

SECTION MA

MAINTENANCE

CONTENTS

PRECAUTION	3	ENGINE OIL	18
PRECAUTIONS	3	ENGINE OIL : Inspection	19
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	3	ENGINE OIL : Changing Engine Oil	19
PREPARATION	4	OIL FILTER	19
PREPARATION	4	OIL FILTER : Removal and Installation	19
Special Service Tool	4	SPARK PLUG	20
Commercial Service Tool	4	SPARK PLUG : Removal and Installation	21
PERIODIC MAINTENANCE	6	EVAP VAPOR LINES	22
GENERAL MAINTENANCE	6	EVAP VAPOR LINES : Inspection	22
Explanation of General Maintenance	6	ENGINE MAINTENANCE (VQ35DE)	23
PERIODIC MAINTENANCE	8	DRIVE BELTS	23
Introduction of Periodic Maintenance	8	DRIVE BELTS : Checking Drive Belts	23
RECOMMENDED FLUIDS AND LUBRICANTS	12	DRIVE BELTS : Tension Adjustment	23
Fluids and Lubricants	12	ENGINE COOLANT	23
Engine Oil Recommendation	12	ENGINE COOLANT : System Inspection	23
Engine Coolant Mixture Ratio	13	ENGINE COOLANT : Changing Engine Coolant	25
ENGINE MAINTENANCE (QR25DE)	14	FUEL LINES	27
DRIVE BELTS	14	FUEL LINES : Inspection	27
DRIVE BELTS : Checking Drive Belts	14	AIR CLEANER FILTER	27
DRIVE BELTS : Tension Adjustment	14	AIR CLEANER FILTER : Exploded View	27
ENGINE COOLANT	14	AIR CLEANER FILTER : Removal and Installation	28
ENGINE COOLANT : System Inspection	14	ENGINE OIL	28
ENGINE COOLANT : Changing Engine Coolant	16	ENGINE OIL : Inspection	28
FUEL LINES	18	ENGINE OIL : Changing Engine Oil	28
FUEL LINES : Inspection	18	OIL FILTER	29
AIR CLEANER FILTER	18	OIL FILTER : Removal and Installation	29
AIR CLEANER FILTER : Removal and Installation	18	SPARK PLUG	30
..... 18		SPARK PLUG : Removal and Installation	30
		EVAP VAPOR LINES	31
		EVAP VAPOR LINES : Inspection	32
		CHASSIS AND BODY MAINTENANCE	33

IN-CABIN MICROFILTER	33	DISC BRAKE : Brake Burnishing	44
IN-CABIN MICROFILTER : Removal and Installation	33	DISC BRAKE : Front Brake Rotor	44
EXHAUST SYSTEM	33	DISC BRAKE : Inspection	44
EXHAUST SYSTEM : Checking Exhaust System...	33	DISC BRAKE : Brake Burnishing	45
CVT FLUID	33	DISC BRAKE : Rear Brake Pad	45
CVT FLUID : RE0F10H	34	DISC BRAKE : Inspection	45
CVT FLUID : Inspection	34	DISC BRAKE : Brake Burnishing	46
CVT FLUID : Replacement	34	DISC BRAKE : Rear Brake Rotor	46
CVT FLUID : Adjustment	36	DISC BRAKE : Inspection	46
CVT FLUID : RE0F10D	37	DISC BRAKE : Brake Burnishing	47
CVT FLUID : Inspection	37	STEERING GEAR AND LINKAGE	47
CVT FLUID : Replacement	37	STEERING GEAR AND LINKAGE : Inspection	47
CVT FLUID : Adjustment	39	POWER STEERING FLUID AND LINES	47
WHEELS	40	POWER STEERING FLUID AND LINES : Inspection	47
WHEELS : Inspection	40	AXLE AND SUSPENSION PARTS	48
WHEELS : Adjustment	41	AXLE AND SUSPENSION PARTS : Inspection	48
BRAKE FLUID LEVEL AND LEAKS	42	DRIVE SHAFT	49
BRAKE FLUID LEVEL AND LEAKS : Inspection ...	42	DRIVE SHAFT : Inspection	49
BRAKE LINES AND CABLES	43	LOCKS, HINGES AND HOOD LATCH	49
BRAKE LINES AND CABLES : Inspection	43	LOCKS, HINGES AND HOOD LATCH : Lubricating	49
BRAKE FLUID	43	SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS	49
BRAKE FLUID : Drain and Refill	43	SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS : Inspection	49
DISC BRAKE	44		
DISC BRAKE : Front Brake Pad	44		
DISC BRAKE : Inspection	44		

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:0000000012590491

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

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.
- Improper repair, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery or batteries, and wait at least three minutes before performing any service.

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

MA

PREPARATION

< PREPARATION >

PREPARATION

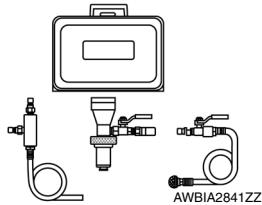
PREPARATION

Special Service Tool

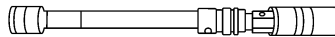
INFOID:0000000012590492

The actual shape of the tools may differ from those illustrated here.

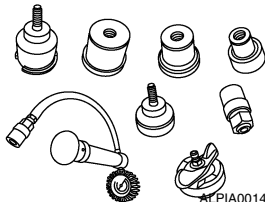
Tool number (TechMate No.) Tool name	Description
KV991J0070 (J-45695-A) Coolant Refill Tool	Refilling engine cooling system
— (J-48891) Spark plug socket	Removing and installing spark plug
— (J-51771) Cooling system pressure test kit	Checking cooling system and radiator cap



AWBIA2841ZZ



AWBIA1785ZZ



ACPJA0014ZZ

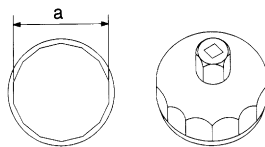
Commercial Service Tool

INFOID:0000000012590493

Tool name	Description
Power tool	Loosening nuts, screws and bolts
Oil filter wrench	Removing and installing oil filter a: 64.3 mm (2.531 in)



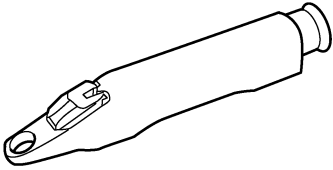
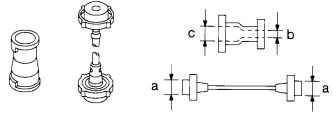
PIIB1407E



S-NT375

PREPARATION

< PREPARATION >

Tool name	Description
Engine coolant refractometer  WBIA0539E	Checking concentration of ethylene glycol in engine coolant
— (J-33984-A) Radiator pressure adapter  S-NT564	Adapting cooling system pressure tester to radiator cap and reservoir tank cap a: 28 (1.10) diameter b: 31.4 (1.236) diameter c: 41.3 (1.626) diameter Unit: mm (in)

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

MA

GENERAL MAINTENANCE

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE

GENERAL MAINTENANCE

Explanation of General Maintenance

INFOID:0000000012590494

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
Tires	Check the pressure with a gauge often and always prior to long distance trips. Adjust the pressure in all tires, including the spare, to the pressure specified. Check carefully for damage, cuts or excessive wear.	MA-41
Wheel nuts	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	MA-41
Tire rotation	Tires should be rotated every 5,000 miles (8,000 km).	MA-41
Tire Pressure Monitoring System (TPMS) transmitter components	Replace the TPMS transmitter grommet seal, valve core and cap when the tires are replaced due to wear or age.	WT-56
Wheel alignment and balance	If the vehicle should pull to either side while driving on a straight and level road, or if you detect uneven or abnormal tire wear, there may be a need for wheel alignment. If the steering wheel or seat vibrates at normal highway speeds, wheel balancing may be needed. For additional information regarding tires, refer to "Important Tire Safety Information" (US) or "Tire Safety Information" (Canada) in the NISSAN Warranty Information Booklet.	FSU-25
Windshield	Clean the windshield on a regular basis. Check the windshield at least every six months for cracks or other damage. Repair as necessary.	—
Windshield wiper blades	Check for cracks or wear if they do not wipe properly.	—
Doors and engine hood	Check that all doors and the engine hood operate properly. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check for lubrication frequently.	MA-49. "LOCKS, HINGES AND HOOD LATCH : Lubricating"
Lamps	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.	EXL-113

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

GENERAL MAINTENANCE

< PERIODIC MAINTENANCE >

Item		Reference page
Seats	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.	—
Seat belts	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.	SB-5
Accelerator pedal	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.	—
Brakes	Check that the brake does not pull the vehicle to one side when applied.	—
Brake pedal and booster	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.	BR-51 , BR-52
Parking brake	Check that the pedal has the proper travel and make sure that the vehicle is held securely on a fairly steep hill when only the parking brake is applied.	PB-4
CVT P (Park) position mechanism	On a fairly steep hill check that the vehicle is held securely with the shift selector in the P (Park) position without applying any brakes.	—

UNDER THE HOOD AND VEHICLE

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

Item		Reference page
Windshield washer fluid	Check that there is adequate fluid in the tank.	—
Engine coolant level	Check the coolant level when the engine is cold.	MA-16 (QR25DE) MA-25 (VQ35DE)
Radiator and hoses	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.	—
Brake and clutch fluid levels	Make sure that the brake and clutch fluid levels are between the "MAX" and "MIN" lines on the reservoir.	MA-43
Battery	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.	—
Engine drive belts	Make sure that no belt is frayed, worn, cracked or oily.	MA-14 (QR25DE) MA-23 (VQ35DE)
Engine oil level	Check the level on the oil level gauge after parking the vehicle on a level spot and turning off the engine.	MA-19 (QR25DE) MA-28 (VQ35DE)
Power steering fluid level and lines	Check the level when the fluid is cold, with the engine off. Check the lines for improper attachment, leaks, cracks, etc.	MA-47
Exhaust system	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.	MA-33
Underbody	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.	—
Fluid leaks	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 >

PERIODIC MAINTENANCE

Introduction of Periodic Maintenance

INFOID:0000000012590495

The following tables show the normal maintenance schedule. Depending upon weather and atmospheric conditions, varying road surfaces, individual driving habits and vehicle usage, additional or more frequent maintenance may be required.

Periodic maintenance beyond the last period shown on the tables requires similar maintenance.

Emission Control System Maintenance

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000)	5 (8)	10 (16)	15 (24)	20 (32)	25 (40)	30 (48)	35 (56)	40 (64)	45 (72)
	Months	6	12	18	24	30	36	42	48	54
Drive belt	NOTE (1)								I*	
Air cleaner filter	NOTE (2)						R			
EVAP vapor lines					I*				I*	
Fuel lines					I*				I*	
Fuel filter	NOTE (3)									
Engine coolant*	NOTE (4)(5)									
Engine oil		R	R	R	R	R	R	R	R	R
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent)		R	R	R	R	R	R	R	R	R
Spark plugs (Iridium - tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km)								
Intake and exhaust valve clearance*	NOTE (7)									

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000)	50 (80)	55 (88)	60 (96)	65 (104)	70 (112)	75 (120)	80 (128)	85 (136)	90 (144)
	Months	60	66	72	78	84	90	96	102	108
Drive belt	NOTE (1)	I*		I*		I*		I*		I*
Air cleaner filter	NOTE (2)			R						R
EVAP vapor lines				I*				I*		
Fuel lines				I*				I*		
Fuel filter	NOTE (3)									
Engine coolant*	NOTE (4)(5)									
Engine oil		R	R	R	R	R	R	R	R	R
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent)		R	R	R	R	R	R	R	R	R
Spark plugs (Iridium - tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km)								
Intake and exhaust valve clearance*	NOTE (7)									

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	95 (152) 114	100 (160) 120	105 (168) 126	110 (176) 132	115 (184) 138	120 (192) 144	
Drive belt	NOTE (1)		I*		I*		I*	MA-14 (QR25DE) MA-23 (VQ35DE)
Air cleaner filter	NOTE (2)						R	MA-18 (QR25DE) MA-28 (VQ35DE)

PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	95 (152) 114	100 (160) 120	105 (168) 126	110 (176) 132	115 (184) 138	120 (192) 144	
EVAP vapor lines			I*				I*	MA-22 (QR25DE) MA-32 (VQ35DE)
Fuel lines			I*				I*	MA-18 (QR25DE) MA-27 (VQ35DE)
Fuel filter	NOTE (3)							—
Engine coolant*	NOTE (4)(5)							MA-14 (QR25DE) MA-23 (VQ35DE)
Engine oil		R	R	R	R	R	R	MA-19 (QR25DE) MA-28 (VQ35DE)
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent)		R	R	R	R	R	R	MA-19 (QR25DE) MA-29 (VQ35DE)
Spark plugs (Iridium - tipped type)	NOTE (6)	Replace every 105,000 miles (168,000 km)						MA-21 (QR25DE) MA-30 (VQ35DE)
Intake and exhaust valve clearance*	NOTE (7)							MA-33 (QR25DE) MA-33 (VQ35DE)

NOTE:

- (1) After 40,000 miles (64,000 km) or 48 months, inspect every 10,000 miles (16,000 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, refer to the FL section.
- (4) First replacement interval is 105,000 miles (168,000 km) or 84 months. After first replacement, replace every 75,000 miles (120,000 km) or 60 months.
- (5) Use only Genuine NISSAN long life Antifreeze/Coolant (blue) or equivalent with proper mixture ratio of 50% anti-freeze and 50% demineralized or distilled water. Mixing any other type of coolant or the use of non-distilled water will reduce the life expectancy of the factory fill coolant.
- (6) Replace spark plug when the plug gap exceeds 1.25 mm (0.049 in) even if within specified periodic replacement mileage.
- (7) Periodic maintenance is not required. However, if valve noise increases, inspect valve clearance.

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

Chassis and Body Maintenance

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	5 (8) 6	10 (16) 12	15 (24) 18	20 (32) 24	25 (40) 30	30 (48) 36	35 (56) 42	40 (64) 48	45 (72) 54
Brake lines & cables			I		I		I		I	
Brake pads & rotors★			I		I		I		I	
Brake fluid★					R				R	
CVT fluid	NOTE (1)		I		I		I		I	
Steering gear & linkage, axle & suspension parts★					I				I	
Tire rotation	NOTE (2)									
Front drive shaft boots★			I		I		I		I	
Exhaust system★					I				I	
In-cabin microfilter				R			R			R
I-key battery				R			R			R

PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	50 (80) 60	55 (88) 66	60 (96) 72	65 (104) 78	70 (112) 84	75 (120) 90	80 (128) 96	85 (136) 102	90 (144) 108
Brake lines & cables		I		I		I		I		I
Brake pads & rotors★		I		I		I		I		I
Brake fluid★				R				R		
CVT fluid	NOTE (1)	I		I		I		I		I
Steering gear & linkage, axle & suspension parts★				I				I		
Tire rotation	NOTE (2)									
Front drive shaft boots★		I		I		I		I		I
Exhaust system★				I				I		
In-cabin microfilter				R			R			R
I-key battery				R			R			R

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	95 (152) 114	100 (160) 120	105 (168) 126	110 (176) 132	115 (184) 138	120 (192) 144	
Brake lines & cables			I		I		I	MA-43
Brake pads & rotors★			I		I		I	MA-44
Brake fluid★			R				R	MA-43
CVT fluid	NOTE (1)		I		I		I	MA-34 MA-37
Steering gear & linkage, axle & suspension parts★			I				I	MA-47 MA-48
Tire rotation	NOTE (2)							MA-40 MA-41
Front drive shaft boots★			I		I		I	MA-49
Exhaust system★			I				I	MA-33
In-cabin microfilter				R			R	MA-33
I-key battery				R			R	MA-33

NOTE:

- Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.
- (1) Use only Genuine NISSAN CVT fluid. If towing a trailer, using a camper or a car-top carrier or driving on rough or muddy roads, inspect CVT fluid deterioration at NISSAN dealer every 60,000 miles (96,000 km), then change CVT fluid if necessary. And if the inspection is not performed, change (not just inspect) CVT fluid every 60,000 miles (96,000 km). Using transmission fluid other than Genuine NISSAN CVT Fluid will damage the CVT, which is not covered by the NISSAN new vehicle limited warranty.
- (2) Refer to “Tire rotation” under the “GENERAL MAINTENANCE” heading earlier in this section.

MAINTENANCE UNDER SEVERE DRIVING CONDITIONS

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

Severe driving conditions

- Repeated short trips of less than 5 miles (8 km).
- Repeated short trips of less than 10 miles (16 km) with outside temperatures remaining below freezing.
- Operating in hot weather in stop-and-go “rush hour” traffic.
- Extensive idling and/or low speed driving for long distances, such as police, taxi or door-to-door delivery use.

PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

- Driving in dusty conditions.
- Driving on rough, muddy, or salt spread roads.
- Towing a trailer, using a camper or a car-top carrier.

Maintenance operation: Inspect = Inspect and correct or replace as necessary.

Maintenance item	Maintenance operation	Maintenance interval	Reference page
Brake fluid	Replace	Every 10,000 miles (16,000 km) or 12 months	MA-43
Brake pads & rotors	Inspect	Every 5,000 miles (8,000 km) or 6 months	MA-44
Steering gear & linkage, axle & suspension parts	Inspect	Every 5,000 miles (8,000 km) or 6 months	MA-47 MA-47
Front drive shaft boots	Inspect	Every 5,000 miles (8,000 km) or 6 months	MA-49
Exhaust system	Inspect	Every 5,000 miles (8,000 km) or 6 months	MA-33

RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

RECOMMENDED FLUIDS AND LUBRICANTS

Fluids and Lubricants

INFOID:000000012590496

The following are approximate capacities. The actual capacities may be slightly different. When refilling, follow the procedures described elsewhere in this manual.

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Metric	US measure	Imp measure	
Fuel	QR25DE	68 ℓ	18 gal	15 gal	<ul style="list-style-type: none"> Unleaded regular gasoline with an octane rating of at least 87 AKI (RON 91)
	VQ35DE				
Engine oil Drain and refill	With oil filter change	QR25DE	4.6 ℓ	4-7/8 qt	<ul style="list-style-type: none"> Genuine NISSAN engine oil or equivalent, Viscosity SAE 0W-20 *2 Engine oil with API Certification Mark *1 <p>*1: For additional information, see "Engine Oil Recommendation".</p> <p>*2: As an alternative to this recommended oil, SAE 5W-30 conventional petroleum based oil may be used and meet all specifications and requirements necessary to maintain the NISSAN New Vehicle Limited Warranty.</p>
		VQ35DE	4.8 ℓ	5-1/8 qt	
	Without oil filter change	QR25DE	4.3 ℓ	4-1/2 qt	
		VQ35DE	4.5 ℓ	4-3/4 qt	
Dry engine (engine overhaul)		QR25DE	5.3 ℓ	5-5/8 qt	
		VQ35DE	5.2 ℓ	5-1/2 qt	
Engine coolant (with reservoir tank at MAX level)		QR25DE	7.9 ℓ	8-3/8 qt	<ul style="list-style-type: none"> Pre-diluted Genuine NISSAN Long Life Antifreeze/ Coolant (blue) or equivalent
		VQ35DE	9.2 ℓ	9-3/4 qt	
CVT fluid		RE0F10D	7.4 ℓ	7-7/8 qt	<ul style="list-style-type: none"> Genuine NISSAN CVT Fluid NS-3 NISSAN recommends using Genuine NISSAN CVT Fluid NS-3 ONLY in NISSAN CVTs. Do not mix with other fluids. Using fluids that are not equivalent to Genuine Nissan CVT Fluid NS-3 may damage the CVT. Damage caused by the use of fluids other than as recommended is not covered under NISSAN's New Vehicle Limited Warranty.
		RE0F10H	8.2 ℓ	8-5/8 qt	
Power steering fluid (E-PSF)		1.1 ℓ	1-1/8 qt	1 qt	<ul style="list-style-type: none"> Genuine NISSAN E-PSF or equivalent Use of a power steering fluid other than Genuine NISSAN E-PSF will prevent the power steering system from operating properly.
Brake fluid		—	—	—	<ul style="list-style-type: none"> Genuine NISSAN Super Heavy Duty Brake Fluid *3 or equivalent DOT 3 (US FMVSS No. 116) <p>*3: Available in mainland U.S.A. through a NISSAN dealer.</p>
Multi-purpose grease		—	—	—	<ul style="list-style-type: none"> NLGI No. 2 (lithium soap base)
Windshield washer fluid		4.2 ℓ	4-1/2 qt	3-3/4 qt	<ul style="list-style-type: none"> Genuine NISSAN Windshield Washer Concentrate Cleaner & Antifreeze fluid or equivalent
Air conditioner system refrigerant		0.525 ± 0.025 kg	1.158 ± 0.055 lb	1.158 ± 0.055 lb	<ul style="list-style-type: none"> HFC-134a (R-134a) For additional information, see "Air conditioner specification label".
Air conditioner system oil		128 m ℓ	4.3 fl oz	4.5 fl oz	<ul style="list-style-type: none"> A/C System Oil Type S (DH-PS) For additional information, see "Air conditioner specification label".

Engine Oil Recommendation

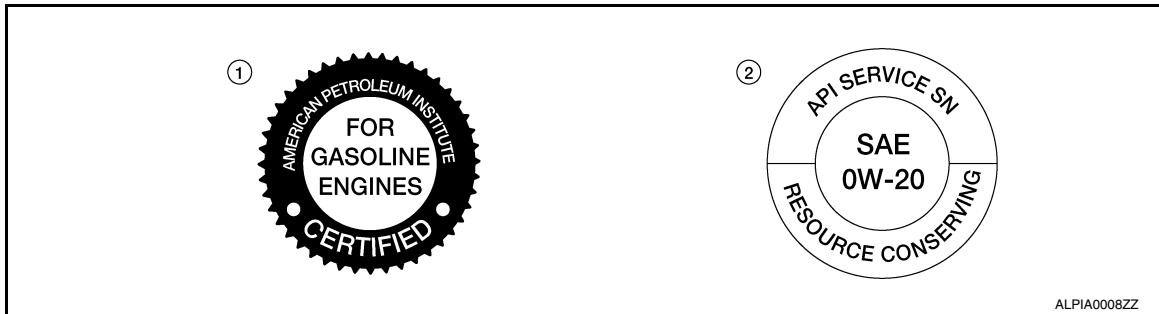
INFOID:000000012590497

NISSAN recommends the use of an energy conserving oil in order to improve fuel economy. Select only engine oils that meet the American Petroleum Institute (API) certification and International Lubricant Standard-

RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

ization and Approval Committee (ILSAC) certification and SAE viscosity standard. These oils have the API certification mark on the front of the container. Oils which do not have the specified quality label should not be used as they could cause engine damage.



1. API certification mark

2. API service symbol (0W-20)

Engine Coolant Mixture Ratio

INFOID:0000000012590498

The engine cooling system is filled at the factory with a pre-diluted mixture of 50% Genuine NISSAN Long Life Antifreeze/Coolant (blue) and 50% water to provide year-round anti-freeze and coolant protection. The anti-freeze solution contains rust and corrosion inhibitors. Additional engine cooling system additives are not necessary.

WARNING:

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

CAUTION:

- When adding or replacing coolant, be sure to use only Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent. Genuine NISSAN Long Life Antifreeze/Coolant (blue) is pre-diluted to provide antifreeze protection to -34°F (-37°C). If additional freeze protection is needed due to weather where you operate your vehicle, add Genuine NISSAN Long Life Antifreeze/Coolant (blue) concentrate following the directions on the container. If an equivalent coolant other than Genuine NISSAN Long Life Antifreeze/Coolant (blue) is used, follow the coolant manufacturer's instructions to maintain minimum antifreeze protection to -34°F (-37°C). The use of other types of coolant solutions other than Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent may damage the engine cooling system.
- Mixing any other type of coolant other than Genuine NISSAN Long Life Antifreeze/Coolant (blue), including Genuine NISSAN Long Life Antifreeze/Coolant (green), or the use of non-distilled water will reduce the life expectancy of the factory-fill coolant.

ENGINE MAINTENANCE (QR25DE)

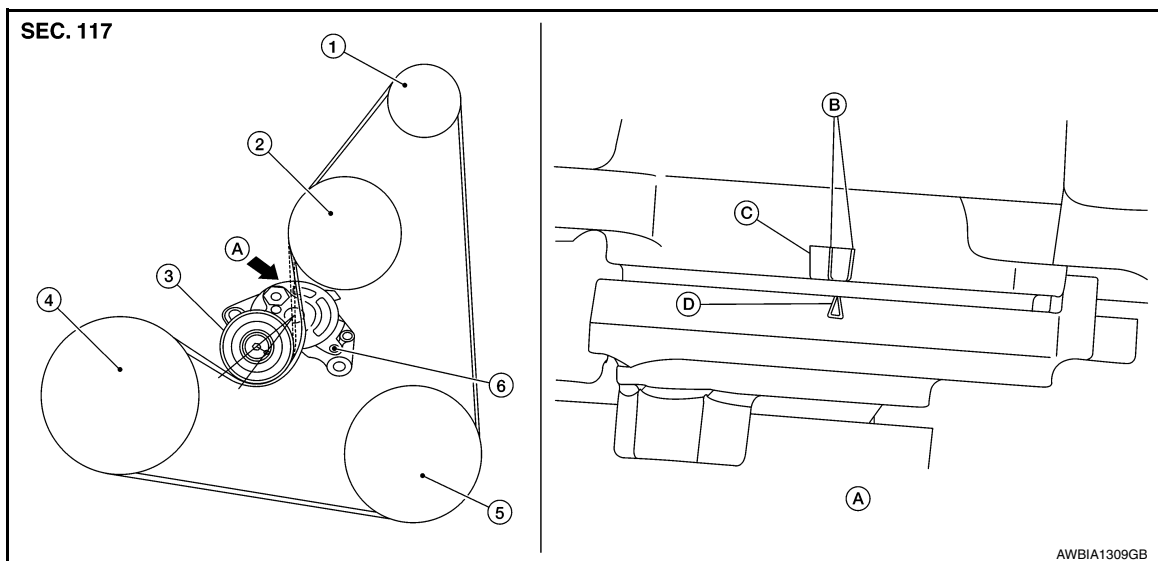
< PERIODIC MAINTENANCE >

ENGINE MAINTENANCE (QR25DE)

DRIVE BELTS

DRIVE BELTS : Checking Drive Belts

INFOID:0000000012590499



- | | | |
|----------------------|--------------------------|------------------------------|
| 1. Generator pulley | 2. Water pump pulley | 3. Drive belt auto-tensioner |
| 4. Crankshaft pulley | 5. A/C compressor pulley | 6. Drive belt retainer boss |
| A. View A | B. New drive belt range | C. Allowable use range |
| D. Indicator (notch) | | |

WARNING:

Inspect the drive belt only when the engine is stopped.

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

NOTE:

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

DRIVE BELTS : Tension Adjustment

INFOID:0000000012590500

Belt tension is not manually adjustable, it is automatically adjusted by the drive belt auto-tensioner.

ENGINE COOLANT

ENGINE COOLANT : System Inspection

INFOID:0000000012590501

WARNING:

- Do not remove the radiator cap or reservoir tank cap when the engine is hot. Serious burns could occur from high-pressure engine coolant escaping from the cooling system.
- When removing the radiator cap or reservoir tank cap, wrap a thick cloth around the cap and slowly turn it a quarter turn to allow built-up pressure to escape. Then carefully remove the cap by turning it all the way.

CHECKING COOLING SYSTEM HOSES

Check hoses for the following:

- Improper attachment
- Leaks
- Cracks

ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

- Dents
- Bulges
- Internal obstruction
- Damage
- Loose connections
- Chafing
- Deterioration

CHECKING RESERVOIR LEVEL

- Check if the reservoir tank coolant level is within MIN to MAX when the engine is cool.

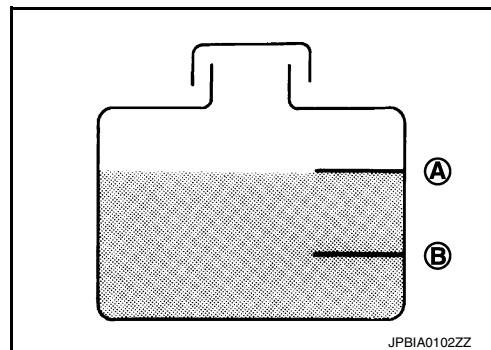
(A) : MAX

(B) : MIN

- Adjust coolant level (if necessary), to ensure that the engine coolant level is within the MIN to MAX range.

CAUTION:

Refill Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent in its quality mixed with water (distilled or demineralized). Refer to [MA-12, "Fluids and Lubricants"](#).



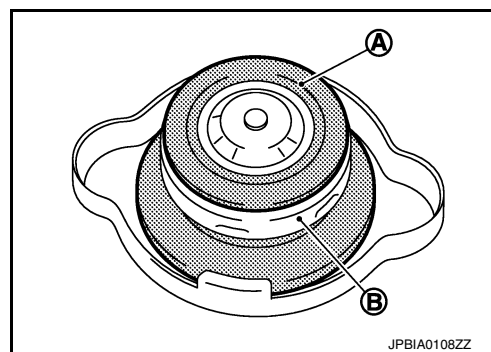
CHECKING RADIATOR CAP

WARNING:

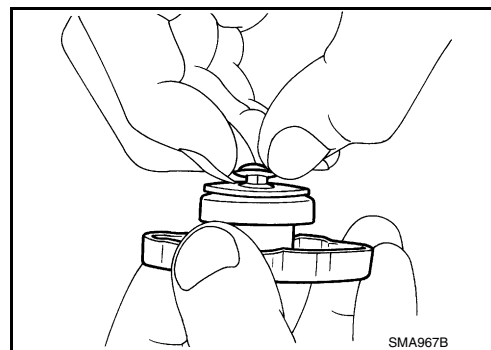
- Do not remove the radiator cap or reservoir tank cap when the engine is hot. Serious burns could occur from high-pressure engine coolant escaping from the cooling system.
- When removing the radiator cap or reservoir tank cap, wrap a thick cloth around the cap and slowly turn it a quarter turn to allow built-up pressure to escape. Then carefully remove the cap by turning it all the way.
- Check the pressure valve of the radiator cap.
- Replace the radiator cap if the metal plunger (B) on the pressure valve cannot be seen around the edge of the rubber gasket (A).
- Replace the radiator cap if there is damage or deposits of foreign material on the rubber gasket or pressure valve.

CAUTION:

Thoroughly wipe out the radiator filler neck to remove any waxy residue or foreign material.



- Check the negative-pressure valve of the radiator cap.
- Replace the radiator cap if the negative-pressure valve does not close completely when pulled open and released.
- Replace the radiator cap if there is damage or deposits of foreign material on the valve seat of the negative-pressure valve.
- Replace the radiator cap if there is an abnormality in the operation of the negative-pressure valve.



- Check radiator cap relief pressure.

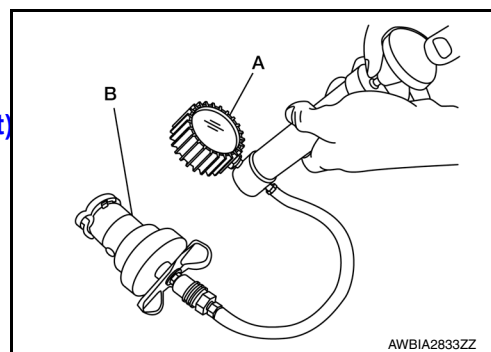
ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

- Check the radiator cap relief pressure using Tool (A) and tool (B).

Tool number (A) : — (J-51771)
Tool number (B) : — (J-33984-A or equivalent)
(commercially available)
Radiator cap relief pressure : Refer to [CO-26, "Radiator"](#).

- When connecting the radiator cap to tool (B), apply water or coolant to the radiator cap seal surface.
- Replace the radiator cap if the radiator cap relief pressure is outside of specification.



CHECKING RADIATOR

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

CAUTION:

- Do not bend or damage the radiator fins.
- When radiator is cleaned on-vehicle, remove surrounding parts in order to access the radiator core. Tape the harness and harness connectors to prevent water from entering.

1. Spray water to the back side of the radiator core using a side to side motion from the top down.
2. Stop spraying when debris no longer flows from radiator core.
3. Blow air into the back side of radiator core using a side to side motion from the top down.
 - Use compressed air lower than 490 kPa (5 kg/cm², 71 psi) and keep distance more than 30 cm (11.8 in).
4. Continue to blow air until no water sprays out.
5. Check for coolant leaks. Repair as necessary.

ENGINE COOLANT : Changing Engine Coolant

INFOID:000000012590502

WARNING:

- To avoid being scalded, do not 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 push down and turn the cap all the way to remove.

DRAINING ENGINE COOLANT

1. Remove the engine under cover. Refer to [EXT-25, "Removal and Installation"](#).
2. Open the radiator drain plug at the bottom of the radiator and remove the radiator filler cap. This is the only step required when partially draining the cooling system (radiator only).

CAUTION:

- Do not allow the coolant to contact the drive belt.
 - Perform this step when engine is cold.
3. 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 (1.055 kg/cm², 15 psi) maximum air pressure] into the hose for 30 seconds to blow the excess coolant out of the heater core.
 4. When draining all of the coolant in the system, remove the reservoir tank and drain the coolant, then clean the reservoir tank before installation.

CAUTION:

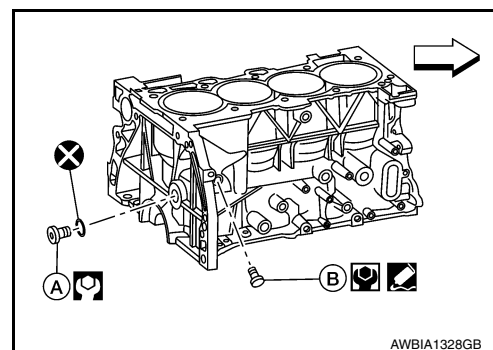
- Do not allow the coolant to contact the drive belt.
- Perform this step when engine is cold.

ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

- When draining all of the coolant in the system for engine removal or repair, open the drain plugs (A and B) on the cylinder block.

⇐: Engine front



- Check the drained coolant for contaminants such as rust, corrosion or discoloration. If the coolant is contaminated, flush the engine cooling system.

REFILLING ENGINE COOLANT

- Install the following, if removed:
 - Cylinder block drain plugs, refer to [EM-91, "Exploded View"](#).
 - Reservoir tank, refer to [CO-13, "Exploded View"](#).
 - Cooling system hoses, refer to [CO-13, "Exploded View"](#).
 - Radiator drain plug, refer to [CO-13, "Exploded View"](#).
- Set the vehicle heater controls to the full HOT and heater ON positions. Turn the vehicle ignition ON with the engine OFF as necessary to activate the heater mode.
- Fill the cooling system with engine coolant using Tool (A), following the manufacturer's instructions included with the tool.

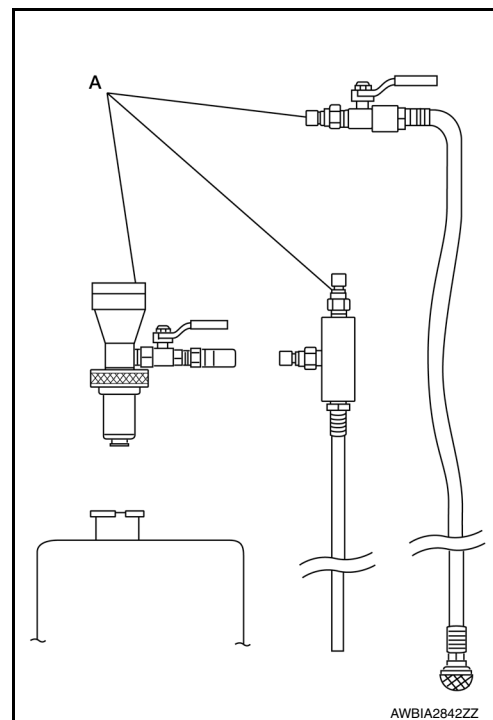
Tool number : KV991J0070 (J-45695-A)

Engine Coolant : Refer to [MA-12, "Fluids and Lubricants"](#).

CAUTION:

- Use recommended coolant or equivalent.
- Do not use any cooling system additives such as radiator sealer. Additives may clog the cooling system and cause damage to the engine, transmission or cooling system.
- The compressed air supply must be equipped with an air dryer.

- Remove the Tool (A) and top off the cooling system with engine coolant as necessary.



- Install the radiator cap and reservoir tank cap.
- Run the engine until it reaches normal operating temperature.

CAUTION:

Do not allow the engine to exceed normal operating temperature or engine damage may occur.

- Stop the engine and allow it to cool.
- Check the engine coolant level and adjust if necessary.

FLUSHING COOLING SYSTEM

- Fill the radiator from the filler neck above the radiator upper hose and reservoir tank with clean water and reinstall the radiator filler cap.
- Run the engine until it reaches normal operating temperature.
- Rev the engine two or three times under no-load.

ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

4. Stop the engine and wait until it cools down.
5. Drain the water from the system. Refer to [MA-16, "ENGINE COOLANT : Changing Engine Coolant"](#).
6. Repeat steps 1 through 5 until clear water begins to drain from the radiator.

FUEL LINES

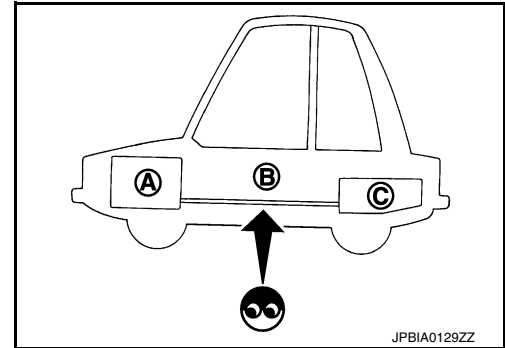
FUEL LINES : Inspection

INFOID:0000000012590503

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

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

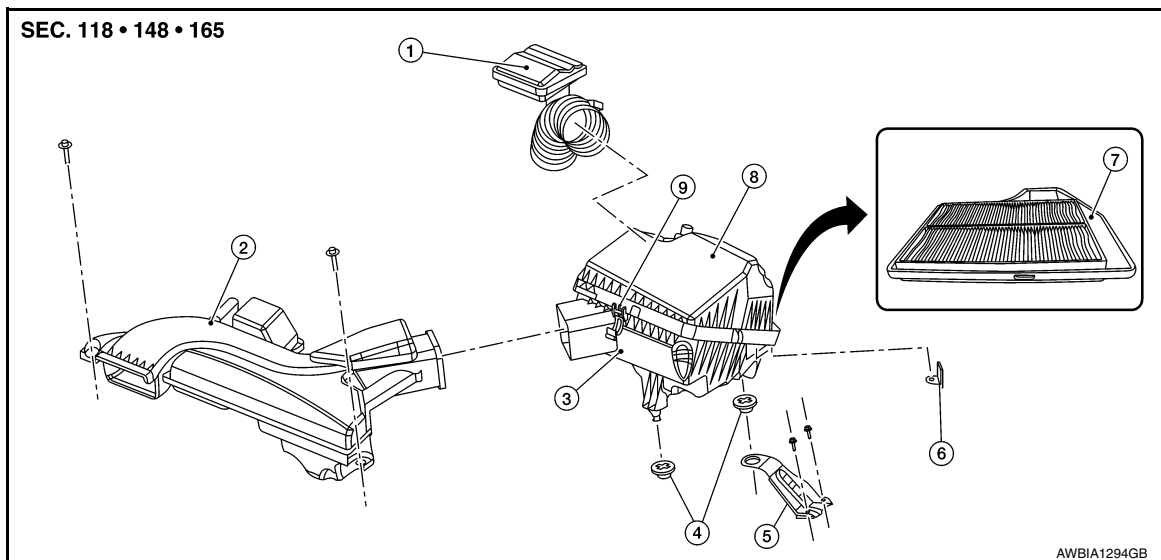
If necessary, repair or replace damaged parts.



AIR CLEANER FILTER

AIR CLEANER FILTER : Removal and Installation

INFOID:0000000012590504



- | | | |
|--------------------------------|---------------------------------|---------------------------------|
| 1. Air duct hose and resonator | 2. Front air duct | 3. Air cleaner case (bottom) |
| 4. Grommets | 5. Air cleaner mounting bracket | 6. Air cleaner mounting bracket |
| 7. Air cleaner filter | 8. Air cleaner case (top) | 9. Air cleaner case clips |

CHANGING THE AIR CLEANER FILTER

1. Release the air cleaner case clips.
2. Open the air cleaner case (top).
3. Remove the air cleaner filter.
4. Install a new air cleaner filter.
5. Close the air cleaner case (top).
6. Secure the air cleaner case clips.

ENGINE OIL

ENGINE MAINTENANCE (QR25DE)

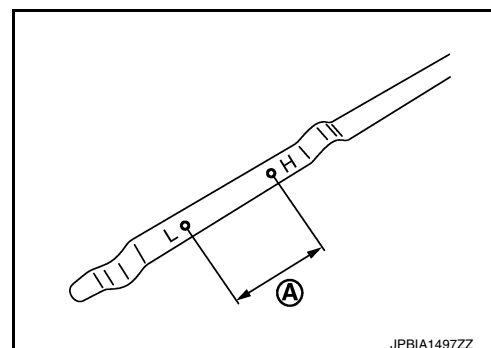
< PERIODIC MAINTENANCE >

ENGINE OIL : Inspection

INFOID:0000000012590505

OIL LEVEL

- Before starting the engine, check the oil level. If the engine is already started, stop it and allow 10 minutes before checking.
- Check that the oil level is within the range (A) on the oil level gauge.
- If it is out of range, adjust it.



ENGINE OIL : Changing Engine Oil

INFOID:0000000012590506

WARNING:

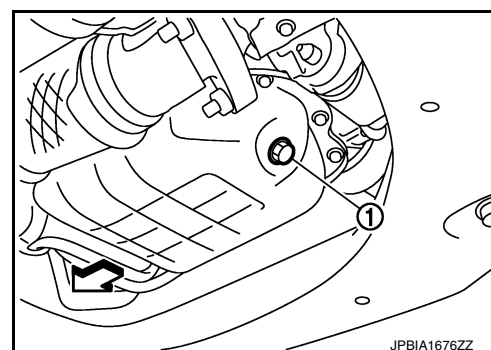
- Be careful not to burn yourself, as the engine oil may be hot.
- Prolonged and repeated contact with used engine oil may cause skin cancer: try to avoid direct skin contact with used oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.

1. Position the vehicle so it is level on the hoist.
2. Warm up the engine and check for oil leaks from the engine.
3. Stop engine and wait for 10 minutes.
4. Remove the oil pan drain plug (1) and oil filler cap.

⇐ : Front

5. Drain the engine oil.
6. Install the oil pan drain plug with a new washer and refill the engine with new engine oil.

Oil specification and viscosity : Refer to [MA-12, "Engine Oil Recommendation"](#).
Oil pan drain plug : 34.3 N·m (3.5 kg-m, 25 ft-lb)



CAUTION:

- Be sure to clean the oil pan drain plug and install using a new washer.
 - The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only. Always use the oil level gauge to determine when the proper amount of oil is in the engine.
7. Warm up the engine and check around the drain plug and oil filter for oil leaks.
 8. Stop the engine and wait for 10 minutes.
 9. Check the oil level using the oil level gauge.

CAUTION:

Do not overfill the engine with engine oil.

OIL FILTER

OIL FILTER : Removal and Installation

INFOID:0000000012590507

REMOVAL

1. Remove fender protector side cover (RH). Refer to [EXT-36, "FENDER PROTECTOR : Removal and Installation"](#).
2. Drain engine oil. Refer to [LU-10, "Changing Engine Oil"](#).

ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

3. Remove the oil filter using suitable tool (A).

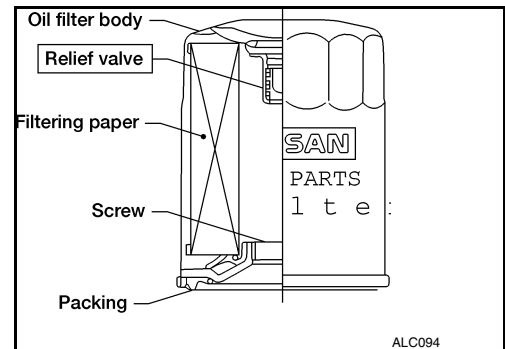
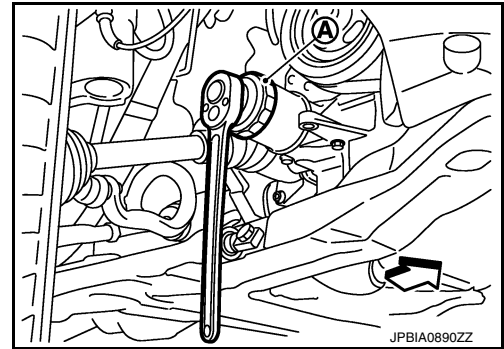
⇐ : Front

WARNING:

Be careful not to get burned, the engine and engine oil may be hot.

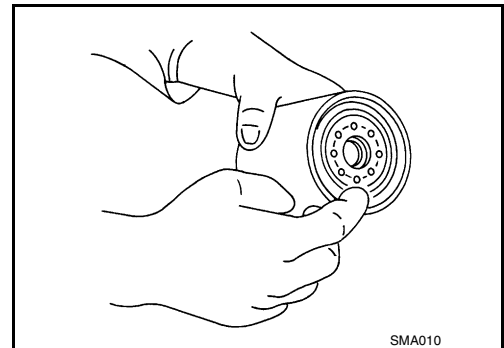
CAUTION:

- 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.
-
- The oil filter has a built in pressure relief valve. Use a Genuine NISSAN oil filter or equivalent.



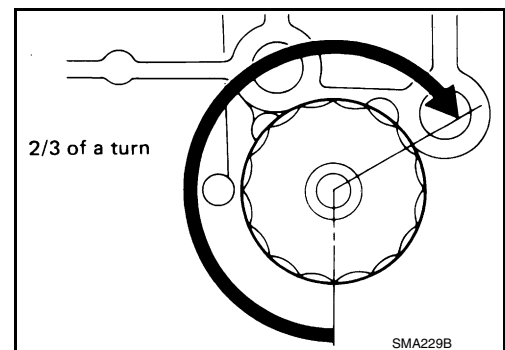
INSTALLATION

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



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

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



4. Refill engine with new engine oil. Refer to [LU-10. "Changing Engine Oil"](#).
5. After warming up the engine, check for engine oil leaks. Repair as necessary.
6. Install fender protector side cover (RH). Refer to [EXT-36. "FENDER PROTECTOR : Removal and Installation"](#).

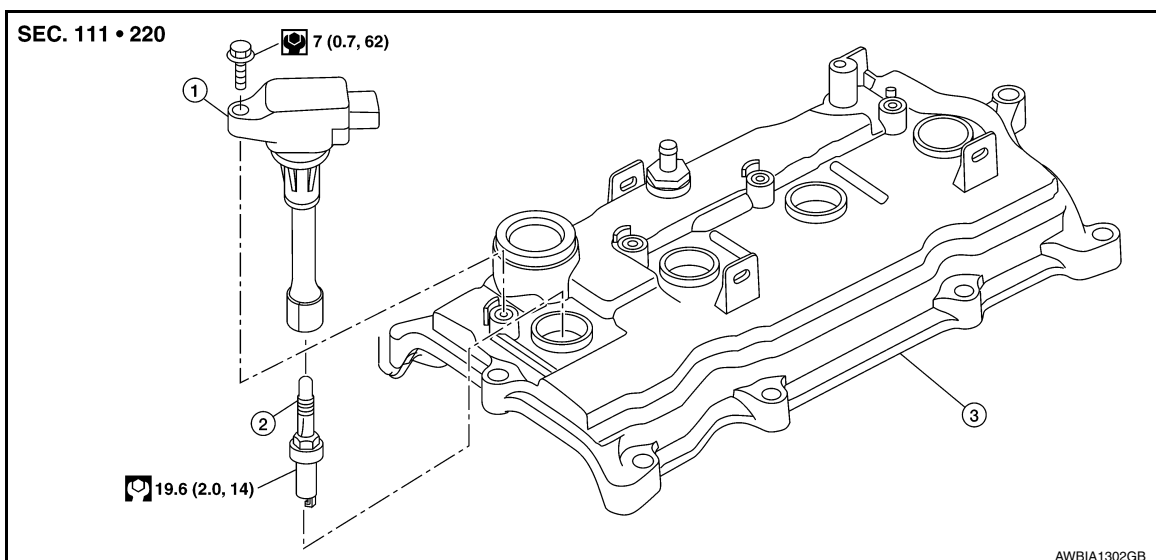
SPARK PLUG

ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

SPARK PLUG : Removal and Installation

INFOID:000000012590508



1. Ignition coil

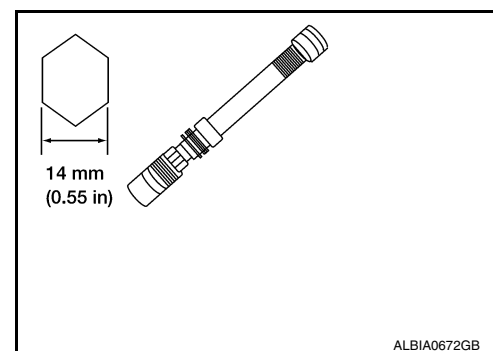
2. Spark plug

3. Rocker cover

REMOVAL

1. Remove engine room cover. Refer to [EM-28, "Removal and Installation"](#).
2. Remove the ignition coil. Refer to [EM-41, "Removal and Installation"](#).
3. Remove the spark plug using Tool.

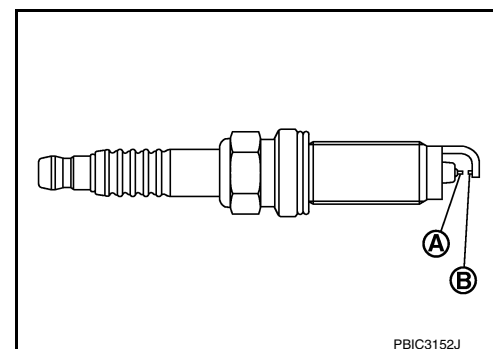
Tool number : — (J-48891)



INSPECTION AFTER REMOVAL

- Visually check the electrode for dirt and wear and the insulator for burning.

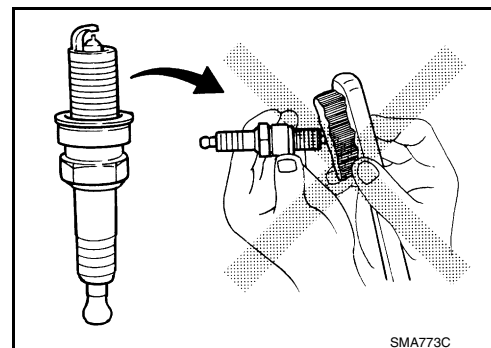
- (A) : Iridium alloy
(B) : Iridium alloy



ENGINE MAINTENANCE (QR25DE)

< PERIODIC MAINTENANCE >

- Do not use a wire brush for cleaning the spark plugs. Replace as necessary.



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

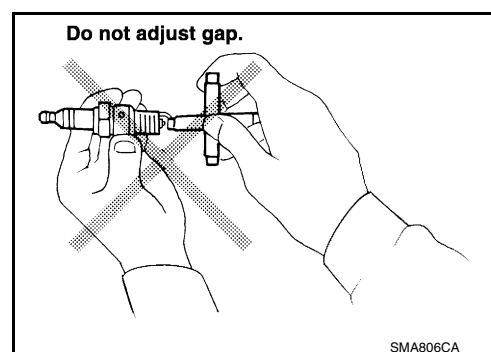
Cleaner air pressure : less than 588 kPa (6 kg/cm², 85 psi)

Cleaning time : less than 20 seconds

- Checking and adjusting plug gap is not required between change intervals. If the gap is out of specification, replace the spark plug.

CAUTION:

- Do not drop or shock spark plug.
- Do not drop or shock ignition coil.
- Discard any spark plug which has been dropped or shocked.
- Discard any ignition coil which has been dropped or shocked.



INSTALLATION

Installation is in the reverse order of removal.

Standard type*	DENSO
	FXE20HE11C
Gap (nominal)	1.1 mm (0.043 in)

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

EVAP VAPOR LINES

EVAP VAPOR LINES : Inspection

INFOID:0000000012590509

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

ENGINE MAINTENANCE (VQ35DE)

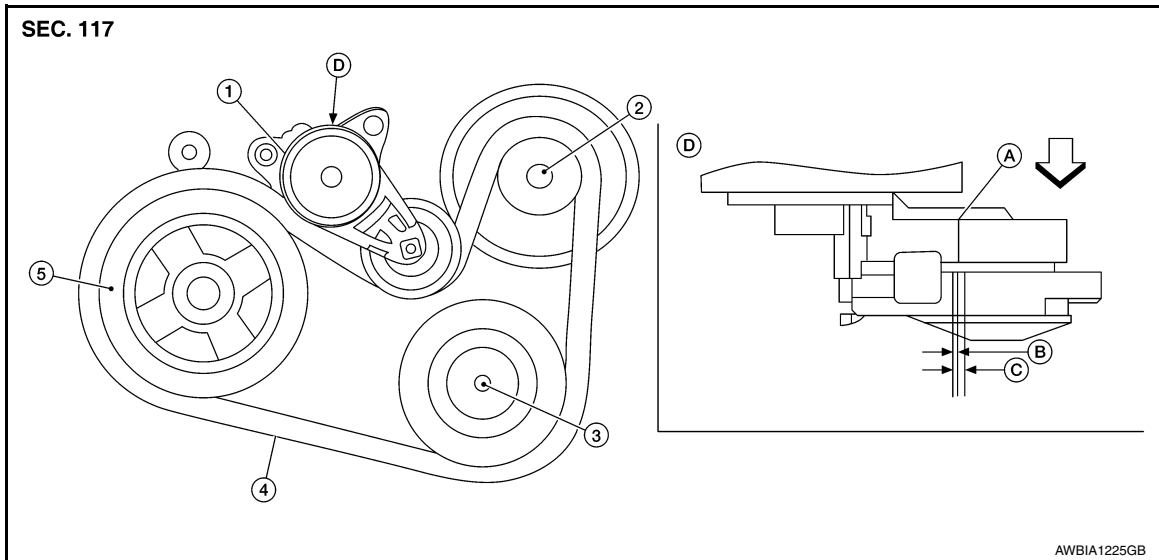
< PERIODIC MAINTENANCE >

ENGINE MAINTENANCE (VQ35DE)

DRIVE BELTS

DRIVE BELTS : Checking Drive Belts

INFOID:0000000012590510



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

WARNING:

Inspect and check the drive belts with the engine off.

1. Inspect belt for cracks, fraying, wear or oil adhesion. If necessary, replace with a new one.
2. Rotate the crankshaft pulley two times then ensure the drive belt auto-tensioner is within the possible use range.

NOTE:

Inspect drive belt tension when engine is cold.

DRIVE BELTS : Tension Adjustment

INFOID:0000000012590511

Belt tension is not manually adjustable, it is automatically adjusted by the drive belt auto-tensioner.

ENGINE COOLANT

ENGINE COOLANT : System Inspection

INFOID:0000000012590512

WARNING:

- Do not remove the radiator cap or reservoir tank cap when the engine is hot. Serious burns could occur from high-pressure engine coolant escaping from the cooling system.
- When removing the radiator cap or reservoir tank cap, wrap a thick cloth around the cap and slowly turn it a quarter turn to allow built-up pressure to escape. Then carefully remove the cap by turning it all the way.

CHECKING COOLING SYSTEM HOSES

Check hoses for the following:

- Improper attachment
- Leaks
- Cracks
- Dents
- Bulges
- Internal obstruction

ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

- Damage
- Loose connections
- Chafing
- Deterioration

CHECKING RESERVOIR LEVEL

- Check if the reservoir tank coolant level is within MIN to MAX when the engine is cool.

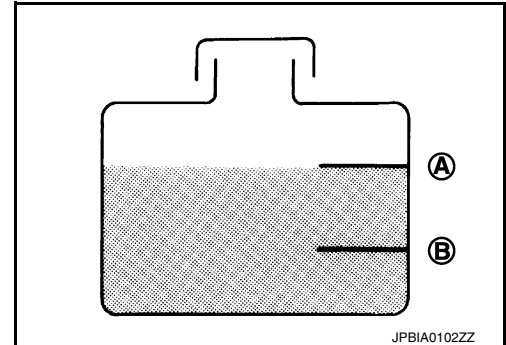
(A) : MAX

(B) : MIN

- Adjust coolant level (if necessary), to ensure that the engine coolant level is within the MIN to MAX range.

CAUTION:

Refill Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent in its quality mixed with water (distilled or demineralized). Refer to [MA-12, "Fluids and Lubricants"](#).



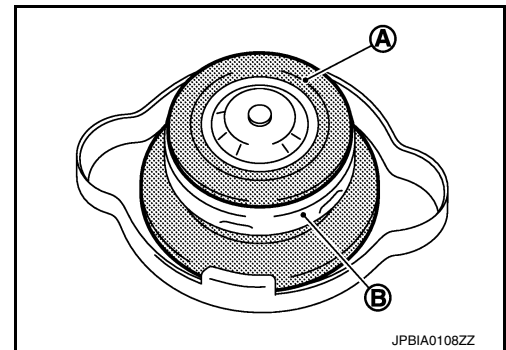
CHECKING RADIATOR CAP

WARNING:

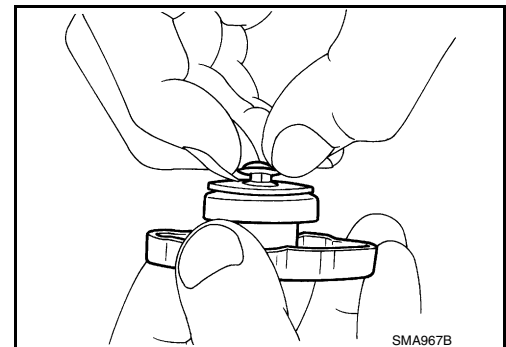
- Do not remove the radiator cap or reservoir tank cap when the engine is hot. Serious burns could occur from high-pressure engine coolant escaping from the cooling system.
- When removing the radiator cap or reservoir tank cap, wrap a thick cloth around the cap and slowly turn it a quarter turn to allow built-up pressure to escape. Then carefully remove the cap by turning it all the way.
- Check the pressure valve of the radiator cap.
- Replace the radiator cap if the metal plunger (B) on the pressure valve cannot be seen around the edge of the rubber gasket (A).
- Replace the radiator cap if there is damage or deposits of foreign material on the rubber gasket or pressure valve.

CAUTION:

Thoroughly wipe out the radiator filler neck to remove any waxy residue or foreign material.



- Check the negative-pressure valve of the radiator cap.
- Replace the radiator cap if the negative-pressure valve does not close completely when pulled open and released.
- Replace the radiator cap if there is damage or deposits of foreign material on the valve seat of the negative-pressure valve.
- Replace the radiator cap if there is an abnormality in the operation of the negative-pressure valve.



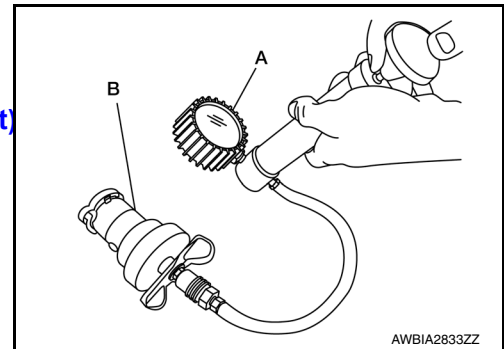
- Check radiator cap relief pressure.

ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

- Check the radiator cap relief pressure using Tool (A) and tool (B).

Tool number (A) : — (J-51771)
Tool number (B) : — (J-33984-A or equivalent)
(commercially available)
Radiator cap relief pressure : Refer to [CO-50, "Radiator"](#).



- When connecting the radiator cap to tool (B), apply water or coolant to the radiator cap seal surface.
- Replace the radiator cap if the radiator cap relief pressure is outside of specification.

CHECKING RADIATOR

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

CAUTION:

- Do not bend or damage the radiator fins.
- When radiator is cleaned on-vehicle, remove surrounding parts in order to access the radiator core. Tape the harness and electrical connectors to prevent water from entering.

1. Spray water to the back side of the radiator core using a side to side motion from the top down.
2. Stop spraying when debris no longer flows from radiator core.
3. Blow air into the back side of radiator core using a side to side motion from the top down.
 - Use compressed air lower than 490 kPa (5 kg/cm², 71 psi) and keep distance more than 30 cm (11.8 in).
4. Continue to blow air until no water sprays out.
5. Check for coolant leaks. Repair as necessary.

ENGINE COOLANT : Changing Engine Coolant

INFOID:0000000012590513

WARNING:

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

DRAINING ENGINE COOLANT

1. Remove the engine under cover. Refer to [EXT-25, "Removal and Installation"](#).
2. Open the radiator drain plug at the bottom of the radiator and remove the radiator filler cap. This is the only step required when partially draining the cooling system (radiator only).

CAUTION:

- Do not allow the coolant to contact the drive belts.
 - Perform this step when engine is cold.
3. 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 (1.055 kg/cm², 15 psi) maximum air pressure] into the hose for 30 seconds to blow the excess coolant out of the heater core.
 4. When draining all of the coolant in the system, remove the reservoir tank and drain the coolant, then clean the reservoir tank before installation.

CAUTION:

- Do not allow the coolant to contact the drive belts.
- Perform this step when engine is cold.

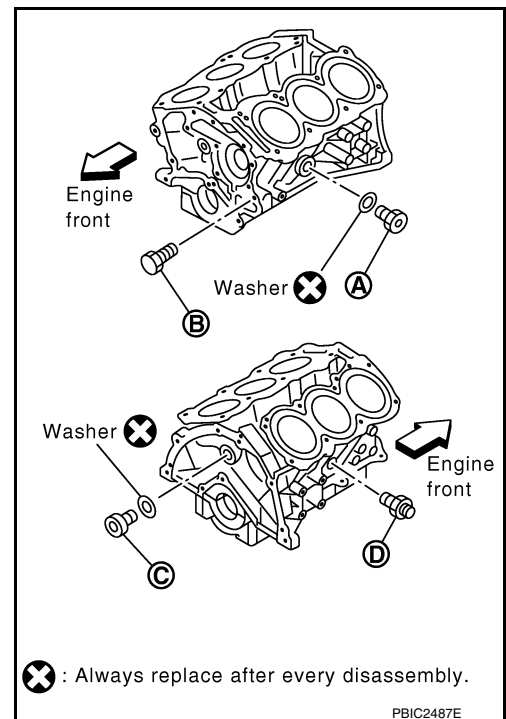
ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

- When draining all of the coolant in the system for engine removal or repair, open all of the drain plugs (A-D) on the cylinder block.
- Check the drained coolant for contaminants such as rust, corrosion or discoloration.
If the coolant is contaminated, flush the engine cooling system.

NOTE:

For Canada, (A) is not plug but block heater.



REFILLING ENGINE COOLANT

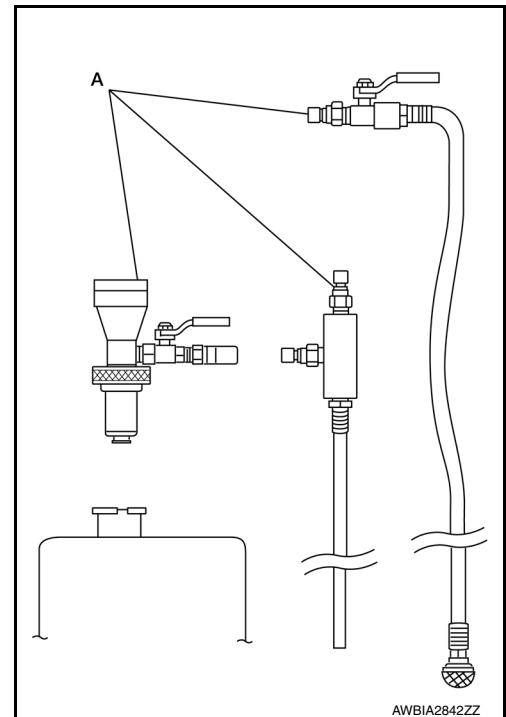
- Install the following, if removed:
 - Cylinder block drain plugs, refer to [EM-230, "Exploded View"](#).
 - Reservoir tank, refer to [CO-37, "Exploded View"](#).
 - Cooling system hoses, refer to [CO-37, "Exploded View"](#).
 - Radiator drain plug, refer to [CO-37, "Exploded View"](#).
- Set the vehicle heater controls to the full HOT and heater ON positions. Turn the vehicle ignition ON with the engine OFF as necessary to activate the heater mode.
- Fill the cooling system with engine coolant using Tool (A), following the manufacturer's instructions included with the tool.

Tool number : KV991J0070 (J-45695-A)

Engine Coolant : Refer to [MA-12, "Fluids and Lubricants"](#).

CAUTION:

- Use recommended coolant or equivalent.
 - Do not use any cooling system additives such as radiator sealer. Additives may clog the cooling system and cause damage to the engine, transmission or cooling system.
 - The compressed air supply must be equipped with an air dryer.
- Remove the Tool (A) and top off the cooling system with engine coolant as necessary.



- Install the radiator cap and reservoir tank cap.
- Run the engine until it reaches normal operating temperature.

CAUTION:

Do not allow the engine to exceed normal operating temperature or engine damage may occur.

ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

7. Stop the engine and allow it to cool.
8. Check the engine coolant level and adjust if 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 until it reaches 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-25, "ENGINE COOLANT : Changing Engine Coolant"](#).
6. Repeat steps 1 through 5 until clear water begins to drain from the radiator.

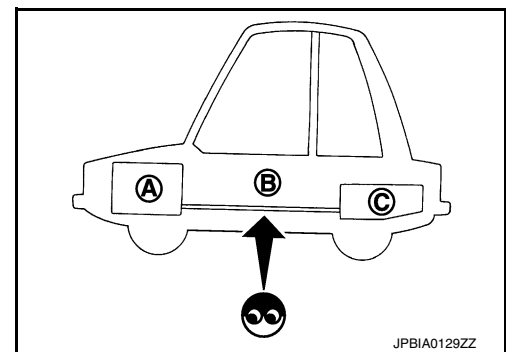
FUEL LINES

FUEL LINES : Inspection

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

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

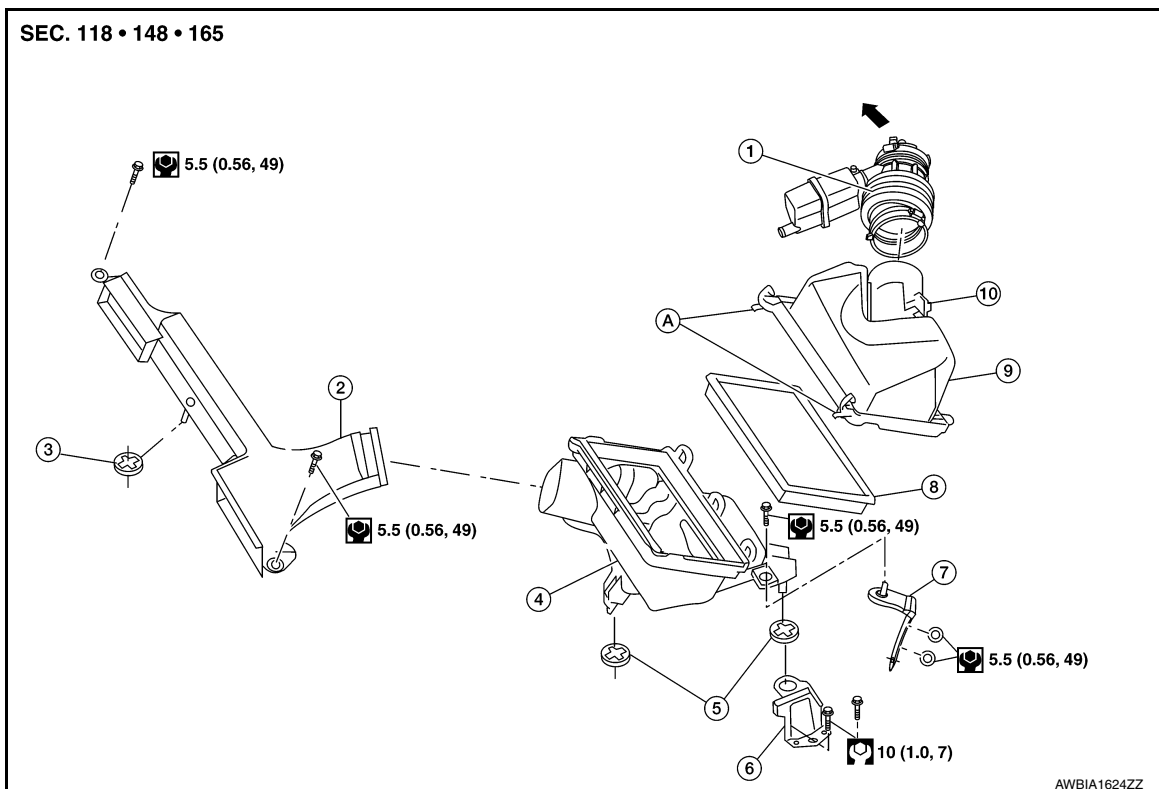
If necessary, repair or replace damaged parts.



INFOID:000000012590514

AIR CLEANER FILTER

AIR CLEANER FILTER : Exploded View



INFOID:000000012590515

ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

- | | | |
|---|--|---|
| 1. Air duct hose and resonator assembly | 2. Front air duct | 3. Grommet |
| 4. Air cleaner case (lower) | 5. Grommets | 6. Air cleaner case mounting bracket |
| 7. Bracket | 8. Air cleaner filter | 9. Air cleaner case (upper) |
| 10. Mass air flow sensor | A. Air cleaner case (upper) side clips | ➡ To electric throttle control actuator |

AIR CLEANER FILTER : Removal and Installation

INFOID:0000000012590516

REMOVAL

CAUTION:

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

NOTE:

Replace the air cleaner filter per the periodic maintenance schedule or as necessary. Refer to [MA-8, "Introduction of Periodic Maintenance"](#).

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

INSTALLATION

Installation is in the reverse order of removal.

ENGINE OIL

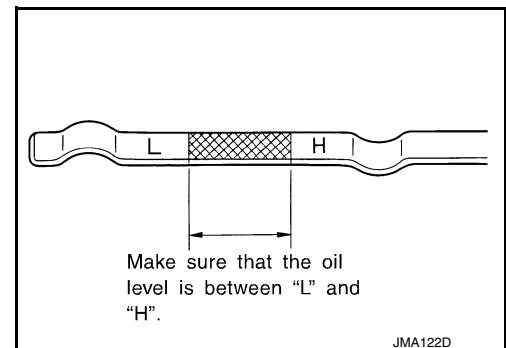
ENGINE OIL : Inspection

INFOID:0000000012590517

OIL LEVEL

NOTE:

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



ENGINE OIL : Changing Engine Oil

INFOID:0000000012590518

WARNING:

- **Be careful not to burn yourself, as the engine oil may be hot.**
- **Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.**

1. Position the vehicle so it is level on the hoist.
2. Warm up the engine and check for oil leaks from the engine.
3. Stop engine and wait for 10 minutes.

ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

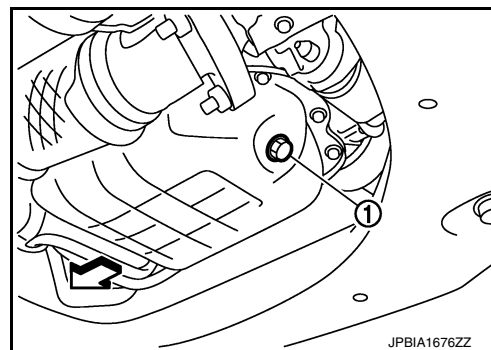
4. Remove the oil pan drain plug (1) and oil filler cap.

⇐ : Front

5. Drain the engine oil.
6. Install the oil pan drain plug (1) with a new washer and refill the engine with new engine oil.

Oil specification : Refer to [MA-12, "Fluids and Lubricants"](#).

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



CAUTION:

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

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

CAUTION:

Do not overfill the engine with engine oil.

OIL FILTER

OIL FILTER : Removal and Installation

INFOID:000000012590519

REMOVAL

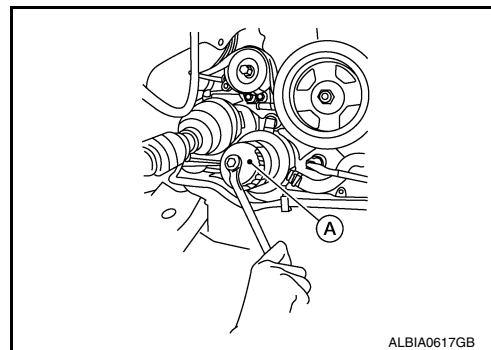
1. Drain engine oil. Refer to [LU-29, "Changing Engine Oil"](#).
2. Remove the fender protector side cover (RH). Refer to [EXT-36, "FENDER PROTECTOR : Removal and Installation"](#).
3. Remove the oil filter using suitable tool (A) as shown.

WARNING:

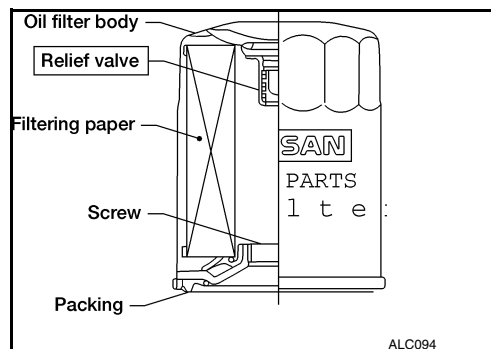
Be careful not to get burned, the engine and engine oil may be hot.

CAUTION:

- 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.



- The oil filter has a built in pressure relief valve. Use a Genuine NISSAN oil filter or equivalent.



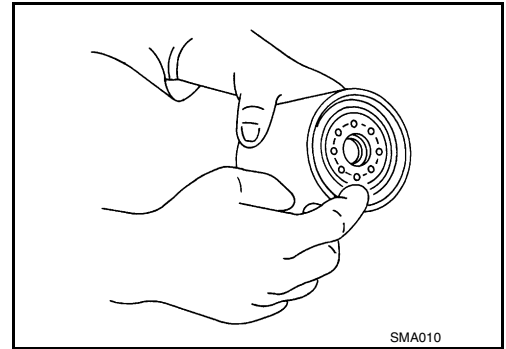
INSTALLATION

1. Remove foreign materials adhering to the oil filter installation surface.

ENGINE MAINTENANCE (VQ35DE)

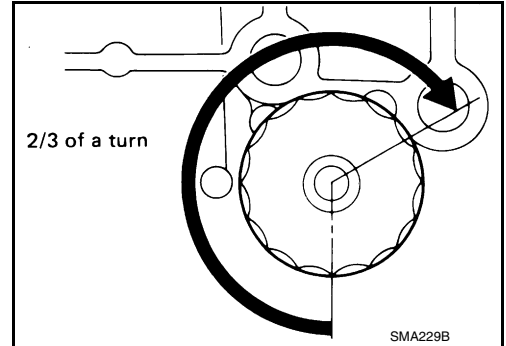
< PERIODIC MAINTENANCE >

2. Apply clean engine oil to the oil seal contact surface of the new oil filter.



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

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

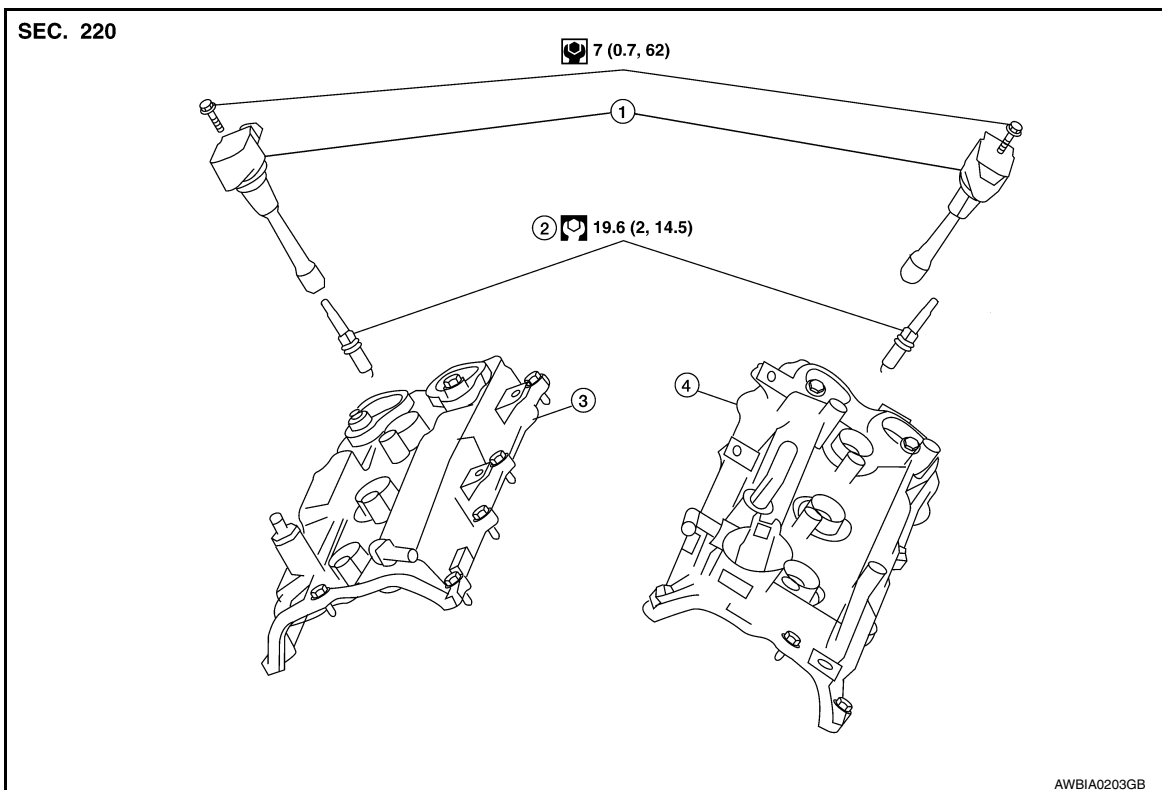


4. Refill engine with new engine oil. Refer to [LU-29, "Changing Engine Oil"](#).
5. After warming up the engine, check for any engine oil leaks.
6. Install the fender protector side cover (RH). Refer to [EXT-36, "FENDER PROTECTOR : Removal and Installation"](#).

SPARK PLUG

SPARK PLUG : Removal and Installation

INFOID:000000012590520



ENGINE MAINTENANCE (VQ35DE)

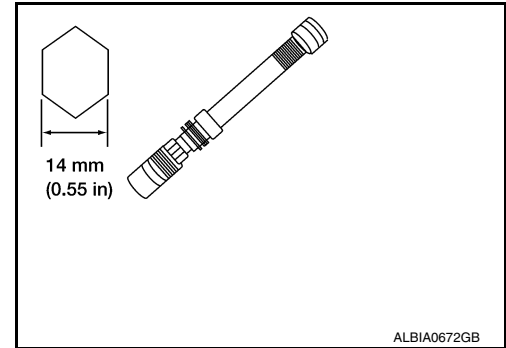
< PERIODIC MAINTENANCE >

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

REMOVAL

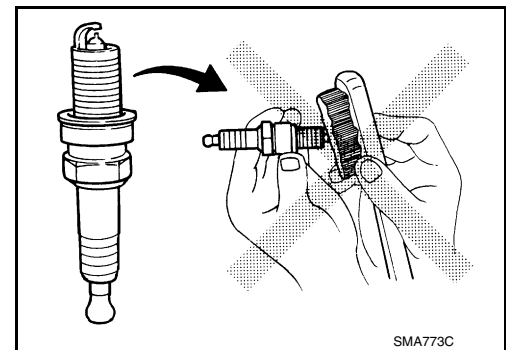
1. Remove the ignition coil. Refer to [EM-166, "Removal and Installation \(bank 2\)"](#) (LH side) and [EM-166, "Removal and Installation \(bank 1\)"](#) (RH side).
2. Remove the spark plug using Tool.

Tool number : — (J-48891)



INSPECTION AFTER REMOVAL

- Do not use a wire brush for cleaning the spark plugs. Replace as necessary.

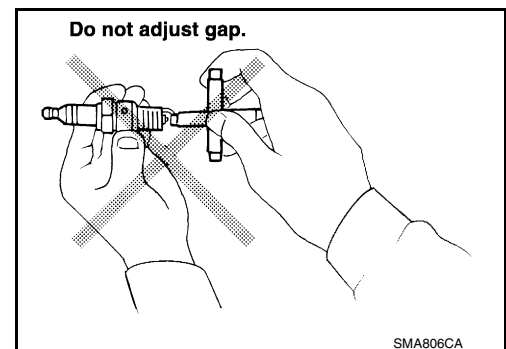


- If plug is covered with carbon, a spark plug cleaner may be used.

Cleaner air pressure : less than 588 kPa (6 kg/cm², 85 psi)

Cleaning time : less than 20 seconds

- Checking and adjusting plug gap is not required between change intervals. If the gap is out of specification, replace the spark plug.



INSTALLATION

Installation is in the reverse order of removal.

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

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

EVAP VAPOR LINES

ENGINE MAINTENANCE (VQ35DE)

< PERIODIC MAINTENANCE >

EVAP VAPOR LINES : Inspection

INFOID:0000000012590521

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

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

CHASSIS AND BODY MAINTENANCE

IN-CABIN MICROFILTER

IN-CABIN MICROFILTER : Removal and Installation

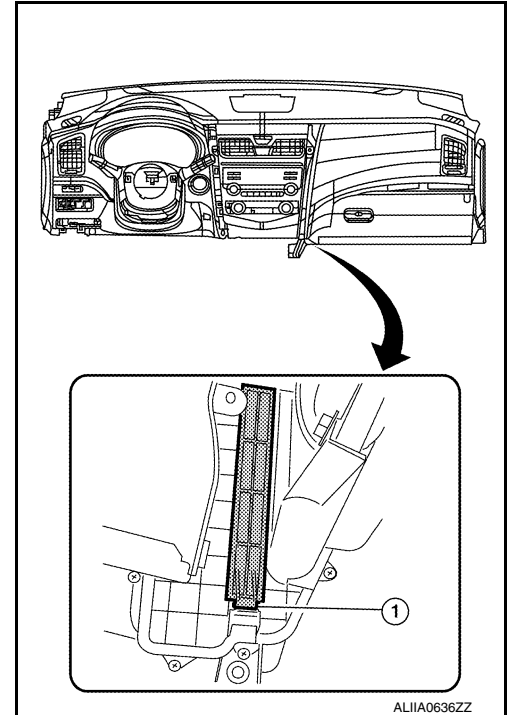
INFOID:000000012590522

REMOVAL

1. Release the filter cover tab (1) to remove the filter cover.

CAUTION:

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



2. Remove the in-cabin microfilter from the blower unit.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

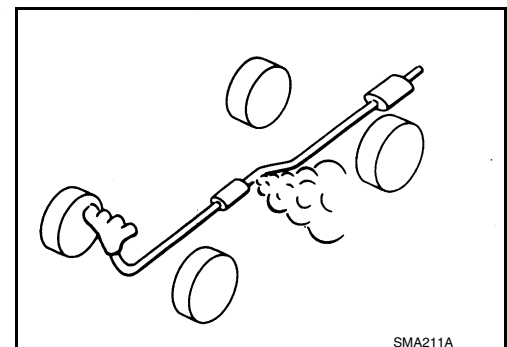
- When installing, handle the filter with extreme care to avoid deforming or damaging the filter.
- If the filter is deformed/damaged when removing, replace it with a new one. A deformed or damaged filter may affect the dust collecting performance.

EXHAUST SYSTEM

EXHAUST SYSTEM : Checking Exhaust System

INFOID:000000012590523

Check the exhaust pipes, muffler, and mounting components for incorrect attachment, leaks, cracks, damage, or deterioration.



CVT FLUID

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

CVT FLUID : RE0F10H

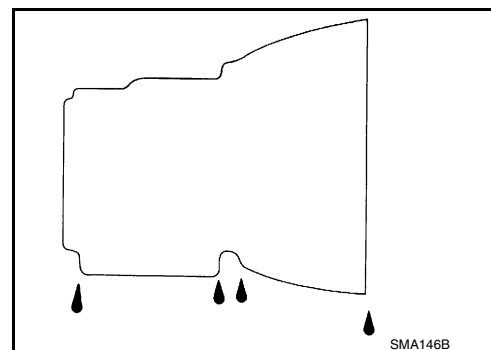
INFOID:0000000012590524

CVT FLUID : Inspection

INFOID:0000000012590525

FLUID LEAKAGE

- Check transaxle surrounding area (oil seal and plug etc.)for fluid leakage.
- If anything is found, repair or replace damaged parts and adjust CVT fluid level. Refer to [TM-292, "Adjustment"](#).



CVT FLUID : Replacement

INFOID:0000000012590526

- | | |
|----------------|--|
| CVT fluid | : Refer to TM-420, "General Specification" . |
| Fluid capacity | : Refer to TM-420, "General Specification" . |

CAUTION:

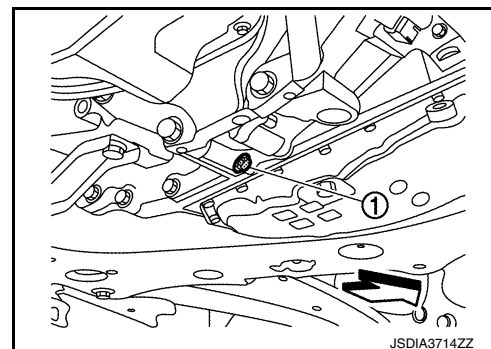
- Always use shop paper. Do not use shop cloth.
- Replace a drain plug gasket with new ones at the final stage of the operation when installing.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.
- After replacement, always perform CVT fluid leakage check.

1. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
2. Select "FLUID TEMP" and confirm that the CVT fluid temperature is 40°C (104°F) or less.
3. Check that the selector lever is in the "P" position, then completely engage the parking brake.
4. Lift up the vehicle.
5. Remove the drain plug and drain the CVT fluid from the oil pan. Refer to [TM-398, "Exploded View"](#).
6. Install the drain plug to oil pan.

CAUTION:

Drain plug gasket use the old one.

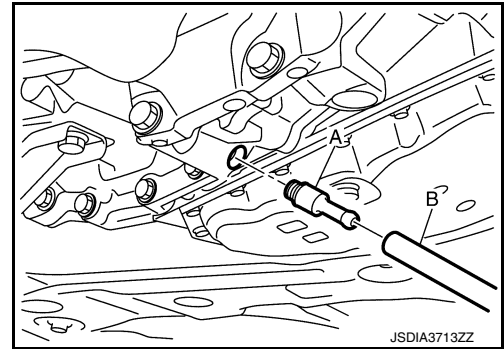
7. Remove the overflow plug ① from converter housing.



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

8. Install the charging pipe set (KV311039S0) (A) into the overflow plug hole.
CAUTION:
Tighten the charging pipe by hand.
9. Install the ATF changer hose (B) to the charging pipe.
CAUTION:
Press the ATF changer hose all the way onto the charging pipe until it stops.
10. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.
11. Remove the ATF changer hose and charging pipe, then install the overflow plug.
NOTE:
Perform this work quickly because CVT fluid leaks.
12. Lift down the vehicle.
13. Start the engine.
14. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.
NOTE:
Hold the lever at each position for 5 seconds.
15. Check that the CONSULT "Data Monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).
16. Stop the engine.
17. Lift up the vehicle.
18. Remove the drain plug, and then drain CVT fluid from oil pan.
19. Repeat steps 8 to 18 (one time).
20. Tighten the drain plug to the specified torque. Refer to [TM-398, "Exploded View"](#).
21. Remove the overflow plug.
22. Install the charging pipe set (KV311039S0) into the overflow plug hole.
CAUTION:
Tighten the charging pipe by hand.
23. Install the ATF changer hose to the charging pipe.
CAUTION:
Press the ATF changer hose all the way onto the charging pipe until it stops.
24. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.
25. Remove the ATF changer hose and charging pipe, then install the overflow plug.
NOTE:
Perform this work quickly because CVT fluid leaks.
26. Lift down the vehicle.
27. Start the engine.
28. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.
NOTE:
Hold the lever at each position for 5 seconds.
29. Check that the CONSULT "Data Monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).
30. Lift up the vehicle.
31. Remove the overflow plug and confirm that the CVT fluid is drained from the overflow plug hole.
CAUTION:
Perform this work with the vehicle idling.
NOTE:
If the CVT fluid is not drained, refer to "Adjustment" and refill with the CVT fluid.
32. When the flow of CVT fluid slows to a drip, tighten the overflow plug to the specified torque. Refer to [TM-398, "Exploded View"](#).
CAUTION:
Do not reuse O-ring.
33. Lift down the vehicle.



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

MA

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

34. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
35. Select "CONFORM CVTF DETERIORATION".
36. Select "Erase".
37. Stop the engine.

CVT FLUID : Adjustment

INFOID:0000000012590527

CVT fluid : Refer to [TM-420, "General Specification"](#).

Fluid capacity : Refer to [TM-420, "General Specification"](#).

CAUTION:

- During adjustment of the CVT fluid level, check CONSULT so that the oil temperature may be maintained from 35 to 45°C (95 to 113°F).
- During adjustment of the CVT fluid level, check that the engine speed is maintaining 500 rpm.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.

1. Check that the selector lever is in the "P" position, then completely engage the parking brake.
2. Start the engine.
3. Adjust the CVT fluid temperature to be approximately 40°C (104°F).

NOTE:

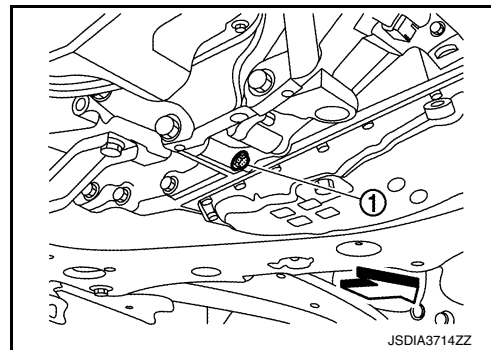
The CVT fluid is largely affected by temperature. Therefore be sure to use CONSULT and check the "FLUID TEMP" under "TRANSMISSION" in "Data Monitor" while adjusting.

4. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.

NOTE:

Hold the lever at each position for 5 seconds.

5. Lift up the vehicle.
6. Check that there is no CVT fluid leakage.
7. Remove the overflow plug ① from converter housing.



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

CAUTION:

Tighten the charging pipe by hand.

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

CAUTION:

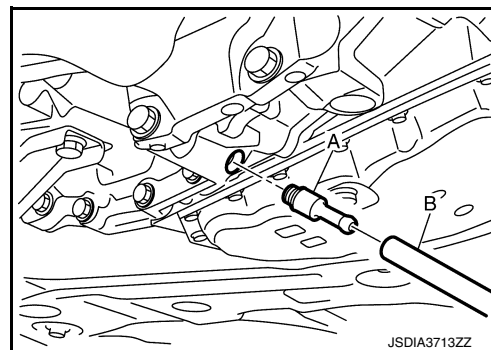
Press the ATF changer hose all the way onto the charging pipe until it stops.

10. Fill approximately 0.5 liter (1/2 US qt, 1/2 Imp qt) of the CVT fluid.
11. Remove the ATF changer hose from the charging pipe, and check that the CVT fluid drains out from the charging pipe. If it does not drain out, perform charging again.

CAUTION:

Perform this work with the vehicle idling.

12. When the flow of CVT fluid slows to a drip, remove the charging pipe from the converter housing.
13. Tighten the overflow plug to the specified torque. Refer to [TM-398, "Exploded View"](#).



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

CAUTION:

Do not reuse O-ring.

14. Lift down the vehicle.
15. Stop the engine.

CVT FLUID : RE0F10D

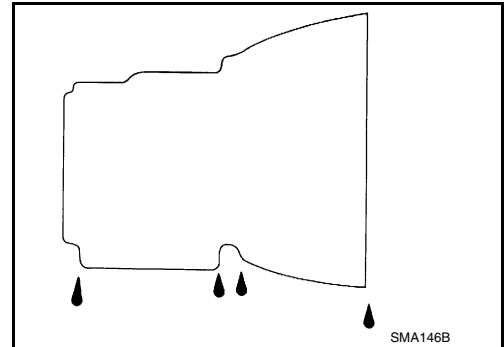
INFOID:0000000012966095

CVT FLUID : Inspection

INFOID:0000000012590529

FLUID LEAKAGE

- Check transaxle surrounding area (oil seal and plug etc.)for fluid leakage.
- If anything is found, repair or replace damaged parts and adjust CVT fluid level. Refer to [TM-86, "Adjustment"](#).



CVT FLUID : Replacement

INFOID:0000000012590530

CVT fluid

: Refer to [TM-215, "General Specification"](#).

Fluid capacity

: Refer to [TM-215, "General Specification"](#).

CAUTION:

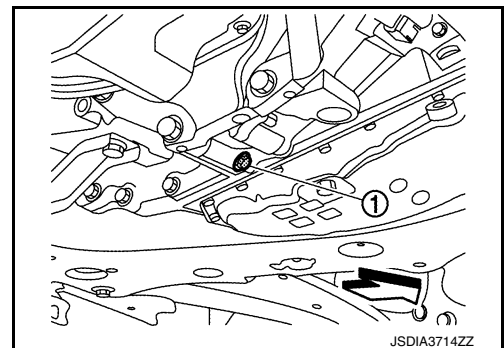
- Always use shop paper. Do not use shop cloth.
- Replace a drain plug gasket with new ones at the final stage of the operation when installing.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.
- After replacement, always perform CVT fluid leakage check.

1. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
2. Select "FLUID TEMP" and confirm that the CVT fluid temperature is 40°C (104°F) or less.
3. Check that the selector lever is in the "P" position, then completely engage the parking brake.
4. Lift up the vehicle.
5. Remove the drain plug and drain the CVT fluid from the oil pan. Refer to [TM-193, "Exploded View"](#).
6. Install the drain plug to oil pan.

CAUTION:

Drain plug gasket use the old one.

7. Remove the overflow plug ① from converter housing.



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

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

CAUTION:

Tighten the charging pipe by hand.

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

CAUTION:

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

10. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.

11. Remove the ATF changer hose and charging pipe, then install the overflow plug.

NOTE:

Perform this work quickly because CVT fluid leaks.

12. Lift down the vehicle.

13. Start the engine.

14. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.

NOTE:

Hold the lever at each position for 5 seconds.

15. Check that the CONSULT "Data Monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).

16. Stop the engine.

17. Lift up the vehicle.

18. Remove the drain plug, and then drain CVT fluid from oil pan.

19. Repeat steps 8 to 18 (one time).

20. Tighten the drain plug to the specified torque. Refer to [TM-193, "Exploded View"](#).

21. Remove the overflow plug.

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

CAUTION:

Tighten the charging pipe by hand.

23. Install the ATF changer hose to the charging pipe.

CAUTION:

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

24. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.

25. Remove the ATF changer hose and charging pipe, then install the overflow plug.

NOTE:

Perform this work quickly because CVT fluid leaks.

26. Lift down the vehicle.

27. Start the engine.

28. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.

NOTE:

Hold the lever at each position for 5 seconds.

29. Check that the CONSULT "Data Monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).

30. Lift up the vehicle.

31. Remove the overflow plug and confirm that the CVT fluid is drained from the overflow plug hole.

CAUTION:

Perform this work with the vehicle idling.

NOTE:

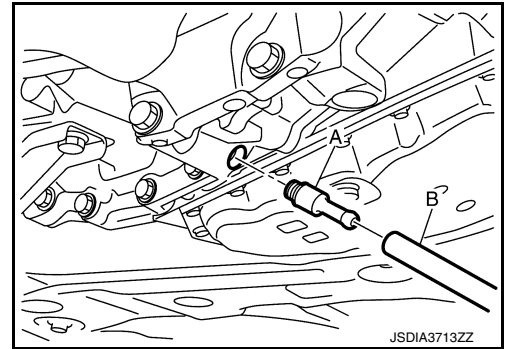
If the CVT fluid is not drained, refer to "Adjustment" and refill with the CVT fluid.

32. When the flow of CVT fluid slows to a drip, tighten the overflow plug to the specified torque. Refer to [TM-193, "Exploded View"](#).

CAUTION:

Do not reuse O-ring.

33. Lift down the vehicle.



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

34. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
35. Select "CONFORM CVTF DETERIORATION".
36. Select "Erase".
37. Stop the engine.

CVT FLUID : Adjustment

INFOID:000000012590531

CVT fluid : Refer to [TM-215, "General Specification"](#).

Fluid capacity : Refer to [TM-215, "General Specification"](#).

CAUTION:

- During adjustment of the CVT fluid level, check CONSULT so that the oil temperature may be maintained from 35 to 45°C (95 to 113°F).
- During adjustment of the CVT fluid level, check that the engine speed is maintaining 500 rpm.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.

1. Check that the selector lever is in the "P" position, then completely engage the parking brake.
2. Start the engine.
3. Adjust the CVT fluid temperature to be approximately 40°C (104°F).

NOTE:

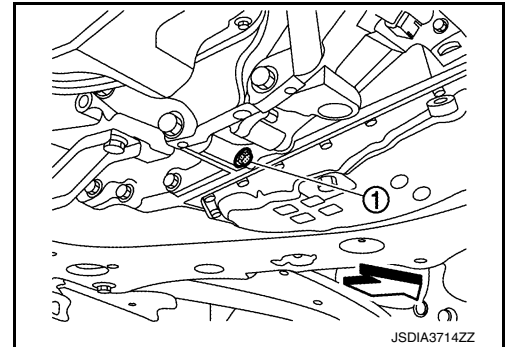
The CVT fluid is largely affected by temperature. Therefore be sure to use CONSULT and check the "FLUID TEMP" under "TRANSMISSION" in "Data Monitor" while adjusting.

4. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "DS", and shift it to the "P" position.

NOTE:

Hold the lever at each position for 5 seconds.

5. Lift up the vehicle.
6. Check that there is no CVT fluid leakage.
7. Remove the overflow plug ① from converter housing.



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

CAUTION:

Tighten the charging pipe by hand.

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

CAUTION:

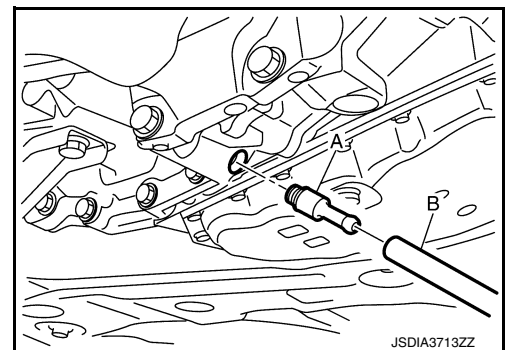
Press the ATF changer hose all the way onto the charging pipe until it stops.

10. Fill approximately 0.5 liter (1/2 US qt, 1/2 Imp qt) of the CVT fluid.
11. Remove the ATF changer hose from the charging pipe, and check that the CVT fluid drains out from the charging pipe. If it does not drain out, perform charging again.

CAUTION:

Perform this work with the vehicle idling.

12. When the flow of CVT fluid slows to a drip, remove the charging pipe from the converter housing.
13. Tighten the overflow plug to the specified torque. Refer to [TM-193, "Exploded View"](#).



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

CAUTION:

Do not reuse O-ring.

14. Lift down the vehicle.
15. Stop the engine.

WHEELS

WHEELS : Inspection

INFOID:0000000012590532

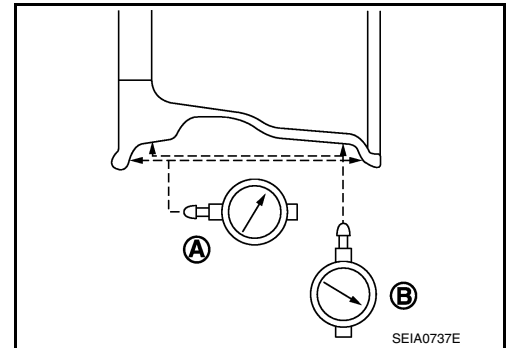
ALUMINUM WHEEL

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

CAUTION:

DO NOT use center hole cone-type clamping machines to hold the wheel assembly during tire removal/installation or balancing. Damage to the wheel finish, cladding or chrome may occur. Use only rim-type or universal lug-type clamping machines to hold the wheel assembly.

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



Lateral Deflection (A) Refer to [WT-60, "Road Wheel"](#).

Vertical Deflection (B) Refer to [WT-60, "Road Wheel"](#).

STEEL WHEEL

1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.
- a. Remove tire from steel wheel and mount on a balancer machine.
- b. Set two dial indicators as shown.
- c. Set each dial indicator to "0".
- d. Rotate wheel and check dial indicators at several points around the circumference of the wheel.
- e. Calculate runout at each point as shown below.

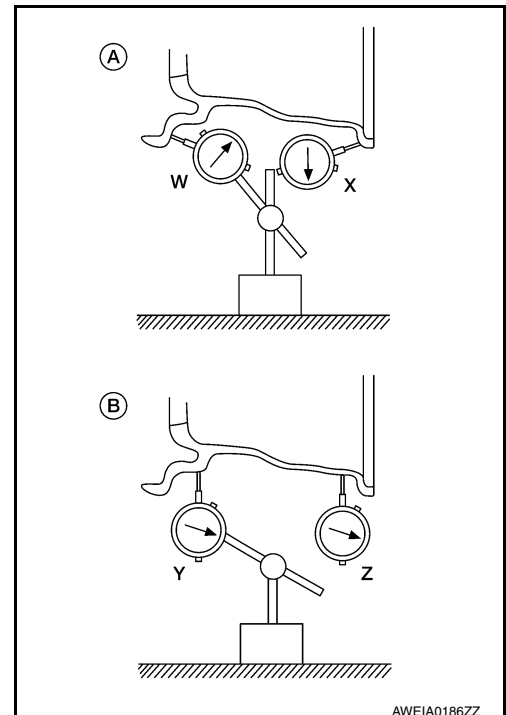
Lateral deflection (A) = (W+X)/2

Vertical deflection (B) = (Y+Z)/2

- f. Select maximum positive runout value and the maximum negative value.
Add the two values to determine total runout.
In case a positive or negative value is not available, use the maximum value (negative or positive) for total runout.
If the total runout value exceeds the limit, replace steel wheel.

Lateral Deflection (A) Refer to [WT-60, "Road Wheel"](#).

Vertical Deflection (B) Refer to [WT-60, "Road Wheel"](#).



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

WHEELS : Adjustment

INFOID:0000000012590533

BALANCING WHEELS (ADHESIVE WEIGHT TYPE)

Preparation Before Adjustment

Remove inner and outer balance weights from the road wheel. Using releasing agent, remove double-faced adhesive tape from the road wheel.

CAUTION:

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

Wheel Balance Adjustment

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

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

- a. Indicated imbalance value $\times 5/3$ (1.67) = balance weight to be installed

Calculation example:

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

NOTE:

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

Example:

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

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

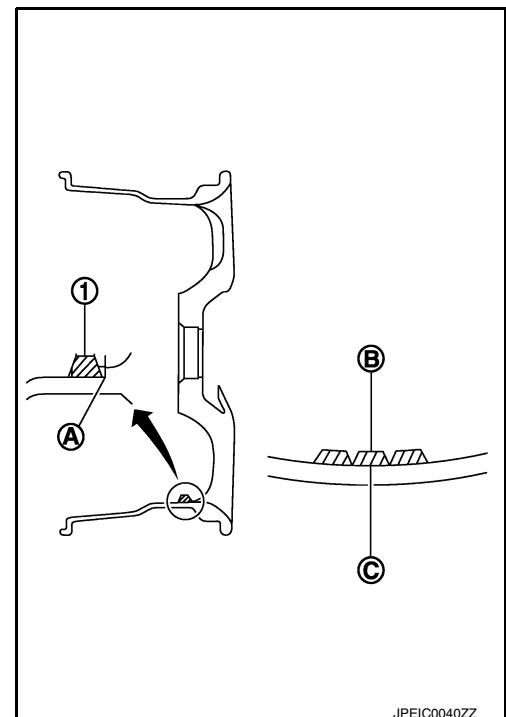
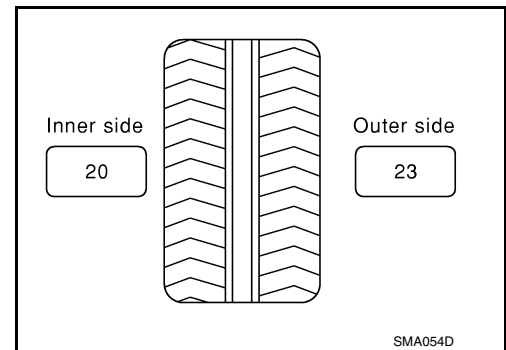
3. Install balance weight in the position shown.

CAUTION:

- **Do not install the inner balance weight before installing the outer balance weight.**
- **Before installing the balance weight, be sure to clean the mating surface of the road wheel.**
- When installing balance weight (1) to road wheel, set it into the grooved area (A) on the inner wall of the road wheel as shown so that the balance weight center (B) is aligned with the balancer machine indication position (angle) (C).

CAUTION:

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



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

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

CAUTION:

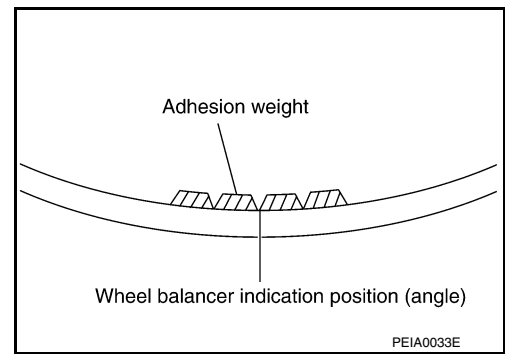
Do not install one balance weight sheet on top another.

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

CAUTION:

Do not install more than two balance weights.

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



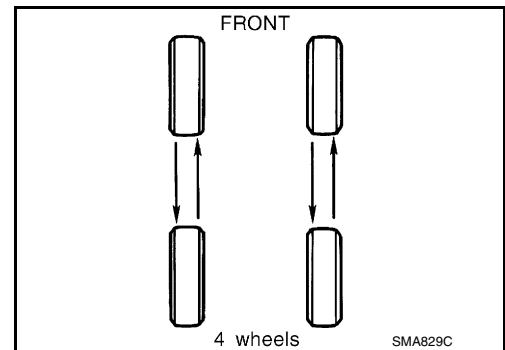
Wheel balance	Dynamic (At flange)	Static (At flange)
Maximum allowable imbalance	Refer to WT-54, "Adjustment" .	

TIRE ROTATION

- Follow the maintenance schedule for tire rotation service intervals. Refer to [MA-8, "Introduction of Periodic Maintenance"](#).
- When installing the wheel, tighten wheel nuts to the specified torque.

CAUTION:

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



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

- Perform the ID registration, after tire rotation. Refer to [WT-24, "Description"](#).

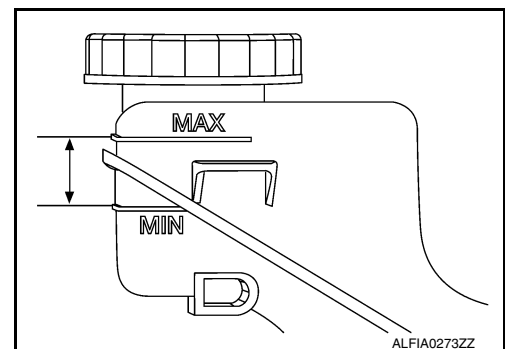
BRAKE FLUID LEVEL AND LEAKS

BRAKE FLUID LEVEL AND LEAKS : Inspection

INFOID:0000000012590534

BRAKE FLUID LEVEL

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



BRAKE LINE

- Check brake line (tubes and hoses) for cracks, deterioration or other damage. Replace any damaged parts.

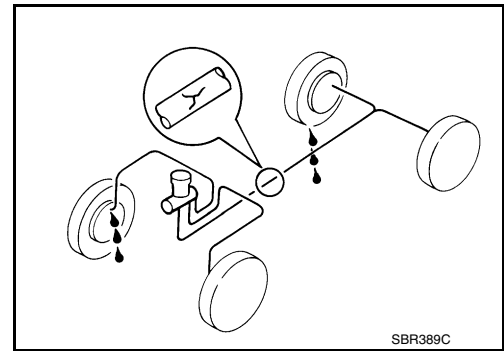
CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

2. Check for brake fluid leakage by depressing brake pedal under a force of 785 N (80 kg-f, 177 lb-ft) for approximately 5 seconds while engine is running.

CAUTION:

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

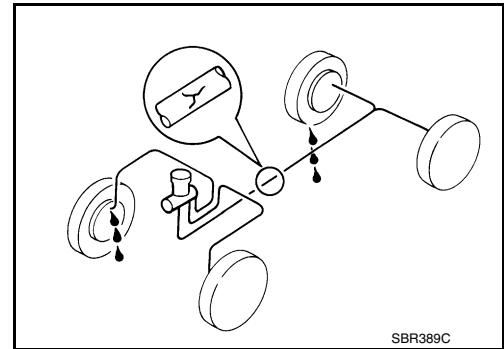


BRAKE LINES AND CABLES

BRAKE LINES AND CABLES : Inspection

INFOID:000000012590535

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



BRAKE FLUID

BRAKE FLUID : Drain and Refill

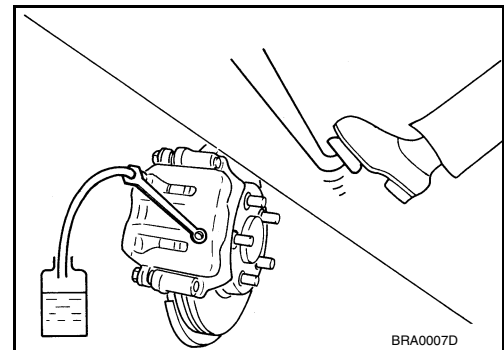
INFOID:000000012590536

CAUTION:

- Do not spill or splash brake fluid on painted surfaces. Brake fluid may damage paint. If brake fluid is splashed on painted areas, wash it away with water immediately.
- Prior to repair, turn the ignition switch OFF, disconnect the ABS actuator and electric unit (control unit) connector or negative battery terminal. Refer to [PG-78, "Removal and Installation"](#).
- Refill brake system with new brake fluid. Refer to [MA-12, "Fluids and Lubricants"](#).
- Do not reuse drained brake fluid.

DRAINING

1. Turn ignition switch OFF and disconnect ABS actuator and electric unit (control unit) connector or negative battery terminal. Refer to [PG-78, "Removal and Installation"](#).
2. Connect a vinyl tube to bleeder valve.
3. Depress brake pedal, loosen bleeder valve, and gradually remove brake fluid.



REFILLING

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

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

CAUTION:

Do not reuse drained brake fluid.

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

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

CAUTION:

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

3. Bleed the air out of the brake hydraulic system. Refer to [BR-15, "Bleeding Brake System"](#).

DISC BRAKE

DISC BRAKE : Front Brake Pad

INFOID:0000000012590537

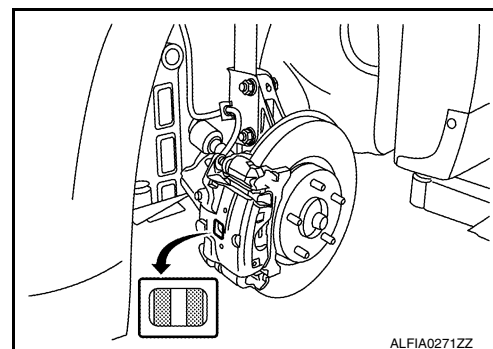
DISC BRAKE : Inspection

INFOID:0000000012958389

PAD WEAR

Check brake pad thickness from an inspection hole on caliper body.
Check using a scale if necessary.

Wear limit thickness : Refer to [BR-52, "Front Disc Brake"](#).



ALFIA0271ZZ

DISC BRAKE : Brake Burnishing

INFOID:0000000012958390

CAUTION:

- Burnish contact surfaces between brake pads and disc brake rotor according to the following procedure after refinishing the disc brake rotor, replacing brake pads or if a soft pedal occurs at very low mileage.
 - Be careful of vehicle speed. Brakes do not operate firmly/securely until pads and disc brake rotor are securely seated.
 - Only perform this procedure under safe road and traffic conditions. Use extreme caution.
1. Drive the vehicle on straight, flat road.
 2. Depress the brake pedal until the vehicle stops.
 3. Release the brake pedal for a few minutes to allow the brake components to cool.
 4. Repeat steps 1 to 3 until pad and disc brake rotor are securely seated.

DISC BRAKE : Front Brake Rotor

INFOID:0000000012590539

DISC BRAKE : Inspection

INFOID:0000000012958391

APPEARANCE

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

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

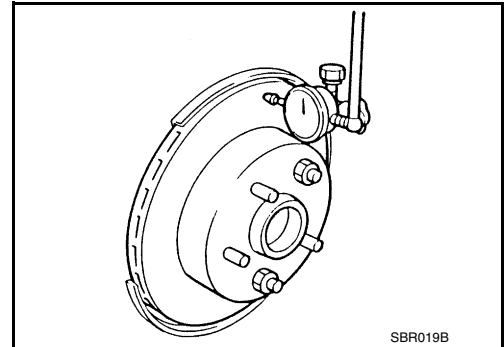
RUNOUT

1. Check the wheel bearing axial end play before the inspection. Refer to [FAX-6, "Inspection"](#).
2. Secure the disc brake rotor to the wheel hub and bearing with wheel nuts at two wheel nut locations.
3. Measure the runout with a dial gauge 10 mm (0.39 in) from the disc brake rotor edge.

Runout (with it attached to the vehicle) : Refer to [BR-52, "Front Disc Brake"](#).

4. Find the installation position with a minimum runout by shifting the disc brake rotor-to-wheel hub and bearing installation position by one hole at a time if the runout exceeds the limit value.
5. Refinish the disc brake rotor if the runout is outside the limit even after performing the above operation. When refinishing, use Tool.

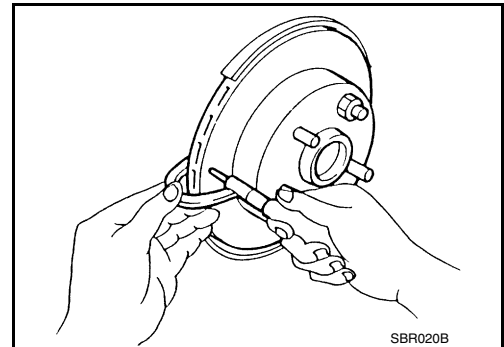
Tool number : 38-PFM92 (—)



THICKNESS

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

Wear limit thickness : Refer to [BR-52, "Front Disc Brake"](#).



DISC BRAKE : Brake Burnishing

INFOID:0000000012958392

CAUTION:

- Burnish contact surfaces between brake pads and disc brake rotor according to the following procedure after refinishing the disc brake rotor, replacing brake pads or if a soft pedal occurs at very low mileage.
 - Be careful of vehicle speed. Brakes do not operate firmly/securely until pads and disc brake rotor are securely seated.
 - Only perform this procedure under safe road and traffic conditions. Use extreme caution.
1. Drive the vehicle on straight, flat road.
 2. Depress the brake pedal until the vehicle stops.
 3. Release the brake pedal for a few minutes to allow the brake components to cool.
 4. Repeat steps 1 to 3 until pad and disc brake rotor are securely seated.

DISC BRAKE : Rear Brake Pad

INFOID:0000000012590541

DISC BRAKE : Inspection

INFOID:0000000012958393

PAD WEAR

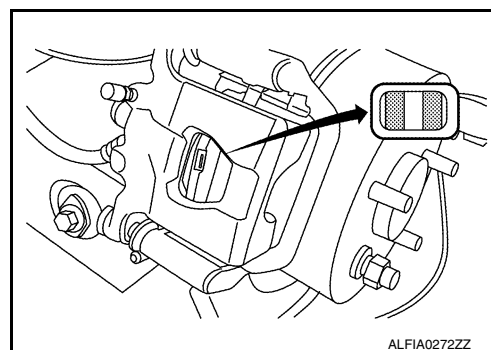
MA

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

Check pad thickness from an inspection hole on caliper body. Check using a scale if necessary.

Wear limit thickness : Refer to [BR-52, "Rear Disc Brake"](#).



DISC BRAKE : Brake Burnishing

INFOID:0000000012958394

CAUTION:

- Burnish contact surfaces between brake pads and disc brake rotor according to the following procedure after refinishing the disc brake rotor, replacing brake pads or if a soft pedal occurs at very low mileage.
 - Be careful of vehicle speed. Brakes do not operate firmly/securely until pads and disc brake rotor are securely seated.
 - Only perform this procedure under safe road and traffic conditions. Use extreme caution.
1. Drive the vehicle on straight, flat road.
 2. Depress the brake pedal until the vehicle stops.
 3. Release the brake pedal for a few minutes to allow the brake components to cool.
 4. Repeat steps 1 to 3 until pad and disc brake rotor are securely seated.

DISC BRAKE : Rear Brake Rotor

INFOID:0000000012950543

DISC BRAKE : Inspection

INFOID:0000000012958395

APPEARANCE

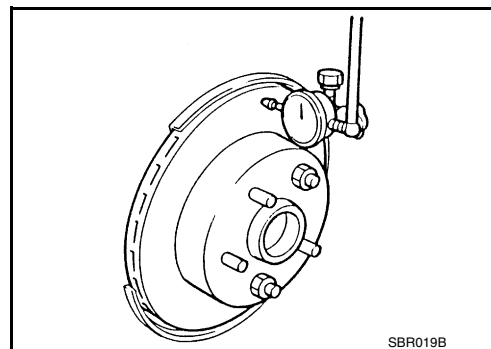
Check surface of disc brake rotor for uneven wear, cracks or damage. Replace if any abnormal conditions exist.

RUNOUT

1. Check the wheel bearing axial end play before the inspection. Refer to [FAX-6, "Inspection"](#).
2. Secure the disc brake rotor to the wheel hub and bearing with wheel nuts at two wheel nut locations.
3. Measure the runout with a dial gauge 10 mm (0.39 in) from the disc brake rotor edge.

Runout (with it attached to the vehicle) : Refer to [BR-52, "Rear Disc Brake"](#).

4. Find the installation position with a minimum runout by shifting the disc brake rotor-to-wheel hub and bearing installation position by one hole at a time if the runout exceeds the limit value.
5. Refinish the disc brake rotor if the runout is outside the limit even after performing the above operation. When refinishing, use Tool.



Tool number : 38-PFM92 (—)

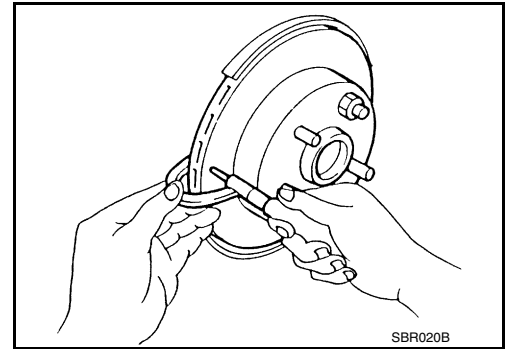
Thickness

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

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

Wear limit thickness : Refer to [BR-52, "Rear Disc Brake"](#).



INFOID:0000000012595396

DISC BRAKE : Brake Burnishing

CAUTION:

- Burnish contact surfaces between brake pads and disc brake rotor according to the following procedure after refinishing the disc brake rotor, replacing brake pads or if a soft pedal occurs at very low mileage.
 - Be careful of vehicle speed. Brakes do not operate firmly/securely until pads and disc brake rotor are securely seated.
 - Only perform this procedure under safe road and traffic conditions. Use extreme caution.
1. Drive the vehicle on straight, flat road.
 2. Depress the brake pedal until the vehicle stops.
 3. Release the brake pedal for a few minutes to allow the brake components to cool.
 4. Repeat steps 1 to 3 until pad and disc brake rotor are securely seated.

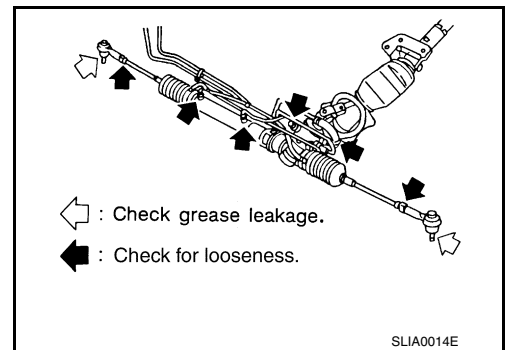
STEERING GEAR AND LINKAGE

STEERING GEAR AND LINKAGE : Inspection

INFOID:0000000012595545

STEERING GEAR

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



STEERING LINKAGE

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

POWER STEERING FLUID AND LINES

POWER STEERING FLUID AND LINES : Inspection

INFOID:0000000012595546

FLUID LEVEL

CHASSIS AND BODY MAINTENANCE

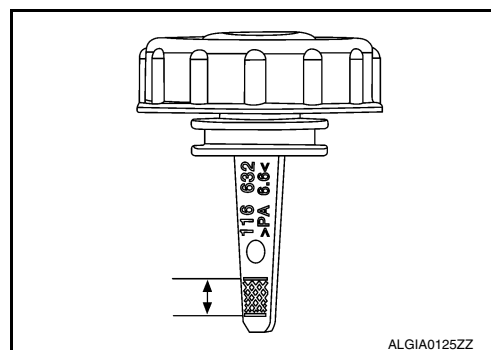
< PERIODIC MAINTENANCE >

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

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

CAUTION:

- Do not overfill.
- Do not reuse used power steering fluid.
- Recommended power steering fluid is Genuine NISSAN E-PSF or equivalent. Refer to [MA-12, "Fluids and Lubricants"](#).



FLUID LEAKAGE

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

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

CAUTION:

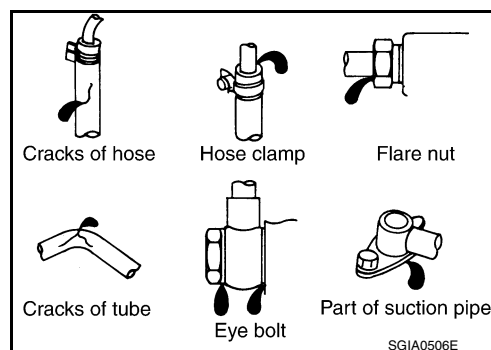
Do not hold steering wheel in a locked position for more than 10 seconds. Damage to power steering oil pump may occur.

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

CAUTION:

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

5. If power steering fluid leakage from the power steering oil pump is noticed, repair connection or replace power steering oil pump. Refer to [ST-15, "Inspection"](#).
6. Check steering gear boots for accumulation of power steering fluid. Power steering fluid indicates a leak from the power steering gear, replace as necessary. Refer to [ST-37, "Removal and Installation"](#).



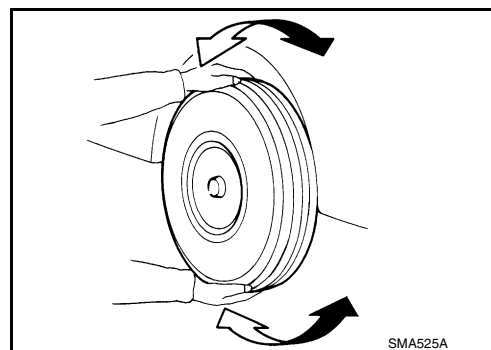
AXLE AND SUSPENSION PARTS

AXLE AND SUSPENSION PARTS : Inspection

INFOID:0000000012590547

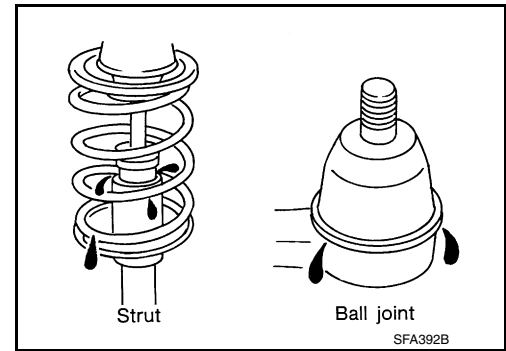
Check front and rear axle and suspension parts for excessive play, cracks, wear or other damage.

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



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >



DRIVE SHAFT

DRIVE SHAFT : Inspection

INFOID:0000000012590548

- Check drive shaft mounting point and joint for looseness and other damage.
- Check boot for cracks and other damage.

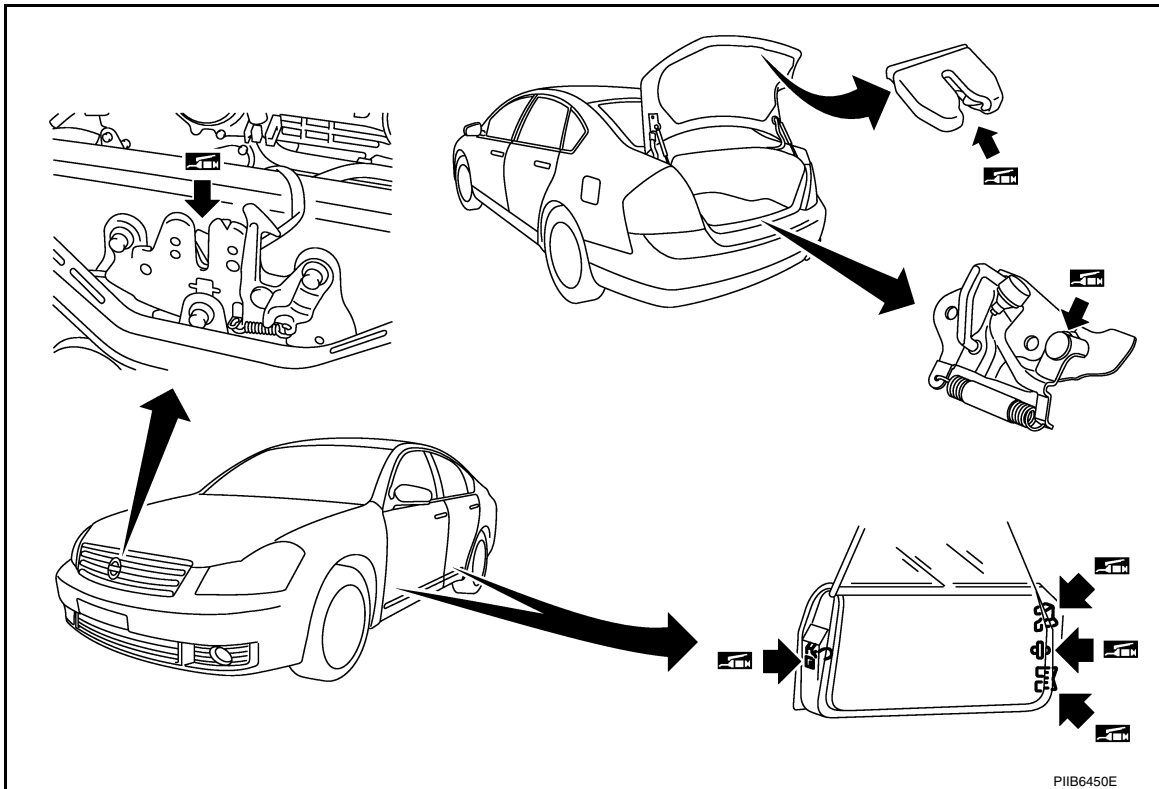
CAUTION:

Replace entire drive shaft assembly when noise or vibration occur from drive shaft.

LOCKS, HINGES AND HOOD LATCH

LOCKS, HINGES AND HOOD LATCH : Lubricating

INFOID:0000000012590549



SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS

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

INFOID:0000000012590550

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.

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

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 seat belt assembly.
- Do not oil tongue and buckle.
- Use only a Genuine NISSAN seat belt assembly.

For details, refer to [SB-5. "Inspection"](#) in the SB section.

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