

SECTION MA
MAINTENANCE

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PRECAUTIONS

PRECAUTIONS

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Precautions for Supplemental Restraint System (SRS) “AIR BAG” and “SEAT BELT PRE-TENSIONER”

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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. 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.

PREPARATION

PREPARATION

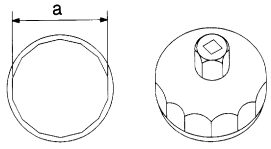
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Special Service Tools

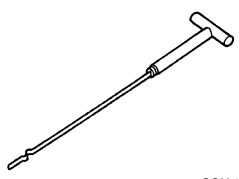
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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
KV10115801 (J38956) Oil filter cap wrench	Removing oil filter a: 64.3 mm (2.531 in)
(J45475) A/T fluid level gauge	Checking A/T fluid



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MA

GENERAL MAINTENANCE

GENERAL MAINTENANCE

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Explanation of General Maintenance

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General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform checks and inspections themselves or have their INFINITI 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 periodically when at a service station, including the spare, and adjust to the specified pressure if necessary. Check carefully for damage, cuts or excessive wear.	—
Wheel nuts	When checking the tires, make sure no nuts are missing, and check for any loose nuts. Tighten if necessary.	—
Tire rotation	Tires should be rotated every 12,000 km (7,500 miles).	MA-22
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.	MA-20 , FSU-6
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-25
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.	—

INSIDE THE VEHICLE

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

Item		Reference page
Warning lamps and chimes	Make sure that all warning lamps and chimes are operating properly.	—
Windshield wiper and washer	Check that the wipers and washer operate properly and that the wipers do not streak.	—
Windshield defroster	Check that the air comes out of the defroster outlets properly and in sufficient quantity when operating the heater or air conditioner.	—
Steering wheel	Check that it has the specified play. Be sure to check for changes in the steering condition, such as excessive play, hard steering or strange noises. Free play: Less than 35 mm (1.38 in)	—
Seats	Check seat position controls such as seat adjusters, seatback recliner, etc. to make sure they operate smoothly and that all latches lock securely in every position. Check that the head restraints move up and down smoothly and that the locks (if equipped) hold securely in all latched positions. Check that the latches lock securely for folding-down rear seatbacks.	—
Seat belts	Check that all parts of the seat belt system (e.g. buckles, anchors, adjusters and retractors) operate properly and smoothly, and are installed securely. Check the belt webbing for cuts, fraying, wear or damage.	SB-5. "Seat Belt Inspection"
Accelerator pedal	Check the pedal for smooth operation and make sure the pedal does not catch or require uneven effort. Keep the floor mats away from the pedal.	—
Brakes	Check that the brake does not pull the vehicle to one side when applied.	—

GENERAL MAINTENANCE

Item		Reference page
Brake pedal and booster	Check the pedal for smooth operation and make sure it has the proper distance under it when depressed fully. Check the brake booster function. Be sure to keep the floor mats away from the pedal.	BR-6 , BR-17 .
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-3 .
Automatic transmission "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.	—

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-9
Radiator and hoses	Check the front of the radiator and clean off any dirt, insects, leaves, etc., that may have accumulated. Make sure the hoses have no cracks, deformation, deterioration or loose connections.	—
Brake fluid level	Make sure that the brake fluid level is between the "MAX" and "MIN" lines on the reservoir.	MA-22
Battery	Check the fluid level in each cell. It should be between the "MAX" and "MIN" lines.	—
Engine drive belts	Make sure that no belt is frayed, worn, cracked or oily.	MA-12
Engine oil level	Check the level on the dipstick after parking the vehicle on a level spot and turning off the engine.	MA-15
Power steering fluid level and lines	Check the level on the dipstick with the engine off. Check the lines for improper attachment, leaks, cracks, etc.	MA-24
Cooling fan fluid level and lines	Check the level when the fluid is cold and the engine is turned off. Check the lines for proper attachment, leaks, cracks, etc.	MA-18
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-19
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

PERIODIC MAINTENANCE

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Introduction of Periodic Maintenance

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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	<p>Follow Periodic Maintenance Schedule 1 if the driving habits frequently include one or more of the following driving conditions:</p> <ul style="list-style-type: none"> ● Repeated short trips of less than 5 miles (8 km). ● Repeated short trips of less than 10 miles (16 km) with outside temperatures remaining below freezing. ● Operating in hot weather in stop-and-go "rush hour" traffic. ● Extensive idling and/or low speed driving for long distances, such as police, taxi or door-to-door delivery use. ● Driving in dusty conditions. ● Driving on rough, muddy, or salt spread roads. ● Towing a trailer, using a camper or a car-top carrier. 	Emission Control System Maintenance	MA-6
		Chassis and Body Maintenance	MA-7
Schedule 2	<p>Follow Periodic Maintenance Schedule 2 if none of driving conditions shown in Schedule 1 apply to the driving habits.</p>	Emission Control System Maintenance	MA-8
		Chassis and Body Maintenance	MA-9

Schedule 1 EMISSION CONTROL SYSTEM MAINTENANCE

ELS0001X

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)	7.50 (12)	11.25 (18)	15 (24)	18.75 (30)	22.5 (36)	26.25 (42)	30 (48)	
Drive belts	NOTE (1)									MA-12
Air cleaner filter	NOTE (2)								[R]	MA-15
EVAP vapor lines									I*	MA-17
Fuel lines									I*	MA-14
Fuel filter	NOTE (3)									-
Engine coolant	NOTE (4)									MA-12
Engine oil		R	R	R	R	R	R	R	R	MA-15
Engine oil filter (Use part No. 15208-31U00 or equivalent.)		R	R	R	R	R	R	R	R	MA-16
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).								MA-17
Intake & exhaust valve clearance*	NOTE (5)									EM-40. "Valve Clearance"

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)	37.5 (60)	41.25 (66)	45 (72)	48.75 (78)	52.5 (84)	56.25 (90)	60 (96)	
Drive belts	NOTE (1)								I*	MA-12
Air cleaner filter	NOTE (2)								[R]	MA-15
EVAP vapor lines									I*	MA-17
Fuel lines									I*	MA-14
Fuel filter	NOTE (3)									-

PERIODIC MAINTENANCE

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title	
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	33.75 (54) 27	37.5 (60) 30	41.25 (66) 33	45 (72) 36	48.75 (78) 39	52.5 (84) 42	56.25 (90) 45	60 (96) 48		
Engine coolant	NOTE (4)									R*	MA-12
Engine oil		R	R	R	R	R	R	R	R	R	MA-15
Engine oil filter (Use part No. 15208-31U00 or equivalent.)		R	R	R	R	R	R	R	R	R	MA-16
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).									MA-17
Intake & exhaust valve clearance*	NOTE (5)										EM-40. "Valve Clearance"

NOTE:

- (1) After 60,000 miles (96,000 km) or 48 months, inspect every 15,000 miles (24,000 km) or 12 months. Replace the drive belts if found damaged or if the auto belt tensioner reading reaches the maximum limit.
- (2) If operating mainly in dusty conditions, more frequent maintenance may be required.
- (3) Maintenance-free item. For service procedures, refer to FL section.
- (4) After 60,000 miles (96,000 km) or 48 months, replace every 30,000 miles (48,000 km) or 24 months.
- (5) If valve noise increases, inspect valve clearance.

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

CHASSIS AND BODY MAINTENANCE

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months	3.75 (6) 3	7.50 (12) 6	11.25 (18) 9	15 (24) 12	18.75 (30) 15	22.5 (36) 18	26.25 (42) 21	30 (48) 24	
Brake lines & cables					I				I	MA-22
Brake pads & rotors			I		I		I		I	MA-23
Automatic transmission fluid & differential gear oil	NOTE (1)				I				I	MA-19 , MA-20
Steering gear & linkage, axle & suspension parts			I		I		I		I	MA-24 , FSU-6 , RSU-6
Tire rotation	NOTE (2)									MA-4 , MA-22
Exhaust system			I		I		I		I	MA-19
Ventilation air filter			I		R		I		R	ATC-123
ASCD vacuum hoses					I				I	MA-26

PERIODIC MAINTENANCE

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
	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	
Perform at number of miles, kilometers or months, whichever comes first.										
Brake lines & cables					I				I	MA-22
Brake pads & rotors			I		I		I		I	MA-23
Automatic transmission fluid & differential gear oil	NOTE (1)				I				I	MA-19 , MA-20
Steering gear & linkage, axle & suspension parts			I		I		I		I	MA-24 , FSU-6 , RSU-6 , MA-24
Tire rotation	NOTE (2)									MA-4 , MA-22
Exhaust system			I		I		I		I	MA-19
Ventilation air filter			I		R		I		R	ATC-123
ASCD vacuum hoses					I				I	MA-26

NOTE:

- (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 at every 30,000 miles (48,000 km) or 24 months.
- (2) Refer to "Tire rotation" under the "General maintenance" heading earlier in this section.

Schedule 2 EMISSION CONTROL SYSTEM MAINTENANCE

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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
	Miles x 1,000 (km x 1,000) Months	7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Perform at number of miles, kilometers or months, whichever comes first.										
Drive belts	NOTE (1)								I*	MA-12
Air cleaner filter					[R]				[R]	MA-15
EVAP vapor lines					I*				I*	MA-17
Fuel lines					I*				I*	MA-14
Fuel filter	NOTE (2)									-
Engine coolant	NOTE (3)								R*	MA-12
Engine oil		R	R	R	R	R	R	R	R	MA-15
Engine oil filter (Use part No. 15208-31U00 or equivalent.)		R	R	R	R	R	R	R	R	MA-16
Spark plugs (PLATINUM-TIPPED type)		Replace every 105,000 miles (169,000 km).								MA-17
Intake & exhaust valve clearance*	NOTE (4)									EM-40 , "Valve Clearance"

NOTE:

- (1) After 60,000 miles (96,000 km) or 48 months, inspect every 15,000 miles (24,000 km) or 12 months. Replace the drive belts if found damaged or if the auto belt tensioner reading reaches the maximum limit.
- (2) Maintenance-free item. For service procedures, refer to FL section.
- (3) After 60,000 miles (96,000 km) or 48 months, replace every 30,000 miles (48,000 km) or 24 months.
- (4) If valve noise increases, inspect valve clearance.

PERIODIC MAINTENANCE

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

CHASSIS AND BODY MAINTENANCE

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference Section - Page or - Content Title
		7.5 (12) 6	15 (24) 12	22.5 (36) 18	30 (48) 24	37.5 (60) 30	45 (72) 36	52.5 (84) 42	60 (96) 48	
Perform at number of miles, kilometers or months, whichever comes first.	Miles x 1,000 (km x 1,000) Months									
Brake lines & cables			I		I		I		I	MA-22
Brake pads & rotors			I		I		I		I	MA-23
Automatic transmission fluid & differential gear oil			I		I		I		I	MA-19,MA-20
Steering gear & linkage, axle & suspension parts					I				I	MA-24, FSU-6,RSU-6,MA-24
Tire rotation	NOTE (1)									MA-4, MA-22
Exhaust system					I				I	MA-19
Ventilation air filter			R		R		R		R	ATC-123, "VENTILATION AIR FILTER"
ASCD vacuum hoses			I		I		I		I	MA-26

NOTE:

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

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RECOMMENDED FLUIDS AND LUBRICANTS

RECOMMENDED FLUIDS AND LUBRICANTS

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Fluids and Lubricants

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		Capacity (Approximate)			Recommended Fluids/Lubricants
		US measure	Imp measure	Liter	
Engine oil Drain and refill	With oil filter change	5-5/8 qt	4-5/8 qt	5.3	<ul style="list-style-type: none"> ● API Certification Mark*1 ● API grade SG/SH, Energy Conserving I & II or API grade SJ, Energy Conserving*1 ● ILSAC grade GF-I & GF-II*1
	Without oil filter change	5-1/4 qt	4-3/8 qt	5.0	
Dry engine (engine overhaul)		7-1/8 qt	5-7/8 qt	6.7	
Cooling system	With reservoir	10-3/8 qt	8-5/8 qt	9.8	Genuine Nissan Anti-freeze coolant or equivalent
	Reservoir	7/8 qt	3/4 qt	0.8	
Cooling fan fluid		—	—	—	Genuine Nissan PSF II or equivalent*2
Automatic transmission fluid		10-5/8 qt	8-7/8 qt	10.1	Nissan Genuine ATF Matic Fluid J *3
Power steering fluid		—	—	—	Genuine Nissan PSF II or equivalent*2
Brake fluid		—	—	—	Genuine Nissan Brake Fluid*4 or equivalent DOT 3 (US FMVSS No. 116)
Differential gear oil		2-3/4 pt	2-1/4 pt	1.3	API GL-5*1
Multi-purpose grease		—	—	—	NLGI No. 2 (Lithium soap base)

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

*2: Genuine Nissan PSF, Canada NISSAN Automatic Transmission Fluid, Dexron™ III/Mercon™, or equivalent ATF may also be used.

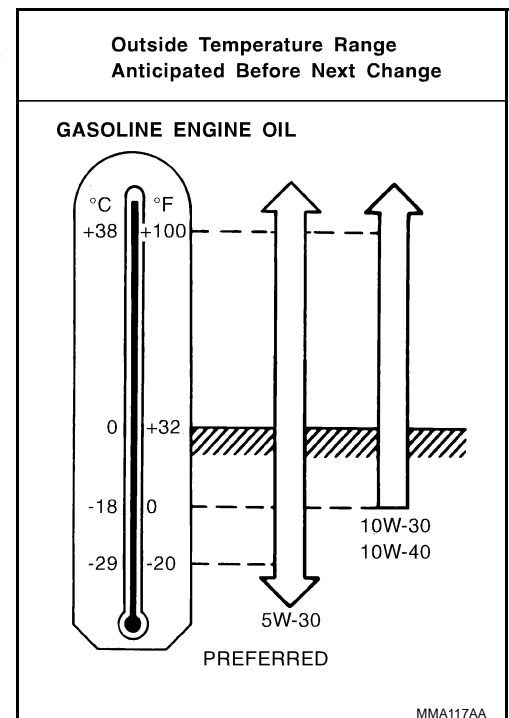
*3: Using automatic transmission fluid other than Nissan Genuine ATF Matic Fluid J will cause deterioration in drive ability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the INFINITI new vehicle limited warranty

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

SAE Viscosity Number GASOLINE ENGINE OIL

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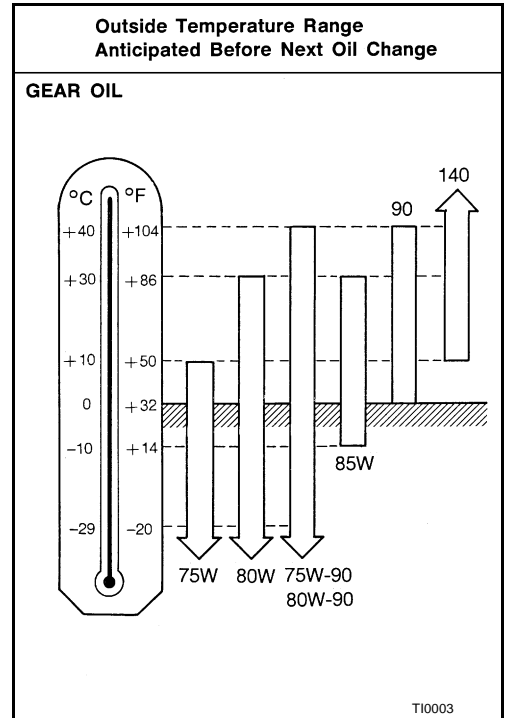
SAE 5W-30 viscosity oil is preferred for all temperatures. SAE 10W-30 and 10W-40 viscosity oil may be used if the ambient temperature is above -18°C(0°F)



RECOMMENDED FLUIDS AND LUBRICANTS

GEAR OIL

SAE 80W-90 for differential is preferable.



ANTI-FREEZE COOLANT MIXTURE RATIO

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

CAUTION:

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

Other types of coolant solutions may damage your cooling system.

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

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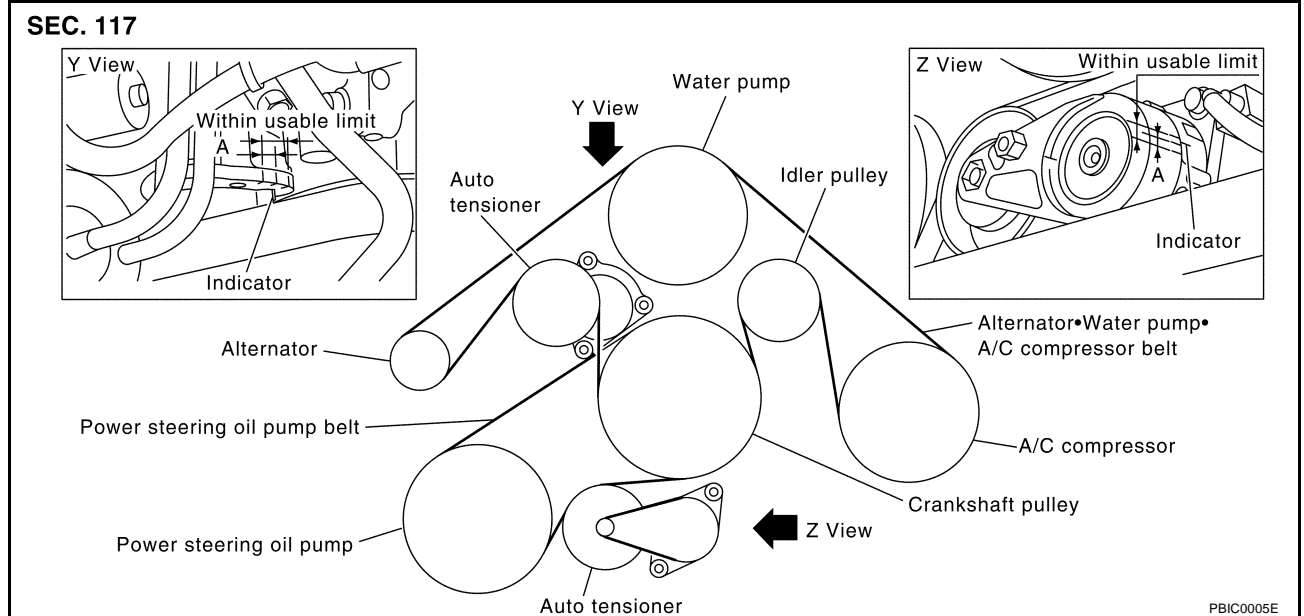
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ENGINE MAINTENANCE

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Checking Drive Belts

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WARNING:

Be sure to perform when the engine is stopped.

- Remove air duct (inlet) when inspecting drive belt for alternator, water pump and A/C compressor.
- Remove under cover (with power tool) when inspecting power steering pump belt.
- Make sure that indicator (single line notch) of each automatic tensioner is within the allowable working range (between three line notches).

NOTE:

- Check the automatic tensioner indicator when the engine is cold.
- When the new drive belt is installed, the range should be A.
- The indicator notch is located on the moving side of the tensioner for alternator, water pump, and A/C compressor belt, while it is found on the fixed side for power steering pump belt.
- Visually check entire belt for wear, damage or cracks.
- If the indicator is out of allowable working range or belt is damaged, replace the belt. Refer to [EM-12, "DRIVE BELTS"](#).
- Belt tensioning is not necessary, as it is automatically adjusted by auto belt tensioner.

Changing Engine Coolant

ELS0003J

WARNING:

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

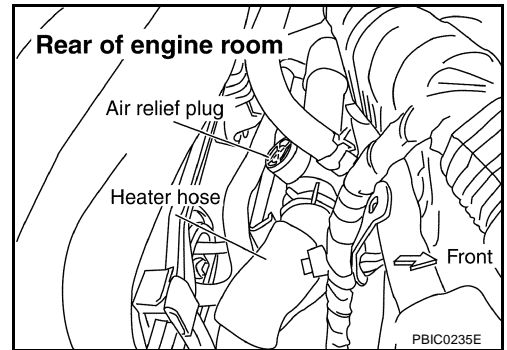
DRAINING ENGINE COOLANT

1. Remove under cover with power tool.
2. Open radiator drain plug at the bottom of radiator, and remove radiator cap.
 - **Be careful not to allow coolant to contact drive belts.**

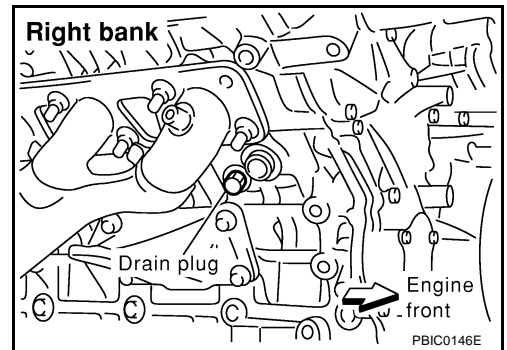
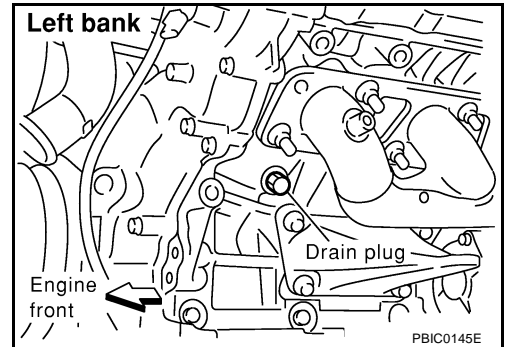
When draining all the coolant in the system, also perform the following steps.

ENGINE MAINTENANCE

3. Remove air relief plug on heater hose.



4. Drain coolant from both sides of cylinder block when draining all the coolant in the system.




5. Check drained coolant for contaminants such as rust, corrosion or discoloration. If contaminated, flush engine cooling system. Refer to [MA-14, "FLUSHING COOLING SYSTEM"](#).
6. Remove reservoir tank, drain coolant, then clean reservoir tank.

REFILLING ENGINE COOLANT

1. Install reservoir tank if removed, and radiator drain plug.
2. Install cylinder block drain plugs if removed.

Apply sealant to the thread of cylinder block drain plugs.

- Use Genuine Thread Sealant Part No. 999MP-AM002P or equivalent.

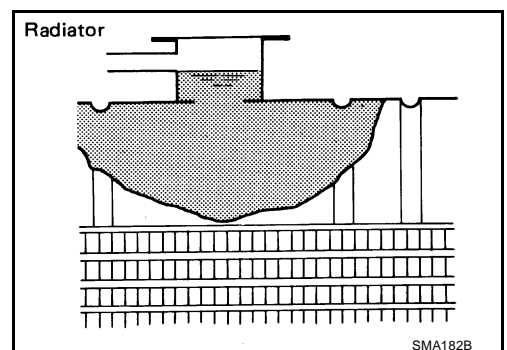
 : 14.7 - 24.5 N-m (1.5 - 2.5 kg-m , 11 - 18 ft-lb)

3. Fill radiator and reservoir tank to specified level.

- Use genuine Nissan anti-freeze coolant or equivalent mixed with water (distilled or demineralized). Refer to [MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS"](#).

Engine coolant capacity (With reservoir tank):

Approximately 9.8 ℓ (10-3/8 US qt, 8-5/8 Imp qt)



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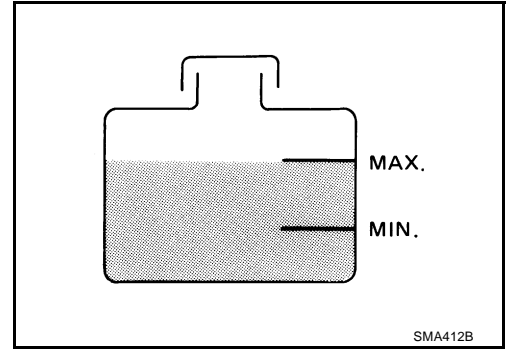
M

ENGINE MAINTENANCE

Reservoir tank capacity:

0.8 l (7/8 US qt, 3/4 Imp qt)

- Pour coolant through coolant filler neck slowly of less than 2 l (2-1/8 US qt, 1-3/4 Imp qt) a minute to allow air in system to escape.
 - When coolant overflows air relief hole on heater hose, install air relief plug.
4. Warm up engine to normal operating temperature with radiator cap installed.
 5. Run engine at 3,000 rpm for 10 seconds and return to idle speed.
- Repeat two or three times.



Watch coolant temperature gauge so as not to overheat the engine.

6. Stop engine and cool down to less than approximately 50°C (122°F).
- Cool down using a fan to reduce the time.
 - If necessary, refill radiator up to filler neck with coolant.
7. Refill reservoir tank to MAX level line with coolant.
 8. Repeat steps 4 through 6 two or more times with radiator cap installed until coolant level no longer drops.
 9. Check cooling system for leaks with engine running.
 10. Warm up engine, and check for sound of coolant flow while running engine from idle up to 3,000 rpm with heater temperature controller set at several position between COOL and WARM.
- Sound may be noticeable at heater unit.
11. Repeat step 9 three times.
 12. If sound is heard, bleed air from cooling system by repeating steps 4 through 6 until coolant level no longer drops.
- Clean excess coolant from engine.

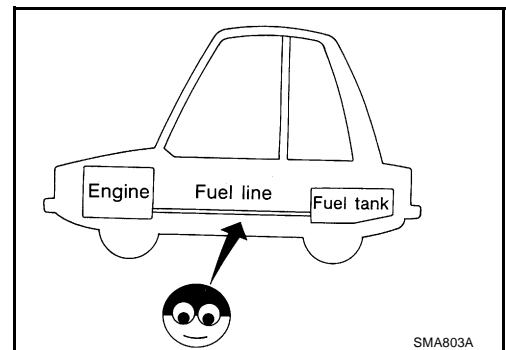
FLUSHING COOLING SYSTEM

1. Fill radiator with water until water spills from the air relief hole, then close air relief plug. Fill radiator and reservoir tank with water and reinstall radiator cap.
2. Run engine and warm it up to normal operating temperature.
3. Rev engine two or three times under no-load.
4. Stop engine and wait until it cools down.
5. Drain water.
6. Repeat steps 1 through 6 until clear water begins to drain from radiator.

Checking Fuel Lines

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

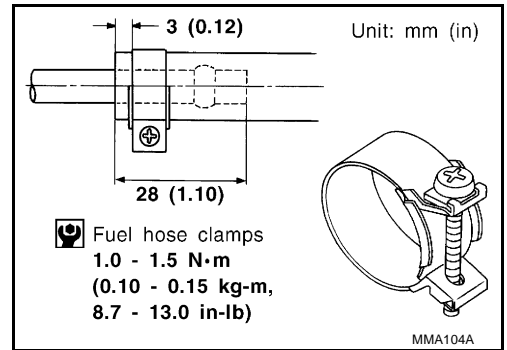
ELS00016



ENGINE MAINTENANCE

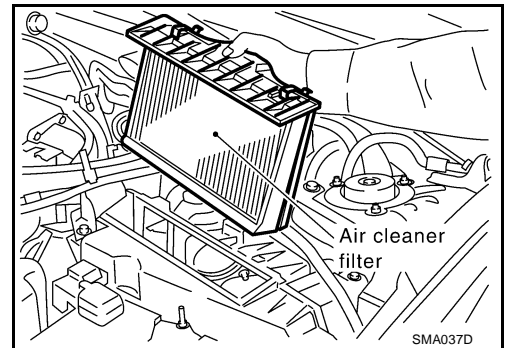
CAUTION:

Tighten high-pressure rubber hose clamp so that clamp end is 3 mm (0.12 in) from hose end.
Tightening torque specifications are the same for all rubber hose clamps.
Ensure that screw does not contact adjacent parts.



Changing Air Cleaner Filter VISCIOUS PAPER TYPE

The viscous paper type filter does not need cleaning.



Changing Engine Oil

WARNING:

- Be careful not to burn yourself, as the engine oil is hot.
 - Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.
1. Remove the under cover with power tool.
 2. Warm up engine, and check for oil leakage from engine components.
 3. Stop engine and wait for 15 minutes.
 4. Remove drain plug and oil filler cap.
 5. Drain oil.
 6. Install drain plug and refill with new engine oil.

Oil specification and viscosity

- API Certification Mark
- API grade SG/SH, Energy Conserving I & II or API grade SJ, Energy Conserving
- ILSAC grade GF-I & GF-II
- Refer to [MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS"](#).

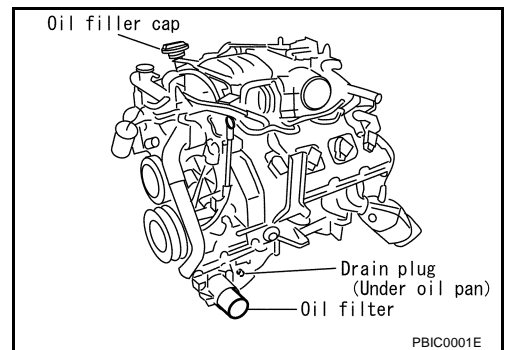
Oil capacity (Approximate):

Unit: Liter (US qt, Imp qt)

Drain and refill	With oil filter change	Approximately 5.3 (5-5/8, 4-5/8)
	Without oil filter change	Approximately 5.0 (5-1/4, 4-3/8)
Dry engine (engine overhaul)		Approximately 6.7 (7-1/8, 5-7/8)


CAUTION:

- Be sure to clean drain plug and install with new washer.



ENGINE MAINTENANCE

Oil pan drain plug:

 : 29 - 39 N-m (3.0 - 4.0 kg-m, 22 - 29 ft-lb)

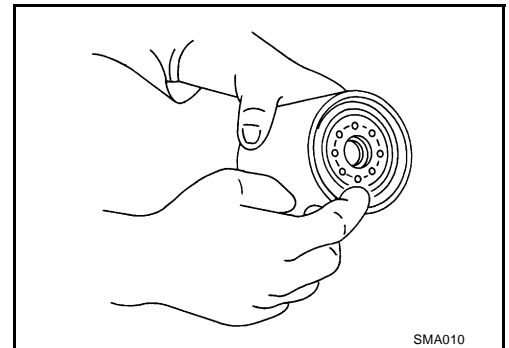
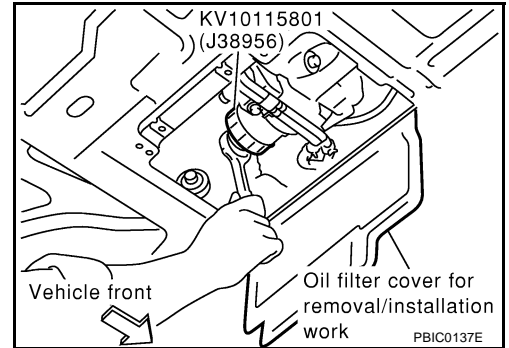
- The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only.
 - Always use the dipstick to determine when the proper amount of oil is in the engine.
7. Warm up engine and check area around drain plug and oil filter for oil leakage.
 8. Stop engine and wait for 15 minutes.
 9. Check oil level. Refer to [LU-6, "Inspection"](#).

Changing Oil Filter

1. Open the oil filter installation/removal cover on the under cover.
2. Using an oil filter wrench, remove the oil filter.


CAUTION:

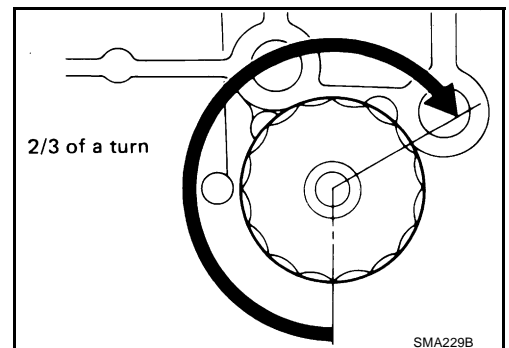
- The oil filter is provided with a relief valve. Use genuine NISSAN oil filter or equivalent.
 - Be careful not to get burned when the engine and engine oil are hot.
 - When removing, prepare a shop cloth to absorb any oil leakage or spillage.
 - Do not allow engine oil to adhere to the drive belts.
 - Completely wipe off any oil that adheres to the engine and the vehicle.
3. Remove foreign materials adhering to the oil filter installation surface.
 4. Apply engine oil to the oil seal circumference of the new oil filter.



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

Oil filter:

 : 14.7 - 20.5 N-m (1.5 - 2.1 kg-m, 11 - 15 ft-lb)



6. After warming up the engine, check for engine oil leakage.
7. Check oil level and add engine oil. Refer to [LU-6, "ENGINE OIL"](#).

ENGINE MAINTENANCE

ELS00022

Changing Spark Plugs


1. Remove ignition coil. Refer to [EM-28, "Removal and Installation"](#).
2. Remove spark plug.
 - Disconnect ignition wire from spark plug at boot. Do not pull on the wire.
 - Reconnect ignition wires according to numbers indicated on them.

Spark plug (Platinum-tipped type):

Make	NGK
Standard type	PLFR5A-11
Hot type	PLFR4A-11
Cold type	PLFR6A-11

Gap (Nominal) : 1.1mm (0.043 in)

3. Install in the reverse order of removal.

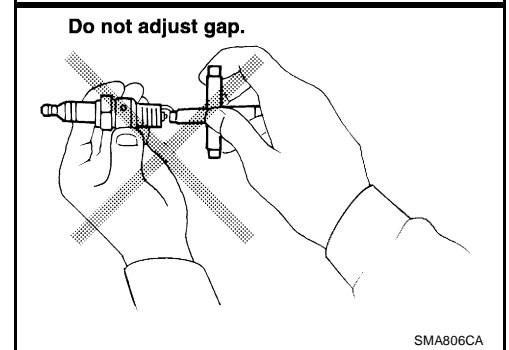
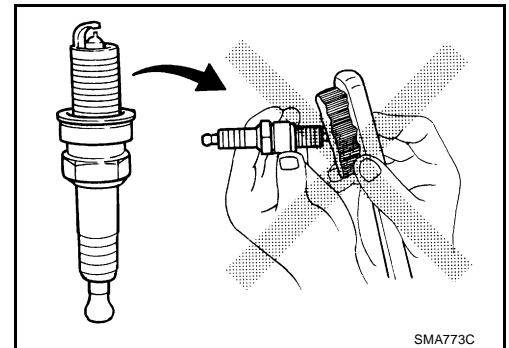
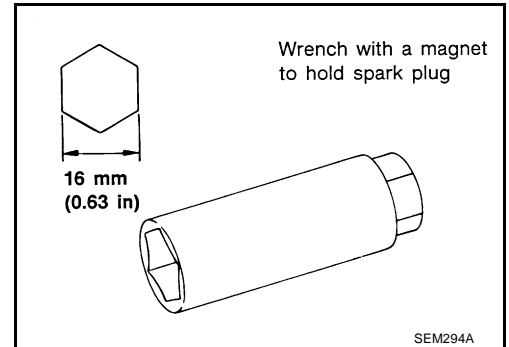
 : 20 - 29 N-m (2.0 - 3.0 kg-m, 14 - 22 ft-lb)

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

Cleaner air pressure : Less than 588 kPa (6 kg/m², 85 psi)

Cleaning time : Less than 20 seconds

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



Checking EVAP Vapor Lines

ELS0001B

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-606, "EVAPORATIVE EMISSION SYSTEM"](#).

ENGINE MAINTENANCE

Checking Cooling Fan Fluid Level and Lines

ELS0003T

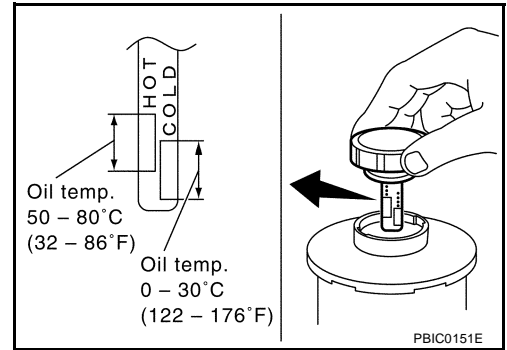
- Check that there is no fluid leaking from any hose connection or any other part.
- Check the fluid level with the level gauge on the reservoir tank cap. If there is too much or too little, adjust the amount of fluid.
- Check that under the fluid temperature conditions below, the fluid level is within the “cold” or “hot” range on the level gauge.

Cold : Fluid temperature 0 - 30 °C (32 - 86 °F)

Hot : Fluid temperature 50 - 80 °C (122 - 176 °F)

NOTE:

- There is no specified timing for replacing the fluid.



CHASSIS AND BODY MAINTENANCE

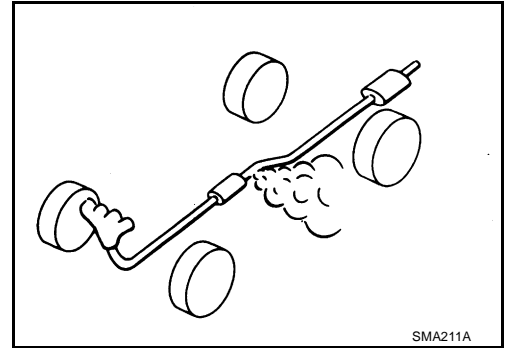
CHASSIS AND BODY MAINTENANCE

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Checking Exhaust System

ELS0001C

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



Checking A/T Fluid

ELS0001G

NOTE:

Use only A/T fluid level gauge: Part No. 31086 AR211 (Special Service Tool No.45475)

1. Warm up engine.
2. Check for fluid leakage.
3. Before driving, fluid level can be checked at fluid temperatures of 30 to 50°C (86 to 122°F) using "COLD" range on A/T fluid level gauge.
 - 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 fluid level with engine idling.
 - d. Remove A/T fluid level gauge and wipe clean with lint-free paper.
 - e. Re-insert A/T fluid level gauge into charging pipe as far as it will go.
 - f. Remove A/T fluid level gauge and note reading. If reading is at low side of range, add fluid to the charging pipe.
Do not overfill.
4. Drive vehicle for approximately 5 minutes in urban areas.
5. Re-check fluid level at fluid temperatures of 50 to 80°C (122 to 176°F) using "HOT" range on A/T fluid level gauge.
6. Check fluid condition.
 - If fluid is very dark or smells burned, refer to AT section for checking operation of A/T. Flush cooling system after repair of A/T.
 - If A/T fluid contains frictional material (clutches, bands, etc.), Replace radiator and flush cooler line using cleaning solvent and compressed air after repair of A/T. Refer to [CO-11, "RADIATOR"](#) .

Changing A/T Fluid

ELS0001H

NOTE:

Use only A/T fluid level gauge: Part No. 31086 AR211 (Special Service Tool No.45475)

1. Stop engine.
2. Warm up A/T fluid.
3. Remove the tightening bolt for A/T fluid level gauge.
4. Drain A/T fluid from drain plug and refill with new A/T fluid. Always refill same volume with drained fluid.
 - To replace the A/T fluid, pour in new oil at the charging pipe with the engine idling and at the same time drain the old oil from the radiator cooler hose return side.
 - When the color of the oil coming out is about the same as the color of the new oil, the replacement is complete. The amount of new transmission fluid to use should be 30-50% of the stipulated amount.

A/T fluid: Nissan Matic Fluid J

Fluid capacity: 10.1 liter (10-5/8 US qt, 8-7/8 Imp qt)

CHASSIS AND BODY MAINTENANCE

CAUTION:

- Use only Nissan Genuine ATF Matic Fluid J. Do not mix with other fluid.
- Using automatic transmission fluid other than Nissan Genuine ATF Matic Fluid J will deteriorate in drive ability and automatic transmission durability, and may damage the automatic transmission, which is not covered by the warranty.

Drain plug: 29 - 39 N·m (3.0 - 4.0 kg·m, 22 - 29 ft·lb)

5. Run engine at idle speed for 5 minutes.
 6. Check fluid level and condition. Refer to [MA-19, "Checking A/T Fluid"](#) . If fluid is still dirty, repeat step 2. through 5.
- Install A/T fluid level gauge in the oil charging pipe and tighten A/T fluid level gauge fix bolt.

Bolt: 4.4 - 5.8 N·m (0.45 - 0.59 kg·m, 39.1 - 51.2 in·lb)

Checking Differential Gear Oil

ELS0003P

1. Check for oil leakage and oil level.

FILLER PLUG:

 : **59 – 98N·m (6 – 10 kg·m, 43 – 72 ft·lb)**

Changing Differential Gear Oil


ELS0003Q

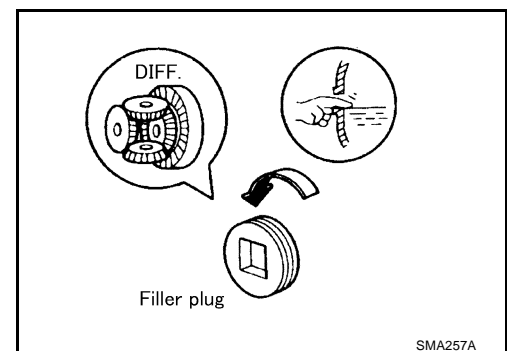
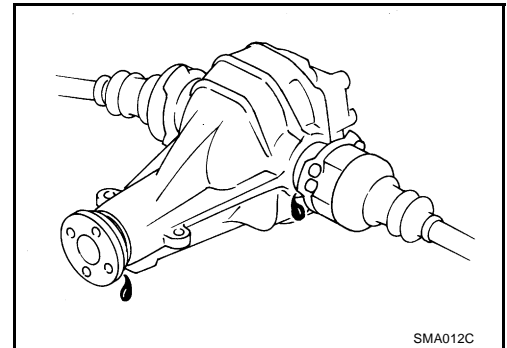
1. Drain oil from drain plug and refill with new gear oil.
2. Check oil level.

Oil grade : APL GL-5

Viscosity : See [MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS"](#)

Capacity : 1.3 ℓ (2-3/4 US pt, 2-1/4 Imp pt)

Drain plug : 59 – 98 N·m (6 – 10 kg·m), 43 – 72 ft·lb)



Balancing Wheels (Bonding Weight Type) REMOVAL

ELS00011

1. Remove inner and outer balance weights from the road wheel.

CAUTION:

Be careful not to scratch the road wheel during removal.

2. Using releasing agent, remove double-faced adhesive tape from the road wheel.

CAUTION:

- Be careful not to scratch the road wheel during removal.

- After removing double-faced adhesive tape, wipe clean traces of releasing agent from the road wheel.

CHASSIS AND BODY MAINTENANCE

WHEEL BALANCE ADJUSTMENT

- If a tire balance machine has adhesion balance weight mode settings and drive-in weight mode setting, select and adjust a drive-in weight mode suitable for road wheels.
- 1. Set road wheel on wheel balancer using the center hole as a guide. Start the tire balance machine.
- 2. When inner and outer unbalance values are shown on the wheel balancer indicator, multiply outer unbalance value by $5/3$ to determine balance weight that should be used. Select the outer balance weight with a value closest to the calculated value above and install it to the designated outer position of, or at the designated angle in relation to the road wheel.

CAUTION:

- Do not install the inner balance weight before installing the outer balance weight.
- Before installing the balance weight, be sure to clean the mating surface of the road wheel.

Indicated unbalance value $\times 5/3$ = balance weight to be installed

Calculation example:

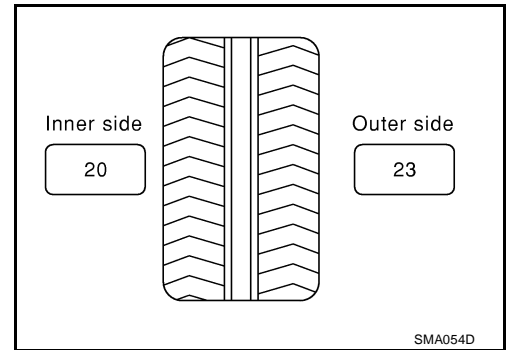
$23 \text{ g (0.81 oz)} \times 5/3 = 38.33 \text{ g (1.35 oz)} = 40 \text{ g (1.41 oz)}$ balance weight (closer to calculated balance weight value)

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

Example:

$37.4 = 35 \text{ g (1.23 oz)}$

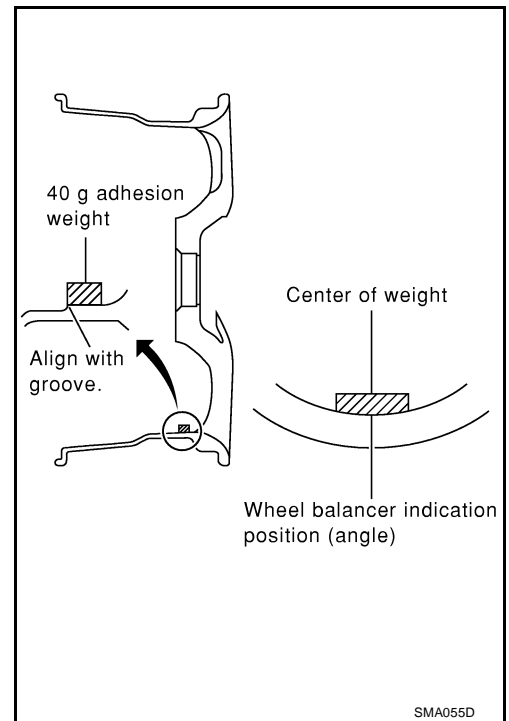
$37.5 = 40 \text{ g (1.41 oz)}$



- a. Install balance weight in the position shown in the figure at left.
- b. When installing balance weight to road wheels, set it into the grooved area on the inner wall of the road wheel as shown in the figure so that the balance weight center is aligned with the wheel balancer indication position (angle).

CAUTION:

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



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

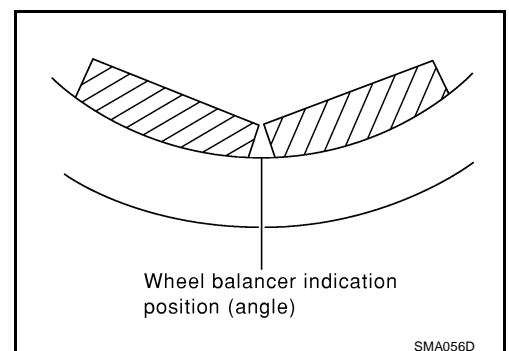
CAUTION:

Do not install one balance weight sheet on top of another.

- 3. Start wheel balancer again.
- 4. Install drive-in balance weight on inner side of road wheel in the wheel balancer indication position (angle).

CAUTION:

Do not install more than two balance weights.



CHASSIS AND BODY MAINTENANCE

5. Start wheel balancer. Make sure that inner and outer residual unbalance values are 10 g (0.35 oz) each or below.
 - If either residual unbalance value exceeds 10 g (0.35 oz), repeat installation procedures.


Wheel balance (Maximum allowable unbalance):

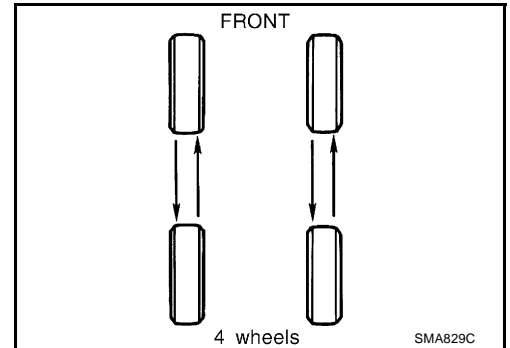
Maximum allowable unbalance	Dynamic (at rim flange)	10 g (0.35 oz) (one side)
	Static (at rim flange)	20 g (0.71 oz)

Tire Rotation

Do not include the T-type spare tire when rotating the tires.

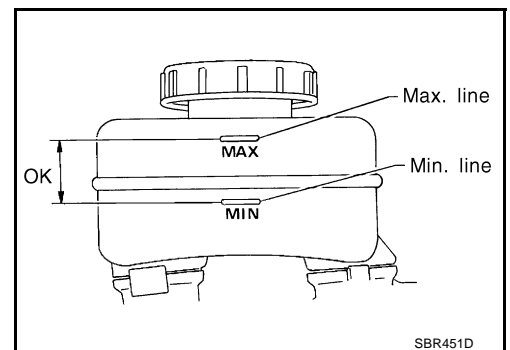
Wheel nuts

 : 98 - 118 N·m (10.0 - 12.0 kg·m, 72 - 87 ft·lb)



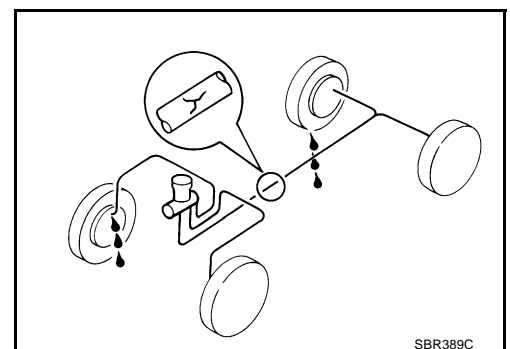
Checking Brake Fluid Level and Leaks

- If fluid level is extremely low, check brake system for leaks.



Checking Brake Lines and Cables

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



CHASSIS AND BODY MAINTENANCE

Changing Brake Fluid

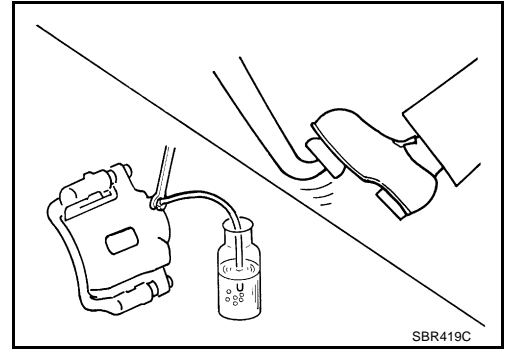
ELS0003R

1. Drain brake fluid from each air bleeder valve.
2. Refill until new brake fluid comes out from each air bleeder valve.

Use same procedure as in bleeding hydraulic system to refill brake fluid.

Refer to [BR-9, "Refilling and Bleeding"](#).

- Refill with recommended Genuine Brake Fluid or equivalent DOT 3 (US FMVSS No. 116).
Refer to [MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS"](#).
- Never reuse drained brake fluid.
- Be careful not to splash brake fluid on painted areas.



SBR419C

Checking Disc Brake ROTOR

ELS0001M

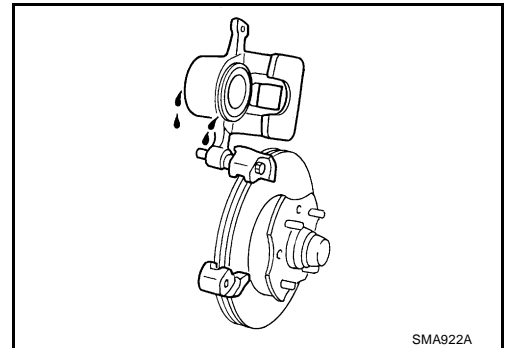
Check condition, wear, and damage.

Unit: mm (in)

	Front	Rear
Brake model	CLZ31VA	AD14VD
Standard thickness	28.0 (1.10)	16.0 (0.63)
Maximum runout	0.07 (0.0028)	0.07 (0.0028)
Minimum thickness (Wear limit)	26.0 (1.02)	14.0 (0.55)

CALIPER

- Check for leakage.



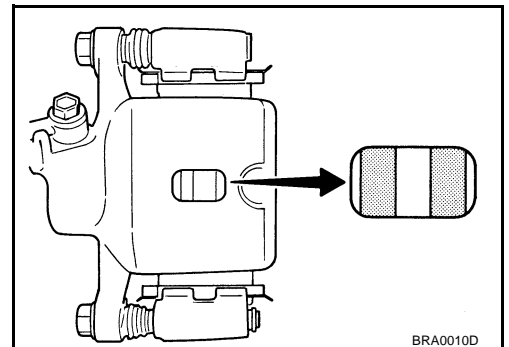
SMA922A

PAD

- Check for wear or damage.

Unit: mm (in)

Brake model	CLZ31VA	AD14VD
Standard thickness	10 (0.394)	9.8 (0.386)
Minimum thickness (Wear limit)	2.0 (0.079)	2.0 (0.079)



BRA0010D

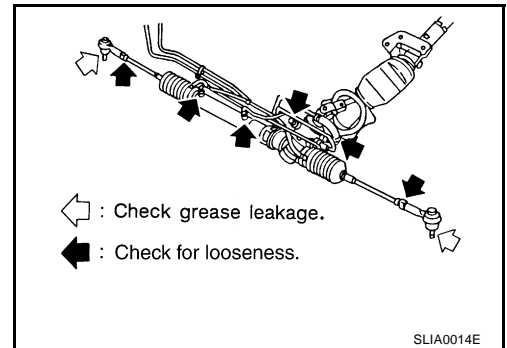
CHASSIS AND BODY MAINTENANCE

Checking Steering Gear and Linkage

STEERING GEAR

ELS0001N

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



STEERING LINKAGE

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

Checking Power Steering Fluid and Lines

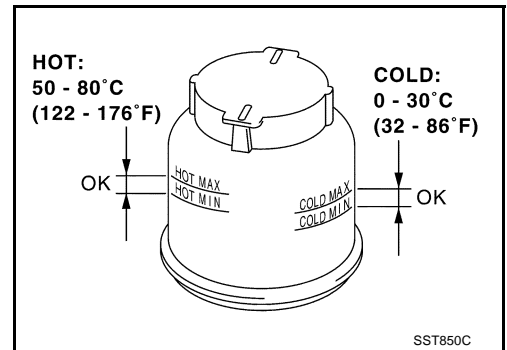
ELS0001O

Check fluid level in reservoir tank with engine off.

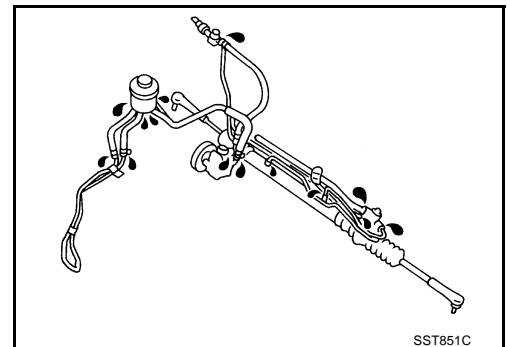
Use "HOT" range at fluid temperatures of 50 to 80°C (122 to 176°F) or "COLD" range at fluid temperatures of 0 to 30°C (32 to 86°F).

CAUTION:

- Do not overfill.
- Recommended fluid is Genuine NISSAN PSF or equivalent. Refer to [MA-10, "RECOMMENDED FLUIDS AND LUBRICANTS"](#)



- Check lines for improper attachment, leaks, cracks, damage, loose connections, chafing and deterioration.
- Check rack boots for accumulation of power steering fluid.

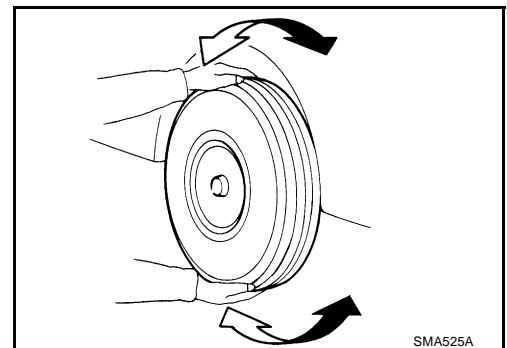


Axle and Suspension Parts

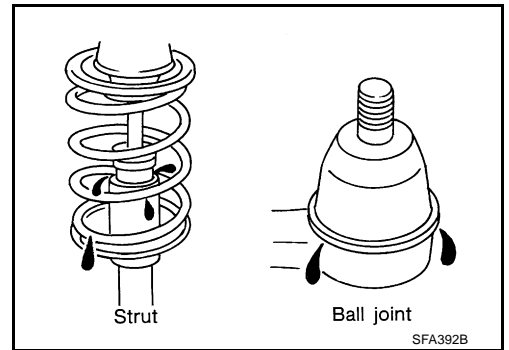
ELS0003U

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.



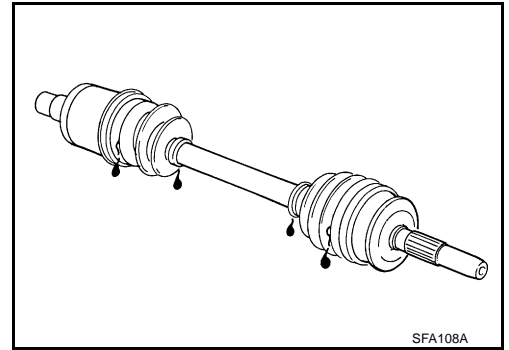
CHASSIS AND BODY MAINTENANCE



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Drive Shaft

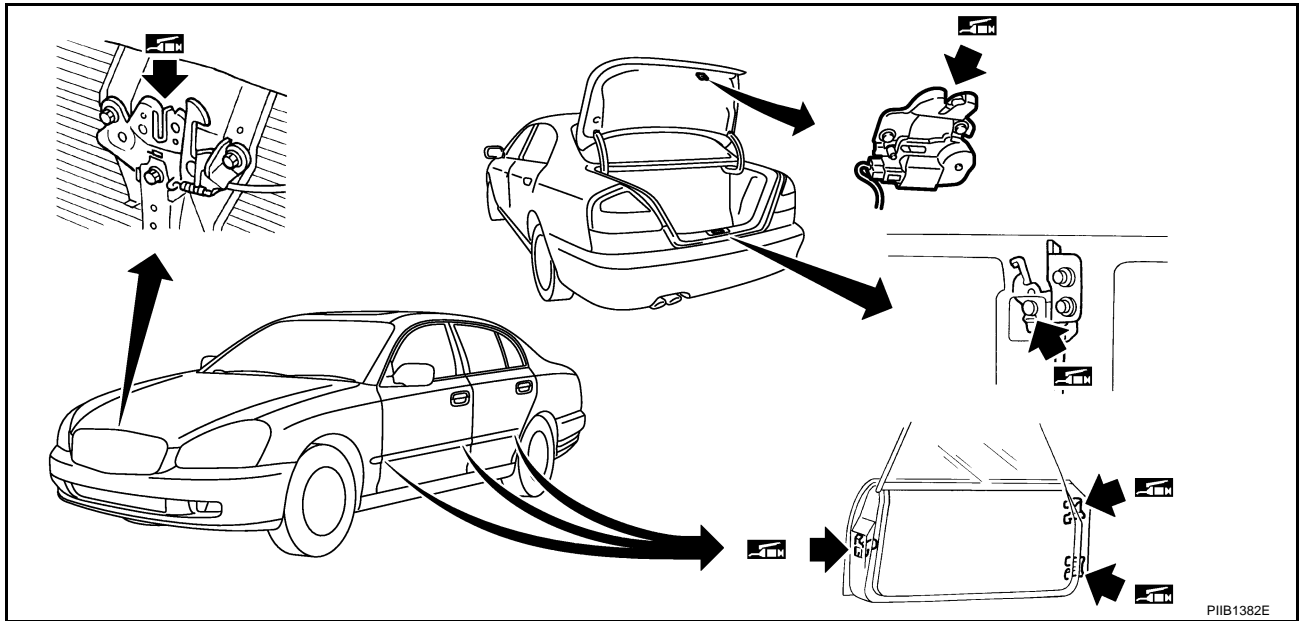
Check boot and drive shaft for cracks, wear, damage and grease leakage.



ELS0003V

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Lubricating Locks, Hinges and Hood Latches



ELS0001P

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CHASSIS AND BODY MAINTENANCE

Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters


ELS0001Q


CAUTION:

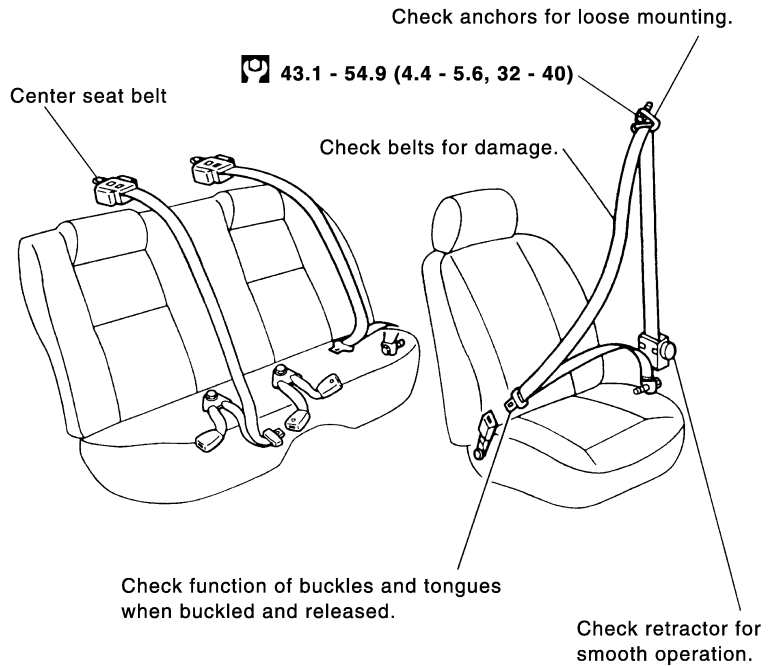
- After any collision, inspect all seat belt assemblies, including retractors and other attached hardware (i.e. anchor bolt, guide rail set). Nissan recommends to replace all seat belt assemblies in use during a collision, unless not damaged and properly operating after minor collision. Also inspect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

For details, refer to "SEAT BELTS" in SB section.

Anchor bolt

 43.1 - 54.9 (4.4 - 5.6, 32 - 40)

 : N·m (kg·m, ft·lb)

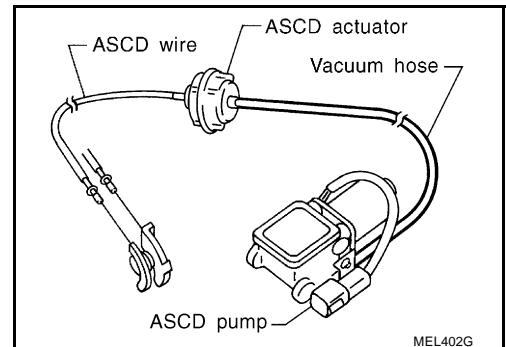


SHIA0204E

ASCD Vacuum Hose

ELS00027

Check vacuum hose (between ASCD actuator and ASCD pump) for breakage, cracks or fracture.



MEL402G

SERVICE DATA AND SPECIFICATIONS (SDS)

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PFP:00030

Standard and Limit BELT DEFLECTION AND TENSION

ELS0003S

Tensions of drive belts	Auto-adjustment by auto tensioner
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SPARK PLUG

		Platinum-tipped type
Make		NGK
Type	Standard	PLFR5A-11
	Hot	PLFR4A-11
	Cold	PLFR6A-11
	Plug gap (Nominal)	1.1 mm (0.043 in)

WHEEL BALANCE

Maximum allowable unbalance	Dynamic (At rim flange)	10 g (0.35 oz) (one side)
	Static	20 g (0.71 oz)

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

MA

SERVICE DATA AND SPECIFICATIONS (SDS)
