



SUPER HEAD 4VALVE+R

Cylinder Kit (124cc) Instruction Manual

The ceramic-coated cylinder is used. (HA Cylinder)
We coated the piston with molybdenum.

Item No. : 0 1 0 4 8 0 0 4 (V Cylinder)
: 0 1 0 4 8 0 0 5 (HA Cylinder)
: 0 1 0 2 6 0 2 4 (Piston kit)

- Thank you for purchasing one of our products.
- These piston and cylinder kits are for exclusive use in a motorcycle equipped with a our super head 4valve +R. Please strictly follow the following instructions in installing and using the kit.

Please note that, in some cases, the illustrations and photos may vary from the actual hardware.

Please read the following before starting the installation

We do not take any responsibility for any accident or damage whatsoever arising from the use of the kit not in conformity with the instructions in the manual.

These products are for exclusive in a motorcycle equipped a our super head 4valve +R.

In case these kits are to be used in a stock crankcase, the crankcase needs to be processed in the section where a sleeve is to be inserted. Consult a technically-reliable shop specialized in internal combustion products or motorcycles about the processing.

Processing of a stock crankcase requires detachment and installation of the engine and separation of the crankcase. Please install the products correctly, referring to a HONDA's genuine service manual for the above-mentioned compatible motorcycles. And the assembly and installation require gaskets, etc., which please purchase separately.

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.

We recommend to install and use an oil cooler for riding at a high outdoor air temperature.

Caution The following show the envisioned possibility of injuries to human bodies or property damages as a result of disregarding the following cautions.

- Since this kit is designed and developed for driving in closed course races, do not use the kit for running on public roads.
- Work only when the engine and the muffler are cool. (Otherwise, you will burn yourself.)
- Prepare right tools for the work, and do the work in the proper and right way.
(Otherwise, improper work could cause breakage of parts or injuries to yourself.)
- As some products and frames have sharp-pointed or protruding portions, please work with greatest care. (Otherwise, you will suffer injuries.)

Warning The following show the envisioned possibility of human death or serious injuries to human bodies as a result of disregarding the following cautions.

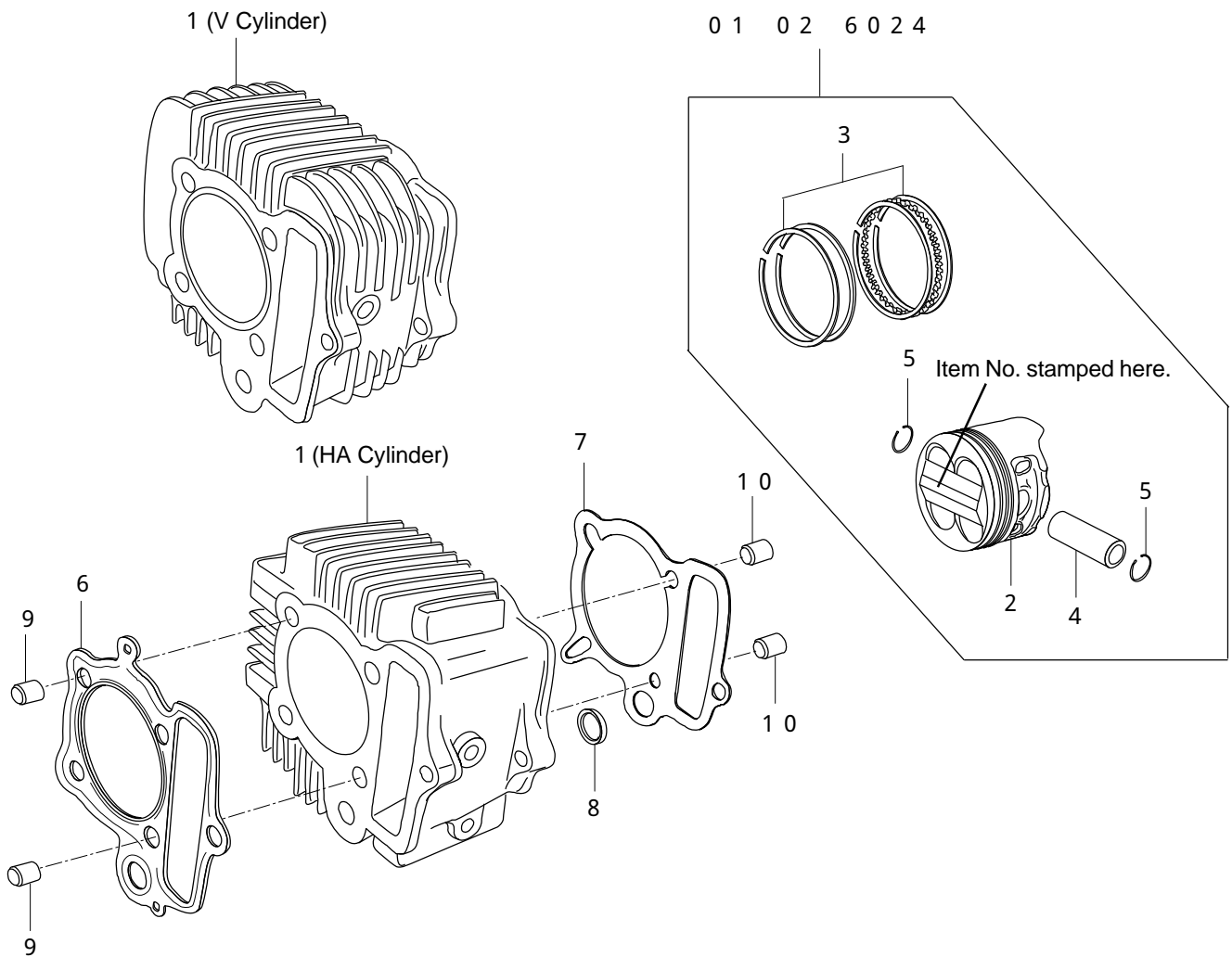
- Those who are technically unskilled or inexperienced are required not to do the work.
(Improper installation due to unskilled technique or lack of knowledge could lead to parts breakage and consequently to accidents.)
- Always use new piston pin circlips, gaskets and sealings. (Wear and damage to these parts are likely to cause parts breakage and accidents.)
- Before working, place the motorcycle on level ground to stabilize its position for safety to avoid the motorcycle overturning.
- If you find damaged parts when inspecting or performing maintenance of your motorcycle, do not use these parts, and replace them with new ones.
(The continued use of these damaged parts could lead to accidents.)
- Always start the engine in a well-ventilated place, and do not start it in an airtight place. (Otherwise, you will suffer from carbon monoxide poisoning.)
- Before riding, always check such parts as screws for loose.
If you find loose ones, screw them securely up to the specified torque to avoid parts coming off, and accidents.
- When you notice something abnormal with your motorcycle while riding on the road, immediately stop riding and park your motorcycle in a safe place.
(Otherwise, the abnormality could lead to accidents.)
- As gasoline is highly flammable, never place it close to fire. Make sure that nothing flammable is near the gasoline.
(Otherwise, there will be a danger of causing fires.)
- Check or perform maintenance of parts correctly according to the procedures in the instruction manual or a service manual.
(Improper checking or maintenance could lead to an accident.)
- Never use any other part than the specified parts. (Otherwise, there is a possibility of parts breakage, leading to accidents.)
- Always use a torque wrench to tighten bolts and nuts securely to the specified torque to avoid these parts getting damaged, loose, and accidents.
- As the accumulation of vaporized gasoline is at the high risk of explosion, work in a well-ventilated place.
- Always use high-octane gasoline. (Otherwise, problems such as engine knocking may cause accidents.)

Please be informed that, mainly because of improvement in performance, design changes, and cost increase, the product specifications and prices are subject to change without prior 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.

This manual should be retained for future reference.

~ Kit Contents ~



No.	Part Name	Qty	Repair Part No.	In packs of
1	Aluminium Cylinder	1	HA 01-01-0251H	1
			V 01-01-0252V	1
2	Piston	1	13105-SH4-T00	1
3	Piston Ring Set (Top, 2nd, Oil)	1	01-15-015	1
4	Piston Pin	1	00-01-0091 (with two circlips)	1SET
5	Piston Pin Circlips, 13x1	2	00-01-0003	6
6	Cylinder Head Gasket	1	01-13-8003V	1
7	Cylinder Gasket	1		1
8	Rubber Packings (Black)	2		2
9	Dowel Pins, 8x14	2		2
10	Dowel Pins, 8x12	2	00-01-0090	2

When ordering a repair part of the piston alone, prepare the Item No. stamped on the piston top surface.

Please order repair parts with the Repair Part Item No.

Without the repair part item No., we may not be able to provide the correct parts.

Some parts are only available as a set. Please order them with the set number.

Composition and gasket shapes of the gasket kit differ depending on the kind of cylinder head and cylinder. Therefore, please always use the special gasket for the cylinder head or cylinder.

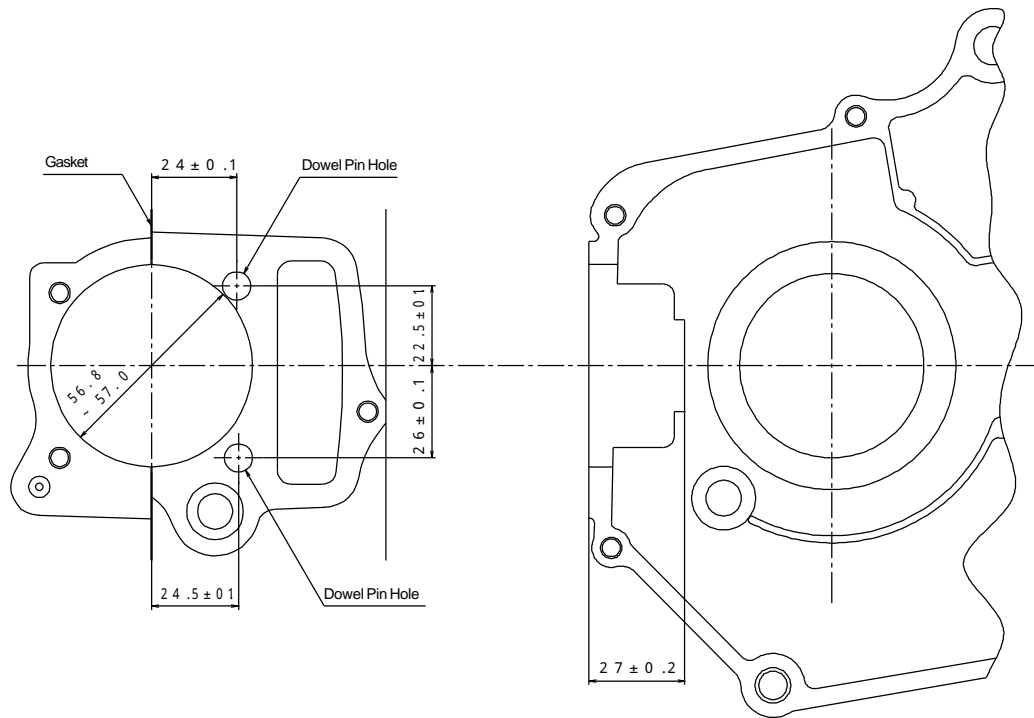
The Piston Kit (01-02-6024) contains the parts shown in the above enclosed square with the kit No.

Boring Process to the Crankcase

In case you get your crankcase bored outside our factory.

Joining together the cylinder and the boring-processed section of the crankcase, process the crankcase little by little until the size measures 56.8 ~ 57.0 mm with a crankcase gasket being squeezed.

Processing of the crankcase will thin the thickness of the wall adjoining dowel pin holes. So the durability of the crankcase will be reduced, resulting in the possible damage of the crankcase in some cases, which please take note.



Caution

Since crankcase boring thins the wall thickness and reduces hardness, be careful in tightening stud bolts.

Please take note that in some cases the crankcase may get damaged during use. Furthermore, please be informed that we shall assume no liability to users for compensation or damages whatsoever of any kind.

SPECIAL PARTS TAKEGAWA Co.,Ltd.

3-5-16 Nishikiorihigashi Tondabayashi Osaka Japan

TEL : 81-721-25-1357 FAX : 81-721-24-5059

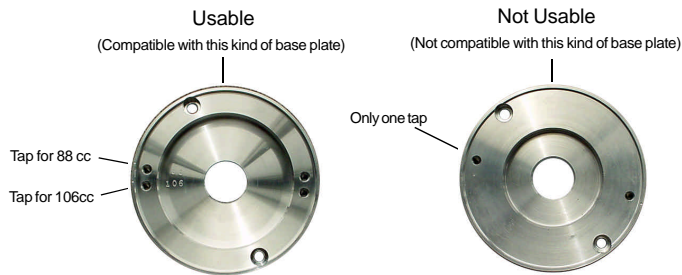
URL : <http://www.takegawa.co.jp>

~ Installation Procedures ~

⚠ Caution : Always use a torque wrench to screw bolts and nuts tight and securely to the specified torque.

⚠ Warning : Those who are technically unskilled or inexperienced are required not to do the work.

About the use of inner rotor CDI:



Installation of this kit requires engine removal and crankcase disassembly. Do the work correctly, strictly following a HONDA genuine service manual for your vehicle.

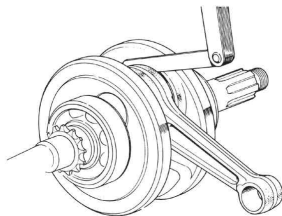
Referring to the service manual, detach the engine from the frame and disassemble it. Boring of the crankcase is required. Please process the boring of the crankcase referring to the attached sheet.

Check every part.

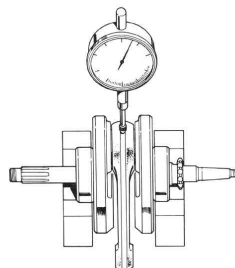
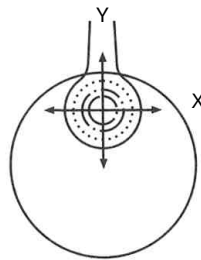
⚠ Caution: Infallibly inspect every part and check consumable parts for damage and wear.

What to check:

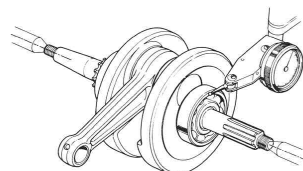
- Measure the internal diameter at the small end of the con'rod.
If larger than 13.03 mm, replace it.
- Measure the clearance at the big end of the con'rod in the axial direction.
If larger than 0.6mm, replace it.



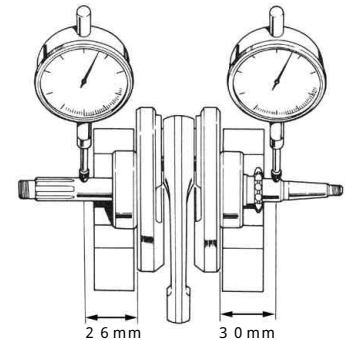
- Measure the misalignment at two points at the big end of the con'rod at right angles to the shaft as shown in the figure on the right.
If larger than 0.05mm, replace it.



- Measure the misalignment on the journal bearing of the crank shaft.
Shaft direction: If larger than 0.10 mm, replace it.
Bearing direction: If larger than 0.05 mm, replace it.



- Measure the deflection of the crank shaft.
If larger than 0.10 mm, replace it.

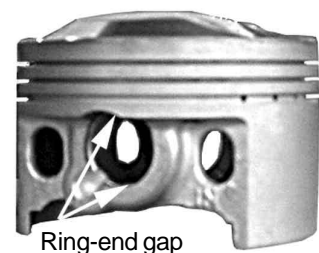


- o Assemble the crankcase referring to the instruction manual or the service manual for the Crankshaft Kit.

Attach a piston pin clip to either of the piston pin grooves.



Attach the piston pin circlip so the ring end gap does not meet with the notch on the piston pin hole, and it should be either on the top or at the bottom of the hole as illustrated in the figure below.

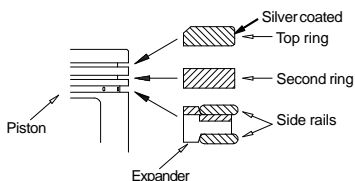
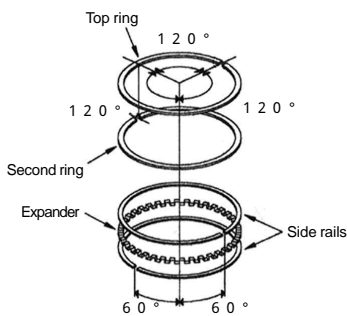


Air-blow the piston rings and the piston pin, and check for their jamming any foreign material.

Apply engine oil to the piston ring grooves. Install the piston rings with the printed side facing upward, aligning the ring-end gaps. For details, see the photo below.



A ring with a silver-coated side is a top ring. Do not make mistakes in choosing the right rings.



Pay attention to the cross section as well !!

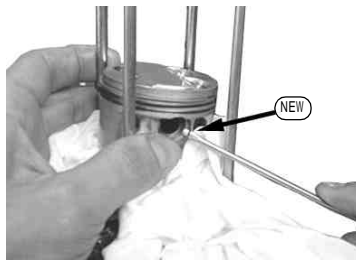
Apply molybdenum solution to the piston pin and the holes on the connecting rod small end.



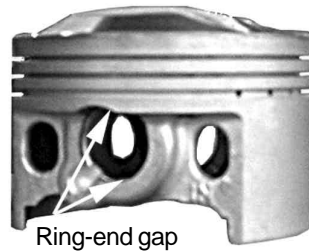
Install the piston onto the connecting rod with an arrow on the piston facing the exhaust side.



Plug the sleeve hole and the cam chain hole on the crankcase with a clean cloth, and fix a piston pin circlip.



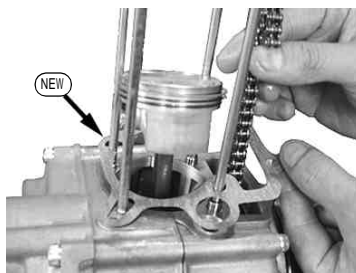
Attach the piston pin circlip so the ring end gap does not meet with the notch on the piston pin hole, and it should be either on the top or at the bottom of the hole as illustrated in the figure below.



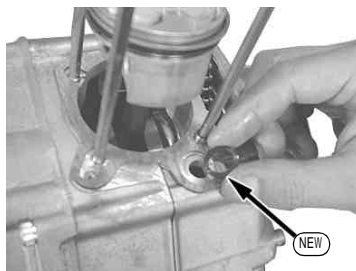
Remove the waste cloth used to clog the holes. Degrease well the cylinder base of the crankcase, and fix 8 x 12 dowel pins onto the dowel pin holes.



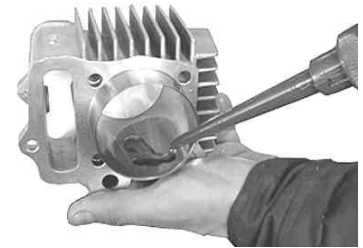
Fix a supplied cylinder gasket into the cylinder base of the crankcase.



Fix a supplied new rubber packing (black) onto the oil-return hole on the cylinder base of the crankcase.



Apply engine oil to the entire inner surface of the aluminum cylinder bore.



Fit the aluminum cylinder into the stud bolt.

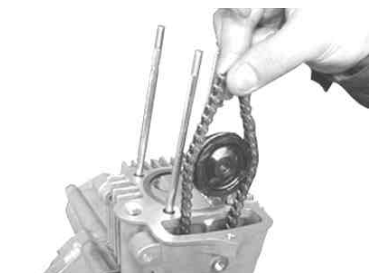


Compressing the piston rings, install the cylinder with care not to get the ring-end gaps out of alignment.

⚠ Caution: Be careful not to damage the piston rings.



Place the cam chain guide roller inside the cam chains, as shown in the figure below.



Install the cam chain guide roller with a sealing washer, and tighten the guide roller bolt temporarily.



Loosely tighten an original hex bolt which holds the crankcase on the cylinder side. Install the cylinder head with reference to its instruction manual.

INSPECTION / SERVICE LIMITS

⚠ Warning: The unskilled or those without proper knowledge are requested not to do the installation work.

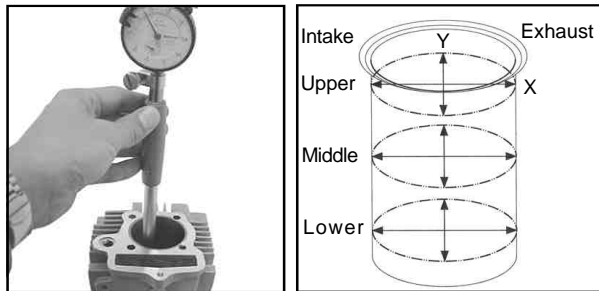
Inspection of Cylinder

- Check the inside of cylinder for wear and damage.
- Measure the internal diameters of the cylinder bore at 6 positions; at the piston pin angle and at the right angle to it (X-Y) each at upper, middle and lower parts of the cylinder bore.

Treat the largest value as its internal diameter.

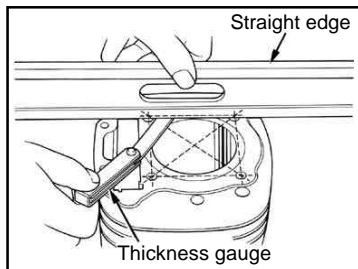
Ceramic-coated cylinder: Service limit: 54.05mm.

Steel sleeve cylinder : Service limit: 54.10mm.



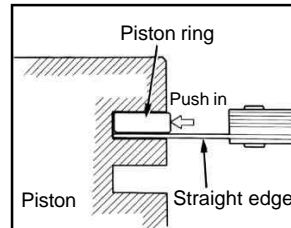
In case the cylinder wall is beyond the service limits, change the cylinder and piston at the same time as a set.

- Check the top surface of the cylinder for scratches and damages.
 - Check the cylinder top surface for distortion with a straight edge and thickness gauge.
- Service limit: If the distortion is more than 0.05 mm, replace the cylinder.

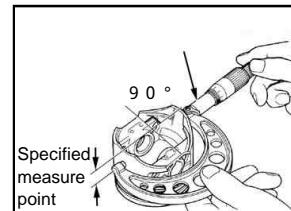
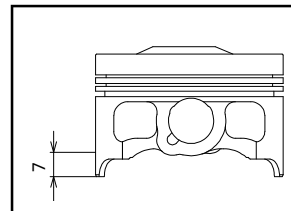


Inspection of Piston

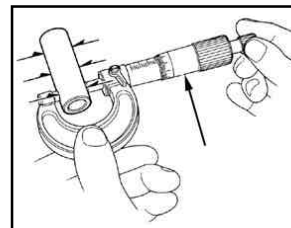
- Clear the piston of the remaining carbon residue.
- Fit a piston ring into the piston, and measure the clearance between the piston ring and ring groove with a thickness gauge. If larger than 0.17mm, replace it.



- Check the piston for damages.
- Measure the external diameter of the piston at the specified place at the bottom edge of the piston skirt at the right angle to the piston pin holes.



- Calculate the clearance between the cylinder and the piston.
 - Ceramic-coated cylinder: 0.015-0.04mm, Service limit: 0.06mm.
 - Steel sleeve cylinder: 0.03-0.06mm, Service limit: 0.10mm.
- Measure the piston pin bore. Service limit: 12.98 mm.

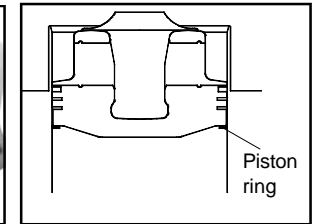
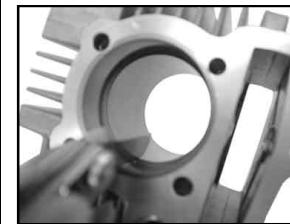


Inspection of Piston Ring

- Press down a piston ring into the piston with the piston head, and measure the clearance of the ring-end gap at the horizontal position with a thickness gauge.

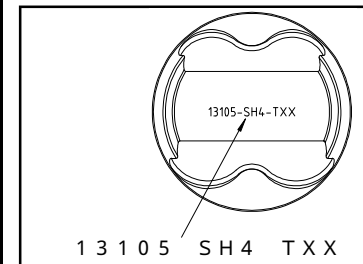
Top : If larger than 0.5mm, replace them.

Oil : If larger than 0.9mm, replace it.



In case you judge by the piston:

- After removing the carbon stuck on the piston top, take a note of the No. stamped on the piston top.



- Order the piston by the No. stamped on the piston top.

OPTIONAL PRATS

Forged piston and cylinder kit.



- 01-04-8014: Cylinder kit. (cylinder, piston kit, gasket)
 - 01-02-6027: Piston kit (piston, ring, pin)
- Forged piston gets more than 0.5 ps than standard piston.

Compact LCD thermo meter. (self battery type)



- 07-04-0035 (V cylinder and stick type sensor)
 - 07-04-0037 (HA type cylinder and M5 type temp sensor)
- We have several type of cylinder and sensor configuration; check your cylinder type before purchase. (please refer our catalog)

Compact LCD thermo meter. (non-battery type)



- 07-04-0015 (V cylinder and stick type sensor)
 - 07-04-0033 (HA cylinder and M5 type temp sensor)
- We have several type of cylinder and sensor configuration; check your cylinder type before purchase. (please refer our catalog)