



## Disassembly

### NOTICE

- Use fender covers to avoid damaging painted surfaces.
- To avoid damage, unplug the wiring connectors carefully while holding the connector portion.

### Information

- Mark all wiring and hoses to avoid misconnection.
- Inspect the timing chain before removing the cylinder head.
- Turn the crankshaft pulley so that the No.1 piston is at top dead center (TDC).

1. Remove the engine and transmission assembly.

(Refer to Engine and Transmission Assembly - "Engine and Transmission Assembly")

2. Remove the automatic transmission.

(Refer to Automatic Transmission System - "Automatic Transmission")

3. Remove the drive plate.

(Refer to Cylinder Block - "Drive Plate")

4. Remove the front driveshaft. (If equipped with AWD system)

(Refer to Driveshaft and Axle - "Front Driveshaft")

5. Remove the front differential assembly. (If equipped with AWD system)

(Refer to Driveshaft and Axle - "Front Differential Carrier")

6. Install the engine assembly to engine stand for disassembly.

7. Remove the surge tank.

(Refer to Intake and Exhaust System - "Surge Tank")

8. Remove the intake manifold.

(Refer to Intake and Exhaust System - "Intake Manifold")

9. Remove the turbo manifold module.

(Refer to Intake and Exhaust System - "Turbo Manifold Module")

10. Remove the water temperature control assembly and water center pipe.

(Refer to Cooling System - "Water Temperature Control Assembly")

11. Remove the cylinder head cover.

(Refer to Cylinder Head Assembly - "Cylinder Head Cover")

12. Remove the timing chain cover.

(Refer to Timing System - "Timing Chain Cover")

13. Remove the timing chain.

(Refer to Timing System - "Timing Chain")

14. Remove the RH / LH CVVT & camshaft assembly.

(Refer to Cylinder Head Assembly - "CVVT & Camshaft")

15. Remove the cylinder head.

(Refer to Cylinder Head Assembly - "Cylinder Head")

16. Remove the lower and upper oil pan.

(Refer to Lubrication System - "Oil Pan")

17. Remove the oil pump.

(Refer to Lubrication System - "Oil Pump")

18. Remove the piston and connecting rod assembly.

(Refer to Cylinder Block - "Piston and Connecting Rod")

19. Remove the crankshaft.

(Refer to Cylinder Block - "Crankshaft")

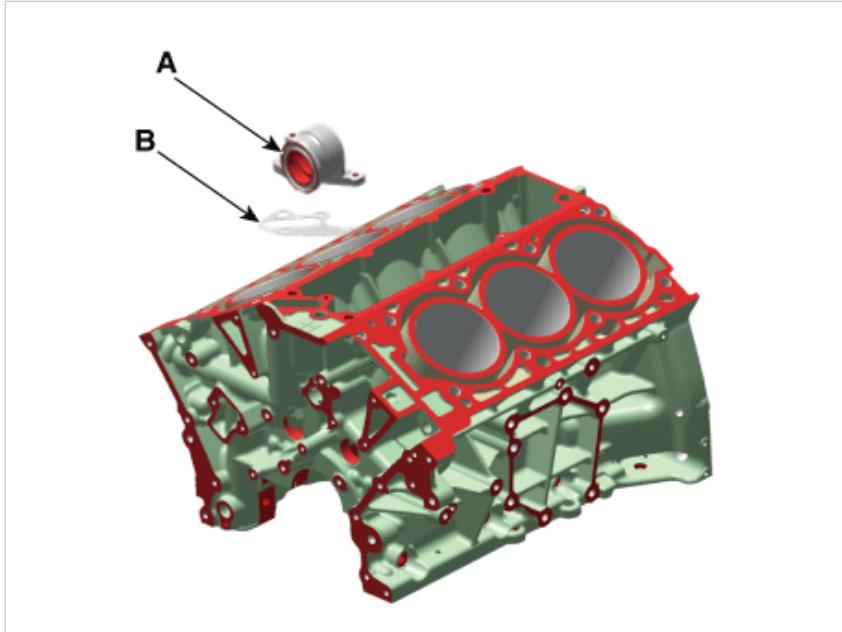
20. Remove the water jacket separator.

(Refer to Cylinder Block - "Water Jacket Separator")

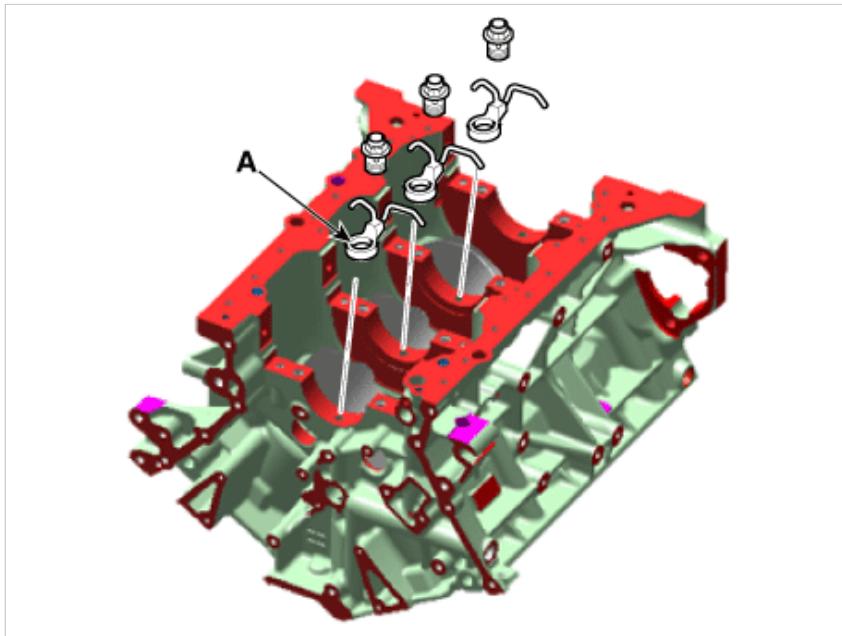
21. Remove the knock sensor (KS).

(Refer to Engine Control / Fuel System - "Knock Sensor (KS)")

22. Remove the oil cover (A) and gasket (B).



23. Remove the oil jets (A).



## Inspection

### Cylinder Block

1. Remove the gasket material.

Using a gasket scraper, remove all the gasket material from the top surface of the cylinder block.

2. Clean the cylinder block.

Using a soft brush and solvent, thoroughly clean the cylinder block.

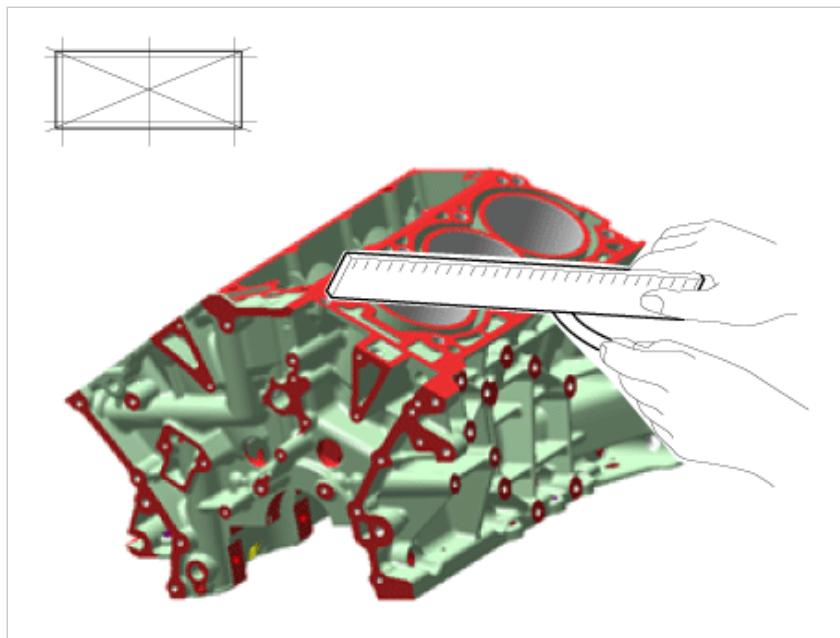
3. Inspect the top surface of the cylinder block for flatness.

Using a precision straight edge and feeler gauge, measure the warpage of the surface contacting with the cylinder head gasket.

#### Flatness of cylinder block gasket surface

Standard : Less than 0.05 mm (0.0020 in.),

Less than 0.02 mm (0.0008 in.) / 150 x 150



4. Inspect cylinder bore diameter.

Visually check the cylinder for vertical scratches.

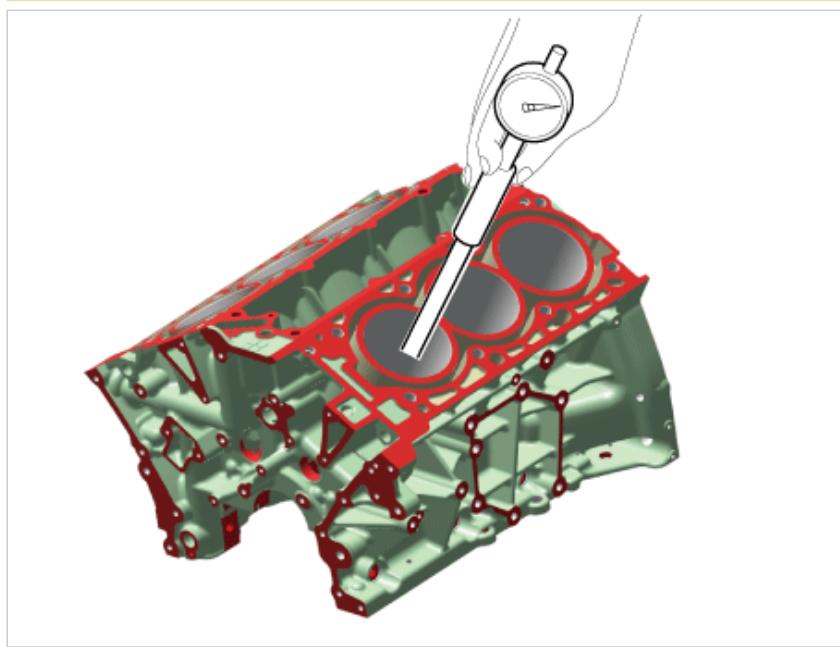
If deep scratches are present, replace the cylinder block.

5. Inspect cylinder bore diameter

Using a cylinder bore gauge, measure the cylinder bore diameter in the direction of the thrust and axial.

**Standard diameter :**

92.00 - 92.03 mm (3.6220 - 3.6232 in.)

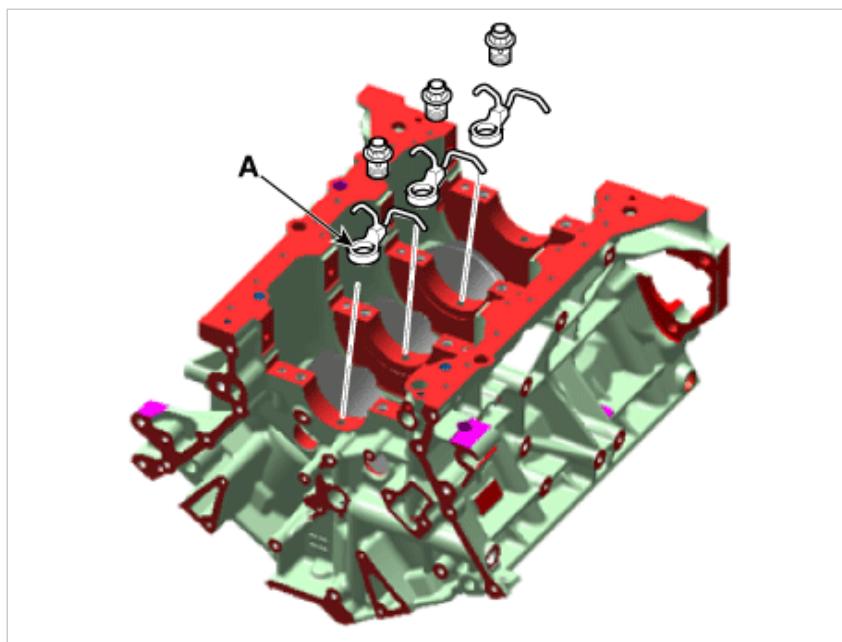


## Reassembly

1. Install the oil jets (A).

**Tightening torque:**

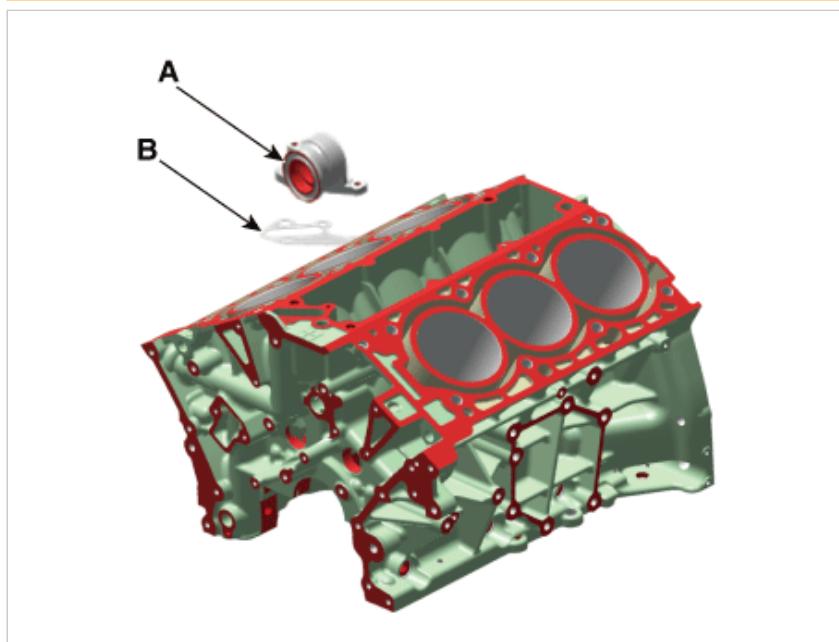
27.5 - 31.3 N·m (2.8 - 3.2 kgf·m, 20.2 - 23.1 lb·ft)



2. Remove the oil cover (A) and gasket (B).

**Tightening torque :**

9.8 - 11.8 N·m (1.0 - 1.2 kgf·m, 7.2 - 8.7 lb·ft)



3. Assemble the remaining parts in the reverse order of disassembly.

**Information**

After replacing the cylinder block with a new one, select the proper crankshaft main bearing and piston according to the crankshaft journal bore mark and the cylinder bore mark on the cylinder block.

- Crankshaft main bearing selection  
(Refer to Cylinder Block - "Crankshaft")
- Piston selection  
(Refer to Cylinder Block - "Piston and Connecting Rod")