

**SECTION MA**  
**MAINTENANCE**

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# PRECAUTIONS

## PRECAUTIONS

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

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The Supplemental Restraint System such as “AIR BAG” and “SEAT BELT PRE-TENSIONER”, used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the 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 harness connectors.

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# PREPARATION

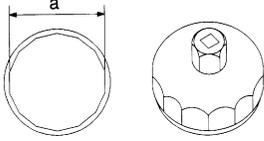
## PREPARATION

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### Special Service Tool

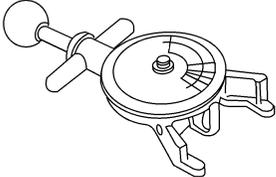
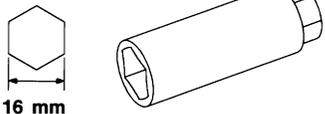
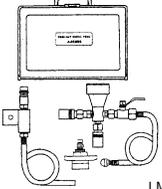
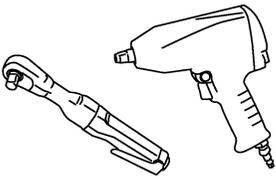
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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
KV10115801 (J-38956) Oil filter cap wrench <div style="text-align: center;">  <p>NT375</p> </div>	Removing oil filter <b>a: 64.3 mm (2.531 in)</b>

### Commercial Service Tool

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Tool name (Kent-Moore No.)	Description
Belt tension gauge (BT-3373-F) <div style="text-align: center;">  <p>AMA126</p> </div>	Checking drive belt tension
Spark plug wrench <div style="text-align: center;">  <p>16 mm (0.63 in)</p> <p>S-NT047</p> </div>	Removing and installing spark plugs
Coolant refill tool (J-45695) <div style="text-align: center;">  <p>LMA053</p> </div>	For refilling the engine cooling system
Power Tools <div style="text-align: center;">  <p>PBIC0190E</p> </div>	Loosening bolts and nuts

# GENERAL MAINTENANCE

## GENERAL MAINTENANCE

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### Explanation of General Maintenance

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General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform checks and inspections themselves or have their 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.	—
<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 windshield at least every six months for cracks or other damage. Repair as necessary.	—
<b>Tire rotation</b>	Tires should be rotated every 12,000 km (7,500 miles).	<a href="#">MA-31</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-30, "Balancing Wheels (Bonding Weight Type)"</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 and 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-35</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>	—
<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-36</a>
<b>Clutch pedal</b>	Make sure the pedal operates smoothly and check that it has proper free play.	—
<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.	—

# GENERAL MAINTENANCE

Item	Reference page
<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-6, "BRAKE PEDAL"</a> and <a href="#">BR-17, "BRAKE BOOSTER"</a>
<b>Parking brake</b>	Check that the lever 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, "Inspection"</a>
<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. —

## UNDER THE HOOD AND VEHICLE

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

Item	Reference page
<b>Windshield washer fluid</b>	Check that there is adequate fluid in the tank. —
<b>Engine coolant level</b>	Check the coolant level when the engine is cold. <a href="#">MA-15</a> QR25DE or <a href="#">MA-22</a> VQ35DE
<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 levels</b>	Make sure that the brake and clutch fluid levels are between the "MAX" and "MIN" lines on the reservoirs. <a href="#">MA-32</a> (brakes), <a href="#">MA-28</a> (clutch)
<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. —
<b>Engine drive belts</b>	Make sure that no belt is frayed, worn, cracked or oily. <a href="#">MA-14</a> QR25DE or <a href="#">MA-21</a> VQ35DE
<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> QR25DE or <a href="#">MA-24</a> VQ35DE
<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-33</a>
<b>Automatic transaxle fluid level</b>	Check the level on the dipstick after putting the selector lever in "P" with the engine idling. —
<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-28</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

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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-7</a>
		Chassis and Body Maintenance	<a href="#">MA-9</a>
Schedule 2	Follow Periodic Maintenance Schedule 2 if none of driving conditions shown in Schedule 1 apply to the driving habits.	Emission Control System Maintenance	<a href="#">MA-10</a>
		Chassis and Body Maintenance	<a href="#">MA-11</a>

## SCHEDULE 1 EMISSION CONTROL SYSTEM MAINTENANCE

ELS000AQ

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)	7.50 (12)	11.25 (18)	15 (24)	18.75 (30)	22.5 (36)	26.25 (42)	30 (48)	
Drive belts	NOTE (1)									<a href="#">MA-14</a> (QR25DE) or <a href="#">MA-21</a> (VQ35DE)
Air cleaner filter	NOTE (2)								[R]	<a href="#">MA-17</a> (QR25DE) or <a href="#">MA-24</a> (VQ35DE)
EVAP vapor lines									I*	<a href="#">MA-20</a> (QR25DE) or <a href="#">MA-27</a> (VQ35DE)
Fuel lines									I*	<a href="#">MA-17</a> (QR25DE) or <a href="#">MA-24</a> (VQ35DE)
Fuel filter	NOTE (3)									-

## 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	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	
Engine coolant	NOTE (4)									<a href="#">MA-14</a> (QR25DE) or <a href="#">MA-22</a> (VQ35DE)
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-17</a> (QR25DE) or <a href="#">MA-24</a> (VQ35DE)
Engine oil filter (Use part No. 15208 9E000 (for QR25DE engine), 15208 65F01 (for VQ35DE engine) or equivalent.)		R	R	R	R	R	R	R	R	<a href="#">MA-18</a> (QR25DE) or <a href="#">MA-25</a> (VQ35DE)
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).								<a href="#">MA-19</a> (QR25DE) or <a href="#">MA-26</a> (VQ35DE)
Intake & exhaust valve clearance*	NOTE (5)									<a href="#">EM-92</a> , "Valve Clearance" (QR25DE) or <a href="#">EM-207</a> , "Valve Clearance" (VQ35DE)

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-14</a> (QR25DE) or <a href="#">MA-21</a> (VQ35DE)
Air cleaner filter	NOTE (2)								[R]	<a href="#">MA-17</a> (QR25DE) or <a href="#">MA-24</a> (VQ35DE)
EVAP vapor lines									I*	<a href="#">MA-20</a> (QR25DE) or <a href="#">MA-27</a> (VQ35DE)
Fuel lines									I*	<a href="#">MA-17</a> (QR25DE) or <a href="#">MA-24</a> (VQ35DE)
Fuel filter	NOTE (3)									-
Engine coolant	NOTE (4)								R*	<a href="#">MA-14</a> (QR25DE) or <a href="#">MA-22</a> (VQ35DE)
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-17</a> (QR25DE) or <a href="#">MA-24</a> (VQ35DE)

# 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 filter (Use part No. 15208-9E000 (for QR25DE engine), 15208 65F01 (for VQ35DE engine) or equivalent.		R	R	R	R	R	R	R	R	<a href="#">MA-18</a> (QR25DE) or <a href="#">MA-25</a> (VQ35DE)
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).								<a href="#">MA-19</a> (QR25DE) or <a href="#">MA-26</a> (VQ35DE)
Intake & exhaust valve clearance*	NOTE (5)									<a href="#">EM-92</a> , " <a href="#">Valve Clearance</a> " (QR25DE) or <a href="#">EM-207</a> , " <a href="#">Valve Clearance</a> " (VQ35DE)

**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 of QR25DE engine 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 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-32</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-32</a>
Automatic transaxle fluid & manual transaxle gear oil	NOTE (1)				I				I	<a href="#">MA-29</a> (A/T) or <a href="#">MA-28</a> (M/T)
Steering gear & linkage, axle & suspension parts			I		I		I		I	<a href="#">MA-33</a> , <a href="#">MA-34</a>
Tire rotation	NOTE (2)									<a href="#">MA-31</a>
Exhaust system			I		I		I		I	<a href="#">MA-28</a>
Front drive shaft boot			I		I		I		I	<a href="#">MA-35</a>
In-Cabin Microfilter					R				R	<a href="#">ATC-111</a> (ATC), <a href="#">MTC-72</a> (MTC)

# 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	
Brake lines & cables					I				I	<a href="#">MA-32</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-32</a>
Automatic transaxle fluid & manual transaxle gear oil	NOTE (1)				I				I	<a href="#">MA-29</a> (A/T) or <a href="#">MA-28</a> (M/T)
Steering gear & linkage, axle & suspension parts			I		I		I		I	<a href="#">MA-33</a> , <a href="#">MA-34</a>
Tire rotation	NOTE (2)									<a href="#">MA-31</a>
Exhaust system			I		I		I		I	<a href="#">MA-28</a>
Front drive shaft boots			I		I		I		I	<a href="#">MA-35</a>
In-Cabin Microfilter					R				R	<a href="#">ATC-111</a> (ATC), <a href="#">MTC-72</a> (MTC)

**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) oil at every 30,000 miles (48,000 km) or 24 months.
- (2) Refer to [MA-5, "GENERAL MAINTENANCE"](#) .

## SCHEDULE 2 EMISSION CONTROL SYSTEM MAINTENANCE

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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-14</a> (QR25DE) or <a href="#">MA-21</a> (VQ35DE)
Air cleaner filter					[R]				[R]	<a href="#">MA-17</a> (QR25DE) or <a href="#">MA-24</a> (VQ35DE)
EVAP vapor lines					I*				I*	<a href="#">MA-20</a> (QR25DE) or <a href="#">MA-27</a> (VQ35DE)
Fuel lines					I*				I*	<a href="#">MA-17</a> (QR25DE) or <a href="#">MA-24</a> (VQ35DE)
Fuel filter	NOTE (2)									-
Engine coolant	NOTE (3)								R*	<a href="#">MA-14</a> (QR25DE) or <a href="#">MA-22</a> (VQ35DE)

# 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	7.5	15	22.5	30	37.5	45	52.5	60	
	(km x 1,000)	(12)	(24)	(36)	(48)	(60)	(72)	(84)	(96)	
	Months	6	12	18	24	30	36	42	48	
Engine oil		R	R	R	R	R	R	R	R	<a href="#">MA-17</a> (QR25DE) or <a href="#">MA-24</a> (VQ35DE)
Engine oil filter (Use part No. 15208-9E000 (for QR25DE engine), 15208 65F01 (for VQ35DE engine) or equivalent.		R	R	R	R	R	R	R	R	<a href="#">MA-18</a> (QR225DE) or <a href="#">MA-25</a> (VQ35DE)
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).								<a href="#">MA-19</a> (QR25DE) or <a href="#">MA-26</a> (VQ35DE)
Intake & exhaust valve clearance*	NOTE (4)									<a href="#">EM-92, "CYLINDER HEAD"</a> (QR25DE) or <a href="#">EM-207, "CYLINDER HEAD"</a> (VQ35DE)

**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 of QR25DE engine 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 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	7.5	15	22.5	30	37.5	45	52.5	60	
	(km x 1,000)	(12)	(24)	(36)	(48)	(60)	(72)	(84)	(96)	
	Months	6	12	18	24	30	36	42	48	
Brake lines & cables			I		I		I		I	<a href="#">MA-32</a>
Brake pads & rotors			I		I		I		I	<a href="#">MA-32</a>
Automatic transaxle fluid & manual transaxle gear oil			I		I		I		I	<a href="#">MA-29</a> (A/T) or <a href="#">MA-28</a> (M/T)
Steering gear & linkage, axle & suspension parts					I				I	<a href="#">MA-33</a> , <a href="#">MA-34</a>
Tire rotation	NOTE (1)									<a href="#">MA-31</a>
Exhaust system					I				I	<a href="#">MA-28</a>
Front drive shaft boots			I		I		I		I	<a href="#">MA-35</a>
In-Cabin Microfilter			R		R		R		R	<a href="#">ATC-111</a> (ATC), <a href="#">MTC-72</a> (MTC)

**NOTE:**

(1) Refer to [MA-5, "GENERAL MAINTENANCE"](#)

# RECOMMENDED FLUIDS AND LUBRICANTS

## RECOMMENDED FLUIDS AND LUBRICANTS

PFP:00000

### Fluids and Lubricants QR25DE

ELS000AS

		Capacity (approximate)			Recommended fluids/lubricants
		US measure	Imp measure	Liter	
Engine oil Drain and refill	With oil filter change	4 1/2 qt	3 3/4 qt	4.2	<ul style="list-style-type: none"> <li>● API Certification Mark*1</li> <li>● API grade SG/SH, Energy Conserving II or API grade SJ or SL, Energy Conserving*1</li> <li>● ILSAC grade GF-II &amp; GF-III*1</li> </ul>
	Without oil filter change	4 1/4 qt	3 1/2 qt	4.0	
Dry engine (engine overhaul)		4 7/8 qt	4 qt	4.6	
Cooling system	With reservoir	7 1/4 qt	6 1/8 qt	6.9	Genuine NISSAN Anti-freeze coolant or equivalent
	Reservoir	3/4 qt	5/8 qt	0.7	
Manual transaxle gear oil		4 7/8 pt	4 pt	2.3	API GL4, Viscosity SAE 75W-90 or 75W-85
Automatic transaxle fluid		9 3/4 qt	8 1/8 qt	9.2	NISSAN Matic "D" (Continental US and Alaska) or Canada NISSAN Automatic Transmission Fluid *2
Power steering fluid		2 1/8 pt	1 3/4 pt	1.0	Genuine NISSAN PSF II or equivalent*3
Brake and clutch fluids		—	—	—	Genuine NISSAN Brake Fluid*4 or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)

\*1: For further details, see "SAE Viscosity Number".

\*2: Dexron™ III/Mercon™ or equivalent may also be used. Outside the continental United States and Alaska contact a NISSAN dealership for more information regarding suitable fluids, including recommended brand(s) of Dexron™ III/Mercon™ Automatic Transmission Fluid.

\*3: Genuine NISSAN PSF, Canada NISSAN Automatic Transmission Fluid, Dexron™ III/Mercon™, or equivalent ATF may also be used.

\*4: Available in mainland U.S.A. through your NISSAN dealer.

### VQ35DE

		Capacity (Approximate)			Recommended Fluids/Lubricants
		US measure	Imp measure	Liter	
Engine oil Drain and refill	With oil filter change	4 1/4 qt	3 1/2 qt	4.0	<ul style="list-style-type: none"> <li>● API Certification Mark*1</li> <li>● API grade SG/SH, Energy Conserving II or API grade SJ or SL, Energy Conserving*1</li> <li>● ILSAC grade GF-II &amp; GF-III*1</li> </ul>
	Without oil filter change	3 7/8 qt	3 1/4 qt	3.7	
Dry engine (engine overhaul)		5 1/4 qt	4 3/8 qt	5.0	
Cooling system	With reservoir	7 7/8 qt	6 5/8 qt	7.5	Genuine NISSAN Anti-freeze coolant or equivalent
	Reservoir	3/4 qt	5/8 qt	0.7	
Manual transaxle gear oil		4 7/8 pt	4 pt	2.3	API GL4, Viscosity SAE 75W-90 or 75W-85
Automatic transaxle fluid		9 3/4 qt	8 1/8 qt	9.2	NISSAN Matic "D" (Continental US and Alaska) or Canada NISSAN Automatic Transmission Fluid *2
Power steering fluid		2 1/8 pt	1 3/4 pt	1.0	Genuine NISSAN PSF II or equivalent*3
Brake and clutch fluids		—	—	—	Genuine NISSAN Brake Fluid*4 or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)

\*1: For further details, see "SAE Viscosity Number".

# RECOMMENDED FLUIDS AND LUBRICANTS

\*2: Dexron™ III/Mercon™ or equivalent may also be used. Outside the continental United States and Alaska contact a NISSAN dealership for more information regarding suitable fluids, including recommended brand(s) of Dexron™ III/Mercon™ Automatic Transmission Fluid.

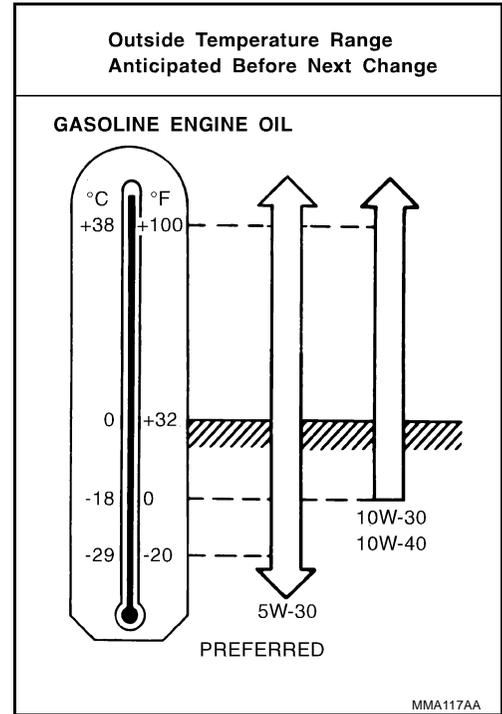
\*3: Genuine NISSAN PSF, Canada NISSAN Automatic Transmission Fluid, Dexron™ III/Mercon™, or equivalent ATF may also be used.

\*4: Available in mainland U.S.A. through your NISSAN dealer.

## SAE Viscosity Number GASOLINE ENGINE OIL

ELS000AT

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)



## ANTI-FREEZE COOLANT MIXTURE RATIO

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 anti-freeze 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%

SMA947CA

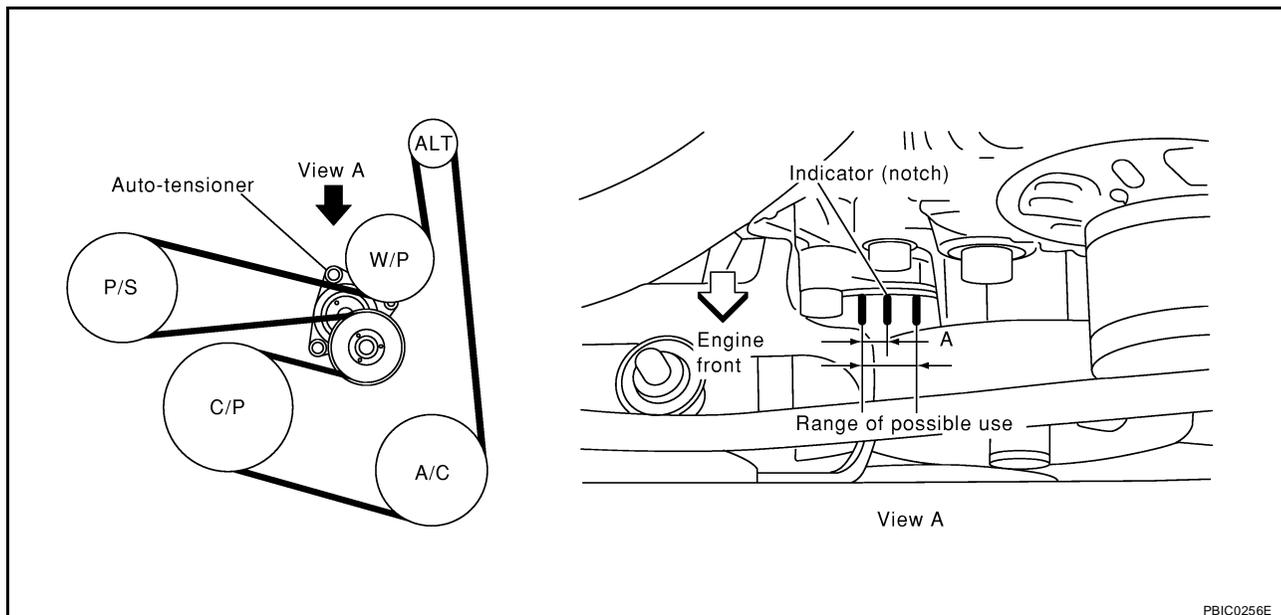
# ENGINE MAINTENANCE (QR25DE ENGINE)

## ENGINE MAINTENANCE (QR25DE ENGINE)

PF10001

### Checking Drive Belts

ELS000AU



PBIC0256E

#### NOTE:

On vehicles not equipped with A/C, there is an idler pulley in the position for the drive belt routing.

#### WARNING:

Be sure to perform when the engine is stopped.

- Remove under cover (with power tool) when inspecting power steering pump belt.
- Make sure that indicator (single line notch) of each automatic tensioner is within the allowable working range (between three line notches).

#### NOTE:

- Check the automatic tensioner indicator when the engine is cold.
- When the new drive belt is installed, the range should be A.
- The indicator notch is located on the moving side of the tensioner for alternator, water pump, and A/C compressor belt, while it is found on the fixed side for power steering pump belt.
- Visually check entire belt for wear, damage or cracks.
- If the indicator is out of allowable working range or belt is damaged, replace the belt. Refer to [EM-12, "Removal and Installation"](#).
- Belt tensioning is not necessary, as it is automatically adjusted by auto belt tensioner.

### Changing Engine Coolant

ELS000AV

#### 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.

#### CAUTION:

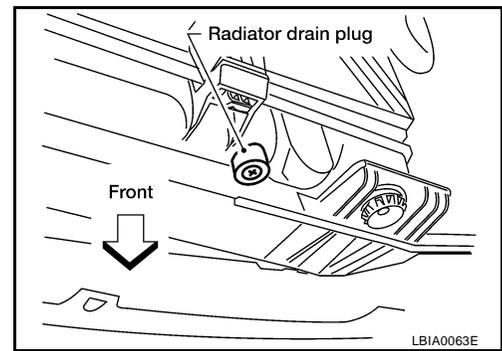
Do not open the radiator cap while changing engine coolant. Fill the radiator only from the filler cap above the radiator upper hose with radiator cap closed.

#### DRAINING ENGINE COOLANT

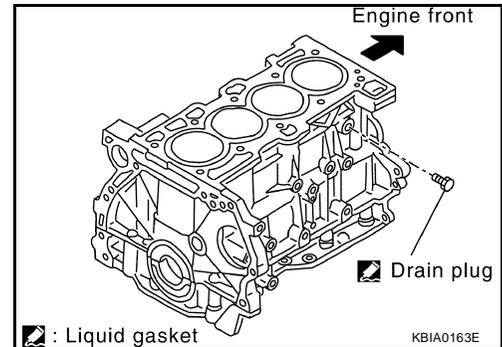
1. Remove engine undercover, using power tools.

## ENGINE MAINTENANCE (QR25DE ENGINE)

- Open radiator drain plug at the bottom of radiator, and remove radiator filler cap when draining all the coolant in the system.
  - Be careful not to allow coolant to contact drive belts.
- Follow this step for heater core removal/replacement only. Disconnect the upper heater hose at the engine side and apply moderate air pressure [103.46 kPa (15 psi, 1.055 kg/cm<sup>2</sup>) maximum] into the hose for 30 seconds to blow out excess coolant from the heater core.
- Remove the reservoir tank, drain the coolant and then clean the tank before installing.



- When draining all of the coolant in the system for engine removal or repair, open the drain plug on the cylinder block.
- Check drained coolant for contaminants such as rust, corrosion or discoloration. If contaminated, flush engine cooling system. Refer to [MA-16, "FLUSHING COOLING SYSTEM"](#).



### REFILLING ENGINE COOLANT

- Install the radiator drain plug. Install the reservoir tank and cylinder block drain plug, if removed for a total system drain or for engine removal or repair.
  - The radiator must be completely empty of coolant and water.**
  - Apply sealant to the threads of the cylinder block drain plugs. Use Genuine High Performance Thread Sealant or equivalent. Refer to [GI-42, "RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS"](#).**

**Radiator drain plug : 7.8 - 11.8 N-m (0.8 - 1.2 kg-m , 69 - 104 in-lb)**  
**Cylinder block drain plug : 34 - 44 N-m (3.5 - 4.5 kg-m, 25 - 33 ft-lb)**
- If disconnected, reattach the upper radiator hose at the engine side.
- 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.

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
MA  
M

## ENGINE MAINTENANCE (QR25DE ENGINE)

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.
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 Anti-Freeze Coolant or equivalent, mixed 50/50 with distilled water or demineralized water. Refer to [MA-13, "ANTI-FREEZE COOLANT MIXTURE RATIO"](#).

**Engine coolant capacity** : 6.9 ℓ (7 1/4 US qt, 6 1/8 Imp qt)  
(without reservoir tank)

**Reservoir tank** : 0.7 ℓ (3/4 US qt, 5/8 Imp qt)

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

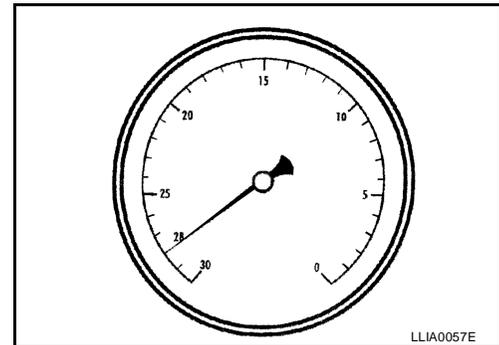
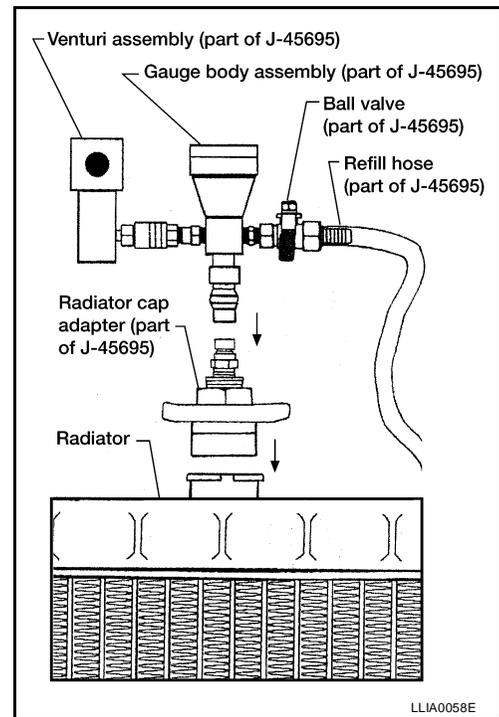
**Compressed air supply pressure** : 5.7 - 8.5 kPa (5.6 - 8.4 kg/cm<sup>2</sup>, 80 - 120 psi)

### 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.
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. Run the engine to warm up the cooling system and top up the system as necessary before installing the radiator cap.

## FLUSHING COOLING SYSTEM

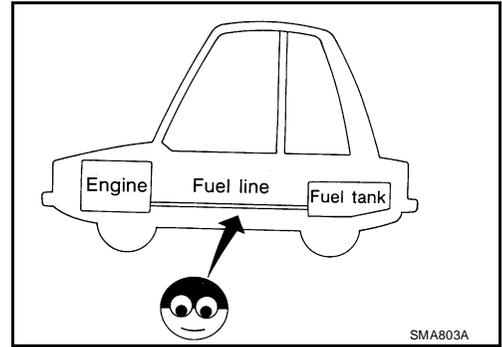
1. Fill radiator from filler cap above radiator upper hose and reservoir tank with water and reinstall filler cap above radiator upper hose.
2. Run engine and warm it up to normal operating temperature.
3. Rev engine two or three times under no-load.
4. Stop engine and wait until it cools down.

# ENGINE MAINTENANCE (QR25DE ENGINE)

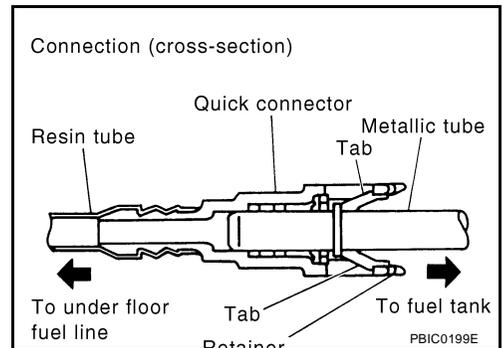
5. Drain water.
6. Repeat steps 1 through 5 until clear water begins to drain from radiator.

## Checking Fuel Lines

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

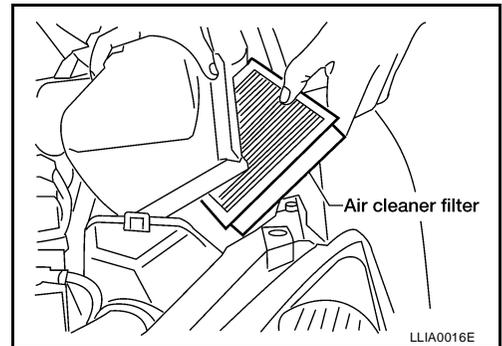


After connecting fuel tubes, make sure the connector is secure. Make sure the connector and resin tube do not contact adjacent parts.



## Changing Air Cleaner Filter VISCIOUS PAPER TYPE

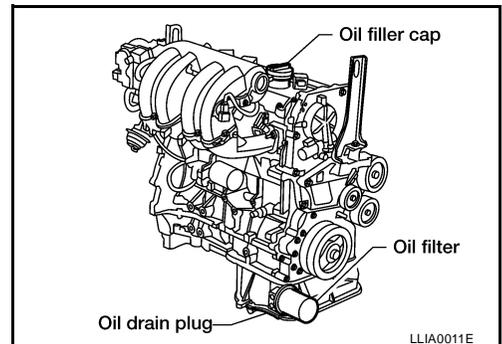
The viscous paper type filter does not need cleaning.



## Changing Engine Oil

### WARNING:

- Be careful not to burn yourself, as the engine oil is hot.
  - Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.
1. Warm up engine, and check for oil leakage from engine components.
  2. Stop engine and wait more than 10 minutes.
  3. Remove drain plug and oil filler cap.
  4. Drain oil.
  5. Install drain plug and refill with new engine oil.  
Oil specification and viscosity
    - API Certification Mark



# ENGINE MAINTENANCE (QR25DE ENGINE)

- API grade SG/SH, Energy Conserving II or API grade SJ or SL, Energy Conserving
- ILSAC grade GF-II & GF-III
- Refer to [MA-13, "Gasoline engine oil"](#).

## Oil capacity (approximate)

Unit: ℓ (US qt, Imp qt)

Drain and refill	With oil filter change	Approximately 4.2 (4 1/2, 3 3/4)
	Without oil filter change	Approximately 4.0 (4 1/4, 3 1/2)
Dry engine (engine overhaul)		Approximately 4.6 (4 7/8, 4.0)

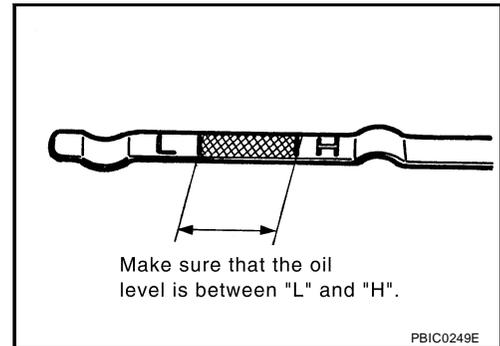
### CAUTION:

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

**Oil pan drain plug : 29 - 39 N·m (3.0 - 4.0 kg·m, 22 - 29 ft·lb)**

- The refill 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.

6. Warm up engine and check area around drain plug and oil filter for oil leakage.
7. Stop engine and wait more than 10 minutes.
8. Check oil level.



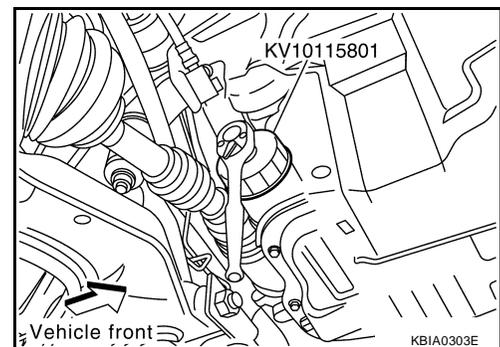
ELS000AZ

## Changing Oil Filter

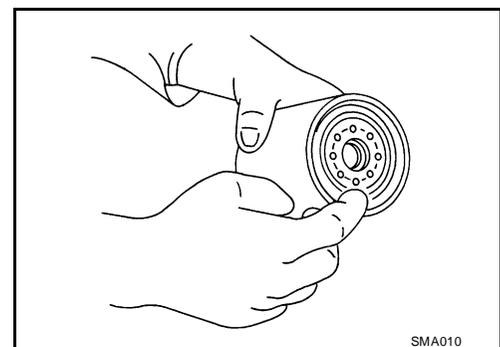
1. Using an oil filter wrench, remove the oil filter.

### CAUTION:

- The oil filter is provided with a relief valve. Use genuine NISSAN oil filter.
- BE careful not to get burned when the engine and engine oil are hot.
- When removing, prepare a shop cloth to absorb any oil leakage or spillage.
- Do not allow engine oil to adhere to the drive belts.
- Completely wipe off any oil that adheres to the engine and the vehicle.



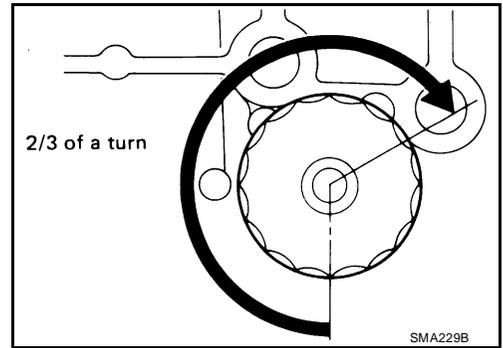
2. Clean oil filter mounting surface on cylinder block. Coat rubber seal of new oil filter with engine oil.



# ENGINE MAINTENANCE (QR25DE ENGINE)

- Screw the oil filter manually until it touches the installation surface, then tighten it by 2/3 turn.

**Oil filter : 14.7 - 20.5 N-m (1.5 - 2.1 kg-m, 11 - 15 ft-lb)**

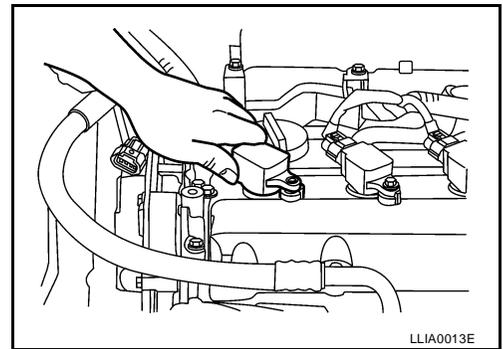


- Check oil level and add engine oil. Refer to [MA-13, "Gasoline engine oil"](#).
- After warming up the engine, check for engine oil leakage.

## Changing Spark Plugs (Platinum - Tipped Type)

ELS000B0

- Remove the engine cover using power tool.
- Remove ignition coils. Refer to [EM-26, "Removal and Installation"](#).



- Remove the spark plugs.
- Install the spark plugs.

### Spark plug:

Standard type	PLFR5A-11
Hot type	PLFR4A-11
Cold type	PLFR6A-11

**Spark plug : 20 - 29 N-m (2.0 - 3.0 kg-m, 14 - 22 ft-lb)**

**Gap (nominal) : 1.1 mm (0.043 in)**

Use standard type spark plug for normal condition.

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 spark knock occurs with the standard type spark plug under conditions such as:

- extended highway driving
- frequent high engine revolution

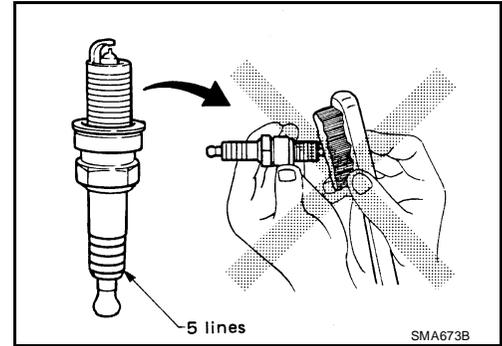
## ENGINE MAINTENANCE (QR25DE ENGINE)

Do not use a wire brush for cleaning.

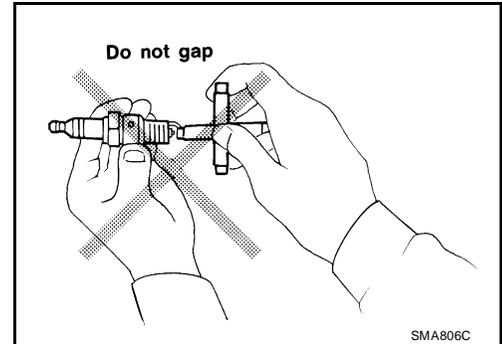
- If plug tip is covered with carbon, spark plug cleaner may be used.

**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.



5. Install the ignition coils. Refer to [EM-26, "Removal and Installation"](#) .

**Ignition coil bolt** : 5.4 - 7.3 N·m (0.55 -0.75 kg·m, 48 - 65 in-lb)

### Checking EVAP Vapor Lines

ELS000B1

1. Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration.
2. Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc. Refer to [EC-614, "EVAPORATIVE EMISSION SYSTEM"](#) .

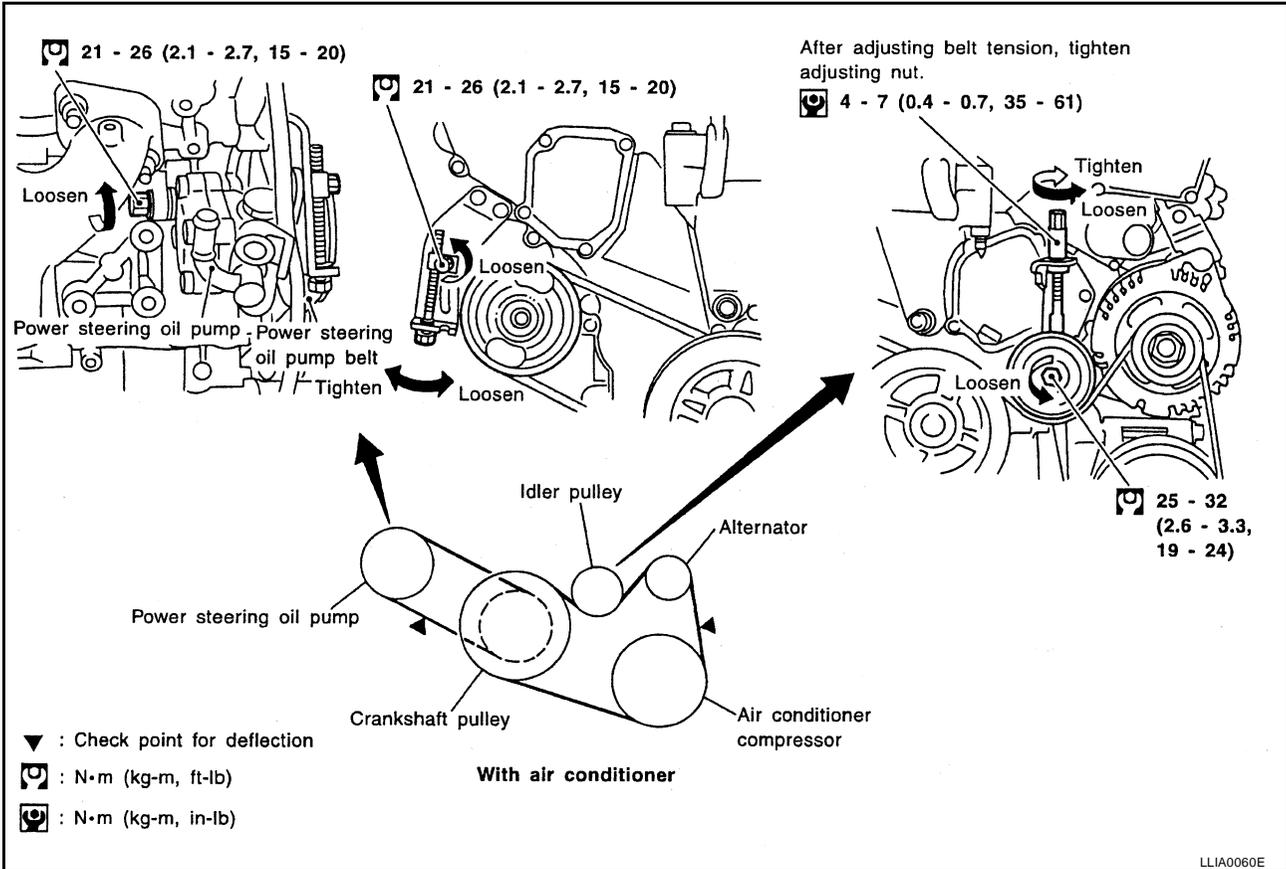
# ENGINE MAINTENANCE (VQ35DE ENGINE)

## ENGINE MAINTENANCE (VQ35DE ENGINE)

PF1:10001

### Checking Drive Belts

EL5000B2



### WARNING:

Inspect and check the drive belts with the engine off.

1. Inspect belt for cracks, fraying, wear or oil adhesion. If necessary, replace with a new one.
2. Inspect drive belt deflections by pushing on the belt midway between pulleys.
3. Check belt tension using belt tension gauge (BT3373-F or equivalent).

### CAUTION:

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

### Belt Deflection and Tension

	Deflection adjustment		Unit: mm (in)	Tension adjustment*		Unit: N (kg, lb)
	Used belt		New belt	Used belt		New belt
	Limit	After adjustment		Limit	After adjustment	
Alternator, Air conditioner compressor oil pump	7.0 (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 oil pump	11.0 (0.43)	7.3 - 8.0 (0.29 - 0.32)	6.5 - 7.2 (0.26 - 0.28)	196 (20, 44)	495 - 583 (50.5 - 59.5, 111.3 - 131.1)	603 - 691 (61.5 - 70.5, 135.6 - 155.4)
Applied pushing force	98 N (10 kg, 22 lb)			—		

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

# ENGINE MAINTENANCE (VQ35DE ENGINE)

ELS000B3

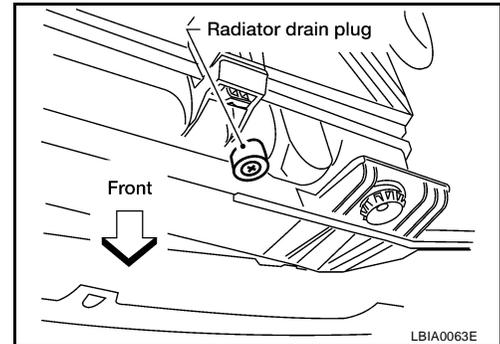
## Changing Engine Coolant

### 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, using power tools.
2. Open radiator drain plug at the bottom of radiator and remove the radiator filler cap.
3. If removing the heater core, remove the upper heater hose from the engine coolant outlet and apply moderate air pressure of 15 psi (103.46 kPa, 1.055 kg-cm<sup>2</sup>) maximum for 30 seconds into the hose to blow out excess coolant from the core.
4. Remove the reservoir tank, drain the coolant and clean the tank before installing.
  - Be careful not to allow coolant to contact the drive belts.
5. When draining all of the coolant for engine removal or repair, open the drain plugs on the engine-front side and engine-right side.
6. Check drained coolant for contaminants such as rust, corrosion or discoloration. If contaminated, flush the engine cooling system. Refer to [EC-1102, "Description"](#).



### 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.
  - 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-42, "RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS"](#).

<b>Radiator drain plug</b>	<b>: 7.8 - 11.8 N·m (0.8 - 1.2 kg-m , 69 - 104 in-lb)</b>
<b>Cylinder block front drain plug</b>	<b>: 8 - 11 N·m (0.8 - 1.2 kg-m, 70 - 104 in-lb)</b>
<b>Cylinder block RH drain plug</b>	<b>: 18 - 21 N·m (1.8 - 2.2 kg-m, 13 - 15 ft-lb)</b>
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.

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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.
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 Anti-Freeze Coolant or equivalent, mixed 50/50 with distilled water or demineralized water. Refer to [MA-13, "ANTI-FREEZE COOLANT MIXTURE RATIO"](#).

**Engine coolant capacity** : 7.5 ℓ (7 7/8 US qt, 6 5/8 Imp qt)  
(without reservoir tank)

**Reservoir tank** : 0.7 ℓ (3/4 US qt, 5/8 Imp qt)

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)

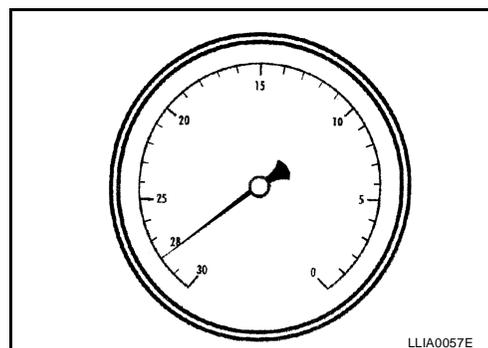
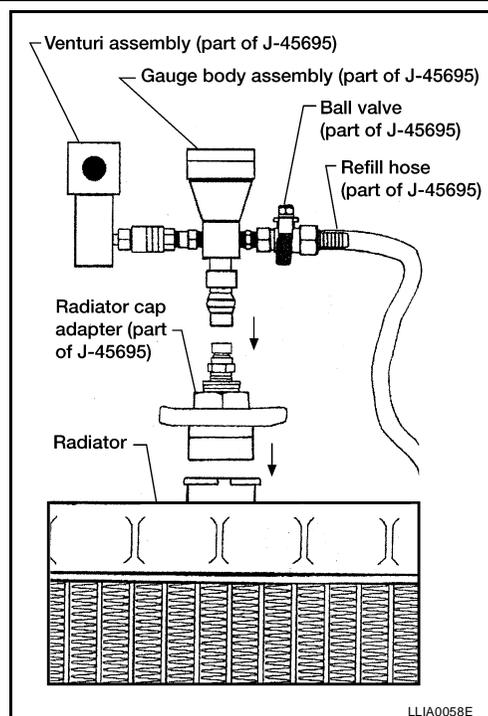
### CAUTION:

**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.

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. Run the engine to warm up the cooling system and top up the system as necessary before installing the radiator cap.

## 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.

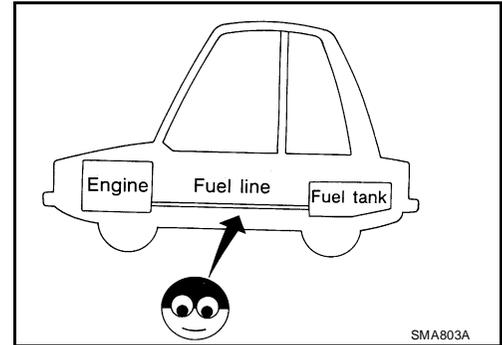
# ENGINE MAINTENANCE (VQ35DE ENGINE)

5. Drain the coolant from the system. Refer to [MA-14, "DRAINING ENGINE COOLANT"](#).
6. Repeat steps 1 through 5 until clear water begins to drain from the radiator.

## Checking Fuel Lines

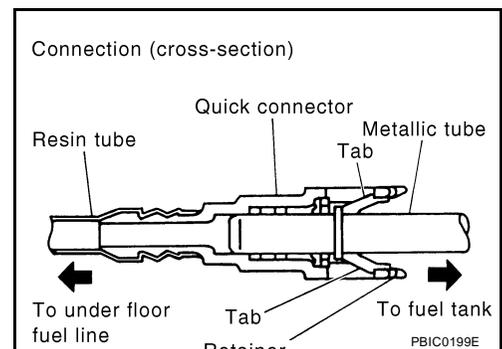
Inspect fuel lines and tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration. If necessary, repair or replace faulty parts.

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After connecting fuel tubes, make sure the connector is secure. Make sure the connector and resin tube do not contact adjacent parts.

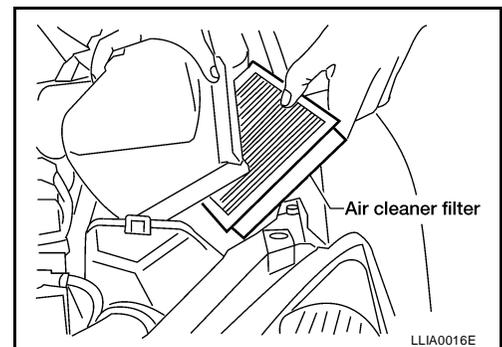


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## Changing Air Cleaner Filter VISCIOUS PAPER TYPE

The viscous paper type filter does not need cleaning. Replace the air filter as necessary.

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## Changing Engine Oil

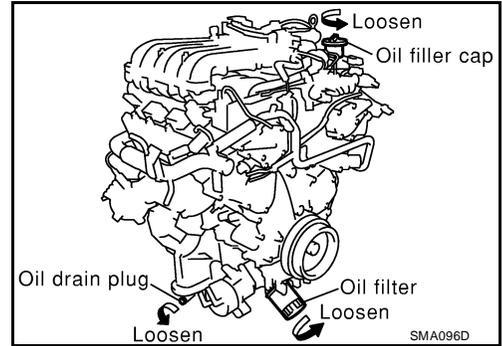
### WARNING:

- Be careful not to burn yourself, as the engine oil is hot.
  - Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.
1. Warm up engine, and check for oil leakage from engine components.
  2. Stop engine and wait more than 10 minutes.

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# ENGINE MAINTENANCE (VQ35DE ENGINE)

3. Remove drain plug and oil filler cap.
4. Drain oil.
5. Install drain plug and refill with new engine oil.
  - Oil specification and viscosity
    - API Certification Mark
    - API grade SG/SH, Energy Conserving II or API grade SJ or SL, Energy Conserving
    - ILSAC grade GF-II & GF-III
    - Refer to [MA-13, "Gasoline engine oil"](#) .



## Oil Capacity

Unit: ℓ (US qt, Imp qt)

Drain and refill	With oil filter change	Approximately 4.0 (4 1/4, 3 1/2)
	Without oil filter change	Approximately 3.7 (3 7/8, 3 1/4)
Dry engine (engine overhaul)		Approximately 5.0 (5 1/4, 4 3/8)

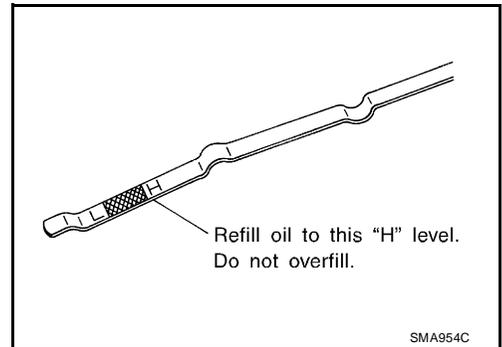
### CAUTION:

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

**Oil pan drain plug : 29 - 39 N·m (3.0 - 4.0 kg·m, 22 - 29 ft·lb)**

- The refill 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.

6. Warm up engine and check area around drain plug and oil filter for oil leakage.
7. Stop engine and wait more than 10 minutes.
8. Check the engine oil level using the dipstick as shown.

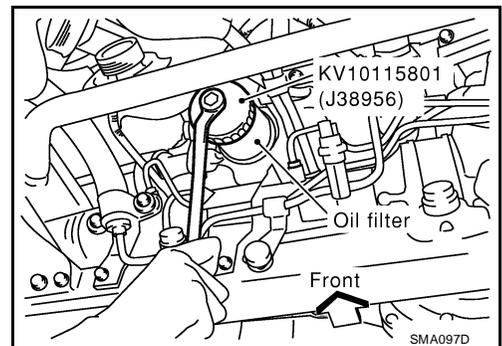


## Changing Oil Filter

1. Using an oil filter wrench, remove the oil filter.

### CAUTION:

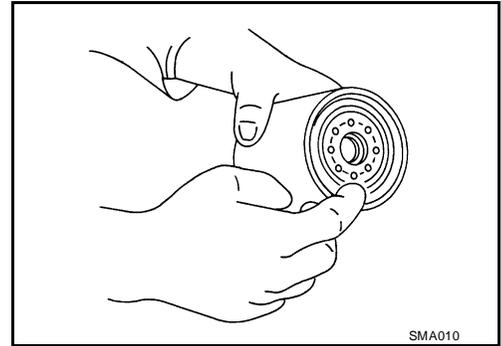
- The oil filter is provided with a relief valve. Use genuine NISSAN oil filter.
- BE careful not to get burned when the engine and engine oil are hot.
- When removing, prepare a shop cloth to absorb any oil leakage or spillage.
- Do not allow engine oil to adhere to the drive belts.
- Completely wipe off any oil that adheres to the engine and the vehicle.



2. Clean oil filter mounting surface on cylinder block.

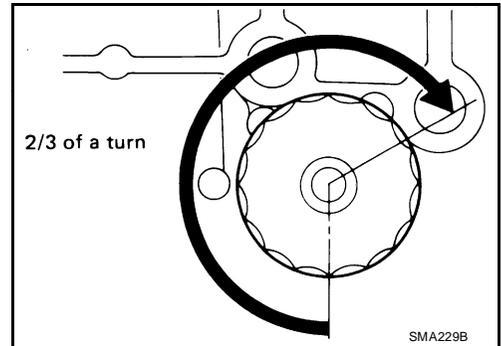
# ENGINE MAINTENANCE (VQ35DE ENGINE)

Coat rubber seal of new oil filter with engine oil.

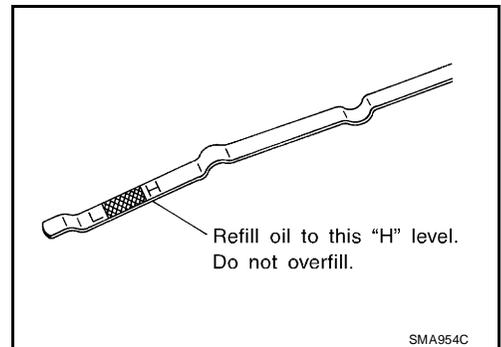


- Screw the oil filter manually until it touches the installation surface, then tighten it by 2/3 turn.

**Oil filter : 14.7 - 20.5 N·m (1.5 - 2.1 kg·m, 11 - 15 ft·lb)**



- Check oil level and add engine oil. Refer to [MA-13, "Gasoline engine oil"](#).
- After warming up the engine, check for engine oil leakage.



## Changing Spark Plugs (Platinum - Tipped Type)

ELS000B8

- Remove engine cover.
- Remove intake manifold collector. Refer to [EM-113, "REMOVAL"](#) steps 1 to 13.
- Remove ignition coils. Refer to [EM-126, "Removal and Installation"](#).
- Remove spark plugs.
- Install spark plugs.

**Gap (nominal) : 1.1 mm (0.043 in)**

**Spark plug : 20 - 29 N·m (2.0 - 3.0 kg·m, 14 - 22 ft·lb)**

### Spark plug:

Standard type	PLFR5A-11
Hot type	PLFR4A-11
Cold type	PLFR6A-11

Use standard type spark plug for normal condition.

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

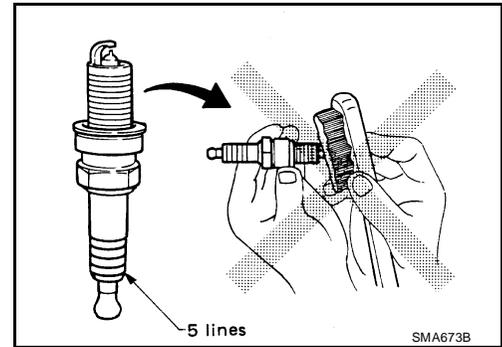
The cold type spark plug is suitable when spark knock occurs with the standard type spark plug under conditions such as:

## ENGINE MAINTENANCE (VQ35DE ENGINE)

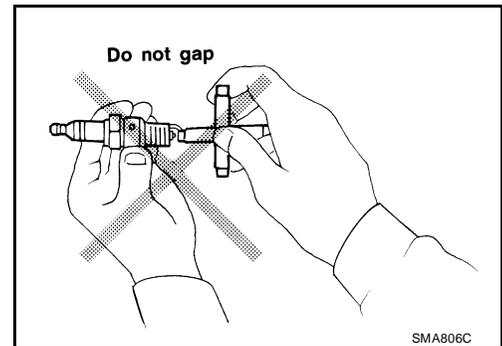
- extended highway driving
- frequent high engine revolution
- Do not use a wire brush for cleaning.
- If plug tip is covered with carbon, spark plug cleaner may be used.

**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.



6. Install the ignition coils. Refer to [EM-126, "Removal and Installation"](#) .

**Ignition coil bolt** : 6.37 - 7.54 N·m (0.65 - 0.77 kg·m, 56 - 67 in·lb)

### Checking EVAP Vapor Lines

ELS000B9

1. Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration.
2. Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc. Refer to [EC-1272, "EVAPORATIVE EMISSION SYSTEM"](#) .

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# CHASSIS AND BODY MAINTENANCE

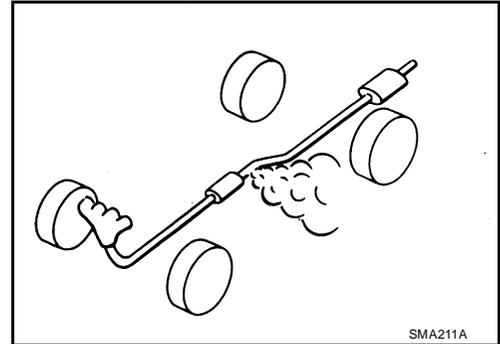
## CHASSIS AND BODY MAINTENANCE

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### Checking Exhaust System

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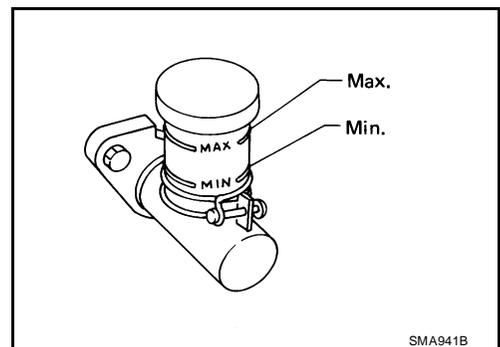
Check exhaust pipes, muffler and mounting for improper attachment, leaks, cracks, damage, chafing or deterioration.



### Checking Clutch Fluid Level and Leaks

ELS000BB

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



### Checking M/T Oil

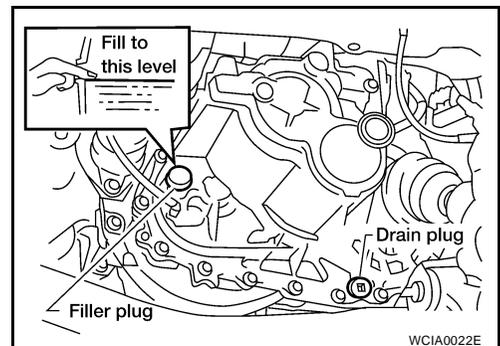
ELS000BC

Check for oil leakage and oil level.

**Filler plug** : 30 - 39 N·m (3.1 - 4.0 kg·m, 23 - 28 ft·lb)

#### **CAUTION:**

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



### Changing M/T Oil

ELS000BD

1. Drain the M/T oil from the drain plug and refill the M/T with new specified gear oil.

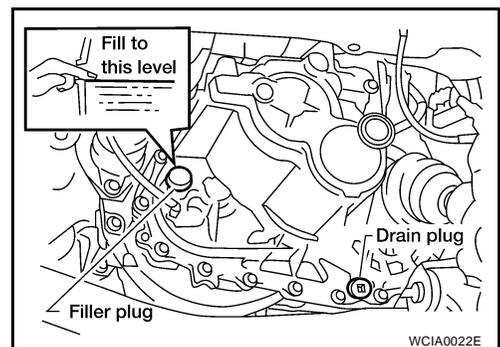
**Oil grade** : API GL-4

**Viscosity** : Refer to [MA-13, "SAE Viscosity Number"](#) .

**Capacity (RS5F51A)** : 2.3 ℓ (4 7/8 US pt, 4 Imp pt)

**Drain plug** : 30 - 39 N·m (3.1 - 4.0 kg·m, 23 - 28 ft·lb)

2. Check oil level as shown.

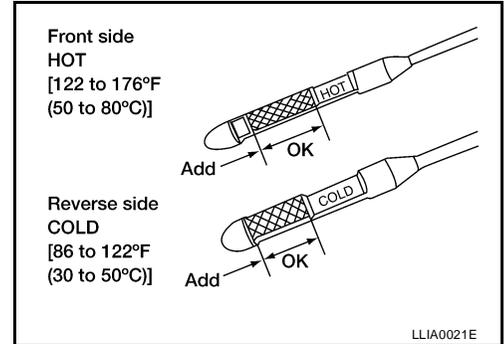


# CHASSIS AND BODY MAINTENANCE

## Checking A/T Fluid

ELS000BE

1. Warm up engine.
2. Check for fluid leakage.
3. Before driving, fluid level can be checked at fluid temperatures of 30 to 50°C (86 to 122°F) using "COLD" range on A/T fluid level gauge.
  - 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 fluid level with engine idling.
- d. Remove A/T fluid level gauge and wipe clean with lint-free paper.
- e. Re-insert A/T fluid level gauge into charging pipe as far as it will go.
- f. Remove A/T fluid level gauge and note reading. If reading is at low side of range, add fluid to the charging pipe.

**CAUTION:**

**Do not overfill.**

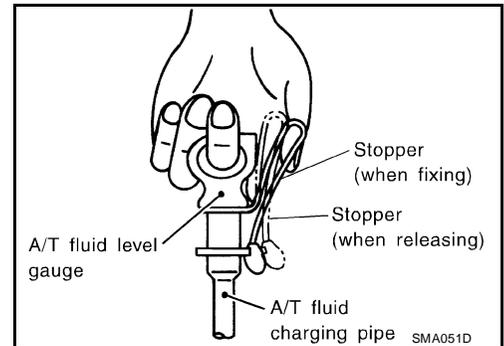
4. Drive vehicle for approximately 5 minutes in urban areas.
5. Re-check fluid level at fluid temperatures of 50 to 80°C (122 to 176°F) using "HOT" range on A/T fluid level gauge.

**CAUTION:**

**Firmly fix the A/T fluid level gauge to the A/T fluid charging pipe using the attached stopper.**

6. Check fluid condition.

- If fluid is very dark or smells burned, refer to AT section for checking operation of A/T. Flush cooling system after repair of A/T.
- If A/T fluid contains frictional material (clutches, bands, etc.), replace radiator and flush cooler line using cleaning solvent and compressed air after repair of A/T. Refer to [CO-34, "RADIATOR"](#).



## Changing A/T Fluid

ELS000BF

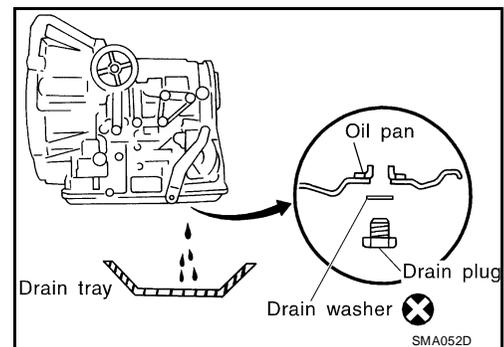
1. Start the engine and run at idle speed for five minutes to warm up the A/T fluid.
2. Stop the engine.
3. Drain the A/T fluid from drain plug and refill the transaxle with new A/T fluid. Always refill with the same volume that was drained from the transaxle.

**Fluid capacity (with torque converter)**

**RE4F04B/RE4F04W : 9.2 l (9 3/4 US qt, 8 1/8 Imp qt)**

**Drain plug : 29 - 39 N-m (3.0 - 4.0 kg-m, 22 - 29 ft-lb)**

**Fluid grade :NISSAN Matic "D" (Continental U.S. and Alaska) or Canada NISSAN Automatic Transmission Fluid Refer to [MA-12, "RECOMMENDED FLUIDS AND LUBRICANTS"](#).**



# CHASSIS AND BODY MAINTENANCE

4. Start the engine and run at idle speed for five minutes.
5. Check fluid level and condition. Refer to [MA-29, "Checking A/T Fluid"](#) . If fluid is still dirty, repeat this procedure.

## Balancing Wheels (Bonding Weight Type)

ELS000BG

### REMOVAL

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

**CAUTION:**

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

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

**CAUTION:**

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

### WHEEL BALANCE ADJUSTMENT

#### NOTE:

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 wheel balancer using the center hole as a guide. Start the tire balance machine.
2. When 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 above and install it 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.**

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

Calculation example:

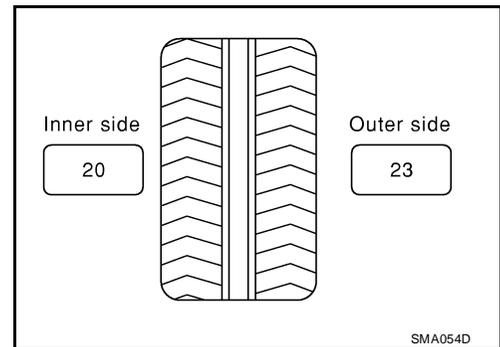
23 g (0.81 oz)  $\times$  1.6 = 38.33 g (1.35 oz) = 40 g (1.41 oz) balance weight (closer to calculated balance weight value)

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

Example:

37.4 = 35 g (1.23 oz)

37.5 = 40 g (1.41 oz)

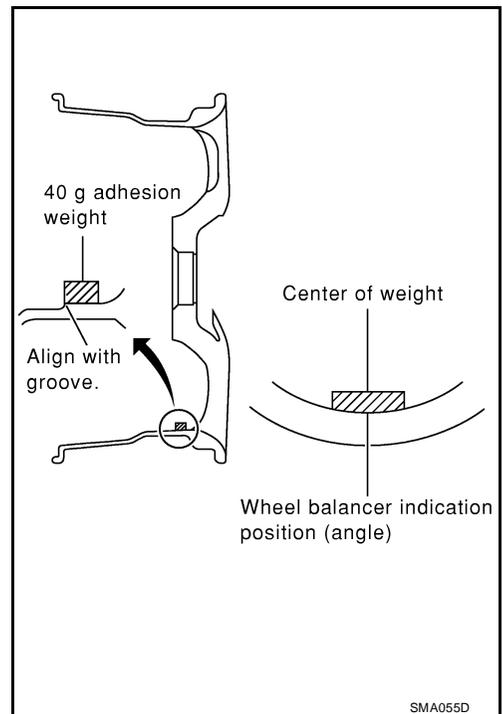


# CHASSIS AND BODY MAINTENANCE

- Install balance weight in the position shown.
- When installing balance weight to 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.



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

**CAUTION:**

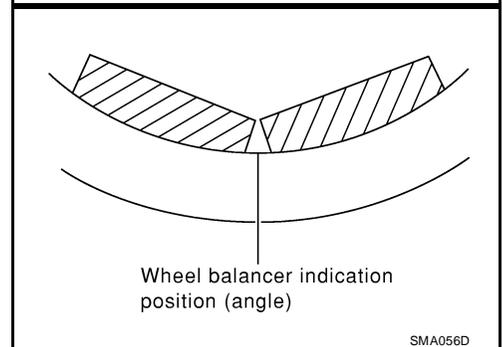
**Do not install one balance weight sheet on top of another.**

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

**CAUTION:**

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

- Start wheel balancer. Make sure that inner and outer residual unbalance values are 10 g (0.35 oz) each or below.
  - If either residual unbalance value exceeds 10 g (0.35 oz), repeat installation procedures.



## Wheel Balance (Maximum Allowable Unbalance)

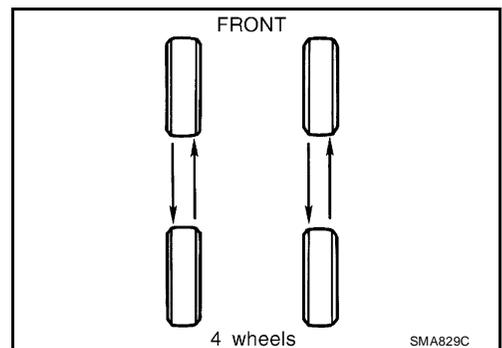
Maximum allowable unbalance	Dynamic (At rim flange)	10 g (0.35 oz) (one side)
	Static	20 g (0.71 oz)

## Tire Rotation

ELS000BH

- After rotating the tires, adjust the tire pressure.
- Retighten the wheel nuts when the vehicle has been driven for the first 1,000 km (600 miles) (also in cases of a flat tire, etc.).

**Wheel nuts : 98 - 117 N·m (10 - 12 kg·m, 73 - 86 ft·lb)**

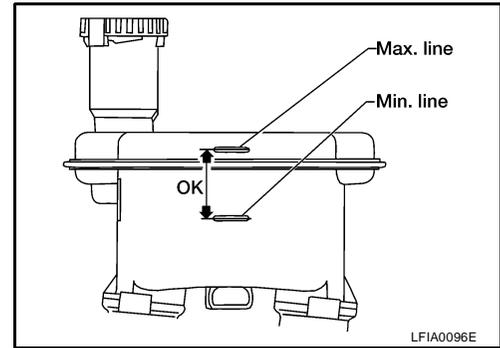


# CHASSIS AND BODY MAINTENANCE

## Checking Brake Fluid Level and Leaks

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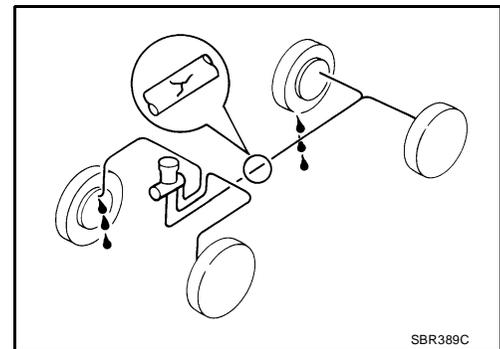
- Check fluid level in reservoir tank. It should be between MAX and MIN lines on reservoir tank.
- If fluid level is extremely low, check brake system for leaks.
- Release parking brake lever and see if brake warning lamp goes off. If not, check brake system for leaks.



## Checking Brake Lines and Cables

ELS000BJ

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



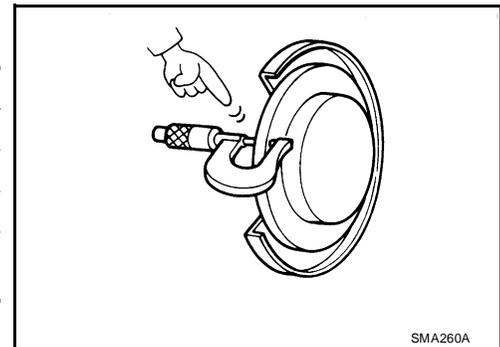
## Checking Disc Brake ROTOR

ELS000BK

Check condition and thickness.

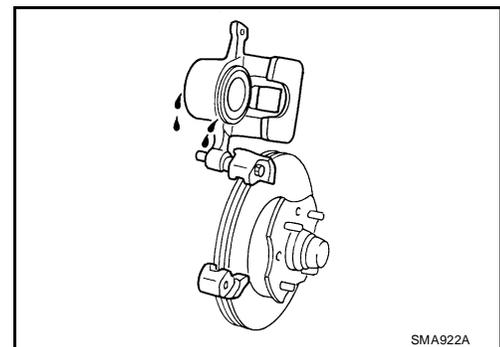
Unit: mm (in)

	Front	Rear
Brake model	CLZ25VD	AD9V
Standard thickness	26 (1.02)	9 (0.35)
Maximum runout	0.07 (0.0028)	0.07 (0.0028)
Minimum thickness (Wear limit)	22.0 (0.866)	8.0 (0.315)



## CALIPER

Check for leakage.



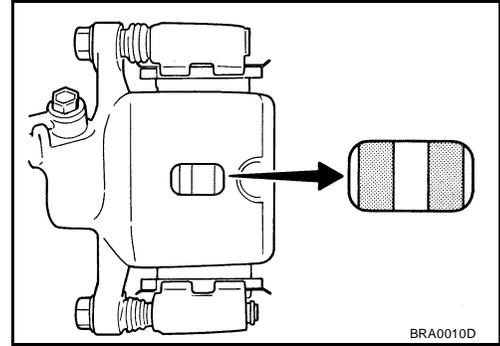
# CHASSIS AND BODY MAINTENANCE

## PAD

Check for wear or damage.

Unit: mm (in)

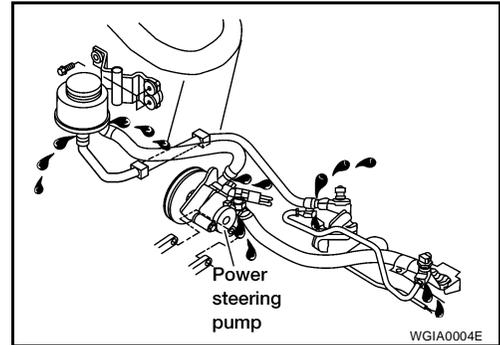
	Front	Rear
Brake model	CLZ25VD	AD9V
Standard thickness	11 (0.43)	10 (0.39)
Minimum thickness (Wear limit)	2.0 (0.079)	1.5 (0.059)



## Checking Steering Gear and Linkage

### 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.

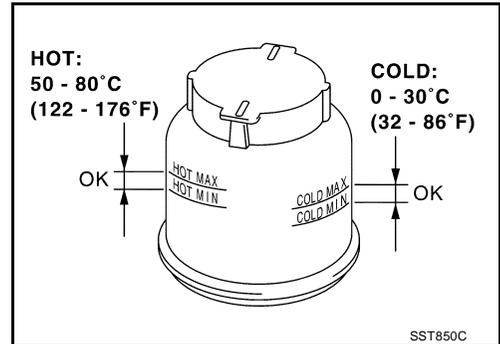
## Checking Power Steering Fluid and Lines

Check fluid level in reservoir tank with engine off.

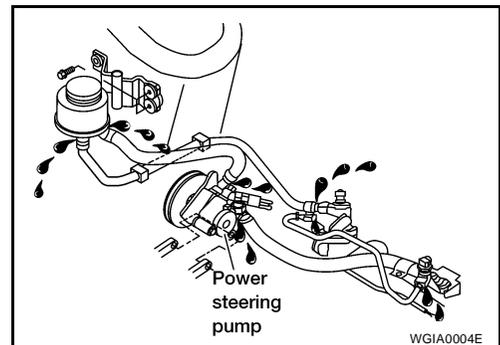
Use "HOT" range at fluid temperatures of 50° to 80°C (122° to 176°F) or "COLD" range at fluid temperatures of 0° to 30°C (32° to 86°F).

### CAUTION:

- Do not overfill.
- Recommended fluid is Genuine NISSAN PSF II or equivalent. Refer to [MA-12, "RECOMMENDED FLUIDS AND LUBRICANTS"](#).



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



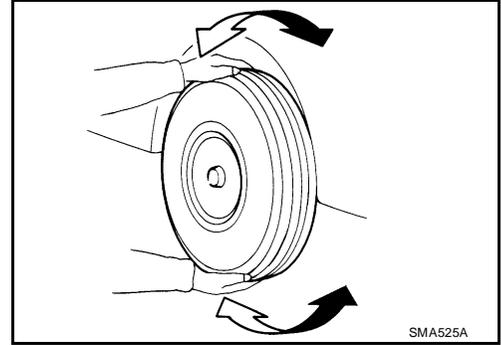
# CHASSIS AND BODY MAINTENANCE

ELS000BN

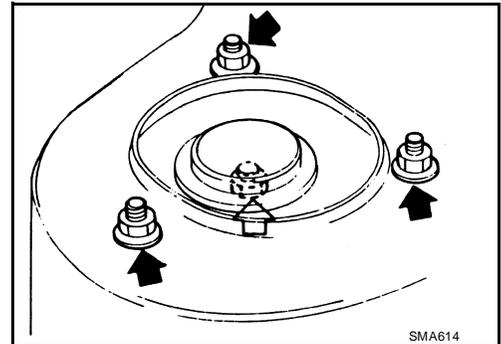
## Axle and Suspension Parts

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

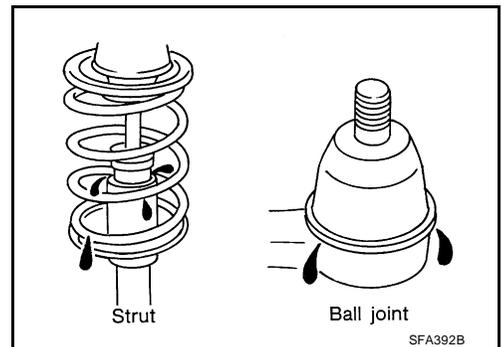
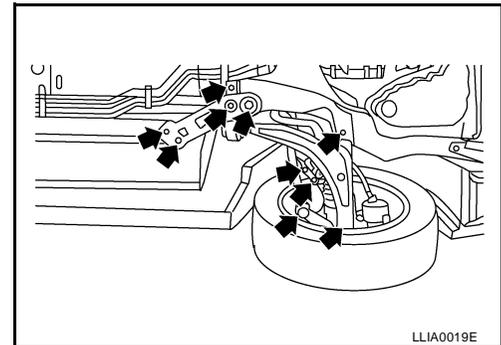
- Shake each wheel to check for excessive play.
- Rotate each wheel to check for abnormal noise.



- Check axle and suspension nuts and bolts for looseness.



- Check strut (shock absorber) for oil leakage or other damage.
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks or other damage.

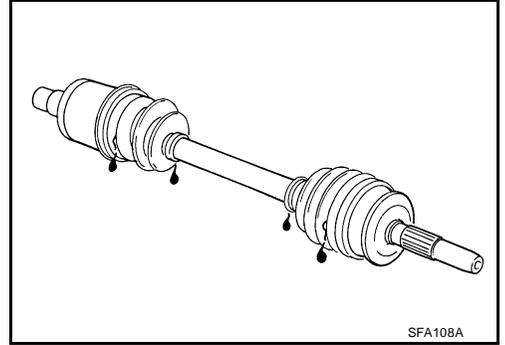


# CHASSIS AND BODY MAINTENANCE

## Drive Shaft

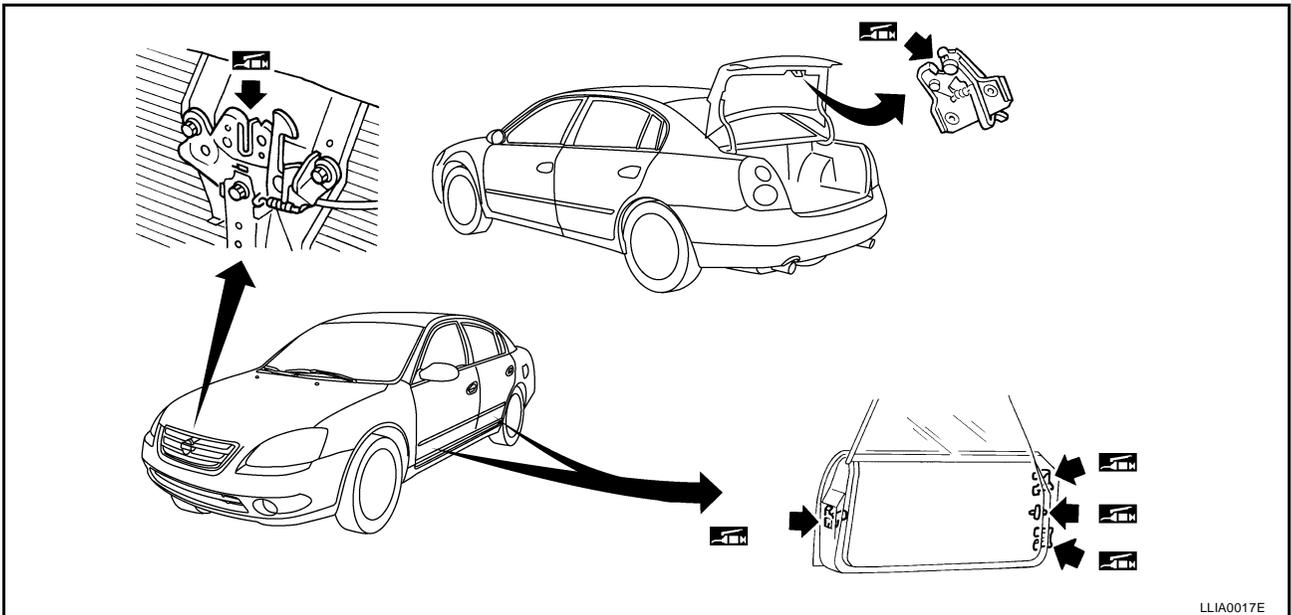
ELS000B0

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



## Lubricating Locks, Hinges and Hood Latch

ELS000BP



A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
MA  
M

# CHASSIS AND BODY MAINTENANCE

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

ELS000BQ

### CAUTION:

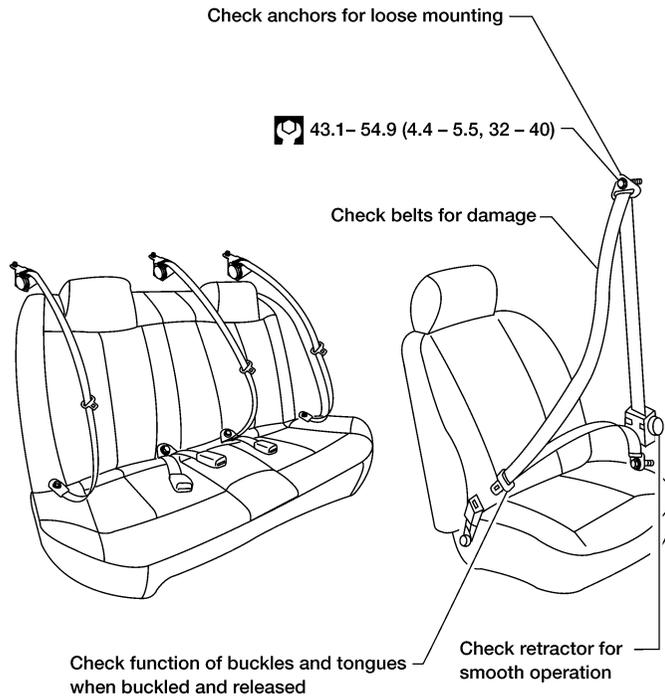
- After any collision, inspect all seat belt assemblies, including retractors and other attached hardware (i.e. anchor bolt, guide rail set). Nissan recommends to replace all seat belt assemblies in use during a collision, unless not damaged and properly operating after minor collision. Also inspect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

Anchor bolt

 43.1 - 54.9 (4.4 - 5.5, 32 - 40)

 N·m (kg·m, ft·lb)



LLIA0022E

# SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

PF0:00030

### Engine Maintenance (QR25DE) SPARK PLUGS (PLATINUM-TIPPED TYPE)

ELS000BR

Type	Standard	PLFR5A-11
	Hot	PLFR4A-11
	Cold	PLFR6A-11
Plug gap	Nominal: 1.1 mm (0.043 in)	

### BELT DEFLECTION AND TENSION

Tension of drive belts	Auto-adjustment by auto tensioner
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### Engine Maintenance (VQ35DE) SPARK PLUGS (PLATINUM-TIPPED TYPE)

ELS000BS

Type	Standard	PLFR5A-11
	Hot	PLFR4A-11
	Cold	PLFR6A-11
Plug gap	Nominal: 1.1 mm (0.043 in)	

### BELT DEFLECTION AND TENSION

	Deflection adjustment		Unit: mm (in)	Tension adjustment		Unit: N (kg, lb)
	Used belt		New belt	Used belt		New belt
	Limit	After adjustment		Limit	After adjustment	
Alternator, Air conditioner compressor oil pump	7.0 (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 oil pump	11.0 (0.43)	7.3 - 8.0 (0.29 - 0.32)	6.5 - 7.2 (0.26 - 0.28)	196 (20, 44)	495 - 583 (50.5 - 59.5, 111.3 - 131.1)	603 - 691 (61.5 - 70.5, 135.6 - 155.4)

### Chassis and Body Maintenance WHEEL BALANCE

ELS000BT

Maximum allowable unbalance	Dynamic (At rim flange) g (oz)	10 (0.35) (one side)
	Static g (oz)	20 (0.71)