

INSTALLATION MANUAL

DOHC BIG BORE 181CC KIT

215-1432900



- Thank you for purchasing Kitaco product. Read and understand the instruction before installing.
 - There are special tools required to install this kit.
 - Use this instruction for setting manual afterwards.
- ※Keep this instruction since it is not included in repair parts.

ATTENTIONS (MUST READ)

- We are not responsible for damages and accidents caused by assembling mistake and improper setting.
- Follow the instructions and install correctly. Do not modify the way which is not listed, or it will cause damage and trouble.
- Ask a mechanic or a specialist at a specialty shop for assembling and setting if you do not understand the role of the surrounding parts.
- Bolts and nuts may get loosen by engine vibration. Make sure to check that each part of bolts and nuts are not loose before running.
- Refer to the HONDA service manual for each vehicle when installing.
- If you have any doubt or do not understand how to assemble, stop driving and ask your shop who installed this product.



This sheet is for the person who has basic knowledge for maintenance.
Do not operate if you do not have skill and knowledge.



FLAMMABLES
Flammable high gasoline is used during operation.
The use of products causing fire or smoke is



HIGH VOLTAGE
Wear insulated gloves when checking the sparking outside the cylinder.



TOXIC
Toxic, highly-volatile gasoline is used during operating.
Make sure to ventilate the room and do not operate for hours in a hermetically closed room.



EXTREMELY HOT
Do not touch the engine parts (cylinder,crankcase, muffler,engine oil,etc...) right after engine operation.
Make sure to start the installation after the engine parts are completely cool.

DOHC CYLINDERHEAD INSTALLATION MANUAL

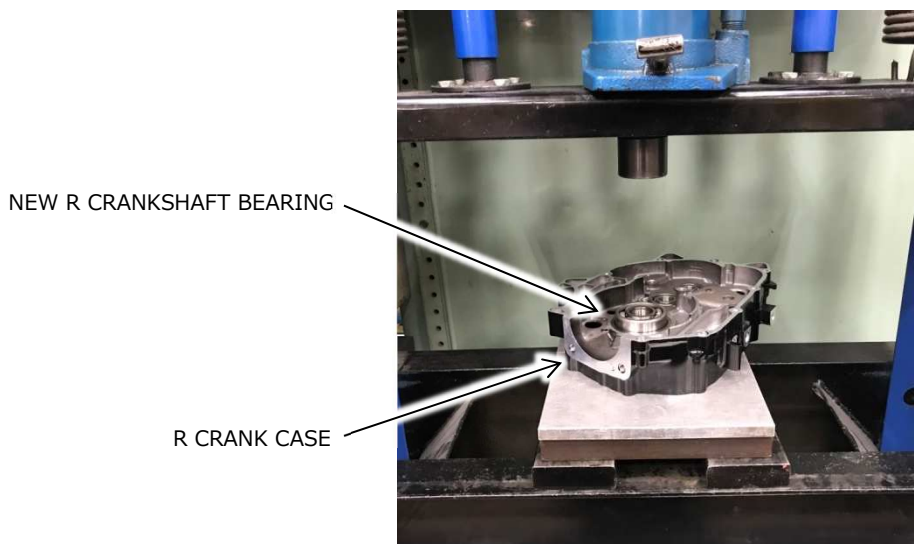
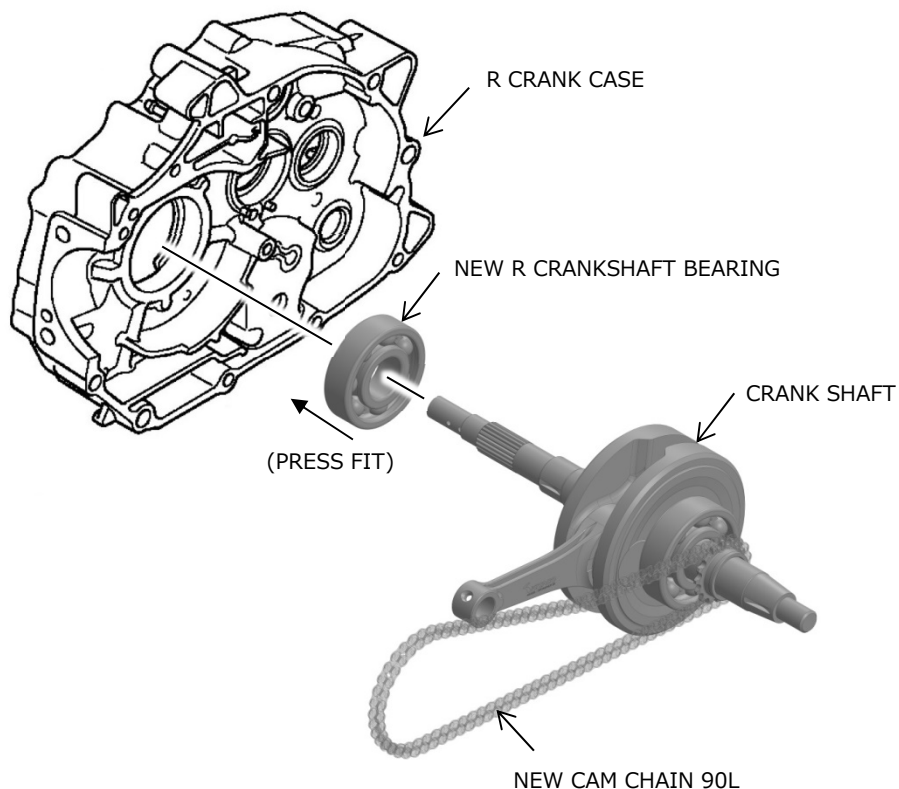
INSTALLATION PROGRESS

- Refer to service manual for disassembly and assembly if not described here.
- Clean all disassembled parts with cleaning solvent before inspection, use compressed air to dry the parts.
- Be sure to check the torque when installing.

CRANK SHAFT

- Apply oil to a new right crankshaft bearing rolling surface.
- Drive in the right crankshaft bearing with its marked side facing up until it is fully seated, using the special tools.

⚠ Be careful not to damage the crankcase.

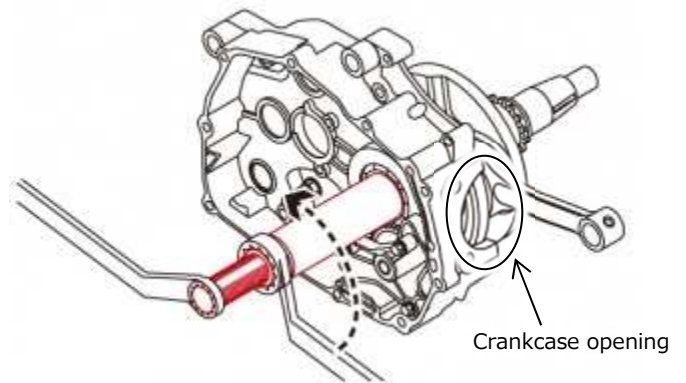
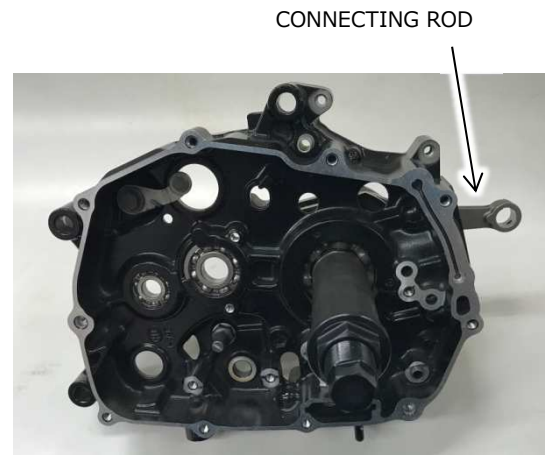


CRANK SHAFT

- Draw the crankshaft into the right crankcase bearing inner race using the special tool.

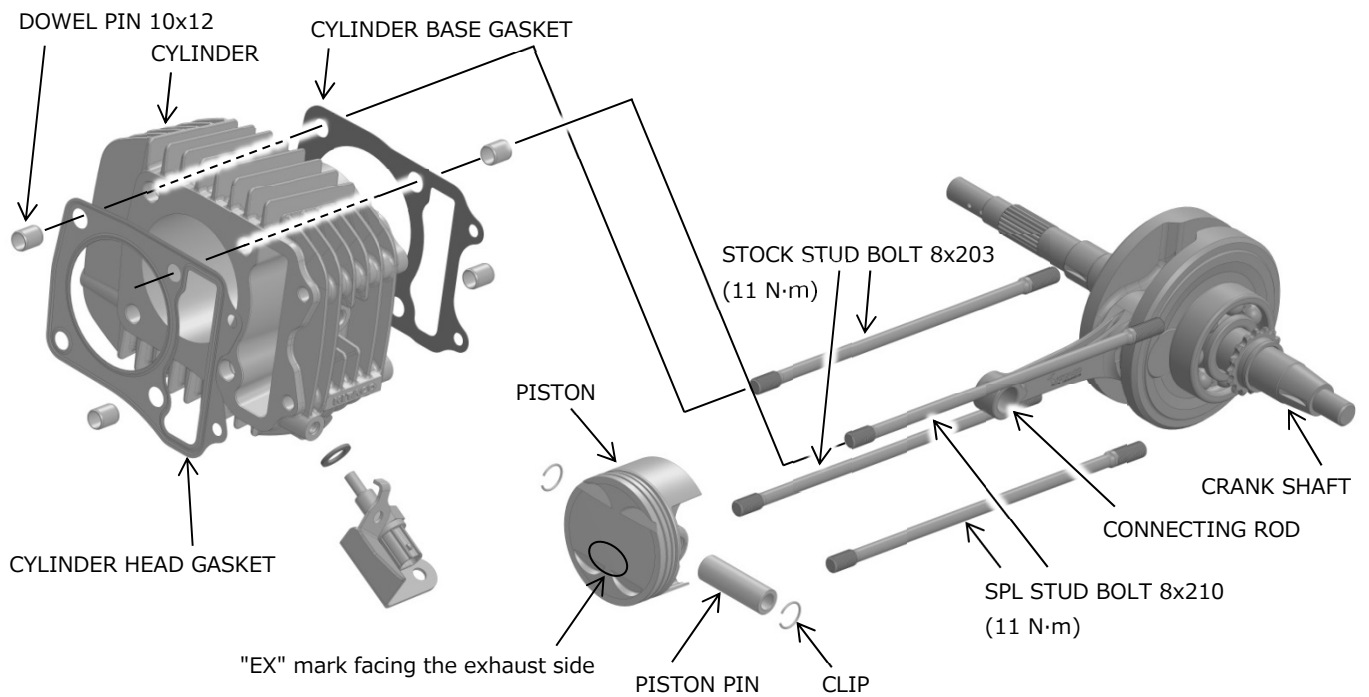
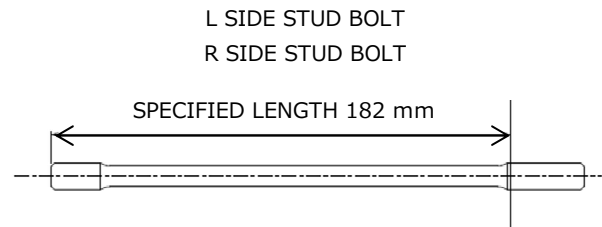
⚠ Be sure that the connecting rod is located in the crankcase opening.

TOOL:
ASSEMBLY SET
KITACO Parts No, 674-1432700



STUD BOLT REPLACEMENT

- Thread two nuts into the stud and tighten them together, and use wrench on them to turn the stud bolt out.
Stock stud bolts 8x196 are not used.
- Install new stud bolts 8x210, stock stud bolts 8x203 into the crankcase and tighten them.
- After crankcase stud bolt installation, check that the length from the bolt head to the crankcase surface is within specification.

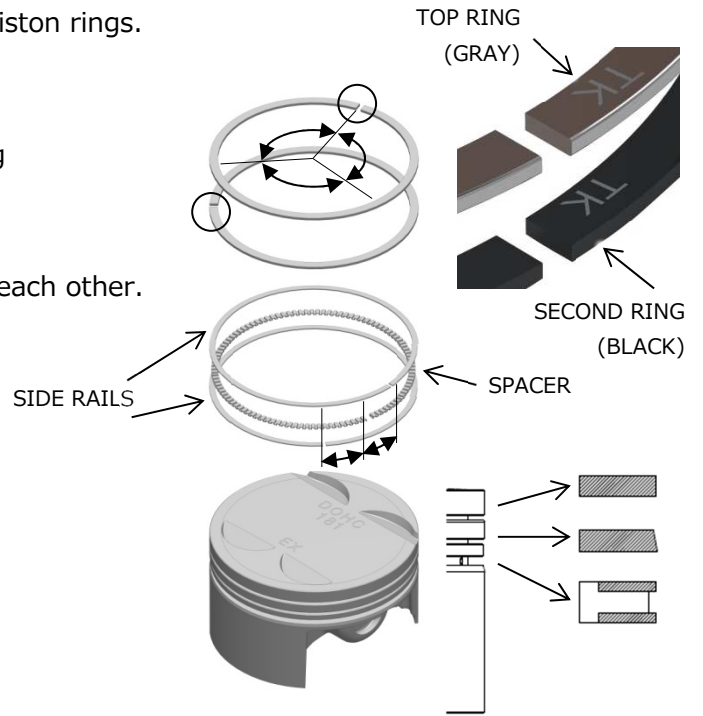


PISTON

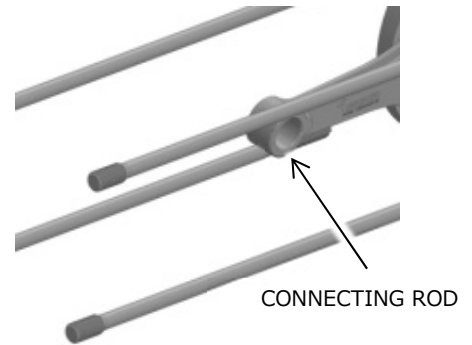
- Apply engine oil to the rings and ring grooves.
- Clean the ring grooves thoroughly and install the piston rings.
- Set the piston pin clip in the groove properly.

Carefully install the piston rings into the piston ring grooves with the markings facing up.

- ⚠ Do not confuse the top ring and second ring.
- Stagger the piston ring end gaps 120° apart from each other.
- Stagger the side rail end gaps as shown.

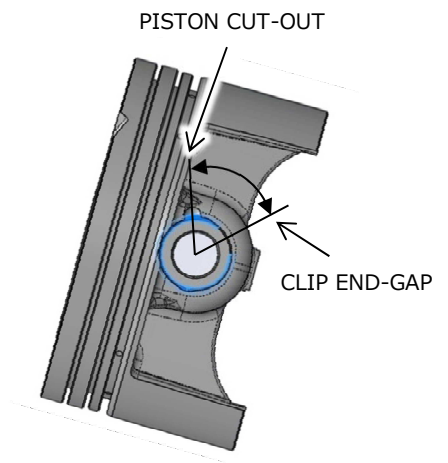


- Apply engine oil to the connecting rod small end hole.
- Apply engine oil to the piston pin.
- Install the piston with the "EX" mark facing the exhaust side.



- Set the piston pin clip in the groove properly.
- Do not align the clip's end gap with the piston cutout.

- ⚠ Always use new piston pin clips.
- Reinstalling used piston pin clips may lead to serious engine damage.



CYLINDER

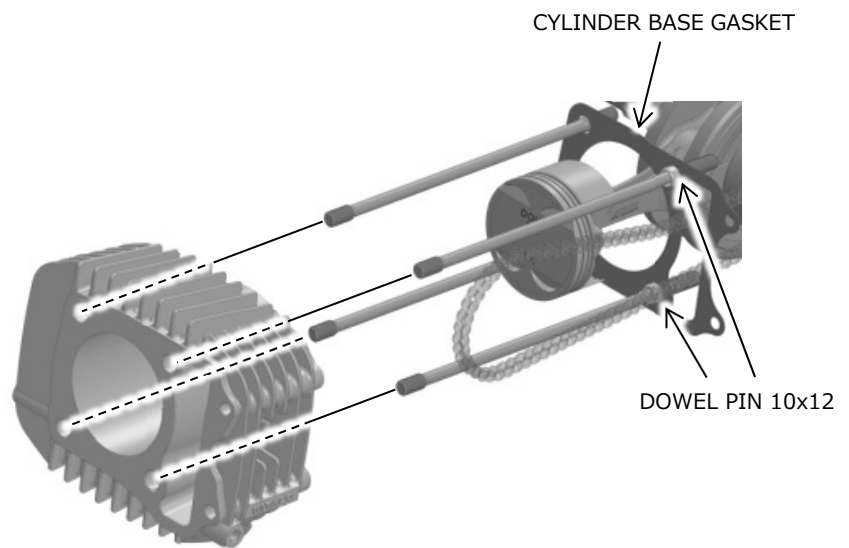
- Camshaft and rocker arm lubricating oil is fed through an oil passage in the cylinder. Clean the oil passage before installing cylinder.
- Install the dowel pins 10x12 and a cylinder base gasket.
- Apply engine oil to the cylinder and piston sliding surface.
- Apply engine oil to the piston rings.
- Install the cylinder over the piston while compressing the piston ring with your finger.

Take care not to damage the cylinder wall and piston.

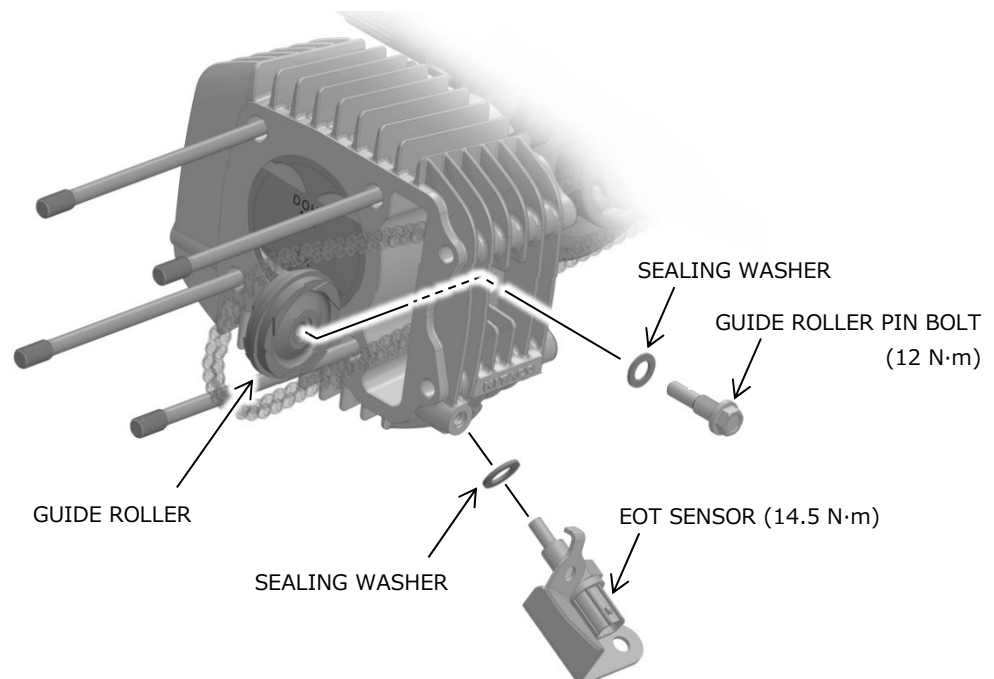
Be careful not to damage the mating surfaces.

⚠ Avoid piston ring damage during installation.

Do not let the cam chain fall into the crankcase.

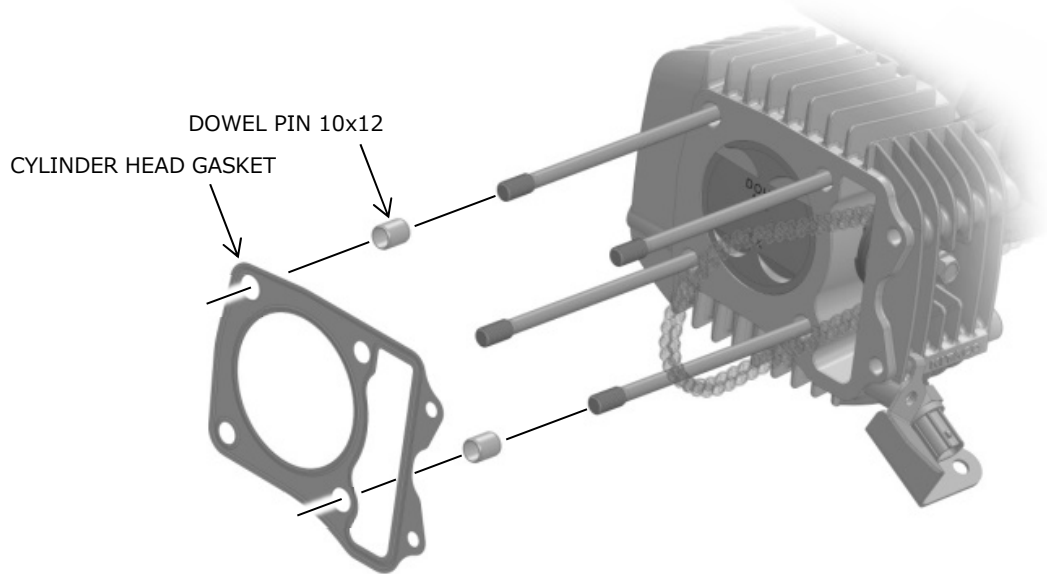


- Install the cam chain guide roller, new sealing washer and cam chain guide roller pin bolt.
- Tighten the roller pin bolt, EOT sensor to the specified torque.

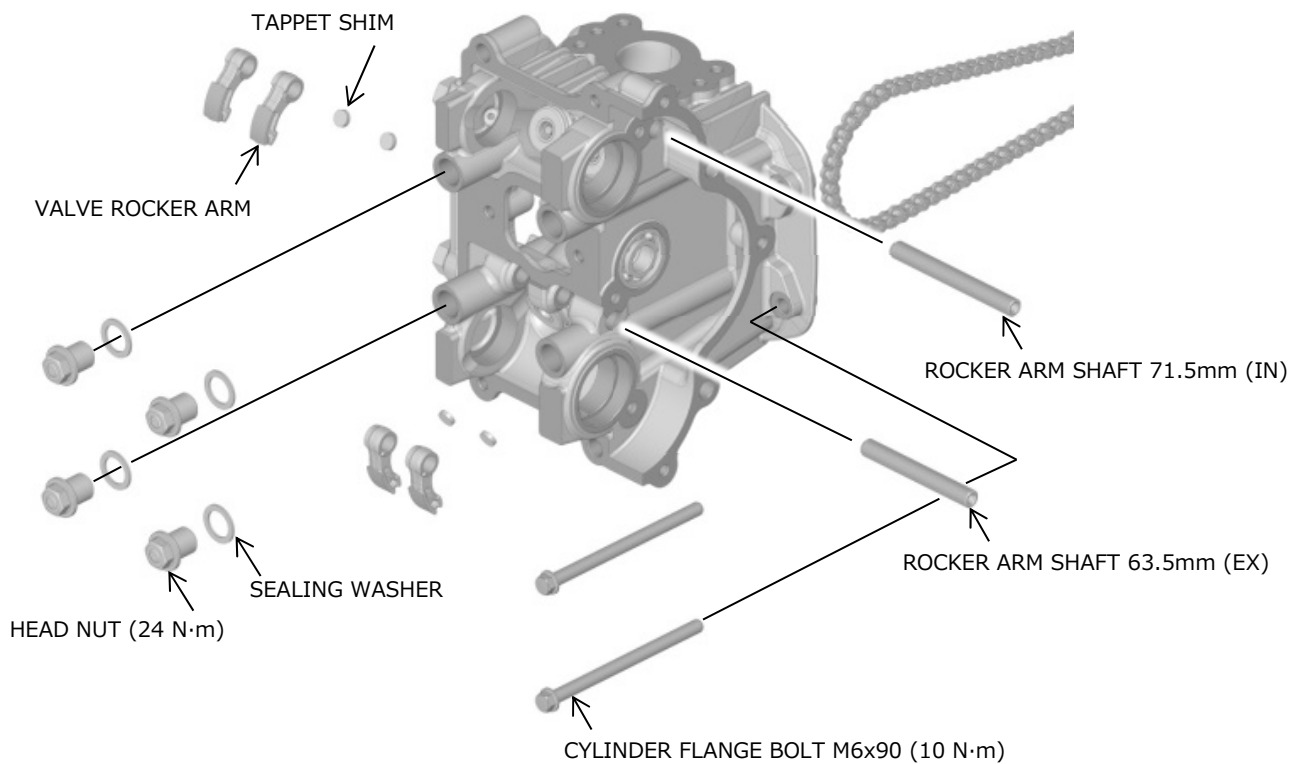


CYLINDER HEAD

- Install the dowel pins 10x12 and a cylinder head gasket onto the cylinder.

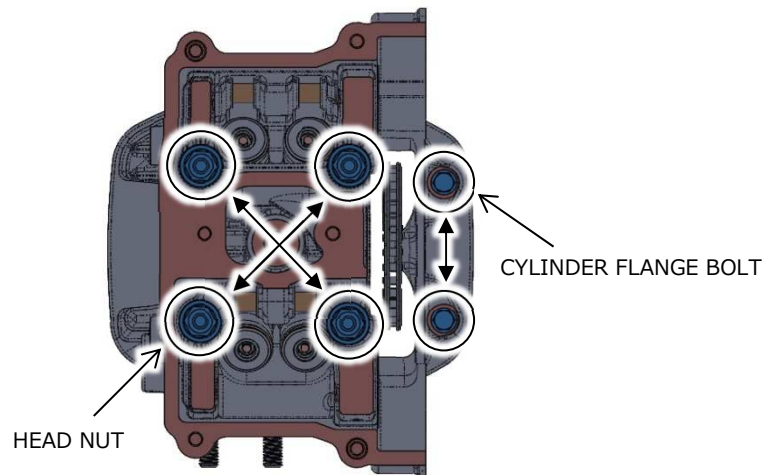


- Route the cam chain through the cylinder head and install the cylinder head onto the cylinder.



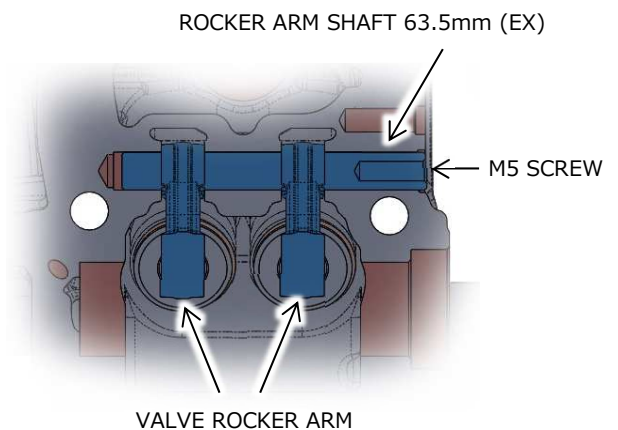
CYLINDER HEAD

- Apply engine oil to the thread and seating surface of the head nut.
- Install the washers and tighten the head nuts in a crisscross pattern in two or three steps to the specified torque.
- Then tighten the cylinder flange bolt.



- Apply engine oil to the sliding surface of the rocker arm shaft.
- Install the rocker arms to the cylinder head.

⚠ Be careful not to let the shims fall into the crankcase.



CYLINDER HEAD/CAMSHAFT

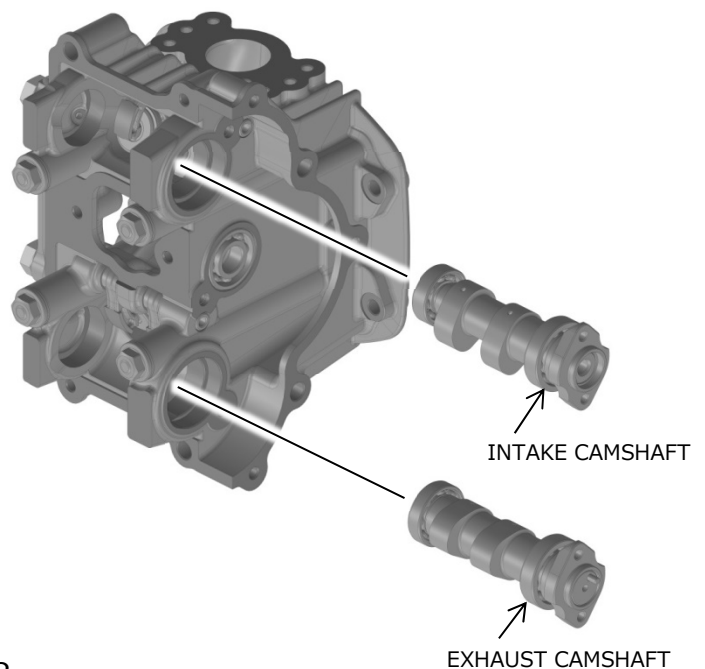
- Install the camshaft into the cylinder head.
- Apply engine oil to the camshaft bearings.

Each camshaft has an identification mark.

"IN" mark : Intake camshaft

"EX" mark : Exhaust camshaft

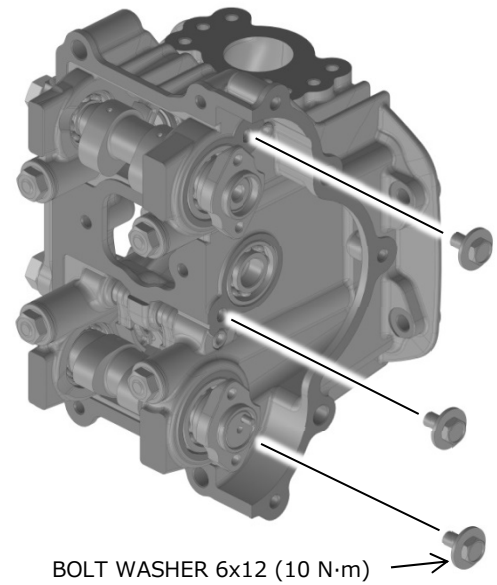
Install the camshaft with its lobes facing up.



CYLINDER HEAD/CAMSHAFT

- Install and tighten the bolt washer to the specified torque.

⚠ Be careful not to let the bolts fall into the opening of the cylinder head.



CYLINDER HEAD/ VALVE CLEARANCE

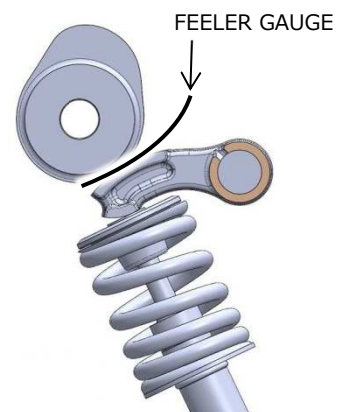
- Check the valve clearance by inserting a feeler gauge between the rocker arm and shim.

Inspect and adjust the valve clearance while the Engine is cold (below 35°C/95°F).

VALVE CLEARANCE:

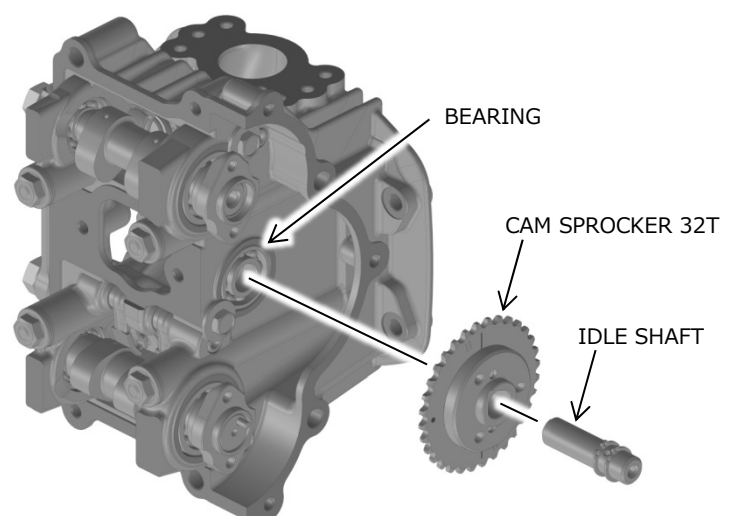
IN : 0.16 ± 0.03 mm

EX : 0.27 ± 0.03 mm



CYLINDER HEAD/TIMING GEAR

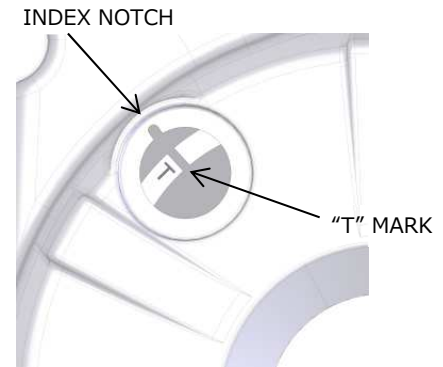
- Apply engine oil to the idle shaft surface and bearings.



CYLINDER HEAD/TIMING GEAR

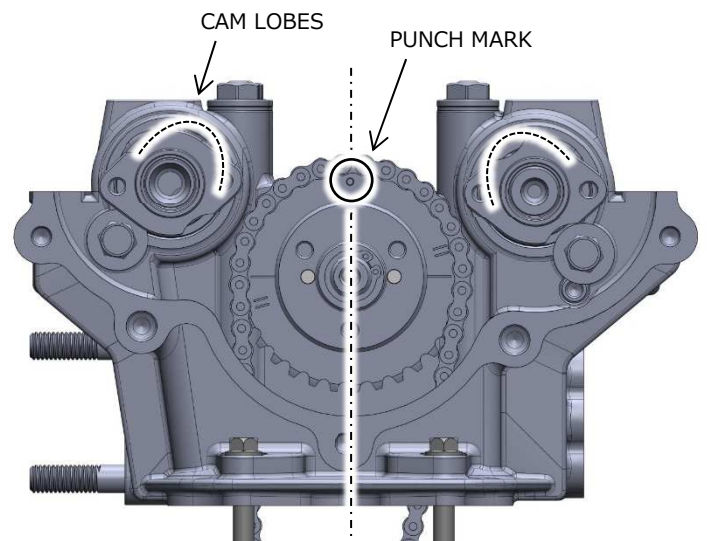
- Rotate the crankshaft counterclockwise, and align the "T" mark on the flywheel with the index notch on the left crankcase cover.

⚠ Be careful not to jam the cam chain and timing sprocket on the crankshaft when rotating the crankshaft.

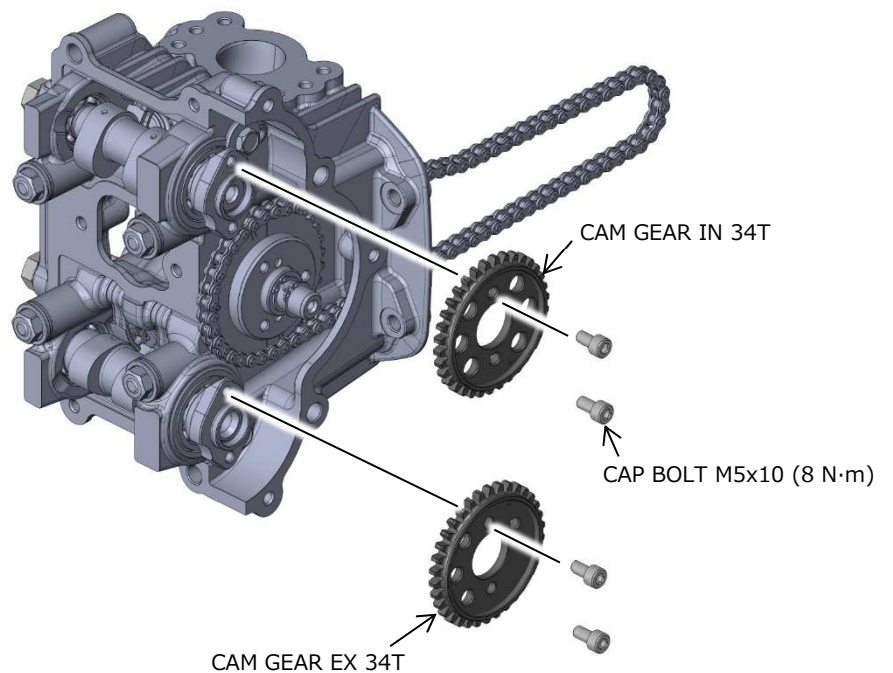


- Set the cam chain onto the cam sprocket 32T.
- Apply engine oil to the cam chain and cam sprocket teeth.

⚠ Check that the punch marks of the cam sprockets is facing up as shown.

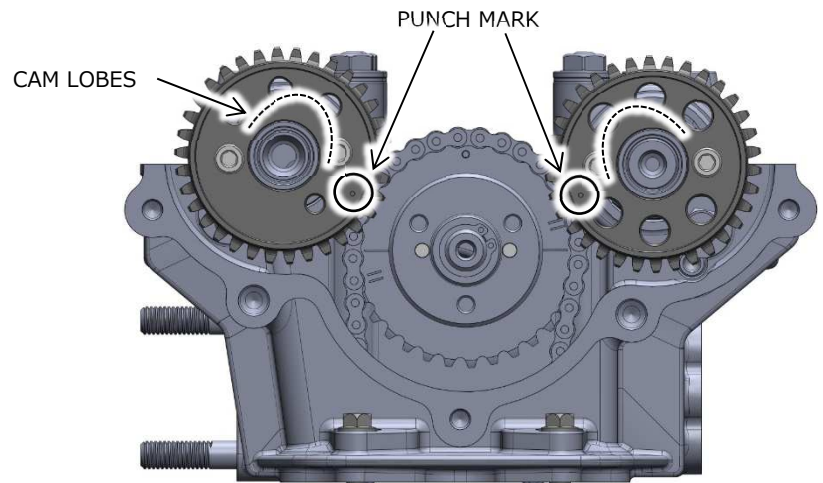


- Install the cam gear 34T to the camshaft.

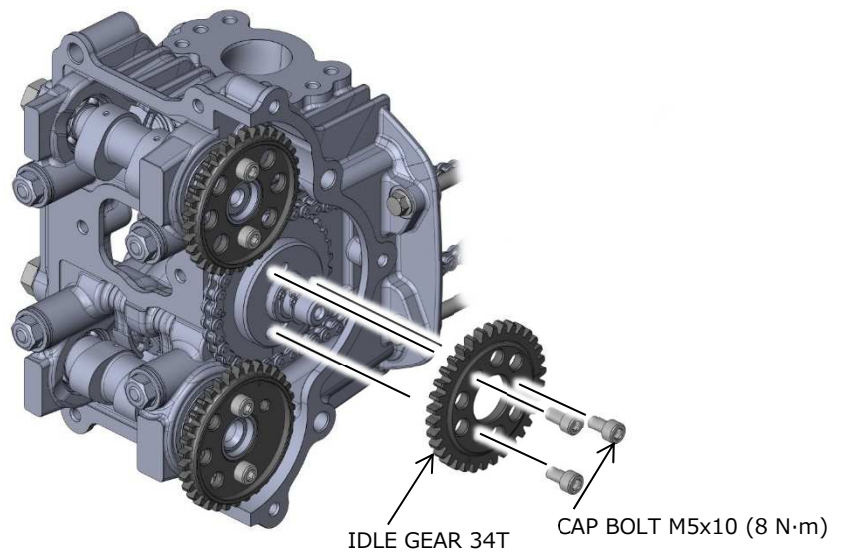


CYLINDER HEAD/TIMING GEAR

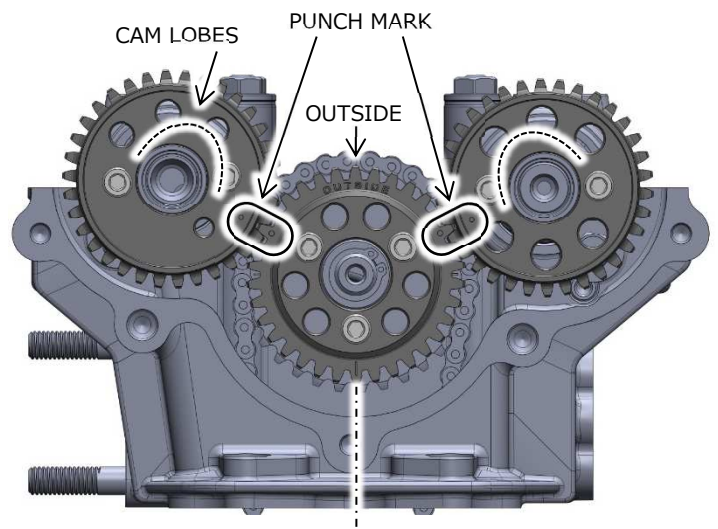
- Install the cam gear onto the camshaft by aligning the punch mark.
- Install and tighten the cam gear socket bolts to the specified torque.



- Install the idle gear 34T to the cam sprocket 32T.
- Install idle gear facing "OUTSIDE" mark out.



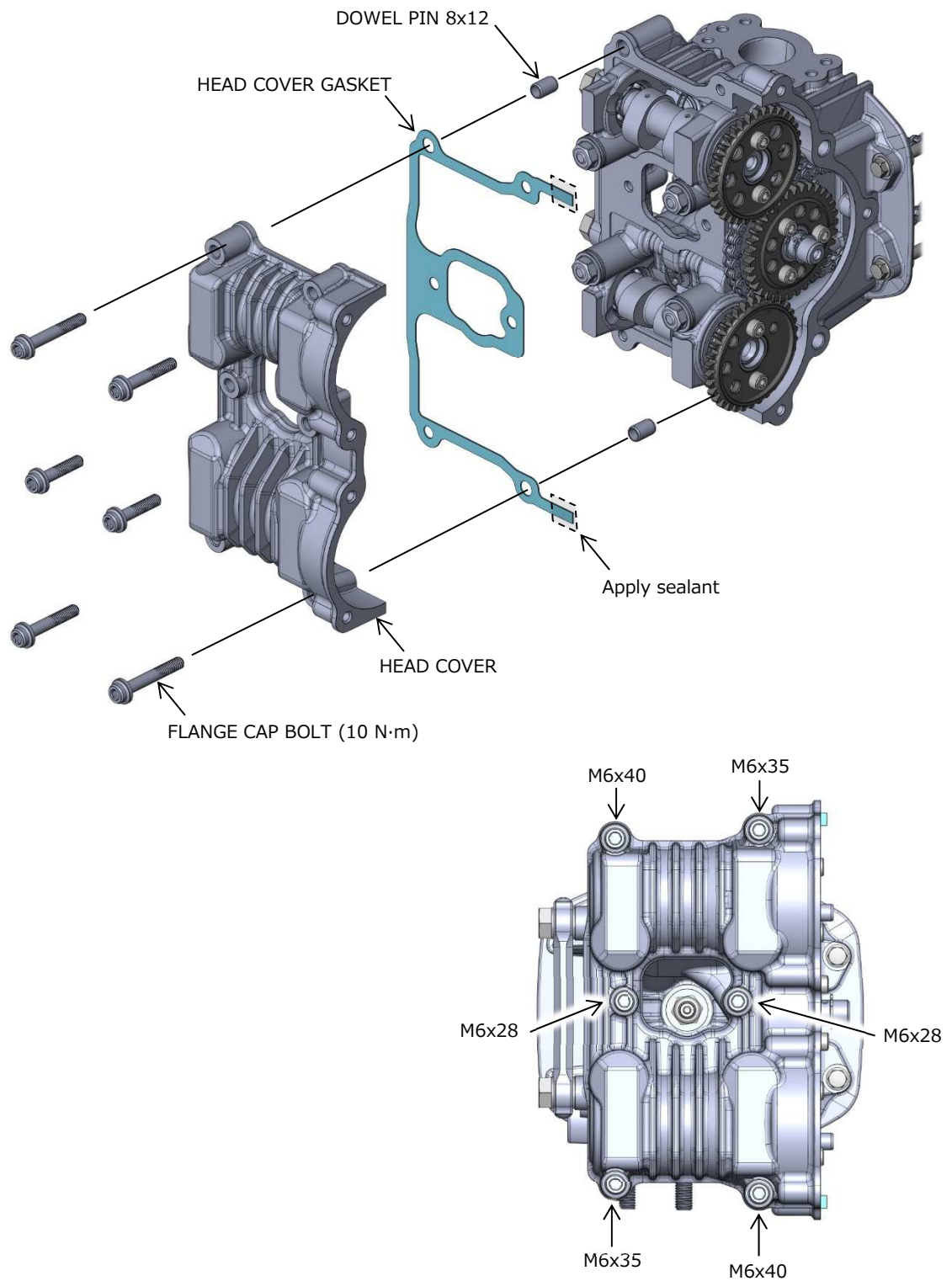
- Align the inside punch mark on the cam gears with the idle gear punch mark as shown.



CYLINDER HEAD/HEAD COVER

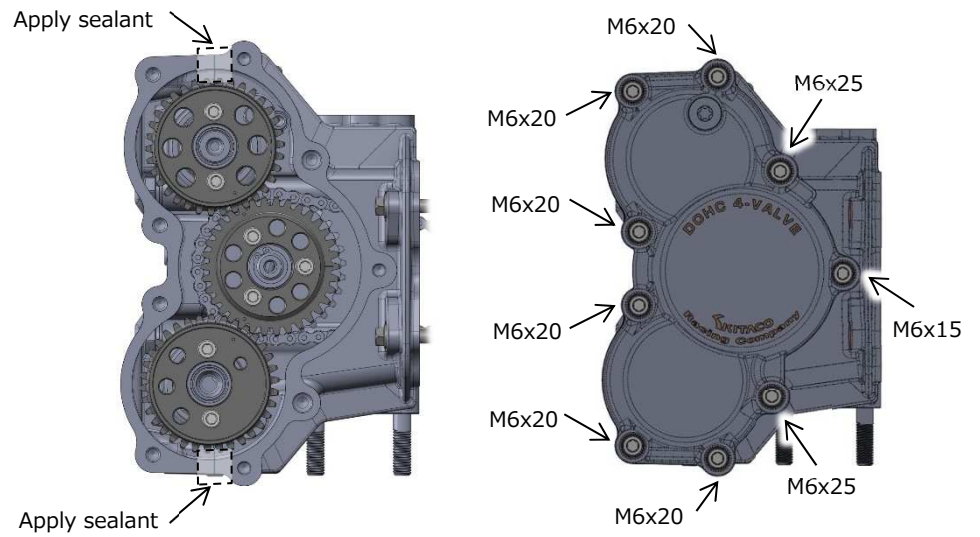
- Apply sealant to the head cover gasket as shown.
- Install the head cover and bolts.
- Tighten the bolts in a crisscross pattern in 2 or 3 steps.

⚠ Make sure that the gasket stays in place.

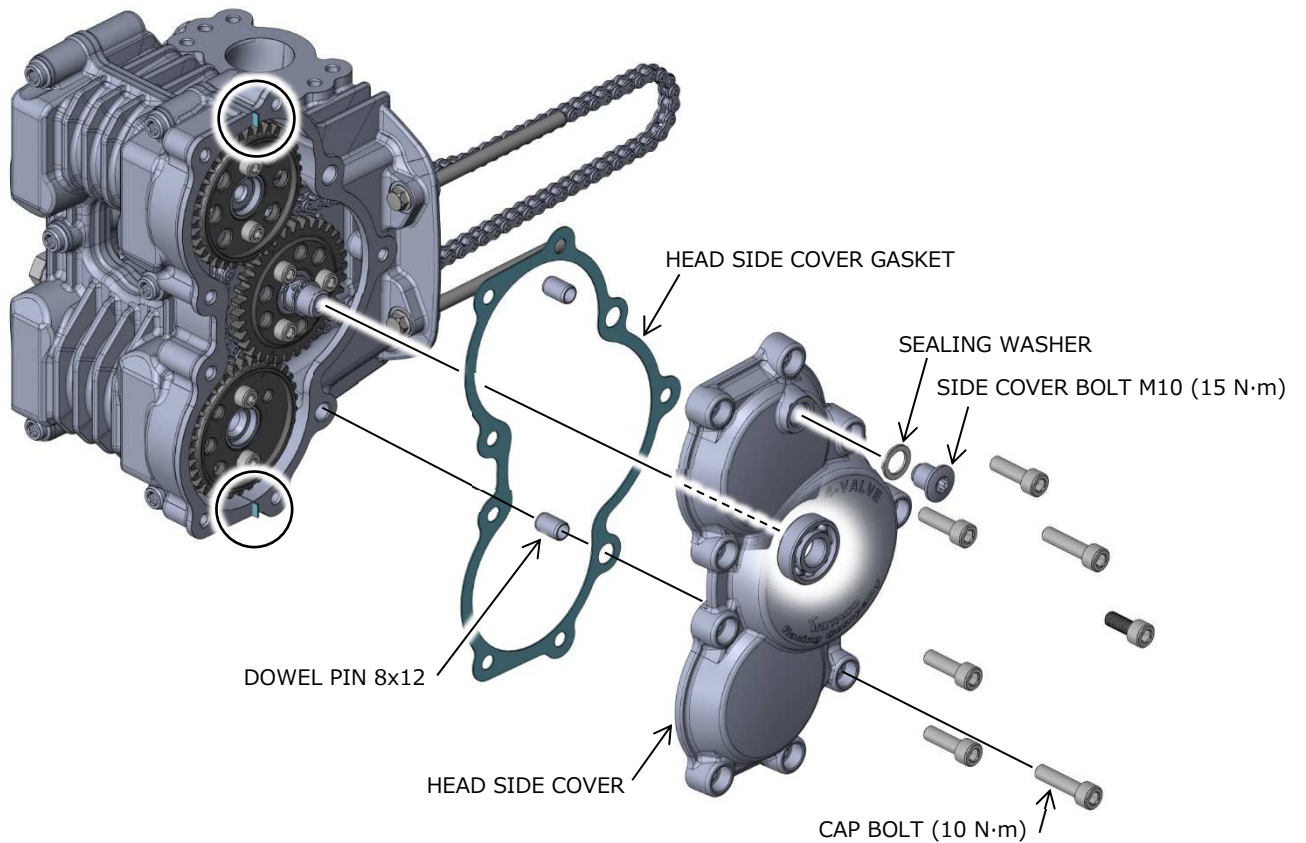


CYLINDER HEAD/HEAD COVER

- Cut the protruding gasket as shown in the figure.
- Apply sealant to the cylinder head as shown.



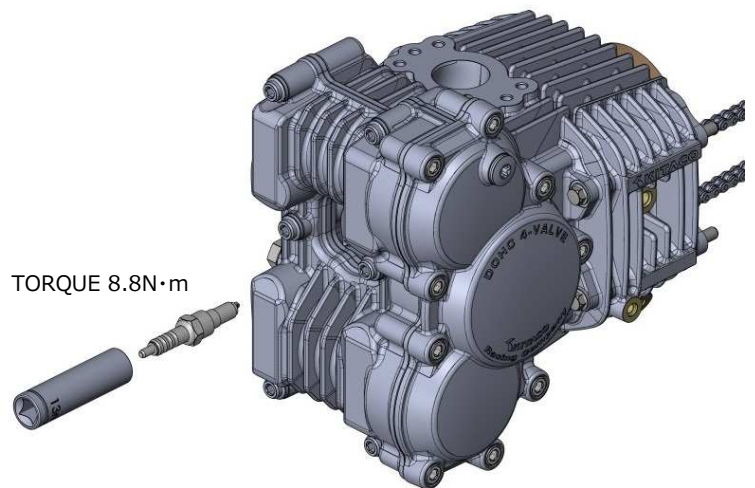
- Apply engine oil to the gear surface and bearings.
- Install the head cover and bolts.
- Tighten the bolts in a crisscross pattern in 2 or 3 steps.



SPARK PLUG

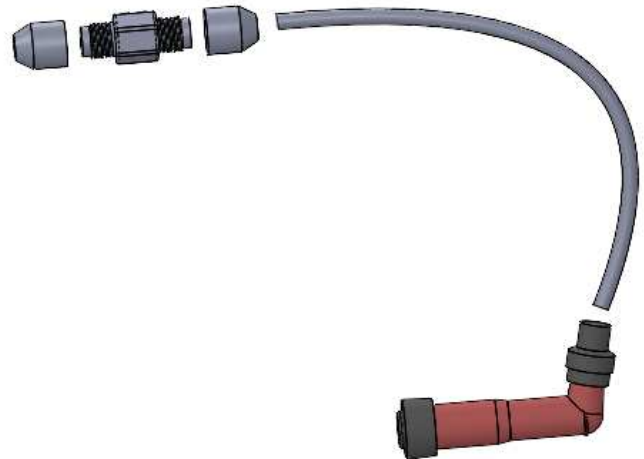
- Install and hand tighten the spark plug to the cylinder head, then tighten the spark plug to the specified torque.

⚠ To prevent damage to the cylinder head, hand-tighten to the specified torque.

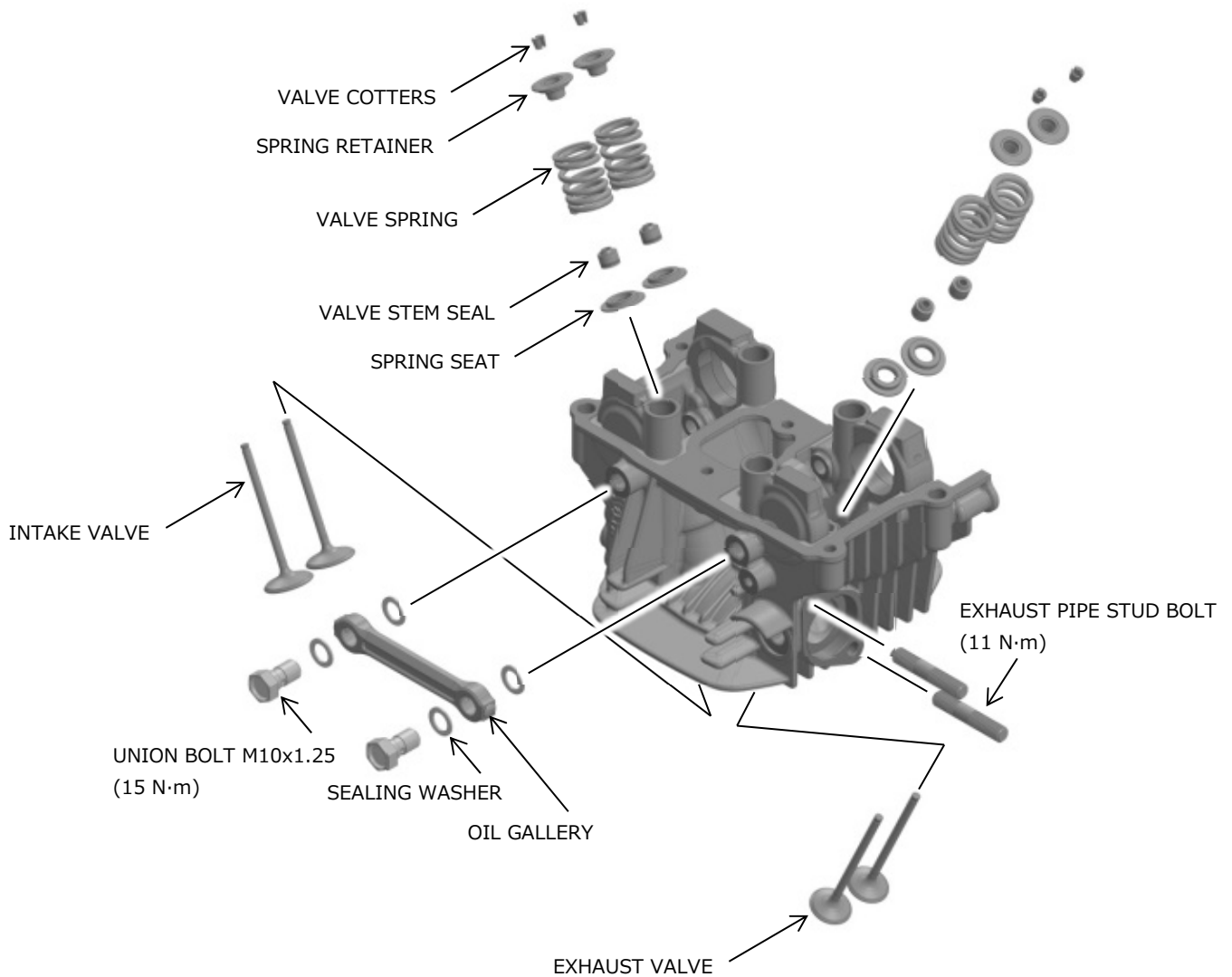


PLUG CAP EXCHANGE / EXTENSION CORD

- Use the attached cable joint and plug cord to extend the length. Cut the attached plug cord to appropriate length, if it is too long.
- Use attached plug cap instead of stock one.



CYLINDER HEAD COMPONENT LOCATION

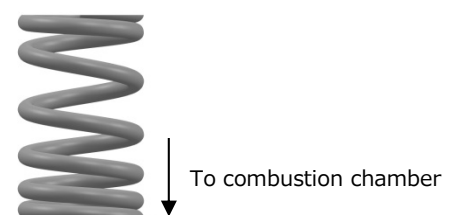


- Install the valve spring seats.
- Apply engine oil to the new valve stem seals and install them.
- Apply engine oil to the valve stem outer surface and stem end.
- Insert the intake and exhaust valves into the valve guides.

To avoid damage to the seal, turn the valve slowly when inserting.

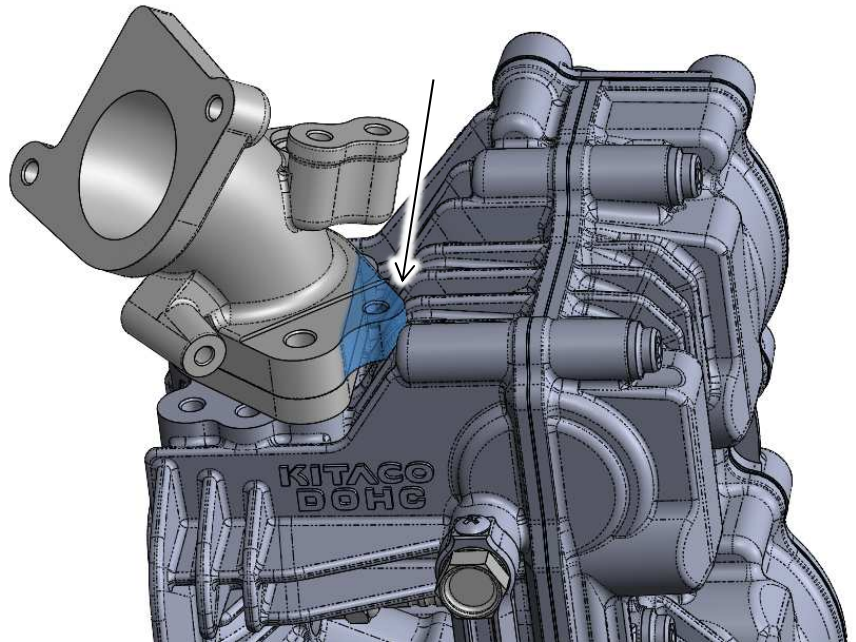
⚠ Grease the cotters to ease installation.

To prevent loss of tension, do not compress the valve spring more than necessary.



MACHINING MODS OF INTAKE MANIFOLD

- If your manifold is the type shown, some will interfere with cylinder head. Make machining mods.



Kitaco assumes no responsibility for accuracy, completeness or sufficiency of the information contained in this document.



3-8-13, NAGATA, HIGASHI-OSAKA, OSAKA, 577-0015, JAPAN
Website <http://www.kitaco.co.jp/>



210331 M-T