MAINTENANCE

SECTION MA

CONTENTS

CONTENTS (Cont'd)

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

NEMA0001

The Supplemental Restraint System “AIR BAG” and “SEAT BELT PRE-TENSIONER” (crew cab model only), used along with a seat belt, help 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 in the instrument panel on the passenger side), seat belt pre-tensioners (crew cab model only), a diagnosis sensor unit, a crash zone sensor (4WD models), warning lamp, wiring harness, and spiral cable.

The vehicle (except crew cab model) is equipped with a passenger air bag deactivation switch. Because no rear seat exists where a rear-facing child restraint can be placed, the switch is designed to turn off the passenger air bag so that a rear-facing child restraint can be used in the front passenger seat. The switch is located in the center of the instrument panel, near the ashtray. When the switch is turned to the ON position, the passenger air bag is enabled and could inflate in a frontal collision. When the switch is turned to the OFF position, the passenger air bag is disabled and will not inflate in a frontal collision. A passenger air bag OFF indicator on the instrument panel lights up when the passenger air bag is switched OFF. The driver air bag always remains enabled and is not affected by the passenger air bag deactivation switch.

Information necessary to service the system safely is included in the **RS section** of this Service Manual.

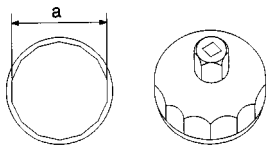
WARNING:

- **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 should be performed by an authorized NISSAN 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 RS section.**
- **Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. Spiral cable and wiring harnesses (except “SEAT BELT PRE-TENSIONER”) are covered with yellow insulation either just before the harness connectors or on the complete harness, for easy identification.**
- **The vehicle (except crew cab model) is equipped with a passenger air bag deactivation switch which can be operated by the customer. When the passenger air bag is switched OFF, the passenger air bag is disabled and will not inflate in a frontal collision. When the passenger air bag is switched ON, the passenger air bag is enabled and could inflate in a frontal collision. After SRS maintenance or repair, make sure the passenger air bag deactivation switch is in the same position (ON or OFF) as when the vehicle arrived for service.**

Special Service Tools

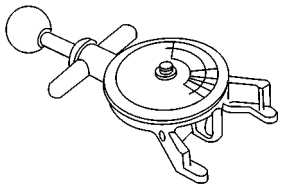
NEMA0002

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

NEMA0052

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 have their NISSAN dealers do them.

OUTSIDE THE VEHICLE

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

Item		Reference page
Tires	Check the pressure with a gauge 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-39
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-39, ***SU-7***, “Front Wheel Alignment”
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-42
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 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 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.	MA-43, ***RS-9***, “Seat Belt Inspection”
Accelerator pedal	Check that 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.	***CL-6***, “Adjusting Clutch Pedal”
Brakes	Check that the brake does not pull the vehicle to one side when applied.	—
Brake pedal and booster	Check the pedal for smooth operation and make sure it has the proper distance under it when depressed fully. Check the brake booster function. Be sure to keep floor mats away from the pedal.	***BR-16***, “Brake Pedal and Bracket” and ***BR-21***, “Brake Booster”
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.	***BR-34***, “Parking Brake Control”
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	
		KA24DE	VG33E
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-18	MA-28
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 reservoirs	MA-35, 39	
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-17	MA-26
Engine oil level	Check the level on the dipstick after parking the vehicle on a level spot and turning off the engine.	MA-21	MA-30
Power steering fluid level and lines	Check the level on the reservoir with the engine off. Check the lines for improper attachment, leaks, cracks, etc.	MA-41	
Automatic transmission fluid level	Check the level on the dipstick after putting the selector lever in “P” with the engine idling.	MA-36	
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-35	
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: ● 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-8
		Chassis and Body Maintenance	MA-9
Schedule 2	Follow Periodic Maintenance Schedule 2 if none of the driving conditions shown in Schedule 1 apply to the driving habits.	Emission Control System Maintenance	MA-11
		Chassis and Body Maintenance	MA-12

Maintenance for off-road driving (4x4 only)

Whenever you drive off-road through sand, mud or water, more frequent maintenance may be required of the following items:

▲ Brake pads and rotors
▲ Brake lining and drums
▲ Brake lines and hoses
▲ Wheel bearing grease and free–running hub grease
▲ Differential, transmission and transfer oil
▲ Steering linkage
▲ Propeller shaft and drive shafts
▲ Air cleaner filter

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	KA24DE	VG33E
Drive belts									I*								I*	MA-17	MA-26
Air cleaner filter	NOTE (1)								[R]								[R]	MA-21	MA-30
Positive crankcase ventilation (PCV) filter	NOTE (2)								[R]								[R]	MA-24	—
EVAP vapor lines									I*								I*	MA-24	MA-33
Fuel lines									I*								I*	MA-20	MA-29
Fuel filter*	NOTE (2)																	MA-20	MA-29
Engine coolant	NOTE (3)																R*	MA-18	MA-27
Engine oil		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	MA-21	MA-30
Engine oil filter (Use part No. 15208-31U00 or equivalent for VG engine.)		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	MA-22	MA-31
Spark plugs (Single PLATINUM–TIPPED type)																	[R]	MA-23	MA-32
Spark plugs (Double PLATINUM–TIPPED type)		Replace every 105,000 miles (169,000 km)																MA-23	MA-32
Timing belt		Replace every 105,000 miles (169,000 km)																—	***EM-79***, Timing Belt
Intake and Exhaust valve clearance ★	NOTE (4)																	***EM-40***, Valve Clearance	—

NOTE:

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

(2) When the filter becomes clogged, the vehicle speed cannot be increased as the driver wishes. In such an event, replace the filter.

(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 noises increases, inspect valve clearance.

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

NEMA0004S01

NEMA0004S0101

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary. L = Lubricate. [ ]: 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	
Brake lines & cables						I				I				I				I	MA-39
Brake pads, rotors, drums & linings				I		I		I		I		I		I		I		I	MA-40, 40
Automatic transmission & transfer fluid, manual transmission & differential gear oil (exc. LSD)		NOTE (1)				I				I				I				I	MA-35, 36, 37, 38
LSD gear oil		NOTE (1)				I				R				I				R	MA-38
Manual transmission gear oil																		[R]	MA-35
Steering gear, linkage, axle & suspension parts				I		I		I		I		I		I		I		I	MA-41 NOTE (6)
Tire Rotation		NOTE (2)																	MA-5
Drive shaft boots (4x4)				I		I		I		I		I		I		I		I	***AX-6*** - Drive Shaft
Propeller shaft		NOTE (3)		L		L		L		L		L		L		L		L	MA-37
Front wheel bearing grease	4x2									I								I	***AX-4*** - Front Wheel Bearing
Front wheel bearing grease and free-running hub grease	4x4	NOTE (4)				I				R				I				R	***AX-4***- Front Wheel Bearing
Exhaust system				I		I		I		I		I		I		I		I	MA-35
Supplemental air bag system		NOTE (5)																	***RS-17*** - Maintenance Items
ASCD vacuum hoses						I				I				I				I	***EL-139***-ASCD Actuator/Pump Check, Trouble Diagnoses

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

NEMA0004S0102

(3) The propeller shaft should be re-greased after being immersed in water.
(4) If operating frequently in water, replace grease every 3,750 miles (6,000 km) or 3 months.
(5) Inspect the air bag system 10 years after the date of manufacture noted on the FMVSS certification label.
(6) Refer to "Front Suspension Parts", ***SU-27***, "Front Axle Parts", ***AX-3***, "Rear Axle Parts", ***AX-25***, "Rear Suspension Parts", ***SU-7***.

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	KA24DE	VG33E
Drive belts					I*				I*	MA-17	MA-26
Air cleaner filter					[R]				[R]	MA-21	MA-30
Positive crankcase ventilation (PCV) filter	NOTE (1)				[R]				[R]	MA-24	—
EVAP vapor lines					I*				I*	MA-24	MA-33
Fuel lines					I*				I*	MA-20	MA-29
Fuel filter*	NOTE (1)									MA-20	MA-29
Engine coolant	NOTE (2)								R*	MA-18	MA-27
Engine oil		R	R	R	R	R	R	R	R	MA-21	MA-30
Engine oil filter (Use part No. 15208-31U00 or equivalent for VG engine)		R	R	R	R	R	R	R	R	MA-22	MA-31
Spark Plugs (Single PLATINUM–TIPPED type)									[R]	MA-23	MA-32
Spark plugs (Double PLATINUM–TIPPED type)		Replace every 105,000 miles (169,000 km)								MA-23	MA-32
Timing belt		Replace every 105,000 miles (169,000 km)								—	***EM-79***, Timing Belt
Intake and Exhaust valve clearance ★	NOTE (3)									***EM-40***, Valve Clearance	—

NOTE:

(2) When the filter becomes clogged, the vehicle speed cannot be increased as the driver wishes. In such an event, replace the filter.

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

(3) If valve noises increase, inspect valve clearance.

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

NEMA0004S02
NEMA0004S0201

Abbreviations: R = Replace. I = Inspect. Correct or replace if necessary. L = Lubricate. [ ]: At the mileage interval 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	
Brake lines & cables			I		I		I		I	MA-39
Brake pads, rotors, drums & linings			I		I		I		I	MA-40, 40
Automatic transmission & transfer fluid, manual transmission & differential gear oil (exc. LSD)			I		I		I		I	MA-35, 36, 37, 38
LSD gear oil			I		R		I		R	MA-38
Manual transmission gear oil									[R]	MA-35
Steering gear, linkage, axle & suspension parts.					I				I	MA-41 NOTE (4)
Tire rotation	NOTE (1)									MA-5
Drive shaft boots (4x4)			I		I		I		I	***AX-6*** - Drive Shaft
Propeller shaft	NOTE (2)		L		L		L		L	MA-37
Front wheel bearing grease (4x2)					I				I	***AX-4*** - Front Axle Wheel Bearing
Front wheel bearing grease and free-running hub grease(4x4)			I		R		I		R	***AX-4*** - Front Axle Wheel Bearing
Exhaust system					I				I	MA-35
Supplemental air bag system	NOTE (3)									***RS-17*** - Maintenance Item
ASCD vacuum hoses			I		I		I		[I]	***EL-139*** -ASCD Actuator/Pump Check, Trouble Diagnoses

NOTE:

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

(2) The propeller shaft should be re-greased after being immersed in water.

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

(4) Refer to "Front Suspension Parts", ***SU-7***, "Rear Suspension Parts", ***SU-27***, "Front Axle Parts", ***AX-3***, "Rear Axle Parts", ***AX-25***.

Fluids and Lubricants

NEMA0005S01

KA24DE 4x2

			Capacity (Approximate)			Recommended Fluids/Lubricants
			US measure	Imp measure	Liter	
Engine oil	Drain and Refill	With oil filter	3-3/4 qt	3-1/8 qt	3.5	• 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	3-1/2 qt	2-7/8 qt	3.3	
	Dry engine (Engine overhaul)		4-1/2 qt	3-3/4 qt	4.1	
Cooling system (With reservoir)		MT	9-5/8 qt	8 qt	9.15	50% Genuine NISSAN anti-freeze coolant or equivalent 50% Demineralized or Distilled water
		AT	9-1/2 qt	7-7/8 qt	8.95	
Manual transmission gear oil (FS5W71C)			4-1/4 pt	3-1/2 pt	2.0	API GL-4, Viscosity SAE 75W-90 only
Differential carrier gear oil		H190A	3-1/8	2-5/8	1.5	Standard differential gear: API GL-5*1 Limited-slip differential (LSD) gear: Use only LSD gear oil API GL-5 and SAE 80W-90*3 approved for NISSAN LSD*4.
		C200	2-3/8 pt	2-1/4 pt	1.3	
Automatic transmission fluid			8-3/8 qt	7 qt	7.9	NISSAN Matic “D” (Continental U.S. and Alaska) or Canada NISSAN Automatic Transmission Fluid *5
Power steering fluid			30.4-33.8 fl oz	31.7-35.2 fl oz	0.9-1.0	Genuine NISSAN PSF II or equivalent*6
Brake and clutch fluid			—	—	—	Genuine NISSAN Brake Fluid*2 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: Available in mainland U.S.A. through your NISSAN dealer.

*3: SAE 90 is acceptable in ambient temperatures above −18°C (0°F).

*4: Contact a NISSAN dealer for a list of approved oils.

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

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

KA24DE 4x4

			Capacity (Approximate)			Recommended Fluids/Lubricants
			US measure	Imp measure	Liter	
Engine oil	Drain and refill	With oil filter	4-1/8 qt	3-3/8 qt	3.9	• 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	3-7/8 qt	3-1/4 qt	3.7	
	Dry engine (Engine overhaul)		4-3/4 qt	4 qt	4.5	
Cooling system (With reservoir)		MT	9-3/4 qt	8-1/8 qt	9.25	50% Genuine NISSAN anti-freeze coolant or equivalent 50% Demineralized
		AT	9-1/2 qt	7-7/8 qt	8.95	
Manual transmission gear oil (FS5W71C)			10-3/8 pt	8-5/8 pt	4.9	API GL-4, Viscosity SAE 75W-90 only

		Capacity (Approximate)			Recommended Fluids/Lubricants
		US measure	Imp measure	Liter	
Transfer fluid (TX10A)		2-3/8 qt	2 qt	2.2	NISSAN Matic ″D″ (Continental U.S. and Alaska or Canada NISSAN Automatic Transmission Fluid*2 or API GL-4*1
Differential carrier gear oil	Front R180A	2-3/4 pt	2-1/4 pt	1.3	Standard differential gear: API GL-5*1 Limited-slip differential (LSD) gear: Use only LSD gear oil API GL-5 and SAE 80W-90*3 approved for NISSAN LSD*4.
	Rear C200	2-3/4 pt	2-1/4 pt	1.3	
Power steering fluid		30.4-33.8 fl oz	31.7-35.2 fl oz	0.9-1.0	Power Steering Fluid: Genuine NISSAN PSF II or equivalent*5
Brake and clutch fluid		—	—	—	Genuine NISSAN Brake Fluid*2 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: Available in mainland U.S.A. through your NISSAN dealer.
*3: SAE 90 is acceptable in ambient temperatures above −18°C (0°F).
*4: Contact a NISSAN dealer for a list of approved oils.
*5: Genuine NISSAN PSF, Canada NISSAN Automatic Transmission Fluid, Dexron™ III/Mercon™, or equivalent ATF may also be used.

VG33E

			Capacity (Approximate)			Recommended Fluids/Lubricants
			US measure	Imp measure	Liter	
Engine oil	Drain and refill	With oil filter	3-1/2 qt	2-7/8 qt	3.3	• 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	3-1/8 qt	2-5/8 qt	3.0	
	Dry engine (Engine overhaul)		4 qt	3-3/8 qt	3.8	
Cooling system (With reservoir)			11-5/8 qt	9-5/8 qt	10.95	Genuine NISSAN anti-freeze coolant or equivalent
Manual transmission gear oil (FS5R30A)		2WD	5-1/8 pt	4-1/4 pt	2.4	API GL-4, Viscosity SAE 75W-90 only
		4WD	10-3/4 pt	9 pt	5.1	
Transfer fluid (TX10A)			2-3/8 qt	2 qt	2.2	NISSAN Matic "D" (Continental U.S. and Alaska) or Canada NISSAN Automatic Transmission Fluid*2 or API GL-4*1
Differential carrier gear oil	Front (4WD) R200A		3-1/8 pt	2-5/8 pt	1.5	Standard differential gear: API GL-5*1 Limited-slip differential (LSD) gear: Use only LSD gear oil API GL-5 and SAE 80W-90*4 approved for NISSAN LSD*5.
	Rear H233B		5-7/8 pt	4-7/8 pt	2.8	
Automatic transmission fluid		2WD	8-3/4 qt	7-1/4 qt	8.3	NISSAN Matic "D" (Continental U.S. and Alaska) or Canada NISSAN Automatic Transmission Fluid *2
		4WD	9 qt	7-1/2 qt	8.5	
Power steering fluid			33.8-37.2 fl oz	35.2-38.7 fl oz	1.0-1.1	Power Steering Fluid: Genuine NISSAN PSF II or equivalent*6
Brake and clutch fluid			—	—	—	Genuine NISSAN Brake Fluid*3 or equivalent DOT 3 (US FMVSS No. 116)

	Capacity (Approximate)			Recommended Fluids/Lubricants
	US measure	Imp measure	Liter	
Propeller shaft grease	—	—	—	NLGI No. 2 (Molybdenum disulphide lithium soap base)
Multi-purpose grease	—	—	—	NLGI No. 2 (Lithium soap base)
Free-running hub grease (Auto-lock)	—	—	—	Genuine NISSAN grease or equivalent

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

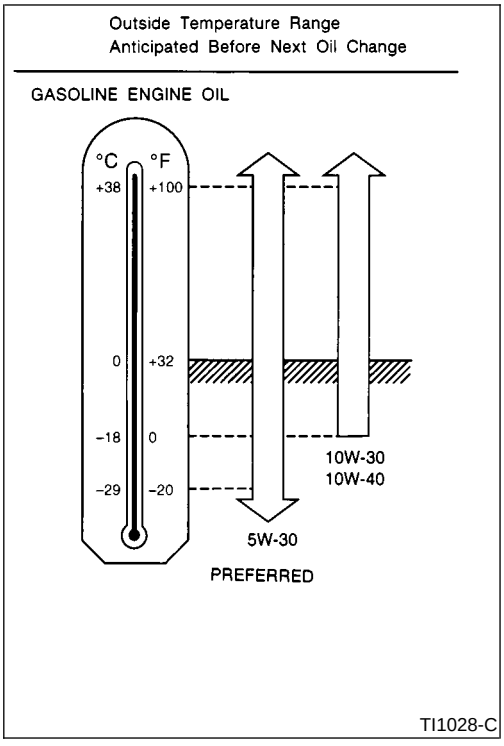
*2: Dexron™ III/Mercon™ or equivalent may also be used. Outside the continental United States and Alaska contact a NISSAN dealership for more information regarding suitable fluids, including recommended brand(s) of Dexron™ III/Mercon™ Automatic Transmission Fluid.

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

*4: SAE 90 is acceptable in ambient temperatures above −18°C (0°F).

*5: Contact a NISSAN dealer for a list of approved oils.

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



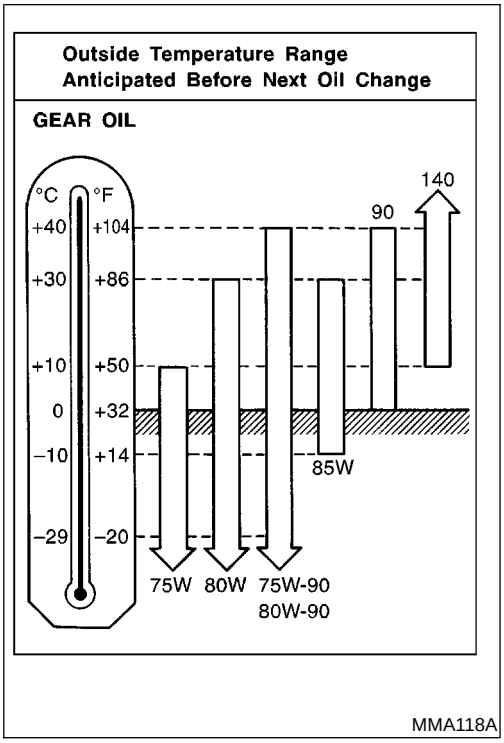
SAE Viscosity Number

NEMA0005S02

GASOLINE ENGINE OIL

NEMA0005S0201

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



GEAR OIL

NEMA0005S0202

75W-90 for transfer, and 80W-90 for differential are preferable if the ambient temperature is below 40°C (104°F).

Anti-freeze Coolant Mixture Ratio

NEMA0005S03

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:

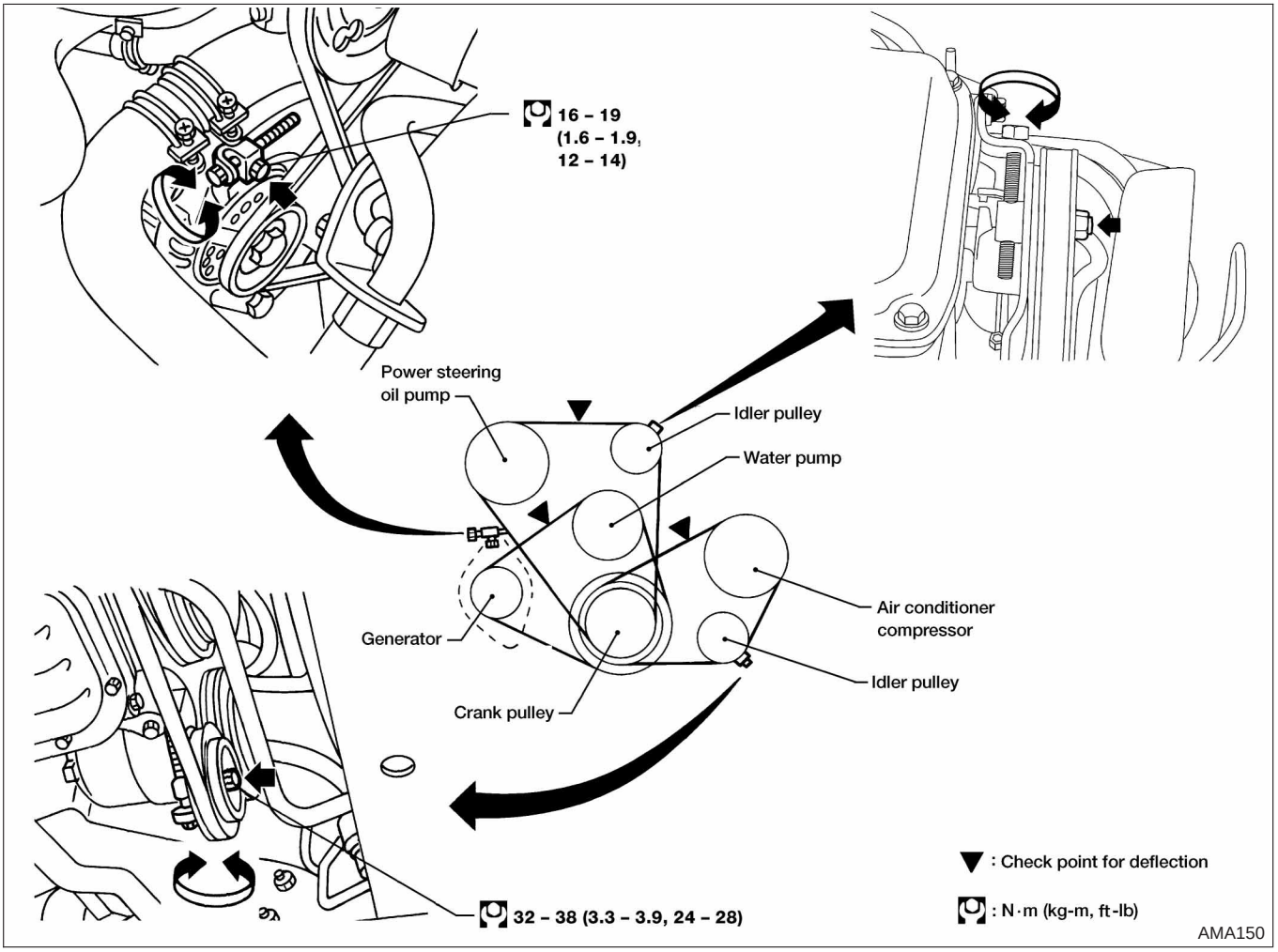
When adding or replacing coolant, be sure to use only a Genuine NISSAN anti-freeze coolant or equivalent with the proper mixture ratio of 50% anti-freeze and 50% demineralized water/ distilled water.

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

Other types of coolant solutions may damage your cooling system.

Checking Drive Belts

NEMA0055



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.

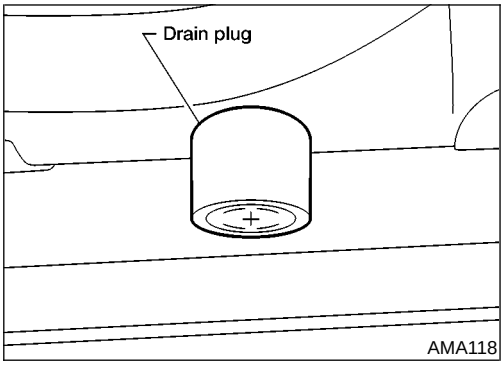
- **Adjust if belt deflections exceed the limit or if belt tension is not within specifications**
- **Drive belt tension can be checked at other points on the belt.**

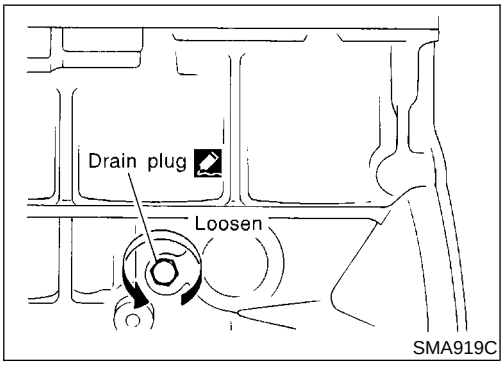
Checking Drive Belts (Cont'd)

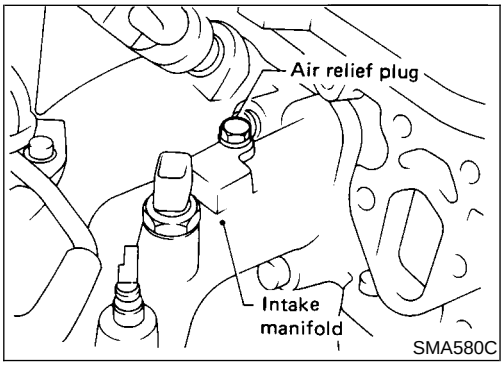
DRIVE BELT DEFLECTION AND TENSION

	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	17 (0.67)	10 - 12 (0.39 - 0.47)	8 - 10 (0.31 - 0.39)	222.4 (22.7, 50)	355.8 - 444.8 (36.3 - 45.4, 80 - 100)	489.3 - 578.2 (49.9 - 59.0, 110 - 130)
Air conditioner compressor	16 (0.63)	10 - 12 (0.39 - 0.47)	8 - 10 (0.31 - 0.39)	200.2 (20.4, 45)	355.8 - 444.8 (36.3 - 45.4, 80 - 100)	489.3 - 578.2 (49.9 - 59.0, 110 - 130)
Power steering oil pump	17 (0.67)	10 - 13 (0.39 - 0.51)	8 - 10 (0.31 - 0.39)	222.4 (22.7, 50)	355.8 - 444.8 (36.3 - 45.4, 80 - 100)	489.3 - 578.2 (49.9 - 59.0, 110 - 130)
Applied pushing force	98 N (10 kg, 22 lb)			—		

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







Changing Engine Coolant

NEMA0056

WARNING:

To avoid being scalded, never change the coolant when the engine is hot.

—DRAINING ENGINE COOLANT—

NEMA0056S01

1. Set air conditioner system as follows to prevent coolant from remaining in the system.
   a. Turn ignition switch ON and set temperature control lever all the way to "HOT" position or the highest temperature position.
   b. Wait 10 seconds before turning ignition switch OFF.
2. Open 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.
5. Open air relief plug.
6. Check drained coolant for contaminants such as rust, corrosion or discoloration. If contaminated flush engine cooling system, "Refer to FLUSHING COOLING SYSTEM", MA-20.

—REFILLING ENGINE COOLANT—

NEMA0056S02

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

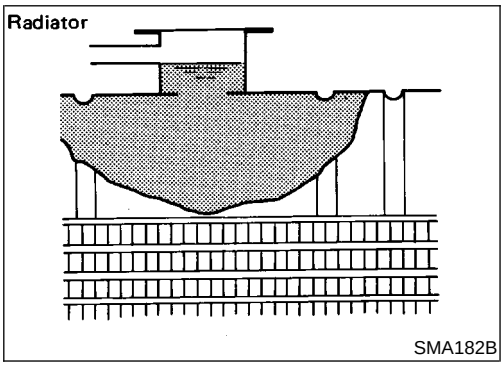
- **Apply sealant to the thread of drain plug.**
  : 34 - 44 N·m (3.5 - 4.5 kg-m, 25 - 33 ft-lb)

2. Fill radiator until coolant spills from the air relief hole, then install air relief plug.

Air relief plug:

: 7 - 8 N·m (0.7 - 0.8 kg-m, 61 - 69 in-lb)

- Use Genuine Nissan antifreeze coolant or equivalent mixed with demineralized water/distilled water.

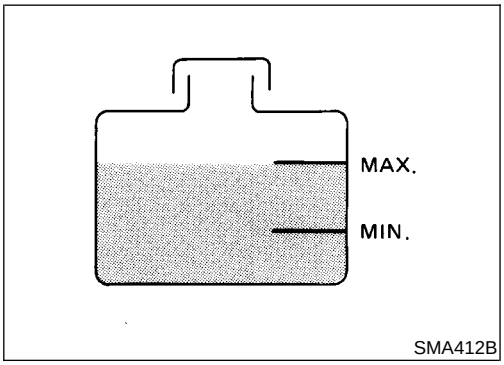


For coolant mixture ratio, refer to "RECOMMENDED FLUIDS AND LUBRICANTS", MA-13.

Unit: ℓ (US qt, Imp qt)

		Coolant capacity
Without reservoir tank	MT 4x2	8.35 (8-3/4, 7-3/8)
	MT 4x4	8.45 (7-1/2, 7-1/2)
	AT	8.15 (8-5/8, 7-1/8)
Reservoir tank		0.8 (7/8, 3/4)

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



3. Fill radiator and reservoir tank to specified level.
4. Warm up engine to normal operating temperature without radiator cap installed.

If coolant overflows radiator filler hole, install filler cap.

5. Install radiator cap and 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.
7. Refill reservoir tank to MAX level line.
8. Repeat steps 5 through 7 two or more times with radiator cap installed until coolant 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 lever set at several positions between COOL and WARM.
- Sound may be noticeable at heater water cock.
11. If sound is heard, bleed air from cooling system by repeating

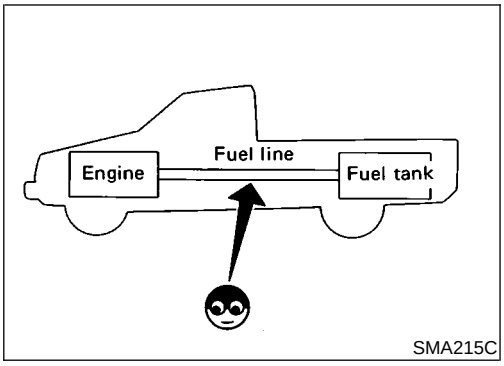
steps 5 through 7 until coolant level no longer drops.

- **Clean excess coolant from engine.**

—FLUSHING COOLING SYSTEM—

NEMA0056S03

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 radiator 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.

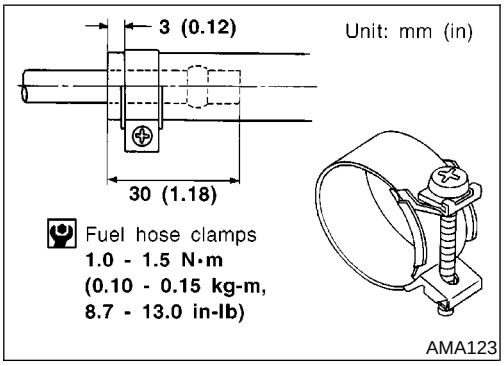


SMA215C

Checking Fuel Lines

NEMA0057

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



AMA123

Changing Fuel Filter

NEMA0058

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 the screw does not contact adjacent parts.

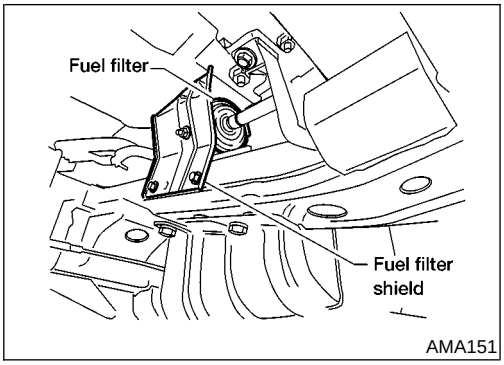
WARNING:

Before removing fuel filter, release fuel pressure from fuel line.

WITH CONSULT - II

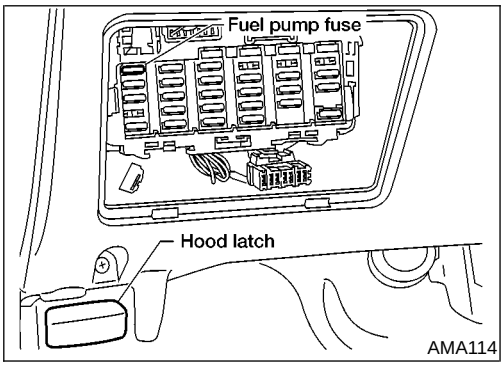
NEMA0058S01

1. Start engine.
2. Perform "FUEL PRES 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. Remove the fuel filter shield.
6. Loosen fuel hose clamps.
7. Replace fuel filter.

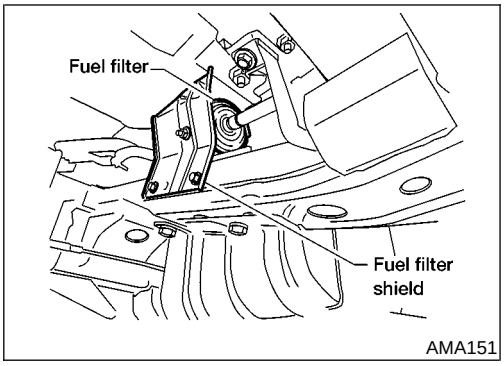
- **Be careful not to spill fuel over engine compartment. Place a shop towel to absorb fuel.**
- **Use a high-pressure type fuel filter. Do not use a synthetic resinous fuel filter.**
- **When tightening fuel hose clamps, refer to "Checking Fuel Lines".**



⊗ WITHOUT CONSULT - II

NEMA0058S02

1. Remove fuel pump fuse.
   For correct fuse location, refer to label on fuse block cover.
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.



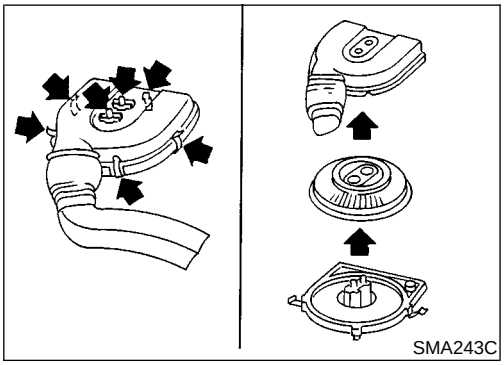
5. Remove the fuel filter shield
6. Loosen fuel hose clamps.
7. Replace fuel filter.

- **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

NEMA0059

The viscous paper type filter does not need cleaning between renewals.

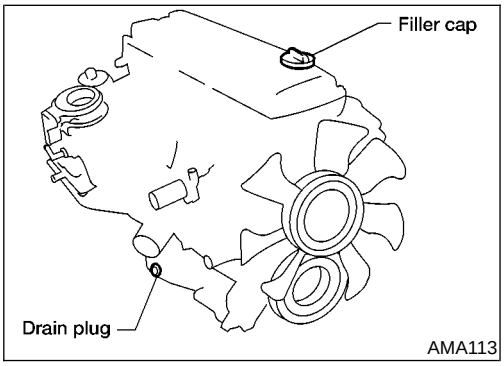


Changing Engine Oil

NEMA0060

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. Remove drain plug and oil filler cap.
3. Drain oil 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 "RECOMMENDED FLUIDS AND LUBRICANTS", MA-13.**

Oil capacity (Approximately):

Unit: ℓ (US qt, Imp qt)

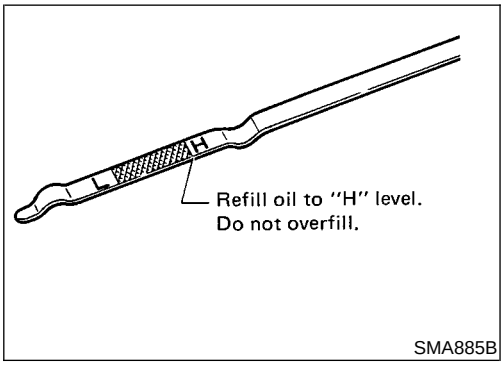
4x2	Drain and refill	with oil filter change	3.5 (3-3/4, 3-1/8)
		without oil filter change	3.3 (3-1/2, 2-7/8)
	Dry engine (engine overhaul)		4.1 (4-1/2, 3-3/4)
4X4	Drain and refill	with oil filter change	3.9 (4-1/8, 3-3/8)
		without oil filter change	3.7 (3-7/8, 3-1/4)
	Dry engine (engine overhaul)		4.5 (4-3/4, 4)

CAUTION:

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

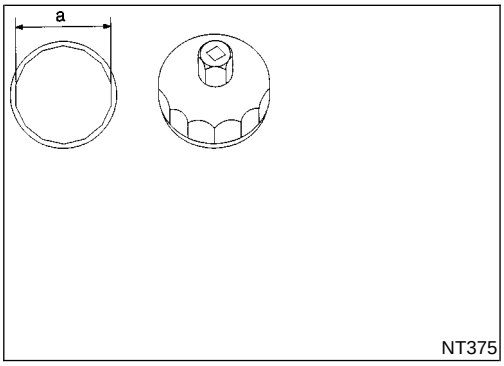
  Drain plug:

  : 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.**



SMA885B

4. Check oil level.
5. Start engine and check area around drain plug and oil filter for oil leakage.
6. Run engine for a few minutes, then turn it off. After several minutes, check oil level.



NT375

Changing Oil Filter

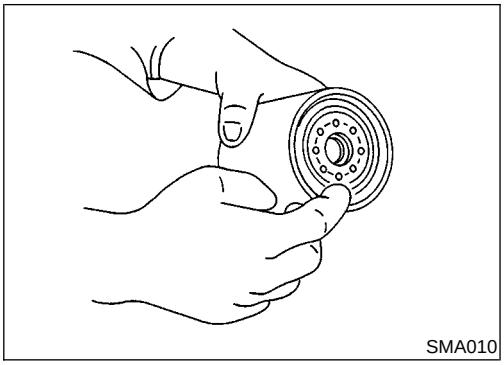
NEMA0061

1. Remove oil filter with Tool.

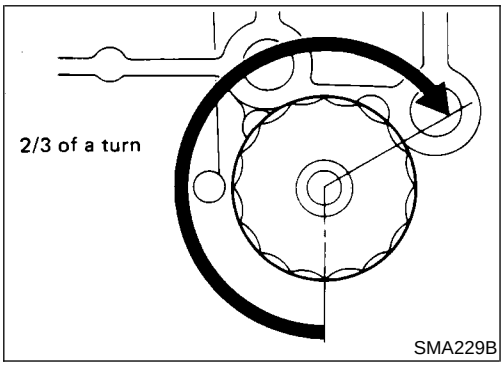
- a: 64.3 mm (2.531 in)

WARNING:

Be careful not to burn yourself. Engine and engine oil are hot.


SMA010

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



SMA229B

3. Screw in the oil filter until a slight resistance is felt, then tighten additionally more than 2/3 of a turn.
4. Add engine oil.

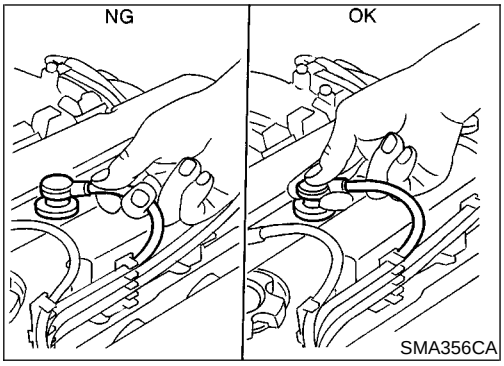
Refer to "Changing Engine Oil", MA-21.

- **Clean excess oil from engine.**

Changing Spark Plugs

NEMA0062

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

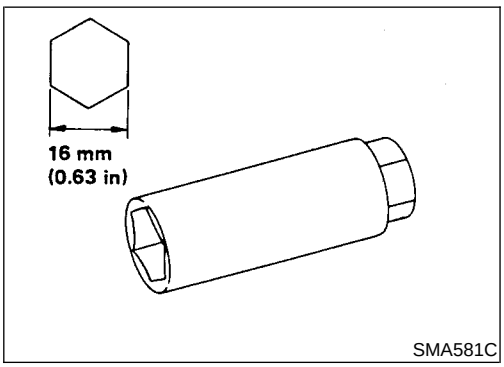


SMA356CA

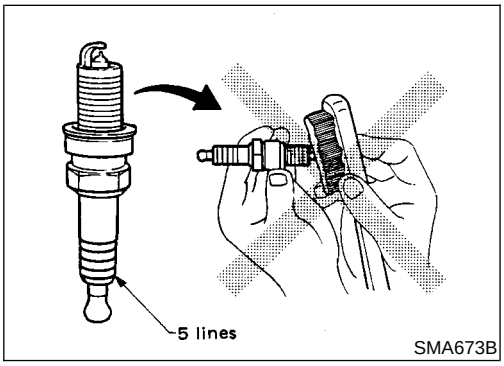
2. Remove spark plugs with spark plug wrench.

Spark plug:

Make	NGK (Single Platimnum Tipped)	NGK (Double Platimnum Tipped)
Hot type	—	PFR4G-11
Standard type	FR5AP-10	PFR5G-11
Cold type	FR6AP-10	PFR6G-11
	FR7AP-10	—
Gap (nominal)	1.0 mm (0.039 in)	1.1 mm (0.043 in)



SMA581C



SMA673B

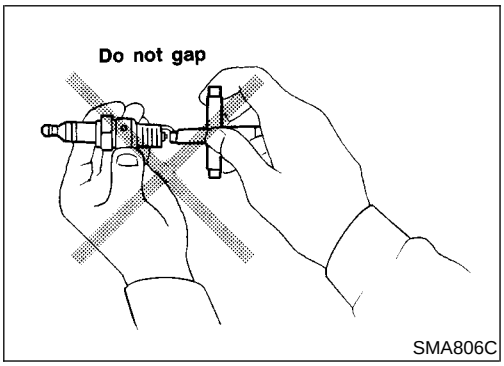
Use standard type spark plug under normal conditions. The hot type spark plug is suitable when fouling occurs with the standard spark plug under conditions such as:

- frequent engine starts
- low ambient temperature

The cold type spark plug is suitable when spark knock occurs with the standard 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

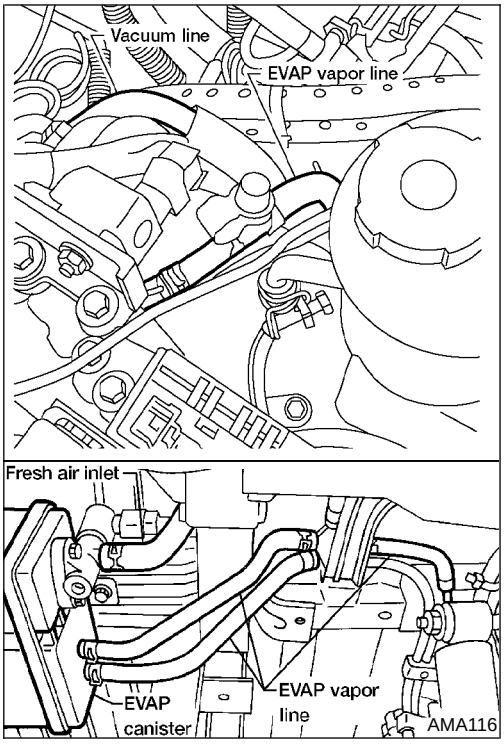


- **Checking and adjusting plug gap is not required between change intervals.**
  Spark plug (Single platinum-tipped type)
  Gap (Nominal): 1.0 mm (0.039 in)
  Spark plug (Double platinum-tipped type)
  Gap (Nominal): 1.1 mm (0.043 in)

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)

Checking EVAP Vapor Lines

NEMA0063



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-34*, ("EVAPORATIVE EMISSION SYSTEM").

Changing Positive Crankcase Ventilation (PCV) Filter

NEMA0064

Remove air cleaner cover and take out PCV filter located inside air cleaner cover. Then install new PCV filter.

Engine Maintenance

KA24DE

Drive Belt Deflection and Tension

NEMA0065

NEMA0065S01

	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	17 (0.67)	10 - 12 (0.39 - 0.47)	8 - 10 (0.31 - 0.39)	222.4 (22.7, 50)	355.8-444.8 (36.3-45.4, 80-100)	489.3-578.2 (49.9-59.0, 110-130)
Air conditioner compressor	16 (0.63)	10 - 12 (0.39 - 0.47)	8 - 10 (0.31 - 0.39)	200.2 (20.4, 45)	355.8-444.8 (36.3-45.4, 80-100)	489.3-578.2 (49.9-59.0, 110-130)
Power steering oil pump	17 (0.67)	10 - 13 (0.39 - 0.51)	8 - 10 (0.31 - 0.39)	222.4 (22.7, 50)	355.8-444.8 (36.3-45.4, 80-100)	489.3-578.2 (49.9-59.0, 110-130)
Applied pushing force	98 N (10 kg, 22 lb)			—		

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

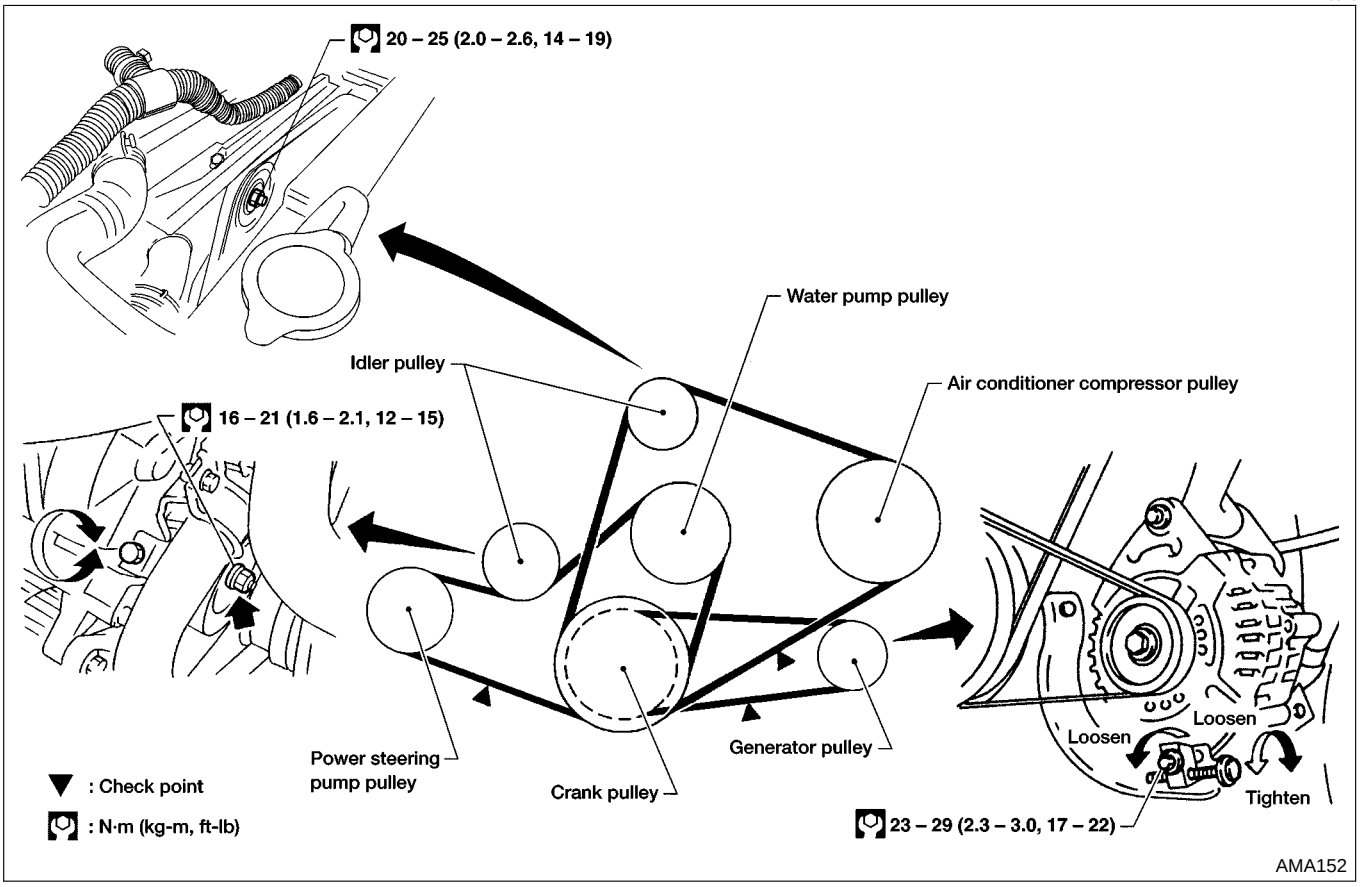
Spark Plug

NEMA0065S02

Make	NGK (Single Platimnum Tipped)	NGK (Double Platimnum Tipped)
Hot type	—	PFR4G-11
Standard type	FR5AP-10	PFR5G-11
Cold type	FR6AP-10	PFR6G-11
	FR7AP-10	—
Gap (nominal)	1.0 mm (0.039 in)	1.1 mm (0.043 in)

Checking Drive Belts

NEMA0016



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.

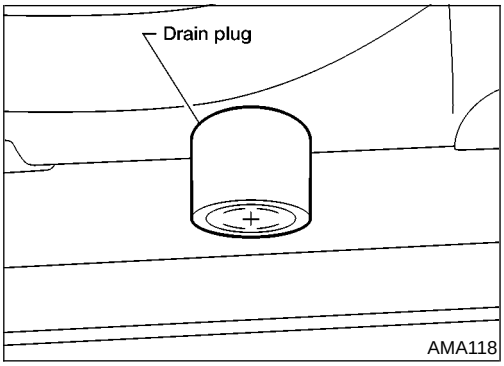
- **Adjust if belt deflections exceed the limit or if belt tension is not within specifications**
- **Drive belt tension can be checked at other points on the belt.**

DRIVE BELT DEFLECTION AND TENSION

NEMA0016S01

	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	11 (0.43)	7 - 8 (0.24 - 0.31)	6 - 7 (0.24 - 0.28)	226 (23, 51)	554.1 - 642.4 (56.5 - 65.5, 124.6 - 144.4)	671.8 - 760.0 (68.5 - 77.5, 151.0 - 170.9)
Air conditioner compressor	18 (0.71)	12 - 13 (0.47 - 0.51)	10.5 - 11.5 (0.413 - 0.453)	196 (20, 44)	495.3 - 583.5 (50.5 - 59.5, 111.4 - 131.2)	603.1 - 691.4 (61.5 -70.5, 135.6 - 155.5)
Power steering oil pump	15 (0.59)	9.5 - 10.5 (0.374 - 0.413)	8 - 9 (0.31 - 0.35)	275 (28, 62)	554.1 - 642.4 (56.5 - 65.5, 124.6 - 144.4)	671.8 - 760.0 (68.5 - 77.5, 151.0 - 170.9)
Applied pushing force	98 N (10 kg, 22 lb)			—		

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



Changing Engine Coolant

NEMA0017

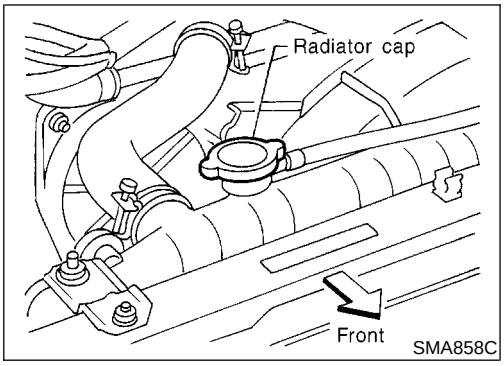
WARNING:

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

—DRAINING ENGINE COOLANT—

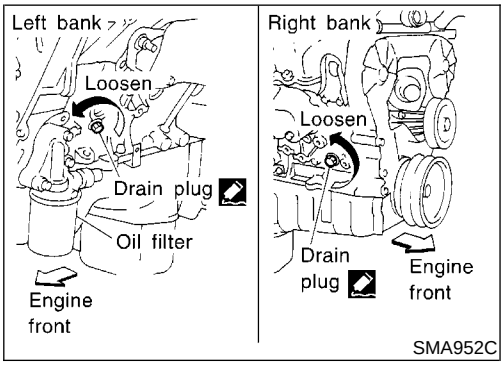
NEMA0017S01

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 filler cap.

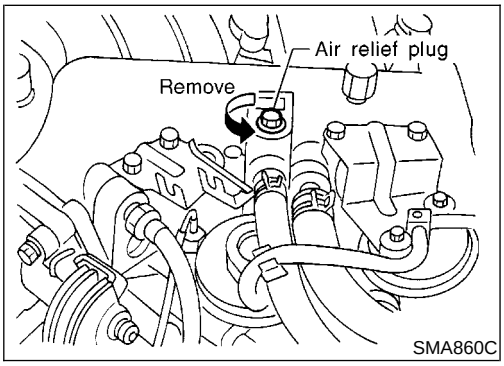


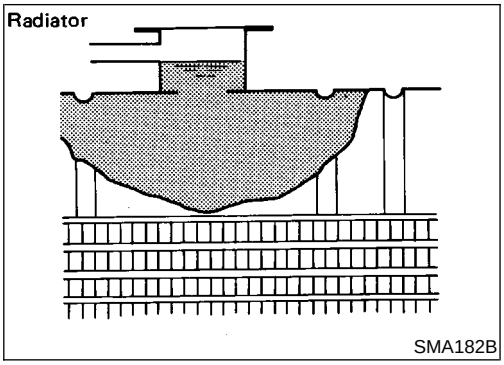
3. Remove reservoir tank, drain coolant, then clean reservoir tank.
Install it temporarily.

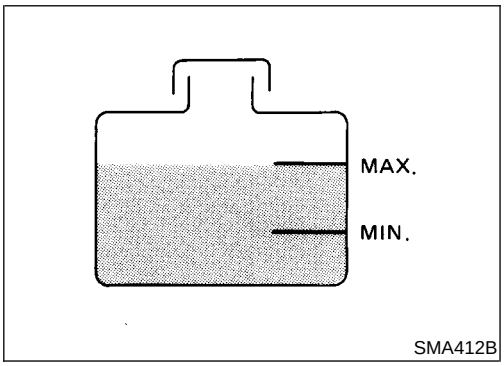
- **Be careful not to allow coolant to contact drive belts.**



4. Remove cylinder block drain plugs 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-28.







—REFILLING ENGINE COOLANT—

NEMA0017S02

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

- **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.

Air relief plug:

: 7 - 8 N·m (0.7 - 0.8 kg-m, 61 - 69 in-lb)

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

- Use Genuine Nissan antifreeze coolant or equivalent mixed with demineralized water or distilled water.

Refer to "RECOMMENDED FLUID AND LUBRICANTS", MA-13.

Coolant capacity (Without reservoir tank):
10.15 ℓ (10–3/4 US qt, 8–7/8 Imp qt)
Reservoir tank capacity (for MAX level):
0.8 ℓ (7/8 US qt, 3/4 Imp qt)

4. Warm up engine to normal operating temperature without radiator cap installed.
If coolant overflows radiator filler hole, install filler cap.
5. Run engine at 3,000 rpm for 10 seconds and return to idle speed with radiator cap installed.

- 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.

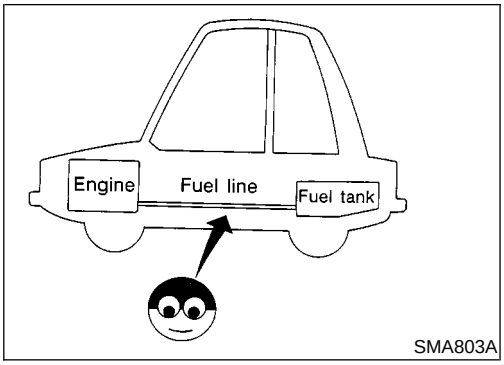
11. If sound is heard, bleed air from cooling system by repeating steps 5 through 7 until coolant level no longer drops.

- **Clean excess coolant from engine.**

—FLUSHING COOLING SYSTEM—

NEMA0017S04

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 radiator 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.

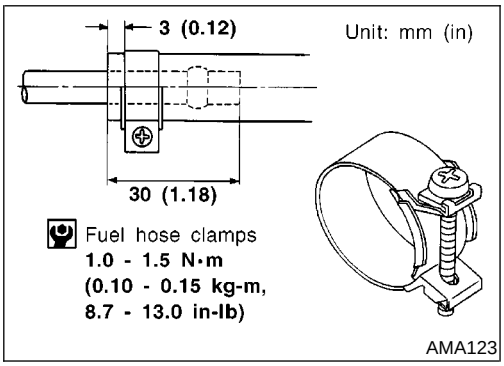


SMA803A

Checking Fuel Lines

NEMA0018

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



AMA123

Changing Fuel Filter

NEMA0019

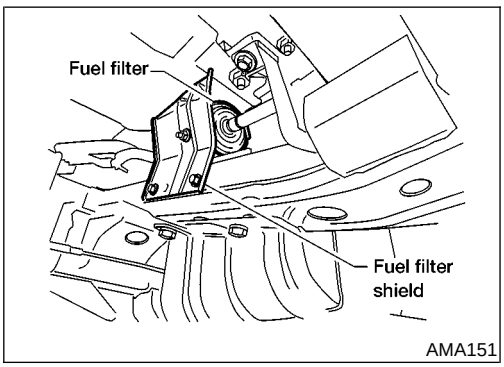
CAUTION:
Tighten high-pressure rubber hose clamp so that clamp end is 3 mm (0.12 in) from hose end.
Tightening torque specifications are the same for all rubber hose clamps.
Ensure that screw does not contact adjacent parts.

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

WITH CONSULT - II

NEMA0019S01

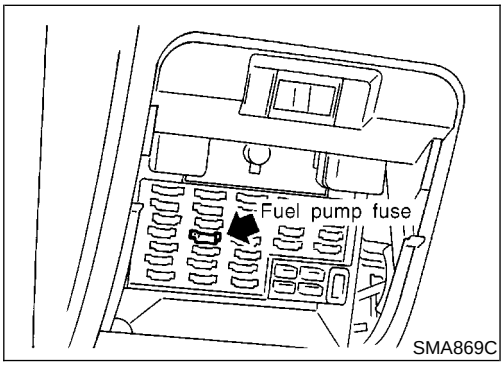
1. Start engine.
2. Perform “FUEL PRESSURE RELEASE” in “WORK SUPPORT” mode to release fuel pressure to zero.
3. After engine stalls, crank engine two or three times to make sure that fuel pressure is released.
4. Turn ignition switch “OFF”.



AMA151

5. Remove the fuel filter shield.
6. Loosen fuel hose clamps.
7. 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”.**

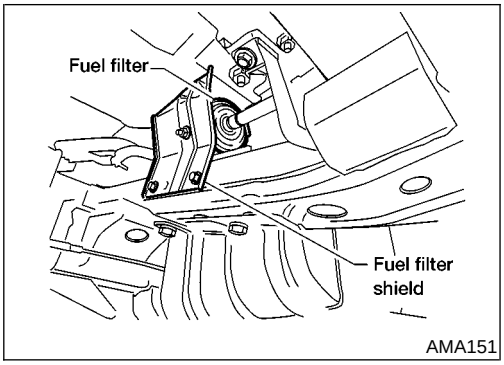


SMA869C

WITHOUT CONSULT - II

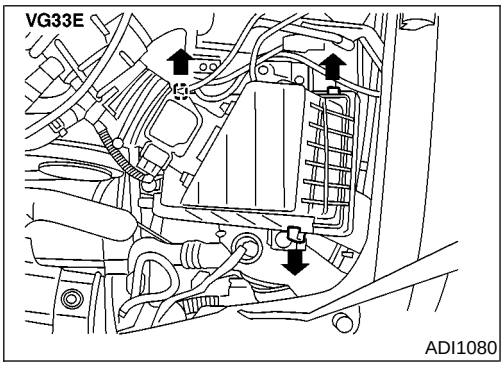
NEMA0019S02

1. Remove fuel pump fuse.
   For correct fuse location, refer to label on fuse block cover.
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. Remove the fuel filter shield
6. Loosen fuel hose clamps.
7. 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".**



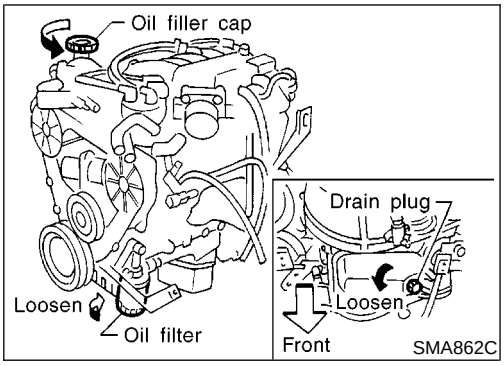
Changing Air Cleaner Filter

NEMA0020

VISCOUS PAPER TYPE

NEMA0020S01

The viscous paper type filter does not need cleaning between replacement intervals.



Changing Engine Oil

NEMA0021

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 and wait for more than 10 minutes.
3. Remove drain plug and oil filler cap.
4. Drain oil and refill with new engine oil.

Oil specification and viscosity

- API SG or SH and Energy Conserving I & II
- API Certification Mark
- See "RECOMMENDED FLUIDS AND LUBRICANTS", MA-13.

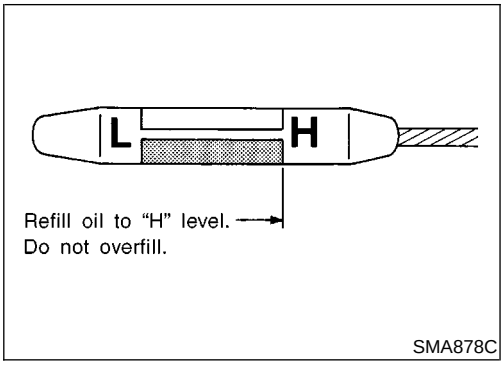
Refill oil capacity (Approximately) :

Unit: ℓ (US qt, Imp qt)

Drain and refill		
	with oil filter change	3.3 (3-1/2, 2-7/8)
	without oil filter change	3.0 (3-1/8, 2-5/8)
Dry engine (engine overhaul)		3.8 (4, 3-3/8)

CAUTION:

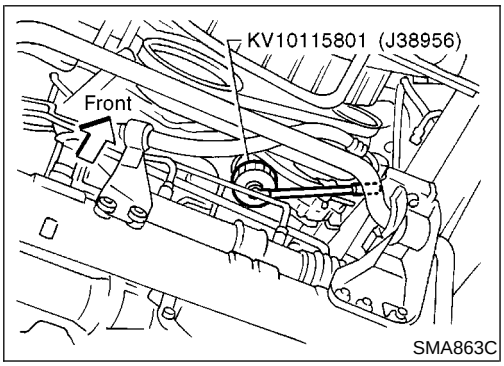
- **Be sure to clean drain plug and install with new washer.**
  Oil pan drain plug:
  : 29 - 39 N·m (3.0 - 4.0 kg-m, 22 - 29 ft-lb)
- **The refill capacity depends on the oil temperature and drain time; use the "Refill oil capacity" values as a reference and be certain to check with the dipstick when changing the oil.**



5. Warm up engine and check area around drain plug and oil filter for oil leakage.
6. Stop engine and wait for more than 10 minutes.
7. Check oil level.

Changing Oil Filter

NEMA0022



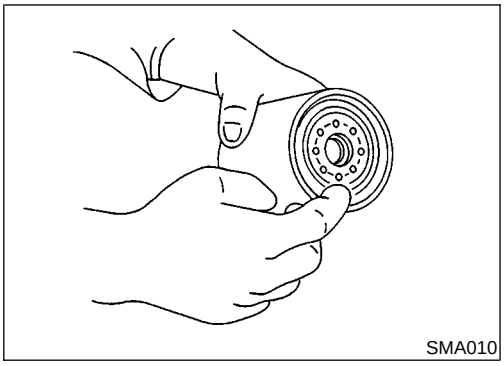
1. Remove oil filter with Tool.

WARNING:

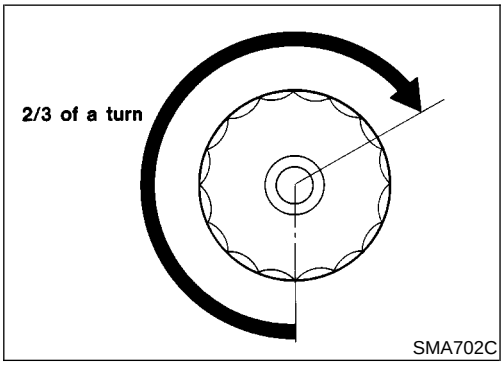
Be careful not to burn yourself, as the engine and engine oil are hot.

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

Refer to *LC-23*, ("Oil Filter", "ENGINE LUBRICATION SYSTEM").



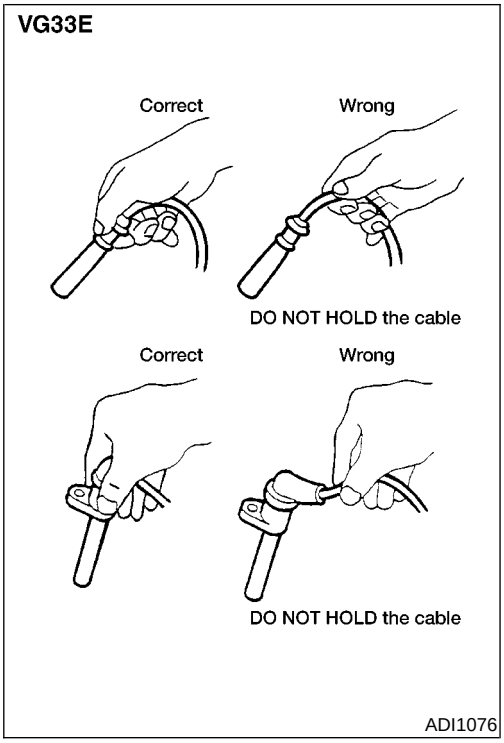
2. Clean oil filter mounting surface on cylinder block. Coat rubber seal of new oil filter with engine oil.



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

NEMA0023

1. Disconnect ignition wires from spark plugs at boot. Do not pull on the wire.
2. Remove spark plugs with 16 mm (0.63 in) spark plug wrench.
3. Check type and gap of new spark plug.

Spark plug type:

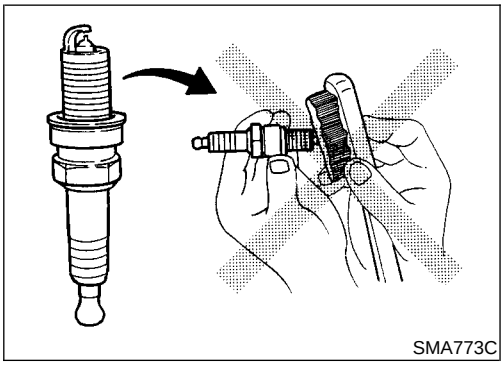
Make	NGK (Single Platimnum Tipped)	NGK (Double Platimnum Tipped)
Hot type	FR4AP-10	PFR4G-11
Standard type	FR5AP-10	PFR5G-11
Cold type	FR6AP-10	PFR6G-11

Use standard type spark plug for normal condition.
The hot type spark plug is suitable when fouling may occur with the standard type spark plug such as:

- frequent engine starts
- low ambient temperatures

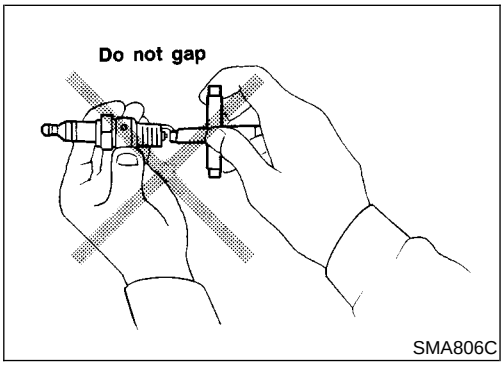
The cold type spark plug is suitable when spark knock may occur with the standard type spark plug such as:

- extended highway driving
- frequent high engine revolution



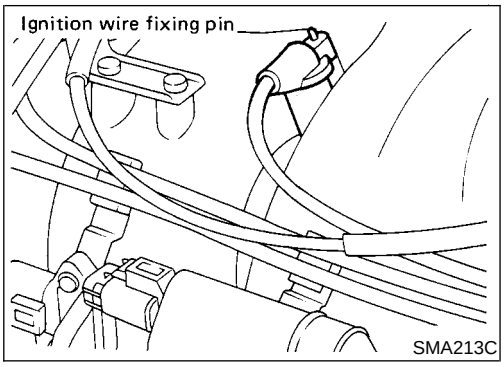
- **Do not use a wire brush for cleaning.**
- **If plug tip is covered with carbon, spark plug cleaner may be used.**

  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.**

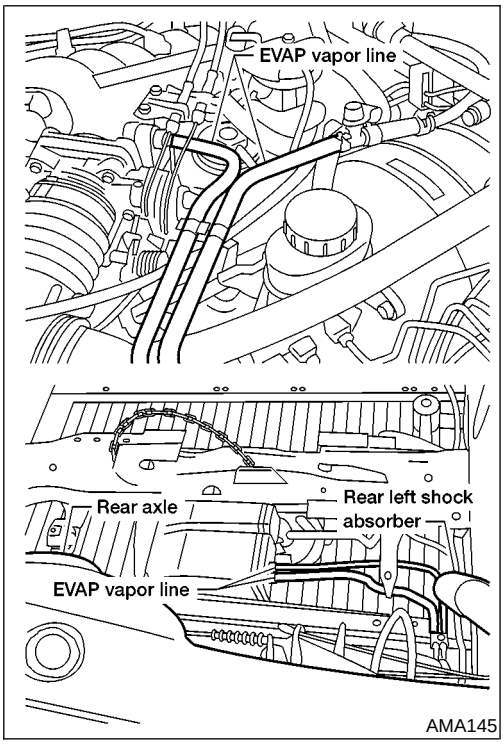
  Spark plug (Single platinum-tipped type)
  Gap (Nominal): 1.0 mm (0.039 in)
  Spark plug (Double platinum-tipped type)
  Gap (Nominal): 1.1 mm (0.043 in)



When installing spark plugs to No. 2 and 4 cylinders, securely fit each ignition wire mounting hole onto the ignition wire fixing pin.

Spark plug:

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



Checking EVAP Vapor Lines

NEMA0024

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-614*, ("EVAPORATIVE EMISSION SYSTEM").

Engine Maintenance

VG33E

NEMA0054

Drive Belt Deflection and Tension

NEMA0054S01

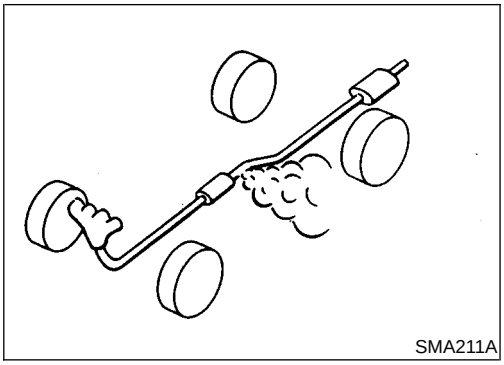
	Deflection adjustment Unit: mm (in)			Tension adjustment *1 Unit: N (kg, lb)		
	Used belt		New belt	Used belt		New belt
	Limit	After adjustment		Limit	After adjustment	
Generator	11 (0.43)	7 - 8 (0.24 - 0.31)	6 - 7 (0.24 - 0.28)	226 (23, 51)	554.1 - 642.4 (56.5 - 65.5, (124.6 - 144.4)	671.8 - 760.0 (68.5 - 77.5, 151.0 - 170.9)
Air conditioner compressor	18 (0.71)	12 - 13 (0.47 - 0.51)	10.5 - 11.5 (0.413 - 0.435)	196 (20, 44)	495.3 - 583.5 (50.5 - 59.5, 111.4 - 131.2)	603.1 - 691.4 (61.5 - 70.5, 135.6 - 155.5)
Power steering oil pump	15 (0.59)	9.5 - 10.5 (0.374 - 0.413)	8 - 9 (0.31 - 0.35)	275 (28, 62)	554.1 - 642.4 (56.5 - 65.5, (124.6 - 144.4)	671.8 - 760.0 (68.5 - 77.5, 151.0 - 170.9)
Applied pushing force	98 N (10 kg, 22 lb)			—		

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

Spark Plug

NEMA0054S02

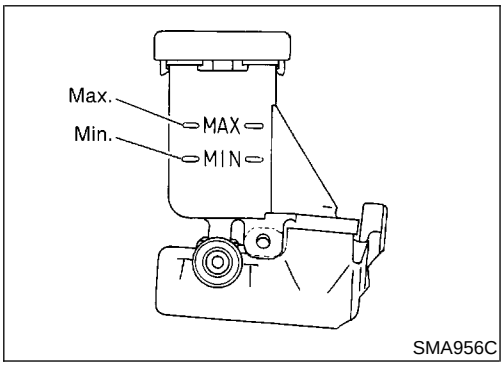
Make	NGK (Single Platimnum Tipped)	NGK (Double Platimnum Tipped)
Hot type	FR4AP-10	PFR4G-11
Standard type	FR5AP-10	PFR5G-11
Cold type	FR6AP-10	PFR6G-11
Gap (nominal)	1.0 mm (0.039 in)	1.1 mm (0.043 in)


SMA211A

Checking Exhaust System

NEMA0025

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

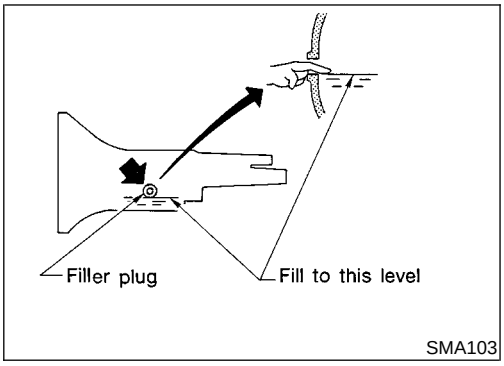


SMA956C

Checking Clutch Fluid Level and Leaks

NEMA0026

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



SMA103

Checking M/T Oil

NEMA0027

Check for oil leakage and oil level.

Never start engine while checking oil level.

Filler plug:

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

Changing M/T Oil

NEMA0028

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

Oil grade and viscosity:

API GL-4. Refer to "RECOMMENDED FLUIDS AND LUBRICANTS", MA-13.

Oil capacity:

FS5W71C

2WD 2.0 ℓ (4-1/4 US pt, 3-1/2 Imp pt)

4WD 4.9 ℓ (10–3/8 US pt, 8–5/8 Imp pt)

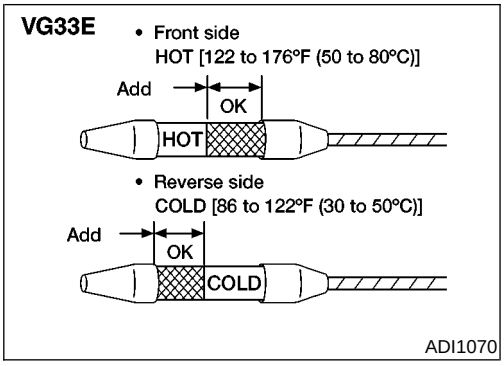
FS5R30A

2WD 2.4 ℓ (5-1/8 US pt, 4-1/4 Imp pt)

4WD 5.1 ℓ (10-3/4 US pt, 9 Imp pt)

Drain plug:

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



Checking A/T Fluid

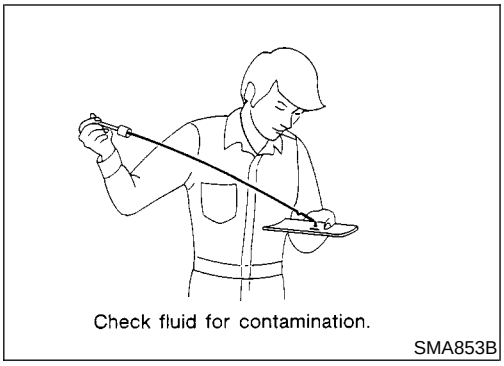
NEMA0030

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.

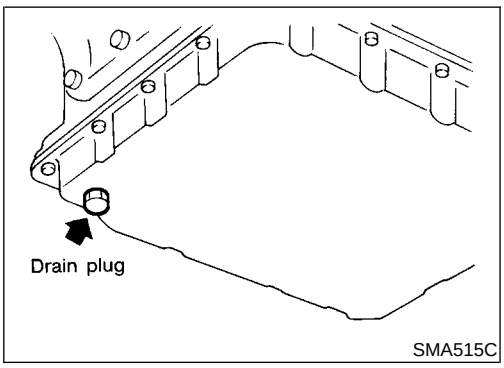
Do not overfill.

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-14***, ***LC-32*** (“Radiator”, “ENGINE COOLING SYSTEM”).



Changing A/T Fluid

NEMA0031

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 Canada Nissan Automatic Transmission Fluid. Refer to “RECOMMENDED FLUIDS AND LUBRICANTS”, MA-13.

Fluid capacity (With torque converter):

KA24DE

2WD 7.9 ℓ (8-3/8 US qt, 7 Imp qt)

VG33E

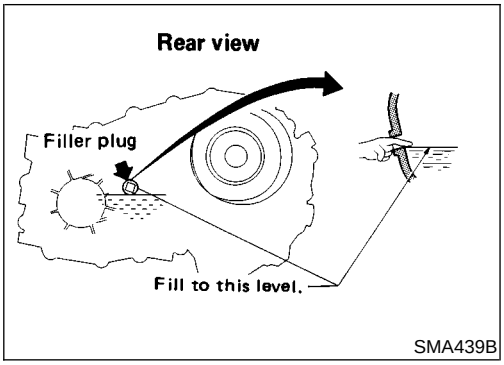
2WD 8.3 ℓ (8-3/4 US qt, 7-1/4 Imp qt)

4WD 8.5 ℓ (9 US qt, 7-1/2 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.



Checking Transfer Fluid

NEMA0032

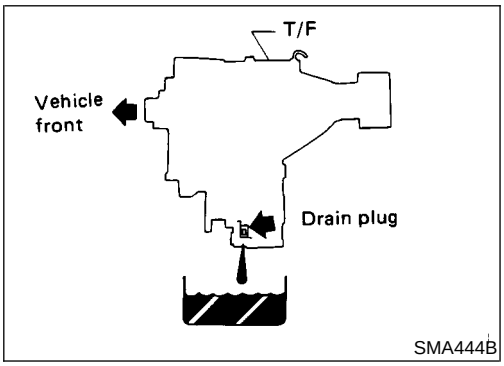
Check for fluid leakage and fluid level.

A/T fluid is used for the transfer in the factory.

Never start engine while checking fluid level.

Filler plug:

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



Changing Transfer Fluid

NEMA0033

When changing transfer fluid completely, A/T fluid may be used.

Fluid grade:

Nissan Matic "D" (Continental U.S. and Alaska) or Canada NISSAN Automatic Transmission Fluid or API GL-4

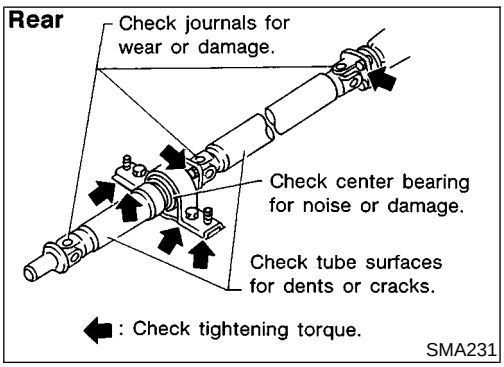
Refer to "RECOMMENDED FLUIDS AND LUBRICANTS", MA-13.

Fluid capacity:

2.2 ℓ (2-3/8 US qt, 2 Imp qt)

Drain plug:

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

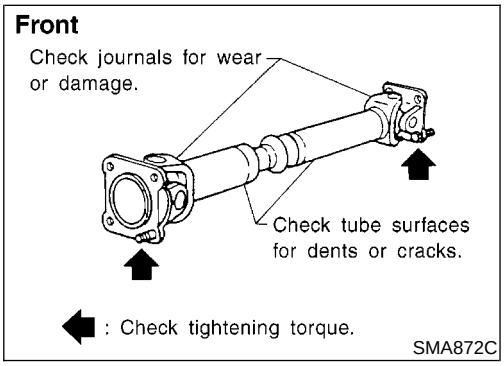


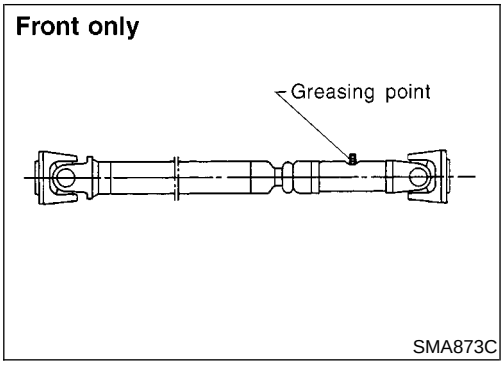
Checking Propeller Shaft

NEMA0034

Check propeller shaft for damage, looseness or grease leakage.

Tightening torque: Refer to *PD-5*.





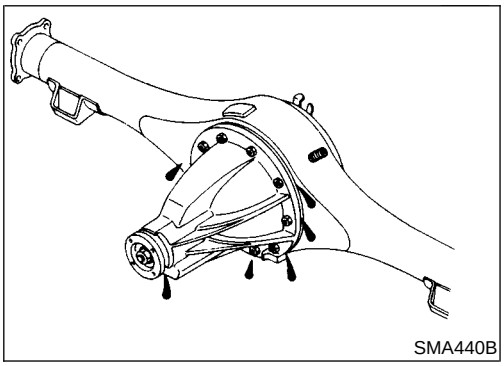
Greasing Propeller Shaft

NEMA0035

Apply specified grease to nipples provided on propeller shaft.

Grease grade:

Refer to “RECOMMENDED FLUIDS AND LUBRICANTS”, MA-13.



Checking Differential Gear Oil

NEMA0036

Check for oil leakage and oil level.

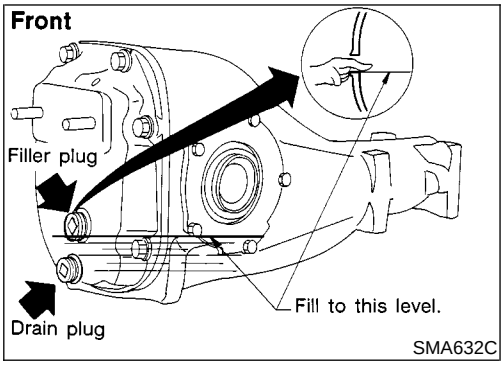
Filler plug:

Front

: 39 - 59 N·m (4 - 6 kg-m, 29 - 43 ft-lb)

Rear

: 59 - 118 N·m (6 - 12 kg-m, 43 - 87 ft-lb)



Changing Differential Gear Oil

NEMA0037

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

Oil grade and viscosity:

See “RECOMMENDED FLUIDS AND LUBRICANTS”, MA-13, 15.

Oil capacity:

Front

R180A: 1.3ℓ (2-3/4 US pt, 2-1/4 Imp pt)

R200A: 1.5ℓ (3-1/8 US pt, 2-5/8 Imp pt)

Rear

H190A: 1.5ℓ (3-1/8 US pt, 2-5/8 Imp pt)

C200: 1.3ℓ (2-3/4 US pt, 2-1/4 Imp pt)

H233B: 2.8ℓ (5-7/8 US pt, 4-7/8 Imp pt)

Filler plug:

Front

: 39 - 59 N·m (4 - 6 kg-m, 29 - 43 ft-lb)

Rear

: 59 - 118 N·m (6 - 12 kg-m, 43 - 87 ft-lb)

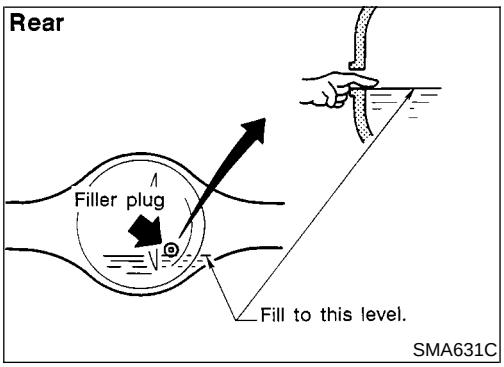
Drain plug:

Front

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

Rear

: 59 - 118 N·m (6 - 12 kg-m, 43 - 87 ft-lb)



LIMITED-SLIP DIFFERENTIAL GEAR

NEMA0037S01

- Use only approved limited-slip differential gear oil.
- Limited-slip differential identification.

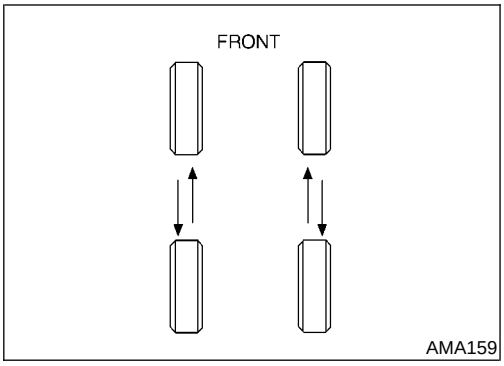
1. Lift both rear wheels off the ground.
2. Turn one rear wheel by hand.
3. If both rear wheels turn in the same direction simultaneously, vehicle is equipped with limited-slip differential.

Balancing Wheels

NEMA0038

Adjust wheel balance using the road wheel center.

Wheel balance (Maximum allowable unbalance):
Refer to SDS, MA-44.



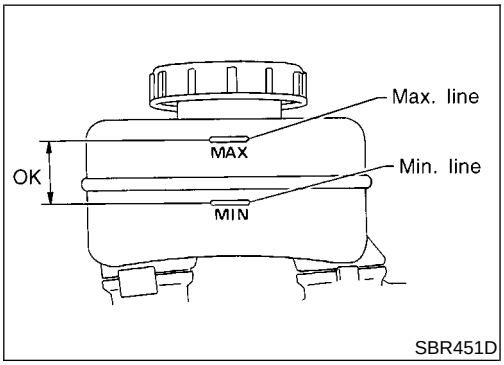
AMA159

Tire Rotation

NEMA0039

- **After rotating the tires, adjust the tire pressure.**
- **Retighten the wheel nuts when the vehicle has been driven for 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)

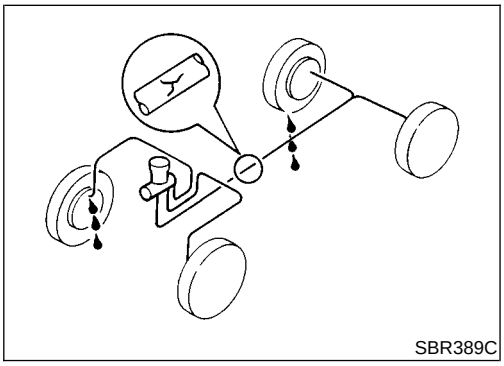


SBR451D

Checking Brake Fluid Level and Leaks

NEMA0040

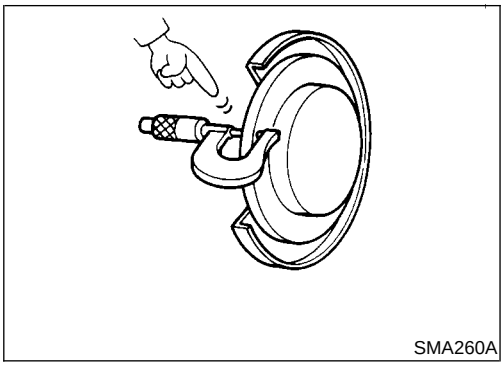
If fluid level is extremely low, check brake system for leaks.


SBR389C

Checking Brake Lines and Cables

NEMA0041

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


SMA260A

Checking Disc Brake

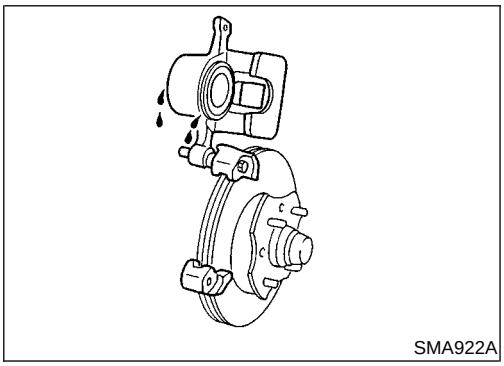
NEMA0042

ROTOR

NEMA0042S01

Check condition and thickness.

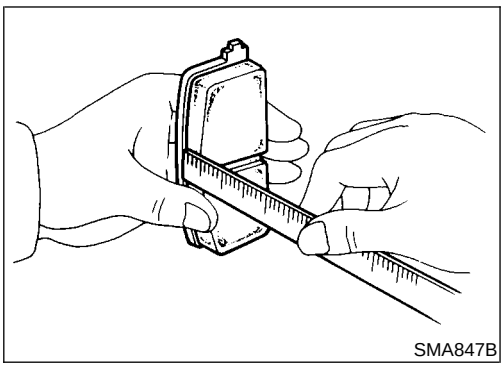
Standard thickness:
26 mm (1.02 in)
Minimum thickness:
24 mm (0.94 in)


SMA922A

CALIPER

NEMA0042S02

Check for leakage.

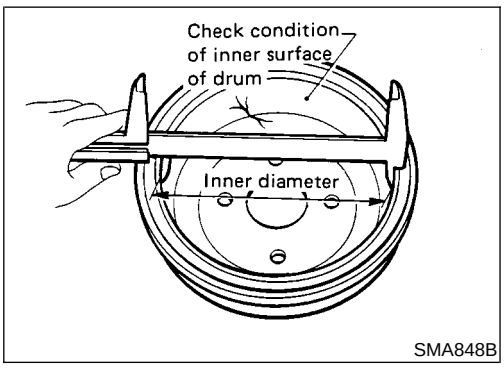

SMA847B

PAD

NEMA0042S03

Check wear or damage.

Standard thickness:
10 mm (0.39 in)
Minimum thickness: 2 mm (0.08 in)



SMA848B

Checking Drum Brake

NEMA0043

WHEEL CYLINDER

NEMA0043S01

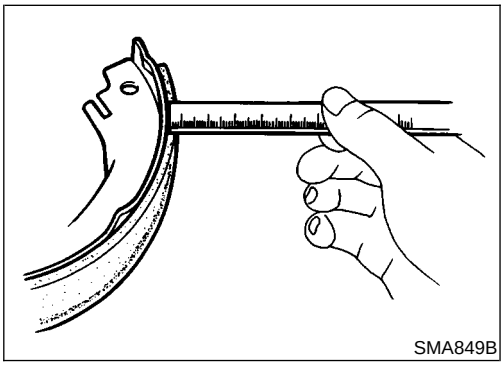
Check for leakage.

DRUM

NEMA0043S02

Check condition and inner surface.

Standard inner diameter:
295 mm (11.61 in)
Drum repair limit (Inner diameter):
296.5 mm (11.67 in)

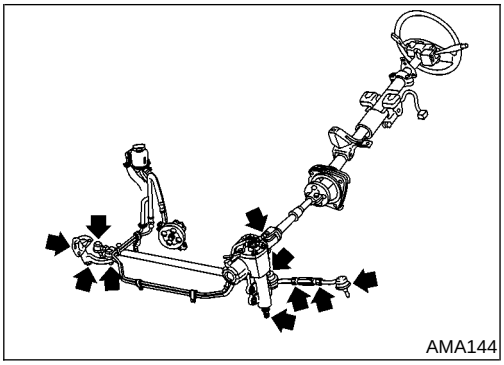

SMA849B

LINING

NEMA0043S03

Check wear or damage.

Standard thickness:
5.8 mm (0.23 in)
Lining wear limit (Minimum thickness):
1.5 mm (0.059 in)


AMA144

Checking Steering Gear, Linkage and Transfer Gear

NEMA0044

STEERING GEAR

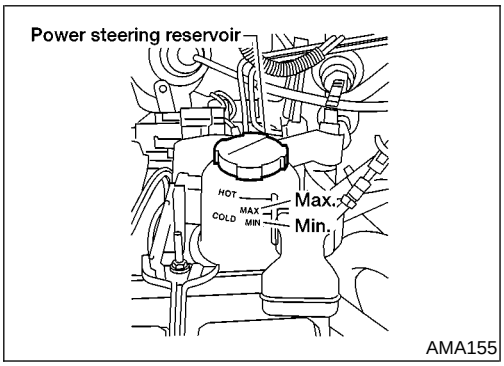
NEMA0044S01

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

STEERING LINKAGE

NEMA0044S02

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



AMA155

Checking Power Steering Fluid and Lines

NEMA0045

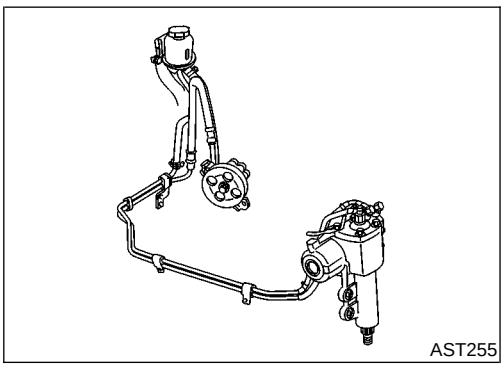
CHECKING FLUID LEVEL

NEMA0045S01

- Check fluid level with engine off.
- Check fluid level on reservoir. 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 Genuine NISSAN PSF II or equivalent.**
  Refer to “RECOMMENDED FLUIDS AND LUBRICANTS”, MA-13.


AST255

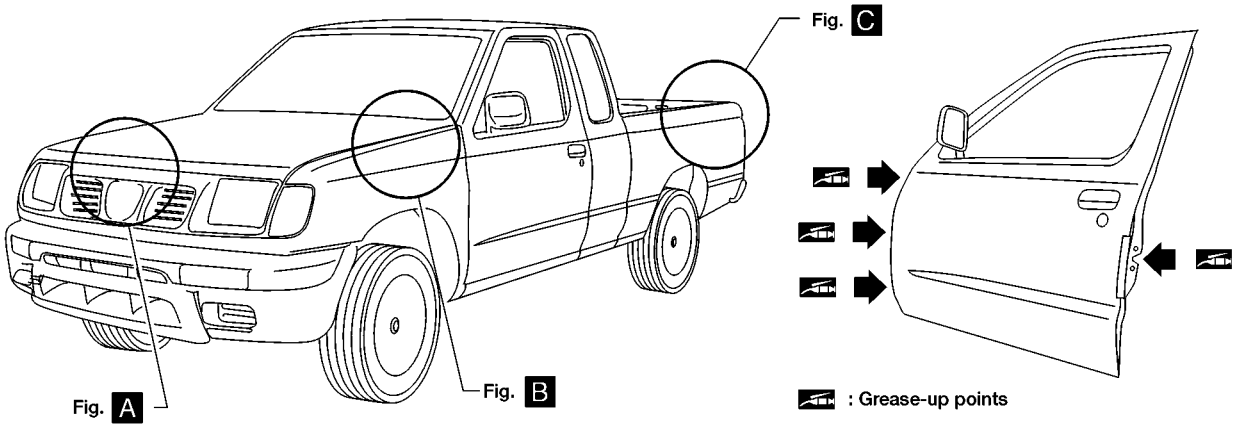
CHECKING LINES

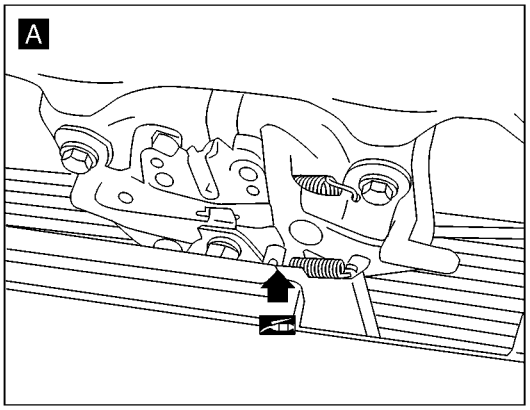
NEMA0045S02

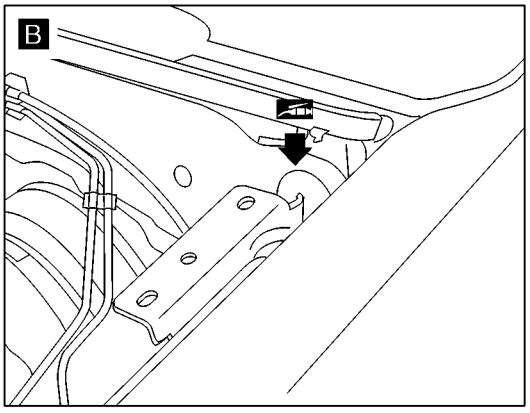
- Check lines for improper attachment, leaks, cracks, damage, loose connections, chafing and deterioration.

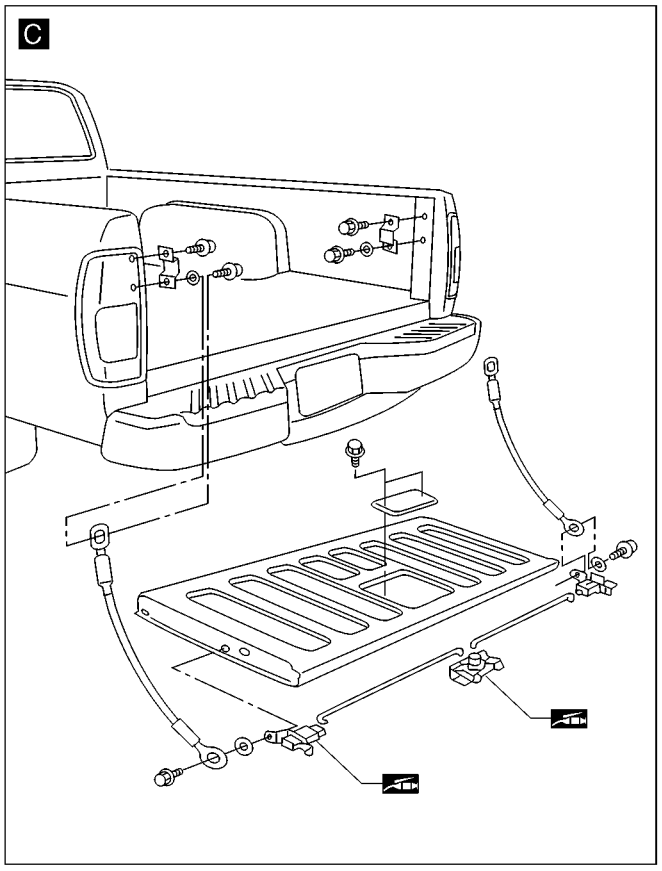
Lubricating Locks, Hinges and Hood Latches

NEMA0046







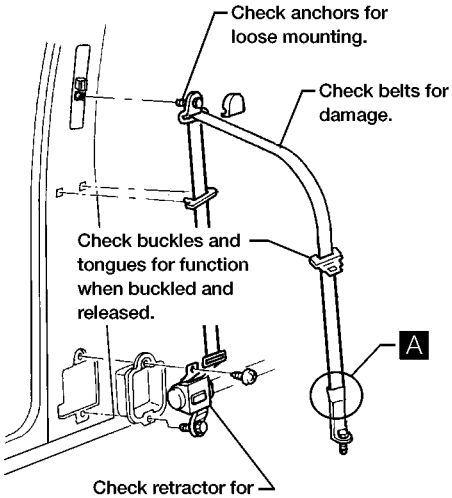


AMA146

Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters

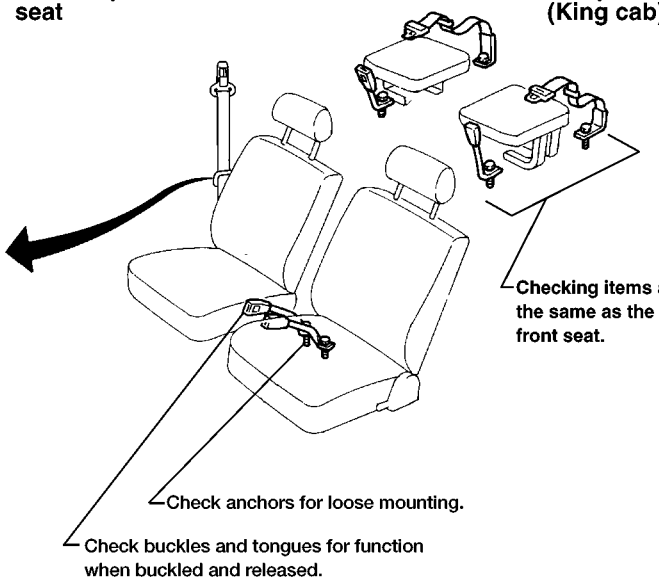
NEMA0047

With ELR type

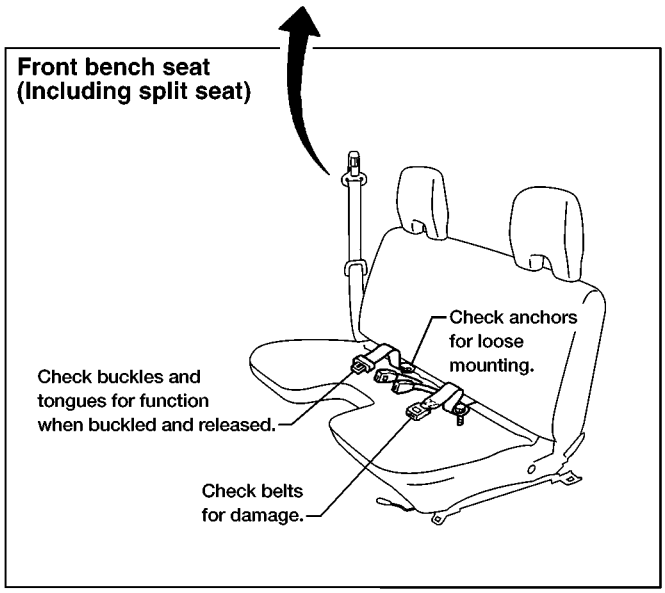


Front separate seat

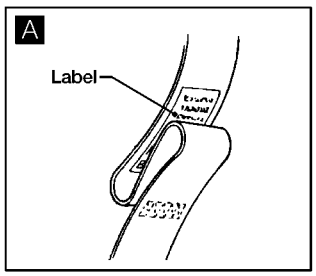
Jump seat (King cab)



Front bench seat (Including split seat)



For details, refer to "Seat Belt Inspection", "SEAT BELTS" in RS section.



For front seat belt, shock absorber type belt has been used. Replace the belt when loop has been pulled out and "REPLACE BELT" is visible because this seat belt has a loop of webbing under the sleeve.

CAUTION:

1. **If the vehicle has collided or overturned, replace the entire belt assembly, regardless of nature of accident.**
2. **If the condition of any component of a seat belt is questionable, do not repair seat belt, but replace it as a belt assembly.**
3. **If webbing is cut, frayed, or damaged, replace belt assembly.**
4. **Do not spill drinks, oil, etc. on inner lap belt buckle. Never oil tongue and buckle.**
5. **Use a NISSAN genuine seat belt assembly.**

Anchor bolt:

: 24 - 31 N•m (2.4 - 3.1 kg-m, 17 - 23 ft-lb)

AMA119

Chassis and Body Maintenance

WHEEL BALANCE

NEMA0050

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