SECTION MA
MAINTENANCE

CONTENTS

PRECAUTION

PRECAUTIONS

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

INFOID:0000000005818040

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

WARNING:

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

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

WARNING:

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

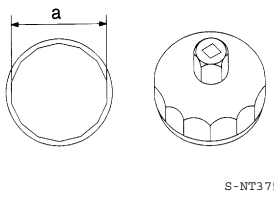
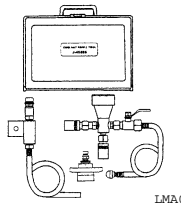
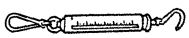
PREPARATION

PREPARATION

Special Service Tool

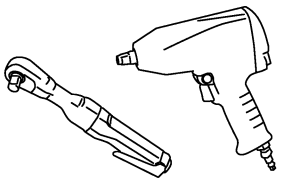
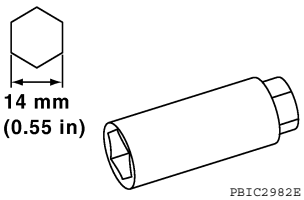
INFOID:0000000005438444

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 coolant system
— (J-44372) Pull gauge  LST024	Measuring steering wheel turning force, rack sliding force and ball joint swinging force

Commercial Service Tool

INFOID:0000000005438445

Tool name	Description
Power tool  PBIC0190E	Loosening nuts and bolts
Spark plug wrench  PBIC2982E	Removing and installing spark plug

ON-VEHICLE MAINTENANCE

GENERAL MAINTENANCE

Explanation General Maintenance

INFOID:0000000005438446

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 trip. Adjust the pressure in all tires, including the spare, to the pressure specified. Check carefully for damage, cuts or excessive wear.	WT-64
Wheel nuts	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	WT-60
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-60
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-59
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-6 and WT-58
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-33
Lamps	Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check headlamp aim. Clean the headlamps on a regular basis.	—

INSIDE THE VEHICLE

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

Item		Reference page
Warning lamps and chimes	Make sure that all warning lamps and chimes are operating properly.	—
Windshield wiper and washer	Check that the wipers and washer operate properly and that the wipers do not streak.	—
Windshield defroster	Check that the air comes out of the defroster outlets properly and in sufficient quantity when operating the heater or air 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)**	—
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 restrains 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.	—

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-3
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	Check the pedal for smooth operation and make sure it has the proper distance under it when depressed fully.	BR-12
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-4
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
Inverter cooling level	Check that the coolant level is between the “MAX” and “MIN” lines on the reservoir.	—
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-14
Engine drive belts	Make sure that no belt is frayed, worn, cracked or oily.	EM-14
Engine oil level	Check the level on the oil level gauge after parking the vehicle on a level spot and turning off the engine.	LU-8
HEV (Hybrid Electric Vehicle) transaxle fluid	Check for leaks. If you should notice any leaks, check for the cause and correct it immediately.	TM-23
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.	EX-4
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, high voltage harness and around the exhaust system. At the end of winter, the underbody should be thoroughly flushed with plain water, being careful to clean those areas where mud and dirt can easily accumulate.	—
Fluid leaks	Check under the vehicle for fuel, oil, water or other fluid leaks after the vehicle has been parked for a while. Water dripping from the air conditioner after use is normal. If you should notice any leaks or gasoline fumes are evident, check for the cause and correct it immediately.	—

PERIODIC MAINTENANCE

Introduction of Periodic Maintenance

INFOID:0000000005438447

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, using a camper or a car-top carrier.	Emission Control System Maintenance	MA-7
		Chassis and Body Maintenance	MA-7
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-9
		Chassis and Body Maintenance	MA-9

Schedule 1

INFOID:0000000005438448

EMISSION CONTROL SYSTEM

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)									EM-14
Air cleaner filter	NOTE (2)								[R]	EM-18
EVAP vapor lines									I*	EC-466
Fuel lines									I*	MA-17
Fuel filter	NOTE (3)									—
Engine coolant	NOTE (4)									CO-10
Inverter coolant	NOTE (4)									HBC-634
Engine oil		R	R	R	R	R	R	R	R	CO-11
Engine oil filter [Use genuine NISSAN oil filter or equivalent.]		R	R	R	R	R	R	R	R	LU-10
Spark plugs (Iridium and platinum-tipped type)		Replace every 105,000 miles (169,000 km).								EM-12
Intake & exhaust valve clearance*	NOTE (5)									EM-98

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*	EM-14
Air cleaner filter	NOTE (2)								[R]	EM-18
EVAP vapor lines									I*	EC-466

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	
Fuel lines									I*	MA-17
Fuel filter	NOTE (3)									—
Engine coolant	NOTE (4)								R*	CO-10
Inverter coolant	NOTE (4)								R	HBC-634
Engine oil		R	R	R	R	R	R	R	R	LU-9
Engine oil filter [Use genuine NISSAN oil filter or equivalent.]		R	R	R	R	R	R	R	R	LU-10
Spark plugs (Iridium and platinum-tipped type)		Replace every 105,000 miles (169,000 km).								EM-12
Intake & exhaust valve clearance*	NOTE (5)									EM-98

NOTE:

(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. Service procedures are in the FL section.

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

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

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

CHASSIS AND BODY

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	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-24
Brake pads & rotors			I		I		I		I	MA-29, MA-29 MA-30 MA-30
HEV transaxle fluid	NOTE (1)				I				I	TM-23
Steering gear and linkage, axle & suspension parts			I		I		I		I	MA-31, MA-32
Tire rotation	NOTE (2)									WT-60
Exhaust system			I		I		I		I	EX-4
Front drive shaft boot			I		I		I		I	FAX-6
In-cabin microfilter					R				R	EM-18

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Brake lines & cables					I				I	MA-24
Brake pads & rotors			I		I		I		I	MA-29, MA-29 MA-30, MA-30
HEV transaxle fluid	NOTE (1)				I				I	TM-23
Steering gear and linkage, axle & suspension parts			I		I		I		I	MA-31, MA-32
Tire rotation	NOTE (2)									WT-60
Exhaust system			I		I		I		I	EX-4
Front drive shaft boot			I		I		I		I	FAX-6
In-cabin microfilter					R				R	EM-18

NOTE:

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

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

Schedule 2

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EMISSION CONTROL SYSTEM

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*	EM-14
Air cleaner filter					[R]				[R]	EM-18
EVAP vapor lines					I*				I*	EC-466
Fuel lines					I*				I*	MA-17
Fuel filter	NOTE (2)									—
Engine coolant	NOTE (3)								R*	CO-10
Inverter coolant	NOTE (3)								R*	HBC-634
Engine oil		R	R	R	R	R	R	R	R	LU-9
Engine oil filter [Use genuine NISSAN oil filter or equivalent.]		R	R	R	R	R	R	R	R	LU-10
Spark plugs (Iridium and platinum-tipped type)		Replace every 105,000 miles (169,000 km).								EM-12
Intake & exhaust valve clearance*	NOTE (4)									EM-98

NOTE:

(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. Service procedures are in the 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) 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

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-24
Brake pads & rotors			I		I		I		I	MA-29, MA-29 MA-30, MA-30
HEV transaxle fluid	NOTE (1)		I		I		I		I	TM-23
Steering gear and linkage, axle & suspension parts					I				I	MA-31, MA-32
Tire rotation	NOTE (2)									WT-60
Exhaust system					I				I	EX-4
Front drive shaft boot			I		I		I		I	FAX-6
In-cabin microfilter			R		R		R		R	MA-23

NOTE:

1. If towing a trailer, or using a car-top carrier, or driving on rough or muddy roads, change (not just inspect) oil at every 30,000 miles (48,000 km) or 24 months.
2. Follow the “Tire rotation” under the “General maintenance” heading earlier in this section.

RECOMMENDED FLUIDS AND LUBRICANTS

Fluids and Lubricants

INFOID:0000000005438450

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 87 AKI (RON 91)
Engine oil Drain and refill	With oil filter change	4-7/8 qt	4 qt	4.6	Engine oil with • API Certification Mark *1 • Viscosity SAE 0W-20 *2
	Without oil filter change	4-1/2 qt	3-3/4 qt	4.3	
Dry engine (Overhaul)		5-3/4 qt	4-3/4 qt	5.4	
Engine cooling system with reservoir tank		8-1/8 qt	6-3/4 qt	7.7	Genuine NISSAN Long Life Antifreeze/ Coolant or equivalent
Inverter coolant with reservoir tank		3-3/8 qt	2-7/8 qt	3.2	Genuine NISSAN Long Life Antifreeze/ Coolant or equivalent
HEV transaxle fluid		4-3/8 qt	3-5/8 qt	4.1	Genuine NISSAN Matic W ATF *3
Brake fluid		—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid*4 or equivalent DOT 3 (US FMVSS No. 116)
Brake grease		—	—	—	PBC (poly butyl cuprysil)
Brake pad plate grease		—	—	—	Molykote AS880N grease or equivalent
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)
Air conditioning system refrigerant		1.10 ± 0.055 lb	0.50 ± 0.025 kg	0.50 ± 0.025 kg	HFC-134a (R-134a) *5
Air conditioning system oil		4.1 fl oz	4.2 fl oz	120 m ℓ	A/C Compressor Oil ND-OIL 11

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

*2: SAE 5W-20 or 5W-30 engine oil may also be used. However, SAE 0W-20 is the best choice for optimum fuel economy and optimum starting in cold weather.

*3: Use only Genuine NISSAN Matic W ATF. Using transaxle fluid other then Genuine NISSAN Matic W ATF will damage the CVT.

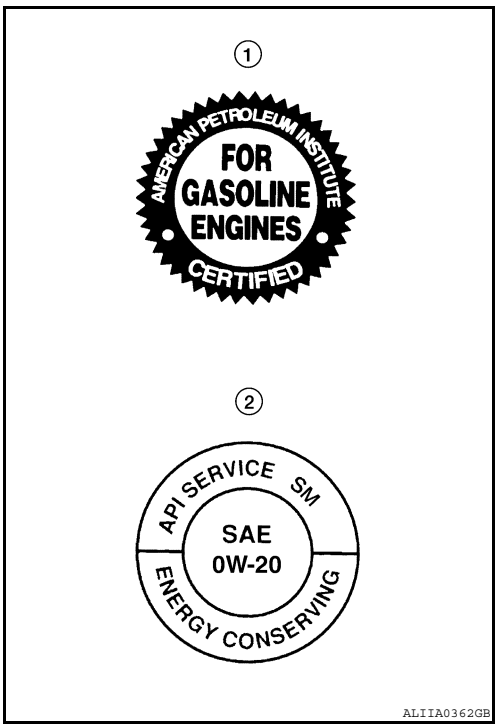
*4: Available in mainland U.S.A. through your NISSAN dealer.

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

Engine Oil Recommendation

INFOID:0000000005438451

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 Commottee (ILSAC) certification and SAE viscosity standard (2). These oils have the API certification mark (1) on the front of the container. Oils which do not have the specified quality label should not be used as they could cause engine damage.



ANTI-FREEZE COOLANT MIXTURE RATIO

The engine cooling system and inverter cooling are 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.

CAUTION:

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

Other types of coolant solutions may damage your cooling system.

Outside temperature down to		Anti-freeze	Demineralized water or distilled water
°C	°F		
–35	–30	50%	50%

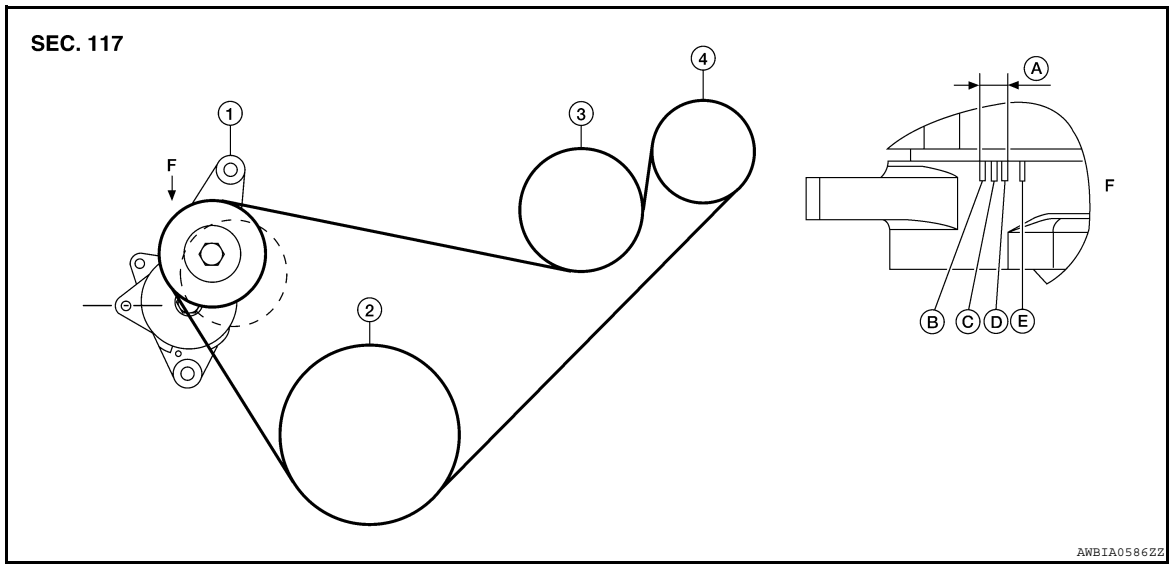
SMA947CA

ENGINE MAINTENANCE

DRIVE BELTS

DRIVE BELTS : Checking Drive Belts

INFOID:0000000005818044



1.	Drive belt auto-tensioner	2.	Crankshaft	3.	Water pump
4.	Idler pulley	A.	Water pump belt working range	B.	Minimum belt length
C.	Nominal position	D.	Maximum belt length	E.	Maximum belt length +0.8%
F.	View F				

WARNING:

Inspect the drive belt only when the Hybrid System is off.

- Make sure that the stamp mark of drive belt auto-tensioner is within the usable range.

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

DRIVE BELTS : Tension Adjustment

INFOID:0000000005818045

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

ENGINE COOLANT

ENGINE COOLANT : Changing Engine Coolant

INFOID:0000000005818046

WARNING:

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

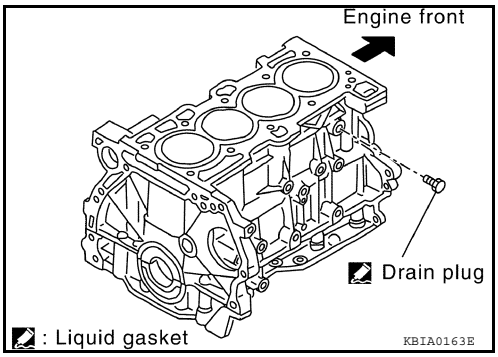
DRAINING ENGINE COOLANT

1. Remove the engine under cover. Refer to EXT-13, "Removal and Installation".
2. Open the radiator drain plug at the bottom of the radiator, and remove the radiator filler cap. This is the only step required when partially draining the cooling system (radiator only).

   CAUTION:

   Do not to allow the coolant to contact the drive belts.

3. Follow this step for heater core removal/replacement only. Disconnect the upper heater hose at the engine side and apply moderate air pressure [103.46 kPa (15 psi, 1.055 kg/cm^2) maximum air pressure] into the hose for 30 seconds to blow the excess coolant out of the heater core.
4. When draining all of the coolant in the system, remove the reservoir tank and drain the coolant, then clean the reservoir tank before installation.
5. When draining all of the coolant in the system for engine removal or repair, open the drain plug on the cylinder block.



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

REFILLING ENGINE COOLANT

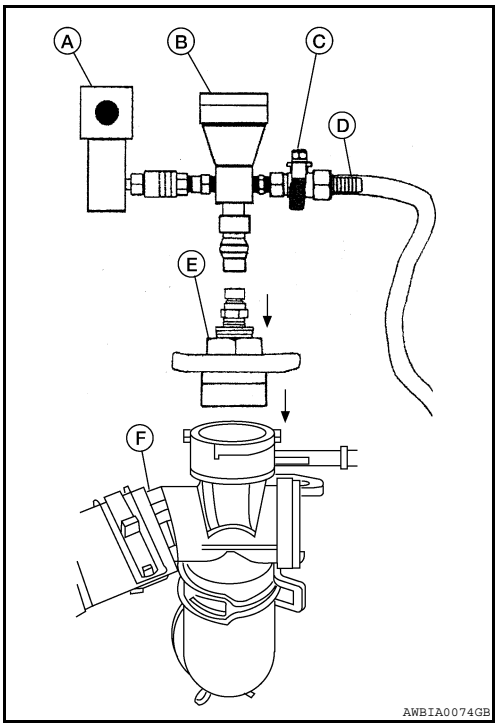
1. Install the radiator drain plug. Install the reservoir tank and cylinder block drain plug, if removed for a total system drain or for engine removal or repair.
   - **The radiator must be completely empty of coolant and water.**
   - **Apply sealant to the threads of the cylinder block drain plugs. Use Genuine High Performance Thread Sealant or equivalent. Refer to GI-15, "Recommended Chemical Products and Sealants".**

Radiator drain plug : Refer to CO-14, "Removal and Installation".
Cylinder block drain plug : 9.8 N·m (1.0 kg-m, 87 in-lb)

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. Push the ignition switch twice to the ON position with the Hybrid system and engine OFF as necessary to activate the heater mode.
4. Install the Tool by installing the radiator cap adapter (E) onto the radiator tee opening (F). Then attach the gauge body assembly (B) with the refill hose (D) and the venturi assembly (A) to the radiator cap adapter.

Tool number : KV991J0070 (J-45695)

- A: Venturi assembly
- B: Gauge body assembly
- C: Ball valve
- D: Refill hose
- E: Radiator cap adapter
- F: Radiator tee



5. Insert the refill hose (D) into the coolant mixture container that is placed at floor level. Make sure the ball valve (C) is in the closed position.
   - **Use Genuine NISSAN Long Life Anti-freeze coolant or equivalent, mixed 50/50 with distilled water or demineralized water.**
   Refer to MA-11, "Engine Oil Recommendation".

Engine coolant capacity (with reservoir tank) : Refer to MA-11, "Fluids and Lubricants".

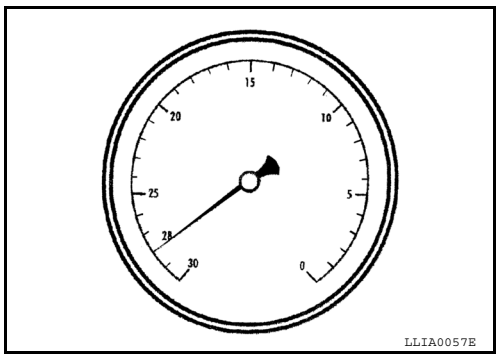
6. Install an air hose to the venturi assembly (A), the air pressure must be within specification.

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 (C) on the refill hose (D) slightly. Coolant will be visible rising in the refill hose (D). Once the refill hose (D) is full of coolant, close the ball valve (C). This will purge any air trapped in the refill hose.

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



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

9. When the vacuum gauge has reached the specified amount, disconnect the air hose and wait 20 seconds to see if the system loses any vacuum. If the vacuum level drops, perform any necessary repairs to the system and repeat steps 6 - 8 to bring the vacuum to the specified amount. Recheck for any leaks.
10. Place the coolant container [with the refill hose (D) inserted] at the same level as the top of the radiator. Then open the ball valve (C) on the refill hose (D) 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. Turn the Hybrid system ON to 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 cap above the radiator upper hose and reservoir tank, with water and reinstall the filler cap above the radiator upper hose.
2. Turn the Hybrid system ON to the engine until it reaches normal operating temperature.
3. Press the engine accelerator two or three times under no-load.
4. Turn the Hybrid system off and wait until it cools down.
5. Drain the water.
6. Repeat steps 1 through 5 until clear water begins to drain from the radiator.

INVERTER ASSEMBLY

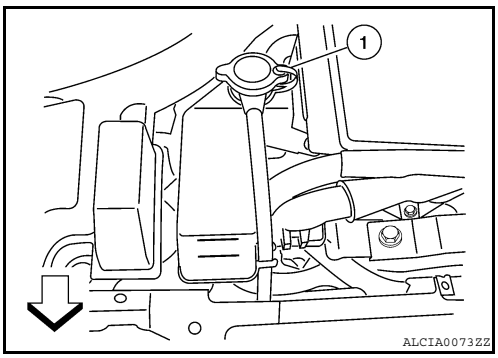
INVERTER ASSEMBLY : Replacement

INFOID:0000000005818047

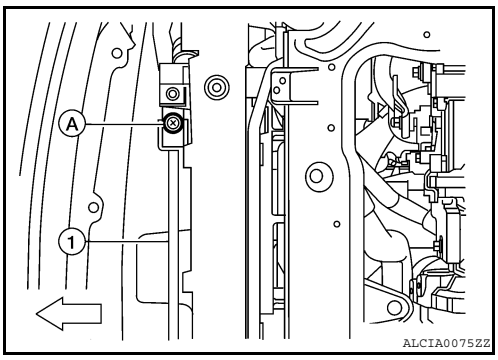
DRAINING COOLANT

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

1. Remove the inverter cooling reservoir tank cap (1).
   - ⇦ : Front



2. Remove the engine under cover. Refer to EXT-13, "Removal and Installation".
3. Loosen the drain plug (A) on the sub radiator (1) and drain the coolant.
   - ⇦ : Front

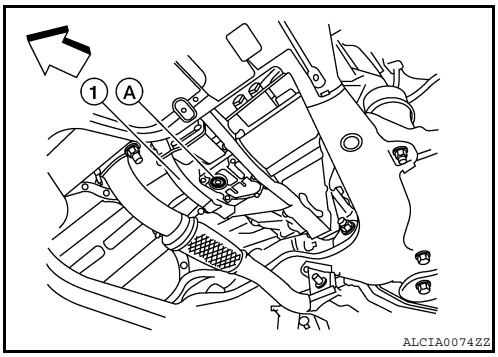


4. Remove the coolant drain plug (A) from the transaxle (1) and drain coolant.
   - ⇦: Front
5. Install the coolant drain plug with a new gasket to the transaxle.

   Coolant drain plug : 35.3 - 43.1 N·m (3.6 - 4.4 kg-m, 26 - 32 ft-lb)

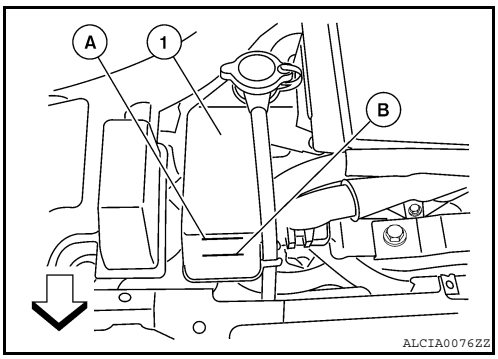
   CAUTION:
   Do not reuse gasket.
6. Tighten the drain plug on the sub radiator.

   Drain plug : 0.78 - 1.56 N·m (0.08 - 0.15 kg-m, 7 - 13 in-lb)



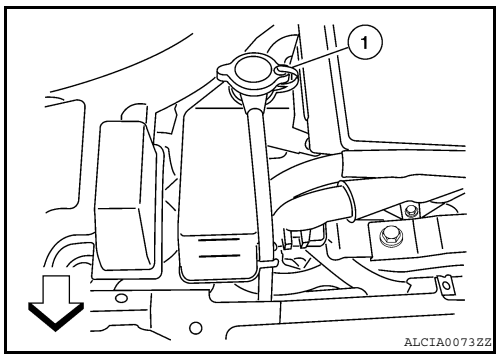
FILLING COOLANT

1. Slowly pour coolant into the inverter cooling reservoir tank (1) until the coolant level reaches MAX (A).
   - ⇦ : Front
2. Turn ignition switch ON.
3. Select “INV WATER PUMP” in “ACTIVE TEST” mode with CONSULT-III, then operate the inverter cooling system coolant pump while continuing to fill the inverter cooling reservoir tank. Keep the coolant level between MIN (B) and MAX (A).
   CAUTION:
   Do not allow the coolant level in the reservoir tank to get too low when filling to avoid air being drawn into the Inverter cooling system.



4. When no air bubbles can be seen in the inverter cooling reservoir tank, fill the tank until the coolant level reaches MAX.

5. Install the inverter cooling reservoir tank cap (1) and inspect the system for leaks.
   - ⇦ : Front

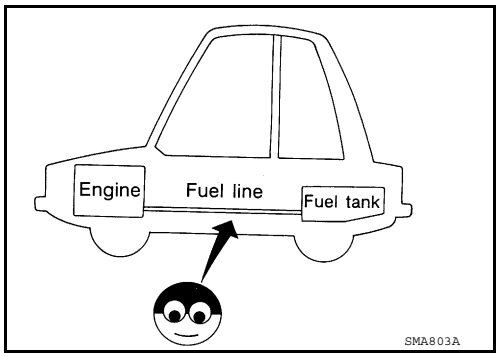


FUEL LINES

FUEL LINES : Inspection

INFOID:0000000005438456

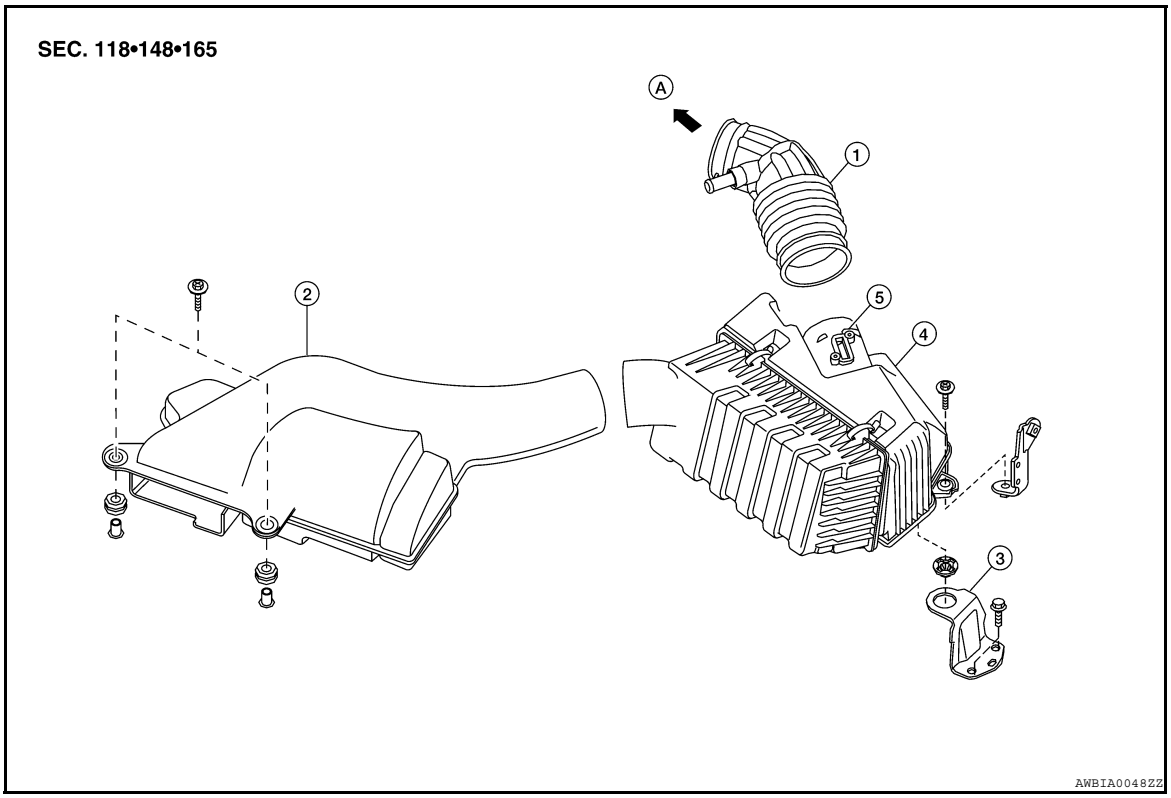
Inspect fuel lines, fuel filler cap and fuel tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration.
If necessary, repair or replace damaged parts.



AIR CLEANER FILTER

AIR CLEANER FILTER : Removal and Installation

INFOID:0000000005818051



1. Air duct hose
2. Front air duct
3. Air cleaner mounting bracket
4. Air cleaner assembly
5. Mass air flow sensor
A. To electric throttle control actuator

CHANGING THE AIR CLEANER ELEMENT

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

ENGINE OIL

ENGINE OIL : Changing Engine Oil

INFOID:0000000005818052

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. Turn Hybrid System ON and warm up the engine, and check for oil leaks from the engine.
3. Turn Hybrid System OFF 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.
   CAUTION:
   - **Be sure to clean the drain plug and install using a new washer.**
   - **The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only. Always use the dipstick to determine when the proper amount of oil is in the engine.**

Oil specification and viscosity	**: Refer to MA-11, "Engine Oil Recommendation"**
Oil pan drain plug	**: Refer to EM-32, "Removal and Installation (Upper Oil Pan)"**

7. Turn Hybrid System ON and warm up the engine and check the area around the drain plug and oil filter for oil leakage.
8. Turn the Hybrid System OFF and wait for 10 minutes.
9. Check the oil level using the dipstick.
   CAUTION:
   Do not overfill the engine with engine oil.

OIL FILTER

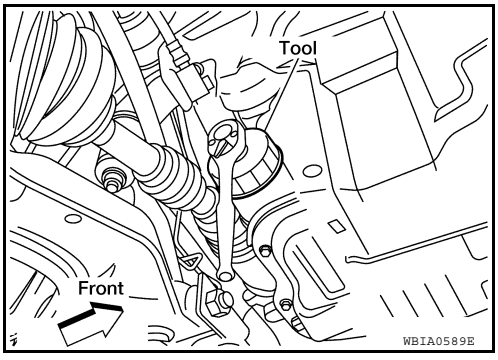
OIL FILTER : Removal and Installation

INFOID:0000000005818053

REMOVAL

1. Drain engine oil. Refer to MA-18, "ENGINE OIL : Changing Engine Oil".
2. Remove fender protector side cover RH. Refer to EXT-19, "Removal and Installation".
3. Remove the oil filter using Tool.

Tool number : KV10115801 (J-38956)



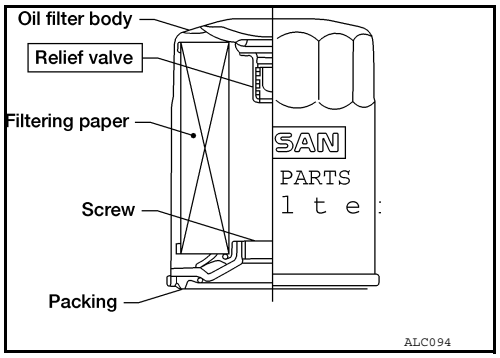
WARNING:

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

CAUTION:

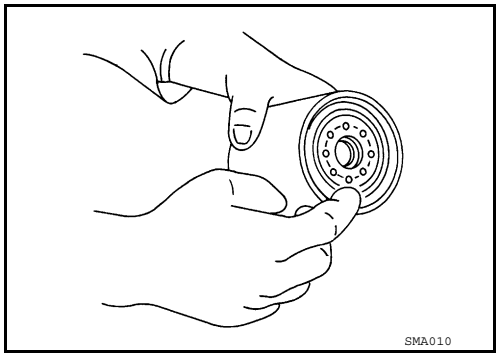
- **When removing, prepare a shop cloth to absorb any oil leakage or spillage.**
- **Do not allow engine oil to adhere to the drive belts.**

- **Completely wipe off any oil that adheres to the engine and the vehicle.**
- **The oil filter has a built in pressure relief valve. Use a genuine NISSAN oil filter or equivalent**



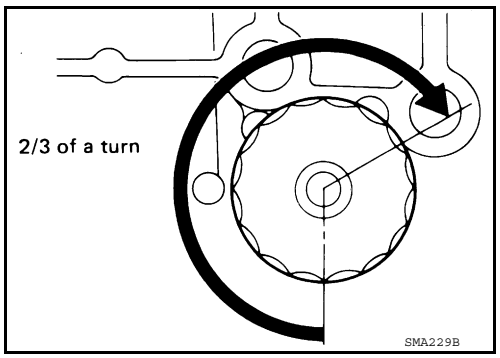
INSTALLATION

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



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

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

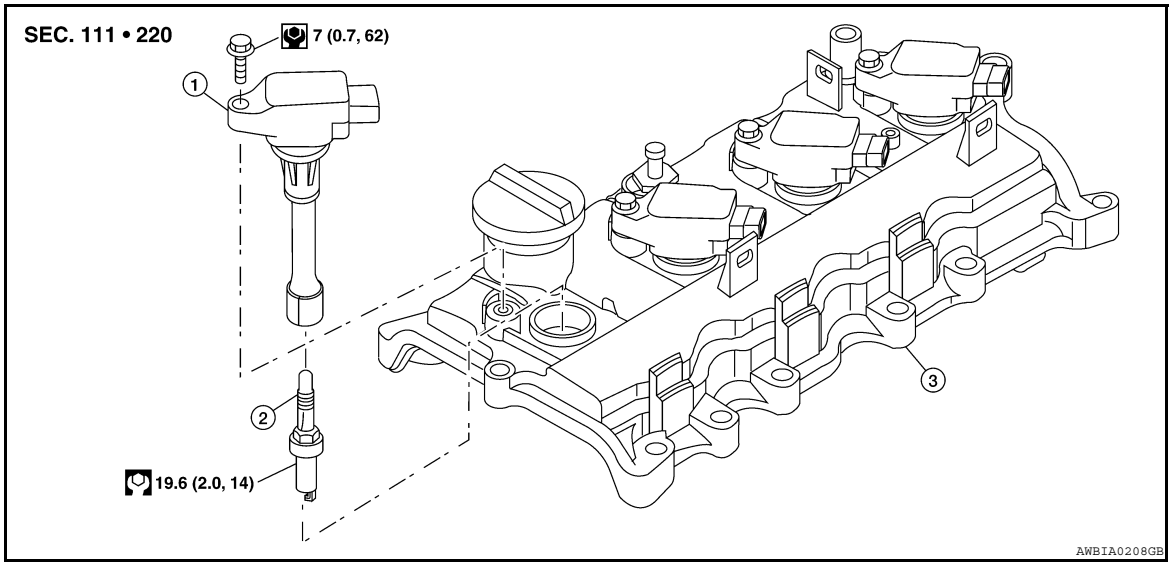


4. Refill engine with new engine oil. Refer to MA-18, "ENGINE OIL : Changing Engine Oil".
5. Turn the Hybrid System ON and after warming up the engine, check for oil leaks.
6. Install fender protector side cover RH. Refer to EXT-19, "Removal and Installation".

SPARK PLUG

SPARK PLUG : Removal and Installation

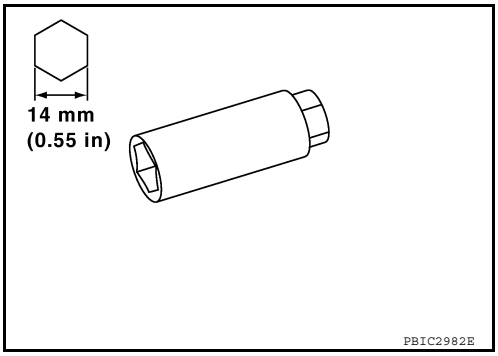
INFOID:0000000005818054



1. Ignition coil
2. Spark plug
3. Rocker cover

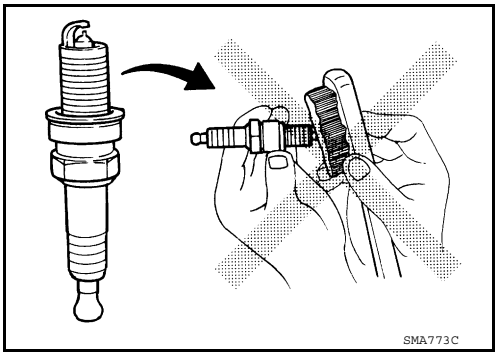
REMOVAL

1. Remove the ignition coil. Refer to EM-34, "Removal and Installation".
2. Remove the spark plug with a suitable spark plug wrench.



INSPECTION AFTER REMOVAL

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

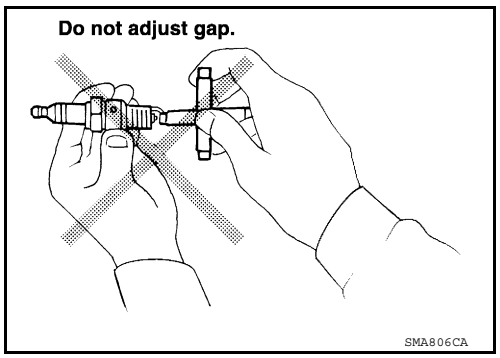


- If plug is covered with carbon, a spark plug cleaner may be used.

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.

Gap (nominal) : 1.1 mm (0.043 in)



INSTALLATION

Installation is in the reverse order of removal.

Standard type*	NGK
	DILKAR6A-11
Gap (nominal)	1.1 mm (0.043 in)

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

EVAP VAPOR LINES

EVAP VAPOR LINES : Inspection

INFOID:0000000005819376

CAUTION:

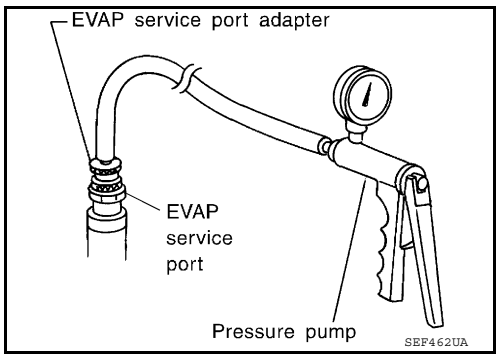
- **Do not use compressed air or a high pressure pump.**
- **Do not exceed 4.12 kPa (0.042 kg/cm^2, 0.6 psi) of pressure in EVAP system.**

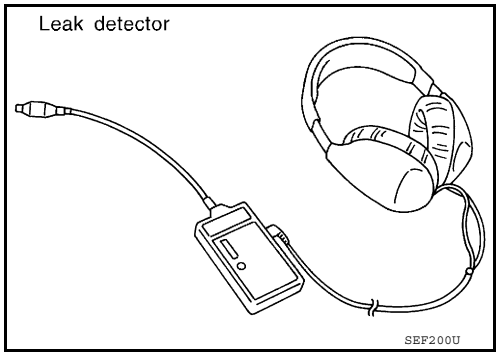
NOTE:

- Do not start engine.
- Improper installation of EVAP service port adapter [commercial service tool: (J-41413-OBD)] to the EVAP service port may cause a leak.

WITH CONSULT-III

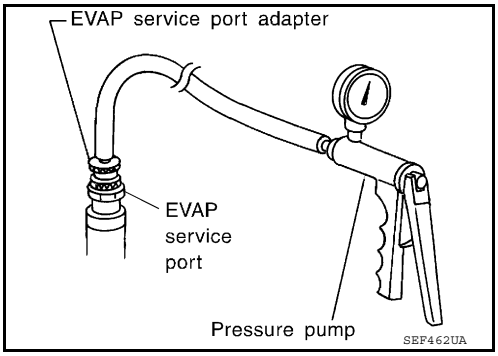
1. To locate the EVAP leak, install EVAP service port adapter [commercial service tool: (J-41413-OBD)] and pressure pump to EVAP service port.
2. Turn ignition switch ON.
3. Select the “EVAP SYSTEM CLOSE” of “WORK SUPPORT” mode with CONSULT-III.
4. Touch “START”. A bar graph (Pressure indicating display) will appear on the screen.
5. Apply positive pressure to the EVAP system until the pressure indicator reaches the middle of the bar graph.
6. Remove EVAP service port adapter [commercial service tool: (J-41413-OBD)] and hose with pressure pump.
7. Locate the leak using a leak detector [commercial service tool: (J-41416)]. Refer to EC-63, "System Diagram".



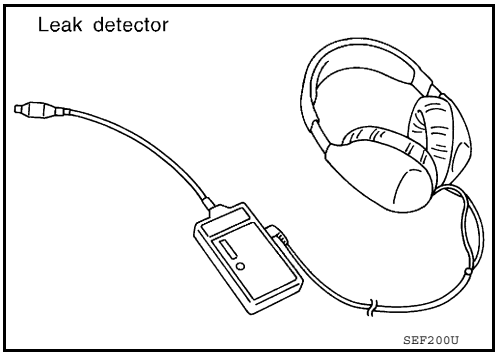


WITHOUT CONSULT-III

1. To locate the EVAP leak, install EVAP service port adapter [commercial service tool: (J-41413-OBD)] and pressure pump to EVAP service port.
2. Apply battery voltage between the terminals of EVAP canister vent control valve to make a closed EVAP system.
3. To locate the leak, deliver positive pressure to the EVAP system until pressure gauge points reach 1.38 to 2.76 kPa (0.014 to 0.028 kg/cm^2, 0.2 to 0.4 psi).
4. Remove EVAP service port adapter [commercial service tool: (J-41413-OBD)] and hose with pressure pump.



5. Locate the leak using a leak detector [commercial service tool: (J-41416)]. Refer to EC-63, "System Diagram".



CHASSIS AND BODY MAINTENANCE

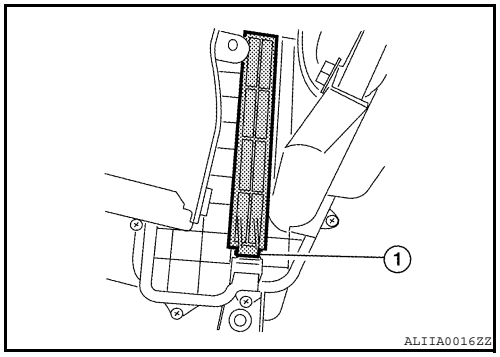
IN-CABIN MICROFILTER

IN-CABIN MICROFILTER : Removal and Installation

INFOID:0000000005818056

REMOVAL

1. Remove the glove box assembly. Refer to IP-11, "Removal and Installation".
2. Remove the console side finisher (RH). Refer to IP-11, "Removal and Installation".
3. Disengage the filter cover tab (1) to remove the filter cover.
4. Remove the in-cabin microfilter from the blower unit.



INSTALLATION

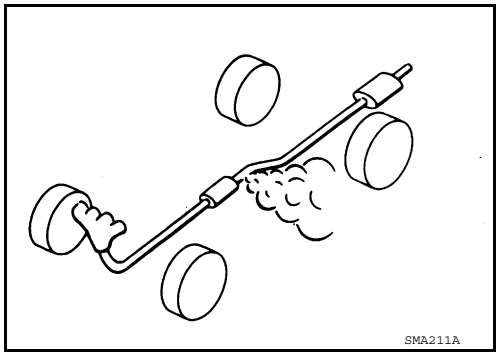
Installation is in the reverse order of removal.

EXHAUST SYSTEM

EXHAUST SYSTEM : Checking Exhaust System

INFOID:0000000005818057

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

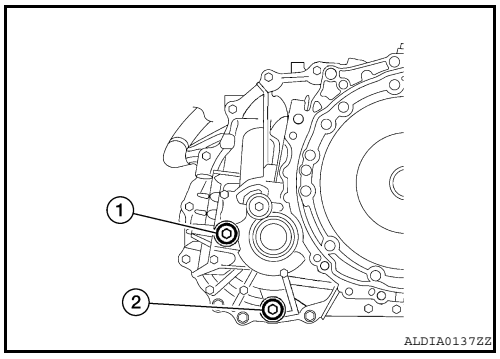


CVT FLUID

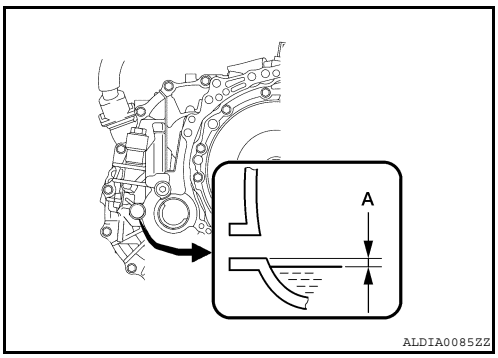
CVT FLUID : Replacement

INFOID:0000000005818058

1. Remove the filler plug and gasket (1) from the transaxle.
2. Remove the drain plug and gasket (2) and drain the fluid from the transaxle.
3. Install the drain plug with a new gasket to the transaxle.
   CAUTION:
   Do not reuse gasket.



4. Fill the transaxle with specified fluid to the fluid level (A) as shown.



Fluid grade and capacity: **Refer to MA-11, "Fluids and Lubricants".**

Oil level (A) : MAX 5 mm (0.20 in)

CAUTION:
- **Use only the specified Genuine Nissan fluid, using fluid other than the Genuine Nissan specified fluid will deteriorate in driveability and durability, and may damage the transaxle, which is not covered by the warranty.**
- **Do not spill fluid on heat generating parts such as exhaust manifold.**
- **Do not overfill the transaxle.**
- **Recheck the fluid level after driving the vehicle to warm up the fluid.**

5. Install the filler plug with a new gasket to the transaxle.

Filler plug: : 39.2 N·m (4.0 kg-m, 29 ft-lb)

CAUTION:
Do not reuse gasket.

WHEELS

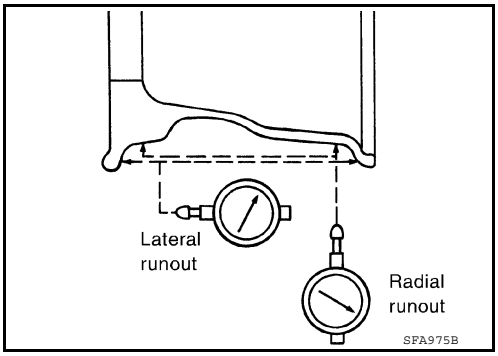
WHEELS : Inspection

INFOID:0000000005818059

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.

b. Set dial indicator as shown in the figure.



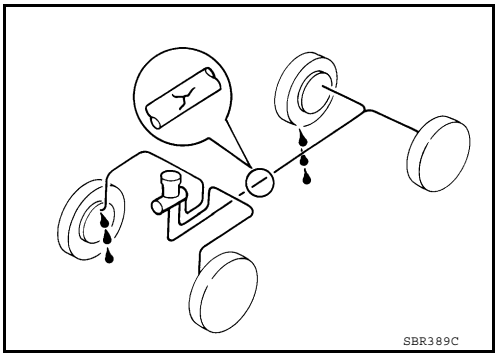
Wheel runout (Dial indicator value) : Refer to WT-64.

BRAKE LINES AND CABLES

BRAKE LINES AND CABLES : Inspection

INFOID:0000000005438466

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



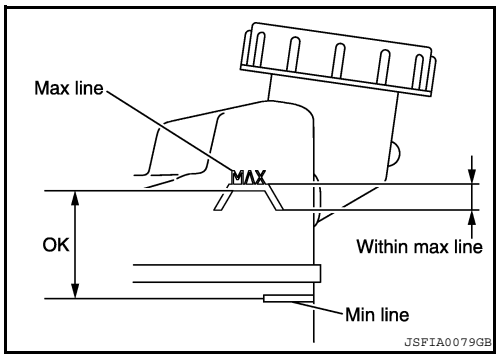
BRAKE FLUID

BRAKE FLUID : On Board Inspection

INFOID:0000000005818070

BRAKE FLUID LEVEL

- Check that the brake fluid level in reservoir tank is within the specified range between the MAX and MIN lines as shown.
- Visually check around the reservoir tank for fluid leaks.
- If the fluid level is excessively low, check the brake system for leaks.
- Release the parking brake and check if the brake warning lamp goes off. If not, check brake system for fluid leaks.

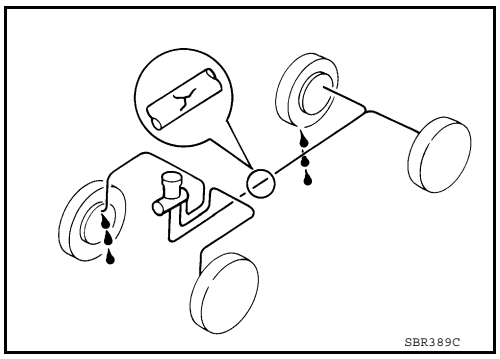


BRAKE LINE

CAUTION:

If leakage occurs around joints, retighten or, if necessary, replace damaged parts.

1. Check brake lines (tubes and hoses) for cracks, deterioration or other damage. Replace any damaged parts.
2. Check for oil leakage by fully depressing brake pedal while the car is ON.



BRAKE FLUID : Refilling

INFOID:0000000005818071

REFILLING

Make sure there is no foreign material in the reservoir tank, and refill with new brake fluid to the proper level.

CAUTION:

- **Refill with new brake fluid “DOT 3”.**
- **Never reuse drained brake fluid.**

BRAKE FLUID : Bleeding Brake System

INFOID:0000000005818072

CAUTION:

- **If any DTC is indicated, erase the indicated DTC.**
- **After the procedure of air bleed, perfrom initialization of linear solenoid valve. Refer to BRC-7, "PERFORM INITIALIZATION OF LINEAR SOLENOID VALVE AND CALIBRATION : Description".**

NOTE:

The brake warning buzzer may be activated during the air bleed procedure. The work can be continued, as it is normal.

AIR RELEASE OF STATIC PRESSURE SYSTEM (FRONT WHEEL)

CAUTION:

- **Monitor the fluid level in the reservoir tank during the air bleeding.**
- **Always use new brake fluid for refilling. Never reuse the drained brake fluid.**

1. Turn ignition switch OFF.
2. Connect CONSULT-III.
3. Turn ignition switch (READY).
4. When performing air bleed of the static pressure system and suction drain system, remove 2 relays for brake actuator motor beforehand.

5. Connect a vinyl tube to the bleeder valve of the front brake.
6. When performing air bleed, following conditions are required.
   - ABS relay No.1 and No.2: ON
   - Parking brake: ON
   - Shift position: P range
   - Vehicle speed: 0 km/h (0 MPH)
   - Normal power supply voltage
   - Normal communication with HV
   - No failure of brake system (except following items)
   - Motor relay
   - Accumulator
   - Fluid level switch
   - Calibration for each sensors and linear solenoid
   - Test mode diag code
7. Select “AIR REL INHIBIT” in “ACTIVE TEST”.
8. Loosen the bleeder valve and bleed air with the brake pedal depressed.
   NOTE:
   Air bleeding is allowed to start from either right or left.
9. After a complete air bleeding, tighten bleeder valve to the specified torque.
10. Check that the fluid level is the reservoir tank is within the specified range after air bleeding.

AIR RELEASE OF SUCTION DRAIN SYSTEM

CAUTION:

- **Monitor the fluid level in the reservoir tank during the air bleeding.**
- **Perform the air bleed procedure within 30 seconds after the transmission of the signal from CONSULT-III. When the air bleed is performed afterward, the re-transmission of the signal from CONSULT-III is needed.**

NOTE:

Air bleed from the bleeder valve is not necessary since this operation is to return brake fluid (air).

1. Turn ignition switch OFF.
2. Connect CONSULT-III.
3. Turn ignition switch (READY).
4. When performing air bleed, following conditions are required.
   - ABS relay No.1 and No.2: ON
   - Parking brake: ON
   - Shift position: P renge
   - Vehicle speed: 0 km/h (0 MPH)
   - Normal power supply voltage
   - Normal communication with HV
   - No failure of brake system (except following items)
   - Motor relay
   - Accumulator
   - Fluid level switch
   - Calibration for each sensors and linear solenoid
   - Test mode diag code
5. Select “AIR REL DRAIN” in “ACTIVE TEST”.
6. Step on the brake pedal and return brake fluid to reservoir tank.
7. Ensure that no air (bubble) is contained in the brake fluid circulated from reservoir tank.

AIR RELEASE OF REAR WHEEL SYSTEM

CAUTION:

- **Monitor the fluid level in the reservoir tank during the air bleeding.**
- **Always use new brake fluid for refilling. Never reuse the drained brake fluid.**

1. Turn ignition switch OFF.
2. Connect 2 motor relays.
3. Connect CONSULT-III.
4. Turn ignition switch (READY).
   NOTE:

If CONSULT-III is freezed, erase the DTC.

5. Confirm accumulator pressure level by using “DATA MONITOR” in CONSULT-III.

a. Select “ACC PRESS SEN” in “DATA MONITOR”.

b. Ensure that this voltage is over 3.42 V.

c. If voltage is under 3.42 V, then step on the brake pedal several time.

6. When performing air bleed, following conditions must be met.
   - ABS relay No.1 and No.2: ON
   - Parking brake: ON
   - Shift position: P range
   - Vehicle speed: 0 km/h (0 MPH)
   - Normal power supply voltage
   - Normal communication with HV
   - ABS motor relay No.1 and No.2 are set
   - No failure of brake system (except following items)
   - Motor relay
   - Accumulator
   - Fluid level switch
   - Calibration for each sensors and linear solenoid
   - Test mode diag code
7. Connect a vinyl tube to the bleeder valve of the rear brake.
8. Select “AIR REL INHIBIT” in “ACTIVE TEST”.
9. Loosen the bleeder valve and bleed air with the brake pedal depressed.
10. Ensure that there is no air leakage from the bleeder.
11. After a complete air bleeding, tighten bleeder valve to the specified torque.
12. Check that the fluid level is the reservoir tank is within the specified range after air bleeding.

AIR RELEASE OF POWER SUPPLY SYSTEM

CAUTION:

- **Monitor the fluid level in the reservoir tank during the air bleeding.**
- **Always use new brake fluid for refilling. Never reuse the drained brake fluid.**
- **Perform the air bleed procedure within 10 seconds after the transmission of the signal from CONSULT-III. When the air bleed is performed afterward, the re-transmission of the signal from CONSULT-III is needed.**

NOTE:

- No need to step on the brake pedal.
- Air bleeding is necessary for the front left brake only.

1. Turn ignition switch OFF.
2. Connect CONSULT-III.
3. Turn ignition switch (READY).
4. Connect a vinyl tube to the bleeder valve of the front left brake.
5. When performing air bleed, following conditions must be met.
   - ABS relay No.1 and No.2: ON
   - Parking brake: ON
   - Shift position: P range
   - Vehicle speed: 0 km/h (0 MPH)
   - Normal power supply voltage
   - Normal communication with HV
   - ABS motor relay No.1 and No.2 are set
   - No failure of brake system (except following items)
   - Motor relay
   - Accumulator
   - Fluid level switch
   - Calibration for each sensors and linear solenoid
   - Test mode diag code
6. Select “AIR REL PWR SPLY 2” in “ACTIVE TEST”.
7. Loosen the bleeder valve.
8. Ensure that there is no air leakage from the bleeder.

9. After a complete air bleeding, tighten bleeder valve to the specified torque.

AIR RELEASE OF STROKE SIMULATOR SYSTEM

Air Bleed of Stroke Simulator System 1

CAUTION:

Perform the air bleed procedure within 30 seconds after the transmission of the signal from CONSULT-III. When the air bleed is performed afterward, the re-transmission of the signal from CONSULT-III is needed.

NOTE:

- Air bleed from the bleeder is not necessary in this stage.
- This process is performed to send air contained in the stroke simulator to piping. Pedal operation only and no need of air bleed from the bleeder.

1. Turn ignition switch OFF.
2. Connect CONSULT-III.
3. Turn ignition switch (READY).
4. When performing air bleed, following conditions must be met.
   - ABS relay No.1 and No.2: ON
   - Parking brake: ON
   - Shift position: P range
   - Vehicle speed: 0 km/h (0 MPH)
   - Normal power supply voltage
   - Normal communication with HV
   - ABS motor relay No.1 and No.2 are set
   - No failure of brake system (except following items)
   - Motor relay
   - Accumulator
   - Fluid level switch
   - Calibration for each sensors and linear solenoid
   - Test mode diag code
5. Select “AIR REL STROKE SIM” in “ACTIVE TEST”.
6. Step on the brake pedal 20 times with its stroke fully within continuously 20 to 30 seconds.

Air Release of Stroke Simulator System 2

NOTE:

Air bleeding is necessary for the front left brake only.

1. Connect a vinyl tube to the bleeder valve of the front left brake.
2. When performing air bleed, following conditions must be met.
   - ABS relay No.1 and No.2: ON
   - Parking brake: ON
   - Shift position: P range
   - Vehicle speed: 0 km/h (0 MPH)
   - Normal power supply voltage
   - Normal communication with HV
   - ABS motor relay No.1 and No.2 are set
   - No failure of brake system (except following items)
   - Motor relay
   - Accumulator
   - Fluid level switch
   - Calibration for each sensors and linear solenoid
   - Test mode diag code
3. Select “AIR REL INHIBIT” in “ACTIVE TEST”.
4. Loosen the bleeder valve and bleed air with the brake pedal depressed.
5. Ensure that there is no air from the bleeder.
6. Tighten the bleeder valve to the specified torque.
7. Return to previous step “Air Release of Stroke Simulator System 1”. Repeat ”Air Release of Stroke Simulator System 1” and “Air Release of Stroke Simulator System 2” at least 3 times.

AIR RELEASE OF HIGH-PRESSURE LINE

CAUTION:
Be careful with fluid level in the reservoir tank because a large amount of brake fluid flows back to the reservoir tank.
NOTE:
Air bleed from the bleeder is not necessary in this stage.

1. Turn ignition switch OFF.
2. Connect CONSULT-III.
3. Turn ignition switch (READY).
4. When performing air bleed, following conditions must be met.
   - ABS relay No.1 and No.2: ON
   - Parking brake: ON
   - Shift position: P range
   - Vehicle speed: 0 km/h (0 MPH)
   - Normal power supply voltage
   - Normal communication with HV
   - ABS motor relay No.1 and No.2 are set
   - No failure of brake system (except following items)
   - Motor relay
   - Accumulator
   - Fluid level switch
   - Calibration for each sensors and linear solenoid
   - Test mode diag code
5. Select “ACC 0 DOWN” in “ACTIVE TEST”.
   NOTE:
   Return air remaining in the high-pressure line to reservoir tank and open atmosphere.
6. Repeat 5 times to ensure the circulation of brake fluid since visual judgment of completion is difficult.
7. Fill the brake fluid to the MAX line after completing this operation, with “ACC 0 DOWN” condition.

DISC BRAKE

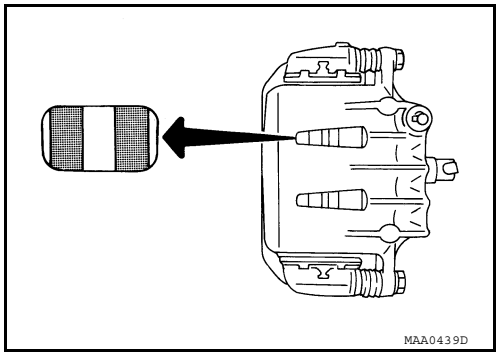
DISC BRAKE : Front Brake Pad Inspection

INFOID:0000000005438470

PAD WEAR

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

Standard thickness	**: Refer to** BR-45, "Front Disc Brake"
Wear limit thickness	**: Refer to** BR-45, "Front Disc Brake"



DISC BRAKE : Front Brake Rotor Inspection

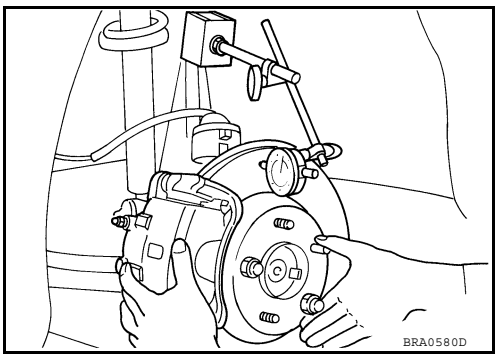
INFOID:0000000005438471

VISUAL

Check surface of disc rotor for uneven wear, cracks, and serious damage. Replace if there are.

RUNOUT

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



Runout limit : Refer to BR-45, "Front Disc Brake".

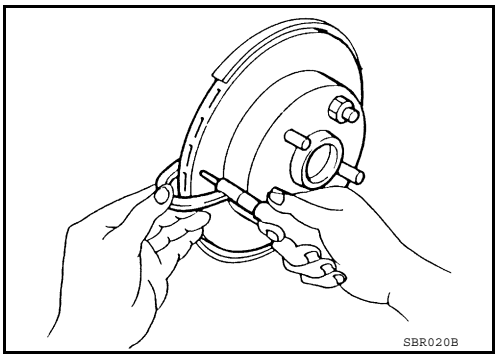
(With it attached to the vehicle.)

NOTE:
Before measuring, make sure that wheel bearing axial end play is within the specification. Refer to FAX-26, "Wheel Bearing".

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. Replace or lathe disc rotor if runout is outside the specified value after performing the above operation.

THICKNESS

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



Standard thickness : Refer to BR-45, "Front Disc Brake".

Wear limit thickness : Refer to BR-45, "Front Disc Brake".

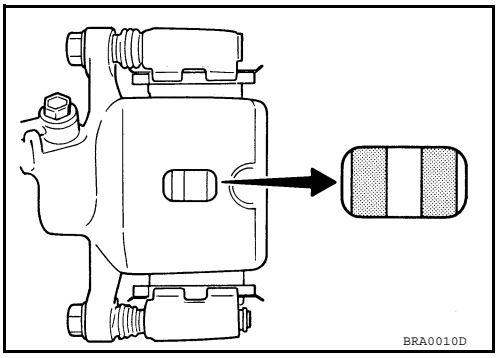
Thickness variation (Measured at 8 positions) : Refer to BR-45, "Front Disc Brake".

DISC BRAKE : Rear Brake Pad Inspection

INFOID:0000000005438472

PAD WEAR

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



Standard thickness : Refer to BR-46, "Rear Disc Brake".

Wear limit thickness : Refer to BR-46, "Rear Disc Brake".

DISC BRAKE : Rear Brake Rotor Inspection

INFOID:0000000005438473

VISUAL

Check surface of disc rotor for uneven wear, cracks, and serious damage. Replace if there are.

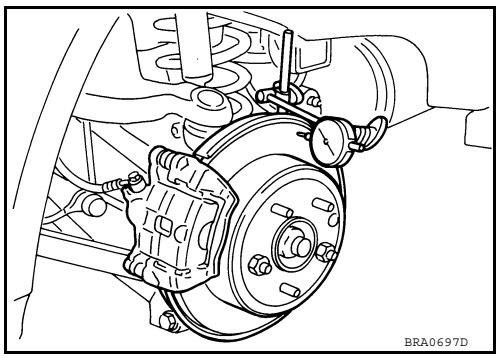
RUNOUT

1. Fix disc rotor to wheel hub using wheel nuts (2 or more positions).
2. Inspect runout using dial gauge. [Measured at 10 mm (0.39 in) inside disc edge.]

Runout limit : Refer to BR-46, "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 RAX-8, "Wheel Bearing (Rear)".



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. Replace disc rotor if it is outside repair limit after performing the above operation.

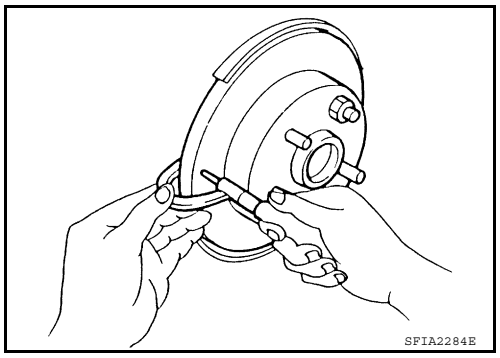
THICKNESS

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

Standard thickness : Refer to BR-46, "Rear Disc Brake".

Wear limit thickness : Refer to BR-46, "Rear Disc Brake".

Thickness variation (Measured at 8 positions) : Refer to BR-46, "Rear Disc Brake".



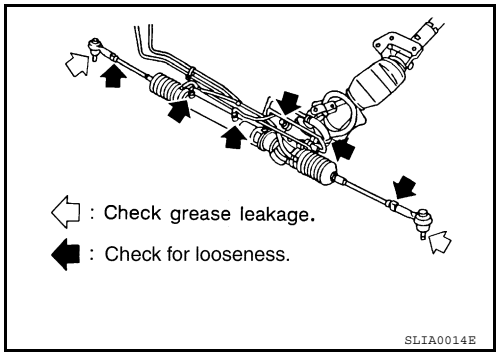
STEERING GEAR AND LINKAGE

STEERING GEAR AND LINKAGE : Inspection

INFOID:0000000005819374

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.

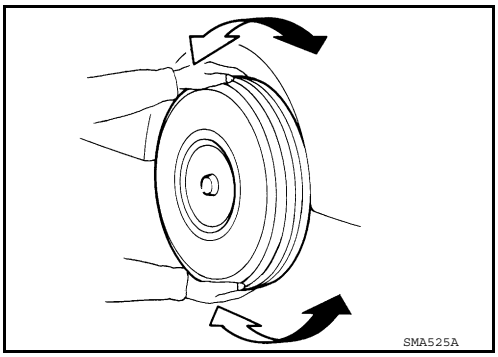
AXLE AND SUSPENSION PARTS

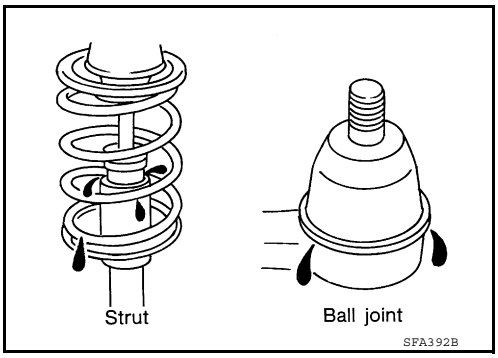
AXLE AND SUSPENSION PARTS : Inspection

INFOID:0000000005438475

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

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





DRIVE SHAFT

DRIVE SHAFT : Inspection

INFOID:0000000005818063

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

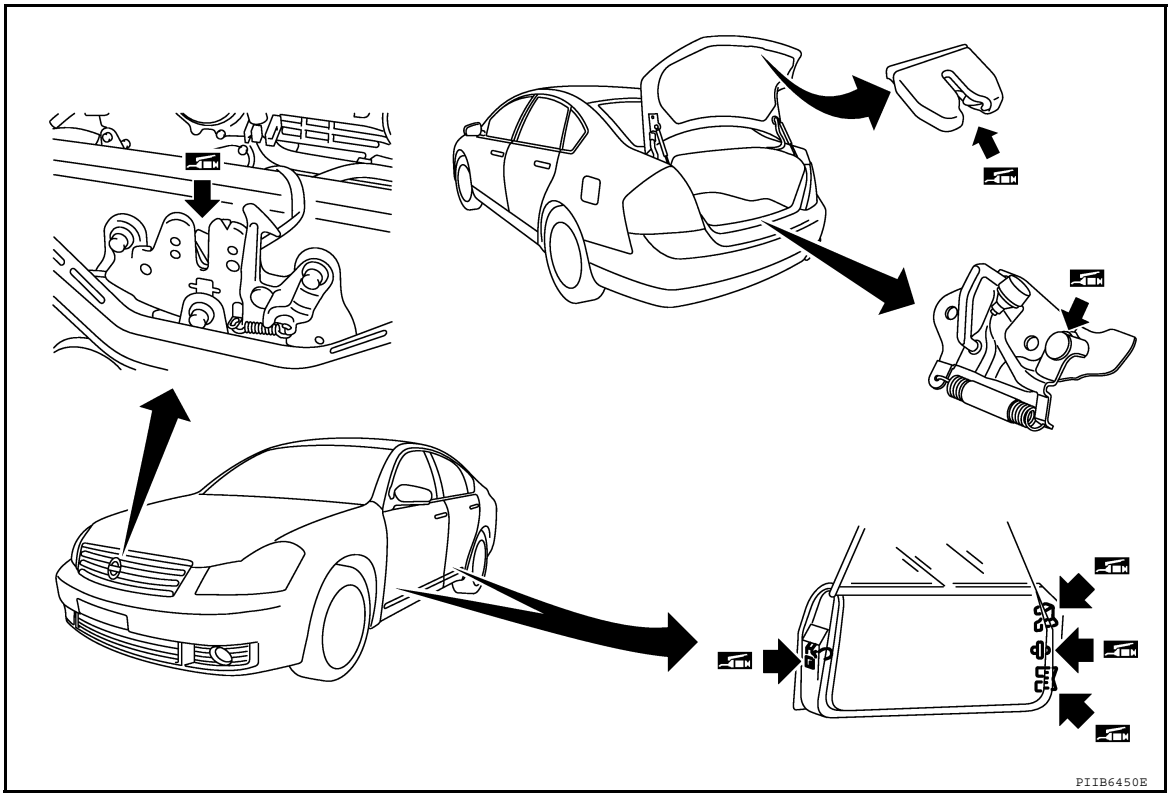
CAUTION:

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

LOCKS, HINGES AND HOOD LATCH

LOCKS, HINGES AND HOOD LATCH : Lubricating

INFOID:0000000005438477



SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS

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

INFOID:0000000005818068

AFTER A COLLISION

WARNING:

Inspect all seat belt assemblies including retractors and attaching hardware after any collision. NISSAN/INFINITI recommends that all seat belt assemblies in use during a collision be replaced unless the collision was minor and the belts show no damage and continue to operate properly. Failure to do so could result in serious personal injury in an accident. Seat belt assemblies not in use during a collision should also be replaced if either damage or improper operation is noted. Seat belt pretensioned should be replaced even if the seat belts are not in use during a frontal collision in which the air bags are deployed.

Replace any seat belt assembly (including anchor bolts) if:

- The seat belt was in use at the time of a collision (except for minor collisions and the belts, retractors and buckles show no damage and continue to operate properly).
- The seat belt was damaged in an accident. (i.e. torn webbing, bent retractor or guide, etc.)
- The seat belt attaching point was damaged in an accident. Inspect the seat belt attaching area for damage or distortion and repair as necessary before installing a new seat belt assembly.
- Anchor bolts are deformed or worn out.
- The seat belt pre-tensioner should be replaced even if the seat belts are not in use during the collision in which the air bags are deployed.

PRELIMINARY CHECKS

1. Check the seat belt warning lamp/chime for proper operation as follows:

a. Switch ignition ON. The seat belt warning lamp should illuminate. Also, the seat belt warning chime should sound for about six seconds.

b. Fasten driver's seat belt. The seat belt warning lamp should go out and the chime (if sounding) should stop.

2. If the air bag warning lamp is blinking, conduct self-diagnosis using CONSULT-III, and air bag warning lamp. Refer to SRC-12, "SRS Operation Check".

3. Check that the seat belt retractor, seat belt anchor and buckle bolts are securely attached.
4. Check the shoulder seat belt guide and shoulder belt height adjuster for front seats. Make sure guide swivels freely and that webbing lays flat and does not bind in guide. Make sure height adjuster operates properly and holds securely.
5. Check retractor operation:

a. Fully extend the seat belt webbing and check for twists, tears or other damage.

b. Allow the seat belt to retract. Make sure that webbing returns smoothly and completely into the retractor. If the seat belt does not return smoothly, wipe the inside of the loops with a clean paper cloth. Dirt built up in the loops of the upper anchors can cause the seat belts to retract slowly.

c. Fasten the seat belt. Check that the seat belt returns smoothly and completely to the retractor. If the webbing does not return smoothly, the cause may be an accumulation of dust or dirt. Use the “SEAT BELT TAPE SET” and perform the following steps.

Inspect the front seat belt through-anchor

1. Pull the seat belt out to a length of 500 mm (19.69 in) or more.
2. Use a clip or other device to hold the seat belt at the center pillar webbing opening.
3. Pass a thin wire through the through-anchor webbing opening. Hold both ends of the wire and pull it taunt while moving it up and down several times along the webbing opening surface to move matter stuck there.
4. Any dirt that can not be removed with the wire can be removed by cleaning the opening with a clean cloth.
5. Apply tape at the point where the webbing contacts the though-anchor webbing opening.
   NOTE:
   Apply the tape so that there is no looseness or wrinkling.
6. Remove the clip holding the seat belt and check that the webbing returns smoothly.

6. Repeat steps above as necessary to check the other seat belts.

SEAT BELT RETRACTOR ON-VEHICLE CHECK

Emergency Locking Retractors (ELR) and Automatic Locking Retractors (ALR)

NOTE:

All seat belt retractors are of the Emergency Locking Retractors (ELR) type. In an emergency (sudden stop) the retractor will lock and prevent the webbing from extending any further. All 3-point type seat belt retractors except the driver's seat belt also have an Automatic Locking Retractors (ALR) mode. The ALR mode (also called child restraint mode) is used when installing child seats. The ALR mode is activated when the seat belt is fully extended. When the webbing is then retracted partially, the ALR mode automatically locks the seat belt in a specific position so the webbing cannot be extended any further. To cancel the ALR mode, allow the seat belt to fully wind back into the retractor.

Check the seat belt retractors using the following test(s) to determine if a retractor assembly is operating properly.

ELR Function Stationary Check

Grasp the shoulder webbing and pull forward quickly. The retractor should lock and prevent the belt from extending further.

ALR Function Stationary Check

1. Pull out entire length of seat belt from retractor until a click is heard.
2. Retract the webbing partially. A clicking noise should be heard as the webbing retracts indicating that the retractor is in the Automatic Locking Retractors (ALR) mode.
3. Grasp the seat belt and try to pull out the retractor. The webbing must lock and not extend any further. If NG, replace the retractor assembly.
4. Allow the entire length of the webbing to retract to cancel the automatic locking mode.

ELR Function Moving Check

WARNING:

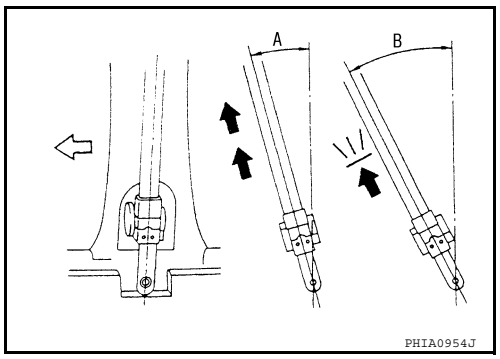
Perform the following test in a safe, open area clear of other vehicles and obstructions (for example, a large, empty parking lot). Road surface must be paved and dry. DO NOT perform the following test on wet or gravel roads or on public streets and highways. This could result in an accident and serious personal injury. The driver and passenger must be prepared to brace themselves in the event the retractor does not lock.

1. Fasten driver's seat belt. Buckle a passenger into the seat for the belt that is to be tested.
2. Proceed to the designated safe area.
3. Drive the vehicle at approximately 16 km/h (10 MPH). Notify any passengers of a pending sudden stop and the driver and passenger must be prepared to brace themselves in the event the retractor does not lock, apply brakes firmly and make a very hard stop.

During stop, seat belts should lock and not be extended. If the seat belt retractor assembly does not lock, perform the retractor off-vehicle check.

SEAT BELT RETRACTOR OFF-VEHICLE CHECK (PILLAR MOUNTED)

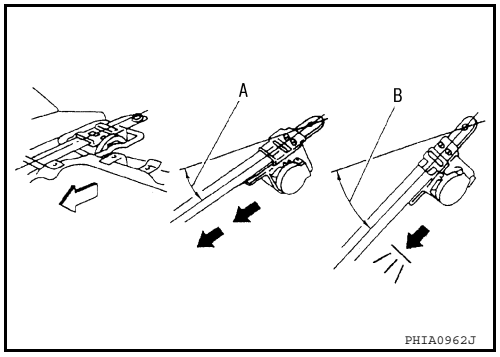
1. Remove the seat belt retractor.
   - Remove the front seat belt assembly, refer to SB-6, "Removal and Installation".
2. Slowly pull out webbing while tilting the retractor assembly forward from the mounted position without twisting the retractor assembly as shown in the illustration.
   A : The webbing can be pulled out in case the retractor is tilted 15° degree or less.
   B : The webbing can not be pulled out if the retractor is tilted 35° degrees or more.
   - A and B show tilting angles.
   - ⇦ : Vehicle front.



Replace the seat belt assembly if it does not operate within specifications.

SEAT BELT RETRACTOR OFF-VEHICLE CHECK (REAR PARCEL SHELF MOUNTED)

1. Remove the seat belt retractor.
   - Remove the rear seat belt assembly, refer to SB-8, "Removal and Installation".
2. Slowly pull out webbing while tilting the retractor assembly forward from the mounted position without twisting the retractor assembly as shown in the illustration.
   A : The webbing can be pulled out in case the retractor is tilted 15° degree or less.
   B : The webbing can not be pulled out if the retractor is tilted 35° degrees or more.
   - A and B show tilting angles.
   - ⇦ : Vehicle front.



Replace the seat belt assembly if it does not operate within specifications.