

S-Stage Bore Up Kit 145cc Instruction manual

Product number	01-05-5457 (With camshaft)
	01-05-5458 (Without camshaft)

Adaptation model	GROM (JC92-1000001 ~ 1099999)
	CT125 (JA65-1000001 ~ 1099999)

Thank you very much for purchasing our products.

Thank you so you will comply with the following matters at the time of use. Before installation, please check your always kit contents. If there is a point of notice event, Please contact us the dealer of purchase.

◎ If the description, such as photos or illustration different with this part.

Caution about fuel to use

This product is so designed to achieve a higher compression ratio than stock engines. As for the fuel, high-octane gasoline should always be used. In case regular gasoline is used, abnormal combustion will take place, and the engine cannot achieve its original performance. Moreover, it is highly likely that the piston will be damaged, leading to a serious failure of the motorcycle. Before installing this kit, make sure that no regular gasoline remains in the fuel tank. In case regular gasoline is remaining in the fuel tank, do replace it with high-octane gasoline.

About FI controller & large capacity injector

Caution : Never use Stock ECU with this product (possibility of serious engine damage).

Caution : Must use FI controller at the same time.

Takegawa camshaft with GROM, please install our large capacity injector (G-1) (00-00-0487) at the same time.

Caution about de-comp

When installing a de-comp mechanism, you will need to disassemble the stock camshaft and use special tools (puller and press).

Without de-comp mechanism, the starter motor may rotate slowly (depending on the battery condition).

We offer the de-comp mechanism assembly service (fee apply). (P/N for de-comp mechanism assembly service : 12-07-0004)

About crankshaft

By installing our bore up kit will increase the burden of twisting and bending on the crankshaft (cause engine output and torque will be significantly increased).

We recommend installing a crankshaft support adapter at the same time to reduce the burden on the crankshaft.

The crankshaft support adapter has extra ball bearing (at the end of the crankshaft on the flywheel) which prevents twisting camshaft.

Increases the durability of the crankshaft by suppressing deflection etc.

For GROM (JC92-1000001 ~ 1099999) : 01-10-0149

For CT125 (JA65-1000001 ~) : 01-10-0150

☆ Please read carefully before use ☆

◎ The use ignoring the instructions that are written in the manual, if the accident or damage has occurred, we can not assume any responsibility for compensation.

◎ This product installation and use, when a problem occurs to after market goods, guarantee other than this product, also can not assume any in any such matters.

◎ If it was the case or mounting that has been processed like a product, it will not be covered under warranty.

◎ It is not possible to inquire of the combination of other manufacturers.

◎ This product is the above-mentioned vehicle exclusive goods. Is not possible attached to the other vehicle. Please note.

◎ Installation of product, go to ensure reference to a genuine service manual to adaptive models always.

The instructions in this manual mainly describe the installation work of this product and omit other parts of the work.

Please refer to the genuine service manual when performing work on the omitted parts.

◎ When installing, please prepare the tools and work carefully according to the installation instructions and genuine service manual.

◎ This manual and genuine service manual are intended for those who have a basic skills and knowledge.

If no experience of mounting, etc., who preparation of such a tool is insufficient, we recommend that it is your request to the shop with a technical credit.

◎ Product may have edges or protrusions. Be sure to wear working gloves.

(Please wear work gloves when working, even if a photo in this article show without work gloves.)

◎ Please perform the break-in.

◎ When this product and FI controller are installed, the higher limit of engine rpm will increase as well as the output power will increase.

For long and high-load riding, we recommend installing our super oil pump kit (with relief valve mechanism) and oil cooler kit.

◎ Some of bolts, nuts, dowel pins, and packings will be reused. However, be sure to replace worn-down or severely-damaged ones with new ones.

◎ It may be necessary to change the secondary reduction ratio depending on the weight of the rider and riding conditions.

◎ The sealing washer for the guide roller part is not included. Must be purchased yourself. If the sealing washer is damaged, please use a new one.

Honda genuine part number: 90475-KWB-600

~ feature ~

○ This is a bore up kit using the stock cylinder head.

The spec increase: piston diameter: ϕ 50mm to ϕ 54mm, Displacement: 144.5cc, compression ratio 10:1 to 11.2:1.

○ The kit camshaft characteristics that improve output in the low to mid range, making it easy to ride and increases output.

○ By transferring the de-comp mechanism parts from the stock camshaft, it is possible to use the same auto de-comp mechanism as the stock camshaft.

○ Further power up can be expected by combining with our exhaust muffler.

SPECIAL PARTS
TAKEGAWA

CONTACT Address : 3-5-16 Nishikiorihigashi Tondabayashi Osaka JAPAN
TEL: +81-721-25-1357 FAX: +81-721-24-5059 e-mail: english@takegawa.co.jp URL: http://www.takegawa.co.jp
Please contact with your name and country name provided. (Only English please)

Caution When the handling of ignoring this display, property damage and human shows the assumption of what injury.

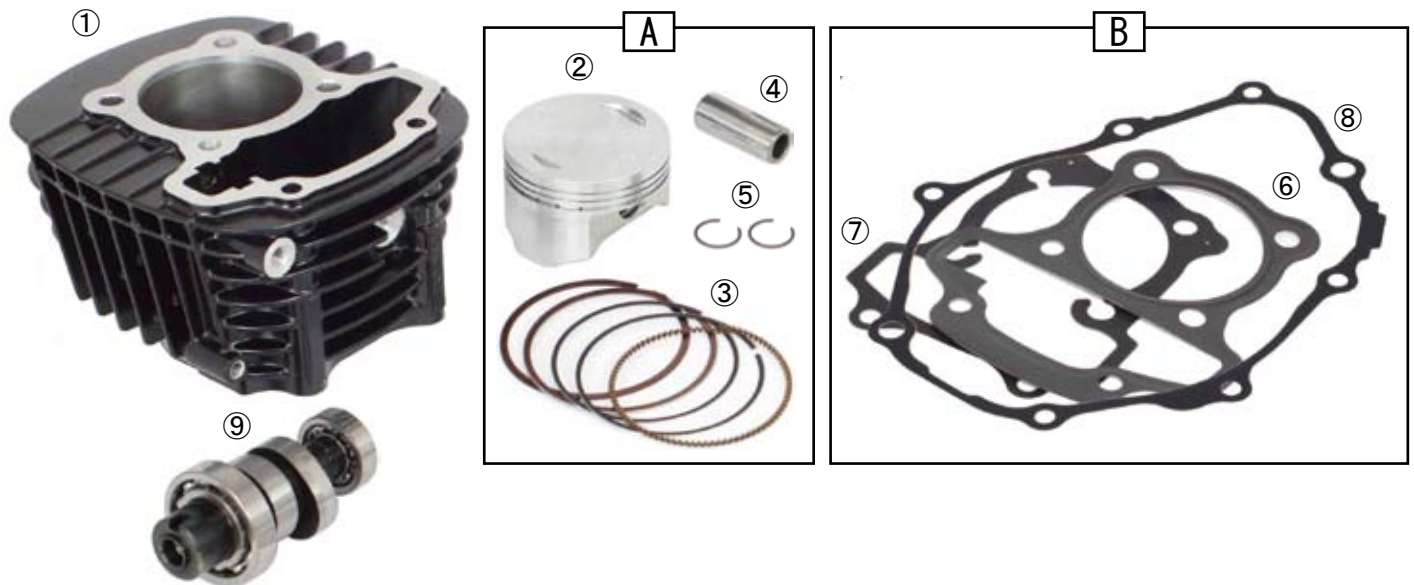
- This is a off highway/competition-only part and cannot be used on public roads.
(Driving on a public road in a vehicle that does not meet the safety standards of the Road Transport Vehicle Act is a violation and the driver will be punished.)
- When performing the work, etc., be sure during the cold (when the engine and the muffler is cold). (It may cause burns.)
- When performing the work, it should be made to prepare the tools for the job. (Breakage of parts, it may cause injury.)
- Do the work must always specified torque using a torque wrench. (Damage of bolts and nuts, and cause of dropout.)
- The product and the frame, might have edges or protrusions. When working, please wear work gloves to protect your hands.
(It may cause injury.)
- Be sure to each part inspection before operation, check the loosening of the threaded portion, be sure to securely tighten the specified torque if there is loose. (It may cause detachment of the parts.)
- ※ As for the cylinder head among others, please be sure to tighten it up to the specified torque.
- Gasket always use new parts. Also, parts can be re-used may be checked, if wear or damage, it is always replaced with new parts.

Warning When the handling of ignoring this display people died, shows the contents of the serious injury possibility is assumed.

- Always start the engine in a well-ventilated place, and do not turn on the engine in an airtight place.
(Otherwise, you will suffer from carbon monoxide poisoning.)
- During operation, when an abnormality occurs, immediately stop the vehicle in a safe place, please stop running.
(It may lead to an accident.)
- When performing the work, do the work safely stabilize the vehicle in a horizontal location.
(There is a risk of injury vehicle collapsed while working.)
- Inspection, maintenance, the instruction manual or, inspection methods such as service manuals, to protect the way, should be done correctly. (unsuitable inspection and maintenance, there is a risk that result to an accident.)
- When carrying out the inspection and maintenance, etc., if found damaged parts, replace the damaged parts to avoid possible to reuse the parts. (There is a risk that lead to accidents Continued use.)
- As gasoline is highly flammable, never place it close to fire. Make sure that nothing flammable is near the gasoline. Since vaporized accumulation of gasoline is at high risk of explosion, work in a well-ventilated place. (Otherwise it may cause a fire.)

- ◎ Please note. Performance up, the design change, the product and the price in the cost up, etc. are subject to change without notice.
- ◎ Please be informed that we shall be held harmless against any claim against us whatsoever arising out of use of the products in racing and the like.
- ◎ Keep this manual stored until this product is discarded.

Product content



Number	Product content	Quantity	Item Number
1	Cylinder, 54mm	1	01-01-0122
2	Piston, 54mm	1	00-01-0481
3	Piston ring set, 54mm	1	01-15-015
4	Piston pin, 12mm	1	00-01-0477 (with ⑤ clip)
5	Piston pin circlip, 12mm	2	00-01-0478 (6 pcs)
6	Cylinder head gasket	1	00-01-0479
7	Cylinder gasket	1	00-01-0480
8	L. crankcase cover gasket	1	00-02-0498
9	Cam shaft, N-10	1	01-08-0190

Symbol	Product content	Product number
A	Piston kit	01-02-0174
B	Gasket set	01-13-0128

※⑨ camshaft are not included in the kit of 01-05-5458

※Please order in the repair parts are always repair part number.

If it is not the part number order, you may not be able to order. Please be forewarned.

It should be noted, In the case of parts that can not be separately shipment, please order a set part number.

※Repair parts may differ slightly from the kit contents in terms of shape, etc.

There is no problem to use it. Please be forewarned.

■ Mounting procedure ※ Please refer to the Genuine Service Manual for detailed mounting methods and specified torques that are not specifically described.

- Park the motorcycle in a horizontal place with a maintenance stand, etc.
- When installing the FI controller, carefully read the installation manual.

● Removal of exterior parts

- If necessary, remove the exterior parts and drive sprocket cover referring to the service manual.
- L. Disconnect the harness from the crankcase cover.

● Exhaust muffler (stock) removal

- Refer to the service manual and remove the exhaust muffler.
- ※ If the exhaust muffler already changed, remove it following to their instruction manual.

● Removal of air cleaner case, inlet pipe / throttle body

- For GROM, refer to the service manual and remove the air cleaner case.
- Refer to the service manual and inlet pipe / throttle body.

● Disconnect all sensor

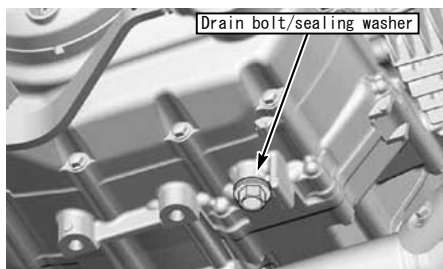
- Refer to the service manual and disconnect the O₂ sensor and EOT sensor.

● Removal of Cylinder head, Cylinder and Piston

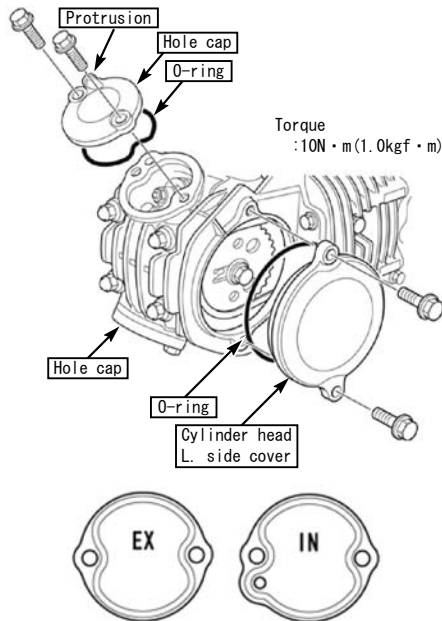
- Remove the spark plug cap and spark plug.



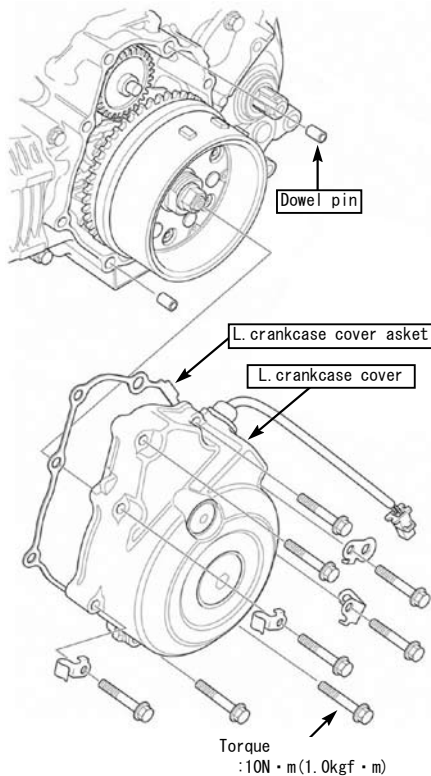
- Prepare the pan, remove the drain bolt/sealing washer, filler cap, and drain the engine oil.



- Remove the two bolts and remove the cylinder head L. side cover/O-ring, intake side, and exhaust side hole cap/O-ring.
- ※ Prepare the pan for oil to drip.



- Loosen and remove the bolts diagonally in several steps. Remove the crankcase cover.
- ※ The L. crankcase cover is pulled in by magnetic force, so be careful not to get your fingers pinched.
- Remove the two dowel pins and clean off the gasket remaining on the crankcase and L. crankcase cover mounting surface.



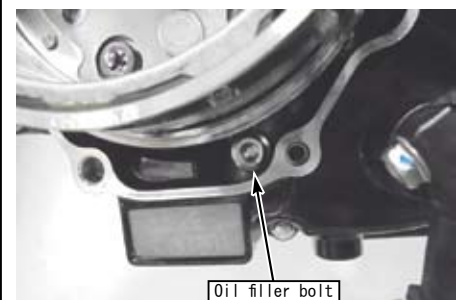
- Turn the crankshaft counterclockwise and align the "O" mark on the cam sprocket with the protrusion on the cylinder head.



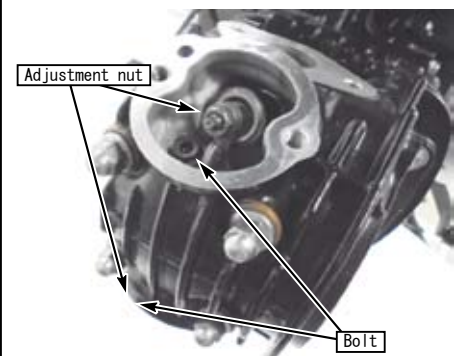
- Fix the cam sprocket with a universal holder, remove the cam sprocket bolt/washer, and remove the cam sprocket.



- Remove the tensioner rod oil filler bolt.



- Loosen the adjustment nuts on the rocker arms of both the intake and exhaust and loosen the adjustment screws. Remove the rocker arm shaft bolts for both the intake and exhaust.

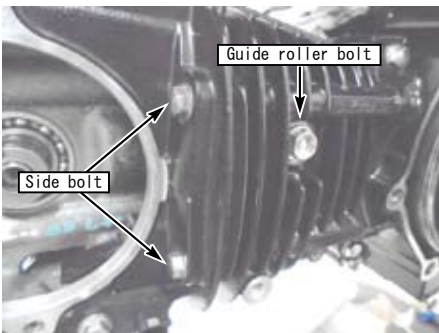


■ Mounting procedure ※ Please refer to the Genuine Service Manual for detailed mounting methods and specified torques that are not specifically described.

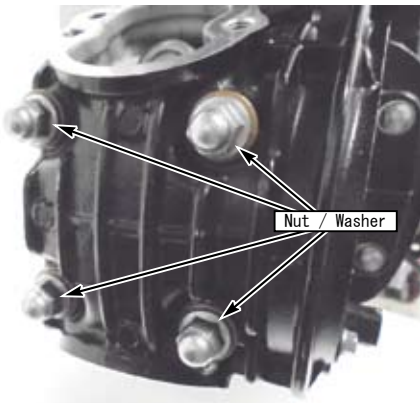
○ Loosen the bolt/washer that holds the camshaft in place.



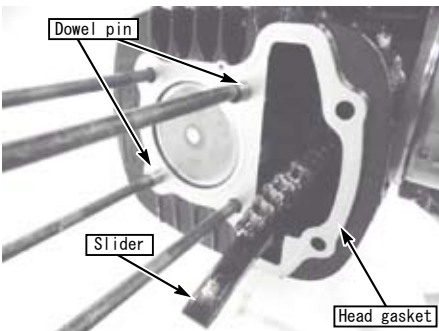
○ Loosen the cylinder guide roller bolt. Remove the two side bolts of the cylinder head.



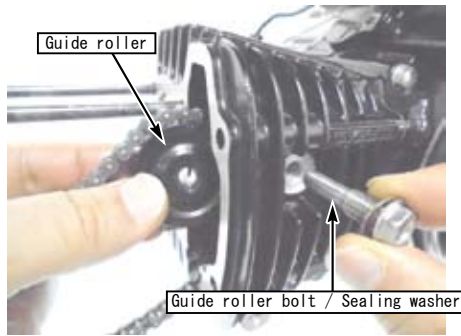
○ Loosen the 4 cylinder head nuts diagonally (in several steps) and remove (with the 4 washers). Remove the cylinder head.



○ Remove the cylinder head gasket and 2 dowel pins. Remove the slider.



○ Remove the guide roller bolt / sealing washer from the cylinder and take out the guide roller.

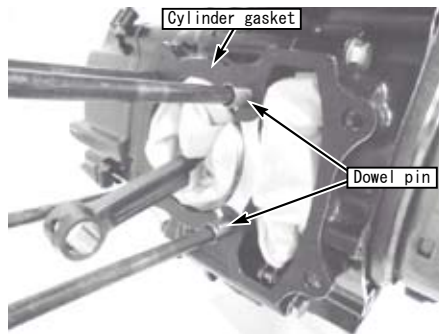


○ Remove the cylinder. ※ cover the crankcase opening with a rag, etc. to prevent parts from entering the crankcase.

○ Remove one side of the piston pin circlip, remove the piston pin and the piston.



○ Remove the cylinder gasket and 2 dowel pins. The cylinder gasket must be removed clearly.



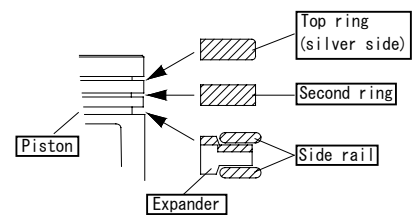
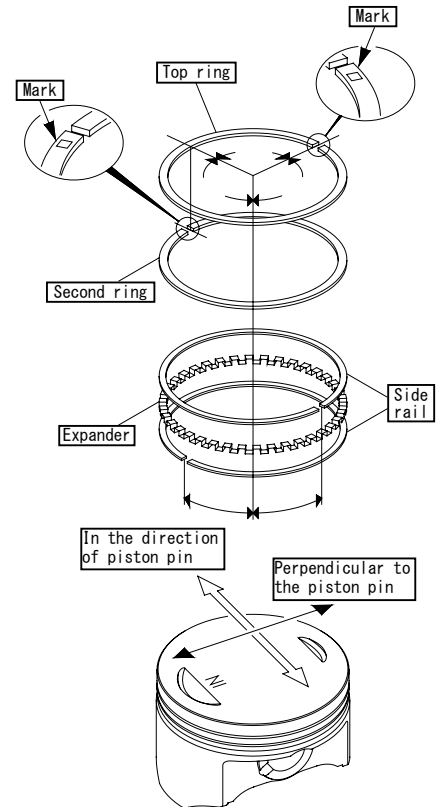
● Check for cylinder interference

※ Due to individual differences in crankcases, there may be interference between the cylinder's crankcase insertion part (sleeve skirt and the crankcase). never use the engine with interference (may cause engine trouble).

○ Attach the cylinder to the crankcase using two dowel pins and check for interference between the cylinder sleeve skirt and the crankcase.

● Installation of Piston and Cylinder

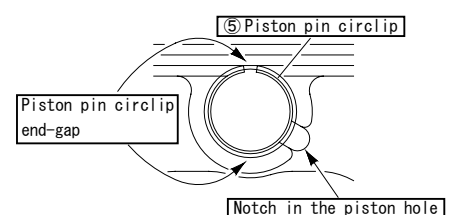
○ Install each piston ring ③. (blow the piston ring groove with air to clean)
 ※ Install the TOP ring and 2ND ring with the mark facing up.
 ※ Do not damage the piston/piston rings.
 ※ After installation, check that the ring rotates smoothly.
 ※ Install the ring openings at 120 degree intervals as shown in the diagram.



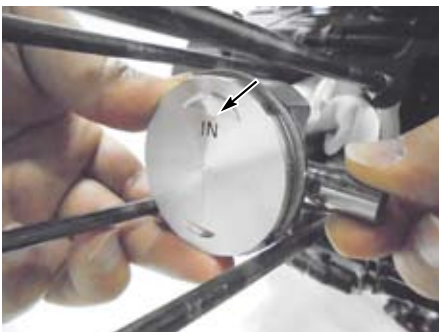
Pay attention to the cross section as well

○ Install the ⑤ piston pin circlip into the groove of the piston pin hole on one side.

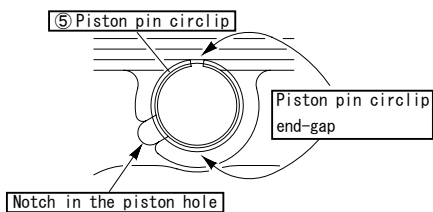
※ Install the piston pin circlip so that it faces upward/downward, avoiding the notch.



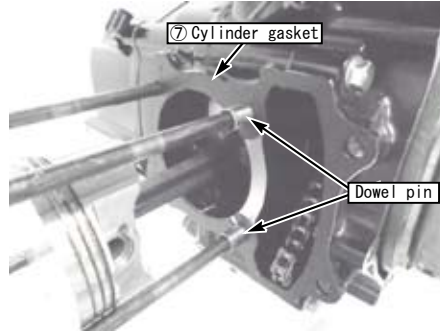
- Apply engine oil to the small end of the connecting rod and the piston pin hole, apply molybdenum solution to the ④ piston pin, and turn the piston pin with the "IN" mark on the piston head facing the intake side.



- Install the ⑤ piston pin circlip into the groove
- ※ Install the piston pin circlip so that it faces upward/downward, avoiding the notch.



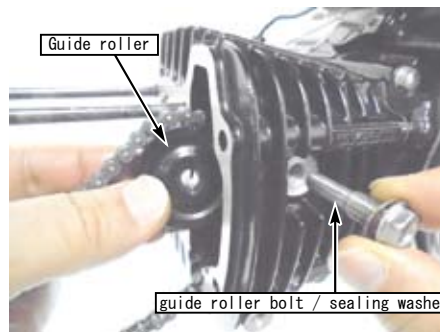
- Clean the cylinder mounting surface of the crankcase and remove the rag that was stuck in the crankcase opening.
- Install the two dowel pins and ⑦ cylinder gasket to the crankcase.



- Apply engine oil to the piston ring and let it blend in. Apply engine oil after cleaning the inner circumference of the ① cylinder. Install the cylinder with the cam chain through the cylinder and compressing the piston ring with fingers.



- Align the guide roller with the cylinder mounting hole and temporarily tighten the guide roller bolt/new sealing washer.

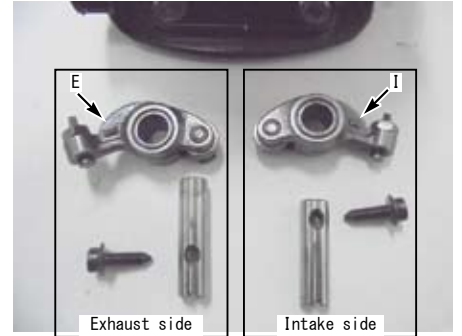


● Removal of Cam shaft

- Remove bolts / washers from cylinder head.



- Use any M6 bolt to the rocker arm shaft and remove it from the cylinder head.



- Remove the camshaft (while matching it to the shape of the cylinder head).
- First, align the groove with the intake side at about 45 degrees and pull partially out.



- Next, rotate groove to the exhaust side at about 45 degrees and remove the cam crest and de-comp mechanism with the shape of the head.



● Installation of de-comp parts

※ If you not install the de-comp mechanism, follow the steps from 「Installing the camshaft」.

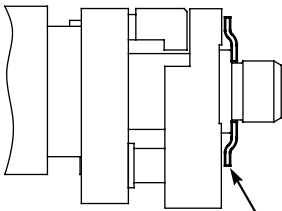
※ Special tools (bearing pullers/presses) must be used for removal and installation.

○ Remove the bearing on the de-comp parts side from stock camshaft and ⑨ camshaft.



○ Remove the de-comp parts from the stock camshaft. Attach the decompression parts to the ⑨ camshaft in the same way.

※ Caution: direction of the washer.



Caution: direction of the washer.

○ Press-in the bearing.

● Installation of Cam shaft

○ Apply engine oil to each part of the ⑨ camshaft.



○ Install the camshaft by reverse order the removal procedure, aligning it with the shape of the cylinder head.

○ Temporarily tighten the bolts / washers to the cylinder head.

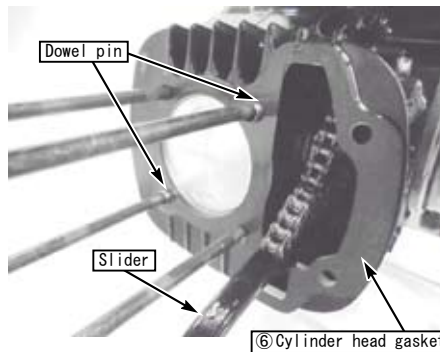


○ Attach the intake and exhaust rocker arms to the cylinder head on each rocker arm shafts. Align the screw holes on the rocker arm shaft with the holes on the cylinder head and temporarily install the bolts.



● Installation of Cylinder head

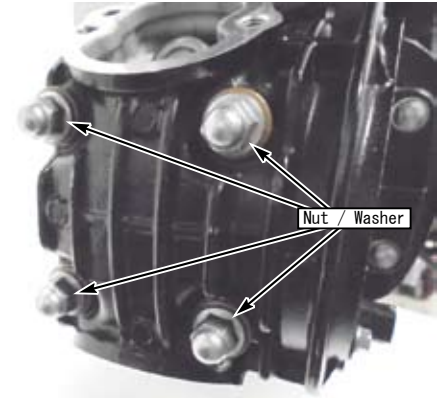
○ Set the slider on the cylinder and crankcase. Clean the mating surfaces of the cylinder and cylinder head. Attach the dowel pin and ⑥ cylinder head gasket to the cylinder.



○ Place the cam chain through the cylinder head and install the cylinder head.



○ Install x4 washers, head nuts and x2 cylinder head side bolts.



○ Tighten the four cylinder head nuts diagonally in several steps to the specified torque.

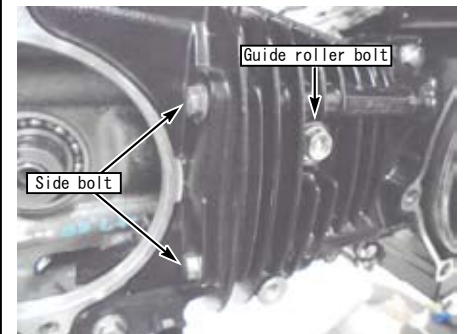
▲ Note: Be sure that you protect specified torque.

Cylinder head nut
Torque : 18N · m (1.8kgf · m)

○ Tighten the two side bolts of the cylinder head alternately in several steps to the specified torque.

▲ Note: Be sure that you protect specified torque.

Side bolt
Torque : 10N · m (1.0kgf · m)



○ Tighten the guide roller bolt of the cylinder to the specified torque.

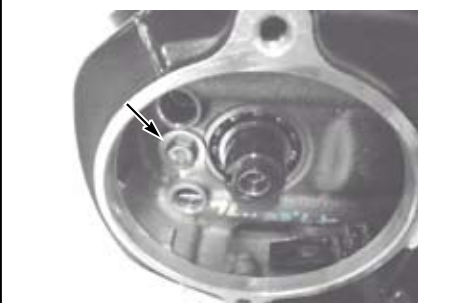
▲ Note: Be sure that you protect specified torque.

Guide roller bolt
Torque : 10N · m (1.0kgf · m)

○ Tighten the bolts / washers to the specified torque.

▲ Note: Be sure that you protect specified torque.

Bolt / Washer
Torque : 10N · m (1.0kgf · m)

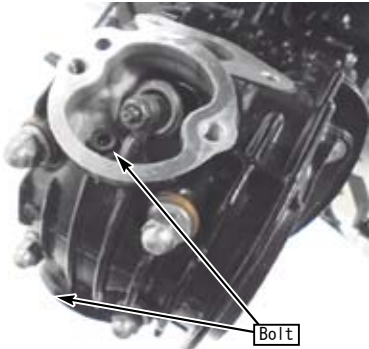


■ Mounting procedure ※ Please refer to the Genuine Service Manual for detailed mounting methods and specified torques that are not specifically described.

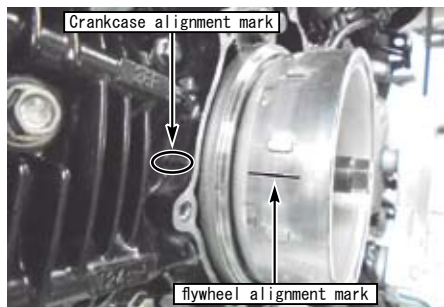
- Tighten the rocker arm shaft bolts to the specified torque on both the intake and exhaust sides.

⚠ Note: Be sure that you protect specified torque.

Bolt
Torque : 5N · m (0.5kgf · m)



- Make sure that the alignment mark on the flywheel matches the alignment mark on the crankcase, and align the cam sprocket so that the "O" mark on the cam sprocket aligns with the protrusion on the cylinder head. Attach the cam chain and align the protrusion of the cam sprocket with the groove of the camshaft.



- Hold the cam sprocket (with a universal holder) and tighten the cam sprocket bolt / washer to the specified torque.

⚠ Note: Be sure that you protect specified torque.

Bolt / Washer
Torque : 27N · m (2.8kgf · m)

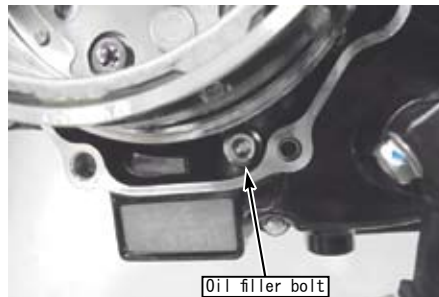


- Turn the crankshaft two revolutions counterclockwise until the alignment mark on the flywheel aligns with the alignment mark on the crankcase, and the "O" mark on the cam sprocket aligns with the cylinder. Make sure it matches the protrusion on the head.

- Inject a small amount of engine oil into the tensioner rod bolt hole and install the oil filler bolt.

⚠ Note: Be sure that you protect specified torque.

Oil filler bolt
Torque : 10N · m (1.0kgf · m)



● Adjustment of valve clearance

- Check that the alignment mark on the flywheel aligns with the crankcase mark, and that the "O" mark on the cam sprocket aligns with the protrusion on the cylinder head.
- Insert the thickness gauge between the rocker arm adjustment screw and the valve stem end, and tighten the adjustment screw until the thickness gauge shows some resistance. Tighten the adjustment nut until it can be pulled out.

Valve clearance

For Takegawa camshaft

0.08 ± 0.02mm for both intake and exhaust.

For Stock camshaft

IN: 0.08 ± 0.02mm, EX: 0.20 ± 0.02mm

⚠ Note: Be sure that you protect specified torque.

Adjust nut
Torque : 9N · m (0.9kgf · m)



● Installing each parts

- Install an injector that meets the specifications listed in the below.

Model and specifications	Installation of injector
GROM Stock camshaft	Stock injector
GROM Takegawa camshaft	Takegawa large capacity injector (G-1) (00-00-0487)
CT125	Stock injector

- Refer to the genuine service manual and install the removed parts and connect the wiring.
- When installing the FI controller, carefully read the installation manual.
- Attach the drain bolt with a new sealing washer to the crankcase and pour the specified amount of engine oil.
- ※ If the drain bolt has been changed, follow the instruction manual for that drain bolt. Install the filler cap.

Engine oil amount

	GROM	CT125
At draining	0.9 ℓ	0.8 ℓ
At replacing the oil filter	0.9 ℓ	0.85 ℓ
At disassembly	1.05 ℓ	1.0 ℓ

⚠ Note: Be sure that you protect specified torque.

Drain bolt
Torque : 24N · m (2.4kgf · m)

- Inspect each part to make sure there are no loose screws or nuts.
- Start the engine carefully and check that there are no oil leaks or abnormal noises from the engine. (do this in well-ventilated and safe place) Refer to the genuine service manual and check if the oil level is within the standard range. Once again check for loose screws, nuts, etc.

⚠ Warning : Start the engine and perform inspections in a well-ventilated area. Do not start the engine in a closed place. (There is a risk of carbon monoxide poisoning.)

● About increasing the amount of engine oil (Stock oil pump)

- By installing this product and FI controller, the upper limit of engine rpm will be higher than stock. In running speed is 9500 rpm or higher, we recommend increasing the oil amount about 100 cc.

- ★ We recommend to use our super oil pump kit (with relief valve mechanism)
- ※ When using a super oil pump, please follow the instruction manual.

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