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MAINTENANCE

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PRECAUTIONS

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SERVICE INFORMATION

PRECAUTIONS

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

INFOID:000000004779265

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SRS section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.
- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000004757366

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

2. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.
5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

PREPARATION

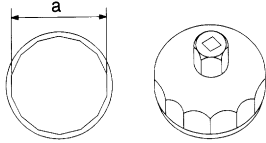
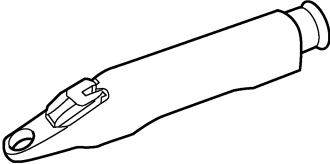
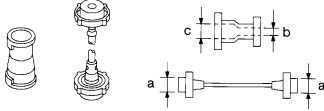
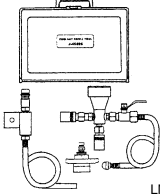
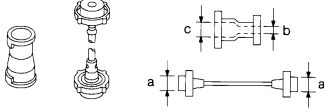
< SERVICE INFORMATION >

PREPARATION

Special Service Tool

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

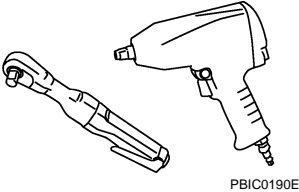
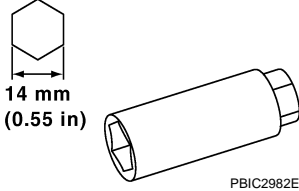
Tool number (Kent-Moore No.) Tool name	Description
KV10115801 (J-38956) Oil filter wrench  S-NT375	Removing and installing oil filter a: 64.3 mm (2.531 in)
KV991J0010 (J-23688) Engine coolant refractometer  WBIA0539E	Checking concentration of ethylene glycol in engine coolant
EG17650301 (J-33984-A) Radiator cap tester adapter  S-NT564	Adapting radiator cap tester to radiator cap and radiator filler neck a: 28 (1.10) dia. b: 31.4 (1.236) dia. c: 41.3 (1.626) dia. Unit: mm (in)
KV991J0070 (J-45695) Coolant Refill Tool  LMA053	Refilling engine cooling system
EG17650301 (J-33984-A) Radiator cap tester adapter  S-NT564	Adapting radiator cap tester to radiator cap and radiator filler neck a: 28 (1.10) dia. b: 31.4 (1.236) dia. c: 41.3 (1.626) dia. Unit: mm (in)

Commercial Service Tool

INFOID:000000004409295

PREPARATION

< SERVICE INFORMATION >

(Kent-Moore No.) Tool name	Description	A
<p>Power tool</p>  <p>PBIC0190E</p>	<p>Loosening bolts and nuts</p>	B
<p>Spark plug wrench</p>  <p>14 mm (0.55 in)</p> <p>PBIC2982E</p>	<p>Removing and installing spark plug</p>	C
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GENERAL MAINTENANCE

< SERVICE INFORMATION >

GENERAL MAINTENANCE

Explanation of General Maintenance

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General Maintenance

INFOID:000000004409297

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 they can have their NISSAN dealers do them.

OUTSIDE THE VEHICLE

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

Item		Reference page
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 specified pressure. Check carefully for damage, cuts or excessive wear.	WT-27, "Tire"
Wheel nuts	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	WT-8, "Rotation"
Windshield	Clean the windshield on a regular basis. Check the windshield at least every six months for cracks or other damage. Repair as necessary.	—
Tire rotation	Tires should be rotated every 12,000 km (7,500 miles).	WT-8, "Rotation"
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-25, "Transmitter (Pressure Sensor)"
Wheel alignment and balance	If the vehicle pulls to either side while driving on a straight and level road, or if you detect uneven or abnormal tire wear, there may be a need for wheel alignment. If the steering wheel or seat vibrates at normal highway speeds, wheel balancing may be needed.	FSU-18, "Wheel Alignment (Unladen*)" and MA-45, "Balancing Wheels"
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 smoothly as well as the trunk lid and back hatch. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check lubrication frequently.	MA-50, "Lubricating Locks, Hinges and Hood Latch"
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.	—

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 conditioning.	—
Steering wheel	Check that it has the specified play. Be sure to check for changes in the steering condition, such as excessive play, hard steering or strange noises. Free play: Less than 35 mm (1.38 in)	—
Seats	Check seat position controls such as seat adjusters, seat back recliner, etc. to make sure they operate smoothly and that all latches lock securely in every position. Check that the head restraints move up and down smoothly and that the locks (if equipped) hold securely in all latched positions. Check that the latches lock securely for folding-down rear seat backs.	—

GENERAL MAINTENANCE

< SERVICE INFORMATION >

Item		Reference page	
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-8, "Seat Belt Inspection"	A
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.	—	B
Clutch pedal	Make sure the pedal operates smoothly and check that it has the proper free play.	MA-43	C
Brakes	Check that the brake does not pull the vehicle to one side when applied.	—	D
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 floor mats away from the pedal.	MA-46 and MA-47	E
Parking brake	Check that the lever has the proper travel and make sure that the vehicle is held securely on a fairly steep hill when only the parking brake is applied.	PB-4	F
CVT P (Park) position mechanism	On a fairly steep hill check that the vehicle is held securely with the selector lever in the "P" position without applying any brakes.	—	G

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.	—	H
Engine coolant level	Check the coolant level when the engine is cold.	MA-17 (MR) MA-29 (QR)	I
A/C condenser, radiator and hoses	Check the front of the condenser and radiator and clean off any dirt, insects, leaves, etc., that may have accumulated. Make sure the radiator hoses have no cracks, deformation, deterioration or loose connections.	—	J
Brake and clutch fluid levels	Make sure that the brake and clutch fluid levels are between the "MAX" and "MIN" lines on the reservoirs.	MA-46 and MA-43	K
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.	—	L
Engine drive belts	Make sure that no belt is frayed, worn, cracked or oily.	MA-17 (MR) MA-29 (QR)	M
Engine oil level	Check the level on the dipstick after parking the vehicle on a level spot and turning off the engine.	MA-22 (MR) MA-35 (QR)	N
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-41	O
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.	—	P
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.	—	Q

PERIODIC MAINTENANCE

< SERVICE INFORMATION >

PERIODIC MAINTENANCE

Introduction of Periodic Maintenance

INFOID:000000004409298

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

Schedule 1	Follow Periodic Maintenance Schedule 1 if your driving habits frequently includes one or more of the following driving conditions: <ul style="list-style-type: none"> • 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. • Driving in dusty conditions. • Driving on rough, muddy, or salt spread roads. • Towing a trailer, using a camper or a car-top carrier. 	Emission Control System Maintenance	MA-8
		Chassis and Body Maintenance	MA-8
Schedule 2	Follow Periodic Maintenance Schedule 2 if none of the driving conditions shown in Schedule 1 apply to your driving habits.	Emission Control System Maintenance	MA-11
		Chassis and Body Maintenance	MA-11

Schedule 1

INFOID:000000004409299

Emission Control System Maintenance

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.5 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Drive belt	NOTE (1)									MA-17 (MR) MA-29 (QR)
Air cleaner filter	NOTE (2)								[R]	MA-21 (MR) MA-34 (QR)
EVAP vapor lines									I*	MA-28 (MR) MA-39 (QR)
Fuel lines									I*	MA-21 (MR) MA-33 (QR)
Fuel filter	NOTE (3)									—
Engine coolant	NOTE (4)									MA-17 (MR) MA-29 (QR)
Engine oil		R	R	R	R	R	R	R	R	MA-22 (MR) MA-35 (QR)

PERIODIC MAINTENANCE

< SERVICE INFORMATION >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.5 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Engine oil filter (Use genuine NISSAN oil filter or equivalent)		R	R	R	R	R	R	R	R	MA-24 (MR) MA-37 (QR)
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km)								MA-26 (MR) MA-38 (QR)
Intake and exhaust valve clearance *	NOTE (5)									EM-106 (MR) EM-209 (QR)

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Drive belt	NOTE (1)								I*	MA-17 (MR) MA-29 (QR)
Air cleaner filter	NOTE (2)								[R]	MA-21 (MR) MA-34 (QR)
EVAP vapor lines									I*	MA-28 (MR) MA-39 (QR)
Fuel lines									I*	MA-21 (MR) MA-33 (QR)
Fuel filter	NOTE (3)									—
Engine coolant	NOTE (4)								R*	MA-17 (MR) MA-29 (QR)
Engine oil		R	R	R	R	R	R	R	R	MA-22 (MR) MA-35 (QR)
Engine oil filter (Use genuine NISSAN oil filter or equivalent)		R	R	R	R	R	R	R	R	MA-24 (MR) MA-37 (QR)

PERIODIC MAINTENANCE

< SERVICE INFORMATION >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km)								MA-26 (MR) MA-38 (QR)
Intake and exhaust valve clearance *	NOTE (5)									EM-106 (MR) EM-209 (QR)

(1) After 60,000 miles (96,000 km) or 48 months, inspect every 15,000 miles (24,000 km) or 12 months. Replace the drive belts if found damaged or if the auto belt tensioner reading reaches the maximum limit.

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

(3) Maintenance-free item. For service procedures, go to the FL section.

(4) After 60,000 miles (96,000 km) or 48 months, replace every 30,000 miles (48,000 km) or 24 months.

(5) 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. L = Lubricate.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.5 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Brake lines & cables					I				I	MA-47
Brake pads, rotors, drums & linings			I		I		I		I	MA-47
Manual transaxle oil	NOTE (1)				I				I	MA-43 (RS6F94R) MA-44 (RS6F52A and RS6F52H)
CVT fluid	NOTE (2)				I				I	MA-41
Steering gear & linkage, axle & suspension parts			I		I		I		I	MA-49 , MA-49
Tire rotation	NOTE (3)									MA-46
Front drive shaft boots			I		I		I		I	MA-49
Exhaust system			I		I		I		I	MA-41
In-cabin microfilter					R				R	MA-40

PERIODIC MAINTENANCE

< SERVICE INFORMATION >

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Brake lines & cables					I				I	MA-47
Brake pads, rotors, drums & linings			I		I		I		I	MA-47
Manual transaxle oil	NOTE (1)				I				I	MA-43 (RS6F94R) MA-44 (RS6F52A and RS6F52H)
CVT fluid	NOTE (2)				I					MA-41
Steering gear & linkage, axle & suspension parts			I		I		I		I	MA-49, MA-49
Tire rotation	NOTE (3)									MA-46
Front drive shaft boots			I		I		I		I	MA-49
Exhaust system			I		I		I		I	MA-41
In-cabin microfilter					R				R	MA-40

(1) If towing a trailer, using a camper or a car-top carrier, or driving on rough or muddy roads, change (not just inspect) oil at every 30,000 miles (48,000 km) or 24 months.

(2) If towing a trailer, using a camper or a car-top carrier, or driving on rough or muddy roads, inspect CVT fluid deterioration with CONSULT-III every 60,000 miles (96,000 km), then change CVT fluid NS-2 if necessary. (Refer to CVT section). If CONSULT-III is not available, change (not just inspect) CVT fluid NS-2 every 60,000 miles (96,000 km). **Using transmission fluid other than Genuine NISSAN CVT Fluid NS-2 will damage the CVT, which is not covered by the NISSAN new vehicle limited warranty.**

(3) Refer to "Tire rotation" under the "GENERAL MAINTENANCE" heading earlier in this section.

Schedule 2

INFOID:000000004409300

Emission Control System Maintenance

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Drive belt	NOTE (1)								I*	MA-17 (MR) MA-29 (QR)
Air cleaner filter					[R]				[R]	MA-21 (MR) MA-34 (QR)
EVAP vapor lines					I*				I*	MA-28 (MR) MA-39 (QR)
Fuel lines					I*				I*	MA-21 (MR) MA-33 (QR)
Fuel filter	NOTE (2)									—

PERIODIC MAINTENANCE

< SERVICE INFORMATION >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title	
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48		
Engine coolant	NOTE (3)									R*	MA-17 (MR) MA-29 (QR)
Engine oil		R	R	R	R	R	R	R	R	R	MA-22 (MR) MA-35 (QR)
Engine oil filter (Use genuine NISSAN oil filter or equivalent.)		R	R	R	R	R	R	R	R	R	MA-24 (MR) MA-37 (QR)
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km)								MA-26 (MR) MA-38 (QR)	
Intake and exhaust valve clearance) *	NOTE (4)										EM-106 (MR) EM-209 (QR)

(1) After 60,000 miles (96,000 km) or 48 months, inspect every 15,000 miles (24,000 km) or 12 months. Replace the drive belt if found damaged or if the auto belt tensioner reading reaches the maximum limit.

(2) Maintenance-free item.

(3) After 60,000 miles (96,000 km) or 48 months, replace every 30,000 miles (48,000 km) or 24 months.

(4) 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. L = Lubricate.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Brake lines & cables			I		I		I		I	MA-47
Brake pads, rotors, drums & linings			I		I		I		I	MA-47
Manual transaxle oil			I		I		I		I	MA-43 (RS6F94R) MA-44 (RS6F52A and RS6F52H)
CVT fluid	NOTE (1)		I		I		I		I	MA-41
Steering gear & linkage, axle & suspension parts					I				I	MA-49 , MA-49
Tire rotation	NOTE (2)									MA-46
Front drive shaft boots			I		I		I		I	MA-49
Exhaust system					I				I	MA-41
In-cabin microfilter			R		R		R		R	MA-40

PERIODIC MAINTENANCE

< SERVICE INFORMATION >

- (1) Using transmission fluid other than Genuine NISSAN CVT Fluid NS-2 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.

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RECOMMENDED FLUIDS AND LUBRICANTS

< SERVICE INFORMATION >

RECOMMENDED FLUIDS AND LUBRICANTS

MR20DE

INFOID:000000004409301

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Liter	US measure	Imp measure	
Fuel		55.0	14 1/2 gal	12 1/8 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91)
Engine oil Drain and refill	With oil filter change	3.9	4 1/8 qt	3 3/8 qt	<ul style="list-style-type: none"> • Engine oil with API Certification Mark *1 • Viscosity SAE 5W-30
	Without oil filter change	3.6	3 7/8 qt	3 1/8 qt	
Dry engine (engine overhaul)		4.4	4 5/8 qt	3 7/8 qt	
Cooling system (with reservoir at max level)		7.0	7 3/8 qt	6 1/8 qt	Genuine NISSAN Long Life Anti-freeze Coolant or equivalent
Manual transaxle fluid (MTF)		2.0	4 1/4 pt	3 1/2 pt	Genuine NISSAN gear oil (XT4447 M+) 75W-80, Genuine NISSAN gear oil (ETL8997B) 75W-80 or equivalent *2
CVT fluid		7.3	7 3/4 qt	6 3/8 qt	Genuine NISSAN CVT Fluid NS-2 *3
Brake and clutch fluid		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid *4 or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)
Windshield washer fluid		3.5	3 3/4 qt	3 1/8 qt	Genuine NISSAN Windshield Washer Concentrate Cleaner & Anti-Freeze or equivalent
Air conditioning system refrigerant		0.50 ± 0.05 kg	1.10 ± 0.11 lb	1.10 ± 0.11 lb	HFC-134a (R-134a) *5
Air conditioning system oil		150 mℓ	5.03 fl oz	5.3 fl oz	NISSAN A/C System Lubricant Type S or equivalent *5

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

*2: If Genuine NISSAN gear oil is not available, API GL-4, Viscosity SAE 75W-80 may be used as a temporary replacement. However, use Genuine NISSAN gear oil as soon as possible.

***3: Using transaxle fluid other than Genuine NISSAN CVT Fluid NS-2 will damage the CVT, which is not covered by the NISSAN new vehicle limited warranty.**

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

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

QR25DE

INFOID:000000004409302

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Liter	US measure	Imp measure	
Fuel		55.0	14 1/2 gal	12 1/8 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91)
Engine oil Drain and refill	With oil filter change	4.3	4 1/2 qt	3 3/4 qt	<ul style="list-style-type: none"> • Engine oil with API Certification Mark *1 • Viscosity SAE 5W-30
	Without oil filter change	4.0	4 1/4 qt	3 1/2 qt	
Dry engine (engine overhaul)		5.1	5 3/8 qt	4 1/2 qt	
Cooling system (with reservoir at max level)	M/T models	6.9	7 1/4 qt	6 1/8 qt	Genuine NISSAN Long Life Anti-freeze Coolant or equivalent
	CVT models	7.1	7 1/2 qt	6 1/4 qt	

RECOMMENDED FLUIDS AND LUBRICANTS

< SERVICE INFORMATION >

Description	Capacity (Approximate)			Recommended Fluids/Lubricants
	Liter	US measure	Imp measure	
Manual transaxle fluid (MTF)	1.7	3 5/8 pt	3 pt	Genuine NISSAN Manual Transmission (MTF) HQ Multi 75W-85 or API GL-4 viscosity SAE 75-W-85
CVT fluid	7.5	7 7/8 qt	6 5/8 qt	Genuine NISSAN CVT Fluid NS-2 *2
Brake and clutch fluids	—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid or equivalent, DOT 3 (US FMVSS No. 116) *3
Multi-purpose grease	—	—	—	NLGI No. 2 (Lithium soap base)
Windshield washer fluid	3.5	3 3/4 qt	3 1/8 qt	Genuine NISSAN Windshield Washer Concentrate Cleaner & Anti-freeze or equivalent
Air conditioning system refrigerant	0.50 ± 0.05 kg	1.10 ± 0.11 lb	1.10 ± 0.11 lb	HFC-134a (R-134a) *4
Air conditioning system oil	150 m ℓ	5.03 fl oz	5.3 fl oz	NISSAN A/C System Lubricant Type S or equivalent *4

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

*2: **Using transaxle fluid other than Genuine NISSAN CVT Fluid NS-2 will damage the CVT, which is not covered by the NISSAN new vehicle limited warranty.**

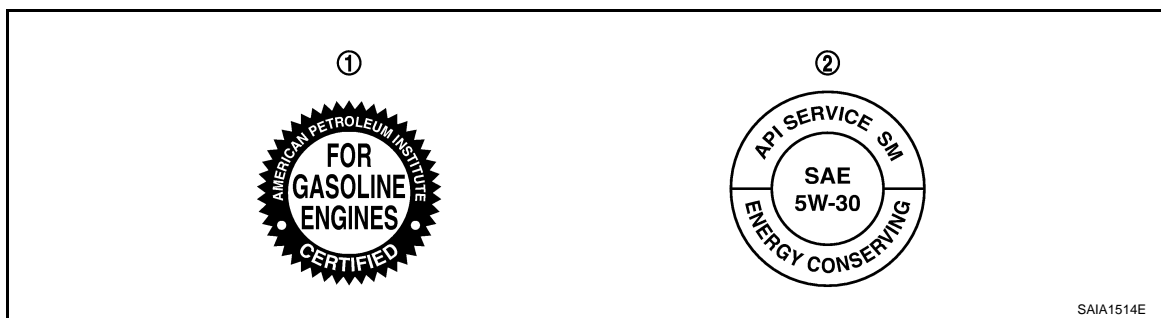
*3: Available in mainland U.S.A. through a NISSAN dealer.

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

Engine Oil Recommendation

INFOID:000000004409303

NISSAN recommends the use of an energy conserving oil in order to improve fuel economy. Select only engine oils that meet the American Petroleum Institute (API) certification and International Lubricant Standardization and Approval Committee (ILSAC) certification and SAE viscosity standard. These oils have the API certification mark on the front of the container. Oils which do not have the specified quality label should not be used as they could cause engine damage.



1. API certification mark

2. API service symbol

ANTI-FREEZE COOLANT MIXTURE RATIO

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

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

CAUTION:

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

RECOMMENDED FLUIDS AND LUBRICANTS

< SERVICE INFORMATION >

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

Anti-freeze Coolant Mixture Ratio

INFOID:000000004409304

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

Maximum outside temperature		Genuine NISSAN Anti-freeze Coolant or equivalent	Demineralized water or distilled water
°C	°F		
-35	-30	50%	50%

CAUTION:

- When adding or replacing coolant, be sure to use only a Genuine NISSAN Long Life Anti-Freeze coolant or equivalent with the proper mixture ratio.
- The use of other types of coolant solutions may damage the engine cooling system.

ENGINE MAINTENANCE (MR20DE)

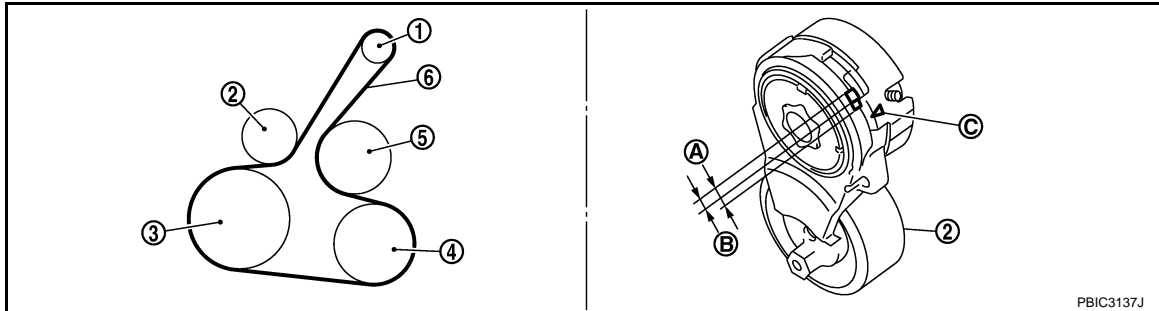
< SERVICE INFORMATION >

ENGINE MAINTENANCE (MR20DE)

DRIVE BELTS

DRIVE BELTS : Component

INFOID:000000004757343



- | | | |
|--|---|----------------------|
| 1. Generator | 2. Drive belt auto-tensioner | 3. Crankshaft pulley |
| 4. A/C compressor (models with A/C)
Idler pulley (models without A/C) | 5. Water pump | 6. Drive belt |
| A. Allowable use range | B. Range when new drive belt is installed | C. Indicator |

DRIVE BELTS : Checking Drive Belts

INFOID:000000004757344

WARNING:

Inspect the drive belt only when the engine is stopped.

NOTE:

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

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

NOTE:

- Check the drive belt auto-tensioner indicator (notch) when the engine is cold.
- When the new drive belt is installed, the range of possible use should be as shown.
- Visually check entire belt for wear, damage or cracks.
- If the indicator is out of allowable use range or belt is damaged, replace the drive belt.

DRIVE BELTS : Tension Adjustment

INFOID:000000004757345

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

ENGINE COOLANT

ENGINE COOLANT : Inspection

INFOID:000000004757346

WARNING:

- **Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure fluid 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 down and turning it all the way.**

CHECKING COOLING SYSTEM HOSES

Check hoses for the following:

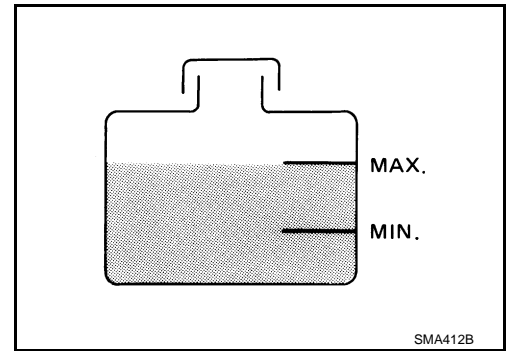
- Improper attachment
- Leaks
- Cracks
- Damage
- Loose connections
- Chafing
- Deterioration

CHECKING RESERVOIR LEVEL

ENGINE MAINTENANCE (MR20DE)

< SERVICE INFORMATION >

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



CHECKING COOLING SYSTEM FOR LEAKS

To check for leaks, apply pressure to the cooling system using Tool.

Tool number : EG17650301 (J-33984-A)

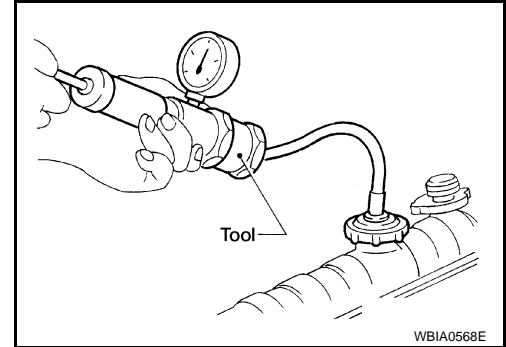
Testing pressure : 157 kPa (1.6 kg/cm², 23 psi)

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure coolant escaping from the radiator.

CAUTION:

Higher pressure than specified may cause radiator damage.



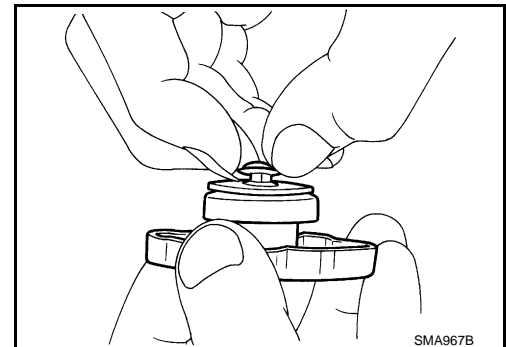
CHECKING RADIATOR CAP

1. Inspect the radiator cap.
 - Replace the cap if the metal plunger cannot be seen around the edge of the black rubber gasket.
 - Replace the cap if deposits of waxy residue or other foreign material are on the black rubber gasket or the metal retainer.

NOTE:

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

2. Pull the negative-pressure valve to open it and check that it closes completely when released.
 - Check that there is no dirt or damage on the valve seat of the radiator cap negative-pressure valve.
 - Check that there are no abnormalities in the opening and closing conditions of the negative-pressure valve.



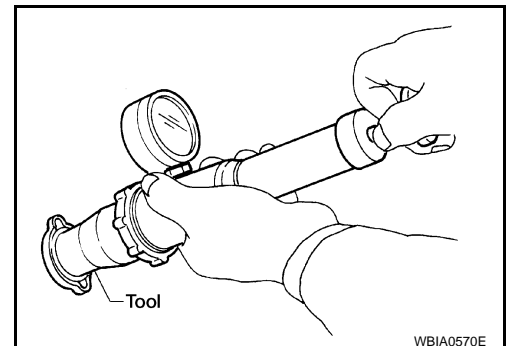
3. Check radiator cap relief pressure using Tool.

Tool number : EG17650301 (J-33984-A)

Standard: 78 – 98 kPa (0.8 – 1.0 kg/cm², 11 – 14 psi)

Limit: 59 kPa (0.6 kg/cm², 9 psi)

- When connecting the radiator cap to the tester, apply water or coolant to the cap seal surface.
- Replace the radiator cap if there is an abnormality in the negative-pressure valve, or if the open-valve pressure is outside of the standard values.



CHECKING RADIATOR

ENGINE MAINTENANCE (MR20DE)

< SERVICE INFORMATION >

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

- Be careful not to bend or damage the radiator fins.
 - When radiator is cleaned without removal, remove all surrounding parts such as cooling fan shroud and horns. Then tape the harness and electrical connectors to prevent water from entering.
1. Apply water by hose to the back side of the radiator core, with the hose pointed vertically downward.
 2. Apply water again to all radiator core surfaces once per minute.
 3. Stop washing if any stains no longer flow out from the radiator.
 4. Blow air into the back side of radiator core, with the air hose pointed vertically downward.
 - Use compressed air lower than 490 kPa (5 kg/cm², 71 psi) and keep distance more than 30 cm (11.8 in).
 5. Blow air again into all the radiator core surfaces once per minute until no water sprays out.
 6. Check for leaks.

ENGINE COOLANT : Changing Engine Coolant

INFOID:000000004757347

WARNING:

- To avoid being scalded, do not change the engine coolant when the engine is hot.
- Wrap a thick cloth around radiator 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.
- Be careful not to allow engine coolant to contact drive belt.

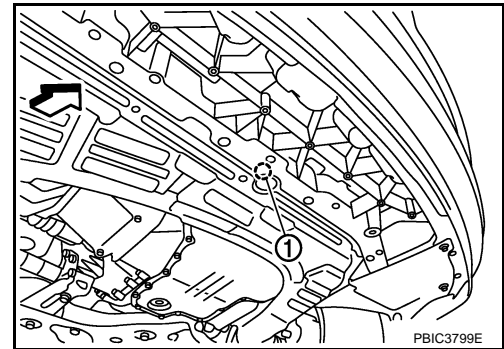
DRAINING ENGINE COOLANT

1. Remove the engine undercover using power tool.
2. Open the radiator drain plug (1) 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).

- ← Front

CAUTION:

- Perform this step when engine is cold.
- Do not spill engine coolant on drive belt.



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 (15 psi, 1.055 kg/cm²) 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.
5. When draining all of the coolant in the system for engine removal or repair, open the drain plug on the cylinder block. Refer to [EM-74. "Component"](#).
6. Check the drained engine coolant for contaminants such as rust, corrosion or discoloration. If the coolant is contaminated, flush the engine cooling system. Follow the "FLUSHING COOLING SYSTEM" procedure.

REFILLING ENGINE COOLANT

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

Radiator drain plug : Refer to [CO-15. "Component"](#).

Cylinder block drain plug : Refer to [EM-182. "Removal and Installation"](#).

2. If disconnected, reattach the upper radiator hose at the engine side.

ENGINE MAINTENANCE (MR20DE)

< SERVICE INFORMATION >

3. Set the vehicle heater controls to the full HOT and heater ON position. Turn the vehicle ignition ON with the engine OFF as necessary to activate the heater mode.
4. Install the Tool by installing the radiator cap adapter onto the radiator neck opening. Then attach the gauge body assembly with the refill tube and the venturi assembly to the radiator cap adapter.

Tool number : KV991J0070 (J-45695)

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

- Use Genuine NISSAN Long Life Anti-freeze coolant or equivalent, mixed 50/50 with distilled water or demineralized water.

Refer to [MA-16, "Anti-freeze Coolant Mixture Ratio"](#).

**Engine coolant capacity : Refer to MA-14.
(with reservoir tank)**

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

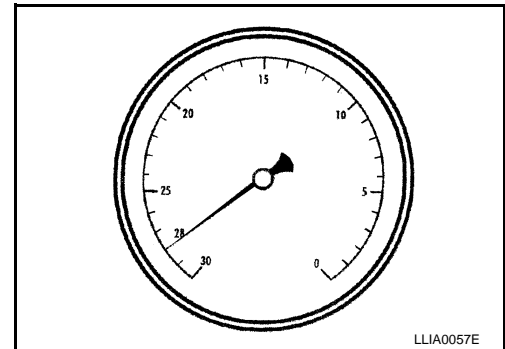
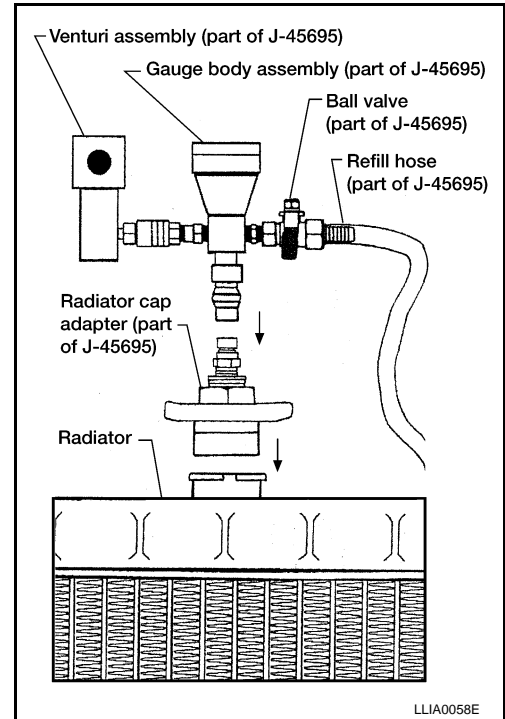
**Compressed air supply pressure : 5.7 - 8.5 kPa (5.6 - 8.4 kg/cm²,
80 - 120 psi)**

CAUTION:

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

7. The vacuum gauge will begin to rise and there will be an audible hissing noise. During this process open the ball valve on the refill hose slightly. Coolant will be visible rising in the refill hose. Once the refill hose is full of coolant, close the ball valve. This will purge any air trapped in the refill hose.
8. Continue to draw the vacuum until the gauge reaches 28 inches of vacuum. The gauge may not reach 28 inches in high altitude locations, use the vacuum specifications below based on the altitude above sea level.

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



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

CAUTION:

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

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

FLUSHING COOLING SYSTEM

1. Fill radiator and reservoir tank with water and reinstall radiator cap.

ENGINE MAINTENANCE (MR20DE)

< SERVICE INFORMATION >

2. Run 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 water from the cooling system.
6. Repeat steps 1 through 5 until clear water begins to drain from the radiator.

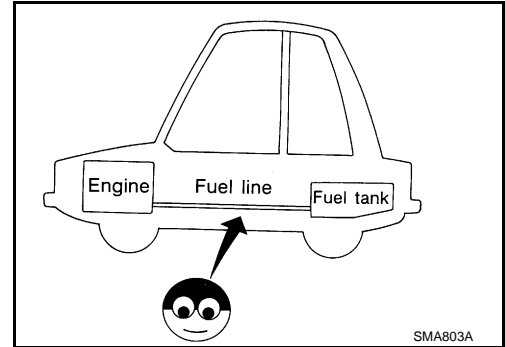
FUEL LINES

FUEL LINES : Checking Fuel Line

INFOID:000000004409310

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

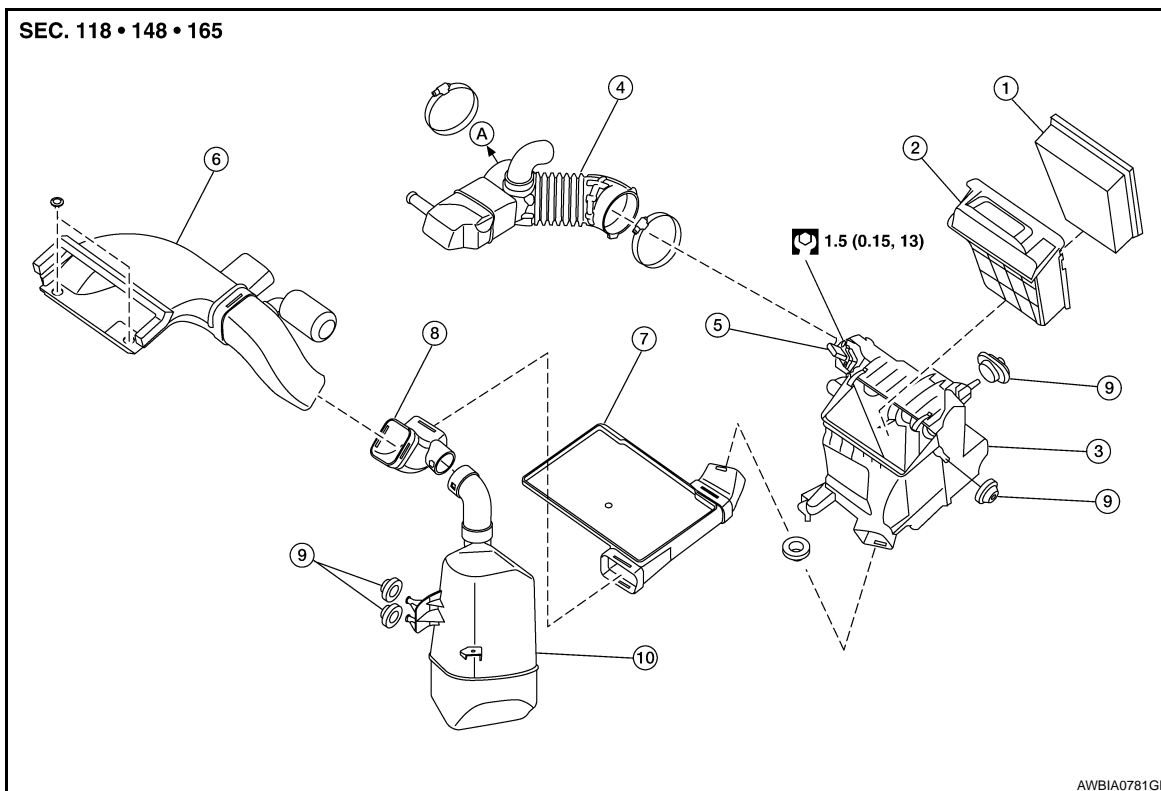
If necessary, repair or replace damaged parts.



AIR CLEANER FILTER

AIR CLEANER FILTER : Component

INFOID:000000004757348



- | | | |
|--------------------------|--|---------------------|
| 1. Air cleaner filter | 2. Air cleaner holder | 3. Air cleaner case |
| 4. Air duct | 5. Mass air flow sensor | 6. Air duct (Inlet) |
| 7. Air duct/battery tray | 8. Air duct | 9. Grommet |
| 10. Resonator | A. To electric throttle control actuator | |

ENGINE MAINTENANCE (MR20DE)

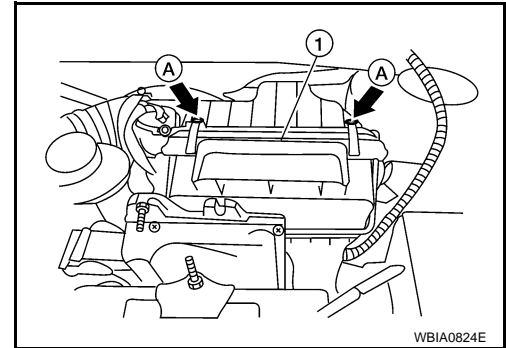
< SERVICE INFORMATION >

AIR CLEANER FILTER : Changing Air Cleaner Filter

INFOID:000000004757349

REMOVAL

1. Unclip the tabs (A) of both ends of the air cleaner cover (1).



2. Remove the air cleaner filter and holder assembly from the air cleaner case.
3. Remove the air cleaner filter from the holder.

INSPECTION AFTER REMOVAL

It is necessary to replace it at the recommended intervals, more often under dusty driving conditions. Refer to [MA-8](#).

INSTALLATION

Installation is in the reverse order of removal.

ENGINE OIL

ENGINE OIL : Inspection

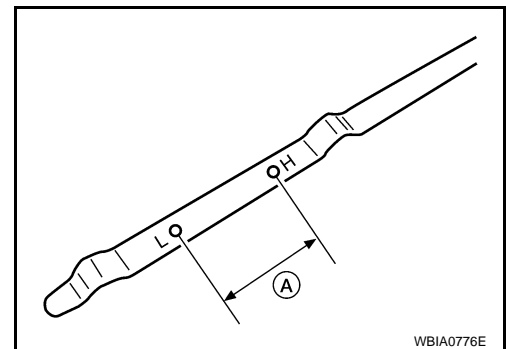
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ENGINE OIL LEVEL

NOTE:

Before starting engine, park vehicle on a level surface and check the engine oil level. If engine is already started, stop it and allow 10 minutes before checking.

1. Pull out oil level gauge and wipe it clean.
2. Insert oil level gauge and make sure the engine oil level is within the range (A) as shown.
3. If it is out of range, add oil as necessary.



ENGINE OIL APPEARANCE

- Check engine oil for white milky or excessive contamination.
- If engine oil becomes milky, it is highly probable that it is contaminated with engine coolant. Repair or replace damaged parts.

ENGINE OIL LEAKAGE

Check for engine oil leakage around the following areas:

- Oil pan (upper and lower)
- Oil pan drain plug
- Oil pressure switch
- Oil filter
- Intake valve timing control solenoid valve
- Front cover

ENGINE MAINTENANCE (MR20DE)

< SERVICE INFORMATION >

- Mating surface between cylinder block and cylinder head
- Mating surface between cylinder head and rocker cover
- Crankshaft oil seals (front and rear)
- Oil filter (for intake valve timing control)

OIL PRESSURE CHECK

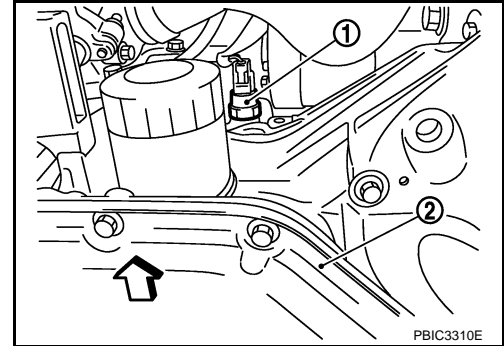
WARNING:

- **Be careful not to burn yourself, as engine oil may be hot.**
- **For M/T models, put the gearshift lever in the Neutral "N" position and apply the parking brake securely. For CVT models, put the selector lever in the Park "P" position.**

1. Check engine oil level.
2. Remove undercover using power tool.
3. Disconnect harness connector at oil pressure switch (1), and remove oil pressure switch using a suitable tool.
 - Oil pan (lower) (2)
 - ←: Front

CAUTION:

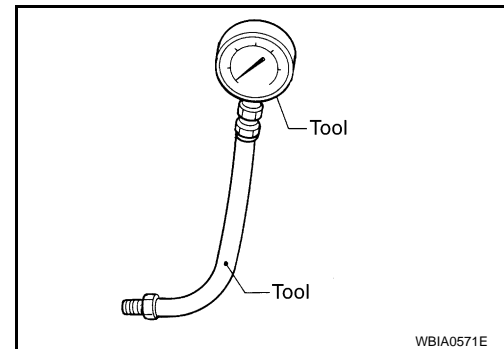
Do not drop or shock oil pressure switch.



4. Install oil pressure gauge and hose.

Tool number : ST25051001 (J-25695-1)

: ST25052000 (J-25695-2)



5. Start engine and warm it up to normal operating temperature.
6. Check oil pressure with engine running under no-load. Refer to [LU-10. "Oil Pressure"](#).

NOTE:

When engine oil temperature is low, engine oil pressure becomes high.

If difference is extreme, check oil passage and oil pump for oil leaks.

7. After the inspections, install oil pressure switch as follows:
 - a. Remove old liquid gasket adhering to oil pressure switch and engine.
 - b. Apply liquid gasket and tighten oil pressure switch to specification.
Use Genuine Silicone RTV Sealant or equivalent. Refer to [GI-42. "Recommended Chemical Product and Sealant"](#).

Oil pressure switch : 14.7 N·m (1.5 kg·m, 11 ft·lb)

- c. Check engine oil level.
- d. After warming up engine, make sure there are no leaks of engine oil with running engine.

ENGINE OIL : Changing Engine Oil

INFOID:000000004757351

WARNING:

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

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ENGINE MAINTENANCE (MR20DE)

< SERVICE INFORMATION >

1. Park vehicle on a level surface and check for engine oil leakage from engine components. Refer to [MA-22, "ENGINE OIL : Inspection"](#).
2. Warm up the engine.
3. Stop engine and wait for 10 minutes.
4. Remove oil filler cap (1) and then remove oil pan drain plug (2).
 - Oil filter (3)
 - ⇐: Engine front
5. Drain the engine oil.
6. Install the oil pan drain plug (2) with a new washer.

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

CAUTION:

Be sure to clean drain plug (2) and install with new washer.

7. Refill with new engine oil. Refer to [MA-14, "MR20DE"](#).

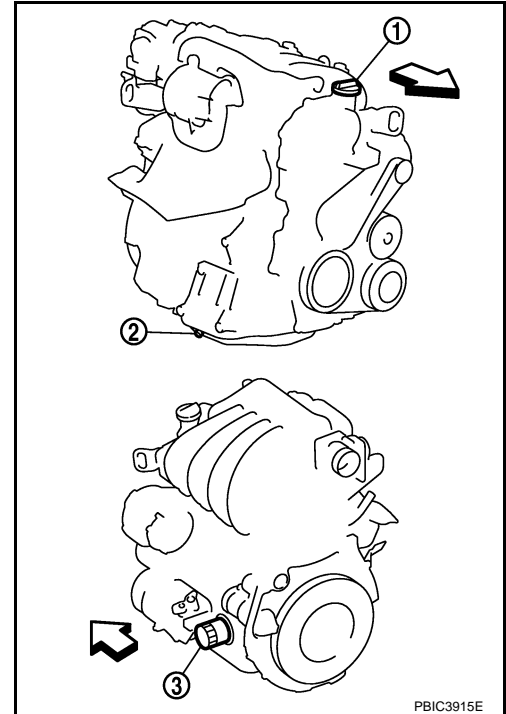
CAUTION:

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

8. Warm up engine and check area around drain plug (2) and oil filter (3) for engine oil leakage.
9. Stop engine and wait for 10 minutes.
10. Check the engine oil level. Refer to [MA-22, "ENGINE OIL : Inspection"](#).

CAUTION:

Do not overfill the engine with oil.



OIL FILTER

OIL FILTER : Removal and Installation

INFOID:000000004757352

REMOVAL

1. Remove oil filter using Tool (A).

Tool number : KV10115801 (J-38956)

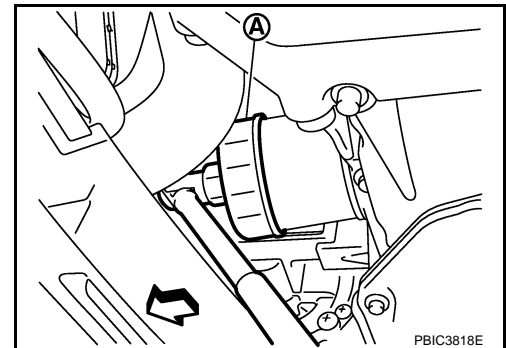
- ⇐: Front

WARNING:

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

CAUTION:

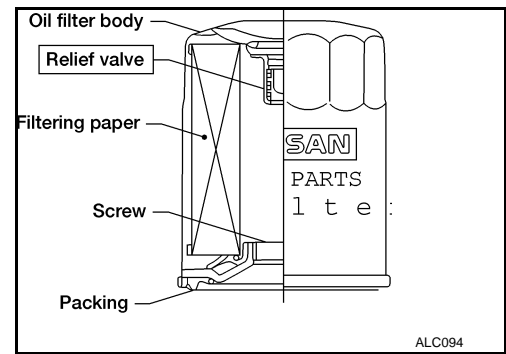
- When removing, prepare a shop cloth to absorb any engine oil leakage or spillage.
- Do not allow engine oil to adhere to drive belt.
- Completely wipe off any engine oil that adheres to the engine and the vehicle.



ENGINE MAINTENANCE (MR20DE)

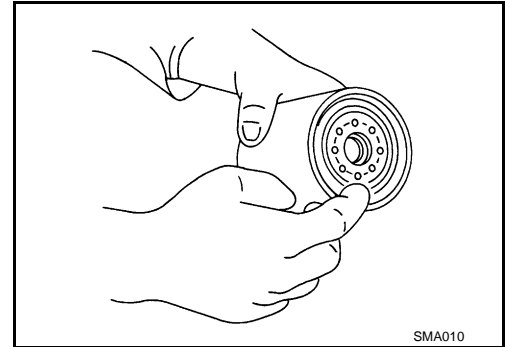
< SERVICE INFORMATION >

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



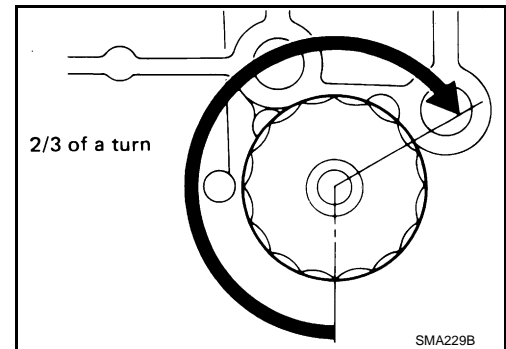
INSTALLATION

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



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

Oil filter: : 17.7 N-m (1.8 kg-m, 13 ft-lb)



INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to [MA-22](#).
2. Start engine, and make sure there are no leaks of engine oil.
3. Stop engine and wait for 10 minutes.
4. Check the engine oil level and adjust as necessary. Refer to [MA-22](#).

SPARK PLUG

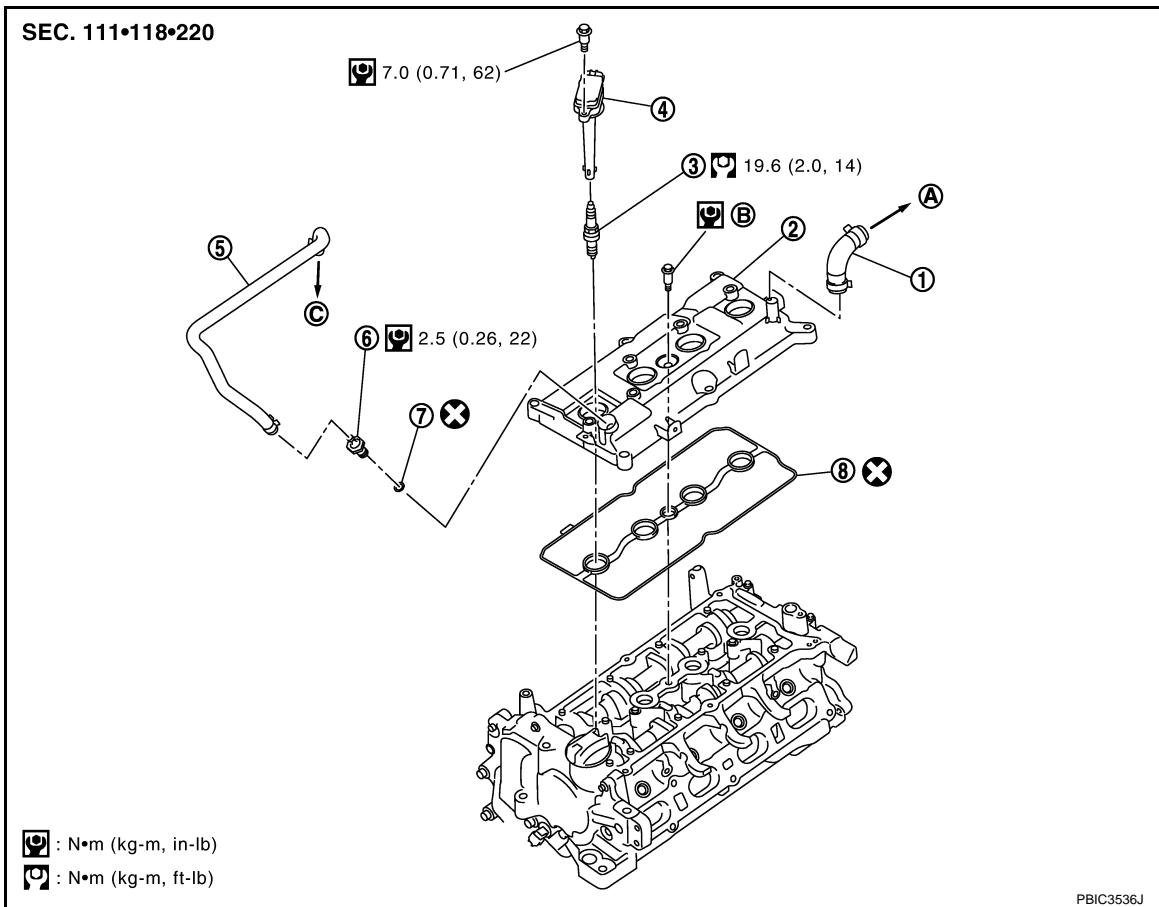
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ENGINE MAINTENANCE (MR20DE)

< SERVICE INFORMATION >

SPARK PLUG : Component

INFOID:000000004757353



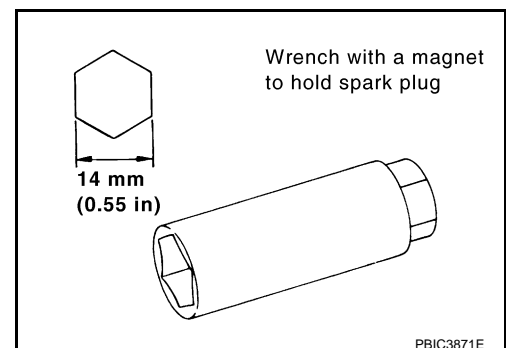
- | | | |
|------------------|-------------------------------------|-----------------------|
| 1. PCV hose | 2. Rocker cover | 3. Spark plug |
| 4. Ignition coil | 5. PCV hose | 6. PCV valve |
| 7. O-ring | 8. Gasket | |
| A. To air duct | B. Refer to MA-26 . | C. To intake manifold |

SPARK PLUG : Removal and Installation

INFOID:000000004757354

REMOVAL

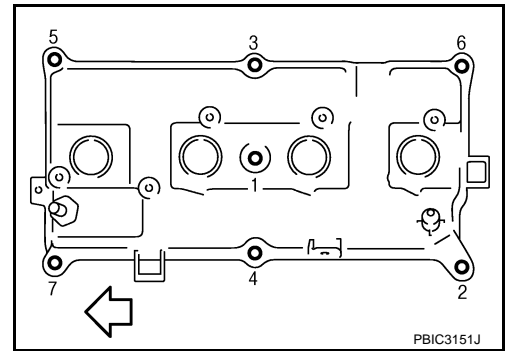
1. Remove intake manifold. Refer to [EM-18](#).
2. Remove ignition coil.
CAUTION:
 - Handle it carefully and avoid impacts.
 - Never disassemble.
3. Remove spark plug using suitable tool.
CAUTION:
 - Never drop or shock it.



ENGINE MAINTENANCE (MR20DE)

< SERVICE INFORMATION >

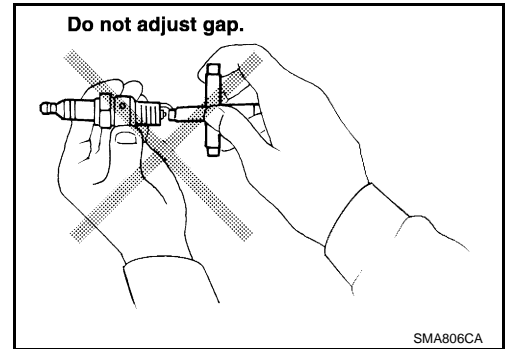
- Remove rocker cover.
 - Loosen bolts in reverse order as shown.
 - ⇐ Engine front



INSPECTION AFTER REMOVAL

CAUTION:

- Never drop or shock spark plug.
- Checking and adjusting spark plug gap is not required between change intervals.

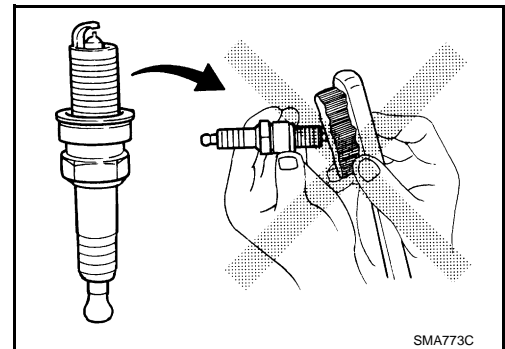


- If spark plug tip is covered with carbon, a spark plug cleaner may be used.

Cleaner air pressure : Less than 588 kPa (5.88 bar, 6 kg/cm², 85 psi)

Cleaning time : Less than 20 seconds

- Never use wire brush for cleaning spark plug.



INSTALLATION

- Install rocker cover gasket to rocker cover.
- Install rocker cover.
 - Tighten bolts in two steps separately in numerical order as shown.

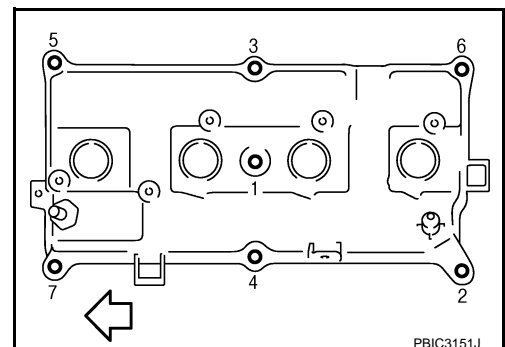
1st step : 1.96 N-m (0.20 kg-m, 17 in-lb)

2nd step : 8.33 N-m (0.85 kg-m, 73 in-lb)

- ⇐ Engine front

CAUTION:

Check if rocker cover gasket is not dropped from the installation groove of rocker cover.



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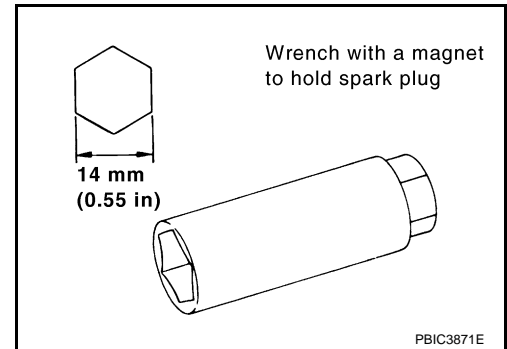
ENGINE MAINTENANCE (MR20DE)

< SERVICE INFORMATION >

3. Install spark plug using suitable tool.

Application	Except for California	For California
Make	: NGK	: Denso
Part number	: PLZKAR6A-11	: FXE20HR-11
Gap (nominal)	: 1.1 mm (0.043 in)	: 1.1 mm (0.043 in)

CAUTION:
Never drop or shock it.



4. Install ignition coil.

CAUTION:

- Handle it carefully and avoid impacts.
- Never disassemble.

5. Install intake manifold. Refer to [EM-18](#).

EVAP VAPOR LINES

EVAP VAPOR LINES : Checking EVAP Vapor Line

INFOID:000000004409316

1. Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration.
2. Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc.
Refer to [EC-44](#) .

ENGINE MAINTENANCE (QR25DE ENGINE)

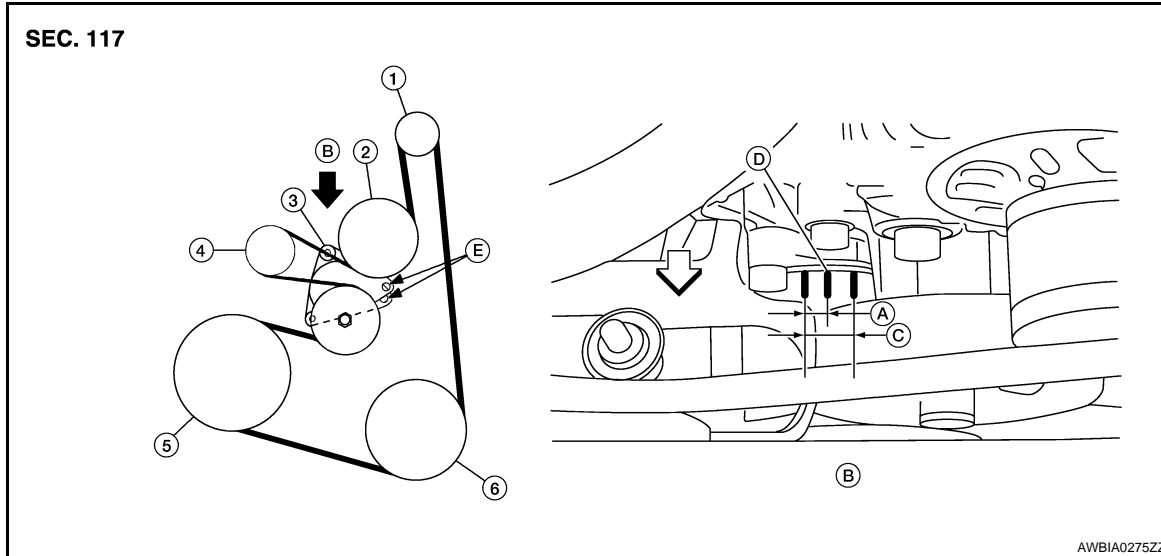
< SERVICE INFORMATION >

ENGINE MAINTENANCE (QR25DE ENGINE)

DRIVE BELT

DRIVE BELT : Checking Drive Belts

INFOID:000000004757355



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

WARNING:

Inspect the drive belt only when the engine is stopped.

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

NOTE:

- Check the drive belt auto-tensioner indicator (notch) when the engine is cold.
- When the new drive belt is installed, the range of possible use should be as shown.
- Visually check entire belt for wear, damage or cracks.
- If the indicator is out of allowable use range or belt is damaged, replace the drive belt.

DRIVE BELT : Tension Adjustment

INFOID:000000004757356

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

ENGINE COOLANT

ENGINE COOLANT : Inspection

INFOID:000000004757357

WARNING:

- **Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure fluid 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 down and turning it all the way.**

CHECKING COOLING SYSTEM HOSES

Check hoses for the following:

- Improper attachment
- Leaks
- Cracks
- Damage

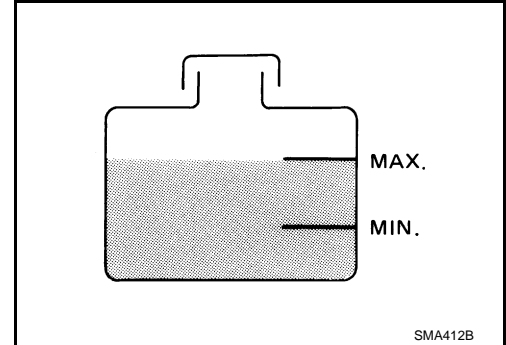
ENGINE MAINTENANCE (QR25DE ENGINE)

< SERVICE INFORMATION >

- Loose connections
- Chafing
- Deterioration

CHECKING RESERVOIR LEVEL

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



CHECKING COOLING SYSTEM FOR LEAKS

To check for leakage, apply pressure to the cooling system using Tool.

Tool number : EG17650301 (J-33984-A)

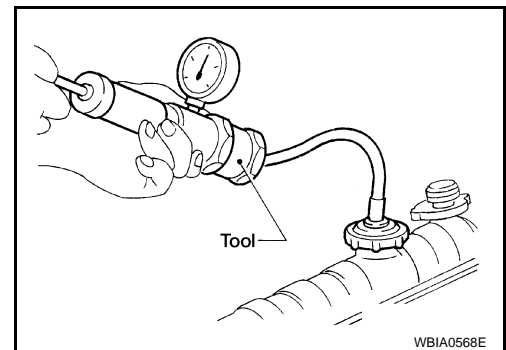
Testing pressure : 157 kPa (1.6 kg/cm², 23 psi)

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure coolant escaping from the radiator.

CAUTION:

Higher pressure than specified may cause radiator damage.



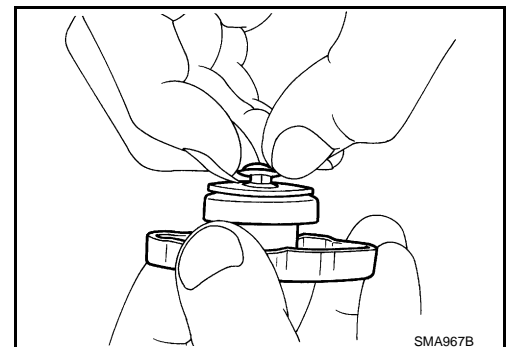
CHECKING RADIATOR CAP

1. Inspect the radiator cap.
 - Replace the cap if the metal plunger cannot be seen around the edge of the black rubber gasket.
 - Replace the cap if deposits of waxy residue or other foreign material are on the black rubber gasket or the metal retainer.

NOTE:

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

2. Pull the negative-pressure valve to open it and check that it closes completely when released.
 - Check that there is no dirt or damage on the valve seat of the radiator cap negative-pressure valve.
 - Check that there are no abnormalities in the opening and closing conditions of the negative-pressure valve.



ENGINE MAINTENANCE (QR25DE ENGINE)

< SERVICE INFORMATION >

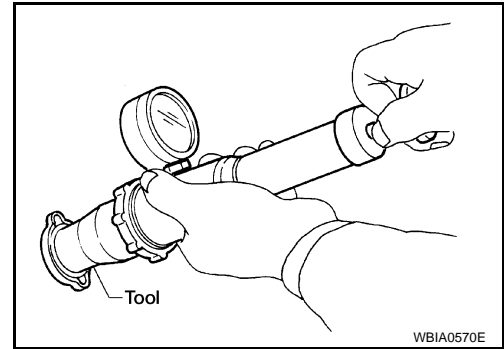
3. Check radiator cap relief pressure using Tool.

Tool number : EG17650301 (J-33984-A)

Standard: 78 – 98 kPa (0.8 – 1.0 kg/cm², 11 – 14 psi)

Limit: 59 kPa (0.6 kg/cm², 9 psi)

- When connecting the radiator cap to the tester, apply water or coolant to the cap seal surface.
- Replace the radiator cap if there is an abnormality in the negative-pressure valve, or if the open-valve pressure is outside of the standard values.



CHECKING RADIATOR

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

- Be careful not to bend or damage the radiator fins.
 - When radiator is cleaned without removal, remove all surrounding parts such as cooling fan shroud and horns. Then tape the harness and electrical connectors to prevent water from entering.
1. Apply water by hose to the back side of the radiator core, with the hose pointed vertically downward.
 2. Apply water again to all radiator core surfaces once per minute.
 3. Stop washing if any stains no longer flow out from the radiator.
 4. Blow air into the back side of radiator core, with the air hose pointed vertically downward.
 - Use compressed air lower than 490 kPa (5 kg/cm², 71 psi) and keep distance more than 30 cm (11.8 in).
 5. Blow air again into all the radiator core surfaces once per minute until no water sprays out.
 6. Check for leaks.

ENGINE COOLANT : Changing Engine Coolant

INFOID:000000004757358

WARNING:

- To avoid being scalded, do not change the engine coolant when the engine is hot.
- Wrap a thick cloth around radiator 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.
- Be careful no to allow engine coolant to contact drive belt.

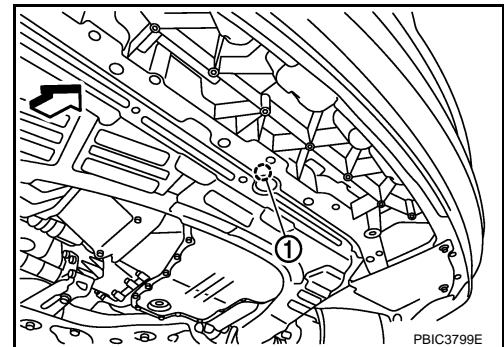
DRAINING ENGINE COOLANT

1. Remove the engine undercover using power tool.
2. Open the radiator drain plug (1) 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).

- ← Front

CAUTION:

- Perform this step when engine is cold.
- Do not spill engine coolant on drive belt.

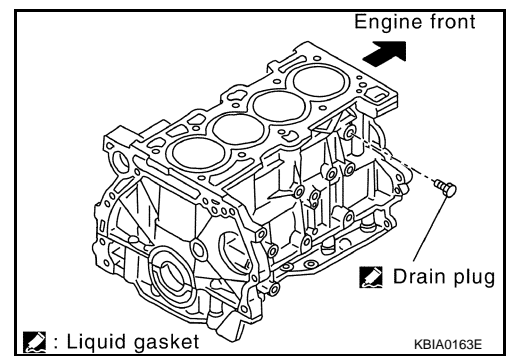


3. Follow this step for heater core removal/replacement only. Disconnect the upper heater hose at the engine side and apply moderate air pressure [103.46 kPa (15 psi, 1.055 kg/cm²) maximum air pressure] into the hose for 30 seconds to blow the excess coolant out of the heater core.
4. When draining all of the coolant in the system, remove the reservoir tank and drain the coolant, then clean the reservoir tank before installation.

ENGINE MAINTENANCE (QR25DE ENGINE)

< SERVICE INFORMATION >

- When draining all of the coolant in the system for engine removal or repair, open the drain plug on the cylinder block.



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

REFILLING ENGINE COOLANT

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

Radiator drain plug : Refer to [CO-43, "Removal and Installation"](#).

Cylinder block drain plug : Refer to [EM-185](#).

- If disconnected, reattach the upper radiator hose at the engine side.
- Set the vehicle heater controls to the full HOT and heater ON position. Turn the vehicle ignition ON with the engine OFF as necessary to activate the heater mode.
- Install the Tool by installing the radiator cap adapter onto the radiator neck opening. Then attach the gauge body assembly with the refill tube and the venturi assembly to the radiator cap adapter.

Tool number : [KV991J0070 \(J-45695\)](#)

- Insert the refill hose into the coolant mixture container that is placed at floor level. Make sure the ball valve is in the closed position.
 - Use Genuine NISSAN Long Life Anti-freeze coolant or equivalent, mixed 50/50 with distilled water or demineralized water.**
 - Refer to [MA-16, "Anti-freeze Coolant Mixture Ratio"](#).

Engine coolant capacity (with reservoir tank) : Refer to [MA-14](#).

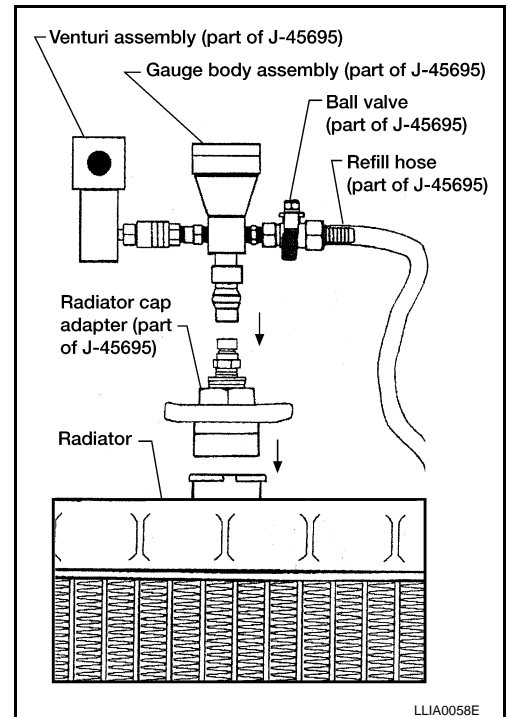
- Install an air hose to the venturi assembly, the air pressure must be within specification.

Compressed air supply pressure : 5.7 - 8.5 kPa (5.6 - 8.4 kg/cm², 80 - 120 psi)

CAUTION:

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

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

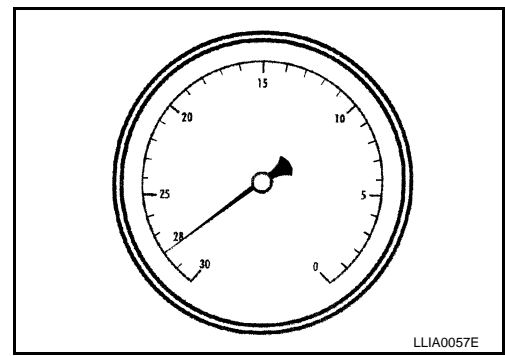


ENGINE MAINTENANCE (QR25DE ENGINE)

< SERVICE INFORMATION >

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

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



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

CAUTION:

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

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

FLUSHING COOLING SYSTEM

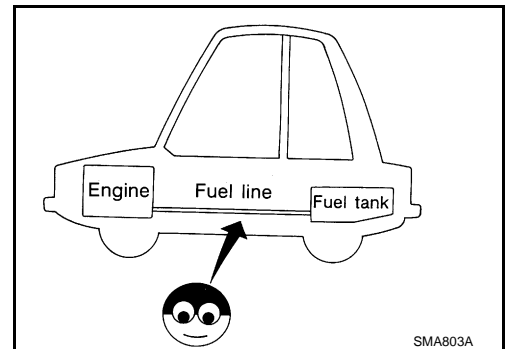
1. Fill radiator and reservoir tank with water and reinstall radiator cap.
2. Run engine until it reaches normal operating temperature.
3. Rev the engine two or three times under no-load.
4. Stop the engine and wait until it cools down.
5. Drain water from the cooling system.
6. Repeat steps 1 through 5 until clear water begins to drain from the radiator.

FUEL LINES

FUEL LINES : Checking Fuel Line

INFOID:000000004409320

Inspect the fuel lines and fuel tank for improperly attached hoses, leaks, cracks, damage, loose connections, chafing, or deterioration. If necessary, repair or replace any damaged parts.



AIR CLEANER FILTER

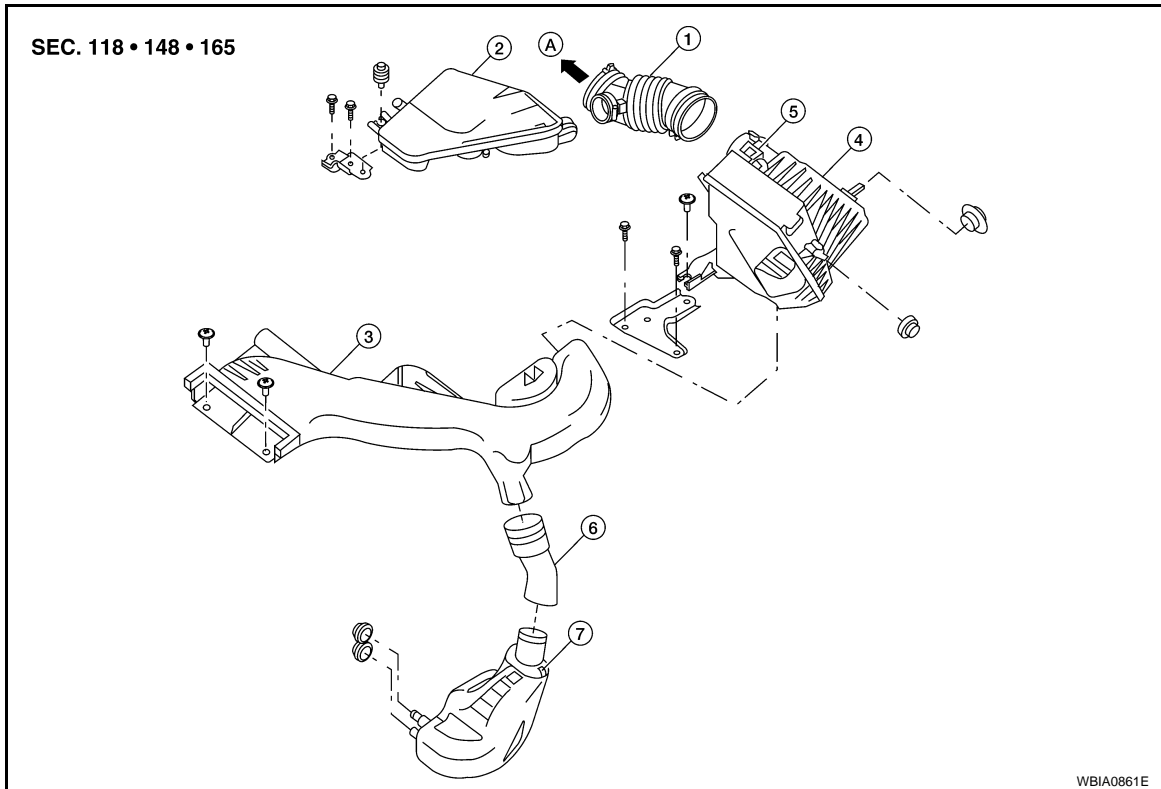
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ENGINE MAINTENANCE (QR25DE ENGINE)

< SERVICE INFORMATION >

AIR CLEANER FILTER : Removal and Installation

INFOID:000000004757359



- | | | |
|--|--|-------------------|
| 1. Electric throttle control actuator tube | 2. Air duct | 3. Front air duct |
| 4. Air cleaner case | 5. Mass air flow sensor | 6. Resonator tube |
| 7. Resonator in fender | A. To electric throttle control actuator | |

REMOVAL

1. Disconnect the mass air flow sensor electrical connector.
2. Disconnect the tube clamp at the electric throttle control actuator and the fresh air intake tube.
3. Remove air cleaner to electric throttle control actuator tube, air cleaner case, with mass air flow sensor attached.
 - Add marks as necessary for easier installation.
4. Remove mass air flow sensor from air cleaner case, as necessary.

CAUTION:
Handle the mass air flow sensor with care:

 - Do not shock it.
 - Do not disassemble it.
 - Do not touch the internal sensor.
5. Remove ECM bracket and CVT controller, as necessary.
6. Remove the resonator in the fender, as necessary.

INSTALLATION

Installation is in the reverse order of removal.

- Align marks.
- Attach each joint securely.
- Screw clamps firmly.

CHANGING AIR CLEANER FILTER

1. Depress the air cleaner case lid side clips and remove.
2. Remove the air cleaner filter.
3. Install a new air cleaner filter.
4. Installation is in the reverse order of removal.

ENGINE MAINTENANCE (QR25DE ENGINE)

< SERVICE INFORMATION >

ENGINE OIL

ENGINE OIL : Inspection

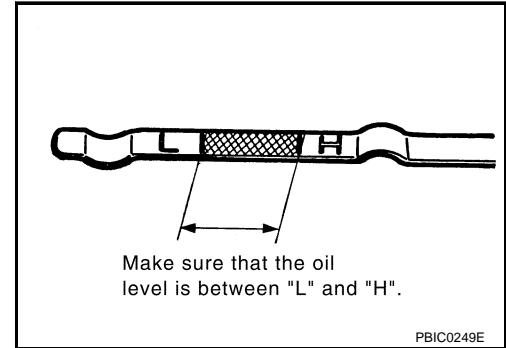
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ENGINE OIL LEVEL

NOTE:

Before starting engine, park vehicle on a level surface and check the engine oil level. If engine is already started, stop it and allow 10 minutes before checking.

1. Pull out oil level gauge and wipe it clean.
2. Insert oil level gauge and make sure the engine oil level is within the range as shown.
3. If it is out of range, add oil as necessary.



ENGINE OIL APPEARANCE

- Check engine oil for white milky or excessive contamination.
- If engine oil becomes milky, it is highly probable that it is contaminated with engine coolant. Repair or replace damaged parts.

ENGINE OIL LEAKAGE

Check for engine oil leakage around the following areas:

- Oil pan (upper and lower)
- Oil pan drain plug
- Oil pressure sensor
- Oil filter
- Intake valve timing control solenoid valve
- Front cover
- Mating surface between cylinder block and cylinder head
- Mating surface between cylinder head and rocker cover
- Crankshaft oil seals (front and rear)

OIL PRESSURE CHECK

WARNING:

- Be careful not to burn yourself, as engine oil may be hot.
- For M/T models, put the gearshift lever in the Neutral "N" position and apply the parking brake securely. For CVT models, put the selector lever in the Park "P" position.

1. Check engine oil level.
2. Remove undercover using power tool.
3. Disconnect harness connector at oil pressure sensor, and remove oil pressure sensor using a suitable tool.

CAUTION:

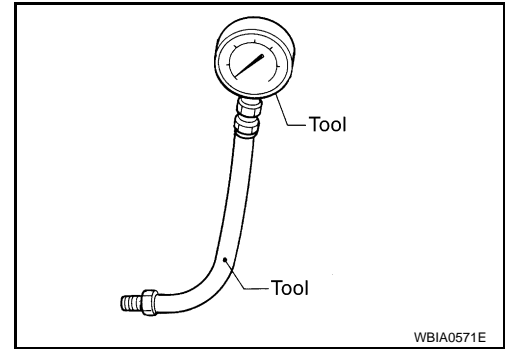
Do not drop or shock oil pressure sensor.

ENGINE MAINTENANCE (QR25DE ENGINE)

< SERVICE INFORMATION >

4. Install oil pressure gauge and hose.

Tool numbers : ST25051001 (J-25695-1)
: ST25052000 (J-25695-2)



5. Start engine and warm it up to normal operating temperature.
6. Check oil pressure with engine running under no-load. Refer to [LU-23, "Oil Pressure"](#).

NOTE:

When engine oil temperature is low, engine oil pressure becomes high.

If difference is extreme, check oil passage and oil pump for oil leaks.

7. After the inspections, install oil pressure sensor as follows:
 - a. Remove old liquid gasket adhering to oil pressure sensor and engine.
 - b. Apply liquid gasket and tighten oil pressure sensor to specification.
Use Genuine RTV Silicone Sealant or equivalent. Refer to [GI-42, "Recommended Chemical Product and Sealant"](#).

Oil pressure sensor : 14.7 N-m (1.5 kg-m, 11 ft-lb)

- c. Check engine oil level.
- d. After warming up engine, make sure there are no leaks of engine oil with running engine.

ENGINE OIL : Changing Engine Oil

INFOID:000000004757361

WARNING:

- Be careful not to burn yourself, as engine oil may be hot.
 - Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used engine oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.
1. Park vehicle on a level surface and check for engine oil leakage from engine components. Refer to [LU-16, "Inspection"](#).
 2. Warm up the engine.
 3. Stop engine and wait for 10 minutes.
 4. Remove oil filler cap and then remove oil pan drain plug.
 5. Drain the engine oil.
 6. Install the oil pan drain plug with a new washer.

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

CAUTION:

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

7. Refill with new engine oil. Refer to [MA-14, "QR25DE"](#).

CAUTION:

 - The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.
 - Always use oil level gauge to determine when the proper amount of engine oil in the engine.
8. Warm up engine and check area around drain plug and oil filter for engine oil leakage.
9. Stop engine and wait for 10 minutes.
10. Check the engine oil level. Refer to [LU-16, "Inspection"](#).

CAUTION:

Do not overfill the engine with oil.

ENGINE MAINTENANCE (QR25DE ENGINE)

< SERVICE INFORMATION >

OIL FILTER

OIL FILTER : Removal and Installation

INFOID:000000004757362

REMOVAL

1. Remove the oil filter using Tool.

Tool number : KV10115801 (J-38956)

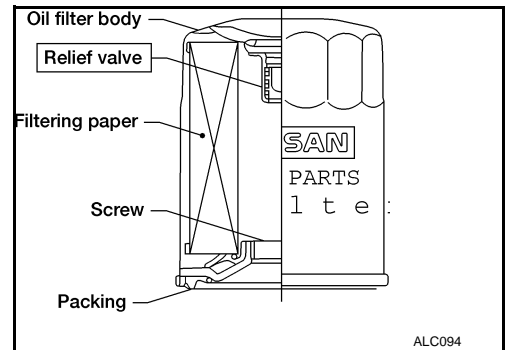
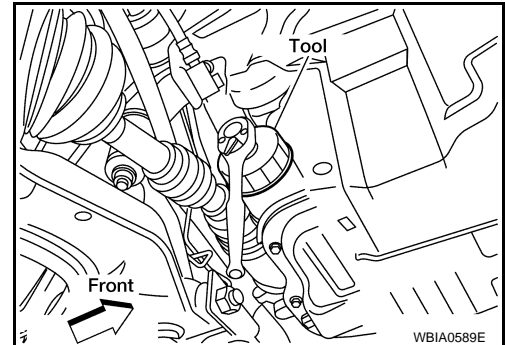
WARNING:

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

CAUTION:

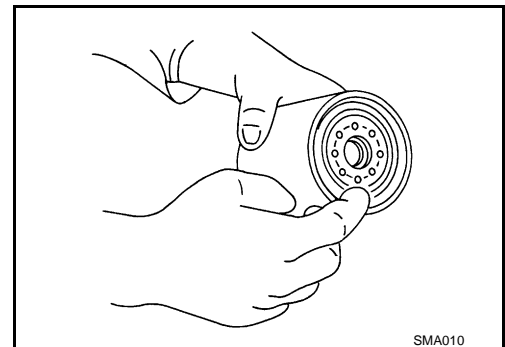
- When removing, prepare a shop cloth to absorb any engine oil leakage or spillage.
- Do not allow engine oil to adhere to drive belt.
- Completely wipe off any engine oil that adheres to the engine and the vehicle.

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



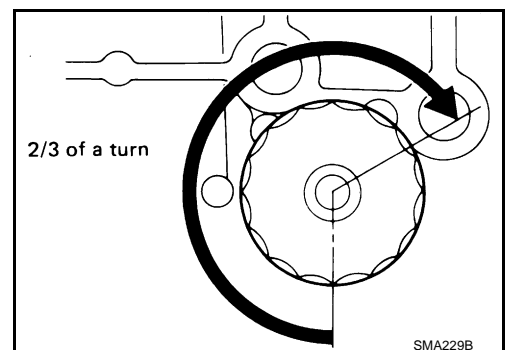
INSTALLATION

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



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

Oil filter : 17.7 N·m (1.8 kg·m, 13 ft·lb)



INSPECTION AFTER INSTALLATION

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ENGINE MAINTENANCE (QR25DE ENGINE)

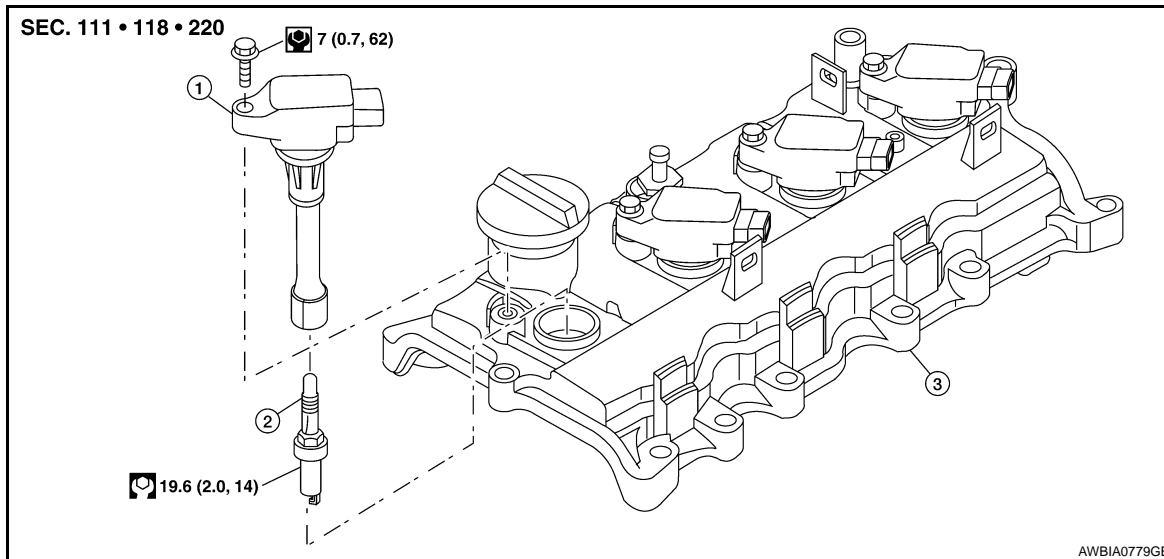
< SERVICE INFORMATION >

1. Check the engine oil level. Refer to [MA-35](#).
2. Start engine, and make sure there are no leaks of engine oil.
3. Stop engine and wait for 10 minutes.
4. Check the engine oil level and adjust as necessary. Refer to [LU-16. "Inspection"](#).

SPARK PLUG

SPARK PLUG : Removal and Installation

INFOID:000000004757363



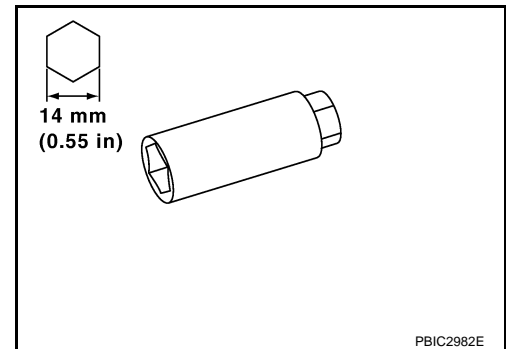
1. Ignition coil

2. Spark plug

3. Rocker cover

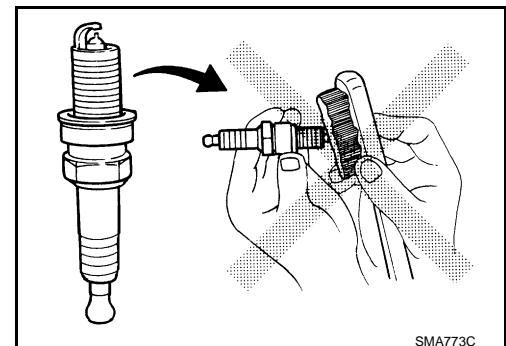
REMOVAL

1. Remove the ignition coil. Refer to [EM-142. "Removal and Installation"](#).
2. Remove the spark plug with a suitable spark plug wrench.



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.

ENGINE MAINTENANCE (QR25DE ENGINE)

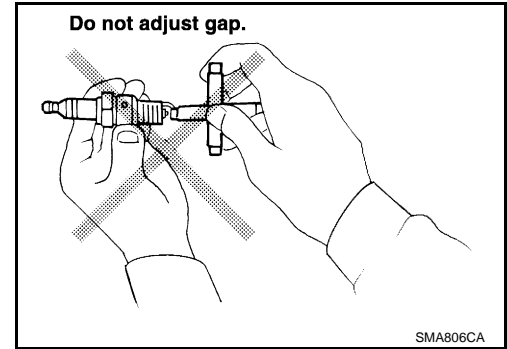
< SERVICE INFORMATION >

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.

Gap (nominal) : 1.1 mm (0.043 in)



INSTALLATION

Installation is in the reverse order of removal.

Spark Plug Types

Make	NGK
Part number	DILKAR6A-11
Gap (nominal)	1.1 mm (0.043 in)

EVAP VAPOR LINES

EVAP VAPOR LINES : Checking EVAP Vapor Line

INFOID:000000004409326

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

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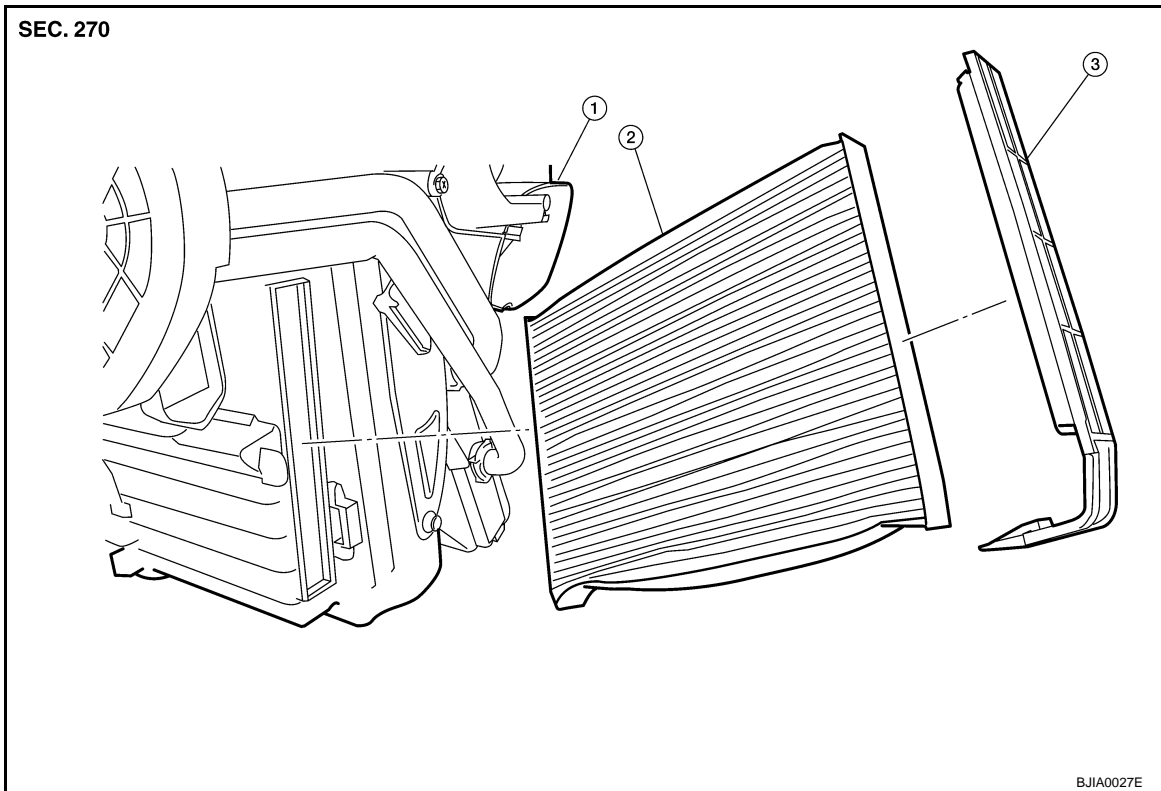
CHASSIS AND BODY MAINTENANCE

< SERVICE INFORMATION >

CHASSIS AND BODY MAINTENANCE

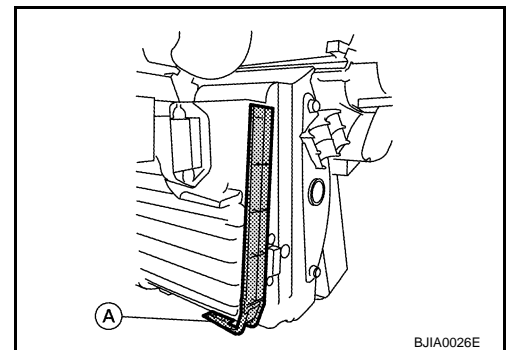
Changing In-cabin Microfilter

INFOID:000000004409327



1. Heater and cooling unit assembly 2. In-cabin microfilter 3. Filter cover

1. Remove the filter cover.
 - a. Release the filter cover tab (A) the pull the bottom of the filter cover out tilting it at an angle
 - b. Pull down the filter cover to disengage the hook at the top and remove the filter cover.



2. Remove the in-cabin microfilter.
3. Install the new in-cabin microfilter.

CAUTION:

 - Insert the new filter with the “UP” arrow in the correct orientation.
 - Insert the new filter with the “UP” arrow side of the filter facing the front of the vehicle.
4. Install the filter cover.
 - a. Insert the hook at the top of the filter cover into the heater and cooling unit case.

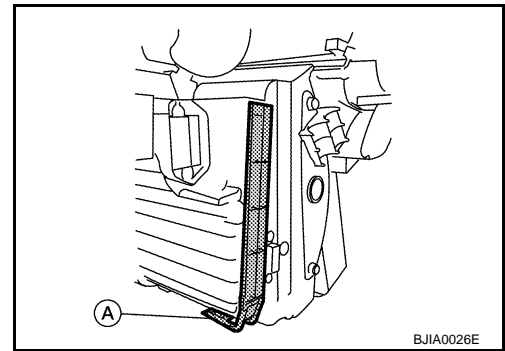
CHASSIS AND BODY MAINTENANCE

< SERVICE INFORMATION >

- b. Swing the filter cover into the heater and cooling unit case until the filter cover tab (A) snaps securely on the heater and cooling unit case.

CAUTION:

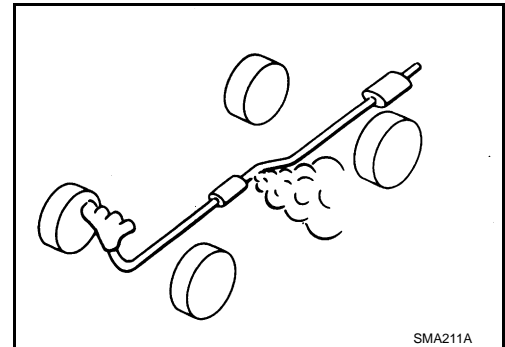
Check the filter cover to make sure it is securely fastened to the heater and cooling unit case.



Checking Exhaust System

INFOID:000000004409328

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



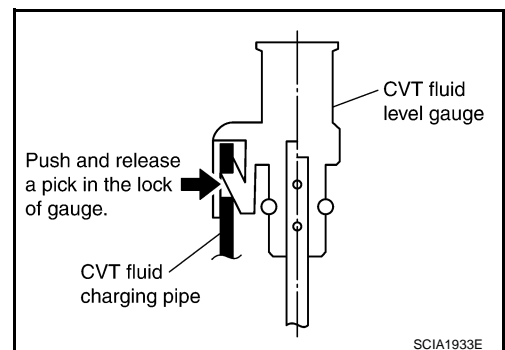
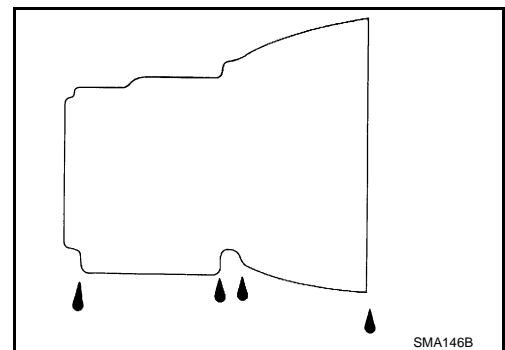
Checking CVT Fluid

INFOID:000000004757364

FLUID LEVEL CHECK

Fluid level should be checked with the fluid warmed up to 50° to 80°C (122° to 176°F).

1. Check for fluid leakage.
2. With the engine warmed up, drive the vehicle to warm up the CVT fluid. When ambient temperature is 20°C (68°F), it takes about 10 minutes for the CVT fluid to warm up to 50° to 80°C (122° to 176°F).
3. Park the vehicle on a level surface and set the parking brake.
4. With engine at idle, while depressing brake pedal, move the selector lever throughout the entire shift range and return it to the "P" position.
5. Press the tab on the CVT fluid level gauge to release the lock and pull out the CVT fluid level gauge from the CVT fluid charging pipe.



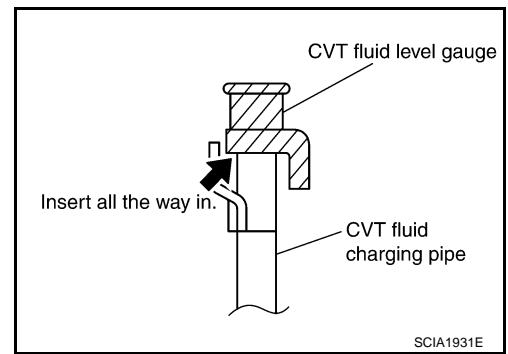
CHASSIS AND BODY MAINTENANCE

< SERVICE INFORMATION >

- Wipe fluid off the CVT fluid level gauge. Then rotate the CVT fluid level gauge 180° and re-insert it into the CVT charging pipe as far as it will go.

CAUTION:

Always use lint free paper towels to wipe fluid off the CVT fluid level gauge.

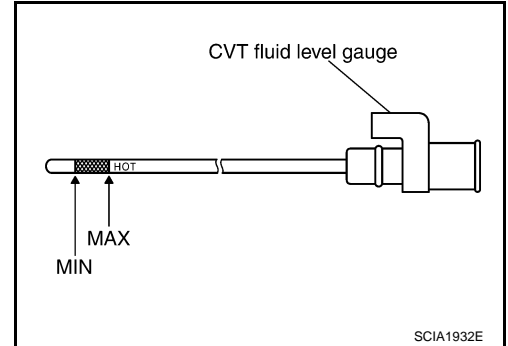


- Remove the CVT fluid level gauge and check that the fluid level is within the specified range as shown. If the fluid level is at or below the low side of the range, add the necessary specified NISSAN CVT fluid through the CVT charging pipe.

Fluid grade: Refer to [MA-14, "MR20DE"](#).

CAUTION:

- Only use specified NISSAN CVT fluid.
- Do not overfill the CVT.



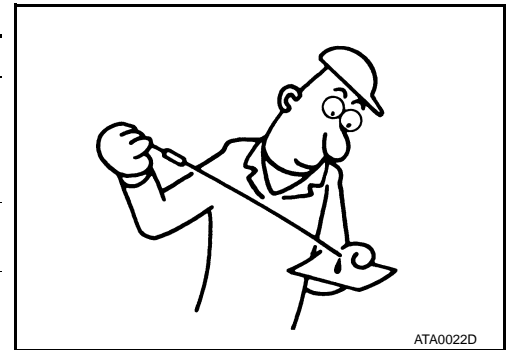
- Install the CVT fluid level gauge to the CVT fluid charging pipe until it locks.

CAUTION:

When CVT fluid level gauge is installed into the CVT fluid charging pipe, make sure that the CVT fluid level gauge is securely locked in place.

FLUID CONDITION CHECK

Fluid status	Conceivable cause	Required operation
Varnished (viscous varnish state)	CVT fluid become degraded due to high temperatures.	Replace the CVT fluid and check the CVT main unit and the vehicle for malfunctions (wire harness, cooler pipes, etc.)
Milky white or cloudy	Water in the fluid	Replace the CVT fluid and check for places where water is getting in.
Large amount of metal powder mixed in fluid	Unusual wear of sliding parts within CVT	Replace the CVT fluid and check for improper operation of the CVT.



Changing CVT Fluid

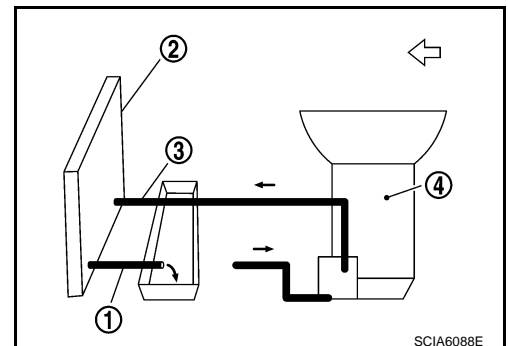
INFOID:000000004757365

- Warm up CVT fluid by driving the vehicle for 10 minutes.
 - ⇐: Vehicle front
 - Radiator (2)
 - CVT fluid cooler hose [inlet side (3)]
 - Transaxle assembly (4)
- Drain CVT fluid from CVT fluid cooler hose [outlet side (1)] and refill with new specified NISSAN CVT fluid in the CVT fluid charging pipe with the engine running at idle speed.
- Refill until new CVT fluid comes out from CVT fluid cooler hose [outlet side (1)].

NOTE:

About 30 to 50% extra fluid will be required for this procedure.

- Check fluid level and condition. Refer to [MA-41, "Checking CVT Fluid"](#).



CHASSIS AND BODY MAINTENANCE

< SERVICE INFORMATION >

- CVT fluid** : Refer to [CVT-196, "General Specification"](#)
Fluid capacity : Refer to [CVT-196, "General Specification"](#)

CAUTION:

- Use only Genuine NISSAN CVT Fluid NS-2. Never mix with other fluid.
- Using CVT fluid other than Genuine NISSAN CVT Fluid NS-2 will deteriorate in driveability and CVT durability, and may damage the CVT, which is not covered by the warranty.
- When filling CVT fluid, take care not to scatter heat generating parts such as exhaust.
- Sufficiently shake the container of CVT fluid before using.
- Delete CVT fluid deterioration date with CONSULT-III after changing CVT fluid. Refer to TM-34, "CONSULT-III Function (TRANSMISSION)".

Checking Clutch Fluid Level and Leaks

INFOID:000000004409331

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

Checking Clutch System

INFOID:000000004409332

Check fluid lines and operating cylinder for improper attachment, cracks, damage, loose connections, chafing and deterioration.

Changing M/T Oil - RS6F94R

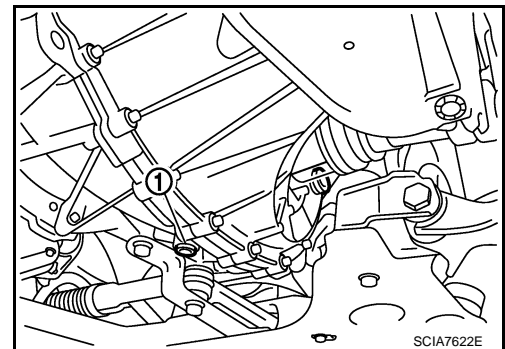
INFOID:000000004409333

DRAINING

1. Start engine and let it run to warm up transaxle.
2. Stop engine. Remove drain plug (1) and drain oil.
3. Install a new gasket onto drain plug (1) and install it into transaxle. Tighten drain plug to specification. Refer to [MT-18, "Disassembly and Assembly"](#).

CAUTION:

Do not reuse gasket.



FILLING

1. Remove filler plug (1). Fill with new oil until oil level reaches the specified limit at filler plug hole as shown.

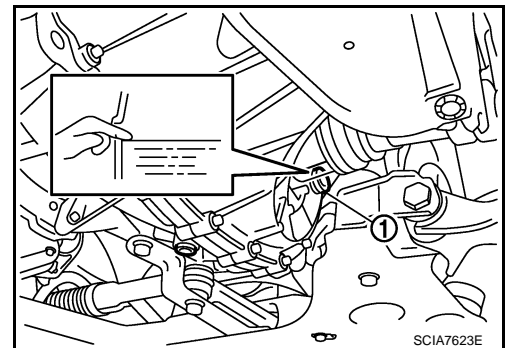
Oil grade and capacity

: Refer to [MA-14, "MR20DE"](#).

2. After refilling oil, check oil level. Install a new gasket on filler plug (1), then install it into transaxle. Tighten filler plug to specification. Refer to [MT-18, "Disassembly and Assembly"](#).

CAUTION:

Do not reuse gasket.



Checking M/T Oil - RS6F94R

INFOID:000000004409334

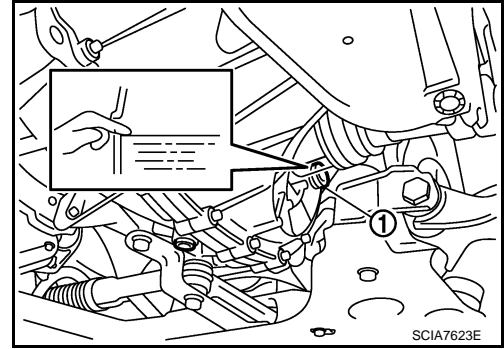
OIL LEAKAGE AND OIL LEVEL

1. Make sure that oil is not leaking from transaxle or around it.

CHASSIS AND BODY MAINTENANCE

< SERVICE INFORMATION >

- Remove filler plug (1) and check oil level at filler plug hole as shown.
CAUTION:
Do not start engine while checking oil level.
- Install a new gasket onto filler plug (1) and install it into transaxle. Tighten filler plug to specification. Refer to [MT-18, "Disassembly and Assembly"](#).
CAUTION:
Do not reuse gasket.

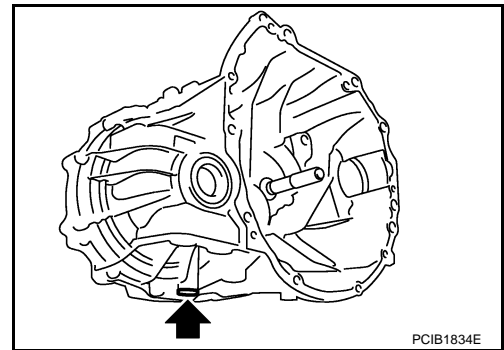


Changing M/T Oil - RS6F52A and RS6F52H

INFOID:000000004409335

DRAINING

- Start engine and let it run to warm up transaxle.
- Stop engine. Remove transaxle drain plug and drain oil.
- Set a gasket on drain plug and install it to transaxle. Tighten drain plug to the specified torque. Refer to [MT-68, "Disassembly and Assembly"](#).
CAUTION:
Do not reuse gasket.



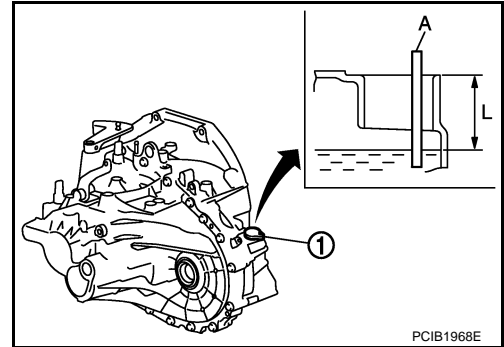
FILLING

- Remove plug (1). Fill the transaxle with new oil and check the oil level (L) using suitable gauge (A) as shown.

Oil grade and capacity : Refer to [MA-14, "QR25DE"](#).

Oil level (L) : 61.0 - 67.0 mm (2.402 - 2.638 in)

- Set an O-ring on plug (1) and then install it to transaxle. Tighten to the specified torque. Refer to [MT-68, "Disassembly and Assembly"](#).
CAUTION:
Do not reuse O-ring.



Checking M/T Oil - RS6F52A and RS6F52H

INFOID:000000004409336

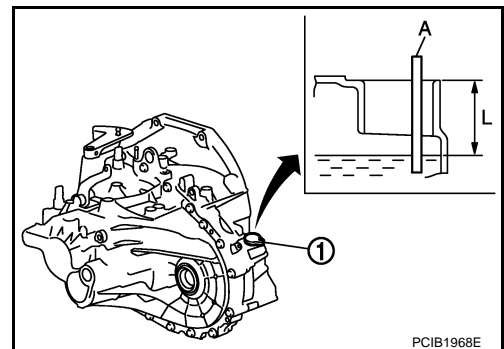
OIL LEAKAGE AND OIL LEVEL

- Make sure that oil is not leaking from transaxle or around it.
- Remove plug (1).
- Check the oil level (L) using suitable gauge (A) as shown.

Oil level (L) : 61.0 - 67.0 mm (2.402 - 2.638 in)

CAUTION:
Do not start engine while checking oil level.

- Set an O-ring on plug (1) and then install it to transaxle. Tighten to the specified torque. Refer to [MT-68, "Disassembly and Assembly"](#).
CAUTION:
Do not reuse O-ring.



CHASSIS AND BODY MAINTENANCE

< SERVICE INFORMATION >

Balancing Wheels

INFOID:000000004409337

REMOVAL

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

CAUTION:

Be careful not to scratch the wheel during removal procedures.

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

CAUTION:

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

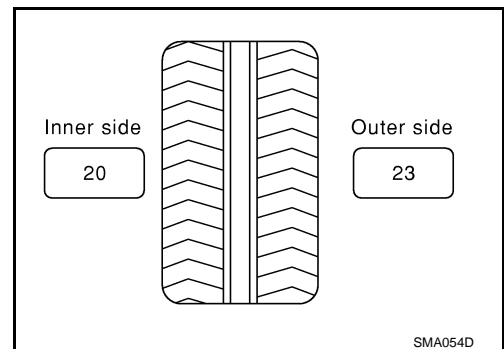
WHEEL BALANCE ADJUSTMENT

NOTE:

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

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

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



CAUTION:

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

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

Calculation example:

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

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

Example:

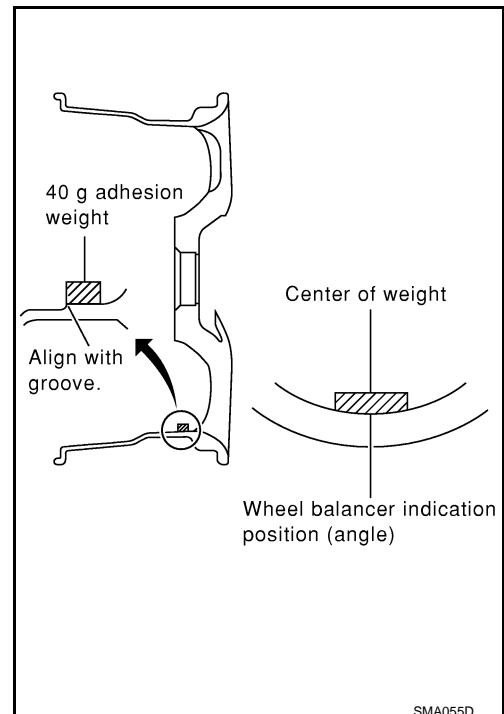
37.4 g = 35 g (1.23 oz.)

37.5 g = 40 g (1.41 oz.)

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

CAUTION:

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



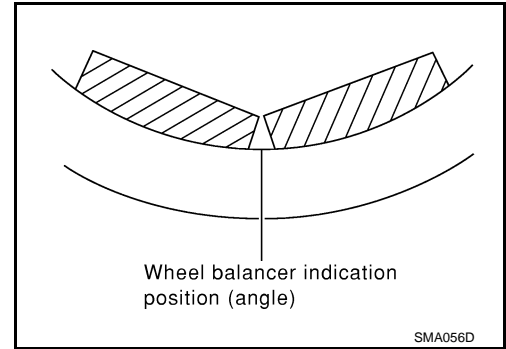
CHASSIS AND BODY MAINTENANCE

< SERVICE INFORMATION >

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

CAUTION:

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



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

CAUTION:

Do not install more than two balance weights.

5. Start wheel balancer. Make sure that inner and outer residual unbalance values are 5 g (0.18 oz.) each or below.
 • If either residual unbalance value exceeds 5 g (0.18 oz.), repeat installation procedures.

Wheel Balance (Maximum Allowable Unbalance)

Maximum allowable unbalance	Dynamic (At rim flange)	5 g (0.18 oz.) (one side)
	Static	10 g (0.35 oz.)

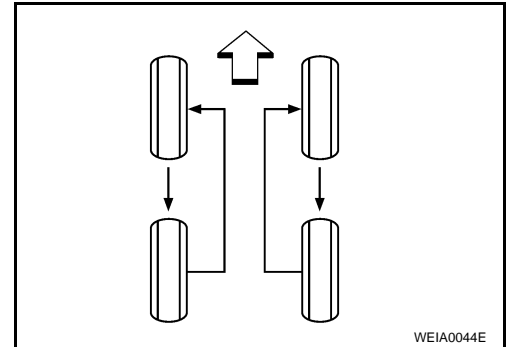
Rotation

INFOID:000000004409338

- Follow the maintenance schedule for tire rotation service intervals. Refer to [MA-8](#).
- ←: Front
- Do not include the T-type spare tire when rotating tires.
- Tighten wheel nuts to specification.

CAUTION:

- **When installing wheels, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.**
- **Be careful not to tighten wheel nut at torque exceeding the specification to prevent damage of disc rotor.**



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

- After rotating the tires, adjust the tire pressure. Refer to [WT-27, "Tire"](#).

Checking Brake Fluid Level and Leaks

INFOID:000000004409339

- Make sure the fluid level in the reservoir tank is within the standard (between MAX and MIN lines).
- Visually check around the reservoir tank for fluid leakage.
- If fluid level is excessively low, check brake system for fluid leakage.
- Release parking brake lever and see if brake warning lamp goes off. If not, check brake system for fluid leakage.

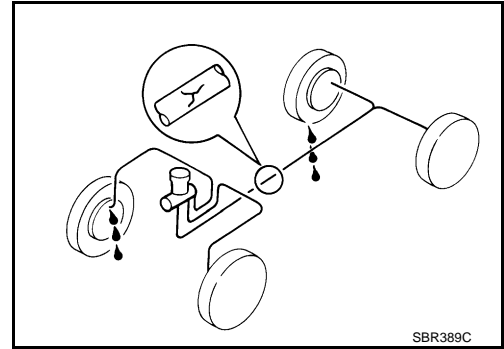
CHASSIS AND BODY MAINTENANCE

< SERVICE INFORMATION >

Checking Brake Line and Cables

INFOID:000000004409340

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



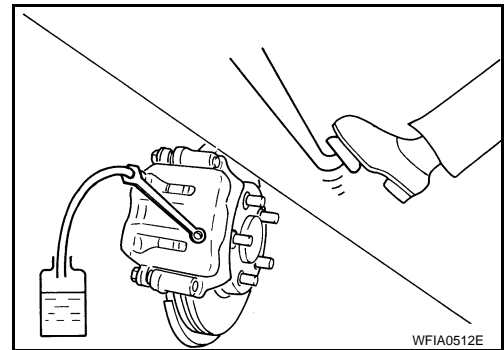
Changing Brake Fluid

INFOID:000000004409341

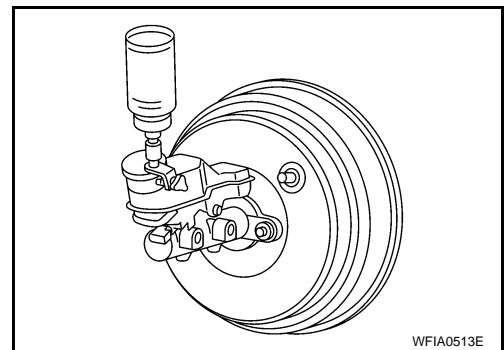
CAUTION:

- Refill using recommended brake fluid. Refer to [MA-14](#).
- Never reuse drained brake fluid.
- Be careful not to splash brake fluid on painted areas; it may cause paint damage. If brake fluid is splashed on painted areas, immediately wipe them with cloth and wash it away with water.
- Before working, disconnect connectors of ABS actuator and electric unit (control unit) or battery cable from the negative terminal.

1. Connect a vinyl tube to bleed valve.
2. Depress the brake pedal, loosen the bleed valve, and gradually remove the brake fluid.



3. Clean inside of reservoir tank, and refill with new brake fluid.
4. Loosen bleed valve, depress brake pedal slowly to full stroke and then release it. Repeat the procedure every 2 or 3 seconds until the new brake fluid comes out, then close the bleed valve while depressing the brake pedal. Repeat the same procedure for each wheel.
5. Bleed air. Refer to [BR-9. "Bleeding Brake System"](#).



Checking Disc Brake

INFOID:000000004409342

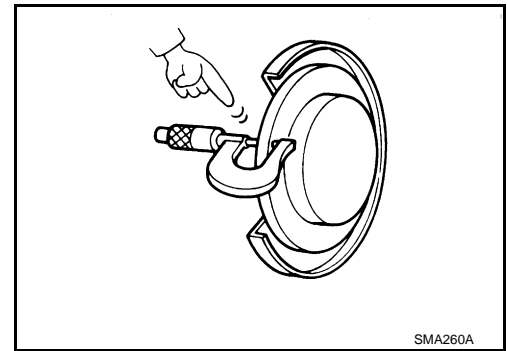
ROTOR

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CHASSIS AND BODY MAINTENANCE

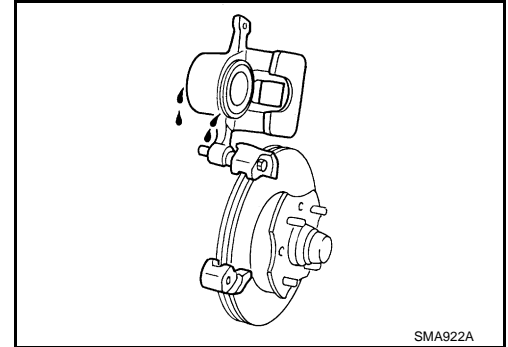
< SERVICE INFORMATION >

Check the rotor condition and thickness. Resurface or replace the rotor as necessary. Refer to [BR-47, "Front Disc Brake"](#).



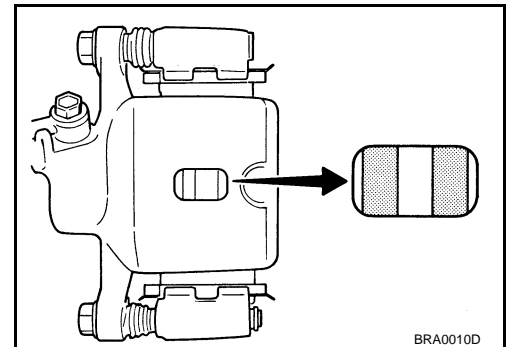
CALIPER

Check the caliper for leakage.



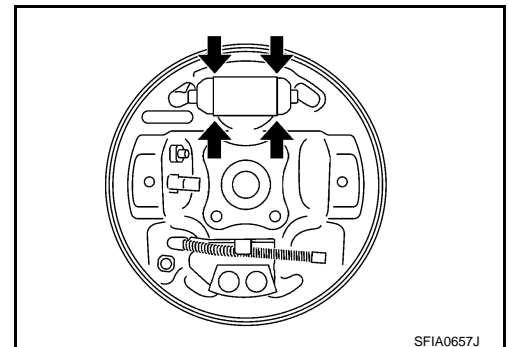
PAD

Check the brake pads for wear or damage. Refer to [BR-24, "On Board Inspection"](#).



WHEEL CYLINDER

Check for leakage.

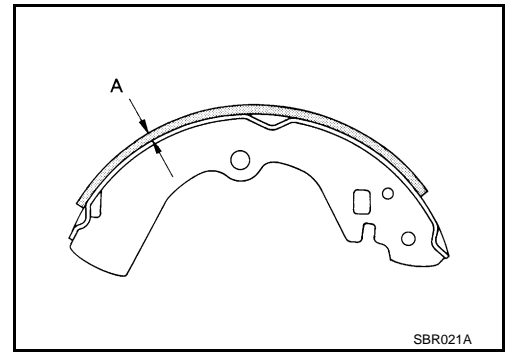


LINING

CHASSIS AND BODY MAINTENANCE

< SERVICE INFORMATION >

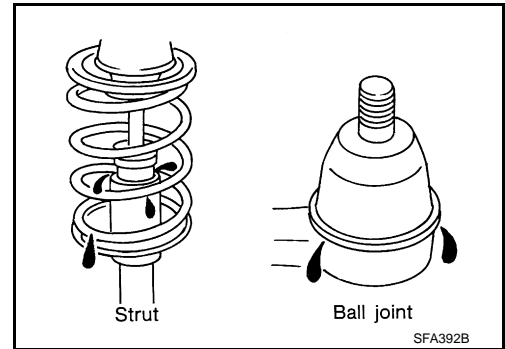
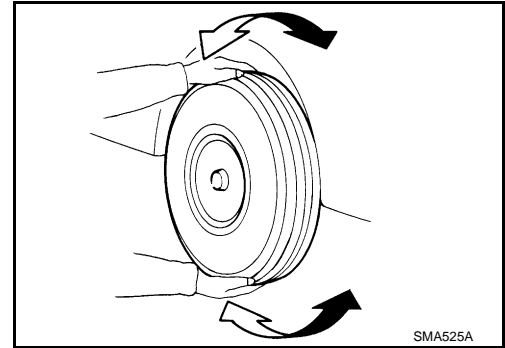
Check for lining thickness (A). Refer to [BR-44. "Disassembly and Assembly of Wheel Cylinder"](#) .



Axle and Suspension Parts

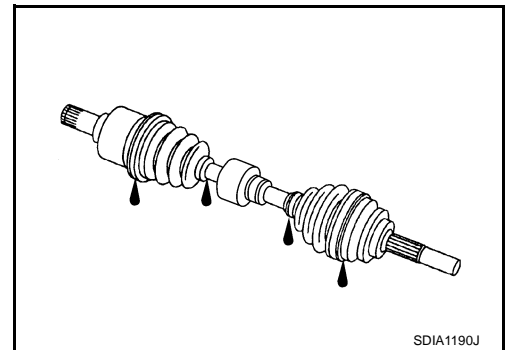
Check front and rear axle and suspension parts for excessive play, cracks, wear or other damage.

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



Drive Shaft

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



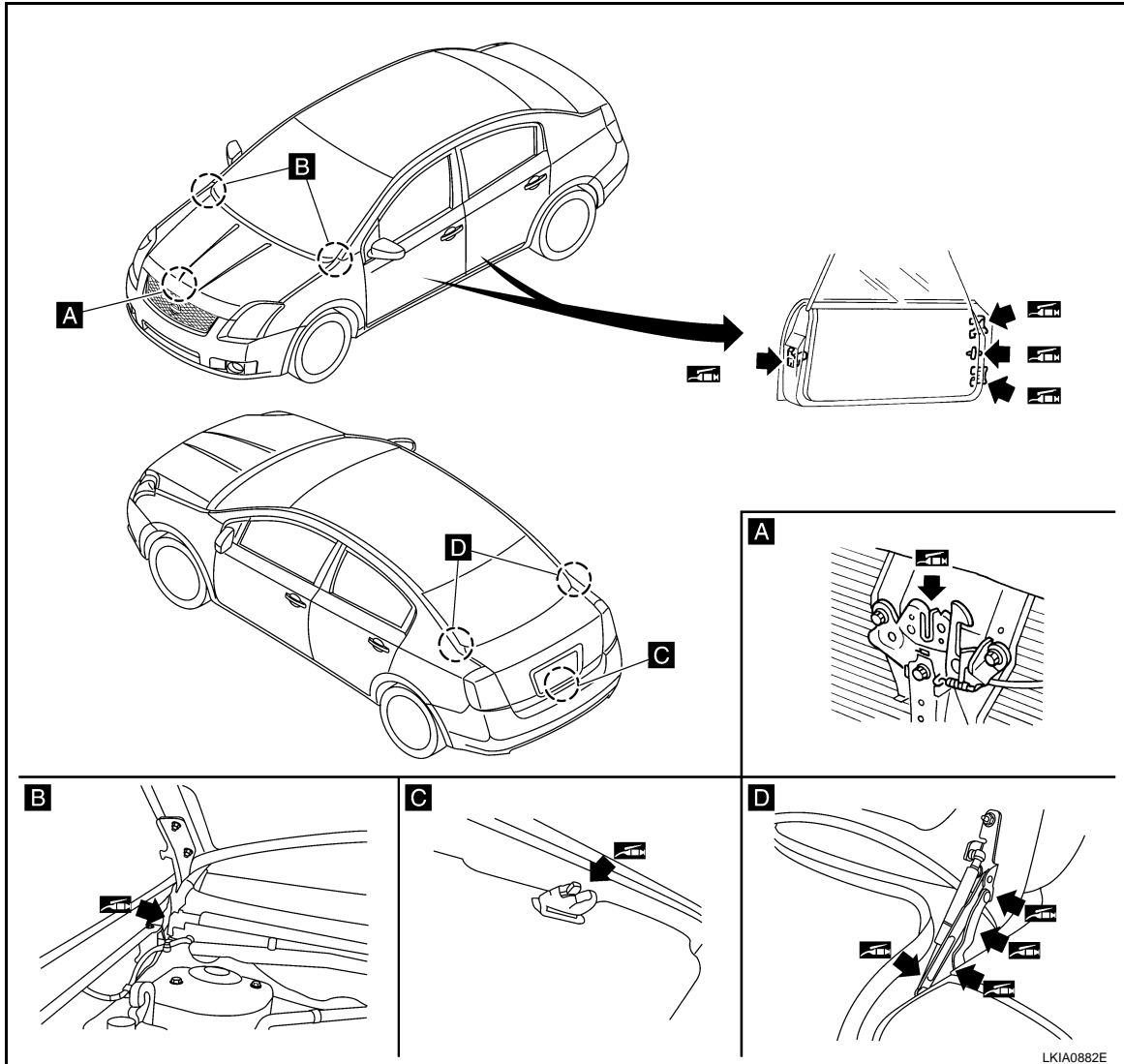
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CHASSIS AND BODY MAINTENANCE

< SERVICE INFORMATION >

Lubricating Locks, Hinges and Hood Latch

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Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters

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Check the seat belt buckles, webbing, retractors, anchors and adjusters. Replace any seat belt assembly as necessary. Refer to [SB-8. "Seat Belt Inspection"](#).

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

CAUTION:

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

CHASSIS AND BODY MAINTENANCE

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- When replacing any seat belt assembly always use a Genuine NISSAN seat belt assembly.

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