

Hyper S-Stage V-KIT C Type Instruction Manual

This is a newly introduced kit which can bore up to 88cc with a stock 50cc cylinder head, on which you can enjoy the feeling of a real powerful engine. This kit is designed for you to install as easily as you assemble a plastic model and have a good time studying the engine structure, as if you enjoy street fashion.

Item NO : 0 1 - 0 5 - 0 2 3 6
Model : Monkey / Gorilla / BAJA
Frame NO : Z50J-2000001 ~
: AB27-1000001 ~

- Thank you for purchasing one of our products. Please strictly follow the following instructions in installing and using the product.
- Before fitting the products, please be sure to check the contents of the kit. Should you have any questions about the product, please kindly contact your dealer.

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

⚠ Cautions about fuel to use ⚠

This S Stage Kit product is so designed to achieve a higher compression ratio than stock engines. As for the fuel, therefore, high-octane gasoline should always be used. In case regular gasoline is used, abnormal combustion takes place, and the engine cannot achieve its original performance. Moreover, it is highly likely that the piston will break down, leading to serious malfunction. Before installing, 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.

⚠ Cautions about spark plug ⚠

Please be sure to replace the spark plug with CR8HSA contained in the kit. Choose and use a right spark plug with the right level, depending on the degree of burning of the spark plug electrode section.

⚠ The cautions about a sprocket ⚠

The installation of this product will increase the power of your vehicle. So use of a stock sprocket will result in severe wears of parts because of the too low gear, not only adversely affecting the engine life, but also breaking the engine in the worst case. With a driving sprocket in the kit, determine the driven sprocket, and then high-gear the sprocket. Please note that a driven sprocket is not included in the kit.

Please be sure to read the following before use

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

We shall be held free from any kind of warranty whatsoever of products other than this product if the glitch takes place on the other products than this one after the installation and use of this product.

If you make alterations to the product, we shall be held free from any guarantee of the product.

You are kindly requested not to contact us about the combination of our products with other manufacturers'.

This product is designed for exclusive use in the above-mentioned types of motorcycles and frame numbers only. Please take note that this product cannot be mounted on other types of motorcycles.

Before installation, prepare the tools listed in page 2, and install the parts with utmost care, referring to the "Installation Procedures." In addition, this instruction manual as well as HONDA's service manual is prepared with those in mind who have basic technical skills and knowledge. So, it is advisable that those who do not have such tools, or skills or knowledge contact a technically reliable specialist shop for installation.

The cylinder and cylinder head gasket in this kit differ from genuine ones in thickness. Please take note these parts cannot be used in combination with other manufacturers' parts as well as genuine parts. And please use our parts for repairs.

Bolts, nuts, and dowel pins will be reused. However, be sure not to use the worn-down or severely-damaged ones, which please do replace with new ones.

A stock carburetor will interfere with kit's cylinder. So, please process the interfering part in case you install a stock carburetor.

If you use a stock carburetor, do not remove the air cleaner box, as well as air cleaner elements. If you exchange the carburetor, please have a set according to the model. Disregarding of these instructions will result in engine troubles and serious accidents.

You cannot run the motorcycle in the rain with kit's filter installed. Otherwise, it could cause the engine trouble.

⚠ CAUTION The following show the envisioned possibility of injuries and damages to human bodies as a result of conduct disregarding the following cautions

- 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.)
- Set torque at a specified level with a torque wrench. Otherwise, improper torque will result in the breakage or coming off of bolts and nuts.
- As some products and frames have sharp-pointed or protruding portions, please work with your hands protected. (Otherwise, you will suffer injuries.)
- Before riding, always check every section for slack in parts like screws. If you find slack ones, screw them securely up to the specified torque. (Or improper torque may cause parts to come off.)
- Please replace gaskets and packings with new ones. As to the parts for reuse, check carefully for wear and/or damage. Always replace worn or damaged ones with new ones.

⚠ WARNING The following show the envisioned possibility of the injuries to human bodies or physical damages as a result of disregarding the following cautions.

- Please try to ride a motorcycle at legal speed on the public road, abiding by the law.
- Work only when the engine and the muffler are cool. (Otherwise, you will burn yourself.)
- Prepare tools suitable for the work. Otherwise, the parts will be damaged or you will suffer injuries.
- Set torque at a specified level with a torque wrench. Otherwise, improper torque will result in the breakage or coming off of bolts and nuts.
- As some products and frames have sharp-pointed or protruding portions, please work with your hands protected. (Otherwise, you will suffer injuries.)
- Before riding, always check every section for slack in parts like screws. If you find slack ones, screw them securely up to the specified torque. (Or improper torque may cause parts to come off.)
- Be sure to retighten the cylinder head to the specified torque.
- Exchange the gaskets and packings with new ones. And as for those parts to be reused, check them for wear or damages. In case wear or damage is detected, always replace them with new ones.

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.

This manual should be retained for future reference.

Lesson

Usually, bolts and nuts are loosened by counterclockwise turns, and tightened by clock wise turns.

When tightening a screw, at first tighten it by hand as tight as you can. If you cannot get it moving more than one or two turns, check if the screw is placed at an angle.

To loosen a screw means turning a tightened screw around three or four times counterclockwise, and to unscrew it means turning it around counterclockwise until it comes off.

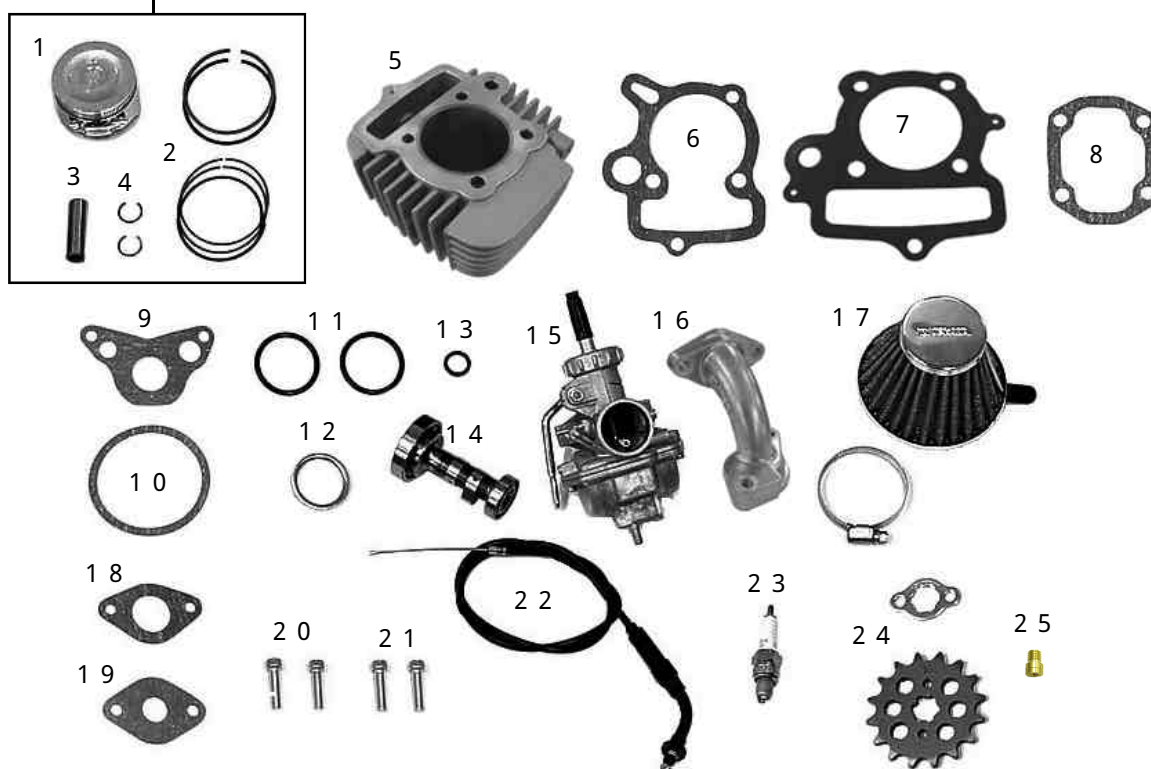
To tighten a screw means to keep a screw from getting loose. The numeric value as a guide at which a screw will not break or get loose when tightened is the so-called "tightening torque." If you do not have a torque wrench, please try to tighten a screw as tight as possible to the level where the screw will not break or get loose, though we can not take any responsibility for the breakage. In case we do not use a torque wrench, we need to judge, only by intuition or using experience, the degree of tightening power at which the bolt will break or get loose.

Improper use of tools will result in breakage of the top of a bolt or screw.

Kit's Contents

0 1 0 2 5 1 7

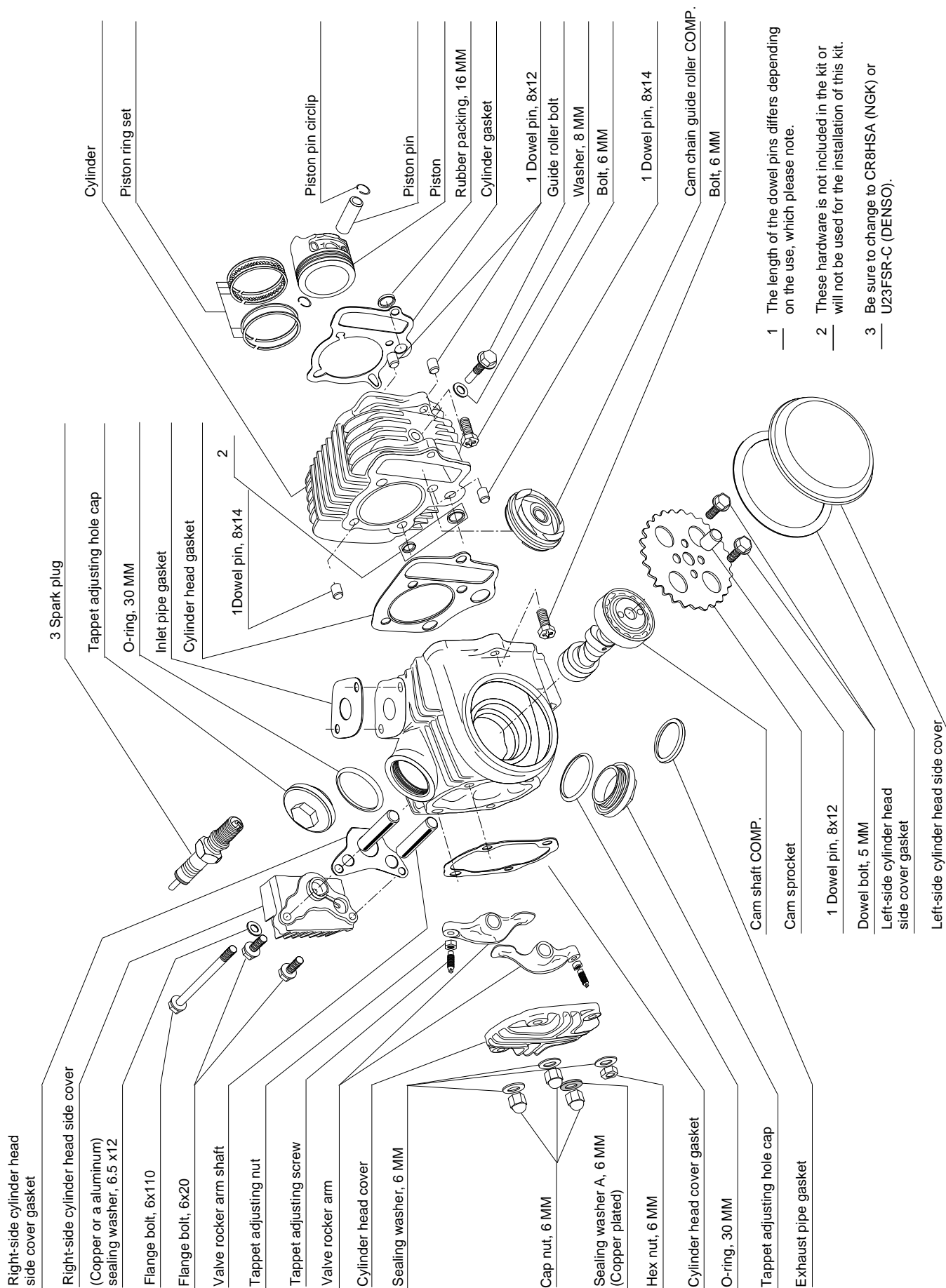
Piston kit



| NO | Parts Name | Qty | Repair Part Item No. | in packs of | NO | Parts Name | Qty | Repair Part Item No. | in packs of |
|----|----------------------------|-----|----------------------|-------------|----|-------------------------------------|-----|----------------------|-------------|
| 1 | Piston | 1 | 13101-NSH-T00 | 1 | 14 | Camshaft | 1 | 01-08-0009 | 1 |
| 2 | Piston ring | 1 | 01-15-014 | 1 | 15 | DENI18 Carburetor assembly | 1 | 03-03-0061 | 1 |
| 3 | Piston pin, 13 x 36 | 1 | 13111-GEF-T00 | 1 | 16 | Inlet pipe | 1 | 17111-GBO-T00 | 1 |
| 4 | Piston pin circlip | 2 | 00-01-0003 | 6 | 17 | Air filter (with a band) | 1 | 03-01-110 | 1 |
| 5 | Cylinder | 1 | 01-01-0222 | 1 | 18 | Carburetor gasket | 1 | 16201-GEY-T01 | 1 |
| 6 | Cylinder gasket | 1 | 00-01-0067 | 2 | 19 | Inlet pipe gasket | 1 | 91301-181-T01 | 1 |
| 7 | Cylinder head gasket | 1 | 12251-GFL-T10 | 1 | 20 | Socket cap screw, 6X20 | 2 | 00-00-0043 | 10 |
| 8 | Cylinder head cover gasket | 1 | 00-01-0156 | 2 | 21 | Socket cap screw, 6X25 | 2 | 00-00-0089 | 10 |
| 9 | R.Side cover gasket | 1 | 00-01-0157 | 2 | 22 | Throttle cable, 710mm | 1 | 09-02-0071 | 1 |
| 10 | L.Side cover gasket | 1 | 00-01-0158 | 2 | 23 | Spark plug CR8HSA | 1 | | |
| 11 | Tappet cap O-ring | 2 | 00-01-0034 | 4 | 24 | Drive sprocket (with a plate) 16T | 1 | 02-05-051 | 1 |
| 12 | Exhaust pipe gasket | 1 | 00-01-0064 | 2 | 25 | Main jet #85 | 1 | 00-03-0041 | 1 |
| 13 | Rubber packing (Black) | 1 | 00-01-0066 | 2 | | | | | |

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.

Names of components



- 1 The length of the dowel pins differs depending on the use, which please note.
- 2 These hardware is not included in the kit or will not be used for the installation of this kit.
- 3 Be sure to change to CR8HSA (NGK) or U23FSR-C (DENSO).

Stock Parts Removal

1 . Seat Removal



Remove the side cover.



Loosen the nuts under the seat, and unscrew the bolts.

Tools :
12 mm box wrench
Extension bar (small)
10 mm offset box wrench



Loosen two nuts on the rear shock.

Tool:
14 mm offset box wrench



Remove the seat by pulling it backward.

2 . Fuel Tank Removal



Turn the fuel cock off.



Shift the tube clip upward and disconnect the carburetor's fuel tube.



Remove the bolts which mount the fuel tank on the frame.

Tool:
10 mm offset box wrench

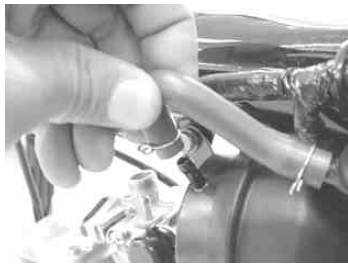


Remove the fuel tank by pulling it backward.

3 . Carburetor Removal



Detach the carburetor's top cap and take out the throttle valve from the carburetor.



Take out the hose of the strage tank (only in case of no. AB27-).



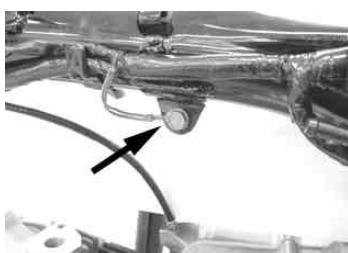
Remove the bolt of the air cleaner stay.

Tools:
10 mm box wrench
Extension bar (small)



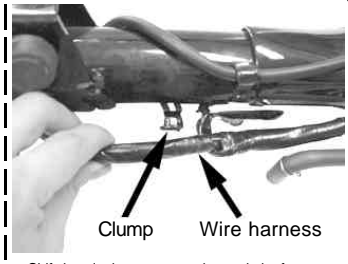
Unscrew two bolts which are fastening the inlet pipe and the cylinder head together. Then remove the inlet pipe, the carburetor, and the air cleaner.

Tool:
8 mm offset box wrench



Install the earth wire to the frame by air cleaner stay's bolt.

Tools:
10 mm box wrench
Extension bar (small)
Torque 12N · m (1.2kgf · m)



Shift the wire harness to underneath the frame.

4 . Muffler Removal



Rotate two nuts on the EX pipe counterclockwise and remove them.

Tool:
10 mm open-end wrench



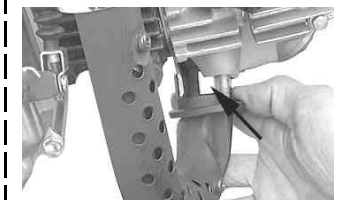
Remove the hex bolt which is used to fix the muffler by turning it counterclockwise.

Tools:
12 mm box wrench
Extension bar (medium)

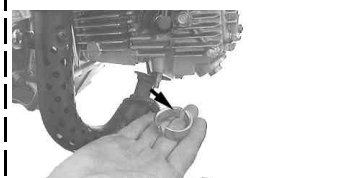


Remove the nut on the back of the muffler by rotating it counterclockwise.

Tools:
10 mm box wrench
Extension bar (medium)



Remove the two flange collars, and take the muffler off the body as if by pulling the muffler outward.



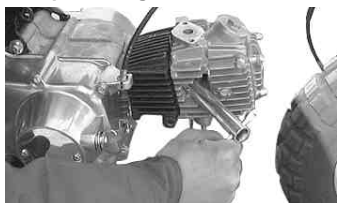
5 . Front Fender Removal



Rotate the two hex bolts on the back of the front fender counterclockwise and remove them.

Tools:
10 mm box wrench
Extension bar (small)

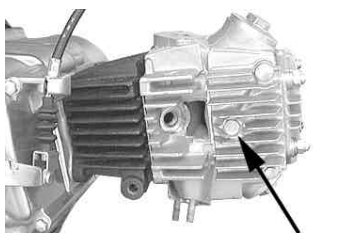
6 . Spark Plug Removal



Remove the plug cap from the plug by pulling it out from the plug. Be sure to hold the cap when pulling it out.

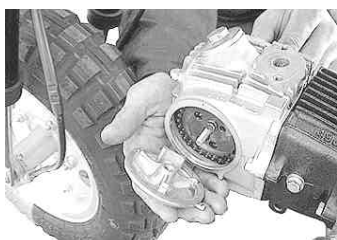
Remove the plug by turning it counterclockwise with the in-vehicle spark plug wrench.

7 . Cylinder Head Left Side Cover Removal



Unscrew the hex bolt in the center of the cylinder head right cover, and the left cover comes off. (If you cannot remove the left cover in this way, screw in the hex bolt a few screw threads and strike the top of the hex bolt with a hammer lightly.)

Tool:
10 mm box wrench

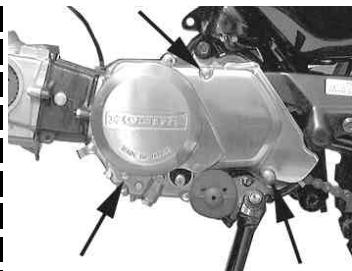


8 . Crankcase Left Side Cover Removal



Unscrew the hex bolt on the shift pedal, and turn the shift pedal counterclockwise and remove it.

Tool:
10 mm offset box wrench



Rotate the three bolts which are fixing the crankcase L cover counterclockwise and remove them.

Tools:
8 mm open end wrench
8 mm box wrench
Extension bar (small)

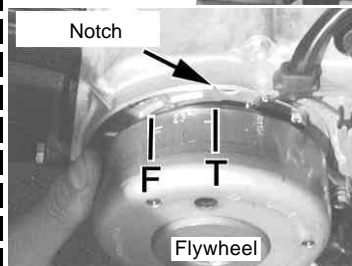
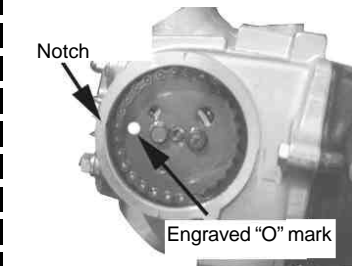
9 . Two Tappet Caps Removal



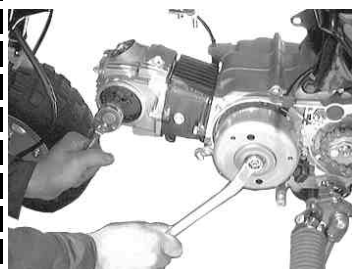
Rotate the two tappet caps counterclockwise, and remove them.

Tool:
17 mm offset box wrench

10 . Cam Sprocket Removal

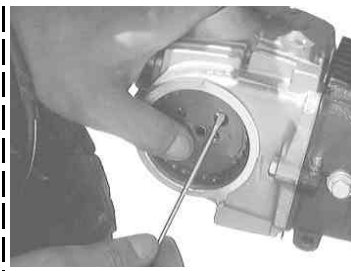


Rotate the flywheel counterclockwise, aligning the "T" mark on the flywheel and the "O" mark on the cam sprocket with each notch.



Fix the flywheel, turn two cam sprocket hex bolts counterclockwise, and remove them.

Tools:
8 mm box wrench
14 mm offset box wrench (For fixing a flywheel)

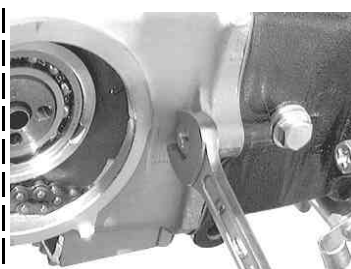


Prise the cam sprocket open with a small flat tip screwdriver or something like this to remove it from the cam shaft.

Remove the cam chain from the cam sprocket first, and then remove the cam sprocket.

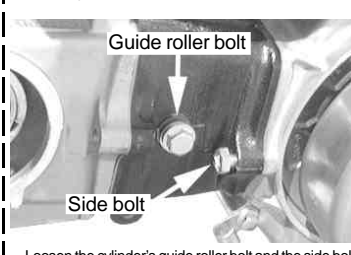
Remove the dowel pin fixed in the center of the camshaft.

11 . Cylinder Head Side Bolt Removal



Rotate counterclockwise the cylinder head side bolt which are used to fix the cylinder head and the cylinder, and remove the bolt.

Tool:
10 mm open-end wrench



Loosen the cylinder's guide roller bolt and the side bolt between the cylinder and the crank case by rotating them.

Loosen the cylinder's guide roller bolt and the side bolt between the cylinder and the crankcase by rotating them.

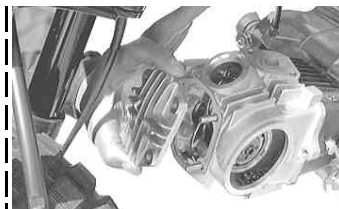
12 . Cylinder Head Cover Removal



Rotate counterclockwise four nuts which are mounting the cylinder head cover in a diagonal order, and remove them.

Remove four washers under the nuts.

Tool:
10 mm box wrench



Remove the head cover. (If it does not come off easily, strike it lightly with a plastic hammer, and it will come off.)

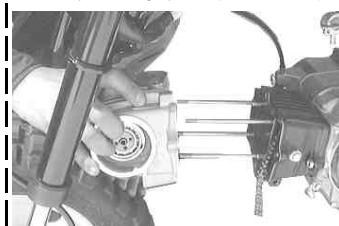
If some gaskets remain on the cylinder head, wipe them off completely with a scraper or a cutter.

13 . Cylinder Head Removal

Let the front tire down. (Push the valve with the tip of a cross slot screwdriver or something like this, then the tire will deflate. Push it till the whoosh cannot be heard any longer.)



Pull the cylinder head away from the cylinder to remove it. (If the cylinder head does not come out smoothly, strike it lightly with a plastic hammer.)



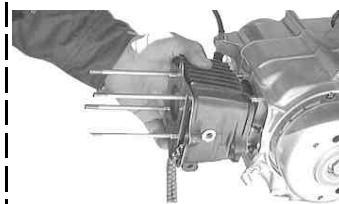
Remove the cylinder head while pushing the front tire. It seems that at this point, you come to understand why you have let the front tire down.

Keep the two dowel pins for reuse.

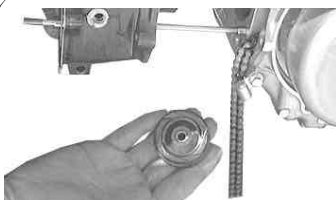
14 . Cylinder Removal



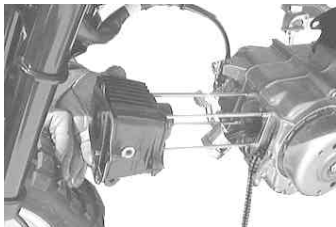
Rotate counterclockwise the guide roller bolt and the cylinder side bolt which were loosened, and remove them.



Pull and remove the cylinder. (If it does not come out smoothly, strike the cylinder lightly with a plastic hammer.)

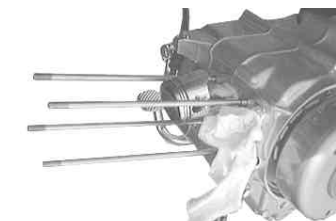


Remove the cam chain guide which will come out when you pull out the cylinder.



After the piston has been taken out, remove the cylinder out forward while holding the tire by hand.

15 . Piston Removal



Cover the cylinder hole and the cam chain in the crankcase with a waste cloth so even a single foreign matter like a part and the dust will never fall down into them.



Piston pin circlip

Remove one of the two piston pin circlips. You can remove it by prising it open with a screwdriver with its tip on the notch.

Tool:

A tapered flat tip screwdriver



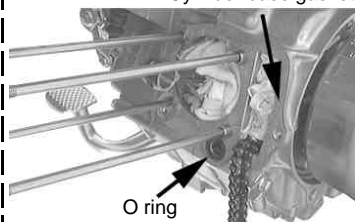
Remove the piston pin in the direction where a piston circlip has already been removed. You can easily remove it by pushing it up with a flat tip driver from the direction where another piston circlip remains fixed.



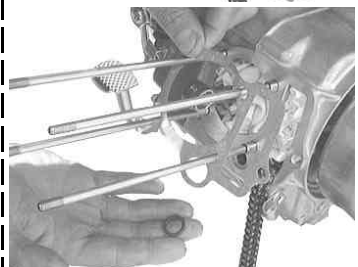
Remove the piston.

16. Removal of a Cylinder Base Gasket, an O-ring, and a Dowel Pin

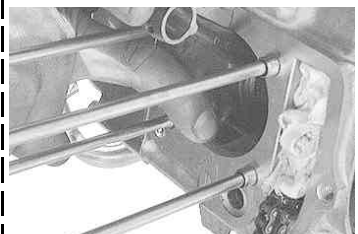
Cylinder base gasket



O ring



In case you cannot remove all the gaskets completely, rasp or wipe them off with a scraper or something else, exercising great caution not to scratch the crankcase. If the crankcase center gaskets protrude into the cylinder base or the cylinder hole, cut them off. Be careful not to let any foreign matter fall into the crankcase.



If the gaskets run off at the point indicated with a finger in the above picture, cut them off.

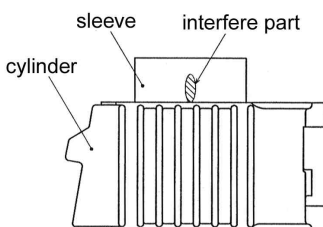
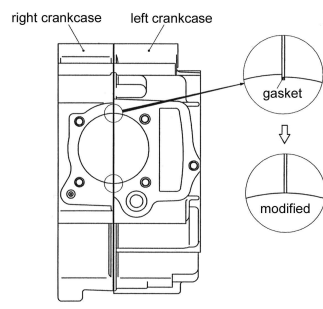
Cautions about Alminum Cylinder Installation

In some cases, due to right and left crankcases being out of alignment and for other reasons, in installing the cylinder, there may be interference in sleeve hole of the crankcase's mating surface, circled parts, shaded areas of the cylinder sleeve, and inside the case. Since such interference will lead to sleeve deformation and engine troubles, do not fail to check and perform maintenance.

The difficulty level of the work is quite high. So, you may feel like being a professional if you have successfully completed the job.

How to Modify

1. Cover the crankcase securely with a waste cloth so the shavings will not fall down into it.
2. Rasp the convex portions on the mating surfaces of the crankcase till the surfaces become level.
3. Then, remove the waste cloth with care not to let the shavings go inside the crank case.
4. After taken off the waste cloth, then stuff a clean waste cloth into the case's hole.
5. After assembly of the kit is completed, leave the engine idling for several minutes. Right after this, exchange the engine oil for new one. Then everything is set.



S - Stage Kit Installation

1 . Piston Installation



Fit a piston pin circlip, attached to one side of the piston, firmly in the circlip groove. In so doing, see to it that the circlip's end gaps do not meet with the notch on the pin hole.



Left side

You can relatively easily install it by pressing it with a screwdriver. But take care not to damage the piston with a screwdriver.

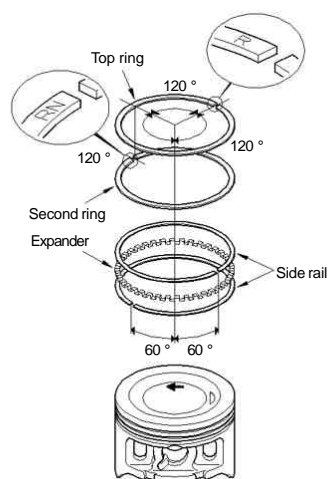
A left side piston pin circlip should be installed first.

Tool:

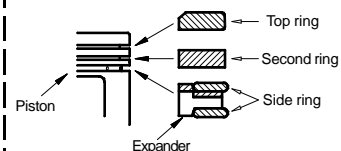
A tapered flat tip screwdriver

Apply engine oil to the ring grooves and install the piston rings in the following order; an oil ring expander, an under oil ring side rail, an upper oil ring side rail, second ring, and a top ring.

Arrange the ring-end gaps of piston rings to meet each other.



"R" is engraved on the upper surface of the top ring, and "RN" on the second ring top surface.



Take note of cross section



Fix the oil ring expander.



Fix the lower oil ringside rail.



Fix the upper oil ringside rail.



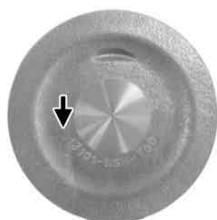
Fix the second ring.



Fix the top ring.

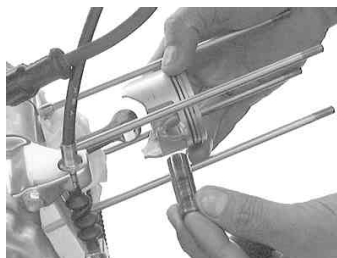


Apply engine oil to the piston pin and the connecting rod, and install the piston pin.



Exhaust side

Install the piston with the arrow on its top surface facing down, or facing toward the exhaust side.



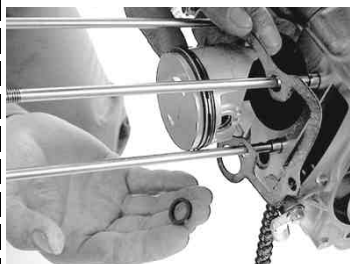
It makes the installation easier to insert the wrist pin one third at first.
Fit the kit's piston pin circlip to the circlip grooves exactly.



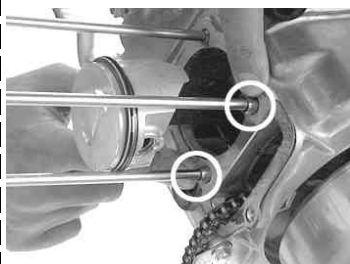
You can rather easily install it by pressing it into the piston with a screwdriver, but taking care not to damage the piston with a screwdriver. Do the job carefully as, in some cases, the circlip comes off flying while you press it inside. So, wear protective eyeglasses for your eye protection.
Take away the waste cloth.

2 . Cylinder Installation

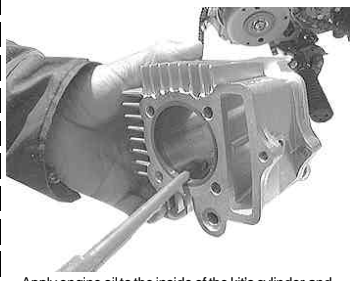
Degrease the cylinder and crankcase sides of the cylinder base gasket surface with thinner or the like.



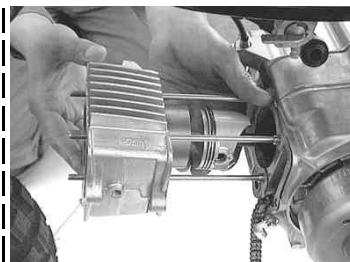
Fix the cylinder base gasket and a black rubber packing.



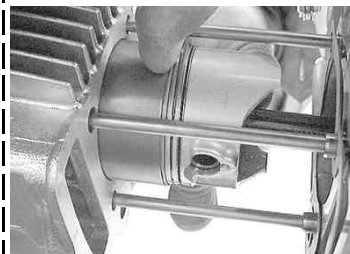
Check that the two dowel pins are installed.



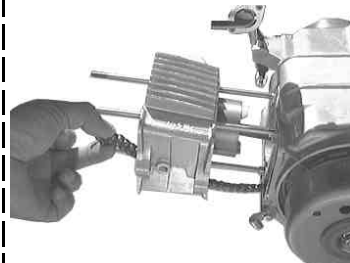
Apply engine oil to the inside of the kit's cylinder, and spread it with fingers to be equally applied.



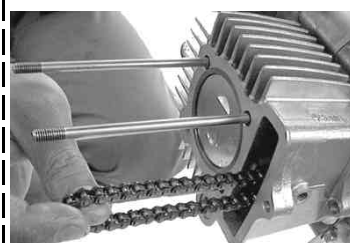
Insert the cylinder while holding the tire.



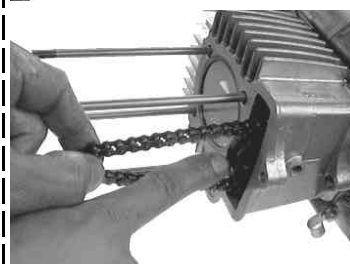
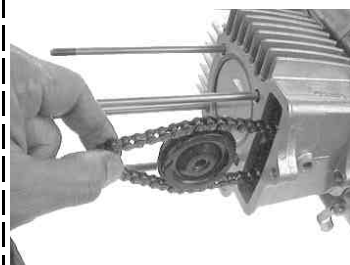
Press the cylinder little by little with fingers, with care not to move the piston rings' end gaps.
The degree of difficulty is very high. Do your best!



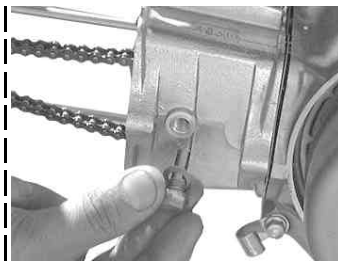
Once the rings are set in the cylinder, letting the cam chain go through the cylinder, fit it into the crankcase.



Install the guide roller while pulling the cam chain.



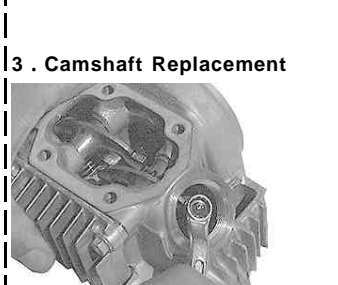
Push the guide roller deeper inside till the guide roller center meets the hole of the guide roller.



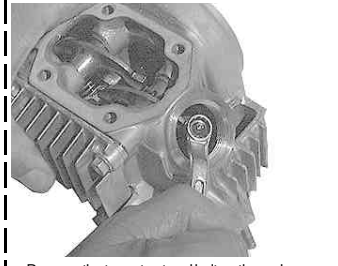
Fix the guide roller bolt. (Temporarily tighten it as tight as possible by hand.)



Install the cylinder side bolt. (Temporarily tighten it as tight as possible by hand.)

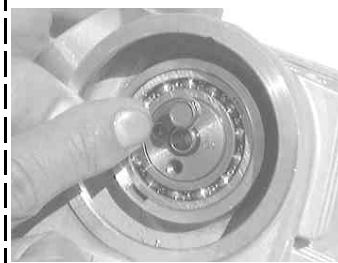
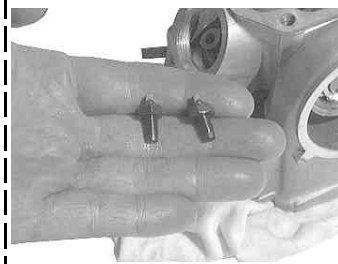


3 . Camshaft Replacement

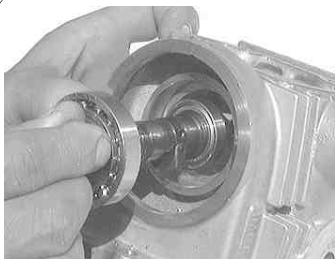


Remove the tappet nut and bolt on the rocker arm which are installed in the cylinder head. At the time you have loosened the tappet nut, remove both the tappet nut and bolt at the same time.

Tool:
9 mm offset box wrench



Install the cam sprocket bolt to the camshaft, and take out the camshaft by rotating it. Never try to pull it out forcibly.



Install the kit's camshaft in the order reverse to installing it.
Apply clean engine oil to the cam profile and the journal of the cam shaft. Even if it is difficult to fit the cam shaft, never strike it with a hammer, etc. Just press it by hand.



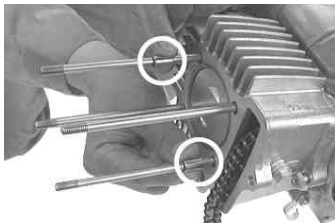
Attach the dowel pin of a stock cam in a kit cam.



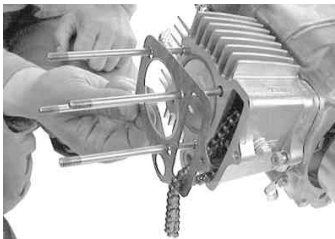
Fix the rocker arm's tappet screw by turning it clockwise.

4 . Cylinder Head Installation

Degrease the head surface and the upper surface of the cylinder with thinner, etc.



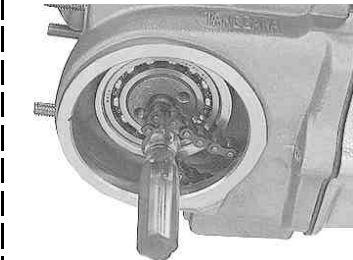
Install two dowel pins to the cylinder.



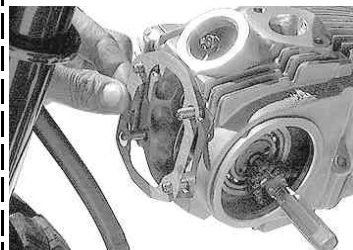
Install the head gasket.
The rubber packing (black) and the rubber gasket (green) are not used here.



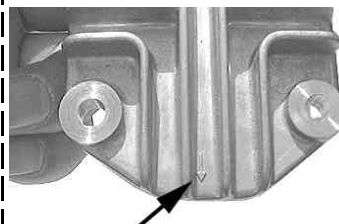
Pass the cylinder head through the stud bolt while pushing the tire by hand.
Passing the cam chain through the cylinder head, install it.



Fix the cam chain by putting a screwdriver in the central hole on the camshaft.

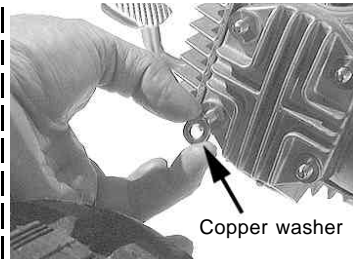
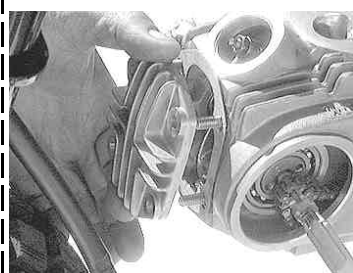


Install the cylinder head cover's gasket and the head cover.



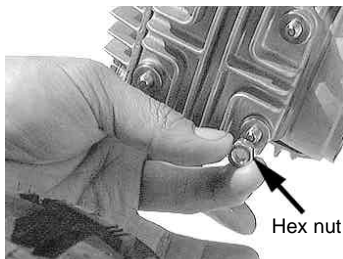
Pay attention to the arrow.

Take note that the arrow faces downward.

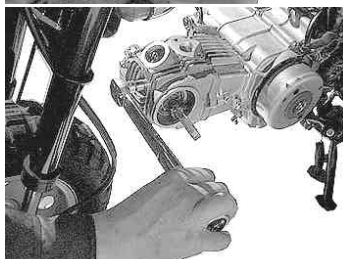


Copper washer

Install the head cover's washers and nuts. Above is the picture of an engine seen from the front. At the lower left are a copper washer and three iron washers, and at the lower left is a hex nut and the remaining three are cap nuts.



Hex nut

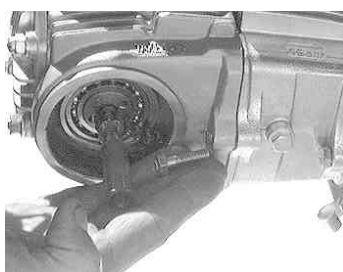


Screw the head nuts equally tight. (If without a torque wrench, tighten them firmly little by little diagonally.)

Torque 12N·m (1.2kgf·m)

Tool:

10 mm box wrench

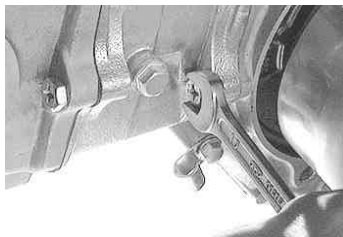
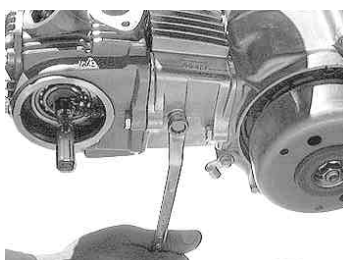
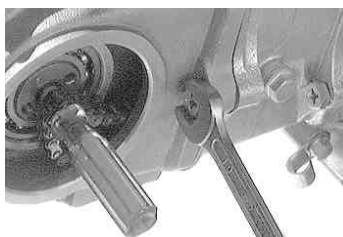


Install the head side bolt. Tighten fully the guide roller bolt and the cylinder side bolt which were temporarily tightened beforehand.

Tool:

10 mm open-end wrench

10 mm offset box wrench

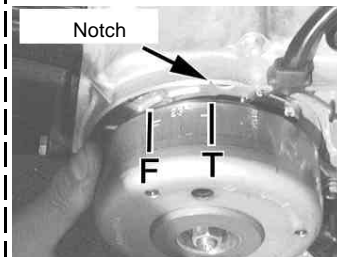


Torque:

Guide roller bolt 10N·m (1.0 kgf·m)

Side bolts, upper and lower 10N·m (1.0 kgf·m)

5 . Cam Sprocket Installation

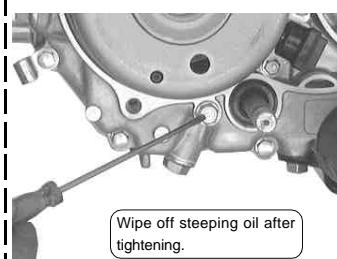


Align the "T" mark on the flywheel with the notch on the crankcase.

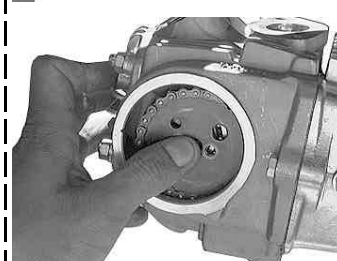


Set one of the cam shaft's holes at the position to be in parallel with the notch on the cylinder head; This arrangement places the cam shaft at TDC (Top Dead Center) on the compression stroke.

In the case of optional cam shaft installation, follow the instructions in its own instruction manual.

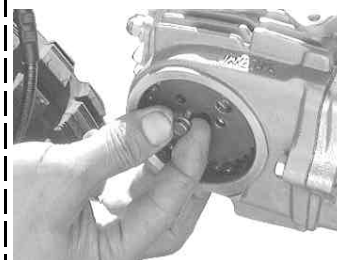


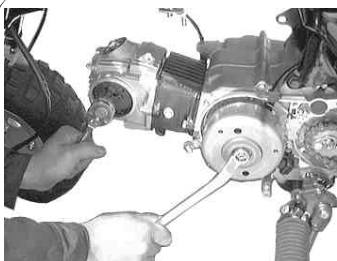
Wipe off steeping oil after tightening.



The job is very difficult, so do your best!

Remove a hex' bolt beside the change pedal shaft, so the tension of the cam chain will be loosened and it becomes easier to install the cam sprocket. Reinstall the bolt after installing the cam sprocket. Applying the cam chain to the cam sprocket, install the cam chain to the cam shaft so the "O" mark on the cam sprocket and the notch on the cylinder head are aligned with.





Fix the flywheel and tighten two cam sprocket bolts.

Torque 9N·m (0.9kgf·m)

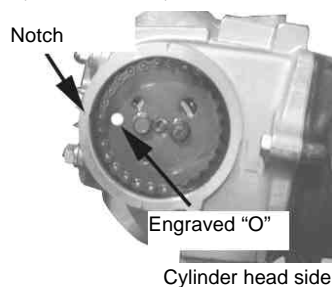
Tools:

8 mm box wrench

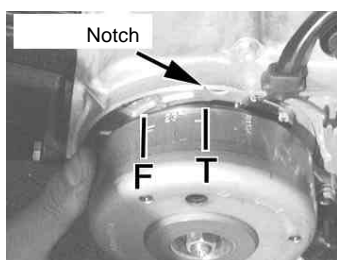
14 mm offset box wrench

6 . Valve Timing and Tappet Adjustment

Very difficult work, and do your best here!



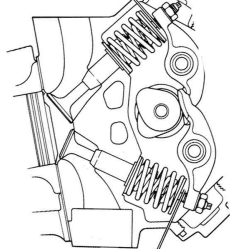
Cylinder head side



Flywheel side

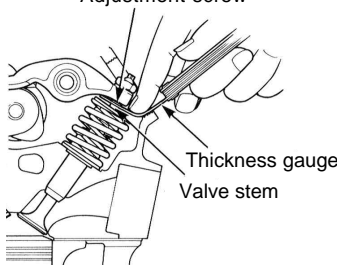
Turn the flywheel until the "O" mark on the cam shaft and the "T" mark on the flywheel meet each notch. Though the flywheel will not stop right at the required position because the magnet repels each other, it's all right if "T" and "O" marks meet each notch at the same time after fixing the cam sprocket.

Valve clearance
(Intake side)

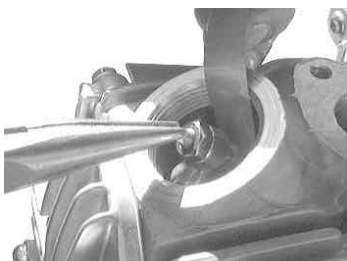


Valve clearance
(Exhaust side)

Adjustment screw



Thickness gauge
Valve stem

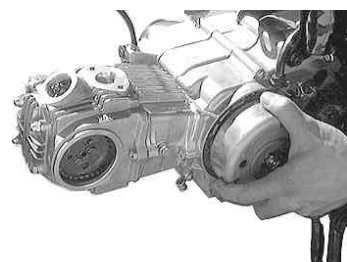


While tightening a rocker arm's tappet screw, tighten the tappet nut to the extent that a 0.05 mm thickness gauge, placed between the tappet screw and the valve stem end, can be pulled out with only a little resistance. If you have no idea of the proper resistance in pulling out the 0.05 mm thickness gauge, then prepare a 0.07 mm and 0.03 mm thickness gauges. The 0.05 mm space is when the 0.07 mm gauge won't go in between the space but the 0.03 mm gauge goes in with little resistance. Set the clearance at 0.05 mm both for intake and exhaust.

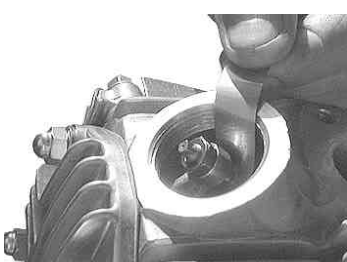
Tools:

Needle nose plier

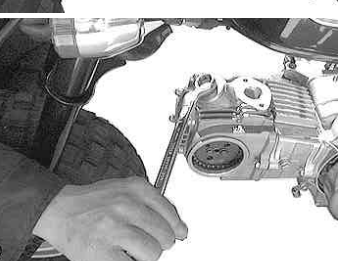
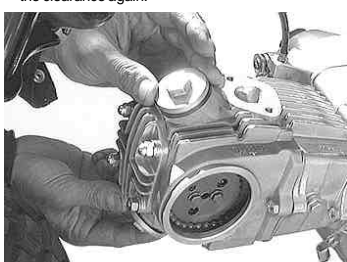
9mm offset box wrench



After adjusting the tappet, turn the flywheel counterclockwise twice by hand, and then, align the "T" mark with the "O" mark.



Check for tappet clearance change. If changed, adjust the clearance again.



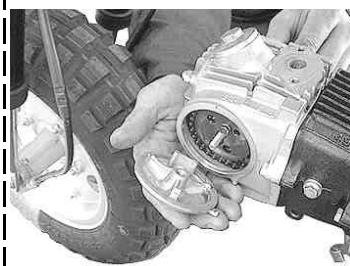
Fix two tappet caps.

Torque 12N·m (1.2kgf·m)

Tool:

17mm offset box wrench

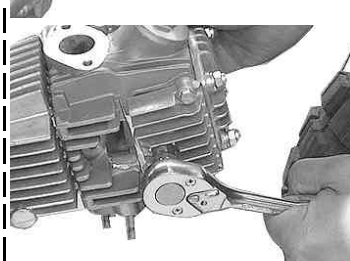
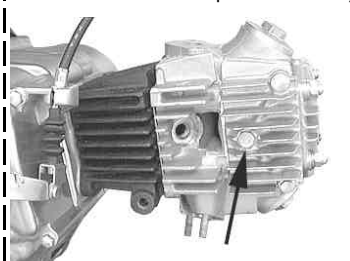
7 . Cylinder Head Left Cover Installation



Fix the cylinder head left cover gasket and the left cover. (Set the stopper at the position indicated in the picture in order for the Lside cover not to turn clockwise when tightening the bolts.)



(Set the stopper as shown in the picture above.)



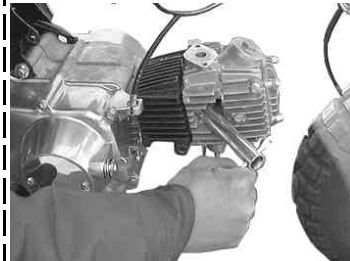
Tighten the hex bolt (see arrow) on the cylinder head right side.

Torque 12N·m (1.2kgf·m)

Tool:

10mm box wrench

8 . Spark Plug Installation



Install the plug with in-vehicle tools or a spark plug wrench.

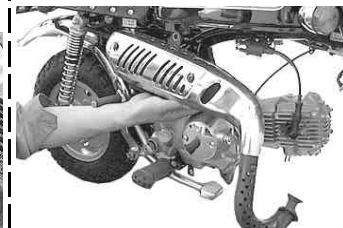
Torque 11N·m (1.1kgf·m)

Tool:

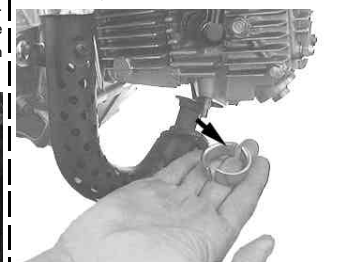
Spark plug wrench

Install a plug cap on the plug.

9 . Stock Muffler Installation



As to the muffler installation, pass the tail pipe through the rear shock first and have the flange part near the exhaust output.



Install two flange collars as if to squeeze the exhaust pipe.

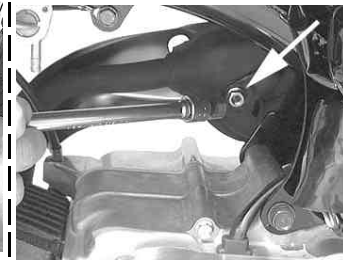


Tighten two nuts on the exhaust pipe (temporary tightening).

Torque 10N·m (1.0kgf·m)

Tool:

10mm open-end wrench



Install nuts to the back side of the muffler (temporary tightening).

Torque 10N·m (1.0kgf·m)

Tools:

10mm box wrench

Extension bar (Medium)



Install and tighten the hex bolt which mounts the muffler (temporary tightening).

Torque 26N·m (2.7kgf·m)

Tools:

12mm box wrench

Extension bar (Medium)

Tighten fully three sections tightened temporarily beforehand.

10 . Front Fender Installation



Tighten and fix the hex bolt at the back of the front fender.

Torque 10N·m (1.0kgf·m)

Tools:
10mm box wrench
Extension bar (Small)
Blow up the tire.

11 . Throttle Cable Installation

Unfasten the wiring of the stock throttle cable.



Loosen the hex nut.

Tool:
14mm open-end wrench



Unscrew two screws and detach the upper throttle housing.



Detach the throttle cable's inner cable from the throttle pipe.



Detach the stock throttle cable from the lower throttle housing.



Fix kit's throttle cable to the lower throttle housing.



Connect the inner cable with the throttle pipe.



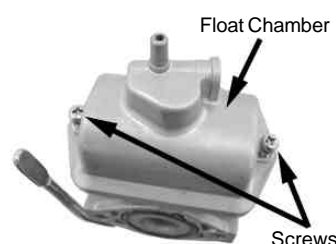
Fix the upper throttle housing with two screws. In this case, tighten the front screw first, and then the one on the back side.



Align like this.

In the case of a stock handle, set the crank in the throttle housing at the "O" mark on the handle. (See the picture above.)
Wire the throttle cable.

12 . Main Jet Replacement

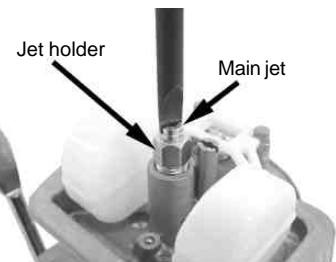


Unscrew two screws and take off the float chamber.

Tool:
Cross slot screwdriver (Medium)



Take note that the float pin often comes off easily.



Detach the main jet from the jet holder.

Tool:
Flat tip driver (Medium)



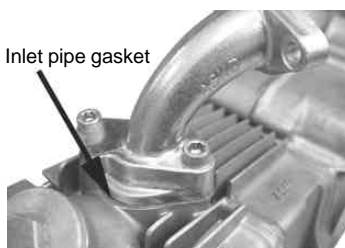
Fix kit's main jet.

Tool:
Flat tip driver (Medium)



Fix the float chamber to the carburetor with two screws.

13 . Carburetor Installation

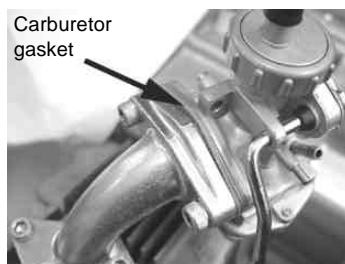


Inlet pipe gasket

Put the inlet pipe gasket between the intake manifold and the cylinder head, and fix the gasket by tightening two 6x25 socket cap screws.

Torque 12N·m (1.2kgf·m)

Tool:
5mm hex wrench



Carburetor gasket

Put the carburetor gasket between the intake manifold and the carburetor, and fix the gasket by tightening two 6x20 socket cap screws.

Torque 12N·m (1.2kgf·m)

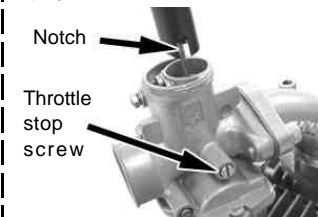
Tool:
5mm hex wrench



Detach the top cap from the carburetor, and take out the spring and the throttle valve.



Fix the top cap onto the throttle cable, and fix the spring and the throttle valve onto the inner cable.



Notch
Throttle stop screw

Align the notch on the throttle valve with the throttle stop screw, and insert the throttle valve into the carburetor.



Fit the top cap into the carburetor as shown in the picture above.

14 . Adjustment of Play in the Throttle



Pull down the boots on the throttle cable to expose the adjuster.

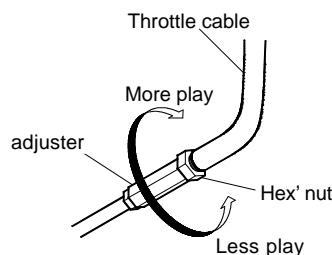


Holding the hex nut, loosen the adjuster.

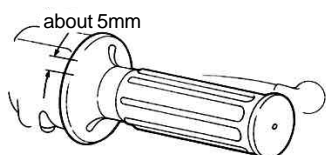
Tool:

8mm open-end wrench

10mm open-end wrench



By turning the adjuster, you can adjust the degree of free play.



Adjust the throttle grip to have about 5mm free play.

Fix the adjuster and tighten the hex nut.

Tools:

8mm open-end wrench

10mm open-end wrench

By turning the throttle, check that the throttle valve moves smoothly and without a hitch.

Check that there is free play in the throttle even when you turn the handle all the way to the right and left.

Replace the boots in the original position.

15 . Air Filter Installation



Attach the band to the airfilter and insert it into the carburetor. Tighten the band.



Install strage tank's hose to the air filter.
(in the case of vehicles of frame No.AB27)

16 . Fuel Tank Installation



Install the fuel tank to the frame.



Fix the fuel tank to the frame with a bolt.

Torque 12N · m (1.2kgf · m)

Tool:

10mm offset box wrench



Connect the fuel tube with the carburetor.



Insert the bolt into the lower part of the seat and fix the nut.

Torque 22N · m (2.2kgf · m)

Tools:

12mm box wrench

Extension bar (Small)

12mm offset box wrench



Tighten two nuts on the rear shock absorber.

Torque 34N · m (3.5kgf · m)

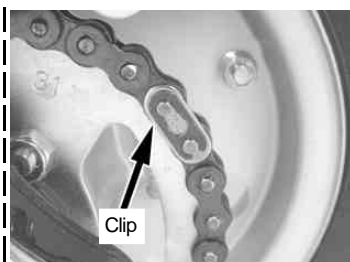
Tool:

14mm offset box wrench

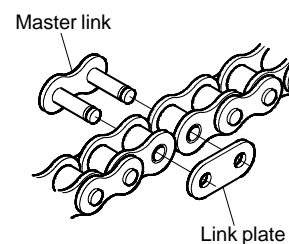


Install the side cover.

18 . Drive (engine side) Sprocket Installation



Remove the clip on the drive chain.



Remove the link plate and the master link first, and then remove the drive chain.

Do not fail to stop the engine before setting to work.



Remove two bolts, applying the rear brake.

Tools:

10mm box wrench

Extension bar (Small)



Remove the plate.



Take the stock sprocket out of the shaft, and remove the chain.



Insert kit's sprocket into the shaft.



Install kit's plate and temporarily tighten two bolts.

19 . About Driven Sprocket (rear-tire side)

With the change of the driven sprocket, the driven sprocket has to be changed as well, and the sprocket needs to be in high gear. Driven sprocket must be determined according to types of a clutch and size of tire. Refer to the following list for the details.

Recommended Sprocket for Hyper S-Stage Kit CType (for 65kg weight)

| Tire size | Clutch | Drive sprocket | Driven sprocket | Ratio |
|-----------|------------------------|----------------|-----------------|-------|
| 8 inc | Stock manual | 16 | 23 | 1.43 |
| | Strengthening, special | 16 | 25 | 1.56 |
| 10 inc | Stock manual | 16 | 25 | 1.56 |
| | Strengthening, special | 16 | 28 | 1.75 |

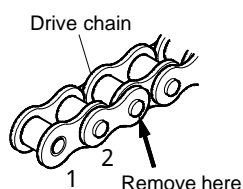
Driven sprocket is not included in this kit. Please purchase it (or them) separately.
Before replacement of driven sprocket, you have to remove all belongings of the rear wheel.
Stand the vehicle firmly by a racing stand or the like, and suspend the rear wheel.

20 . About Drive Chain

In some cases, replacement of the stock sprocket with the recommended one will make the drive chain too short even if the chain is adjusted. In such a case, prepare a drive chain separately and adjust the length. In addition, length of the chain varies according to the length of a swing arm. Refer to the following list for the detail.

The number of links of a sprocket and a chain

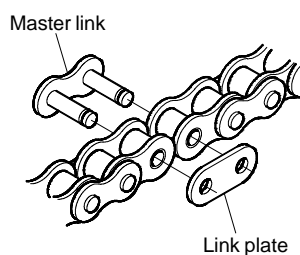
| Drive Sprocket | Driven Sprocket | The length of a swing arm, and the number of links of a chain | | | | |
|----------------|-----------------|---|--------------|--------------|---------------|---------------|
| | | Stock swing arm | 4 cm Stretch | 8 cm Stretch | 12 cm Stretch | 16 cm Stretch |
| 13(Stock) | 31(Stock) | 74(Stock) | - | - | - | - |
| 16 | 23 | 72 | 76 | 84 | 90 | 98 |
| 16 | 25 | 72 | 76 | 84 | 90 | 98 |
| 16 | 28 | - | - | - | 92 | 100 |



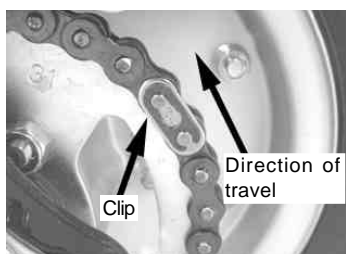
If you need to replace stock sprockets (stock swing arm) with a drive sprocket 16 T / a driven sprocket 23T, remove two links from the stock chain.

Always stop the engine in this procedure.

Fix the drive chain to the drive and driven sprockets.



Reinstall the master link from inside to connect the drive chain, and then reinstall the link plate also.



Fix the clip.
At this point, clip's end gap must face toward the reverse direction of travel.

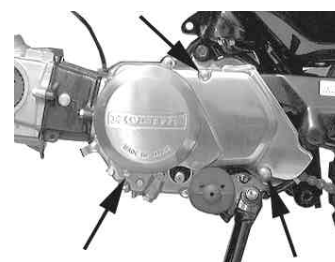


Carry out this bundle of the bolt of the drive sprocket which temporary-stopped and was being carried out.

Torque 12N · m (1.2kgf · m)

Tool
10mm box wrench
Extension bar S

21 . Crankcase Left Cover Installation



Install and tighten three bolts which are fixing the crankcase L cover.

Torque 10N · m (1.0kgf · m)

Tools:
8 mm box wrench
Extension bar (small)



Fix the change pedal.

Torque 10N · m (1.0kgf · m)

Tool:
10mm offset box wrench

Check for slackness of the bolts fixed all the way from the engine to the suspension.



Turn on the fuel cock.

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>

How to Set the Carburetor

- When the carburetor does not match the engine and the engine fails, the engine failures are caused by either too dense or too lean air-fuel mixture.
- The engine failure symptoms for the engine are as follows:

| When the air-fuel mixture is too dense: | When the air-fuel mixture is too lean: |
|--|---|
| <ul style="list-style-type: none"> • The explosion sound with a dull thud continues intermittently. • The engine malfunctions further if you use the choke. • The engine malfunctions when you warm it up. • The engine works well if the cleaner is detached. • The motorcycle belches dense (or, black) exhaust gas. • The plug smolders, getting blackened. | <ul style="list-style-type: none"> • The engine overheats somewhat. • The engine starts working well If you use the choke,. • The engine does not accelerate well. (No smooth acceleration) • Revolutions change, generating weak power. • The plug burns white. |

Set the carburetor only after warming up the engine, and then test-drive. And use a plug with the right heat value.
Do the setting in the following manner, studying at what throttle opening position the engine starts failing.

Jet needle (Throttle position at 1/4 - 3/4)

Whether or not the engine revolution is in proportion to the throttle operation

- When the acceleration is not smooth or even, make the air-fuel mixture dense.
- Make the air-fuel mixture lean when the engine revolution goes up heavily and belches black gas.

The mixture ratio at this throttle position can be adjusted by the location of E-ring in the grooves. The air-fuel mixture becomes dense as the location of the E-ring moves down from the 1st to the 5th groove.



Main jet (The throttle position at 3/4 - 4/4)

The air-fuel mixture ratio at this throttle position can be adjusted by changing the number of the main jet. The larger the main jet numbers, the denser the mixture ratio becomes.

In view of the engine and muffler specifications, select the most appropriate main jet to get the highest revolutions.

Pilot jet (First of all, please adjust the air screw.)

- In case you have given more than three turns to the air screw to tighten it, use a pilot jet with a small number.
- If you have tighten the air screw (clockwise) to the full, use a pilot jet with a larger number.

Check whether you have made a right choice of the pilot jet by seeing if the engine starts up revolving smoothly from the idling to running at slow speed.

- When the engine revolves up unevenly, the pilot jet number is too small. (At idle)
- When the motorcycle belches black exhaust gas and produces heavy exhaust sound, the pilot jet number is too big. (At idle)
- After replacing the pilot jet, you need to readjust the airscrew.

Air screw

The air screw adjusts the air mass flow at the time of engine's revolving at slow speed. (At idling)

- Give the air screw a right turn The air-fuel mixture gets dense.
- Give the air screw a left turn The air-fuel mixture gets lean.

Loosen the tightened air screw back to the 1.5-turn position. And then from this position, give to the airscrew a right or left turn of 1/4 to 1/2 till the engine revolves at the highest speed.

Loosen the idle stop screw till you get the steady idling revolutions. And once again adjust the position of the airscrew to get the highest revolutions.

On how the barometric pressure, temperatures and humidity affect the setting:

- At highlands or at high altitudes, the barometric pressure and air density go down and the air gets into the carburetor in less amounts. This makes the air-fuel mixture dense which was adjusted at low altitudes.
- Under the weather conditions with very low temperatures, the air density increases, which makes the air-fuel mixture lean.
- Under the rainy and humid weather conditions, the air density decreases, which makes the air-fuel mixture dense.

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.

This manual should be retained for future reference.

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>