SECTION MA
MAINTENANCE

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000005459768

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.**

Precautions Necessary for Steering Wheel Rotation after Battery Disconnect (Early Production, With Electronic Steering Column Lock)

INFOID:0000000005885983

NOTE:

- Before removing and installing any control units, first turn the push-button ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

This vehicle is equipped with a push-button ignition switch and a steering lock unit.
If the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.
If turning the steering wheel is required with the battery disconnected or discharged, 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. Carry the Intelligent Key or insert it to the key slot and turn the push-button ignition switch to ACC position. (At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.

5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)
6. Perform self-diagnosis check of all control units using CONSULT-III.

PREPARATION

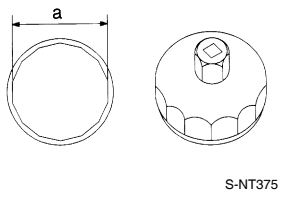
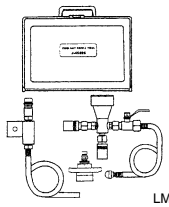
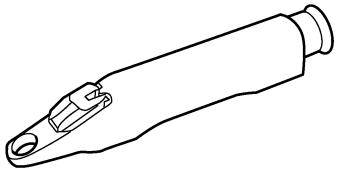
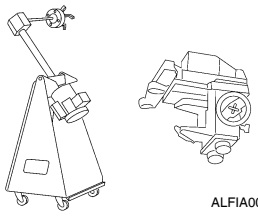
PREPARATION

FOR NORTH AMERICA

FOR NORTH AMERICA : Special Service Tool

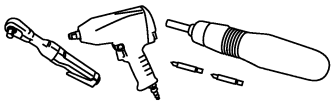
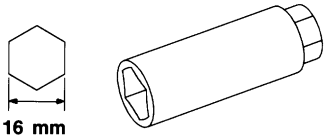
INFOID:0000000005459770

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

Tool number (Kent-Moore No.) Tool name	Description
KV10115801 (J-38956) Oil filter wrench  S-NT375	Removing and installing oil filter **a: 64.3 mm (2.531 in)**
KV991J0070 (J-45695) Coolant Refill Tool  LMA053	Refilling engine cooling system
— (J-23688) Engine coolant refractometer  WBIA0539E	Checking concentration of ethylene glycol in engine coolant
38-PFM90.5 (—) Pro-Cut PFM90 On-Car Brake Lathe  ALFIA0092ZZ	Turning rotors

FOR NORTH AMERICA : Commercial Service Tool

INFOID:0000000005459771

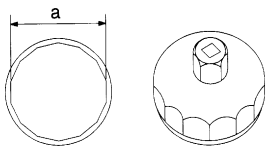
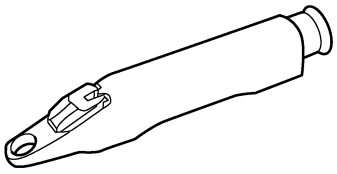
Tool name	Description
Power tool  PIIB1407E	Loosening nuts and bolts
Spark plug wrench  S-NT047	Removing and installing spark plug

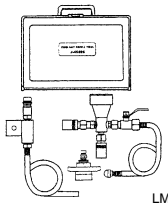
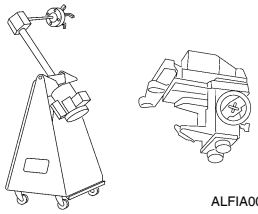
FOR MEXICO

FOR MEXICO : Special Service Tool

INFOID:0000000005459772

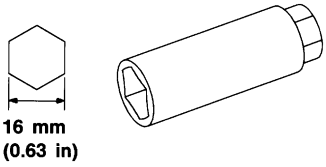
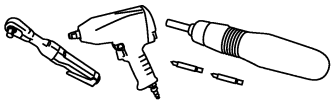
The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
KV10115801 (J-38956) Oil filter cap wrench  NT375	Removing oil filter **a: 64.3 mm (2.531 in)**
KV991J0010 (J-23688) Engine coolant refractometer  WBIA0539E	Checking concentration of ethylene glycol in engine coolant

Tool number (Kent-Moore No.) Tool name	Description
KV991J0070 (J-45695) Coolant Refill Tool  LMA053	For refilling engine cooling system
38-PFM90.5 (—) Pro-Cut PFM90 On-Car Brake Lathe  ALFIA0092ZZ	Turning rotors

FOR MEXICO : Commercial Service Tool

INFOID:0000000005459773

Tool name	Description
Spark plug wrench  16 mm (0.63 in) S-NT047	Removing and installing spark plugs
Power Tool  PIIB1407E	Loosening bolts and nuts

FOR MEXICO : Pre-Delivery Inspection Item

INFOID:0000000005459774

Shown below are Pre-delivery Inspection Items required for the new vehicle. It is recommended that necessary items other than those listed here be added, paying due regard to the conditions in each country.

Perform applicable items on each model. Consult text of this section for specifications.

UNDER HOOD — engine off

- ☐ Radiator coolant level and coolant hose connections for leaks
- ☐ Battery fluid level, specific gravity and conditions of battery terminals
- ☐ Drive belts tension
- ☐ Fuel filter for water or dusts (Diesel only), and fuel lines and connections for leaks
- ☐ Engine oil level and oil leaks
- ☐ Clutch and brake reservoir fluid level and fluid lines for leaks
- ☐ Windshield and rear window washer and headlamp cleaner reservoir fluid level
- ☐ Power steering reservoir fluid level and hose connections for leaks

ON INSIDE AND OUTSIDE

- ☐ Remove front spring/strut spacer (If applicable)
- ☐ Operation of all instruments, gauges, lights and accessories
- ☐ Operation of horn(s), wiper and washer
- ☐ Steering lock for operation
- ☐ Check air conditioner for gas leaks
- ☐ Front and rear seats, and seat belts for operation
- ☐ All moldings, trims and fittings for fit and alignment
- ☐ All windows for operation and alignment
- ☐ Hood, trunk lid, door panels for fit and alignment
- ☐ Latches, keys and locks for operation
- ☐ Weatherstrips for adhesion and fit
- ☐ Headlamp aiming
- ☐ Tighten wheel nuts (Inc. inner nuts if applicable)
- ☐ Tire pressure (Inc. spare tire)
- ☐ Check front wheels for toe-in
- ☐ Install clock/voltmeter/room lamp fuse (If applicable)
- ☒ Install deodorizing filter to air conditioner (If applicable)
- ☒ Remove wiper blade protectors (If applicable)

UNDER BODY

- ☒ Manual transmission/transaxle, transfer and differential gear oil level
- ☐ Brake and fuel lines and oil/fluid reservoirs for leaks
- ☐ Tighten bolts and nuts of steering linkage and gear box, suspension, propeller shafts and drive shafts
- ☒ Tighten rear body bolts and nuts (Models with wooden bed only)

ROAD TEST

- ☒ Clutch operation
- ☐ Parking brake operation
- ☒ Service brake operation
- ☒ Automatic transmission/transaxle shift timing and kickdown
- ☐ Steering control and returnables
- ☐ Engine performance
- ☐ Squeaks and rattles

ENGINE OPERATING AND HOT

- ☒ Adjust idle speed
- ☐ Automatic transmission/transaxle fluid level
- ☒ Engine idling and stop knob operation (Diesel only)

FINAL INSPECTION

- ☐ Install necessary parts (outside mirror, wheel covers, seat belts, mat, carpet or mud flaps)
- ☐ Inspect for interior and exterior metal and paint damage
- ☐ Check for spare tire, jack, tools (wheel chock), and literature
- ☐ Wash, clean interior and exterior

☒ : Not applicable to this model

ON-VEHICLE MAINTENANCE

GENERAL MAINTENANCE
FOR NORTH AMERICA

FOR NORTH AMERICA : Explanation of General Maintenance

INFOID:0000000005459775

General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform checks and inspections themselves or have their NISSAN dealers do them.

OUTSIDE THE VEHICLE

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

Item		Reference page
Tires	Check the pressure with a gauge, including the spare, at least once a month and always prior to long distance trips. Adjust to the specified pressure if necessary. Check carefully for damage, cuts or excessive wear.	WT-67
Wheel nuts	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	WT-63
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-63
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-10
Wheel alignment and balance	If the vehicle pulls to either side while driving on a straight and level road, or if you detect uneven or abnormal tire wear, there may be a need for wheel alignment. If the steering wheel or seat vibrates at normal highway speeds, wheel balancing may be needed.	FSU-19, WT-61
Windshield wiper blades	Check for cracks or wear if they do not wipe properly.	—
Doors and engine hood	Check that all doors and the engine hood operate smoothly as well as the trunk lid. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check lubrication frequently.	MA-40
Lamps	Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check headlamp aim. Clean the headlamps on a regular basis.	EXL-162 (Xenon), EXL-336 (Halogen)

INSIDE THE VEHICLE

The maintenance items listed here should be checked on a regular basis, such as when performing periodic maintenance, cleaning the vehicle, etc.

Item		Reference page
Warning lamps and chimes	Make sure that all warning lamps and chimes are operating properly.	—
Windshield wiper and washer	Check that the wipers and washer operate properly and that the wipers do not streak.	—
Windshield defroster	Check that the air comes out of the defroster outlets properly and in sufficient quantity when operating the heater or air conditioner.	—
Steering wheel	Check that it has the specified play. 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-15

Item		Reference page
Seats	Check seat position controls such as seat adjusters, seatback recliner, etc. to make sure they operate smoothly and that all latches lock securely in every position. Check that the head restraints move up and down smoothly and that the locks (if equipped) hold securely in all latched positions. Check that the latches lock securely for folding-down rear seatbacks.	—
Seat belts	Check that all parts of the seat belt system (e.g., buckles, anchors, adjusters and retractors) operate properly and smoothly, and are installed securely. Check the belt webbing for cuts, fraying, wear or damage.	SB-4
Accelerator pedal	Check the pedal for smooth operation and make sure the pedal does not catch or require uneven effort. Keep the floor mats away from the pedal.	—
Brakes	Check that the brake does not pull the vehicle to one side when applied.	—
Brake pedal and booster	Check the pedal for smooth operation and make sure it has the proper distance under it when depressed fully. Check the brake booster function. Be sure to keep the floor mats away from the pedal.	BR-9, BR-26
Parking brake	Check that the lever or pedal has the proper travel and make sure that the vehicle is held securely on a fairly steep hill when only the parking brake is applied.	PB-5
CVT P (Park) position mechanism	On a fairly steep hill check that the vehicle is held securely with the selector lever in the P (Park) position without applying any brakes.	—

UNDER THE HOOD AND VEHICLE

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

Item		Reference page
Windshield washer fluid	Check that there is adequate fluid in the tank.	—
Engine coolant level	Check the coolant level when the engine is cold.	CO-10
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.	BR-16
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.	PG-67
Engine drive belts	Make sure that no belt is frayed, worn, cracked or oily.	MA-22
Engine oil level	Check the level on the oil level gauge after parking the vehicle on a level spot and turning off the engine.	MA-27
Power steering fluid level and lines	Check the level on the dipstick with the engine off. Check the lines for improper attachment, leaks, cracks, etc.	MA-38
Exhaust system	Make sure there are no loose supports, cracks or holes. If the sound of the exhaust seems unusual or there is a smell of exhaust fumes, immediately locate the trouble and correct it.	MA-33
Underbody	The underbody is frequently exposed to corrosive substances such as those used on icy roads or to control dust. It is very important to remove these substances, otherwise rust will form on the floor pan, frame, fuel lines and around the exhaust system. At the end of winter, the underbody should be thoroughly flushed with plain water, being careful to clean those areas where mud and dirt can easily accumulate.	—
Fluid leaks	Check under the vehicle for fuel, oil, water or other fluid leaks after the vehicle has been parked for a while. Water dripping from the air conditioner after use is normal. If you should notice any leaks or gasoline fumes are evident, check for the cause and correct it immediately.	—

FOR MEXICO

FOR MEXICO : Explanation of General Maintenance

INFOID:0000000005459776

General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform checks and inspections themselves or have their NISSAN dealers do them.

OUTSIDE THE VEHICLE

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

Item		Reference page
Tires	Check the pressure with a gauge often and always prior to long distance trips . Adjust to the pressure in all tires, including the spare, to the pressure specified.	—
Tire rotation	Tires should be rotated every 10,000 km (6,000 miles).	WT-63
Windshield wiper blades	Check for cracks or wear if they do not wipe properly. Repair as necessary.	—
Doors and engine hood	Check that all doors and the engine hood operate smoothly as well as the trunk lid. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check lubrication frequently.	MA-40, "LOCKS, HINGES AND HOOD LATCH : Lubricating"

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.	—
Lamps	Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check headlamp aim. Clean the headlamps on a regular basis.	EXL-162, "Aiming Adjustment Procedure" (Xenon), EXL-336, "Aiming Adjustment Procedure" (Halogen)
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-15, "Inspection"
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-4

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
Brake fluid level	Make sure that the brake fluid level is between the “MAX” and “MIN” lines on the reservoir.	BR-16
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.	PG-67
Engine oil level	Check the level on the dipstick after parking the vehicle on a level spot and turning off the engine.	MA-27

PERIODIC MAINTENANCE
FOR NORTH AMERICA

FOR NORTH AMERICA : Introduction of Periodic Maintenance

INFOID:0000000005459777

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

Schedule 1	Follow Periodic Maintenance Schedule 1 if the driving habits frequently include one or more of the following driving conditions: • 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, a caravan or using a car-top carrier.	Emission Control System Maintenance	MA-12
		Chassis and Body Maintenance	MA-12
Schedule 2	Follow Periodic Maintenance Schedule 2 if none of driving conditions shown in Schedule 1 apply to the driving habits.	Emission Control System Maintenance	MA-14
		Chassis and Body Maintenance	MA-14

FOR NORTH AMERICA : Schedule 1

INFOID:0000000005459778

EMISSION CONTROL SYSTEM

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.50 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Drive belts	NOTE (1)									MA-22
Air cleaner filter	NOTE (2)								[R]	MA-27
EVAP vapor lines									I★	MA-32
Fuel lines									I★	MA-26
Fuel filter	NOTE (3)									—
Engine coolant	NOTE (4)									MA-22
Engine oil		R	R	R	R	R	R	R	R	MA-28
Engine oil filter [Use genuine NISSAN engine oil filter or equivalent.]		R	R	R	R	R	R	R	R	LU-10
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km).								EM-12
Intake & exhaust valve clearance*	NOTE (5)									EM-124

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Drive belts	NOTE (1)								I★	MA-22
Air cleaner filter	NOTE (2)								[R]	MA-27

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	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	
EVAP vapor lines									I★	MA-32
Fuel lines									I★	MA-26
Fuel filter	NOTE (3)									—
Engine coolant	NOTE (4)								R★	MA-24
Engine oil		R	R	R	R	R	R	R	R	MA-28
Engine oil filter [Use genuine NISSAN engine oil filter or equivalent.]		R	R	R	R	R	R	R	R	LU-10
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km).								EM-12
Intake & exhaust valve clearance*	NOTE (5)									EM-124

(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.

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

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

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

(5) If valve noise increases, inspect valve clearance.

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

CHASSIS AND BODY

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.50 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Brake lines & cables					I				I	MA-36
Brake pads & rotors			I		I		I		I	BR-7, BR-7 BR-8, BR-8
CVT fluid	NOTE (1)				I				I	MA-33
Steering gear and linkage, axle & suspension parts			I		I		I		I	MA-37
Tire rotation	NOTE (2)									MA-35
Exhaust system			I		I		I		I	MA-33
Front drive shaft boot			I		I		I		I	MA-39
In-cabin microfilter					R				R	MA-33
Climate controlled seat filter									R	SE-62

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Brake lines & cables					I				I	MA-36
Brake pads & rotors			I		I		I		I	BR-7, BR-7 BR-8, BR-8
CVT fluid	NOTE (1)				I				I	MA-33
Steering gear and linkage, axle & suspension parts			I		I		I		I	MA-37
Tire rotation	NOTE (2)									MA-35
Exhaust system			I		I		I		I	MA-33
Front drive shaft boot			I		I		I		I	MA-39
In-cabin microfilter					R				R	MA-33
Climate controlled seat filter									R	SE-62

(1) If towing a trailer, or using a car-top carrier, or driving on rough or muddy roads, inspect CVT fluid deterioration with Consult-III every 60,000 miles (96,000 km), then change the CVT fluid NS-2 if necessary. (Refer to TM-150, "Changing".) **Using transmission fluid other than Genuine NISSAN CVT Fluid NS-2 will damage the CVT, which is not covered by the NISSAN new vehicle limited warranty.**

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

FOR NORTH AMERICA : Schedule 2

INFOID:0000000005459779

EMISSION CONTROL SYSTEM

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Drive belts	NOTE (1)								I★	MA-22
Air cleaner filter					[R]				[R]	MA-27
EVAP vapor lines					I★				I★	MA-32
Fuel lines					I★				I★	MA-26
Fuel filter	NOTE (2)									—
Engine coolant	NOTE (3)								R★	MA-24
Engine oil		R	R	R	R	R	R	R	R	MA-28
Engine oil filter [Use genuine NISSAN engine oil filter or equivalent.]		R	R	R	R	R	R	R	R	LU-10
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km).								EM-12
Intake & exhaust valve clearance*	NOTE (4)									EM-124

(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.

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

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

(4) If valve noise increases, inspect valve clearance.

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

CHASSIS AND BODY

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Page
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	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-36
Brake pads & rotors			I		I		I		I	BR-7, BR-7 BR-8, BR-8
CVT fluid	NOTE (1)		I		I		I		I	MA-33
Steering gear and linkage, axle & suspension parts					I				I	MA-37
Tire rotation	NOTE (2)									MA-35
Exhaust system					I				I	MA-33
Front drive shaft boot			I		I		I		I	MA-39
In-cabin microfilter			R		R		R		R	MA-33
Climate controlled seat filter					R				R	SE-62

(1) Using transmission fluid other than Genuine NISSAN CVT Fluid NS-2 will damage the CVT, which is not covered by the NISSAN new vehicle limited warranty.

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

FOR MEXICO

FOR MEXICO : Periodic Maintenance

INFOID:0000000005459780

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	
Under hood and under vehicle										
Intake & exhaust valve clearance	See NOTE (1)									EM-124
Drive belts	See NOTE (2)				I				I	MA-22
Engine oil (Use recommended oil.)★		R	R	R	R	R	R	R	R	MA-28
Engine oil filter (Use genuine NISSAN engine oil filter or equivalent)★		R	R	R	R	R	R	R	R	LU-10

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 coolant (Use Genuine NISSAN Engine Coolant or equivalent in its quality.)	See NOTE (3)				E				R	MA-24
Cooling system			I		I		I		I	CO-10
Fuel lines					I				I	MA-26
Air cleaner filter (Viscous paper type)★					R				R	MA-27
Fuel filter (In-tank type)	See NOTE (4)									—
Spark plugs (Iridium-tipped type)		Replace every 100,000 km (60,000 miles)								EM-12
EVAP vapor lines (With carbon canister)					I				I	MA-32

NOTE:

- **Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- (1) Periodic maintenance is not required. However, if valve noise increases, check valve clearance.
- (2) Replace the drive belts if found damaged.
- (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) Maintenance-free item. For service procedures, refer to FL section.

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	
Under hood and under vehicle										
Brake fluid (For level & leaks)		I	I	I	I	I	I	I	I	MA-35
Brake fluid★					R				R	BR-16
Brake booster vacuum hoses, connections & check valve					I				I	MA-36
Brake & exhaust system		I	I	I	I	I	I	I	I	MA-36, MA-33
CVT fluid (For level & leaks)	See NOTE (1)		I		I		I		I	MA-33
Steering gear & linkage, axle & suspension parts & front drive shafts★			I		I		I		I	MA-37, MA-39, MA-39
Outside and inside										
Wheel alignment (If necessary, rotate & balance wheels)			I		I		I		I	MA-35
Brake pads, rotors & other brake components★		I	I	I	I	I	I	I	I	MA-37, MA-37, MA-35, MA-36
Locks, hinges & hood latch★		L	L	L	L	L	L	L	L	MA-40

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	
Seat belts, buckles, retractors, anchors & adjusters			I		I		I		I	MA-40
Foot brake & parking brake (For free play, stroke & operation)		I	I	I	I	I	I	I	I	BR-14, PB-5
Air conditioner filter★			R		R		R		R	MA-33

NOTE:

- **Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- (1) If towing a trailer, using a camper or a car-top carrier, or driving on rough or muddy roads, inspect CVT fluid deterioration with CONSULT-III every 100,000 km (60,000 miles), then change CVT fluid NS-2 if necessary. (Refer to TM-36, "CONSULT-III Function (TRANSMISSION)".) And if CONSULT-III is not available, change (not just inspect) CVT fluid NS-2 every 100,000 km (60,000 miles). **Using transmission fluid other than Genuine NISSAN CVT Fluid NS-2 will damage the CVT, which is not covered by the warranty.**

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
J — Frequent driving in water

Driving condition										Maintenance item		Maintenance operation	Maintenance interval	Reference page
A	.	.	.	.	.	.	.	.	.	Air cleaner filter	Viscous paper type	Replace	More frequently	MA-27
A	B	C	D	.	.	.	.	.	.	Engine oil & engine oil filter		Replace	Every 5,000 km (3,000 miles) or 3 months	MA-28, MA-29
.	.	.	.	.	F	.	.	.	.	Brake fluid		Replace	Every 20,000 km (12,000 miles) or 12 months	MA-36
.	.	.	.	.	.	G	H	.	.	Steering gear & linkage, axle & suspension parts & front drive shafts		Inspect	Every 10,000 km (6,000 miles) or 6 months	MA-37, MA-39, MA-39
A	.	C	.	.	.	G	H	I	.	Brake pads, rotors & other brake components		Inspect	Every 5,000 km (3,000 miles) or 3 months	MA-37, MA-37, MA-35, MA-36
.	.	.	.	.	.	G	.	.	.	Locks, hinges & hood latch		Lubricate	Every 5,000 km (3,000 miles) or 3 months	MA-40
A	.	.	.	.	.	.	.	.	.	Air conditioner filter		Replace	More frequently	MA-33

RECOMMENDED FLUIDS AND LUBRICANTS FOR NORTH AMERICA

FOR NORTH AMERICA : Fluids and Lubricants

INFOID:0000000005459781

Description		Capacity (Approximate)			Recommended Fluids/Lubricants
		US measure	Imp measure	Liter	
Fuel		20 gal	16-5/8 gal	75.6	Unleaded gasoline with an octane rating of at least 91 AKI (RON 96)
Engine oil Drain and refill	With oil filter change	4-7/8 qt	4 qt	4.6	• Engine oil with API Certification Mark *1*2 • Viscosity SAE 5W-30 *2
	Without oil filter change	4-1/2 qt	3-3/4 qt	4.3	
	Dry engine (Overhaul)	5-1/4 qt	4-3/8 qt	5.0	
Cooling system with reservoir at MAX level		2-1/8 gal	1-3/4 gal	8.2	Genuine NISSAN Long Life Antifreeze/ Coolant or equivalent
CVT fluid		10-3/4 qt	9 qt	10.2	Genuine NISSAN CVT Fluid NS-2 *3
Power steering fluid (PSF)		1-1/8 qt	7/8 qt	1.0	Genuine NISSAN PSF or equivalent *4
Brake fluid		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid *5 or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)
Air conditioning system refrigerant		1.21 ± 0.055 lb	1.21 ± 0.055 lb	0.55 ± 0.025 kg	HFC-134a (R-134a) *6
Air conditioning system oil		5.03 fl oz	5.3 fl oz	150 m ℓ	NISSAN A/C System Oil Type S or equivalent *6
Windshield washer fluid		4 1/2 qt	3 3/4 qt	4.3	Genuine NISSAN Windshield Washer Concentrate Cleaner & Antifreeze or equivalent

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

*2: NISSAN recommends Genuine NISSAN Ester Engine Oil available at your NISSAN dealer.

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

*4: DEXRON™ VI type ATF may be used.

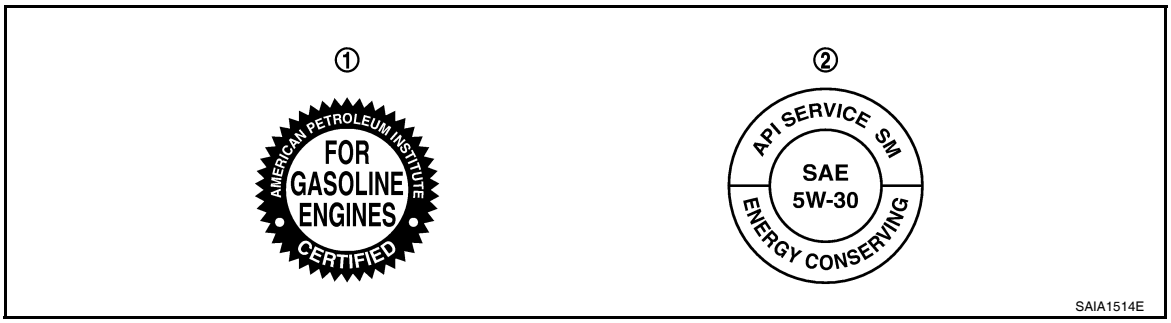
*5: Available in mainland U.S.A. through your NISSAN dealer.

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

FOR NORTH AMERICA : Engine Oil Recommendation

INFOID:0000000005459782

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 NORTH AMERICA : Engine Coolant Mixture Ratio

INFOID:0000000005519023

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

Coolant Mixture Ratios

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

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

Mixed Coolant Specific Gravity

Unit: specific gravity

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

CAUTION:

- **When adding or replacing coolant, be sure to use only Genuine NISSAN Long Life Anti-freeze coolant or equivalent with the proper mixture ratio of 50% anti-freeze and 50% demineralized water or distilled water.**
- **Other types of coolant solutions may damage your cooling system.**

FOR MEXICO

FOR MEXICO : Fluids and Lubricants

INFOID:0000000005459783

Description		Capacity (Approximate)		Recommended Fluids/Lubricants
		Liter	Imp measure	
Fuel		75.6	16-5/8 gal	Unleaded gasoline with an octane rating of at least 91 AKI (RON 96)
Engine oil Drain and refill	With oil filter change	4.6	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
	Without oil filter change	4.3	3 3/4 qt	
	Dry engine (engine overhaul)	5.0	4 3/8 qt	
Cooling system (with reservoir at MAX level)		8.2	1 3/4 gal	Genuine NISSAN Engine Coolant or equivalent in its quality *2
CVT fluid		10.2	9 qt	Genuine NISSAN CVT fluid NS-2 *3
Power steering fluid		1.0	7/8 qt	Genuine NISSAN PSF or equivalent *4

Description	Capacity (Approximate)		Recommended Fluids/Lubricants
	Liter	Imp measure	
Brake fluid	—	—	DOT 3 (US FMVSS No. 116)
Multi-purpose grease	—	—	NLGI No. 2 (Lithium soap base)
Air conditioning system refrigerant	0.55 ± 0.025 kg	1.21 ± 0.055 lb	HFC-134a (R-134a)
Air conditioning system oil	150 m ℓ	5.3 fl oz	NISSAN A/C System Oil Type S or equivalent
Windshield washer fluid	4.3	3 3/4 qt	Genuine NISSAN Windshield Washer Concentrate Cleaner & Antifreeze or equivalent

*1: For further details, see “SAE Viscosity Number”.

*2: 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.

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: Using transmission fluid other than Genuine NISSAN CVT fluid NS-2 will damage the CVT, which is not covered by the warranty.**

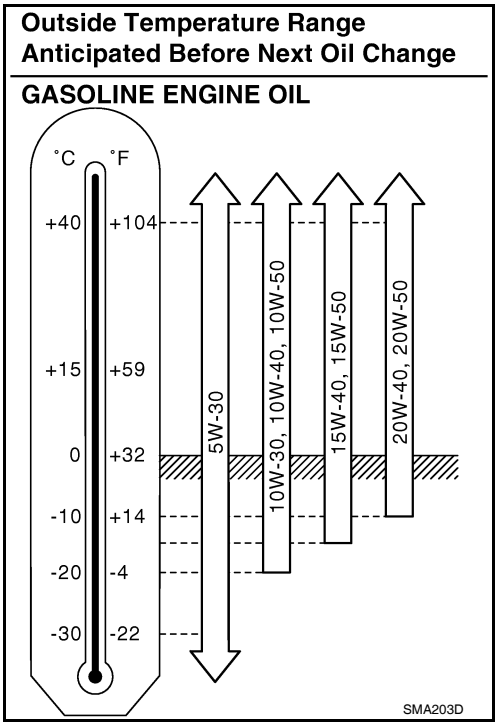
*4: DEXTRON™ VI type ATF may be used.

FOR MEXICO : Engine Oil Recommendation

INFOID:0000000005459784

GASOLINE ENGINE

- 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.



FOR MEXICO : Engine Coolant Mixture Ratio

INFOID:0000000005459785

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.

Coolant Mixture Ratios

For outside temperatures down to:		Anti-freeze coolant mixture ratio	
° C	° F	Genuine NISSAN Engine Coolant or equivalent	Demineralized water or distilled water
– 15°	5°	30 %	70 %
– 35°	– 30°	50 %	50 %

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

Mixed Coolant Specific Gravity

Unit: specific gravity

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

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.

CAUTION:

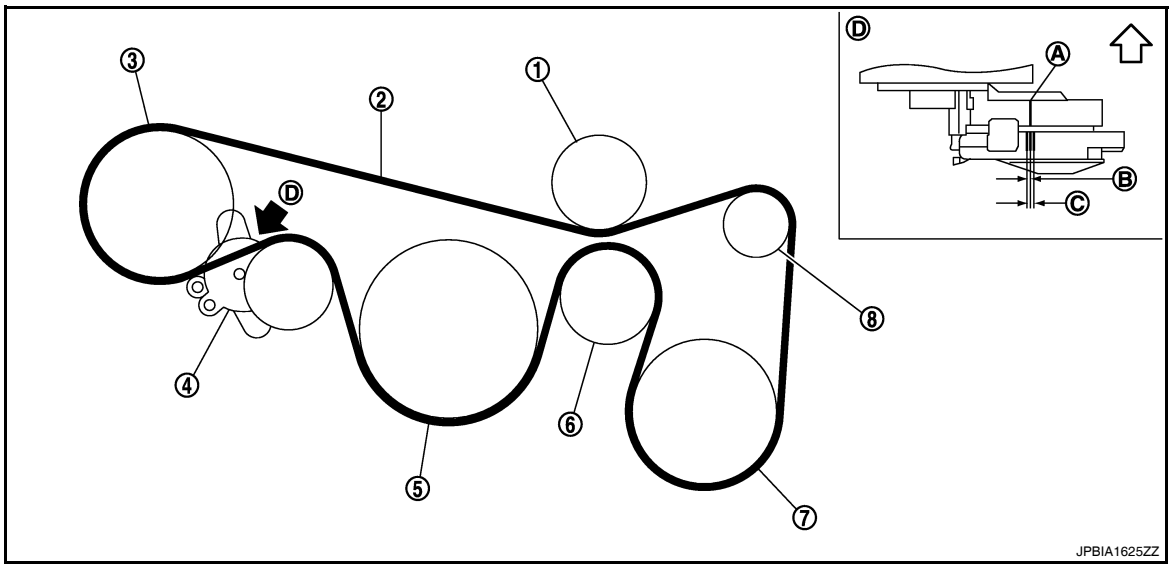
- **When adding or replacing coolant, be sure to use only Genuine NISSAN Engine Coolant or equivalent in its quality with the proper mixture ratio.**
- **The use of other types of engine coolant may damage your cooling system.**

ENGINE MAINTENANCE (VQ35DE)

DRIVE BELTS

DRIVE BELTS : Checking Drive Belts

INFOID:0000000005524469



1.	Idler pulley	2.	Drive belt	3.	Power steering oil pump
4.	Drive belt auto-tensioner	5.	Crankshaft pulley	6.	Idler pulley
7.	A/C compressor	8.	Generator		
A.	Indicator	B.	Range when new drive belt is installed	C.	Possible use range
D.	View D	⇦	Engine front		

WARNING:

Inspect and check the drive belts with the engine off.

- Check that the indicator of drive belt auto-tensioner is within the possible use range.

  NOTE:

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

DRIVE BELTS : Tension Adjustment

INFOID:0000000005524470

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

ENGINE COOLANT

ENGINE COOLANT : System Inspection

INFOID:0000000005524471

WARNING:

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

CHECKING COOLING SYSTEM HOSES

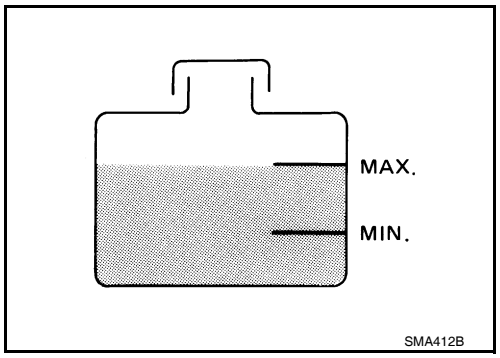
Check hoses for the following:

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

- Chafing
- Deterioration

CHECKING RESERVOIR LEVEL

- Check if the reservoir tank coolant level is within MIN to MAX range when the engine is cool.
- Adjust coolant level if it is too much or too little.

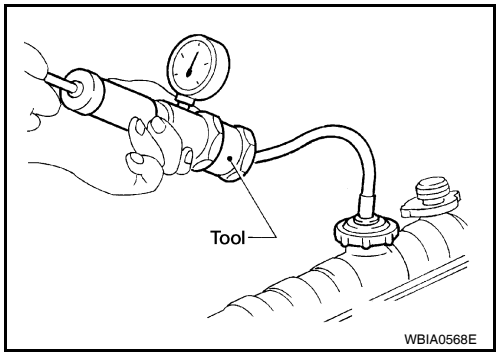


CHECKING COOLING SYSTEM FOR LEAKS

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

Tool number : EG17650301 (J-33984-A)

Testing pressure : 157 kPa (1.6 kg/cm^2, 23 psi)



WARNING:

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

CAUTION:

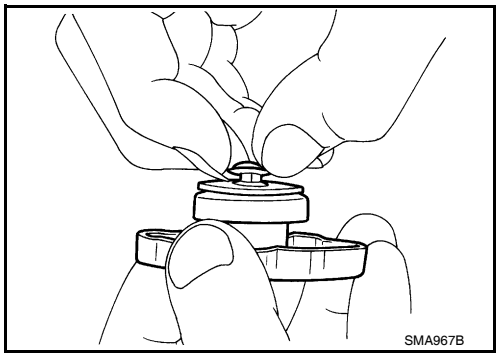
Higher pressure than specified may cause radiator damage.

CHECKING RADIATOR CAP

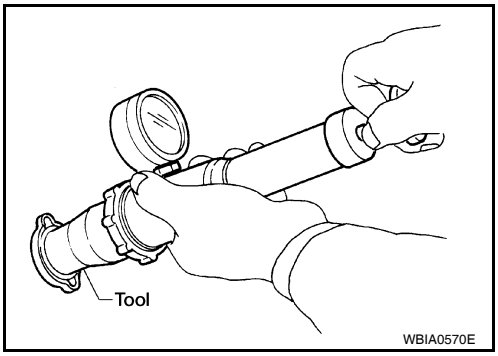
1. Inspect the radiator cap.
   - Replace the cap if the metal plunger cannot be seen around the edge of the black rubber gasket.
   - Replace the cap if deposits of waxy residue or other foreign material are on the black rubber gasket or the metal retainer.

   NOTE:

   Thoroughly wipe out the radiator filler neck to remove any waxy residue or foreign material.
2. Pull the negative-pressure valve to open it and check that it closes completely when released.
   - Check that there is no dirt or damage on the valve seat of the radiator cap negative-pressure valve.
   - Check that there are no abnormalities in the opening and closing conditions of the negative-pressure valve.



3. Check radiator cap relief pressure using Tool.



Tool number : EG17650301 (J-33984-A)

Standard: 78 – 98 kPa (0.8 – 1.0 kg/cm^2, 11 – 14 psi)

Limit: 59 kPa (0.6 kg/cm^2, 9 psi)

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

CHECKING RADIATOR

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

- Be careful not to bend or damage the radiator fins.
- When radiator is cleaned without removing, remove all surrounding parts such as cooling fan shroud and horns. Then tape the harness and electrical connectors to prevent water from entering.

1. Apply water by hose to the back side of the radiator core, with the hose pointed vertically downward.
2. Apply water again to all radiator core surfaces once per minute.
3. Stop washing if dirt no longer rinses out from the radiator.
4. Blow air into the back side of radiator core, with the air hose pointed vertically downward.
   - Use compressed air lower than 490 kPa (5 kg/cm^2, 71 psi) and keep distance more than 30 cm (11.8 in).
5. Blow air again into all the radiator core surfaces once per minute until no water sprays out.
6. Check for leaks.

ENGINE COOLANT : Changing Engine Coolant

INFOID:0000000005524472

WARNING:

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

DRAINING ENGINE COOLANT

1. Open radiator drain plug at the bottom of radiator and remove the radiator filler cap. This is the only step required for a partial cooling system drain.
2. If removing the heater core, remove the upper heater hose from the engine coolant outlet and apply moderate air pressure of 15 psi (103.46 kPa, 1.055 kg-cm^2) maximum for 30 seconds into the hose to blow out excess coolant from the core.
3. For a complete cooling system drain, remove the reservoir tank and drain the coolant, and then clean the reservoir tank before installation.
   - Do not allow coolant to spill on the drive belts.
4. When performing a complete cooling system drain (to remove the engine or for engine repair), remove the cylinder block front drain plug and the cylinder block RH drain plug.
5. Check the drained coolant for contaminants such as rust, corrosion or discoloration.
   - If contaminated, flush the engine cooling system.

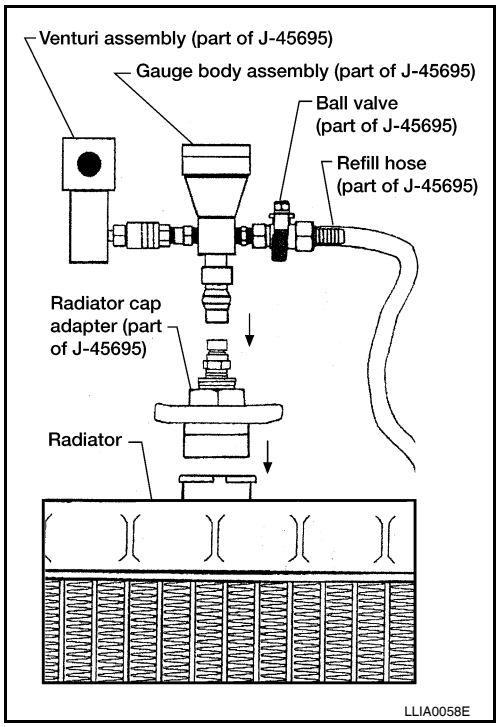
REFILLING ENGINE COOLANT

1. Install the radiator drain plug. If the cooling system was drained completely, install the reservoir tank and the cylinder block drain plugs.
   - The radiator must be completely empty of coolant and water.
   - Apply sealant to the threads of the cylinder block drain plugs. Use Genuine High Performance Thread Sealant or equivalent. Refer to GI-15, "Recommended Chemical Products and Sealants".

Radiator drain plug : Refer to CO-14, "Removal and Installation".

Cylinder block front drain plug : Refer to EM-99, "Disassembly and Assembly".
Cylinder block RH drain plug : Refer to EM-99, "Disassembly and Assembly".

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



Tool number : KV991J0070 (J-45695)

5. Insert the refill hose into the coolant mixture container that is placed at floor level. Make sure the ball valve is in the closed position.
   - Use Genuine NISSAN Engine Coolant or equivalent, mixed 50/50 with distilled water or demineralized water.
     Refer to MA-18, "FOR NORTH AMERICA : Engine Oil Recommendation" or MA-20, "FOR MEXICO : Engine Oil Recommendation".

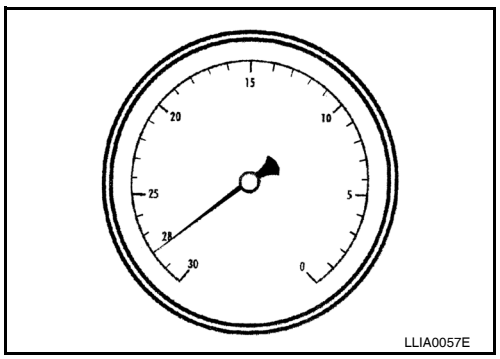
Engine coolant capacity (with reservoir tank) : Refer to MA-18, "FOR NORTH AMERICA : Fluids and Lubricants" or MA-19, "FOR MEXICO : Fluids and Lubricants"

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

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

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

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



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

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

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

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

FLUSHING COOLING SYSTEM

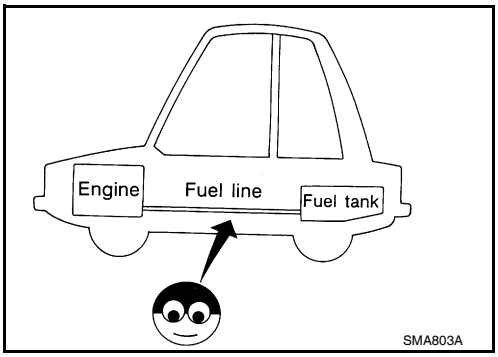
1. Fill the radiator from the filler neck above the radiator upper hose and reservoir tank with clean water and reinstall radiator filler cap.
2. Run the engine and warm it up to normal operating temperature.
3. Rev the engine two or three times under no-load.
4. Stop the engine and wait until it cools down.
5. Drain the water from the system. Refer to MA-24, "ENGINE COOLANT : Changing Engine Coolant".
6. Repeat steps 1 through 5 until clear water begins to drain from the radiator.

FUEL LINES

FUEL LINES : Inspection

INFOID:0000000005459789

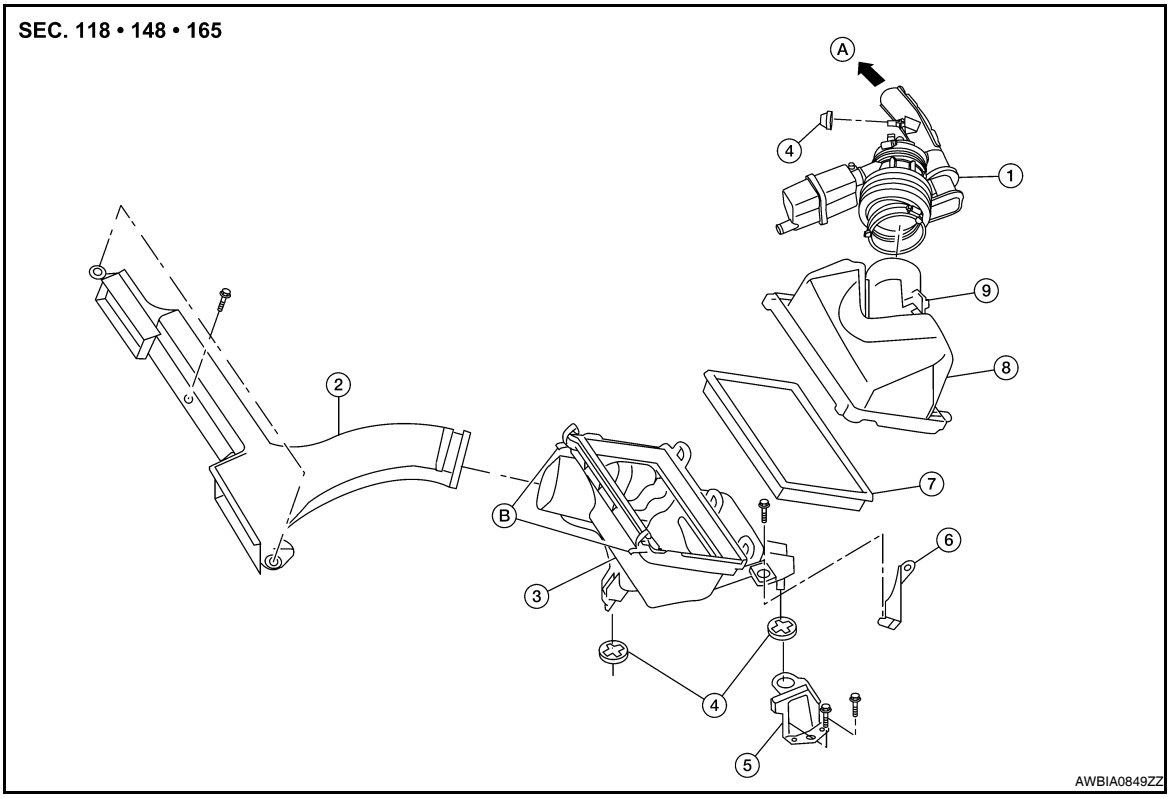
Inspect fuel lines, filler cap and tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration.
If necessary, repair or replace damaged parts.



AIR CLEANER FILTER

AIR CLEANER FILTER : Removal and Installation

INFOID:0000000005524476



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

CHANGING THE AIR CLEANER FILTER

CAUTION:

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

1. Unhook the air cleaner case side clips.
2. Remove the air cleaner filter.
3. Install a new air cleaner filter.
4. Lock the air cleaner case side clips.

ENGINE OIL

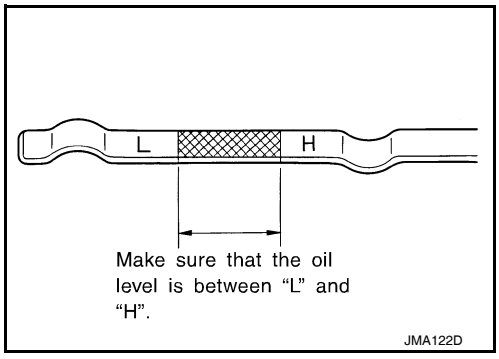
ENGINE OIL : Inspection

INFOID:0000000005524478

OIL LEVEL

NOTE:

- Before starting the engine, check the oil level. If the engine is already started, stop it and allow 10 minutes before checking.
- Check that the oil level is within the range as indicated on the dip-stick.
- If it is out of range, add oil as necessary. Refer to MA-27, "ENGINE OIL : Inspection".



ENGINE OIL APPEARANCE

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

OIL LEAKAGE

Check for oil leakage around the following areas:

- Oil pan
- Oil pan drain plug
- Oil pressure switch
- Oil filter
- Oil cooler
- IVT cover
- Front cover
- Mating surface between cylinder block and cylinder head
- Mating surface between cylinder head and rocker cover
- Crank oil seal (front and rear)

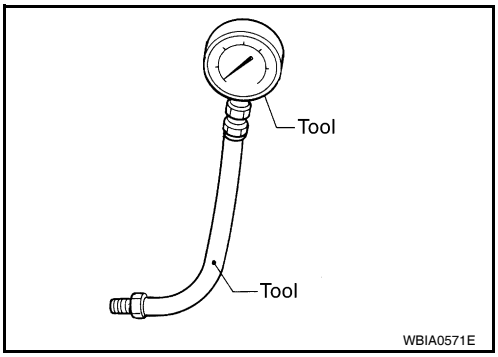
OIL PRESSURE CHECK

WARNING:

- **Be careful not to burn yourself, as engine oil may be hot.**
- **Put the CVT shift selector in the Park "P" position.**

1. Check the oil level. Refer to MA-27, "ENGINE OIL : Inspection".
2. Remove undercover using power tool.
3. Disconnect oil pressure switch harness connector at the oil pressure switch. Remove oil pressure switch and install Tools.

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



4. Start the engine and warm it up to normal operating temperature.
5. Check oil pressure with engine running under no-load, using Tool.
   If difference is extreme, check oil passage and oil pump for oil leaks.
6. After the inspections, install the oil pressure switch as follows:

a. Remove the old sealant adhering to oil pressure switch and engine.
b. Apply thread sealant and tighten the oil pressure switch to specification.
   Use Genuine High Performance Thread Sealant, or equivalent. Refer to GI-15, "Recommended Chemical Products and Sealants".

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

ENGINE OIL : Changing Engine Oil

INFOID:0000000005524479

WARNING:

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

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

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

Oil specification and viscosity	**: Refer to MA-18, "FOR NORTH AMERICA : Engine Oil Recommendation" or MA-20, "FOR MEXICO : Engine Oil Recommendation".**
Oil pan drain plug	**: 34.3 N·m (3.5 kg-m, 25 ft-lb)**

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

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

CAUTION:
Do not overfill the engine oil.

OIL FILTER

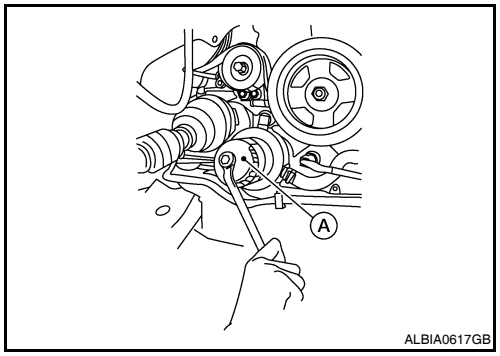
OIL FILTER : Removal and Installation

INFOID:0000000005524480

REMOVAL

1. Drain engine oil. Refer to MA-28, "ENGINE OIL : Changing Engine Oil".
2. Remove engine side undercover.
3. Remove the oil filter using Tool (A) as shown.

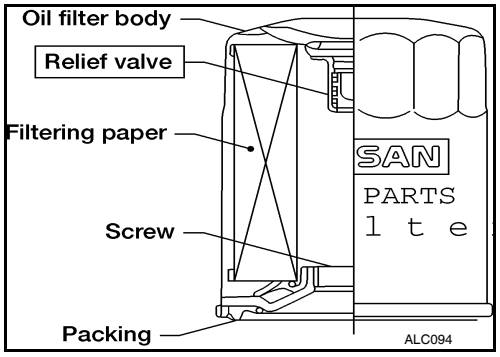
Tool number : KV10115801 (J-38956)



WARNING:
Be careful not to get burned; the engine oil may be hot.

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

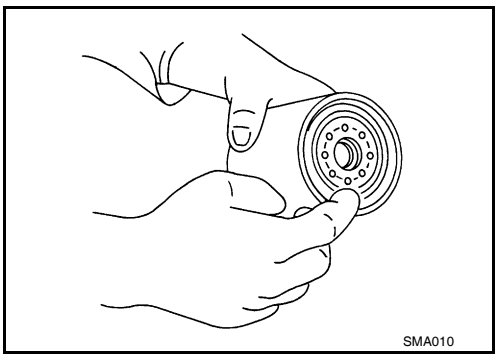
- **The oil filter is provided with a relief valve. Use a genuine NISSAN oil filter or equivalent**



INSTALLATION

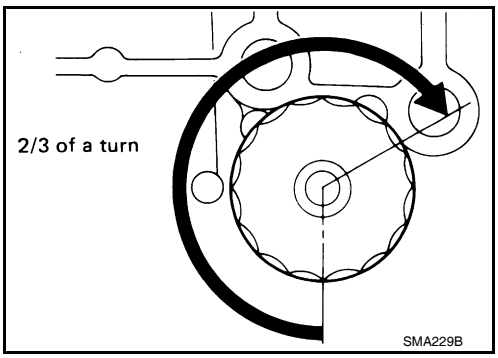
1. Remove foreign materials adhering to the oil filter installation surface.

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



3. Screw the oil filter manually until it touches the installation surface, then tighten it by turning another 2/3 turn, or tighten to specification using Tool.

Oil filter : 18.0 N·m (1.8 kg-m, 13 ft-lb)
Tool number : KV10115801 (J-38956)

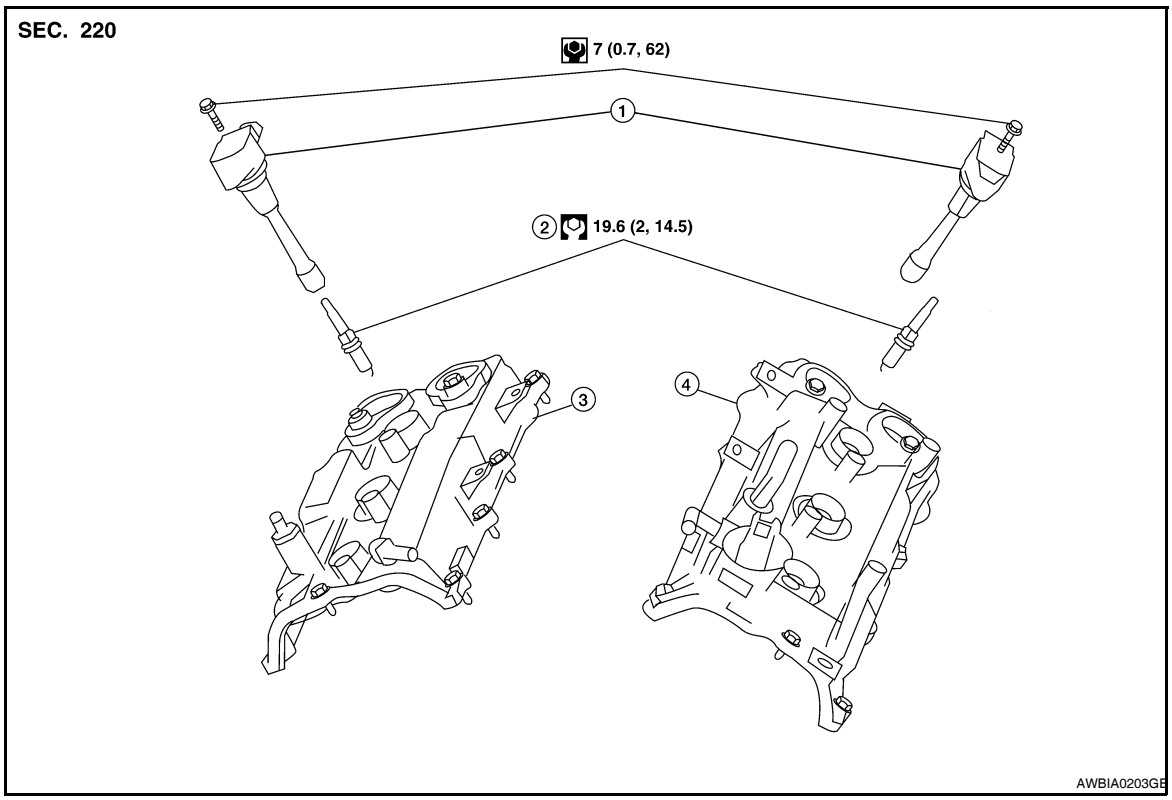


4. Refill the engine with new engine oil. Refer to MA-28, "ENGINE OIL : Changing Engine Oil".
5. Check the oil level and add engine oil as necessary. Refer to MA-27, "ENGINE OIL : Inspection".
6. After warming up the engine, check for any engine oil leaks.

SPARK PLUG

SPARK PLUG : Exploded View

INFOID:0000000005524481



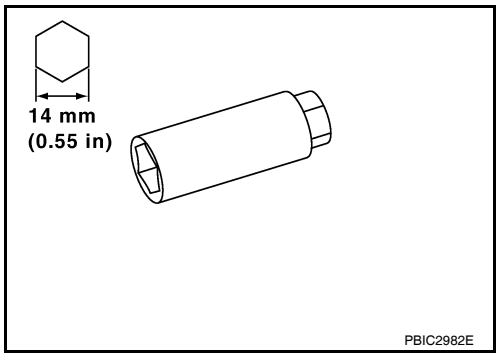
1. Ignition coil
2. Spark plug
3. Rocker cover RH
4. Rocker cover LH

SPARK PLUG : Removal and Installation

INFOID:0000000005524482

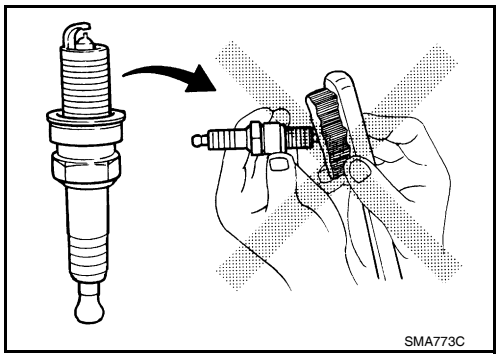
REMOVAL

1. Remove the ignition coil. Refer to EM-39, "Removal and Installation LH" and EM-39, "Removal and Installation RH".
2. Remove the spark plug with a suitable spark plug wrench.



INSPECTION AFTER REMOVAL

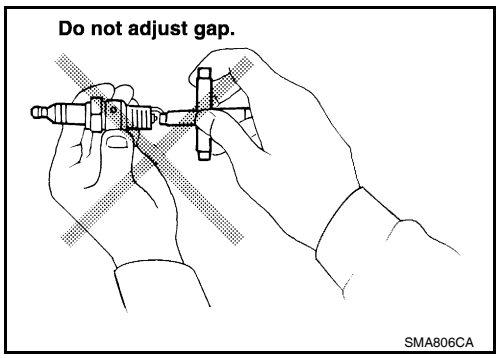
- Do not use a wire brush for cleaning the spark plugs. Replace as necessary.



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

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. If the gap is out of specification, replace the spark plug.



INSTALLATION

Installation is in the reverse order of removal.

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

EVAP VAPOR LINES

EVAP VAPOR LINES : Inspection

INFOID:0000000005459795

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

CHASSIS AND BODY MAINTENANCE

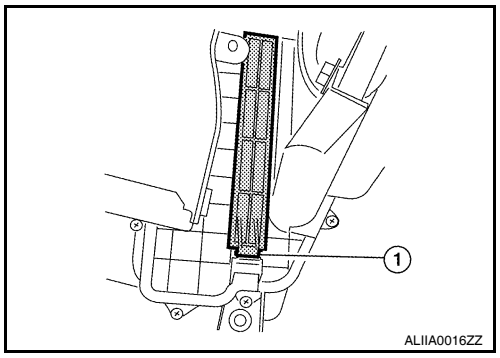
IN-CABIN MICROFILTER

IN-CABIN MICROFILTER : Removal and Installation

INFOID:0000000005524483

REMOVAL

1. Disengage the filter cover tab (1) by pushing up and pull out to remove the filter cover.
2. Remove the in-cabin microfilter from the blower unit.



INSTALLATION

Installation is in the reverse order of removal.

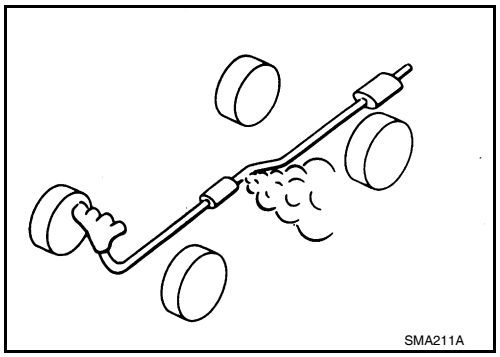
EXHAUST SYSTEM

EXHAUST SYSTEM : Inspection

INFOID:0000000005459797

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

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



CVT FLUID

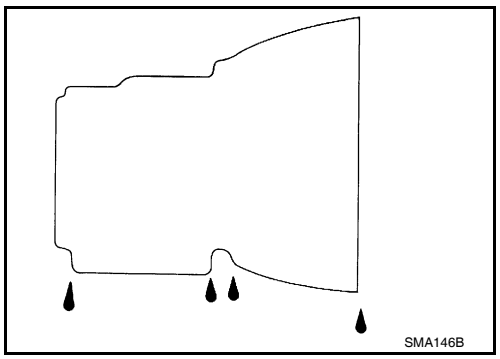
CVT FLUID : Inspection

INFOID:0000000005524484

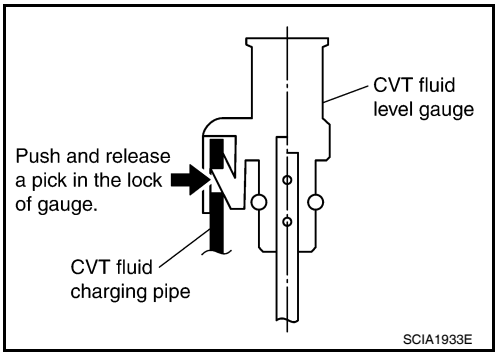
CHECKING CVT FLUID

The fluid level should be checked with the fluid warmed up to 50° to 80°C (122° to 176°F). The fluid level check procedure is as follows:

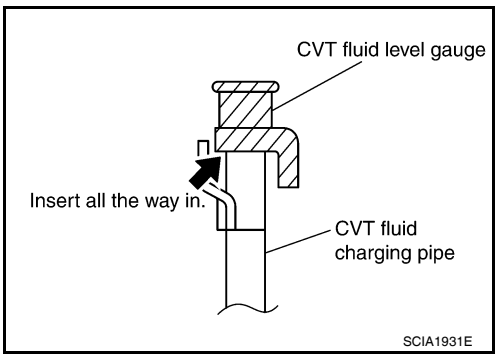
1. Check for fluid leakage.
2. With the engine warmed up, drive the vehicle in an urban area. When ambient temperature is 20°C (68°F), it takes about 10 minutes for the CVT fluid to warm up to 50° to 80°C (122° to 176°F).
3. Park the vehicle on a level surface.
4. Apply parking brake firmly.
5. With engine at idle, while depressing brake pedal, move shift selector throughout the entire shift range.



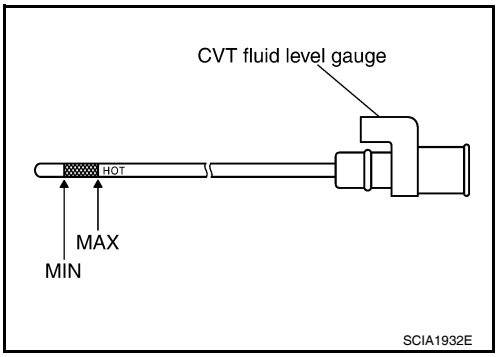
6. Pull out the CVT fluid level gauge from the CVT fluid charging pipe after pressing the tab on the CVT fluid level gauge to release the lock.



7. Wipe fluid off the CVT fluid level gauge. Insert the CVT fluid level gauge rotating 180° from the originally installed position, then securely push the CVT fluid level gauge until it meets the top end of the CVT fluid charging pipe.
CAUTION:
When wiping away the CVT fluid level gauge, always use lint-free paper, not a cloth rag.



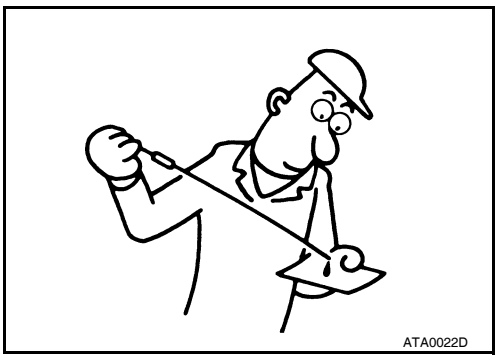
8. Place the selector lever in “P” or “N” and check that the fluid level is within the specified range.
CAUTION:
When reinstalling CVT fluid level gauge, insert it into the CVT fluid charging pipe and rotate it to the original installation position until securely locked.



CVT FLUID CONDITION

Check CVT fluid condition.

- If CVT fluid is very dark or smells burned, check operation of CVT. Flush cooling system after repair of CVT.
- If CVT fluid contains frictional material (clutches, brakes, etc.), inspect and clean the CVT fluid cooler mounted in the radiator and flush cooler line using cleaning solvent and compressed air after repair of CVT. Refer to TM-151, "Cleaning".



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

CVT FLUID : Changing

INFOID:0000000005524485

CAUTION:

Replace a O-ring with new ones at the final stage of the operation when installing.

1. Remove drain plug from oil pan.
2. Remove O-ring from drain plug.
3. Install O-ring to drain plug.
   CAUTION:
   Never reuse O-ring.
4. Install drain plug to oil pan. Refer to TM-171, "Exploded View".
5. Fill CVT fluid from CVT fluid charging pipe to the specified level.

CVT fluid	**: Refer to TM-188, "General Specification".**
Fluid capacity	**: Refer to TM-188, "General Specification".**

CAUTION:
- **Use only Genuine NISSAN CVT Fluid NS-2. Never mix with other fluid.**
- **Using CVT fluid other than Genuine NISSAN CVT Fluid NS-2 will deteriorate in driveability and CVT durability, and may damage the CVT, which is not covered by the warranty.**
- **When filling CVT fluid, take care not to scatter heat generating parts such as exhaust.**
- **Sufficiently shake the container of CVT fluid before using.**
- **Delete CVT fluid deterioration date with CONSULT-III after changing CVT fluid. Refer to TM-36, "CONSULT-III Function (TRANSMISSION)".**

6. With the engine warmed up, drive the vehicle in an urban area.
   NOTE:
   When ambient temperature is 20°C (68°F), it takes about 10 minutes for the CVT fluid to warm up to 50 to 80°C (122 to 176°F).
7. Check CVT fluid level and condition.
8. Repeat steps 1 to 5 if CVT fluid has been contaminated.

WHEELS

WHEELS : Inspection

INFOID:0000000005524486

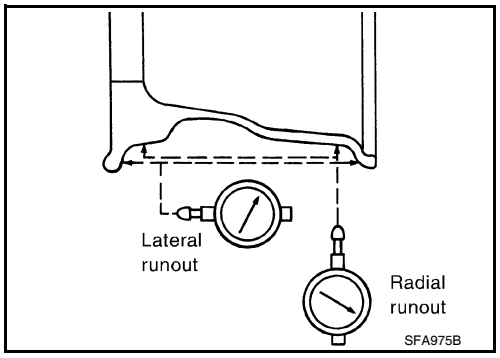
ALUMINUM WHEEL

1. Check tires for wear and improper inflation.
2. Check wheels for deformation, cracks and other damage. If deformed, remove wheel and check wheel runout.

a. Remove tire from aluminum wheel and mount on a tire balance machine. Refer to WT-65, "Removal and Installation" to remove transmitter.

b. Set dial indicator as shown and rotate the wheel to check for runout.
   - Replace wheel if runout exceeds specification.

Wheel runout	**Refer to WT-67.**



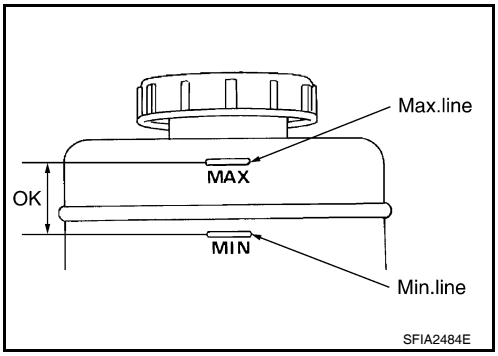
BRAKE FLUID LEVEL AND LEAKS

BRAKE FLUID LEVEL AND LEAKS : Inspection

INFOID:0000000005524487

LEVEL CHECK

- Make sure that a brake fluid level in reservoir tank is between MAX and MIN lines as shown.
- Visually check around reservoir tank for fluid leakage.
- If the 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.

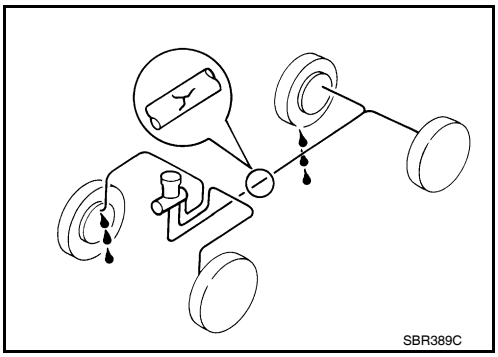


BRAKE LINES AND CABLES

BRAKE LINES AND CABLES : Inspection

INFOID:0000000005459802

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



BRAKE FLUID

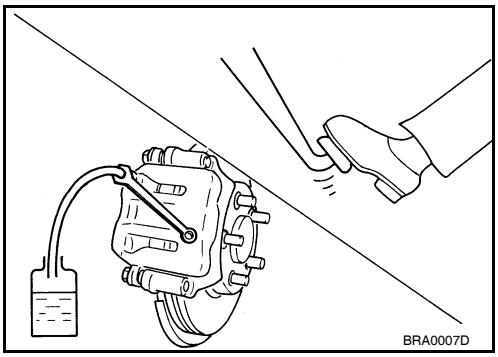
BRAKE FLUID : Drain and Refill

INFOID:0000000005524488

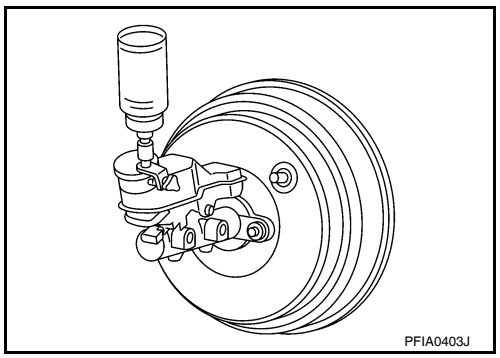
CAUTION:

- **Refill with new brake fluid. Refer to MA-18, "FOR NORTH AMERICA : Fluids and Lubricants" (for North America) or MA-19, "FOR MEXICO : Fluids and Lubricants" (for Mexico).**
- **Do not reuse drained brake fluid.**
- **Do not let brake fluid splash on the painted surfaces of the body. This might damage the paint. If brake fluid is splashed on painted areas, wash it away with water immediately.**
- **Before working, disconnect ABS actuator and electric unit (control unit) connector or battery negative terminal.**

1. Turn ignition switch OFF and disconnect ABS actuator and electric unit (control unit) connector or battery negative terminal.
2. Connect a vinyl tube to bleed valve.
3. Depress brake pedal, loosen bleed valve, and gradually remove brake fluid.



4. Make sure there is no foreign material in the reservoir tank, and refill with new brake fluid.
5. Rest foot on brake pedal. Loosen bleed valve. Slowly depress brake pedal until it stops. Tighten bleed valve. Release brake pedal. Repeat the process a few times, then pause to add new brake fluid to master cylinder. Continue until the new brake fluid flows out of bleed valve.
   Bleed the air out of the brake hydraulic system. Refer to BR-16, "Bleeding Brake System".


PFIA0403J

FRONT BRAKE

FRONT BRAKE : Inspection

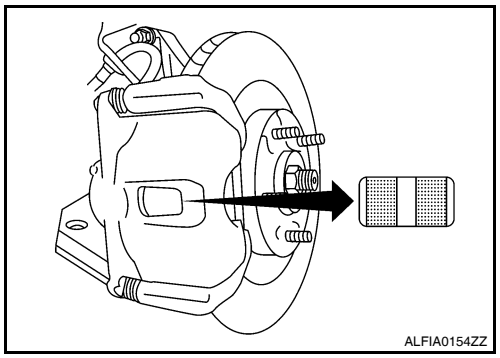
INFOID:0000000005524524

PAD WEAR

- Check pad thickness from the 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".


ALFIA0154ZZ

REAR BRAKE

REAR BRAKE : Inspection

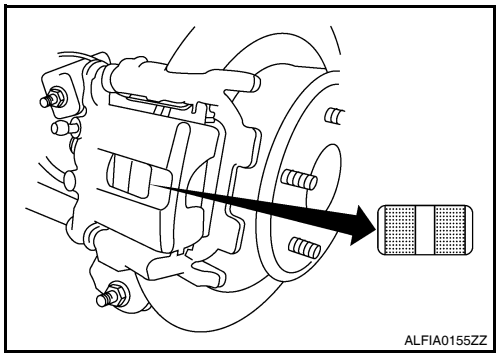
INFOID:0000000005524525

PAD WEAR

- Check pad thickness from the 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".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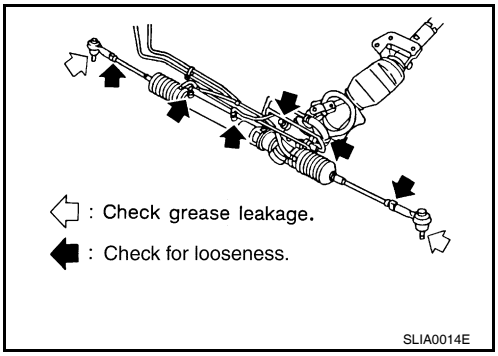
STEERING GEAR AND LINKAGE

STEERING GEAR AND LINKAGE : Inspection

INFOID:0000000005459808

STEERING GEAR

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



STEERING LINKAGE

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

POWER STEERING FLUID AND LINES

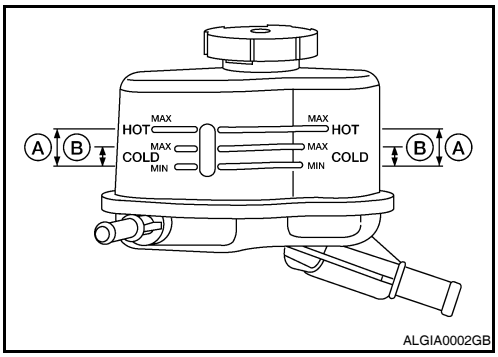
POWER STEERING FLUID AND LINES : Inspection

INFOID:0000000005524526

FLUID LEVEL

- Check fluid level with engine stopped.
- Make sure that fluid level is between MIN and MAX.
- Fluid levels at HOT (A) and COLD (B) are different. Do not confuse them.

HOT (A) : Fluid temperature 50° - 80 °C (122° - 176°F)
COLD (B) : Fluid temperature 0° - 30°C (32° - 86°F)



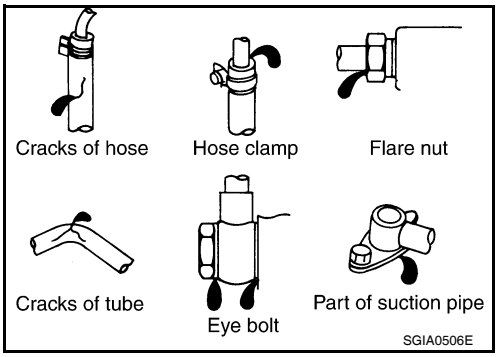
CAUTION:

- **The fluid level should not exceed the MAX line. Excessive fluid will cause fluid leakage from the cap.**
- **Do not reuse drained power steering fluid.**
- **Recommended fluid is Genuine Nissan PSF or equivalent.**

FLUID LEAKAGE

Check hydraulic connections for fluid leakage, cracks, damage, looseness, or wear.

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



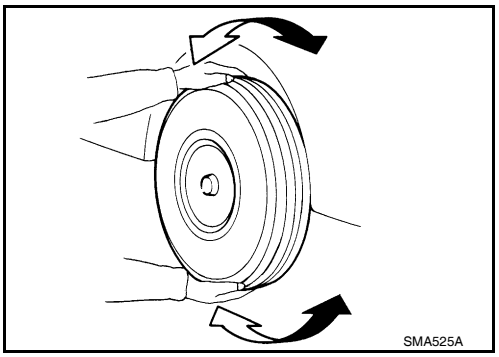
4. If fluid leakage at connections is noticed, then loosen flare nut and then retighten. Do not overtighten connector as this can damage O-ring, washer and connector.
5. If fluid leakage from oil pump is noticed, check oil pump. Refer to ST-29, "Removal and Installation".
6. Check steering gear boots for accumulation of fluid indicating leakage from steering gear.

AXLE AND SUSPENSION PARTS

AXLE AND SUSPENSION PARTS : Inspection

INFOID:0000000005459810

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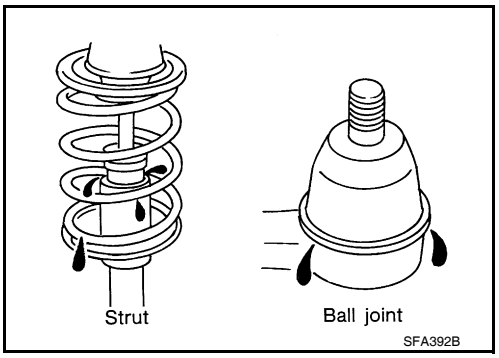

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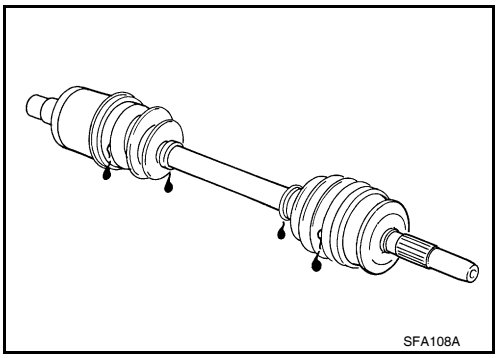
DRIVE SHAFT

DRIVE SHAFT : Inspection

INFOID:0000000005459811

Check boot and drive shaft for cracks, wear, damage and grease leakage.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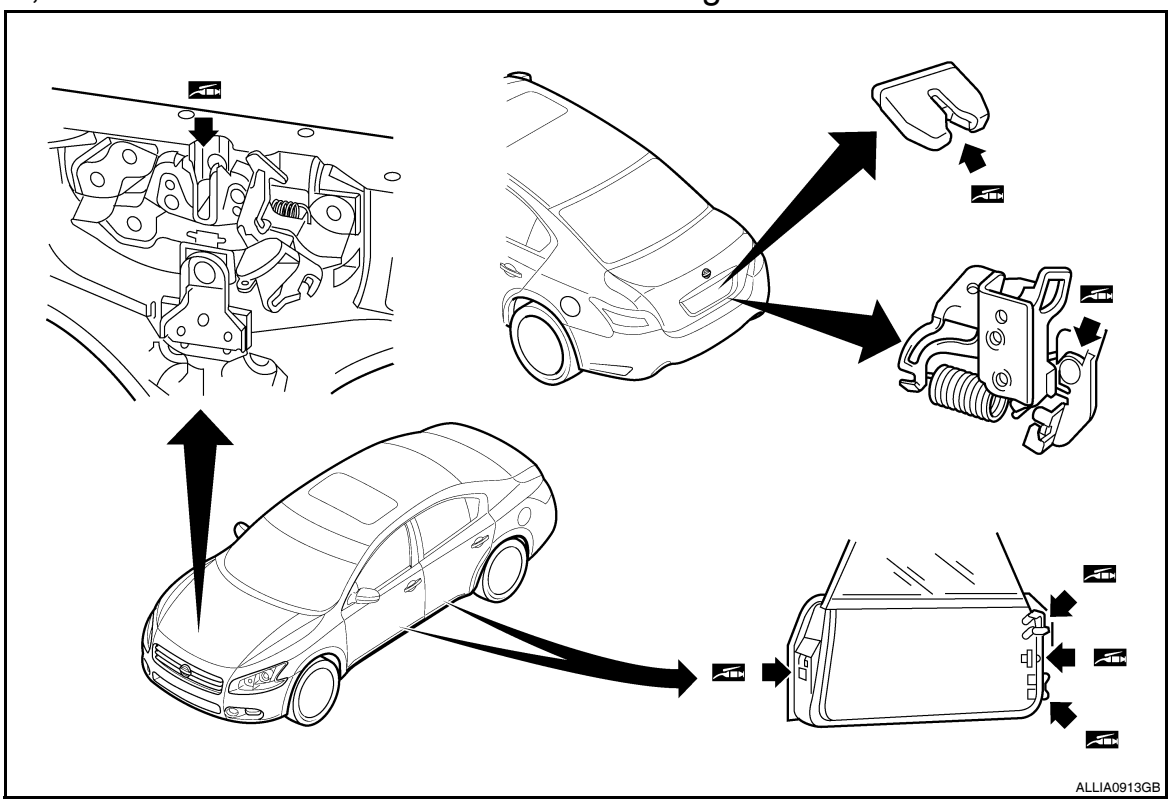
LOCKS, HINGES AND HOOD LATCH

LOCKS, HINGES AND HOOD LATCH : Lubricating

INFOID:0000000005459812



SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS

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

INFOID:0000000005459813

For details, refer to SB-4, "Inspection" in SB section.

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

CAUTION:

- **After any collision, inspect all seat belt assemblies, including retractors and other attached hardwares (i.e., anchor bolt, guide rail set). Nissan recommends to replace all seat belt assemblies in use during a collision, unless not damaged and properly operating after minor collision.**
  Also inspect seat belt assemblies not in use during a collision, and replace if damaged or improperly operating.
  Seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision where the driver and passenger air bags are deployed.
- **If any component of seat belt assembly is questionable, do not repair.**
  Replace as seat belt assembly.
- **If webbing is cut, frayed, or damaged, replace belt assembly.**
- **Never oil tongue and buckle.**
- **Use a genuine NISSAN seat belt assembly.**