SECTION MA
MAINTENANCE

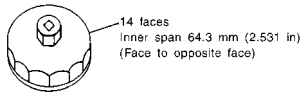
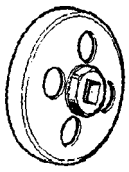
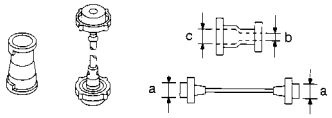
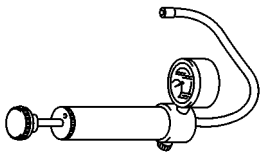
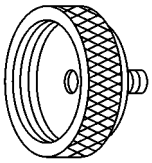
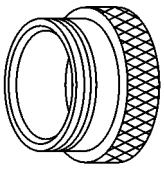
CONTENTS

PREPARATION

PFP:00002

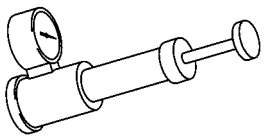
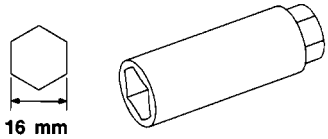
Special Service Tools

ELS000L4

NISSAN tool number (RENAULT tool number) Tool name	Description
KV10115801 Oil filter wrench (For CR and HR engine)  S-NT772	Removing and installing oil filter
KV10115801 (Mot. 1329) Oil filter wrench (For K9K engine)  MBIB0369E	Removing and installing oil filter
EG17650301 Radiator cap tester adapter  S-NT564	Adapter radiator cap tester to radiator filler neck **a: 28 (1.10) dia.** **b: 31.4 (1.236) dia.** **c: 41.3 (1.626) dia.** Unit: mm (in)
— (M.S. 554_07) Tester  MLIA0012E	Leak checking Checking reservoir tank and reservoir tank cap
— (M.S. 554_01) Reservoir tank tester adapter  MLIA0013E	Adapting tester to reservoir tank
— (M.S. 554_06) Reservoir tank cap tester adapter  MLIA0014E	Adapting tester to reservoir tank cap

Commercial Service Tool

ELS000L5

Tool name	Description
Radiator cap tester  PBIC1982E	Checking radiator and radiator cap
Spark plug wrench  NT047	Removing and installing spark plug

DESCRIPTION

PFP:00000

Pre-delivery Inspection Items

ELS000L6

Shown on next page are Pre-delivery Inspection Items required for the new vehicle. It is recommended that necessary items other than those listed here be added, paying due regard to the conditions in each country.

Perform applicable items on each model. Consult text of this section for specifications.

NEW CAR **PRE-DELIVERY INSPECTION**

Customer name:	Model:
Address:	VIN:
	Engine code & no.:
	Registration number: Delivery date:
Dealer name:	Key no.:
Code:	Radio code:

No.	✓	Operation
1	☐	Install vehicle protection kit
Where applicable:		
2	☐	Fit all accessories ordered (e.g. towbar, audio, navigation, air conditioner, styling kit)
UNDER HOOD		
3	☐	Check coolant level and cooling system for leaks
4	☐	Charge battery and check terminals for condition
5	☐	Check drive belts tension
6	☐	Check fuel filter for water or dust (diesel only) and fuel system for leaks
7	☐	Check engine oil level and for oil leaks
8	☐	Check brake and clutch fluid levels and fluid lines for leaks
9	☐	Check and top up washer reservoirs
Where applicable:		
10	☐	Check power steering fluid level and fluid lines for leaks
11	☐	Check air conditioning system for gas leaks
INSIDE AND OUTSIDE		
12	☐	Install transit fuse if removed for vehicle storage
13	☐	Check instruments, gauges, lights, horn and accessories for operation
14	☐	Check wipers and washers for operation and adjustment
15	☐	Check interior and door mirrors and sun visors for operation
16	☐	Set radio code and set clock
17	☐	Check parking brake adjustment
18	☐	Check clutch pedal adjustment
19	☐	Check steering lock operation
20	☐	Check seat adjusters and seat belts for operation
21	☐	Check all windows for operation and alignment
22	☐	Check mouldings, trim and fittings for fit and alignment
23	☐	Check weatherstrips for fit and adhesion
24	☐	Check bonnet, boot lid, door panels and fuel flap for fit and alignment
25	☐	Check latches, keys, remote key, door locks and remote boot lid and fuel flap release for operation
26	☐	Check wheel nut torques
27	☐	Check tyre pressure (incl. spare tyre)
28	☐	Check tool kit and jack for operation
Where applicable:		
29	☐	Check automatic transmission starter inhibitor
30	☐	Check sunroof for operation and alignment
UNDER VEHICLE		
31	☐	Check manual transmission, differential and transfer box for oil level and oil leaks
32	☐	Tighten bolts and nuts steering linkage and gear box, axle/suspension parts, propshaft and exhaust system
33	☐	Check brake and clutch lines, and oil/fluid reservoirs for leaks
Where applicable:		
34	☐	Remove front suspension spacer blocks
35	☐	Check body mountings torque

No.	✓	Operation
ROAD TEST		
36	☐	Check clutch operation
37	☐	Check foot brake operation
38	☐	Check parking brake operation
39	☐	Check steering operation, self-centering and steering wheel alignment
40	☐	Check engine performance
41	☐	Check for squeeks, rattles and noise from interior, suspension and brakes
42	☐	Check heating, ventilation and air conditioning operation
43	☐	Check radio, cassette and CD player operation
44	☐	Check odometer and trip meter operation and cancelling
45	☐	Check instruments for operation
Where applicable:		
46	☐	Check automatic transmission shift patter and kickdown operation
47	☐	Check cruise control and navigation system operation
WITH ENGINE AT OPERATING TEMPERATURE		
48	☐	Check idle speed
Where applicable:		
49	☐	Check automatic transmission oil level
FINAL INSPECTION - TECHNICIAN		
50	☐	Remove vehicle protection kit
51	☐	Fit interior mats and wheel covers
52	☐	Check for interior and exterior metal and paint damage
53	☐	Wash, clean interior and exterior

The above checks have been completed, any faults found have been corrected as necessary and the vehicle passed fit for delivery

Date: _____ Job no.: _____

Technician's signature:

FINAL INSPECTION - SALES EXECUTIVE

54	☐	Confirm all accessories ordered have been fitted
55	☐	Check content of vehicle owner's manuals pack and also operation manuals for accessories
56	☐	Complete warranty booklet record

I confirm that I am satisfied with the condition of the vehicle and it is ready for delivery to the customer

Date: _____

Sales executive signature:

MLIB0002E

APPLICATION NOTICE

PFP:00000

How to Confirm K9K Engine Type

ELS001L0

Confirm K9K engine type with Vehicle Identification Number (VIN) written on vehicle identification plate (refer to GI-44, "IDENTIFICATION INFORMATION"), then refer to service information in MA section.

VIN	Engine Type	Service Information
xTKxxxxK12Vxx	Euro3 48kW	K9K-Type1
xTKxxxxK12Yxx	Euro3 60kW	
xTKxxxxK12Txx	Euro4 50kW	K9K-Type2
xTKxxxxK12Uxx	Euro4 63kW	

GENERAL MAINTENANCE

PFP:00000

General Maintenance

ELS000L7

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 the checks and inspections themselves or they can have their NISSAN dealers do them for a nominal charge.

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.	—
Windshield wiper blades	Check for cracks or wear if not functioning correctly.	—
Doors and engine hood	Check that all doors and the engine hood operate smoothly as well as the back door and glass hatch. Also ensure 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 for lubrication frequently.	BL-8, BL-233
Tire rotation	Tires should be rotated every 10,000 km (6,000 miles).	MA-68

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 chimes	Make sure that all warning lamps and buzzers/chimes are operating properly.	—
Steering wheel	Check that it has the specified play. Check for changes in the steering conditions, such as excessive free play, hard steering or strange noises. **Free play: Less than 35 mm (1.38 in)**	—
Seat belts	Check that all parts of the seat belt system (e.g. buckles, anchors, adjusters and retractors) operate properly and smoothly, and are installed securely. Check the belt webbing for cuts, fraying, wear or damage.	SB-3

UNDER THE HOOD AND VEHICLE

The maintenance items listed here should be checked periodically. e.g. each time you check the engine oil or refuel.

Item		Reference page
Windshield washer fluid	Check that there is adequate fluid in the tank.	—
Engine coolant level	Check the coolant level when the engine is cold.	CO-9, CO-34 , CO-61
Engine oil level	Check the level after parking the vehicle (on level ground) and turning off the engine.	LU-6, LU-16 , LU-24
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-68, MA-66
Battery	Check the fluid level in each cell. It should be between the “MAX” and “MIN” lines.	—

PERIODIC MAINTENANCE

PFP:00026

Periodic Maintenance

ELS000L8

The following tables show the normal maintenance schedule. Depending upon weather and atmospheric conditions, varying road surfaces, individual driving habits and vehicle usage, additional or more frequent maintenance may be required.

Periodic maintenance beyond the last period shown on the tables requires similar maintenance.

ENGINE AND EMISSION CONTROL MAINTENANCE (CR ENGINE FOR EUROPE)

(Annual Mileage <30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace,.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference page
Perform on a kilometer basis, but on an annual basis when driving less than 20,000 km (12,000 miles) per year	km x 1,000 (Miles x 1,000) Months	20 (12) 12	40 (24) 24	60 (36) 36	80 (48) 48	100 (60) 60	120 (72) 72	
Engine compartment and under vehicle								
Intake and exhaust valve clearance	See NOTE (1)							EM-47
Drive belts	See NOTE (2)	I	I	I	I	I	I	EM-14
Engine oil (Use recommended oil.)★		R	R	R	R	R	R	LU-6
Engine oil filter (Use NISSAN genuine part or equivalent)★		R	R	R	R	R	R	LU-9
Engine anti-freeze coolant (Use genuine NISSAN Anti-Freeze Coolant (L250) or equivalent.)	See NOTE (3)		I			R		CO-9
Cooling system		I	I	I	I	I	I	CO-9
Fuel lines			I		I		I	FL-3
Air cleaner filter★				R			R	EM-18
Fuel filter (In-tank type)	See NOTE (4)							FL-4
Spark plugs [Platinum-Tipped Type]				R			R	MA-47
EVAP vapor lines (With carbon canister)			I		I		I	EC-444 or EC-796
Heated oxygen sensor 1	See NOTE (5)							EC-181 or EC-577

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- **(1) Periodic maintenance is not required. However, if valve noise increases, check valve clearance.**
- **(2) Replace the drive belts if found damaged.**
- **(3) First replace at 100,000 Km (60,000 miles)/60 months, then every 60,000 km (36,000 miles)/36 months. Perform "I" (Checking the mixture ratio and correcting the mixture ratio if necessary) at the middle of replacement interval.**
- **(4) Fuel filter is maintenance-free. For service procedures, refer to FL-4 .**
- **(5) Perform only according to "Maintenance Under Severe Driving conditions" for models without Euro-OBD system. For models with Euro-OBD system, periodic maintenance is not required.**

CHASSIS AND BODY MAINTENANCE (CR ENGINE FOR EUROPE)

(Annual Mileage <30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference page
Perform on a kilometer basis, but on an annual basis when driving less than 20,000 km (12,000 miles) per year	km x 1,000 (Miles x 1,000) Months	20 (12) 12	40 (24) 24	60 (36) 36	80 (48) 48	100 (60) 60	120 (72) 72	
Underhood and under vehicle								
Headlamp aiming		I	I	I	I	I	I	LT-40
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	I	I	MA-68, MA-66
Brake fluid★			R		R		R	MA-69
Brake booster vacuum hoses, connections & check valve			I		I		I	BR-17
Manual transaxle gear oil (For leaks)		I	I	I	I	I	I	MA-66
Automatic transaxle fluid (For level & leaks)★		I	I	I	I	I	I	MA-67
Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system★			I		I		I	MA-70, MA-70 , MA-71 , MA-66
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	I	I	FSU-15
Brake pads, rotors, linings, drums & other brake components★		I	I	I	I	I	I	MA-69, MA-69 , MA-69
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	I	I	BR-6, PB-3 , CL-6
Air conditioner filter★			R		R		R	ATC-83, MTC-55
Body corrosion	See NOTE (1)							MA-71

NOTE:

- **(1) Inspect once per year.**
- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**

ENGINE AND EMISSION CONTROL MAINTENANCE (HR ENGINE)

(Annual Mileage <30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, [ ] = At the specified mileage only.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Refer-ence page
Perform on a kilometer basis, but on an annual basis when driving less than 30,000 km (18,000 miles) per 2 years.	km x 1,000 (Miles x 1,000) Months	30 (18) 24	60 (36) 48	90 (54) 72	120 (72) 96	
Engine compartment and under vehicle						
Intake and exhaust valve clearance	See NOTE (1)					EM-167
Drive belts	See NOTE (2)	I	I	I	I	EM-115
Engine oil (Use recommended oil.)★		R	R	R	R	LU-16
Engine oil filter (Use NISSAN genuine part or equivalent)★		R	R	R	R	LU-19
Engine anti-freeze coolant (Use genuine NISSAN Anti-Freeze Coolant (L250) or equivalent.)	See NOTE (3)	I	I	R	I	CO-34
Cooling system		I	I	I	I	CO-34
Fuel lines		I	I	I	I	FL-13
Air cleaner filter★			R		R	EM-119
Fuel filter (In-tank type)	See NOTE (4)					FL-14
Spark plugs [Platinum-Tipped Type]				[R]		EM-134
EVAP vapor lines (With carbon canister)		I	I	I	I	EC-825 or EC-1262
Heated oxygen sensor 1	See NOTE (5)					EC-958 or EC-1377

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- **(1) Periodic maintenance is not required. However, if valve noise increases, check valve clearance.**
- **(2) Replace the drive belts if found damaged.**
- **(3) First replace at 90,000 Km (54,000 miles)/60 months, then every 60,000 km (36,000 miles)/48 months. Perform "I" (Checking the mixture ratio and correcting the mixture ratio if necessary) at the middle of replacement interval.**
- **(4) Fuel filter is maintenance-free. For service procedures, refer to FL-14 .**
- **(5) Perform only according to "Maintenance Under Severe Driving conditions" for models without Euro-OBD system. For models with Euro-OBD system, periodic maintenance is not required.**

CHASSIS AND BODY MAINTENANCE (HR ENGINE)

(Annual Mileage <30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform on a kilometer basis, but on an annual basis when driving less than 30,000 km (18,000 miles) per 2 years.	km x 1,000 (Miles x 1,000) Months	30 (18) 24	60 (36) 48	90 (54) 72	120 (72) 96	
Underhood and under vehicle						
Headlamp aiming		I	I	I	I	LT-40
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	MA-68, MA-66
Brake fluid★		R	R	R	R	MA-69
Brake booster vacuum hoses, connections & check valve		I	I	I	I	BR-17
Manual transaxle gear oil (For level & leaks)		I	I	I	I	MA-66
Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system★		I	I	I	I	MA-70, MA-70 , MA-71 , MA-66
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	FSU-15
Brake pads, rotors & other brake components★		I	I	I	I	MA-69, MA-69 , MA-69
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	BR-6, PB-3 , CL-6
Air conditioner filter★		R	R	R	R	ATC-83, MTC-55
Body corrosion	See NOTE (1)					MA-71

NOTE:

- **(1) Inspect once per year.**
- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**

ENGINE AND EMISSION CONTROL MAINTENANCE (K9K TYPE1 DIESEL ENGINE)

Refer to MA-7, "APPLICATION NOTICE" , to confirm engine type.

(Annual Mileage <30,000 Km/year)

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform on a kilometer basis, but on an annual basis when driving less than 30,000 km (18,000 miles) per 2 years.	km x 1,000 (Miles x 1,000) Months	30 (18) 24	60 (36) 48	90 (54) 72	120 (72) 96	
Engine compartment and under vehicle						
Engine oil (Use recommended oil.)★		R	R	R	R	LU-24
Engine oil filter (Use recommended oil filter)★		R	R	R	R	LU-26
Timing belt★	See NOTE (1)	Replace every 120,000 km/60 months				EM-273
Drive belt	See NOTE (2)	I	I	I	R	EM-244
Cooling system		I	I	I	I	CO-61
Engine anti-freeze coolant (Use genuine NISSAN Anti-freeze Coolant (L250) or equivalent)	See NOTE (3)	I	I	R	I	CO-61
Air cleaner filter★		R	R	R	R	EM-247
Intake & exhaust valve clearance	See NOTE (4)	Inspect every 100,000 km				EM-295
Fuel lines		I	I	I	I	FL-23
Fuel filter★	See NOTE (5)	R	R	R	R	FL-24

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- **(1) The replacement interval for the timing belt is the maximum lifespan which should not be exceeded. Replace the timing belt if it comes into contact with fuel. The frequency of replacement should be adapted depending on vehicle usage. See "Maintenance Under Sever Driving Conditions".**
- **(2) Replace every 120,000 km/maximum 60 months. Replace drive belt if it comes into contact with fuel or damage is found during inspection.**
- **(3) First replace at 90,000 Km (54,000 miles)/60 months, then every 60,000 km (36,000 miles)/48 months. After first replacement, perform "I" (Checking the mixture ratio and correcting the mixture ratio if necessary) at the middle of replacement interval.**
- **(4) If valve noise increases, check valve clearance.**
- **(5) Replace every 30,000km/48 months.**

CHASSIS AND BODY MAINTENANCE (K9K TYPE1 DIESEL ENGINE)

Refer to MA-7, "APPLICATION NOTICE" , to confirm engine type.

(Annual Mileage <30,000 Km/year)

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform on a kilometer basis, but on an annual basis when driving less than 30,000 km (18,000 miles) per 2 years.	km x 1,000 (Miles x 1,000) Months	30 (18) 24	60 (36) 48	90 (54) 72	120 (72) 96	
Underhood and under vehicle						
Headlamp aiming		I	I	I	I	LT-40
Wheel alignment (if necessary, balance & rotate wheels)		I	I	I	I	FSU-6
Brake pads, rotor & other brake components★		I	I	I	I	BR-21
Brake linings, drums & other brake components★		I	I	I	I	BR-27
Brake booster vacuum hoses, connections & check valve		I	I	I	I	BR-17
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	BR-6, PB-3 , CL-6
Brake & clutch, systems and fluid (for level and leaks)		I	I	I	I	MA-68, MA-66
Brake fluid★		R	R	R	R	MA-68
Air conditioner filter★		R	R	R	R	ATC-83, MTC-55
Manual transaxle gear oil (check for leakage. Use genuine Nissan gear oil or exact equivalent)		I	I	I	I	MA-66
Steering gear & linkage, axle & suspension parts, drive shafts, exhaust system★		I	I	I	I	MA-70, MA-70 , MA-71 , MA-66
Body corrosion	See NOTE (1)					MA-71

NOTE:

- **(1) Inspect once per year.**
- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**

ENGINE AND EMISSION CONTROL MAINTENANCE (K9K TYPE2 DIESEL ENGINE)

Refer to MA-7, "APPLICATION NOTICE" , to confirm engine type.

(Annual Mileage <30,000 Km/year)

Abbreviations: R = Replace I = Inspect: Correct or replace if necessary D= Check filter and drain water.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference page
Perform on a kilometer basis, but on an annual basis when driving less than 20,000 km (12,000 miles) per year.	km x 1,000 (Miles x 1,000) Months	20 (12) 12	40 (24) 24	60 (36) 36	80 (48) 48	100 (60) 60	120 (72) 72	
Engine compartment and under vehicle								
Engine oil (Use recommended oil.)★		R	R	R	R	R	R	LU-24
Engine oil filter (Use recommended oil filter)★		R	R	R	R	R	R	LU-26
Timing belt★	See NOTE (1)	Replace every 120,000 km/60 months						EM-273
Drive belt	See NOTE (2)	I	I	I	I	I	R	EM-244
Cooling system		I	I	I	I	I	I	CO-61
Engine anti-freeze coolant (Use genuine NISSAN Anti-freeze Coolant (L250) or equivalent)	See NOTE (3)		I			R		CO-61
Air cleaner filter★			R		R		R	EM-247
Intake & exhaust valve clearance	See NOTE (4)	Inspect every 100,000 km						EM-295
Fuel lines		I	I	I	I	I	I	FL-23
Fuel filter★	See NOTE (5)	D	R	D	R	D	R	FL-24

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- **(1) The replacement interval for the timing belt is the maximum lifespan which should not be exceeded. Replace the timing belt if it comes into contact with fuel. The frequency of replacement should be adapted depending on vehicle usage. See "Maintenance Under Sever Driving Conditions".**
- **(2) Replace every 120,000 km/maximum 60 months. Replace drive belt if it comes into contact with fuel or damage is found during inspection.**
- **(3) First replace at 100,000 Km (60,000 miles)/60 months, then every 60,000 km (36,000 miles)/36 months. After first replacement, perform "I" (Checking the mixture ratio and correcting the mixture ratio if necessary) at the middle of replacement interval.**
- **(4) If valve noise increases, check valve clearance.**
- **(5) Replace every 40,000km/48 months.**

CHASSIS AND BODY MAINTENANCE (K9K TYPE2 DIESEL ENGINE)

Refer to MA-7, "APPLICATION NOTICE" , to confirm engine type.

(Annual Mileage <30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference page
Perform on a kilometer basis, but on an annual basis when driving less than 20,000 km (12,000 miles) per year.	km x 1,000 (Miles x 1,000) Months	20 (12) 12	40 (24) 24	60 (36) 36	80 (48) 48	100 (60) 60	120 (72) 72	
Underhood and under vehicle								
Headlamp aiming		I	I	I	I	I	I	LT-40
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	I	I	MA-68, MA-66
Brake fluid★			R		R		R	MA-69
Brake booster vacuum hoses, connections & check valve			I		I		I	BR-17
Manual transaxle gear oil (For leaks)		I	I	I	I	I	I	MA-66
Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system★			I		I		I	MA-70, MA-70 , MA-71 , MA-66
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	I	I	FSU-15
Brake pads, rotors, linings, drums & other brake components★		I	I	I	I	I	I	MA-69, MA-69 , MA-69
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	I	I	BR-6, PB-3 , CL-6
Air conditioner filter★			R		R		R	ATC-83, MTC-55
Body corrosion	See NOTE (1)							MA-71

NOTE:

- **(1) Inspect once per year.**
- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**

MAINTENANCE UNDER SEVERE DRIVING CONDITIONS (FOR EUROPE)

(Annual Mileage <30,000 Km/year)

The maintenance intervals shown on the preceding pages are for normal operating conditions. If the vehicle is mainly operated under severe driving conditions as shown below, more frequent maintenance must be performed on the following items as shown in the table.

Severe driving conditions

A — Driving in dusty conditions
B — Repeatedly driving short distances
C — Towing a trailer or caravan
D — Extensive idling
E — Driving in extremely adverse weather conditions or in areas where ambient temperatures are either extremely low or extremely high
F — Driving in high humidity or mountainous areas
G — Driving in areas using salt or other corrosive materials
H — Driving on rough and/or muddy roads or in the desert
I — Driving with frequent use of braking or in mountainous areas
J — Frequent off road use or driving in water
K —Sustained high speed driving
L — For models without Euro-OBD system (For CR and HR petrol engine models)
L — Repeated short journeys, cold engine at low temperature (For K9K diesel engine models)

Maintenance operation: Check = Check and correct or replace as necessary.

Driving condition												Maintenance item		Maintenance operation	Maintenance interval	Reference page
A	.	.	.	.	.	.	.	.	.	.	.	Air cleaner filter	CR engine models	Replace	Every 30,000 km (18,000 miles) or 18 months	MA-45
													HR engine models		Every 30,000 km (18,000 miles) or 24 months	MA-55
													K9K engine models			MA-63
A	B	C	D	.	.	.	.	.	.	.	.	Engine oil & engine oil filter	CR engine models	Replace	Every 10,000 km (6,000 miles) or 6 months	MA-45, MA-46
													HR engine models		Every 15,000 km (9,000 miles) or 12 months	MA-56, MA-57
													K9K engine models			MA-64, MA-65
.	.	.	.	.	.	.	.	.	.	.	L	Heated oxygen sensor 1	CR engine models	Inspect	Every 40,000 km (24,000 miles) or 24 months	EC-175, EC-572 , EC-746
													HR engine models		Every 30,000 km (18,000 miles) or 24 months	EC-958, EC-1377 , EC-1550
A	B	.	D	.	.	.	H	.	.	.	L	Timing belt	K9K engine models	Replace	More frequently	EM-273
.	.	.	.	.	F	.	.	.	.	.	.	Brake fluid	CR engine models	Replace	Every 20,000 km (12,000 miles) or 12 months	MA-69
													HR and K9K engine models		Every 15,000 km (9,000 miles) or 12 months	
.	.	C	.	.	.	.	H	.	.	.	.	Automatic transaxle fluid	CR engine models	Replace	Every 40,000 km (24,000 miles) or 24 months	MA-67

Driving condition												Maintenance item		Maintenance operation	Maintenance interval	Reference page
.	.	C	.	.	.	.	H	.	.	.	.	Fuel filter	K9K engine models	Check filter & drain water	Every 15,000 km (9,000 miles) or 12 months	FL-24
														Replace	Every 30,000 km (18,000 miles) or 24 months	
.	.	.	.	.	.	G	H	.	.	.	.	Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system	CR engine models	Inspect	Every 20,000 km (12,000 miles) or 12 months	MA-70, MA-70 , MA-71 , MA-66
													HR and K9K engine models	Inspect	Every 15,000 km (9,000 miles) or 12 months	MA-70, MA-70 , MA-71 , MA-66
A	.	C	.	.	.	G	H	I	.	.	.	Brake pads, rotors, linings, drums & other brake components	CR engine models	Inspect	Every 10,000 km (6,000 miles) or 6 months	MA-69, MA-69 , MA-69
													HR and K9K engine models	Inspect	Every 15,000 km (9,000 miles) or 12 months	MA-69, MA-69
A	.	.	.	.	.	.	.	.	.	.	.	Air conditioner filter	CR engine models	Replace	Every 20,000 km (12,000 miles) or 12 months	ATC-83, MTC-55
													HR and K9K engine models		Every 15,000 km (9,000 miles) or 12 months	

ENGINE AND EMISSION CONTROL MAINTENANCE (CR ENGINE FOR EUROPE)

(Annual Mileage >30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace,.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference page
Perform either at number of kilometers (miles) basis only.	km x 1,000 (Miles x 1,000)	20 (12)	40 (24)	60 (36)	80 (48)	100 (60)	120 (72)	
Engine compartment and under vehicle								
Intake and exhaust valve clearance	See NOTE (1)							EM-47
Drive belts	See NOTE (2)	I	I	I	I	I	I	EM-14
Engine oil (Use recommended oil.)★		R	R	R	R	R	R	MA-45
Engine oil filter (Use NISSAN genuine part or equivalent)★		R	R	R	R	R	R	LU-9
Engine anti-freeze coolant (Use genuine NISSAN Anti-Freeze Coolant (L250) or equivalent.)	See NOTE (3)		I			R		CO-9
Cooling system			I		I		I	CO-9
Fuel lines				I			I	FL-3
Air cleaner filter★				R			R	EM-18
Fuel filter (In-tank type)	See NOTE (4)							FL-4
Spark plugs [Platinum-Tipped Type]				R			R	MA-47
EVAP vapor lines (With carbon canister)				I			I	EC-444 or EC-796
Heated oxygen sensor 1	See NOTE (5)							EC-175, or EC-746

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- **(1) Periodic maintenance is not required. However, if valve noise increases, check valve clearance.**
- **(2) Replace the drive belts if found damaged.**
- **(3) First replace at 100,000 Km (60,000 miles), then every 60,000 km (36,000 miles). Perform "I" (Checking the mixture ratio and correcting the mixture ratio if necessary) at the middle of replacement interval.**
- **(4) Fuel filter is maintenance-free. For service procedures, refer to FL section.**
- **(5) Perform only according to "Maintenance Under Severe Driving conditions" for models without Euro-OBD system. For models with Euro-OBD system, periodic maintenance is not required.**

CHASSIS AND BODY MAINTENANCE (CR ENGINE FOR EUROPE)

(Annual Mileage >30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, L = Lubricate.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference page
Perform either at number of kilometers (miles) basis only.	km x 1,000 (Miles x 1,000)	20 (12)	40 (24)	60 (36)	80 (48)	100 (60)	120 (72)	
Underhood and under vehicle								
Headlamp aiming			I		I		I	LT-40
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	I	I	MA-68, MA-66
Brake fluid★				R			R	MA-69
Brake booster vacuum hoses, connections & check valve				I			I	BR-17
Manual transaxle gear oil (For leaks)		I	I	I	I	I	I	MA-66
Automatic transaxle fluid (For level & leaks)★		I	I	I	I	I	I	MA-67
Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system★				I			I	MA-70, MA-70 , MA-71 , MA-66
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	I	I	FSU-6
Brake pads, rotors, linings, drums & other brake components★		I	I	I	I	I	I	MA-69, MA-69 , MA-69
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	I	I	BR-6, PB-3 , CL-6
Air conditioner filter★			R		R		R	ATC-83, MTC-55
Body corrosion	See NOTE (1)							MA-71

NOTE:

- **(1) Inspect once per year.**
- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**

ENGINE AND EMISSION CONTROL MAINTENANCE (HR ENGINE)

(Annual Mileage >30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace,.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform either at number of kilometers (miles) basis only.	km x 1,000 (Miles x 1,000)	30 (18)	60 (36)	90 (54)	120 (72)	
Engine compartment and under vehicle						
Intake and exhaust valve clearance	See NOTE (1)					EM-167
Drive belts	See NOTE (2)	I	I	I	I	EM-115
Engine oil (Use recommended oil.)★		R	R	R	R	LU-16
Engine oil filter (Use NISSAN genuine part or equivalent)★		R	R	R	R	LU-19
Engine anti-freeze coolant (Use genuine NISSAN Anti-Freeze Coolant (L250) or equivalent.)	See NOTE (3)	I	I	R	I	CO-34
Cooling system		I	I	I	I	CO-34
Fuel lines			I		I	FL-13
Air cleaner filter★			R		R	EM-119
Fuel filter (In-tank type)	See NOTE (4)					FL-14
Spark plugs [Platinum-Tipped Type]				R		EM-134
EVAP vapor lines (With carbon canister)			I		I	EC-825 or EC-1262
Heated oxygen sensor 1	See NOTE (5)					EC-958 or EC-1377

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- **(1) Periodic maintenance is not required. However, if valve noise increases, check valve clearance.**
- **(2) Replace the drive belts if found damaged or if the auto belt tensioner reading reaches the maximum limit.**
- **(3) First replace at 90,000 Km (54,000 miles), then every 60,000 km (36,000 miles). Perform "I" (Checking the mixture ratio and correcting the mixture ratio if necessary) at the middle of replacement interval.**
- **(4) Fuel filter is maintenance-free. For service procedures, refer to FL-14 .**
- **(5) Perform only according to "Maintenance Under Severe Driving conditions" for models without Euro-OBD system. For models with Euro-OBD system, periodic maintenance is not required.**

CHASSIS AND BODY MAINTENANCE (HR ENGINE)

(Annual Mileage >30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, L = Lubricate.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform either at number of kilometers (miles) basis only.	km x 1,000 (Miles x 1,000)	30 (18)	60 (36)	90 (54)	120 (72)	
Underhood and under vehicle						
Headlamp aiming		I	I	I	I	LT-40
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	MA-68, MA-66
Brake fluid★			R		R	MA-69
Brake booster vacuum hoses, connections & check valve			I		I	BR-17
Manual transaxle gear oil (For level & leaks)		I	I	I	I	MA-66
Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system★			I		I	MA-70, MA-70 , MA-71 , MA-66
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	FSU-6
Brake pads, rotors & other brake components★		I	I	I	I	MA-69, MA-69 , MA-69
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	BR-6, PB-3 , CL-6
Air conditioner filter★		R	R	R	R	ATC-83, MTC-55
Body corrosion	See NOTE (1)					MA-71

NOTE:

- **(1) Inspect once per year.**
- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**

ENGINE AND EMISSION CONTROL MAINTENANCE (K9K TYPE1 DIESEL ENGINE)

Refer to MA-7, "APPLICATION NOTICE" , to confirm engine type.

(Annual Mileage >30,000 Km/year)

Abbreviations: R = Replace I = Inspect and correct or replace as necessary.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform either at number of kilometers (miles) basis only.	km x 1,000 (Miles x 1,000)	30 (18)	60 (36)	90 (54)	120 (72)	
Engine compartment and under vehicle						
Engine oil (Use recommended oil.)★		R	R	R	R	LU-24
Engine oil filter (Use recommended oil filter)★		R	R	R	R	LU-26
Timing belt★	See NOTE (1)	Replace every 120,000 km				EM-273
Drive belt	See NOTE (2)	I	I	I	R	EM-244
Cooling system		I	I	I	I	CO-61
Engine anti-freeze coolant (Use genuine NISSAN Anti-freeze Coolant (L250) or equivalent.)	See NOTE (3)	I	I	R	I	CO-61
Air cleaner filter★		R	R	R	R	EM-247
Intake & exhaust valve clearance	See NOTE (4)	Inspect every 100,000 km				EM-295
Fuel lines			I		I	FL-23
Fuel filter★	See NOTE (5)	R	R	R	R	FL-24

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- **(1) The replacement interval for the timing belt is the maximum lifespan which should not be exceeded. Replace the timing belt if it comes into contact with fuel. The frequency of replacement should be adapted depending on vehicle usage. See "Maintenance Under Sever Driving Conditions".**
- **(2) Replace every 120,000 km. Replace drive belt if it comes into contact with fuel or damage is found during inspection.**
- **(3) First replace at 90,000 Km (54,000 miles), then every 60,000 km (36,000 miles). After first replacement, Perform "I" (Checking the mixture ratio and correcting the mixture ratio if necessary) at the middle of replacement interval.**
- **(4) If valve noise increases, check valve clearance.**
- **(5) Replace every 30,000km..**

CHASSIS AND BODY MAINTENANCE (K9K TYPE1 DIESEL ENGINE)

Refer to MA-7, "APPLICATION NOTICE" , to confirm engine type.

(Annual Mileage >30,000 Km/year)

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform either at number of kilometers (miles) basis only.	km x 1,000 (Miles x 1,000)	30 (18)	60 (36)	90 (54)	120 (72)	
Underhood and under vehicle						
Headlamp aiming		I	I	I	I	LT-40
Wheel alignment (if necessary, balance & rotate wheels)		I	I	I	I	FSU-6
Brake pads, rotor & other brake components★		I	I	I	I	BR-21
Brake linings, drums & other brake components★		I	I	I	I	BR-27
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	BR-6, PB-3 , CL-6
Brake booster vacuum hoses, connections & check valve			I		I	BR-17
Brake & clutch, systems and fluid (for level and leaks)		I	I	I	I	MA-68, MA-66
Brake fluid★			R		R	MA-68
Air conditioner filter★		R	R	R	R	ATC-83, MTC-55
Manual transaxle gear oil (check for leakage. Use genuine Nissan gear oil or exact equivalent)		I	I	I	I	MA-66
Steering gear & linkage, axle & suspension parts, drive shafts, exhaust system★			I		I	MA-70, MA-70 , MA-71 , MA-66
Body corrosion	See NOTE (1)					MA-71

NOTE:

- **(1) Inspect once per year.**
- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**

ENGINE AND EMISSION CONTROL MAINTENANCE (K9K TYPE2 DIESEL ENGINE)

Refer to MA-7, "APPLICATION NOTICE" , to confirm engine type.

(Annual Mileage >30,000 Km/year)

Abbreviations: R = Replace I = Inspect and correct or replace as necessary D= Check filter and drain water.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference page
Perform either at number of kilometers (miles) basis only.	km x 1,000 (Miles x 1,000)	20 (12)	40 (24)	60 (36)	80 (48)	100 (60)	120 (72)	
Engine compartment and under vehicle								
Engine oil (Use recommended oil.)★		R	R	R	R	R	R	LU-24
Engine oil filter (Use recommended oil filter)★		R	R	R	R	R	R	LU-26
Timing belt★	See NOTE (1)	Replace every 120,000 km						EM-273
Drive belt	See NOTE (2)	I	I	I	I	I	R	EM-244
Cooling system		I	I	I	I	I	I	CO-61
Engine anti-freeze coolant (Use genuine NISSAN Anti-freeze Coolant (L250) or equivalent.)	See NOTE (3)		I			R		CO-61
Air cleaner filter★			R		R		R	EM-247
Intake & exhaust valve clearance	See NOTE (4)	Inspect every 100,000 km						EM-295
Fuel lines		I	I	I	I	I	I	FL-23
Fuel filter★	See NOTE (5)	D	R	D	R	D	R	FL-24

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- **(1) The replacement interval for the timing belt is the maximum lifespan which should not be exceeded. Replace the timing belt if it comes into contact with fuel. The frequency of replacement should be adapted depending on vehicle usage. See "Maintenance Under Sever Driving Conditions".**
- **(2) Replace every 120,000 km. Replace drive belt if it comes into contact with fuel or damage is found during inspection.**
- **(3) First replace at 100,000 km (60,000 miles), then every 60,000 km (36,000 miles). After first replacement, Perform "I" (Checking the mixture ratio and correcting the mixture ratio if necessary) at the middle of replacement interval.**
- **(4) If valve noise increases, check valve clearance.**
- **(5) Replace every 40,000 km.**

CHASSIS AND BODY MAINTENANCE (K9K TYPE2 DIESEL ENGINE)

Refer to MA-7, "APPLICATION NOTICE" , to confirm engine type.

(Annual Mileage >30,000 Km/year)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, L = Lubricate.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference page
Perform either at number of kilometers (miles) basis only.	km x 1,000 (Miles x 1,000)	20 (12)	40 (24)	60 (36)	80 (48)	100 (60)	120 (72)	
Underhood and under vehicle								
Headlamp aiming			I		I		I	LT-40
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	I	I	MA-68, MA-66
Brake fluid★				R			R	MA-69
Brake booster vacuum hoses, connections & check valve				I			I	BR-17
Manual transaxle gear oil (For leaks)		I	I	I	I	I	I	MA-66
Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system★				I			I	MA-70, MA-70 , MA-71 , MA-66
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	I	I	FSU-6
Brake pads, rotors, linings, drums & other brake components★		I	I	I	I	I	I	MA-69, MA-69 , MA-69
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	I	I	BR-6, PB-3 , CL-6
Air conditioner filter★			R		R		R	ATC-83, MTC-55
Body corrosion	See NOTE (1)							MA-71

NOTE:

- **(1) Inspect once per year.**
- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**

MAINTENANCE UNDER SEVERE DRIVING CONDITIONS (FOR EUROPE)

(Annual Mileage >30,000 Km/year)

The maintenance intervals shown on the preceding pages are for normal operating conditions. If the vehicle is mainly operated under severe driving conditions as shown below, more frequent maintenance must be performed on the following items as shown in the table.

Severe driving conditions

A — Driving in dusty conditions
B — Repeatedly driving short distances
C — Towing a trailer or caravan
D — Extensive idling
E — Driving in extremely adverse weather conditions or in areas where ambient temperatures are either extremely low or extremely high
F — Driving in high humidity or mountainous areas
G — Driving in areas using salt or other corrosive materials
H — Driving on rough and/or muddy roads or in the desert
I — Driving with frequent use of braking or in mountainous areas
J — Frequent off road use or driving in water
K —Sustained high speed driving
L — For models without Euro-OBD system (For CR and HR petrol engine models)
L — Repeated short journeys, cold engine at low temperature (For K9K diesel engine models)

Maintenance operation: Check = Check and correct or replace as necessary.

Driving condition												Maintenance item		Maintenance operation	Maintenance interval	Reference page
A	.	.	.	.	.	.	.	.	.	.	.	Air cleaner filter	CR engine models	Replace	Every 30,000 km (18,000 miles)	MA-45
													HR engine models			MA-55
													K9K engine models			MA-63
A	B	C	D	.	.	.	.	.	.	.	.	Engine oil & engine oil filter	CR engine models	Replace	Every 10,000 km (6,000 miles)	MA-45, MA-46
													HR engine models		Every 15,000 km (9,000 miles)	MA-56, MA-57
													K9K engine models			MA-64, MA-65
.	.	.	.	.	.	.	.	.	.	.	L	Heated oxygen sensor 1	CR engine models	Inspect	Every 60,000 km (36,000 miles)	EC-175, EC-572 , EC-746
													HR engine models			EC-958, EC-1377 , EC-1550
A	B	.	D	.	.	.	H	.	.	.	L	Timing belt	K9K engine models	Replace	More frequently	EM-273
.	.	.	.	.	F	.	.	.	.	.	.	Brake fluid	All models	Replace	Every 30,000 km (18,000 miles)	MA-69
.	.	C	.	.	.	.	H	.	.	.	.	Automatic transaxle fluid	CR engine models	Replace	Every 60,000 km (36,000 miles)	MA-67
.	.	C	.	.	.	.	H	.	.	.	.	Fuel filter	K9K engine models	Check filter & drain water	Every 15,000 km (9,000 miles)	FL-24
														Replace	Every 30,000 km (18,000 miles)	

.	.	.	.	.	.	G	H	.	.	.	.	Steering gear & linkage, axle & suspension parts, drive shafts & exhaust system	All models	Inspect	Every 30,000 km (18,000 miles)	MA-70, MA-70 , MA-71 , MA-66
A	.	C	.	.	.	G	H	I	.	.	.	Brake pads, rotors, linings, drums & other brake compo-nents	CR engine models	Inspect	Every 10,000 km (6,000 miles)	MA-69, MA-69 , MA-69
													HR and K9K engine models		Every 15,000 km (9,000 miles)	
A	.	.	.	.	.	.	.	.	.	.	.	Air conditioner filter	CR engine models	Replace	Every 20,000 km (12,000 miles)	ATC-83, MTC-55
													HR and K9K engine models		Every 15,000 km (9,000 miles)	

ENGINE AND EMISSION CONTROL MAINTENANCE (CR ENGINE FOR SOUTH AFRICA)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, E = Check and correct the mixture ratio.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Refer-ence page
Perform at specified mileages or months which-ever comes first	km x 1,000 (Miles x 1,000) Months	15 (9) 12	30 (18) 24	45 (27) 36	60 (36) 48	75 (45) 60	90 (54) 72	105 (63) 84	120 (72) 96	
Engine compartment and under vehicle										
Intake and exhaust valve clearance	See NOTE (1)									EM-47
Drive belts	See NOTE (2)		I		I		I		I	EM-14
Engine oil (Use recommended oil.)★		Replace every 10,000km (6,000miles) or 6 months								LU-6
Engine oil filter (Use NISSAN genuine part or equivalent)★		Replace every 10,000km (6,000miles) or 6 months								LU-9
Fuel filter (In-tank type)	See NOTE (3)									FL-4
Engine anti-freeze coolant (Use genuine NIS-SAN Anti-Freeze Coolant (L250) or equivalent.)	See NOTE (4)		E		E	R		E		CO-9
Cooling system		I	I	I	I	I	I	I	I	CO-9
Fuel lines			I		I		I		I	FL-3
Air cleaner filter (Viscous paper type)★			R		R		R		R	EM-18
Spark plugs [Platinum-Tipped Type]					R				R	MA-47
EVAP vapor lines (With carbon canister)			I		I		I		I	EC-444 or EC-796
Heated oxygen sensor 1			I		I		I		I	EC-181 or EC-577

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- **(1) Periodic maintenance is not required. However, if valve noise increases, check valve clearance.**
- **(2) Replace drive belt if found damage.**
- **(3) Fuel filter is maintenance-free. For service procedures, refer to FL-4 .**
- **(4) Use NISSAN Genuine engine coolant, or equivalent in its quality, in order to avoid possible aluminium corrosion within the engine cooling system caused by the use of non-genuine engine coolant. After first replacement, replace every 45,000 km (27,000 miles) or 36 months.**

CHASSIS AND BODY MAINTENANCE (CR ENGINE FOR SOUTH AFRICA)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, L = Lubricate.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference page
Perform at specified mileages or months whichever comes first.	km x 1,000 (Miles x 1,000) Months	15 (9) 12	30 (18) 24	45 (27) 36	60 (36) 48	75 (45) 60	90 (54) 72	105 (63) 84	120 (72) 96	
Underhood and under vehicle										
Brake & clutch fluid (For level & leaks)★		I	I	I	I	I	I	I	I	MA-68, MA-66
Brake fluid★			R		R		R		R	MA-69
Brake booster vacuum hoses, connections & check valve			I		I		I		I	BR-17
Brake, clutch & exhaust system		I	I	I	I	I	I	I	I	MA-68, MA-66 , MA-66
Manual transaxle gear oil (For level & leaks)		I	I	I	I	I	I	I	I	MA-66
Steering gear & linkage, axle & suspension parts, front drive shafts★		I	I	I	I	I	I	I	I	MA-70,MA-70 , MA-71
Outside and inside										
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	I	I	I	I	FSU-15
Brake pads, rotors, linings, drums & other brake components★		I	I	I	I	I	I	I	I	MA-69, MA-69 , MA-70 , MA-70 , MA-69 , MA-69
Locks, hinges & hood latch★		L	L	L	L	L	L	L	L	MA-71
Seat belts, buckles, reactors, anchors & adjuster		I	I	I	I	I	I	I	I	MA-71
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	I	I	I	I	BR-6, PB-3 , CL-6
Air conditioner filter★			R		R		R		R	ATC-83, MTC-55

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**

MAINTENANCE UNDER SEVERE DRIVING CONDITIONS (FOR SOUTH AFRICA)

The maintenance intervals shown on the preceding pages are for normal operating conditions. If the vehicle is mainly operated under severe driving conditions as shown below, more frequent maintenance must be performed on the following items as shown in the table.

Severe driving conditions

A — Driving in dusty conditions
B — Repeatedly driving short distances
C — Towing a trailer or caravan
D — Extensive idling or urban driving
E — Driving in extremely adverse weather conditions or in areas where ambient temperatures are either extremely low or extremely high
F — Driving in high humidity or mountainous areas
G — Driving in areas using salt or other corrosive materials
H — Driving on rough and/or muddy roads or in the desert
I — Driving with frequent use of braking or in mountainous areas

Driving condition									Maintenance item	Maintenance operation	Maintenance interval	Reference page
A	.	.	.	.	.	.	.	.	Air cleaner filter (Viscous paper type)	Replace	More frequently	MA-45
A	B	C	D	.	.	.	.	.	Engine oil & engine oil filter	Replace	Every 5,000 km (3,000 miles) or 3 months	MA-45, LU-9
.	.	.	.	.	F	.	.	.	Brake fluid	Replace	Every 15,000 km (9,000 miles) or 12 months	MA-69
.	.	.	.	.	.	G	H	.	Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system	Inspect	Every 7,500 km (4,500 miles) or 6 months	MA-70, MA-70 , MA-71 , MA-66
A	.	C	.	.	.	G	H	I	Brake pads, rotors, linings, drums & other brake components	Inspect	Every 7,500 km (4,500 miles) or 6 months	MA-69, MA-69 , MA-70 , MA-70 , MA-69 , MA-69
.	.	.	.	.	.	G	.	.	Lock, hinges & hood latch	Lubricate	Every 7,500 km (4,500 miles) or 6 months	MA-71
A	.	.	.	.	.	.	.	.	Air conditioner filter	Replace	Every 15,000 km (9,000 miles) or 12 months	ATC-83, MTC-55

ENGINE AND EMISSION CONTROL MAINTENANCE (CR ENGINE FOR MEXICO)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, E = Check and correct the mixture ratio.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Refer-ence page
Perform at specified mileage or months which-ever comes first	km x 1,000 (Miles x 1,000) Months	10 (6) 6	20 (12) 12	30 (18) 18	40 (24) 24	50 (30) 30	60 (36) 36	70 (42) 42	80 (48) 48	
Engine compartment and under vehicle										
Intake and exhaust valve clearance	See NOTE (1)									EM-47
Drive belts	See NOTE (2)				I					EM-14
Engine oil (Use recommended oil.)★		R	R	R	R	R	R	R	R	LU-6
Engine oil filter (Use NISSAN genuine part or equivalent)★		R	R	R	R	R	R	R	R	LU-9
Fuel filter (In-tank type)	See NOTE (3)									FL-4
Engine anti-freeze coolant (Use genuine NIS-SAN Anti-Freeze Coolant (L250) or equivalent.)	See NOTE (4)				E				R	CO-9
Cooling system			I		I		I		I	CO-9
Fuel lines					I				I	FL-3
Air cleaner filter (Viscous paper type)★					R				R	EM-18
Spark plugs [Platinum-Tipped Type]							R			MA-47
EVAP vapor lines (With carbon canister)					I				I	EC-444 or EC-796
Heated oxygen sensor 1					I				I	EC-181 or EC-577

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**
- **(1) Periodic maintenance is not required. However, if valve noise increases, check valve clearance.**
- **(2) Replace drive belt if found damage.**
- **(3) Fuel filter is maintenance-free. For service procedures, refer to FL-4 .**
- **(4) Use NISSAN Genuine engine coolant, or equivalent in its quality, in order to avoid possible aluminium corrosion within the engine cooling system caused by the use of non-genuine engine coolant. After first replacement, replace every 40,000 km (24,000 miles) or 24 months.**

CHASSIS AND BODY MAINTENANCE (CR ENGINE FOR MEXICO)

Abbreviations: I = Inspect and correct or replace as necessary, R = Replace, L = Lubricate.

MAINTENANCE OPERATION		MAINTENANCE INTERVAL								Reference page
Perform at specified mileages or months whichever comes first.	km x 1,000 (Miles x 1,000) Months	10 (6) 6	20 (12) 12	30 (18) 18	40 (24) 24	50 (30) 30	60 (36) 36	70 (42) 42	80 (482) 48	
Underhood and under vehicle										
Brake & clutch fluid (For level & leaks)★		I	I	I	I	I	I	I	I	MA-68, MA-66
Brake fluid★					R				R	MA-69
Brake booster vacuum hoses, connections & check valve					I				I	BR-17
Brake, clutch & exhaust system		I	I	I	I	I	I	I	I	MA-68, MA-66 , MA-66
Manual transaxle gear oil (For level & leaks)		I	I	I	I	I	I	I	I	MA-66
Steering gear & linkage, axle & suspension parts, front drive shafts★			I		I		I		I	MA-70,MA-70 , MA-71
Outside and inside										
Wheel alignment (If necessary, rotate & balance wheels)			I		I		I		I	FSU-15
Brake pads, rotors & other brake components★		I	I	I	I	I	I	I	I	MA-69, MA-69 , MA-69
Brake linings, drums & other brake components★			I		I		I		I	MA-69, MA-70 , MA-70
Locks, hinges & hood latch★		L	L	L	L	L	L	L	L	MA-71
Seat belts, buckles, reactors, anchors & adjuster			I		I		I		I	MA-71
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	I	I	I	I	BR-6, PB-3 , CL-6
Air conditioner filter★			R		R		R		R	ATC-83, MTC-55

NOTE:

- **★ Maintenance items with "★" should be performed more frequently according to "Maintenance Under Severe Driving Conditions".**

MAINTENANCE UNDER SEVERE DRIVING CONDITIONS (FOR MEXICO)

The maintenance intervals shown on the preceding pages are for normal operating conditions. If the vehicle is mainly operated under severe driving conditions as shown below, more frequent maintenance must be performed on the following items as shown in the table.

Severe driving conditions

A — Driving in dusty conditions
B — Repeatedly driving short distances
C — Towing a trailer or caravan
D — Extensive idling
E — Driving in extremely adverse weather conditions or in areas where ambient temperatures are either extremely low or extremely high
F — Driving in high humidity or mountainous areas
G — Driving in areas using salt or other corrosive materials
H — Driving on rough and/or muddy roads or in the desert
I — Driving with frequent use of braking or in mountainous areas

Driving condition									Maintenance item	Maintenance operation	Maintenance interval	Reference page
A	.	.	.	.	.	.	.	.	Air cleaner filter (Viscous paper type)	Replace	More frequently	MA-45
A	B	C	D	.	.	.	.	.	Engine oil & engine oil filter	Replace	Every 5,000 km (3,000 miles) or 3 months	MA-45, LU-9
.	.	.	.	.	F	.	.	.	Brake fluid	Replace	Every 20,000 km (12,000 miles) or 12 months	MA-69
.	.	.	.	.	.	G	H	.	Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system	Inspect	Every 10,000 km (6,000 miles) or 6 months	MA-70, MA-70 , MA-71 , MA-66
A	.	C	.	.	.	G	H	I	Brake pads, rotors & other brake components	Inspect	Every 5,000 km (3,000 miles) or 3 months	MA-69, MA-69 , MA-69
A	.	C	.	.	.	G	H	I	Brake linings, drums & other brake components	Inspect	Every 10,000 km (6,000 miles) or 6 months	MA-70, MA-70 , MA-69
.	.	.	.	.	.	G	.	.	Lock, hinges & hood latch	Lubricate	Every 5,000 km (3,000 miles) or 3 months	MA-71
A	.	.	.	.	.	.	.	.	Air conditioner filter	Replace	Every 10,000 km (6,000 miles) or 6 months	ATC-83, MTC-55

RECOMMENDED FLUIDS AND LUBRICANTS

PFP:00000

Fluids and Lubricants

ELS000L9

			Capacity (Approximate)		Recommended Fluids/Lubricants
			Liter	Imp measure	
Engine oil Drain and refill	With oil filter change	CR engine	3.4	3 qt	● CR engine API SG, SH or SJ*1 ILSAC grade GF-I or GF-II*1 ACEA A2 ● HR engine API SG, SH, SJ or SL*1 ILSAC grade GF-I, GF-II GF-III*1 ACEA A3/B3 (HTHS2.9) or A5/B5 ● K9K engine ACEA B3, B4
		HR engine	4.6	4 qt	
		K9K engine	4.55	4 qt	
	Without oil filter change	CR engine	3.2	2-7/8 qt	
		HR engine	4.4	3-7/8 qt	
		K9K engine	4.39	3-7/8 qt	
Dry engine (engine overhaul)		CR engine	3.9	3-3/8 qt	
		HR engine	4.8	4-1/4	
		K9K engine	4.71	4-1/8 qt	
Cooling system (with reservoir)	CR engine	M/T models with A/C	5.3	4-5/8 qt	● Genuine Nissan Anti-freeze Coolant (L250) or equivalent in its quality*3
		Except M/T models with A/C	4.9	4-3/8 qt	
	HR engine	Models without A/C	5.6	4-7/8 qt	
		Models with A/C	6.0	5-1/4 qt	
	K9K engine	Models without intercooler	6.5	5-3/4 qt	
		Models with intercooler	7.0	6-1/8 qt	
Reservoir tank	CR engine	M/T models with A/C	1.2	1-1/8 qt	
		Except M/T models with A/C	0.7	5/8 qt	
	HR engine	Models without A/C	0.7	5/8 qt	
		Models with A/C	1.2	1-1/8 qt	
	K9K engine		1.2	1-1/8 qt	
Manual transaxle gear oil		JH3	2.6	4-5/8 pt	● Genuine Nissan gear oil or API GL-4, Viscosity SAE 75W-80, 75W-85
		JR5	2.5	4-3/8 pt	
Automatic transaxle fluid			7.7	6-3/4 qt	Genuine Nissan ATF or equivalent*4
Brake and clutch fluid			—	—	● DOT 3 or DOT 4 (US FMVSS No. 116)*5
Multi-purpose grease			—	—	NLGI No. 2 (Lithium soap base)

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

*2: Never use API CG-4.

*3: Use Genuine Nissan Anti-freeze Coolant (L250)] or equivalent in its quality, in order to avoid possible aluminum corrosion within the engine cooling system caused by the use of non-genuine engine coolant.

Note that any repairs for the incidents within the engine cooling system while using non-genuine engine coolant may not be covered by the warranty even if such incidents occurred during the warranty period.

*4: Contact a Nissan dealership for more information regarding suitable fluids, including recommended brand(s) of Dexron™ III/Mercon™ Automatic Transmission Fluid.

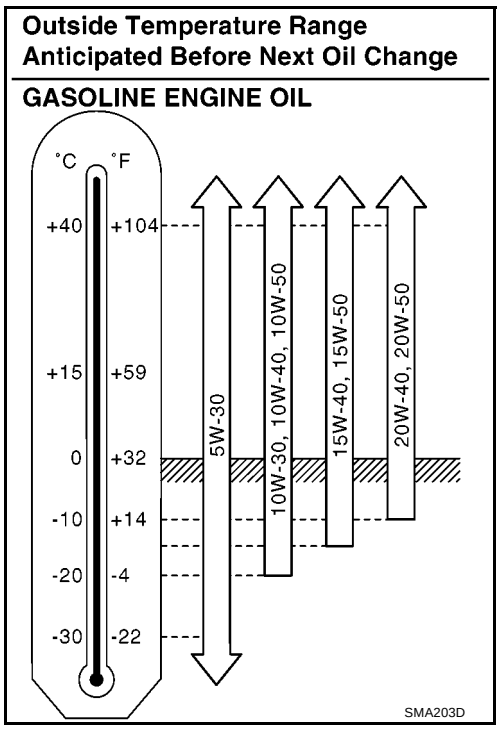
*5: Never mix different types of fluids (DOT 3 and DOT 4).

SAE Viscosity Number

ELS000LA

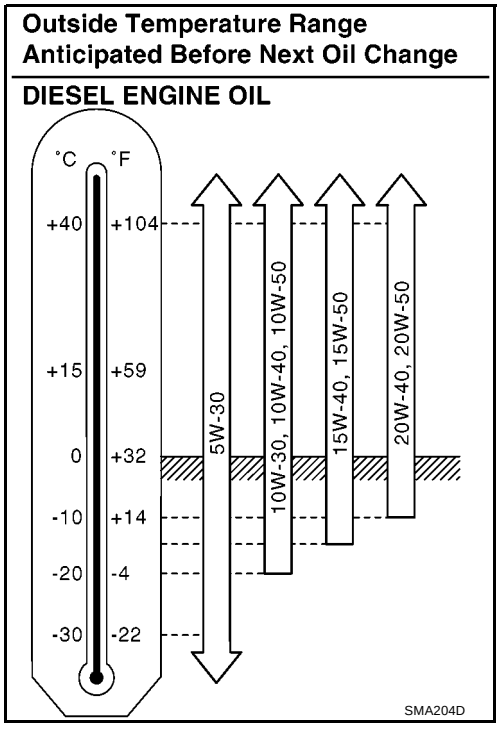
GASOLINE ENGINE

- 5W-30 is preferable.
  If 5W-30 is not available, select the viscosity, from the chart, that is suitable for outside temperature range.



DIESEL ENGINE

- 5W-30 is preferable.
  If 5W-30 is not available, select the viscosity, from the chart, that is suitable for outside temperature range.



Engine Coolant Mixture Ratio

ELS000LB

The engine cooling system is filled at the factory with a high-quality, year-round and extended life engine coolant. The high quality engine coolant contains the specific solutions effective for the anti-corrosion and the anti-freeze function. Therefore, additional cooling system additives are not necessary.

Outside temperature down to		Composition	
°C	°F	Engine coolant (Concentrated)	Demineralized water or distilled water
–15	5	30%	70%
–35	–30	50%	50%

SMA089D

CAUTION:

- **When adding or replacing coolant, be sure to use only Genuine NISSAN Anti-freeze Coolant (L250) or equivalent. Because L250 is premixed type coolant.**

The use of other types of engine coolant may damage your cooling system.

- When checking the engine coolant mixture ratio by the coolant hydrometer, use the chart below to correct your hydrometer reading (specific gravity) according to coolant temperature.

Mixed coolant specific gravity

Unit: specific gravity

Engine coolant mixture ratio	Coolant temperature °C (°F)			
	15 (59)	25 (77)	35 (95)	45 (113)
30%	1.046 - 1.050	1.042 - 1.046	1.038 - 1.042	1.033 - 1.038
50%	1.076 - 1.080	1.070 - 1.076	1.065 - 1.071	1.059 - 1.065

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could be caused by high pressure fluid escaping from the radiator. Wait until the engine and radiator cool down.

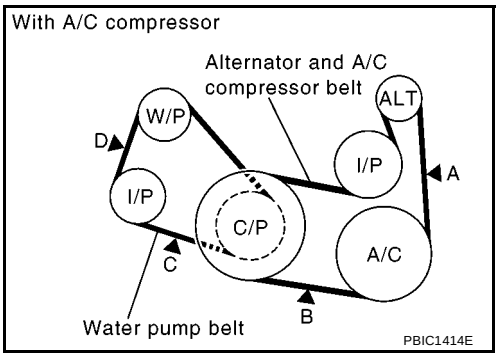
ENGINE MAINTENANCE (CR)

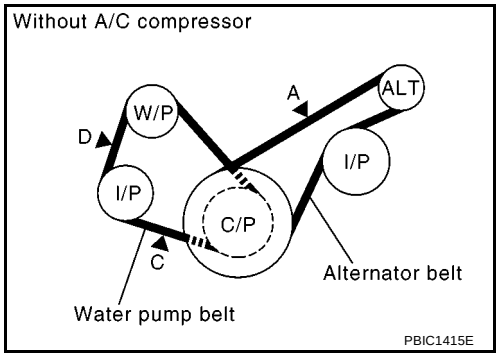
PFP:00000

Checking Drive Belts

ELS000MI

- Inspection should be done only when engine is cold or over 30 minutes after the engine is stopped.
- Turn the clamp pulleys two times clockwise, and make sure tension on all pulleys is equal before doing the test.
- Visually check the belts for wear, damage, and cracks on inside and edges.
- When measuring deflection, apply 98,1 N (10 kg, 22lb) at the ▼ marked point.





CAUTION:

When measuring belt tension immediately after the belt is installed, first set the tension to the standard, rotate the crankshaft for more than two turns in order to eliminate variance in the tension between pulleys, then measure and adjust tension to the standard again.

Location	Tension [N (kg, lb)]			Deflection [mm (in)] [When pressed by force of 98.1N (10 kg, 22lb)]			
	New	At adjustment	Limit	Measuring point	New belt	At adjustment	Limit
Alternator and A/C compressor belt	603 - 691 (61.5 - 70.5, 135.6 - 155.3)	495 - 583 (50.5 - 59.5, 111.3 - 131.1)	196 (20, 44.1)	A	6.6 - 7.8 (0.260 - 0.307)	7.3 - 8.5 (0.287 - 0.335)	13.8 (0.543)
				B	5.6 - 6.6 (0.220 - 0.260)	7.1 - 8.3 (0.280 - 0.327)	11.9 (0.469)
Alternator belt	603 - 691 (61.5 - 70.5, 135.6 - 155.3)	495 - 583 (50.5 - 59.5, 111.3 - 131.1)	196 (20, 44.1)	A	3.1 - 4.1 (0.122 - 0.161)	9.8 - 10.6 (0.386 - 0.417)	13.8 (0.543)
Water pump belt	446 - 534 (45.5 - 54.5, 100.3 - 120.0)	348 - 436 (35.5 - 44.5, 78.2 - 98.0)	137 (14, 30.9)	C	6.7 - 7.3 (0.264 - 0.287)	7.6 - 8.6 (0.299 - 0.339)	12.4 (0.448)
				D	4.7 - 5.6 (0.185 - 0.220)	7.0 - 7.7 (0.276 - 0.303)	8.6 (0.339)

Tension Adjustment

ELS000MJ

Location	Location of adjuster and tightening method
Alternator and A/C compressor drive belt	Adjusting bolt on idler pulley
Water pump belt	Adjusting bolt on idler pulley

CAUTION:

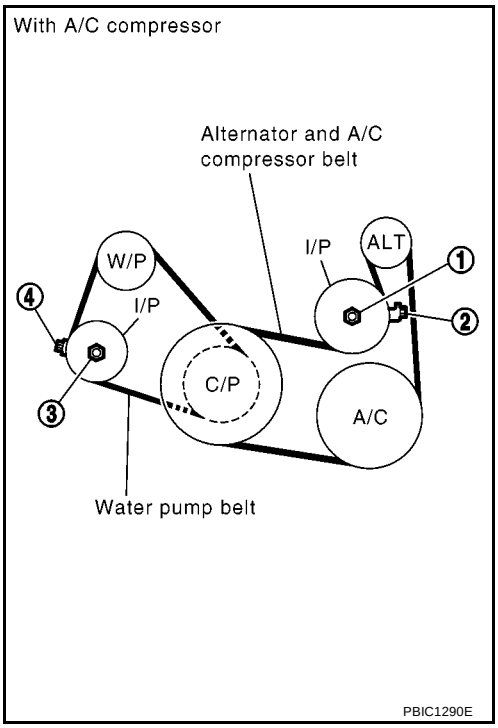
- **When the belt is replaced with new one, adjust the belt tension to the value for “New belt”, because new belt will not fully seat in the pulley groove.**
- **When tension of the belt being used exceeds “Limit”, adjust it to the value for “At adjustment”.**
- **When installing a belt, make sure that it is correctly engaged with the pulley groove.**
- **Do not allow oil or engine coolant to get on the belt.**
- **Do not twist or bend the belt strongly.**

ALTERNATOR AND A/C COMPRESSOR BELT (WITH A/C MODELS)

1. Remove RH front fender protector.
2. Loosen lock nut (1).
3. Tighten lock nut (1) with fingers.
4. Loosen lock nut (1) half a turn counter-clockwise.
5. Adjust the belt tension by turning the adjuster bolt (2).
   For the specified belt tension, refer to MA-38, "Checking Drive Belts" .
6. Tighten lock nut (1).

   Nut (1) :

   : 24.5 - 31.4 N·m (2.5 - 3.2 kg-m, 18 - 23 ft-lb)
7. Turn the crankshaft pulley two times clockwise.
8. Check that the belt tension is within the standard. Refer to MA-38, "Checking Drive Belts" .

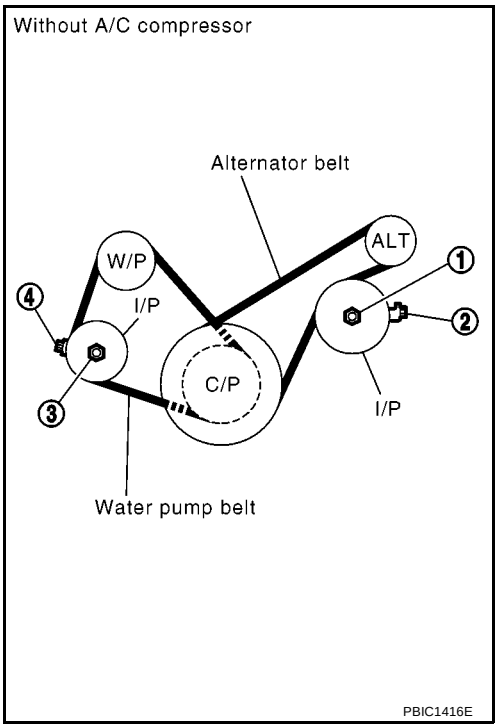


ALTERNATOR BELT (WITHOUT A/C MODELS)

1. Remove RH front fender protector.
2. Loosen lock nut (1).
3. Tighten lock nut (1) with fingers.
4. Loosen lock nut (1) half a turn counter-clockwise.
5. Adjust the belt tension by turning the adjuster bolt (2).
   For the specified belt tension, refer to MA-38, "Checking Drive Belts" .
6. Tighten lock nut (1).

   Nut (1) :

   : 24.5 - 31.4 N·m (2.5 - 3.2 kg-m, 18 - 23 ft-lb)
7. Turn the crankshaft pulley two times clockwise.
8. Check that the belt tension is within the standard. Refer to MA-38, "Checking Drive Belts" .



WATER PUMP BELT

1. Remove RH front fender protector.
2. Loosen lock nut (3).
3. Tighten lock nut (3) with fingers.
4. Adjust the belt tension by turning the adjuster bolt (4).
   For the specified belt tension, refer to MA-38, "Checking Drive Belts" .
5. Tighten lock nut (3).

Nut (3) :

: 24.5 - 31.4 N·m (2.5 - 3.2 kg-m, 18 - 23 ft-lb)

6. Turn the crankshaft pulley two times clockwise.
7. Check that the belt tension is within the standard. Refer to MA-38, "Checking Drive Belts" .

Changing Engine coolant

ELS001HJ

WARNING:

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

DRAINING ENGINE COOLANT

M/T Models without A/C and A/T Models

1. Disconnect radiator lower hose and radiator cap.

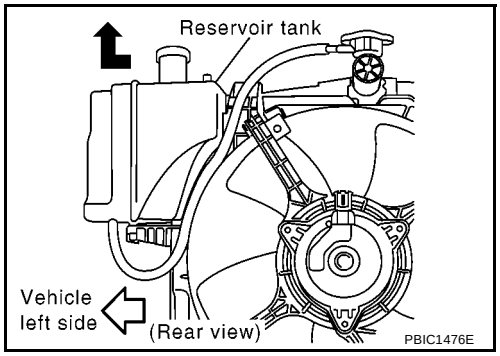
   CAUTION:
   Make sure to drain when the engine coolant temperature is cold.

2. Remove reservoir tank and drain the engine coolant in the following procedures.

a. Move relay case in front of the battery.

b. Disconnect the reservoir tank from fan shroud to remove. With force applied in the left direction of vehicle, pull up reservoir tank.

3. Check drain coolant for contaminants such as rust, corrosion or discoloration.
   If contaminated, flush engine cooling system.
   Refer to MA-42, "FLUSHING COOLING SYSTEM" .



M/T Models with A/C

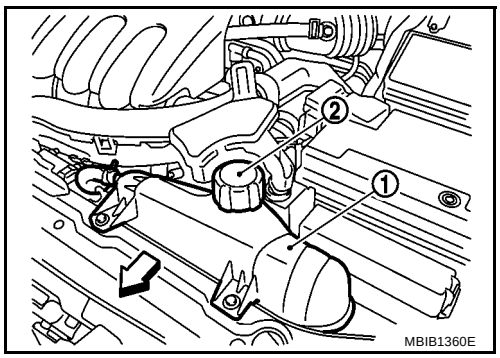
1. Disconnect radiator lower hose and reservoir tank cap.

   CAUTION:
   Make sure to drain when the engine coolant temperature is cold.

2. Remove reservoir tank and drain the engine coolant.

   ⇦ : Vehicle front

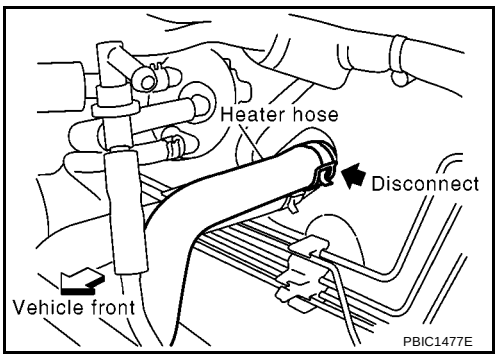
3. Check drain coolant for contaminants such as rust, corrosion or discoloration.
   If contaminated, flush engine cooling system.
   Refer to MA-42, "FLUSHING COOLING SYSTEM" .



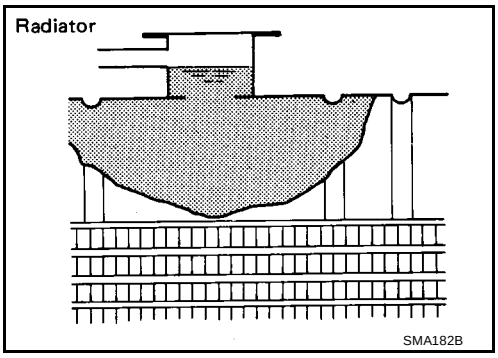
REFILLING ENGINE COOLANT

1. Install reservoir tank.
2. Connect radiator lower hose.

3. Disconnect heater hose (at heater hose outlet side: upper side) as shown in figure. Keep hose end at the same height as that of before removal.



4. Fill radiator and reservoir tank to specified level.
   - **Pour coolant slowly of less than 2 ℓ (1-3/4 Imp qt) a minute to allow air in system to escape.**
   - **When coolant from heater hose starts to drain, connect heater hose and continue to fill.**
   - **Use Genuine Nissan Anti-freeze Coolant or equivalent mixed with water (distilled or demineralized).**
     Refer to MA-35, "RECOMMENDED FLUIDS AND LUBRICANTS".

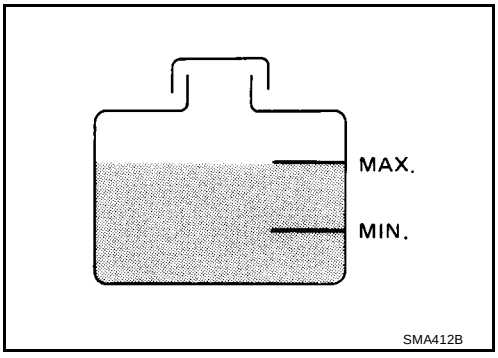


Engine coolant capacity

M/T models with A/C and A/T models

With reservoir tank : Approx. 4.9 ℓ (4-3/8 Imp qt)

Reservoir tank : 0.7 ℓ (5/8 Imp qt)

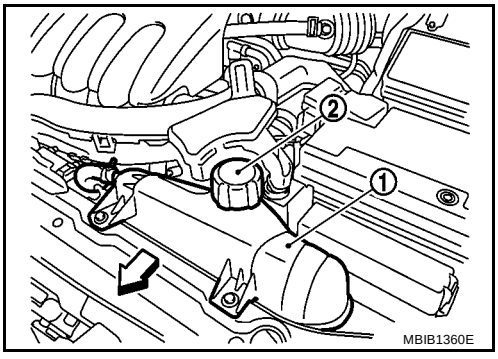


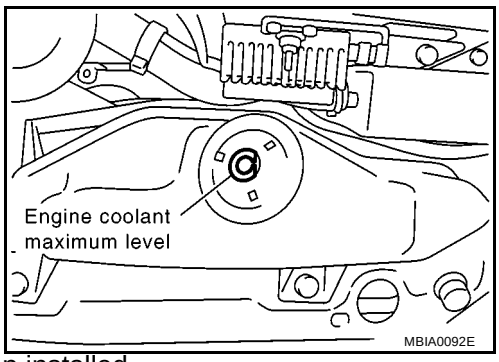
M/T models with A/C

With reservoir tank : Approx. 5.3 ℓ (4-5/8 Imp qt)

Reservoir tank : 1.2 ℓ (1-1/8 Imp qt)

⇦ : Vehicle front





5. Warm up engine to normal operating temperature with radiator cap installed.
6. Warm up until thermostat opens. Keep warming at 3,000 rpm for approximately 10 minutes as guide.
   - For thermostat opening, touch radiator upper hose by hand to insure that water flow is hot.

   CAUTION:
   Be careful not to overheat.
7. Stop the engine.
8. After cooling engine [approximately 50°C (122 °F) or lower], remove radiator cap and check coolant level. If the level is low, fill up to the radiator neck again and repeat from step 5.
9. When the coolant level stabilizes, fill reservoir tank up to the “MAX” line.
10. Check cooling system for leaks with engine running.
11. Allow the engine to cool [approximately 50°C (122°F) or lower].
12. Start the engine. Perform the following cycle three times. Keep an engine speed of 1,000 rpm for approximately 30 seconds. Then increase it gradually to 3,000 rpm.
13. During the above step 12, make sure water flow sound is not heard from heater core.
    - Sound may be noticeable at heater unit.
14. If water flow sound is heard, repeat from step 4 to 13.
    - **Clean excess coolant from engine.**

FLUSHING COOLING SYSTEM

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

Checking Cooling System

ELS000ML

WARNING:
Never remove the radiator cap when the engine is hot; serious burns could be caused by high pressure fluid escaping from the radiator.
Wrap a thick cloth around the cap and carefully remove it by turning it a quarter turn to allow built-up pressure to escape and then turn the cap all the way off.

CHECKING COOLING SYSTEM HOSES

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

CHECKING RADIATOR

Check radiator for mud or clogging. If necessary, clean radiator as follows.

- Be careful not to bend or damage the radiator fins.
- When radiator is cleaned without removal, remove all surrounding parts such as cooling fan, radiator shroud and horns. Then tape the harness and connectors to prevent water from entering.

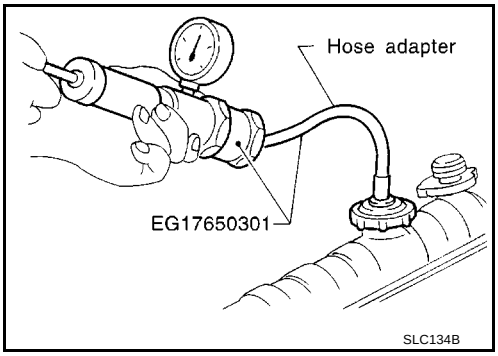
1. Apply water by hose to the back side of the radiator core vertically downward.
2. Apply water again to all radiator core surfaces once per minute.
3. Stop washing if any stains no longer flow out from the radiator.

4. Blow air into the back side of radiator core vertically downward.
   - Use compressed air lower than 490 kPa (4.9 bar, 5 kg/cm^2 , 71 psi) and keep distance more than 30 cm (11.8 in).
5. Blow air again into all the radiator core surfaces once per minute until no water sprays out.

CHECKING COOLING SYSTEM FOR LEAKS

M/T Model without A/C and A/T Models

- To check for leakage, apply pressure to the cooling system with a radiator cap tester (commercial service tool) and radiator cap tester adapter (SST).



Testing pressure : 157 kPa (1.57 bar, 1.6 kg/cm^2 , 23 psi)

WARNING:
Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure coolant escaping from the radiator.

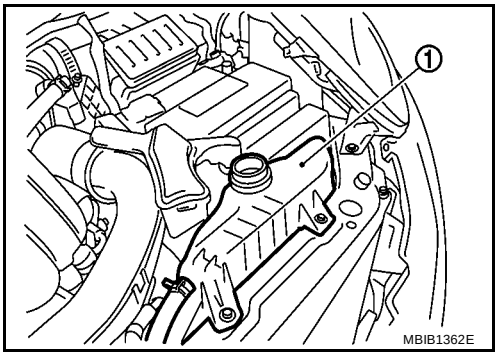
CAUTION:
Higher pressure than specified may cause radiator damage.

NOTE:
In a case that engine coolant decreases, replenish radiator with engine coolant.

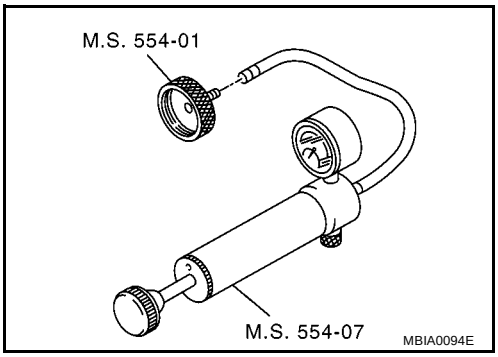
- If anything is found, repair or replace damaged parts.

M/T Models with A/C

- To check for leakage, fit the adapter to the reservoir tank (1), and then connect it to the tester.



- Warm up the engine and turn it off.
- Apply pressure to the cooling system and stop pumping.



Testing pressure : 10 kpa
(0.1 bar, 0.10 kg/cm^2 , 1.5 psi)

- If the pressure drops, look for leakage.
- Unscrew slowly the adapter from the reservoir tank to reduce the pressure in cooling system, and install the reservoir tank cap.

WARNING:
Never remove the reservoir tank cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator.

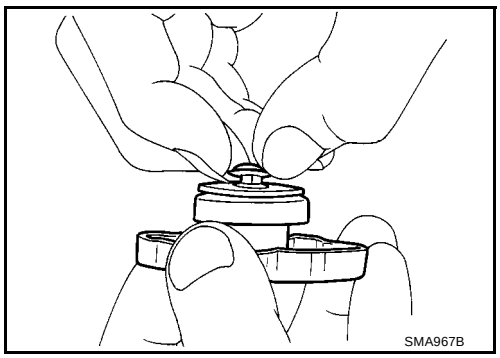
CAUTION:
Higher pressure than specified may cause radiator damage.

Checking Radiator Cap (M/T Models without A/C and A/T Models)

ELS001HK

1. Pull the negative-pressure valve to open it and check that it closes completely when released.
   - Check that there is no dirt or damage on the valve seat of the radiator cap negative-pressure valve.

- Check that there are no unusual conditions in the opening and closing conditions of the negative-pressure valve.



2. Check radiator cap relief pressure.

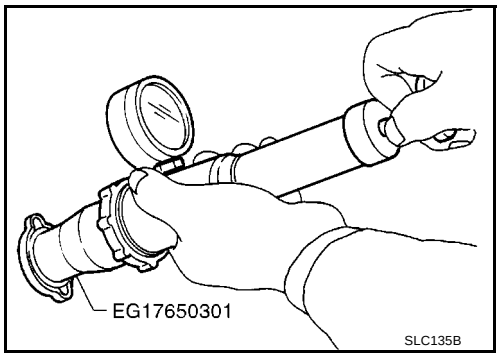
Standard:

78 - 98 kPa

(0.78 - 0.98 bar, 0.8 - 1.0 kg/cm^2 , 11 - 14 psi)

Limit:

59 kPa (0.59 bar, 0.6 kg/cm^2 , 9 psi)



- When connecting the radiator cap to the tester, apply water or engine coolant to the cap seal part.
- Replace the radiator cap if there is an unusual conditions in the negative-pressure valve, or if the open-valve pressure is outside of the standard values.

CAUTION:

When installing radiator cap, thoroughly wipe out the radiator filler neck to remove any waxy residue or foreign material.

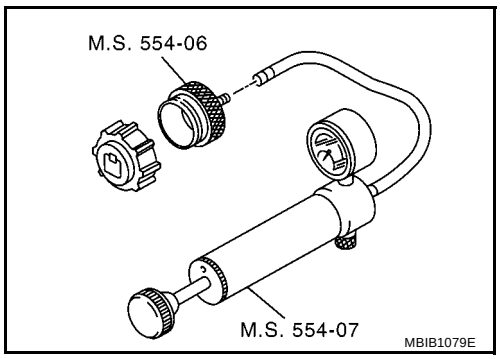
Checking Reservoir Tank Cap (M/T Models with A/C)

ELS001HL

- Fit the adapter to the tester as shown.
- When connecting the reservoir tank cap to the tester, apply water or LLC to the cap seal part.
- Check reservoir tank cap relief pressure.

88 kPa (0.88 bar, 0.90 kg/cm^2 , 12.8 psi)

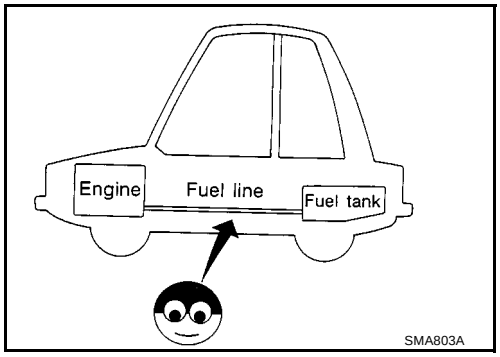
- Replace the reservoir tank cap if the engine coolant passes through it, or if any fur signs is detected.



Checking Fuel Lines

ELS000MM

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



CAUTION:

Tighten high-pressure rubber hose clamp so that clamp end is 3 mm (0.12 in) from hose end.

Tightening torque specifications are the same for all rubber hose clamps.
Ensure that screw does not contact adjacent parts.

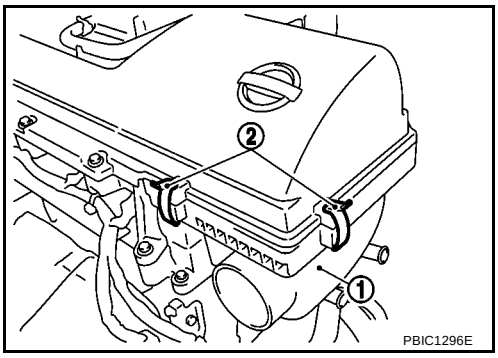
Changing Air Cleaner Filter

ELS000MN

REMOVAL

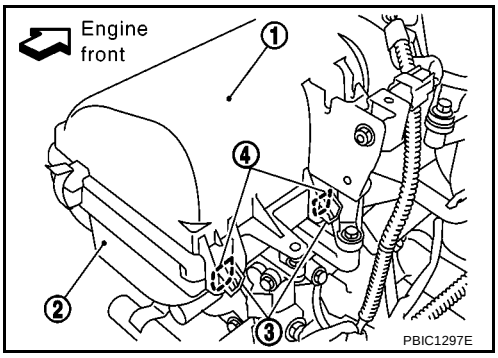
1. Remove air duct. Refer to EM-18, "REMOVAL" .
2. Remove clips (2) of air cleaner body (1).
3. After moving the air cleaner body downward, remove it by pulling it forward.
   - While pressing down the radiator upper hose, remove air cleaner body.
4. Remove air cleaner filter from the air cleaner body.

   NOTE:
   In some cases the air cleaner filter might remain in the air cleaner case (upper).



INSTALLATION

1. Set the air cleaner filter on the air cleaner case (upper) (1).
2. Insert the two projections (3) on the air cleaner body (2) into the two notch holes (4) on the rear of the air cleaner case (upper) (1), then lift up and fasten with the clip.
3. Attach air duct.



Changing Engine Oil

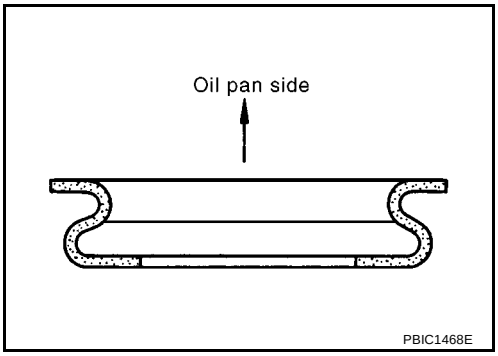
ELS000MO

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 put vehicle horizontally, and check for oil leakage from engine components.
2. Stop engine and wait for 10 minutes.
3. Remove oil filler cap, and remove drain plug.
4. Drain engine oil.
5. Install drain plug. Refill with new engine oil.
   - Install drain plug washer in the direction shown in figure.

   Oil specification and viscosity:
   Refer to MA-35, "RECOMMENDED FLUIDS AND LUBRICANTS".



Oil capacity (Approximate):

Unit: ℓ (Imp qt)

Drain and refill	With oil filter change	3.4 (3)
	Without oil filter change	3.2 (2-7/8)
Dry engine (engine overhaul)		3.9 (3-3/8)

CAUTION:

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

  Oil pan drain plug:

  : 29.4 - 39.2 N·m (3.0 - 3.9 kg-m, 22 - 28 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.

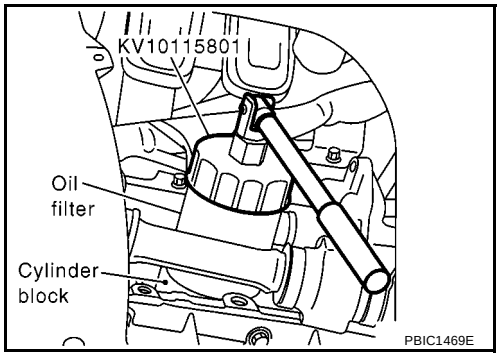
6. Warm up engine and check area around drain plug and oil filter for oil leakage.
7. Check oil level. Refer to LU-6, "Inspection" .
8. Stop engine and wait for 10 minutes.

Changing Oil Filter

ELS000MP

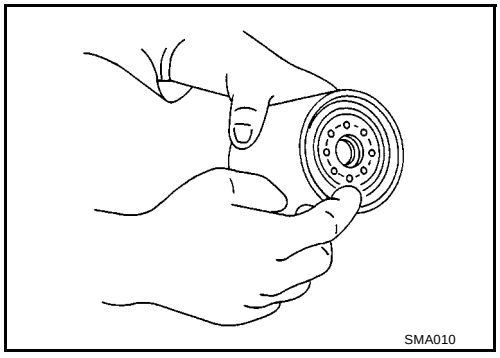
1. Using an oil filter wrench (special service tool), remove oil filter.

   CAUTION:
   - **Be careful not to get burned when the engine and engine oil are hot.**
   - **When removing, prepare a shop cloth to absorb any oil leakage or spillage.**
   - **Do not allow engine oil to adhere to the drive belts.**
   - **Completely wipe off any oil that adheres to the engine and the vehicle.**



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

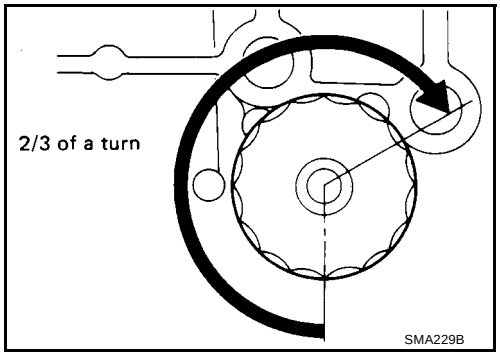
   CAUTION:
   - **Use genuine NISSAN oil filter or the equivalent.**



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

   Oil filter:

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



5. After warming up the engine, check for engine oil leakage.
6. Check oil level and add engine oil. Refer to LU-6, "ENGINE OIL" .

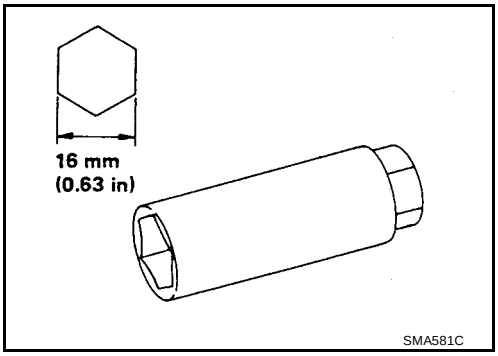
Changing Spark Plugs

ELS000MQ

REMOVAL

1. Remove ignition coil. Refer to EM-29, "IGNITION COIL" .
2. Remove spark plugs with a spark plug wrench.

CAUTION:
Handle spark plug with care. Avoid impacts.



INSPECTION AFTER REMOVAL

- 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 plug knock occurs with the standard type spark plug under conditions such as:
  - Extended highway driving
  - Frequent high engine revolution

Make	NGK	Champion
Standard type	LFR5AP-11	REC10PYC4
Hot type	LFR4AP-11	—
Cold type	LFR6AP-11	—

Gap (Nominal) : 1.1 mm (0.043 in)

CAUTION:

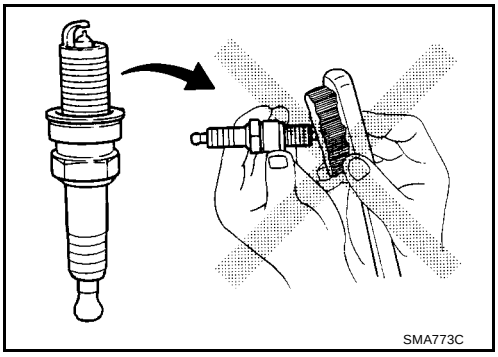
- **Do not use a wire brush for cleaning.**
- **If plug tip is covered with carbon, spark plug cleaner may be used.**

Cleaner air pressure:

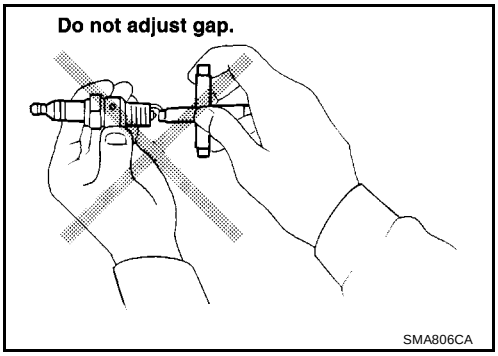
Less than 588 kPa (6 kg/cm^2 , 85 psi)

Cleaning time:

Less than 20 seconds



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



INSTALLATION

Install in the reverse order of removal.

Spark plug

: 19.6 - 29.4 N·m (2.0 - 3.0 kg-m, 15 - 21 ft-lb)

Checking EVAP Vapor Lines

ELS000MR

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-444, "EVAPORATIVE EMISSION SYSTEM" (CR engine models with E-OBD), EC-796, "EVAPORATIVE EMISSION SYSTEM" (CR engine models without E-OBD).

ENGINE MAINTENANCE (HR16DE)

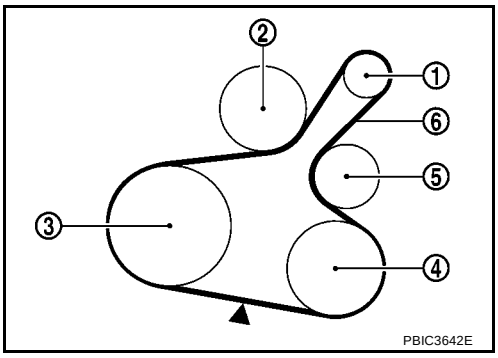
PFP:00100

Checking Drive Belts

ELS001EQ

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

1. Alternator
2. Water pump
3. Crankshaft pulley
4. A/C compressor
5. Idler pulley
6. Drive belt



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

CAUTION:

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

Belt Deflection:

Unit: mm (in)

Location		Deflection adjustment *		
		Used belt		New belt
		Limit	After adjusted	
Drive belt	With A/C models	7.9 (0.31)	4.8 - 5.3 (0.19 - 0.21)	4.2 - 4.5 (0.17 - 0.18)
	Without A/C models	7.1 (0.28)	4.3 - 4.7 (0.17 - 0.19)	3.6 - 3.9 (0.14 - 0.15)
Applied pushing force	98 N (10 kg, 22lb)			

*: When engine is cold.

Tension Adjustment

ELS001ER

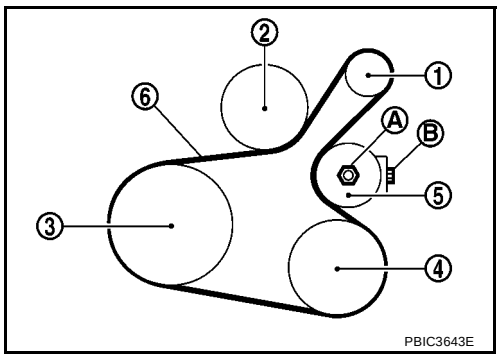
Location	Location of adjuster and tightening method
Drive belt	Adjusting bolt on idler pulley

CAUTION:

- **When belt is replaced with new one, adjust belt tension to the value for “New belt”, because new belt will not fully seat in the pulley groove.**
- **When tension of the belt being used exceeds “Limit”, adjust it to the value for “After adjusted”.**
- **When installing a belt, make sure it is correctly engaged with the pulley groove.**
- **Do not allow oil or engine coolant to get on the belt.**
- **Do not twist or bend the belt strongly.**

1. Remove front fender protector (RH). Refer to EI-14, "FENDER PROTECTOR" .

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



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

CAUTION:

- **When the lock nut is loosened excessively, the idler pulley tilts and the correct tension adjustment cannot be performed. Do not loosen it excessively (more than 45 degrees).**
- **Put a matching mark on the lock nut (A), and check turning angle with a protractor. Do not visually check the tightening angle.**

3. Adjust the belt tension by turning the adjusting bolt (B). Refer to MA-49, "Checking Drive Belts" .

CAUTION:

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

4. Tighten the lock nut (A).

: 34.8 N·m (3.5 kg-m, 26 ft-lb)

Changing Engine coolant

ELS001HM

WARNING:

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

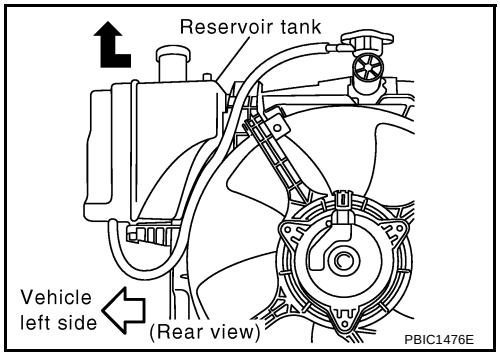
DRAINING ENGINE COOLANT

Without A/C Models

1. Disconnect radiator lower hose and radiator cap.

CAUTION:
Make sure to drain when the engine coolant temperature is cold.

2. Remove reservoir tank and drain the engine coolant in the following procedures.



a. Move relay case in front of the battery.
b. Disconnect the reservoir tank from fan shroud to remove. With force applied in the left direction of vehicle, pull up reservoir tank.
3. Check drain coolant for contaminants such as rust, corrosion or discoloration.
If contaminated, flush engine cooling system.
Refer to MA-52, "FLUSHING COOLING SYSTEM" .

With A/C Models

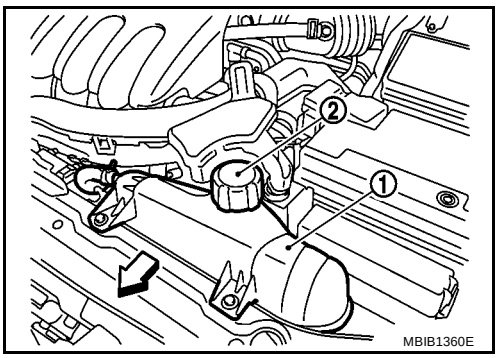
1. Disconnect radiator lower hose and reservoir tank cap.

CAUTION:
Make sure to drain when the engine coolant temperature is cold.

2. Remove reservoir tank and drain the engine coolant.

⇦ : Vehicle front

3. Check drain coolant for contaminants such as rust, corrosion or discoloration.
   If contaminated, flush engine cooling system.
   Refer to MA-52, "FLUSHING COOLING SYSTEM" .

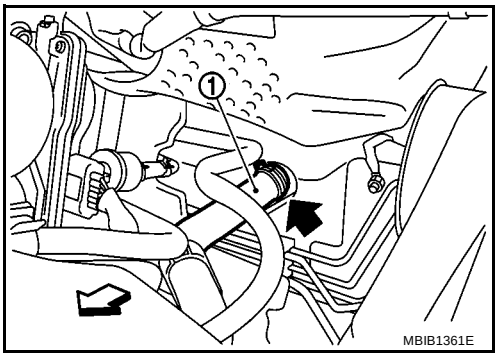


REFILLING ENGINE COOLANT

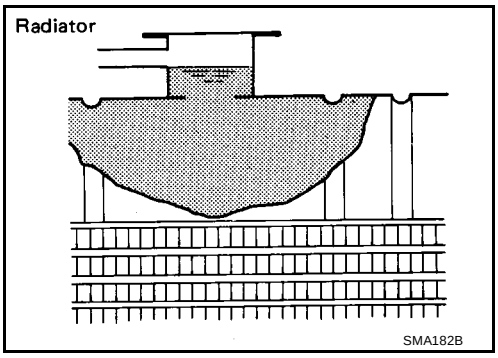
1. Install reservoir tank.
2. Connect radiator lower hose.
3. Disconnect heater hose (1) (at heater hose outlet side: upper side) as shown in figure. Keep hose end at the same height as that of before removal.

⇦ : Vehicle front

⬅ : Disconnect

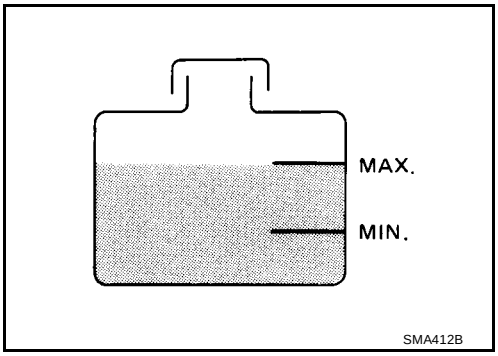


4. Fill radiator and reservoir tank to specified level.
   - **Pour coolant slowly of less than 2 ℓ (1-3/4 lmp qt) a minute to allow air in system to escape.**
   - **When coolant from heater hose starts to drain, connect heater hose and continue to fill.**
   - **Use Genuine Nissan Anti-freeze Coolant or equivalent mixed with water (distilled or demineralized).**
     Refer to MA-35, "RECOMMENDED FLUIDS AND LUBRICANTS".

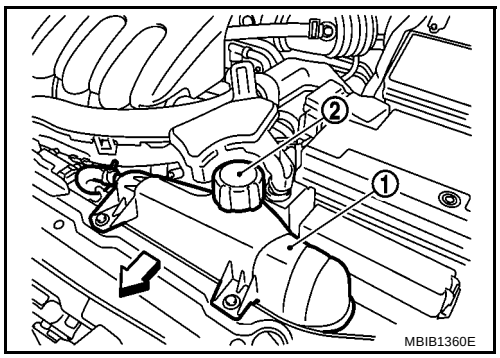


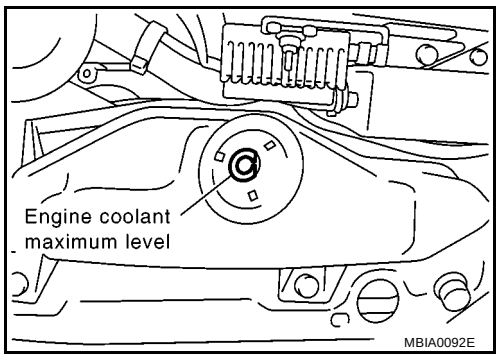
Engine coolant capacity

Without A/C models	
With reservoir tank	**: Approx. 5.6 ℓ (4-7/8 Imp qt)**
Reservoir tank	**: 0.7 ℓ (5/8 Imp qt)**
With A/C models	
With reservoir tank	**: Approx. 6.0 ℓ (5-1/4 Imp qt)**
Reservoir tank	**: 1.2 ℓ (1-1/8 Imp qt)**



⇦ : Vehicle front





5. Warm up engine to normal operating temperature with radiator cap installed.
6. Warm up until thermostat opens. Keep warming at 3,000 rpm for approximately 10 minutes as guide.
   - For thermostat opening, touch radiator upper hose by hand to insure that water flow is hot.

   CAUTION:
   Be careful not to overheat.
7. Stop the engine.
8. After cooling engine [approximately 50°C (122 °F) or lower], remove radiator cap and check coolant level. If the level is low, fill up to the radiator neck again and repeat from step 5.
9. When the coolant level stabilizes, fill reservoir tank up to the “MAX” line.
10. Check cooling system for leaks with engine running.
11. Allow the engine to cool [approximately 50°C (122°F) or lower].
12. Start the engine. Perform the following cycle three times. Keep an engine speed of 1,000 rpm for approximately 30 seconds. Then increase it gradually to 3,000 rpm.
13. During the above step 12, make sure water flow sound is not heard from heater core.

- Sound may be noticeable at heater unit.

14. If water flow sound is heard, repeat from step 4 to 13.

- **Clean excess coolant from engine.**

FLUSHING COOLING SYSTEM

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

Checking Cooling System

ELS001ET

WARNING:
Never remove the radiator cap when the engine is hot; serious burns could be caused by high pressure fluid escaping from the radiator.
Wrap a thick cloth around the cap and carefully remove it by turning it a quarter turn to allow built-up pressure to escape and then turn the cap all the way off.

CHECKING COOLING SYSTEM HOSES

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

CHECKING RADIATOR

Check radiator for mud or clogging. If necessary, clean radiator as follows.

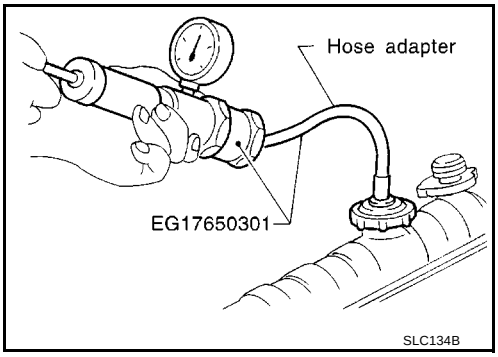
- Be careful not to bend or damage the radiator fins.
- When radiator is cleaned without removal, remove all surrounding parts such as cooling fan, radiator shroud and horns. Then tape harness and electrical connectors to prevent water from entering.

1. Apply water by hose to the back side of radiator core vertically downward.
2. Apply water again to all radiator core surface once per minute.
3. Stop washing if any stains no longer flow out from radiator.
4. Blow air into the back side of radiator core vertically downward.
   - Use compressed air lower than 490 kPa (4.9 bar, 5 kg/cm^2 , 71 psi) and keep distance more than 30 cm (11.8 in).
5. Blow air again into all the radiator core surfaces once per minute until no water sprays out.

CHECKING COOLING SYSTEM FOR LEAKS

Without A/C Models

- To check for leakage, apply pressure to the cooling system with a radiator cap tester (commercial service tool) and radiator cap tester adapter (SST).



Testing pressure : 157 kPa (1.57 bar, 1.6 kg/cm^2 , 23 psi)

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure coolant escaping from the radiator.

CAUTION:

Higher pressure than specified may cause radiator damage.

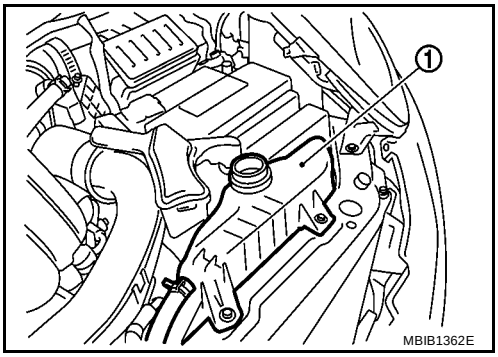
NOTE:

In a case that engine coolant decreases, replenish radiator with engine coolant.

- If anything is found, repair or replace damaged parts.

With A/C Models

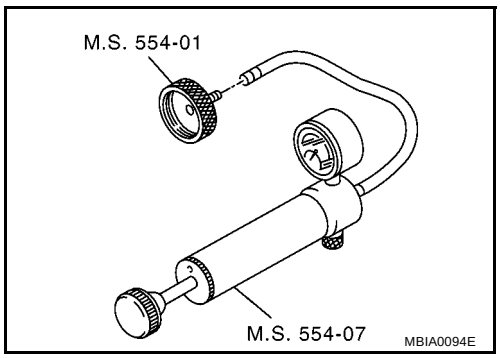
- To check for leakage, fit the adapter to the reservoir tank (1), and then connect it to the tester as shown.



- Warm up the engine and turn it off.

- Apply pressure to the cooling system and stop pumping.

  Testing pressure : 10 kpa (0.1 bar, 0.10 kg/cm^2 , 1.5 psi)



- If the pressure drops, look for leakage.
- Unscrew slowly the adapter from the reservoir tank to reduce the pressure in cooling system, and install the reservoir tank cap.

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator.

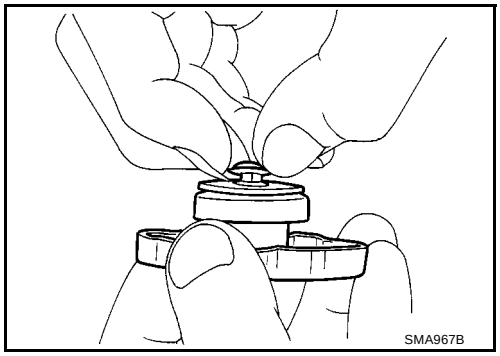
CAUTION:

Higher pressure than specified may cause radiator damage.

Checking Radiator Cap (Without A/C Models)

ELS001HN

1. Pull the negative-pressure valve to open it and check that it closes completely when released.
   - Check that there is no dirt or damage on the valve seat of the radiator cap negative-pressure valve.
   - Check that there are no unusual conditions in the opening and closing conditions of the negative-pressure valve.



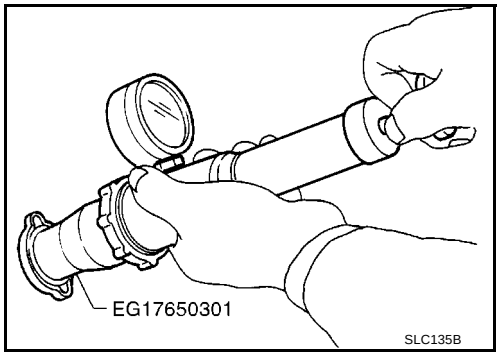
2. Check radiator cap relief pressure.

   Standard:

   78 - 98 kPa (0.78 - 0.98 bar, 0.8 - 1.0 kg/cm^2 , 11 - 14 psi)

   Limit:

   59 kPa (0.59 bar, 0.6 kg/cm^2 , 9 psi)



   - When connecting the radiator cap to the tester, apply water or engine coolant to the cap seal part.
   - Replace the radiator cap if there is an unusual conditions in the negative-pressure valve, or if the open-valve pressure is outside of the standard values.

CAUTION:

When installing radiator cap, thoroughly wipe out the radiator filler neck to remove any waxy residue or foreign material.

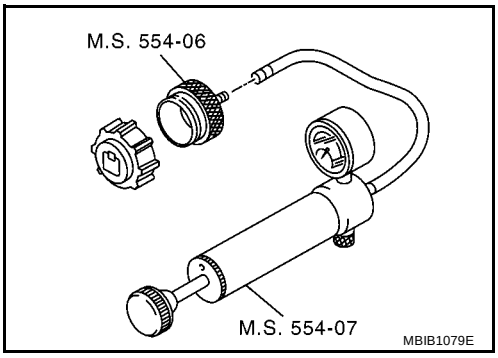
Checking Reservoir Tank Cap (With A/C Models)

ELS001HO

- Fit the adapter to the tester as shown.
- When connecting the reservoir tank cap to the tester, apply water or LLC to the cap seal part.
- Check reservoir tank cap relief pressure.

  140 kPa (1.4 bar, 1.43 kg/cm^2 , 20.3 psi)

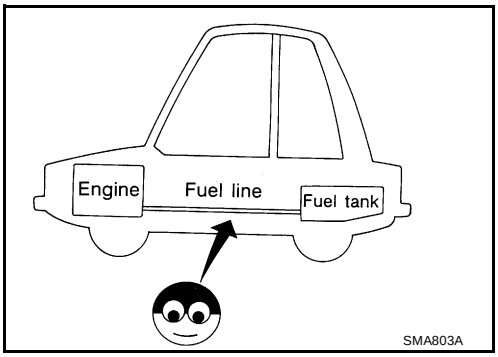
- Replace the reservoir tank cap if the engine coolant passes through it, or if any fur signs is detected.



Checking Fuel Lines

ELS001EU

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

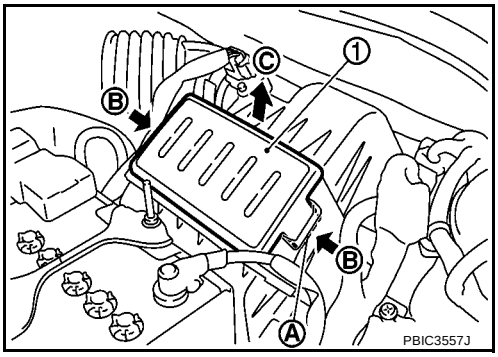


Changing Air Cleaner Filter

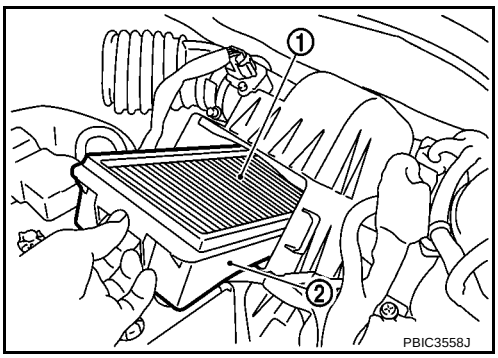
ELS001EV

REMOVAL

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



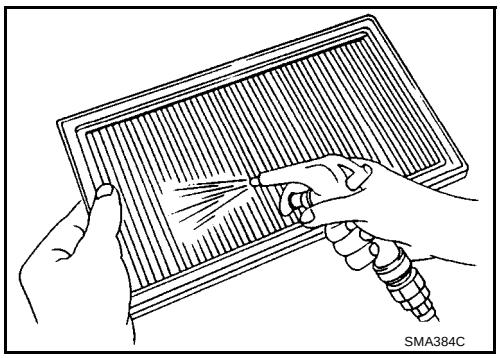
3. Remove the air cleaner filter (1) and holder (2) assembly from the air cleaner case.
4. Remove the air cleaner filter from the holder.



INSPECTION AFTER REMOVAL

It is necessary to clean air cleaner filter or replace it at the recommended intervals, more often under dusty driving conditions. Refer to MA-9, "PERIODIC MAINTENANCE" .

- Blow air into the back side of air cleaner filter until no any object sprays out.

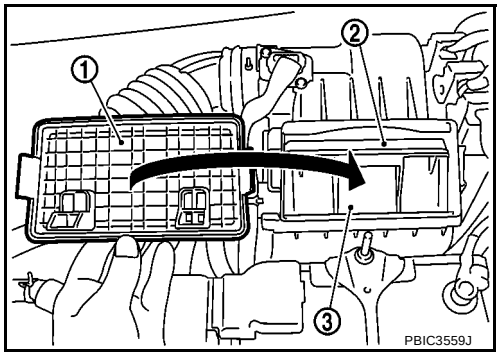


INSTALLATION

Note the following, and install in the reverse order of removal.

- Install the air cleaner cover (1) in the direction shown in the figure.

2 : Air cleaner filter
3 : Holder



Changing Engine Oil

ELS001EW

WARNING:

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

1. Warm up engine, put vehicle horizontally and check for engine oil leakage from engine components. Refer to LU-16, "ENGINE OIL LEAKAGE" .
2. Stop engine and wait for 10 minutes.
3. Loosen oil filler cap and then remove drain plug.
4. Drain engine oil.
5. Install drain plug with new washer. Refer to EM-128, "OIL PAN AND OIL STRAINER" .

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

   Oil pan drain plug:

   : 34.3 N·m (3.5 kg-m, 25 ft-lb)

6. Refill with new engine oil.
   Engine oil specification and viscosity:
   Refer to MA-35, "RECOMMENDED FLUIDS AND LUBRICANTS" .

   Engine oil capacity (Approximate):

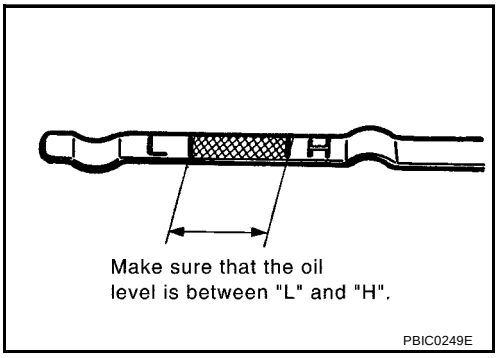
Unit: ℓ (Imp qt)

Drain and refill	With oil filter change	4.6 (4)
	Without oil filter change	4.4 (3-7/8)
Dry engine (Overhaul)		4.8 (4-1/4)

CAUTION:

- **The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.**
- **Always use oil level gauge to the determine when the proper amount of engine oil is in the engine.**

7. Warm up engine and check area around drain plug and oil filter for engine oil leakage.
8. Stop engine and wait for 10 minutes.
9. Check the engine oil level.

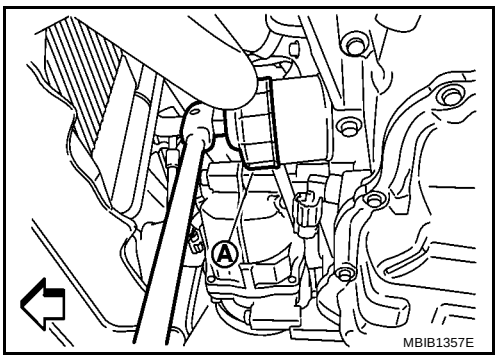


Changing Oil Filter

ELS001EX

REMOVAL

1. Using oil filter wrench (SST: KV10115801) (A), remove oil filter.



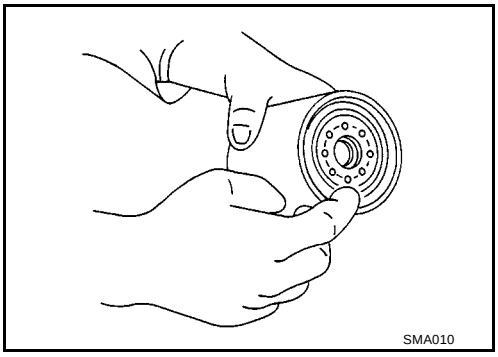
⇦ : Vehicle font

CAUTION:

- **Oil filter is provided with relief valve. Use Genuine NISSAN Oil Filter or equivalent.**
- **Be careful not to get burned when engine and engine oil may be hot.**
- **When removing, prepare a shop cloth to absorb any engine oil leakage or spillage.**
- **Do not allow engine oil to adhere to drive belt.**
- **Completely wipe off any engine oil that adheres to engine and vehicle.**

INSTALLATION

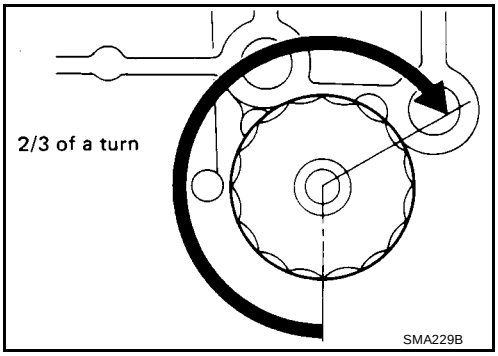
1. Remove foreign materials adhering to the oil filter installation surface.
2. Apply new engine oil to the oil seal contact surface of new oil filter.



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

Oil filter:

: 17.7 N·m (1.8 kg-m, 13 ft-lb)



INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to MA-56, "Changing Engine Oil" .
2. Start engine, and check there is no leaks of engine oil.

3. Stop engine and wait for 10 minutes.
4. Check the engine oil level and add engine oil. Refer to MA-56, "Changing Engine Oil" .

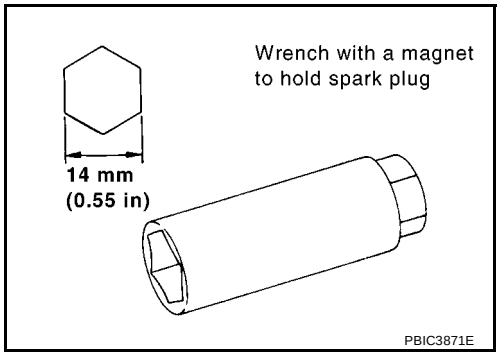
Changing Spark Plug (Platinum-Tipped Type)

ELS001EY

REMOVAL

1. Remove intake manifold. Refer to EM-121, "INTAKE MANIFOLD" .
2. Remove ignition coil. Refer to EM-133, "IGNITION COIL" .
3. Remove spark plug using spark plug wrench (commercial service tool).

CAUTION:
Do not drop or shock it.



INSPECTION AFTER REMOVAL

Use standard type spark plug for normal condition.

Hot type spark plug is suitable when fouling occurs with standard type spark plug under conditions such as:

- Frequent engine starts
- Low ambient temperatures

Cold type spark plug is suitable when spark plug knock occurs with standard type spark plug under conditions such as:

- Extended highway driving
- Frequent high engine revolution

Make	NGK
Standard type	PLZKAR6A-11
Hot type	PLZKAR5A-11
Cold type	PLZKAR7A-11

Gap (Nominal) : 1.1 mm (0.043 in)

CAUTION:

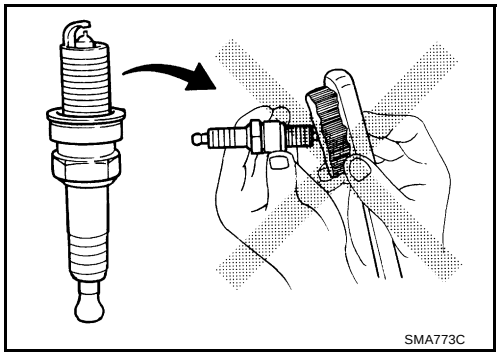
- **Do not drop or shock spark plug.**
- **Do not use wire brush for cleaning.**
- **If plug tip is covered with carbon, spark plug cleaner may be used.**

Cleaner air pressure:

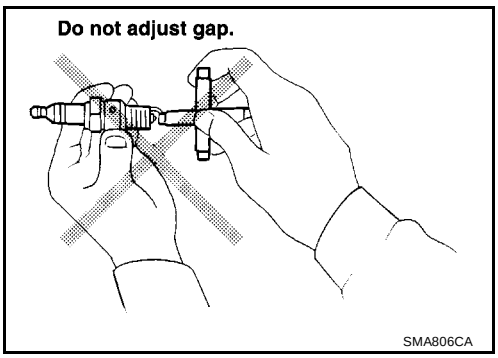
Less than 588 kPa (5.88 bar, 6 kg/cm^2 , 85 psi)

Cleaning time:

Less than 20 seconds



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



INSTALLATION

Install in the reverse order of removal.

: 19.6 N·m (2.0 kg-m, 14 ft-lb)

Checking EVAP Vapor Lines

ELS001EZ

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-825, "EVAPORATIVE EMISSION SYSTEM" .

ENGINE MAINTENANCE (K9K)

PFP:00000

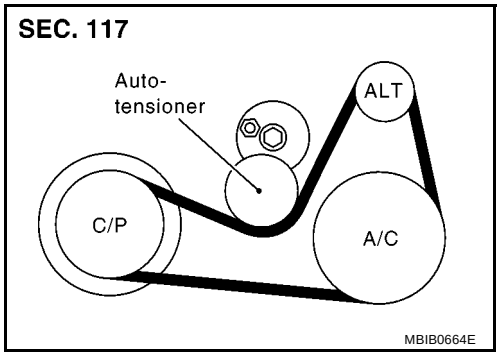
Checking Drive Belts

ELS0016D

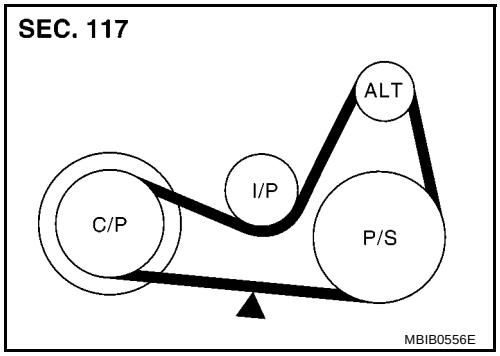
WARNING:

Be sure to perform when the engine is stopped.

1. Inspect belts for cracks, fraying, wear and oil. If necessary, replace.
2. Tighten auto-tensioner lock nut (models with A/C compressor) or idler pulley lock nut (models without A/C compressor) by hand and measure deflection or tension without looseness.



3. When measuring deflection, apply 98 N (10 kg, 22 lb) at the ▼ marked point as shown (models without A/C compressor).



TENTION ADJUSTMENT

Models With A/C Compressor

Belt tensioning is not necessary, as it is automatically adjusted by auto-tensioner.

Models Without A/C Compressor

Belt tightening method for adjustment	Adjusting bolt on idler pulley

- The tension value is 234±10 Hz.

NOTE:

The engine must be turned through two revolutions in order to position the belt correctly.

CAUTION:

- **When checking belt tension immediately after installation, first adjust it to the specified value. Then, after turning the crankshaft two turns or more, re-adjust to the specified value to avoid variation in deflection between pulleys.**
- **When installing belt, make sure that it is correctly engaged with pulley groove.**
- **Keep oil and water away from belt.**
- **Do not twist or bend belt excessively.**

Changing Engine coolant

ELS0016E

WARNING:

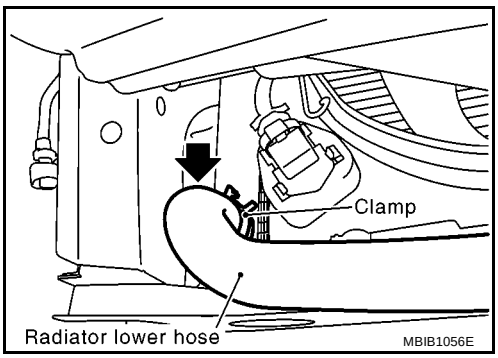
- **To avoid being scalded, never change the coolant when the engine is hot.**
- **Wrap a thick cloth around cap and carefully remove the cap. First, turn the cap a quarter of a turn to release built-up pressure. Then turn the cap all the way.**

DRAINING ENGINE COOLANT

1. Remove engine undercover.

2. Disconnect lower radiator hose, and remove radiator cap.
3. Remove reservoir tank, drain coolant, then clean reservoir tank.
4. Check drained coolant for contaminants such as rust, corrosion or discoloration.

If contaminated, flush engine cooling system. Refer to CO-63, "FLUSHING COOLING SYSTEM" .



REFILLING ENGINE COOLANT

1. Install reservoir tank, radiator lower hose and air relief plug.
2. Fill reservoir tank slowly with coolant until coolant spills from radiator cap holes.

CAUTION:
If the filling rate is too fast, this could lead to air being mixed in the coolant. Be sure to fill the coolant slowly according to the rate indicated above.

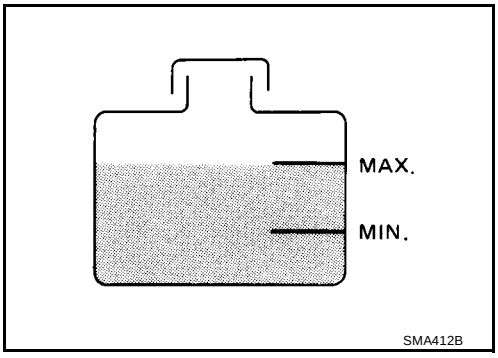
- **Use genuine Nissan anti-freeze coolant or equivalent mixed with water (distilled or demineralized).**
  Refer to MA-35, "RECOMMENDED FLUIDS AND LUBRICANTS".

Engine coolant capacity (With reservoir tank)

Without intercooler: 6.5 litre (5-3/4 lmp qt)

With intercooler: 7.0 litre (6-1/8 lmp qt)

Reservoir tank capacity 1.2 litre (1-1/8 lmp qt)



- **Pour coolant through coolant filler neck slowly of less than 2 ℓ (1-3/4 lmp qt) a minute to allow air in system to escape.**

3. Fill 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. 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 down to less than approximately 50°C (122°F).
   - Cool down using a fan to reduce the time.
   - If necessary, refill radiator up to filler neck with coolant.
7. Refill reservoir tank to MAX level line with coolant.
8. Repeat steps 5 through 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 controller set at several position between COOL and WARM.
    - Sound may be noticeable at heater unit.
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

1. Fill radiator with water until water spills from the air relief hole, then close air relief plug. Fill radiator and reservoir tank with water and reinstall radiator cap.
2. Run engine and warm it up to normal operating temperature.
3. Rev engine two or three times under no-load.

4. Stop engine and wait until it cools down.
5. Drain water.
6. Repeat steps 1 through 5 until clear water begins to drain from radiator.
7. Blow compressed air into cooling circuit through the reservoir tank valve hole to drain all the water.

Checking Cooling System

ELS0016F

WARNING:

Never remove the radiator cap when the engine is hot; serious burns could be caused by high pressure fluid escaping from the radiator.
Wrap a thick cloth around the cap and carefully remove it by turning it a quarter turn to allow built-up pressure to escape and then turn the cap all the way off.

CHECKING COOLING SYSTEM HOSES

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

CHECKING RADIATOR

Check radiator for mud or clogging. If necessary, clean radiator as follows.

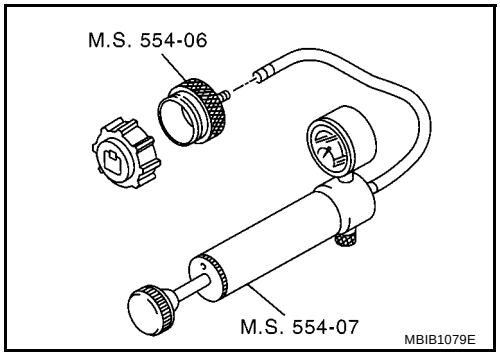
- Be careful not to bend or damage the radiator fins.
- When radiator is cleaned without removal, remove all surrounding parts such as cooling fan, radiator shroud and horns. Then tape the harness and connectors to prevent water from entering.

1. Apply water by hose to the back side of the radiator core vertically downward.
2. Apply water again to all radiator core surfaces once per minute.
3. Stop washing if any stains no longer flow out from the radiator.
4. Blow air into the back side of radiator core vertically downward.
   - Use compressed air lower than 490 kPa (4.9 bar, 5 kg/cm^2 , 71 psi) and keep distance more than 30 cm (11.8 in).
5. Blow air again into all the radiator core surfaces once per minute until no water sprays out.

Checking Reservoir Tank Cap

ELS0016G

- Fit the adapter to the tester as shown.
- When connecting the reservoir tank cap to the tester, apply water or LLC to the cap seal part.
- Check reservoir tank cap relief operation.
- Replace the reservoir tank cap if the engine coolant passes through it, or if any fur signs is detected.



Checking Radiator

ELS0016H

Check radiator for mud or clogging. If necessary, clean radiator as follows.

- Be careful not to bend or damage the radiator fins.
- When radiator is cleaned without removal, remove all surrounding parts such as radiator fan, radiator shroud and horns. Then tape the harness and connectors to prevent water from entering.

1. Apply water by hose to the back side of the radiator core vertically downwards.
2. Apply water again to all radiator core surface once per minute.
3. Stop washing if any stains no longer flow out from the radiator.
4. Blow air into the back side of radiator core vertically downwards.

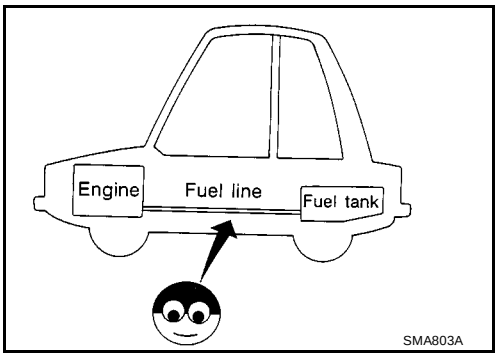
- Use compressed air lower than 490 kPa (4.9 bar 5 kg/cm^2 , 71psi) and keep distance more than 30 cm (11.8 in).

5. Blow air again into all the radiator core surface once per minute until no water sprays out.

Checking Fuel Lines

ELS0016I

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



CAUTION:

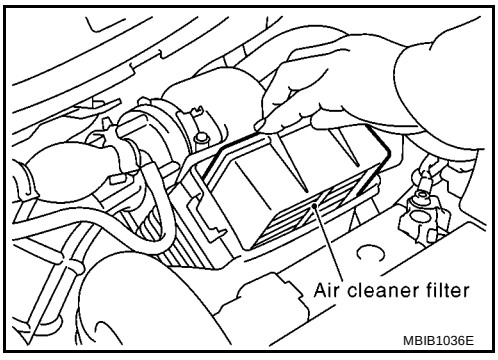
Tighten high-pressure rubber hose clamp so that clamp end is 3 mm (0.12 in) from hose end.
Tightening torque specifications are the same for all rubber hose clamps.
Ensure that screw does not contact adjacent parts.

Changing Air Cleaner Filter

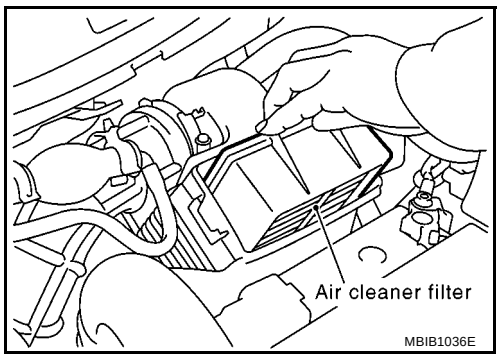
ELS0016J

REMOVAL

1. Open air cleaner case.



2. Remove air cleaner filter.



INSTALLATION

Install in the reverse order of removal.

Changing Engine Oil

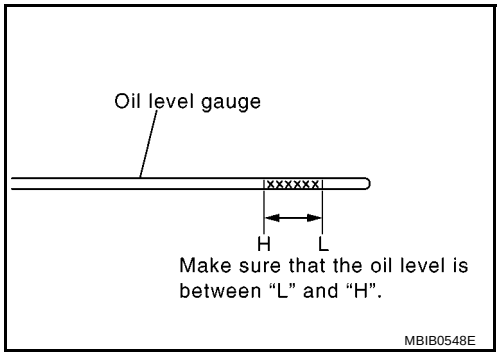
ELS0016K

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. Put vehicle horizontally.
2. Warm up engine, and check for oil leakage from engine components.
3. Stop engine and wait for 10 minutes.
4. Remove drain plug and oil filler cap.
5. Drain oil and refill with new engine oil.

- Refer to MA-35, "RECOMMENDED FLUIDS AND LUBRICANTS" .



Oil capacity (Approximate):

Drain and refill	With oil filter change	4.55 ℓ (4 Imp qt)
	Without oil filter change	4.39 ℓ (3-7/8 Imp qt)
Dry engine (overhaul)		4.71 ℓ (4-1/8 Imp qt)

- The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only.
  Always use the dipstick to the determine when the proper amount of oil is in the engine.

CAUTION:

- **Be sure to clean drain plug and install with new washer.**
- **The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only.**
  Always use the dipstick to the determine when the proper amount of oil is in the engine.

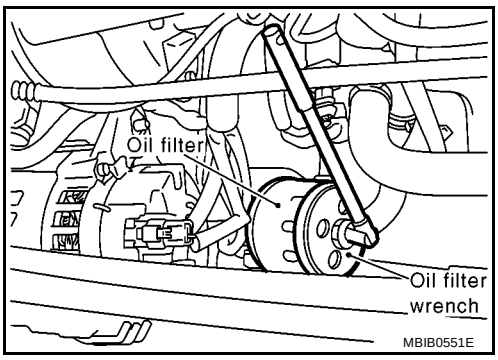
6. Warm up engine and check area around drain plug and oil filter for oil leakage.
7. Stop engine and wait for 10 minutes.
8. Check oil level.

Changing Oil Filter

ELS0016L

REMOVAL

1. Using an oil filter wrench (special service too), remove oil filter.



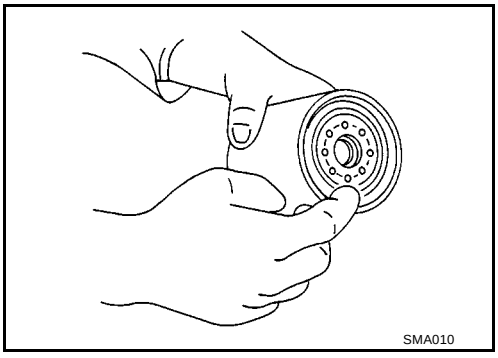
CAUTION:

- **Be careful not to get burned when the engine and engine oil are hot.**
- **When removing, prepare a shop cloth to absorb any oil leakage or spillage.**
- **Do not allow engine oil to adhere to the drive belts.**
- **Completely wipe off any oil that adhere to the engine and the vehicle.**

INSTALLATION

1. Remove foreign materials adhering to the oil filter installation surface.
2. Install oil filter bracket to oil cooler.

   CAUTION:
   Install oil filter bracket, positioning lug in the hole of oil cooler.
3. Apply engine oil to the oil seal contact surface of the new oil filter.



4. Install the oil filter to oil filter bracket.
5. After warming up the engine, check for engine oil leakage.
6. Check oil level and add engine oil. Refer to LU-24, "ENGINE OIL" .

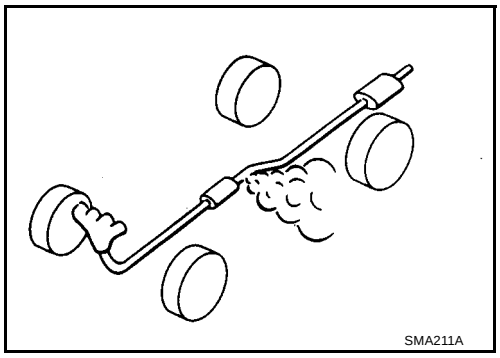
CHASSIS AND BODY MAINTENANCE

PFP:00100

Checking Exhaust System

ELS000LV

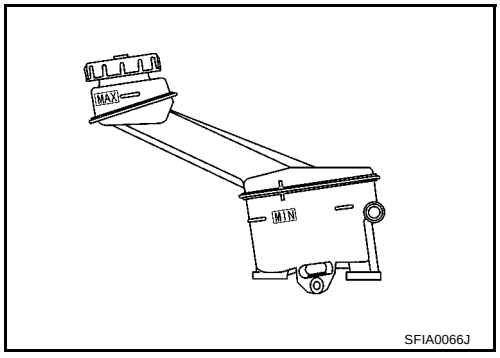
Check exhaust pipes, muffler and mounting for improper attachment, leaks, cracks, damage, chafing or deterioration.



Checking Clutch Fluid Level and Leaks

ELS000LW

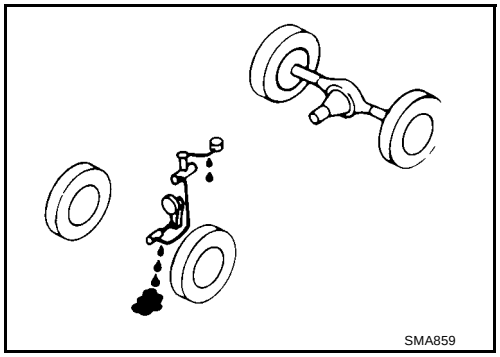
If fluid level is extremely low, check clutch system for leaks.



Checking Clutch System

ELS000LX

Check fluid lines and operating cylinder for improper attachment, cracks, damage, loose connections, chafing and deterioration.



Checking M/T Oil

ELS000LY

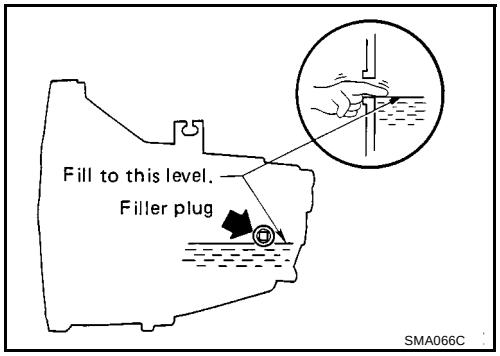
- Check that oil is not leaking from transaxle or around it.
- Check oil level from filler plug mounting hole as shown in the figure.

  CAUTION:
  Never start engine while checking oil level.
- Set a new gasket on the filler plug and install it on the transaxle.

  Filler plug:

  : 2 N·m (0.2 kg-m, 1.8 in-lb)

  CAUTION:
  Do not reuse gasket.



Changing M/T Oil

ELS000LZ

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

Oil grade and viscosity:

Refer to MA-35, "RECOMMENDED FLUIDS AND LUBRICANTS"

Oil capacity (Reference):

JH3: Approx. 2.6 ℓ (4-5/8 Imp pt)

JR5: Approx. 2.5 ℓ (4-3/8 Imp pt)

Drain plug:

: 22 N·m (2.2 kg-m, 1.5 - 1.7 ft-lb)

CAUTION:

Do not reuse gasket.

Checking A/T Fluid

ELS000M0

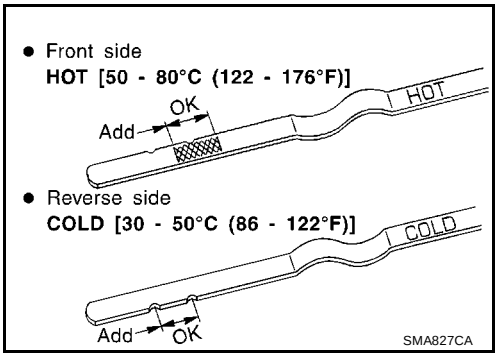
1. Warm up engine.
2. Check for fluid leakage.
3. Before driving, fluid level can be checked at fluid temperatures of 30 to 50°C (86 to 122°F) using “COLD” range on dipstick.

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.

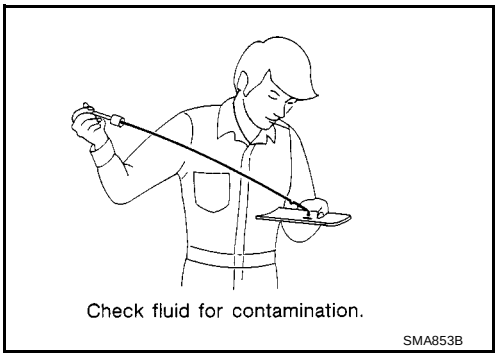


e. Re-insert dipstick into charging pipe as far as it will go.

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 CO-13, "RADIATOR" , CO-19, "RADIATOR (ALUMINUM TYPE)" .



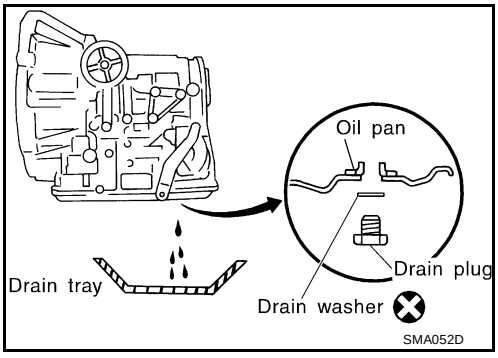
Changing A/T Fluid

ELS000M1

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:

Genuine Nissan ATF or equivalent. Refer to MA-35, "RECOMMENDED FLUIDS AND LUBRICANTS" .



Fluid capacity (With torque converter):

Approx. 7.7 ℓ (6-3/4 lmp qt)

Drain plug:

: 29 - 39 N·m (3.0 - 3.9 kg-m, 22 - 28 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.

Rotation

ELS000M5

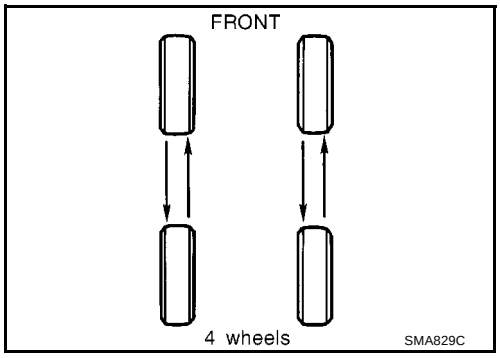
- After rotating the tires, adjust the tire pressure.
- Retighten the wheel nuts when the vehicle has been driven for 1,000 km (600 miles) (also in cases of a flat tire, etc.).

CAUTION:

When installing wheels, tighten them diagonally by dividing the work two to three times in order to prevent the wheels from developing any distortion.

Tightening torque of wheel nut:

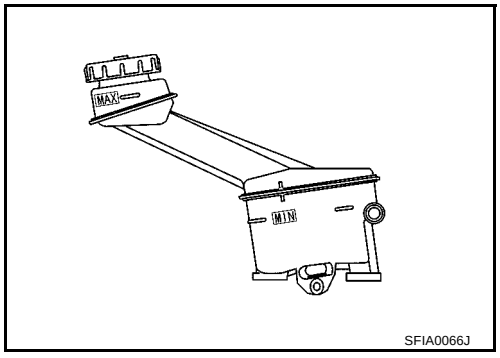
98 - 118N·m (10 - 12 kg·m, 72 - 87 ft·lb)



Checking Brake Fluid Level and Leaks

ELS000M6

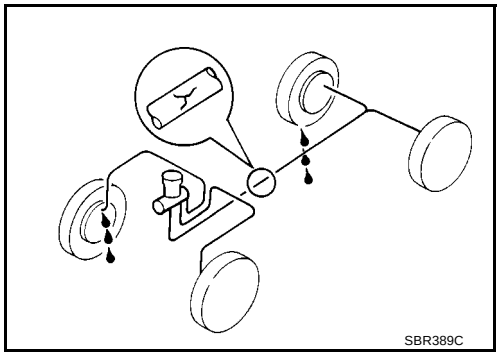
- If fluid level is extremely low, check brake system for leaks.



Checking Brake Lines and Cables

ELS000M7

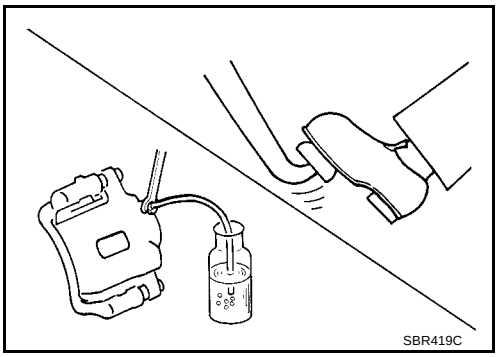
- Check brake fluid lines and parking brake cables for improper attachment, leaks, chafing, abrasions, deterioration, etc.



Changing Brake Fluid

ELS000M8

1. Drain brake fluid from each air bleeder valve.
2. Refill until new brake fluid comes out from each air bleeder valve.
   Use same procedure as in bleeding hydraulic system to refill brake fluid.
   Refer to BR-9, "BRAKE FLUID" .
   - Refill with recommended Genuine Brake Fluid or equivalent “DOT 3” or “DOT 4”.
     Refer toMA-35, "RECOMMENDED FLUIDS AND LUBRICANTS" .
   - Never reuse drained brake fluid.
   - Be careful not to splash brake fluid on painted areas.


SBR419C

Checking Disc Brake

ELS000M9

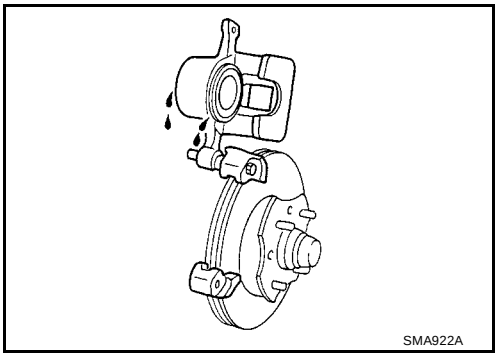
ROTOR

Check condition, wear, and damage.

Applied	Front
Brake model	CL22
Standard thickness	22.0 mm (0.87 in)
Maximum runout	0.058 mm (0.0023 in)
Minimum thickness (Wear limit)	20 mm (0.79 in)

CALIPER

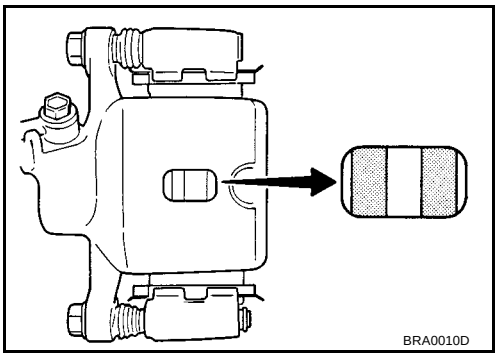
- Check for leakage.


SMA922A

PAD

Check for wear or damage.

Applied	Front
Brake model	CL22
Standard thickness	12.4 mm (0.488 in)
Minimum thickness (Wear Limit)	2.0 mm (0.079 in)


BRA0010D

Checking Drum Brake

ELS000O1

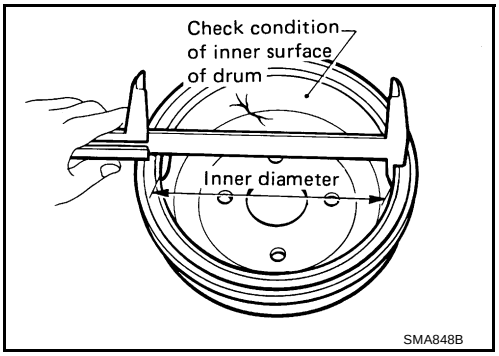
WHEEL CYLINDER

Check for leakage.

DRUM

Check condition and inner surface.

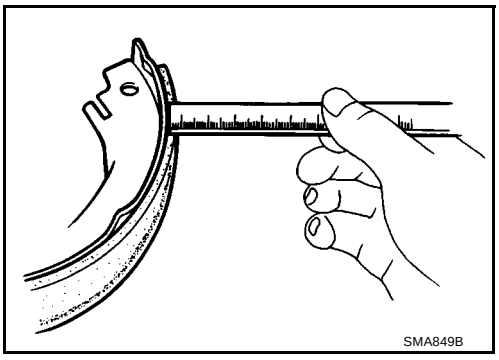
Standard inner diameter	202 mm (7.95 in)
Drum repair limit (Maximum inner diameter)	203.2 mm (8.0 in)



LINING

Check wear or damage.

Standard thickness	4.5 mm (0.177 in)
Lining Wear Limit (Minimum thickness)	1.5 mm (0.059 in)

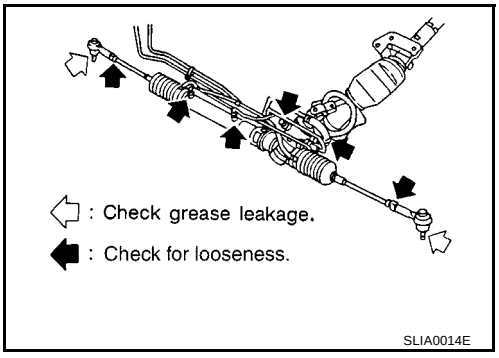


Checking Steering Gear and Linkage

ELS000MA

STEERING GEAR

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



STEERING LINKAGE

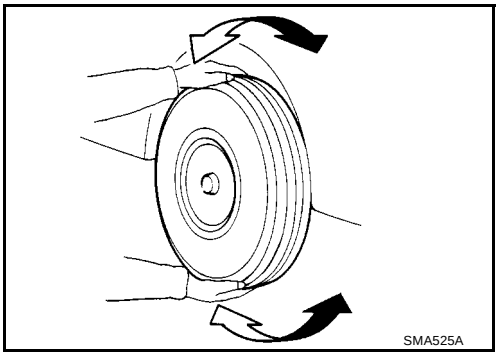
Check ball joint, dust cover and other component parts for looseness, wear, damage and grease leakage.

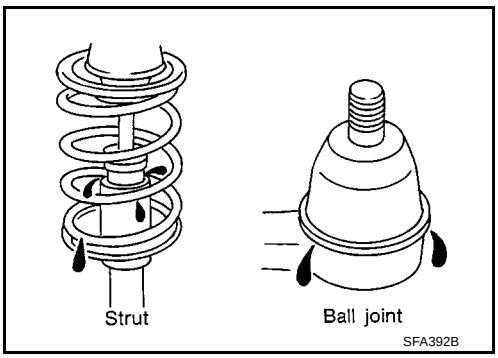
Axle and Suspension Parts

ELS000MC

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

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

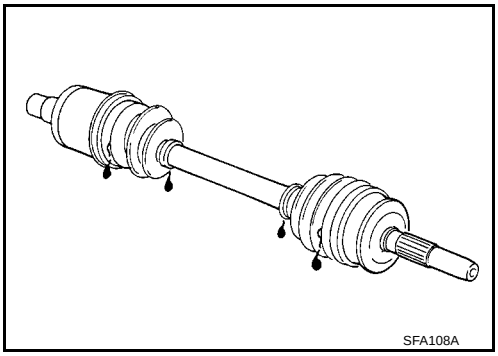




Drive Shaft

ELS000MD

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



Lubricating Locks, Hinges and Hood Latches

ELS000ME

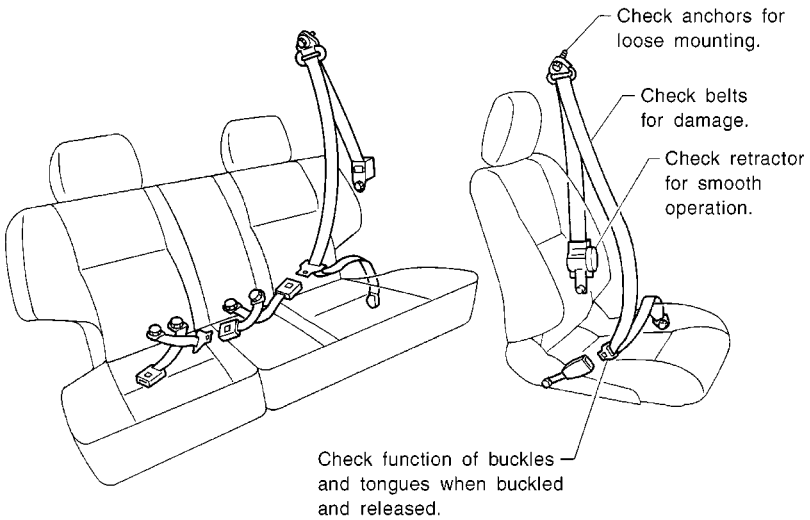
Front door	Refer to BL-233, "DOOR" .
Back door	Refer to BL-246, "BACK DOOR" .

Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters

ELS000MF

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.
- **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.**



Anchor bolt
43 - 55 N·m (4.4 - 5.6 kg-m, 32 - 41 ft-lb)

Checking Body Corrosion

ELS000MG

Visually check body panels for collision damage (scratches, chipping, rubbing, etc.) or damage to the anti-corrosion materials. In particular, check the following locations.

HEMMED PANELS

Hood front end, door lower end, trunk lid rear end, etc.

PANEL JOINT

Side sill of rear fender and center pillar, rear wheel housing of rear fender, around strut tower in engine compartment, etc.

PANEL EDGE

Trunk lid opening, sunroof opening, fender wheel-arch flange, fuel filler lid flange, around holes in panel, etc.

PARTS CONTACT

Waist moulding, windshield moulding, bumper, etc.

PROTECTORS

Damage or condition of mudguard, fender protector, chipping protector, etc.

ANTI-CORROSION MATERIALS

Damage or separation of anti-corrosion materials under the body.

DRAIN HOLES

Condition of drain holes at door and side sill. When repairing corroded areas, refer to the Corrosion Repair Manual.

SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00030

Standard and Limit

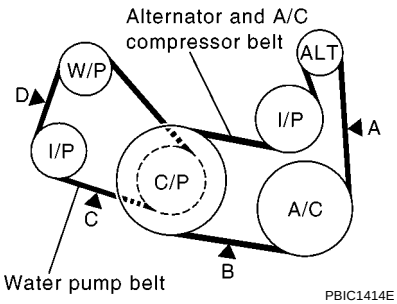
ELS000MH

BELT DEFLECTION AND TENSION

CR Engine

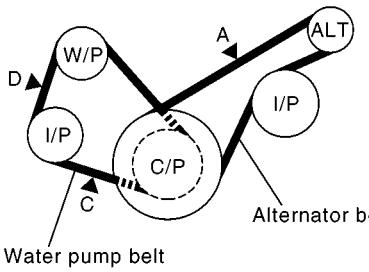
Location	Tension [N (kg, lb)]			Deflection [mm (in)] [When pressed by force of 98.1N (10 kg, 22lb)]			
	New	At adjustment	Limit	Measuring point	New belt	At adjustment	Limit
Alternator and A/C compressor belt	603 - 691 (61.5 - 70.5, 135.6 - 155.3)	495 - 583 (50.5 - 59.5, 111.3 - 131.1)	196 (20, 44.1)	A	6.6 - 7.8 (0.260 - 0.307)	7.3 - 8.5 (0.287 - 0.335)	13.8 (0.543)
				B	5.6 - 6.6 (0.220 - 0.260)	7.1 - 8.3 (0.280 - 0.327)	11.9 (0.469)
Alternator belt	603 - 691 (61.5 - 70.5, 135.6 - 155.3)	495 - 583 (50.5 - 59.5, 111.3 - 131.1)	196 (20, 44.1)	A	3.1 - 4.1 (0.122 - 0.161)	9.8 - 10.6 (0.386 - 0.417)	13.8 (0.543)
Water pump belt	446 - 534 (45.5 - 54.5, 100.3 - 120.0)	348 - 436 (35.5 - 44.5, 78.2 - 98.0)	137 (14, 30.9)	C	6.7 - 7.3 (0.264 - 0.287)	7.6 - 8.6 (0.299 - 0.339)	12.4 (0.448)
				D	4.7 - 5.6 (0.185 - 0.220)	7.0 - 7.7 (0.276 - 0.303)	8.6 (0.339)

With A/C compressor



PBIC1414E

Without A/C compressor



PBIC1415E

HR Engine

Location		Deflection adjustment *		Unit: mm (in)
		Used belt		New belt
		Limit	After adjusted	
Drive belt	With A/C models	7.9 (0.31)	4.8 - 5.3 (0.19 - 0.21)	4.2 - 4.5 (0.17 - 0.18)
	Without A/C models	7.1 (0.28)	4.3 - 4.7 (0.17 - 0.19)	3.6 - 3.9 (0.14 - 0.15)
Applied pushing force	98 N (10 kg, 22lb)			

*: When engine is cold.

K9K Engine

Refer to EM-244, "DRIVE BELTS" .

ENGINE COOLANT CAPACITY

CR Engine

Unit: ℓ (Imp qt)

Coolant capacity [With reservoir tank (MAX level)]	M/T models with A/C	Approximately 5.3 (4-5/8)
	Except M/T models with A/C	Approximately 4.9 (4-3/8)
Reservoir tank	M/T models with A/C	1.2 (1-1/8)
	Except M/T models with A/C	0.7 (5/8)

HR Engine

Unit: ℓ (Imp qt)

Coolant capacity [With reservoir tank (MAX level)]	Without A/C models	Approximately 5.6 (4-7/8)
	With A/C models	Approximately 6.0 (5-1/4)
Reservoir tank	Without A/C models	0.7 (5/8)
	With A/C models	1.2 (1-1/8)

K9K Engine

Unit: ℓ (Imp qt)

Coolant capacity [With reservoir tank (MAX level)]	Without intercooler models	Approximately 6.5 (5-3/4)
	With intercooler models	Approximatery 7.0 (6-1/8)
Reservoir tank		1.2 (1-1/8)

ENGINE OIL CAPACITY

CR Engine

Unit: ℓ (Imp qt)

With oil filter change	3.4 (3)
Without oil filter change	3.2 (2-7/8)
Dry engine (engine overhaul)	3.9 (3-3/8)

HR Engine

Unit: ℓ (Imp qt)

With oil filter change	4.6 (4 Imp qt)
Without oil filter change	4.4 (3-7/8 Imp qt)
Dry engine (overhaul)	4.8 (4-1/4 Imp qt)

K9K Engine

Unit: ℓ (Imp qt)

With oil filter change	4.55 (4)
Without oil filter change	4.39 (3-7/8)
Dry engine (engine overhaul)	4.71 (4-1/8)

SPARK PLUG

CR Engine

Make	NGK	Champion
Standard type	LFR5AP-11	REC10PYC4
Hot type	LFR4AP-11	—
Cold type	LFR6AP-11	—
Gap (nominal)	1.1 mm (0.043 in)	

SPARK PLUG (PLATINUM-TIPPED TYPE)

HR Engine

Make		NGK
Standard type		PLZKAR6A-11
Hot type		PLZKAR5A-11
Cold type		PLZKAR7A-11
Spark plug gap	Standard	1.1 mm (0.043 in)