

SECTION MA

MAINTENANCE

CONTENTS

PRECAUTION	3	AIR CLEANER FILTER	25
PRECAUTIONS	3	AIR CLEANER FILTER : Removal and Installation	26
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	3	ENGINE OIL	26
PREPARATION	4	ENGINE OIL : Draining	27
PREPARATION	4	ENGINE OIL : Refilling	27
Special Service Tool	4	OIL FILTER	27
Commercial Service Tool	4	OIL FILTER : Removal and Installation	27
Pre-Delivery Inspection Item	5	OIL FILTER : Inspection	28
ON-VEHICLE MAINTENANCE	6	SPARK PLUG	28
GENERAL MAINTENANCE	6	SPARK PLUG : Removal and Installation	28
General Maintenance	6	SPARK PLUG : Inspection	29
PERIODIC MAINTENANCE	7	EVAP VAPOR LINES	30
Periodic Maintenance	7	EVAP VAPOR LINES : Inspection	30
RECOMMENDED FLUIDS AND LUBRICANTS	19	ENGINE MAINTENANCE (MR18DE)	31
Fluids and Lubricants	19	DRIVE BELTS	31
SAE Viscosity Number	20	DRIVE BELTS : Component	31
Engine Coolant Mixture Ratio	21	DRIVE BELTS : Checking Drive Belts	31
ENGINE MAINTENANCE (HR16DE)	22	DRIVE BELTS : Tension Adjustment	31
DRIVE BELTS	22	ENGINE COOLANT	31
DRIVE BELTS : Checking	22	ENGINE COOLANT : Inspection	31
DRIVE BELTS : Tension Adjustment	22	ENGINE COOLANT : Changing Engine Coolant	32
ENGINE COOLANT	23	RADIATOR	33
ENGINE COOLANT : Inspection	23	RADIATOR : Checking Radiator Cap	34
ENGINE COOLANT : Changing Engine Coolant	23	RADIATOR : Checking Radiator	34
RADIATOR	25	FUEL LINES	34
RADIATOR : Checking Radiator	25	FUEL LINES : Inspection	35
FUEL LINES	25	AIR CLEANER FILTER	35
FUEL LINES : Inspection	25	AIR CLEANER FILTER : Removal and Installation	35
		ENGINE OIL	36
		ENGINE OIL : Inspection	36
		ENGINE OIL : Changing Engine Oil	37

OIL FILTER	38	ENGINE OIL	46
OIL FILTER : Removal and Installation	38	ENGINE OIL : Inspection	47
OIL FILTER : Inspection	39	ENGINE OIL : Draining	47
SPARK PLUG	39	ENGINE OIL : Refilling	48
SPARK PLUG : Component	40	OIL FILTER	48
SPARK PLUG : Removal and Installation	40	OIL FILTER : Replacement	48
EVAP VAPOR LINES	41	CHASSIS AND BODY MAINTENANCE	50
EVAP VAPOR LINES : Inspection	41	Air Conditioner Filter	50
ENGINE MAINTENANCE (K9K)	42	Checking Exhaust System	50
DRIVE BELTS	42	Checking Clutch Fluid Level and Leaks	50
DRIVE BELTS : Exploded View	42	Checking Clutch System	50
DRIVE BELTS : Inspection and Adjustment	42	Checking M/T Oil	50
ENGINE COOLANT	42	Changing M/T Oil	51
ENGINE COOLANT : Inspection	42	Checking A/T Fluid: RE4F03B	51
ENGINE COOLANT : Draining	43	Changing A/T Fluid: RE4F03B	52
ENGINE COOLANT : Refilling	43	Checking A/T Fluid: RSF91R	52
ENGINE COOLANT : Flushing	44	Changing A/T Fluid: RS9F94R	52
RADIATOR	44	Balancing Wheels	53
RADIATOR : Checking Radiator Cap	44	Rotation	53
RADIATOR : Checking Radiator	45	Checking Brake Fluid Level and Leaks	54
FUEL LINES	45	Checking Brake Line and Cables	54
FUEL LINES : Inspection	45	Changing Brake Fluid	54
AIR CLEANER FILTER	46	Drain and Refill	54
AIR CLEANER FILTER : Removal and Installation	46	Checking Disc Brake	55
		Axle and Suspension Parts	56
		Drive Shaft	56
		Lubricating Locks, Hinges and Hood Latch	57
		Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters	57

PRECAUTIONS

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PRECAUTION

PRECAUTIONS

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

INFOID:000000001731952

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

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

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PREPARATION

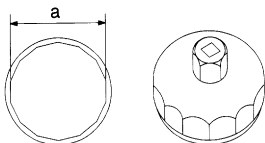
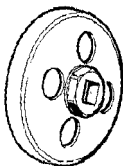
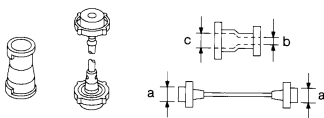
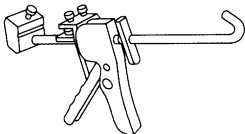
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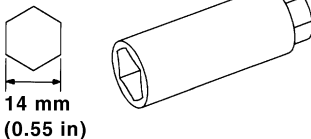
Special Service Tool

INFOID:000000001277594

Tool number (RENAULT Tool number) Tool name		Description
KV10115801 (—) Oil filter wrench	 S-NT375	Removing and installing oil filter (HR16DE and MR20DE engine models) a: 64.3 mm (2.531 in)
KV113C0010 (Mot.1329) Oil filter wrench	 MBIB0369E	Removing and installing oil filter (K9K engine models)
(J-33984-A) Radiator cap tester adapter	 S-NT564	Adapting radiator cap tester to radiator cap and radiator filler neck a: 28 (1.10) dia. b: 31.4 (1.236) dia. c: 41.3 (1.626) dia. Unit: mm (in)
WS39930000 Tube pressure	 S-NT052	Pressing the tube of liquid gasket

Commercial Service Tool

INFOID:000000001277595

Tool name		Description
Spark plug wrench	 PBIC3874E	Removing and installing spark plug (HR16DE and MR20DE engine models)

PREPARATION

< PREPARATION >

Pre-Delivery Inspection Item

INFOID:000000001277596

Shown below 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	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		ROAD TEST	
3	☐ Check coolant level and cooling system for leaks	38	☐ Check clutch operation
4	☐ Charge battery and check terminals for condition	39	☐ Check foot brake operation
5	☐ Check drive belts tension	40	☐ Check parking brake operation
6	☐ Check fuel filter for water or dust (diesel only) and fuel system for leaks	41	☐ Check steering operation, self-centering and steering wheel alignment
7	☐ Check engine oil level and for oil leaks	42	☐ Check engine performance
8	☐ Check brake and clutch fluid levels and fluid lines for leaks	43	☐ Check for squeaks, rattles and noise from interior, suspension and brakes
9	☐ Check and top up washer reservoirs	44	☐ Check heating, ventilation and air conditioning operation
Where applicable:		45	☐ Check Audio and Navigation system operation
10	☐ Check power steering fluid level and fluid lines for leaks	46	☐ Check odometer and trip meter operation and cancelling
11	☐ Check air conditioning system for gas leaks	47	☐ Check instruments for operation
INSIDE AND OUTSIDE		Where applicable:	
12	☐ Install transit fuse if removed for vehicle storage and perform initialization of disabled electrical systems	48	☐ Check automatic transmission/ transaxle/ CVT shift pattern and kickdown operation
13	☐ Check instruments, gauges, lamps, horn and accessories for operation	49	☐ Check cruise control and navigation system operation
14	☐ Check wipers and washers for operation and adjustment	WITH ENGINE AT OPERATING TEMPERATURE	
15	☐ Check interior and door mirrors and sun visors for operation	50	☐ Check idle speed
16	☐ Set radio code and set clock	Where applicable:	
17	☐ Check parking brake adjustment	51	☐ Check automatic transmission/ transaxle/ CVT oil level
18	☐ Check clutch pedal adjustment	FINAL INSPECTION - TECHNICIAN	
19	☐ Check steering lock operation	52	☐ Remove vehicle protection kit
20	☐ Check seat adjusters and seat belts for operation	53	☐ Fit interior mats and wheel covers
21	☐ Check electric window operation and alignment, including 1 touch up and down (if applicable). Perform initialization if required	54	☐ Check for interior and exterior metal and paint damage
22	☐ Check mouldings, trim and fittings for fit and alignment	55	☐ Wash, clean interior and exterior
23	☐ Check weatherstrips for fit and adhesion	The above checks have been completed, any faults found have been corrected as necessary and the vehicle passed fit for delivery	
24	☐ Check hood, trunk lid, door panels and fuel lid for fit and alignment	Date: _____ Job no.: _____	
25	☐ Check latches, keys, remote key, door locks and remote trunk lid and fuel lid release for operation. Ensure child locks are off	Technician's signature: _____	
26	☐ Check wheel nut torques	FINAL INSPECTION - SALES EXECUTIVE	
27	☐ Check tire pressure (incl. spare tire)	56	☐ Confirm all accessories ordered have been fitted
28	☐ Check tool kit and jack for operation	57	☐ Check content of vehicle owner's manuals pack, operation manuals for accessories and Quick Reference Guide (if applicable)
29	☐ Remove towing eye from bumper (if applicable)	58	☐ Complete warranty booklet record
Where applicable:			
30	☐ Check automatic transmission starter inhibitor		
31	☐ Check sunroof for operation and alignment		
32	☐ Set up Trip Computer service reminder		
UNDER VEHICLE			
33	☐ Check manual transmission/ transaxle, differential and transfer box for oil level and oil leaks	I confirm that I am satisfied with the condition of the vehicle and it is ready for delivery to the customer	
34	☐ Tighten bolts and nuts steering linkage and gear box, axle/suspension parts, propeller shaft and exhaust system	Date: _____	
35	☐ Check brake and clutch lines, and oil/fluid reservoirs for leaks	Sales executive signature: _____	
Where applicable:			
36	☐ Remove front suspension spacer blocks		
37	☐ Check body mountings torque		

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GENERAL MAINTENANCE

< ON-VEHICLE MAINTENANCE >

ON-VEHICLE MAINTENANCE

GENERAL MAINTENANCE

General Maintenance

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General maintenance includes those items which should be checked during the normal day-to-day operation of the vehicle. They are essential if the vehicle is to continue operating properly. The owners can perform 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.	WT-7, "Tire"
Windshield wiper blades	Check for cracks or wear if not functioning correctly.	—
Doors and engine hood	Check that all doors, the engine hood, the trunk lid and back door operate properly. 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.	MA-57, "Lubricating Locks, Hinges and Hood Latch"
Tire rotation	Tires should be rotated every 10,000 km (6,000 miles) for 2WD models and every 5,000 km (3,000 miles) for 4WD models.	MA-53

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.	MA-57

UNDER THE HOOD AND VEHICLE

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

Item		Reference page
Windshield washer fluid	Check that there is adequate fluid in the tank.	—
Engine coolant level	Check the coolant level when the engine is cold.	MA-23 (HR)
		MA-31 (MR)
		MA-42 (K9K)
Engine oil level	Check the level after parking the vehicle on a level spot and turning off the engine.	LU-6 (HR)
		LU-15 (MR)
		LU-26 (K9K)
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-50 , MA-54
Battery	Check the fluid level in each cell. It should be between the "MAX" and "MIN" lines.	—

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

PERIODIC MAINTENANCE

Periodic Maintenance

INFOID:000000001277598

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 (MR 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-238
Drive belts	See NOTE (2)	I	I	I	I	MA-31
Engine oil (Use recommended oil.)★		R	R	R	R	MA-36
Engine oil filter (Use genuine NISSAN part or equivalent)★		R	R	R	R	MA-39
Engine coolant (Use genuine NISSAN Engine Coolant or equivalent in its quality.)	See NOTE (3)	I	I	R	I	MA-31
Cooling system		I	I	I	I	CO-35
Fuel lines		I	I	I	I	MA-35
Air cleaner filter★			R		R	MA-35
Fuel filter (In-tank type)	See NOTE (4)					—
Spark plugs [Platinum-tipped type]				[R]		MA-40
EVAP vapor lines (With carbon canister)		I	I	I	I	MA-41
Heated oxygen sensor 1	See NOTE (5)					EC-164

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 belt 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 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 (MR ENGINE)

(Annual Mileage <30,000 Km/year)

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

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

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	EXL-81 ,
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	MA-54 , MA-50
Brake fluid★		R	R	R	R	MA-54
Brake booster vacuum hoses, connections & check valve		I	I	I	I	BR-22 , BR-17
Manual transaxle gear oil (For level & leaks)		I	I	I	I	MA-50
Automatic transaxle fluid (For level & leaks)★	See NOTE (1)	I	I	I	I	MA-51 (RE4F03B) MA-52 (RS9F94B)
Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system★		I	I	I	I	MA-56 ,
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	FSU-6 , RSU-5 ,
Brake pads & other brake components★		I	I	I	I	MA-55 ,
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	BR-6 , PB-4 , CL-5 ,
Air conditioner filter★		R	R	R	R	VTL-33 , VTL-6
Body corrosion	See NOTE (1)					

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 year.	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-125
Drive belt	See NOTE (2)	I	I	I	I	MA-22
Engine oil (Use recommended oil.)★		R	R	R	R	MA-27
Engine oil filter (Use genuine NISSAN part or equivalent)★		R	R	R	R	MA-28
Engine coolant (Use genuine NISSAN Engine Coolant or equivalent in its quality.)	See NOTE (3)	I	I	R	I	MA-23

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
	km x 1,000 (Miles x 1,000) Months	30 (18) 24	60 (36) 48	90 (54) 72	120 (72) 96	
Perform on a kilometer basis, but on an annual basis when driving less than 30,000 km (18,000 miles) per year.						
Cooling system		I	I	I	I	CO-11
Fuel lines		I	I	I	I	MA-25
Air cleaner filter★			R		R	MA-26
Fuel filter (In-tank type)	See NOTE (4)					—
Spark plugs [Platinum-tipped type]				[R]		MA-29
EVAP vapor lines (With carbon canister)		I	I	I	I	MA-30
Heated oxygen sensor 1	See NOTE (5)					EC-829

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 belt 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 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 (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	EXL-81 ,
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	MA-54 , MA-50
Brake fluid★		R	R	R	R	MA-54
Brake booster vacuum hoses, connections & check valve		I	I	I	I	BR-22 , BR-17
Automatic transaxle fluid (For level & leaks)★	See NOTE (1)	I	I	I	I	MA-51 (RE4F03B) MA-52 (RS9F94B)
Manual transaxle gear oil (For level & leaks)		I	I	I	I	MA-50
Steering gear & linkage, axle & suspension parts, propeller shaft, drive shafts & exhaust system★		I	I	I	I	MA-56 ,
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	FSU-6 , RSU-5 ,
Brake pads, rotors & other brake components★		I	I	I	I	MA-55 ,
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	BR-6 , PB-4 , CL-5 ,

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

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	
Air conditioner filter★		R	R	R	R	VTL-33 , VTL-6
Body corrosion	See NOTE (1)					

NOTE:

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

ENGINE AND EMISSION CONTROL MAINTENANCE (K9K ENGINE)

(Annual Mileage <30,000 Km/year)

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Refer- ence 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	MA-47
Engine oil filter (Use recommended oil filter)★		R	R	R	R	R	R	MA-48
Timing belt★	See NOTE (1)	Replace every 120,000 km/60 months						EM-291
Drive belt	See NOTE (2)	I	I	I	I	I	R	MA-42
Cooling system		I	I	I	I	I	I	CO-58
Engine coolant (Use genuine Nissan Engine Coolant or equivalent in its quality.)	See NOTE (3)		I			R		MA-42
Air cleaner filter ★			R		R		R	MA-46
Intake & exhaust valve clearance	See NOTE (4)	Inspect every 100,000 km						EM-335
Fuel lines		I	I	I	I	I	I	MA-45
Fuel filter★	See NOTE (5)	D	R	D	R	D	R	FL-13

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 Severe 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 60,000Km (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 40,000 km/48 months.

CHASSIS AND BODY MAINTENANCE (K9K ENGINE)

(Annual Mileage <30,000 Km/year)

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

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

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	EXL-81 ,
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	I	I	MA-54 , MA-50
Brake fluid★			R		R		R	MA-54
Brake booster vacuum hoses, connections & check valve			I		I		I	BR-22 , BR-17
Manual transaxle gear oil (For leaks)		I	I	I	I	I	I	MA-50
Automatic transaxle fluid (For level & leaks)★	See NOTE (1)	I	I	I	I	I	I	MA-51 (RE4F03B) MA-52 (RS9F94B)
Steering gear & linkage, axle & suspension parts, drive shafts & exhaust system★			I		I		I	MA-56 ,
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	I	I	FSU-6 , RSU-5 ,
Brake pads, rotors & other brake components★		I	I	I	I	I	I	MA-55 ,
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	I	I	BR-6 , PB-4 , CL-5 ,
Air conditioner filter★		R	R	R	R	R	R	VTL-33 , VTL-6
Body corrosion	See NOTE (1)							

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

(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 — Driving repeatedly short distances or door to door driving
- 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 areas or in 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 petrol engine models)

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

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	HR engine models	Replace	Every 30,000 km (18,000 miles) or 24 months	MA-26
	.	.	.	.	.	.	.	.	.	.	.	MR engine models		MA-35			
	.	.	.	.	.	.	.	.	.	.	.	K9K engine models		MA-46			
A	B	C	D	.	.	.	.	.	.	.	.	.	Engine oil & engine oil filter	HR engine models	Replace	Every 15,000 km (9,000 miles) or 12 months	MA-27 , MA-27
	.	.	.	.	.	.	.	.	.	.	.	MR engine models		MA-37 , MA-38			
	.	.	.	.	.	.	.	.	.	.	.	.		K9K engine models		Every 10,000 km (6,000 miles) or 6 months	MA-47 , MA-48
.	.	.	.	.	.	.	.	.	.	.	.	L	Heated oxgen sensor 1	MR engine models	Inspect	Every 30,000 km (18,000 miles) or 24 months	EC-615 EC-903
.	.	.	.	.	.	.	.	.	.	.	.	L		HR engine models			
A	B	.	D	.	.	.	.	H	.	.	.	L	Timing belt	K9K	Replace	More frequently	EM-291
.	.	.	.	.	.	F	.	.	.	.	.	.	Brake fluid	K9K engine models	Replace	Every 20,000 km (12,000 miles) or 12 months	MA-54
.	.	.	.	.	.	.	.	.	.	.	.	.		MR and HR engine models		Every 15,000 km (9,000 miles) or 12 months	MA-54
.	.	C	.	.	.	.	.	H	.	.	.	.	Automatic transaxle fluid	HR engine models	Replace	Every 30,000 km (18,000 miles) or 24 months	MA-51 (RE4F03B) MA-52 (RS9F94B)
.	.	C	.	.	.	.	.	H	.	.	.	.	Fuel filter	K9K engine models	Check & drain water	Every 15,000 km (9,000 miles) or 12 months	FL-13
.	.	.	.	.	.	.	.	.	.	.	.	.			Replace	Every 30,000 km (18,000 miles) or 24 months	FL-13
.	.	.	.	.	.	.	G	H	.	.	.	.	Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system	MR and HR engine models	Inspect	Every 15,000km (9,000miles) or 12 months	ST-12 MA-56
.	.	.	.	.	.	.	.	.	.	.	.	.		K9K engine models			ST-12 MA-56
A	.	C	.	.	.	.	G	H	I	.	.	.	Brake pads, rotors & other brake components	MR and HR engine models	Inspect	Every 15,000km (9,000miles) or 12 months	BR-10 BR-11
.	.	.	.	.	.	.	.	.	.	.	.	.		K9K engine models			BR-10 BR-11
A	.	.	.	.	.	.	.	.	.	.	.	.	Air conditioner filter	MR and HR engine models	Replace	Every 15,000 km (9,000 miles) or 12 months	MA-50 , MA-50
	.	.	.	.	.	.	.	.	.	.	.	.		K9K engine models			

ENGINE AND EMISSION CONTROL MAINTENANCE (MR ENGINE)
(Annual Mileage >30,000 Km/year)

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Refer- ence page
Perform 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-238
Drive belts	See NOTE (2)	I	I	I	I	MA-31
Engine oil (Use recommended oil.)★		R	R	R	R	MA-36
Engine oil filter (Use genuine NISSAN part or equivalent)★		R	R	R	R	MA-39
Engine coolant (Use genuine NISSAN Engine Coolant or equivalent in its quality.)	See NOTE (3)	I	I	R	I	MA-31
Cooling system		I	I	I	I	CO-35
Fuel lines		I	I	I	I	MA-35
Air cleaner filter★			R		R	MA-35
Fuel filter (In-tank type)	See NOTE (4)					—
Spark plugs [Platinum-tipped type]				[R]		MA-40
EVAP vapor lines (With carbon canister)		I	I	I	I	MA-41
Heated oxygen sensor 1	See NOTE (5)					EC-164

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 belt if found damaged.
- (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 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 (MR 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 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	EXL-81 ,
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	MA-54 , MA-50
Brake fluid★		R	R	R	R	MA-54
Brake booster vacuum hoses, connections & check valve		I	I	I	I	BR-22 , BR-17
Manual transaxle gear oil (For level & leaks)		I	I	I	I	MA-50
Automatic transaxle fluid (For level & leaks)★	See NOTE (1)	I	I	I	I	MA-51 (RE4F03B) MA-52 (RS9F94B)
Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system★		I	I	I	I	MA-56 ,
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	FSU-6 , RSU-5 ,

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
	km x 1,000 (Miles x 1,000)	30 (18)	60 (36)	90 (54)	120 (72)	
Perform at number of kilometers (miles) basis only.						
Brake pads & other brake components★		I	I	I	I	MA-55 ,
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	BR-6 , PB-4 , CL-5 ,
Air conditioner filter★		R	R	R	R	VTL-33 , VTL-6
Body corrosion	See NOTE (1)					

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
	km x 1,000 (Miles x 1,000) Months	30 (18) 24	60 (36) 48	90 (54) 72	120 (72) 96	
Perform on a kilometer (miles) basis only.						
Underhood and under vehicle						
Intake and exhaust valve clearance	See NOTE (1)					EM-125
Drive belt	See NOTE (2)	I	I	I	I	MA-22
Engine oil (Use recommended oil.)★		R	R	R	R	MA-27
Engine oil filter (Use genuine NISSAN part or equivalent)★		R	R	R	R	MA-28
Engine coolant (Use genuine NISSAN Engine Coolant or equivalent in its quality.)	See NOTE (3)	I	I	R	I	MA-23
Cooling system		I	I	I	I	CO-11
Fuel lines		I	I	I	I	MA-25
Air cleaner filter★			R		R	MA-26
Fuel filter (In-tank type)	See NOTE (4)					—
Spark plugs [Platinum-tipped type]				[R]		MA-29
EVAP vapor lines (With carbon canister)		I	I	I	I	MA-30
Heated oxygen sensor 1	See NOTE (5)					EC-829

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 belt if found damaged.
- (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 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 (HR ENGINE) (Annual Mileage <30,000 Km/year)

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL				Reference page
Perform on a kilometer (miles) basis only.	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	EXL-81 ,
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	MA-54 , MA-50
Brake fluid★		R	R	R	R	MA-54
Brake booster vacuum hoses, connections & check valve		I	I	I	I	BR-22 , BR-17
Manual transaxle gear oil (For level & leaks)		I	I	I	I	MA-50
Automatic transaxle fluid (For level & leaks)★	See NOTE (1)	I	I	I	I	MA-51 (RE4F03B) MA-52 (RS9F94B)
Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system★		I	I	I	I	MA-56 ,
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	FSU-6 , RSU-5 ,
Brake pads & other brake components★		I	I	I	I	MA-55 ,
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	BR-6 , PB-4 , CL-5 ,
Air conditioner filter★		R	R	R	R	VTL-33 , VTL-6
Body corrosion	See NOTE (1)					

NOTE:

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

ENGINE AND EMISSION CONTROL MAINTENANCE (K9K ENGINE) (Annual Mileage >30,000 Km/year)

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

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Reference page
Perform 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	MA-47
Engine oil filter (Use recommended oil filter)★		R	R	R	R	R	R	MA-48
Timing belt★	See NOTE (1)	Replace every 120,000 km/60 months						EM-291
Drive belt	See NOTE (2)	I	I	I	I	I	R	MA-42
Cooling system		I	I	I	I	I	I	CO-58
Engine coolant (Use genuine Nissan Engine Coolant or equivalent in its quality.)	See NOTE (3)		I			R		MA-42

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

MAINTENANCE OPERATION		MAINTENANCE INTERVAL						Refer- ence page
	km x 1,000 (Miles x 1,000)	20 (12)	40 (24)	60 (36)	80 (48)	100 (60)	120 (72)	
Perform at number of kilometers (miles) basis only.								
Air cleaner filter ★			R		R		R	MA-46
Intake & exhaust valve clearance	See NOTE (4)	Inspect every 100,000 km						EM-335
Fuel lines		I	I	I	I	I	I	MA-45
Fuel filter★		D	R	D	R	D	R	FL-13

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 Severe 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 60,000Km (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.

CHASSIS AND BODY MAINTENANCE (K9K 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
	km x 1,000 (Miles x 1,000)	20 (12)	40 (24)	60 (36)	80 (48)	100 (60)	120 (72)	
Perform at number of kilometers (miles) basis only.								
Underhood and under vehicle								
Headlamp aiming		I	I	I	I	I	I	EXL-81,
Brake & clutch, systems and fluid (For level & leaks)		I	I	I	I	I	I	MA-54, MA-50
Brake fluid★			R		R		R	MA-54
Brake booster vacuum hoses, connections & check valve			I		I		I	BR-22, BR-17
Manual transaxle gear oil (For leaks)		I	I	I	I	I	I	MA-50
Automatic transaxle fluid (For level & leaks)★	See NOTE (1)	I	I	I	I	I	I	MA-51 (RE4F03B) MA-52 (RS9F94B)
Steering gear & linkage, axle & suspension parts, drive shafts & exhaust system★			I		I		I	MA-56,
Wheel alignment (If necessary, rotate & balance wheels)		I	I	I	I	I	I	FSU-6, RSU-5,
Brake pads, rotors & other brake components★		I	I	I	I	I	I	MA-55,
Foot brake, parking brake & clutch (For free play, stroke & operation)		I	I	I	I	I	I	BR-6, PB-4, CL-5,
Air conditioner filter★		R	R	R	R	R	R	VTL-33, VTL-6
Body corrosion	See NOTE (1)							

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

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

(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 — Driving repeatedly short distances or door to door driving

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 areas or in 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 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	HR engine models	Replace	Every 30,000 km (18,000 miles)	MA-26
												MR engine models				MA-35
												K9K engine models				MA-46
A	B	C	D	.	.	.	.	.	.	.	.	Engine oil & engine oil filter	HR engine models	Replace	Every 15,000 km (9,000 miles)	MA-27 , MA-27
												MR engine models				MA-37 , MA-38
												K9K engine models			Every 10,000 km (6,000 miles)	MA-47 , MA-48
.	.	.	.	.	.	.	.	.	.	.	L	Heated oxygen sensor 1	MR engine models	Inspect	Every 60,000 km (36,000 miles)	EC-615 EC-903
												HR engine models				
A	B	.	D	.	.	.	H	.	.	.	L	Timing belt	K9K	Replace	More frequently	EM-291
.	.	.	.	.	.	F	.	.	.	.	.	Brake fluid	K9K engine models	Replace	Every 20,000 km (12,000 miles)	MA-54
												MR and HR engine models			Every 15,000 km (9,000 miles)	MA-54
.	.	C	.	.	.	.	H	.	.	.	.	Automatic transaxle fluid	HR engine models	Replace	Every 60,000 km (36,000 miles)	MA-51 (RE4F03B) MA-52 (RS9F94B)

PERIODIC MAINTENANCE

< ON-VEHICLE MAINTENANCE >

Driving condition													Maintenance item		Maintenance operation	Maintenance interval	Reference page
.	.	C	.	.	.	.	H	.	.	.	.	.	Fuel filter	K9K engine models	Check & drain water	Every 15,000 km (9,000 miles)	FL-13
.	.	C	.	.	.	.	H	.	.	.	.	.	Fuel filter	K9K engine models	Replace	Every 30,000 km (18,000 miles)	FL-13
.	.	.	.	.	.	G	H	.	.	.	.	.	Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system	MR and HR engine models	Inspect	Every 30,000km (18,000miles)	ST-12 MA-56
.	.	.	.	.	.	G	H	.	.	.	.	.	Steering gear & linkage, axle & suspension parts, front drive shafts & exhaust system	K9K engine models			ST-12 MA-56
A	.	C	.	.	.	G	H	I	.	.	.	.	Brake pads, rotors & other brake components	MR and HR engine models	Inspect	Every 15,000km (9,000miles)	BR-10 BR-11
A	.	C	.	.	.	G	H	I	.	.	.	.	Brake pads, rotors & other brake components	K9K engine models			BR-10 BR-11
A	.	.	.	.	.	.	.	.	.	.	.	.	Air conditioner filter	MR and HR engine models	Replace	Every 15,000 km (9,000 miles)	MA-50,
A	.	.	.	.	.	.	.	.	.	.	.	.	Air conditioner filter	K9K engine models			

RECOMMENDED FLUIDS AND LUBRICANTS

< ON-VEHICLE MAINTENANCE >

RECOMMENDED FLUIDS AND LUBRICANTS

Fluids and Lubricants

INFOID:000000001277599

				Capacity (Approximate)		Recommended Fluids/Lubricants
				Liter	Imp mea- sure	
Engine oil Drain and refill	With oil filter change	HR engine		4.6	4 qt	• HR and MR engines Genuine NISSAN engine oil*1 API SL or SM*1 ILSAC grade GF-3 or GF-4*1 ACEA A1/B1, A3/B3, A3/B4, A5/B5, C2 or C3*1 • K9K engine Genuine NISSAN engine oil *1 ACEA A1-B1*1
		MR engine		3.4	3 qt	
		K9K engine		4.4	3-7/8 qt	
	Without oil filter change	HR engine		4.4	3-7/8 qt	
		MR engine		3.2	2-7/8 qt	
		K9K engine		4.24	3-3/4 qt	
Dry engine (engine over- haul)		HR engine		4.8	4-1/4 qt	
		MR engine		3.9	3-3/8 qt	
		K9K engine		4.56	4 qt	
Cooling system (with res- ervoir)		HR engine	M/T models without A/C	5.6	4-7/8 qt	Genuine NISSAN Engine Coolant or equivalent in its quality*2
			M/T models with A/C	6.0	5-1/4 qt	
			A/T models	5.4	4-3/4 qt	
		MR engine	Without A/C	4.9	4-5/8 qt	
			With A/C	5.3	4-3/8 qt	
		K9K engine		6.0	5-1/4 qt	
		Reservoir tank		HR engine	M/T models without A/C	
M/T models with A/C	1.2				1-1/8 qt	
A/T models	0.7				5/8 qt	
MR engine	Without A/C			1.2	1-1/8 qt	
	With A/C			0.7	5/8 qt	
K9K engine				1.2	1-1/8 qt	
Manual transaxle gear oil				JH3		2.6
		JR5		2.5	4-3/8 pt	
Automatic transaxle fluid				7.7	6-3/4 qt	Genuine NISSAN ATF Matic D or equiv- alent*3
Brake and clutch fluid				—	—	Genuine NISSAN brake fluid or equiva- lent DOT 4 (US FMVSS No. 116)*4
Multi-purpose grease				—	—	NLGI No. 2 (Lithium soap base)

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

*2: Use Genuine NISSAN Engine Coolant 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.

*3: Contact a NISSAN dealership for more information regarding suitable fluids, including recommended brand(s) of DEXTRON™™ Automatic Transaxle Fluid.

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

RECOMMENDED FLUIDS AND LUBRICANTS

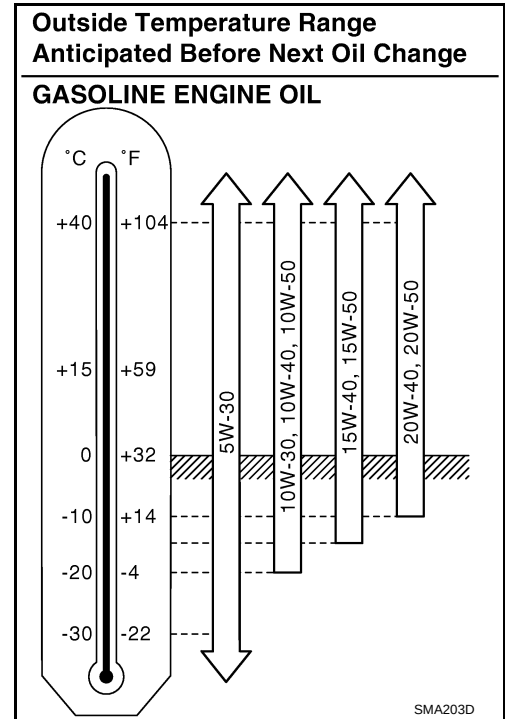
< ON-VEHICLE MAINTENANCE >

SAE Viscosity Number

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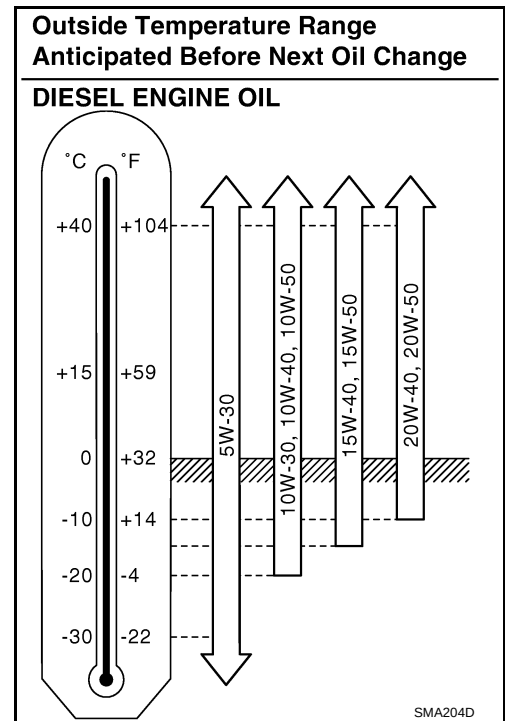
PETROL ENGINE

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



RECOMMENDED FLUIDS AND LUBRICANTS

< ON-VEHICLE MAINTENANCE >

Engine Coolant Mixture Ratio

INFOID:000000001277601

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.

CAUTION:

- When adding or replacing coolant, be sure to use only Genuine NISSAN Engine Coolant or equivalent in its quality. Genuine NISSAN Engine Coolant is premixed (mixture ratio 50%) 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.

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

SMA089D

ENGINE MAINTENANCE (HR16DE)

< ON-VEHICLE MAINTENANCE >

ENGINE MAINTENANCE (HR16DE)

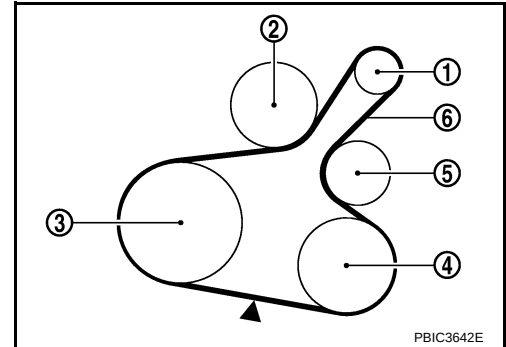
DRIVE BELTS

DRIVE BELTS : Checking

INFOID:000000001730848

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

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



PBIC3642E

- 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 / Belt Tension and Frequency : Refer to [EM-122, "Drive Belts"](#).

DRIVE BELTS : Tension Adjustment

INFOID:000000001730849

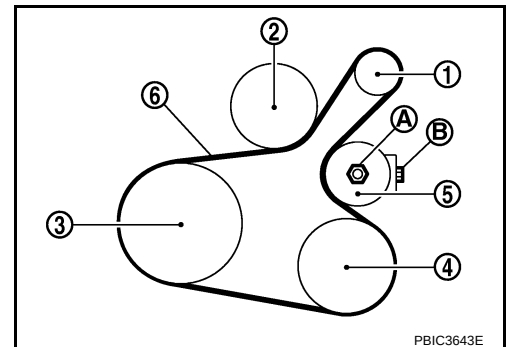
Location	Location of adjuster and tightening method
Drive belt	Adjusting bolt on idler pulley

CAUTION:

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

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

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



PBIC3643E

CAUTION:

ENGINE MAINTENANCE (HR16DE)

< ON-VEHICLE MAINTENANCE >

- When the lock nut is loosened excessively, the idler pulley tilts and the correct tension adjustment cannot be performed. Never loosen it excessively (more than 45 degrees).
 - Put a matching mark on the lock nut, and check turning angle with a protractor. Never visually check the tightening angle.
2. Adjust the belt tension by turning the adjusting bolt.
- CAUTION:**
- When checking immediately after installation, first adjust it to the specified value. Then, after turning crankshaft two turns or more, re-adjust to the specified value to avoid variation in deflection between pulleys.
 - When the tension adjustment is performed, the lock nut should be in the condition at step“2”. If the tension adjustment is performed when the lock nut is loosened more than the standard, the idler pulley tilts and the correct tension adjustment cannot be performed.
3. Tighten the idler pulley lock nut.

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

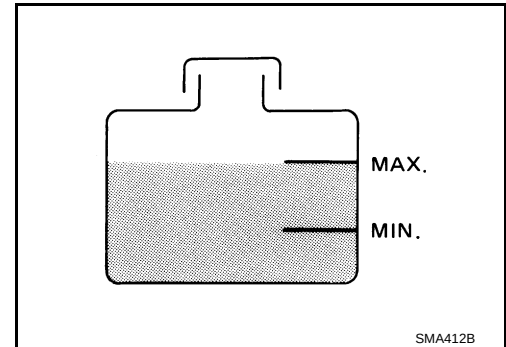
ENGINE COOLANT

ENGINE COOLANT : Inspection

INFOID:000000001730856

LEVEL CHECK

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



CHECKING COOLING SYSTEM FOR LEAKS

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

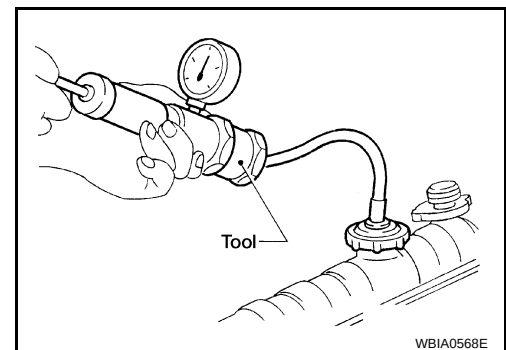
Testing pressure : 157 kPa (1.6 kg/cm², 23 psi)

WARNING:

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

CAUTION:

Higher pressure than specified may cause radiator damage.



ENGINE COOLANT : Changing Engine Coolant

INFOID:000000001730857

WARNING:

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

DRAINING ENGINE COOLANT

ENGINE MAINTENANCE (HR16DE)

< ON-VEHICLE MAINTENANCE >

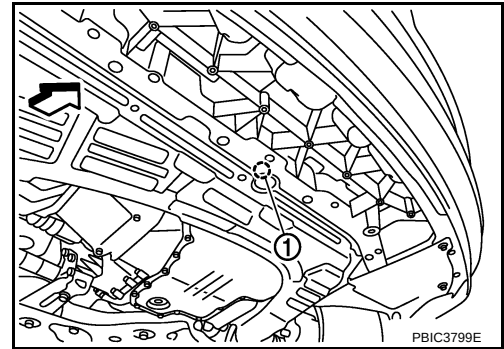
1. Open radiator drain plug (1) at the bottom of radiator, and then remove radiator cap.

- ⇐ Front

When drain all of engine coolant in the system, open water drain plug on cylinder block. Refer to [EM-100, "Exploded View"](#).

CAUTION:

- Perform this step when engine is cold.
- Do not spill engine coolant on drive belt.



2. Remove reservoir tank as necessary, and drain engine coolant and clean reservoir tank before installing.
3. Check drained engine coolant for contaminants such as rust, corrosion or discoloration. If contaminated, flush the engine cooling system. Refer to [CO-11, "Changing Engine Coolant"](#).

REFILLING ENGINE COOLANT

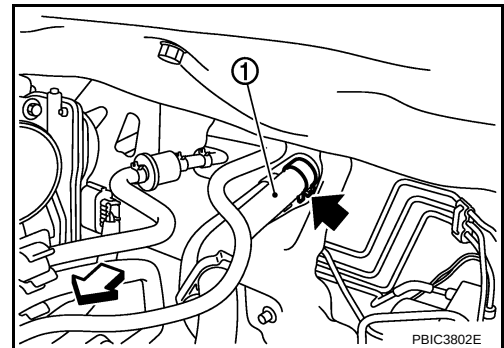
1. Install reservoir tank if removed.
2. Install radiator drain plug.

- If water drain plug on cylinder block is removed, close and tighten it. Refer to [EM-100, "Exploded View"](#).

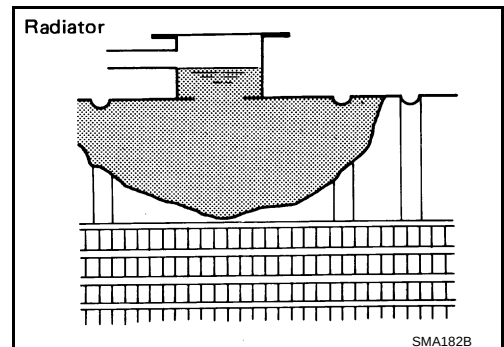
CAUTION:

Be sure to clean radiator drain plug and install with new O-ring. Refer to [CO-16, "Component"](#).

3. Make sure that each hose clamp has been firmly tightened.
4. Remove air duct assembly. Refer to [EM-27, "Exploded View"](#).
5. Disconnect heater hose (1) at position (⇐) as shown.
 - ⇐ Front
 - Reposition heater hose as high as possible.



6. Fill radiator and reservoir tank to specified level.
 - Pour engine coolant through engine coolant filler neck slowly of less than 2ℓ (2 1/8 US qt, 1-3/4 Imp qt) a minute to allow air in system to escape.
 - Use NISSAN Genuine Engine Coolant or equivalent mixed with water (distilled or demineralized). Fill cooling system to specification. Refer to [MA-19, "Fluids and Lubricants"](#).
 - When engine coolant overflows disconnected heater hose, connect heater hose, and continue filling the engine coolant, if heater hose is disconnected.



7. Install radiator cap.
8. Install air duct assembly. Refer to [EM-27, "Exploded View"](#).
9. Warm up until opening thermostat. Standard for warming-up time is approximately 10 minutes at 3,000 rpm.
 - Make sure thermostat opening condition by touching radiator hose (lower) to see a flow of warm water.

CAUTION:
Watch water temperature gauge so as not to overheat the engine.
10. Stop engine and cool down to less than approximately 50°C (122°F).
 - Cool down using fan to reduce the time.
 - If necessary, refill radiator up to filler neck with engine coolant.

ENGINE MAINTENANCE (HR16DE)

< ON-VEHICLE MAINTENANCE >

11. Refill reservoir tank to "MAX" level line with engine coolant.
12. Repeat steps 6 through 11 two or more times with radiator cap installed until engine coolant level no longer drops.
13. Check cooling system for leaks with engine running.
14. Warm up engine, and check for sound of engine 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.
15. Repeat step 14 three times.
16. If sound is heard, bleed air from cooling system by repeating steps 6 through 11 until engine coolant level no longer drops.

FLUSHING COOLING SYSTEM

1. Install reservoir tank if removed.
 2. Install radiator drain plug.
 - If water drain plug on cylinder block is removed, close and tighten it. Refer to [EM-100, "Exploded View"](#).
- CAUTION:**
Be sure to clean radiator drain plug and install with new O-ring. Refer to [CO-16, "Component"](#).
3. Fill radiator and reservoir tank with water and reinstall radiator cap.
 4. Run engine and warm it up to normal operating temperature.
 5. Rev engine two or three times under no-load.
 6. Stop engine and wait until it cools down.
 7. Drain water from the cooling system. Refer to [CO-11, "Changing Engine Coolant"](#).
 8. Repeat steps 1 through 7 until clear water begins to drain from radiator.

RADIATOR

RADIATOR : Checking Radiator

INFOID:000000001730858

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

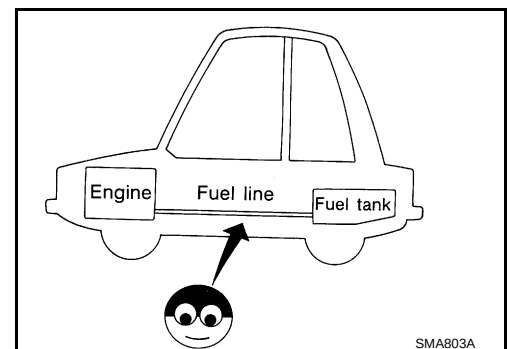
- Be careful not to bend or damage radiator fins.
 - When radiator is cleaned without removal, remove all surrounding parts such as cooling fan, radiator shroud and horns. Then tape harness and connectors to prevent water from entering.
1. Apply water by hose to the back side of the radiator core vertically downward.
 2. Apply water again to all radiator core 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/cm², 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.

FUEL LINES

FUEL LINES : Inspection

INFOID:000000001277610

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



AIR CLEANER FILTER

ENGINE MAINTENANCE (HR16DE)

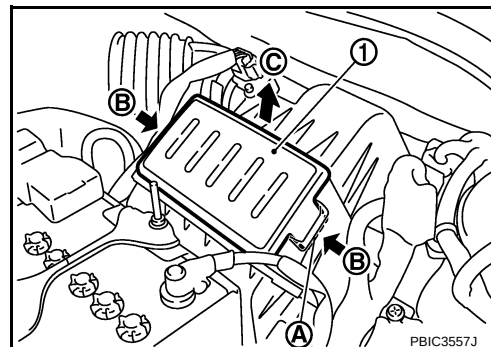
< ON-VEHICLE MAINTENANCE >

AIR CLEANER FILTER : Removal and Installation

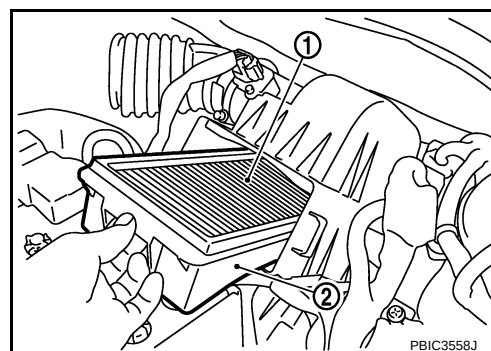
INFOID:000000001730850

REMOVAL

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



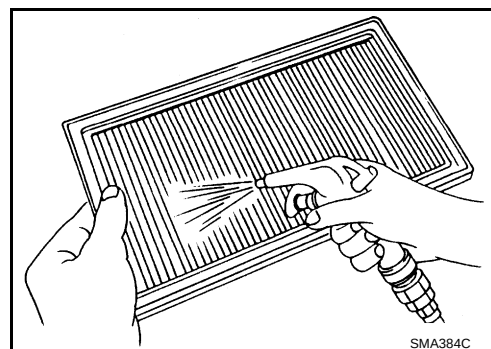
3. Remove air cleaner filter (1) and holder (2) assembly from the air cleaner case.
4. Remove the air cleaner filter (1) from the holder (2).



INSPECTION AFTER REMOVAL

It is necessary to clean air cleaner filter or replace it at the recommended intervals, more often under dusty conditions. Refer to [MA-7, "Periodic Maintenance"](#).

- Blow air into the back side of air cleaner filter until no objects spray out.



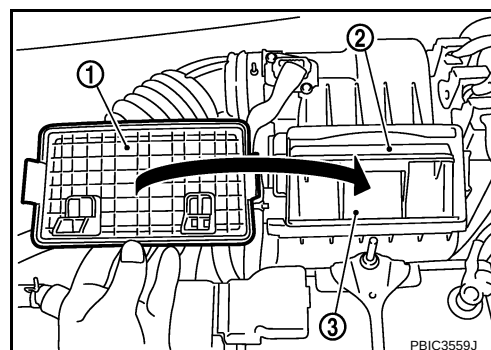
INSTALLATION

Installation is in the reverse order of removal.

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

2 : Air cleaner filter

3 : Holder



ENGINE OIL

ENGINE MAINTENANCE (HR16DE)

< ON-VEHICLE MAINTENANCE >

ENGINE OIL : Draining

INFOID:000000001730852

WARNING:

- Be careful not to get burned, as engine oil may be hot.
 - Prolonged and repeated contact with used engine oil may cause skin cancer. Try to avoid direct skin contact with used engine oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.
1. Warm up the engine, and check for engine oil leakage from engine components. Refer to [LU-6, "Inspection"](#).
 2. Stop the engine and wait for 10 minutes.
 3. Loosen oil filler cap.
 4. Remove drain plug and then drain engine oil.

ENGINE OIL : Refilling

INFOID:000000001730853

1. Install drain plug with new washer. Refer to [EM-100, "Exploded View"](#).

CAUTION:

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

Drain plug : Refer to [EM-100, "Exploded View"](#).

2. Refill with new engine oil.
Engine oil specification and viscosity: Refer to [MA-19, "Fluids and Lubricants"](#).
- ### CAUTION:
- The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.
 - Always use oil level gauge to determine the proper amount of engine oil in the engine.
3. Warm up engine and check area around drain plug and oil filter for engine oil leakage.
 4. Stop engine and wait for 10 minutes.
 5. Check the engine oil level. Refer to [LU-6, "Inspection"](#).

OIL FILTER

OIL FILTER : Removal and Installation

INFOID:000000001730854

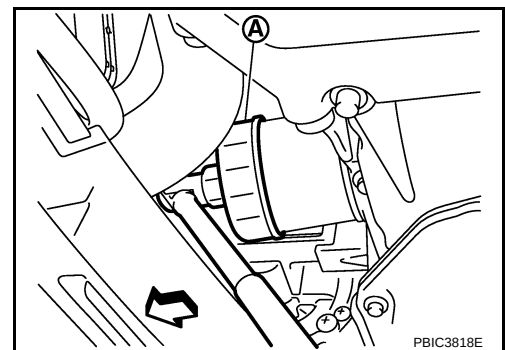
REMOVAL

- Using oil filter wrench [SST: KV10115801] (A), remove oil filter.

⇐ : Vehicle front

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.
- Completely wipe off any engine oil that adheres to engine and vehicle.



INSTALLATION

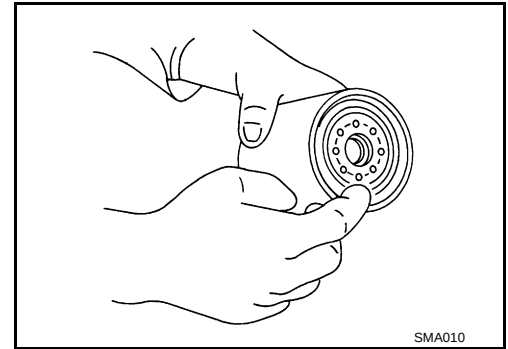
1. Remove foreign materials adhering to the oil filter installation surface.

MA

ENGINE MAINTENANCE (HR16DE)

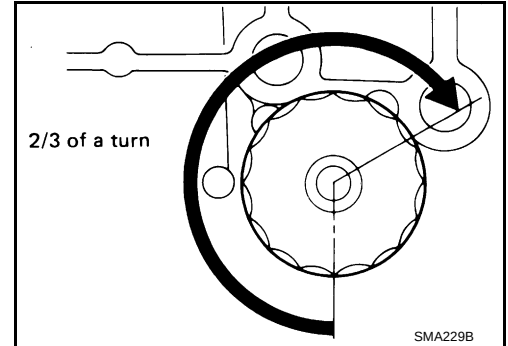
< ON-VEHICLE MAINTENANCE >

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)



OIL FILTER : Inspection

INFOID:000000001730855

INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to [LU-6, "Inspection"](#).
2. Start the engine, and check there is no leak of engine oil.
3. Stop the engine and wait for 10 minutes.
4. Check the engine oil level, and adjust the level. Refer to [LU-6, "Inspection"](#).

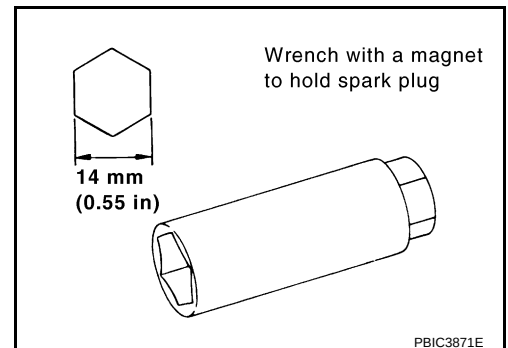
SPARK PLUG

SPARK PLUG : Removal and Installation

INFOID:000000001730851

REMOVAL

1. Remove intake manifold. Refer to [EM-29, "Removal and Installation"](#).
2. Remove ignition coil. Refer to [EM-47, "Removal and Installation"](#).
3. Remove spark plug with a spark plug wrench (commercial service tool).



INSPECTION AFTER REMOVAL

Use the standard type spark plug for normal condition.

Spark plug (Standard type): Refer to [MA-29, "SPARK PLUG : Inspection"](#).

CAUTION:

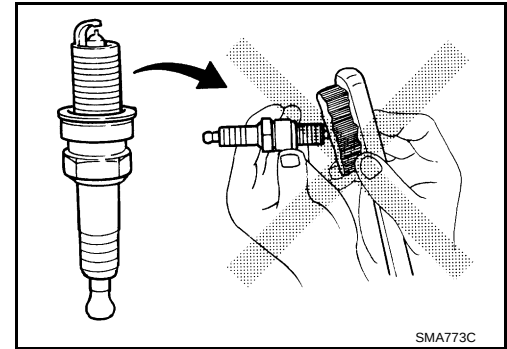
ENGINE MAINTENANCE (HR16DE)

< ON-VEHICLE MAINTENANCE >

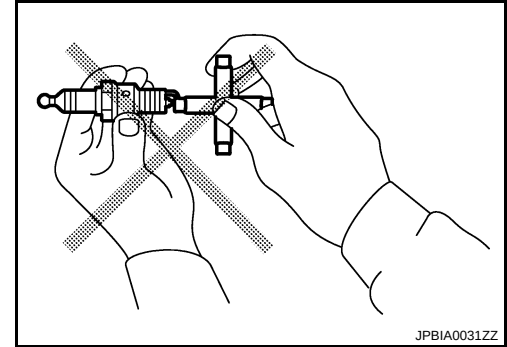
- Never drop or shock spark plug.
- Never use a wire brush for cleaning.
- If plug tip is covered with carbon, spark plug cleaner may be used.

Cleaner air pressure: Less than 588 kPa (6 kg/cm², 85 psi)

Cleaning time: Less than 20 seconds



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



INSTALLATION

Installation is the reverse order of removal.

Plug type : Platinum tipped
Make : NGK
Part number : PLZKAR6AP-11
Gap (nominal) : 1.1 mm (0.043 in)

SPARK PLUG : Inspection

INFOID:000000001277617

INSPECTION AFTER REMOVAL

Use the standard type spark plug for normal condition.

Spark plug (Standard type): : PLZKAR6AP-11

CAUTION:

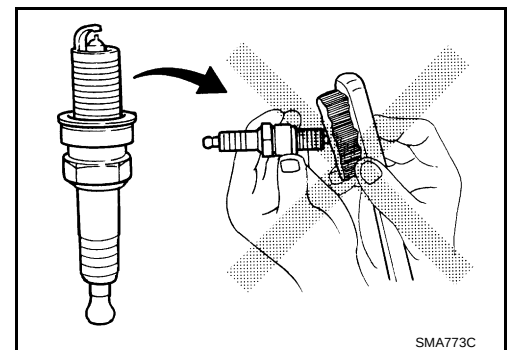
- Never drop or shock spark plug.
- Never use a wire brush for cleaning.
- If plug tip is covered with carbon, spark plug cleaner may be used.

Cleaner air pressure:

Less than 588 kPa (6 kg/cm², 85 psi)

Cleaning time:

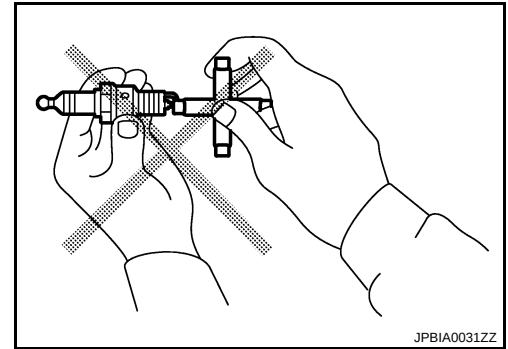
Less than 20 seconds



ENGINE MAINTENANCE (HR16DE)

< ON-VEHICLE MAINTENANCE >

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



EVAP VAPOR LINES

EVAP VAPOR LINES : Inspection

Refer to [FL-10. "Removal and Installation"](#) .

INFOID:000000001277618

ENGINE MAINTENANCE (MR18DE)

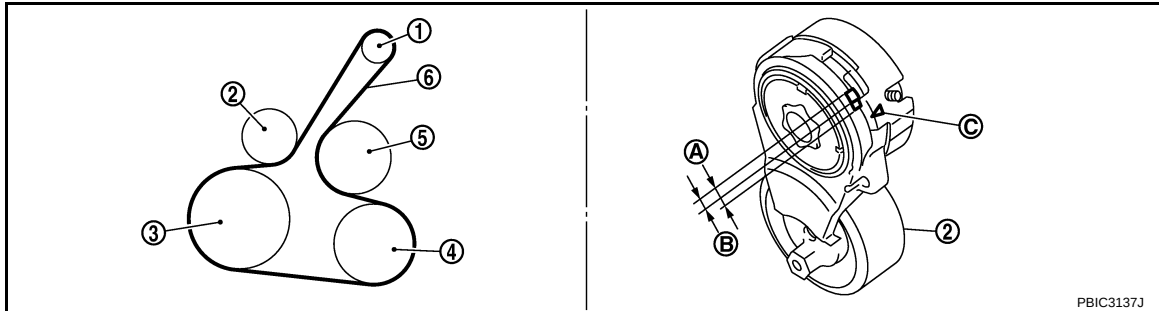
< ON-VEHICLE MAINTENANCE >

ENGINE MAINTENANCE (MR18DE)

DRIVE BELTS

DRIVE BELTS : Component

INFOID:000000001730859



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

DRIVE BELTS : Checking Drive Belts

INFOID:000000001730860

WARNING:

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

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

NOTE:

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

DRIVE BELTS : Tension Adjustment

INFOID:000000001730861

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

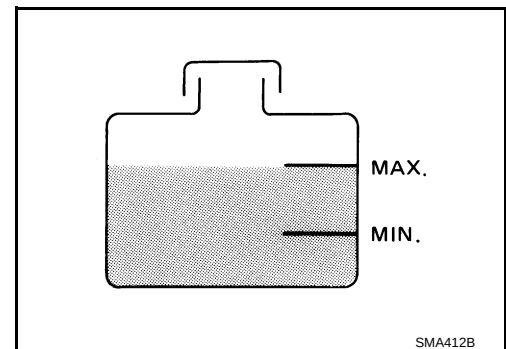
ENGINE COOLANT

ENGINE COOLANT : Inspection

INFOID:000000001730869

LEVEL CHECK

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



CHECKING COOLING SYSTEM FOR LEAKS

ENGINE MAINTENANCE (MR18DE)

< ON-VEHICLE MAINTENANCE >

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

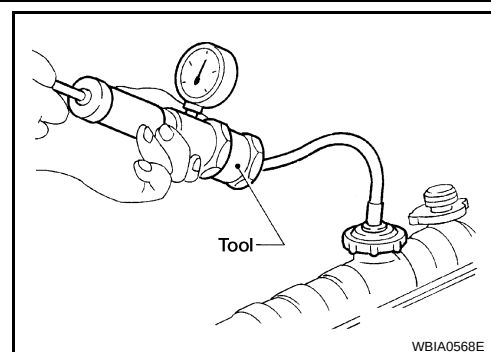
Testing pressure : 157 kPa (1.6 kg/cm², 23 psi)

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.



INFOID:000000001730870

ENGINE COOLANT : Changing Engine Coolant

WARNING:

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

DRAINING ENGINE COOLANT

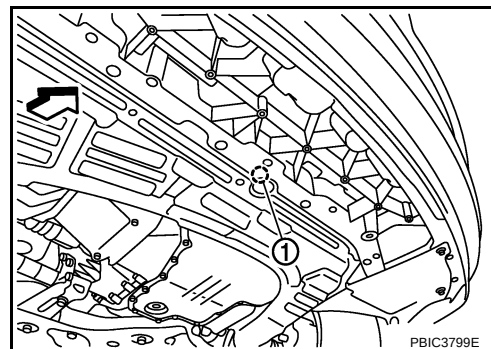
1. Open radiator drain plug (1) at the bottom of radiator, and then remove radiator cap.

- ⇐ Front

When drain all of engine coolant in the system, open water drain plug on cylinder block. Refer to [EM-211, "Component"](#).

CAUTION:

- Perform this step when engine is cold.
- Do not spill engine coolant on drive belt.



2. Remove reservoir tank as necessary, and drain engine coolant and clean reservoir tank before installing. Refer to [CO-35, "Changing Engine Coolant"](#).
3. Check drained engine coolant for contaminants such as rust, corrosion or discoloration. If contaminated, flush the engine cooling system. Refer to [CO-35, "Changing Engine Coolant"](#).

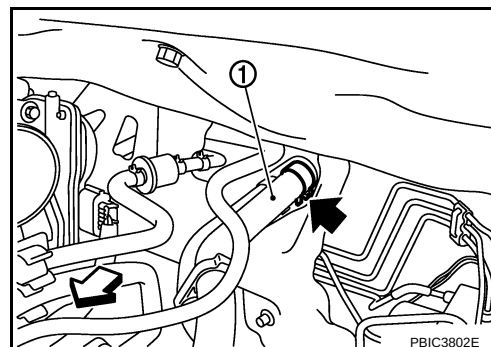
REFILLING ENGINE COOLANT

1. Install reservoir tank if removed.
2. Install radiator drain plug.
 - If water drain plug on cylinder block is removed, install and tighten it. Refer to [EM-211, "Component"](#).

CAUTION:

Be sure to clean radiator drain plug and install with new O-ring. Refer to [CO-40, "Component"](#).

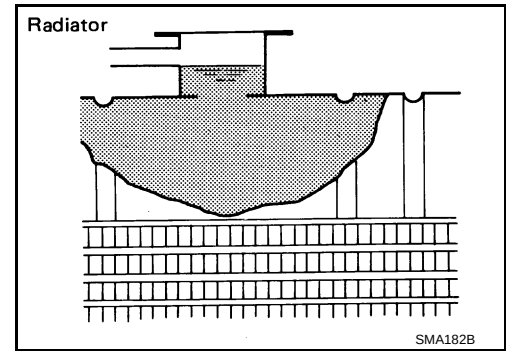
3. Make sure that each hose clamp has been firmly tightened.
4. Remove air duct assembly. Refer to [EM-154, "Component"](#).
5. Disconnect heater hose (1) at position (⇐) as shown.
 - ⇐ Front
 - Reposition heater hose as high as possible.



ENGINE MAINTENANCE (MR18DE)

< ON-VEHICLE MAINTENANCE >

6. Fill radiator and reservoir tank to specified level.
 - **Pour engine coolant through engine coolant filler neck slowly of less than 2 ℓ (2 1/8 US qt, 1-3/4 Imp qt) a minute to allow air in system to escape.**
 - **Use NISSAN Genuine Engine Coolant or equivalent mixed with water (distilled or demineralized). Fill cooling system to specification. Refer to [MA-19, "Fluids and Lubricants"](#).**
 - When engine coolant overflows disconnected heater hose, connect heater hose, and continue filling the engine coolant, if heater hose is disconnected.
 7. Install radiator cap.
 8. Install air duct assembly. Refer to [EM-154, "Component"](#).
 9. Warm up until opening thermostat. Standard for warming-up time is approximately 10 minutes at 3,000 rpm.
 - Make sure thermostat opening condition by touching radiator hose (lower) to see a flow of warm water.
- CAUTION:**
Watch water temperature gauge so as not to overheat the engine.
10. Stop engine and cool down to less than approximately 50°C (122°F).
 - Cool down using fan to reduce the time.
 - If necessary, refill radiator up to filler neck with engine coolant.
 11. Refill reservoir tank to "MAX" level line with engine coolant.
 12. Repeat steps 6 through 11 two or more times with radiator cap installed until engine coolant level no longer drops.
 13. Check cooling system for leaks with engine running.
 14. Warm up engine, and check for sound of engine 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.
 15. Repeat step 14 three times.
 16. If sound is heard, bleed air from cooling system by repeating steps 6 through 11 until engine coolant level no longer drops.



FLUSHING COOLING SYSTEM

1. Install reservoir tank if removed.
 2. Install radiator drain plug.
 - **If water drain plug on cylinder block is removed, close and tighten it. Refer to [EM-211, "Component"](#).**
- CAUTION:**
Be sure to clean radiator drain plug and install with new O-ring. Refer to [CO-40, "Component"](#).
3. Fill radiator and reservoir tank with water and reinstall radiator cap.
 4. Run engine and warm it up to normal operating temperature.
 5. Rev engine two or three times under no-load.
 6. Stop engine and wait until it cools down.
 7. Drain water from the cooling system. Refer to [CO-35, "Changing Engine Coolant"](#).
 8. Repeat steps 1 through 7 until clear water begins to drain from radiator.

RADIATOR

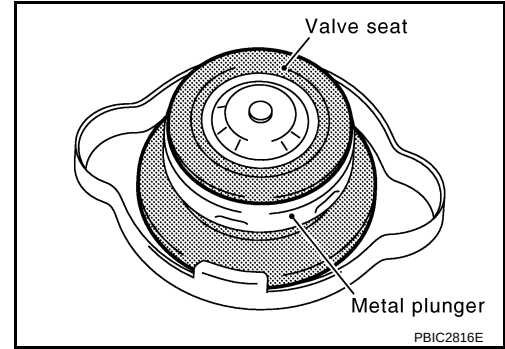
ENGINE MAINTENANCE (MR18DE)

< ON-VEHICLE MAINTENANCE >

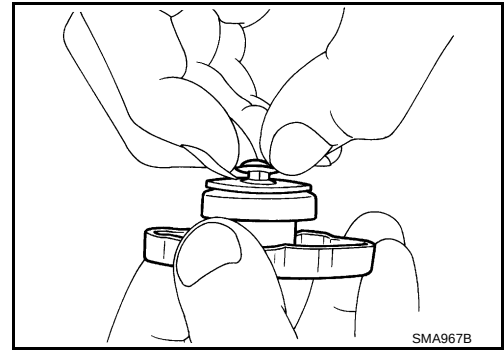
RADIATOR : Checking Radiator Cap

INFOID:000000001730871

- Check valve seat of radiator cap.
- Check if valve seat is swollen to the extent that the edge of the plunger cannot be seen when watching it vertically from the top.
- Check if valve seat has no soil and damage.



- Pull negative-pressure valve to open it, and make sure that it is completely closed when released.
- Make sure that there is no dirt or damage on the valve seat of radiator cap negative-pressure valve.
- Make sure that the valve operates properly in the opening and closing conditions.

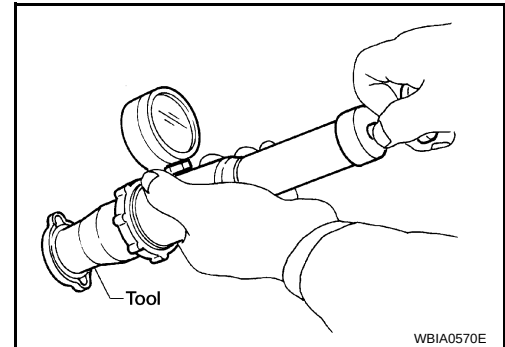


- Check radiator cap relief pressure using suitable tool.

Standard: 78 – 98 kPa (0.78 - 0.98 bar, 0.8 – 1.0 kg/cm², 11 – 14 psi)

Limit: 59 kPa (0.59 bar, 0.6 kg/cm², 9 psi)

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



- Replace radiator cap if there it does not comply to specifications to the above three checks.

CAUTION:

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

RADIATOR : Checking Radiator

INFOID:000000001730872

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

- Be careful not to bend or damage radiator fins.
 - When radiator is cleaned without removal, remove all surrounding parts such as cooling fan, radiator shroud and horns. Then tape 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 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/cm², 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.

FUEL LINES

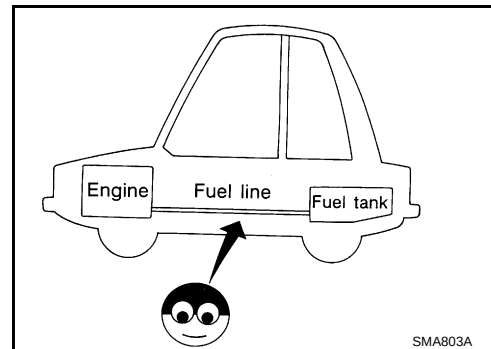
ENGINE MAINTENANCE (MR18DE)

< ON-VEHICLE MAINTENANCE >

FUEL LINES : Inspection

INFOID:000000001277628

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



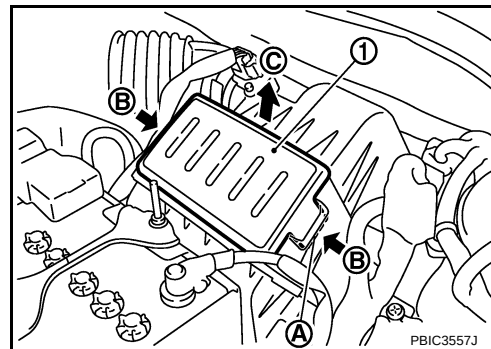
AIR CLEANER FILTER

AIR CLEANER FILTER : Removal and Installation

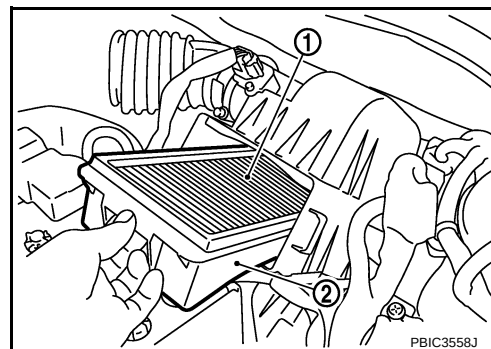
INFOID:000000001730862

REMOVAL

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



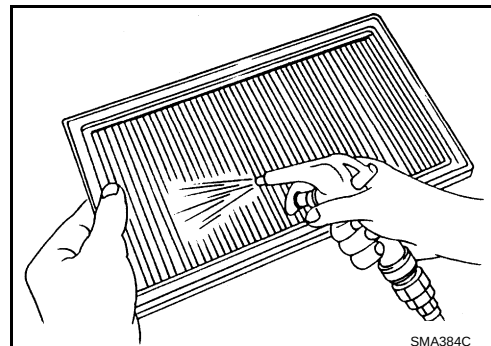
3. Remove air cleaner filter (1) and holder (2) assembly from the air cleaner case.
4. Remove the air cleaner filter (1) from the holder (2).



INSPECTION AFTER REMOVAL

It is necessary to clean air cleaner filter or replace it at the recommended intervals, more often under dusty conditions. Refer to [MA-7, "Periodic Maintenance"](#).

- Blow air into the back side of air cleaner filter until no objects spray out.



INSTALLATION

Installation is in the reverse order of removal.

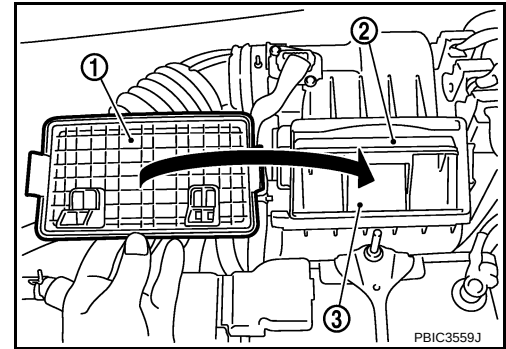
ENGINE MAINTENANCE (MR18DE)

< ON-VEHICLE MAINTENANCE >

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

2 : Air cleaner filter

3 : Holder



ENGINE OIL

ENGINE OIL : Inspection

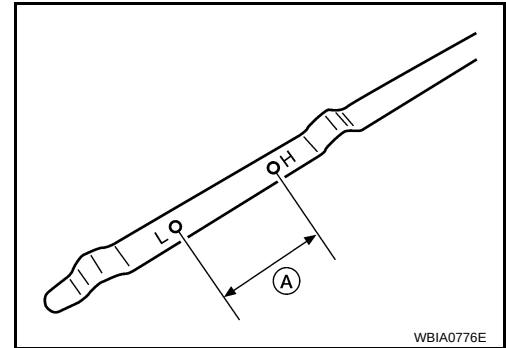
INFOID:000000001730867

ENGINE OIL LEVEL

NOTE:

Before starting engine, park vehicle on a level surface and check the engine oil level. If engine is already started, stop it and allow 10 minutes before checking.

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



ENGINE OIL APPEARANCE

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

ENGINE OIL LEAKAGE

Check for engine oil leakage around the following areas:

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

OIL PRESSURE CHECK

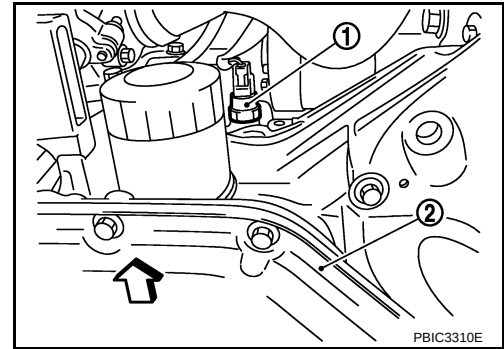
WARNING:

- Be careful not to burn yourself, as engine oil may be hot.
- For engine oil pressure check the transaxle should be in "Neutral position", and apply the parking brake securely.

ENGINE MAINTENANCE (MR18DE)

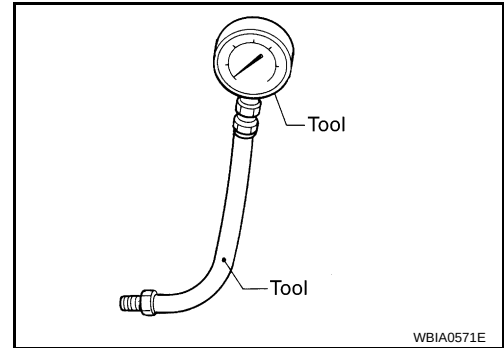
< ON-VEHICLE MAINTENANCE >

1. Disconnect harness connector at oil pressure switch (1), and remove oil pressure switch using a suitable tool.
 - Oil pan (lower) (2)
 - ← Front



2. Install oil pressure gauge and hose.

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



3. Check engine oil level. Refer to [LU-15, "Inspection"](#).
4. Start engine and warm it up to normal operating temperature.
5. Check oil pressure with engine running under no-load.

NOTE:

When engine oil temperature is low, engine oil pressure becomes high.

Engine oil pressure [Engine oil temperature at 80°C (176°F)]

Engine speed rpm	Approximate discharge pressure kPa (bar, kg/cm ² , psi)
Idle speed	More than 71.5 (0.70, 0.70, 10)
2,000	More than 200 (2.0, 2.0, 29)

If difference is extreme, check oil passage and oil pump for oil leaks.

6. After the inspections, install oil pressure switch as follows:
 - a. Remove old liquid gasket adhering to oil pressure switch and engine.
 - b. Apply liquid gasket and tighten oil pressure switch to specification.
Use Genuine Silicone RTV Sealant or equivalent. Refer to [GI-27, "Recommended Chemical Products and Sealants"](#).

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

- c. Check engine oil level. Refer to [LU-15, "Inspection"](#).
- d. After warming up engine, make sure there are no engine leaks of oil with running engine.

ENGINE OIL : Changing Engine Oil

INFOID:0000000001730866

WARNING:

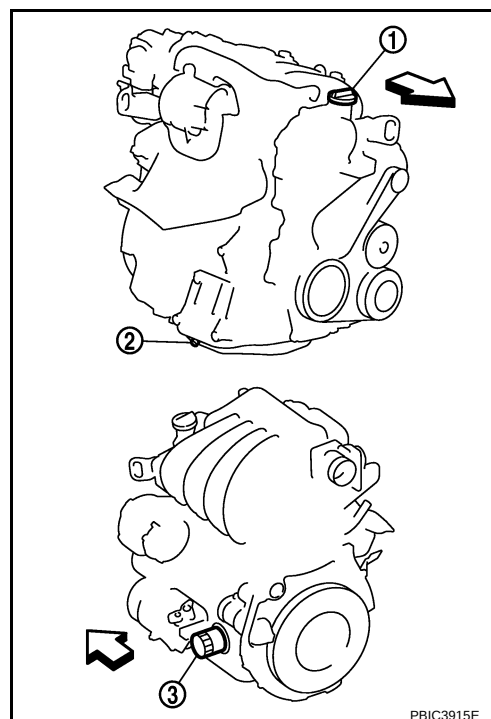
- Be careful not to burn yourself, as engine oil may be hot.
- Prolonged and repeated contact with used engine oil may cause skin cancer; try to avoid direct skin contact with used engine oil. If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.

1. Warm up engine, park vehicle on a level surface and check for engine oil leakage from engine components. Refer to [LU-15, "Inspection"](#).
2. Stop engine and wait for 10 minutes.

ENGINE MAINTENANCE (MR18DE)

< ON-VEHICLE MAINTENANCE >

3. Loosen oil filler cap (1) and then remove drain plug (2).
 - Oil filter (3)
 - ⇐ Engine front
4. Drain engine oil.
5. Install drain plug (2) with new washer. Refer to [EM-211, "Component"](#).
CAUTION:
Be sure to clean drain plug (2) and install with new washer.
6. Refill with new engine oil.
Refer to [MA-19, "Fluids and Lubricants"](#).
CAUTION:
 - The refill capacity depends on the engine oil temperature and drain time. Use these specifications for reference only.
 - Always use oil level gauge to determine the proper amount of engine oil in the engine.
7. Warm up engine and check area around drain plug (2) and oil filter (3) for engine oil leakage.
8. Stop engine and wait for 10 minutes.
9. Check the engine oil level. Refer to [LU-15, "Inspection"](#).



OIL FILTER

OIL FILTER : Removal and Installation

INFOID:0000000001730868

REMOVAL

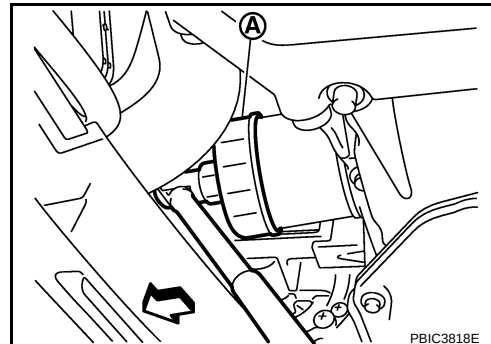
1. Remove oil filter using Tool (A).

Tool number : KV10115801 (J-38956)

- ⇐ Front

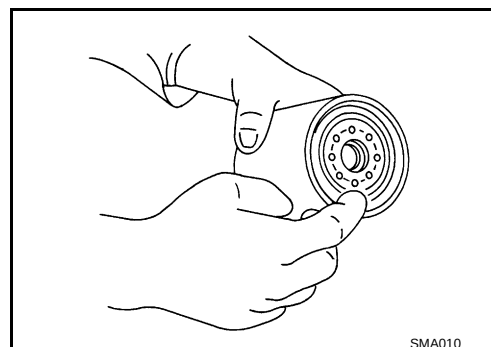
CAUTION:

- 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.

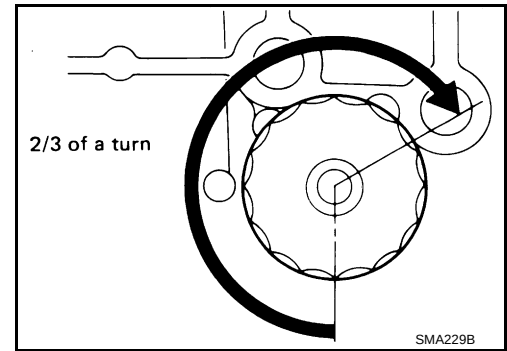


ENGINE MAINTENANCE (MR18DE)

< ON-VEHICLE MAINTENANCE >

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 [LU-6, "Inspection"](#).
2. Start engine, and make sure there is no leaks of engine oil.
3. Stop engine and wait for 10 minutes.
4. Check the engine oil level and adjust engine oil. Refer to [LU-6, "Inspection"](#).

OIL FILTER : Inspection

INFOID:000000001277633

INSPECTION AFTER INSTALLATION

1. Check the engine oil level. Refer to [MA-36, "ENGINE OIL : Inspection"](#).
2. Start the engine, and check there is no leak of engine oil.
3. Stop the engine and wait for 10 minutes.
4. Check the engine oil level, and adjust the level. Refer to [MA-36, "ENGINE OIL : Inspection"](#).

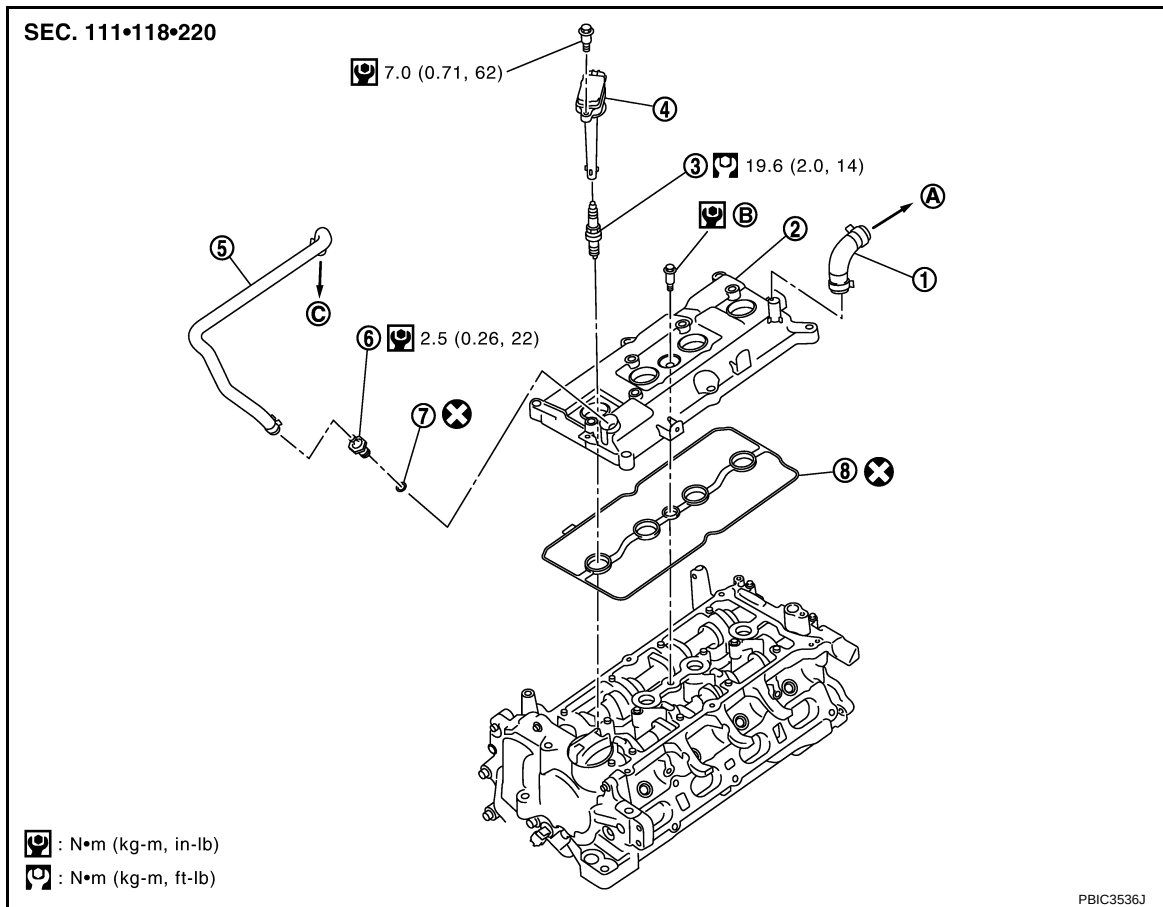
SPARK PLUG

ENGINE MAINTENANCE (MR18DE)

< ON-VEHICLE MAINTENANCE >

SPARK PLUG : Component

INFOID:000000001730863



SPARK PLUG : Removal and Installation

INFOID:000000001730864

REMOVAL

1. Remove intake manifold. Refer to [EM-156, "Removal and Installation"](#).

2. Remove ignition coil.

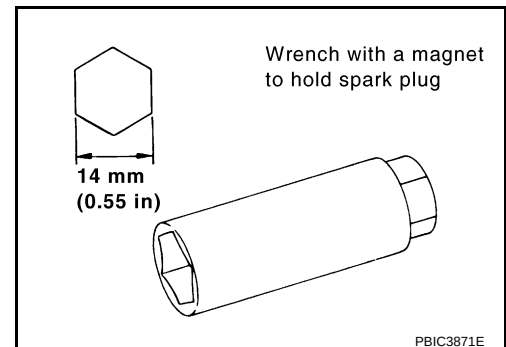
CAUTION:

- Handle it carefully and avoid impacts.
- Never disassemble.

3. Remove spark plug using suitable tool.

CAUTION:

Never drop or shock it.



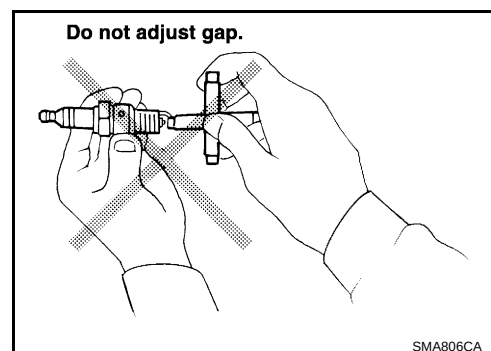
ENGINE MAINTENANCE (MR18DE)

< ON-VEHICLE MAINTENANCE >

INSPECTION AFTER REMOVAL

CAUTION:

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

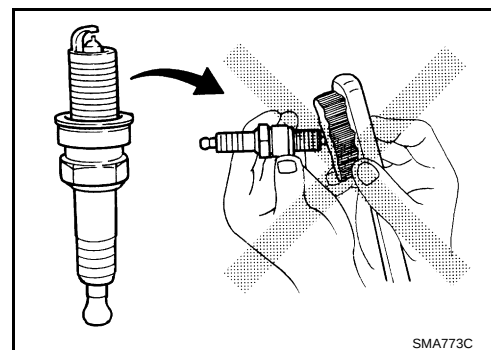


- If spark plug tip is covered with carbon, a spark plug cleaner may be used.

Cleaner air pressure : Less than 588 kPa (5.88 bar, 6 kg/cm², 85 psi)

Cleaning time : Less than 20 seconds

- Never use wire brush for cleaning spark plug.



INSTALLATION

1. Install spark plug using suitable tool.

Plug type : Platinum tipped

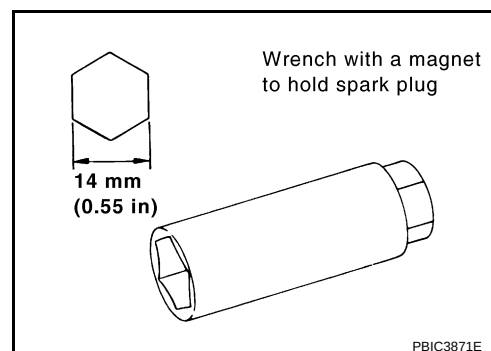
Make : NGK

Part number : PLZKAR6A-11

Gap (nominal) : 1.1 mm (0.043 in)

CAUTION:

Never drop or shock it.



2. Install ignition coil.

CAUTION:

- Handle it carefully and avoid impacts.
- Never disassemble.

3. Install intake manifold. Refer to [EM-156, "Removal and Installation"](#).

EVAP VAPOR LINES

EVAP VAPOR LINES : Inspection

Refer to [FL-10, "Removal and Installation"](#)

INFOID:000000001277636

ENGINE MAINTENANCE (K9K)

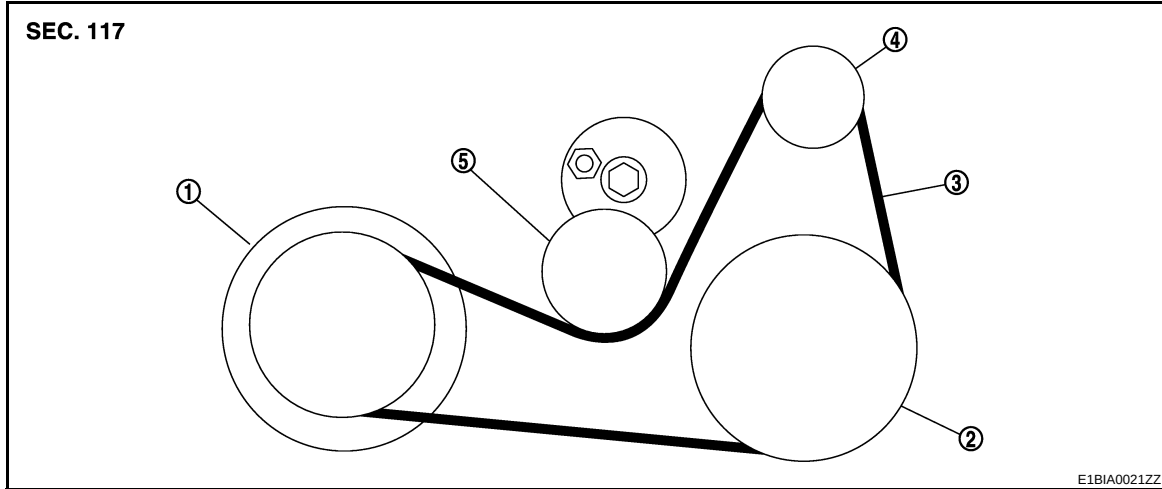
< ON-VEHICLE MAINTENANCE >

ENGINE MAINTENANCE (K9K)

DRIVE BELTS

DRIVE BELTS : Exploded View

INFOID:000000001730873



- | | | |
|----------------------|------------------------------|---------------|
| 1. Crankshaft pulley | 2. A/C compressor | 3. Drive belt |
| 4. Generator | 5. Drive belt auto-tensioner | |

DRIVE BELTS : Inspection and Adjustment

INFOID:000000001730874

INSPECTION

WARNING:

Be sure to perform when the engine is stopped.

1. Inspect drive belt for cracks, fraying, wear and oil. Replace drive belt if necessary.
2. Manually evaluate the drive belt tension (tension cannot be measured using frequency meter).
3. Replace drive belt when tension is beyond normal operating limit.

CAUTION:

Auto-tensioner must be replaced with a new one when the belt is replaced.

ADJUSTMENT

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

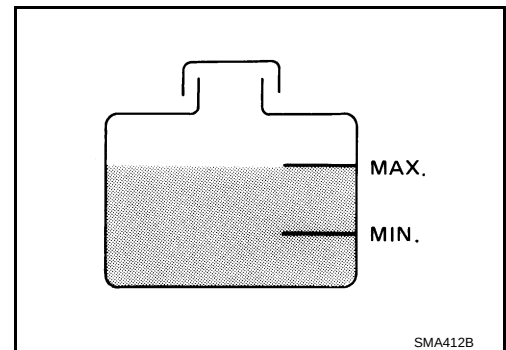
ENGINE COOLANT

ENGINE COOLANT : Inspection

INFOID:000000001730880

LEVEL CHECK

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



CHECKING COOLING SYSTEM FOR LEAKS

ENGINE MAINTENANCE (K9K)

< ON-VEHICLE MAINTENANCE >

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

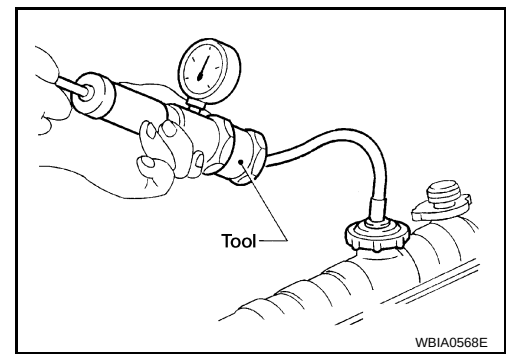
Testing pressure : 157 kPa (1.6 kg/cm², 23 psi)

WARNING:

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

CAUTION:

Higher pressure than specified may cause radiator damage.



ENGINE COOLANT : Draining

INFOID:000000001730881

WARNING:

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

1. Remove engine undercover using power tool.
2. Disconnect radiator hose (lower) from radiator and remove reservoir tank cap.
When draining all of engine coolant in the system, open water drain plug on cylinder block. Refer to [EM-314, "Exploded View"](#).

CAUTION:

- Perform this step when engine is cold.
 - Do not spill engine coolant on drive belt.
3. Remove air relief plug from water outlet. Refer to [EM-302, "Exploded View"](#).
 4. Remove reservoir tank as necessary, and drain engine coolant and clean reservoir tank before installing.
 5. Check drained coolant for contaminants such as rust, corrosion or discoloration.
If contaminated, flush engine cooling system. Refer to [CO-59, "Flushing"](#).

ENGINE COOLANT : Refilling

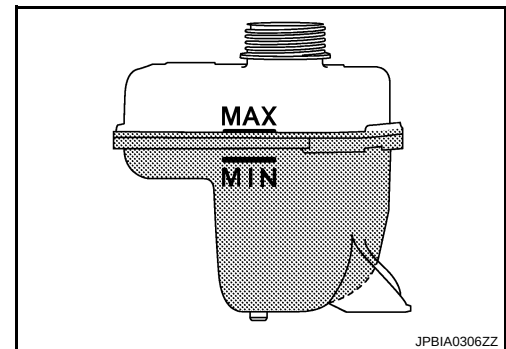
INFOID:0000000001730882

- Before starting work, turn off the automatic air conditioner and the blower motor.
1. Install reservoir tank if removed, lower radiator hose and air relief plug.
 - If water drain plug on cylinder block is removed, install and tighten it. Refer to [EM-314, "Exploded View"](#).
 2. Fill reservoir tank slowly with coolant until coolant spills from the air relief hole.
 - Put a cloth under the air relief plug to prevent engine coolant from dampening the crankshaft position sensor.
 - Pour coolant to the MAX level line of the reservoir tank at a rate of 2 liter (1-3/4 lamp qt.)/min. or lower.
 3. Close the air relief plug.

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 Insane Genuine Engine Coolant or equivalent mixed with water (distilled or demineralized). Refer to [MA-21, "Engine Coolant Mixture Ratio"](#).



Engine coolant capacity
(With reservoir tank at MAX)

: Refer to [MA-19, "Fluids and Lubricants"](#).

Reservoir tank capacity

: Refer to [MA-19, "Fluids and Lubricants"](#).

ENGINE MAINTENANCE (K9K)

< ON-VEHICLE MAINTENANCE >

4. Start engine without closing reservoir tank cap and keep engine racing at 1,500 rpm for about 2-3 minutes. If necessary, pour engine coolant up to MAX level.
 - **If coolant overflows reservoir tank hole, install filler cap.**
 - **Watch engine coolant temperature gauge so as not overheat the engine.**
- WARNING:**
 - **Be careful not to be scalded with hot engine coolant or vacuum pump when operating.**
 - **Radiator fan blade can start at any time and cause personal injuries.**
5. Turn off the engine and loosen air relief plug until coolant spills from air relief hole.
6. Close the air relief plug and run the engine at 2,000 rpm until the upper hose becomes hot and radiator fan operates. Leave the engine running approximately 5 minutes at idle speed and check for sound of coolant flow while running engine from idle up to 3,000 rpm.
 - Sound may be noticeable at heater water cock.
7. If sound is heard, bleed air from cooling system by repeating steps 4 to 6 until coolant level no longer drops.
 - Check the radiator lower hose for any signs of leakage.
8. Turn off the engine and let it cool down.
 - Cool down using a fan to reduce the time.
9. After cooling period, loosen the air relief plug and check if coolant spills from the air relief hole. if not, remove the air relief plug until the coolant spills, and then close the relief air plug. Bleed air from cooling system by repeating steps 6 to 10 until the coolant spills immediately.
10. Check the engine coolant level when engine is cool and refill to MAX level line if the level is lower.
 - Clean excess coolant from engine.
11. Check that the reservoir tank cap is tightened.

ENGINE COOLANT : Flushing

INFOID:000000001730883

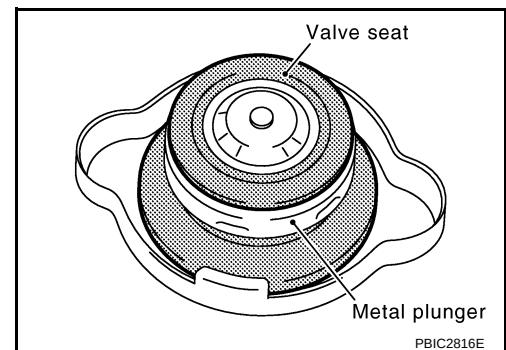
1. Install reservoir tank if removed.
 - **If water drain plug on cylinder block is removed, close and tighten it. Refer to [EM-314, "Exploded View"](#).**
2. Fill reservoir tank with water until water spills from the air relief hole, then close air relief plug. Reinstall reservoir tank cap.
3. Run engine and warm it up to normal operating temperature.
4. Rev engine two or three times under no-load.
5. Stop engine and wait until it cools down.
6. Drain water.
7. Repeat steps 1 through 6 until clear water begins to drain from radiator.
8. Blow compressed air into cooling circuit through the reservoir tank valve hole to drain all the water.

RADIATOR

RADIATOR : Checking Radiator Cap

INFOID:000000001730884

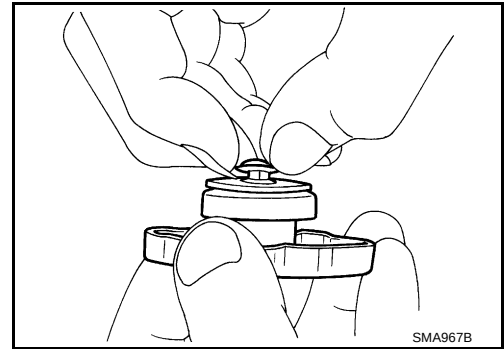
- Check valve seat of radiator cap.
- Check if valve seat is swollen to the extent that the edge of the plunger cannot be seen when watching it vertically from the top.
- Check if valve seat has no soil and damage.



ENGINE MAINTENANCE (K9K)

< ON-VEHICLE MAINTENANCE >

- Pull negative-pressure valve to open it, and make sure that it is completely closed when released.
- Make sure that there is no dirt or damage on the valve seat of radiator cap negative-pressure valve.
- Make sure that the valve operates properly in the opening and closing conditions.

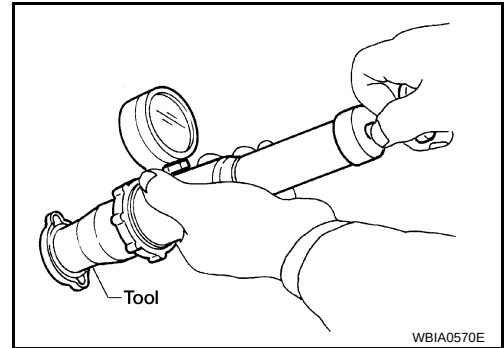


- Check radiator cap relief pressure using suitable tool.

Standard: 78 – 98 kPa (0.78 - 0.98 bar, 0.8 – 1.0 kg/cm², 11 – 14 psi)

Limit: 59 kPa (0.59 bar, 0.6 kg/cm², 9 psi)

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



- Replace radiator cap if there it does not comply to specifications to the above three checks.

CAUTION:

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

RADIATOR : Checking Radiator

INFOID:000000001730885

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

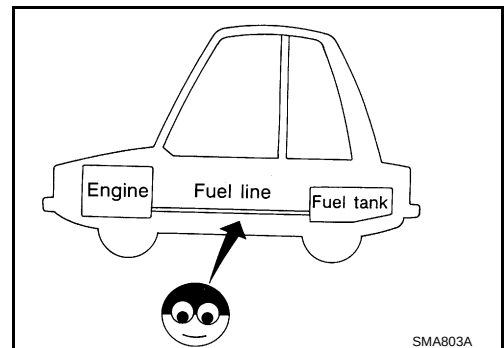
- Be careful not to bend or damage radiator fins.
 - When radiator is cleaned without removal, remove all surrounding parts such as cooling fan, radiator shroud and horns. Then tape harness and connectors to prevent water from entering.
1. Apply water by hose to the back side of the radiator core vertically downward.
 2. Apply water again to all radiator core 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/cm², 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.

FUEL LINES

FUEL LINES : Inspection

INFOID:000000001277645

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



ENGINE MAINTENANCE (K9K)

< ON-VEHICLE MAINTENANCE >

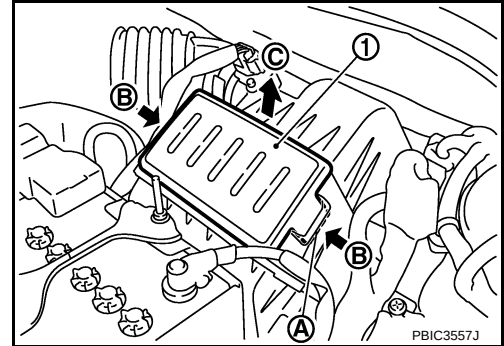
AIR CLEANER FILTER

AIR CLEANER FILTER : Removal and Installation

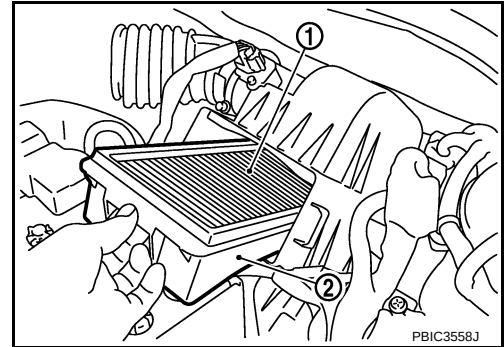
INFOID:000000001730875

REMOVAL

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



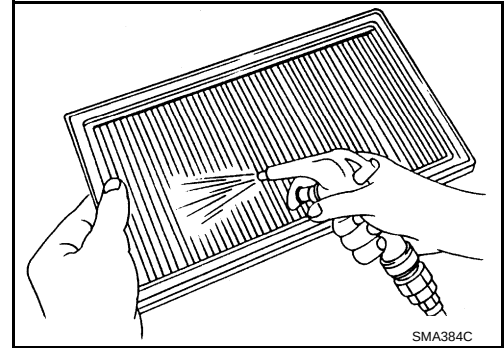
3. Remove air cleaner filter (1) and holder (2) assembly from the air cleaner case.
4. Remove the air cleaner filter (1) from the holder (2).



INSPECTION AFTER REMOVAL

It is necessary to clean air cleaner filter or replace it at the recommended intervals, more often under dusty conditions. Refer to [MA-7. "Periodic Maintenance"](#).

- Blow air into the back side of air cleaner filter until no objects spray out.



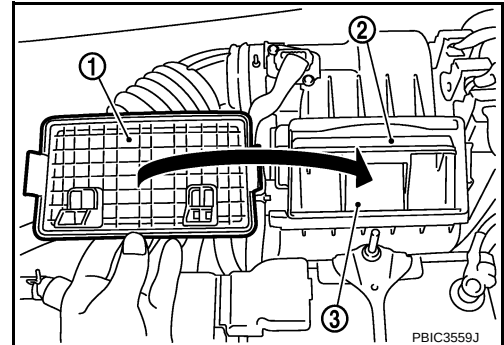
INSTALLATION

Installation is in the reverse order of removal.

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

2 : Air cleaner filter

3 : Holder



ENGINE OIL

ENGINE MAINTENANCE (K9K)

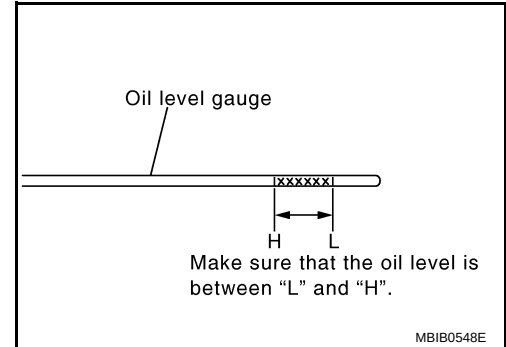
< ON-VEHICLE MAINTENANCE >

ENGINE OIL : Inspection

INFOID:000000001730878

OIL LEVEL AND MUDDINESS

- Before starting the engine, check the oil level placing the vehicle on a level surface. If the engine is already started, stop it and allow 10 minutes before checking.
- Make sure the oil level is within the range shown.
- If it is out of range, adjust it.
- Check the oil for white turbidity or remarkable contamination.
- If the oil becomes turbid and white, it is highly probable that it is contaminated with coolant. Find the cause and repair.



OIL LEAKAGE

Check for oil leakage around the following area.

- Oil pan
- Oil pan drain plug
- Oil pressure switch
- Oil filter bracket
- Vacuum pump
- Oil pump housing
- Mating surface between cylinder block and cylinder head
- Mating surface between cylinder head and rocker cover
- Oil cooler
- Crankshaft oil seals

OIL PRESSURE CHECK

WARNING:

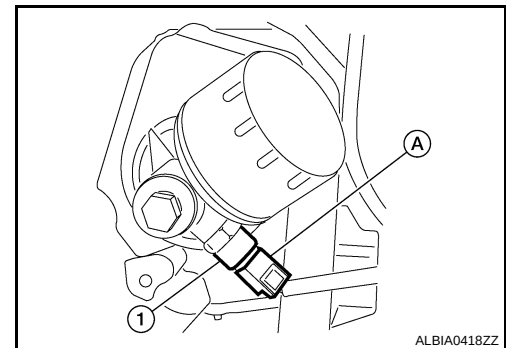
- **Be careful not to burn yourself, as the engine oil is hot.**
- **Oil pressure check should be done in Neutral "N" position.**

1. Check the engine oil level.
2. Remove engine undercover using power tool.
3. Disconnect the electrical connector (A) and remove the oil pressure switch (1) to connect the oil pressure gauge [SST: KV113E0020 (Mot. 836-05)].
4. After warming up the engine, make sure oil pressure corresponding to the engine speed is produced.

Idle speed : Refer to [LU-33, "Engine Oil Pressure"](#).

3000 rpm : Refer to [LU-33, "Engine Oil Pressure"](#).

5. After checking, install the oil pressure switch (1) as follows.
 - a. Remove old sealant adhering to the oil pressure switch (1) and engine.
 - b. Apply thread sealant.
Use Genuine Liquid Gasket or equivalent.



Oil pressure switch:

: **25 N·m (2.55 kg-m, 18.4 ft-lb)**

6. Start engine and check for oil leakage.

ENGINE OIL : Draining

INFOID:000000001730876

WARNING:

- **Be careful not to burn yourself, as the engine oil is hot.**

ENGINE MAINTENANCE (K9K)

< ON-VEHICLE MAINTENANCE >

- **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 the vehicle on a level surface.
2. Warm up engine, and check for oil leakage from engine components.
3. Stop engine and wait for 10 minutes.
4. Loosen oil filler cap.
5. Remove drain plug and then drain engine oil.

ENGINE OIL : Refilling

INFOID:000000001730877

1. Refill with new engine oil.

Oil capacity (Approximate) : Refer to [MA-19, "Fluids and Lubricants"](#).

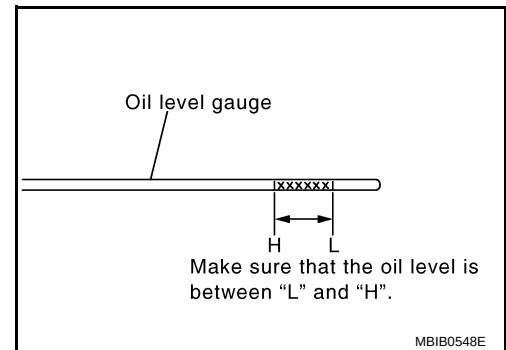
- The refill capacity depends on the oil temperature and drain time. Use these specifications for reference only. Always use the dipstick to determine when the proper amount of oil is in the engine.

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 determine when the proper amount of oil is in the engine.

2. Warm up engine and check area around drain plug and oil filter for oil leakage.
3. Stop engine and wait for 10 minutes.
4. Check oil level and add engine oil as necessary. Refer to [LU-26, "Inspection"](#).



OIL FILTER

OIL FILTER : Replacement

INFOID:000000001730879

1. Remove engine undercover using power tool.
2. Using an oil filter wrench [SST: KV113C0010 (Mot. 1329)], remove oil filter.

CAUTION:

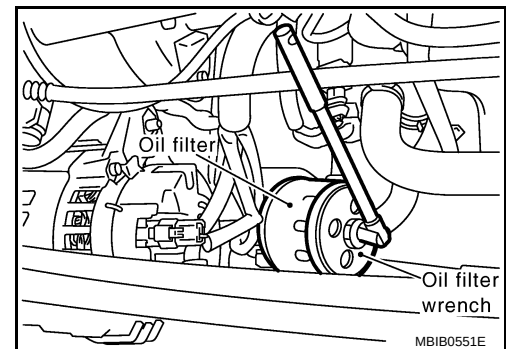
- **Be careful not to get burned when the engine and engine oil are hot.**
- **When removing, prepare a shop cloth to absorb any oil leakage or spillage.**
- **Do not allow engine oil to adhere to the drive belts.**
- **Completely wipe off any oil that adhere to the engine and the vehicle.**

3. Remove foreign materials adhering to the oil filter installation surface.

4. Install oil filter bracket to oil cooler.

CAUTION:

Install oil filter bracket, positioning lug in the hole of oil cooler.



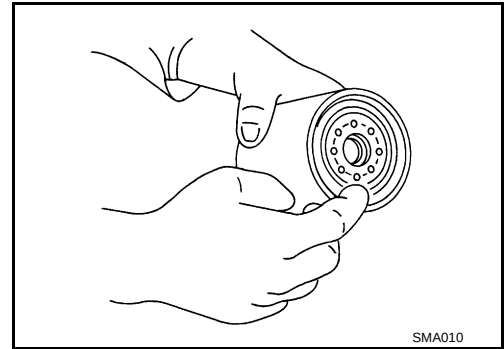
ENGINE MAINTENANCE (K9K)

< ON-VEHICLE MAINTENANCE >

5. Apply engine oil to the oil seal contact surface of the new oil filter.
6. Install the oil filter until it comes into contact with the oil seal on the engine bracket.
7. Using an oil filter wrench [SST: KV113C0010 (Mot. 1329)], tighten oil filter.

Oil filter : 14 N·m (1.4 kg-m, 10 ft-lb)

8. After warming up the engine, check for engine oil leakage.
9. Check oil level and add engine oil as necessary. Refer to [MA-47](#), "[ENGINE OIL : Inspection](#)".



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MA

CHASSIS AND BODY MAINTENANCE

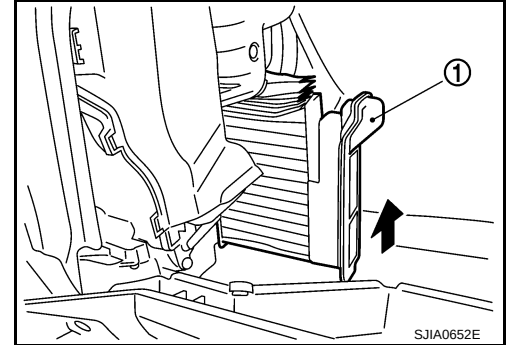
< ON-VEHICLE MAINTENANCE >

CHASSIS AND BODY MAINTENANCE

Air Conditioner Filter

INFOID:000000001730893

1. Remove the instrument lower finisher and instrument lower cover (LH) for LHD only. Refer to [IP-23, "Disassembly and Assembly"](#).
2. Remove the glove box assembly and instrument lower cover (RH) for RHD only. Refer to [IP-23, "Disassembly and Assembly"](#).
3. Compress the air conditioner filter (1) downward while sliding it to the RH side of the vehicle to release the upper pawl.
4. Move the bottom of air conditioner filter (1) upward as shown to release the bottom tab, then remove it.

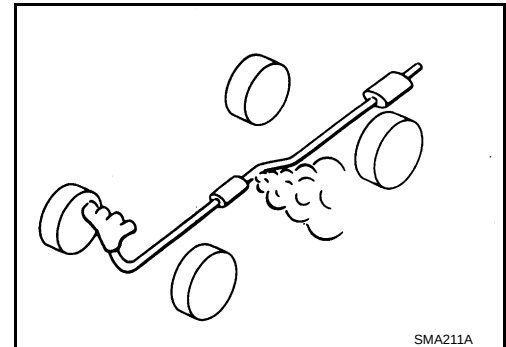


5. Replace the air conditioner filter with new one and install the new filter in the A/C unit assembly.
CAUTION:
Make sure that the air conditioner filter lower tab is fully seated, and that the air conditioner upper pawl is locked into place securing the new filter into the A/C unit assembly.
6. Install the glove box assembly and instrument lower cover (RH) for RHD only. Refer to [IP-23, "Disassembly and Assembly"](#).
7. Install the instrument lower finisher and instrument lower cover (LH) for LHD only. Refer to [IP-23, "Disassembly and Assembly"](#).

Checking Exhaust System

INFOID:000000001730894

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



Checking Clutch Fluid Level and Leaks

INFOID:000000001730897

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

Checking Clutch System

INFOID:000000001730898

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

Checking M/T Oil

INFOID:000000001730899

OIL LEAKAGE AND OIL LEVEL

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

CHASSIS AND BODY MAINTENANCE

< ON-VEHICLE MAINTENANCE >

2. Remove filler plug (1) and check oil level at filler plug hole as shown.

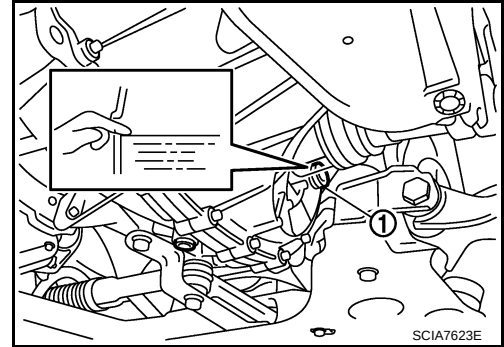
CAUTION:

Do not start engine while checking oil level

3. Install a new gasket onto filler plug (1) and install it into transaxle. Tighten filler plug to specification. Refer to [EM-166](#), "Component".

CAUTION:

Do not reuse gasket.



INFOID:000000001730900

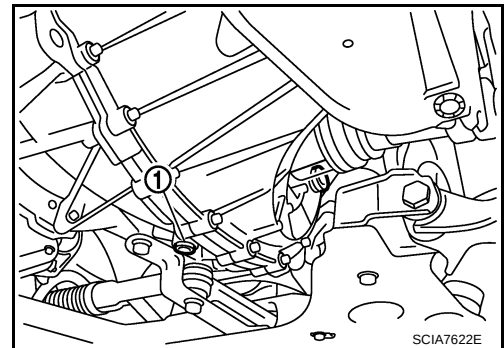
Changing M/T Oil

DRAINING

1. Start engine and let it run to warm up transaxle.
2. Stop engine. Remove drain plug (1) and drain oil.
3. Install a new gasket onto drain plug (1) and install it into transaxle. Tighten drain plug to specification. Refer to [TM-628](#), "Exploded View" (RS5F91R) or [TM-672](#), "Exploded View" (RS6F94R).

CAUTION:

Do not reuse gasket.



FILLING

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

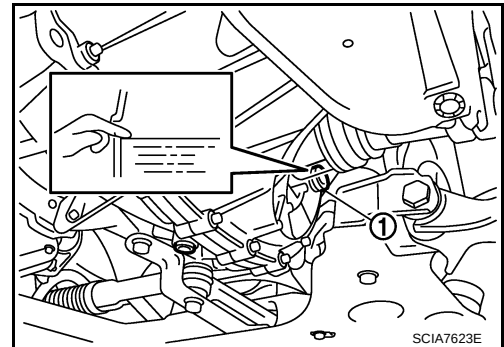
Oil grade and capacity

: Refer to [MA-19](#), "Fluids and Lubricants"

2. After refilling oil, check oil level. Install a new gasket on filler plug (1), then install it into transaxle. Tighten filler plug to specification. Refer to [TM-628](#), "Exploded View" (RS5F91R) or [TM-672](#), "Exploded View" (RS6F94R).

CAUTION:

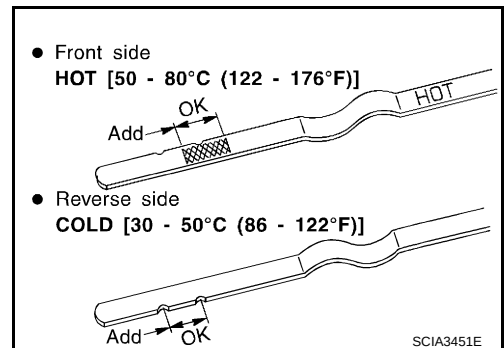
Do not reuse gasket.



Checking A/T Fluid: RE4F03B

INFOID:000000001730901

1. Warm up engine.
2. Check for A/T fluid leakage.
3. Before driving, A/T fluid level can be checked at A/T fluid temperatures of 30 to 50°C (86 to 122°F) using the "COLD" range on A/T fluid level gauge.
 - a. Park vehicle on level surface and set parking brake.
 - b. Start engine and move selector lever through each gear position. Leave selector lever in "P" position.
 - c. Check A/T fluid level with engine idling.



CHASSIS AND BODY MAINTENANCE

< ON-VEHICLE MAINTENANCE >

- d. Remove A/T fluid level gauge and wipe clean with lint-free cloth.

CAUTION:

When wiping the A/T fluid level gauge, always use lint-free cloth.

- e. Re-insert A/T fluid level gauge into A/T fluid charging pipe as far as it will go.

CAUTION:

Firmly fix the A/T fluid level gauge to the A/T fluid charging pipe using the stopper attached.

- f. Remove A/T fluid level gauge and note reading. If reading is at low side of range, add A/T fluid to the A/T fluid charging pipe.

CAUTION:

Do not overfill.

4. Drive vehicle for approximately 5 minutes.

5. Re-check A/T fluid level at A/T fluid temperatures of 50 to 80°C (122 to 176°F) using "HOT" range on A/T fluid level gauge.

CAUTION:

• **When wiping the A/T fluid level gauge, always use lint-free cloth.**

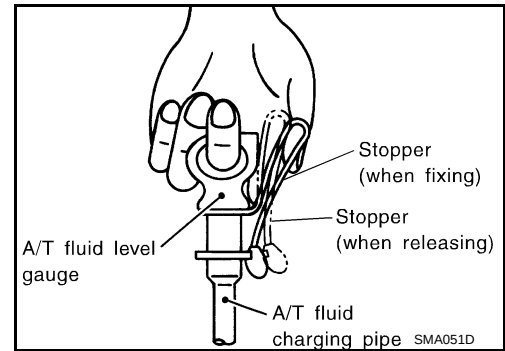
• **Firmly fix the A/T fluid level gauge to the A/T fluid charging pipe using the stopper attached.**

6. Check A/T fluid condition and make any necessary repairs. Refer to [TM-171, "Checking A/T Fluid"](#) (TYPE 1) or [TM-473, "Checking A/T Fluid"](#) (TYPE 2). If the A/T fluid contains frictional material (clutches, bands, etc.), or if the A/T is repaired, overhauled, or replaced, inspect and clean the A/T fluid cooler mounted in the radiator. Refer to [TM-172, "A/T Fluid Cooler Cleaning"](#) (TYPE 1) or [TM-474, "A/T Fluid Cooler Cleaning"](#) (TYPE 2).

7. Install the removed A/T fluid level gauge into the A/T fluid charging pipe.

CAUTION:

Firmly fix the A/T fluid level gauge to the A/T fluid charging pipe using the stopper attached.



Changing A/T Fluid: RE4F03B

INFOID:0000000001730902

1. Warm up A/T fluid.
2. Stop engine.
3. Drain A/T fluid by removing the drain plug. Reinstall the drain plug to the specified torque.

CAUTION:

Do not reuse drain plug gasket.

Drain plug: Refer to [TM-210, "Exploded View"](#) (TYPE 1) or [TM-503, "Exploded View"](#) (TYPE 2).

4. Refill the transaxle with new specified A/T fluid through the A/T fluid charging pipe. Always refill the transaxle with the same volume of A/T fluid that was drained out.

Fluid grade and capacity: Refer to [MA-19, "Fluids and Lubricants"](#).

5. Run engine at idle speed for 5 minutes.
6. Check A/T fluid level and condition. Refer to [TM-171, "Checking A/T Fluid"](#) (TYPE 1) or [TM-473, "Checking A/T Fluid"](#) (TYPE 2).

Checking A/T Fluid: RSF91R

INFOID:0000000001730929

Changing A/T Fluid: RS9F94R

INFOID:0000000001730930

DRAINING

1. Start engine and let it run to warm up transaxle.

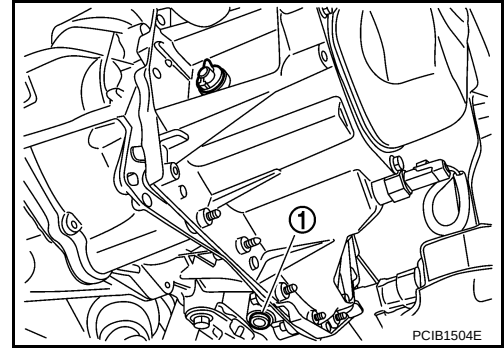
CHASSIS AND BODY MAINTENANCE

< ON-VEHICLE MAINTENANCE >

2. Stop engine. Remove drain plug (1) and drain oil.
3. Set a new gasket on drain plug (1) and install it to transaxle and tighten drain plug to the specified torque. Refer to Exploded View.

CAUTION:

Do not reuse gasket.



REFILLING

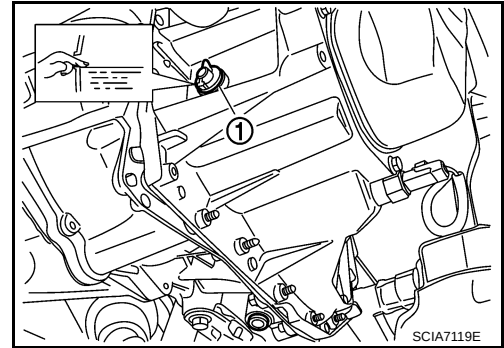
1. Remove filler plug (1). Fill with new oil until oil level reaches the specified limit near filler plug hole as shown.

Oil grade and capacity : Refer to [MA-19, "Fluids and Lubricants"](#).

2. After refilling oil, check oil level.
3. Set a new gasket on filler plug (1), then install it to transaxle and tighten to the specified torque. Refer to [TM-635, "Exploded View"](#).

CAUTION:

Do not reuse gasket.



Balancing Wheels

INFOID:000000001730925

Adjust wheel balance using road wheel center.

CAUTION:

- Be careful not to scratch the road wheel during removal.
- Use clip-on type wheel balance weights only.

Wheel balance (Maximum allowable unbalance):

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

Rotation

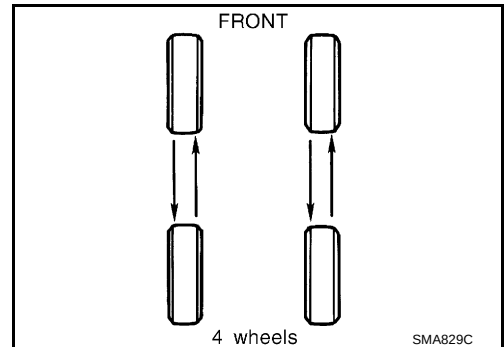
INFOID:000000001730926

- Follow the maintenance schedule for tire rotation service intervals. Refer to [MA-7, "Periodic Maintenance"](#).
- Do not include the T-type spare tire when rotating tires.

CAUTION:

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

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



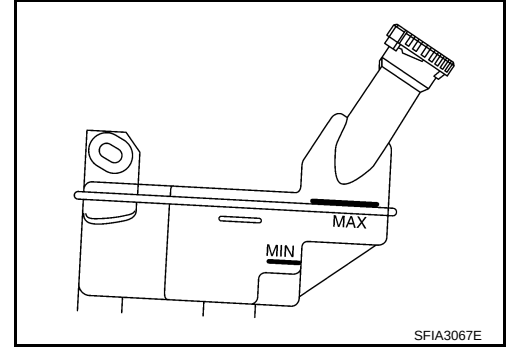
CHASSIS AND BODY MAINTENANCE

< ON-VEHICLE MAINTENANCE >

Checking Brake Fluid Level and Leaks

INFOID:000000001730905

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

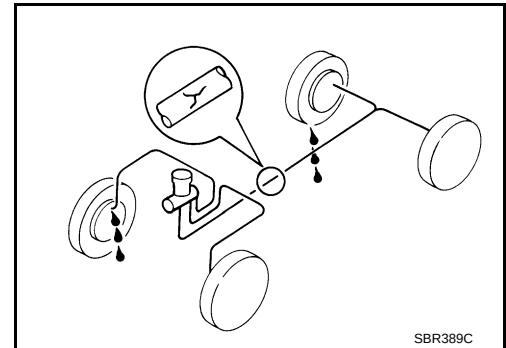


SFIA3067E

Checking Brake Line and Cables

INFOID:000000001730906

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

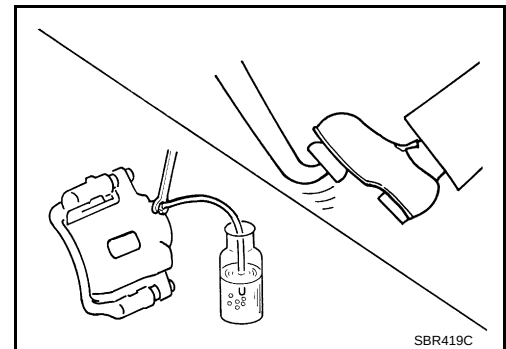


SBR389C

Changing Brake Fluid

INFOID:000000001730907

1. Drain brake fluid from each bleed valve.
2. Refill until new brake fluid comes out from each bleed valve. Use same procedure as in bleeding hydraulic system to refill brake fluid.
Refer to [BR-8, "Bleeding Brake System"](#).
 - Refill with recommended Genuine Brake Fluid or equivalent DOT 3 (US FMVSS No. 116).
Refer to [MA-19, "Fluids and Lubricants"](#).
 - Never reuse drained brake fluid.
 - Be careful not to splash brake fluid on painted areas.



SBR419C

Drain and Refill

INFOID:000000001730927

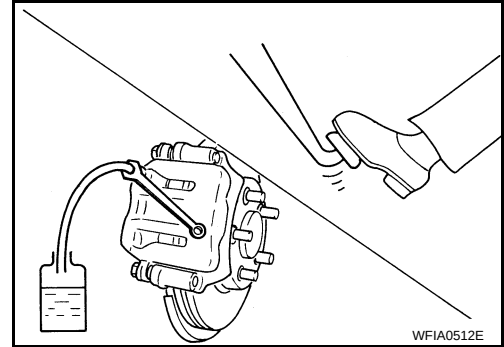
CAUTION:

- Refill using recommended brake fluid. Refer to [MA-19, "Fluids and Lubricants"](#).
 - Never reuse drained brake fluid.
 - Be careful not to splash brake fluid on painted areas; it may cause paint damage. If brake fluid is splashed on painted areas, immediately wipe them with cloth and wash it away with water.
 - Before working, disconnect connectors of ABS actuator and electric unit (control unit) or battery cable from the negative terminal.
1. Connect a vinyl tube to bleed valve.

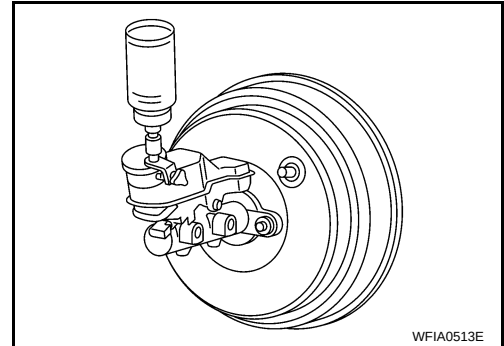
CHASSIS AND BODY MAINTENANCE

< ON-VEHICLE MAINTENANCE >

2. Depress the brake pedal, loosen the bleed valve, and gradually remove the brake fluid.



3. Clean inside of reservoir tank, and refill with new brake fluid.
4. Loosen bleed valve, depress brake pedal slowly to full stroke and then release it. Repeat the procedure every 2 or 3 seconds until the new brake fluid comes out, then close the bleed valve while depressing the brake pedal. Repeat the same procedure for each wheel.
5. Bleed air. Refer to [BR-8, "Bleeding Brake System"](#).

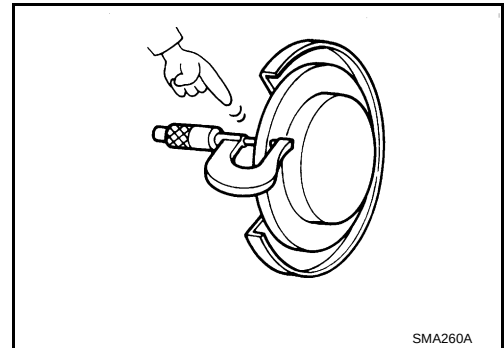


Checking Disc Brake

INFOID:000000001730908

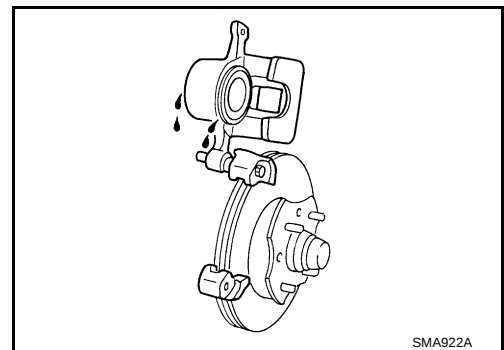
ROTOR

Check the rotor condition and thickness. Resurface or replace the rotor as necessary.



CALIPER

Check the caliper for leakage.

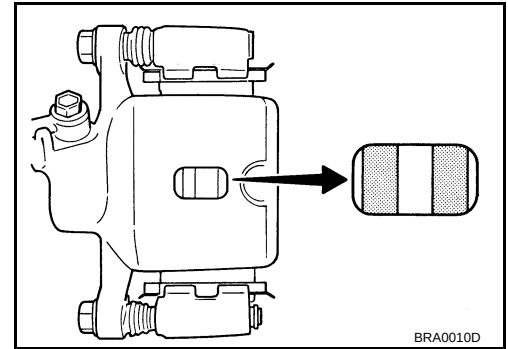


PAD

CHASSIS AND BODY MAINTENANCE

< ON-VEHICLE MAINTENANCE >

Check the brake pads for wear or damage. Refer to [BR-24](#), "[Removal and Installation of Brake Pad](#)".

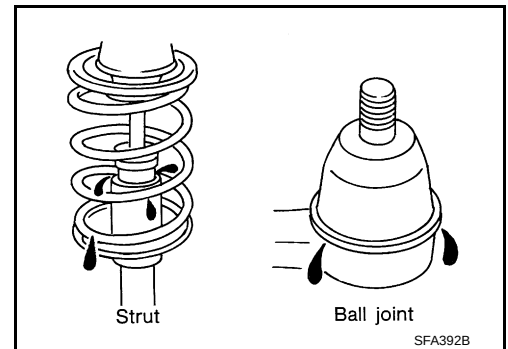
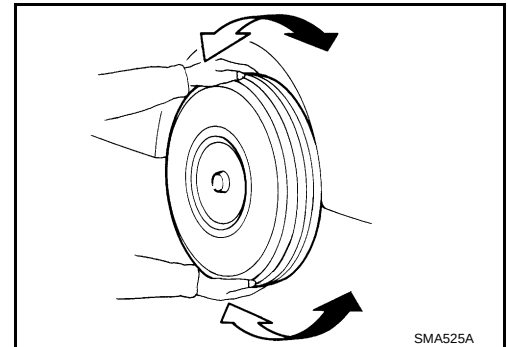


INFOID:000000001730909

Axle and Suspension Parts

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

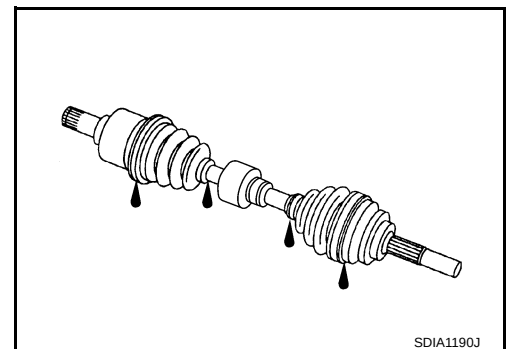
- Shake each wheel to check for excessive play.
- Check wheel bearings for smooth operation.
- Check axle and suspension nuts and bolts for looseness.
- Check strut (shock absorber) for oil leakage or other damage.
- Check suspension ball joint for grease leakage and ball joint dust cover for cracks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



INFOID:000000001730910

Drive Shaft

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

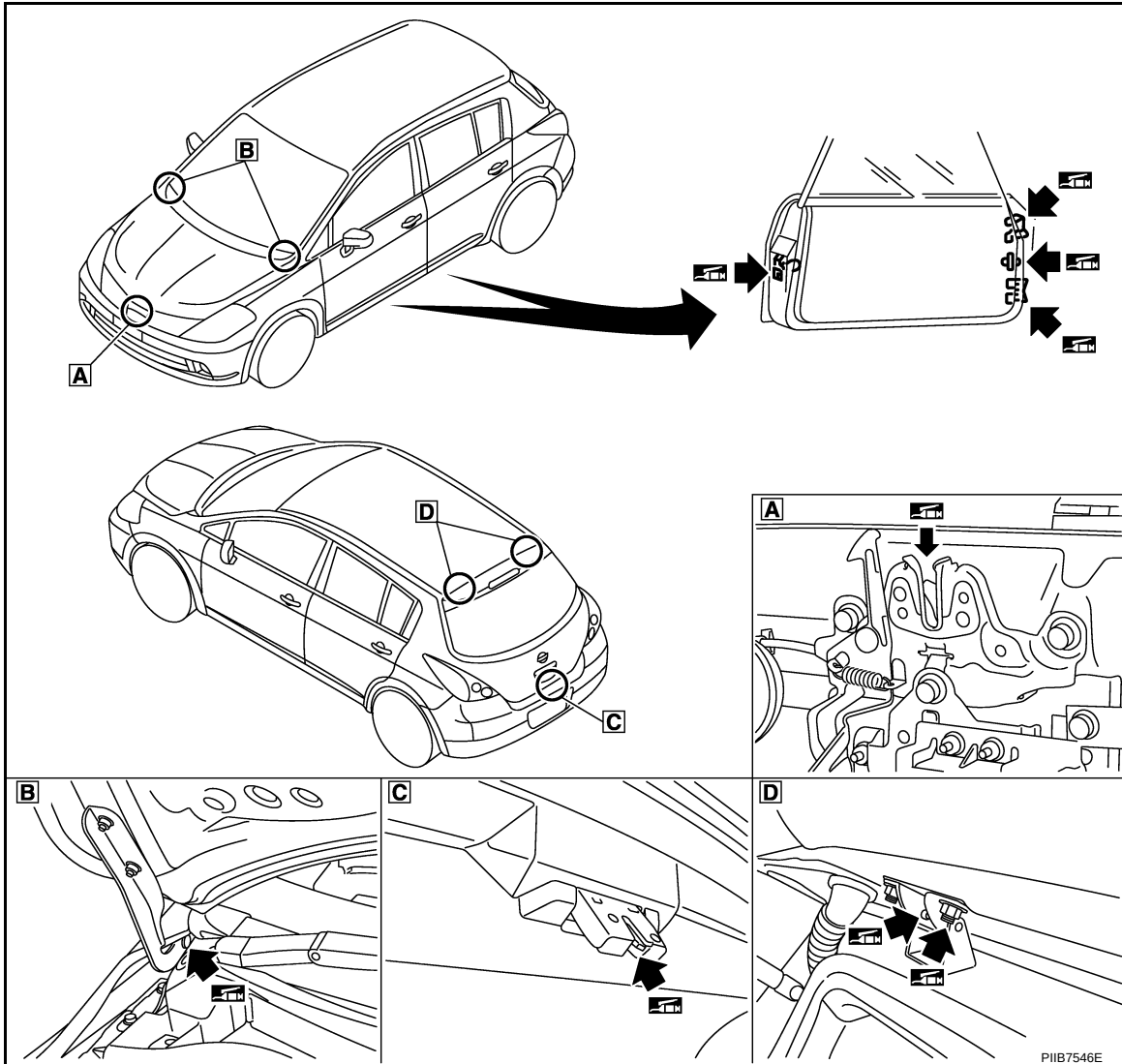


CHASSIS AND BODY MAINTENANCE

< ON-VEHICLE MAINTENANCE >

Lubricating Locks, Hinges and Hood Latch

INFOID:000000001730911



Checking Seat Belts, Buckles, Retractors, Anchors and Adjusters

INFOID:000000001730912

Check the seat belt buckles, webbing, retractors, anchors and adjusters. Replace any seat belt assembly as necessary. Refer to [SB-3, "Seat Belt Inspection"](#).

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

CAUTION:

- After any collision, inspect all seat belt assemblies, including retractors and other attached components, such as the guide rail set. NISSAN recommends replacing all seat belt assemblies in use during a collision, unless they are not damaged and are inspected to confirm they are operating properly after a minor collision.

Also inspect all seat belt assemblies that are not in use during a collision, and replace any components if damaged or not operating properly. The seat belt pre-tensioner should be replaced even if the seat belts are not in use during a frontal collision where the driver and passenger air bags have been deployed.

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

CHASSIS AND BODY MAINTENANCE

< ON-VEHICLE MAINTENANCE >

- When replacing any seat belt assembly always use a Genuine NISSAN seat belt assembly.