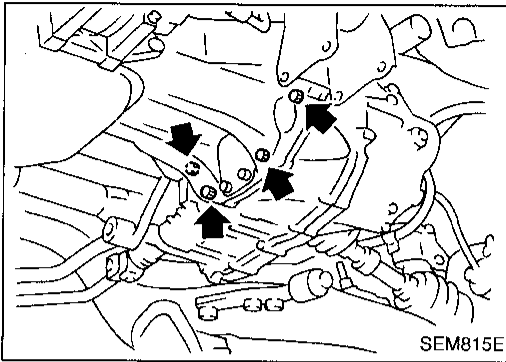
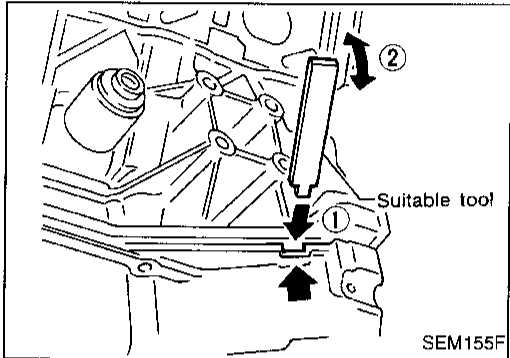


OIL PAN

Removal (Cont'd)



15. Remove transaxle bolts.



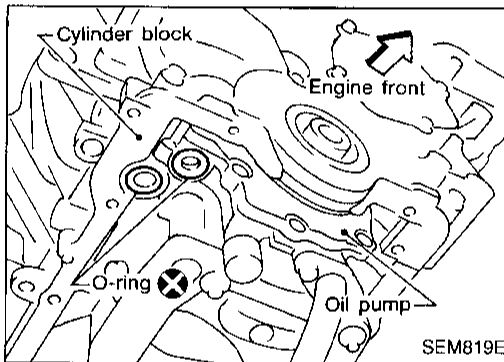
16. Remove aluminum oil pan.

a. Insert an appropriate size tool into the notch of aluminum oil pan as shown in the figure.

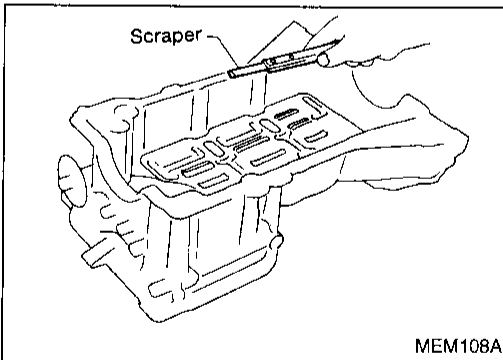
- Be careful not to damage aluminum mating surface.
- Do not insert screwdriver, or oil pan flange will be deformed.

b. Pry off aluminum oil pan by moving the tool up and down.

c. Remove aluminum oil pan.



17. Remove O-rings from cylinder block and oil pump body.



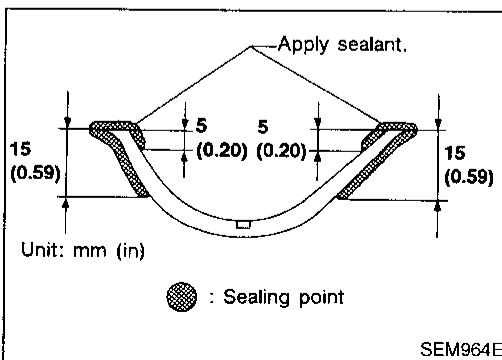
Installation

1. Install aluminum oil pan.

a. Use a scraper to remove all traces of liquid gasket from mating surfaces.

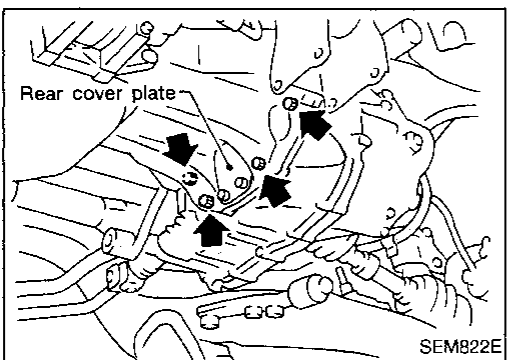
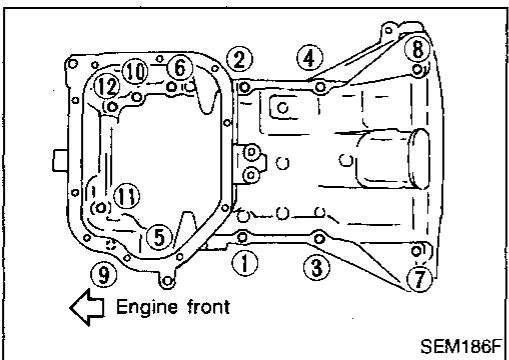
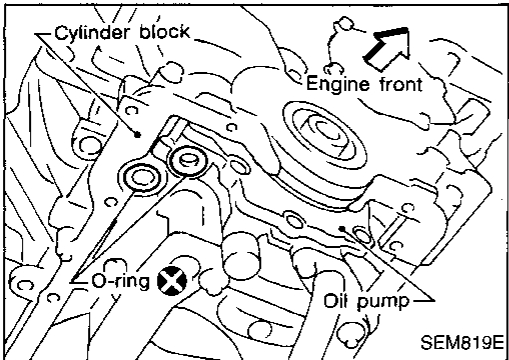
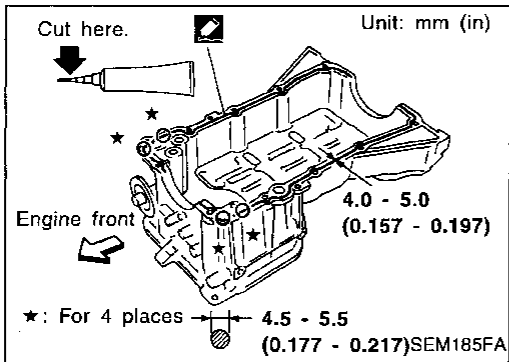
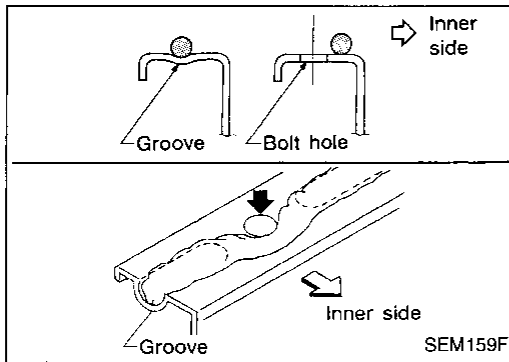
- Also remove traces of liquid gasket from mating surface of cylinder block, front cover and steel oil pan.
- Remove old liquid gasket from the bolt hole and thread.

b. Apply sealant to front cover gasket and rear oil seal retainer gasket.



OIL PAN

Installation (Cont'd)



- c. Apply a continuous bead of liquid gasket to mating surface of aluminum oil pan.
- Use Genuine RTV silicone sealant Part No. 999MP-A7007 or equivalent.

- d. Apply liquid gasket to inner sealing surface as shown in figure.
- Be sure liquid gasket is 4.0 to 5.0 mm (0.157 to 0.197 in) or 4.5 to 5.5 mm (0.177 to 0.217 in) wide.
 - Attaching should be done within 5 minutes after coating.

- e. Install O-rings, cylinder block and oil pump body.

- f. Install aluminum oil pan.
- Tighten bolts in numerical order.
 - Wait at least 30 minutes before refilling engine oil.

2. Install the transaxle bolts.
3. Install rear cover plate.

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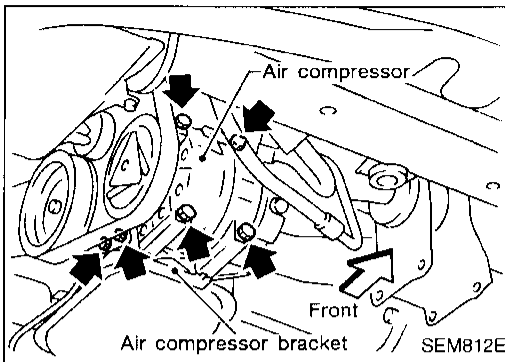
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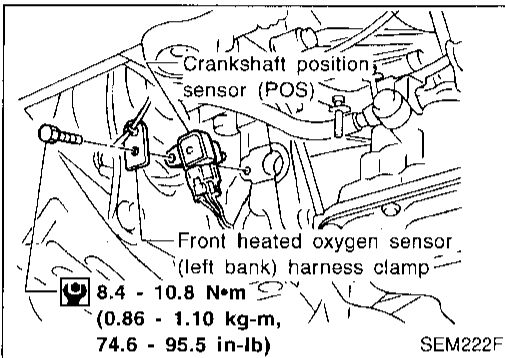
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OIL PAN

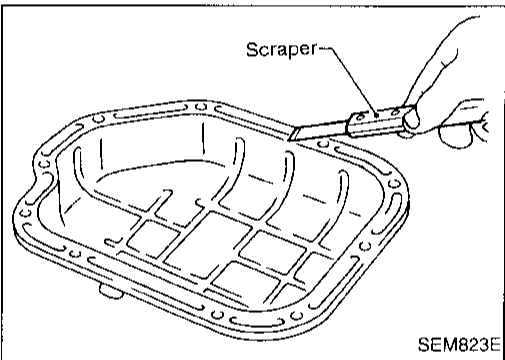
Installation (Cont'd)



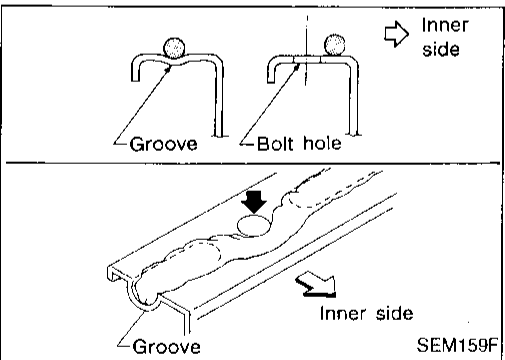
4. Install air compressor and bracket.
5. Install drive belts.
6. Install center member.
7. Install front and rear engine mounting insulator nuts and bolts.



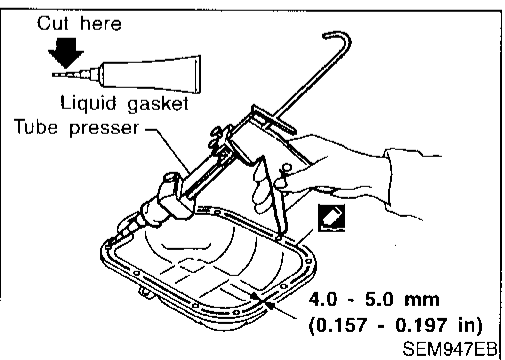
8. Install crankshaft position sensors (POS and REF) and front heated oxygen sensor (left bank) harness clamp.
 - **Make sure that crankshaft position sensor (POS) and front heated oxygen sensor (left bank) harness clamp are installed correctly as shown in figure.**
9. Install front exhaust tube and its support.
10. Install oil strainer.



11. Install steel oil pan.
 - a. Use a scraper to remove all traces of liquid gasket from mating surfaces.
 - Also remove traces of liquid gasket from mating surface of aluminum oil pan.

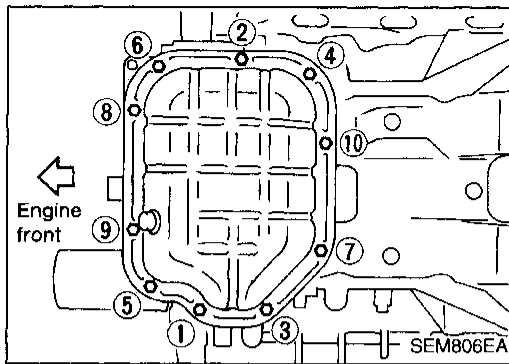


- b. Apply a continuous bead of liquid gasket to mating surface of steel oil pan.
 - **Use Genuine RTV silicone sealant Part No. 999MP-A7007 or equivalent.**
 - **Be sure liquid gasket is 4.0 to 5.0 mm (0.157 to 0.197 in) wide.**
 - **Attaching should be done within 5 minutes after coating.**



OIL PAN

Installation (Cont'd)



c. Install steel oil pan.

- Tighten in numerical order shown in the figure.
- Wait at least 30 minutes before refilling engine oil.

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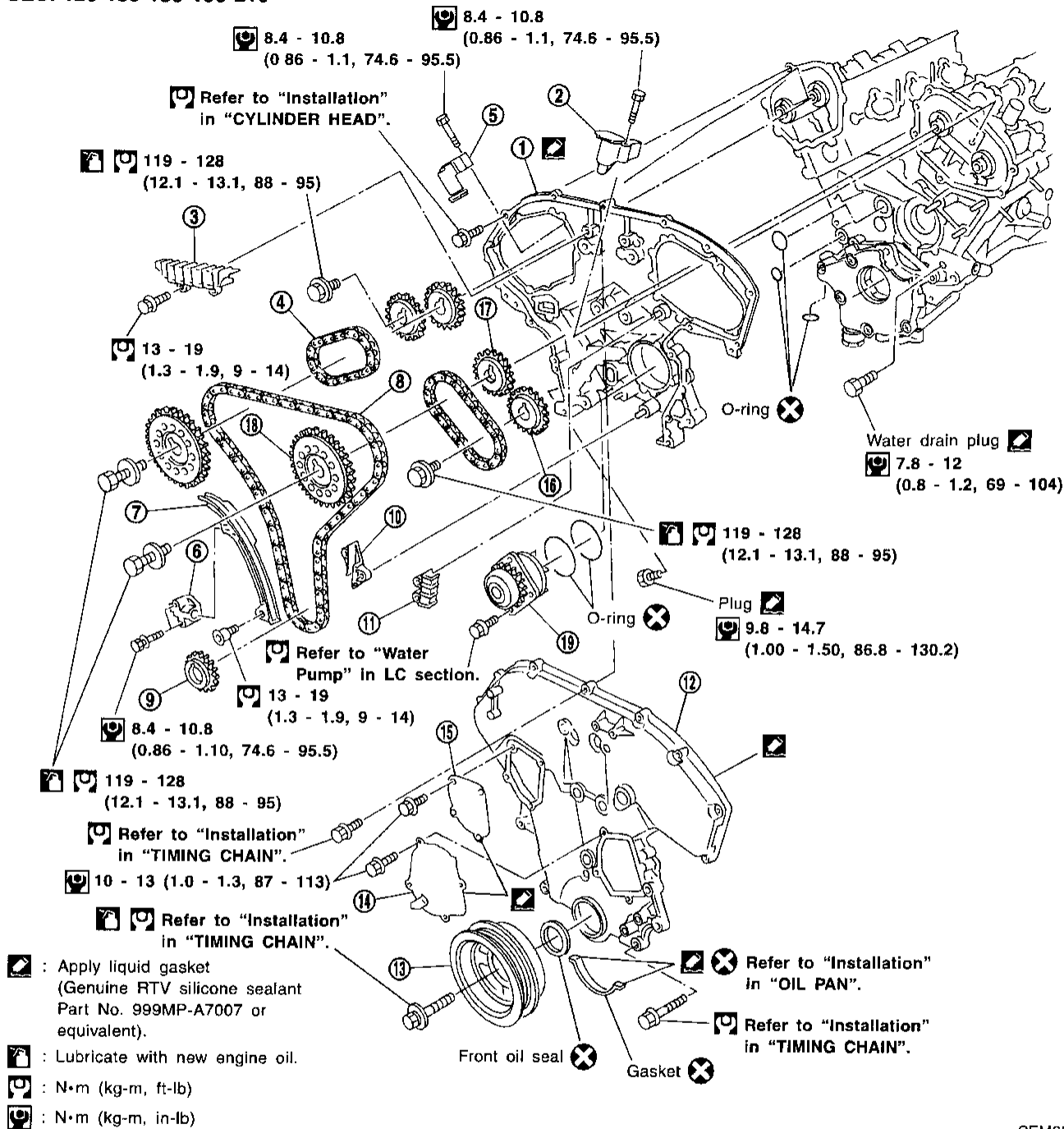
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TIMING CHAIN

SEC. 120•130•135•150•210



SEM651FA

- | | | |
|----------------------------------|---------------------------|---------------------------------|
| ① Rear timing chain case | ⑧ Timing chain | ⑭ Water pump cover |
| ② Left camshaft chain tensioner | ⑨ Crankshaft sprocket | ⑮ Chain tensioner cover |
| ③ Internal chain guide | ⑩ Lower chain guide | ⑯ Exhaust camshaft sprocket 2ND |
| ④ Camshaft chain | ⑪ Upper chain guide | ⑰ Intake camshaft sprocket 2ND |
| ⑤ Right camshaft chain tensioner | ⑫ Front timing chain case | ⑱ Camshaft sprocket 1ST |
| ⑥ Timing chain tensioner | ⑬ Crankshaft pulley | ⑲ Water pump |
| ⑦ Slack side chain guide | | |

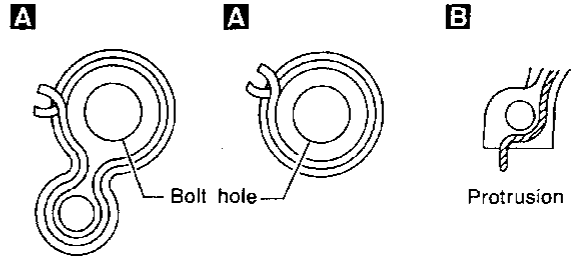
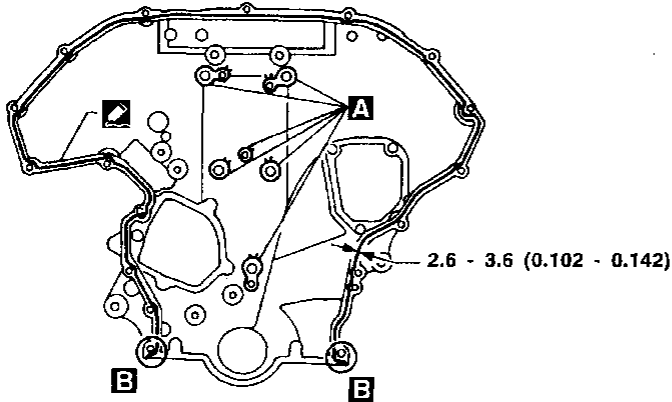
TIMING CHAIN

POSITION FOR APPLYING LIQUID GASKET

Refer to "Installation" in "OIL PAN" for installing oil pan (EM-16).

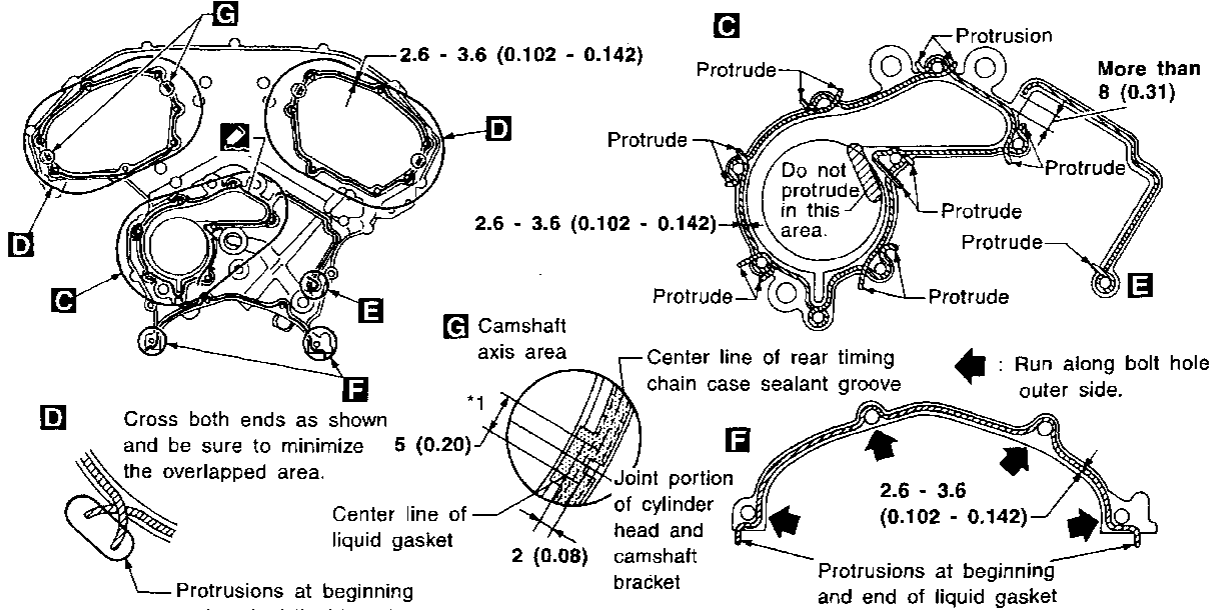
- Before installation, wipe off the protruding sealant.

Front timing chain case



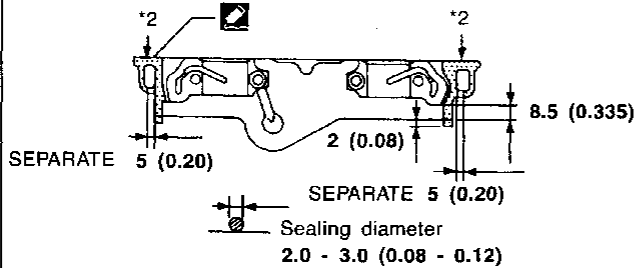
Sealant protrusion away from bolt hole

Rear timing chain case



*1 : Apply liquid gasket to the chamfered surface between camshaft bracket and cylinder head.

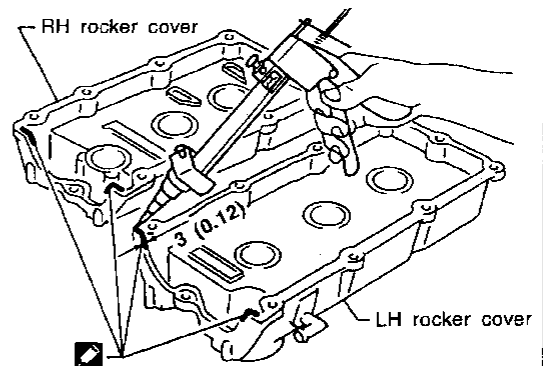
Camshaft bracket



*2 : Remove the protruding sealant from front face.
(Remove the hardened sealant from surface only.)

Unit: mm (in)

Rocker cover



SEM443FA

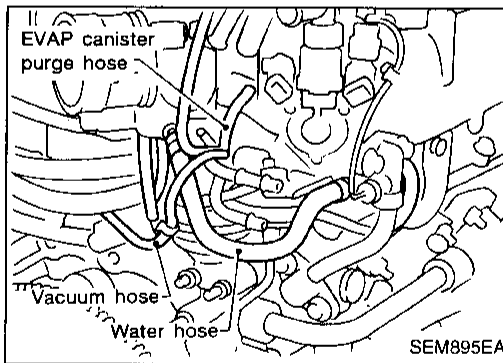
TIMING CHAIN

CAUTION:

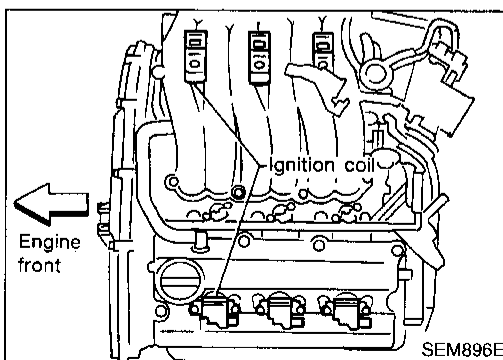
- After removing timing chain, do not turn crankshaft and camshaft separately, or valves will strike piston heads.
- When installing camshafts, chain tensioners, oil seals, or other sliding parts, lubricate contacting surfaces with new engine oil.
- Apply new engine oil to bolt threads and seat surfaces when installing cylinder head, camshaft sprockets, crankshaft pulley, and camshaft brackets.
- Before disconnecting fuel hose, release fuel pressure. Refer to EC section ("Fuel Pressure Release", "BASIC SERVICE PROCEDURE").
- When removing the oil pans, oil pump assembly and timing chain from engine, first remove the camshaft position sensor (PHASE) and the crankshaft position sensors (REF)/(POS) from the assembly.
Be careful not to damage sensor edges.
- Do not spill engine coolant on drive belts.

Removal

1. Drain engine oil.
2. Release fuel pressure.
Refer to "Fuel Pressure Release" in EC section.
3. Drain coolant by removing cylinder block drain plugs (refer to "Water pump" in LC section) and radiator drain cock.
4. Remove left side ornament cover.
5. Remove air duct to intake manifold, collector, blow-by hose, vacuum hoses, fuel hoses, wires, harness, connectors and so on.



6. Remove the following.
 - Vacuum hoses
 - Water hoses
 - EVAP canister purge hose
 - Blow-by hose

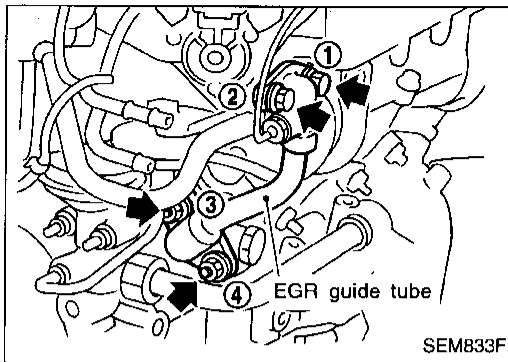


7. Remove RH and LH ignition coils.

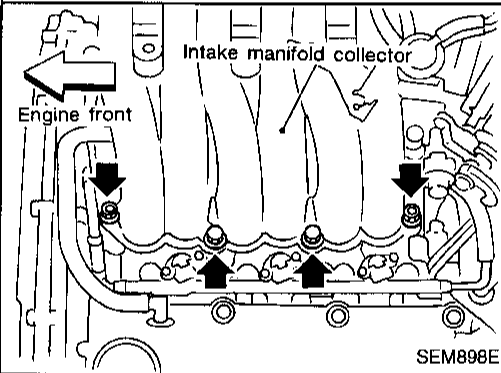
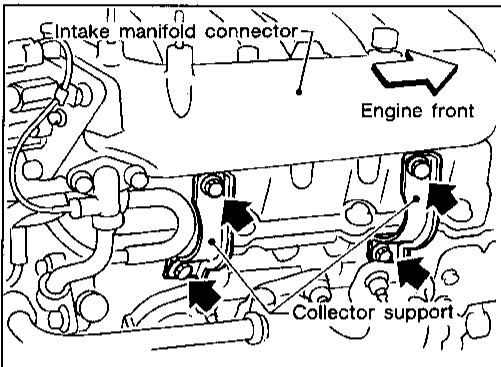
TIMING CHAIN

Removal (Cont'd)

8. Remove EGR guide tube.

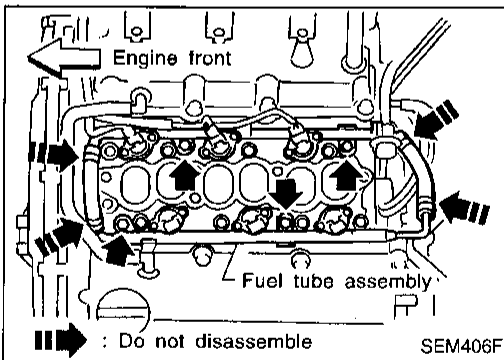


9. Remove intake manifold collector supports and intake manifold collector (RH cylinder head only).

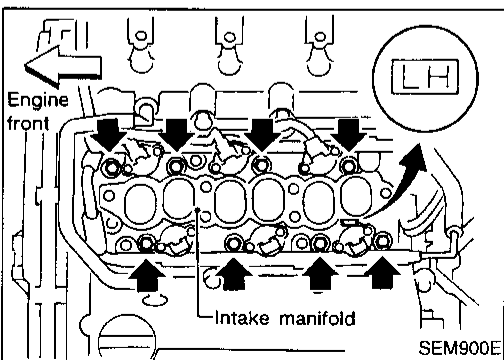


10. Remove fuel tube assembly.

- Do not disassemble fuel tube assembly.



11. Remove intake manifold in reverse order of installation. Refer to "TIGHTENING PROCEDURES" in "OUTER COMPONENT PARTS" (EM-10).



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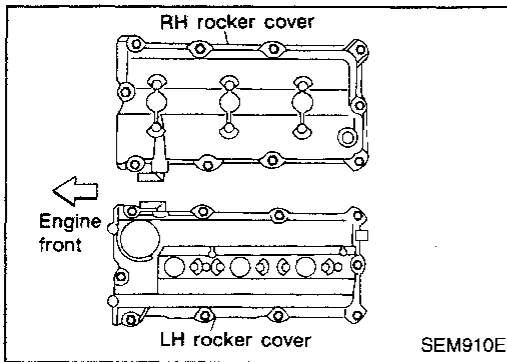
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TIMING CHAIN

Removal (Cont'd)

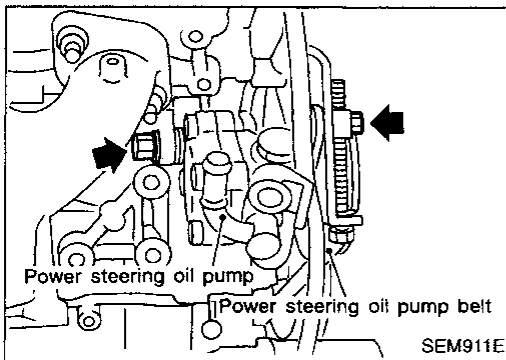


12. Remove RH and LH rocker covers from cylinder head.

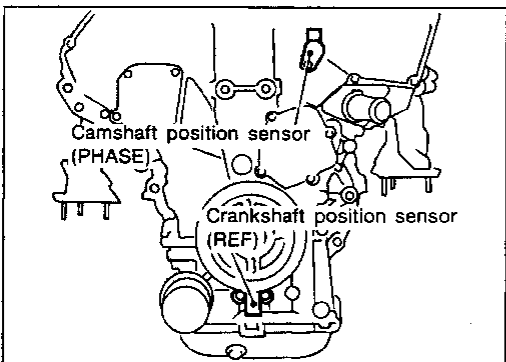
13. Remove engine undercover.

14. Remove front RH wheel and engine side cover.

15. Remove drive belts and idler pulley bracket.



16. Remove power steering oil pump belt and power steering oil pump assembly.



17. Remove camshaft position sensor (PHASE) and crankshaft position sensors (REF)/(POS).

