SECTION MA
MAINTENANCE

CONTENTS

SERVICE INFORMATION

PRECAUTIONS

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

INFOID:0000000006146538

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.**

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000006146539

NOTE:

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

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.
For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.
If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.
   NOTE:
   Supply power using jumper cables if battery is discharged.
2. Use the Intelligent Key or mechanical key to turn the ignition switch to the ″ACC″ position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.

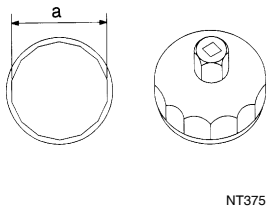
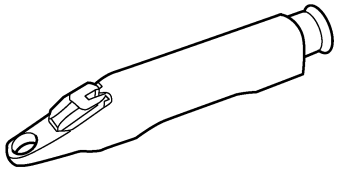
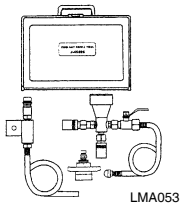
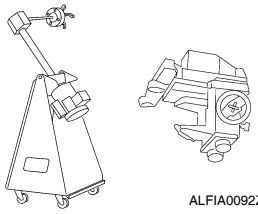
5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

PREPARATION

Special Service Tool

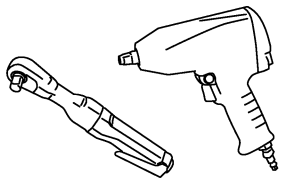
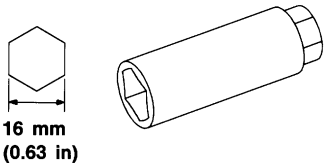
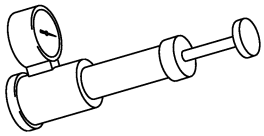
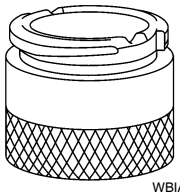
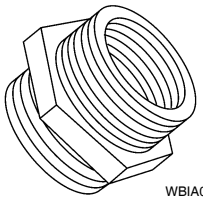
INFOID:0000000006146540

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  NT375	Removing and installing oil filter **a: 64.3 mm (2.531 in)**
KV991J0010 (J-23688) Engine coolant refractometer  WBIA0539E	Checking concentration of ethylene glycol in engine coolant
KV991J0070 (J-45695) Coolant refill tool  LMA053	Filling cooling system
38-PFM90.5 (—) Pro-Cut PFM90 On-Car Brake Lathe  ALFIA0092ZZ	Turning rotors

Commercial Service Tool

INFOID:0000000006146541

(Kent-Moore No.) Tool name	Description
Power tool  PBIC0190E	Loosening bolts and nuts
Spark plug wrench  16 mm (0.63 in) S-NT047	Removing and installing spark plug
Radiator cap tester  PBIC1982E	Checking radiator and radiator cap
Coolant system tester adapter  WBIA0408E	Adapting radiator cap tester to radiator filler neck
Coolant system tester adapter  WBIA0409E	Adapting radiator cap tester to reservoir cap

GENERAL MAINTENANCE
FOR USA AND CANADA

FOR USA AND CANADA : General Maintenance

INFOID:0000000006146542

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 owner can perform these checks and inspections or have their NISSAN dealers perform 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 a long distance trip. Adjust the pressure in all tires, including the spare, to the pressure specified. Check carefully for damage, cuts or excessive wear.	WT-48, "Inspection"
Wheel lug nuts	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	WT-50, "Rotation"
Windshield	Clean the windshield on a regular basis. Check the windshield at least every six months for cracks or other damage. Repair as necessary.	—
Tire rotation	Tires should be rotated every 12,000 km (7,500 miles).	WT-50, "Rotation"
Tire Pressure Monitoring System (TPMS) transmitter components	Replace the TPMS transmitter grommet seat, valve core and cap when the tires are replaced due to wear or age.	WT-52, "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.	WT-49, "Balancing Wheels", FSU-7, "Front Wheel Alignment"
Windshield wiper blades	Check for cracks or wear if they do not wipe properly.	WW-69, "Front Wiper Arms"
Doors and engine hood	Check that all doors and the engine hood operate smoothly as well as the back tail gate. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the engine hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check lubrication frequently.	MA-49, "LOCKS AND HINGES : Lubricating Locks, Hinges and Hood Latches"
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-133, "HEADLAMP : 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 windshield wipers and washer operate properly and that the wipers do not streak.	WW-69, "Front Wiper Arms"
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 (1.98 in)	ST-16, "On-Vehicle Inspection and Service"
Seats	Check seat position controls such as seat adjusters, seatback recliner, etc. to make sure they operate smoothly and that all latches lock securely in every position. Check that the head restraints move up and down smoothly and that the locks (if equipped) hold securely in all latched positions. Check that the latches lock securely for folding-down rear seat backs.	SE-5, "Preliminary Check"

Item		Reference page
Seat belts	Check that all parts of the seat belt system (e.g. buckles, anchors, adjusters and retractors) operate properly and smoothly and are installed securely. Check the belt webbing for cuts, fraying, wear or damage.	SB-11, "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-15, "Inspection and Adjustment", BR-10, "Inspection"
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-5, "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.	CO-10, "Inspection"
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 fluid level	Make sure that the brake fluid level is between the “MAX” and “MIN” lines on the reservoir.	MA-45, "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. 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-26, "DRIVE BELTS : Checking Drive Belts"
Engine oil level	Check the level on the dipstick after parking the vehicle on a level spot and turning off the engine.	MA-31, "ENGINE OIL : Inspection"
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-48, "POWER STEERING FLUID AND LINES : Checking Fluid Level"
Automatic transmission fluid level	Check the level on the dipstick after putting the selector lever in “P” with the engine idling.	MA-40, "TRANSFER FLUID : Inspection"
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-36, "EXHAUST SYSTEM : Checking Exhaust System"
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

FOR MEXICO : General Maintenance

INFOID:0000000006146543

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 owner can perform the 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 a long distance trip. Adjust the pressure in all tires, including the spare, to the pressure specified. Check carefully for damage, cuts or excessive wear.	WT-48, "Inspection"
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.	WT-50, "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-52, "Transmitter (Pressure Sensor)"
Windshield wiper blades	Check for cracks or wear if they do not wipe properly.	WW-69, "Front Wiper Arms"
Doors and engine hood	Check that all doors and the engine hood operate smoothly as well as the back tail gate. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the engine hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check lubrication frequently.	MA-49, "LOCKS AND HINGES : Lubricating Locks, Hinges and Hood Latches"

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 head lamp aim. Clean the head lamps on a regular basis.	EXL-133, "HEADLAMP : 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-16, "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.	SB-11, "Seat Belt Inspection"

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.	CO-10, "Inspection"
Brake fluid level	Make sure that the brake fluid level is between the “MAX” and “MIN” lines on the reservoir.	MA-45, "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. Vehicles operated in high temperatures or under severe conditions require frequent checks of the battery fluid level.	—
Engine oil level	Check the level on the dipstick after parking the vehicle on a level spot and turning off the engine.	MA-31, "ENGINE OIL : Inspection"

PERIODIC MAINTENANCE
FOR USA AND CANADA

FOR USA AND CANADA : Introduction of Periodic Maintenance

INFOID:0000000006146544

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: • 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 car-top carrier.	Emission Control System Maintenance	MA-10
		Chassis and Body Maintenance	MA-10
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	MA-14
		Chassis and Body Maintenance	MA-14

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
▲ Drive shafts
▲ Engine air cleaner filter
▲ In-cabin microfilters

FOR USA AND CANADA : Schedule 1

INFOID:0000000006146545

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-26, "DRIVE BELTS : Checking Drive Belts"
Air cleaner filter	NOTE (2)								[R]	MA-30, "AIR CLEANER FILTER : Removal and Installation (Viscous paper type)"
EVAP vapor lines									I*	MA-35
Fuel lines									I*	MA-30

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	
Fuel filter	NOTE (3)									MA-30, "FUEL FILTER : Removal and Installation"
Engine coolant*	NOTE (4)									MA-26, "ENGINE COOLANT : Inspection"
Engine oil*		R	R	R	R	R	R	R	R	MA-31, "ENGINE OIL : Inspection"
Engine oil filter		R	R	R	R	R	R	R	R	MA-32, "OIL FILTER : Removal and Installation"
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (168,000 km).								MA-34, "SPARK PLUG : Removal and Installation"
Intake and exhaust valve clearance*	NOTE (5)									EM-112

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Drive belts	NOTE (1)								I*	MA-26, "DRIVE BELTS : Checking Drive Belts"
Air cleaner filter	NOTE (2)								[R]	MA-30, "AIR CLEANER FILTER : Removal and Installation (Viscous paper type)"
EVAP vapor lines									I*	MA-35
Fuel lines									I*	MA-30, "FUEL LINES : Checking Fuel Line"
Fuel filter	NOTE (3)									MA-30, "FUEL FILTER : Removal and Installation"
Engine coolant*	NOTE (4)									MA-26, "ENGINE COOLANT : Inspection"

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Engine oil*		R	R	R	R	R	R	R	R	MA-32, "ENGINE OIL : Changing Engine Oil"
Engine oil filter		R	R	R	R	R	R	R	R	MA-32, "OIL FILTER : Removal and Installation"
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (168,000 km).								MA-34, "SPARK PLUG : Removal and Installation"
Intake and exhaust valve clearance*	NOTE (5)									EM-112

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

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

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

(4) First replacement interval is 105,000 miles (168,000 km) or 84 months. After first replacement, replace every 75,000 miles (120,000 km) or 60 months. Use only Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent with proper mixture ratio of 50% antifreeze and 50% demineralized or distilled water. Mixing any type of coolant or the use on non-distilled water will reduce the life expectancy of the factory fill coolant.

(5) Periodic maintenance is not required. However, if valve noise increases, inspect valve clearance.

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

CHASSIS AND BODY MAINTENANCE

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary. L = Lubricate. [ ]: 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-45
Brake fluid									R	MA-45
Brake pads and rotors			I		I		I		I	MA-45, MA-46

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	
Automatic transmission fluid, transfer fluid and differential gear oil	NOTE (1)				I				I	MA-37, "A/T FLUID : Checking the A/T Fluid (ATF)", MA-40, "TRANSFER FLUID : Inspection", MA-41, "FRONT DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil", MA-42, "REAR DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil"
Steering gear and linkage, axle and suspension parts			I		I		I		I	MA-47, MA-48
Tire rotation	NOTE (2)									MA-44, "WHEELS : Rotation"
Drive shaft boots and propeller shaft (4WD)			I		I		I		I	MA-41
Exhaust system			I		I		I		I	MA-36
In-cabin microfilter					R				R	MA-36, "IN-CABIN MICROFILTER : Removal and Installation"

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-45
Brake fluid									R	MA-45
Brake pads and rotors			I		I		I		I	MA-45, MA-46

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	
Automatic transmission fluid, transfer fluid and differential gear oil	NOTE (1)				I				I	MA-37, "A/T FLUID : Checking the A/T Fluid (ATF)", MA-40, "TRANSFER FLUID : Inspection", MA-42, "REAR DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil"
Steering gear and linkage, axle and suspension parts			I		I		I		I	MA-47, MA-48
Tire rotation	NOTE (2)									MA-44, "WHEELS : Rotation"
Drive shaft boots and propeller shaft (4WD)			I		I		I		I	MA-41
Exhaust system			I		I		I		I	MA-36
In-cabin microfilter					R				R	MA-36, "IN-CABIN MICROFILTER : Removal and Installation"

(1) If towing a trailer, using a camper or car-top carrier, or driving on rough or muddy roads, change (not just inspect) oil/fluid 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) Refer to “Tire rotation” under the “General maintenance” heading earlier in this section.

FOR USA AND CANADA : Schedule 2

INFOID:0000000006146546

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-26, "DRIVE BELTS : Checking Drive Belts"
Air cleaner filter					[R]				[R]	MA-30, "AIR CLEANER FILTER : Removal and Installation (Viscous paper type)"
EVAP vapor lines					I*				I*	MA-35
Fuel lines					I*				I*	MA-30
Fuel filter	NOTE (2)									MA-30, "FUEL FILTER : Removal and Installation"
Engine coolant*	NOTE (3)									MA-26, "ENGINE COOLANT : Inspection"
Engine oil (Except for FFV models)		R	R	R	R	R	R	R	R	MA-32, "ENGINE OIL : Changing Engine Oil"
Engine oil (For FFV models)		Replace every 3,750 miles (6,000 km) or 3 months.								MA-32, "ENGINE OIL : Changing Engine Oil"
Engine oil filter (Except for FFV models)		R	R	R	R	R	R	R	R	MA-32, "OIL FILTER : Removal and Installation"
Engine oil filter (For FFV models)		Replace every 3,750 miles (6,000 km) or 3 months.								MA-32, "OIL FILTER : Removal and Installation"
Spark plugs (Iridium - tipped type)		Replace every 105,000 miles (168,000 km)								MA-34, "SPARK PLUG : Removal and Installation"
Intake and exhaust valve clearance*	NOTE (4)									EM-18

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

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

(3) First replacement interval is 105,000 miles (168,000 km) or 84 months. After first replacement, replace every 75,000 miles (120,000 km) or 60 months. Use only Genuine NISSAN Long Life Antifreeze/Coolant (blue) or equivalent with the proper mixture ratio of 50% antifreeze and 50% demineralized or distilled water. Mixing any other type of coolant or the use of non-distilled water will reduce the life expectancy of the factory-fill coolant.

(4) Periodic maintenance is not required. However, if valve noise increases, inspect valve clearance.

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

CHASSIS AND BODY MAINTENANCE

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

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-45
Brake fluid					R				R	MA-45
Brake pads and rotors			I		I		I		I	MA-45, MA-46
Automatic transmission fluid, transfer fluid and differential gear oil	NOTE (1)		I		I		I		I	MA-37, "A/T FLUID : Checking the A/T Fluid (ATF)"MA-40, "TRANSFER FLUID : Inspection", MA-41, "FRONT DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil", MA-42, "REAR DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil"
Steering gear and linkage, axle and suspension parts.					I				I	MA-47, MA-48
Tire rotation	NOTE (2)									MA-44, "WHEELS : Rotation"
Drive shaft boots and propeller shaft (4WD)			I		I		I		I	MA-41
Exhaust system					I				I	MA-36
In-cabin microfilter			R		R		R		R	MA-36, "IN-CABIN MICROFILTER : Removal and Installation"

(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 : Introduction of Periodic Maintenance

INFOID:0000000006146547

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.

ENGINE AND EMISSION CONTROL 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	See NOTE (1)									EM-18
Drive belts	See NOTE (2)				I				I	MA-26, "DRIVE BELTS : Checking Drive Belts"
Engine oil (Use recommended oil.)★		R	R	R	R	R	R	R	R	LU-9
Engine oil filter (Use Genuine NISSAN engine oil filter or equivalent.)★		R	R	R	R	R	R	R	R	LU-11
Engine coolant (Use Genuine NISSAN Engine Coolant or equivalent in its quality.)	See NOTE (3)				E				R	CO-11
Cooling system					I				I	CO-10
Fuel lines					I				I	FL-6
Air cleaner filter (Viscous paper type)★					R				R	EM-15
Fuel filter (In-tank type)	See NOTE (4)									—
Spark plugs (Iridium-tipped type)		Replace every 100,000 km (60,000 miles)								EM-16
EVAP vapor lines (with carbon canister)					I				I	MA-35

(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.

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**

CHASSIS AND BODY MAINTENANCE

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

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	
Underhood and under vehicle										
Brake and automatic transmission fluid (For level & leaks)★			I		I		I		I	BR-17, TM-154
Brake Fluid★					R				R	BR-17
Power steering fluid & lines (For level & leaks)			I		I		I		I	ST-13
Brake lines & cable			I		I		I		I	EX-5
Exhaust system					I				I	EX-5
Transfer gear fluid (For level & leaks)			I		I		I		I	DLN-129
Differential gear oil (For level & leaks)★			I		I		I		I	DLN-209, DLN-244
Steering gear & linkage, axle & suspension parts★					I				I	ST-13, FSU-7
Propeller shaft & drive★			I		I		I		I	DLN-194
Outside and inside										
Wheel alignment (If necessary, rotate & balance wheels)			I		I		I		I	FSU-7, RSU-6
Brake pads, rotors & drums & linings★			I		I		I		I	BR-7, BR-9
Foot brake & parking brake (For free play, stroke & operation)			I		I		I		I	BR-15, PB-5
Air conditioner filter★			R		R		R		R	MA-36, "IN-CABIN MICROFILTER : Removal and Installation"

NOTE:

★ 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.

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

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

Driving condition									Maintenance item	Maintenance operation	Maintenance interval	Reference page
A	.	.	.	.	.	.	.	.	Air cleaner filter	Replace	More frequently	MA-30, "AIR CLEANER FILTER : Removal and Installation (Viscous paper type)"
A	B	C	D	.	.	.	.	.	Engine oil & engine oil filter	Replace	Every 5,000 km (3,000 miles) or 3 months	MA-32, "ENGINE OIL : Changing Engine Oil",MA-32, "OIL FILTER : Removal and Installation"
.	.	.	.	.	F	.	.	.	Brake fluid	Replace	Every 20,000 km (12,000 miles) or 12 months	MA-45
.	.	C	.	.	.	.	H	.	Automatic transmission fluid	Replace	Every 40,000 km (24,000 miles) or 24 months	MA-39, "A/T FLUID : Changing the A/T Fluid (ATF)"
.	.	C	.	.	.	.	H	.	Differential gear oil	Replace	Every 40,000 km (24,000 miles) or 24 months	MA-42, "REAR DIFFERENTIAL GEAR OIL : Changing Differential Gear Oil"
.	.	.	.	.	.	G	H	.	Steering gear & linkage, axle & suspension parts	Inspect	Every 10,000 km (6,000 miles) or 6 months	MA-47, MA-48
.	.	.	.	.	.	G	H	.	Propeller shaft & exhaust system	Inspect	Every 20,000 km (12,000 miles) or 12 months	MA-41
A	.	C	.	.	.	G	H	I	Brake pads, rotors, drums & linings	Inspect	Every 10,000 km (6,000 miles) or 6 months	MA-45, MA-46
A	.	.	.	.	.	.	.	.	Air conditioner filter	Replace	More frequently	MA-36, "IN-CABIN MICROFILTER : Removal and Installation"

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 FOR USA AND CANADA

FOR USA AND CANADA : Fluids and Lubricants

INFOID:0000000006146549

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Metric	US measure	Imp measure	
Fuel		105.8 ℓ	28 gal	23 1/4 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91), or E-85 Ethanol fuel for Flexible Fuel Vehicles (FFV) *7
Engine oil Drain and refill	With oil filter change	6.5 ℓ	6 7/8 qt	5 3/4 qt	• Engine oil with API Certification Mark*1 • Viscosity SAE 5W-30
	Without oil filter change	6.2 ℓ	6 1/2 qt	5 1/2 qt	
Dry engine (engine overhaul)		7.6 ℓ	8 qt	6 3/4 qt	
Cooling system	With reservoir at MAX level	14.4 ℓ	15 1/4 qt	12 5/8 qtl	Genuine NISSAN Long Life Anti-freeze coolant (blue) or equivalent
Automatic transmission fluid (ATF)		10.6 ℓ	11 1/4 qt	9 3/8 qt	Genuine NISSAN Matic S ATF*2
Rear differential gear oil		1.75 ℓ	3 3/4 pt	3 1/8 pt	Genuine NISSAN differential oil synthetic 75W-90 or API GL-5 synthetic gear oil, Viscosity SAE 75W-90 *6
Transfer fluid		3.0 ℓ	3 1/8 qt	2 5/8 qt	Genuine NISSAN Matic D ATF recommended *9
Front differential gear oil		1.6 ℓ	3 3/8 pt	2 7/8 pt	Genuine NISSAN Differential Oil Hypoid Super GL-5 80W-90 or API GL-5 Viscosity SAE 80W-90 *8
Power steering fluid (PSF)		1.0 ℓ	2 1/8 pt	1 3/4 pt	Genuine NISSAN PSF or equivalent*3
Brake fluid		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid *4 or equivalent, DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	—	NLGI No. 2 (lithium soap base)
Brake grease		—	—	—	PBC (poly butyl cuprysil) grease or equivalent
Windshield washer fluid		4.5 ℓ	1 1/4 gal	1 gal	Genuine NISSAN Windshield Washer Concentrate Cleaner & Anti-freeze or equivalent
Air conditioning system refrigerant		1.08 ± 0.05 kg	2.38 ± 0.11 lb	2.38 ± 0.11 lb	HFC-134a (R-134a)*5
Air conditioning system oil		290 m ℓ	9.8 fl oz	10.2 fl oz	A/C System Oil Type S (DH-PS)*5

*1: For further details, refer to MA-21, "FOR USA AND CANADA : Engine Oil Recommendation" .

*2: **If Genuine NISSAN Matic S ATF is not available, Genuine 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.**

*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-27, "Fuel (Regular Unleaded Gasoline Recommended)".

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

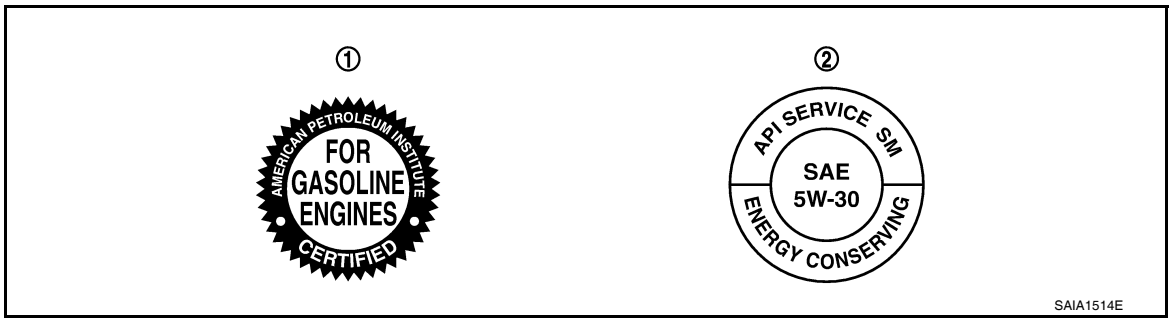
*9: Using fluid other than Genuine NISSAN Matic D ATF will cause deterioration in driveability and transfer durability, and may damage the transfer, which is not covered by the NISSAN new vehicle limited warranty.

FOR USA AND CANADA : Engine Oil Recommendation

INFOID:0000000006146550

NISSAN recommends the use of an energy conserving oil in order to improve fuel economy.

Select only engine oils that meet the American Petroleum Institute (API) certification and International Lubricant Standardization and Approval Committee (ILSAC) certification and SAE viscosity standard. These oils have the API certification mark on the front of the container. Oils which do not have the specified quality label should not be used as they could cause engine damage.



1. API certification mark
2. API service symbol

FOR USA AND CANADA : Anti-Freeze Coolant Mixture Ratio

INFOID:0000000006146551

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

Mixed Coolant Specific Gravity

Engine coolant mixture ratio	Coolant temperature °C (°F)			
	15° (59°)	25° (77°)	35° (95°)	45° (113°)
	Specific gravity			
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

CAUTION:
When adding or replacing coolant, be sure to use only Genuine NISSAN Long Life Antifreeze/ Coolant (blue) or equivalent with the proper mixture ratio of 50% anti-freeze and 50% demineralized water/distilled water.
Mixing any other type of coolant or the use of non-distilled water will reduce the life expectancy of the factory-fill coolant.

FOR MEXICO

FOR MEXICO : Fluids and Lubricants

INFOID:0000000006146552

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		Metric	US measure	Imp measure	
Fuel		105.8 ℓ	28 gal	23 1/4 gal	Unleaded gasoline with an octane rating of at least 89 AKI (RON 95)
Engine oil Drain and refill	With oil filter change	6.5 ℓ	6 7/8 qt	5 3/4 qt	• Genuine NISSAN engine oil *1 • 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	6.2 ℓ	6 1/2 qt	5 1/2 qt	
Dry engine (engine overhaul)		7.6 ℓ	8 qt	6 3/4 qt	
Cooling system	With reservoir at MAX level	14.4 ℓ	15 1/4 qt	12 5/8 qt	Genuine NISSAN Engine Coolant or equivalent in its quality*2
Automatic transmission fluid (ATF)		10.6 ℓ	11 1/4 qt	9 3/8 qt	Genuine NISSAN Matic S ATF*3
Rear final drive oil		1.75 ℓ	3 3/4 pt	3 1/8 pt	API GL-5 Synthetic gear oil, Viscosity SAE 75W-90 or equivalent *4

Description	Capacity (Approximate)			Recommended Fluids/Lubricants
	Metric	US measure	Imp measure	
Transfer fluid	3.0 ℓ	3 1/8 qt	2 5/8 qt	Genuine NISSAN Matic D ATF recommended *5
Front final drive oil	1.6 ℓ	3 3/8 pt	2 7/8 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 *6
Brake fluid	—	—	—	Genuine NISSAN Brake Fluid or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease	—	—	—	NLGI No. 2 (lithium soap base)
Brake grease	—	—	—	PBC (poly butyl cuprysil) grease or equivalent
Windshield washer fluid	4.5 ℓ	1 1/4 gal	1 gal	Windshield washer fluid
Air conditioning system refrigerant	1.08 ± 0.05 kg	2.38 ± 0.11 lb	2.38 ± 0.11 lb	HFC-134a (R-134a) *7
Air conditioning system oil	290 m ℓ	9.8 fl oz	10.2 fl oz	A/C System Oil Type S (DH-PS) *7

*1: For further details, refer to MA-23, "FOR MEXICO : SAE Viscosity Number" .

***2: Use Genuine NISSAN Engine Coolant or equivalent in its 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 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 dealer for service for synthetic oil.

*5: 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.

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

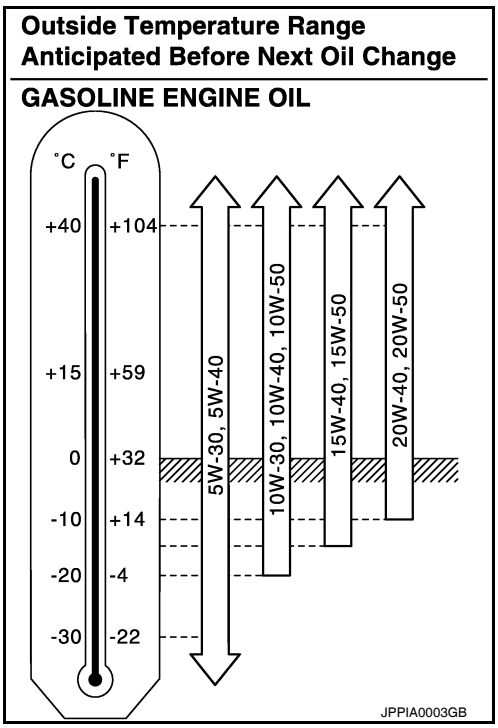
*7: For further details, see “Air conditioner specification label”.

FOR MEXICO : SAE Viscosity Number

INFOID:0000000006146553

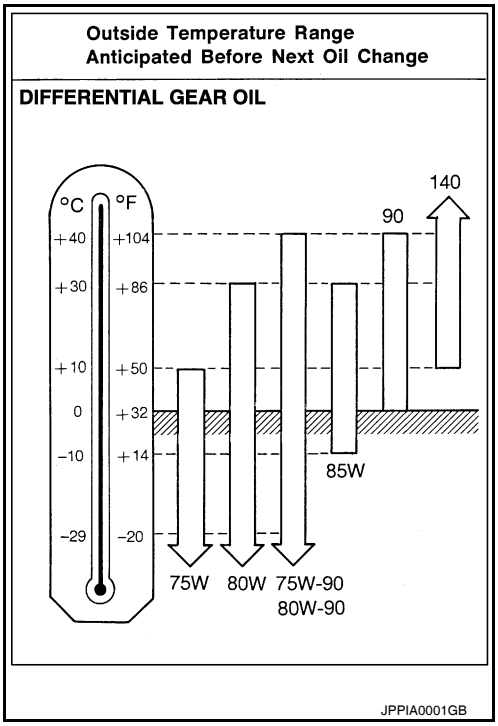
GASOLINE ENGINE OIL

- 10W-30 is preferable.
  5W-30 is also preferable and will improve fuel economy.
  If 10W-30 or 5W-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 differential gear is preferable.



ANTI-FREEZE COOLANT MIXTURE RATIO

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.

Protection for outside temperature down to:		Engine Coolant or equivalent	Demineralized water or distilled water
°C	°F		
–15°	5°	30%	70%
–35°	–30°	50%	50%

CAUTION:

- **When adding or replacing coolant, be sure to use only the specified engine coolant or equivalent in its quality with the proper mixture ratio. See the examples shown in the figure.**

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

Engine coolant mixture ratio	Coolant temperature °C (°F)			
	15° (59°)	25° (77°)	35° (95°)	45° (113°)
	Specific gravity			
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

WARNING:

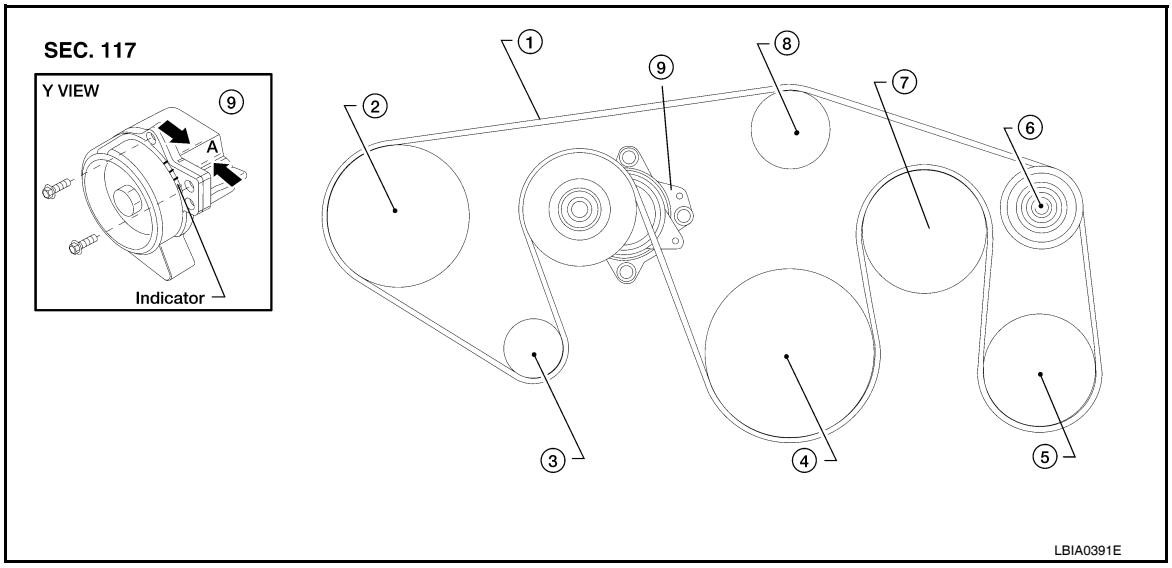
Never remove the radiator cap when the engine is hot. Serious burns could be caused by high pressure fluid escaping from the radiator. Wait until the engine and radiator cool down.

ENGINE MAINTENANCE

DRIVE BELTS

DRIVE BELTS : Checking Drive Belts

INFOID:0000000006706808



1. Drive belt
2. Power steering pump pulley
3. Generator pulley
4. Crankshaft pulley
5. A/C compressor
6. Idler pulley
7. Cooling fan pulley
8. Water pump pulley
9. Drive belt auto tensioner
A. Allowable working range

WARNING:

Be sure to perform when the engine is stopped.

1. Remove air duct and resonator assembly when inspecting drive belt.
2. Make sure that indicator (single line notch) of each auto tensioner is within the allowable working range (between three line notches).
   NOTE:
   - Check the drive belt auto tensioner indication when the engine is cold.
   - The indicator notch is located on the moving side of the drive belt auto tensioner.
3. Visually check entire belt for wear, damage or cracks.
4. If the indicator is out of allowable working range or belt is damaged, replace the belt. Refer to MA-26.

DRIVE BELT TENSION

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

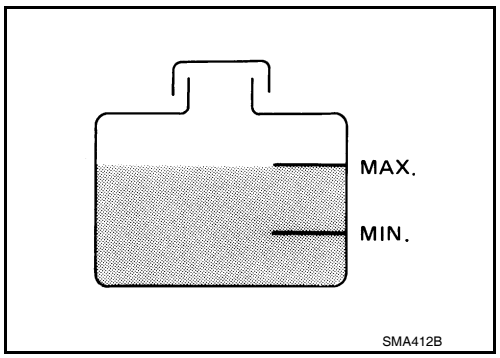
ENGINE COOLANT

ENGINE COOLANT : Inspection

INFOID:0000000006706809

LEVEL CHECK

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



CHECKING COOLING SYSTEM FOR LEAKS

WARNING:

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

- To check for leakage, apply pressure to the cooling system at the reservoir filler neck using suitable tool and Tool.

Tool number : (J-24460-92)

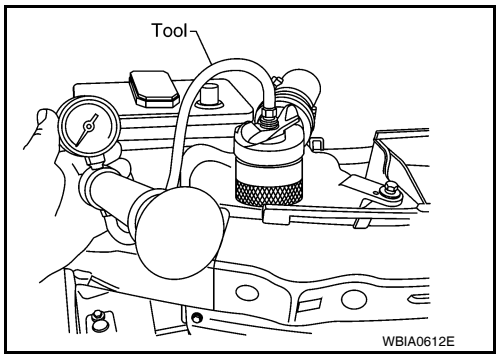
Leakage test pressure : 137 kPa (1.4 kg/cm^2, 20 psi)

CAUTION:

Higher pressure than specified may cause radiator damage.

NOTE:

In case that engine coolant decreases, replenish cooling system with engine coolant.



- If any concerns are found, repair or replace damaged parts.

CHECKING RESERVOIR CAP

- Check reservoir cap relief pressure using suitable tool and Tool.

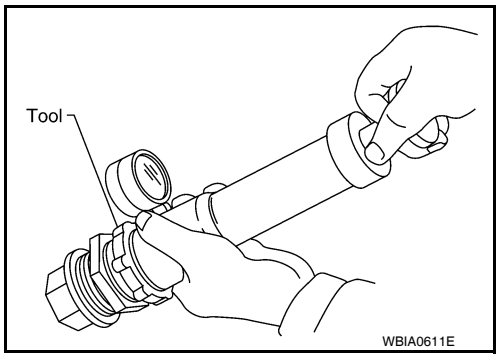
Tool number : (J-24460-92)

Standard : 95 - 125 kPa (0.97 - 1.28 kg/cm^2, 14 - 18 psi)

NOTE:

Apply engine coolant to the cap seal.

- Replace the reservoir cap if there is any damage in the negative-pressure valve, or if the open-valve pressure is outside of the limit.



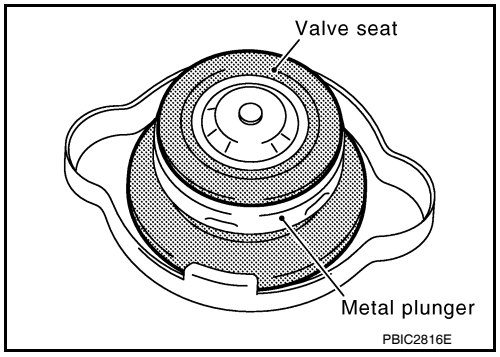
CHECKING RADIATOR CAP

Inspect the radiator cap.

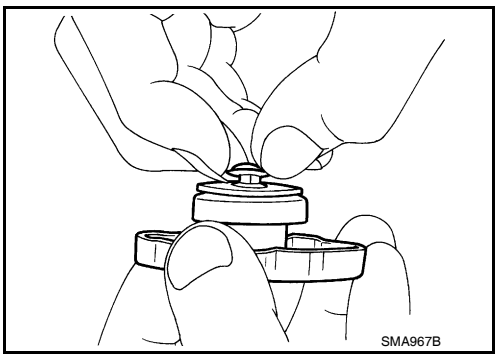
NOTE:

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

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



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



ENGINE COOLANT : Changing Engine Coolant

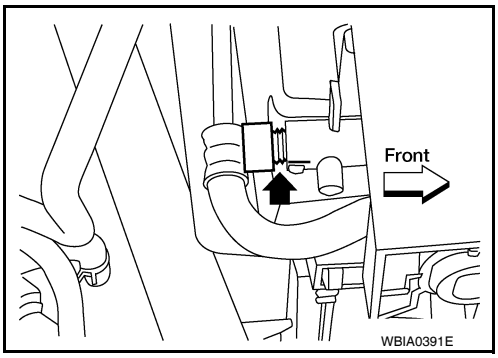
INFOID:0000000006706810

WARNING:

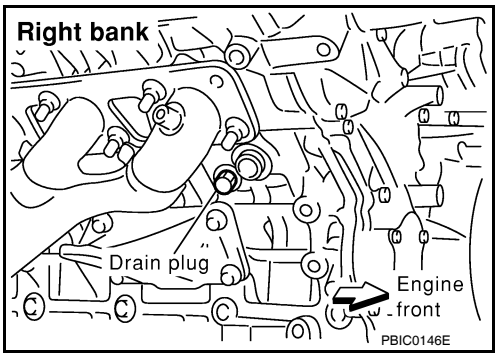
- **To avoid being scalded, never change the coolant when the engine is hot.**
- **Wrap a thick cloth around the cap to carefully remove the cap. First, turn the cap a quarter of a turn to release any built-up pressure, then push down and turn the cap all the way to remove it.**

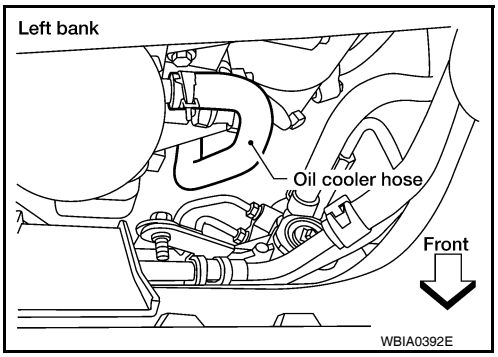
DRAINING ENGINE COOLANT

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 front undercover using power tool.
3. Open the radiator drain plug at the bottom of the radiator, and remove the radiator filler cap. This is the only step required when partially draining the cooling system (radiator only).
   CAUTION:
   Do not to allow the coolant to contact the drive belts.



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 RH cylinder block drain plug to drain the right bank and the oil cooler hose to drain the left bank as shown.





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. Refer to MA-28, "ENGINE COOLANT : Changing Engine Coolant".

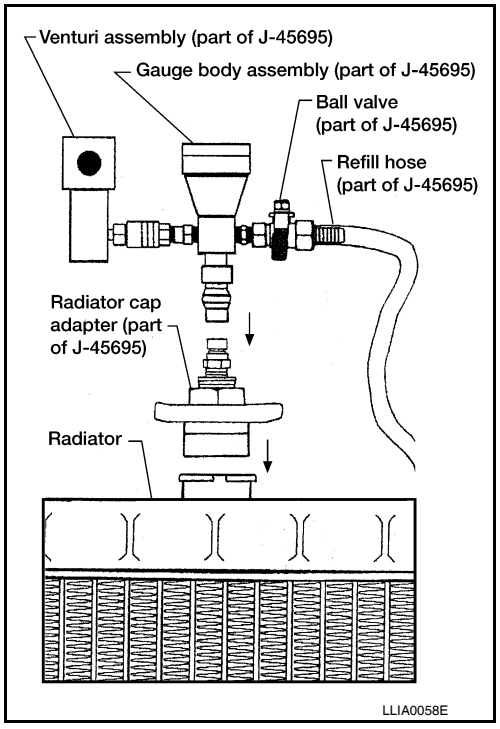
REFILLING ENGINE COOLANT

1. Close the radiator drain plug. Install the reservoir tank, cylinder block drain plug, and the oil cooler hose, 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 plug. Use Genuine High Performance Thread Sealant or equivalent. Refer to GI-15, "Recommended Chemical Products and Sealants".

Radiator drain plug	**: Refer to CO-15.**
RH cylinder block drain plug	**: Refer to EM-87.**

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 specified coolant or equivalent.
     Refer to CO-24, "Standard and Limit".

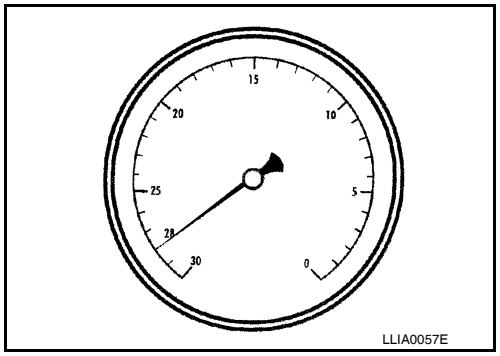
Cooling system capacity (with reservoir)	**: Refer to CO-24, "Standard and Limit".**

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/cm^2, 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.
8. Continue to draw the vacuum until the gauge reaches 28 inches of vacuum. The gauge may not reach 28 inches in high altitude locations, refer to the vacuum specifications based on the altitude above sea level.



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

9. When the vacuum gauge has reached the specified amount, disconnect the air hose and wait 20 seconds to see if the system loses any vacuum. If the vacuum level drops, perform any necessary repairs to the system and repeat steps 6 - 8 to bring the vacuum to the specified amount. Recheck for any leaks.
10. Place the coolant container (with the refill hose inserted) at the same level as the top of the radiator. Then open the ball valve on the refill hose so the coolant will be drawn up to fill the cooling system. The cooling system is full when the vacuum gauge reads zero.
    CAUTION:
    Do not allow the coolant container to get too low when filling, to avoid air from being drawn into the cooling system.
11. Remove the Tool from the radiator neck opening 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.

FLUSHING COOLING SYSTEM

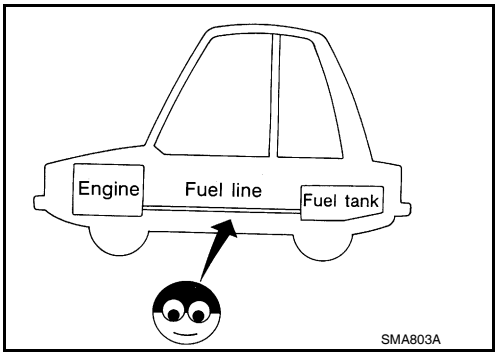
1. Drain the water from the engine cooling system. Refer to MA-28, "ENGINE COOLANT : Changing Engine Coolant".
2. Fill the radiator and the reservoir tank (to the “MAX” line), with water. Reinstall the radiator cap and leave the vented reservoir cap off.
3. Run the engine until it reaches normal operating 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-28, "ENGINE COOLANT : 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:0000000006146557

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



FUEL FILTER

FUEL FILTER : Removal and Installation

INFOID:0000000006706811

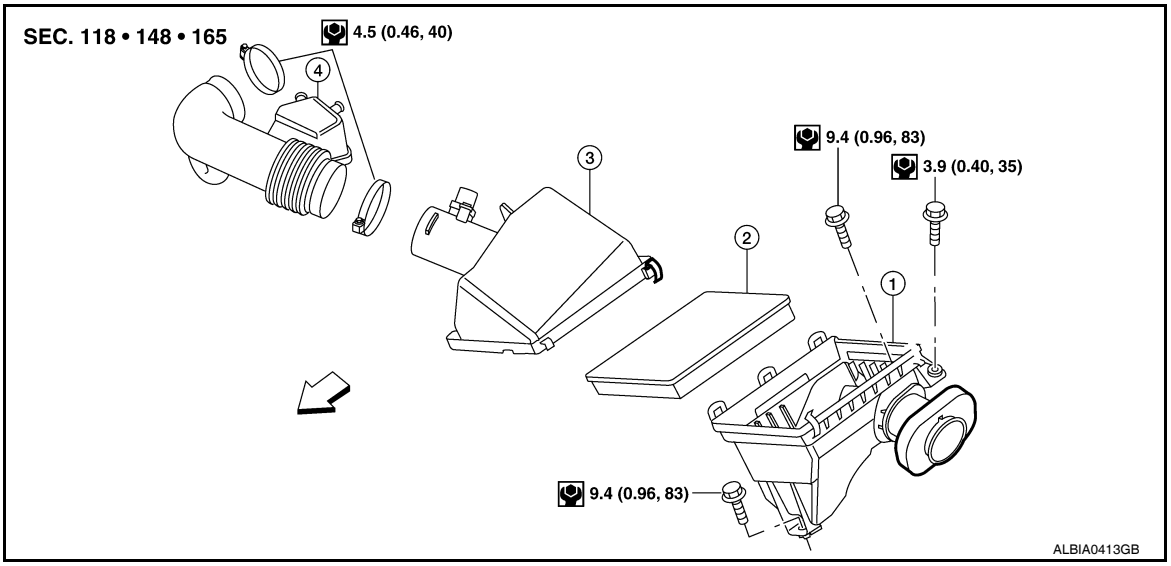
The fuel filter is part of the Fuel level sensor, fuel filter and fuel pump assembly and is not serviced separatley. Refer to FL-12, "Removal and Installation"

AIR CLEANER FILTER

AIR CLEANER FILTER : Removal and Installation (Viscous paper type)

INFOID:0000000006706812

REMOVAL



1. Air cleaner case (lower)
2. Air cleaner filter
3. Air cleaner case (upper)
4. Air duct and resonator assembly
⇦ Front

NOTE:
- The viscous paper type filter does not need cleaning between replacement intervals.
- Replace the air filter as necessary for periodic maintenance. Refer to MA-10, "FOR USA AND CANADA : Introduction of Periodic Maintenance" (United States and Canada), MA-17, "FOR MEXICO : Introduction of Periodic Maintenance" (Mexico).

1. Remove the air cleaner case (upper).
2. Remove the air cleaner filter from the air cleaner case (lower).

INSTALLATION

1. Install the new air cleaner filter in the air cleaner case (lower).
2. Install the air cleaner case (upper).

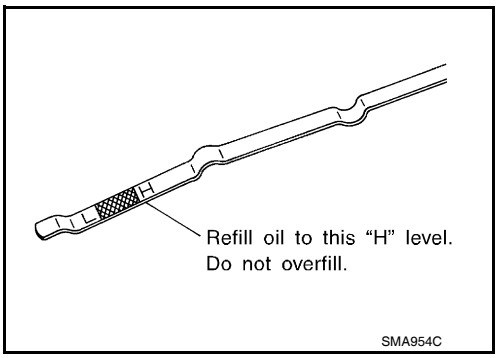
ENGINE OIL

ENGINE OIL : Inspection

INFOID:0000000006706813

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.
- Check that the oil level is within the low (L) to high (H) range as indicated on the dipstick.
- If the engine oil level is out of range, add oil as necessary. Refer to MA-21, "FOR USA AND CANADA : Fluids and Lubricants".



OIL APPEARANCE

- Check the engine oil for a white milky appearance or excessive contamination.
- If the engine oil is milky, it is highly probable that it is contaminated with engine coolant. Repair the broken parts.

OIL LEAKAGE

Check for oil leakage around the following areas:
- Oil pan
- Oil pan drain plug

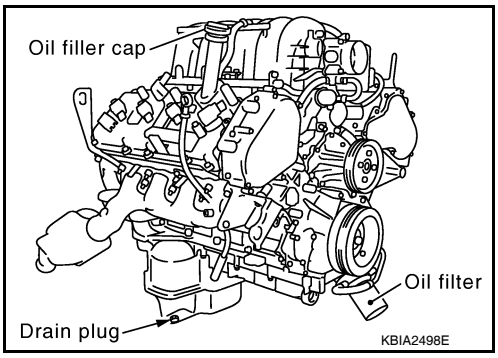
- Oil pressure switch
- Oil filter
- Oil cooler
- Intake valve timing control cover
- Intake valve timing control solenoid valve
- Front cover
- Mating surface between cylinder block and cylinder head
- Mating surface between cylinder head and rocker cover
- Crankshaft oil seal (front and rear)

ENGINE OIL : Changing Engine Oil

INFOID:0000000006706814

WARNING:

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



1. Remove engine front undercover using power tool.
2. Warm up engine, and check for oil leakage from engine components. Refer to MA-31, "ENGINE OIL : Inspection".
3. Stop engine and wait for 10 minutes.
4. Loosen oil filler cap, then remove drain plug.
5. Drain engine oil.
6. Install drain plug with new washer.
   CAUTION:
   - **Be sure to clean drain plug and install with new washer.**

   Oil pan drain plug : 34.3 N·m (3.5 kg-m, 25 ft-lb)
7. Refill with new engine oil. Refer to MA-21, "FOR USA AND CANADA : Fluids and Lubricants" (United States and Canada), MA-22, "FOR MEXICO : Fluids and Lubricants" (Mexico).
   CAUTION:
   - **The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.**
   - **Always use the oil level gauge to determine when the proper amount of engine oil is in the engine.**
8. Warm up engine and check area around drain plug and oil filter for oil leakage.
9. Stop engine and wait for 10 minutes.
10. Check engine oil level. Refer to MA-31, "ENGINE OIL : Inspection".

OIL FILTER

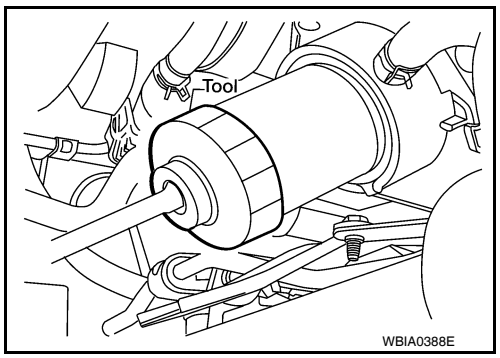
OIL FILTER : Removal and Installation

INFOID:0000000006706815

REMOVAL

1. Remove the engine undercover. Using power tool.
2. Drain the engine oil. Refer to MA-32, "ENGINE OIL : Changing Engine Oil".

3. Remove the oil filter using Tool.



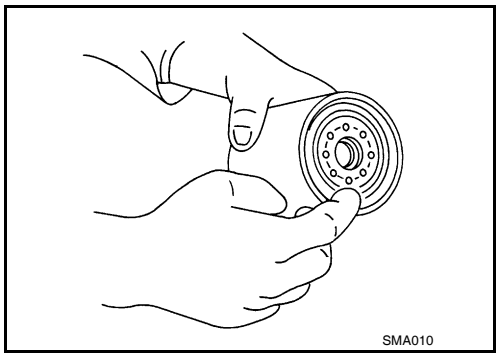
Tool number : KV10115801 (J-38956)

WARNING:
- **Be careful not to get burned when the engine and engine oil are hot.**

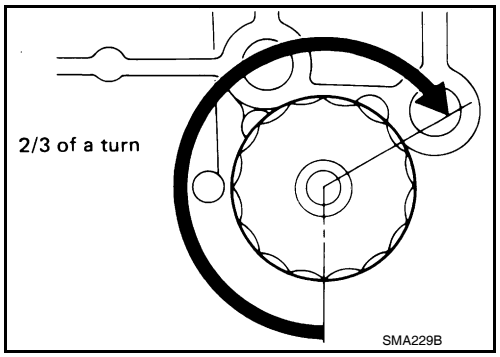
CAUTION:
- **The oil filter is provided with a relief valve.**
- **Use Genuine NISSAN oil filter or equivalent.**
- **When removing, prepare a shop cloth to absorb any engine oil leakage or spillage.**
- **Do not allow engine oil to adhere to the drive belt.**
- **Completely wipe off any engine oil that adheres to the engine and the vehicle.**

INSTALLATION

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



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



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

4. Refill the engine with new engine oil. Refer to MA-32, "ENGINE OIL : Changing Engine Oil".
5. Inspect the engine for oil leakage. Follow the "INSPECTION AFTER INSTALLATION" procedure.

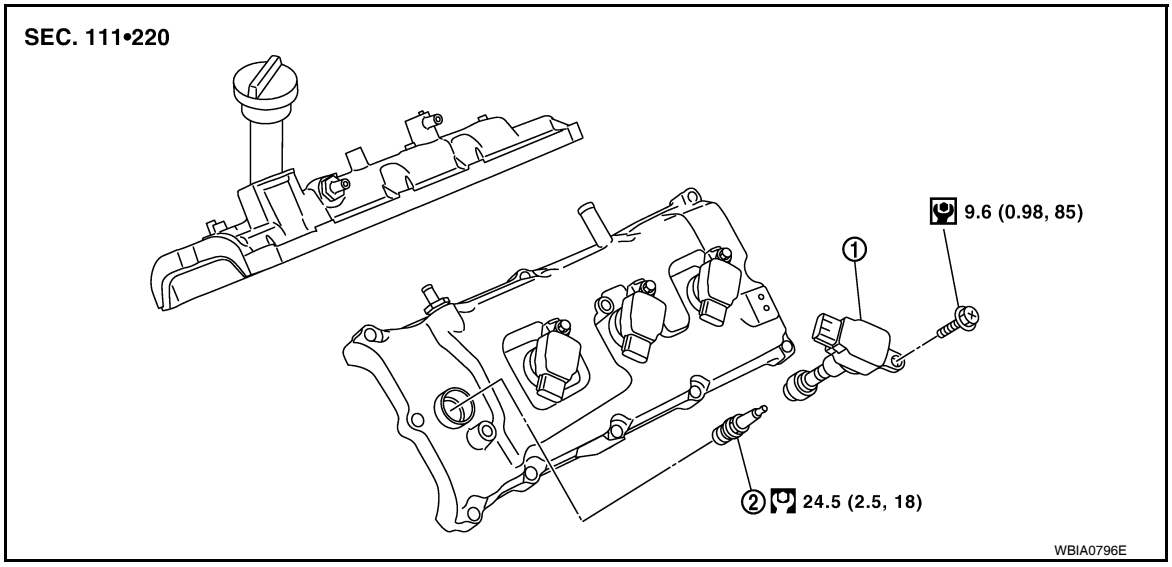
INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to MA-31, "ENGINE OIL : Inspection".
2. Start the engine and check for engine oil leakage.
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 : Removal and Installation

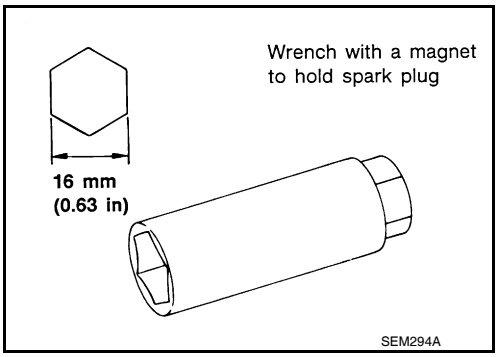
INFOID:0000000006706816



1. Ignition coil
2. Spark plug

REMOVAL

1. Disconnect the harness connector from the ignition coil.
2. Remove ignition coil.
   CAUTION:
   Do not shock ignition coil.
3. Remove spark plug using suitable tool.



INSPECTION AFTER REMOVAL

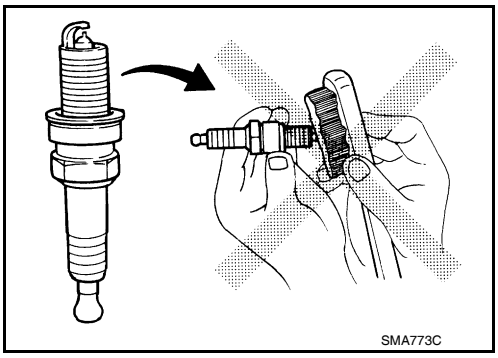
- Do not use a wire brush for cleaning.
- If plug tip is covered with carbon, spark plug cleaner may be used.

Cleaner air pressure:

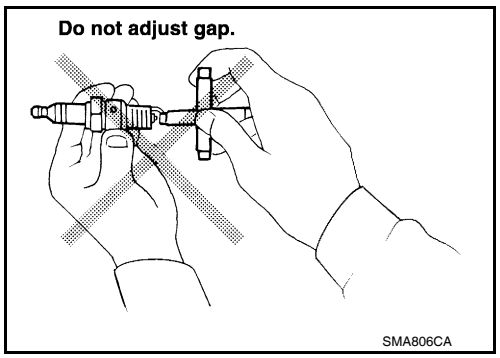
Less than 588 kPa (6 kg/cm^2, 85 psi)

Cleaning time:

Less than 20 seconds



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



INSTALLATION

Installation is in the reverse order of removal.

Spark Plug Types

Make	NGK	
Model	Standard model	FFV model
Standard type*	DILFR5A-11	DILFR5A-11D
Gap (Nominal)	1.1 mm (0.043 in)	1.1 mm (0.043)

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

CAUTION:

Do not drop or shock spark plug.

EVAP VAPOR LINES

EVAP VAPOR LINES : Checking EVAP Vapor Line

INFOID:0000000006146564

1. Visually inspect the EVAP vapor lines for improper attachment, cracks, damage, loose connections, chafing, or deterioration.
2. Inspect the vacuum relief valve of the fuel tank filler cap for clogging and sticking. Refer to EC-481, "How to Detect Fuel Vapor Leakage" .

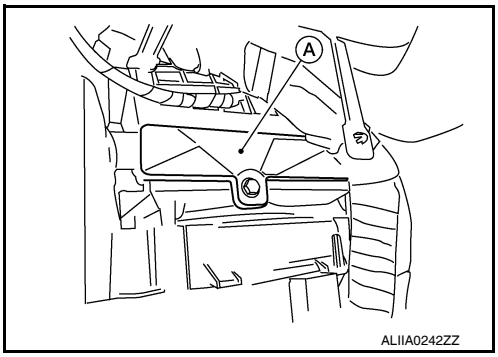
CHASSIS AND BODY MAINTENANCE
IN-CABIN MICROFILTER

IN-CABIN MICROFILTER : Removal and Installation

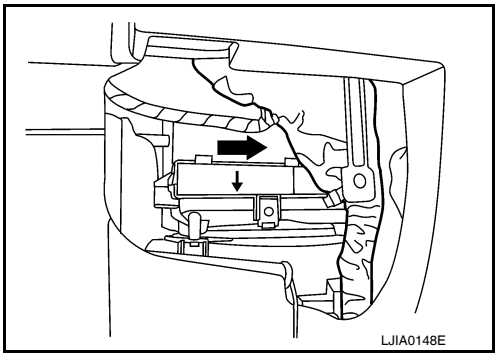
INFOID:0000000006706817

REPLACEMENT PROCEDURE

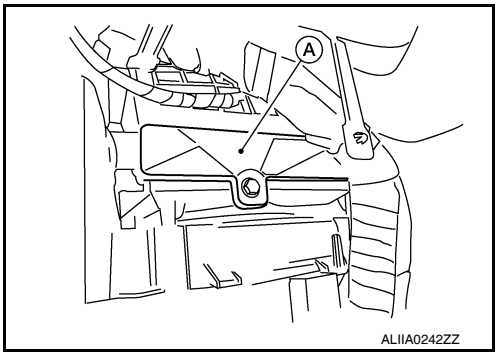
1. Remove the glove box assembly from the instrument panel. Refer to IP-18, "Removal and Installation".
2. Remove the screw and remove the in-cabin microfilter cover (A) as shown.
3. Remove the two in-cabin microfilters from the front heater and cooling unit assembly housing.



4. Insert the first new in-cabin microfilter into the front heater and cooling unit assembly housing and slide it over to the right. Insert the second new in-cabin microfilter into the front heater and cooling unit assembly housing as shown.
   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.



5. Install the in-cabin microfilter cover (A).



6. Install the glove box assembly in the instrument panel. Refer to IP-18, "Removal and Installation".
7. Fill out the date information on the small replacement label and attach it to the glove box lid.

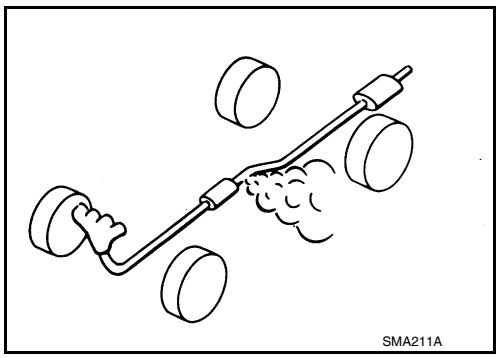
EXHAUST SYSTEM

EXHAUST SYSTEM : Checking Exhaust System

INFOID:0000000006146566

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

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



A/T FLUID

A/T FLUID : Checking the A/T Fluid (ATF)

INFOID:0000000006706818

CAUTION:
If using the vehicle for towing, the A/T fluid must be replaced as specified. Refer to TM-265, "General Specification" (United States and Canada), TM-265, "General Specification" (Mexico).

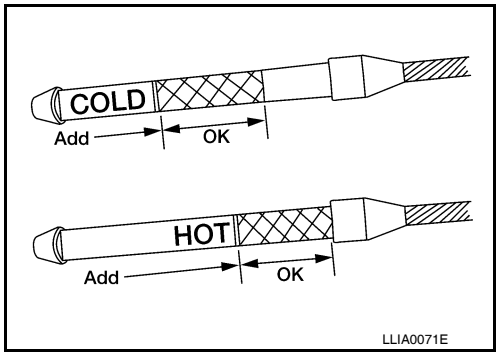
1. Before driving, the A/T fluid level can be checked at A/T fluid temperatures of 30° to 50° C (86° to 122° F) using the “COLD” range on the A/T fluid level gauge as follows:

a. Park the vehicle on a level surface and set the parking brake.

b. Start the engine and move the selector lever through each gear position. Shift the selector lever into the “P” position.

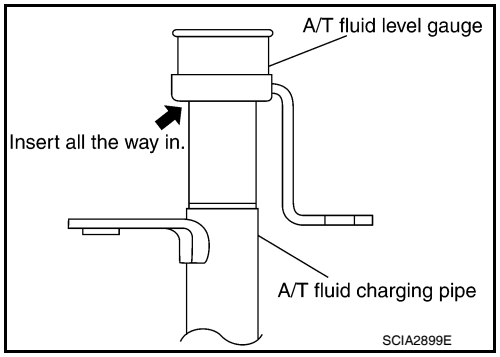
c. Check the A/T fluid level with the engine idling.

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.

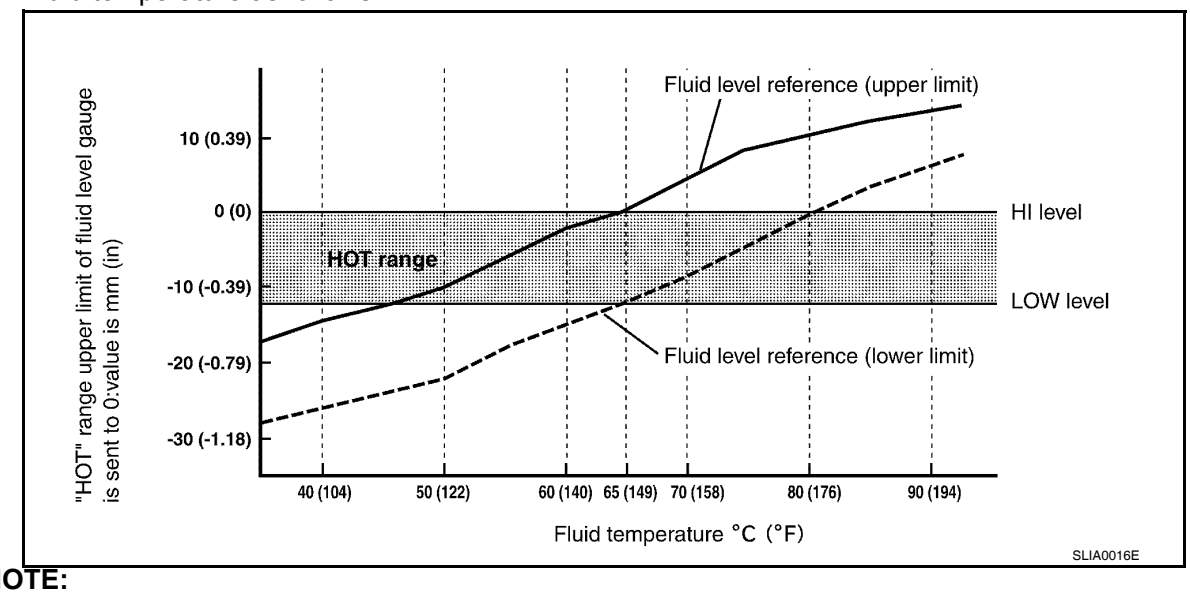


g. Install the A/T fluid level gauge and the A/T fluid level gauge bolt.

A/T fluid level gauge bolt	**: Refer to TM-188, "Removal and Installation (2WD)" or TM-190, "Removal and Installation (4WD)"**

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).

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:

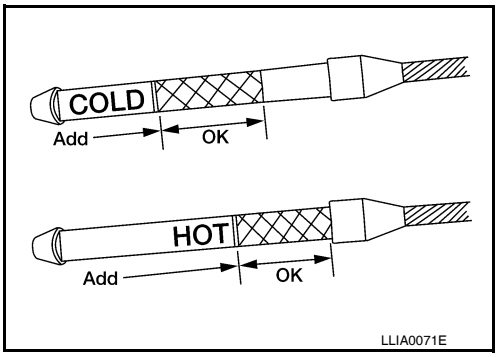


NOTE:
The A/T fluid level will be significantly affected by the A/T fluid temperature as shown. Therefore monitor the A/T fluid temperature data using the CONSULT-III.

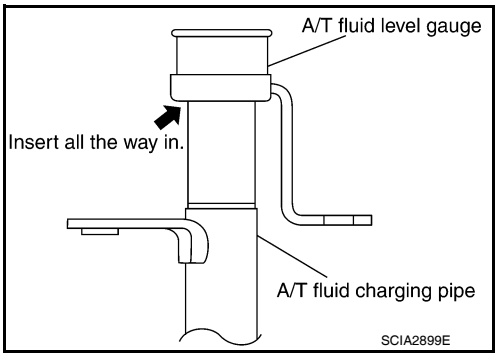
a. Connect CONSULT-III to data link connector.
b. Select “MAIN SIGNALS” in “DATA MONITOR” mode for “A/T” with CONSULT-III.
c. Read out the value of “ATF TEMP 1”.

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. Refer to TM-158, "A/T Fluid Cooler Cleaning". 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-188, "Removal and Installation (2WD)" or TM-190, "Removal and Installation (4WD)"**

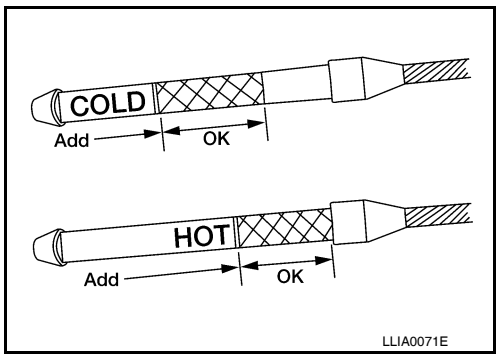
A/T FLUID : Changing the A/T Fluid (ATF)

INFOID:0000000006706819

CAUTION:
If using the vehicle for towing, the A/T fluid must be replaced as specified. Refer to TM-265, "General Specification".

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-194, "Component".**



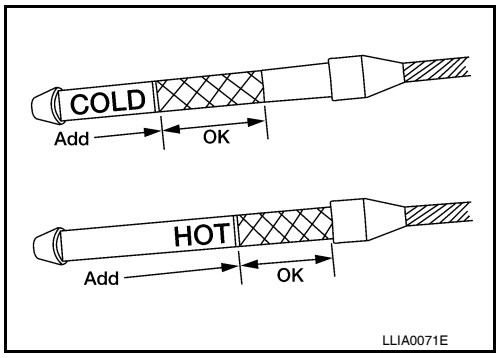
   - To flush out the old A/T fluid from the transmission oil coolers, pour new A/T fluid into the A/T fluid charging pipe with the engine idling and at the same time drain the old A/T fluid from the auxiliary transmission oil cooler hose return line.
   - When the color of the A/T fluid coming out of the 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 TM-265, "General Specification".**

   CAUTION:
   - **If Genuine NISSAN Matic S ATF is not available, Genuine NISSAN Matic J ATF may also be used.**
   - **Using ATF fluid other than Genuine NISSAN Matic S ATF or Matic J ATF will cause deterioration in driveability and A/T durability, and may damage the A/T, which is not covered by the 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 parts.**
   - **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-188, "Removal and Installation (2WD)" or TM-190, "Removal and Installation (4WD)".**

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.

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

A/T fluid level gauge bolt : **Refer to TM-188, "Removal and Installation (2WD)" or TM-190, "Removal and Installation (4WD)".**

TRANSFER FLUID

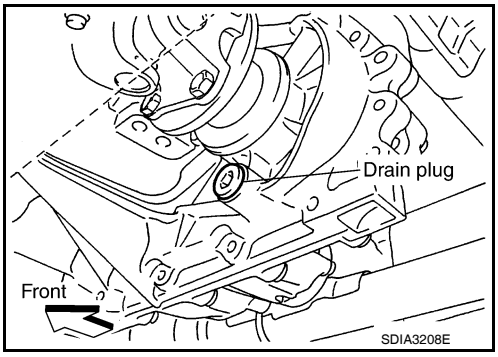
TRANSFER FLUID : Replacement

INFOID:0000000006706820

CAUTION:
If using the vehicle for towing, the A/T fluid must be replaced as specified. Refer to MA-10, "FOR USA AND CANADA : Introduction of Periodic Maintenance" (United States and Canada), MA-17, "FOR MEXICO : Introduction of Periodic Maintenance" (Mexico).

DRAINING

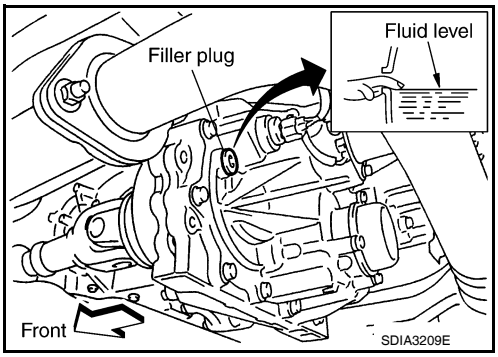
1. Stop engine.
2. Remove the drain plug and gasket and drain the fluid.
3. Install the drain plug with a new gasket to the transfer. Tighten to the specified torque. Refer to DLN-143, "Disassembly and Assembly".
   CAUTION:
   Do not reuse gasket.



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-21, "FOR USA AND CANADA : Fluids and Lubricants" (United States and Canada), MA-22, "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-143, "Disassembly and Assembly".
   CAUTION:
   Do not reuse gasket.

TRANSFER FLUID : Inspection

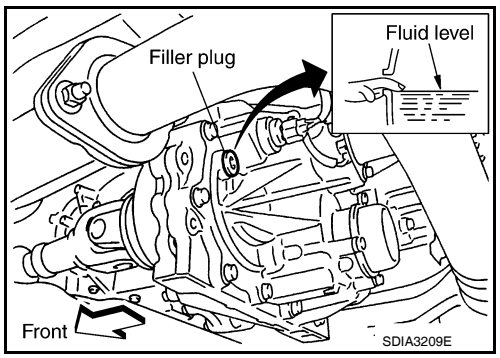
INFOID:0000000006706821

CAUTION:
If using the vehicle for towing, the A/T fluid must be replaced as specified. Refer to MA-10, "FOR USA AND CANADA : Introduction of Periodic Maintenance" (United States and Canada), MA-17, "FOR MEXICO : Introduction of 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-143, "Disassembly and Assembly".
CAUTION:
Do not reuse gasket.



PROPELLER SHAFT

PROPELLER SHAFT : Checking Propeller Shaft

INFOID:0000000006146571

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.

FRONT DIFFERENTIAL GEAR OIL

FRONT DIFFERENTIAL GEAR OIL : Changing Differential Gear Oil

INFOID:0000000006706822

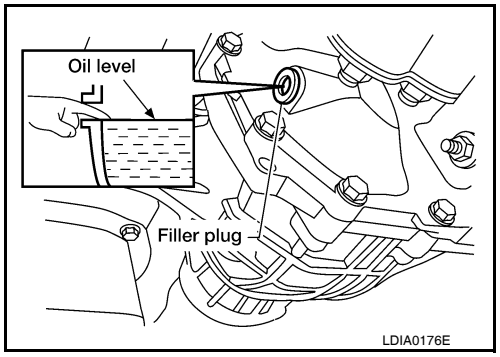
DRAINING

1. Stop the engine.
2. Remove the drain plug from the front final drive assembly to drain the differential gear oil.
3. Install the drain plug with sealant applied on the threads to the front final drive assembly. Tighten to the specified torque. Refer to DLN-217, "Disassembly and Assembly".
   - Use High Performance Thread Sealant or equivalent. Refer to GI-15, "Recommended Chemical Products and Sealants".

FILLING

1. Remove the filler plug 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-21, "FOR USA AND CANADA : Fluids and Lubricants" (United States and Canada), MA-22, "FOR MEXICO : Fluids and Lubricants" (Mexico).**



3. Install the filler plug with sealant applied on the threads to the front final drive assembly. Tighten to the specified torque. Refer to DLN-217, "Disassembly and Assembly".
   - Use High Performance Thread Sealant or equivalent. Refer to GI-15, "Recommended Chemical Products and Sealants".

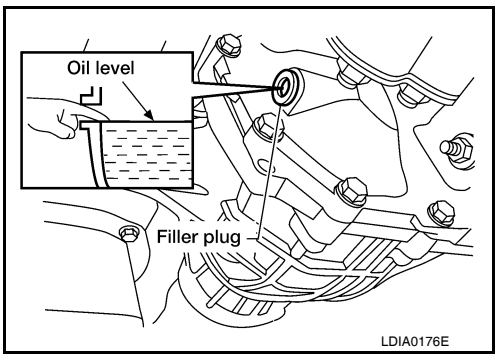
FRONT DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil

INFOID:0000000006706823

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 sealant applied on the threads to the front final drive assembly. Tighten to the specified torque. Refer to DLN-217, "Disassembly and Assembly".
   - Use High Performance Thread Sealant or equivalent. Refer to GI-15, "Recommended Chemical Products and Sealants".



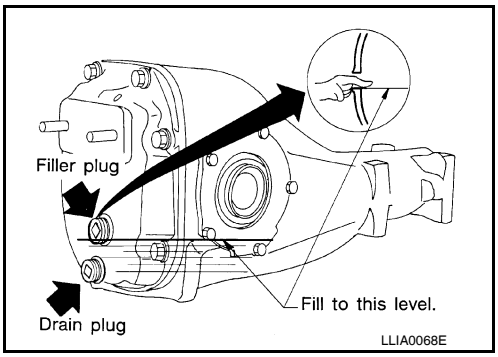
REAR DIFFERENTIAL GEAR OIL

REAR DIFFERENTIAL GEAR OIL : Changing Differential Gear Oil

INFOID:0000000006706824

DRAINING

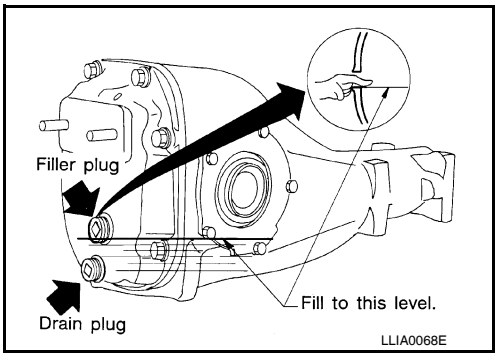
1. Stop the engine.
2. Remove the drain plug and gasket from the rear final drive assembly to drain the differential gear oil.
3. Install the drain plug with a new gasket to the rear final drive assembly. Tighten to the specified torque. Refer to DLN-253, "Disassembly and Assembly".
   CAUTION:
   Do not reuse gasket.



FILLING

1. Remove the filler plug and gasket 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-21, "FOR USA AND CANADA : Fluids and Lubricants" (United States and Canada), MA-22, "FOR MEXICO : Fluids and Lubricants" (Mexico).**



3. Install the filler plug with a new gasket on it to the rear final drive assembly. Tighten to the specified torque. Refer to DLN-253, "Disassembly and Assembly".
   CAUTION:
   Do not reuse gasket.

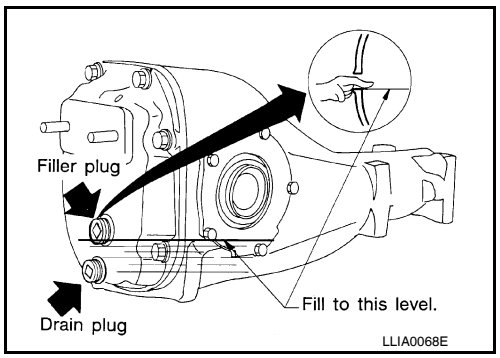
REAR DIFFERENTIAL GEAR OIL : Checking Differential Gear Oil

INFOID:0000000006706825

OIL LEAKAGE AND OIL 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 a new gasket on it to the rear final drive assembly. Tighten to the specified torque. Refer to DLN-253, "Disassembly and Assembly".
CAUTION:
Do not reuse gasket.



WHEELS

WHEELS : Balancing Wheels

INFOID:0000000006706826

BALANCING WHEELS (ADHESIVE WEIGHT TYPE)

Preparation Before Adjustment

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

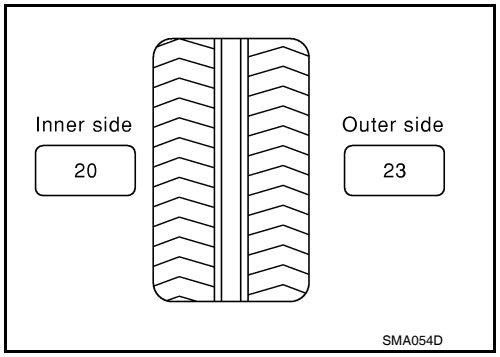
CAUTION:
- **Be careful not scratch the road wheel during removal.**
- **After removing double-faced adhesive tape, wipe clean traces of releasing agent from the road wheel.**

Wheel Balance Adjustment

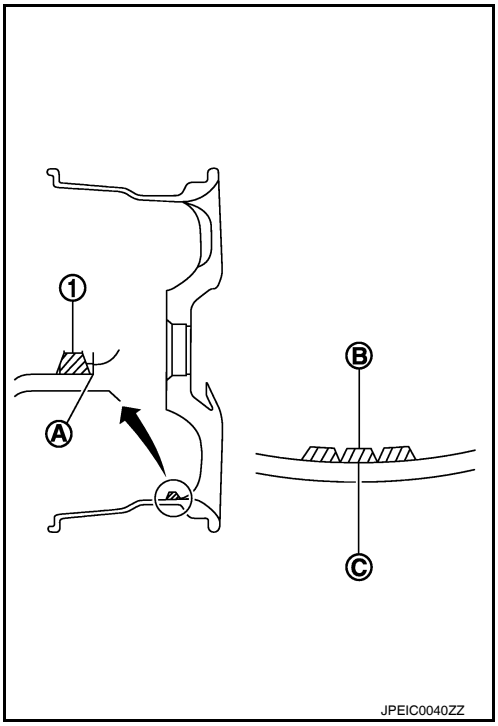
- If a balancer machine has an adhesive weight mode setting, select the adhesive weight mode setting and skip Step 2. below. If a balancer machine only has the clip-on (rim flange) weight mode setting, follow Step 2. to calculate the correct size adhesive weight.

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

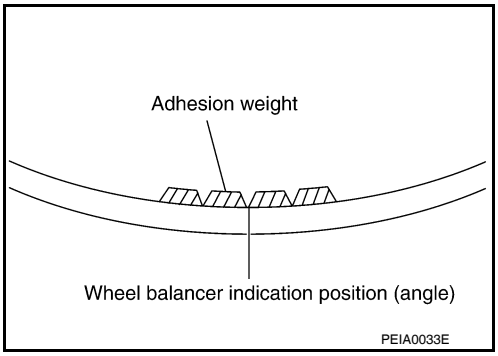
a. Indicated imbalance value × 5/3 (1.67) = balance weight to be installed
Calculation example:
23 g (0.81 oz) × 5/3 (1.67) = 38.33 g (1.35 oz) ⇒ 40 g (1.41 oz) balance weight (closer to calculated balance weight value)
NOTE:
Note that balance weight value must be closer to the calculated balance weight value.
Example:
37.4 ⇒ 35 g (1.23 oz)
37.5 ⇒ 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.

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

WHEELS : Rotation

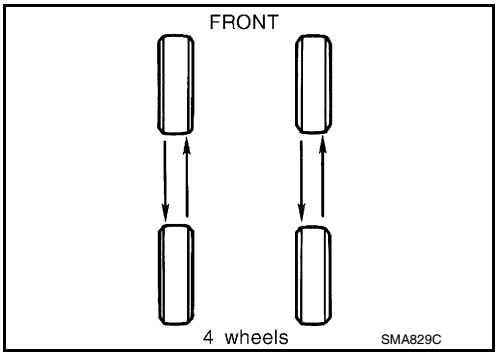
INFOID:0000000006706827

TIRE ROTATION

- Follow the maintenance schedule for tire rotation service intervals. Refer to MA-10, "FOR USA AND CANADA : Introduction of Periodic Maintenance" (United States and Canada), MA-17, "FOR MEXICO : Introduction of Periodic Maintenance" (Mexico).
- Rotate the wheel and tires front to back in the pattern as shown. When installing the wheel and tires, tighten the wheel nuts diagonally to the specified torque.

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

CAUTION:
- **Do not include the spare wheel and tire when rotating the wheel and tires.**



- **When installing the wheel nuts, 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 the wheel nuts to a torque exceeding specification to prevent strain on the disc rotor.**
- **Use genuine NISSAN wheel nuts for aluminum wheels.**

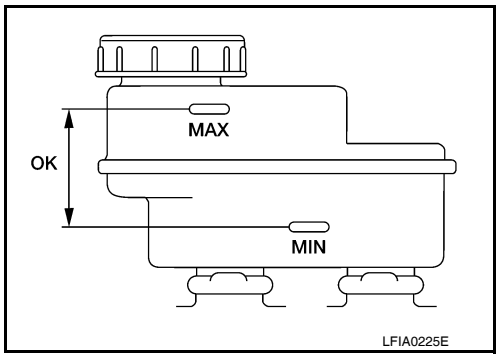
BRAKE FLUID LEVEL AND LEAKS

BRAKE FLUID LEVEL AND LEAKS : On Board Inspection

INFOID:0000000006146578

LEVEL CHECK

- Make sure the fluid level in reservoir tank is between 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 parking brake pedal is released, check brake system for fluid leaks.

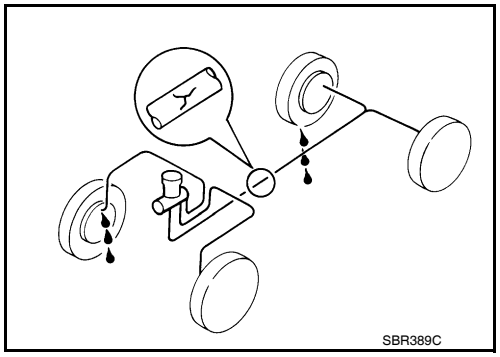


BRAKE LINES AND CABLES

BRAKE LINES AND CABLES : Checking Brake Line and Cables

INFOID:0000000006146579

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 : Front Brake Pad Inspection

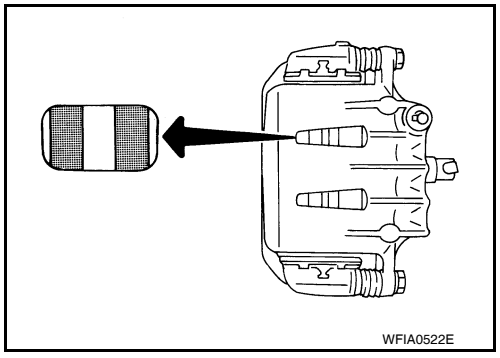
INFOID:0000000006146580

PAD WEAR

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

Standard thickness : Refer to BR-47, "Front Disc Brake".

Repair limit thickness : Refer to BR-47, "Front Disc Brake".



DISC BRAKE : Front Brake Rotor Inspection

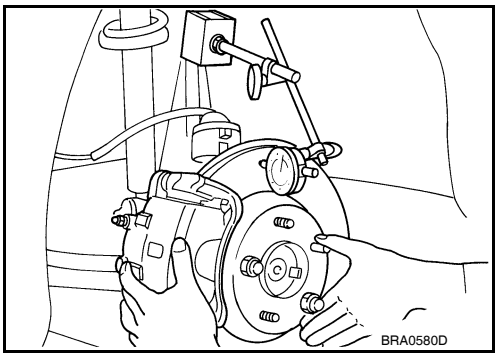
INFOID:0000000006146581

VISUAL

Check surface of disc rotor for uneven wear, cracks, and serious damage. Replace as necessary.

RUNOUT

1. Attach disc rotor to wheel hub using wheel nuts at two or more positions.
2. Inspect runout using a dial gauge placed at 10 mm (0.39 in) inside the disc edge.



Runout limit : Refer to BR-47, "Front Disc Brake".

(with it attached to the vehicle)

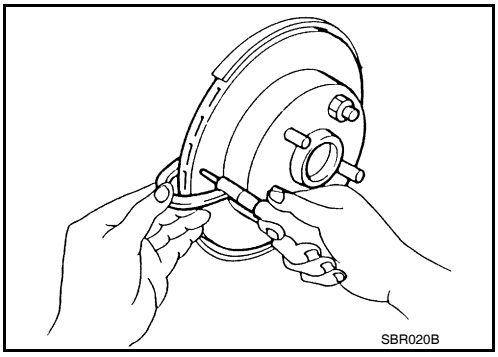
NOTE:
Before measuring, make sure that wheel bearing axial end play is within the specification. Refer to BR-6, "NVH Troubleshooting Chart".

3. When runout exceeds limit value, displace mounting positions of disc rotor by one hole. And then find a position of the minimum value for runout.
4. If runout is outside the specified value after performing the above operation, turn disc rotor using Tool.

Tool number : 38-PFM90.5 (—)

THICKNESS

Check thickness of the disc rotor using a micrometer. Replace disc rotor if thickness is less then the wear limit.



Standard thickness : Refer to BR-47, "Front Disc Brake".

Repair limit thickness : Refer to BR-47, "Front Disc Brake".

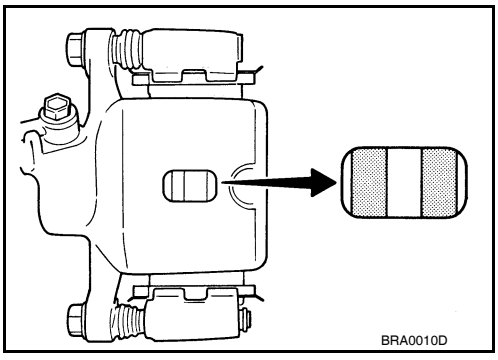
Thickness variation (Measured at 8 positions) : Refer to BR-47, "Front Disc Brake".

DISC BRAKE : Rear Brake Pad Inspection

INFOID:0000000006146582

PAD WEAR

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



Standard thickness : Refer to BR-47, "Rear Disc Brake".

Repair limit thickness : Refer to BR-47, "Rear Disc Brake".

DISC BRAKE : Rear Brake Rotor Inspection

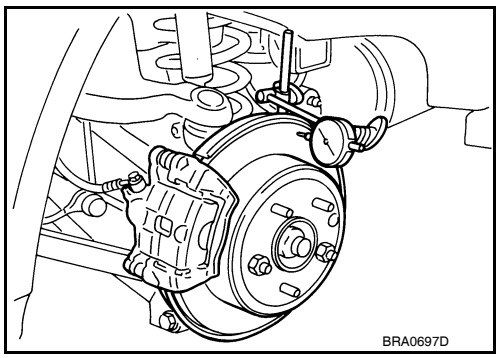
INFOID:0000000006146583

VISUAL

Check surface of disc rotor for uneven wear, cracks, and serious damage. Replace as necessary.

RUNOUT

1. Attach disc rotor to wheel hub using wheel nuts at two or more positions.
2. Inspect runout using dial gauge placed at 10 mm (0.39 in) inside disc edge.


BRA0697D

Runout limit : Refer to BR-47, "Rear Disc Brake".
(With it attached to the vehicle)

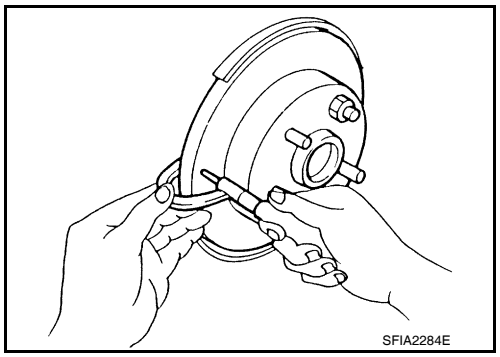
NOTE:
Before measuring, make sure that wheel bearing axial end play is within the specification. Refer to BR-6, "NVH Troubleshooting Chart".

3. When runout exceeds limit value, displace mounting positions of disc rotor by one hole. And then find a position of the minimum value for runout.
4. If runout is outside the specified value after performing the above operation, turn disc rotor using Tool.

Tool number : 38-PFM90.5 (—)

THICKNESS

Check the thickness of the disc rotor using a micrometer. Replace disc rotor if the thickness is less then the wear limit.


SFIA2284E

Standard thickness	**: Refer to BR-47, "Rear Disc Brake".**
Repair limit thickness	**: Refer to BR-47, "Rear Disc Brake".**
Thickness variation (Measured at 8 positions)	**: Refer to BR-47, "Rear Disc Brake".**

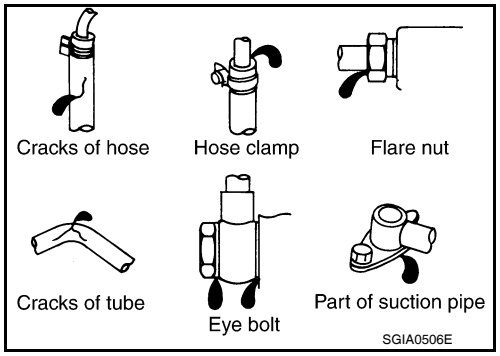
STEERING GEAR AND LINKAGE

STEERING GEAR AND LINKAGE : Checking Steering Gear and Linkage

INFOID:0000000006146584

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

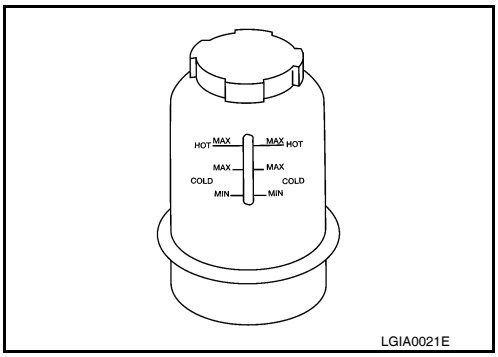
POWER STEERING FLUID AND LINES : Checking Fluid Level

INFOID:0000000006146585

Check power steering fluid level with engine off, referring to the scale on reservoir tank.
Use HOT range for fluid temperatures of 50° – 80°C (122° – 176°F).
Use COLD range for fluid temperatures of 0° – 30°C (32° – 86°F).

CAUTION:

- **Do not overfill.**
- **Do not reuse any power steering fluid.**
- **Use the recommended power steering fluid or equivalent. Refer to MA-21, "FOR USA AND CANADA : Fluids and Lubricants".**

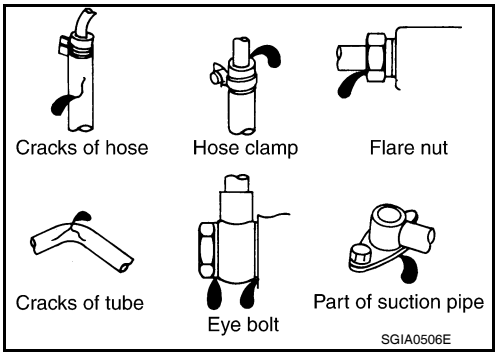


POWER STEERING FLUID AND LINES : Checking Fluid Leakage

INFOID:0000000006146586

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

1. Run engine until fluid temperature reaches 50° – 80°C (122° – 176°F) in reservoir tank. Keep engine speed idle.
2. Turn steering wheel right-to-left several times.
3. Hold steering wheel at each “lock” position for five seconds to check fluid leakage.
   CAUTION:
   Do not hold steering wheel in a locked position for more than 10 seconds. (There is the possibility that oil pump may be damaged.)



4. If fluid leakage at connections is noticed, then loosen flare nut and then retighten. Do not over tighten connector as this can damage O-ring, washer and connector.
5. If fluid leakage from oil pump is noticed, check oil pump. Refer to ST-15 .
6. Check steering gear boots for accumulation of fluid indicating a leak from the steering gear.

AXLE AND SUSPENSION PARTS

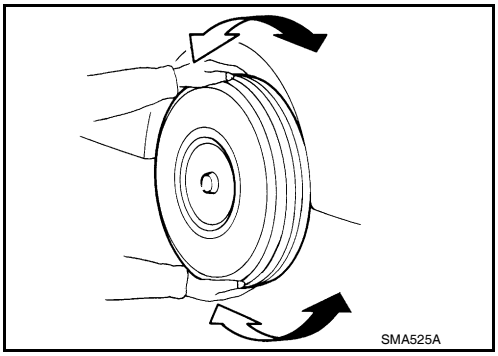
AXLE AND SUSPENSION PARTS : Checking Axle and Suspension Parts

INFOID:0000000006146587

FRONT AND REAR AXLE AND SUSPENSION PARTS

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

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



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

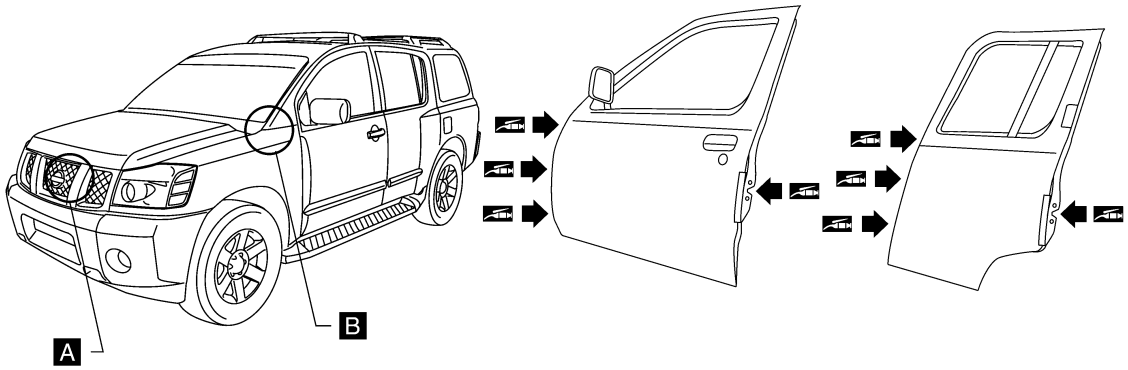
PROPELLER SHAFT

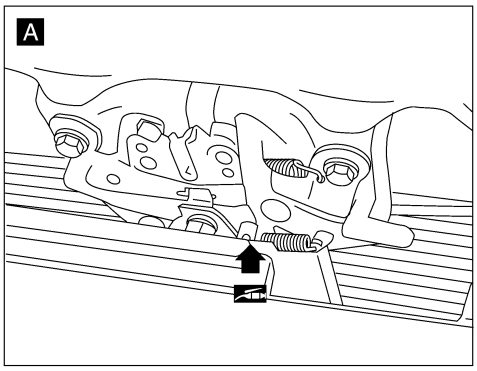
Inspect the propeller shaft tube for dents or cracks. If damaged, replace the propeller shaft assembly.

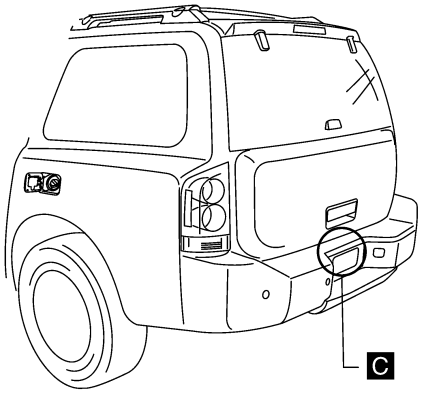
LOCKS AND HINGES

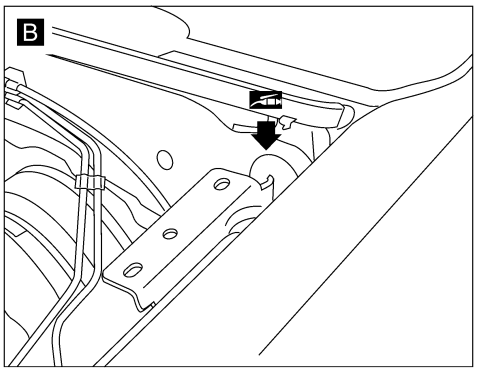
LOCKS AND HINGES : Lubricating Locks, Hinges and Hood Latches

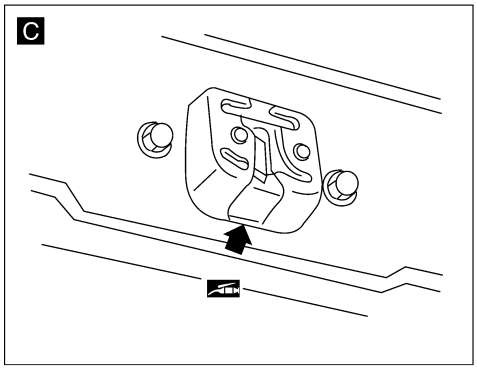
INFOID:0000000006146588











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NOTE:
Lubricate the locations shown with a suitable multi-purpose grease.

SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS

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

INFOID:0000000006146589

Check the seat belt buckles, webbing, retractors, anchors and adjusters. Replace any seat belt assembly as necessary. Refer to SB-11, "Seat Belt Inspection".

- Check the seat belt anchors for loose mounting bolts, damage, or excessive wear.
- Check the seat belt webbing for any damage, cuts, fraying, or excessive wear.
- Check the retractor for smooth operation.

- Check the function of the buckles by inserting the seat belt tongue and checking for proper engagement of the buckle and press the button on the buckle to check for proper release of the seat belt tongue.

CAUTION:

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