SECTION MA
MAINTENANCE

CONTENTS

SERVICE INFORMATION

PRECAUTIONS

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

INFOID:0000000004803408

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

WARNING:

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

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

WARNING:

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

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:0000000004803409

NOTE:

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

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

OPERATION PROCEDURE

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

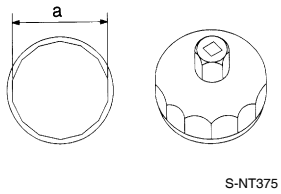
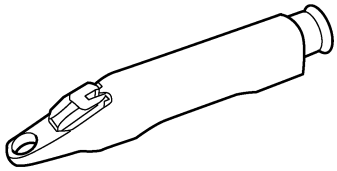
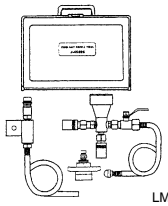
5. When the repair work is completed, return the ignition switch to the ″LOCK″ position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

PREPARATION

Special Service Tool

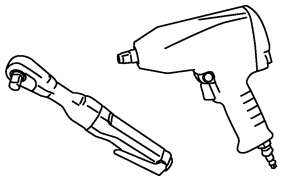
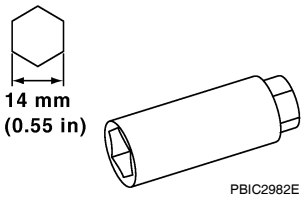
INFOID:0000000004305180

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

Tool number (Kent-Moore No.) Tool name	Description
KV10115801 (J-38956) Oil filter wrench  S-NT375	Removing and installing oil filter **a: 64.3 mm (2.531 in)**
KV991J0010 (J-23688) Engine coolant refractometer  WBIA0539E	Checking concentration of ethylene glycol in engine coolant
KV991J0070 (J-45695) Coolant Refill Tool  LMA053	Refilling engine cooling system

Commercial Service Tool

INFOID:0000000004305181

(Kent-Moore No.) Tool name	Description
Power tool  PBIC0190E	Loosening bolts and nuts
Spark plug wrench  PBIC2982E	Removing and installing spark plug

GENERAL MAINTENANCE

Explanation of General Maintenance

INFOID:0000000004305182

General Maintenance

INFOID:0000000004305183

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

OUTSIDE THE VEHICLE

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

Item		Reference page
Tires	Check the pressure with a gauge often and always prior to long distance trips. Adjust the pressure in all tires, including the spare, to the specified pressure. Check carefully for damage, cuts or excessive wear.	WT-27, "Tire"
Wheel nuts	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	WT-7, "Rotation"
Windshield	Clean the windshield on a regular basis. Check the windshield at least every six months for cracks or other damage. Repair as necessary.	—
Tire rotation	Tires should be rotated every 12,000 km (7,500 miles).	WT-7, "Rotation"
Tire Pressure Monitoring System (TPMS) **transmitter components**	Replace the TPMS transmitter grommet seal, valve core and cap when the tires are replaced due to wear or age.	WT-8
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-7, "Wheel Alignment Inspection" and WT-7, "Balancing Wheels"
Windshield wiper blades	Check for cracks or wear if they do not wipe properly.	—
Doors and engine hood	Check that all doors and the engine hood operate smoothly as well as the trunk lid and back hatch. Also make sure that all latches lock securely. Lubricate if necessary. Make sure that the secondary latch keeps the hood from opening when the primary latch is released. When driving in areas using road salt or other corrosive materials, check lubrication frequently.	MA-50, "LOCKS, HINGES AND HOOD LATCH : Lubricating Locks, Hinges and Hood Latch"
Lamps	Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check headlamp aim. Clean the headlamps on a regular basis.	—

INSIDE THE VEHICLE

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

Item		Reference page
Warning lamps and chimes	Make sure that all warning lamps and chimes are operating properly.	—
Windshield wiper and washer	Check that the wipers and washer operate properly and that the wipers do not streak.	—
Windshield defroster	Check that the air comes out of the defroster outlets properly and in sufficient quantity when operating the heater or air conditioning.	—
Steering wheel	Check that it has the specified play. Be sure to check for changes in the steering condition, such as excessive play, hard steering or strange noises. **Free play: Less than 35 mm (1.38 in)**	—
Seats	Check seat position controls such as seat adjusters, seat back recliner, etc. to make sure they operate smoothly and that all latches lock securely in every position. Check that the head restraints move up and down smoothly and that the locks (if equipped) hold securely in all latched positions. Check that the latches lock securely for folding-down rear seat backs.	—

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.	MA-50, "SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS : Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters"
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.	—
Clutch pedal	Make sure the pedal operates smoothly and check that it has the proper free play.	CL-5, "On-vehicle Inspection and Adjustment"
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 floor mats away from the pedal.	BR-6, "Inspection and Adjustment" and BR-20, "On Board Inspection"
Parking brake	Check that the lever has the proper travel and make sure that the vehicle is held securely on a fairly steep hill when only the parking brake is applied.	PB-5, "On-Vehicle Service"
Automatic transaxle “Park” mechanism	Check that the lock release button on the selector lever operates properly and smoothly. On a fairly steep hill check that the vehicle is held securely with the selector lever in the “P” position without applying any brakes.	—
CVT P (Park) position mechanism	On a fairly steep hill check that the vehicle is held securely with the selector lever in the “P” position without applying any brakes.	—

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-11 (HR) CO-35 (MR)
A/C condenser, radiator and hoses	Check the front of the condenser and radiator and clean off any dirt, insects, leaves, etc., that may have accumulated. Make sure the radiator hoses have no cracks, deformation, deterioration or loose connections.	—
Brake and clutch fluid levels	Make sure that the brake and clutch fluid levels are between the “MAX” and “MIN” lines on the reservoirs.	BR-9, "On Board Inspection"
Battery	Check the fluid level in each cell. It should be between the “MAX” and “MIN” lines. Vehicles operated in high temperatures or under severe conditions require frequent checks of the battery fluid level.	—
Engine drive belts	Make sure that no belt is frayed, worn, cracked or oily.	MA-16 (HR) MA-26 (MR)
Engine oil level	Check the level on the dipstick after parking the vehicle on a level spot and turning off the engine.	MA-20 (HR) MA-30 (MR)
Automatic transaxle fluid level	Check the level on the dipstick after putting the selector lever in “P” with the engine idling.	MA-38, "CVT FLUID : Checking CVT Fluid (RE0F08A)" MA-39, "CVT FLUID : Checking CVT Fluid (RE0F08B)"
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-37

Item		Reference page
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.	—

PERIODIC MAINTENANCE

Introduction of Periodic Maintenance

INFOID:0000000004305184

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

Schedule 1	Follow Periodic Maintenance Schedule 1 if your driving habits frequently includes one or more of the following driving conditions: • 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-9
		Chassis and Body Maintenance	MA-9
Schedule 2	Follow Periodic Maintenance Schedule 2 if none of the driving conditions shown in Schedule 1 apply to your driving habits.	Emission Control System Maintenance	MA-11
		Chassis and Body Maintenance	MA-11

Schedule 1

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Emission Control System Maintenance

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.5 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Drive belt	NOTE (1)									MA-16 (HR) MA-26 (MR)
Air cleaner filter	NOTE (2)								[R]	MA-20 (HR) MA-29 (MR)
EVAP vapor lines									I*	MA-25 (HR) MA-36 (MR)
Fuel lines									I*	MA-29
Fuel filter	NOTE (3)									—
Engine coolant	NOTE (4)									MA-17 (HR) MA-26 (MR)
Engine oil		R	R	R	R	R	R	R	R	MA-20 (HR) MA-30 (MR)
Engine oil filter (Use genuine oil filter or equivalent)		R	R	R	R	R	R	R	R	MA-23 (HR) MA-33 (MR)
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km)								MA-24 (HR) MA-34 (MR)
Intake and exhaust valve clearance*	NOTE (5)									EM-119, "Cylinder Head" (HR) EM-227, "Standard and Limit" (MR)

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
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	Reference Section - Page or - Content Title
Drive belt	NOTE (1)								I*	MA-16 (HR) MA-26 (MR)
Air cleaner filter	NOTE (2)								[R]	MA-20 (HR) MA-29 (MR)
EVAP vapor lines									I*	MA-25 (HR) MA-36 (MR)
Fuel lines									I*	MA-29
Fuel filter	NOTE (3)									—
Engine coolant	NOTE (4)								R*	MA-17 (HR) MA-26 (MR)
Engine oil		R	R	R	R	R	R	R	R	MA-20 (HR) MA-30 (MR)
Engine oil filter (Use genuine oil filter or equivalent)		R	R	R	R	R	R	R	R	MA-23 (HR) MA-33 (MR)
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km)								MA-24 (HR) MA-34 (MR)
Intake and exhaust valve clearance*	NOTE (5)									EM-119, "Cylinder Head" (HR) EM-227, "Standard and Limit" (MR)

(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, go to the FL section.

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

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

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

Chassis and Body Maintenance

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.5 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	Reference Section - Page or - Content Title
Brake lines & cables					I				I	MA-47
Brake pads, rotors, drums & linings			I		I		I		I	MA-47 MA-47
Manual transaxle oil or automatic transaxle fluid	NOTE (1)				I				I	MA-43 (RS5F91R) MA-44 (RS6F94R) MA-44 (A/T)

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.5 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
CVT fluid	NOTE (2)				I				I	MA-38 (RE0F08A) MA-39 (RE0F08B)
Steering gear & linkage, axle & suspension parts			I		I		I		I	MA-48, PS-12
Tire rotation	NOTE (3)									MA-46
Front drive shaft boots			I		I		I		I	MA-49
Exhaust system			I		I		I		I	MA-37
In-cabin microfilter					R				R	MA-37

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48	
Brake lines & cables					I				I	MA-47
Brake pads, rotors, drums & linings			I		I		I		I	MA-47 MA-47
Manual transaxle oil or automatic transaxle fluid	NOTE (1)				I				I	MA-43 (RS5F91R) MA-44 (RS6F94R) MA-44 (A/T)
CVT fluid	NOTE (2)				I				I	MA-38 (RE0F08A) MA-39 (RE0F08B)
Steering gear & linkage, axle & suspension parts			I		I		I		I	MA-48, PS-12
Tire rotation	NOTE (3)									MA-46
Front drive shaft boots			I		I		I		I	MA-49
Exhaust system			I		I		I		I	MA-37
In-cabin microfilter					R				R	MA-37

(1) If towing a trailer, using a camper or a car-top carrier, or driving on rough or muddy roads, change (not just inspect) oil (exc. LSD) at every 30,000 miles (48,000 km) or 24 months, and change LSD gear oil every 15,000 miles (24,000 km) or 12 months.

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

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

Schedule 2

INFOID:0000000004305186

Emission Control System Maintenance

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Drive belt	NOTE (1)								I*	MA-16 (HR) MA-26 (MR)
Air cleaner filter					[R]				[R]	MA-20 (HR) MA-29 (MR)
EVAP vapor lines					I*				I*	MA-25 (HR) MA-36 (MR)
Fuel lines					I*				I*	MA-29
Fuel filter	NOTE (2)									—
Engine coolant	NOTE (3)								R*	MA-17 (HR) MA-26 (MR)
Engine oil		R	R	R	R	R	R	R	R	MA-20 (HR) MA-30 (MR)
Engine oil filter (Use genuine oil filter or equivalent.)		R	R	R	R	R	R	R	R	MA-23 (HR) MA-33 (MR)
Spark plugs (Iridium-tipped type)		Replace every 105,000 miles (169,000 km)								MA-24 (HR) MA-34 (MR)
Intake and exhaust valve clearance*	NOTE (4)									EM-119, "Cylinder Head" (HR) EM-227, "Standard and Limit" (MR)

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

(2) Maintenance-free item.

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

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

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

Chassis and Body Maintenance

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Brake lines & cables			I		I		I		I	MA-47
Brake pads, rotors, drums & linings			I		I		I		I	MA-47 MA-47
Manual transaxle oil or automatic transaxle fluid			I		I		I		I	MA-43 (RS5F91R) MA-44 (RS6F94R) MA-44 (A/T)
CVT fluid	NOTE (1)		I		I		I		I	MA-38 (RE0F08A) MA-39 (RE0F08B)

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	
Steering gear & linkage, axle & suspension parts					I				I	MA-48, PS-12
Tire rotation	NOTE (2)									MA-46
Front drive shaft boots			I		I		I		I	MA-49
Exhaust system					I				I	MA-37
In-cabin microfilter			R		R		R		R	MA-37

(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.

RECOMMENDED FLUIDS AND LUBRICANTS

Fluids and Lubricants

INFOID:0000000004305187

Description			Capacity (Approximate)			Recommended Fluids/Lubricants
			Liter	US measure	Imp measure	
Fuel			50.0	13 1/4 gal	11 gal	Unleaded gasoline with an octane rating of at least 87 AKI (RON 91)
Engine oil Drain and refil	With oil filter change	HR16DE	3.0	3 1/8 qt	2 5/8 qt	• Engine oil with API Certification Mark *1 • Viscosity SAE 5W-30
		MR18DE	4.1	4 3/8 qt	3 5/8 qt	
	Without oil filter change	HR16DE	2.8	3 qt	2 1/2 qt	
		MR18DE	3.9	4 1/8 qt	3 3/8 qt	
Dry engine (engine overhaul)		HR16DE	3.5	3 3/4 qt	3 1/8 qt	
		MR18DE	4.9	5 1/8 qt	4 3/8 qt	
Cooling system (with reservoir at max level)		HR16DE	6.3	6 5/8 qt	5 1/2 qt	Genuine NISSAN Long Life Anti-freeze Coolant or equivalent
		MR18DE	6.8	7 1/4 qt	6 qt	
Manual transaxle fluid (MTF)		5MT	2.6	5 1/2 pt	4 5/8 pt	Genuine NISSAN Manual Transmission Fluid (MTF) HQ Multi 75W-85 or API GL-4, Viscosity SAE 75W-85
		6MT	2.0	4 1/4 pt	3 1/2 pt	Genuine NISSAN gear oil (XT4447 M+) 75W-80, Genuine NISSAN gear oil (ETL8997B) 75W-80, or equivalent *2
Automatic transaxle fluid (ATF)			7.9	8 3/8 qt	7 qt	Genuine NISSAN Matic D ATF or equivalent (if available)
CVT fluid		RE0F08A	8.3	8 3/4 qt	7 1/4 qt	Genuine NISSAN CVT Fluid NS-2 *3
		RE0F08B	7.4	7 7/8 qt	6 1/2 qt	
Brake and clutch fluid			—	—	—	Genuine NISSAN Super Heavy Duty Brake Fluid*4 or equivalent DOT 3 (US FMVSS No. 116)
Multi-purpose grease			—	—	—	NLGI No. 2 (Lithium soap base)
Windshield washer fluid			4.5	4 3/4 qt	4 qt	Genuine NISSAN Windshield Washer Concentrate Cleaner & Anti-Freeze or equivalent
Air conditioning system refrigerant			0.45 ± 0.05 kg	0.99 ± 0.11 lb	0.99 ± 0.11 lb	HFC-134a (R-134a) *5
Air conditioning system oil		Type 1	120 m	4.1 fl oz	4.2 fl oz	NISSAN A/C System Lubricant Type R or equivalent *5
		Type 2	100 m	3.4 fl oz	3.5 fl oz	NISSAN A/C System Lubricant Type S or equivalent *5

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

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

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

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

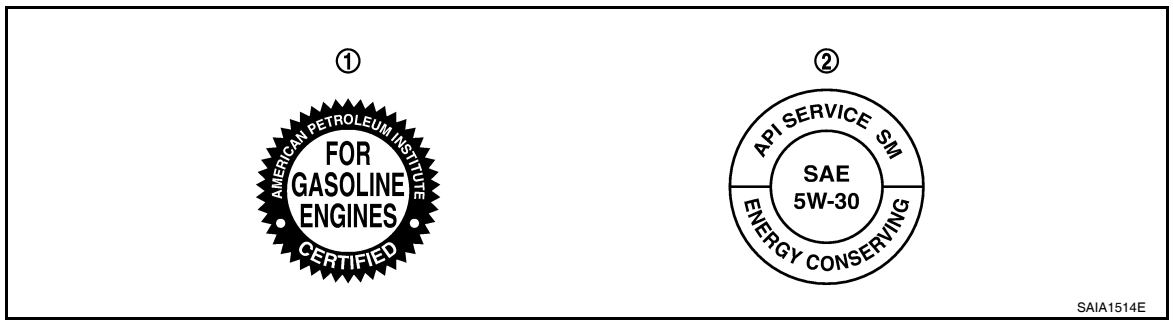
*5: For further details, see “Air conditioner specification label”.

SAE Viscosity Number

INFOID:0000000004305188

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 Lubrication Standardization and Approval Committee (ILSAC) certification and SAE viscosity standard. These oils

have the API certification mark on the front of the container. Oils which do not have the specified quality label should not be used as they could cause engine damage.



1. API certification mark
2. API service symbol

Anti-freeze Coolant Mixture Ratio

INFOID:0000000004305189

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

For outside temperatures down to:		Genuine NISSAN Anti-freeze Coolant or equivalent	Demineralized water or distilled water
°C	°F		
-35	-30	50%	50%

CAUTION:

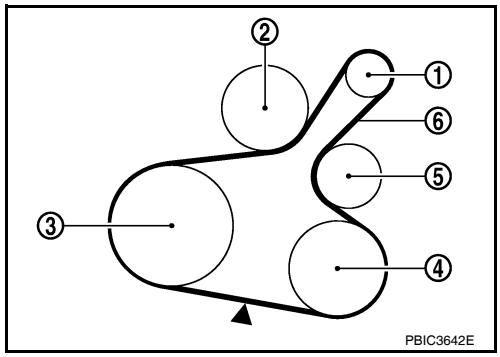
- **When adding or replacing coolant, be sure to use only a Genuine NISSAN Long Life Anti-Freeze coolant or equivalent with the proper mixture ratio.**
- **The use of other types of coolant solutions may damage the engine cooling system.**

ENGINE MAINTENANCE (HR16DE)
DRIVE BELT
DRIVE BELT : Checking

INFOID:0000000004806005

- Inspection should be done only when engine is cold or over 30 minutes after the engine is stopped.

1 : Generator
2 : Water pump
3 : Crankshaft pulley
4 : A/C compressor (with A/C models)
: Idler pulley (without A/C models)
5 : Idler pulley
6 : Drive belt



- Visually check belts for wear, damage, and cracks on inside and edges.
- Turn crankshaft pulley two time clockwise, and make sure tension on all pulleys is equal before doing the test.
- When measuring deflection, apply 98 N (10 kg, 22 lb) at the (■) marked point.
- Measure the belt tension and frequency with acoustic tension gauge at the (■) marked point.

CAUTION:
- **When the tension and frequency are measured, the acoustic tension gauge should be used.**
- **When checking immediately after installation, first adjust it to the specified value. Then, after turning crankshaft two turns or more, re-adjust to the specified value to avoid variation in deflection between pulleys.**

Belt Deflection / Belt Tension and Frequency : Refer to EM-116, "Drive Belts".

DRIVE BELT : Tension Adjustment

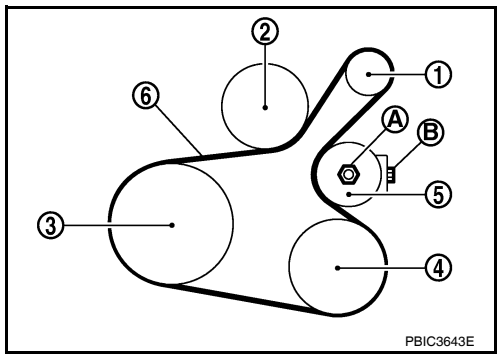
INFOID:0000000004806006

Location	Location of adjuster and tightening method
Drive belt	Adjusting bolt on idler pulley

CAUTION:
- **When belt is replaced with new one, adjust belt tension to the value for “New belt”, because new belt will not fully seat in the pulley groove.**
- **When tension of the belt being used exceeds “Limit”, adjust it to the value for “After adjusted”.**
- **When installing a belt, make sure it is correctly engaged with the pulley groove.**
- **Never allow oil or engine coolant to get on the belt.**
- **Never twist or bend the belt strongly.**

1. Loosen the idler pulley lock nut (A) from the tightening position with the specified torque by 45 degrees.

1 : Generator
2 : Water pump
3 : Crankshaft pulley
4 : A/C compressor (with A/C models)
: Idler pulley (without A/C models)
5 : Idler pulley
6 : Drive belt
A : Idler pulley lock nut
B : Adjusting bolt



CAUTION:

- **When the lock nut is loosened excessively, the idler pulley tilts and the correct tension adjustment cannot be performed. Never loosen it excessively (more than 45 degrees).**
- **Put a matching mark on the lock nut, and check turning angle with a protractor. Never visually check the tightening angle.**

2. Adjust the belt tension by turning the adjusting bolt.

CAUTION:
- **When checking immediately after installation, first adjust it to the specified value. Then, after turning crankshaft two turns or more, re-adjust to the specified value to avoid variation in deflection between pulleys.**
- **When the tension adjustment is performed, the lock nut should be in the condition at step“2”. If the tension adjustment is performed when the lock nut is loosened more than the standard, the idler pulley tilts and the correct tension adjustment cannot be performed.**

3. Tighten the idler pulley lock nut.

Idler pulley lock nut : 34.8 N·m (3.5 kg-m, 26 ft-lb)

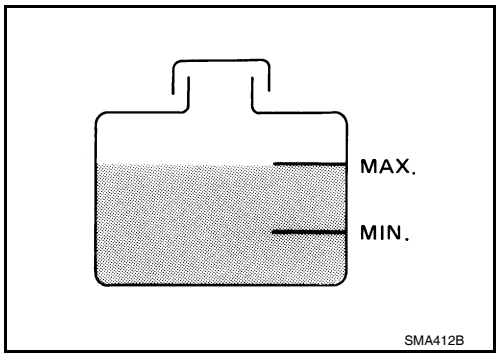
ENGINE COOLANT

ENGINE COOLANT : Inspection

INFOID:0000000004806014

LEVEL CHECK

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

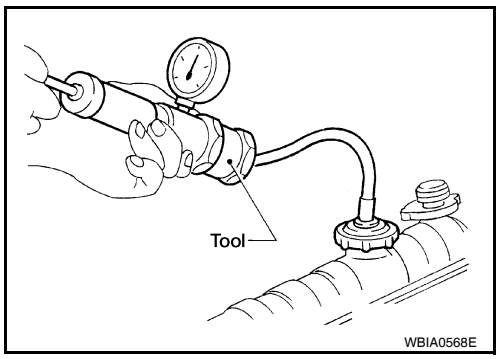


CHECKING COOLING SYSTEM FOR LEAKS

To check for leaks, apply pressure to the cooling system using suitable tool and 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.

ENGINE COOLANT : Changing Engine Coolant

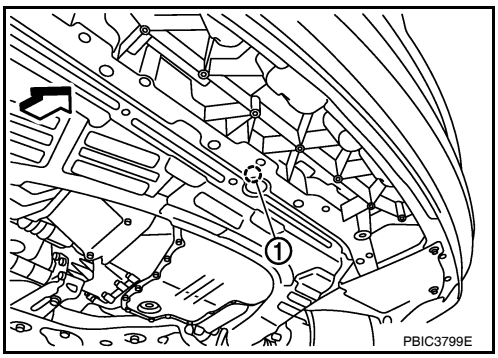
INFOID:0000000004806015

WARNING:
- **To avoid being scalded, do not change engine coolant when engine is hot.**
- **Wrap a thick cloth around radiator cap and carefully remove the cap. First, turn the cap a quarter of a turn to release built-up pressure. Then turn the cap all the way.**

CAUTION:
- **Do not spill engine coolant on drive belt.**

DRAINING ENGINE COOLANT

1. Open radiator drain plug (1) at the bottom of radiator, and then remove radiator cap.
   • Front
   When draining all of engine coolant in the system, open water drain plug on cylinder block. Refer to EM-96.
   CAUTION:
   • Perform this step when engine is cold.
   • Do not spill engine coolant on drive belt.



2. Remove reservoir tank as necessary, and drain engine coolant and clean reservoir tank before installing. Refer to CO-16, "Component".
3. Check drained engine coolant for contaminants such as rust, corrosion or discoloration.
   If contaminated, flush the engine cooling system.

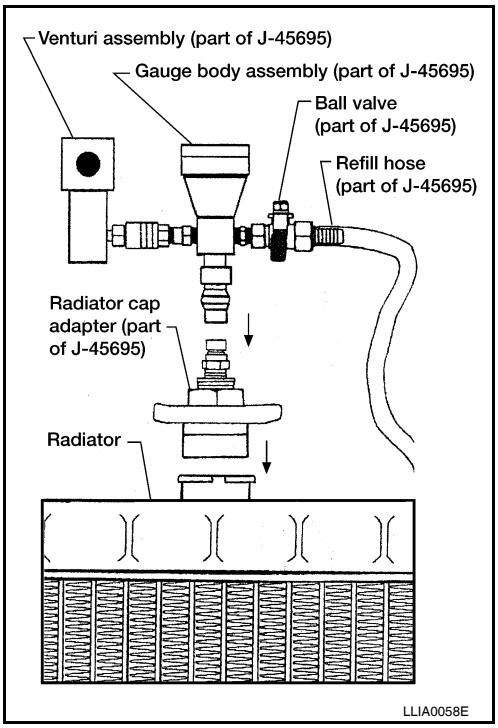
REFILLING ENGINE COOLANT

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

   Radiator drain plug : Refer to CO-16, "Component".
   Cylinder block drain plug : Refer to EM-96, "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 Long Life Anti-freeze coolant or equivalent, mixed with distilled water or demineralized water.
   Refer to MA-15, "Anti-freeze Coolant Mixture Ratio".

   Engine coolant capacity (with reservoir tank) : Refer to MA-14, "Fluids and Lubricants".

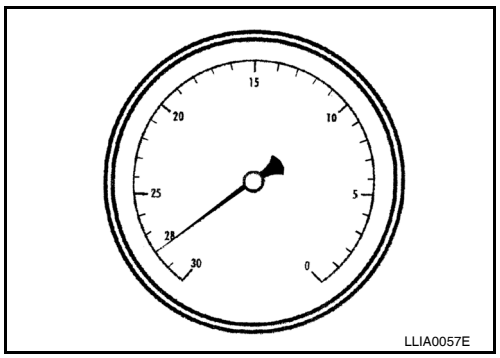
6. Install an air hose to the venturi assembly, the air pressure must be within specification.

   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



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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. Install reservoir tank if removed. Refer to CO-16, "Component".
2. Install radiator drain plug.
   - **If water drain plug on cylinder block is removed, close and tighten it. Refer to EM-96, "Disassembly and Assembly".**

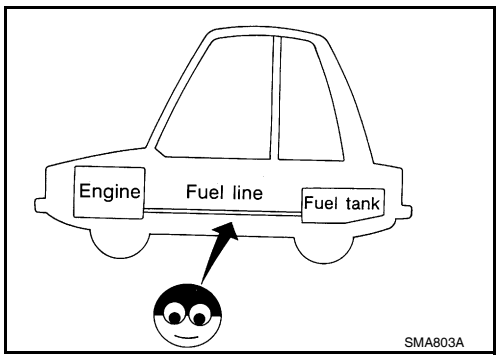
   CAUTION:
   Be sure to clean radiator drain plug and install with new O-ring. Refer to CO-16, "Component".
3. Fill radiator and reservoir tank with water and reinstall radiator cap.
4. Run engine and warm it up to normal operating temperature.
5. Rev engine two or three times under no-load.
6. Stop engine and wait until it cools down.
7. Drain water from the cooling system.
8. Repeat steps 1 through 7 until clear water begins to drain from radiator.

FUEL LINES

FUEL LINES : Checking Fuel Line

INFOID:0000000004803414

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.



SMA803A

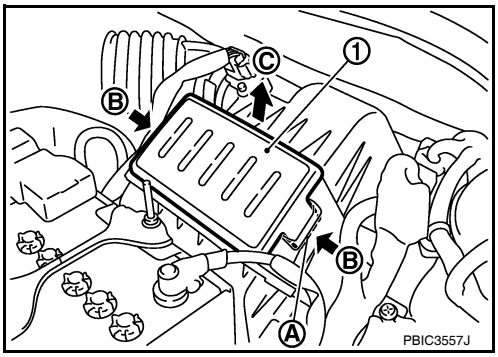
AIR CLEANER FILTER

AIR CLEANER FILTER : Removal and Installation

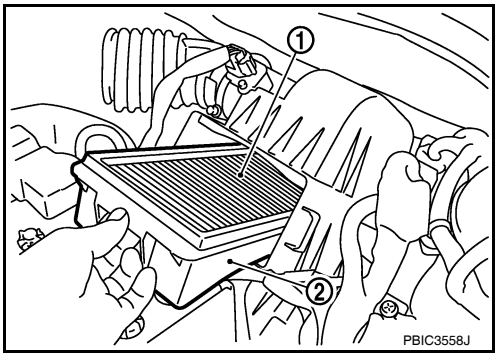
INFOID:0000000004806007

REMOVAL

1. Push the tabs (A) of both ends of the air cleaner cover (1) into the inside (B).
2. Pull up the air cleaner cover (1) and remove it (C).



3. Remove air cleaner filter (1) and holder (2) assembly from the air cleaner case.
4. Remove the air cleaner filter (1) from the holder (2).



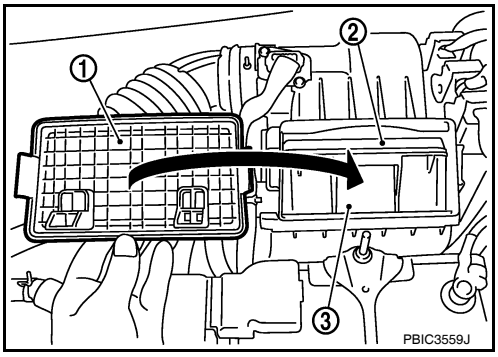
INSPECTION AFTER REMOVAL

It is necessary to replace the air cleaner filter at the recommended intervals, more often under dusty driving conditions. Refer to MA-9, "Introduction of Periodic Maintenance".

INSTALLATION

Installation is in the reverse order of removal.

- Install the air cleaner cover (1) in the direction shown.
- Air cleaner filter (2)
- Holder (3)



ENGINE OIL

ENGINE OIL : Inspection

INFOID:0000000004806010

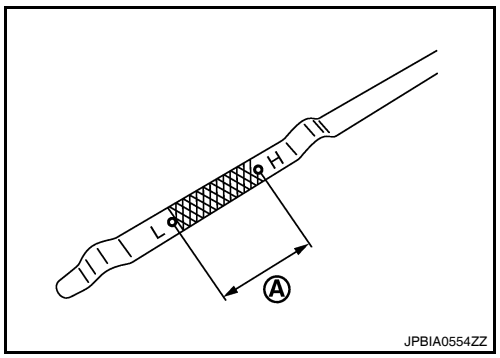
ENGINE OIL LEVEL

NOTE:

Park vehicle on a level surface, wait 10 minutes and check the engine oil level.

1. Pull out oil level gauge and wipe it clean.

2. Insert oil level gauge and make sure the engine oil level is within the range (A) shown.
3. If it is out of range, adjust it.



ENGINE OIL APPEARANCE

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

ENGINE OIL LEAKAGE

Check for engine oil leakage around the following areas:

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

OIL PRESSURE CHECK

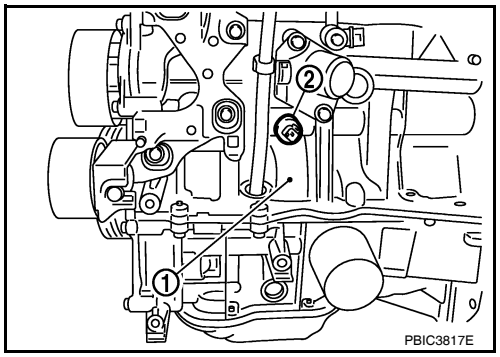
WARNING:

- **Be careful not to burn yourself, as engine oil may be hot.**
- **For engine oil pressure check the transaxle should be in " Park position" (A/T models) or "Neutral position" (M/T models), and apply the parking brake securely.**

1. Check engine oil level.
2. Disconnect harness connector at oil pressure switch (2), and remove oil pressure switch (2) from the cylinder block (1) using suitable tool.

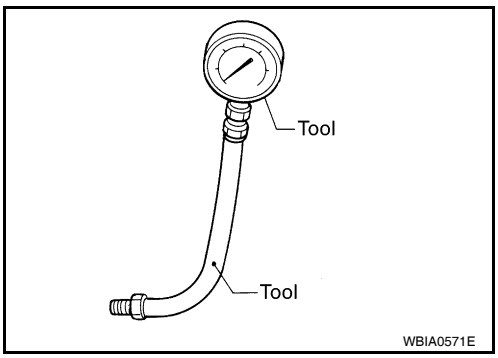
   CAUTION:

   Never drop or shock oil pressure switch.



3. Install oil pressure gauge and hose.

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



4. Start engine and warm it up to normal operating temperature.
5. Check oil pressure with engine running under no-load. Refer to LU-10, "Engine Oil Pressure".
If difference is extreme, check oil passage and oil pump for oil leaks.
NOTE:
When engine oil temperature is low, engine oil pressure becomes high.
6. After the inspections, install oil pressure switch as follows:

a. Remove old liquid gasket adhering to oil pressure switch and engine.
b. Apply liquid gasket and tighten oil pressure switch to specification.
Use Genuine Silicone RTV Sealant or equivalent. Refer to GI-42, "Recommended Chemical Product and Sealant".

Oil pressure switch : Refer to EM-95, "Exploded View".

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

ENGINE OIL : Draining

INFOID:0000000004806011

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

1. Warm up the engine, park vehicle on a level surface and check for engine oil leakage from engine components. Refer to MA-20, "ENGINE OIL : Inspection".
2. Stop the engine and wait for 10 minutes.
3. Loosen oil filler cap.
4. Remove drain plug and then drain engine oil.

ENGINE OIL : Refilling

INFOID:0000000004806012

1. Install drain plug with new washer. Refer to EM-39, "Exploded View".
CAUTION:
Be sure to clean drain plug and install with new washer.
2. Refill with new engine oil.
Engine oil specification and viscosity: Refer to MA-14, "Fluids and Lubricants".
CAUTION:
- **The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.**
- **Always use oil level gauge to determine the proper amount of engine oil in the engine.**
3. Warm up engine and check area around drain plug and oil filter for engine oil leakage.
4. Stop engine and wait for 10 minutes.
5. Check the engine oil level. Refer to MA-20, "ENGINE OIL : Inspection".

OIL FILTER

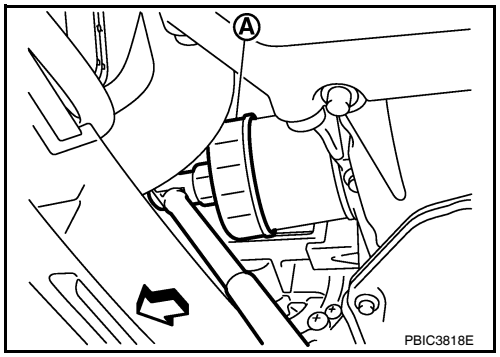
OIL FILTER : Removal and Installation

INFOID:0000000004806013

REMOVAL

1. Remove oil filter using Tool (A).
   - : Front

Tool number : KV10115801 (J-38956)

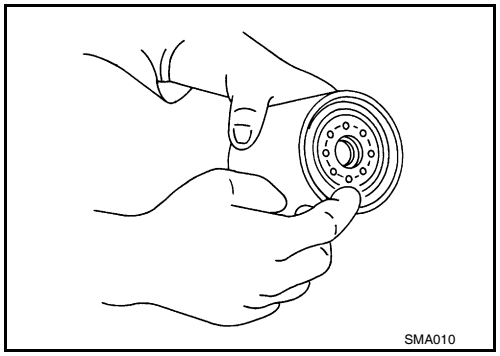


WARNING:
- **Be careful not to get burned when engine and engine oil may be hot.**

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

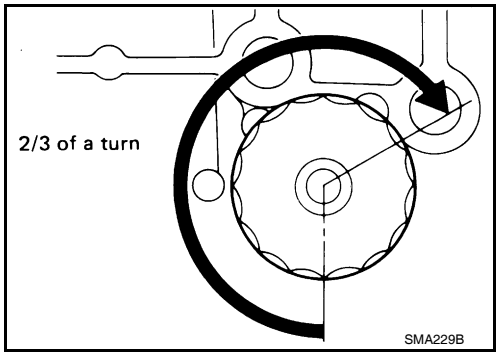
INSTALLATION

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



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

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



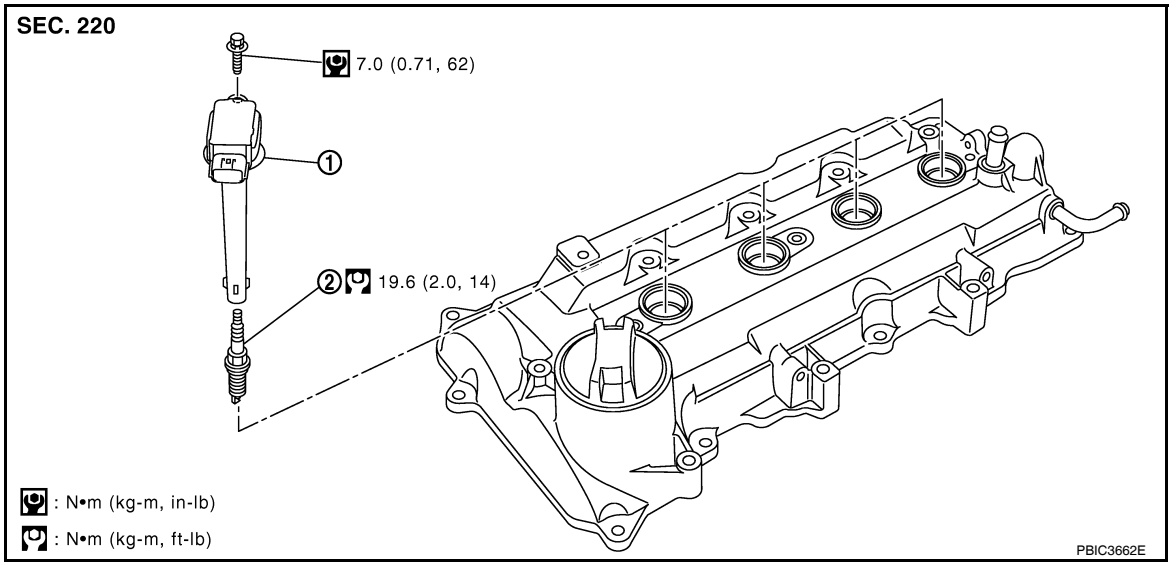
INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to MA-20, "ENGINE OIL : Inspection".
2. Start engine, and make sure there are no leaks of engine oil.
3. Stop engine and wait for 10 minutes.
4. Check the engine oil level and adjust as necessary. Refer to MA-20, "ENGINE OIL : Inspection".

SPARK PLUG (HR16DE)

SPARK PLUG (HR16DE) : Exploded View

INFOID:0000000004806008



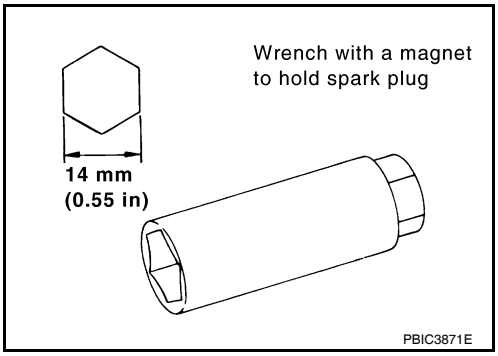
1. Ignition coil
2. Spark plug

SPARK PLUG (HR16DE) : Removal and Installation

INFOID:0000000004806009

REMOVAL

1. Remove intake manifold. Refer to EM-28, "Removal and Installation".
2. Remove ignition coil. Refer to EM-46, "Removal and Installation".
3. Remove spark plug with a suitable tool.

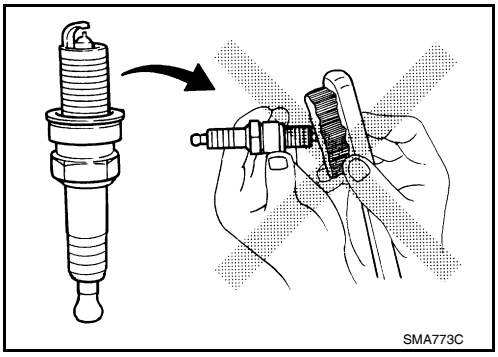


INSPECTION AFTER REMOVAL

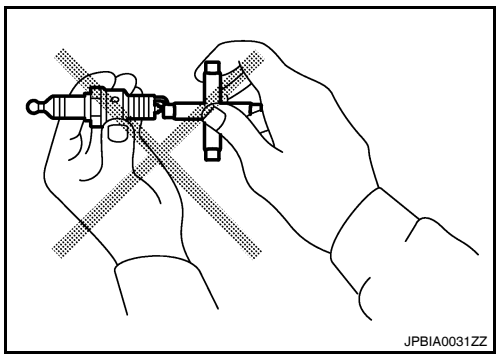
CAUTION:

- **Never drop or shock spark plug.**
- **Never use a wire brush for cleaning.**
- **If plug tip is covered with carbon, spark plug cleaner may be used.**

Cleaner air pressure:	**Less than 588 kPa (6 kg/cm^2, 85 psi)**
Cleaning time:	**Less than 20 seconds**



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

Installation is in the reverse order of removal.

Make	**: Denso**
Part number	**: FXE20HE-11**
Gap (nominal)	**: 1.1 mm (0.043 in)**

EVAP VAPOR LINES

EVAP VAPOR LINES : Checking EVAP Vapor Line

INFOID:0000000004803420

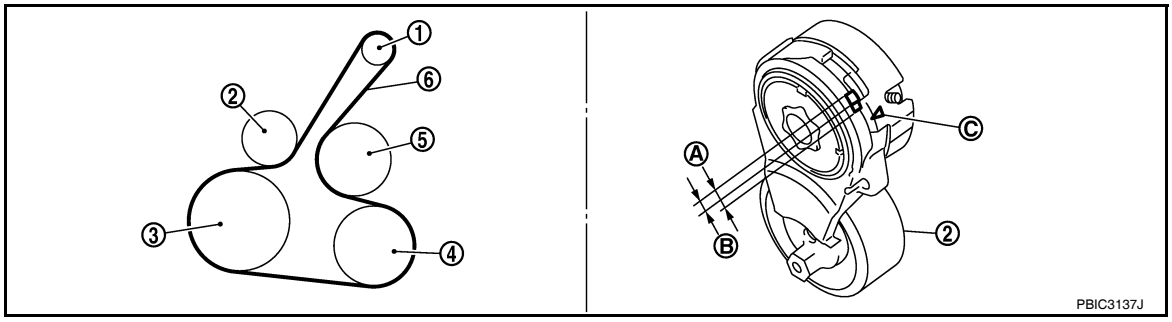
1. Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration.
2. Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc.
   Refer to EC-74, "System Diagram".

ENGINE MAINTENANCE (MR18DE)

DRIVE BELT

DRIVE BELT : Component

INFOID:0000000004683270



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

DRIVE BELT : Checking Drive Belts

INFOID:0000000004683271

WARNING:

Be sure to perform this step when the engine is stopped.

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

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

DRIVE BELT : Tension Adjustment

INFOID:0000000004683272

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

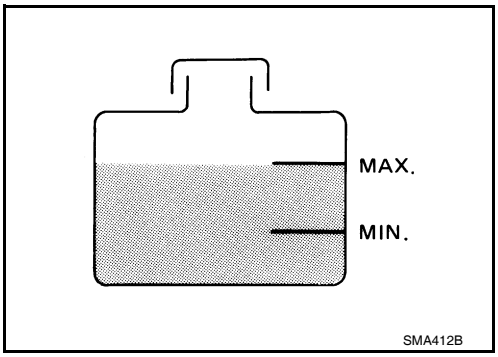
ENGINE COOLANT

ENGINE COOLANT : Inspection

INFOID:0000000004683273

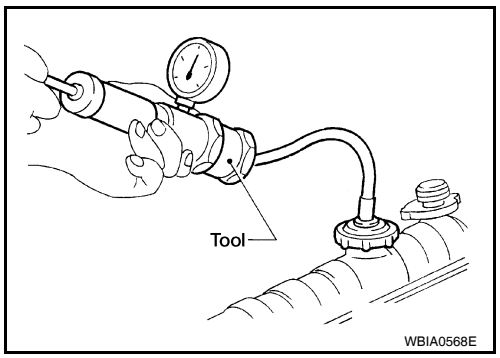
LEVEL CHECK

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



CHECKING COOLING SYSTEM FOR LEAKS

To check for leaks, apply pressure to the cooling system using suitable tool and 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.

ENGINE COOLANT : Changing Engine Coolant

INFOID:0000000004683274

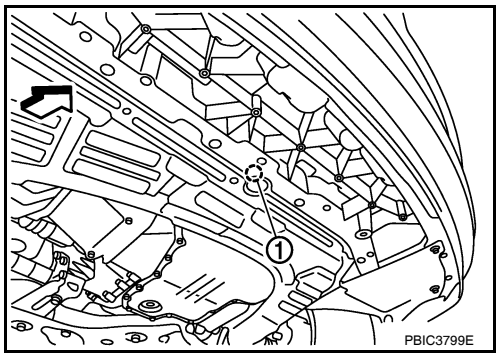
WARNING:
- **To avoid being scalded, do not change engine coolant when engine is hot.**
- **Wrap a thick cloth around radiator cap and carefully remove the cap. First, turn the cap a quarter of a turn to release built-up pressure. Then turn the cap all the way.**

CAUTION:
- **Do not spill engine coolant on drive belt.**

DRAINING ENGINE COOLANT

1. Open radiator drain plug (1) at the bottom of radiator, and then remove radiator cap.
   - Front

   When draining all of engine coolant in the system, open water drain plug on cylinder block. Refer to EM-200.
   CAUTION:
   - **Perform this step when engine is cold.**
   - **Do not spill engine coolant on drive belt.**



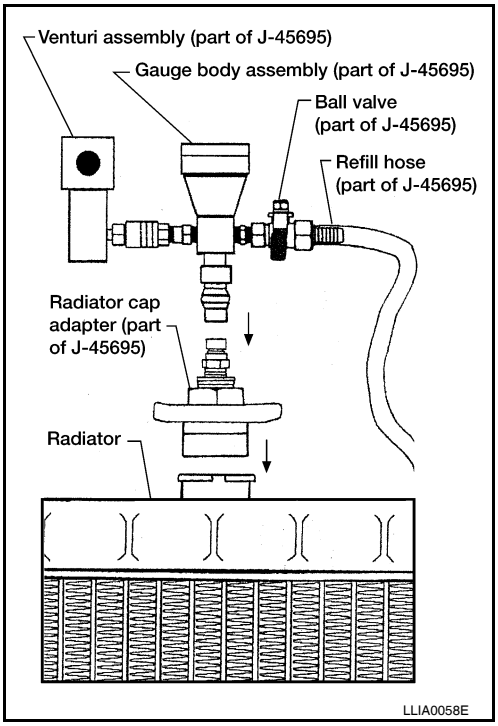
2. Remove reservoir tank as necessary, and drain engine coolant and clean reservoir tank before installing. Refer to CO-38, "Component".
3. Check drained engine coolant for contaminants such as rust, corrosion or discoloration.
   If contaminated, flush the engine cooling system.

REFILLING ENGINE COOLANT

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

   Radiator drain plug : Refer to CO-38, "Component".
   Cylinder block drain plug : Refer to EM-200, "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 Long Life Anti-freeze coolant or equivalent, mixed with distilled water or demineralized water.**

   Refer to MA-15, "Anti-freeze Coolant Mixture Ratio".

Engine coolant capacity (with reservoir tank) : Refer to MA-14, "Fluids and Lubricants".

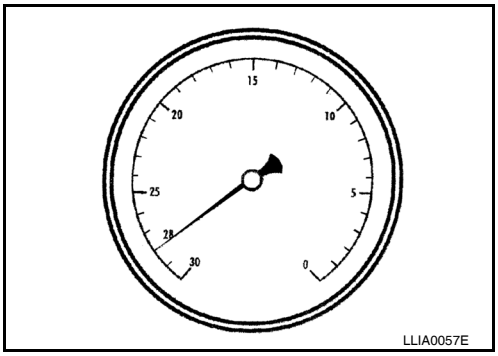
6. Install an air hose to the venturi assembly, the air pressure must be within specification.

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. Install reservoir tank if removed. Refer to CO-38, "Component".
2. Install radiator drain plug.
   - **If water drain plug on cylinder block is removed, close and tighten it. Refer to EM-200, "Disassembly and Assembly".**

CAUTION:
Be sure to clean radiator drain plug and install with new O-ring. Refer to CO-38, "Component".

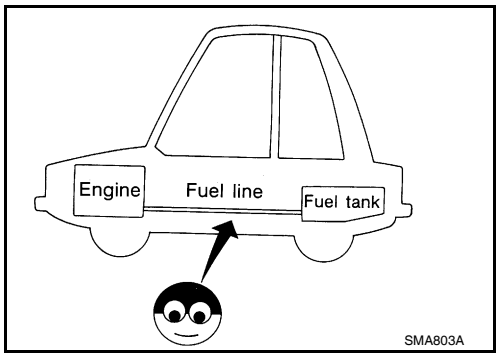
3. Fill radiator and reservoir tank with water and reinstall radiator cap.
4. Run engine and warm it up to normal operating temperature.
5. Rev engine two or three times under no-load.
6. Stop engine and wait until it cools down.
7. Drain water from the cooling system.
8. Repeat steps 1 through 7 until clear water begins to drain from radiator.

FUEL LINES

FUEL LINES : Checking Fuel Line

INFOID:0000000004683691

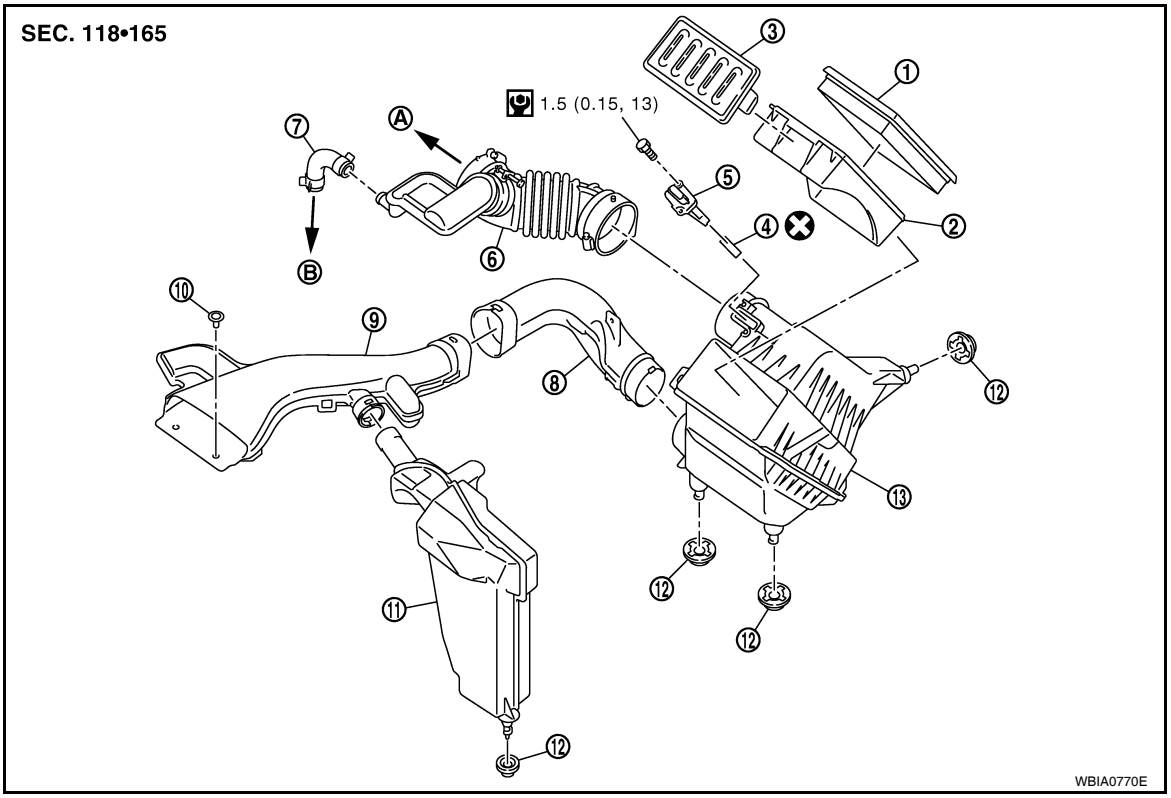
Inspect fuel lines, fuel filler cap and fuel tank for improper attachment, leaks, cracks, damage, loose connections, chafing or deterioration.
If necessary, repair or replace damaged parts.



AIR CLEANER FILTER

AIR CLEANER FILTER : Component

INFOID:0000000004683692



1. Air cleaner filter
2. Holder
3. Air cleaner cover
4. Seal
5. Mass air flow sensor
6. Air duct
7. PCV hose
8. Air duct (Inlet)
9. Air duct (Front)

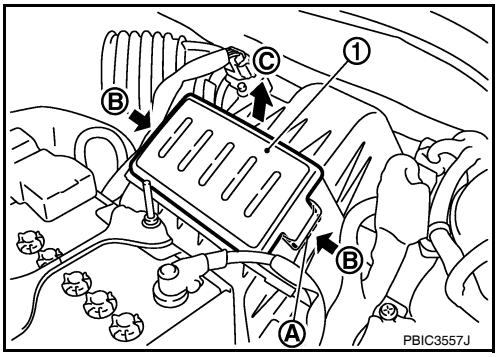
10. Clip
11. Resonator
12. Grommet
13. Air cleaner case
A. To electric throttle control actuator
B. To rocker cover

AIR CLEANER FILTER : Changing Air Cleaner Filter

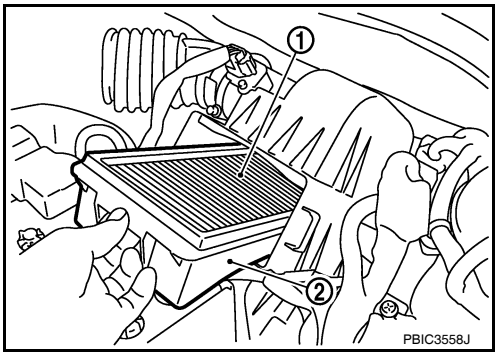
INFOID:0000000004685431

REMOVAL

1. Push the tabs (A) of both ends of the air cleaner cover (1) into the inside (B).
2. Pull up the air cleaner cover forward (C) and remove it.



3. Remove the air cleaner filter (1) and holder (2) assembly from the air cleaner case.
4. Remove the air cleaner filter (1) from the holder (2).



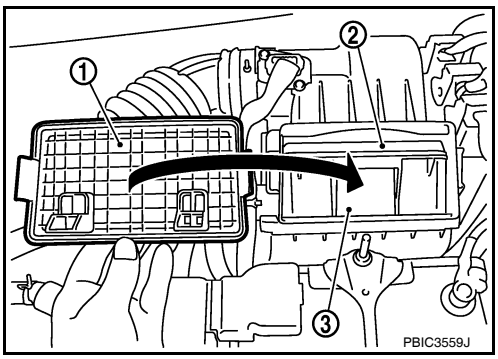
INSPECTION AFTER REMOVAL

It is necessary to replace it at the recommended intervals, more often under dusty driving conditions. Refer to MA-9.

INSTALLATION

Installation is in the reverse order of removal.

- Install the air cleaner cover (1) in the direction shown.
- Air cleaner filter (2)
- Holder (3)



ENGINE OIL

ENGINE OIL : Inspection

INFOID:0000000004683694

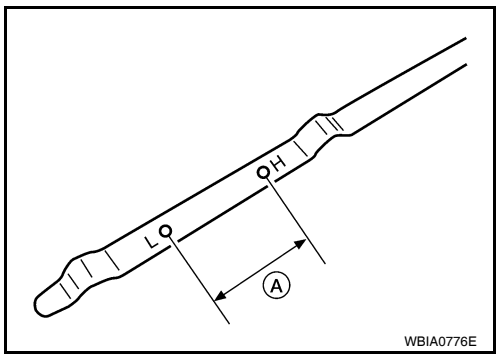
ENGINE OIL LEVEL

NOTE:

Park vehicle on a level surface, wait 10 minutes and check the engine oil level.

1. Pull out oil level gauge and wipe it clean.

2. Insert oil level gauge and make sure the engine oil level is within the range (A) as shown.
3. If it is out of range, adjust it.



ENGINE OIL APPEARANCE

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

ENGINE OIL LEAKAGE

Check for engine oil leakage around the following areas:

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

OIL PRESSURE CHECK

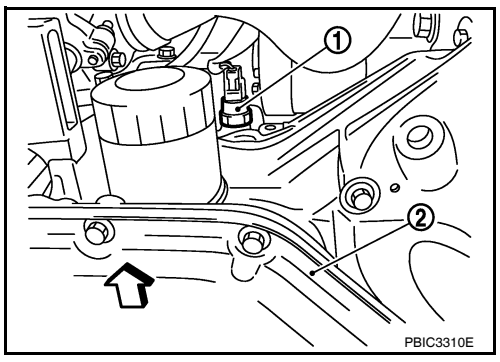
WARNING:

- **Be careful not to burn yourself, as engine oil may be hot.**
- **For engine oil pressure check the transaxle should be in " Park position" (A/T models) and (CVT models) or "Neutral position" (M/T models), and apply the parking brake securely.**

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

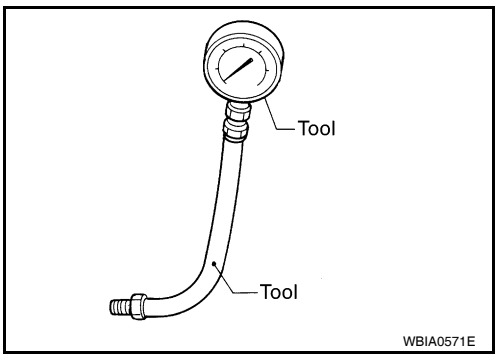
   CAUTION:

   Do not drop or shock oil pressure switch.



4. Install oil pressure gauge and hose.

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



5. Start engine and warm it up to normal operating temperature.
6. Check oil pressure with engine running under no-load. Refer to LU-22, "Standard and Limit".
If difference is extreme, check oil passage and oil pump for oil leaks.
NOTE:
When engine oil temperature is low, engine oil pressure becomes high.
7. After the inspections, install oil pressure switch as follows:

a. Remove old liquid gasket adhering to oil pressure switch and engine.
b. Apply liquid gasket and tighten oil pressure switch to specification.
Use Genuine Silicone RTV Sealant or equivalent. Refer to GI-42, "Recommended Chemical Product and Sealant".

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

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

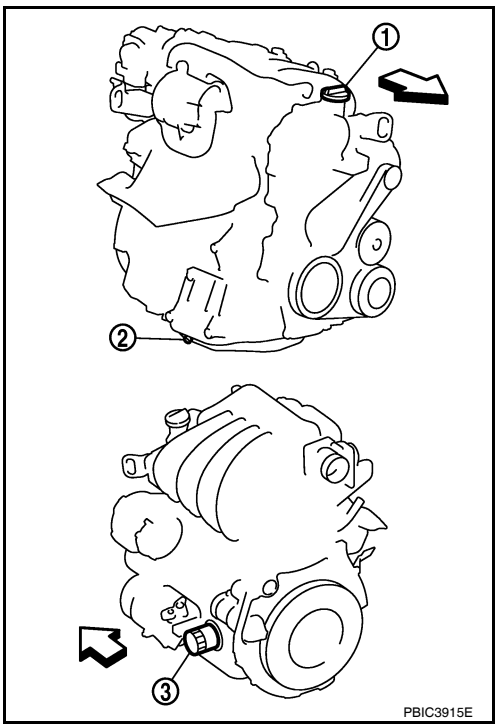
ENGINE OIL : Changing Engine Oil

INFOID:0000000004683695

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

1. Warm up the engine, park vehicle on a level surface and check for engine oil leakage from engine components. Refer to MA-30, "ENGINE OIL : Inspection".
2. Stop the engine and wait for 10 minutes.

3. Loosen oil filler cap (1) and then remove drain plug (2).
   - Oil filter (3)
   - : Engine front
4. Drain engine oil.
5. Install drain plug (2) with new washer. Refer to EM-147, "Component".
   CAUTION:
   Be sure to clean drain plug (2) and install with new washer.
6. Refill with new engine oil.
   Refer to MA-14.
   CAUTION:
   - **The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.**
   - **Always use oil level gauge to determine the proper amount of engine oil in the engine.**
7. Warm up engine and check area around drain plug (2) and oil filter (3) for engine oil leakage.
8. Stop engine and wait for 10 minutes.
9. Check the engine oil level. Refer to MA-30, "ENGINE OIL : Inspection".



OIL FILTER

OIL FILTER : Removal and Installation

INFOID:0000000004683696

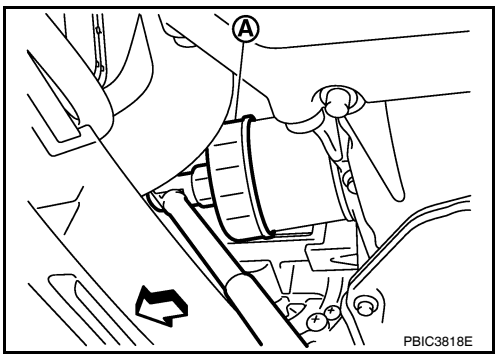
REMOVAL

1. Remove oil filter using Tool (A).
   - : Front

   Tool number : KV10115801 (J-38956)

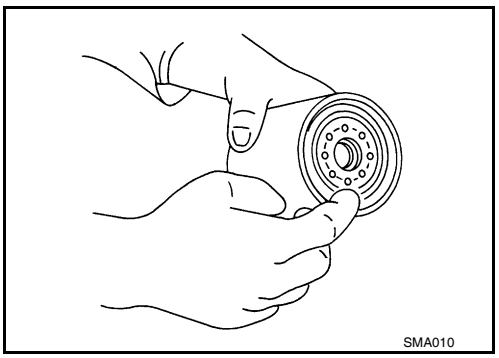
   WARNING:
   - **Be careful not to get burned when engine and engine oil may be hot.**

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



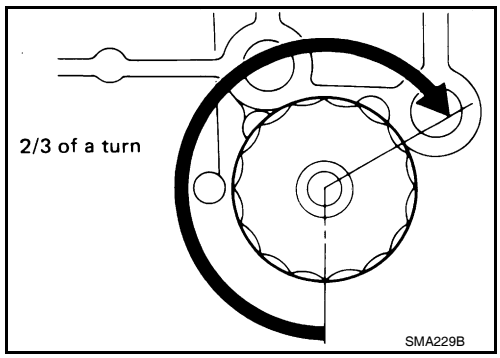
INSTALLATION

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



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

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



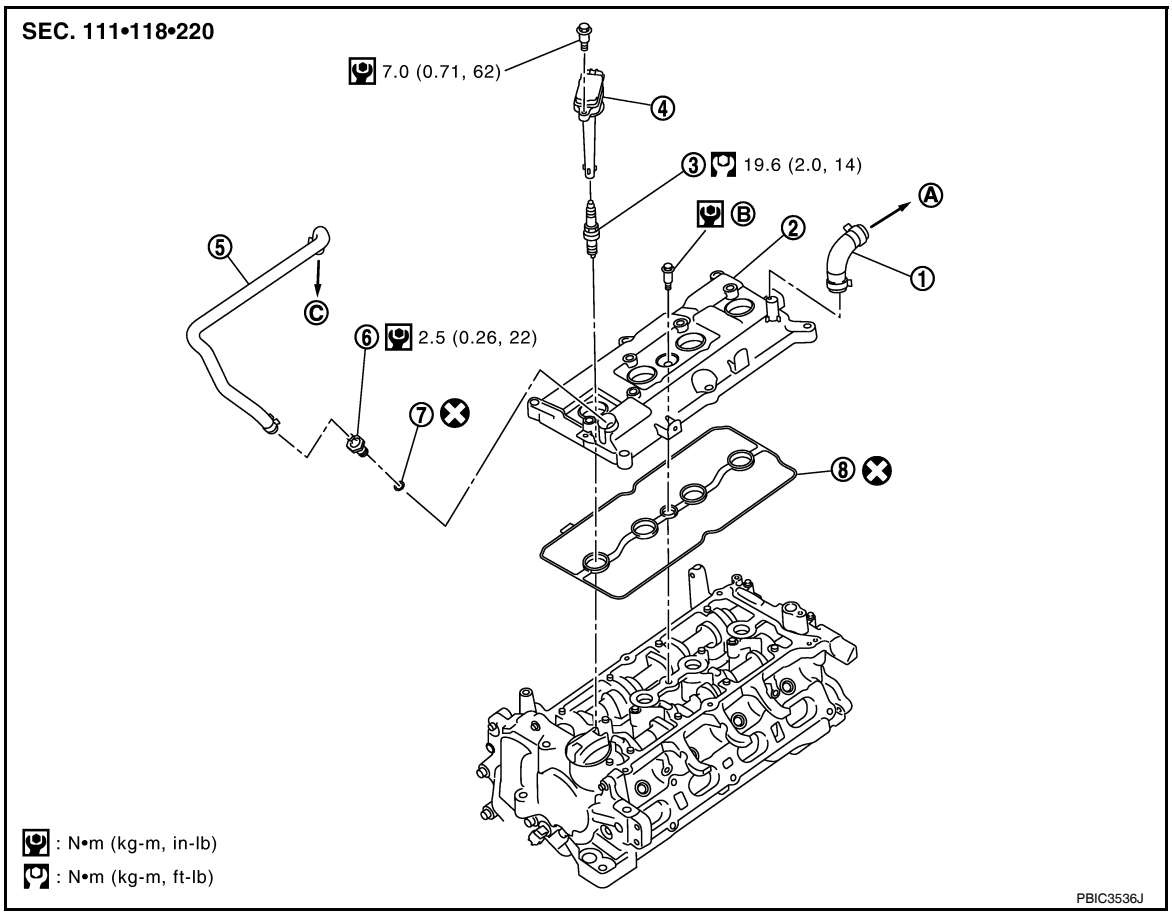
INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to MA-30, "ENGINE OIL : Inspection".
2. Start engine, and make sure there are no leaks of engine oil.
3. Stop engine and wait for 10 minutes.
4. Check the engine oil level and adjust as necessary. Refer to MA-30, "ENGINE OIL : Inspection".

SPARK PLUG

SPARK PLUG : Component

INFOID:0000000004683697



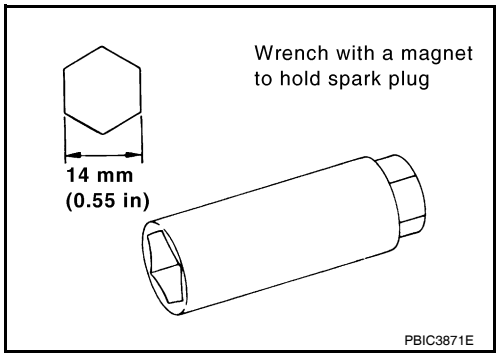
1. PCV hose
2. Rocker cover
3. Spark plug
4. Ignition coil
5. PCV hose
6. PCV valve
7. O-ring
8. Gasket
A. To air duct
B. Refer to MA-35.
C. To intake manifold

SPARK PLUG : Removal and Installation

INFOID:0000000004683698

REMOVAL

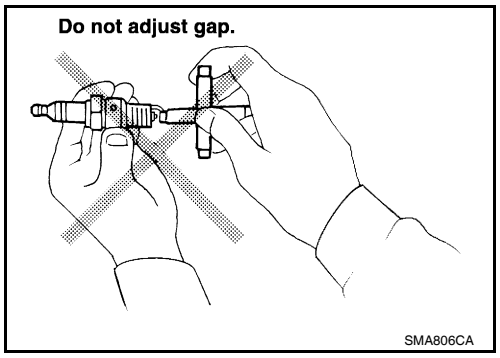
1. Remove spark plug using suitable tool.
   CAUTION:
   Never drop or shock it.



INSPECTION AFTER REMOVAL

CAUTION:

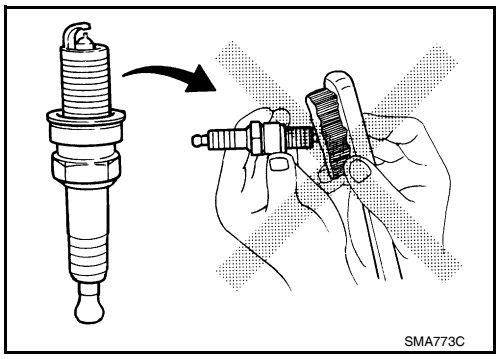
- **Never drop or shock spark plug.**
- **Checking and adjusting spark plug gap is not required between change intervals.**



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

Cleaner air pressure	**: Less than 588 kPa (5.88 bar, 6 kg/cm^2, 85 psi)**
Cleaning time	**: Less than 20 seconds**

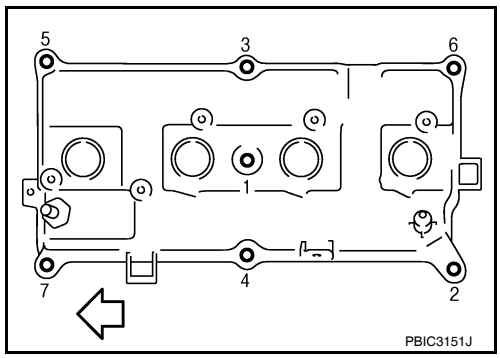
- **Never use wire brush for cleaning spark plug.**



INSTALLATION

1. Install rocker cover gasket to rocker cover.

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



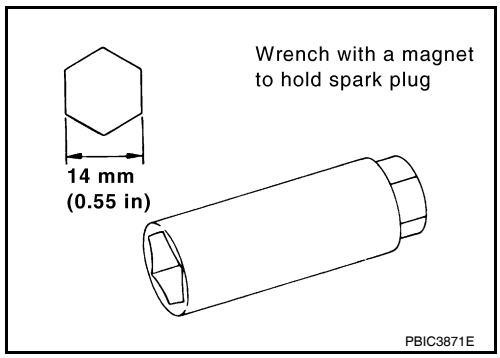
1st step : 1.96 N·m (0.20 kg-m, 17 in-lb)
2nd step : 8.33 N·m (0.85 kg-m, 73 in-lb)

   - Engine front

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

3. Install spark plug using suitable tool.

Make : DENSO
Part number : FXE20HR11
Gap (nominal) : 1.1 mm (0.043 in)



CAUTION:
Never drop or shock it.

4. Install ignition coil.

CAUTION:
- **Handle it carefully and avoid impacts.**
- **Never disassemble.**

5. Install intake manifold. Refer to EM-141.

EVAP VAPOR LINES

EVAP VAPOR LINES : Checking EVAP Vapor Line

INFOID:0000000004305200

1. Visually inspect EVAP vapor lines for improper attachment and for cracks, damage, loose connections, chafing and deterioration.
2. Inspect fuel tank filler cap vacuum relief valve for clogging, sticking, etc.
   Refer to EC-529, "Component Inspection".

CHASSIS AND BODY MAINTENANCE

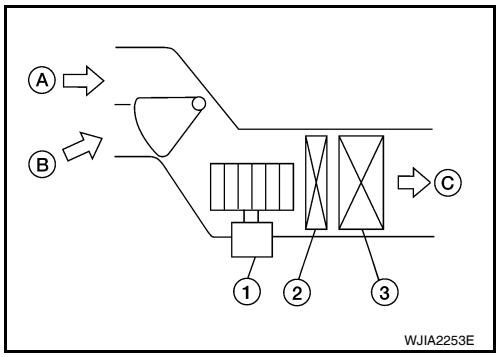
IN-CABIN MICROFILTER

IN-CABIN MICROFILTER : Removal and Installation

INFOID:0000000004683699

FUNCTION

The fresh air (A) and the recirculated air (B) drawn inside the passenger compartment by the blower fan (1) is kept clean (C) on either mode by the air conditioner filter (2), located before the evaporator (3), in the A/C unit assembly.



REPLACEMENT TIMING

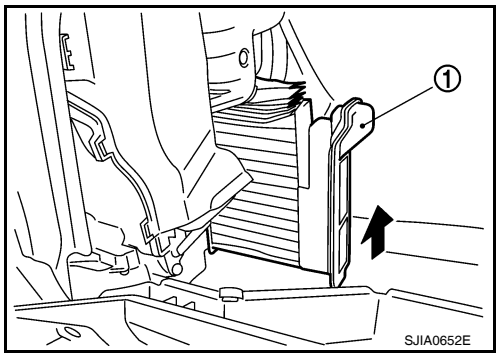
Replace the air conditioner filter according to the maintenance schedules. Refer to MA-9.

NOTE:

The air conditioner filter caution label is located inside the glove box door.

REPLACEMENT PROCEDURES

1. Remove the glove box assembly. Refer to IP-11.
2. Compress the air conditioner filter (1) downward while sliding it to the RH side of the vehicle to release the upper pawl.
3. Move the bottom of air conditioner filter (1) upward as shown to release the bottom tab, then remove it.



4. Replace the air conditioner filter with new one and install the new filter in the A/C unit assembly.
   CAUTION:
   Make sure that the air conditioner filter lower tab is fully seated, and that the air conditioner upper pawl is locked into place securing the new filter into the A/C unit assembly.
5. Install the glove box assembly. Refer to IP-11.

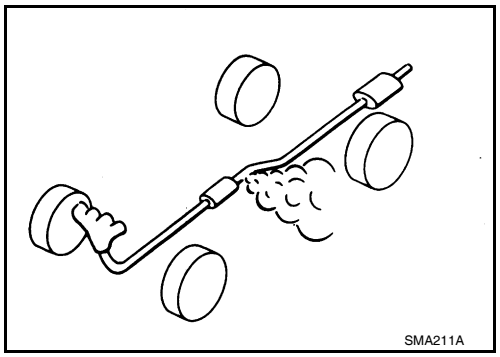
EXHAUST SYSTEM

EXHAUST SYSTEM : Checking Exhaust System

INFOID:0000000004683700

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

- If necessary, repair or replace damaged parts.



CVT FLUID

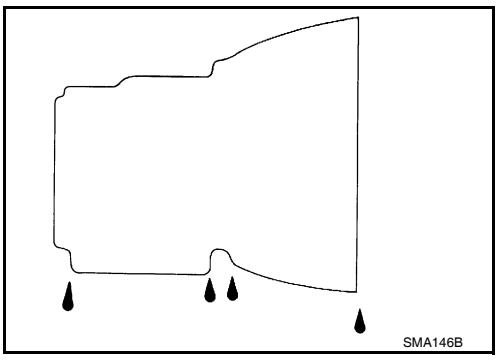
CVT FLUID : Checking CVT Fluid (RE0F08A)

INFOID:0000000004803426

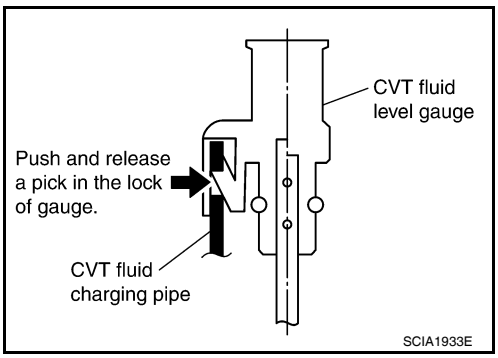
FLUID LEVEL CHECK

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

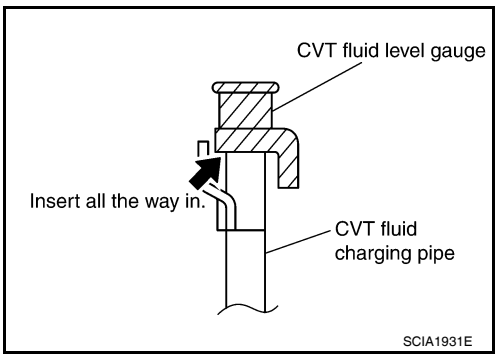
1. Check for fluid leakage.
2. With the engine warmed up, drive the vehicle to warm up the CVT fluid. When ambient temperature is 20°C (68°F), it takes about 10 minutes for the CVT fluid to warm up to 50° to 80°C (122° to 176°F).
3. Park the vehicle on a level surface and set the parking brake.
4. With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



5. Press the tab on the CVT fluid level gauge to release the lock and pull out the CVT fluid level gauge from the CVT fluid charging pipe.



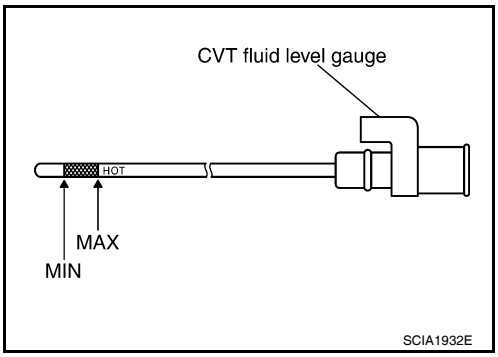
6. Wipe fluid off the CVT fluid level gauge. Then rotate the CVT fluid level gauge 180° and re-insert it into the CVT charging pipe as far as it will go.
   CAUTION:
   Always use lint free paper towels to wipe fluid off the CVT fluid level gauge.



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

   Fluid grade: **Refer to MA-14, "Fluids and Lubricants".**

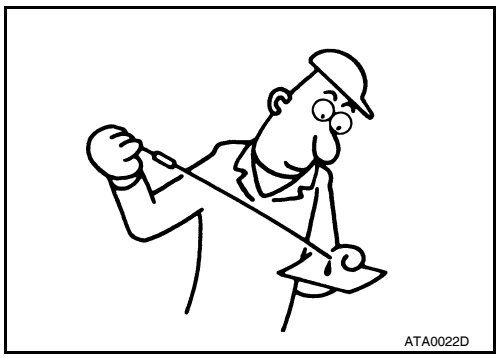
   CAUTION:
   - **Only use specified NISSAN CVT fluid.**
   - **Do not overfill the CVT.**



8. Install the CVT fluid level gauge to the CVT fluid charging pipe until it locks.
   CAUTION:
   When CVT fluid level gauge is installed into the CVT fluid charging pipe, make sure that the CVT fluid level gauge is securely locked in place.

FLUID CONDITION CHECK

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

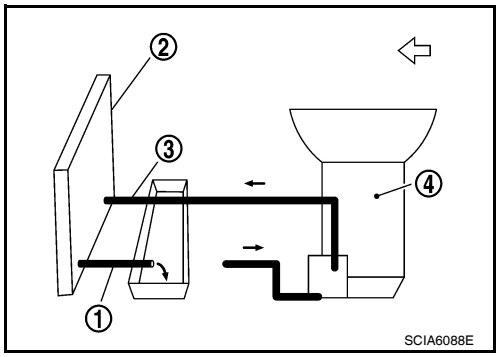

ATA0022D

CVT FLUID : Changing CVT Fluid (RE0F08A)

INFOID:0000000004803427

1. Warm up CVT fluid by driving the vehicle for 10 minutes.

- : Vehicle front
- Radiator (2)
- CVT fluid cooler hose [inlet side (3)]
- Transaxle assembly (4)



SCIA6088E

2. Drain CVT fluid from CVT fluid cooler hose [outlet side (1)] and refill with new specified NISSAN CVT fluid in the CVT fluid charging pipe with the engine running at idle speed.

Fluid capacity and grade: **Refer to MA-14, "Fluids and Lubricants".**

CAUTION:
Only use the specified NISSAN CVT fluid.

3. Refill until new CVT fluid comes out from CVT fluid cooler hose [outlet side (1)].
NOTE:
About 30 to 50% extra fluid will be required for this procedure.
4. Check fluid level and condition. Refer to MA-38, "CVT FLUID : Checking CVT Fluid (RE0F08A)".
CAUTION:
Delete CVT fluid deterioration date with CONSULT-III after changing CVT fluid. Refer to CVT-51, "CONSULT-III Function (TRANSMISSION)".

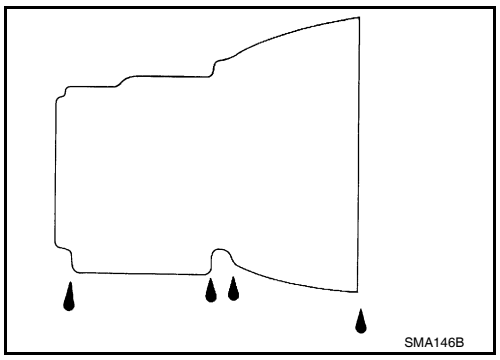
CVT FLUID : Checking CVT Fluid (RE0F08B)

INFOID:0000000004803428

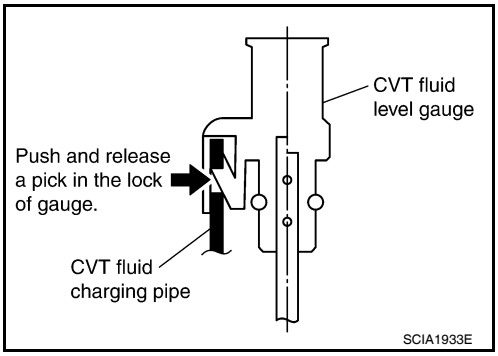
FLUID LEVEL CHECK

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

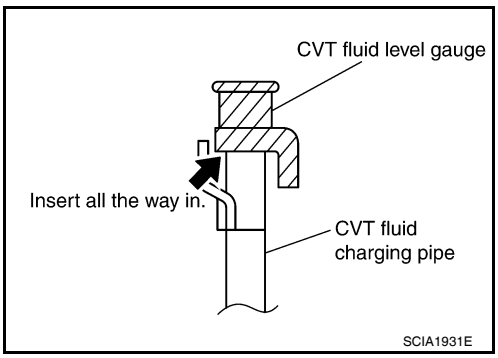
1. Check for fluid leakage.
2. With the engine warmed up, drive the vehicle to warm up the CVT fluid. When ambient temperature is 20°C (68°F), it takes about 10 minutes for the CVT fluid to warm up to 50° to 80°C (122° to 176°F).
3. Park the vehicle on a level surface and set the parking brake.
4. With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


SMA146B

5. Press the tab on the CVT fluid level gauge to release the lock and pull out the CVT fluid level gauge from the CVT fluid charging pipe.



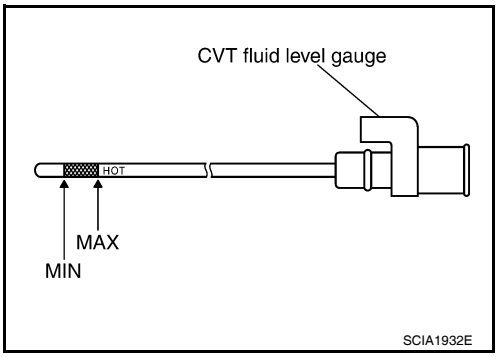
6. Wipe fluid off the CVT fluid level gauge. Then rotate the CVT fluid level gauge 180° and re-insert it into the CVT charging pipe as far as it will go.
CAUTION:
Always use lint free paper towels to wipe fluid off the CVT fluid level gauge.



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

Fluid grade: **Refer to MA-14, "Fluids and Lubricants".**

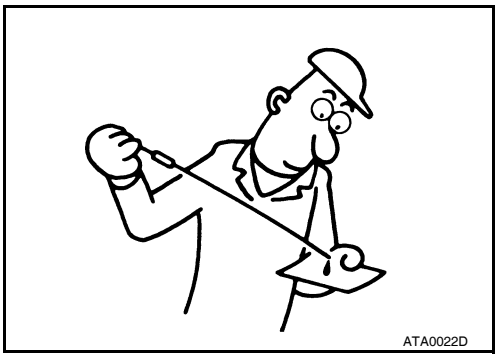
CAUTION:
- **Only use specified NISSAN CVT fluid.**
- **Do not overfill the CVT.**



8. Install the CVT fluid level gauge to the CVT fluid charging pipe until it locks.
CAUTION:
When CVT fluid level gauge is installed into the CVT fluid charging pipe, make sure that the CVT fluid level gauge is securely locked in place.

FLUID CONDITION CHECK

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

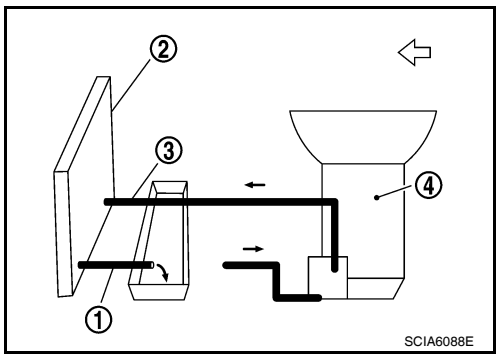


CVT FLUID : Changing CVT Fluid (RE0F08B)

INFOID:0000000004803429

1. Warm up CVT fluid by driving the vehicle for 10 minutes.

- : Vehicle front
- Radiator (2)
- CVT fluid cooler hose [inlet side (3)]
- Transaxle assembly (4)



2. Drain CVT fluid from CVT fluid cooler hose [outlet side (1)] and refill with new specified NISSAN CVT fluid in the CVT fluid charging pipe with the engine running at idle speed.

Fluid capacity and grade: **Refer to MA-14, "Fluids and Lubricants".**

CAUTION:
Only use the specified NISSAN CVT fluid.

3. Refill until new CVT fluid comes out from CVT fluid cooler hose [outlet side (1)].
NOTE:
About 30 to 50% extra fluid will be required for this procedure.
4. Check fluid level and condition. Refer to MA-39, "CVT FLUID : Checking CVT Fluid (RE0F08B)".
CAUTION:
Delete CVT fluid deterioration date with CONSULT-III after changing CVT fluid. Refer to CVT-230, "CONSULT-III Function (TRANSMISSION)".

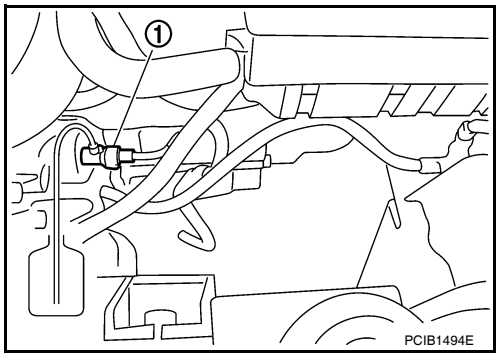
CLUTCH FLUID

CLUTCH FLUID : Air Bleeding Procedure

INFOID:0000000004683730

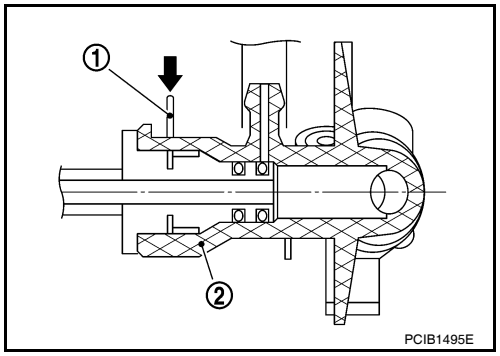
CAUTION:
Do not spill clutch fluid onto painted surfaces. If it spills, wipe up immediately and wash the affected area with water.
NOTE:
- Do not use a vacuum assist or any other type of power bleeder on this system. Use of a vacuum assist or power bleeder will not purge all the air from the system.
- Carefully monitor fluid level in reservoir tank during bleeding operation.

1. Fill master cylinder reservoir tank with new clutch fluid.
2. Connect a transparent vinyl tube and container to the bleeding connector (1) on the CSC.
3. Depress and release the clutch pedal slowly and fully 15 times at an interval of two to three seconds and release the clutch pedal.



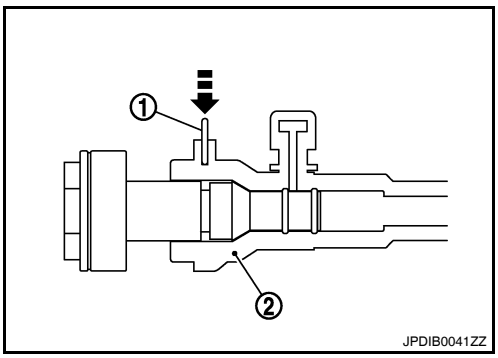
4. Push in the lock pin (1) of the bleeding connector (2), and maintain the position.
- RS5F91R transaxle models

CAUTION:
Hold the lock pin in to prevent the bleeding connector from separating when fluid pressure is applied.



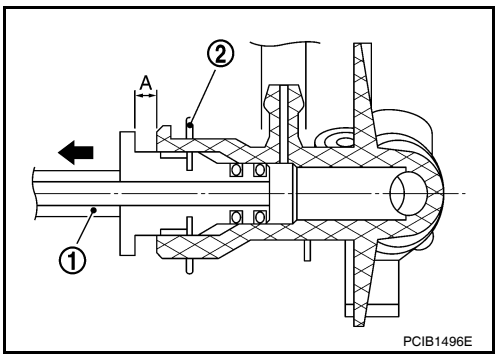
- RS6F94R transaxle models

CAUTION:
Hold the lock pin in to prevent the bleeding connector from separating when fluid pressure is applied.



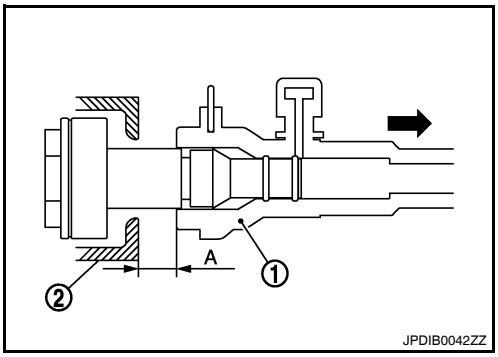
5. Slide the clutch tube (1) in the direction of the arrow as shown to the dimension (A). (For RS5F91R transaxle models)
2: bleeding connector

Dimension (A) : 5 mm (0.20 in)



6. Slide bleeding connector (1) in the direction of the arrow as shown to the dimension (A). (For RS6F94R transaxle models)
2: clutch housing

Dimension (A) : 10 mm (0.39 in)



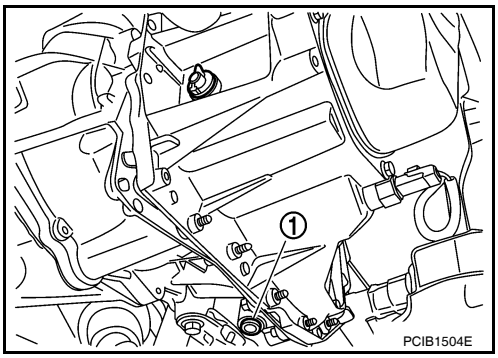
7. Depress the clutch pedal soon and hold it, and then bleed air from the piping. wait for 5 seconds.
CAUTION:
Hold the clutch pedal down to prevent air from getting back into the clutch system.
8. Return the clutch tube and lock pin to their original positions.
9. Release clutch pedal and wait for 5 seconds.
10. Repeat steps 3 to 8 until no bubbles are observed in the clutch fluid.

M/T OIL

M/T OIL : Draining (RS5F91R)

INFOID:0000000004803421

1. Start engine and let it run to warm up transaxle.
2. Stop engine. Remove drain plug (1) and drain oil.
3. Set a new gasket on drain plug (1) and install it to transaxle and tighten drain plug to the specified torque. Refer to MT-17, "Disassembly and Assembly".
CAUTION:
Do not reuse gasket.



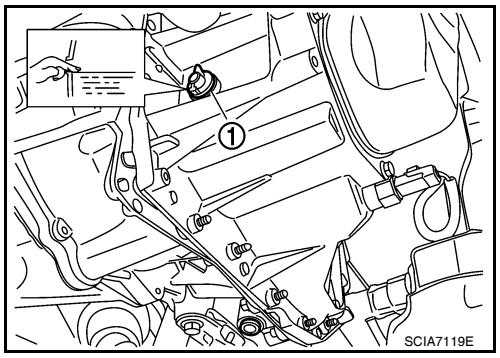
M/T OIL : Refilling (RS5F91R)

INFOID:0000000004803422

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

Oil grade and capacity : Refer to MA-14, "Fluids and Lubricants".

2. After refilling oil, check oil level.
3. Set a new gasket on filler plug (1), then install it to transaxle and tighten to the specified torque. Refer to MT-17, "Disassembly and Assembly".
CAUTION:
Do not reuse gasket.



M/T OIL : Inspection (RS5F91R)

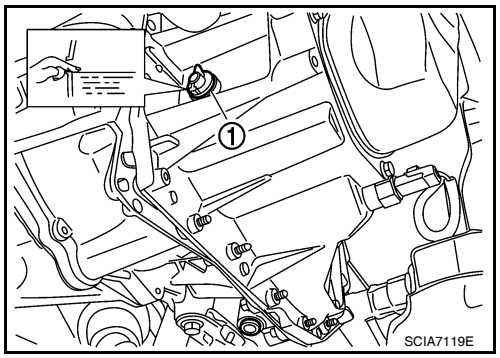
INFOID:0000000004803423

LEAKAGE

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

LEVEL

1. Remove filler plug (1) and check oil level at filler plug hole as shown.
CAUTION:
Do not start engine while checking oil level.
2. Set a new gasket on filler plug (1) and install it to the transaxle case.
CAUTION:
Do not reuse gasket.
3. Tighten filler plug to the specified torque. Refer to MT-17, "Disassembly and Assembly".

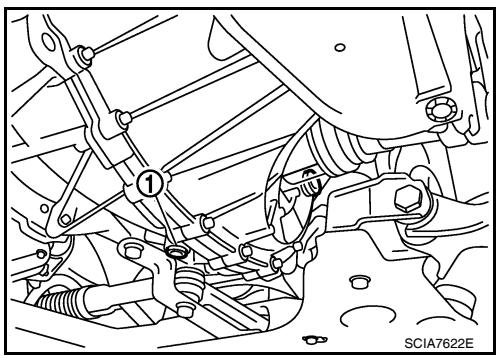


M/T OIL : Changing M/T Oil (RS6F94R)

INFOID:0000000004803424

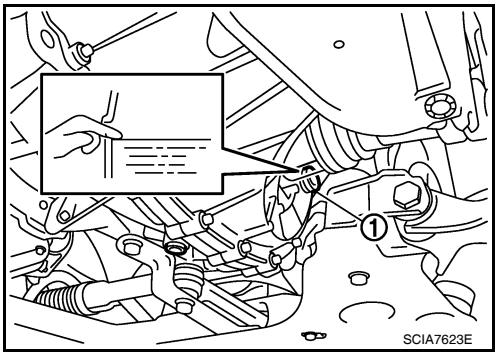
DRAINING

1. Start engine and let it run to warm up transaxle.
2. Stop engine. Remove drain plug (1) and drain oil.
3. Install a new gasket onto drain plug (1) and install it into transaxle. Tighten drain plug to specification. Refer to MT-59, "Disassembly and Assembly".
CAUTION:
Do not reuse gasket.



FILLING

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



Oil grade and capacity

: Refer to MA-14, "Fluids and Lubricants"

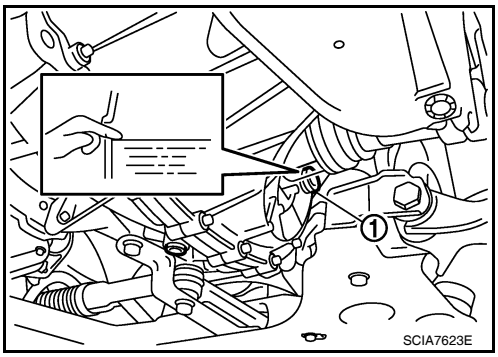
2. After refilling oil, check oil level. Install a new gasket on filler plug (1), then install it into transaxle. Tighten filler plug to specification. Refer to MT-59, "Disassembly and Assembly".
CAUTION:
Do not reuse gasket.

M/T OIL : Checking M/T Oil (RS6F94R)

INFOID:0000000004803425

OIL LEAKAGE AND OIL LEVEL

1. Make sure that oil is not leaking from transaxle or around it.
2. Remove filler plug (1) and check oil level at filler plug hole as shown.
CAUTION:
Do not start engine while checking oil level.
3. Install a new gasket onto filler plug (1) and install it into transaxle. Tighten filler plug to specification. Refer to MT-59, "Disassembly and Assembly".
CAUTION:
Do not reuse gasket.

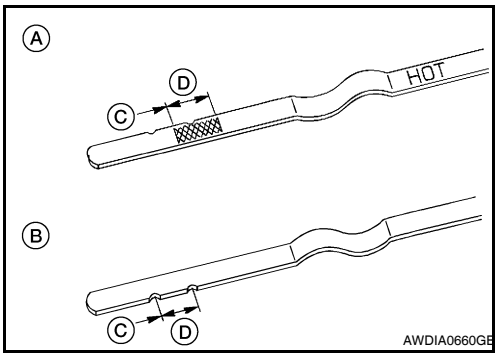


A/T FLUID

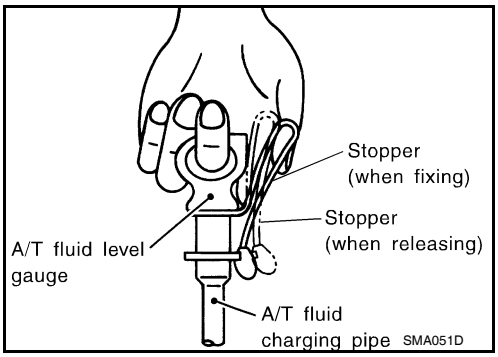
A/T FLUID : Checking A/T Fluid

INFOID:0000000004803430

1. Warm up engine.
2. Check for A/T fluid leakage.
3. Before driving, A/T fluid level can be checked at A/T fluid temperatures of 30° to 50°C (86° to 122°F) using the “COLD” range on A/T fluid level gauge.
   - A : Front side
   - B : Reverse side
   - C : Add
   - D : OK



a. Park vehicle on level surface and set parking brake.
b. Start engine and move selector lever through each gear position. Leave selector lever in “P” position.
c. Check A/T fluid level with engine idling.
d. Remove A/T fluid level gauge and wipe clean with lint-free cloth.
CAUTION:
When wiping the A/T fluid level gauge, always use lint-free cloth.
e. Re-insert A/T fluid level gauge into A/T fluid charging pipe as far as it will go.
CAUTION:
Firmly fix the A/T fluid level gauge to the A/T fluid charging pipe using the stopper attached.
f. Remove A/T fluid level gauge and note reading. If reading is at low side of range, add A/T fluid to the A/T fluid charging pipe.
CAUTION:



Do not overfill.

4. Drive vehicle for approximately 5 minutes.
5. Re-check A/T fluid level at A/T fluid temperatures of 50° to 80°C (122° to 176°F) using “HOT” range on A/T fluid level gauge.
   CAUTION:
   - **When wiping the A/T fluid level gauge, always use lint-free cloth.**
   - **Firmly fix the A/T fluid level gauge to the A/T fluid charging pipe using the stopper attached.**
6. Check A/T fluid condition and make any necessary repairs. Refer to AT-51, "Inspections Before Trouble Diagnosis". If the A/T fluid contains frictional material (clutches, bands, etc.), or if the A/T is repaired, overhauled, or replaced, inspect and clean the A/T fluid cooler mounted in the radiator. Refer to AT-18, "A/T Fluid Cooler Cleaning".
7. Install the removed A/T fluid level gauge into the A/T fluid charging pipe.
   CAUTION:
   Firmly fix the A/T fluid level gauge to the A/T fluid charging pipe using the stopper attached.

A/T FLUID : Changing A/T Fluid

INFOID:0000000004803431

1. Warm up A/T fluid.
2. Stop engine.
3. Drain A/T fluid by removing the drain plug. Reinstall the drain plug to the specified torque.
   CAUTION:
   Do not reuse drain plug gasket.

   Drain plug: Refer to AT-236, "Component".
4. Refill the transaxle with new specified A/T fluid through the A/T fluid charging pipe. Always refill the transaxle with the same volume of A/T fluid that was drained out.

   Fluid grade and capacity: Refer to MA-14.
5. Run engine at idle speed for 5 minutes.
6. Check A/T fluid level and condition. Refer to MA-44, "A/T FLUID : Checking A/T Fluid".

WHEELS

WHEELS : Balancing Wheels

INFOID:0000000004683837

Adjust wheel balance using road wheel center.
CAUTION:
- **Be careful not to scratch the road wheel during removal.**
- **Use clip-on type wheel balance weights only.**

Wheel balance (Maximum allowable unbalance):

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

WHEELS : Rotation

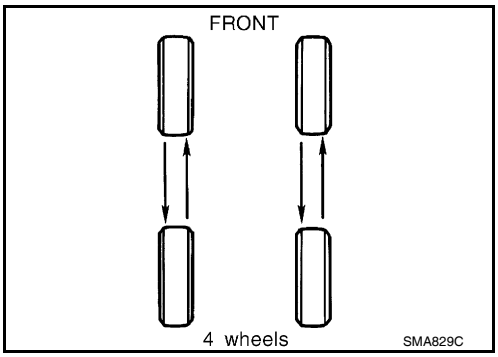
INFOID:0000000004683838

- Follow the maintenance schedule for tire rotation service intervals. Refer to MA-9.
- Do not include the T-type spare tire when rotating tires.

CAUTION:

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

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



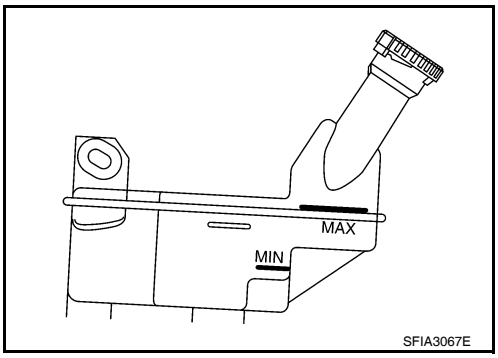
BRAKE FLUID LEVEL AND LEAKS

BRAKE FLUID LEVEL AND LEAKS : On Board Inspection

INFOID:0000000004683839

CHECKING BRAKE FLUID LEVEL

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



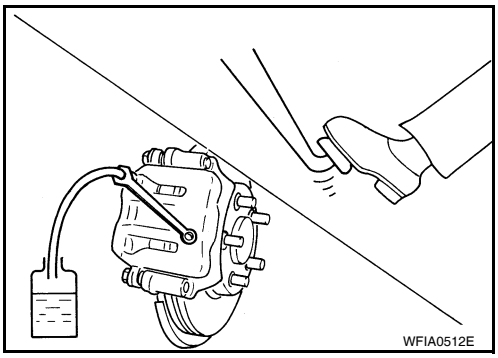
BRAKE FLUID LEVEL AND LEAKS : Drain and Refill

INFOID:0000000004683840

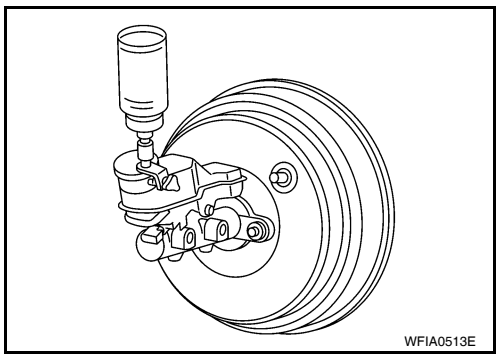
CAUTION:

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

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



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

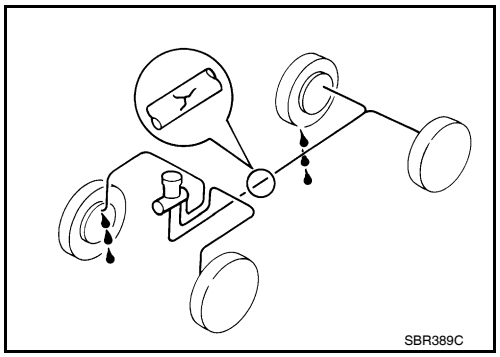

WFIA0513E

BRAKE LINES AND CABLES

BRAKE LINES AND CABLES : Checking Brake Line and Cables

INFOID:0000000004305214

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

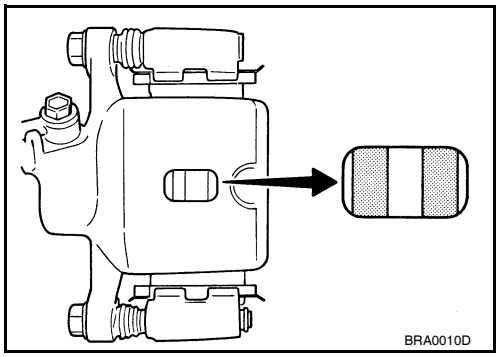
DISC BRAKE : On Board Inspection

INFOID:0000000004683841

PAD WEAR INSPECTION

- Check pad thickness from check hole on cylinder body.

Standard thickness	**: Refer to BR-40, "Front Disc Brake".**
Repair limit thickness	**: Refer to BR-40, "Front Disc Brake".**


BRA0010D

DRUM BRAKE

DRUM BRAKE : Inspection

INFOID:0000000004683843

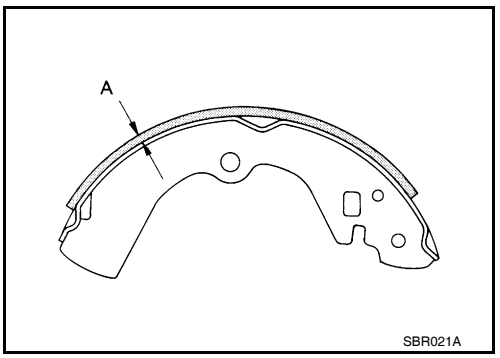
INSPECTION

Lining Thickness Inspection

Check lining thickness.

Standard thickness (A) : Refer to BR-40, "Rear Drum Brake"

Repair limit thickness (A) : Refer to BR-40, "Rear Drum Brake"



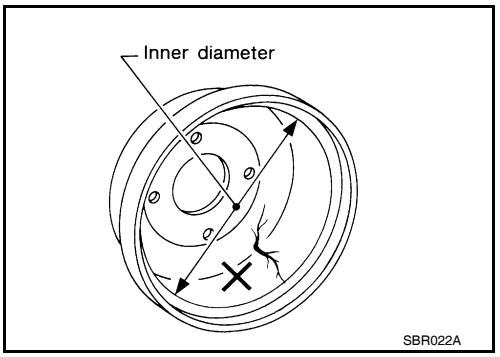
Drum Inner Diameter Inspection

Check inner diameter of brake drum.

Measurement area: lining contact surface (center)

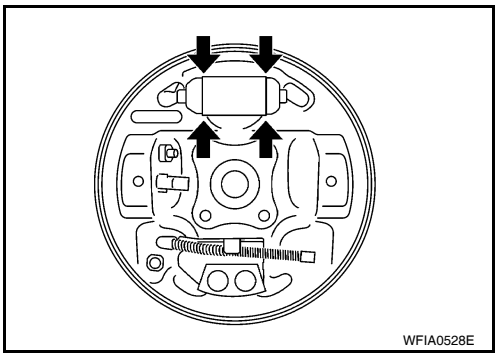
Standard inner diameter : Refer to BR-40, "Rear Drum Brake"

Repair limit inner diameter : Refer to BR-40, "Rear Drum Brake"



Wheel Cylinder Leakage Inspection

- Check wheel cylinder for brake fluid leakage.
- Check for wear, damage, and looseness. If any non-standard condition is found, replace it.



Other Inspections

Check the following:

- Inside of the drum for excessive wear, damage, and cracks.
- Lining for excessive wear, damage, and peeling.
- Shoe sliding surface for excessive wear and damage.
- Return spring for sagging.
- Check back plate for damage, cracks, and deformation. Replace back plate as necessary.

Replace applicable part as necessary.

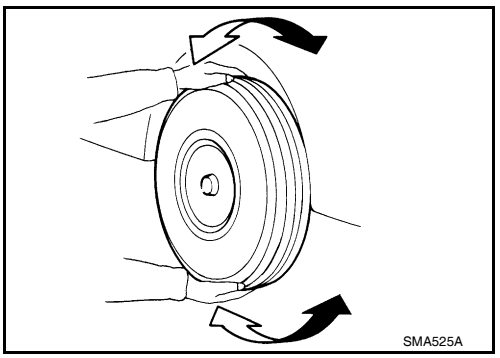
AXLE AND SUSPENSION PARTS

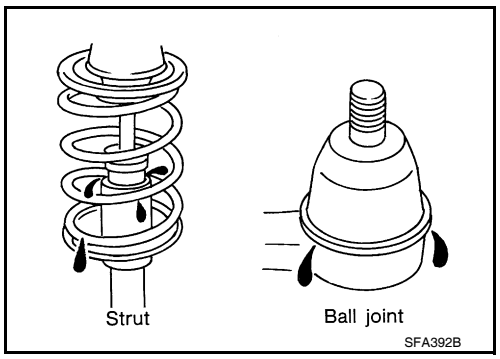
AXLE AND SUSPENSION PARTS : Axle and Suspension Parts

INFOID:0000000004305217

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.



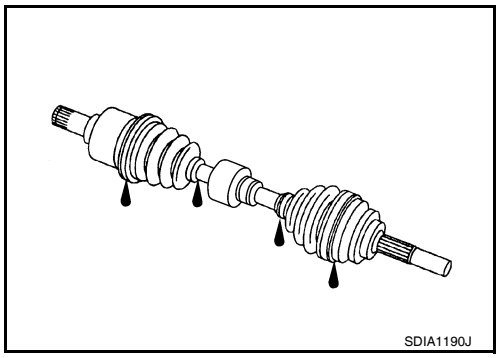


DRIVE SHAFT

DRIVE SHAFT : Drive Shaft

INFOID:0000000004305218

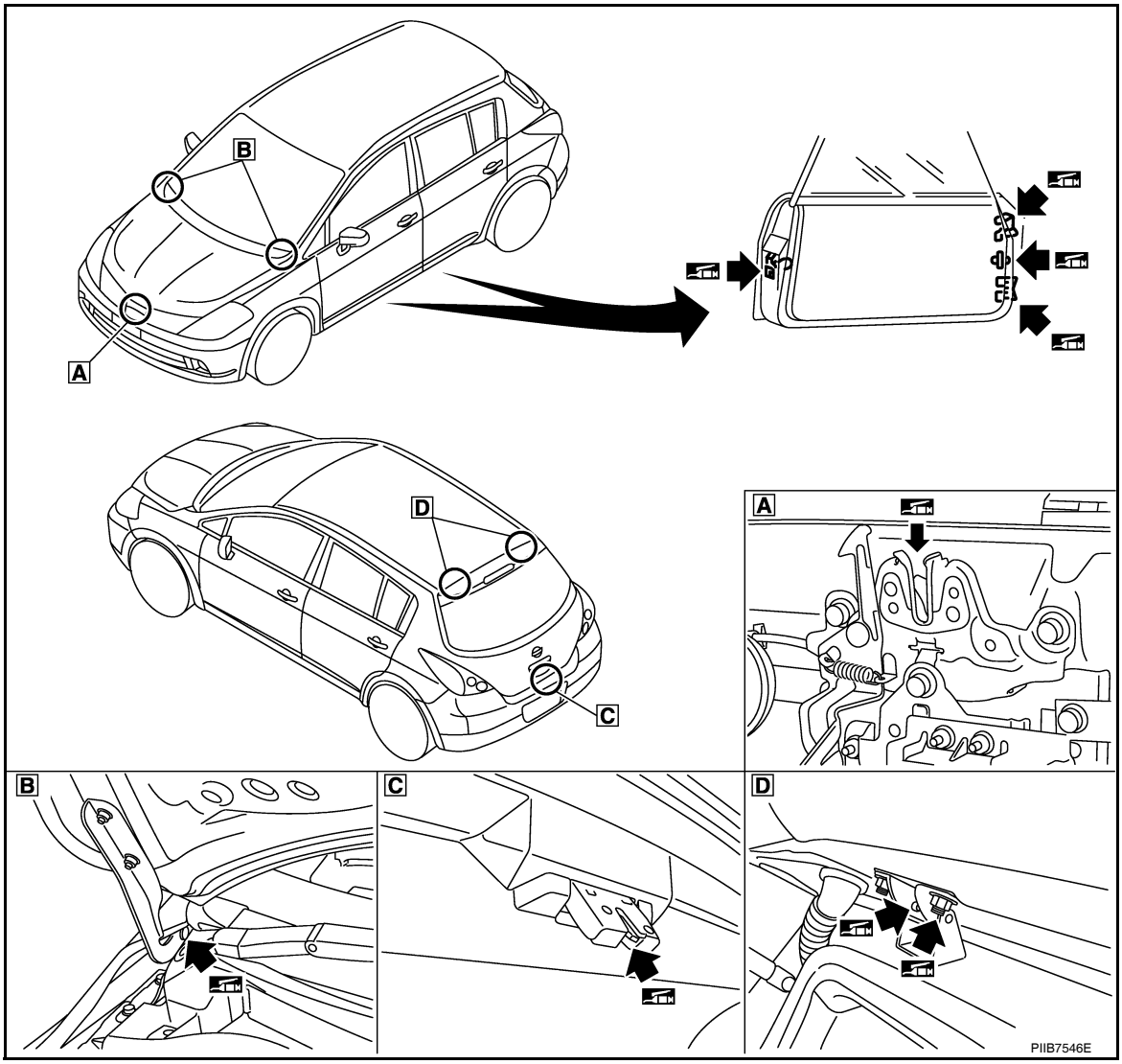
Check boot and drive shaft for cracks, wear, damage and grease leakage.



LOCKS, HINGES AND HOOD LATCH

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

INFOID:0000000004305219



SEAT BELT, BUCKLES, RETRACTORS, ANCHORS AND ADJUSTERS

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

INFOID:0000000004305220

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

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

CAUTION:

- **After any collision, inspect all seat belt assemblies, including retractors and other attached components, such as the guide rail set. NISSAN recommends replacing all seat belt assemblies in use during a collision, unless they are not damaged and are inspected to confirm they are operating properly after a minor collision.**
  Also inspect all seat belt assemblies that are not in use during a collision, and replace any components if damaged or not operating properly. The seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision where the driver and passenger air bags have been deployed.

- **If any component of the seat belt assembly is suspected of being damaged or not operating properly, do not repair the component. Replace the components as an assembly.**
- **If the seat belt webbing is cut, frayed, or damaged then replace the seat belt assembly.**
- **Never lubricate the seat belt buckle or tongue.**
- **When replacing any seat belt assembly always use a Genuine NISSAN seat belt assembly.**