

Hyper S-Stage V-KIT A 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 3
Monkey / Gorilla Z50J-1300017 ~ 1510400

- 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

Bolts and nuts will get loose when turned counterclockwise, and tighten when turned clockwise.

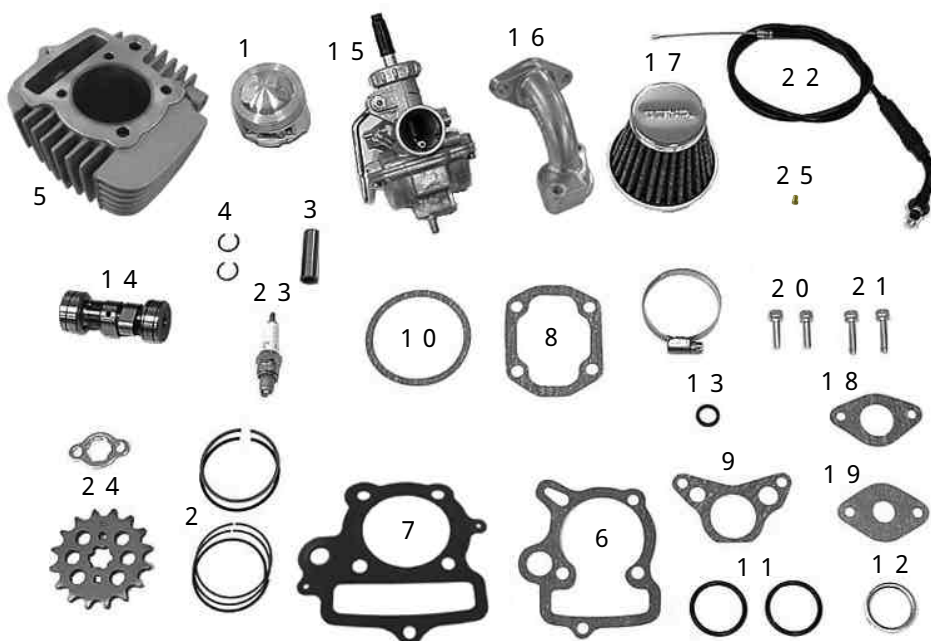
In tightening screws, first finger tighten them as hard as possible without using tools. If they stop turning after giving them one or two turns, the screw may be fixed at a slant.

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 screw it up to keep it 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 "torque." If you do not have a torque wrench, please try to tighten a screw as tight as possible to the point where the screw will not break or get loose, though we can not take any responsibility for the breakage. In case you do not use a torque wrench, you need to judge, only by intuition or using experience, the degree of tightening power at which the bolt will break or get loose.

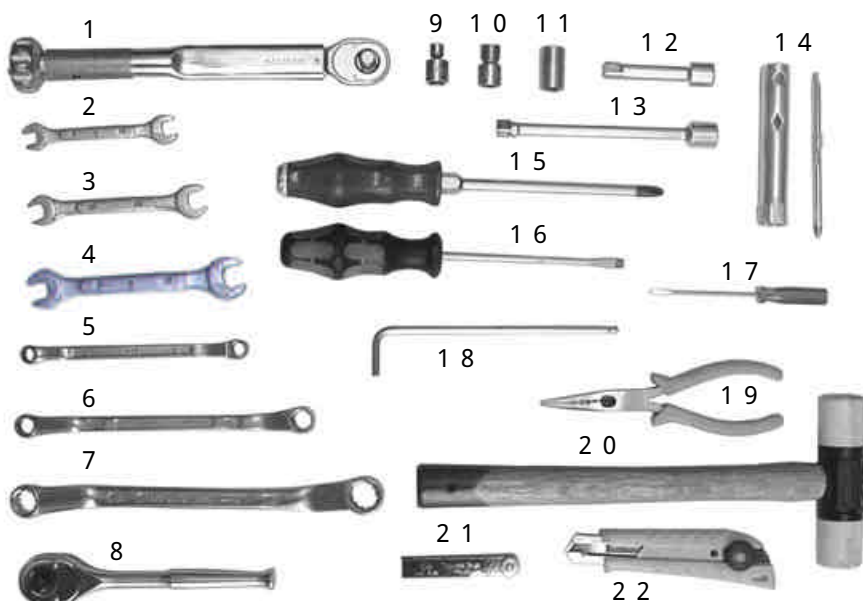
Improper use of tools will result in breakage of the top of a bolt or screw.

Kit's Contents



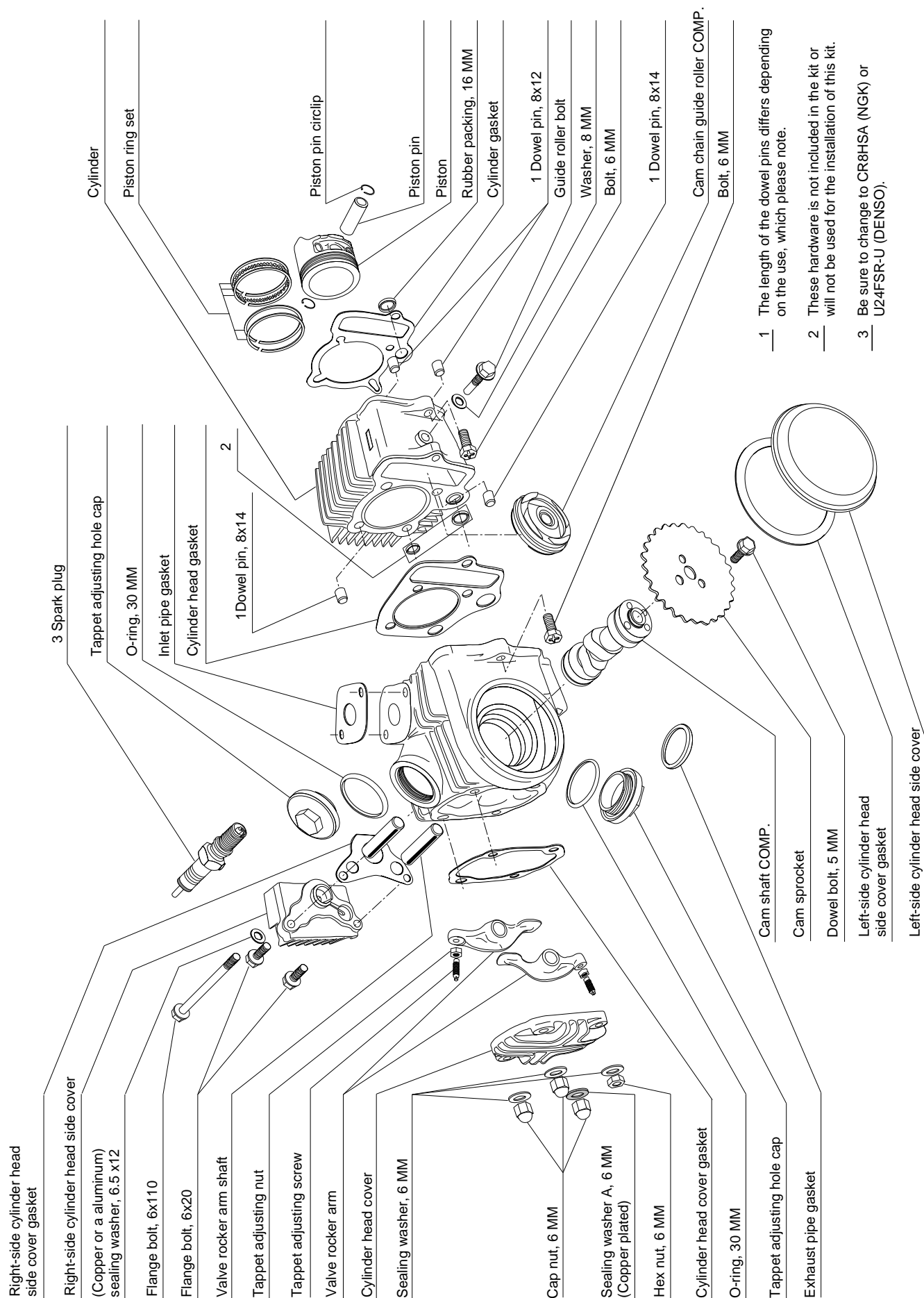
NO	Parts Name	Qty
1	Piston	1
2	Piston ring	1
3	Piston pin	1
4	Piston pin circlip	2
5	Cylinder	1
6	Cylinder gasket	1
7	Cylinder head gasket	1
8	Cylinder head cover gasket	1
9	R.Side cover gasket	1
10	L.Side cover gasket	1
11	Tappet cap O-ring	2
12	Exhaust pipe gasket	1
13	Rubber packing (Black)	1
14	Camshaft	1
15	DENI18 Carburetor ASSY.	1
16	Inlet pipe	1
17	Air filter (with a band)	1
18	Carburetor gasket	1
19	Inlet pipe gasket	1
20	Socket cap screw, 6X20	2
21	Socket cap screw, 6X25	2
22	Throttle cable, 710mm	1
23	Spark plug CR8HSA	1
24	Drive sprocket (with a plate) 15T	1
25	Main jet #85	1

Required Tools for Installtion



1	Torque wrench
2	Open-end wrench 8-10 mm
3	Open-end wrench 10-12 mm
4	Open-end wrench 12-14 mm
5	Offset box wrench 8- 9 mm
6	Offset box wrench 10-12 mm
7	Offset box wrench 14-17 mm
8	Ratchet handle
9	Socket 8mm
10	Socket 10mm
11	Socket 12mm
12	Extention bar (small)
13	Extention bar (midsize)
14	Spark plug wrench set (in-vehicle)
15	Cross tip driver (large)
16	Flat chip driver (midsize)
17	Flat chip driver EXS
18	Hex wrench 5 mm
19	Needle nose plier
20	Plastic hammer
21	Thickness gauge
22	Scraper or cutter
	Wire etc
	Waste cloth
	Engine oil

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 U24FSR-U (DENSO).

Stock Parts Removal

1 . Seat Removal



Remove the side cover.



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

Tools:
Box wrench 12 mm
Extension bar (small)
Offset wrench 10 mm



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

Tool:
Offset wrench 10 mm



Loosen two nuts on the rear shock.

Tool:
Offset wrench 14 mm



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:
Offset wrench 10 mm

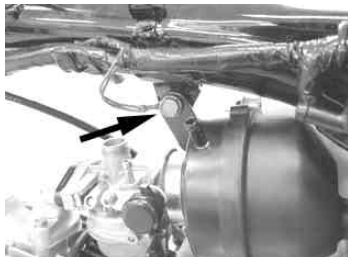


Remove the fuel tank by pulling it backward.

3 . Carburetor Removal



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



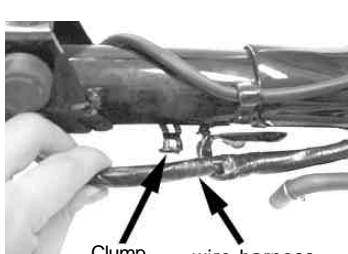
Remove the bolt of the air cleaner stay.

Tools:
Box wrench 10 mm
Extension bar (small)

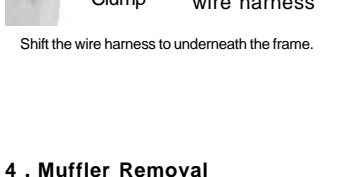


Unscrew two bolts which are fastening the inlet pipe and the cylinder head together. Then remove the inlet pipe, the carburetor, and the air cleaner.

Tool:
Offset wrench 8 mm



Shift the wire harness to underneath the frame.



4 . Muffler Removal



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

Tool:
Open-end wrench 10 mm



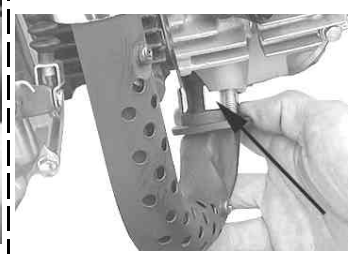
Remove the hex bolt which is used to fix the muffler by turning it counterclockwise.

Tools:
Box wrench 12 mm
Extension bar (medium)

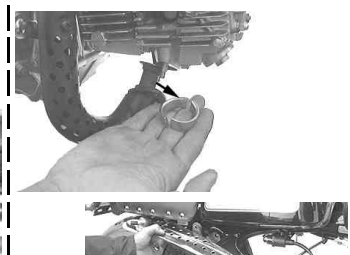


Remove the nut on the back of the muffler by rotating it counterclockwise.

Tools:
Box wrench 10 mm
Extension bar (medium)



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



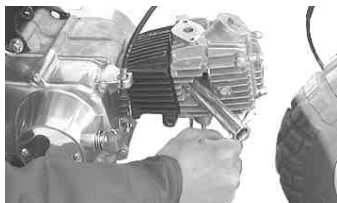
5 . Front Fender Removal



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

Tools:
Box wrench 10 mm
Extension bar (small)

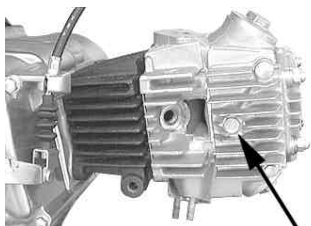
6 . Spark Plug Removal



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

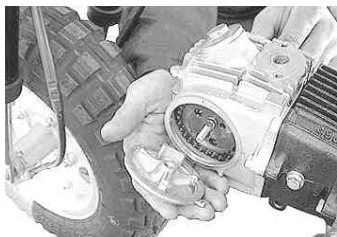
Remove the plug by turning it counterclockwise with the in-vehicle spark plug wrench.

7 . Cylinder Head L 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:
Box wrench 10 mm

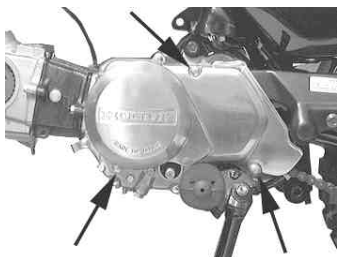


8 . Crankcase L Side Cover Removal



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

Tool:
Offset wrench 10 mm



Turn the three screws which are used to mount the crankcase left cover counterclockwise and remove them.

Tool:
Cross tip driver (large)

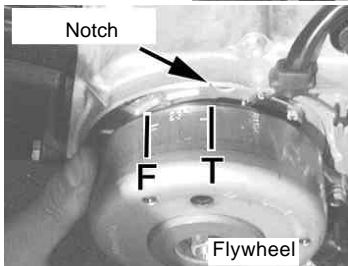
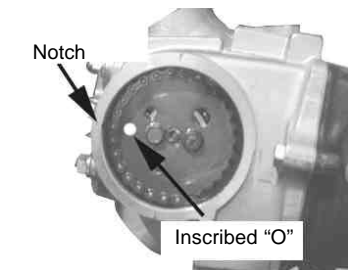
9 . Two Tappet Cap Removal



Rotate the two tappet caps counterclockwise, and remove them.

Tool:
Offset wrench 17 mm

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:
Box wrench 8 mm
Offset wrench 14 mm (For fixing a flywheel)

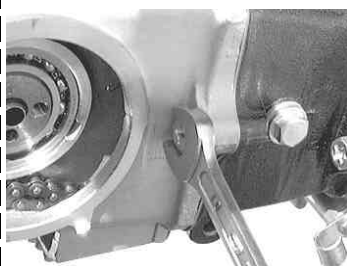


Pry the cam sprocket open with a small flat tip screwdriver or something like this to remove it from the cam shaft.

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

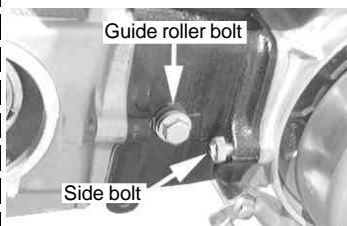
Remove the dowel pin fixed in the center of the camshaft.

11 . Cylinder Head Side Bolt Can Removal



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

Tool:
Open-end wrench 10 mm



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

Tools:
Spanner 10 mm
Offset wrench 10 mm

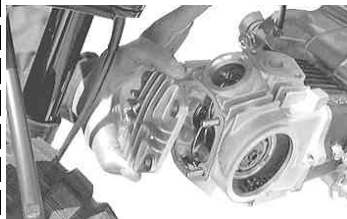
12 . Cylinder Head Cover Removal



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:
Box wrench 10 mm

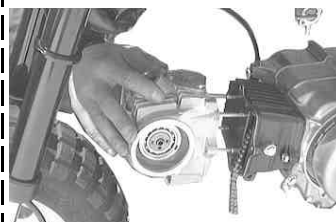


Remove the head cover. (If it does not come off easily, strike it lightly with a plastic hammer, and it will come off.)

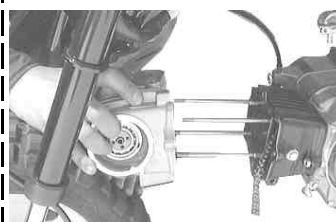
If some gaskets remain on the cylinder head, wipe them off completely with a scraper or a cutter.

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.)

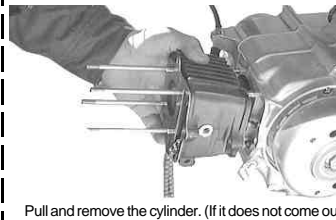


Remove the cylinder head while pushing the front tire. It seems that at this point, you come to understand why you have let the front tire down. Keep the two dowel pins for reuse.

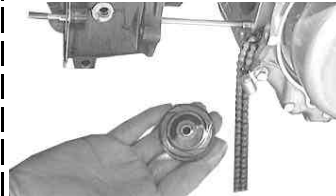
14 . Cylinder Removal



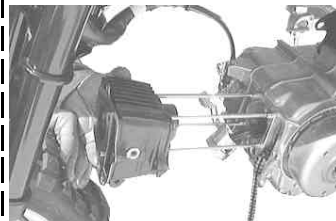
Rotate counterclockwise the guide roller bolt and the cylinder side bolt which were loosened, and remove them.



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

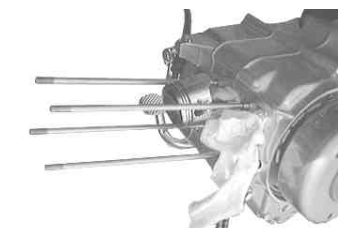


Remove the cam chain guide which will come out when you pull out the cylinder.



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

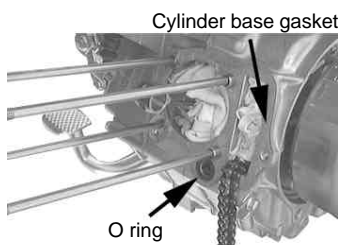


Remove the piston pin in the direction where a piston circlip has already been removed. You can easily remove it by pushing it up with a flat tip driver from the direction where another piston circlip remains fixed.



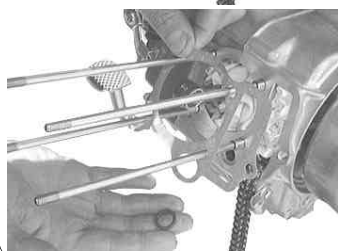
Remove the piston.

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

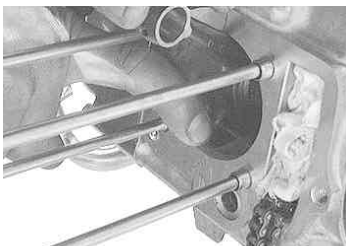


Cylinder base gasket

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 crank case.



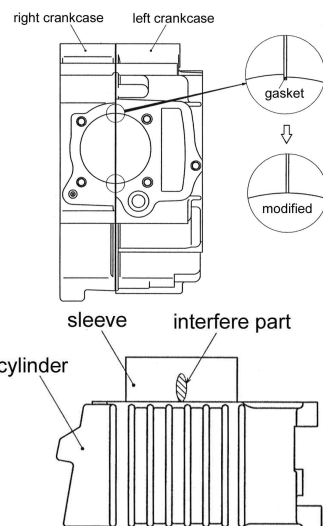
If the gaskets run off at the point indicated with a finger in the above picture, cut them off.

Cautions about Aluminum 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 in side the crankcase.
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.

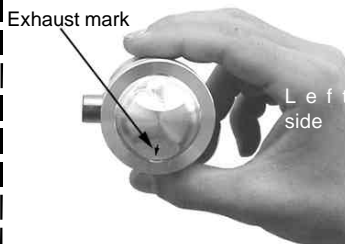


S - Stage Kit Installation

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.



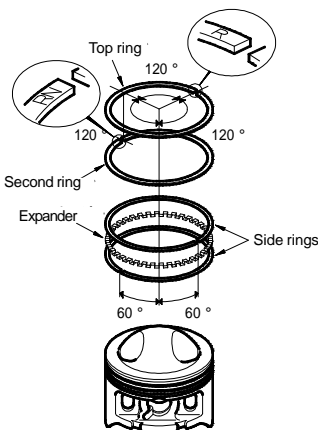
You can relatively easily install it by pressing it with a screwdriver. But take care not to damage the piston with a screwdriver.

A left side piston pin circlip should be installed first.

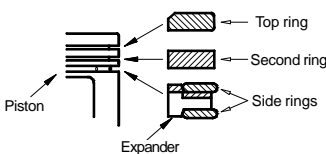
Tool:
A tapered flat tip screwdriver

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.

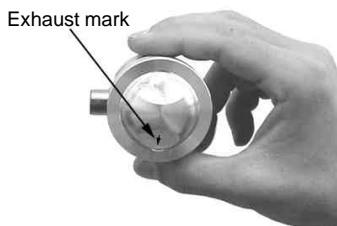


2 . Cylinder Installation

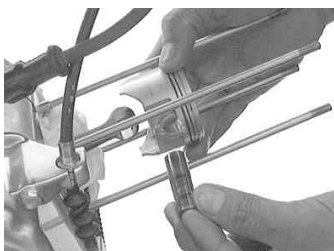
Degrease the cylinder and crankcase sides of the cylinder base gasket surface with thinner or the like.



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



Install the piston with the arrow mark on the head of the piston pointing downwards (or, to be on the exhaust side).



It makes the installation easier to insert the piston 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.

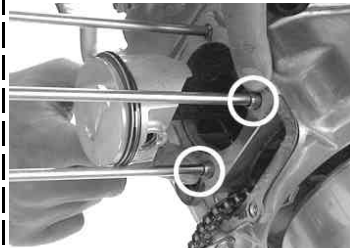
Take away the waste cloth.



Fix the cylinder base gasket and a black rubber packing.



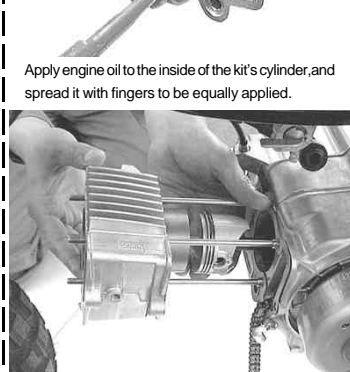
Check that the two dowel pins are installed.



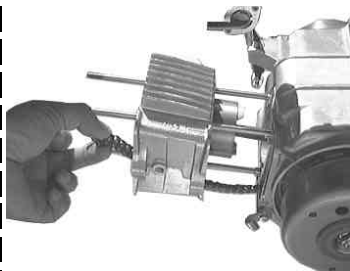
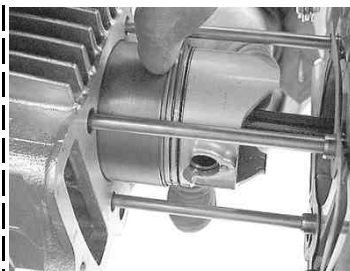
Apply engine oil to the inside of the kit's cylinder, and spread it with fingers to be equally applied.



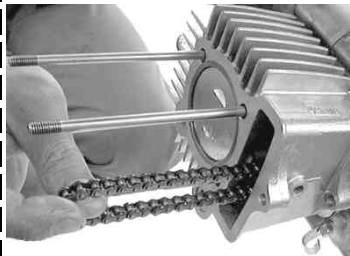
Insert the cylinder while holding the tire.



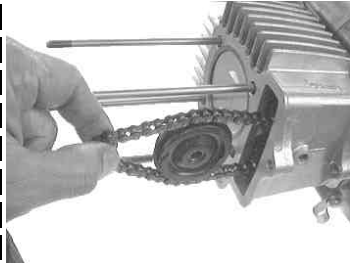
Press the cylinder little by little with fingers, with care not to move the piston rings' end gaps.
The degree of difficulty is very high. Do your best!



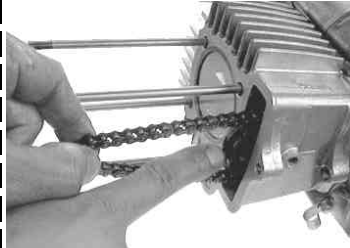
Once the rings are set in the cylinder, letting the cam chain go through the cylinder, fit it into the crankcase.



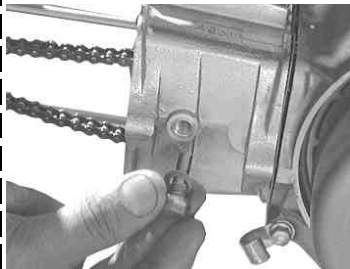
Install the guide roller while pulling the cam chain.



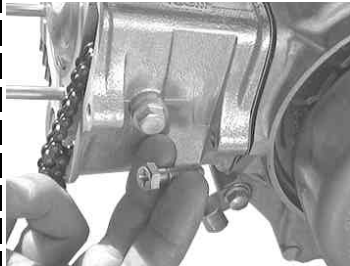
Push it into as aligning the guide roller's center with the cylinder's guide roller bolt.



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:
Offset wrench 9 mm



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



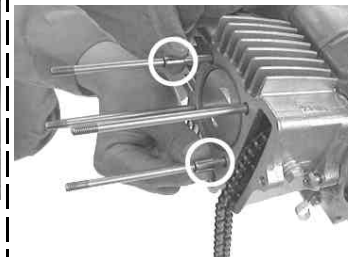
Install the kit's camshaft in the order reverse to installing it.
Apply clean engine oil to the cam profile and the journal of the cam shaft. Even if it is difficult to fit the cam shaft, never strike it with a hammer, etc. Just press it by hand.



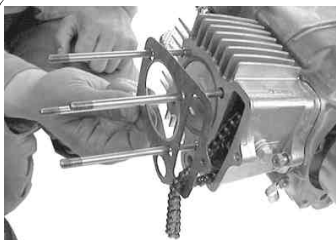
Fix the rocker arm's tappet screw by turning it clockwise.

4 . Cylinder Head Installation

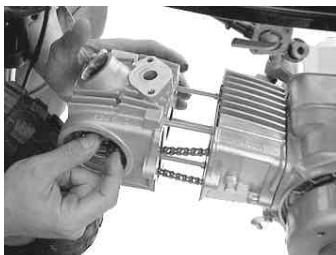
Degrease the head surface and the upper surface of the cylinder with thinner, etc.



Install two dowel pins to the cylinder.



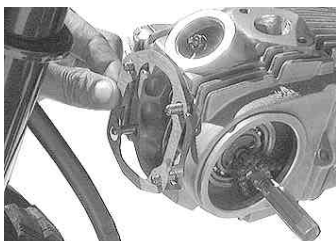
Install the head gasket.
The rubber packing (black) and the rubber gasket (green) are not used here.



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



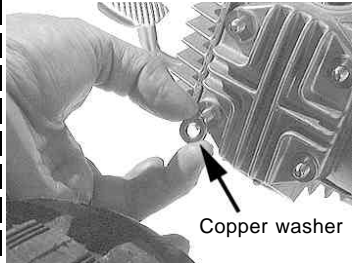
Fix the cam chain by putting a screwdriver in the central hole on the camshaft.



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

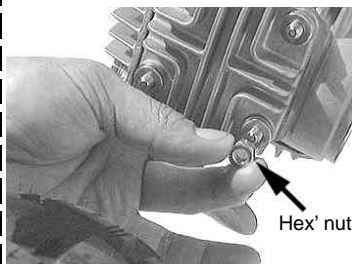


Pay attention to the arrow.
Take note that the arrow faces downward.

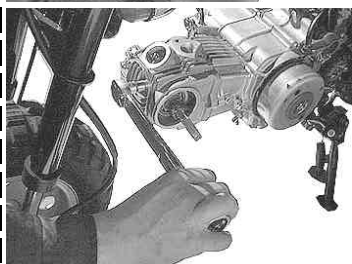


Copper washer

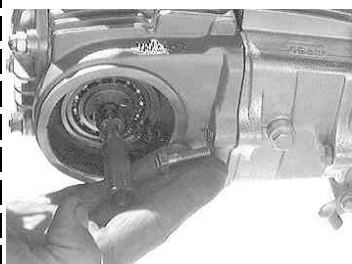
Install the head cover's washers and nuts. Above is the picture of an engine seen from the front. At the lower left are a copper washer and three iron washers, and at the lower left is a hex nut and the remaining three are cap nuts.



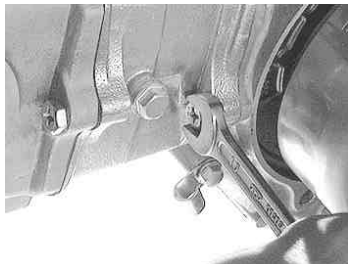
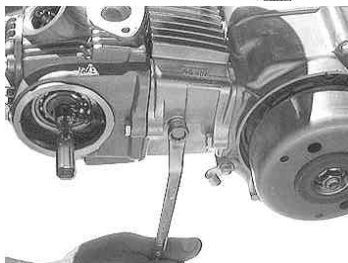
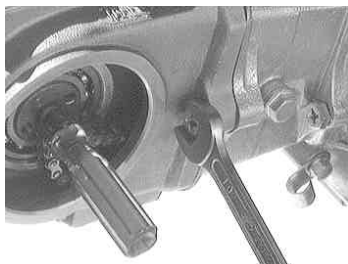
Hex' nut



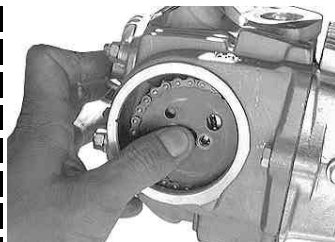
Screw the head nuts equally tight. (If without a torque wrench, tighten them firmly little by little diagonally.)
Torque 12N · m (1.2kgf · m)
Tool:
Box wrench 10 mm



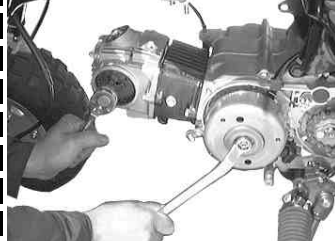
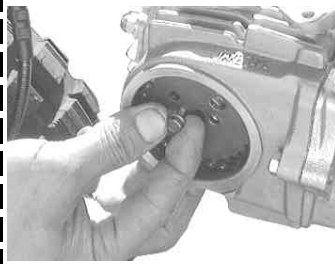
Install the head side bolt. Tighten fully the guide roller bolt and the cylinder side bolt which were temporarily tightened beforehand.
Tool:
Open-end wrench 10 mm
Offset wrench 10 mm



Torque:
Guide roller bolt 10N · m (1.0 kgf · m)
Side bolts, upper and lower 10N · m (1.0 kgf · m)

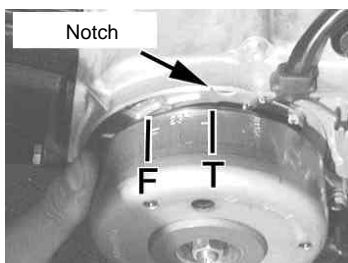


The job is very difficult, so do your best!
After installing the cam sprocket, screw bolts. While attaching the cam sprocket to the cam chain, install the cam chain to the camshaft aligning the "O" mark on the cam sprocket with the notch on the cylinder head.

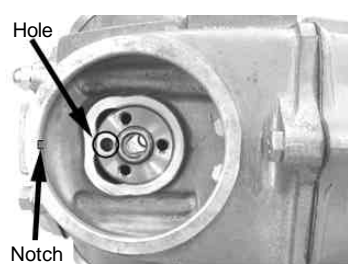


Install the cam shaft washer.
Fix the flywheel and tighten two cam sprocket bolts.
Torque 9N · m (0.9kgf · m)
Tools:
Box wrench 8 mm
Offset wrench 14 mm

5 . Cam Sprocket Installation



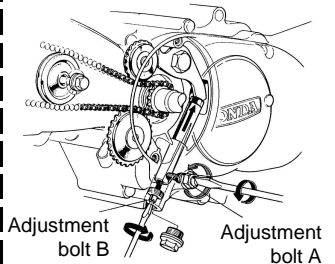
Align the "T" mark on the flywheel with the notch on the crankcase.



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.

6 . Cam Chain Adjustment

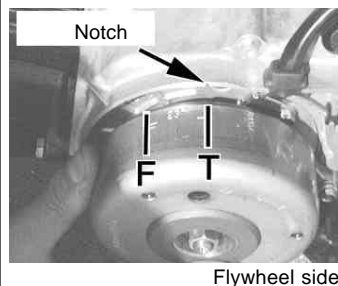
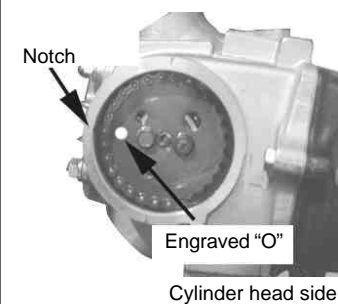
In case you have adjusted the cam chain, refer to "23. Checking and Adjusting of Ignition Timing" on page 12.



Loosen the 8mm nut and the adjustment bolt A, then it will be adjusted by the spring. But in case the tension of the cam chain is not strong enough, gradually tighten the adjustment bolt B while the adjustment A is still loosened, and then adjust it so that there is no slackness between the chain and the sprocket even if you rotate the flywheel.
Tighten the adjust bolt A first, and then the 8mm nut.

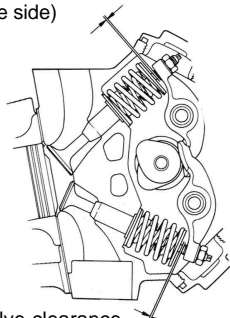
7 . Valve Timing and Tappet Adjustment

Very difficult work, and do your best here!

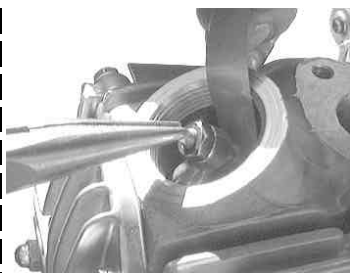
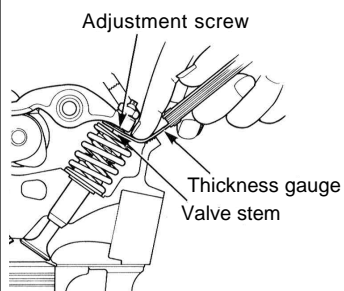


Turn the flywheel until the "O" mark on the camshaft and the "T" mark on the flywheel meet each notch. Though the flywheel will not stop right at the required position because the magnet repels each other, it's all right if "T" and "O" marks meet each notch at the same time after fixing the cam sprocket.

Valve clearance (Intake side)

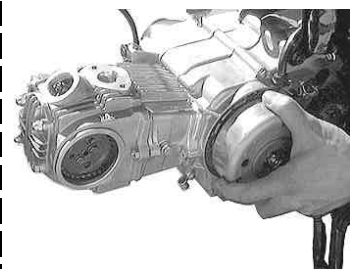


Valve clearance (Exhaust side)

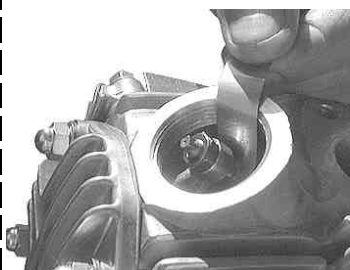


While tightening a rocker arm's tappet screw, tighten the tappet nut to the extent that a 0.05 mm thickness gauge, placed between the tappet screw and the valve stem end, can be pulled out with only a little resistance. If you have no idea of the proper resistance in pulling out the 0.05mm thickness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

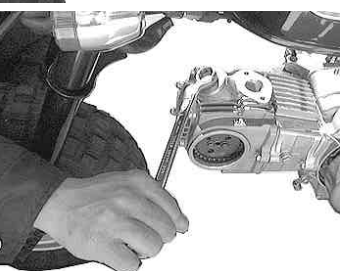
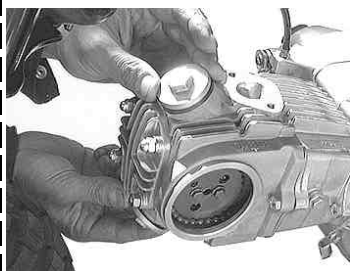
Tools:
Needle nose plier
Offset wrench 9 mm
Thickness gauge



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.

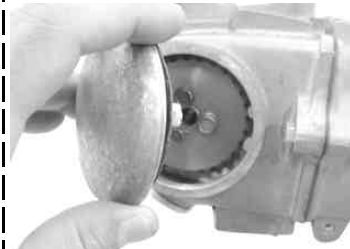


Fix two tappet caps.
Torque 12N · m (1.2kgf · m)
Tool:
Offset wrench 17 mm

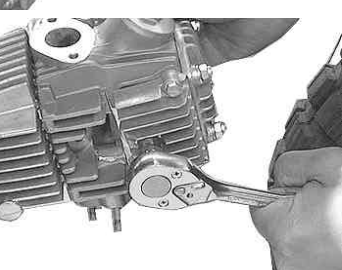
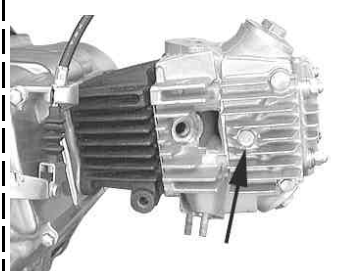
8 . Cylinder Head Left Cover Installation



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.)



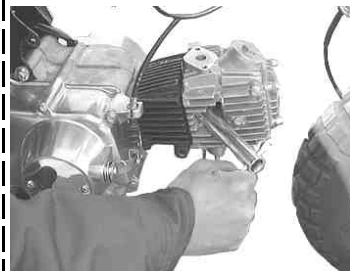
(Set the stopper as shown in the picture above.)



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

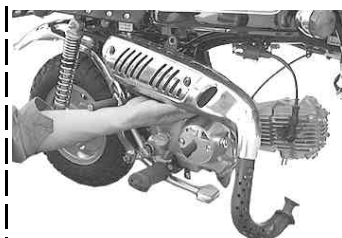
Torque 12N · m (1.2kgf · m)
Tool:
Box wrench 10 mm

9 . Spark Plug Installation

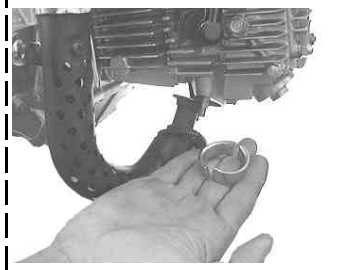


Install the plug with in-vehicle tools or a spark plug wrench.
Torque 11N · m (1.1kgf · m)
Tools:
Spark plug wrench
Install a plug cap on the plug.

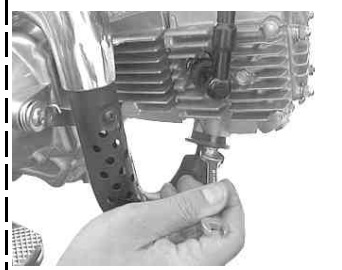
10 . Stock Muffler Installation



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

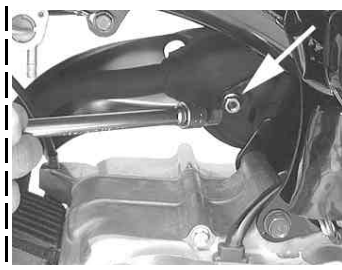


Install two flange collars as if to squeeze the exhaust pipe.



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

Torque 10N · m (1.0kgf · m)
Tool:
Open-end wrench 10 mm



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

Torque 10N · m (1.0kgf · m)
Tools:
Box wrench 10 mm
Extension bar (Medium)



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

Torque 26N · m (2.7kgf · m)
Tools:
Box wrench 12 mm
Extension bar (Medium)

Tighten fully three sections tightened temporarily beforehand.

11 . Front Fender Installation



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

Torque 10N · m (1.0kgf · m)

Tools:

Box wrench 10 mm

Extension bar (Small)

Blow up the tire.

12 . Throttle Cable Attachment

Unfasten the wiring of the stock throttle cable.



Loosen the hex nut.

Tool:

Spanner wrench 14 mm

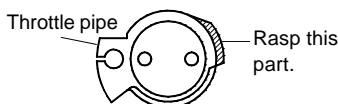


Unscrew two screws and detach the upper throttle housing.



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

Rasp and take away the part indicated in the figure below.



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.

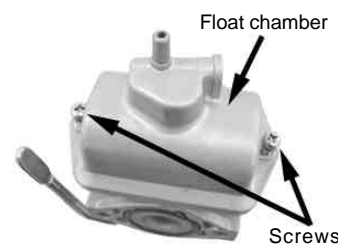
In the case of a stock handle, set the crank in the throttle housing at the "O" mark on the handle. (See the picture above.)

Wire the throttle cable.

Tool:

Spanner wrench 14 mm

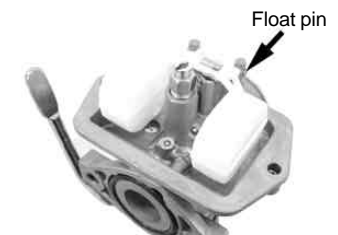
13 . Main Jet Replacement



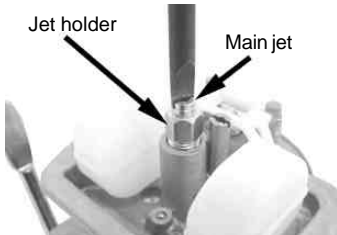
Unscrew two screws and take off the float chamber.

Tool:

Cross slot screwdriver (Medium)



Take note that the float pin often comes off easily.



Jet holder

Main jet

Detach the main jet from the jet holder.

Tool:

Flat tip driver (Medium)



Fix kit's main jet.

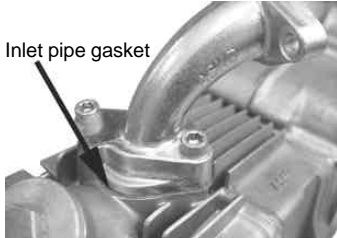
Tool:

Flat tip driver (Medium)



Fix the float chamber to the carburetor with two screws.

14 . Carburetor Installation

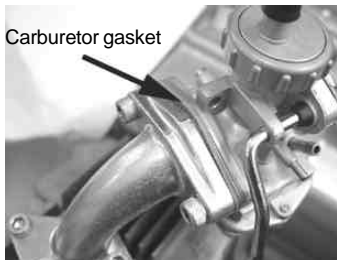


Put the inlet pipe gasket between the intake manifold and the cylinder head, and fix the gasket by tightening two 6x25 socket cap screws.

Torque 12N · m (1.2kgf · m)

Tool:

Hex wrench 5 mm



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:

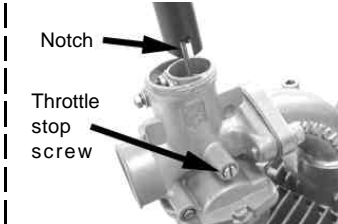
Hex wrench 5 mm



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.



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.

15 . Adjustment of Play in the Throttle

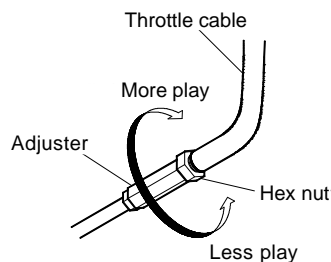


Pull down the boots on the throttle cable to expose the adjuster.

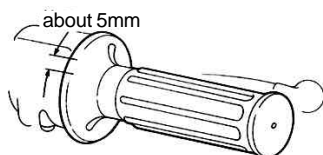


Holding the hex nut, loosen the adjuster.

Tools:
Spanner wrench 8 mm
Spanner wrench 10 mm



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:
Spanner wrench 8 mm
Spanner wrench 10 mm

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.

16 . Air Filter Installation



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

17 . 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:
Offset wrench 10 mm



Connect the fuel tube with the carburetor.

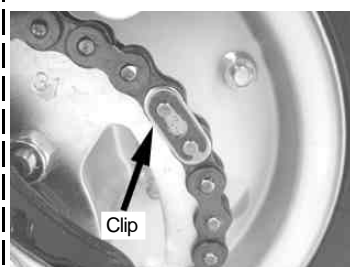
18 . Seat Installation



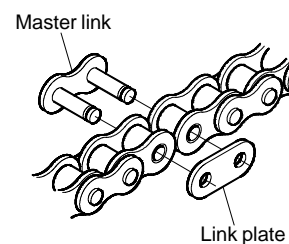
Fix the hook of the seat tray by inserting it between two washers of rear shock.



19 . 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:
Box wrench 10 mm
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.

20 . 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. Driven sprocket is not included in this kit. Please purchase it (or them) separately. Before the driven sprocket replacement, you have to remove all belongings to the rear tire. Stabilize the vehicle by a racing stand or something to suspend the rear tire.

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

Tire size	Clutch	Drive sprocket	Driven sprocket	Ratio
8 inc	Centrifugal 3speed	1 6	3 0	1 . 8 7
	Stock manual	1 5	2 5	1 . 6 7
	Heavy-duty, Special	1 6	2 5	1 . 5 6
1 0 inc	Stock manual	1 6	2 5	1 . 5 6
	Heavy-duty, Special	1 6	2 8	1 . 7 5

21 . About Drive Chain

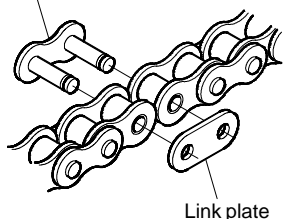
In some cases, replacement of the stock sprocket with the recommended one will make the drive chain too short even if the chain is adjusted. In such a case, prepare a drive chain separately and adjust the length. In addition, length of the chain varies according to the length of a swing arm. Refer to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

The number of links of a sprocket and a chain

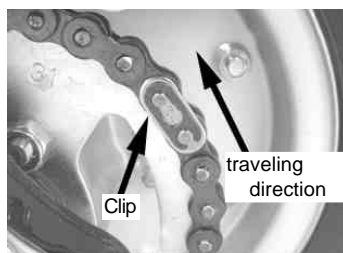
Drive Sprocket	Driven Sprocket	The length of a swing arm, and the number of links of a chain				
		Stock swing arm	4 c m Stretch	8 c m Stretch	1 2 c m Stretch	1 6 c m Stretch
1 2 (Stock)	3 1 (Stock)	7 2 (Stock)	-	-	-	-
1 2 (Stock)	3 1 (Stock)	7 6 (Stock)	-	-	-	-
1 6	3 0	7 4	7 8	8 4	9 2	1 0 0
1 5	2 5	7 2	7 6	8 4	9 0	9 8
1 6	2 5	7 2	7 6	8 4	9 0	9 8
1 6	2 8	-	-	-	9 2	1 0 0

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

Master link



Fix the master link from the inside to the drive chain, and fit the link plate.



Install a clip.

At this point, the clip's end gap must be placed in the opposite position to the traveling direction.



Fully tighten the drive sprocket bolt which was tightened temporarily.

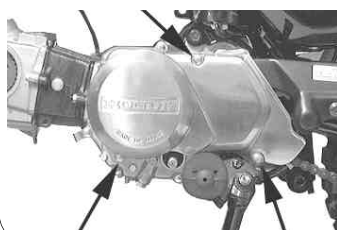
Torque 12N · m (1.2kgf · m)

Tools:

Box wrench 10 mm

Extension bar (Small)

22 . Crankcase Left Cover Installation



Fit three bolts to fix the crankcase left cover.

Torque 10N · m (1.0kgf · m)

Tool:

Cross slot driver (Large)



Fix the change pedal.

Torque 10N · m (1.0kgf · m)

Tool:

Offset wrench 10 mm

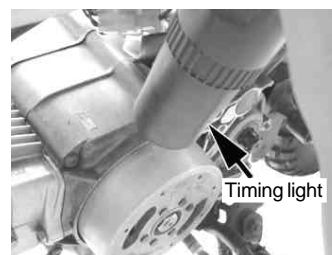
Check for slackness of the bolts fixed all the way from the engine to the suspension.



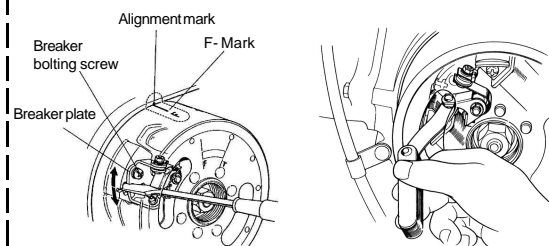
Turn on the fuel cock.

23. Checking and Adjusting of Ignition Timing

Improper ignition timing may in some cases result in disfunction and, at worst, serious breakdown. It is advisable that you should check and perform maintenance for ignition timing. If you cannot do the work by yourself, have your machine checked by a specialist shop.



With a timing light (000-01-009), check that the "F" mark on the flywheel and the alignment mark on the crankcase are aligned while leaving the car idle.



Loosen the breaker bolting screw and move the breaker plate little by little to adjust the ignition timing.

After the adjustment, turn the crankshaft and align it with the point on which the clearance opens most widely, and measure the clearance with a thickness gauge.

Point clearance: 0.3-0.4 mm

If the clearance is out of this range, replace the point.

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>