

SECTION MA

MAINTENANCE

CONTENTS

PRECAUTION	3	FOR MEXICO : Engine Coolant Mixture Ratio	20
PRECAUTIONS	3	ENGINE MAINTENANCE (QR25DE ENGINE)...	22
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	3	DRIVE BELTS	22
PREPARATION	4	DRIVE BELTS : Exploded View	22
PREPARATION	4	DRIVE BELTS : Checking Drive Belts	22
Special Service Tool	4	DRIVE BELTS : Tension Adjustment	22
Commercial Service Tool	4	ENGINE COOLANT	22
PERIODIC MAINTENANCE	6	ENGINE COOLANT : System Inspection	22
GENERAL MAINTENANCE	6	ENGINE COOLANT : Changing Engine Coolant	23
FOR USA AND CANADA	6	FUEL LINES	25
FOR USA AND CANADA : General Maintenance.....	6	FUEL LINES : Checking Fuel Line	25
FOR MEXICO	7	AIR CLEANER FILTER	25
FOR MEXICO : General Maintenance	8	AIR CLEANER FILTER : Removal and Installation	25
PERIODIC MAINTENANCE	9	ENGINE OIL	26
FOR USA AND CANADA	9	ENGINE OIL : Inspection	26
FOR USA AND CANADA : Periodic Maintenance.....	9	ENGINE OIL : Changing Engine Oil	26
FOR MEXICO	13	OIL FILTER	27
FOR MEXICO : Periodic Maintenance	13	OIL FILTER : Removal and Installation	27
RECOMMENDED FLUIDS AND LUBRICANTS	16	SPARK PLUG	28
FOR USA AND CANADA	16	SPARK PLUG : Exploded View	28
FOR USA AND CANADA : Fluids and Lubricants... ..	16	SPARK PLUG : Removal and Installation	28
FOR USA AND CANADA : SAE Viscosity Number	18	EVAP VAPOR LINES	29
FOR USA AND CANADA : Anti-Freeze Coolant Mixture Ratio	18	EVAP VAPOR LINES : Checking EVAP Vapor Line	30
FOR MEXICO	18	ENGINE MAINTENANCE (VQ40DE)	31
FOR MEXICO : Fluids and Lubricants	18	DRIVE BELT	31
FOR MEXICO : SAE Viscosity Number	19	DRIVE BELT : Exploded View	31
		DRIVE BELT : Checking Drive Belts	31
		DRIVE BELT : Adjustment	31
		ENGINE COOLANT	31
		ENGINE COOLANT : System Inspection	31

ENGINE COOLANT : Changing Engine Coolant ...	32	DIFFERENTIAL GEAR OIL : Changing Differential Gear Oil	48
FUEL LINES	34	DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil	48
FUEL LINES : Checking Fuel Line	35	DIFFERENTIAL GEAR OIL : Rear Final Drive - C200	48
FUEL FILTER	35	DIFFERENTIAL GEAR OIL : Changing Differential Gear Oil	48
FUEL FILTER : Changing Fuel Filter	35	DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil	49
AIR CLEANER FILTER	35	DIFFERENTIAL GEAR OIL : Rear Final Drive - M226	49
AIR CLEANER FILTER : Exploded View	35	DIFFERENTIAL GEAR OIL : Changing Differential Gear Oil	49
AIR CLEANER FILTER : Removal and Installation ...	35	DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil	50
ENGINE OIL	36	DIFFERENTIAL GEAR OIL : Rear Final Drive - M226 (ELD)	50
ENGINE OIL : Inspection	36	DIFFERENTIAL GEAR OIL : Changing Differential Gear Oil	50
ENGINE OIL : Changing Engine Oil	36	DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil	51
OIL FILTER	37	WHEELS	51
OIL FILTER : Removal and Installation	37	WHEELS : Balancing Wheels	51
SPARK PLUG	38	WHEELS : Rotation	53
SPARK PLUG : Exploded View	38	BRAKE FLUID LEVEL AND LEAKS	53
SPARK PLUG : Removal and Installation	38	BRAKE FLUID LEVEL AND LEAKS : On Board Inspection	53
EVAP VAPOR LINES	39	BRAKE LINES AND CABLES	53
EVAP VAPOR LINES : Checking EVAP Vapor Line	39	BRAKE LINES AND CABLES : Checking Brake Line and Cables	54
CHASSIS AND BODY MAINTENANCE	41	DISC BRAKE	54
IN-CABIN MICROFILTER	41	DISC BRAKE : Checking Disc Brake	54
IN-CABIN MICROFILTER : Removal and Installation	41	STEERING GEAR AND LINKAGE	54
EXHAUST SYSTEM	41	STEERING GEAR AND LINKAGE : Checking Steering Gear and Linkage	55
EXHAUST SYSTEM : Checking Exhaust System...	42	POWER STEERING FLUID AND LINES	55
TRANSMISSION OIL	42	POWER STEERING FLUID AND LINES : Checking Power Steering Fluid and Line	55
TRANSMISSION OIL : Checking the A/T Fluid (ATF)	42	AXLE AND SUSPENSION PARTS	55
TRANSMISSION OIL : Changing the A/T Fluid (ATF)	44	AXLE AND SUSPENSION PARTS : Checking Axle and Suspension Parts	55
M/T OIL	45	LOCKS, HINGES AND HOOD LATCH	56
M/T OIL : FS6R31A	45	LOCKS, HINGES AND HOOD LATCH : Lubricating Locks, Hinges and Hood Latches	57
M/T OIL : Changing	45	SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS	57
M/T OIL : Checking	45	SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS : Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters ...	57
M/T OIL : FS5R30A	45		
M/T OIL : Changing	45		
M/T OIL : Checking	46		
TRANSFER FLUID	46		
TRANSFER FLUID : Replacement	46		
TRANSFER FLUID : Inspection	47		
PROPELLER SHAFT	47		
PROPELLER SHAFT : Checking Propeller Shaft...	47		
DIFFERENTIAL GEAR OIL	47		
DIFFERENTIAL GEAR OIL : Front Final Drive - R180A	48		

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000006252245

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 SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, 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 SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

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

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

PREPARATION

< PREPARATION >

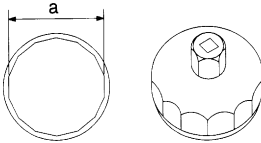
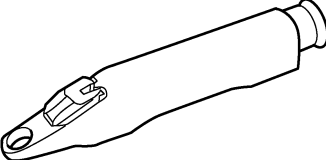
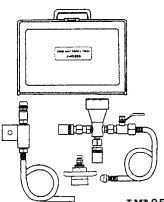
PREPARATION

PREPARATION

Special Service Tool


INFOID:000000006252246

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

Tool number (Kent-Moore No.) Tool name	Description
KV10115801 (J-38956) Oil filter cap wrench <div>  <p>NT375</p> </div>	Removing and installing oil filter a: 64.3 mm (2.531 in)
KV991J0010 (J-23688) Engine coolant refractometer <div>  <p>WBIA0539E</p> </div>	Checking concentration of ethylene glycol in engine coolant
KV991J0070 (J-45695) Coolant refill tool <div>  <p>LMA053</p> </div>	Filling cooling system

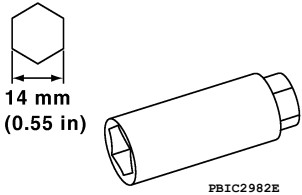
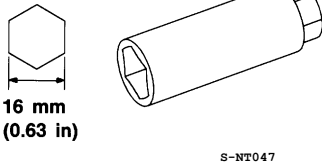
Commercial Service Tool

INFOID:000000006252247

Tool name	Description
Power tool <div>  <p>PIIB1407E</p> </div>	Loosening nuts, screws and bolts

PREPARATION

< PREPARATION >

Tool name	Description
Spark plug wrench  14 mm (0.55 in) PBIC2982E	Removing and installing spark plug for QR25DE engine
Spark plug wrench  16 mm (0.63 in) S-NT047	Removing and installing spark plug for VQ40DE engine

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

MA

GENERAL MAINTENANCE

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE

GENERAL MAINTENANCE

FOR USA AND CANADA

FOR USA AND CANADA : General Maintenance

INFOID:000000006252248

EXPLANATION OF GENERAL MAINTENANCE

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 these checks and inspections themselves or have their NISSAN dealers do them.

OUTSIDE THE VEHICLE

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

Item		Reference page
Tires	Check the pressure with a gauge often and always prior to long distance trips. Adjust the pressure in all tires, including the spare, to the pressure specified. Check carefully for damage, cuts or excessive wear.	WT-51, "Tire"
Wheel lug nuts	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	MA-53
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).	MA-53
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-49, "Transmitter (Pressure Sensor)"
Wheel alignment and balance	If the vehicle should pull to either side while driving on a straight and level road, or if you detect uneven or abnormal tire wear, there may be a need for wheel alignment. If the steering wheel or seat vibrates at normal highway speeds, wheel balancing may be needed.	MA-51, FSU-6, "Front Wheel Alignment"
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 back tailgate. 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-57
Lamps	Make sure that the head lamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check head lamp aim. Clean the head lamps on a regular basis.	EXL-135, "Aiming Adjustment"

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.	WCS-4, "WARNING CHIME SYSTEM : System Description"
Windshield wiper and washer	Check that the wipers and washer operate properly and that the wipers do not streak.	—
Windshield defroster	Check that the air comes out of the defroster outlets properly and in sufficient quantity when operating the heater or air conditioner.	—
Steering wheel	Check that it has the specified play. Check for changes in the steering condition, such as excessive play, hard steering or strange noises. Free play: Less than 35mm (1.38in)	ST-30, "Steering Wheel"

GENERAL MAINTENANCE

< PERIODIC MAINTENANCE >

Item		Reference page
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.	—
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-7, "Seat Belt Inspection" , SB-12, "Seat Belt Inspection"
Accelerator pedal	Check the pedal for smooth operation and make sure the pedal does not catch or require uneven effort. Keep the floor mats away from the pedal.	—
Brakes	Check that the brake does not pull the vehicle to one side when applied.	—
Brake pedal and booster	Check the pedal for smooth operation and make sure it has the proper distance under it when depressed fully. Check the brake booster function. Keep the floor mats away from the pedal.	BR-10, "Inspection" , BR-19, "Inspection and Adjustment"
Clutch Pedal	Make sure the pedal operates smoothly and check that it has proper free play.	CL-26, "Clutch Pedal"
Parking brake	Check that the parking brake control 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, "On-Vehicle Service"
Automatic transmission "Park" mechanism	On a fairly steep hill check that the vehicle is held securely with the selector lever in the P (Park) position without applying the brakes.	—

UNDER THE HOOD AND VEHICLE

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

Item		Reference page
Windshield washer fluid	Check that there is adequate fluid in the tank.	—
Engine coolant level	Check the coolant level when the engine is cold.	MA-22 (QR) , MA-31 (VQ)
Radiator and hoses	Check the front of the radiator and clean off any dirt, insects, leaves, etc., that may have accumulated. Make sure the hoses have no cracks, deformation, deterioration or loose connections.	—
Brake and clutch fluid levels	Make sure that the brake and clutch fluid levels are between the "MAX" and "MIN" lines on the reservoirs	MA-53 CL-9, "Bleeding"
Battery	Check the fluid level in each cell. It should be between the "MAX" and "MIN" lines. Vehicles operated in high temperatures or under severe conditions require frequent checks of the battery fluid level.	—
Engine drive belt	Make sure that no belt is frayed, worn, cracked or oily.	MA-22 (QR) , MA-31 (VQ)
Engine oil level	Check the level on the dipstick after parking the vehicle on a level ground and turning off the engine.	MA-26 (QR) , MA-36 (VQ)
Power steering fluid level and lines	Check the level on the reservoir with the engine off. Check the lines for improper attachment, leaks, cracks, etc.	MA-55
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-42
Underbody	The underbody is frequently exposed to corrosive substances such as those used on icy roads or to control dust. It is very important to remove these substances, otherwise rust will form on the floor pan, frame, fuel lines and around the exhaust system. At the end of winter, the underbody should be thoroughly flushed with plain water, being careful to clean those areas where mud and dirt can easily accumulate.	—
Fluid leaks	Check under the vehicle for fuel, oil, water or other fluid leaks after the vehicle has been parked for a while. Water dripping from the air conditioner after use is normal. If you should notice any leaks or gasoline fumes are evident, check for the cause and correct it immediately.	—

FOR MEXICO

GENERAL MAINTENANCE

< PERIODIC MAINTENANCE >

FOR MEXICO : General Maintenance

INFOID:000000006819901

EXPLANATION OF GENERAL MAINTENANCE

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 these 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 the tires, including the spare, to the pressure specified. Check carefully for damage, cuts or excessive wear.	WT-51, "Tire"
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 back tailgate. 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-57
Tire rotation	Tires should be rotated every 10,000 km (6,000 miles) for 2WD models and every 5,000 km (3,000 miles) for 4WD models.	MA-53, "WHEELS : 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-49, "Transmitter (Pressure Sensor)"

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
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.	EXL-135, "Aiming Adjustment"
Warning lamps and chimes	Make sure that all warning lamps and chimes are operating properly.	WCS-4, "WARNING CHIME SYSTEM : System Description"
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)	ST-8, "On-Vehicle Inspection and Service"
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.	MA-57

UNDER THE HOOD AND VEHICLE

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

Item		Reference page
Windshield washer fluid	Check that there is adequate fluid in the tank.	—
Engine coolant level	Check the coolant level when the engine is cold.	MA-23 (QR), MA-32 (VQ)
Engine oil level	Check the level after parking the vehicle on level ground and turning off the engine.	MA-26 (QR), MA-36 (VQ)
Brake fluid level	Make sure that the brake fluid level is between the "MAX" and "MIN" lines on the reservoirs.	MA-53, "BRAKE FLUID LEVEL AND LEAKS : On Board Inspection"
Battery	Check the fluid level in each cell. It should be between the "MAX" and "MIN" lines.	—

PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

PERIODIC MAINTENANCE FOR USA AND CANADA

FOR USA AND CANADA : Periodic Maintenance

INFOID:000000006252249

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 or time intervals, whichever comes first.**

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 or using a camper or a car-top carrier. 	Emission Control System Maintenance
		Chassis and Body Maintenance
Schedule 2	Follow Periodic Maintenance Schedule 2 if none of the driving conditions shown in Schedule 1 apply to the driving habits.	Emission Control System Maintenance
		Chassis and Body Maintenance

Maintenance for off-road driving (4WD only)

After driving the vehicle off-road through sand, mud, or water; more frequent maintenance may be required for the following items:

- ▲ Brake pads and rotors
- ▲ Brake lines and hoses
- ▲ Differential, transfer gear oil and automatic transmission fluid
- ▲ Steering linkage
- ▲ Propeller shaft and drive shafts
- ▲ Engine air cleaner filter
- ▲ In-cabin microfilters
- ▲ Clutch housing (Check water entry)

FOR UNITED STATES AND CANADA: SCHEDULE 1

Emission Control System Maintenance

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.50 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Drive belts	NOTE (1)									MA-22 (QR), MA-31 (VQ)
Air cleaner filter	NOTE (2)								[R]	MA-25 (QR), MA-35 (VQ)
EVAP vapor lines									I*	MA-30 (QR), MA-39(VQ)
Fuel lines									I*	MA-25 (QR), MA-35 (VQ)
Fuel filter	NOTE (3)									—
Engine coolant *	NOTE (4) (5)									MA-22 (QR), MA-31 (VQ)
Engine oil		R	R	R	R	R	R	R	R	MA-26 (QR), MA-36 (VQ)

PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, which- ever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.50 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Engine oil filter		R	R	R	R	R	R	R	R	MA-27 (QR), MA-37 (VQ)
Spark plugs (Platinum-tipped type for QR and iridium-tipped type for VQ)		Replace every 105,000 miles (168,000 km).								MA-28 (QR), MA-38 (VQ)
Intake and exhaust valve clearance*	NOTE (6)									EM-108 (QR), EM-248 (VQ)

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, which- ever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Drive belts	NOTE (1)								I*	MA-22 (QR), MA-31 (VQ)
Air cleaner filter	NOTE (2)								[R]	MA-25 (QR), MA-35 (VQ)
EVAP vapor lines									I*	MA-30 (QR), MA-39 (VQ)
Fuel lines									I*	MA-25 (QR), MA-35 (VQ)
Fuel filter	NOTE (3)									—
Engine coolant *	NOTE (4) (5)									MA-22 (QR), MA-31 (VQ)
Engine oil		R	R	R	R	R	R	R	R	MA-26 (QR), MA-36 (VQ)
Engine oil filter		R	R	R	R	R	R	R	R	MA-27 (QR), MA-37 (VQ)
Spark plugs (Platinum-tipped type for QR and iridium-tipped type for VQ)		Replace every 105,000 miles (168,000 km).								MA-28 (QR), MA-38 (VQ)
Intake and exhaust valve clearance*	NOTE (6)									EM-108 (QR), EM-248 (VQ)

(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 reaches the maximum limit.

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

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

(4) First replacement interval is 105,000 miles (120,000 km) or 84 months. After first replacement, replace every 75,000 miles (120,000 km) or 60 months.

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

(6) 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

PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary. L = Lubricate. []: 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	
Brake lines and cables					I				I	MA-54
Brake fluid									R	BR-21
Brake pads and rotors			I		I		I		I	MA-54
Automatic transmission fluid and manual transmission fluid	NOTE (1)				I				I	MA-42 MA-45 MA-46
Transfer fluid and front final drive oil	NOTE (2)				I				I	MA-46 MA-48
Rear final drive oil	NOTE (2)				I				I	MA-49 MA-50 MA-51
Steering gear, linkage, axle, and suspension parts			I		I		I		I	MA-55 MA-55
Tire rotation	NOTE (3)									MA-53
Drive shaft boots and propeller shaft (4WD)			I		I		I		I	MA-55
Exhaust system			I		I		I		I	MA-42
In-cabin microfilter					R				R	MA-41

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 and cables					I				I	MA-54
Brake fluid									R	BR-21
Brake pads and rotors			I		I		I		I	MA-54
Automatic transmission fluid and Manual transmission fluid	NOTE (1)				I				I	MA-42 MA-45 MA-46
Transfer fluid and front final drive oil	NOTE (2)				I				I	MA-46 MA-48
Rear final drive oil	NOTE (2)				I				I	MA-49 MA-50 MA-51
Steering gear, linkage, axle, and suspension parts			I		I		I		I	MA-55 MA-55
Tire rotation	NOTE (3)									MA-53
Drive shaft boots and propeller shaft (4WD)			I		I		I		I	MA-55
Exhaust system			I		I		I		I	MA-42
In-cabin microfilter					R				R	MA-41

(1) If towing a trailer, or 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. **Using automatic transmission fluid other than Genuine NISSAN Matic S ATF or Matic J ATF will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the NISSAN new vehicle limited warranty.**

(2) If towing a trailer, or 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.

PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

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

FOR UNITED STATES AND CANADA: SCHEDULE 2

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 belts	NOTE (1)								I*	MA-22 (QR), MA-31 (VQ)
Air cleaner filter					[R]				[R]	MA-25 (QR), MA-35 (VQ)
EVAP vapor lines					I*				I*	MA-30 (QR), MA-39 (VQ)
Fuel lines					I*				I*	MA-25 (QR), MA-35 (VQ)
Fuel filter	NOTE (2)									—
Engine coolant *	NOTE (3) (4)									MA-23 (QR), MA-32 (VQ)
Engine oil		R	R	R	R	R	R	R	R	MA-26 (QR), MA-36 (VQ)
Engine oil filter		R	R	R	R	R	R	R	R	MA-27 (QR), MA-37 (VQ)
Spark plugs (Platinum-tipped type for QR and iridium-tipped type for VQ)		Replace every 105,000 miles (168,000 km).								MA-28 (QR), MA-38 (VQ)
Intake and exhaust valve clearance*	NOTE (5)									EM-108 (QR), EM-248 (VQ)

(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 reaches the maximum limit.

(2) Maintenance-free item. For service procedures, refer to FL section.

(3) First replacement interval is 105,000 miles (120,000 km) or 84 months. After first replacement, replace every 75,000 miles (120,000 km) or 60 months.

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

(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.

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 and cables			I		I		I		I	MA-54
Brake fluid					R				R	MA-54

PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Perform at number of miles, kilometers or months, whichever comes first.										
Brake pads and rotors			I		I		I		I	MA-54
Automatic transmission fluid and Manual transmission fluid	NOTE (1)		I		I		I		I	MA-46 , MA-45 , MA-45
Transfer fluid and front final drive oil			I		I		I		I	MA-46 , MA-48
Rear final drive oil			I		I		I		I	MA-49 , MA-50 , MA-51
Steering gear, linkage, axle, and suspension parts.					I				I	MA-55 , MA-55
Tire rotation	NOTE (2)									MA-53
Drive shaft boots and propeller shaft (4WD)			I		I		I		I	MA-47
Exhaust system					I				I	MA-42
In-cabin microfilter			R		R		R		R	MA-41

(1) Using automatic transmission fluid other than Genuine NISSAN Matic S ATF or Matic J ATF will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the NISSAN new vehicle limited warranty.

(2) Refer to "Tire rotation" under the "General maintenance" heading earlier in this section.

FOR MEXICO

FOR MEXICO : Periodic Maintenance

INFOID:000000006252250

ENGINE AND EMISSION CONTROL MAINTENANCE

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

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

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, E = Check and correct the engine coolant mixture ratio

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference page
Perform either at number of kilometers (miles) or months, whichever comes first.	km x 1,000 (Miles x 1,000) Months	10 (6) 6	20 (12) 12	30 (18) 18	40 (24) 24	50 (30) 30	60 (36) 36	70 (42) 42	80 (48) 48	
Engine compartment and under vehicle										
Intake & exhaust valve clearance	NOTE (1)									EM-248
Drive belts	NOTE (2)				I				I	MA-31
Engine oil (Use recommended oil)★		R	R	R	R	R	R	R	R	MA-36
Engine oil filter (Use Genuine NISSAN engine oil filter or equivalent) ★		R	R	R	R	R	R	R	R	MA-37
Engine coolant (Use Genuine NISSAN Engine Coolant or equivalent in quality)	NOTE (3)				E				R	MA-32
Cooling system					I				I	MA-31
Fuel lines and EVAP vapor lines					I				I	MA-35
Air cleaner filter (Viscous paper type)★					R				R	MA-35

PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference page
	km x 1,000 (Miles x 1,000) Months	10 (6) 6	20 (12) 12	30 (18) 18	40 (24) 24	50 (30) 30	60 (36) 36	70 (42) 42	80 (48) 48	
Perform either at number of kilometers (miles) or months, whichever comes first.										
Fuel filter	NOTE (4)									—
Spark plugs (Iridium-tipped type)		Replace every 100,000 km (60,000 miles)								MA-38

NOTE:

★ Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.

(1) Periodic maintenance is not required. However, if valve noise increases, check valve clearance.

(2) Replace the drive belts if found damaged or if the auto belt tensioner reading reaches the maximum limit.

(3) Use Genuine NISSAN Engine Coolant, or equivalent in its quality in order to avoid possible aluminum corrosion within the engine cooling system caused by the use of non-genuine engine coolant. After first replacement, replace every 40,000 km (24,000 miles) or 24 months.

(4) Fuel filter is maintenance-free. For service procedures, refer to FL section.

CHASSIS AND BODY MAINTENANCE

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference page
Perform either at number of kilometers (miles) or months, whichever comes first.	km x 1,000 (Miles x 1,000)	10 (6)	20 (12)	30 (18)	40 (24)	50 (30)	60 (36)	70 (42)	80 (48)	
	Months	6	12	18	24	30	36	42	48	
Underhood and under vehicle										
Brake line & cable			I		I		I		I	MA-54
Brake fluid (For level & leaks)			I		I		I		I	MA-53
Brake fluid ★					R				R	MA-53
Automatic transmission fluid (For level & leaks)			I		I		I		I	BR-12
Power steering fluid & lines (For level & leaks)			I		I		I		I	MA-55
Exhaust system					I				I	MA-42
Transfer gear fluid (For level &leaks)			I		I		I		I	MA-46
Differential gear oil (For level & leaks) ★			I		I		I		I	MA-49 , MA-50
Steering gear & linkage, axle & suspension parts ★			I		I		I		I	MA-55 MA-47
Propeller shaft and drive shafts ★			I		I		I		I	—
Outside and inside										
Wheel alignment (If necessary, rotate & balance wheels)			I		I		I		I	MA-53 MA-51 ,
Brake pads, rotors, drums & linings ★			I		I		I		I	MA-54
Foot brake & parking brake (For free play, stroke & operation)			I		I		I		I	PB-4 ,
Air conditioner filter ★			R		R		R		R	MA-41

★ : Maintenance items with “★” should be performed more frequently according to “Maintenance Under Severe Driving Conditions”.

MAINTENANCE UNDER SEVERE DRIVING CONDITIONS

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

PERIODIC MAINTENANCE

< PERIODIC MAINTENANCE >

Severe driving conditions

A — Driving in dusty conditions

B — Repeatedly driving short distances

C — Towing a trailer or caravan

D — Extensive idling

E — Driving in extremely adverse weather conditions or in areas where ambient temperatures are either extremely low or extremely high

F — Driving in high humidity or mountainous areas

G — Driving in areas using salt or other corrosive materials

H — Driving on rough and/or muddy roads or in the desert

I — Driving with frequent use of braking or in mountainous areas

Driving condition									Maintenance item		Maintenance operation	Maintenance interval	Reference page
A	.	.	.	.	.	.	.	.	Air cleaner filter	Viscous paper filter	Replace	More frequently	MA-35 MA-41
A	B	C	D	.	.	.	.	.	Engine oil and engine oil filter		Replace	Every 5,000 km (3,000 miles) or 3 months	MA-36 MA-37
.	.	.	.	.	F	.	.	.	Brake fluid		Replace	Every 20,000 km (12,000 miles) or 12 months	MA-53
.	.	C	.	.	.	.	.	H	Automatic transmission fluid		Replace	Every 40,000 km (24,000 miles) or 24 months	MA-44
.	.	C	.	.	.	.	.	H	Differential gear oil		Replace	Every 40,000 km (24,000 miles) or 24 months	MA-49 MA-50
.	.	.	.	.	.	.	G	H	Steering gear & linkage, axle & suspension parts		Inspect	Every 20,000 km (12,000 miles) or 12 months	MA-55 , MA-55
.	.	.	.	.	.	.	G	H	Propeller shaft & drive shafts		Inspect	Every 10,000 km (6,000 miles) or 6 months	MA-55
A	.	C	.	.	.	.	G	H	Brake pads, rotors, drums & linings		Inspect	Every 10,000 km (6,000 miles) or 6 months	MA-54
A	.	.	.	.	.	.	.	.	Air conditioner filter		Replace	More frequently	MA-41

MAINTENANCE FOR OFF-ROAD DRIVING (4WD ONLY)

Whenever you drive off-road through sand, mud or water, more frequent maintenance may be required of the following items.

- Brake pads and rotors
- Brake lines and hoses
- Differential gear oil, transfer fluid and automatic transmission fluid
- Steering linkage
- Propeller shafts and front drive shafts
- Air cleaner filter

RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

RECOMMENDED FLUIDS AND LUBRICANTS FOR USA AND CANADA

FOR USA AND CANADA : Fluids and Lubricants

INFOID:000000006252251

QR25DE

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Metric	US measure	Imp measure	
Fuel		80 ℓ	21 1/8 gal	17 5/8 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91) *7
Engine oil Drain and refill	With oil filter change	4.6 ℓ	4 7/8 qt	4 qt	<ul style="list-style-type: none"> • Engine oil with API Certification Mark *1 • Viscosity SAE 5W-30
	Without oil filter change	4.3 ℓ	4 1/2 qt	3 3/4 qt	
Dry engine (engine overhaul)		5.0 ℓ	5 1/4 qt	4 3/8 qt	
Cooling system	With reservoir at MAX level	9.4 ℓ	10 qt	8 1/4 qt	Pre-diluted Genuine NISSAN Long Life Antifreeze/ Coolant (blue) or equivalent
Automatic transmission fluid (ATF)		10.3 ℓ	10 7/8 qt	9 1/8 qt	Genuine NISSAN Matic S ATF *2
Manual transmission fluid (MTF) (5 M/T)		2.89 ℓ	6 1/8 pt	5 1/8 pt	Genuine NISSAN Manual Transmission Fluid (MTF) HQ Multi 75W-85 or API GL-4, Viscosity SAE 75W-85
Rear final drive oil	C200	1.6 ℓ	3 3/8 pt	2 7/8 pt	Genuine NISSAN differential oil synthetic 75W-90 or API GL-5 synthetic gear oil, Viscosity SAE 75W-90 *6
Power steering fluid (PSF)		1.0 ℓ	2 1/8 pt	1 3/4 pt	Genuine NISSAN PSF or equivalent *3
Brake and clutch fluids		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid or equivalent, DOT 3 (US FMVSS No. 116) *4
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)
Windshield washer fluid		4.5 ℓ	1 1/4 gal	1 gal	Genuine NISSAN Windshield Washer Concentrate Cleaner & Anti-freeze or equivalent
Air conditioning system refrigerant		0.70 ± 0.05 kg	1.54 ± 0.11 lb	1.54 ± 0.11 lb	HFC-134a (R-134a) *5
Air conditioning system oil		180 m ℓ	6.1 fl oz	6.3 fl oz	A/C System Oil Type R (DH-PR) *5

*1: For further details, refer to [MA-18](#).

*2: If Genuine NISSAN Matic S ATF is not available, Genuine NISSAN Matic J ATF may also be used. Using automatic transmission fluid other than Genuine NISSAN Matic S ATF or Genuine NISSAN Matic J ATF will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the NISSAN new vehicle limited warranty.

*3: DEXRON™ VI type ATF may also be used.

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

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

*6: See a NISSAN dealer for service for synthetic oil.

*7: For further details, refer to [GI-35, "Fuel \(Regular Unleaded Gasoline Recommended\) QR25DE and VQ40DE"](#).

VQ40DE

RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Metric	US measure	Imp measure	
Fuel		80 ℓ	21 1/8 gal	17 5/8 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91) *8
Engine oil Drain and refill	With oil filter change	5.1 ℓ	5 3/8 qt	4 1/2 qt	<ul style="list-style-type: none"> Engine oil with API Certification Mark *1 Viscosity SAE 5W-30
	Without oil filter change	4.8 ℓ	5 1/8 qt	4 1/4 qt	
Dry engine (engine overhaul)		6.3 ℓ	6 5/8 qt	5 1/2 qt	
Cooling system	With reservoir at MAX level	10.2 ℓ	10 3/4 qt	9 qt	Pre-diluted Genuine NISSAN Long Life Antifreeze/ Coolant (blue) or equivalent
Automatic transmission fluid (ATF)		10.3 ℓ	10 7/8 qt	9 1/8 qt	Genuine NISSAN Matic S ATF *2
Manual transmission fluid (MTF) (6 M/T)	2WD	3.98 ℓ	8 3/8 pt	7 pt	Genuine NISSAN Manual Transmission Fluid (MTF) HQ Multi 75W-85 or API GL-4, Viscosity SAE 75W-85
	4WD	4.18 ℓ	8 7/8 pt	7 3/8 pt	
Rear final drive oil	C200	1.6 ℓ	3 3/8 pt	2 7/8 pt	Genuine NISSAN differential oil synthetic 75W-90 or API GL-5 synthetic gear oil, Viscosity SAE 75W-90 *6
	M226	2.01 ℓ	4 1/4 pt	3 1/2 pt	Genuine NISSAN differential oil synthetic 75W-140 or API GL-5 synthetic gear oil, Viscosity SAE 75W-140 *6
Transfer fluid	TX15B	2.0 ℓ	2 1/8 qt	1 3/4 qt	Genuine NISSAN Matic D ATF recommended *9.
Front final drive oil		0.85 ℓ	1 3/4 pt	1 1/2 pt	Genuine NISSAN Differential Oil Hypoid Super GL-5 80W-90 or API GL-5 Viscosity SAE 80W-90 *7
Power steering fluid (PSF)		1.0 ℓ	2 1/8 pt	1 3/4 pt	Genuine NISSAN PSF or equivalent *3
Brake and clutch fluid		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid or equivalent, DOT 3 (US FMVSS No. 116) *4
Multi-purpose grease		—	—	—	NLGI No. 2 (lithium soap base)
Windshield washer fluid		4.5 ℓ	1-1/4 gal	1 gal	Genuine NISSAN Windshield Washer Concentrate Cleaner & Anti-freeze or equivalent
A/C system refrigerant		0.70 ± 0.05 kg	1.54 ± 0.11 lb	1.54 ± 0.11 lb	HFC-134a (R134a) *5
A/C system oil		180 m ℓ	6.1 fl oz	6.3 fl oz	A/C System Oil Type R (DH-PR) or equivalent *5

*1: For further details, refer to [MA-18](#).

*2: If Genuine NISSAN Matic S ATF is not available, Genuine NISSAN Matic J ATF may also be used. Using automatic transmission fluid other than Genuine NISSAN Matic S ATF or Genuine NISSAN Matic J ATF will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the NISSAN new vehicle limited warranty.

*3: DEXRON™ VI type ATF may also be used.

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

*5: For further details, see "Air conditioner Specification Label".

*6: See a NISSAN dealer for service for synthetic oil.

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

*8: For further details, refer to [GI-35, "Fuel \(Regular Unleaded Gasoline Recommended\) QR25DE and VQ40DE"](#).

*9: Using fluid other than Genuine NISSAN Matic D ATF will cause deterioration in driveability and transfer durability, and may damage the transfer, which is not covered by the NISSAN new vehicle limited warranty.

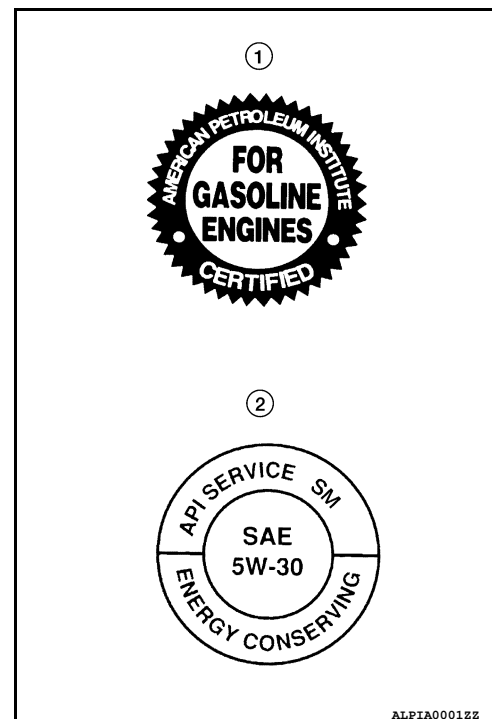
RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

FOR USA AND CANADA : SAE Viscosity Number

INFOID:000000006252252

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 (2). These oils have the API certification mark (1) 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.



FOR USA AND CANADA : Anti-Freeze Coolant Mixture Ratio

INFOID:000000006819950

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

WARNING:

- Never remove the radiator or coolant reservoir cap when the engine is hot. Wait until the engine and radiator cool down. Serious burns could be caused by high pressure fluid escaping from the radiator.
- The radiator is equipped with a pressure type radiator cap. To prevent engine damage, use only a genuine NISSAN radiator cap.

CAUTION:

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

FOR MEXICO

FOR MEXICO : Fluids and Lubricants

INFOID:000000006252253

VQ40DE

RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Metric	US measure	Imp measure	
Fuel		80 ℓ	21 1/8 gal	17 5/8 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91)
Engine oil Drain and refill	With oil filter change	5.1 ℓ	5 3/8 qt	4 1/2 qt	Genuine NISSAN engine oil API grade SL or SM *1 ILSAC grade GF-2, GF-3 or GF-4 *1 Viscosity SAE 10W-30 *1
	Without oil filter change	4.8 ℓ	5 1/8 qt	4 1/4 qt	
Dry engine (engine overhaul)		6.3 ℓ	6 5/8 qt	5 1/2 qt	
Cooling system (with reservoir at "MAX" level)		10.2 ℓ	10 3/4 qt	9 qt	Genuine NISSAN Engine Coolant or equivalent in quality *2
Automatic transmission fluid (ATF)		10.3 ℓ	10 7/8 qt	9 1/8 qt	Genuine NISSAN Matic S ATF *3
Rear final drive oil		2.01 ℓ	4 1/4 pt	3 1/2 pt	API GL-5 synthetic gear oil, Viscosity SAE 75W-90 or equivalent *4
Transfer fluid		2.0 ℓ	2 1/8 qt	1 3/4 qt	Genuine NISSAN Matic D ATF recommended *7
Front final drive oil		0.85 ℓ	1 3/4 pt	1 1/2 pt	Genuine NISSAN Differential Oil Hypoid Super GL-5 80W-90 or API GL-5 *1
Power steering fluid (PSF)		1.0 ℓ	2 1/8 pt	1 3/4 pt	Genuine NISSAN PSF or equivalent *5
Brake fluid		—	—	—	Genuine NISSAN Brake Fluid or equivalent DOT 3
Multi-purpose grease		—	—	—	NLGI No. 2 (lithium soap base)
Windshield washer fluid		4.5 ℓ	1 1/4 gal	1 gal	Windshield Washer Concentrate Cleaner & Anti-freeze or equivalent
A/C system refrigerant		0.70 ± 0.05 kg	1.54 ± 0.11 lb	1.54 ± 0.11 lb	HFC-134a (R134a) *6
A/C system oil		180 m ℓ	6.1 fl oz	6.3 fl oz	A/C System Oil Type R (DH-PR) or equivalent *6

*1: For further details, refer to [MA-19, "FOR MEXICO : SAE Viscosity Number"](#).

*2: Use Genuine NISSAN Engine Coolant or equivalent in quality, in order to avoid possible aluminium corrosion within the engine cooling system caused by the use of non-genuine engine coolant.

Note that any repairs for the incidents within the engine cooling system while using non-genuine engine coolant may not be covered by the warranty even if such incidents occurred during the warranty period.

*3: If Genuine NISSAN Matic S ATF is not available, Genuine NISSAN Matic J ATF may also be used. Using automatic transmission fluid other than Genuine NISSAN Matic S ATF or Genuine NISSAN Matic J ATF will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the warranty.

*4: See a NISSAN dealership for service for synthetic oil.

*5: DEXRON™ VI type ATF may also be used.

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

*7: Using fluid other than Genuine NISSAN Matic D ATF will cause deterioration in driveability and transfer durability, and may damage the transfer, which is not covered by the warranty.

FOR MEXICO : SAE Viscosity Number

INFOID:000000006252254

GASOLINE ENGINE

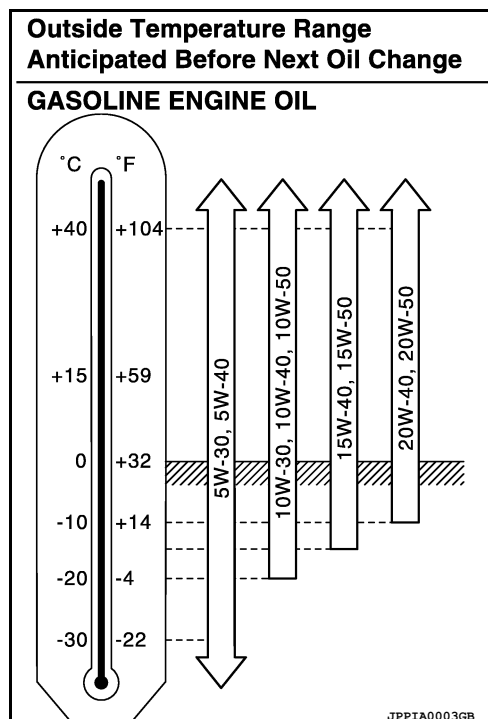
- 10W-30 is preferable.

MA

RECOMMENDED FLUIDS AND LUBRICANTS

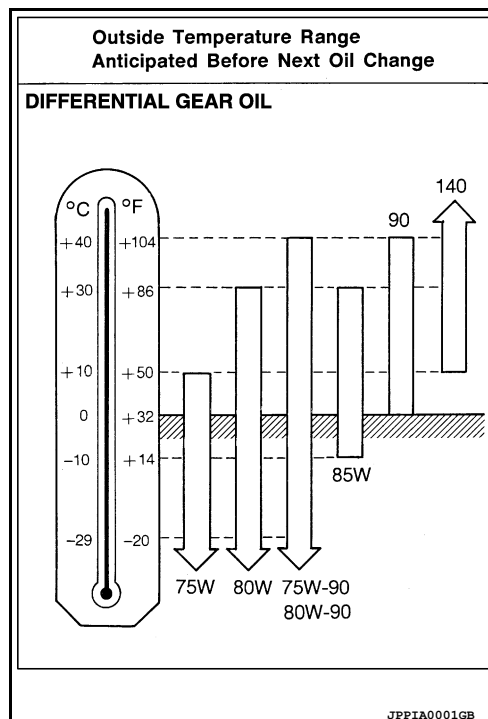
< PERIODIC MAINTENANCE >

If 10W-30 is not available, select the viscosity, from the chart, that is suitable for the outside temperature range.



DIFFERENTIAL GEAR OIL

- 80W-90 for the front final drive is preferable.



FOR MEXICO : Engine Coolant Mixture Ratio

INFOID:000000006252255

The engine cooling system is filled at the factory with a high-quality, year-round and extended life engine coolant. The high quality engine coolant contains the specific solutions effective for the anti-corrosion and the anti-freeze function. Therefore, additional cooling system additives are not necessary.

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could be caused by high pressure fluid escaping from the radiator. Wait until the engine and radiator cool down.

RECOMMENDED FLUIDS AND LUBRICANTS

< PERIODIC MAINTENANCE >

Coolant Mixture Ratio

Outside temperature down to		Composition	
°C	°F	Engine coolant (concentrated)	Demineralized water or distilled water
- 15°	5°	30%	70%
- 35°	- 30°	50%	50%

CAUTION:

- When adding or replacing coolant, be sure to use only Genuine NISSAN Engine Coolant. or equivalent in quality with the proper mixture ratio.
- The use of other types of engine coolant may damage your cooling system.

When checking the engine coolant mixture ratio by the coolant hydrometer, use the chart below to correct your hydrometer reading (specific gravity) according to coolant temperature.

Mixed coolant specific gravity

Unit: specific gravity

Engine coolant mixture ratio	Coolant temperature °C (°F)			
	15 (59)	25 (77)	35 (95)	45 (113)
30%	1.046 - 1.050	1.042 - 1.046	1.038 - 1.042	1.033 - 1.038
50%	1.076 - 1.080	1.070 - 1.076	1.065 - 1.071	1.059 - 1.065

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

MA

ENGINE MAINTENANCE (QR25DE ENGINE)

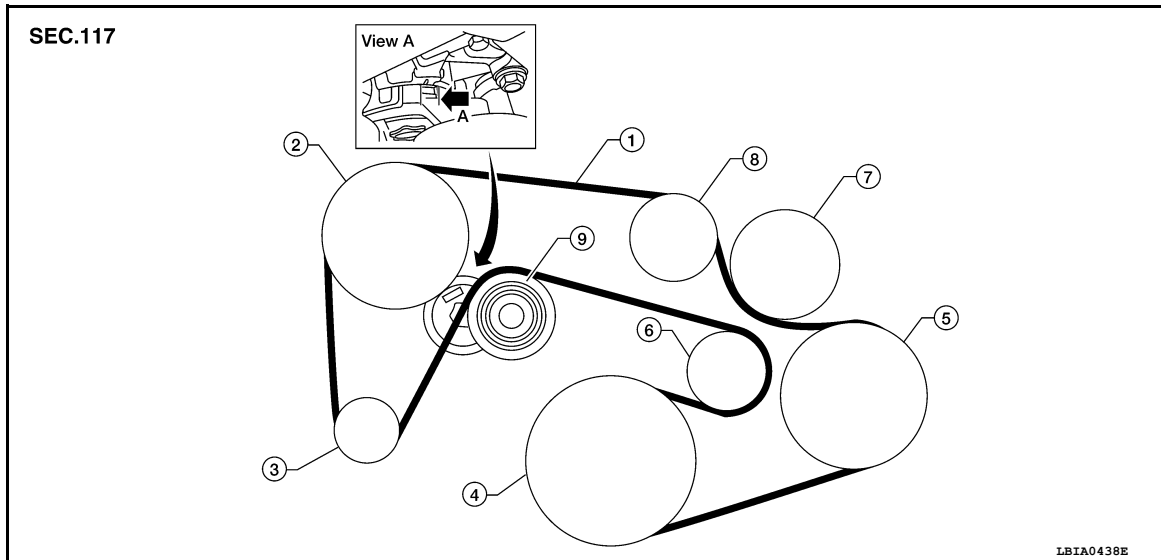
< PERIODIC MAINTENANCE >

ENGINE MAINTENANCE (QR25DE ENGINE)

DRIVE BELTS

DRIVE BELTS : Exploded View

INFOID:000000006252256



- | | | |
|----------------------------|---|------------------------------|
| 1. Drive belt | 2. Power steering oil pump pulley | 3. Generator pulley |
| 4. Crankshaft pulley | 5. A/C compressor (if equipped) or idler pulley | 6. Idler pulley |
| 7. Water pump | 8. Idler pulley | 9. Drive belt auto-tensioner |
| A. Allowable working range | | |

DRIVE BELTS : Checking Drive Belts

INFOID:000000006252257

WARNING:

Be sure to perform when the engine is stopped.

1. Remove air duct and resonator assembly when inspecting drive belt. Refer to [EM-142, "Removal and Installation"](#).
2. Make sure that the auto tensioner indicator is within the allowable working range.
3. Visually check entire belt for wear, damage or cracks.
4. If the indicator is out of allowable working range or drive belt is damaged, replace the drive belt. Refer to [EM-130, "Removal and Installation"](#).

DRIVE BELTS : Tension Adjustment

INFOID:000000006252258

Belt tensioning is not necessary, as it is automatically adjusted by drive belt auto-tensioner.

ENGINE COOLANT

ENGINE COOLANT : System Inspection

INFOID:000000006252259

WARNING:

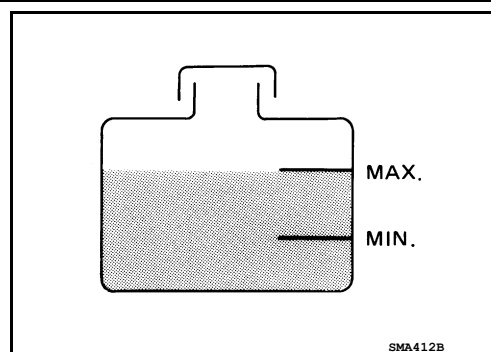
- Never remove the radiator cap or reservoir tank cap when the engine is hot. Serious burns could occur from high pressure fluid escaping from the radiator or reservoir.
- Wrap a thick cloth around the cap. Slowly push down and turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by pushing down and turning it all the way.

CHECKING RESERVOIR LEVEL

ENGINE MAINTENANCE (QR25DE ENGINE)

< PERIODIC MAINTENANCE >

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



INFOID:000000006252260

ENGINE COOLANT : Changing Engine Coolant

WARNING:

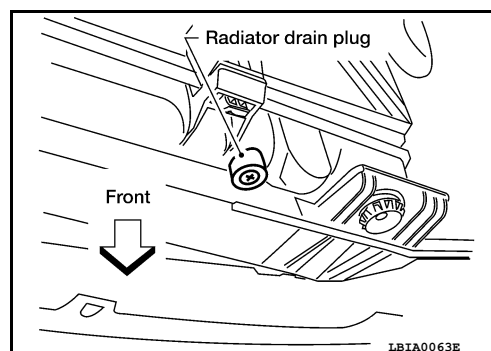
- To avoid being scalded, never change the coolant when the engine is hot.
- Wrap a thick cloth around the cap to carefully remove the cap. First, turn the cap a quarter of a turn to release any built-up pressure, then push down and turn the cap all the way to remove it.

DRAINING ENGINE COOLANT

1. Turn ignition switch ON and set temperature control lever all the way to HOT position or the highest temperature position. Wait 10 seconds and turn ignition switch OFF.
2. Remove the engine under cover. Refer to [EXT-15, "Removal and Installation"](#).
3. Open the radiator drain plug at the bottom of the radiator, and remove the reservoir cap. This is the only step required when partially draining the cooling system (radiator only).

CAUTION:

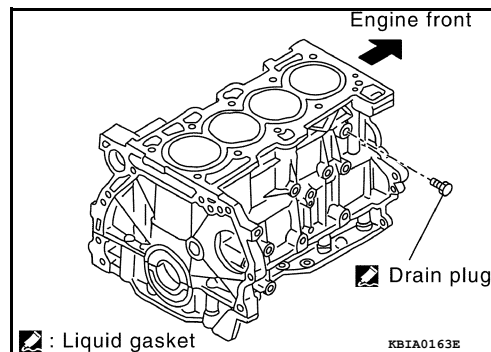
- Do not allow the coolant to contact the drive belts.
- Perform this step when engine is cold.



4. 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.
5. When draining all of the coolant in the system for engine removal or repair, it is necessary to drain the cylinder block. Remove the cylinder block drain plug or block heater to drain the cylinder block as shown.

NOTE:

For Canada, the cylinder block drain plug as shown, is not a cylinder block drain plug but a block heater.



6. Remove the reservoir tank to drain the engine coolant, then clean the reservoir tank before installing it.
7. Check the drained 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

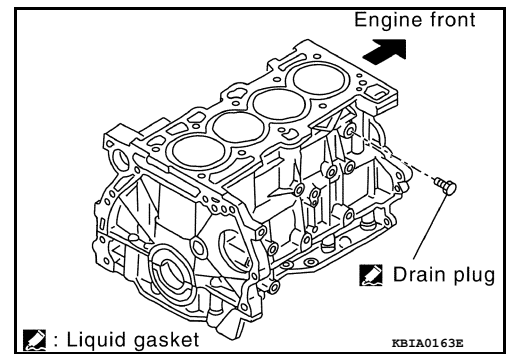
ENGINE MAINTENANCE (QR25DE ENGINE)

< PERIODIC MAINTENANCE >

1. Close the radiator drain plug. Install the reservoir tank and cylinder block drain plug or block heater, 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-22. "Recommended Chemical Products and Sealants"](#).

Radiator drain plug : Refer to [CQ-17](#).

Cylinder block drain plug : Refer to [EM-81](#).



2. 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.
3. Remove the vented reservoir cap and replace it with a non-vented reservoir cap before filling the cooling system.
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)

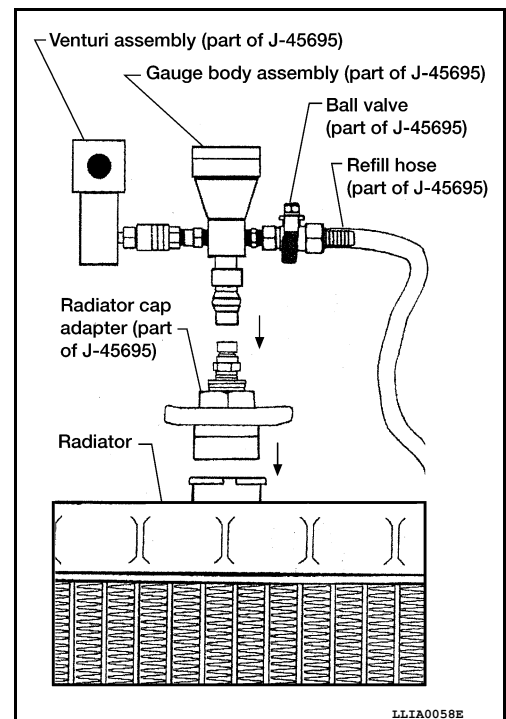
5. Insert the refill hose into the coolant mixture container that is placed at floor level. Make sure the ball valve is in the closed position.

• Use recommended coolant or equivalent. Refer to [MA-16. "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada).

CAUTION:

Never use any cooling system additives such as radiator sealer. Additives may clog the cooling system and cause damage to the engine, transmission and/or cooling system.

Cooling system capacity (with reservoir) : Refer to [MA-16. "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada).



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

Compressed air supply pressure : 549 - 824 kPa (5.6 - 8.4 kg/cm², 80 - 119 psi)

CAUTION:

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

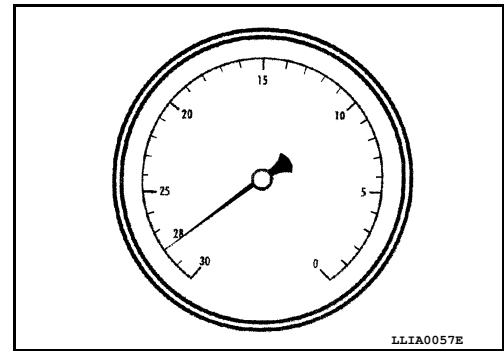
7. The vacuum gauge will begin to rise and there will be an audible hissing noise. During this process open the ball valve on the refill hose slightly. Coolant will be visible rising in the refill hose. Once the refill hose is full of coolant, close the ball valve. This will purge any air trapped in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

ENGINE MAINTENANCE (QR25DE ENGINE)

< PERIODIC MAINTENANCE >

8. Continue to draw the vacuum until the gauge reaches 28 inches of vacuum. The gauge may not reach 28 inches in high altitude locations, 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 and install the radiator cap.
12. Remove the non-vented reservoir cap.
13. Fill the cooling system reservoir tank to the specified level. Run the engine to warm up the cooling system and top up the system as necessary before installing the vented reservoir cap.
14. Install engine under cover. Refer to [EXT-15, "Removal and Installation"](#).

FLUSHING COOLING SYSTEM

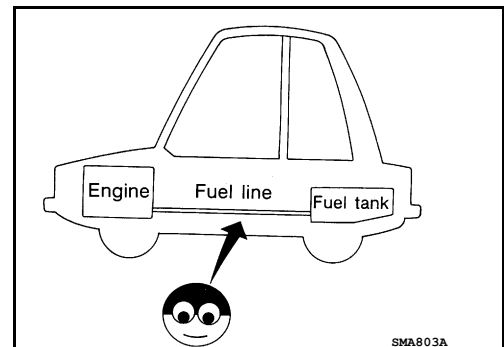
1. Drain the engine coolant from the engine cooling system. Refer to [CO-13, "Changing Engine Coolant"](#).
2. Fill the radiator and the reservoir tank (to the "MAX" line) with water. Reinstall the radiator cap and leave the vented reservoir cap off.
3. Run the engine until it reaches normal operating temperature.
4. Press the engine accelerator two or three times under no-load.
5. Stop the engine and wait until it cools down.
6. Drain the water from the engine cooling system. Refer to [CO-13, "Changing Engine Coolant"](#).
7. Repeat steps 2 through 6 until clear water begins to drain from the radiator.

FUEL LINES

FUEL LINES : Checking Fuel Line

INFOID:000000006252261

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

AIR CLEANER FILTER : Removal and Installation

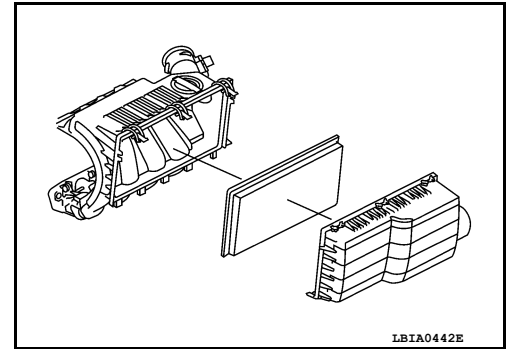
INFOID:000000006252262

REMOVAL

ENGINE MAINTENANCE (QR25DE ENGINE)

< PERIODIC MAINTENANCE >

1. Unfasten clips and lift up air cleaner case (upper).
2. Remove air cleaner filter.



INSTALLATION

Installation is in the reverse order of removal.

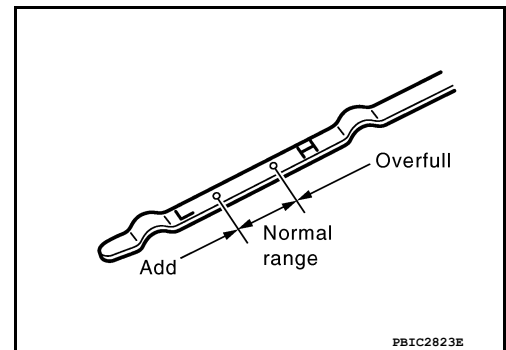
ENGINE OIL

ENGINE OIL : Inspection

INFOID:000000006252263

OIL LEVEL

- Before starting the engine make sure the vehicle is parked on a flat and level surface, then check the oil level. If the engine is already running, turn it off and allow 10 minutes before checking.
- Pull out oil level gauge and wipe clean.
- Insert oil level gauge.
- Check that the oil level is within the low (L) and high (H) range as indicated on the dipstick.
- If the engine oil level is out of range, add oil as necessary. Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada).



CAUTION:

Do not overfill the engine with oil.

ENGINE OIL : Changing Engine Oil

INFOID:000000006252264

WARNING:

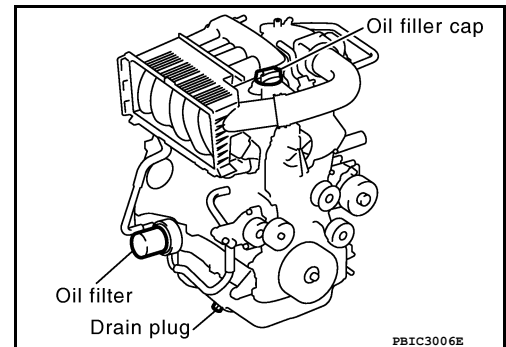
- Be careful not to burn yourself, as the engine and engine oil may be hot.
- Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.

1. Warm up the engine and check for any oil leaks
2. Stop the engine and wait for at least 10 minutes.
3. Remove the oil drain plug and oil filler cap to drain the old oil.
4. Install a new washer on the oil drain plug, then install the oil drain plug in the oil pan.

CAUTION:

- Clean the drain plug and install with new washer.
- Do not reuse copper sealing washer.

Oil pan drain plug: : Refer to [EM-33, "Exploded View"](#).



5. Refill the engine with new specified engine oil.

Oil grade and viscosity : Refer to [MA-18, "FOR USA AND CANADA : SAE Viscosity Number"](#) (United States and Canada).

Oil capacity : Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada).

ENGINE MAINTENANCE (QR25DE ENGINE)

< PERIODIC MAINTENANCE >

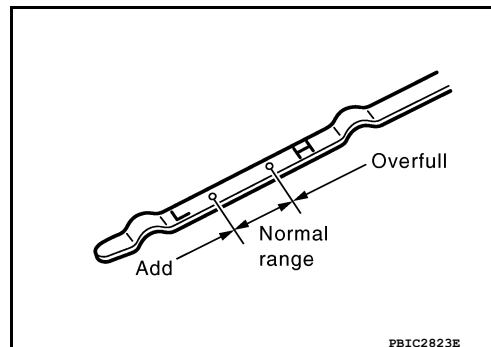
CAUTION:

The refill capacity depends on the oil temperature and drain time. Use the "Refill oil capacity" values as a reference and check the oil level using the dipstick when filling the engine with oil.

6. Warm up the engine and check the area around the drain plug and oil filter for any oil leaks.
7. Stop the engine and wait for more than 10 minutes.
8. Check the oil level using the dipstick as shown. Add oil as necessary and install the oil filler cap.

CAUTION:

Do not overfill the engine with oil.



OIL FILTER

OIL FILTER : Removal and Installation

INFOID:000000006252265

REMOVAL

1. Remove engine under cover. Refer to [EXT-15. "Removal and Installation"](#).
2. Drain the engine oil. Refer to [MA-26. "ENGINE OIL : Changing Engine Oil"](#).
3. Remove the oil filter using Tool as shown.

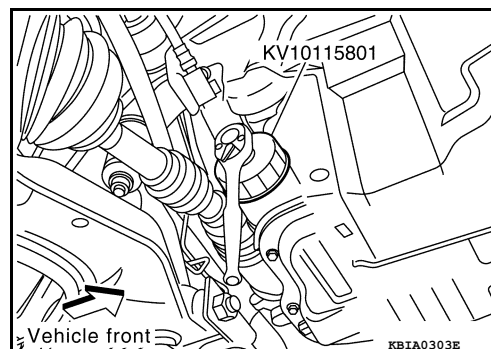
Tool number : KV10115801 (J-38956)

WARNING:

Be careful not to burn yourself, as the engine and engine oil may be hot.

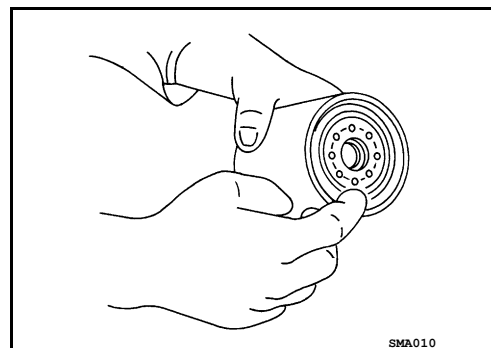
CAUTION:

- Oil filter is equipped with a pressure relief valve.
- Use Genuine NISSAN Oil Filter or equivalent.
- When removing, position a shop cloth to absorb any engine oil leaks or spills.
- Do not allow engine oil to adhere to drive belts.
- Completely wipe off any engine oil that adheres to the engine and the vehicle.



INSTALLATION

1. Remove foreign materials adhering to the oil filter seal mating surface.
2. Apply clean engine oil to the oil filter seal circumference of the new oil filter as shown.

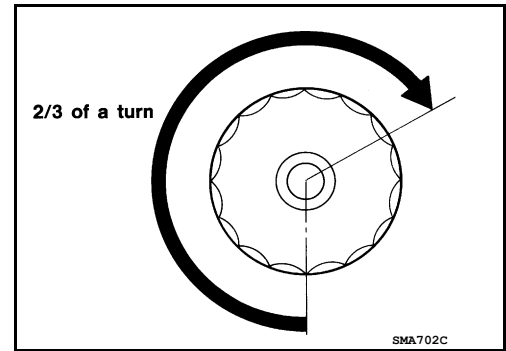


ENGINE MAINTENANCE (QR25DE ENGINE)

< PERIODIC MAINTENANCE >

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

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



4. Refill the engine with new oil. Refer to [LU-10, "Changing Engine Oil"](#).
5. Inspect the engine for oil leaks. Refer to [LU-9, "Inspection"](#).
6. Install engine under cover. Refer to [EXT-15, "Removal and Installation"](#).

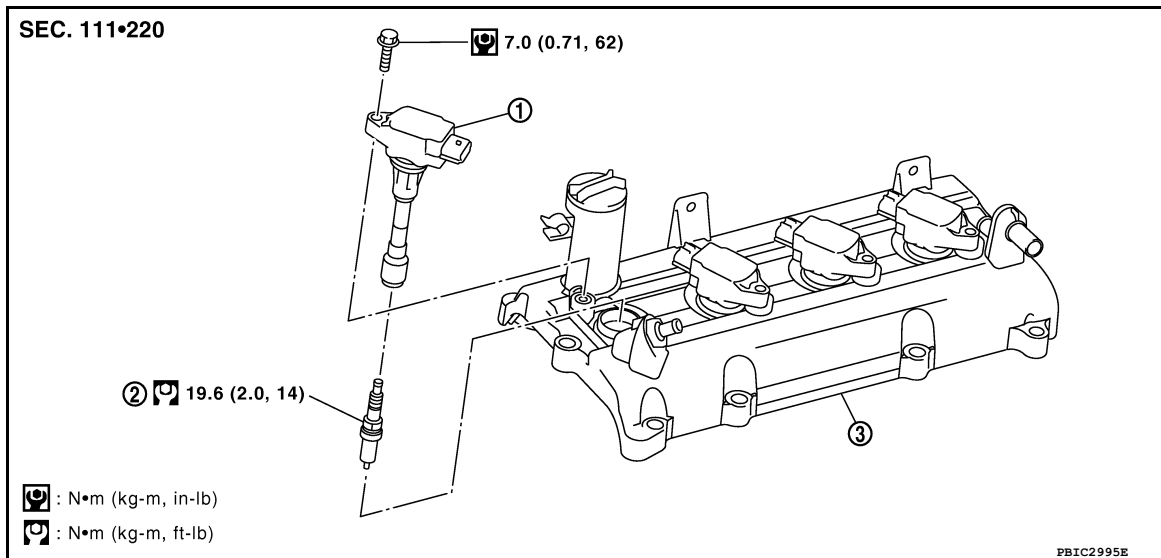
INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to [LU-9, "Inspection"](#).
2. Start the engine and check for engine oil leaks.
3. Stop the engine and wait for 10 minutes.
4. Check the engine oil level and add engine oil as required.

SPARK PLUG

SPARK PLUG : Exploded View

INFOID:000000006252266



1. Ignition coil

2. Spark plug

3. Rocker cover

SPARK PLUG : Removal and Installation

INFOID:000000006252267

WARNING:

Be sure the engine and ignition switch are off and that the parking brake is engaged securely.

CAUTION:

Be sure to use the correct socket to remove the spark plugs. An incorrect socket can damage the spark plugs.

REMOVAL

1. Remove the ignition coil. Refer to [EM-36, "Removal and Installation"](#).

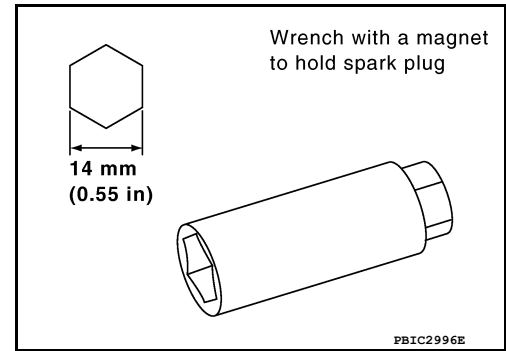
ENGINE MAINTENANCE (QR25DE ENGINE)

< PERIODIC MAINTENANCE >

- Remove the spark plug using a suitable tool.

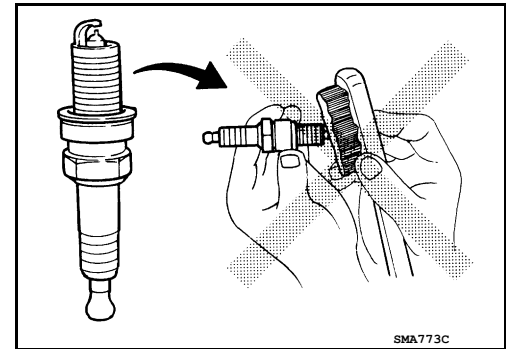
CAUTION:

Do not drop or shock it.



INSPECTION AFTER REMOVAL

- Do not use a wire brush for cleaning.

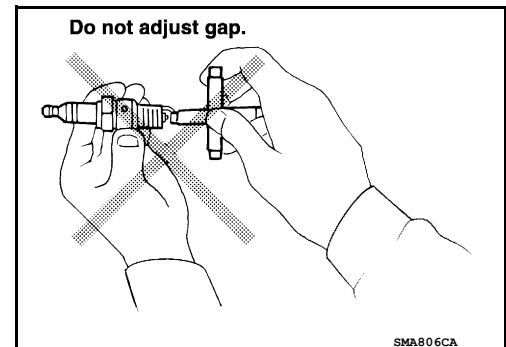


- If the spark plug tip is covered with carbon, spark plug cleaner may be used.

Cleaner air pressure : Less than 588 kPa (5.9 bar, 6 kg/cm², 85 psi)

Cleaning time : Less than 20 seconds

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



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Do not drop or shock the spark plug.

Make	NGK
Standard type *	PLZKAR6A-11
Gap (nominal)	1.1 mm (0.043 in)

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

EVAP VAPOR LINES

ENGINE MAINTENANCE (QR25DE ENGINE)

< PERIODIC MAINTENANCE >

EVAP VAPOR LINES : Checking EVAP Vapor Line

INFOID:000000006252268

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.

ENGINE MAINTENANCE (VQ40DE)

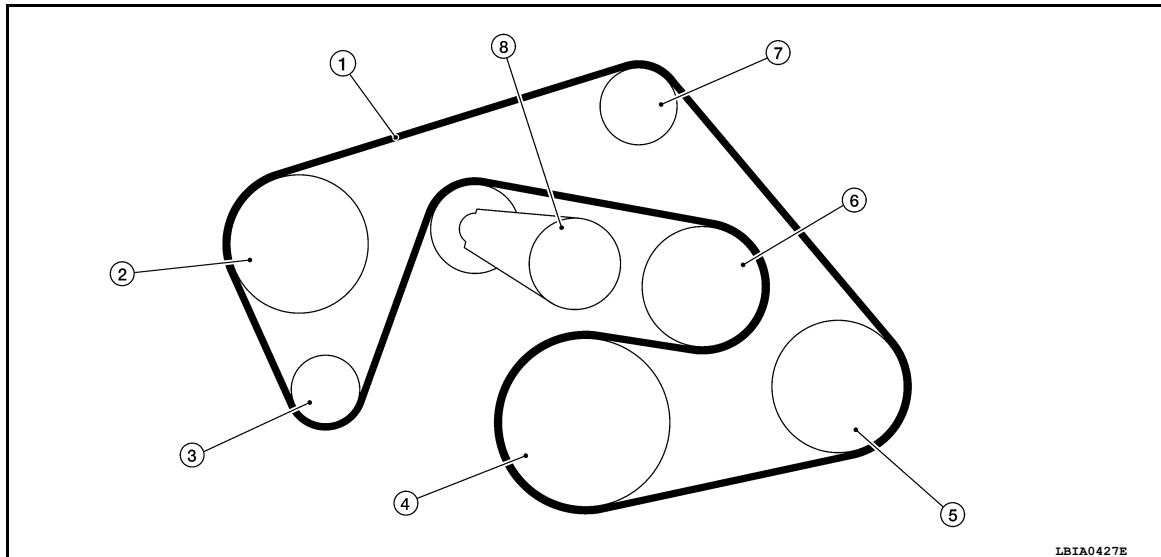
< PERIODIC MAINTENANCE >

ENGINE MAINTENANCE (VQ40DE)

DRIVE BELT

DRIVE BELT : Exploded View

INFOID:000000006252269



- | | | |
|----------------------|-----------------------------------|-----------------------|
| 1. Drive belt | 2. Power steering oil pump pulley | 3. Generator pulley |
| 4. Crankshaft pulley | 5. A/C compressor | 6. Cooling fan pulley |
| 7. Idler pulley | 8. Drive belt tensioner | |

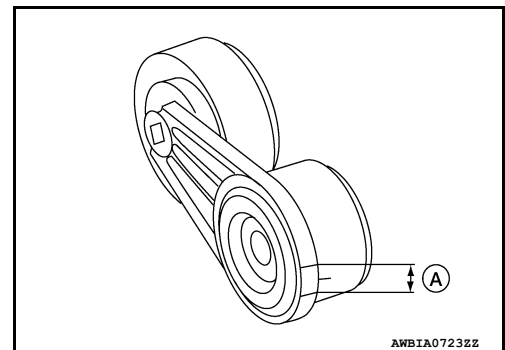
DRIVE BELT : Checking Drive Belts

INFOID:000000006252270

WARNING:

Be sure to perform when the engine is stopped.

1. Remove air duct and resonator assembly when inspecting drive belt. Refer to [EM-142, "Removal and Installation"](#).
2. Make sure that the auto tensioner indicator is within the allowable working range (A) as shown.
3. Visually check entire belt for wear, damage or cracks.
4. If the indicator is out of allowable working range or drive belt is damaged, replace the drive belt. Refer to [EM-130, "Removal and Installation"](#).



DRIVE BELT : Adjustment

INFOID:000000006252271

There is no manual drive belt tension adjustment. The drive belt tension is automatically adjusted by the drive belt auto tensioner.

ENGINE COOLANT

ENGINE COOLANT : System Inspection

INFOID:000000006252272

WARNING:

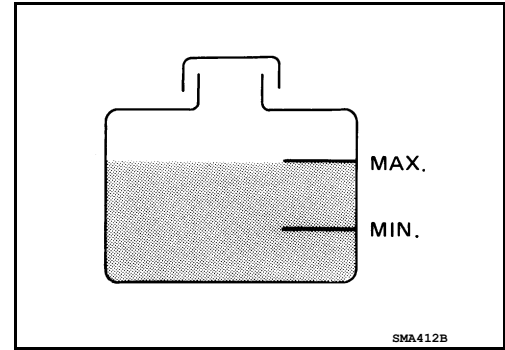
- **Never remove the radiator/reservoir cap when the engine is hot. Serious burns could occur from high pressure fluid escaping from the radiator or reservoir.**
- **Wrap a thick cloth around the cap. Slowly push down and turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by pushing down and turning it all the way.**

ENGINE MAINTENANCE (VQ40DE)

< PERIODIC MAINTENANCE >

CHECKING RESERVOIR LEVEL

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



ENGINE COOLANT : Changing Engine Coolant

INFOID:000000006252273

WARNING:

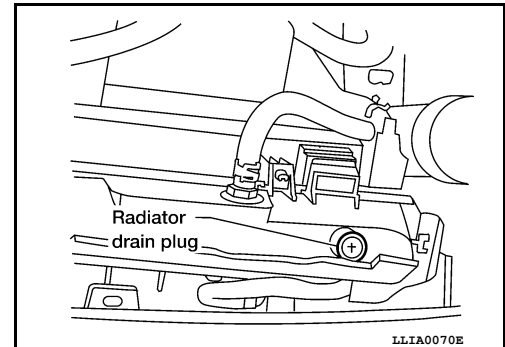
- To avoid being scalded, never change the coolant when the engine is hot.
- Wrap a thick cloth around the cap to carefully remove the cap. First, turn the cap a quarter of a turn to release any built-up pressure, then push down and turn the cap all the way to remove it.

DRAINING ENGINE COOLANT

1. Turn ignition switch ON and set temperature control lever all the way to HOT position or the highest temperature position. Wait 10 seconds and turn ignition switch OFF.
2. Remove the engine under cover. Refer to [EXT-15, "Removal and Installation"](#).
3. Open the radiator drain plug at the bottom of the radiator, and remove the reservoir cap. This is the only step required when partially draining the cooling system (radiator only).

CAUTION:

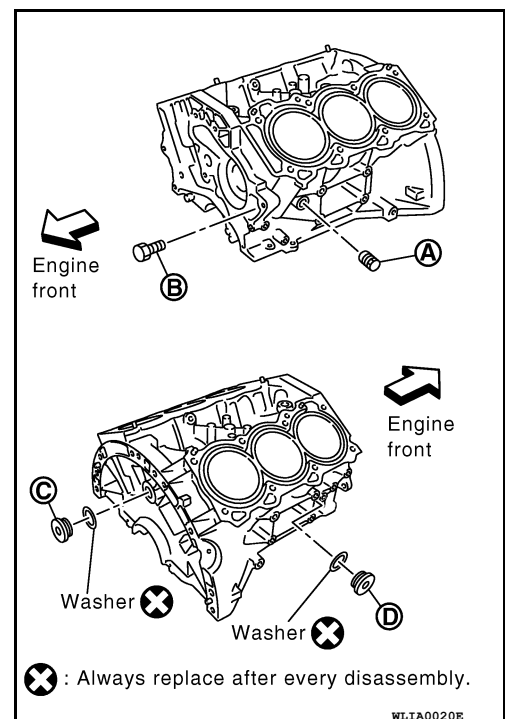
- Do not allow the coolant to contact the drive belts.
- Perform this step when engine is cold.



4. When draining all of the coolant in the system for engine removal or repair, it is necessary to drain the cylinder block. Remove the cylinder block drain plugs (A), (B), (C), (D) and block heater (if equipped), to drain the cylinder block as shown.

NOTE:

For Canada, the cylinder block drain plug (D) as shown, is not a cylinder block drain plug but a block heater.



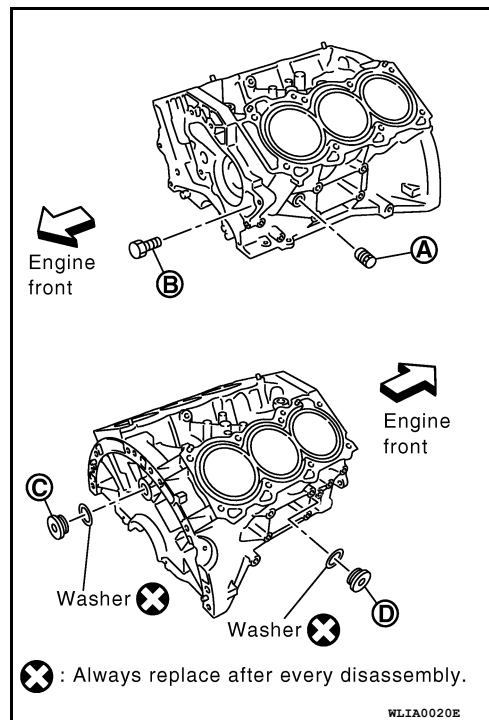
ENGINE MAINTENANCE (VQ40DE)

< PERIODIC MAINTENANCE >

5. Remove the reservoir tank to drain the engine coolant, then clean the reservoir tank before installing it.
6. Check the drained 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. Close the radiator drain plug. Install the reservoir tank, cylinder block drain plugs (A), (B), (C), (D) and block heater (if equipped), 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 (A), (B), (C), (D). Use Genuine High Performance Thread Sealant or equivalent. Refer to [GI-22. "Recommended Chemical Products and Sealants"](#).
 - Tighten each plug to the specified torque. Refer to [EM-221. "Disassembly and Assembly"](#).



2. 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.
3. Remove the vented reservoir cap and replace it with a non-vented reservoir cap before filling the cooling system.
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.

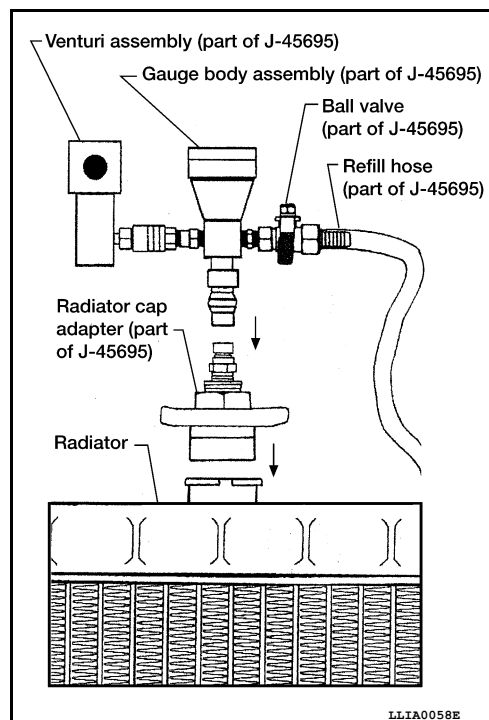
- Use recommended coolant or equivalent.

Refer to [MA-16](#) (United States and Canada), [MA-18](#) (Mexico).

CAUTION:

Never use any cooling system additives such as radiator sealer. Additives may clog the cooling system and cause damage to the engine, transmission and/or cooling system.

Cooling system capacity (with reservoir) : Refer to [MA-16](#) (United States and Canada), [MA-18](#) (Mexico).



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

ENGINE MAINTENANCE (VQ40DE)

< PERIODIC MAINTENANCE >

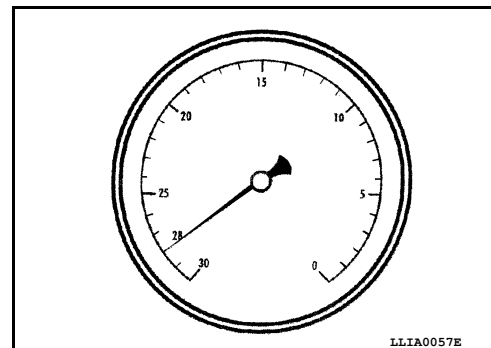
Compressed air supply pressure : 549 - 824 kPa (5.6 - 8.4 kg/cm², 80 - 120 psi)

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 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 and install the radiator cap.
12. Remove the non-vented reservoir cap.
13. Fill the cooling system reservoir tank to the specified level. Run the engine to warm up the cooling system and top up the system as necessary before installing the vented reservoir cap.
14. Install engine under cover. Refer to [EXT-15, "Removal and Installation"](#).

FLUSHING COOLING SYSTEM

1. Drain the water from the engine cooling system. Refer to [MA-32, "ENGINE COOLANT : Changing Engine Coolant"](#).
2. Fill the radiator and the reservoir tank (to the "MAX" line), with water. Reinstall the radiator cap and leave the vented reservoir cap off.
3. Run the engine until it reaches normal operating temperature.
4. Press the engine accelerator two or three times under no-load.
5. Stop the engine and wait until it cools down.
6. Drain the water from the engine cooling system. Refer to [MA-32, "ENGINE COOLANT : Changing Engine Coolant"](#).
7. Repeat steps 2 through 6 until clear water begins to drain from the radiator.

FUEL LINES

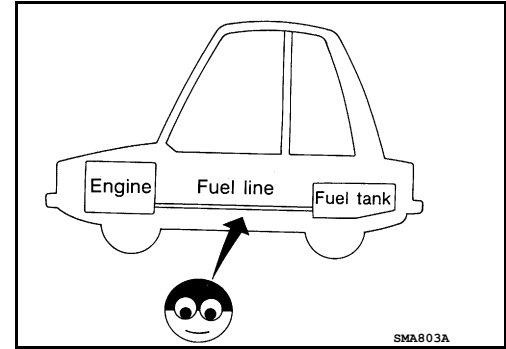
ENGINE MAINTENANCE (VQ40DE)

< PERIODIC MAINTENANCE >

FUEL LINES : Checking Fuel Line

INFOID:000000006252274

Inspect the fuel lines and fuel tank for improper mounting, leaks, cracks, damage, loose connections, chafing, or deterioration. As necessary, repair or replace any faulty parts.



FUEL FILTER

FUEL FILTER : Changing Fuel Filter

INFOID:000000006252275

The fuel filter is part of the fuel level sensor unit, fuel filter and fuel pump assembly. Refer to [FL-11, "Removal and Installation"](#).

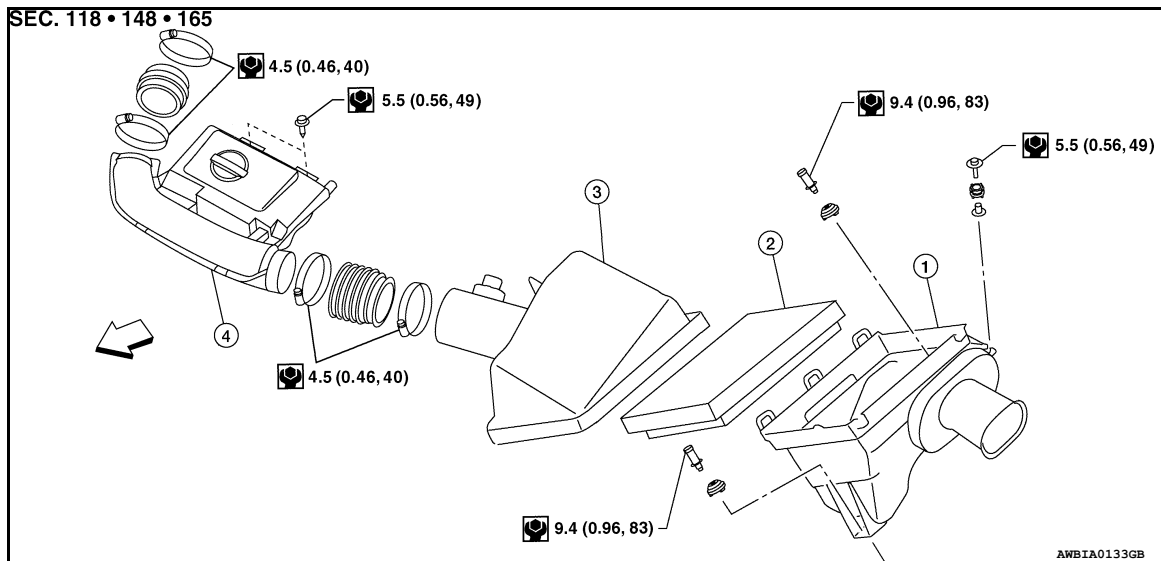
WARNING:

Before replacing the fuel filter, release the fuel pressure from the fuel system. Refer to [EC-931, "Fuel Pressure Check"](#).

AIR CLEANER FILTER

AIR CLEANER FILTER : Exploded View

INFOID:000000006252276



- | | | |
|-----------------------------|-----------------------|-----------------------------|
| 1. Air cleaner case (lower) | 2. Air cleaner filter | 3. Air cleaner case (upper) |
| 4. Air duct and resonator | ⇐ Front | |

AIR CLEANER FILTER : Removal and Installation

INFOID:000000006252277

REMOVAL

1. Disconnect air duct and resonator from the air cleaner case (upper).
2. Disconnect MAF/IAT sensor.
3. Unhook clips, and lift air cleaner case (upper).
4. Remove air cleaner filter.

INSTALLATION

ENGINE MAINTENANCE (VQ40DE)

< PERIODIC MAINTENANCE >

Installation is in the reverse order of removal.

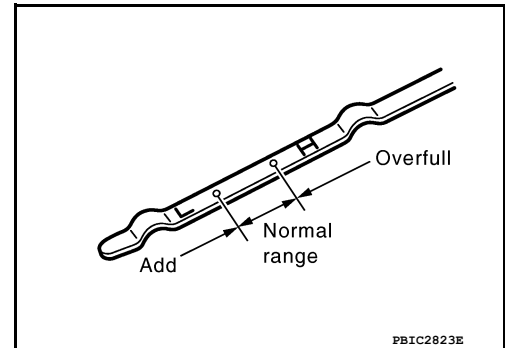
ENGINE OIL

ENGINE OIL : Inspection

INFOID:000000006252278

OIL LEVEL

- Before starting the engine make sure the vehicle is parked on a flat and level surface, then check the oil level. If the engine is already running, turn it off and allow 10 minutes before checking.
- Pull out oil level gauge and wipe clean.
- Insert oil level gauge.
- Check that the oil level is within the low (L) and high (H) range as indicated on the dipstick.
- If the engine oil level is out of range, add oil as necessary. Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada), [MA-18, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).



CAUTION:

Do not overfill the engine with oil.

ENGINE OIL : Changing Engine Oil

INFOID:000000006252279

WARNING:

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

1. Warm up the engine, and check for any oil leaks.
2. Stop the engine and wait for at least 10 minutes.
3. Remove the oil drain plug and oil filler cap to drain the old oil.
4. Install a new washer on the oil drain plug, then install the oil drain plug in the oil pan.

CAUTION:

- Clean the drain plug and install with a new washer.
- Do not reuse copper sealing washer.

Oil drain plug : Refer to [EM-152, "Removal and Installation"](#).

5. Refill the engine with new specified engine oil.

Oil grade and viscosity : Refer to [MA-16](#) (United States and Canada), [MA-18](#) (Mexico).

Oil capacity : Refer to [MA-16](#) (United States and Canada), [MA-18](#) (Mexico).

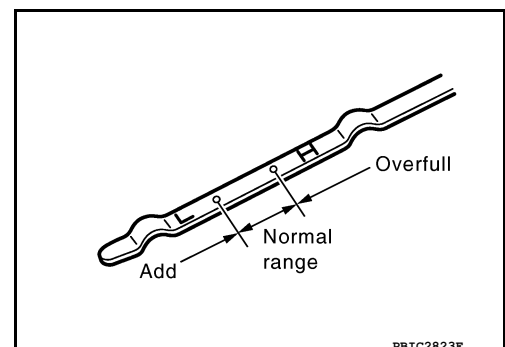
CAUTION:

The refill capacity depends on the oil temperature and drain time. Use the "Refill oil capacity" values as a reference and check the oil level using the dipstick when filling the engine with oil.

6. Warm up the engine and check the area around the drain plug and oil filter for any oil leaks.
7. Stop the engine and wait for more than 10 minutes.
8. Check the oil level using the dipstick as shown. Add oil as necessary and install the oil filler cap. Refer to [MA-36, "ENGINE OIL : Inspection"](#).

CAUTION:

Do not overfill the engine with oil.



ENGINE MAINTENANCE (VQ40DE)

< PERIODIC MAINTENANCE >

OIL FILTER

OIL FILTER : Removal and Installation

INFOID:000000006252280

REMOVAL

1. Remove the engine under cover. Refer to [EXT-15, "Removal and Installation"](#).
2. Drain engine oil. Refer to [MA-36, "ENGINE OIL : Changing Engine Oil"](#).
3. Remove the oil filter using Tool as shown.

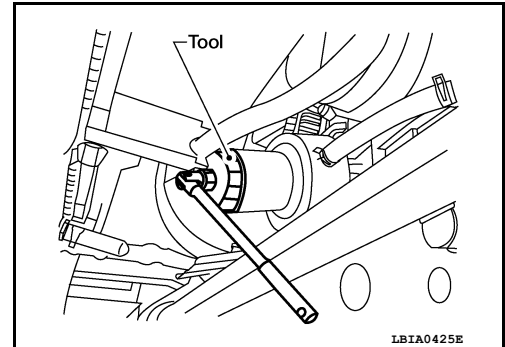
Tool number : KV10115801 (J-38956)

WARNING:

Be careful not to burn yourself, as the engine and engine oil may be hot.

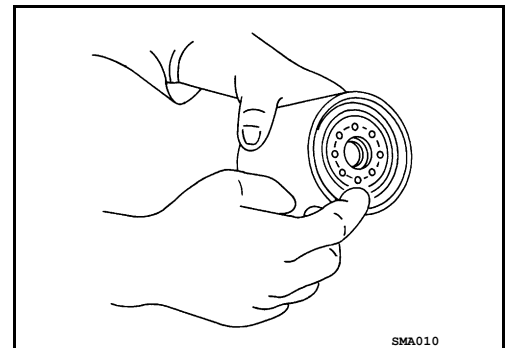
CAUTION:

- Oil filter is equipped with a pressure relief valve.
- Use Genuine NISSAN Oil Filter or equivalent.
- When removing, prepare a shop cloth to absorb any engine oil leaks or spills.
- Do not allow engine oil to adhere to drive belts.
- Completely wipe off any engine oil that adheres to the engine and the vehicle.



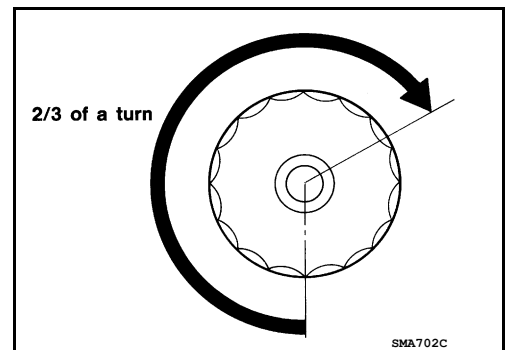
INSTALLATION

1. Remove foreign materials adhering to the oil filter seal mating surface.
2. Apply clean engine oil to the oil filter seal circumference of the new oil filter as shown.



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

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



4. Refill engine with new engine oil. Refer to [LU-22, "Changing Engine Oil"](#).
5. Inspect the engine for oil leaks. Refer to [MA-37, "OIL FILTER : Removal and Installation"](#).
6. Install the engine under cover. Refer to [EXT-15, "Removal and Installation"](#).

INSPECTION AFTER INSTALLATION

- Before starting engine, check oil/fluid levels including engine coolant and engine oil. If less than required quantity, fill to the specified level. Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada). Refer to [MA-18, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).
- Use procedure below to check for fuel leakage.

ENGINE MAINTENANCE (VQ40DE)

< PERIODIC MAINTENANCE >

- Turn ignition switch ON (with engine stopped). With fuel pressure applied to fuel piping, check for fuel leakage at connection points.
- Start engine. With engine speed increased, check again for fuel leakage at connection points.
- Run engine to check for unusual noise and vibration.

NOTE:

If hydraulic pressure inside timing chain tensioner drops after removal and installation, slack in the guide may generate a pounding noise during and just after engine start. However, this is normal. Noise will stop after hydraulic pressure rises.

- Warm up engine thoroughly to make sure there is no leakage of fuel, exhaust gas, or any oils/fluids including engine oil and engine coolant.
- Bleed air from passages in lines and hoses, such as in cooling system.
- After cooling down engine, again check oil/fluid levels including engine oil and engine coolant. Refill to specified level, if necessary.
- Summary of the inspection items:

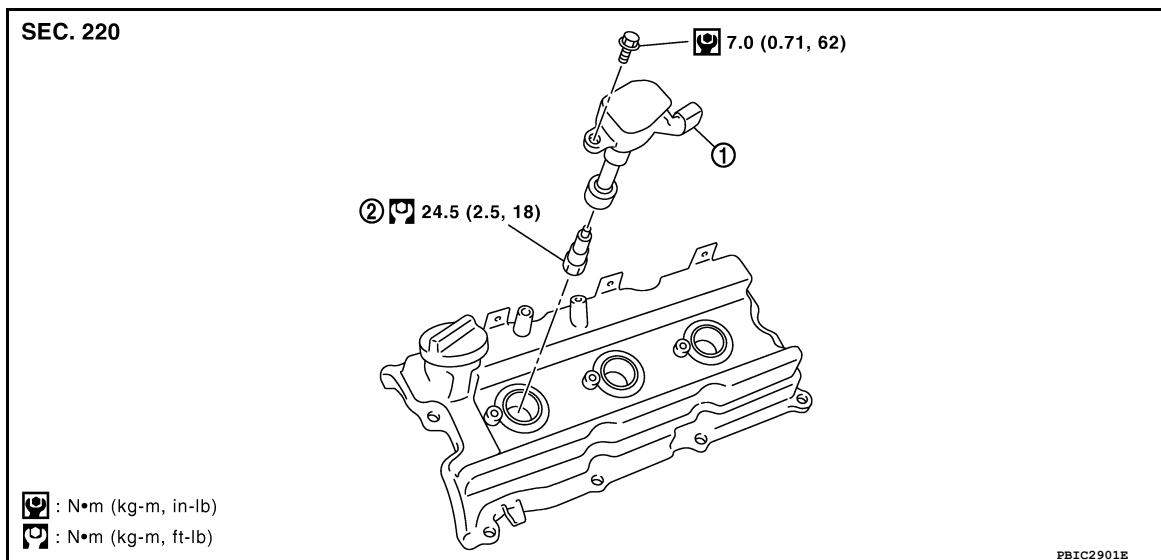
Item		Before starting engine	Engine running	After engine stopped
Engine coolant		Level	Leakage	Level
Engine oil		Level	Leakage	Level
Transmission/ transaxle fluid	A/T and CVT Models	Leakage	Level/Leakage	Leakage
	M/T Models	Level/Leakage	Leakage	Level/Leakage
Other oils and fluids*		Level	Leakage	Level
Fuel		Leakage	Leakage	Leakage
Exhaust gas		—	Leakage	—

*Power steering fluid, brake fluid, etc.

SPARK PLUG

SPARK PLUG : Exploded View

INFOID:000000006252281



1. Ignition coil

2. Spark plug

SPARK PLUG : Removal and Installation

INFOID:000000006252282

REMOVAL

1. Remove the ignition coil. Refer to [EM-158. "Removal and Installation"](#).

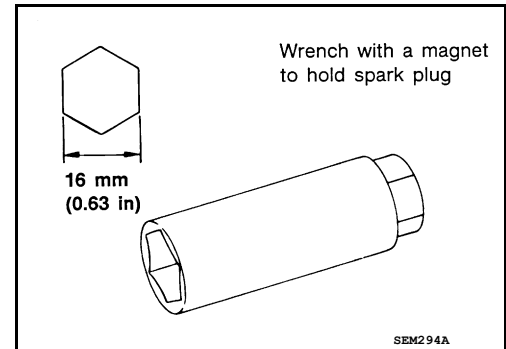
ENGINE MAINTENANCE (VQ40DE)

< PERIODIC MAINTENANCE >

- Remove the spark plug using a suitable tool.

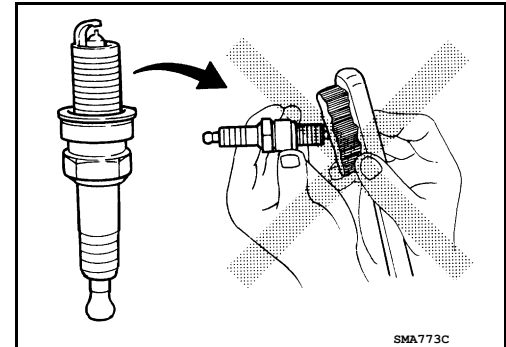
CAUTION:

Do not drop or shock it.



INSPECTION AFTER REMOVAL

- Do not use a wire brush for cleaning.

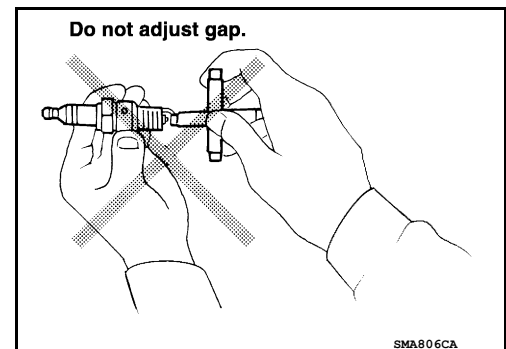


- If the spark plug tip is covered with carbon, spark plug cleaner may be used.

Cleaner air pressure : Less than 588 kPa (5.9 bar, 6 kg/cm², 85 psi)

Cleaning time : Less than 20 seconds

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



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

Do not drop or shock the spark plug.

Make	NGK
Standard type *	DILFR5A-11
Gap (nominal)	1.1 mm (0.043 in)

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

EVAP VAPOR LINES

EVAP VAPOR LINES : Checking EVAP Vapor Line

INFOID:000000006252283

- Visually inspect EVAP vapor lines for improper attachment, cracks, damage, loose connections, chafing or deterioration.

ENGINE MAINTENANCE (VQ40DE)

< PERIODIC MAINTENANCE >

2. Inspect vacuum relief valve of fuel tank filler cap for clogging and sticking.
Refer to [EC-933, "How to Detect Fuel Vapor Leakage"](#).

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

CHASSIS AND BODY MAINTENANCE

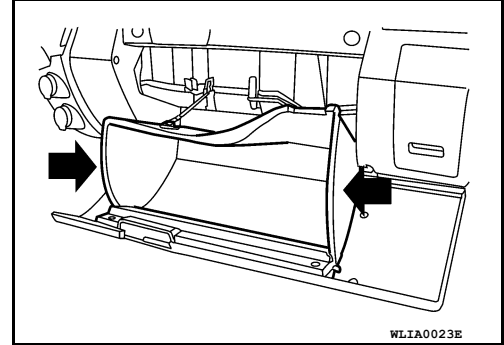
IN-CABIN MICROFILTER

IN-CABIN MICROFILTER : Removal and Installation

INFOID:000000006252284

REPLACEMENT PROCEDURE

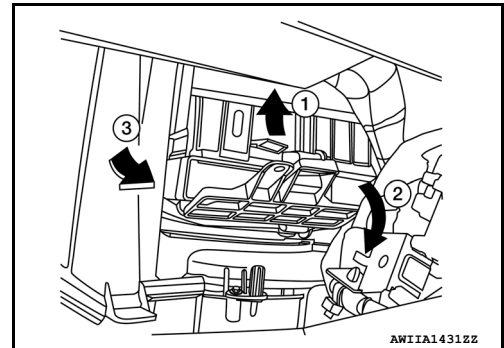
1. Open the lower glove box and press in on the sides so that it will open completely allowing it to hang by the cord.



2. Gently lift up on the lock tab (1) then pull the in-cabin microfilter cover rearward (toward the rear of the vehicle) and then down (2) to remove the in-cabin microfilters (3) from the heater and cooling unit housing.

CAUTION:

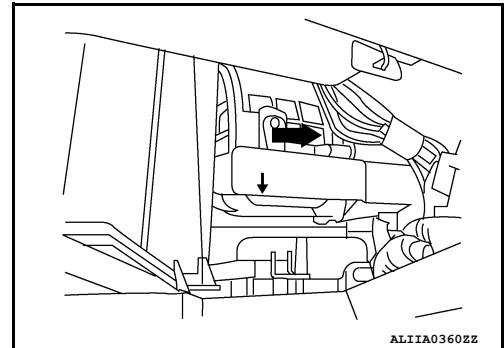
Use care when lifting up on the tab to avoid damaging it.



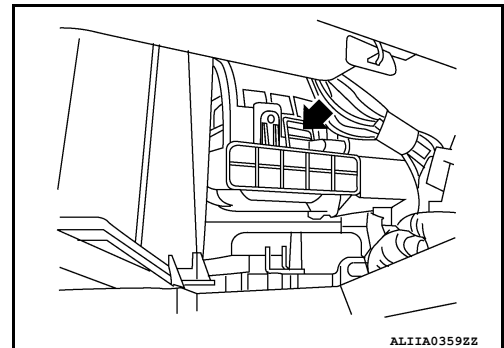
3. Insert the first new in-cabin microfilter into the heater and cooling unit housing and slide it over to the right. Insert the second new in-cabin microfilter into the heater and cooling unit housing.

NOTE:

The in-cabin microfilters are marked with air flow arrows. The end of the microfilter with the arrow should face the rear of the vehicle. The arrows should point downward.



4. Install the in-cabin microfilter cover, make sure the lock tab is locked in place as shown.



5. Close the lower glove box completely.

EXHAUST SYSTEM

CHASSIS AND BODY MAINTENANCE

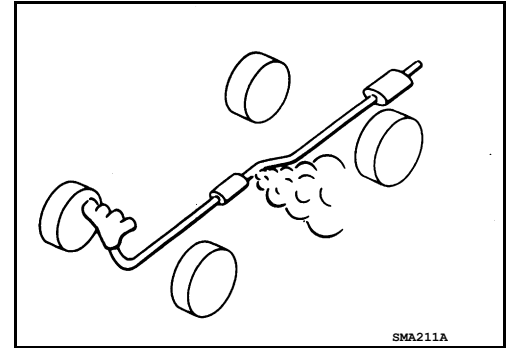
< PERIODIC MAINTENANCE >

EXHAUST SYSTEM : Checking Exhaust System

INFOID:000000006252285

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

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



TRANSMISSION OIL

TRANSMISSION OIL : Checking the A/T Fluid (ATF)

INFOID:000000006252286

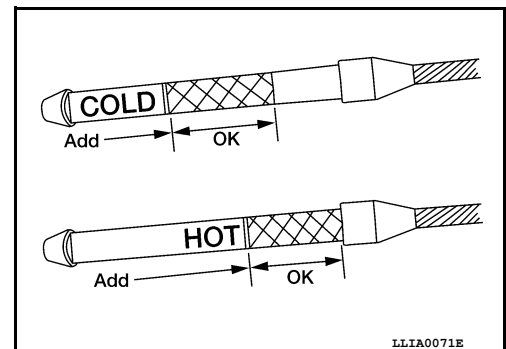
CAUTION:

If using the vehicle for towing, the A/T fluid must be replaced as specified. Refer to [MA-9, "FOR USA AND CANADA : Periodic Maintenance"](#) (United States and Canada), [MA-13, "FOR MEXICO : Periodic Maintenance"](#) (Mexico).

1. Before driving, the A/T fluid level can be checked at A/T fluid temperatures of 30° to 50° C (86° to 122° F) using the "COLD" range on the A/T fluid level gauge as follows:
 - a. Park the vehicle on a level surface and set the parking brake.
 - b. Start the engine and move the shift selector through each gear position. Move the shift selector into the "P" position.
 - c. Check the A/T fluid level with the engine idling.
 - d. Remove the A/T fluid level gauge and wipe it clean with a lint-free paper.

CAUTION:

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



- e. Re-insert the A/T fluid level gauge into the A/T fluid charging pipe until the cap contacts the top of the A/T fluid charging pipe as shown.

CAUTION:

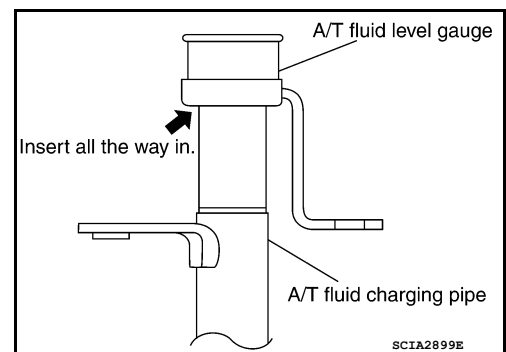
To check A/T fluid level, insert the A/T fluid level gauge until the cap contacts the top of the A/T fluid charging pipe, with the gauge reversed from the normal inserted position.

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

CAUTION:

Do not overfill the transmission with A/T fluid.

- g. Install the A/T fluid level gauge and the A/T fluid level gauge bolt.



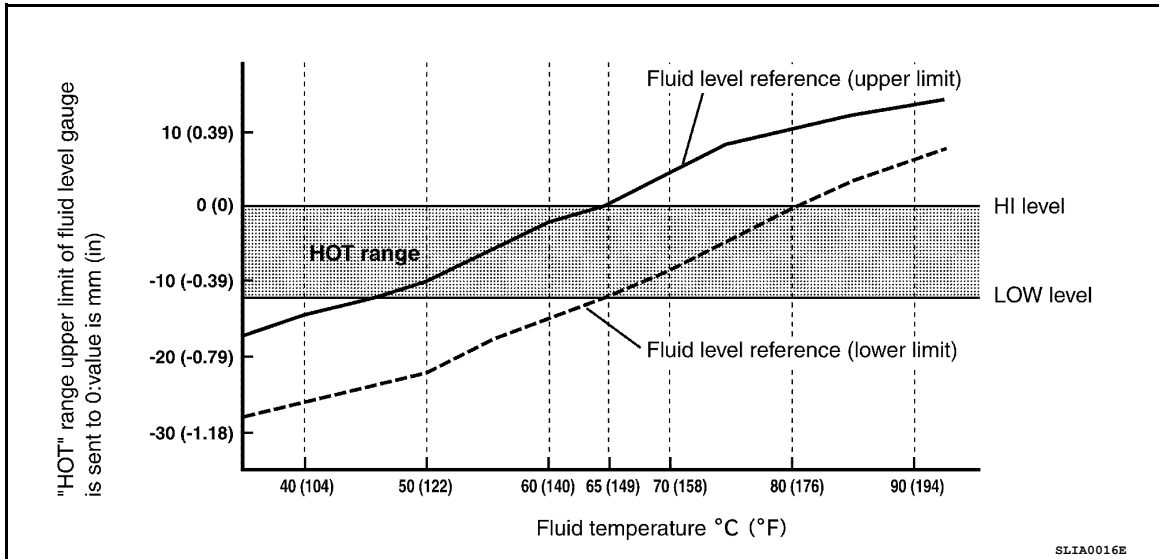
A/T fluid level gauge bolt : Refer to [TM-299, "Component"](#).

2. Warm up the engine and transmission.
3. Check for any A/T fluid leaks.
4. Drive the vehicle to increase the A/T fluid temperature to 80° C (176° F).

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

5. Allow the A/T fluid temperature to fall to approximately 65°C (149°F). Use the CONSULT-III to monitor the A/T fluid temperature as follows:



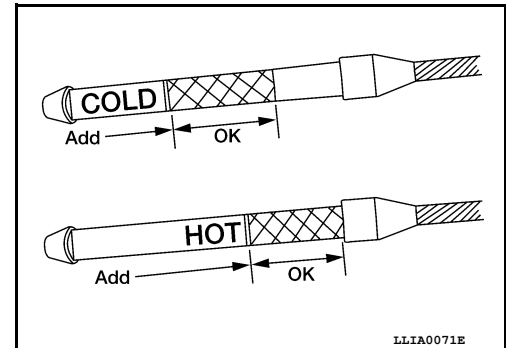
NOTE:

The A/T fluid level will be significantly affected by the A/T fluid temperature as shown. Therefore monitor the A/T fluid temperature data using the CONSULT-III.

- a. Connect CONSULT-III to data link connector.
 - b. Select "MAIN SIGNALS" in "DATA MONITOR" mode for "A/T" with CONSULT-III.
 - c. Read out the value of "ATF TEMP 1".
6. Re-check the A/T fluid level at A/T fluid temperatures of approximately 65°C (149°F) using the "HOT" range on the A/T fluid level gauge as shown. The HOT range is between 50° - 80° C (122° - 176° F).

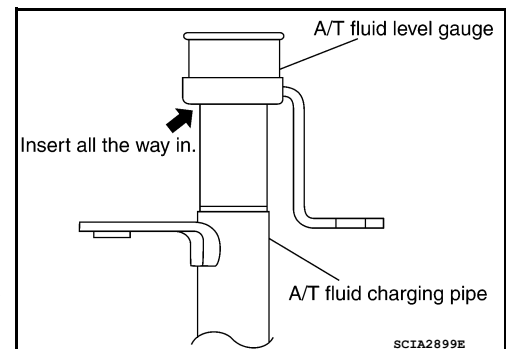
CAUTION:

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



- To check the A/T fluid level, insert the A/T fluid level gauge until the cap contacts the top of the A/T fluid charging pipe, with the gauge reversed from the normal inserted position as shown.

7. Check the A/T fluid condition.
 - If the A/T fluid is very dark or has some burned smell, there may be an internal problem with the transmission. Flush the transmission cooling system after repairing the transmission.
 - If the A/T fluid contains frictional material (clutches, bands, etc.), replace the radiator and flush the transmission cooler lines using cleaning solvent and compressed air after repairing the transmission.
8. Install the A/T fluid level gauge in the A/T fluid charging pipe.
9. Tighten the A/T fluid level gauge bolt to specification.



A/T fluid level gauge bolt : Refer to [TM-299, "Component"](#).

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

TRANSMISSION OIL : Changing the A/T Fluid (ATF)

INFOID:000000006252287

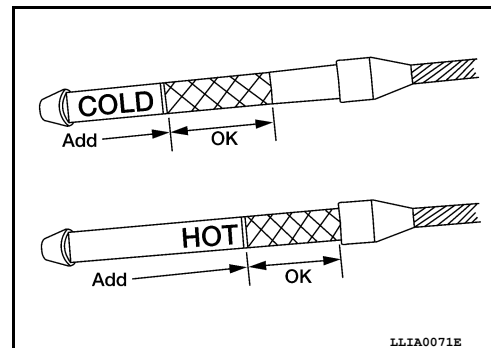
CAUTION:

If using the vehicle for towing, the A/T fluid must be replaced as specified.

Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada), [MA-18, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).

1. Drive the vehicle to warm up the A/T fluid to approximately 80° C (176° F).
2. Stop the engine.
3. Remove the A/T fluid level gauge.
4. Drain the A/T fluid from the drain plug hole, then install the drain plug with a new gasket. Refill the transmission with new A/T fluid. Always refill with the same volume as the drained A/T fluid. Use the A/T fluid level gauge to check the A/T fluid level as shown. Add A/T fluid as necessary.

Drain plug : Refer to [TM-299, "Component"](#).



- To flush out the old A/T fluid from the transmission oil coolers, pour new A/T fluid into the A/T fluid charging pipe with the engine idling and at the same time drain the old A/T fluid from the auxiliary transmission oil cooler hose return line.
- When the color of the A/T fluid coming out of the auxiliary transmission oil cooler hose return line is about the same as the color of the new A/T fluid, flushing out the old A/T fluid is complete. The amount of new A/T fluid used for flushing should be 30% to 50% increase of the specified capacity.

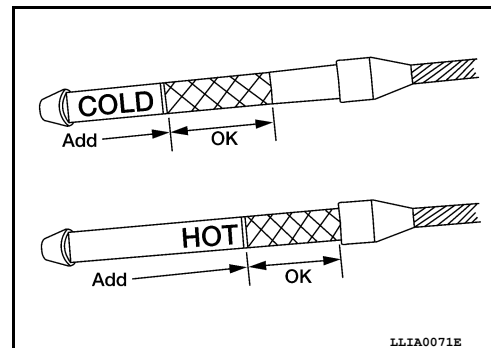
A/T fluid grade and capacity : Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada), [MA-18, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).

CAUTION:

- If genuine NISSAN Matic S ATF is not available, Genuine NISSAN Matic J ATF may also be used. Using automatic transmission fluid other than Genuine NISSAN Matic S ATF or Matic J ATF will cause deterioration in driveability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the NISSAN new vehicle limited warranty
 - When filling the transmission with A/T fluid, do not spill the A/T fluid on any heat generating parts such as the exhaust manifold.
 - Do not reuse the drain plug gasket.
5. Install the A/T fluid level gauge and tighten the A/T fluid level gauge bolt to specification.

A/T fluid level gauge bolt : Refer to [TM-299, "Component"](#).

6. Drive the vehicle to warm up the A/T fluid to approximately 80° C (176° F).
7. Check the fluid level and condition. If the A/T fluid is still dirty, repeat steps 2 through 6.



8. Install the A/T fluid level gauge in the A/T fluid charging pipe and install the A/T fluid level gauge bolt.

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

9. Tighten the A/T fluid level gauge bolt to specification.

A/T fluid level gauge bolt : Refer to [TM-299, "Component"](#).

M/T OIL

M/T OIL : FS6R31A

INFOID:000000006252288

M/T OIL : Changing

INFOID:000000006252289

DRAINING

1. Start the engine and let it run to warm up the transmission.
2. Stop the engine. Remove the transmission drain plug and drain the oil.
3. Set a gasket on the drain plug and install it to the transmission. Tighten the drain plug to the specified torque. Refer to [TM-76, "Overhaul"](#).

CAUTION:

Do not reuse gasket.

FILLING

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

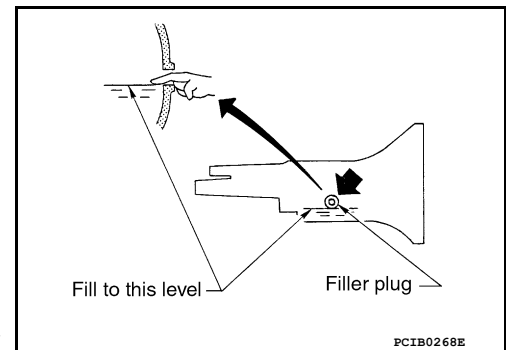
Oil grade and viscosity Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#).

Oil capacity Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#).

2. After refilling the oil, check oil level. Set a gasket to the filler plug, then install it to the transmission. Tighten the filler plug to the specified torque. Refer to [TM-76, "Overhaul"](#).

CAUTION:

Do not reuse gasket.



M/T OIL : Checking

INFOID:000000006252290

OIL LEAKAGE AND OIL LEVEL

1. Make sure that oil is not leaking from the transmission or around it.
2. Check oil level from the filler plug hole as shown.

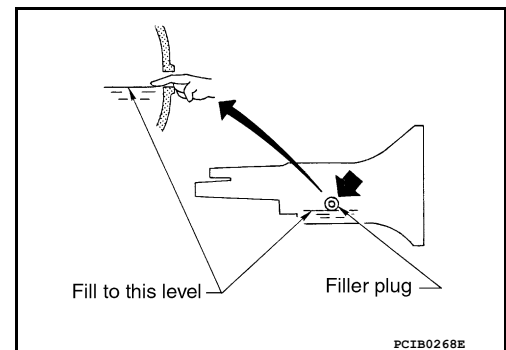
CAUTION:

Do not start engine while checking oil level.

3. Set a gasket on the filler plug and install it to the transmission. Tighten the filler plug to the specified torque. Refer to [TM-76, "Overhaul"](#).

CAUTION:

Do not reuse gasket.



M/T OIL : FS5R30A

INFOID:000000006252291

M/T OIL : Changing

INFOID:000000006252292

DRAINING

1. Start the engine and let it run to warm up the transmission.

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

2. Stop the engine. Remove the transmission drain plug and drain the oil.
3. Set a gasket on the drain plug and install it to the transmission. Tighten the drain plug to the specified torque. Refer to [TM-22, "Overhaul"](#).

CAUTION:

Do no reuse gasket.

FILLING

1. Remove the filler plug. Fill with new oil until oil level reaches the specified limit near the filler plug hole.

Oil grade and Viscosity Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#).

Oil capacity Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#).

2. After refilling the oil, check oil level. Set a gasket to the filler plug, then install it to the transmission. Tighten the filler plug to the specified torque. Refer to [TM-22, "Overhaul"](#).

CAUTION:

Do not reuse gasket.

M/T OIL : Checking

INFOID:000000006252293

OIL LEAKAGE AND OIL LEVEL

1. Make sure that oil is not leaking from the transmission or around it.
2. Check oil level from the filler plug hole as shown.

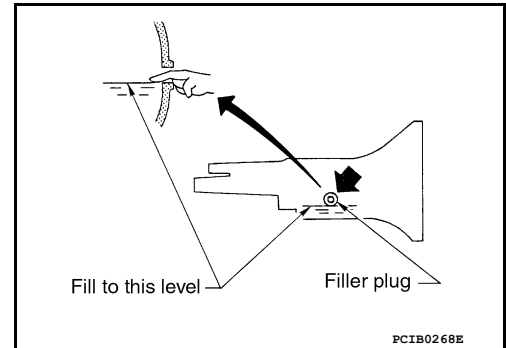
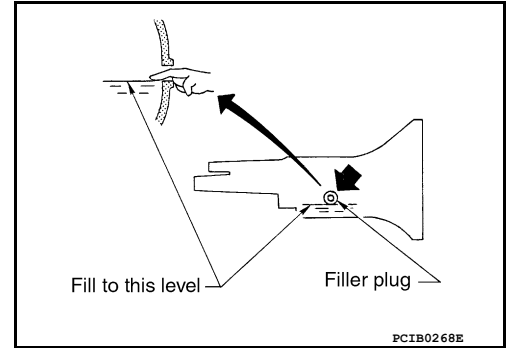
CAUTION:

Do not start engine while checking oil level.

3. Set a gasket on the filler plug and install it to the transmission. Tighten the filler plug to the specified torque. Refer to [TM-22, "Overhaul"](#).

CAUTION:

Do not reuse gasket.



TRANSFER FLUID

TRANSFER FLUID : Replacement

INFOID:000000006252294

CAUTION:

If using the vehicle for towing, the transfer fluid must be replaced as specified.

Refer to [MA-9, "FOR USA AND CANADA : Periodic Maintenance"](#) (United States and Canada), [MA-13, "FOR MEXICO : Periodic Maintenance"](#) (Mexico).

DRAINING

1. Stop engine.

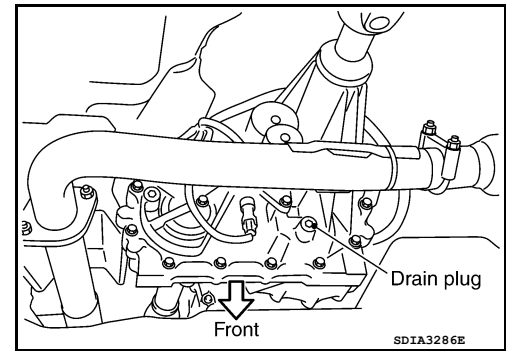
CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

2. Remove the drain plug and gasket and drain the fluid.
3. Install the drain plug with a new gasket to the transfer. Tighten to the specified torque. Refer to [DLN-105, "Exploded View"](#).

CAUTION:

Do not reuse gasket.



FILLING

1. Remove the filler plug and gasket.
2. Fill the transfer with new fluid until the fluid level reaches the specified limit near the filler plug hole.

Fluid grade and capacity : Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada), [MA-18, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).

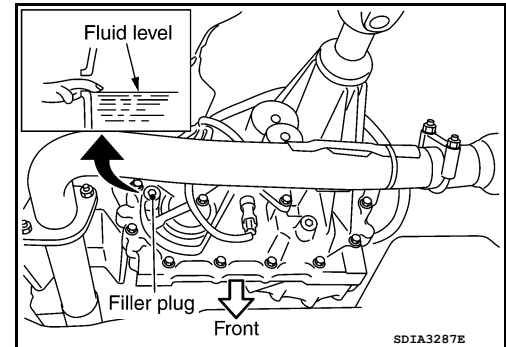
CAUTION:

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

3. Leave the vehicle for 3 minutes, and check fluid level again.
4. Install the filler plug with a new gasket to the transfer. Tighten to the specified torque. Refer to [DLN-105, "Exploded View"](#).

CAUTION:

Do not reuse gasket.



TRANSFER FLUID : Inspection

INFOID:000000006252295

CAUTION:

If using the vehicle for towing, the transfer fluid must be replaced as specified.

Refer to [MA-9, "FOR USA AND CANADA : Periodic Maintenance"](#) (United States and Canada), [MA-13, "FOR MEXICO : Periodic Maintenance"](#) (Mexico).

FLUID LEAKAGE AND FLUID LEVEL

1. Make sure that fluid is not leaking from the transfer assembly or around it.
2. Check fluid level from the filler plug hole as shown.

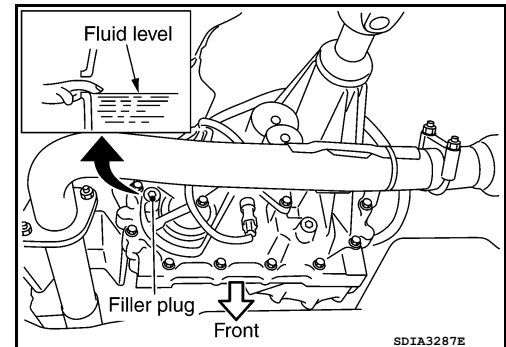
CAUTION:

Do not start engine while checking fluid level.

3. Install the filler plug with a new gasket to the transfer. Tighten to the specified torque. Refer to [DLN-105, "Exploded View"](#).

CAUTION:

Do not reuse gasket.



PROPELLER SHAFT

PROPELLER SHAFT : Checking Propeller Shaft

INFOID:000000006252296

Check the front and rear propeller shafts for damage, dents, and cracks. Check the joints for looseness and any damage. Repair or replace as necessary. Refer to [FAX-4, "NVH Troubleshooting Chart"](#).

DIFFERENTIAL GEAR OIL

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

DIFFERENTIAL GEAR OIL : Front Final Drive - R180A

INFOID:000000006252297

DIFFERENTIAL GEAR OIL : Changing Differential Gear Oil

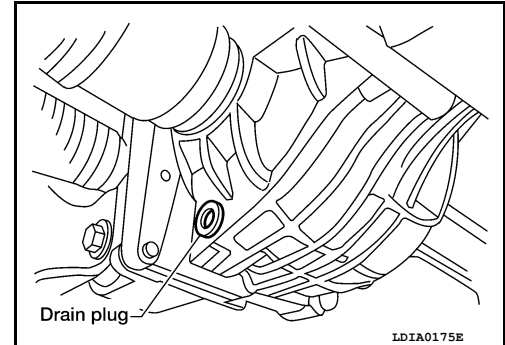
INFOID:000000006252298

DRAINING

1. Stop the engine.
2. Remove the drain plug and gasket from the front final drive assembly to drain the differential gear oil.
3. Install the drain plug with a new gasket to the front final drive assembly. Tighten to the specified torque. Refer to [DLN-195, "Disassembly and Assembly"](#).

CAUTION:

Do not reuse gasket.

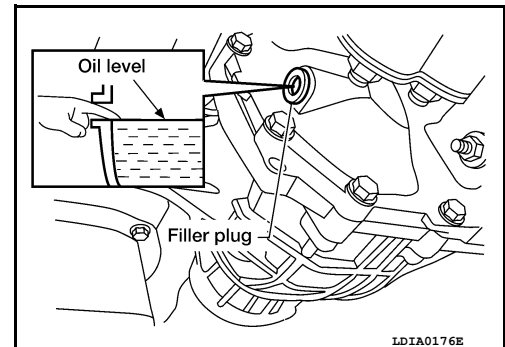


FILLING

1. Remove the filler plug and gasket from the front final drive assembly.
2. Fill the front final drive assembly with new differential gear oil until the level reaches the specified level near the filler plug hole.

**Differential gear oil
grade and capacity**

: Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada), [MA-18, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).



3. Install the filler plug with a new gasket on it to the front final drive assembly. Tighten to the specified torque. Refer to [DLN-195, "Disassembly and Assembly"](#).

CAUTION:

Do not reuse gasket.

DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil

INFOID:000000006252299

DIFFERENTIAL GEAR OIL LEAKAGE AND LEVEL

1. Make sure that differential gear oil is not leaking from the front final drive assembly or around it.
2. Check the differential gear oil level from the filler plug hole as shown.

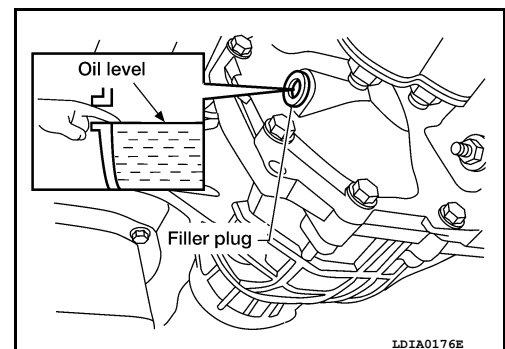
CAUTION:

Do not start engine while checking differential gear oil level.

3. Install the filler plug with a new gasket on it to the front final drive assembly. Tighten to the specified torque. Refer to [DLN-195, "Disassembly and Assembly"](#).

CAUTION:

Do not reuse gasket.



DIFFERENTIAL GEAR OIL : Rear Final Drive - C200

INFOID:000000006252300

DIFFERENTIAL GEAR OIL : Changing Differential Gear Oil

INFOID:000000006252301

DRAINING

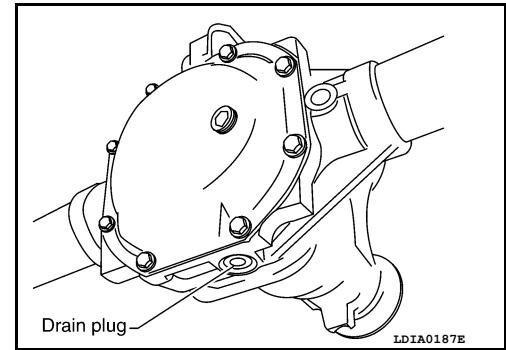
CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

1. Stop engine.
2. Remove the drain plug from the rear final drive assembly to drain the differential gear oil.
3. Install the drain plug with a new gasket to the rear final drive assembly. Tighten to the specified torque. Refer to [DLN-230, "Disassembly and Assembly"](#).

CAUTION:

Do not reuse gasket.



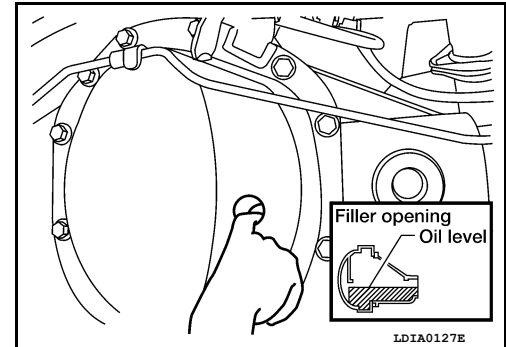
FILLING

1. Remove the filler plug from the rear final drive assembly.
2. Fill the rear final drive assembly with new differential gear oil until the level reaches the specified level near the filler plug hole.

**Differential gear oil
grade and capacity**

: Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada), [MA-18, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).

3. Install the filler plug with sealant applied on the threads to the rear final drive assembly. Tighten to the specified torque. Refer to [DLN-230, "Disassembly and Assembly"](#).
 - Use High Performance Thread Sealant or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).



DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil

INFOID:000000006252302

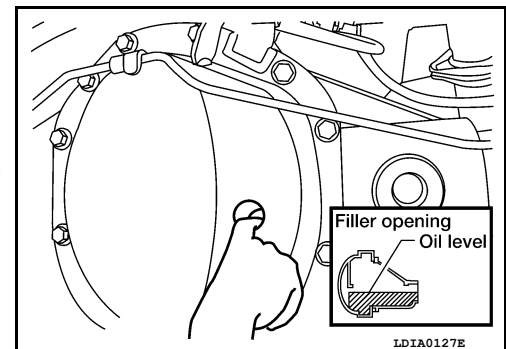
DIFFERENTIAL GEAR OIL LEAKAGE AND LEVEL

1. Make sure that differential gear oil is not leaking from the rear final drive assembly or around it.
2. Check the differential gear oil level from the filler plug hole as shown.

CAUTION:

Do not start engine while checking differential gear oil level.

3. Install the filler plug with sealant applied on the threads to the rear final drive assembly. Tighten to the specified torque. Refer to [DLN-230, "Disassembly and Assembly"](#).
 - Use High Performance Thread Sealant or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).



DIFFERENTIAL GEAR OIL : Rear Final Drive - M226

INFOID:000000006252303

DIFFERENTIAL GEAR OIL : Changing Differential Gear Oil

INFOID:000000006252304

DRAINING

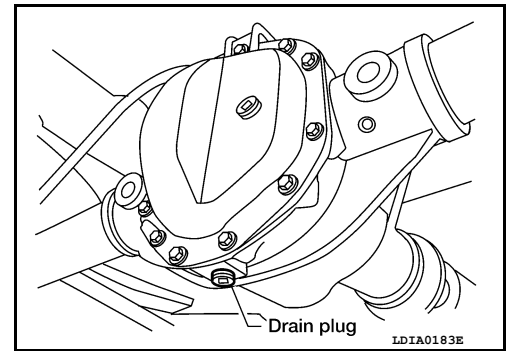
1. Stop engine.

MA

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

2. Remove the drain plug from the rear final drive assembly to drain the differential gear oil.
3. Install the drain plug with sealant applied on the threads to the rear final drive assembly. Tighten to the specified torque. Refer to [DLN-261, "Disassembly and Assembly"](#).
 - Use High Performance Thread Sealant or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).



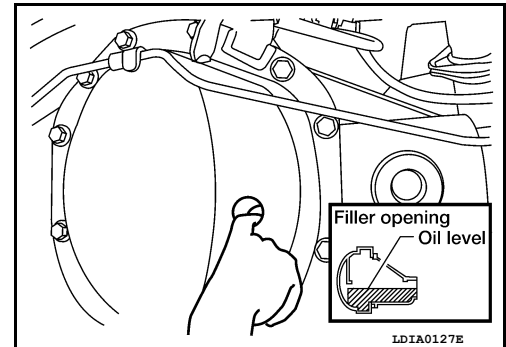
FILLING

1. Remove the filler plug from the rear final drive assembly.
2. Fill the rear final drive assembly with new differential gear oil until the level reaches the specified level near the filler plug hole.

**Differential gear oil
grade and capacity**

: Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants" \(United States and Canada\), MA-18, "FOR MEXICO : Fluids and Lubricants" \(Mexico\).](#)

3. Install the filler plug with sealant applied on the threads to the rear final drive assembly. Tighten to the specified torque. Refer to [DLN-261, "Disassembly and Assembly"](#).
 - Use High Performance Thread Sealant or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).



DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil

INFOID:000000006252305

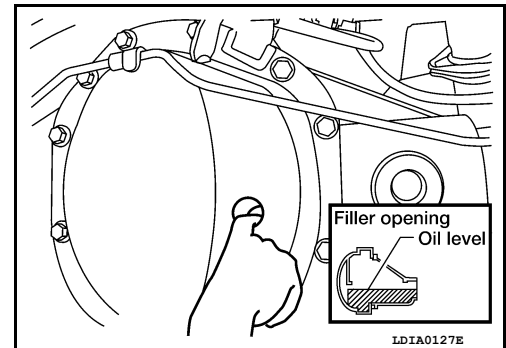
DIFFERENTIAL GEAR OIL LEAKAGE AND LEVEL

1. Make sure that differential gear oil is not leaking from the rear final drive assembly or around it.
2. Check the differential gear oil level from the filler plug hole as shown.

CAUTION:

Do not start engine while checking differential gear oil level.

3. Install the filler plug with sealant applied on the threads to the rear final drive assembly. Tighten to the specified torque. Refer to [DLN-261, "Disassembly and Assembly"](#).
 - Use High Performance Thread Sealant or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).



DIFFERENTIAL GEAR OIL : Rear Final Drive - M226 (ELD)

INFOID:000000006252306

DIFFERENTIAL GEAR OIL : Changing Differential Gear Oil

INFOID:000000006252307

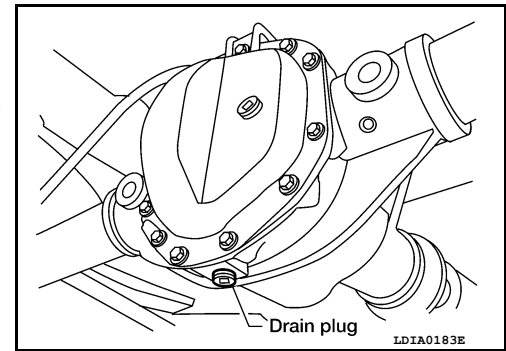
DRAINING

1. Stop engine.

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

2. Remove the drain plug from the rear final drive assembly to drain the differential gear oil.
3. Install the drain plug with sealant applied on the threads to the rear final drive assembly. Tighten to the specified torque. Refer to [DLN-326, "Disassembly and Assembly"](#).
 - Use High Performance Thread Sealant or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#)



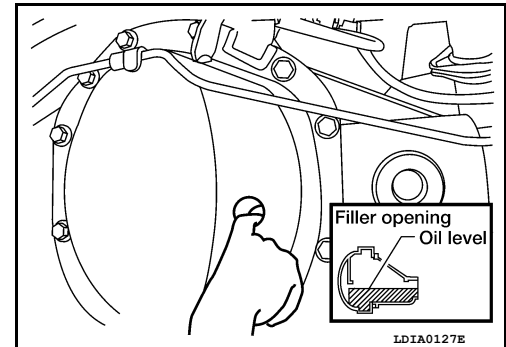
FILLING

1. Remove the filler plug from the rear final drive assembly.
2. Fill the rear final drive assembly with new differential gear oil until the level reaches the specified level near the filler plug hole.

**Differential gear oil
grade and capacity**

: Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada), [MA-18, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).

3. Install the filler plug with sealant applied on the threads to the rear final drive assembly. Tighten to the specified torque. Refer to [DLN-326, "Disassembly and Assembly"](#).
 - Use High Performance Thread Sealant or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).



DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil

INFOID:000000006252308

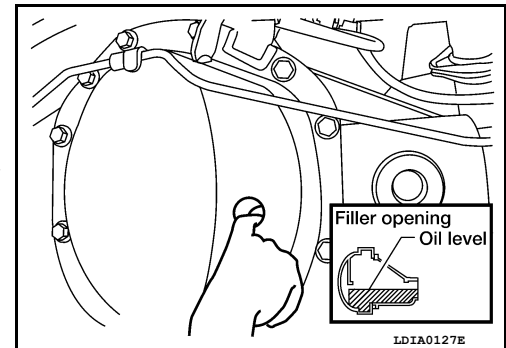
DIFFERENTIAL GEAR OIL LEAKAGE AND LEVEL

1. Make sure that differential gear oil is not leaking from the rear final drive assembly or around it.
2. Check the differential gear oil level from the filler plug hole as shown.

CAUTION:

Do not start engine while checking differential gear oil level.

3. Install the filler plug with sealant applied on the threads to the rear final drive assembly. Tighten to the specified torque. Refer to [DLN-326, "Disassembly and Assembly"](#).
 - Use High Performance Thread Sealant or equivalent. Refer to [GI-22, "Recommended Chemical Products and Sealants"](#).



WHEELS

WHEELS : Balancing Wheels

INFOID:000000006252309

BALANCING WHEELS (ADHESIVE WEIGHT TYPE)

Preparation Before Adjustment

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

CAUTION:

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

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

Wheel Balance Adjustment

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

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

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

Calculation example:

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

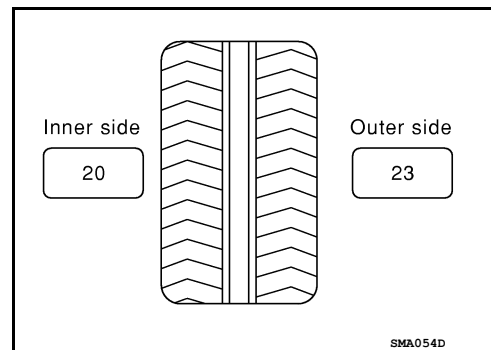
NOTE:

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

Example:

37.4 \Rightarrow 35 g (1.23 oz)

37.5 \Rightarrow 40 g (1.41 oz)



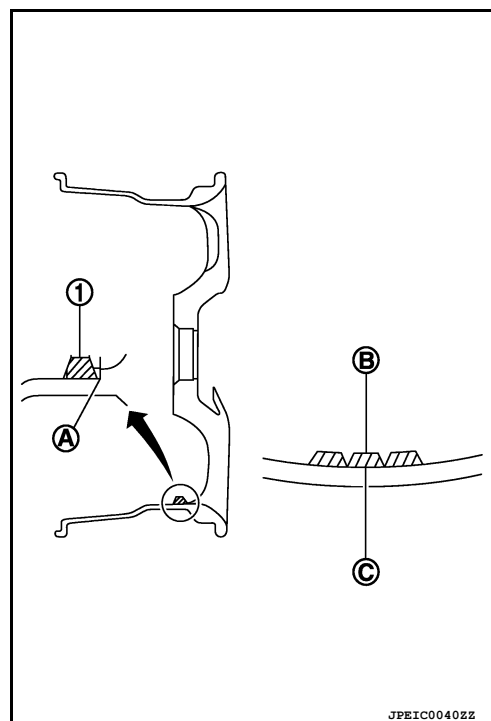
3. Install balance weight in the position shown.

CAUTION:

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

CAUTION:

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



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

CAUTION:

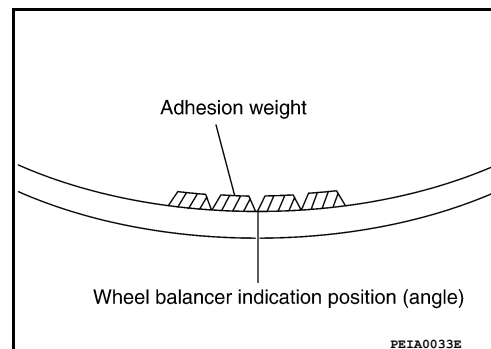
Do not install one balance weight sheet on top another.

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

CAUTION:

Do not install more than two balance weights.

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



CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

Wheel balance	Dynamic (At flange)	Static (At flange)
Maximum allowable im- balance	Refer to WT-51, "Road Wheel" .	

WHEELS : Rotation

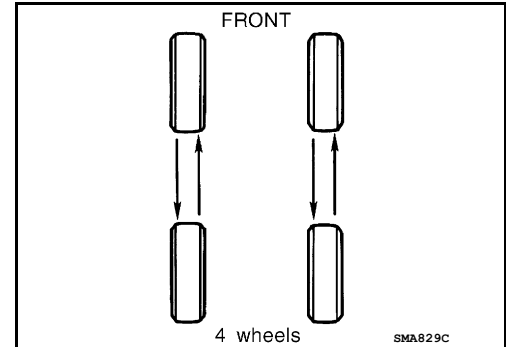
INFOID:000000006252310

TIRE ROTATION

- Follow the maintenance schedule for tire rotation service intervals. Refer to [MA-6, "FOR USA AND CANADA : General Maintenance"](#) (United States and Canada), or [MA-8, "FOR MEXICO : General Maintenance"](#) (Mexico).
- When installing the wheel, tighten wheel nuts to the specified torque.

CAUTION:

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



Wheel nut tightening torque : 133 N·m (14 kg-m, 98 ft-lb)

- Perform the ID registration, after tire rotation. Refer to [WT-6, "ID Registration Procedure"](#).

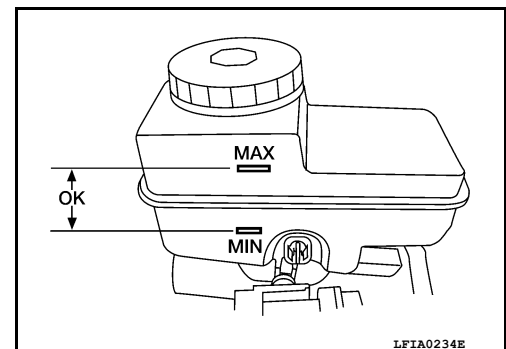
BRAKE FLUID LEVEL AND LEAKS

BRAKE FLUID LEVEL AND LEAKS : On Board Inspection

INFOID:000000006252311

LEVEL CHECK

- Check that the brake fluid level in the reservoir tank is within specification, between the MAX and MIN lines as shown.
- Visually check around reservoir tank for fluid leaks.
- If fluid level is excessively low, check brake system for leaks.
- If brake warning lamp remains illuminated after the parking brake pedal is released, check the brake system for any brake fluid leaks.



BRAKE LINES AND CABLES

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

BRAKE LINES AND CABLES : Checking Brake Line and Cables

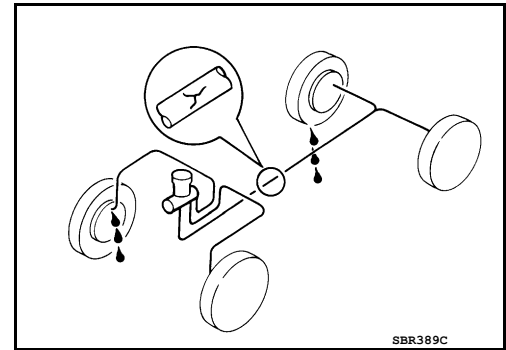
INFOID:000000006252312

1. Check the brake lines and hoses for cracks, deterioration, and other damage. Replace any damaged parts.

CAUTION:

If brake fluid leaks are visible around the brake line joints, retighten the joint, or replace damaged parts as necessary.

2. Check for brake fluid leaks by fully depressing brake pedal while engine is running.



DISC BRAKE

DISC BRAKE : Checking Disc Brake

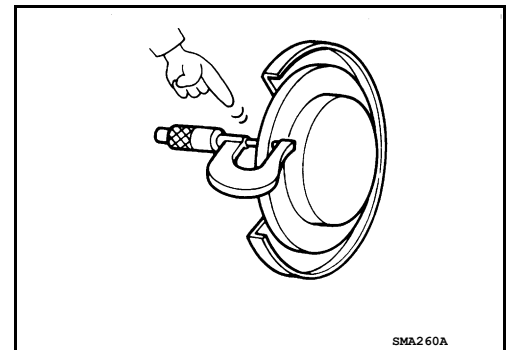
INFOID:000000006252313

ROTOR

Check the condition of the rotor, and for any wear or damage. Measure the rotor thickness using a suitable tool as shown. Repair or replace as necessary.

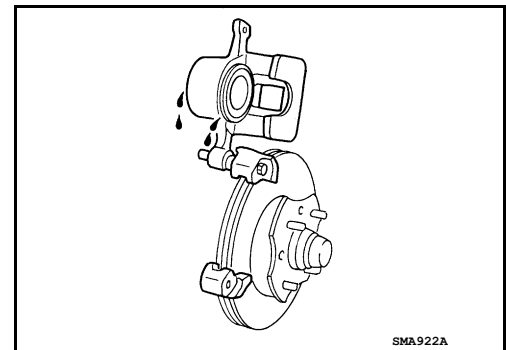
Standard thickness : Refer to [BR-57, "Front Disc Brake" \(front\)](#), [BR-57, "Rear Disc Brake" \(rear\)](#).

Repair limit thickness : Refer to [BR-57, "Front Disc Brake" \(front\)](#), [BR-57, "Rear Disc Brake" \(rear\)](#).



CALIPER

Check for any fluid leakage. Repair as necessary.



PAD

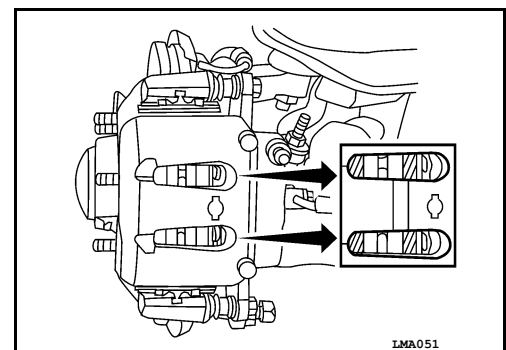
Check for any wear or damage. Measure the pad thickness. Replace as necessary.

NOTE:

Front brake shown, rear brake similar.

Standard thickness : Refer to [BR-57, "Front Disc Brake" \(front\)](#), [BR-57, "Rear Disc Brake" \(rear\)](#).

Repair limit thickness : Refer to [BR-57, "Front Disc Brake" \(front\)](#), [BR-57, "Rear Disc Brake" \(rear\)](#).



STEERING GEAR AND LINKAGE

CHASSIS AND BODY MAINTENANCE

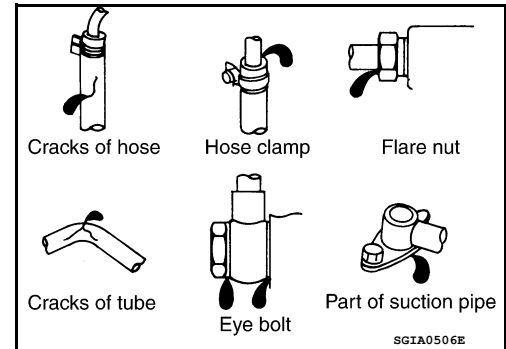
< PERIODIC MAINTENANCE >

STEERING GEAR AND LINKAGE : Checking Steering Gear and Linkage

INFOID:000000006252314

STEERING GEAR

- Check the steering gear housing for looseness, damage and oil leakage as shown.
- Check the steering column connections for looseness.



STEERING LINKAGE

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

POWER STEERING FLUID AND LINES

POWER STEERING FLUID AND LINES : Checking Power Steering Fluid and Line

INFOID:000000006252315

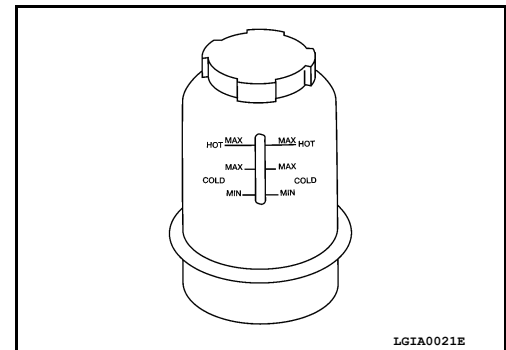
CHECKING FLUID LEVEL

- Check the power steering fluid level with the engine off.
- Check fluid level on reservoir. Use "HOT" range at fluid temperatures of 50° to 80°C (122° to 176°F). Use "COLD" range at fluid temperatures of 0° to 30°C (32° to 86°F).

CAUTION:

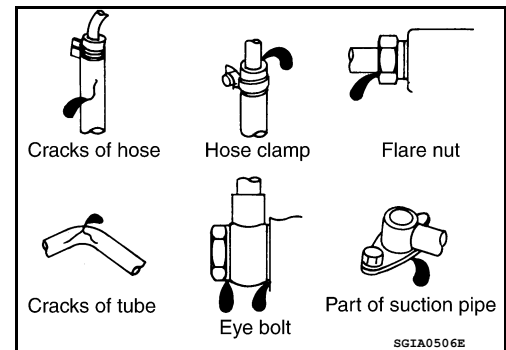
- Do not overfill.
- Fill with the recommended fluid or equivalent.

Refer to [MA-16, "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada), [MA-18, "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).



CHECKING LINES

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



AXLE AND SUSPENSION PARTS

AXLE AND SUSPENSION PARTS : Checking Axle and Suspension Parts

INFOID:000000006252316

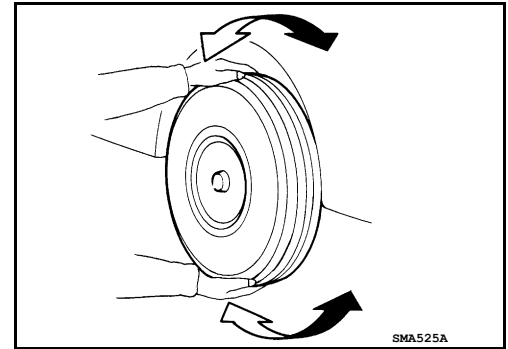
FRONT AND REAR AXLE AND SUSPENSION PARTS

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

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

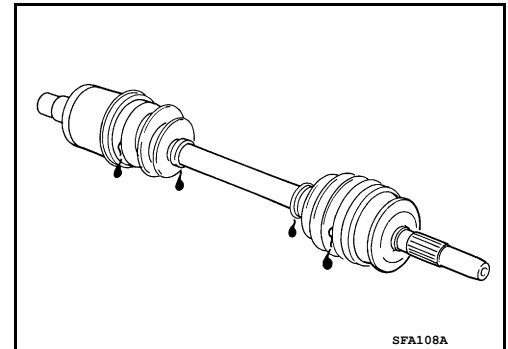
- Shake each wheel to check for excessive play.
- Rotate each wheel to check for abnormal noise.
- Check axle and suspension nuts and bolts for looseness.



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

FRONT DRIVE SHAFT

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



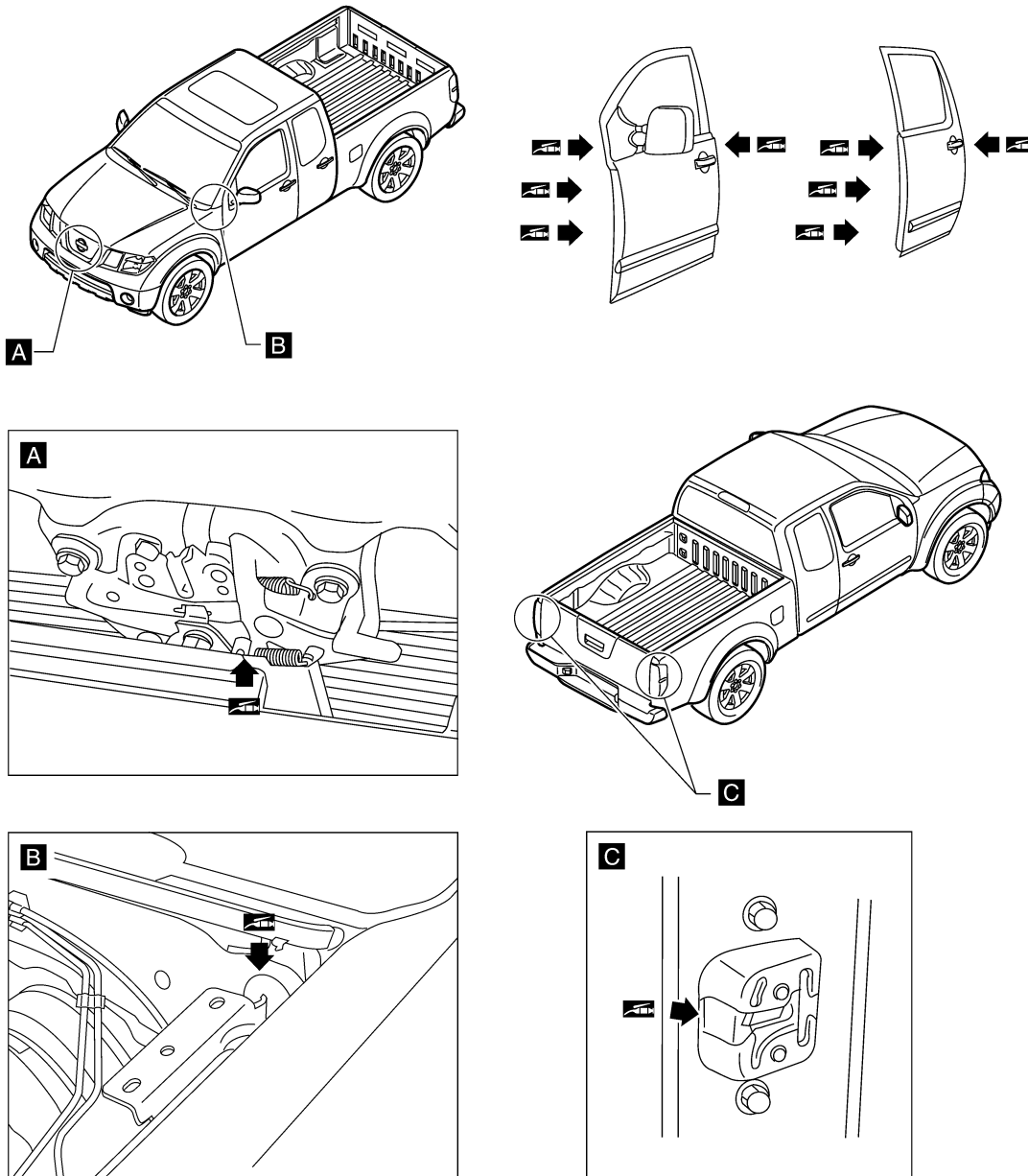
LOCKS, HINGES AND HOOD LATCH

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

LOCKS, HINGES AND HOOD LATCH : Lubricating Locks, Hinges and Hood Latches

INFOID:000000006252317



 : Multi-purpose grease

WLIA0025E

- Lubricate the locations shown.

Refer to [MA-16. "FOR USA AND CANADA : Fluids and Lubricants"](#) (United States and Canada), [MA-18. "FOR MEXICO : Fluids and Lubricants"](#) (Mexico).

SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS

SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS : Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters

INFOID:000000006252318

Check the seat belt buckles, webbing, retractors, anchors and adjusters. Replace any seat belt assembly as necessary. Refer to [SB-7. "Seat Belt Inspection"](#).

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

CHASSIS AND BODY MAINTENANCE

< PERIODIC MAINTENANCE >

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

CAUTION:

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