SECTION MA



# CONTENTS

## Precautions for Supplemental Restraint System (SRS) "AIR BAG"

NCMA0001

The Supplemental Restraint System "AIR BAG", used along with a seat belt, helps to reduce the risk or severity of injury to the driver and front passenger in a frontal collision. The Supplemental Restraint System consists of air bag modules (located in the center of the steering wheel and on the instrument panel on the passenger side), a diagnosis sensor unit, warning lamp, wiring harness and spiral cable. In addition to the supplemental air bags for a frontal collision, the supplemental side air bag used along with the seat belt helps to reduce the risk or severity of injury to the driver and front passenger in a side collision. The supplemental side air bag consists of air bag modules (located in the outer side of front seats), satellite sensor, diagnosis sensor unit (which is one of components of supplemental air bags for a frontal collision), wiring harness, warning lamp (which is one of components of supplemental air bags for a frontal collision). Information necessary to service the system safely is included in the **RS section** of this Service Manual.

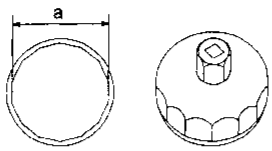
**WARNING:**

- **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 INFINITI dealer.**
- **Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system.**
- **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 with yellow harness protector or yellow insulation tape before the harness connectors.**

## Special Service Tool

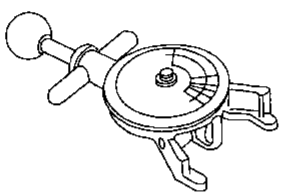
NCMA0002

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 |   NT375 Removing oil filter **a: 64.3 mm (2.531 in)** |

## Commercial Service Tool

NCMA0010

| Tool name (Kent-Moore No.) | Description |
|---|---|
| Belt tension gauge (BT3373-F) |  AMA126 Checking drive belt tension |

# GENERAL MAINTENANCE

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 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-24 |
| **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-24, "Front Wheel Alignment" in SU section |
| **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.<br>When driving in areas using road salt or other corrosive materials, check lubrication frequently. | MA-26 |

## INSIDE THE VEHICLE

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

| Item | | Reference page |
|---|---|---|
| **Lamps** | Make sure that the headlamps, stop lamps, tail lamps, turn signal lamps, and other lamps are all operating properly and installed securely. Also check headlamp aim. | — |
| **Warning lamps and buzzers/chimes** | Make sure that all warning lamps and buzzers/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.<br>**Free play: Less than 35 mm (1.38 in)** | — |
| **Seats** | Check seat position controls such as seat adjusters, seatback recliner, etc. to make sure they operate smoothly and that all latches lock securely in every position. Check that the head restrains move up and down smoothly and that the locks (if equipped) hold securely in all latched positions. Check that the latches lock securely for folding-down rear seatbacks. | — |
| **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-26<br>"Seat Belt Inspection" in RS section |
| **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. | — |

| Item | | Reference page |
|---|---|---|
| **Clutch pedal** | Make sure the pedal operates smoothly and check that it has the proper free play. | "Adjusting Clutch Pedal" in CL section |
| **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. | "Brake Pedal and Bracket" and "Brake Booster" in BR section |
| **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. | "Parking Brake Control" in BR section |
| **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. | MA-14 |
| **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 and clutch fluid levels** | Make sure that the brake and clutch fluid levels are between the "MAX" and "MIN" lines on the reservoir. | MA-22, 24 |
| **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-13 |
| **Engine oil level** | Check the level on the dipstick after parking the vehicle on a level spot and turning off the engine. | MA-17 |
| **Power steering fluid level and lines** | Check the level is between the "MAX" and "MIN" lines on the reservoir with the engine off. Check the lines for improper attachment, leaks, cracks, etc. | MA-25 |
| **Automatic transmission fluid level** | Check the level on the dipstick after putting the selector lever in "P" with the engine idling. | MA-23 |
| **Exhaust system** | Make sure there are no loose supports, cracks or holes. If the sound of the exhaust seems unusual or there is a smell of exhaust fumes, immediately locate the trouble and correct it. | MA-22 |
| **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

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:<br>• Repeated short trips of less than 5 miles (8 km).<br>• Repeated short trips of less than 10 miles (16 km) with outside temperatures remaining below freezing.<br>• Operating in hot weather in stop-and-go "rush hour" traffic.<br>• Extensive idling and/or low speed driving for long distances, such as police, taxi or door-to-door delivery use.<br>• Driving in dusty conditions.<br>• Driving on rough, muddy, or salt spread roads.<br>• Towing a trailer, using a camper or a car-top carrier. | Emission Control System Maintenance | MA-7 |
| | | Chassis and Body Maintenance | MA-8 |
| 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-9 |
| | | Chassis and Body Maintenance | MA-10 |

## EMISSION CONTROL SYSTEM MAINTENANCE

### Schedule 1

NCMA0004S01

NCMA0004S0101

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 | 33.75 (54) 27 | 37.5 (60) 30 | 41.25 (66) 33 | 45 (72) 36 | 48.75 (78) 39 | 52.5 (84) 42 | 56.25 (90) 45 | 60 (96) 48 | |
| Drive belts | NOTE (1) | | | | | | | | | | | | | | | | I* | MA-13 |
| Air cleaner filter | NOTE (2) | | | | | | | | [R] | | | | | | | | [R] | MA-17 |
| EVAP vapor lines | | | | | | | | | I* | | | | | | | | I* | MA-21 |
| Fuel lines | | | | | | | | | I* | | | | | | | | I* | MA-16 |
| Fuel filter* | NOTE (3) | | | | | | | | | | | | | | | | | MA-16 |
| Engine coolant | NOTE (4) | | | | | | | | | | | | | | | | R* | MA-14 |
| Engine oil | | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | MA-17 |
| Engine oil filter (Use part No. 15208-65F00 or equivalent.) | | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | R | MA-18 |
| Spark plugs (PLATINUM-TIPPED type) | NOTE (5) | | | | | | | | | | | | | | | | [R] | MA-19 |

**NOTE:**

(1) After 60,000 miles (96,000 km) or 48 months, inspect every 15,000 miles (24,000 km) or 12 months.

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

(3) If vehicle is operated under extremely adverse weather conditions or in areas where ambient temperatures are either extremely low or extremely high, the filters might become clogged. In such an event, replace them immediately.

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

(5) Original equipment platinum-tipped plug should be replaced at 60,000 miles (96,000 km). Conventional spark plugs can be used but should be replaced at 30,000 miles (48,000 km) intervals.

★ 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.

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 | 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 | 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 | | | | I | | | | I | MA-24 |
| Brake pads & rotors | | | I | | I | | I | | I | | I | | I | | I | | I | MA-24 |
| Manual transmission oil or automatic transmission fluid | NOTE (1) | | | | I | | | | I | | | | I | | | | I | MA-22, 23 |
| Steering gear & linkage, axle & suspension parts | | | I | | I | | I | | I | | I | | I | | I | | I | MA-25 NOTE (3) |
| Front drive shaft boots | | | I | | I | | I | | I | | I | | I | | I | | I | AX - Drive Shaft |
| Exhaust system | | | I | | I | | I | | I | | I | | I | | I | | I | MA-22 |
| Air bag system | NOTE (2) | | | | | | | | | | | | | | | | | RS - Maintenance Items |
| Ventilation air filter | | | I | | R | | I | | R | | I | | R | | I | | R | HA - Service Procedures |

**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 (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) Inspect the air bag system 10 years after the date of manufacture noted on the FMVSS certification label.

(3) Refer to "Front Suspension Parts" and "Rear Suspension Parts" in SU section, "Front Axle Parts" and "Rear Axle Parts" in AX section.



NCMA000450102

## EMISSION CONTROL SYSTEM MAINTENANCE

### Schedule 2

NCMA0004S02

NCMA0004S0201

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

| MAINTENANCE OPERATION | | MAINTENANCE INTERVAL | | | | | | | | Reference Section - Page or - Content Title |
|---|---|---|---|---|---|---|---|---|---|---|
| Perform at number of miles, kilometers or months, whichever comes first. | Miles x 1,000 (km x 1,000) Months | 7.5 (12) 6 | 15 (24) 12 | 22.5 (36) 18 | 30 (48) 24 | 37.5 (60) 30 | 45 (72) 36 | 52.5 (84) 42 | 60 (96) 48 | |
| Drive belts | NOTE (1) | | | | | | | | I* | MA-13 |
| Air cleaner filter | | | | | [R] | | | | [R] | MA-17 |
| EVAP vapor lines | | | | | I* | | | | I* | MA-21 |
| Fuel lines | | | | | I* | | | | I* | MA-16 |
| Fuel filter* | NOTE (2) | | | | | | | | | MA-16 |
| Engine coolant | NOTE (3) | | | | | | | | R* | MA-14 |
| Engine oil | | R | R | R | R | R | R | R | R | MA-17 |
| Engine oil filter (Use part No. 15208-65F00 or equivalent.) | | R | R | R | R | R | R | R | R | MA-18 |
| Spark plugs (PLATINUM-TIPPED type) | NOTE (4) | | | | | | | | [R] | MA-19 |

**NOTE:**

(1) After 60,000 miles (96,000 km) or 48 months, inspect every 15,000 miles (24,000 km) or 12 months.

(2) If vehicle is operated under extremely adverse weather conditions or in areas where ambient temperatures are either extremely low or extremely high, the filters might become clogged. In such an event, replace them immediately.

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

(4) Original equipment platinum-tipped plug should be replaced at 60,000 miles (96,000 km). Conventional spark plugs can be used but should be replaced at 30,000 miles (48,000 km) intervals.

★ 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.

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-24 |
| Brake pads & rotors | | | I | | I | | I | | I | MA-24 |
| Manual transmission oil or automatic transmission fluid | | | I | | I | | I | | I | MA-22, 23 |
| Steering gear & linkage, axle & suspension parts | | | | | I | | | | I | MA-25 NOTE (2) |
| Front drive shaft boots | | | I | | I | | I | | I | AX - Drive Shaft |
| Exhaust system | | | | | I | | | | I | MA-22 |
| Air bag system | NOTE (1) | | | | | | | | | RS - Maintenance Item |
| Ventilation air filter | | | R | | R | | R | | R | HA - Service Procedures |

**NOTE:**

(1) Inspect the air bag system 10 years after the date of manufacture noted on the FMVSS certification label.

(2) Refer to "Front Suspension Parts" and "Rear Suspension Parts" in SU section, "Front Axle Parts" and "Rear Axle Parts" in AX section.



NCMA000450202

## Fluids and Lubricants

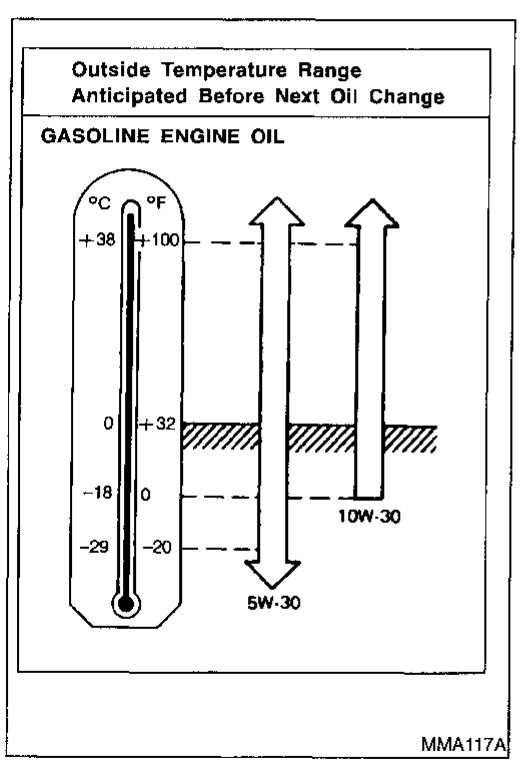
NCMA0005S01

| | | Capacity (Approximate) | | | Recommended Fluids/Lubricants |
|---|---|---|---|---|---|
| | | US measure | Imp measure | Liter | |
| Engine oil Drain and refill | With oil filter change | 3-5/8 qt | 3 qt | 3.4 | • API Certification Mark*1<br>• API grade SG/SH, Energy Conserving II or API grade SJ, Energy Conserving*1<br>• ILSAC grade GF-II*1 |
| | Without oil filter change | 3-3/8 qt | 2-7/8 qt | 3.2 | |
| Dry engine (engine overhaul) | | 3-7/8 qt | 3-1/8 qt | 3.6 | |
| Cooling system (With reservoir) | MT | 6-1/2 qt | 5-1/2 qt | 6.2 | Genuine Nissan Anti-freeze coolant or equivalent |
| | AT | 6-1/2 qt | 5-1/2 qt | 6.2 | |
| Manual transmission gear oil | RS5F32A | 7-5/8 - 8 pt | 6-3/8 - 6-3/4 pt | 3.6 - 3.8 | API GL-4, Viscosity SAE 80W-90 only |
| | RS5F32V | 7-7/8 - 8-1/4 pt | 6-1/2 - 6-7/8 pt | 3.7 - 3.9 | |
| Automatic transmission fluid | RE4F03A/V | 7-3/8 qt | 6-1/8 qt | 7.0 | Nissan Matic "D" (Continental U.S. and Alaska) or Genuine Nissan Automatic Transmission Fluid (Canada)*2 |
| Power steering fluid | | — | — | — | Type DEXRON™ III or equivalent |
| Brake and clutch fluid | | — | — | — | Genuine Nissan Brake Fluid*3 or equivalent DOT 3 (US FMVSS No. 116) |
| Multi-purpose grease | | — | — | — | NLGI No. 2 (Lithium soap base) |

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

*2: Dexron™ III/Mercon™ or equivalent may also be used. Outside the continental United States and Alaska contact an INFINITI dealership for more information regarding suitable fluids, including recommended brand(s) of Dexron™ III/Mercon™ Automatic Transmission Fluid.

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




## SAE Viscosity Number

NCMA0005S02

### GASOLINE ENGINE OIL

NCMA0005S0201

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

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

SMA947CA

## Anti-freeze Coolant Mixture Ratio

NCMA0005S03

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.

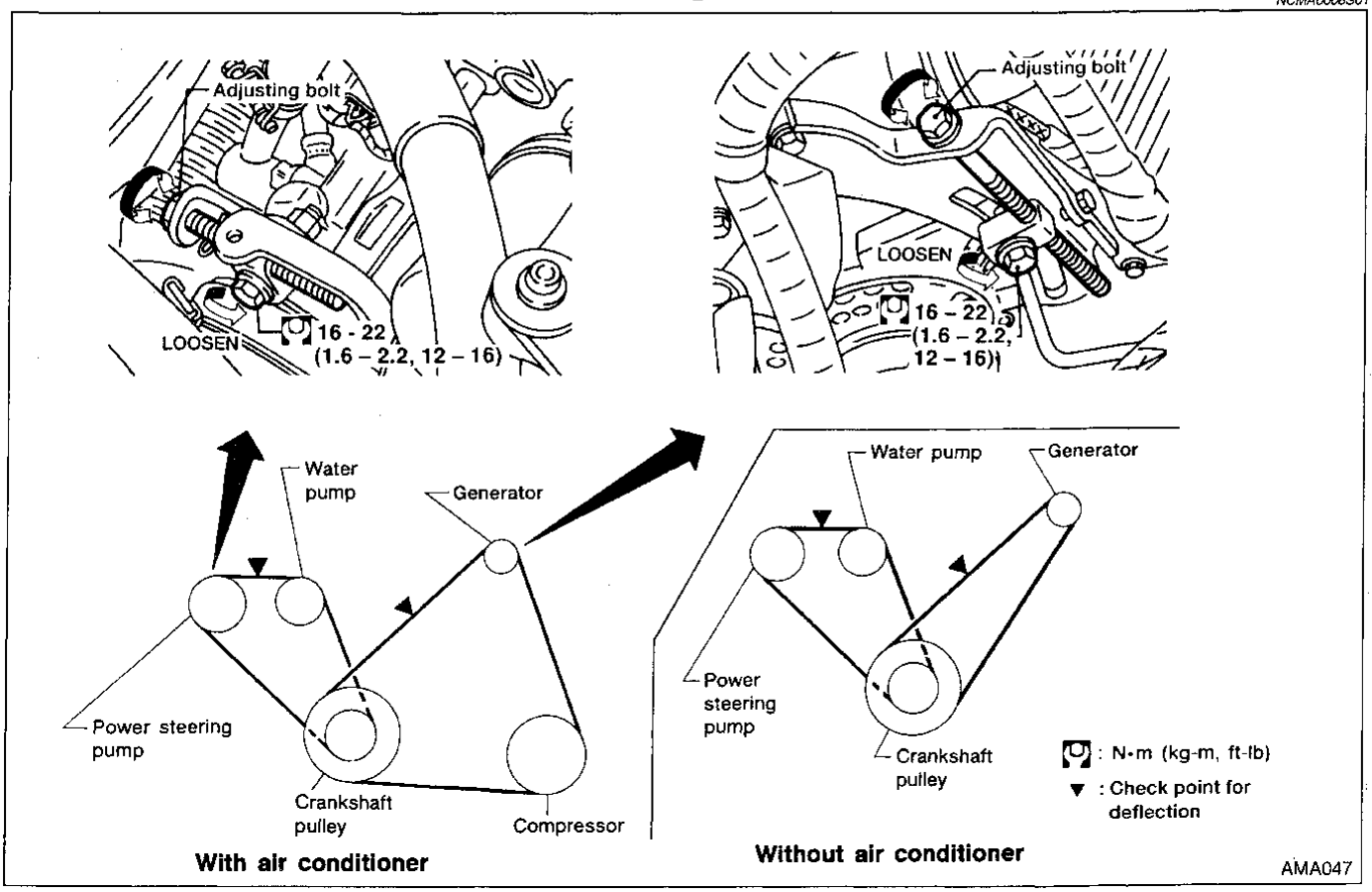
**CAUTION:**

**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.**

## Checking Drive Belts

NCMA0006S01




1. Inspect belt for cracks, fraying, wear and oil. If necessary, replace.
2. Inspect drive belt deflection or tension at a point on the belt midway between pulleys. Check belt tension using belt tension gauge (BT3373-F or equivalent).

- **Inspect drive belt deflection or tension when engine is cold. Adjust if belt deflection exceeds the limit or if belt tension is not within specifications.**
- Belt tension can also be checked at other points on the belt.

### DRIVE BELT DEFLECTION AND TENSION

| | | Deflection adjustment Unit: mm (in) | | | Tension adjustment *1 Unit: N (kg, lb) | | |
|---|---|---|---|---|---|---|---|
| | | Used belt | | New belt | Used belt | | New belt |
| | | Limit | After adjustment | | Limit | After adjustment | |
| Generator | With air conditioner compressor | 11.5 - 12.5 (0.453 - 0.492) | 7 - 8 (0.28 - 0.31) | 6.5 - 7.5 (0.256 - 0.295) | 324 (33, 75) | 686 - 736 (70 - 75, 155 - 165) | 755 - 853 (77 - 87, 170 - 190) |
| | Without air conditioner compressor | 12 - 13 (0.47 - 0.51) | 8 - 9 (0.31 - 0.35) | 7 - 8 (0.28 - 0.31) | 294 (30, 65) | 549 - 647 (56 - 66, 125 - 145) | 677 - 755 (69 - 77, 150 - 170) |
| Power steering oil pump | | 6 - 7 (0.24 - 0.28) | 4 - 5 (0.16 - 0.20) | 3.5 - 4.5 (0.138 - 0.177) | 294 (30, 65) | 549 - 647 (56 - 66, 125 - 145) | 677 - 755 (69 - 77, 150 - 170) |
| Applied pushing force | | 98 N (10 kg, 22 lb) | | | — | | |

*1: If the belt tension gauge cannot be installed at check points shown, check belt tension at a different location on the belt.

## Changing Engine Coolant

NCMA0006S02

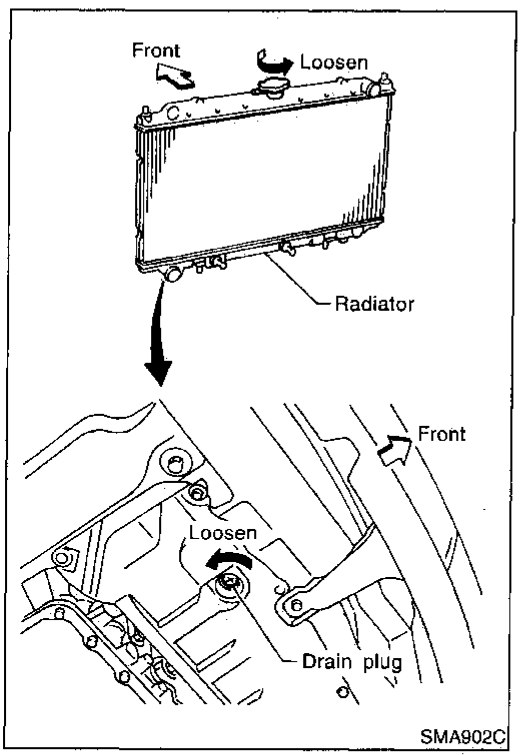
**WARNING:**
**To avoid the danger of being scalded, never change the coolant when the engine is hot.**

### —DRAINING ENGINE COOLANT—

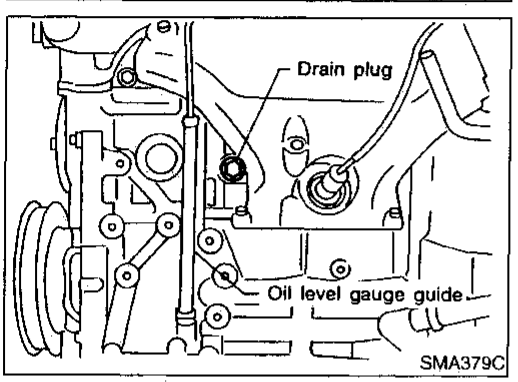
NCMA0006S0201

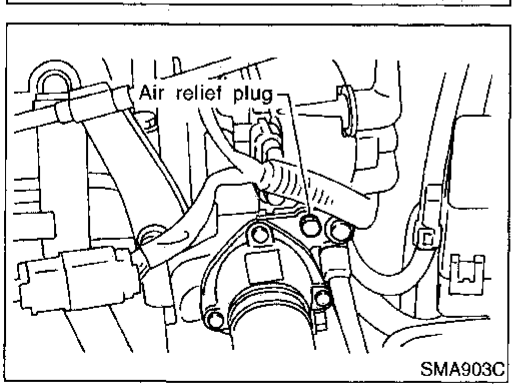
1. Set air conditioning system as follows to prevent coolant from remaining in the system.
   a. Turn ignition switch "ON" and set temperature controller to maximum hot position.
   b. Wait 10 seconds before turning ignition switch "OFF".
2. Open radiator drain plug at the bottom of radiator and remove radiator cap.
3. Remove reservoir tank, drain coolant, then clean reservoir tank.
   Install it temporarily.

- **Be careful not to allow coolant to contact drive belts.**




4. Remove cylinder block drain plug and air relief plug.
5. Check drained coolant for contaminants such as rust, corrosion or discoloration.
   If contaminated, flush engine cooling system.
   Refer to "—FLUSHING COOLING SYSTEM—", MA-16.



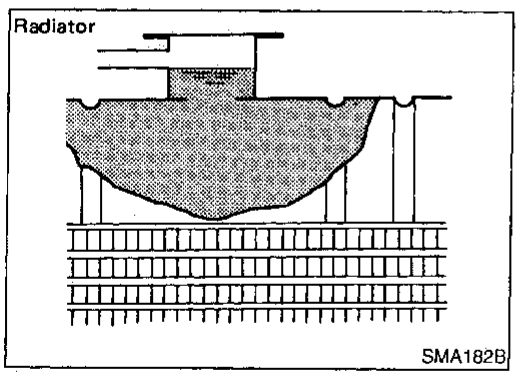
## —REFILLING ENGINE COOLANT—

NCMA0006S0202

1. Install reservoir tank, radiator drain plug, and cylinder block drain plug.

- **Apply sealant to the thread of cylinder block drain plug.**

**: 34.3 - 44.1 N·m (3.5 - 4.5 kg-m, 25 - 33 ft-lb)**




2. Fill radiator slowly with coolant until coolant spills from the air relief plug, then install air relief plug.
3. Fill radiator and reservoir tank to specified level as soon as coolant spills out without bubbles.

**Air relief plug:**

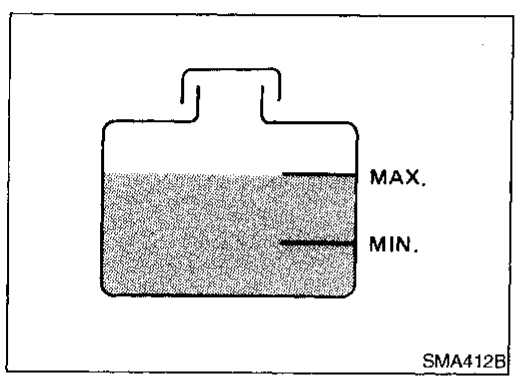
**: 7.2 - 9.8 N·m (0.73 - 1.0 kg-m, 63.4 - 86.8 in-lb)**

- Use genuine Nissan antifreeze coolant or equivalent mixed with water (distilled or demineralized).

**Pour coolant through coolant filler neck slowly to allow air in system to escape.**

**Refer to "RECOMMENDED FLUIDS AND LUBRICANTS", MA-12.**

**Coolant capacity (Without reservoir tank):**
**6.2 ℓ (6-1/2 US qt, 5-1/2 Imp qt)**




**Reservoir tank capacity (for MAX level):**
**0.7 ℓ (3/4 US qt, 5/8 Imp qt)**

4. Warm up engine to normal operating temperature without radiator cap installed.
5. Run engine at 2,500 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 it down.

- 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 line with coolant.
8. Repeat step 5 through step 7 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 control set at several positions between COOL and HOT.

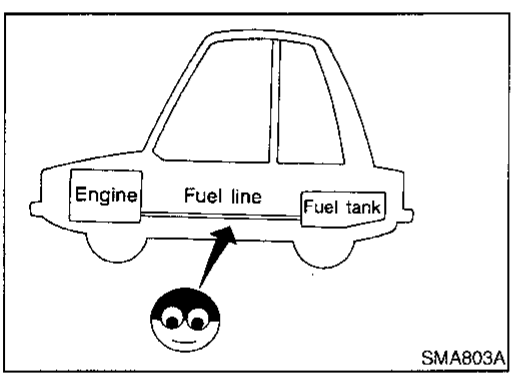
- Sound may be noticeable at heater water cock.

11. If sound is heard, bleed air from cooling system by repeating steps 5 through 7 until coolant level no longer drops.

- **Clean excess coolant from engine.**

**—FLUSHING COOLING SYSTEM—** NCMA0006S0203

1. Open air relief plug.
2. 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 rediator cap.
3. Run engine and warm it up to normal operating temperature.
4. Rev engine two or three times under no-load.
5. Stop engine and wait until it cools down.
6. Drain water.
7. Repeat steps 1 through 6 until clear water begins to drain from radiator.

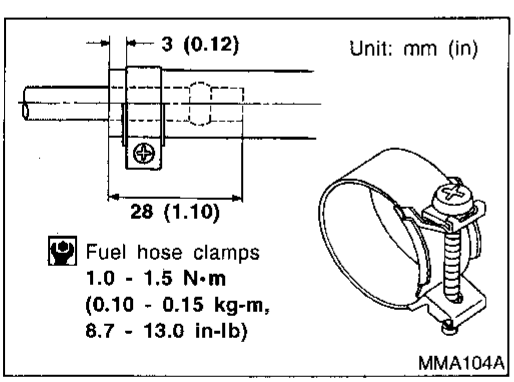


SMA803A

## Checking Fuel Lines

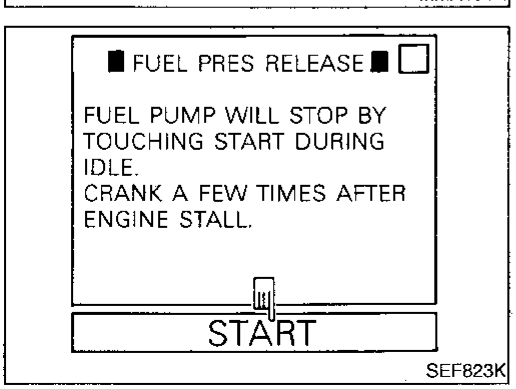
NCMA0006S03

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



MMA104A

**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.**



SEF823K

## Changing Fuel Filter

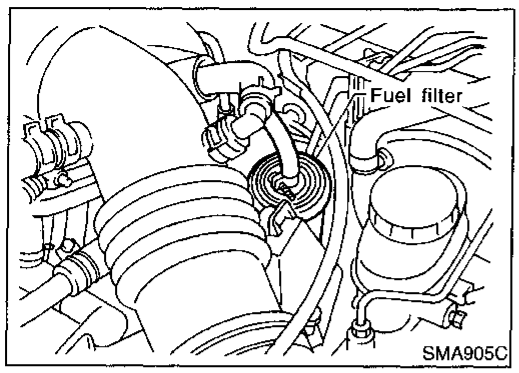
NCMA0006S04

**WARNING:**
**Before removing fuel filter, release fuel pressure from fuel line.**

### WITH CONSULT

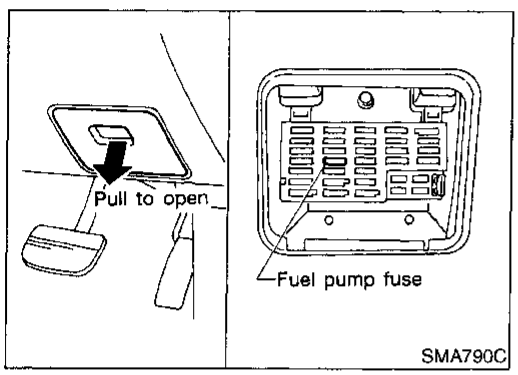
NCMA0006S0401

1. Start engine.
2. Perform "FUEL PRESSURE RELEASE" in "WORK SUPPORT" mode to release fuel pressure to zero.
3. After engine stalls, crank engine two or three times to make sure that fuel pressure is released.
4. Turn ignition switch "OFF".




5. Loosen fuel hose clamps.
6. Replace fuel filter.

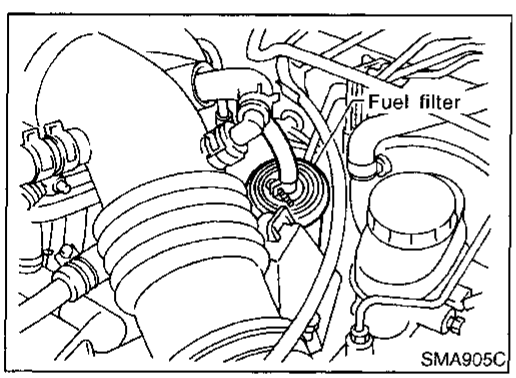
- **Be careful not to spill fuel over engine compartment. Place a shop towel to absorb fuel.**
- **Use a high-pressure type fuel filter. Do not use a synthetic resinous fuel filter.**
- **When tightening fuel hose clamps, refer to "Checking Fuel Lines".**




### ⊗ WITHOUT CONSULT

NCMA0006S0402

1. Remove fuel pump fuse.
2. Start engine.
3. After engine stalls, crank engine two or three times to make sure that fuel pressure is released.
4. Turn ignition switch "OFF" and install fuel pump fuse.




5. Loosen fuel hose clamps.
6. Replace fuel filter.

- **Be careful not to spill fuel over engine compartment. Place a shop towel to absorb fuel.**
- **Use a high-pressure type fuel filter. Do not use a synthetic resinous fuel filter.**
- **When tightening fuel hose clamps, refer to "Checking Fuel Lines".**

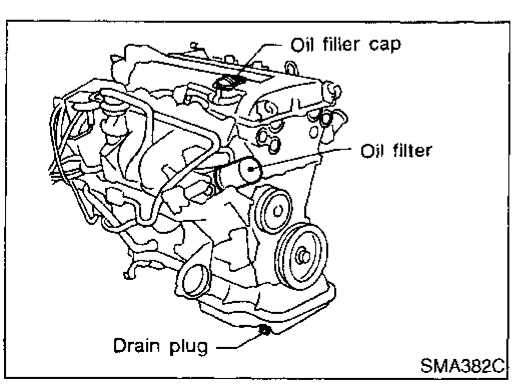
## Changing Air Cleaner Filter

NCMA0006S05

### VISCOUS PAPER TYPE

NCMA0006S0501

**The viscous paper type filter does not need cleaning.**




## Changing Engine Oil

NCMA0006S06

**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. Warm up engine, and check for oil leakage from engine components.
2. Stop engine.
3. Remove drain plug and oil filler cap.

4. Drain oil and refill with new engine oil.

**Oil specification and viscosity**

- API Certification Mark
- API grade SG/SH, Energy Conserving II or API grade SJ, Energy Conserving
- ILSAC grade GF-II
- See "RECOMMENDED FLUIDS AND LUBRICANTS", MA-11.

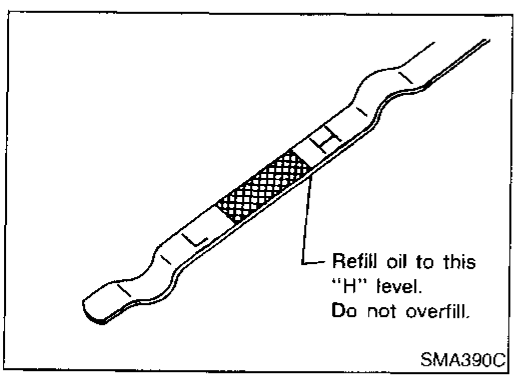
**Oil capacity (Approximate):**

Unit: ℓ (US qt, Imp qt)

| | | |
|---|---|---|
| Drain and refill | With oil filter change | 3.4 (3-5/8, 3) |
| | Without oil filter change | 3.2 (3-3/8, 2-7/8) |
| Dry engine (engine overhaul) | | 3.6 (3-7/8, 3-1/8) |

**CAUTION:**

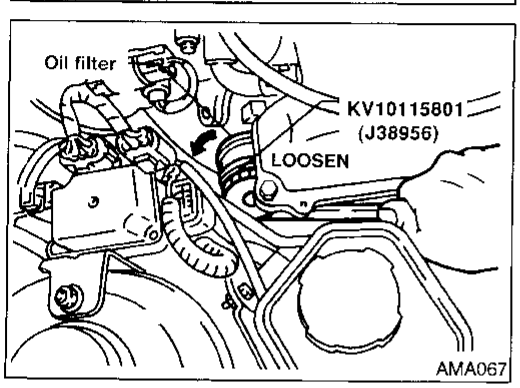
- **Be sure to clean drain plug and install with new washer.**
  **Oil pan drain plug:**
  **: 29 - 39 N·m (3.0 - 4.0 kg-m, 22 - 29 ft-lb)**
- **The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only. Always use the dipstick to determine when the proper amount of oil is in the engine.**




5. Warm up engine and check area around drain plug and oil filter for oil leakage.
6. Stop engine.
7. Check oil level.

## Changing Oil Filter

NCMA0006S07



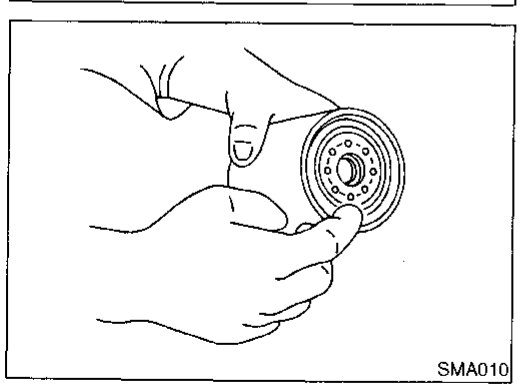

1. Remove oil filter with Tool.

**WARNING:**

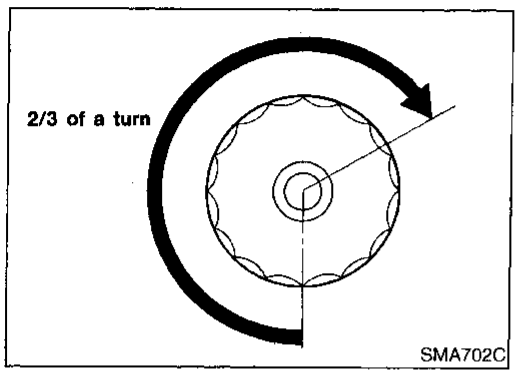
**Be careful not to burn yourself, as the engine and engine oil are hot.**

The filter is a full-flow cartridge type and is provided with a relief valve.

**Refer to LC section ("Oil Filter", "ENGINE LUBRICATION SYSTEM").**



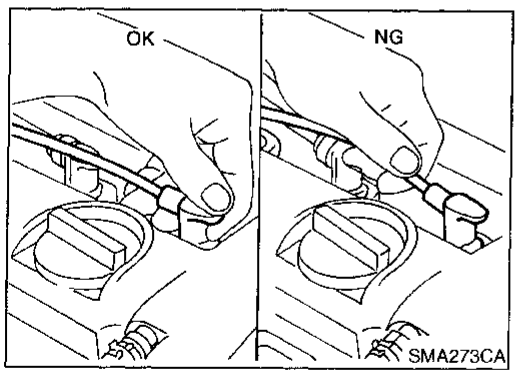

2. Clean oil filter mounting surface on cylinder block. Coat rubber seal of new oil filter with engine oil.




3. Screw in the oil filter until a slight resistance is felt, then tighten an additional 2/3 turn.
4. Add engine oil.

**Refer to Changing Engine Oil.**

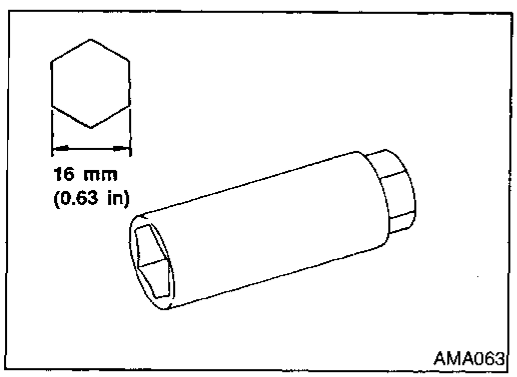
- **Clean excess oil from engine.**




## Changing Spark Plugs (Platinum-tipped type)

NCMA0006S08

1. Disconnect ignition wires from spark plugs at boot. Do not pull on the wire.




2. Remove spark plugs with spark plug socket.

**Spark plug:**

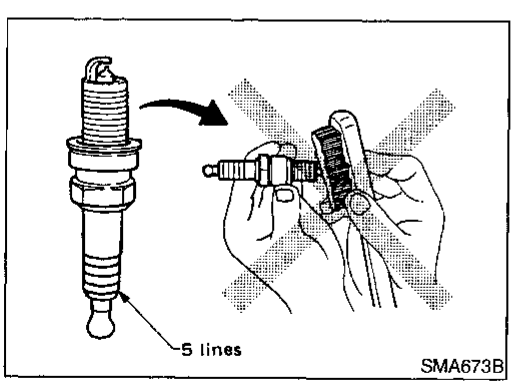
| | |
|---|---|
| Standard type | PFR5B-11 |
| Cold type | PFR6B-11<br>PFR7B-11 |

**Use standard type spark plug for normal condition.**
The hot type spark plug is suitable when fouling occurs with the standard type spark plug under conditions such as:

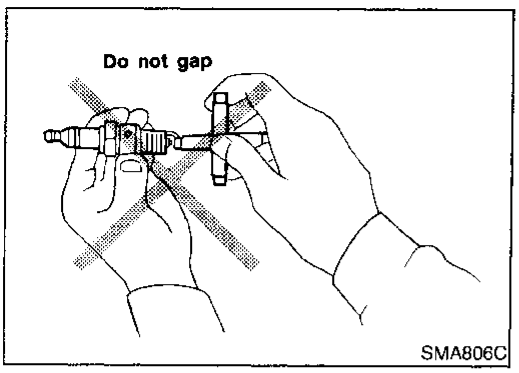
- frequent engine starts
- low ambient temperatures

The cold type spark plug is suitable when spark knock occurs with the standard type spark plug under conditions such as:

- extended highway driving
- frequent high engine revolution




- **Do not use a wire brush for cleaning.**
- **If plug tip is covered with carbon, spark plug cleaner may be used.**
  - **Cleaner air pressure:**
    **Less than 588 kPa (6 kg/cm$^2$, 85 psi)**
  - **Cleaning time:**
    **Less than 20 seconds**

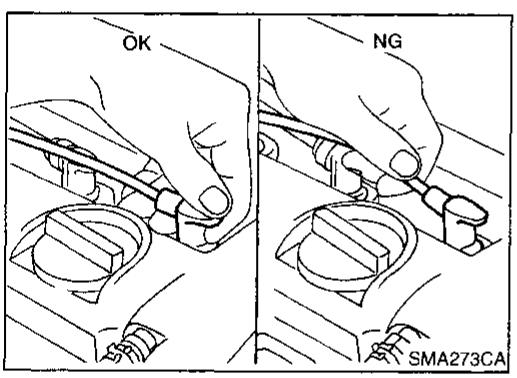



- **Checking and adjusting plug gap is not required between change intervals.**

3. Install spark plugs. Reconnect ignition wires according to numbers indicated on them.

   **Spark plug:**

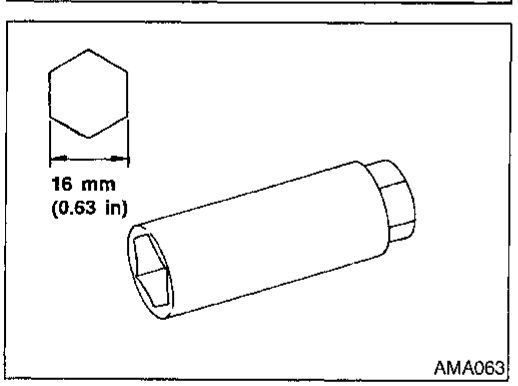
   **: 20 - 29 N·m (2.0 - 3.0 kg-m, 14 - 22 ft-lb)**




## Changing Spark Plugs (Conventional type)

NCMA0006S10

1. Disconnect ignition wires from spark plugs at boot. Do not pull on the wire.




2. Remove spark plugs with spark plug socket.

**Spark plug:**

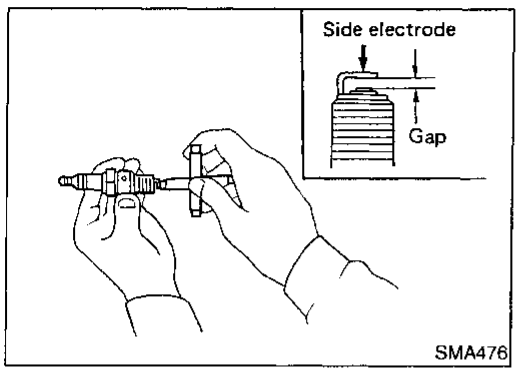
| | |
|---|---|
| Standard type | BKR6E |
| Hot type | BKR5E |
| Cold type | BKR7E |

**Use standard type spark plug for normal condition.**
The hot type spark plug is suitable when fouling occurs with the standard type spark plug under conditions such as:

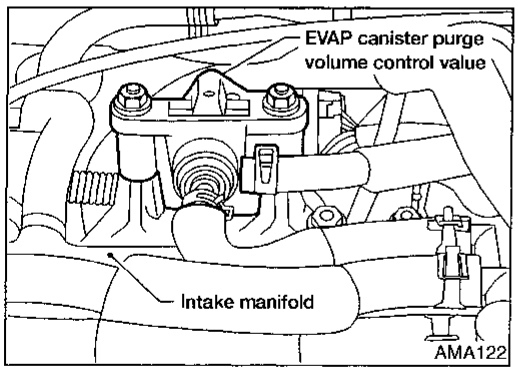
- frequent engine starts
- low ambient temperatures

The cold type spark plug is suitable when spark knock occurs with the standard type spark plug under conditions such as:

- extended highway driving
- frequent high engine revolution




3. Check plug gap of each new spark plug.
   **Gap: 0.8 - 0.9 mm (0.031 - 0.035 in)**
- **Use a wire brush for cleaning, if necessary.**
4. Install spark plugs. Reconnect ignition wires according to numbers indicated on them.
   **Spark plug:**
   **: 20 - 29 N·m (2.0 - 3.0 kg-m, 14 - 22 ft-lb)**

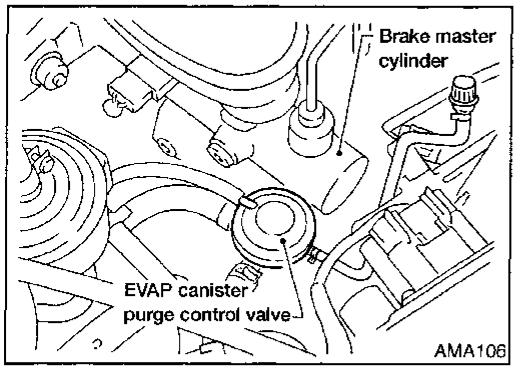


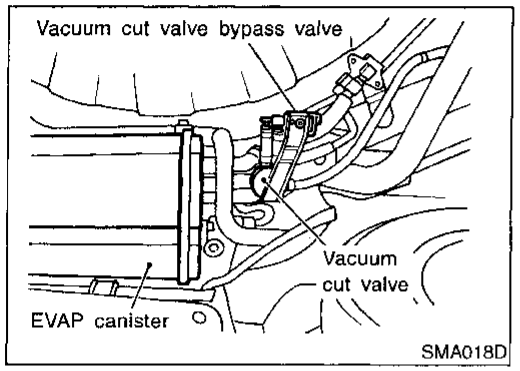

## Checking EVAP Vapor Lines

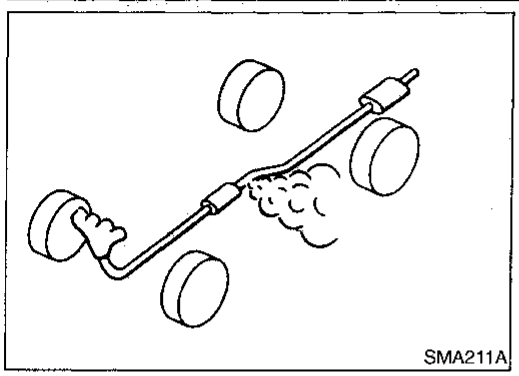
NCMA0006S09

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

**Refer to EC section ("EVAPORATIVE EMISSION SYSTEM").**



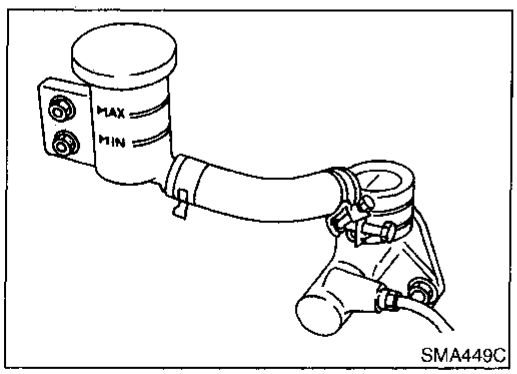




SMA211A

## Checking Exhaust System

NCMA0007S01

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

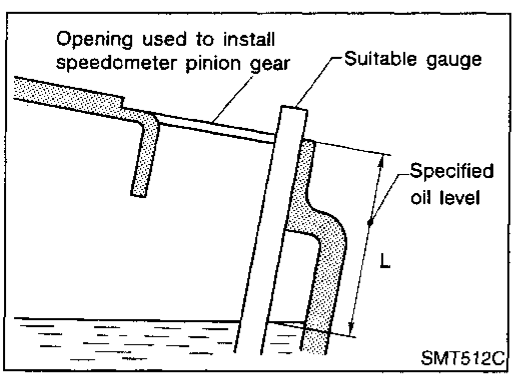


SMA449C

## Checking Clutch Fluid Level and Leaks

NCMA0007S02

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



SMT512C

## Checking M/T Oil

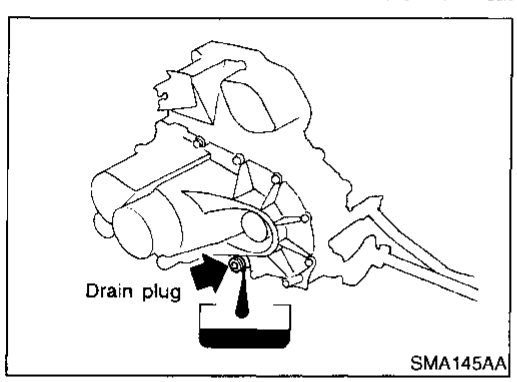
NCMA0007S03

- Check that oil is not leaking from transaxle or around it.
- Remove speedometer pinion and check that the oil level L at vehicle rear side is within specification.

**Specified oil level (Dimension L):**

**RS5F32A 40 - 45 mm (1.57 - 1.77 in)**

**RS5F32V 34 - 40 mm (1.34 - 1.57 in)**



SMA145AA

## Changing M/T Oil

NCMA0007S04

1. Drain oil from drain plug and refill with new gear oil.
2. Check oil level. (Refer to "Checking M/T Oil".)

**Oil grade:**

**API GL-4**

**Viscosity:**

**See "RECOMMENDED FLUIDS AND LUBRICANTS", MA-11.**

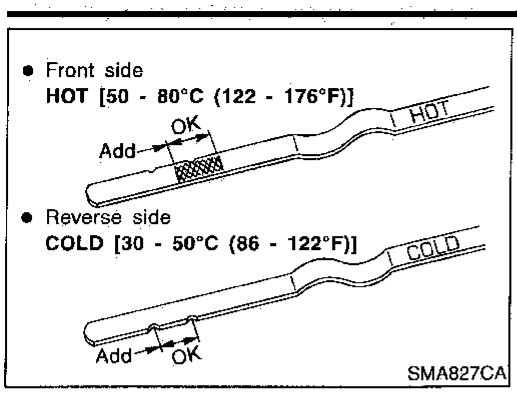
**Capacity:**

**RS5F32A 3.6 - 3.8 ℓ (7-5/8 - 8 US pt, 6-3/8 - 6-3/4 Imp pt)**

**RS5F32V 3.7 - 3.9 ℓ (7-7/8 - 8-1/4 US pt, 6-1/2 - 6-7/8 Imp pt)**

**Drain plug:**

**: 25 - 34 N·m (2.5 - 3.5 kg-m, 18 - 25 ft-lb)**

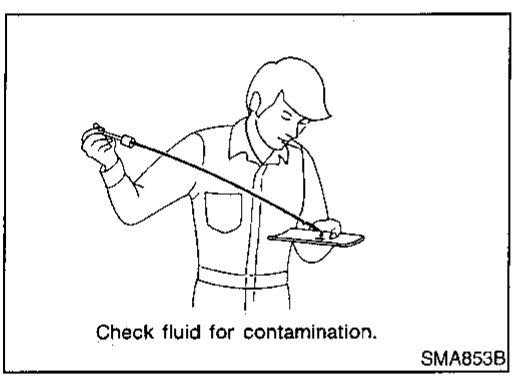



## Checking A/T Fluid

NCMA0007S06

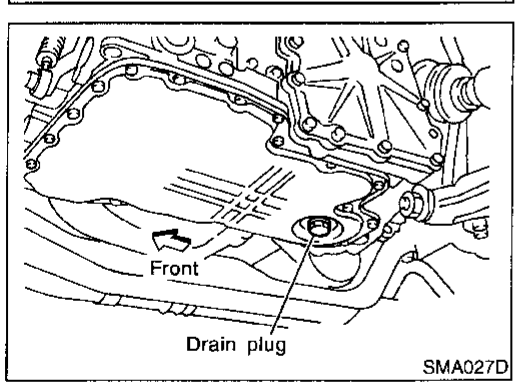
1. Warm up engine.
2. Check for fluid leakage.
3. Before driving, fluid level can be checked at fluid temperatures of 30 to 50°C (86 to 122°F) using "COLD" range on dipstick.
   a. Park vehicle on level surface and set parking brake.
   b. Start engine and move selector lever through each gear position. Leave selector lever in "P" position.
   c. Check fluid level with engine idling.
   d. Remove dipstick and note reading. If level is at low side of either range, and fluid to the charging pipe.
   e. Re-insert dipstick into charging pipe as far as it will go.
   f. Remove dipstick 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 dipstick.




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 LC section ("Radiator", "ENGINE COOLING SYSTEM").




## Changing A/T Fluid

NCMA0007S07

1. Warm up A/T fluid.
2. Stop engine.
3. Drain A/T fluid from drain plug and refill with new A/T fluid. Always refill same volume with drained fluid.

   **Fluid grade:**

   **Nissan Matic "D" (Continental U.S. and Alaska) or Genuine Nissan Automatic Transmission Fluid (Canada). Refer to "RECOMMENDED FLUIDS AND LUBRICANTS", MA-11.**

   **Fluid capacity (With torque converter):**

   **7.0 ℓ (7-3/8 US qt, 6-1/8 Imp qt)**

   **Drain plug:**

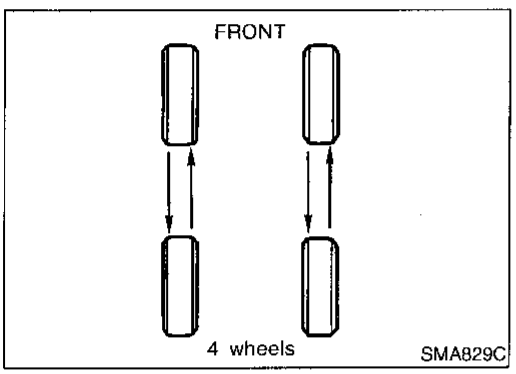
   **: 29 - 39 N·m (3.0 - 4.0 kg-m, 22 - 29 ft-lb)**
4. Run engine at idle speed for five minutes.
5. Check fluid level and condition. Refer to "Checking A/T Fluid". If fluid is still dirty, repeat steps 2 through 5.

## Balancing Wheels

NCMA0007S14

Adjust wheel balance using the road wheel center.

**Wheel balance (Maximum allowable unbalance):**
**Refer to SDS, MA-27.**

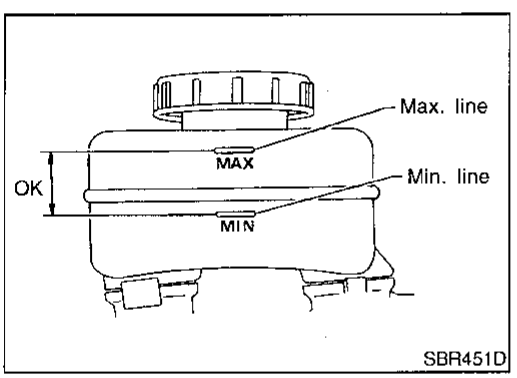



## Tire Rotation

NCMA0007S15

- **After rotating the tires, adjust the tire pressure.**
- **Retighten the wheel nuts after the aluminum wheel has been run for the first 1,000 km (600 miles). (also in cases of a flat tire, etc.)**

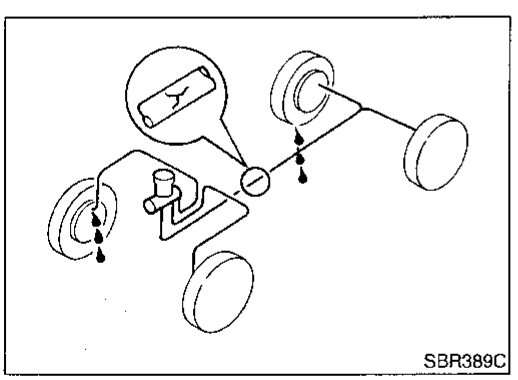
**Wheel nuts:**
**: 118 - 147 N·m (12 - 15 kg-m, 87 - 108 ft-lb)**




## Checking Brake Fluid Level and Leaks

NCMA0007S16

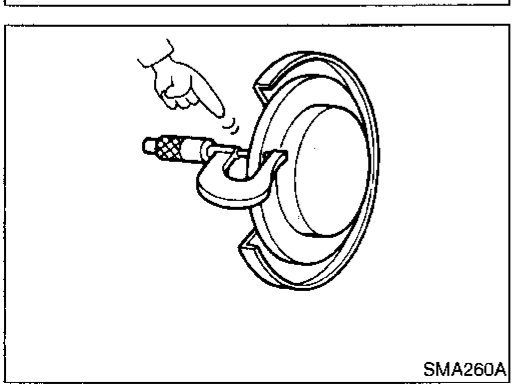
If fluid level is extremely low, check brake system for leaks.




## Checking Brake Lines and Cables

NCMA0007S17

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




## Checking Disc Brake

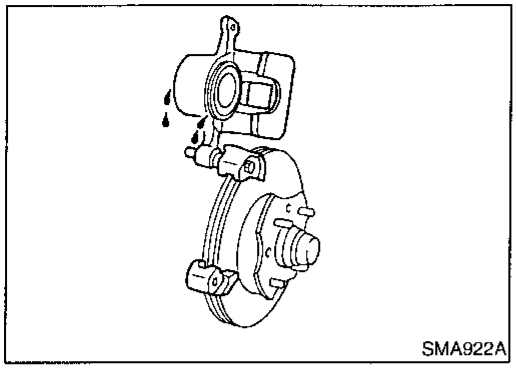
NCMA0007S18

### ROTOR

NCMA0007S1801

Check condition and thickness.

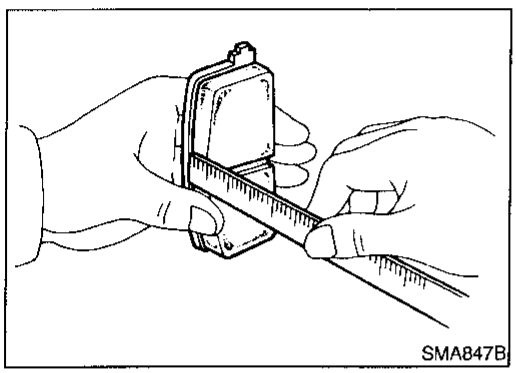
**Standard thickness:**
**Front 22 mm (0.87 in)**
**Rear 9 mm (0.35 in)**
**Minimum thickness:**
**Front 20 mm (0.79 in)**
**Rear 8 mm (0.31 in)**


SMA922A

## CALIPER

NCMA0007S1802

Check for leakage.

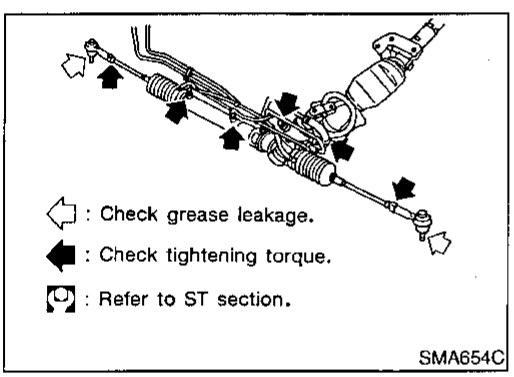

SMA847B

## PAD

NCMA0007S1803

Check wear or damage.

**Standard thickness:**
**Front 11 mm (0.43 in)**
**Rear 10 mm (0.39 in)**
**Minimum thickness:**
**Front 2 mm (0.08 in)**
**Rear 1.5 mm (0.0059 in)**



SMA654C

## Checking Steering Gear and Linkage

NCMA0007S20

### STEERING GEAR

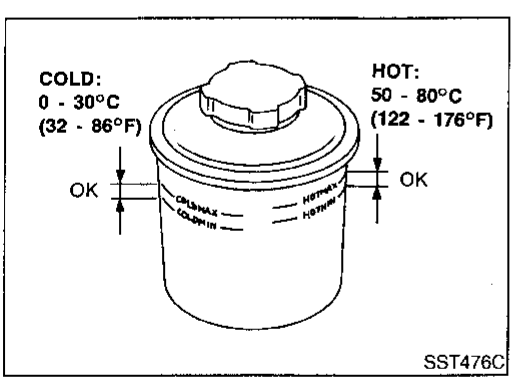
NCMA0007S2001

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

### STEERING LINKAGE

NCMA0007S2002

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



SST476C

## Checking Power Steering Fluid and Lines

NCMA0007S21

### CHECKING FLUID LEVEL

NCMA0007S2101

- Check fluid level with engine off.
- Use the correct range of the tank depending on the fluid temperature. Use "HOT" range at fluid temperatures of 50 to 80°C (122 to 176°F). Use "COLD" range at fluid temperatures of 0 to 30°C (32 to 86°F).

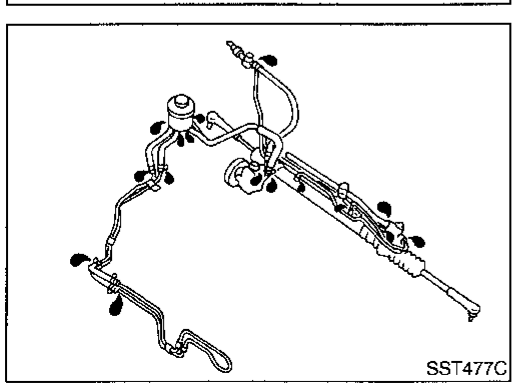
**CAUTION:**

- **Do not overfill.**
- **Recommended fluid is Automatic Transmission Fluid type DEXRON™III or equivalent.**

### CHECKING LINES

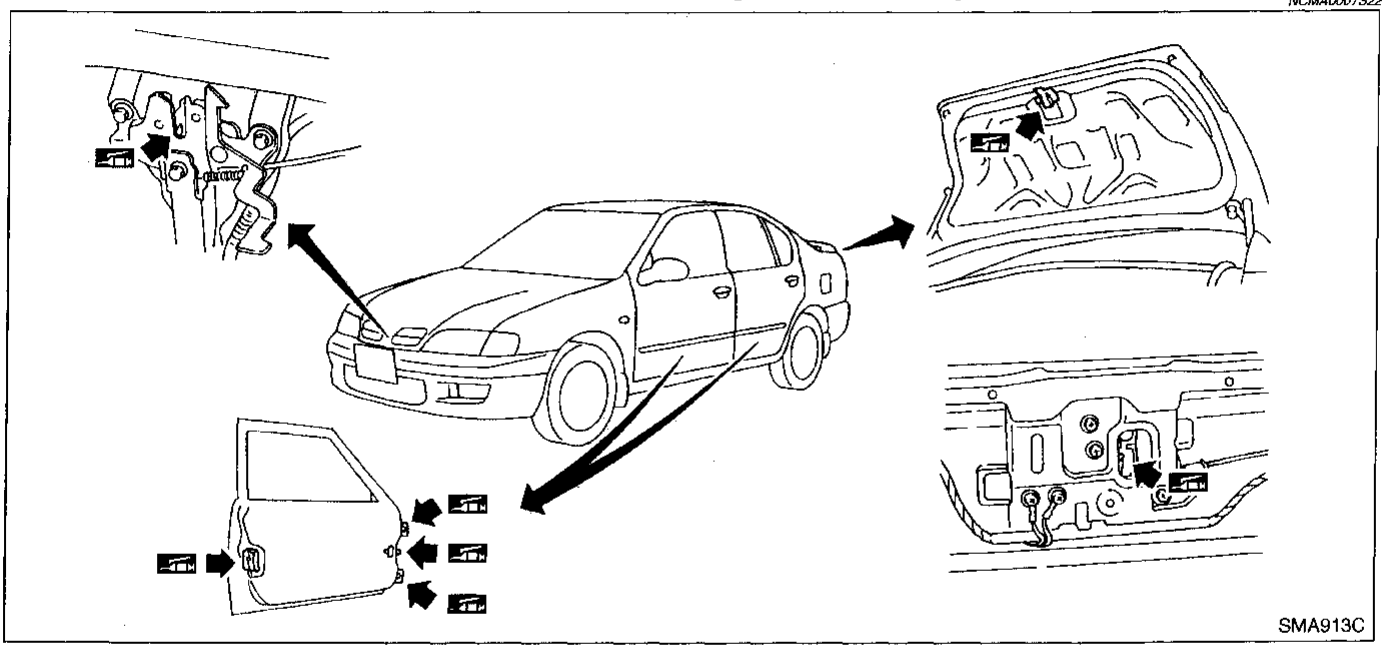
NCMA0007S2102

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


SST477C

## Lubricating Locks, Hinges and Hood Latches

NCMA0007S22




## Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters

NCMA0007S23

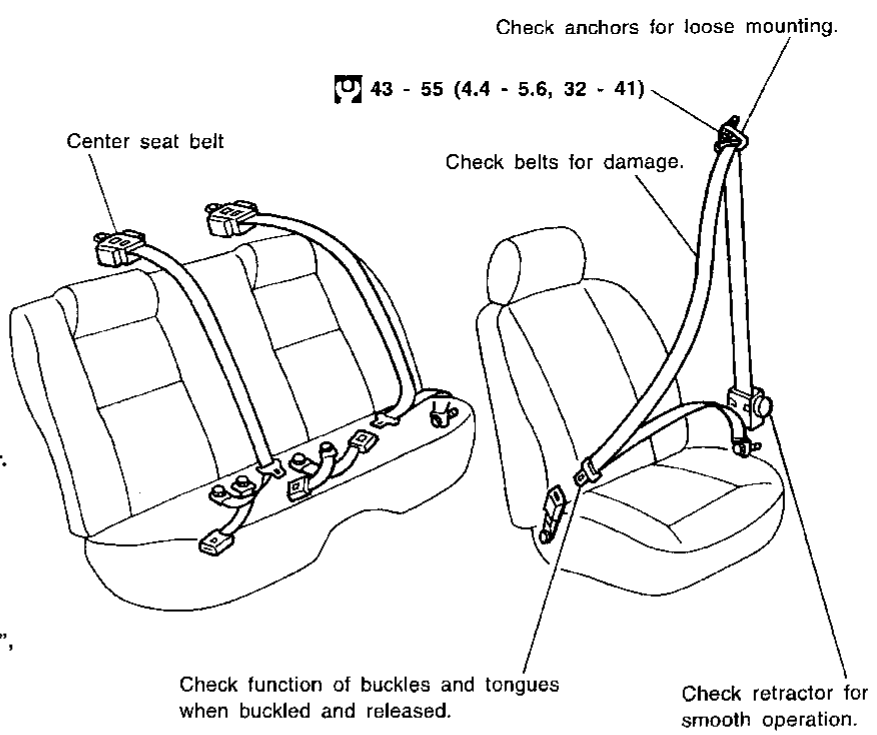
**CAUTION:**

- **After any collision, inspect all seat belt assemblies, including retractors and other attached hardwares (i.e. 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 Belt Inspection", "SEAT BELTS" in RS section.**

**Anchor bolt**
**43 - 55 (4.4 - 5.6, 32 - 41)**

: N•m (kg-m, ft-lb)



# Engine Maintenance

## DRIVE BELT DEFLECTION AND TENSION

NCMA0008

NCMA0008S01

| | | Deflection adjustment Unit: mm (in) | | | Tension adjustment *1 Unit: N (kg, lb) | | |
|---|---|---|---|---|---|---|---|
| | | Used belt | | New belt | Used belt | | New belt |
| | | Limit | After adjustment | | Limit | After adjustment | |
| Generator | With air conditioner compressor | 11.5 - 12.5 (0.453 - 0.492) | 7 - 8 (0.28 - 0.31) | 6.5 - 7.5 (0.256 - 0.295) | 324 (33, 75) | 686 - 736 (70 - 75, 155 - 165) | 755 - 853 (77 - 87, 170 - 190) |
| | Without air conditioner compressor | 12 - 13 (0.47 - 0.51) | 8 - 9 (0.31 - 0.35) | 7 - 8 (0.28 - 0.31) | 294 (30, 65) | 549 - 647 (56 - 66, 125 - 145) | 677 - 755 (69 - 77, 150 - 170) |
| Power steering oil pump | | 6 - 7 (0.24 - 0.28) | 4 - 5 (0.16 - 0.20) | 3.5 - 4.5 (0.138 - 0.177) | 294 (30, 65) | 549 - 647 (56 - 66, 125 - 145) | 677 - 755 (69 - 77, 150 - 170) |
| Applied pushing force | | 98 N (10 kg, 22 lb) | | | — | | |

*1: If the belt tension gauge cannot be installed at check points, check belt tension at a different location on the belt.

## SPARK PLUG TYPE

NCMA0006S02

| | | Platinum-tipped type | Conventinal type |
|---|---|---|---|
| Type | Standard | PFR5B-11 | BKR6E |
| | Hot | — | BKR5E |
| | Cold | PFR6B-11<br>PFR7B-11 | BKR7E |
| Plug gap | | — | 0.8 - 0.9 mm (0.031 - 0.035 in) |

# Chassis and Body Maintenance

## WHEEL BALANCE

NCMA0009

NCMA0009S01

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