheel assembly.

## CONVENTIONAL TIRES AND WHEELS

1. Remove the inner and outer balance weights from the road wheel.

**CAUTION:**

**Be careful not to scratch the road wheel during removal.**

2. Use a releasing agent to remove the double-faced adhesive tape from the road wheel.

**CAUTION:**

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

3. Set the road wheel on the wheel balancer using the center hole as a guide. Start the tire balance machine.

**NOTE:**

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

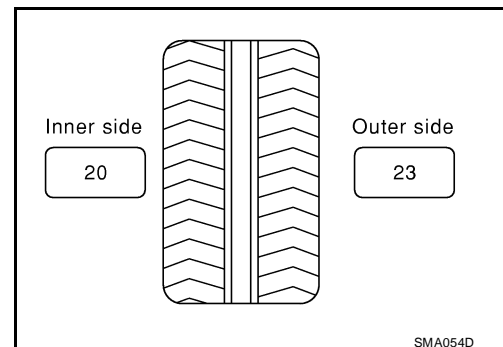
4. When the inner and outer unbalance values are shown on the wheel balancer indicator, multiply outer unbalance value by 1.6 to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value, then install it at the designated outer position of, or at the designated angle position on 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.

**Calculation:**

Indicated unbalance value  $\times$  1.6 = balance weight to be installed



# CHASSIS AND BODY MAINTENANCE

**Calculation example:**

$23 \text{ g (0.81 oz)} \times 1.6 = 38.33 \text{ g (1.35 oz)} = 40 \text{ g (1.41 oz)}$  balance weight (closer to calculated balance weight value)

**NOTE:**

The selected balance weight value must be the closest balance weight available to the calculated balance weight value.

**Example:**

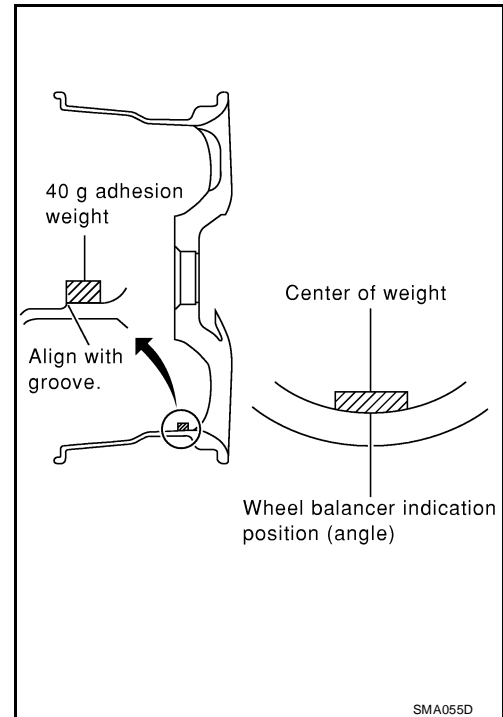
$37.4 = 35 \text{ g (1.23 oz)}$

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

- a. Install the balance weight in the position as shown.
- b. When installing the balance weight to the road wheels, set it into the grooved area on the inner wall of the road wheel as shown, so that the balance weight center is aligned with the wheel balancer indication position (angle).

**CAUTION:**

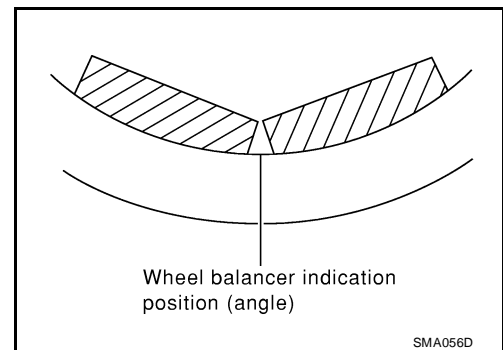
- Always use Genuine NISSAN adhesion balance weights.
- Balance weights are not reusable; always replace with new ones.
- Do not install more than three sheets of balance weight.



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

**CAUTION:**

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



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

**CAUTION:**

**Do not install more than two balance weights in one position (angle).**

7. Start the wheel balancer. Make sure that the inner and outer residual unbalance values are 5 g (0.18 oz) each or less.

**Wheel Balance (Maximum Allowable Unbalance)**

Maximum allowable unbalance	Dynamic (at rim flange)	Less than 5 g (0.18 oz) (per side)
	Static (at rim flange)	Less than 10 g (0.35 oz)

- If either residual unbalance value exceeds 5 g (0.18 oz), repeat the installation procedures.

# CHASSIS AND BODY MAINTENANCE

## Tire Rotation

ELS001NT

1. Rotate the tires as shown.

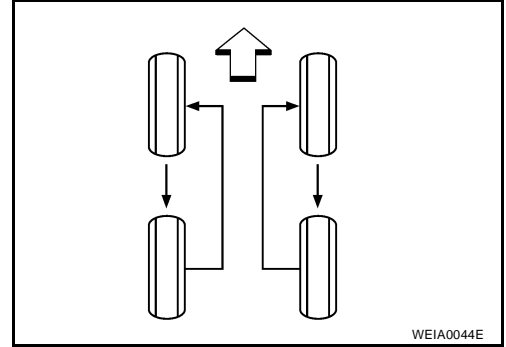
● ← : Front

**Wheel nuts** : Refer to [WT-7, "ROAD WHEEL TIRE ASSEMBLY"](#) .

2. After rotating the tires, adjust the tire pressure to specification.
3. Retighten the wheel nuts to specification after the vehicle has been driven the first 1,000 km (600 miles). Also retighten the wheel nuts to specification after a flat tire repair, or any type of service where the wheels have been removed and installed.

### CAUTION:

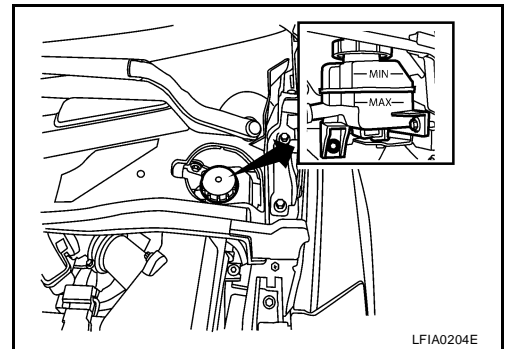
**When installing wheels, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.**



## Checking Brake Fluid Level and Leaks

ELS001NU

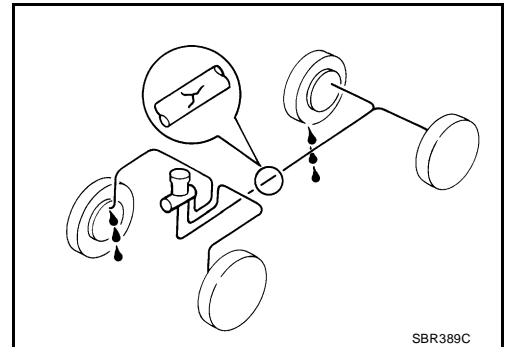
- Check the brake fluid level in the sub tank. It should be between the "MAX" and "MIN" lines on the sub tank.
- Visually check around the reservoir tank and sub tank for leaks.
- If the brake fluid level is extremely low or below the "MIN" level, check the brake system for leaks.
- Release the parking brake lever and check that the brake warning lamp goes off. If not, check the brake system for leaks.



## Checking Brake Lines and Cables

ELS001NV

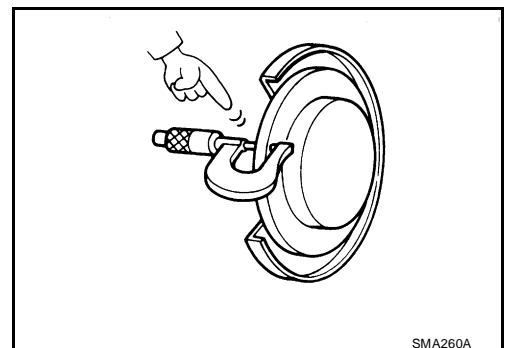
Check the brake fluid lines and parking brake cables for improper attachment, leaks, chafing, abrasions, deterioration, and damage. Repair or replace parts as necessary.



## Checking Disc Brake ROTOR

ELS001NW

Check the rotor condition and thickness. Resurface or replace the rotor as necessary. Refer to [BR-40, "Disc Brake"](#) .

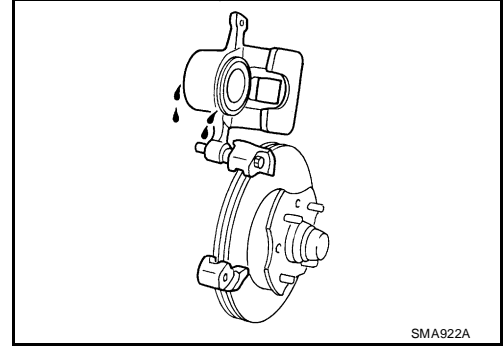


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# CHASSIS AND BODY MAINTENANCE

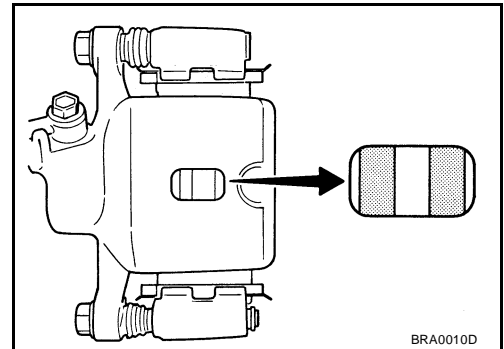
## CALIPER

Check the caliper for leakage.



## PAD

Check the brake pads for wear or damage. Refer to [BR-40, "Disc Brake"](#).



## Checking Steering Gear and Linkage

- Check the gear housing and boots for looseness, damage and power steering fluid leaks.
- Check the power steering hose connections for leaks.
- Check the steering column for looseness.

### STEERING LINKAGE

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

## Checking Power Steering Fluid and Lines

Check the power steering fluid level in the reservoir tank with the engine off.

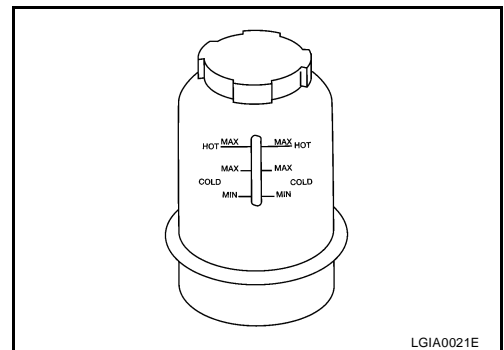
Use the "HOT" range or the "COLD" range fluid temperatures.

"HOT" range PSF temperature : 50° – 80° C  
(122° – 176° F)

"COLD" range PSF temperature : 0° – 30° C  
(32° – 86° F)

### CAUTION:

- Do not overfill the power steering reservoir tank.
- Do not reuse any used power steering fluid.
- Use the recommended power steering fluid. Refer to [MA-9, "RECOMMENDED FLUIDS AND LUBRICANTS"](#).



# CHASSIS AND BODY MAINTENANCE

## CHECKING FLUID LEAKS

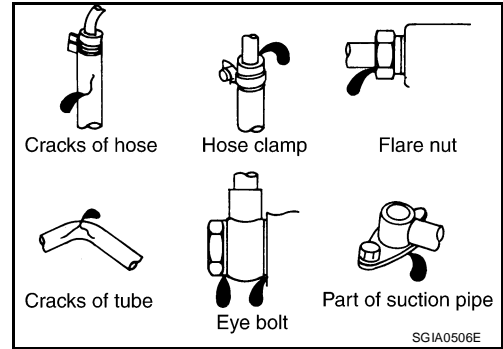
Check the lines for improper attachment and for leaks, cracks, damage, loose connections, chafing and deterioration.

1. Run engine between idle speed and 1,000 rpm. Make sure temperature of fluid in oil tank rises to 60° – 80°C (140° – 176°F).
2. Turn steering wheel right-to-left several times.
3. Hold steering wheel at each lock position for five seconds and carefully check for fluid leaks.

### CAUTION:

**Do not hold the steering wheel in a locked position for more than 15 seconds.**

4. If fluid leaks at the connectors are noticed, loosen the flare nut and then retighten to specification. Do not overtighten connector as this can damage O-ring, washer and connector.
5. If fluid leaks from the power steering oil pump are noticed, check the power steering oil pump. Refer to [PS-23, "INSPECTION BEFORE DISASSEMBLY"](#).
6. Check steering gear boots for accumulation of power steering fluid, indicating a steering gear fluid leak.

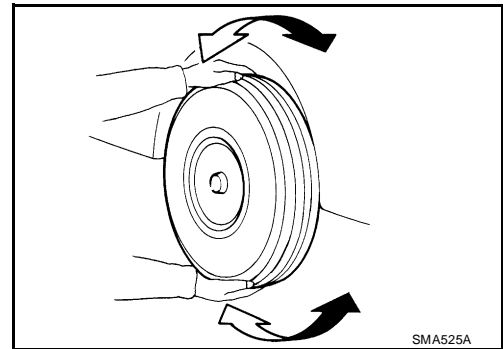


## Axle and Suspension Parts

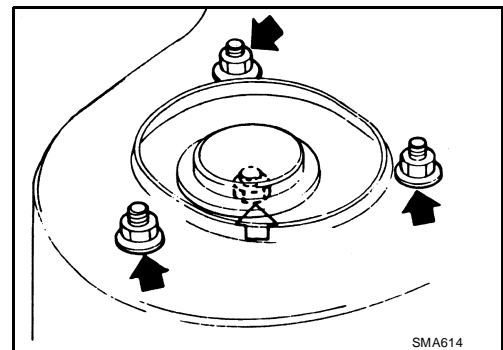
Check the front and rear axle and suspension parts for excessive play, cracks, wear, or other damage.

- Shake each wheel as shown to check for excessive play.
- Rotate each wheel to check for abnormal noise.

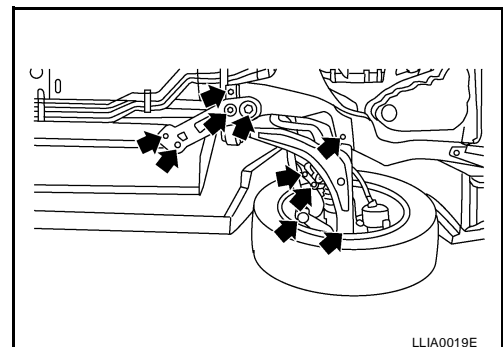
ELS001NZ



- Check the strut mount nuts for looseness.

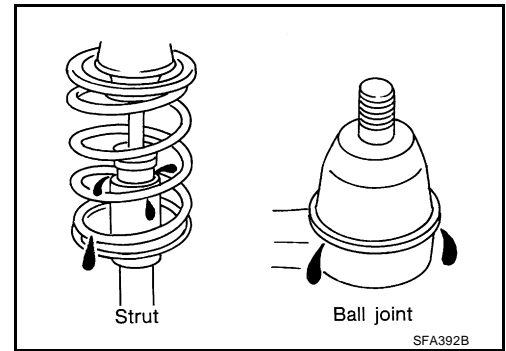


- Check the axle and suspension nuts and bolts for looseness.



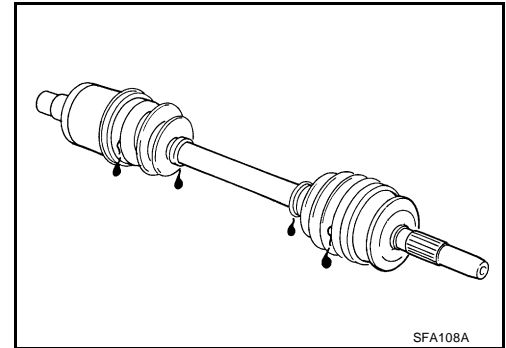
# CHASSIS AND BODY MAINTENANCE

- Check the struts for oil leakage or other damage.
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks or other damage.

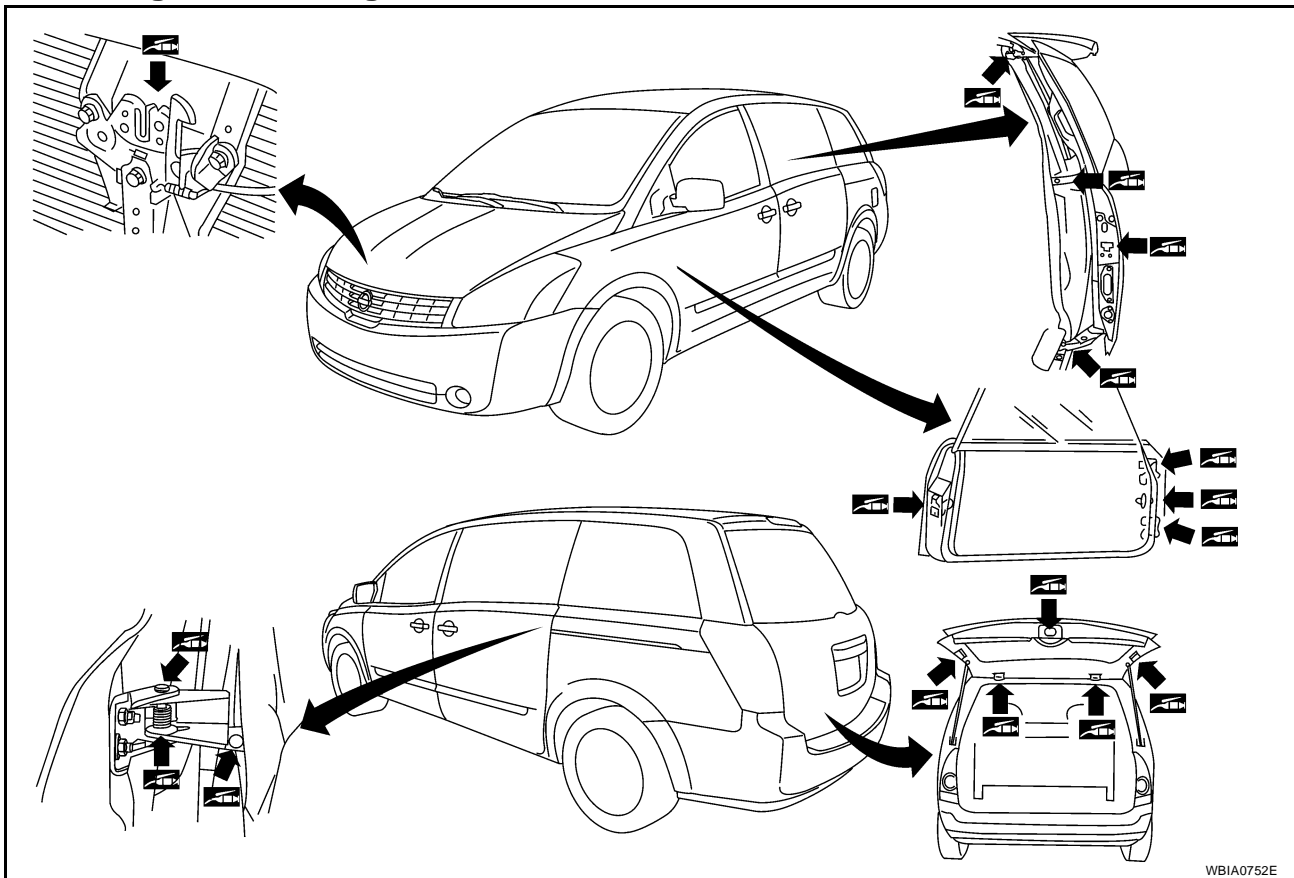


## Drive Shaft

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



## Lubricating Locks, Hinges and Hood Latch



## Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters

Check the seat belt buckles, webbing, retractors, anchors and adjusters. Replace any seat belt assembly as necessary. Refer to [SB-10, "Seat Belt Inspection"](#).

- Check the seat belt anchors for loose bolts, damage, or excessive wear.

## CHASSIS AND BODY MAINTENANCE

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- Check the seat belt webbing for any damage, cuts, fraying, or excessive wear.
- Check the retractor for smooth operation.
- Check the function of the buckles by inserting the seat belt tongue and checking for proper engagement of the buckle and press the button on the buckle to check for proper release of the seat belt tongue.

### CAUTION:

- **After any collision, inspect all seat belt assemblies, including retractors and other attached components, such as the guide rail set. NISSAN recommends replacing all seat belt assemblies in use during a collision, unless they are not damaged and are inspected to confirm they are operating properly after a minor collision.**  
**Also inspect all seat belt assemblies that are not in use during a collision, and replace any components if damaged or not operating properly. The 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 have been deployed.**
- **If any component of the seat belt assembly is suspected of being damaged or not operating properly, do not repair the component. Replace the components as an assembly.**
- **If the seat belt webbing is cut, frayed, or damaged then replace the seat belt assembly.**
- **Never lubricate the seat belt buckle or tongue.**
- **When replacing any seat belt assembly always use a Genuine NISSAN seat belt assembly.**

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# CHASSIS AND BODY MAINTENANCE

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