SECTION CO
ENGINE COOLING SYSTEM

CONTENTS

PRECAUTIONS

PFP:00001

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

ABS004RH

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. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SRS and SB section of this Service Manual.

WARNING:

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

Precautions for Liquid Gasket

ABS004RI

REMOVAL OF LIQUID GASKET SEALING

- After removing the mounting bolts and nuts, separate the mating surface using a seal cutter and remove the liquid gasket sealing.

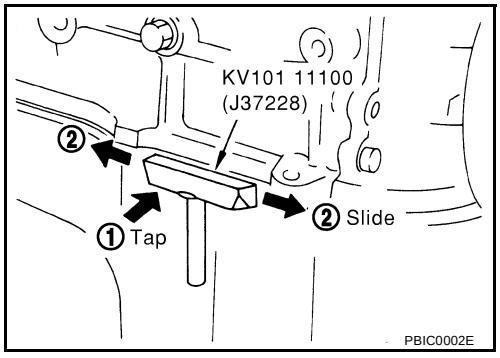
  CAUTION:

  Be careful not to damage the mating surfaces.

- In areas where the cutter is difficult to use, use a plastic hammer to lightly tap the area where the liquid gasket is applied.

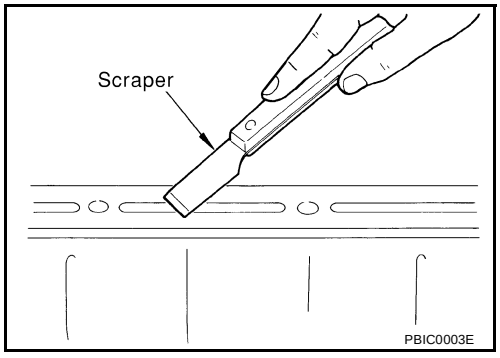
  CAUTION:

  If for some unavoidable reason a tool such as a flat-bladed screwdriver is used, be careful not to damage the mating surfaces.

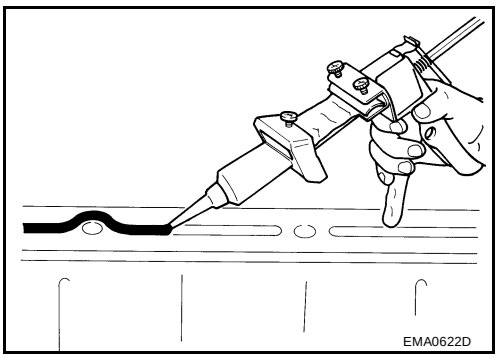


LIQUID GASKET APPLICATION PROCEDURE

1. Using a scraper, remove the old liquid gasket adhering to the gasket application surface and the mating surface.
   - Remove the liquid gasket completely from the groove of the gasket application surface, mounting bolts, and bolt holes.
2. Wipe the gasket application surface and the mating surface with white gasoline (lighting and heating use) to remove adhering moisture, grease and foreign materials.
3. Attach the liquid gasket tube to the tube presser.
   Use Genuine RTV Silicone Sealant or equivalent. Refer to **GI-46, "RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS"**.

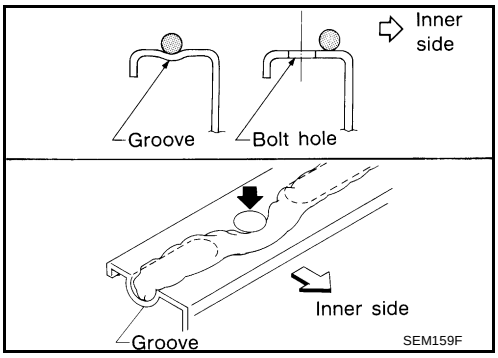


4. Apply the liquid gasket without breaks to the specified location with the specified dimensions.
   - If there is a groove for the liquid gasket application, apply the gasket to the groove.



   - As for the bolt holes, normally apply the gasket inside the holes. Occasionally, it should be applied outside the holes. Make sure to read the text of service manual.
   - Within five minutes of gasket application, install the mating component.
   - If the liquid gasket protrudes, wipe it off immediately.
   - Do not retighten after the installation.
   - After 30 minutes or more have passed from the installation, fill the engine oil and engine coolant.

     CAUTION:
     If there are specific instructions in this manual, observe them.



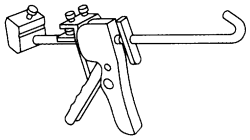
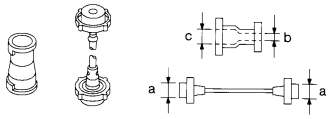
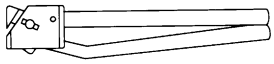
PREPARATION

PFP:00002

Special Service Tools

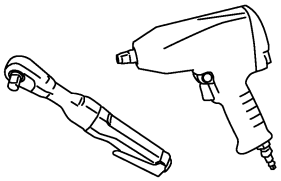
ABS0035A

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

Tool number (Kent-Moore No.) Tool name	Description
WS39930000 (–) Tube pressure  S-NT052	Pressing the tube of liquid gasket
EG17650301 (J33984-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)
KV99103510 (–) Radiator plate pliers A  S-NT224	Installing radiator upper and lower tanks
KV99103520 (–) Radiator plate pliers B  S-NT225	Removing radiator upper and lower tanks

Commercial Service Tools

ABS0035B

Tool name	Description
Power tool  PBIC0190E	Loosening bolts and nuts

OVERHEATING CAUSE ANALYSIS

PFP:00012

Troubleshooting Chart

ABS0035C

	Symptom		Check items	
Cooling system parts malfunction	Poor heat transfer	Water pump malfunction	Worn or loose drive belt	—
		Thermostat stuck closed	—	
		Damaged fins	Dust contamination or paper clogging	
			Physical damage	
		Clogged radiator cooling tube	Excess foreign material (rust, dirt, sand, etc.)	
	Reduced air flow	Cooling fan does not operate	Fan assembly	—
		High resistance to fan rotation		
		Damaged fan blades		
	Damaged radiator shroud	—	—	—
	Improper engine coolant mixture ratio	—	—	—
	Poor engine coolant quality	—	Engine coolant viscosity	—
	Insufficient engine coolant	Engine coolant leaks	Cooling hose	Loose clamp
				Cracked hose
			Water pump	Poor sealing
			Radiator cap	Loose
				Poor sealing
			Radiator	O-ring for damage, deterioration or improper fitting
				Cracked radiator tank
				Cracked radiator core
			Reservoir tank	Cracked reservoir tank
		Overflowing reservoir tank	Exhaust gas leaks into cooling system	Cylinder head deterioration
				Cylinder head gasket deterioration

OVERHEATING CAUSE ANALYSIS

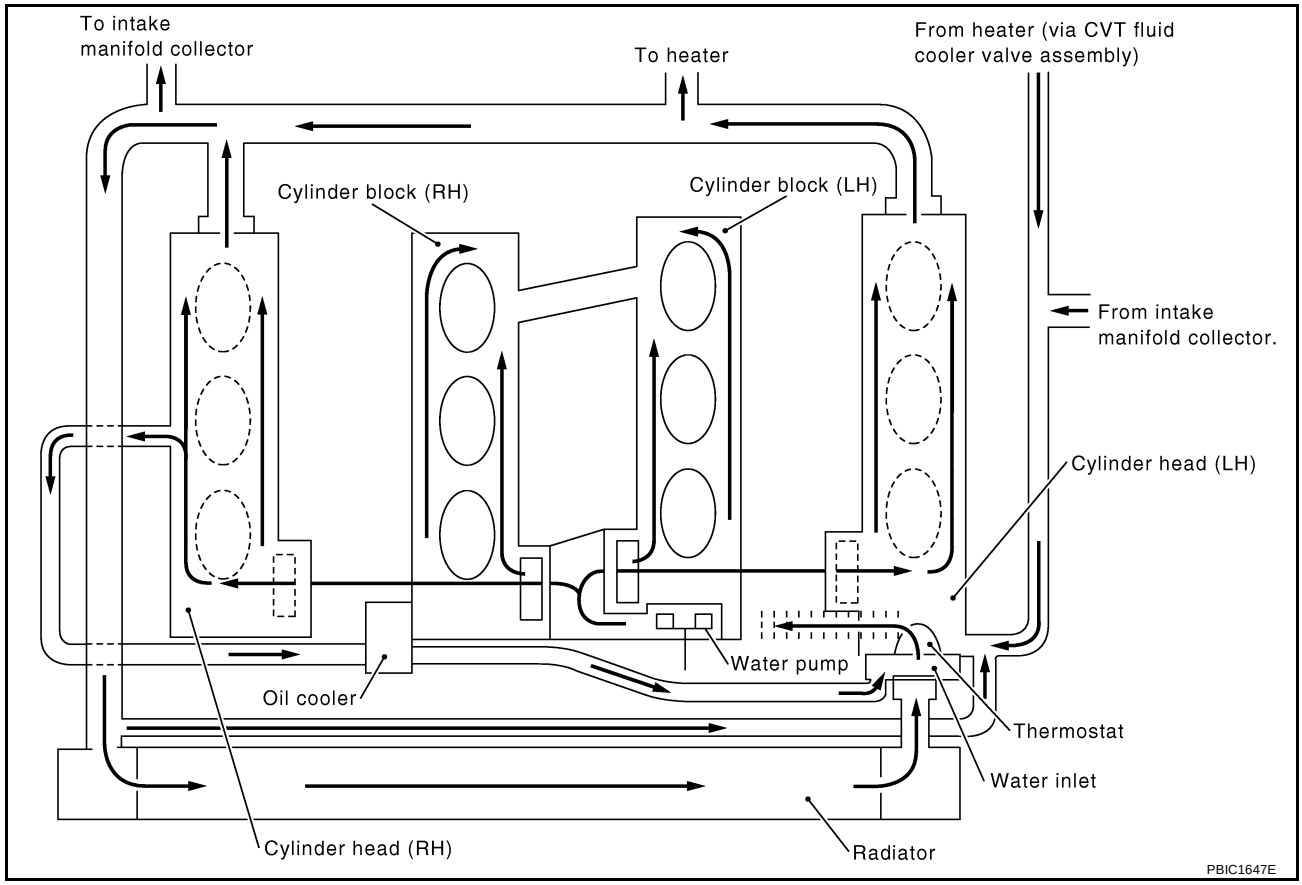
	Symptom		Check items	
Except cooling system parts malfunction	—	Overload on engine	Abusive driving	High engine rpm under no load
				Driving in low gear for extended time
				Driving at extremely high speed
			Powertrain system malfunction	—
			Installed improper size wheels and tires	
			Dragging brakes	
			Improper ignition timing	
	Blocked or restricted air flow	Blocked bumper	—	—
		Blocked radiator grille	Installed car brassiere	
			Mud contamination or paper clogging	
		Blocked radiator	—	
		Blocked condenser	Blocked air flow	
		Installed large fog lamp		

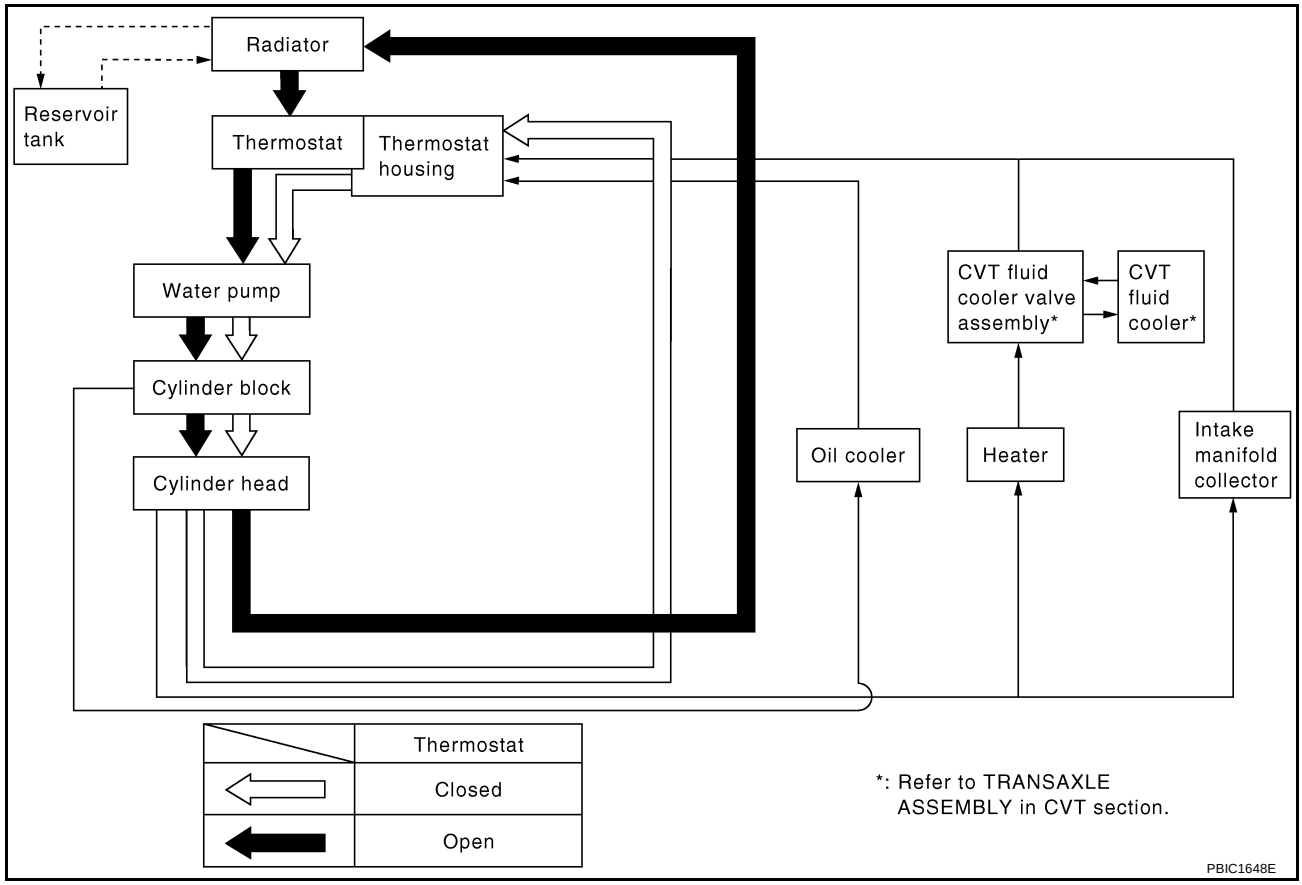
COOLING SYSTEM

PFP:21020

Cooling Circuit

ABS0034X





ENGINE COOLANT

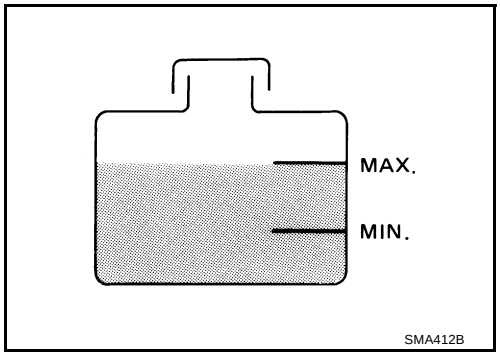
PFP:KQ100

Inspection

ABS0035F

LEVEL CHECK

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



LEAK CHECK

- To check for leaks, apply pressure to the cooling system with the tester.

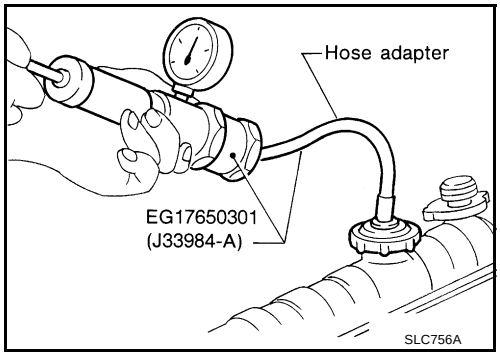
Testing pressure : 157 kPa (1.6 kg/cm^2 , 23 psi)

WARNING:

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

CAUTION:

Higher test pressure than specified may cause radiator damage.



Changing Engine Coolant

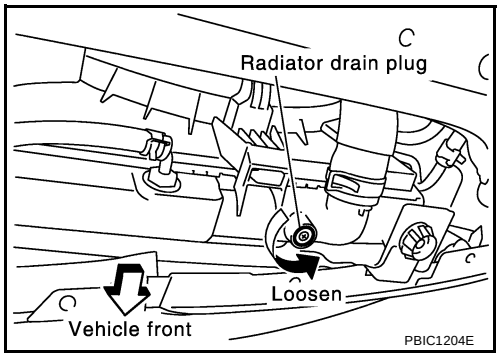
ABS0035V

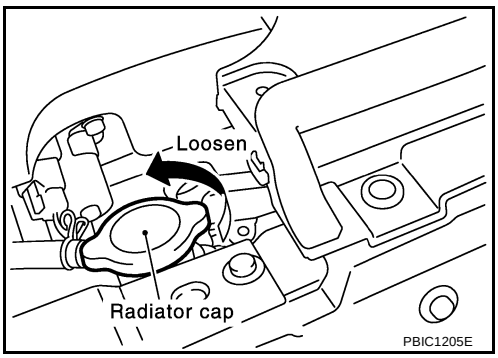
WARNING:

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

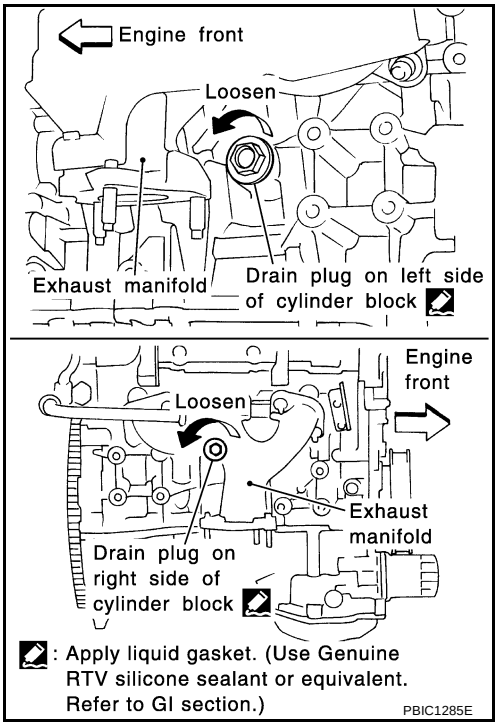
DRAINING ENGINE COOLANT

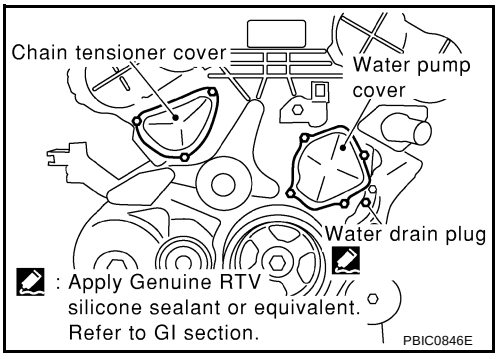
1. Remove radiator drain hole cap on engine undercover.
2. Open radiator drain plug at the bottom of radiator and remove the radiator filler cap.
   - **Be careful not to allow engine coolant to contact the drive belts.**





3. When draining all of the engine coolant for engine removal or repair, open the drain plugs on the engine-right and left sides and the engine-front side.





4. Remove the reservoir tank, drain the engine coolant and clean the tank before installing.
5. Check drained engine coolant for contaminants such as rust, corrosion or discoloration.
   If contaminated, flush the engine cooling system. Refer to CO-11, "FLUSHING COOLING SYSTEM" .

REFILLING ENGINE COOLANT

1. Install reservoir tank if removed, and radiator drain plug.
2. Close and tighten cylinder block drain plugs securely if removed.
   - **Apply sealant to the threads of the cylinder block drain plugs.**
   - **Use Genuine Thread Sealant or equivalent. Refer to** **GI-46, "RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS"**.

   Radiator drain plug:

   : 0.78 - 1.56 N·m (0.08 - 0.15 kg-m, 7 - 13 in-lb)

   Cylinder block drain plug (LH):

   : 59 - 65 N·m (6.1 - 6.6 kg-m, 44 - 47 ft-lb)

   Cylinder block drain plug (RH):

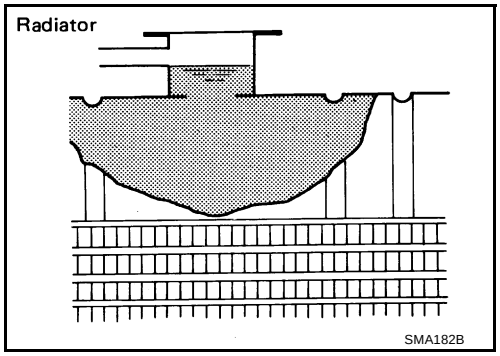
   : 24.5 - 29.4 N·m (2.5 - 2.9 kg-m, 18 - 21 ft-lb)

   Cylinder block drain plug (Front side):

   : 7.8 - 11.8 N·m (0.8 - 1.2 kg-m, 69 - 104 in-lb)
3. Fill radiator, and reservoir tank if removed, to specified level.
   - **Pour engine coolant through coolant filler neck slowly of less than 2 ℓ (2-1/8 US qt,1-3/4 Imp qt) a minute to allow air in system to escape.**
   - **Use genuine Nissan anti-freeze coolant or equivalent mixed with water (distilled or demineralized. Refer to** **MA-11, "RECOMMENDED FLUIDS AND LUBRICANTS"**.

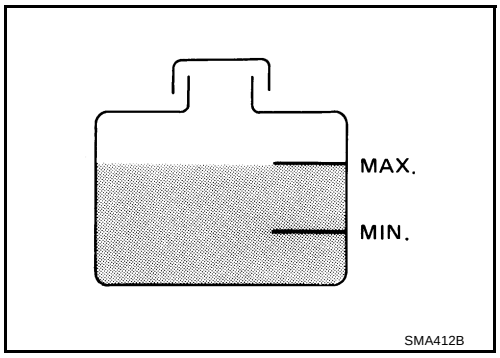
   Engine coolant capacity
   (with reservoir tank at MAX level)

   : Approximately 9.2 ℓ (9-3/4 US qt, 8-1/8 Imp qt)



   Reservoir tank capacity (at MAX level)

   : 0.8 ℓ (7/8 US qt, 3/4 Imp qt)



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

FLUSHING COOLING SYSTEM

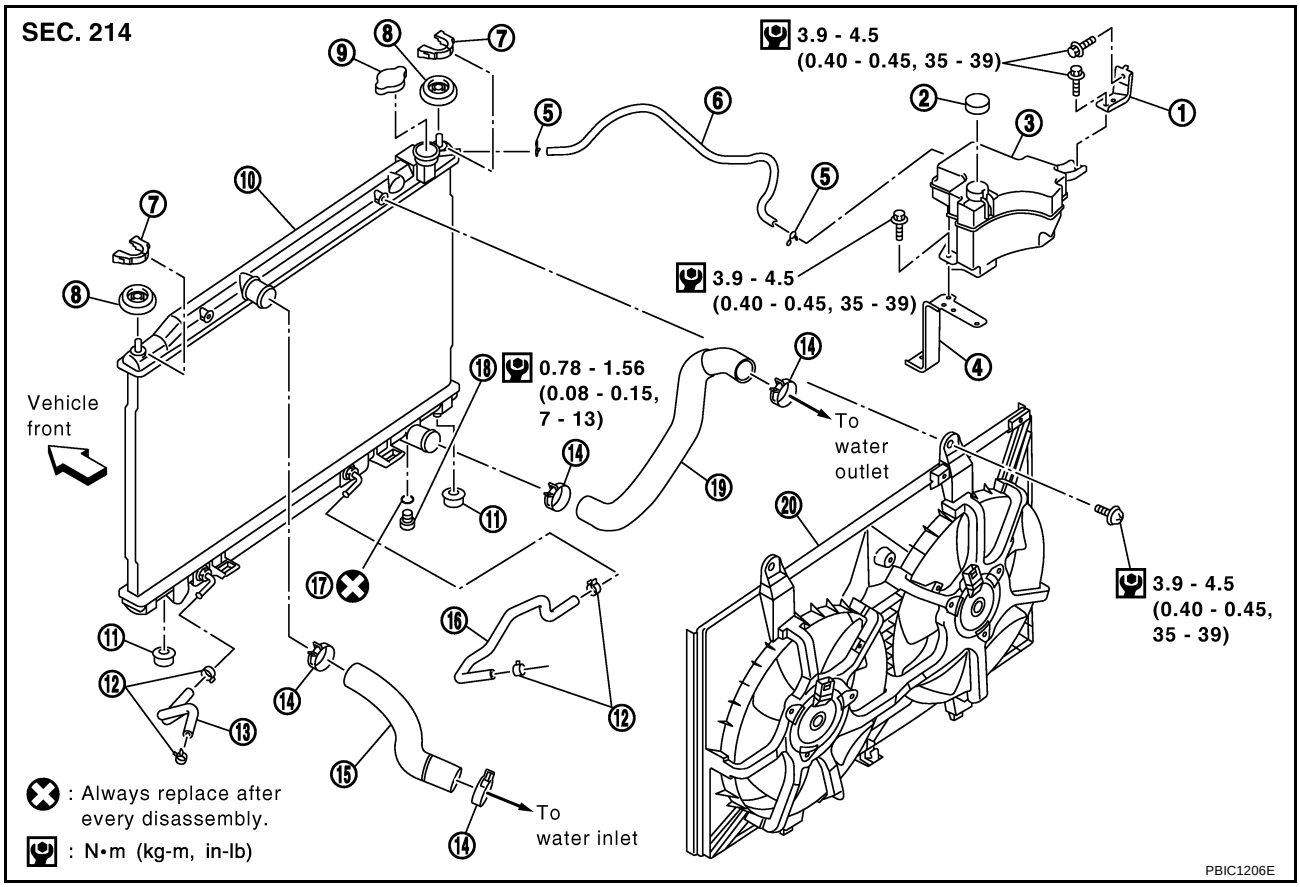
1. Fill radiator with water until water spills from the air relief hole, then close air relief plug. Fill radiator and reservoir tank with water and reinstall radiator cap.
2. Run engine and warm it up to normal operating temperature.
3. Rev engine two or three times under no-load.
4. Stop engine and wait until it cools down.
5. Drain the water from the system. Refer to MA-15, "DRAINING ENGINE COOLANT" .
6. Repeat steps 1 through 5 until clear water begins to drain from the radiator.

RADIATOR

PFP:21400

Removal and Installation

ABS0035H



1. Bracket	2. Reservoir tank filler cap	3. Reservoir tank
4. Bracket	5. Clamp	6. Reservoir tank hose
7. Radiator upper clip	8. Mounting rubber	9. Radiator cap
10. Radiator	11. Mounting rubber	12. Clamp
13. CVT fluid cooler hose	14. Clamp	15. Radiator hose (lower)
16. CVT fluid cooler hose	17. O-ring	18. Drain plug
19. Radiator hose (upper)	20. Radiator cooling fan assembly	

WARNING:

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

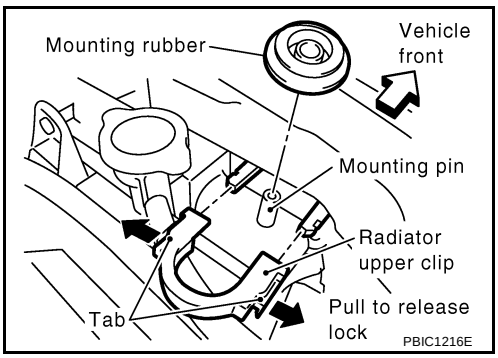
REMOVAL

1. Remove undercover.
2. Drain engine coolant. Refer toMA-15, "Changing Engine Coolant" .

   CAUTION:

   Perform when the engine is cold.
3. Remove air duct and radiator cover grills. Refer to EM-14, "Removal and Installation" .
4. Disconnect CVT fluid cooler hoses.
   - Install plug to avoid leakage of CVT fluid.
5. Remove reservoir tank and bracket.
6. Disconnect upper and lower radiator hoses.
7. Remove battery and battery tray, and move fuse box aside.
8. Remove radiator cooling fan assembly.

9. Remove radiator upper clips by pulling the tabs outside to release the lock.
   Do not pull the tabs outside excessively to prevent it from damaging.
10. Remove mounting rubbers from the mounting pins on the radiator.



11. Lift up and remove the radiator.
    CAUTION:
    Do not damage or scratch air conditioner condenser and radiator core when removing.

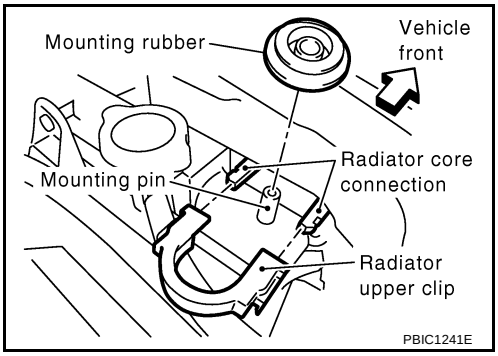
INSTALLATION

- Install in the reverse order of removal paying attention to the following.

Installation of Radiator Upper Clip

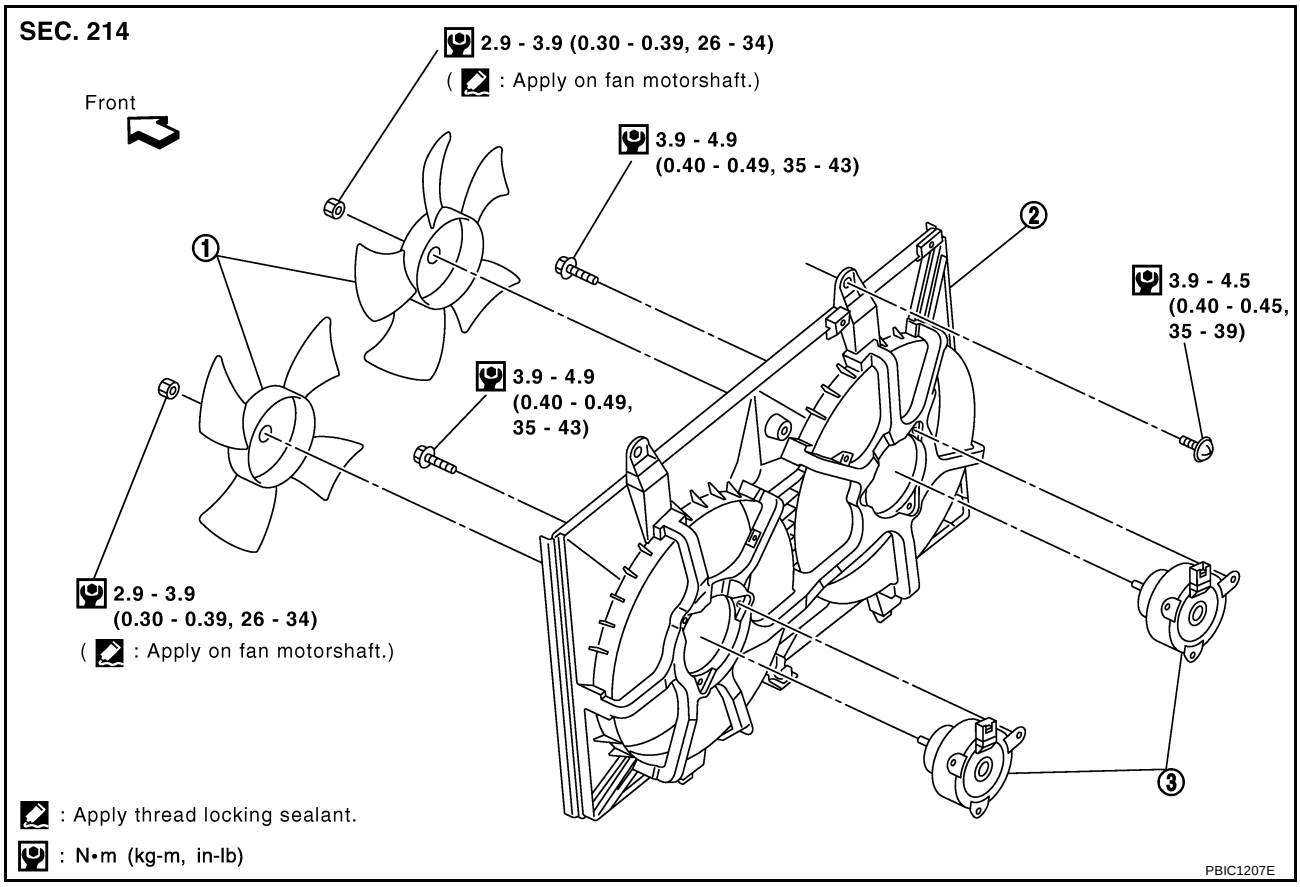
- Install radiator upper clip on radiator core connection with the following procedure:

1. Install the mounting rubbers on mounting pins of radiator.
2. Align the radiator upper clip with the radiator core connection, then insert the radiator upper clip straight into the radiator core connections until a click is heard.
3. After connecting the radiator upper clip, use the following method to make sure it is fully connected.
   - Visually confirm that the two radiator upper clips are connected to the radiator core connections.
   - Move the radiator upper clip and the radiator forward and backward to make sure they are securely connected.



Disassembly and Assembly Radiator Cooling Fan

ABS0035I



1. Cooling fan
2. Fan shroud
3. Fan motors

DISASSEMBLY

1. Remove fan from fan motor.
2. Remove cooling fan motor from fan shroud.

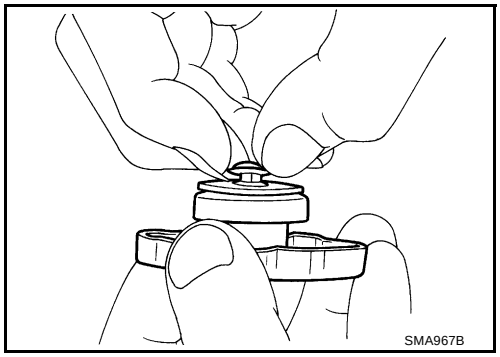
ASSEMBLY

- Install in the reverse order of removal.

Checking Radiator Cap

ABS007ZV

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



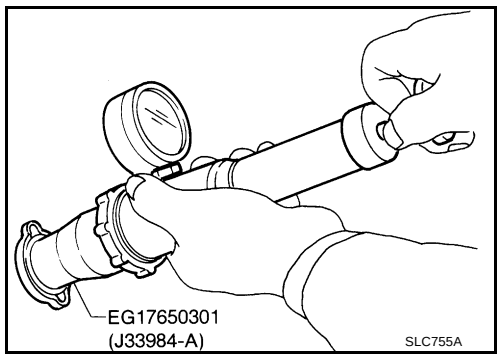
2. Check radiator cap relief pressure.

Standard:

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

Limit:

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



- When connecting the radiator cap to the tester, apply engine coolant to the cap seal surface.
- Replace the radiator cap if there is an unusualness in the negative-pressure valve, or if the open-valve pressure is outside of the limit.

Checking Radiator

ABS007ZW

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

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

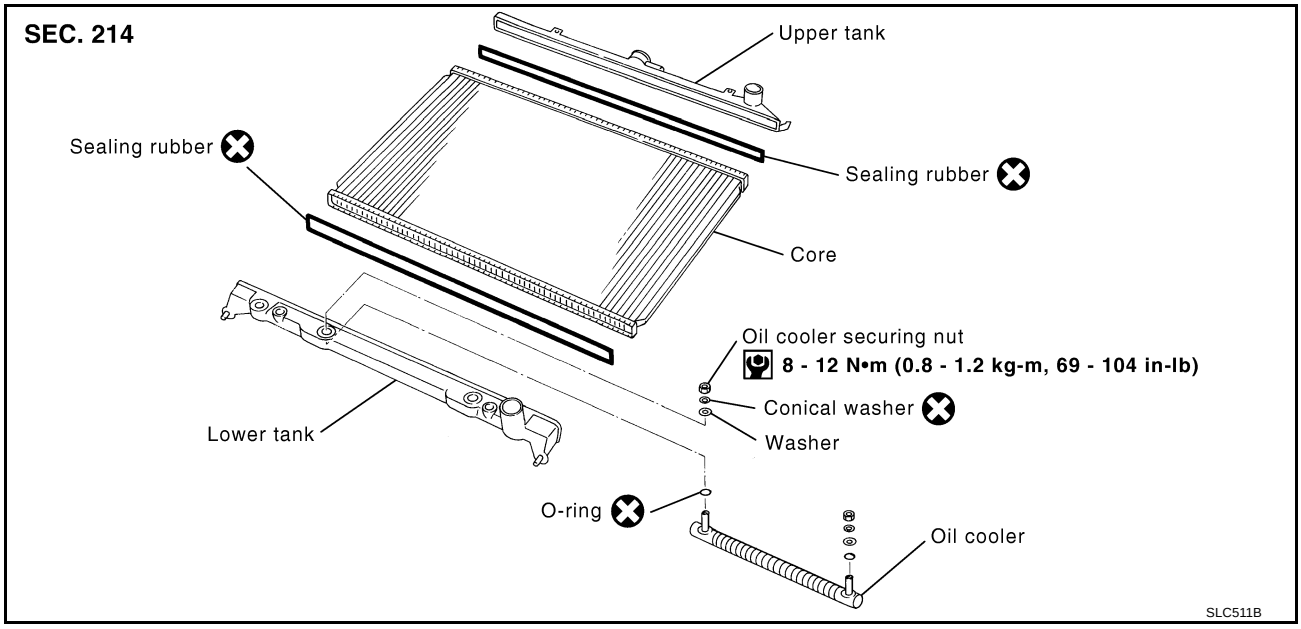
1. Apply water by hose to the back side of the radiator core vertically downward.
2. Apply water again to all radiator core surface once per minute.
3. Stop washing if any stains no longer flow out from the radiator.
4. Blow air into the back side of radiator core vertically downward.
   - Use compressed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

RADIATOR (ALUMINUM TYPE)

PFP:21460

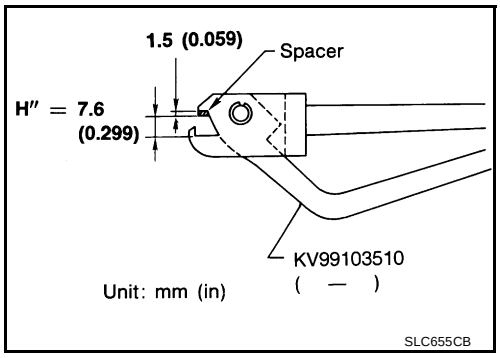
Disassembly and Assembly

ABS004RT



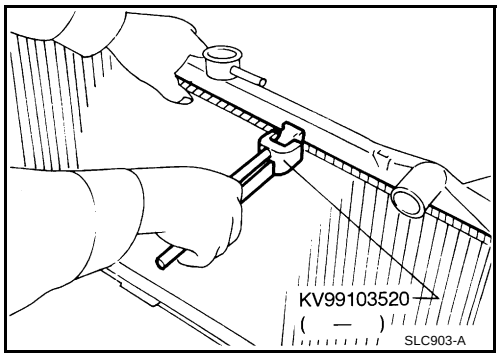
PREPARATION

1. Attach the spacer to the tip of the radiator plate pliers A. Spacer specification: 1.5 mm (0.059 in) thick x 18 mm (0.71 in) wide x 8.5 mm (0.335 in) long.
2. Make sure that when radiator plate pliers A are closed dimension H″ is approx. 7.6 mm (0.299 in).
3. Adjust dimension H″ with the spacer, if necessary.



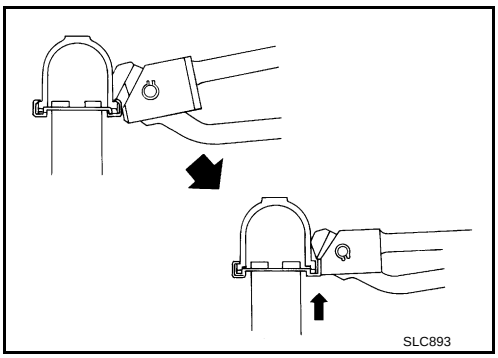
DISASSEMBLY

1. Remove upper and lower tanks with Tool.



- Grip the crimped edge and bend it upwards so that Tool slips off.

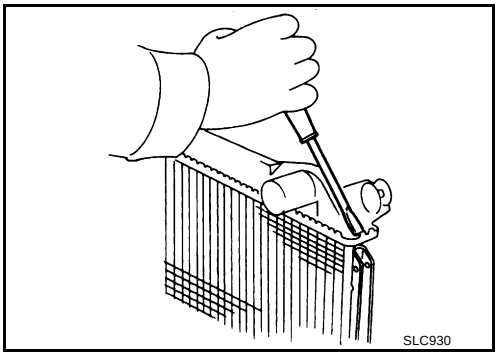
Do not bend excessively.



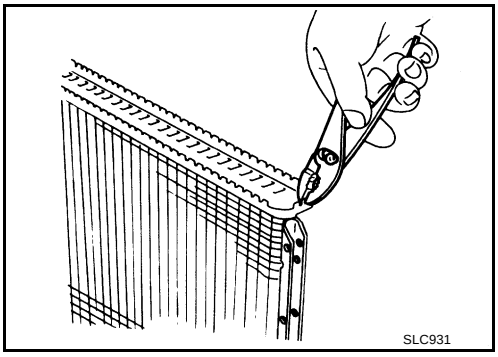
- In areas where Tool cannot be used, use a screwdriver to bend the edge up.

Be careful not to damage tank.

2. Remove sealing rubber.



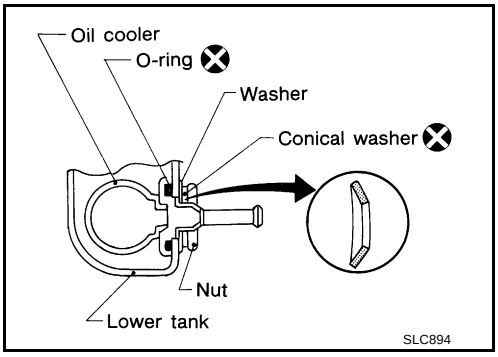
3. Make sure the edge stands straight up.
4. Remove oil cooler from tank.



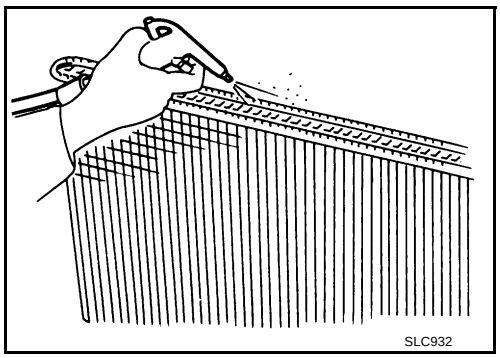
ASSEMBLY

1. Install oil cooler.

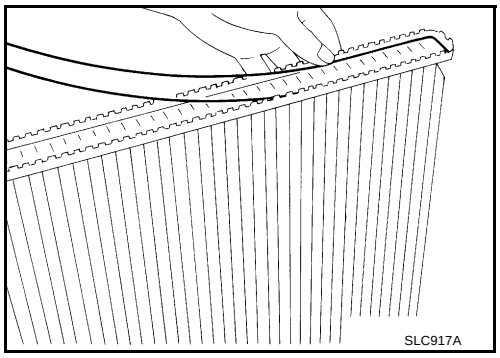
Pay attention to direction of conical washer.



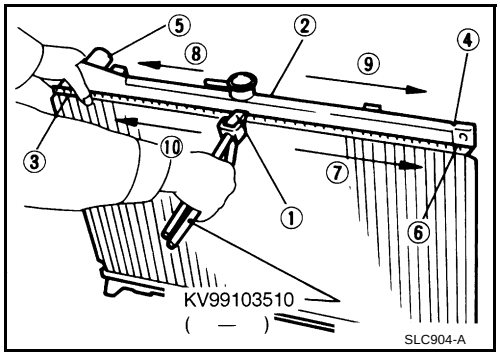
2. Clean contact portion of tank.

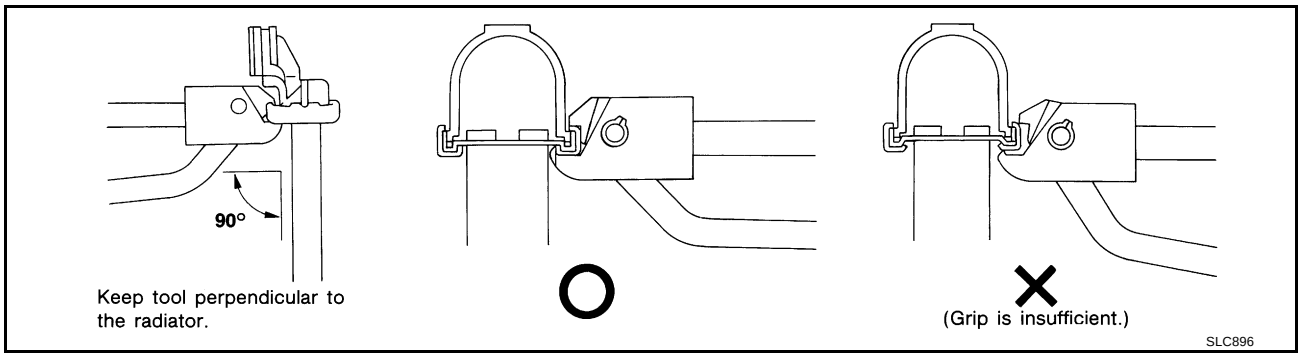


3. Install sealing rubber.
   Push it in with fingers.
   Be careful not to twist sealing rubber.

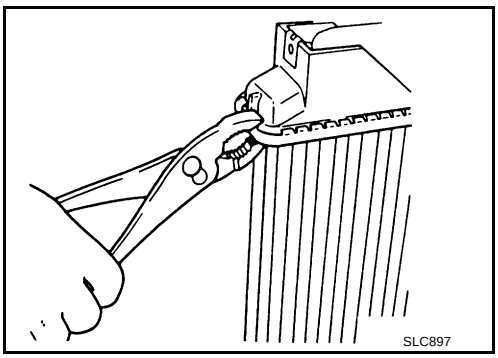


4. Caulk tank in specified sequence with Tool.





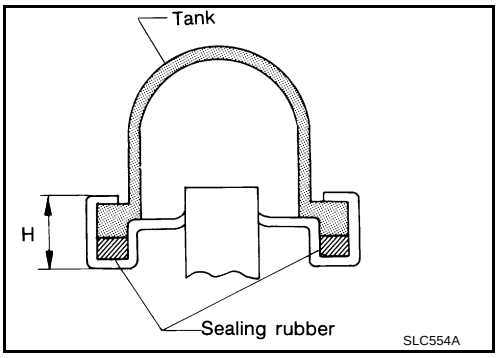
- Use pliers in the locations where Tool cannot be used.



5. Make sure that the rim is completely crimped down.

   Standard height "H" : 8.0 - 8.4 mm (0.315 - 0.331 in)

6. Confirm that there is no leakage.
   Refer to CO-19, "INSPECTION" .

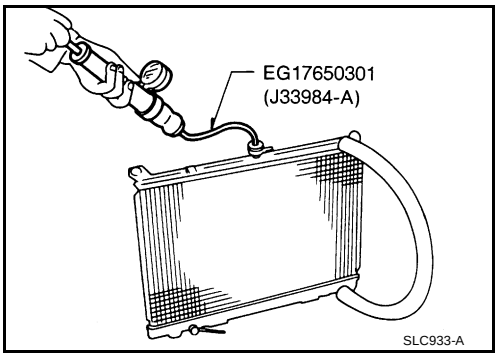


INSPECTION

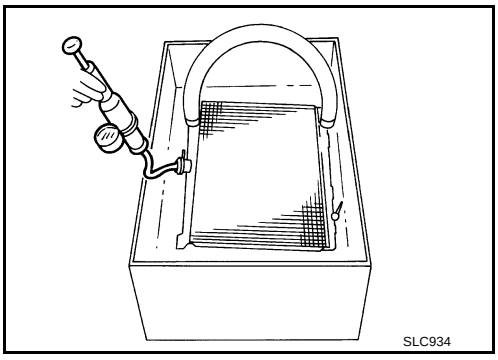
1. Apply pressure with Tool.

   Specified pressure value : 157 kPa (1.6 kg/cm^2 , 23 psi)

   WARNING:
   To prevent the risk of the hose coming undone while under pressure, securely fasten it down with a hose clamp.
   Attach a hose to the oil cooler to seal its inlet and outlet.



2. Check for leakage by soaking radiator in water container.

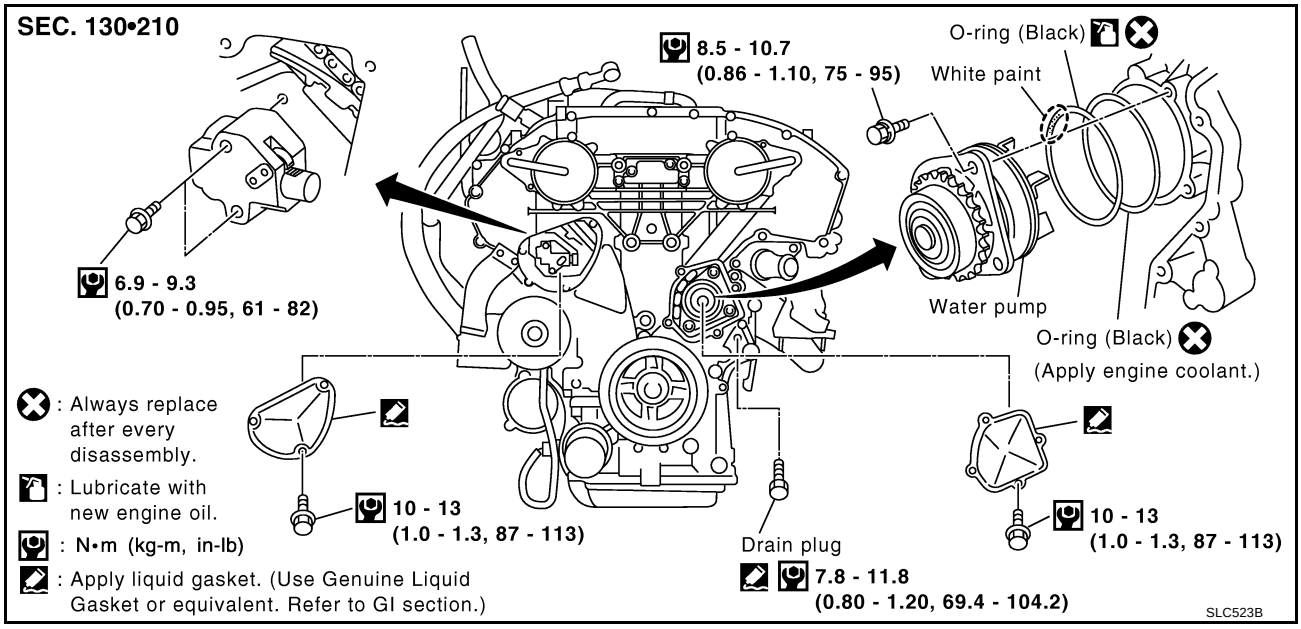


WATER PUMP

PFP:21020

Removal and Installation

ABS00353



CAUTION:

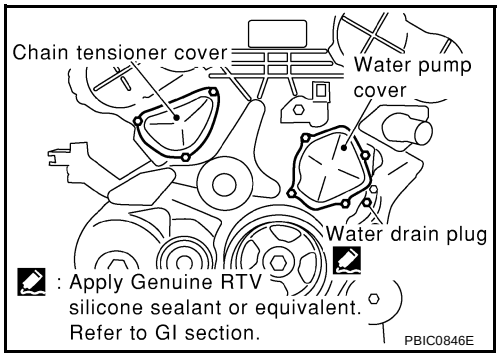
- **When removing water pump assembly, be careful not to get engine coolant on drive belt.**
- **Water pump cannot be disassembled and should be replaced as a unit.**
- **After installing water pump, connect hose and clamp securely, then check for leaks using radiator cap tester.**

REMOVAL

1. Remove drive belts. Refer to EM-12, "Removal and Installation" .
2. Remove undercover.
3. Drain engine coolant from radiator. Refer to MA-15, "Changing Engine Coolant" .

   CAUTION:

   Perform when the engine is cold.
4. Remove water drain plug on water pump side of cylinder block.
5. Support lower oil pan bottom with a transmission jack.
6. Remove RH engine mounting insulator and mounting bracket. Refer to EM-95, "ENGINE ASSEMBLY" .
7. Remove idler pulley bracket. Refer to EM-54, "TIMING CHAIN" .
8. Remove chain tensioner cover and water pump cover.



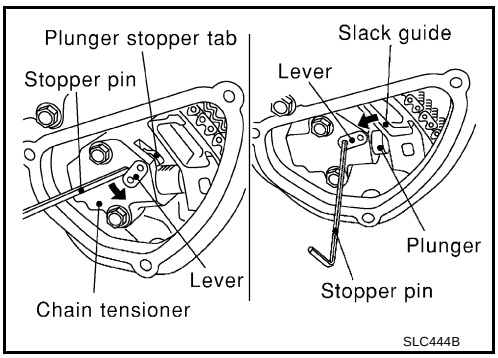
9. Remove the chain tensioner assembly in the following procedure.

a. Pull the lever down and release the plunger stopper tab.

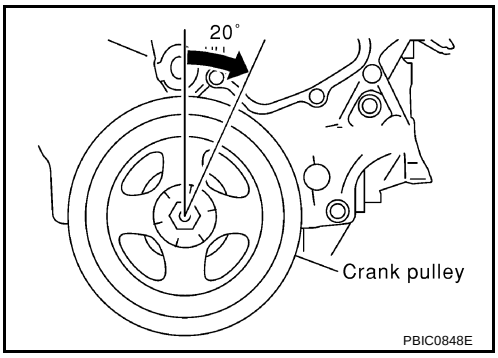
b. Insert the stopper pin into the tensioner body hole to hold the lever and keep the stopper tab released.

c. Insert the plunger into the tensioner body by pressing the timing chain slack guide.

d. Keep the slack guide pressed and hold the plunger in by pushing the stopper pin deeper through the lever and into the tensioner body hole.



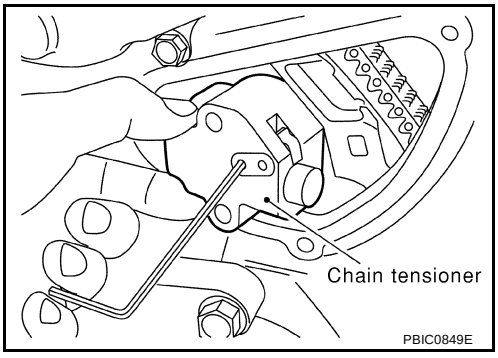
e. Turn crankshaft pulley approximately 20° clockwise so that the timing chain on the chain tensioner side is loose.



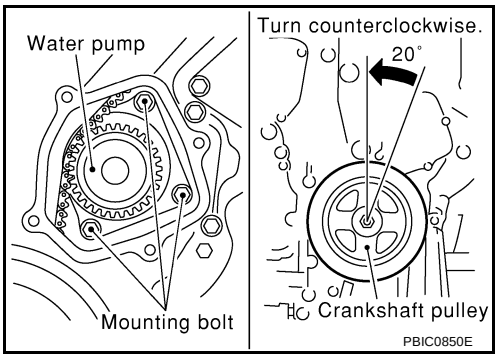
10. Remove chain tensioner.

CAUTION:

Be careful not to drop mounting bolts inside chain case.



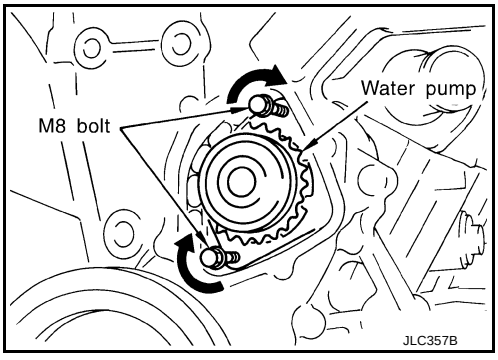
11. Remove the 3 water pump fixing bolts. Secure a gap between water pump gear and timing chain, by turning crankshaft pulley approximately 20° counterclockwise.



12. Screw M8 bolts [pitch: 1.25mm (0.049in) length: Approx. 50 mm (1.97in)] into water pumps upper and lower mounting-bolt holes until they reach timing chain case. Then, alternately tighten each bolt for a half turn, and pull out water pump.

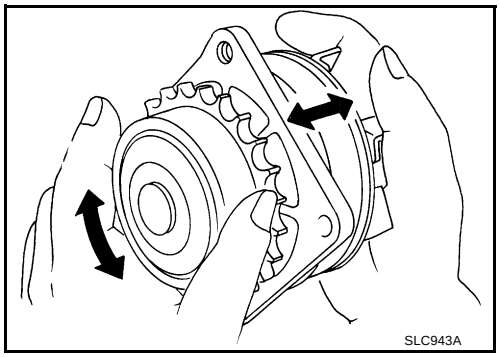
- Pull straight out while preventing vane from contacting socket in installation area.
- Remove water pump without causing sprocket to contact timing chain.

13. Remove M8 bolts and O-rings from water pump.



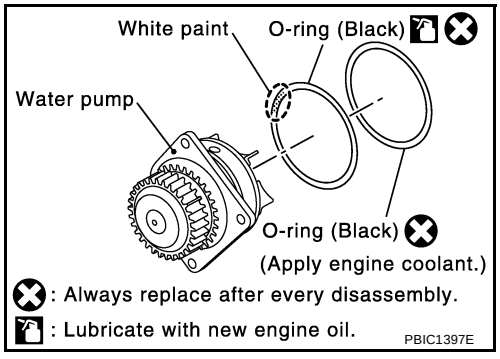
INSPECTION AFTER REMOVAL

1. Check for badly rusted or corroded water pump body assembly.
2. Check for rough operation due to excessive end play.

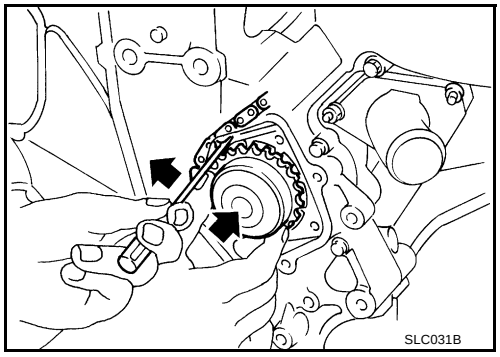


INSTALLATION

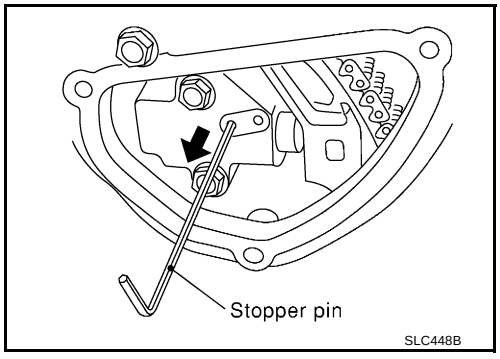
1. Install new O-rings to water pump.
2. Apply engine oil and engine coolant to the O-rings as shown.
   - Locate the O-ring with white paint mark to engine front side.



3. Install the water pump.
   - **Do not allow cylinder block to nip the O-rings when installing the water pump.**
   - Check that timing chain and water pump sprocket are engaged.
   - Insert water pump by tightening mounting bolts alternately and evenly.

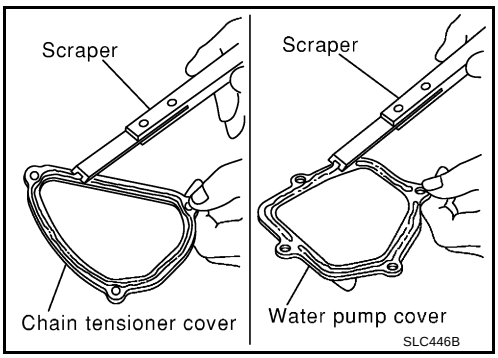


4. Remove dust and foreign material completely from backside of chain tensioner and from installation area of rear timing chain case.
5. Turn the crankshaft pulley clockwise so that the timing chain on the timing chain tensioner side is loose.
   - **When installing the timing chain tensioner, engine oil should be applied to the oil hole and tensioner.**
6. Install the timing chain tensioner.
7. Remove the stopper pin.



8. Install chain tensioner cover and water pump cover.

a. Before installing, remove all traces of liquid gasket from mating surface of water pump cover and chain tensioner cover using a scraper.
Also remove traces of liquid gasket from the mating surface of the front cover.

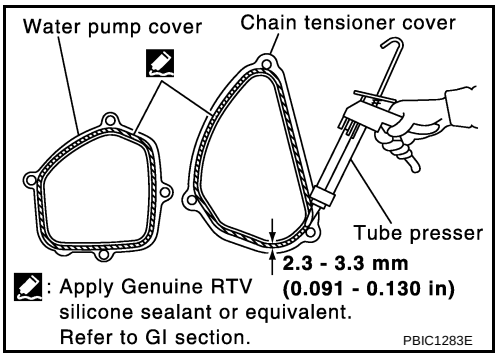


b. Apply a continuous bead of liquid gasket, to mating surface of chain tensioner cover and water pump cover. Use Genuine RTV Silicon Sealant or equivalent Refer to GI-46, "RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS" .

9. Install water drain plug on water pump side of cylinder block.

10. Installation is in the reverse order of removal for remaining parts.

- **After starting engine, let idle for three minutes, then rev engine up to 3,000 rpm under no load to purge air from the high-pressure chamber of the chain tensioner. The engine may produce a rattling noise. This indicates that air still remains in the chamber and is not a matter of concern.**

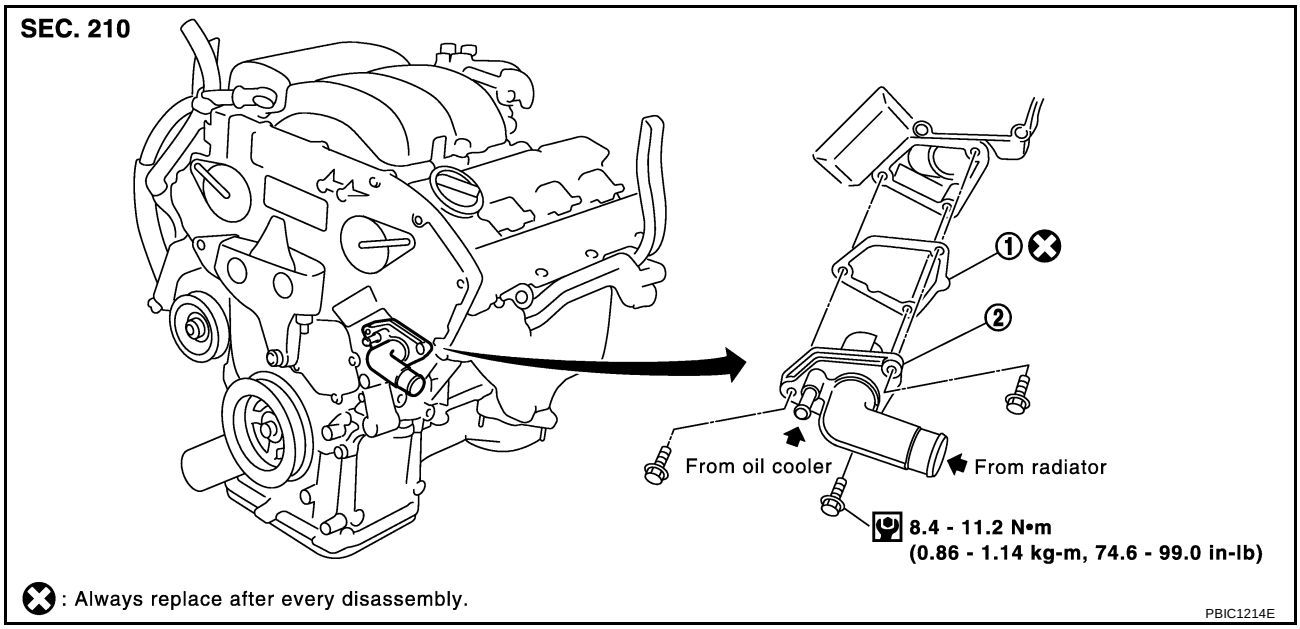


THERMOSTAT AND THERMOSTAT HOUSING

PFP:21200

Removal and Installation

ABS00354

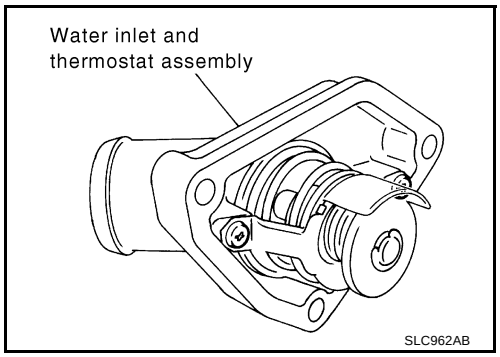


1. Gasket
2. Water inlet and thermostat assembly

REMOVAL

1. Remove undercover.
2. Drain engine coolant from radiator. Refer to MA-15, "Changing Engine Coolant" .

   CAUTION:
   - **Perform when the engine is cold.**
   - **Be careful not to get engine coolant on drive belt.**
3. Remove radiator reservoir tank and move IPDM E/R aside.
4. Remove water drain plug on water pump side of the engine.
5. Disconnect lower radiator hose and oil cooler water hose.
6. Remove water inlet and thermostat assembly.
   - **Do not disassemble water inlet and thermostat assembly. Replace them as a unit, if necessary.**

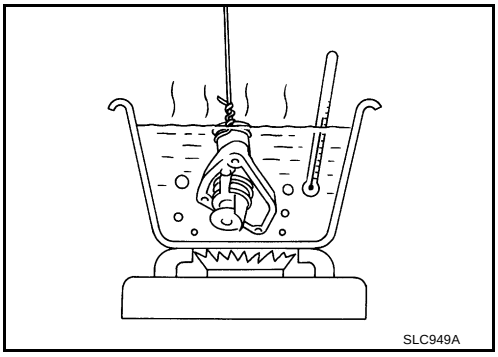


INSPECTION AFTER REMOVAL

1. Check valve seating condition at ordinary room temperatures. It should seat tightly.
2. Check valve opening temperature and maximum valve lift.

Thermostat	Standard Values
Valve opening temperature	82°C (180°F)
Valve lift	8.6 mm / 95°C (0.339 in / 203°F)

3. Then check if valve closes at 5°C (9°F) below valve opening temperature.



INSTALLATION

Install in the reverse order of removal.

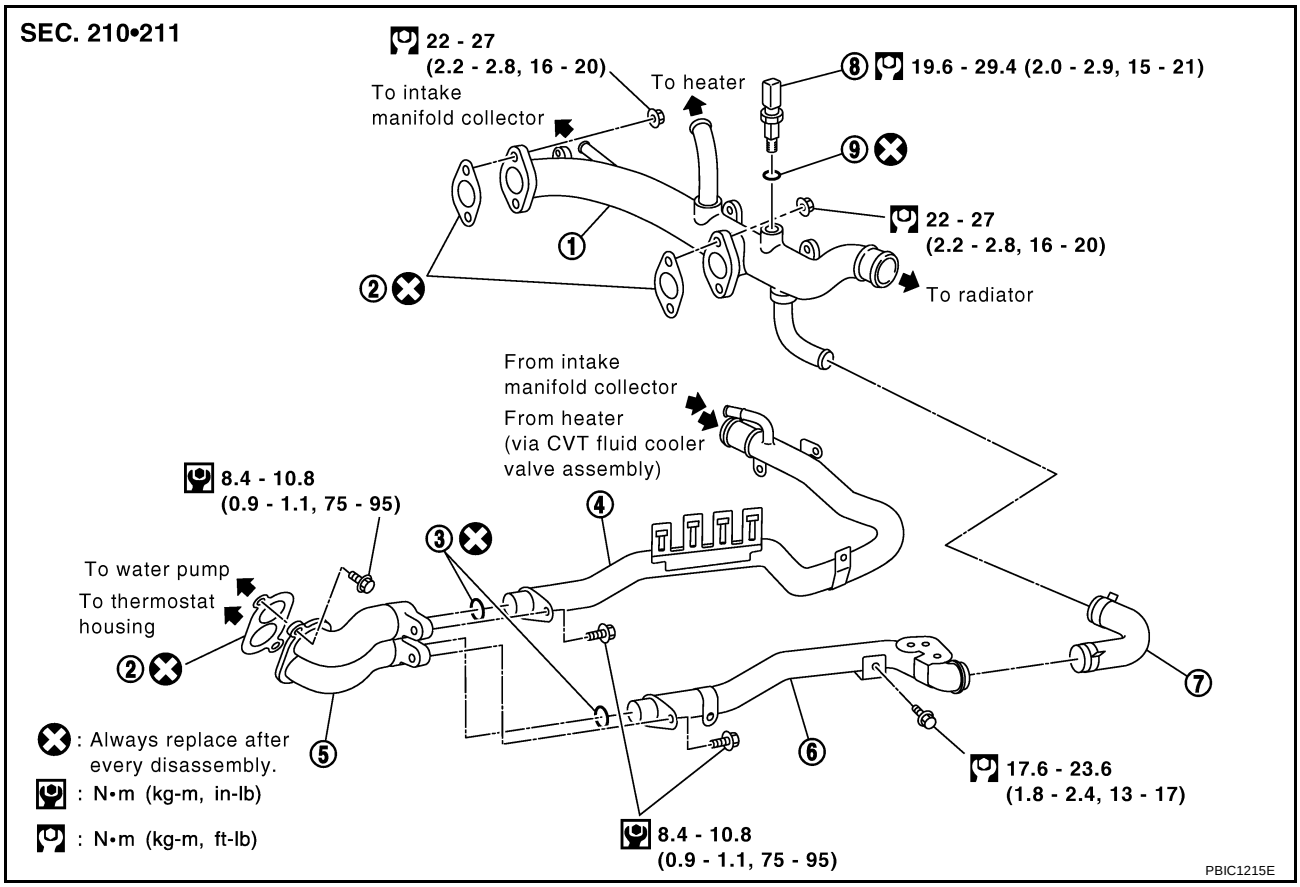
- **After installation, run engine for a few minutes, and check for leaks.**
- **Be careful not to spill engine coolant over engine compartment. Use a rag to absorb engine coolant.**

WATER OUTLET AND WATER PIPING

PFP:11060

Removal and Installation

ABS0035E



1.	Water outlet	2.	Gasket	3.	O-ring
4.	Heater pipe	5.	Water connector	6.	Water bypass pipe
7.	Water bypass hose	8.	Engine coolant temperature sensor	9.	Washer

REMOVAL

1. Remove undercover.
2. Drain engine coolant from drain plugs on radiator and both sides of cylinder block. Refer to MA-15, "Changing Engine Coolant" .

   CAUTION:
   Perform when the engine is cold.
3. Remove engine cover. Refer to EM-17, "REMOVAL" .
4. Remove air duct and air cleaner case assembly. Refer to EM-14, "Removal and Installation" .
5. Remove battery and battery tray.
6. Remove CVT fluid cooler control valve assembly. Refer to CVT-197, "TRANSAXLE ASSEMBLY" .
7. Move CVT control cable aside. Refer to CVT-182, "SHIFT CONTROL SYSTEM" .
8. Remove radiator upper hose and heater hose.
9. Remove water outlet and water pipes.

INSTALLATION

Install in the reverse order of removal.

- Securely insert each hose, and install a clamp at a position where it does not interfere with the pipe bulge.
- When inserting a water pipe into water connector, apply neutral detergent to O-ring.

SERVICE DATA AND SPECIFICATIONS (SDS)

PFP:00100

Engine Coolant Capacity (Approximate)

ABS0035J

Unit: ℓ (US qt, Imp qt)

Engine coolant capacity (With reservoir tank at MAX level)	9.2 (9-3/4, 8-1/8)
Reservoir tank engine coolant capacity (at MAX level)	0.8 (7/8 , 3/4)

Thermostat

ABS0035K

Valve opening temperature	82°C (180°F)
Valve lift	8.6 mm / 95°C (0.339 in / 203°F)

Radiator

ABS0035L

Unit: kPa (kg/cm^2 , psi)

Cap relief pressure	Standard	78 - 98 (0.8 - 1.0, 11 - 14)
	Limit	59 (0.6, 9)
Leakage test pressure		157 (1.6, 23)

Tightening Torque

ABS0035M

Unit: N·m (kg-m, ft-lb)
Unit: N·m (kg-m, in-lb)*

Radiator drain plug	0.78 - 1.56 (0.08 - 0.15, 7 - 13)*
Cylinder block drain plug (LH)	59 - 65 (6.1 - 6.7, 44 - 48)
Cylinder block drain plug (RH)	24.5 - 29.4 (2.5 - 2.9, 18 - 21)
Cylinder block drain plug (front side)	7.8 - 11.8 (0.8 - 1.2, 69 - 104)*
Fan shroud	3.9 - 4.5 (0.40 - 0.45, 35 - 39)*
Cooling fan	2.9 - 3.9 (0.30 - 0.39, 26 - 34)*
Fan motor	3.9 - 4.9 (0.40 - 0.49, 35 - 43)*
Water pump	8.5 - 10.7 (0.86 - 1.10, 75 - 95)*
Water pump cover	10 - 13 (1.0 - 1.3, 87 - 113)*
Chain tensioner cover	10 - 13 (1.0 - 1.3, 87 - 113)*
Chain tensioner	6.9 - 9.3 (0.70 - 0.95, 61 - 82)*
Water inlet and thermostat assembly	8.4 - 11.2 (0.86 - 1.14, 74.6 - 99.0)*
Water outlet	22 - 27 (2.2 - 2.8, 16 - 20)
Water connector	8.4 - 10.8 (0.9 - 1.1, 7.5 - 95)*
Engine coolant temperature sensor	19.6 - 29.4 (2.0 - 2.9, 15 - 21)