

Hyper S-Stage V KIT Instruction Manual

| Item No. | Applicable to | Frame No. |
|--------------------------------------|---------------|------------------|
| 0 1 0 5 0 2 3 5 (Paper-type filter) | CRF50F | : AE03-1400001 ~ |
| 0 1 0 5 0 2 3 7 (Sponge-type filter) | XR50R | : AE03-1000001 ~ |

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 product is so designed to achieve a higher compression ratio than stock engines. As for the fuel, high-octane gasoline should always be used. In case regular gasoline is used, abnormal combustion takes place, and the engine cannot achieve its original performance. Moreover, it is highly likely that the piston will break down, leading to serious breakdown. 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 (NGK) or U24 FSR-U (DENSO). In the case of a non-resistive plug, please replace with C8HSA (NGK) or U24 FS-U (DENSO). Subsequently, choose and use a right spark plug with the right level, depending on the degree of burning of the spark plug electrode section.

⚠ Cautions about sprocket ⚠

The installation of this product will increase the power of your vehicle. So use of a stock sprocket will result in hard wears of parts, not only adversely affecting the engine life, but also breaking the engine in the worst case. Please replace the sprocket with the high-geared one.

Read the instructions carefully before installation

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.

Installation of this product requires processing of the stopper part of the throttle pipe. Moreover, please note that the processing disables the use of an acceleration limiter.

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 outside our factory, 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.

Please install this product correctly, referring to the HONDA genuine service manual for the above-mentioned model numbers of the motorcycles.

Before installation, prepare tools and the like 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 supplied cylinder and cylinder head gasket 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.

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

Bolts, nuts, and dowel pins will be reused. However, be sure to replace worn-down or severely damaged ones with new ones.

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.)
- Always use a torque wrench to screw bolts and nuts tight and securely to the specified torque. (Otherwise, improper torque may 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.
- Please replace gaskets and packings with new ones without fail. Check carefully those parts to be reused, and in case wear or damage is detected, always replace them with new ones.

⚠ WARNING The following show the envisioned possibility of human death or serious injuries as a result of conduct disregarding the following cautions

- Always drive the engine in a well-ventilated place, and do not switch the engine on in an airtight place. (Otherwise, you will suffer from carbon monoxide poisoning.)
- When you notice something abnormal with your motorcycle while riding down a road, stop riding immediately and park your motorcycle in a safe place. (Otherwise, the abnormality could lead to an accident.)
- Before doing work, place the motorcycle on level ground to stabilize the position of your motorcycle for safety's sake. (Otherwise, your motorcycle could fall down and injure you while you are working.)
- Check or perform maintenance of parts correctly according to the procedures in the instruction manual or a service manual. (Improper checking or maintenance could lead to an accident.)
- If you find damaged parts when checking and performing maintenance, do not use these parts any longer, and replace them with new ones. The continued use of these damaged parts as they are could lead to an accident.)
- Since gasoline is very ignitable, keep everything that may fire away. Also, since vaporized accumulation of gasoline has a explosion hazard, keep well-ventilated place to work on.

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.

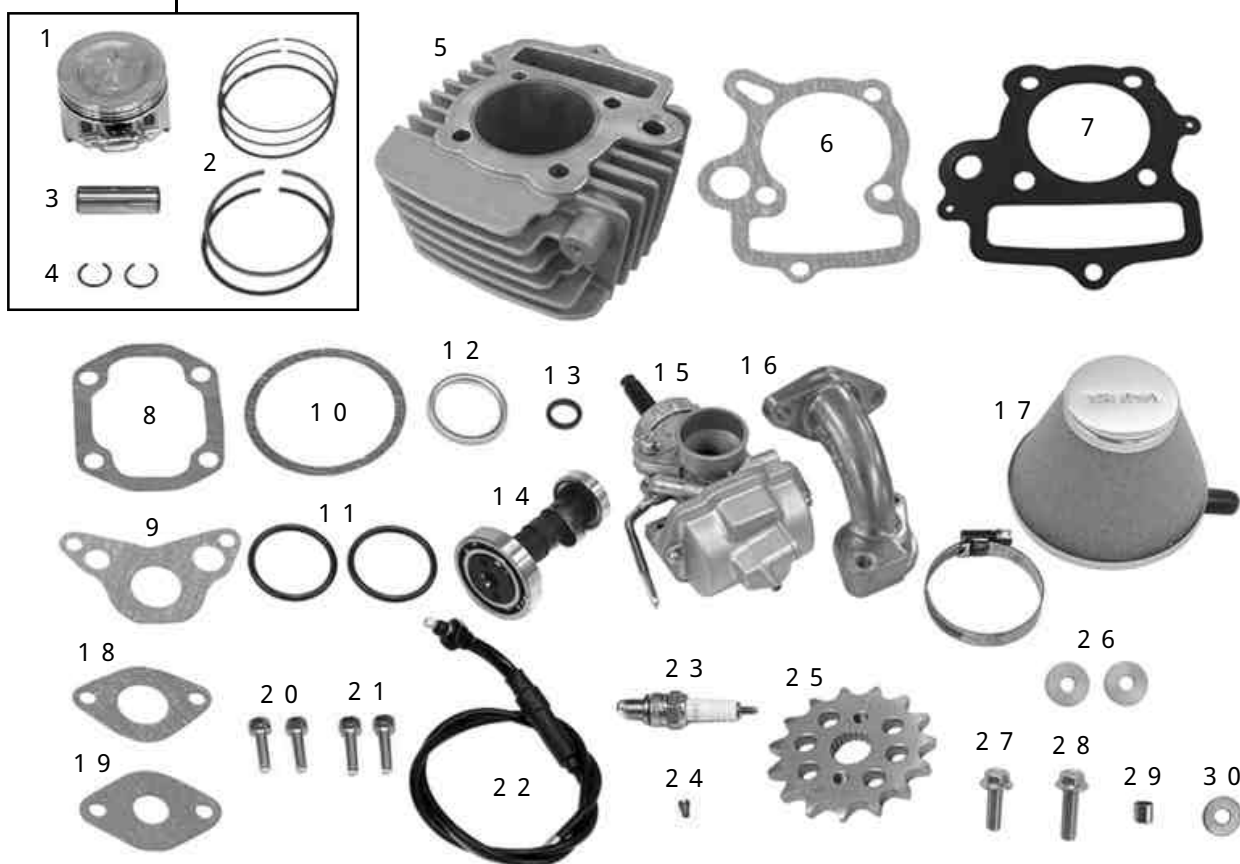
To tighten a screw means to screw it up to keep it from getting loose. The numeric value as a guide at which a screw will not break or get loose when tightened is the so-called "torque." If you do not have a torque wrench, please try to tighten a screw as tight as possible to the point where the screw 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.

Contents of Kit

0 1 0 2 5 1 7

Piston kit

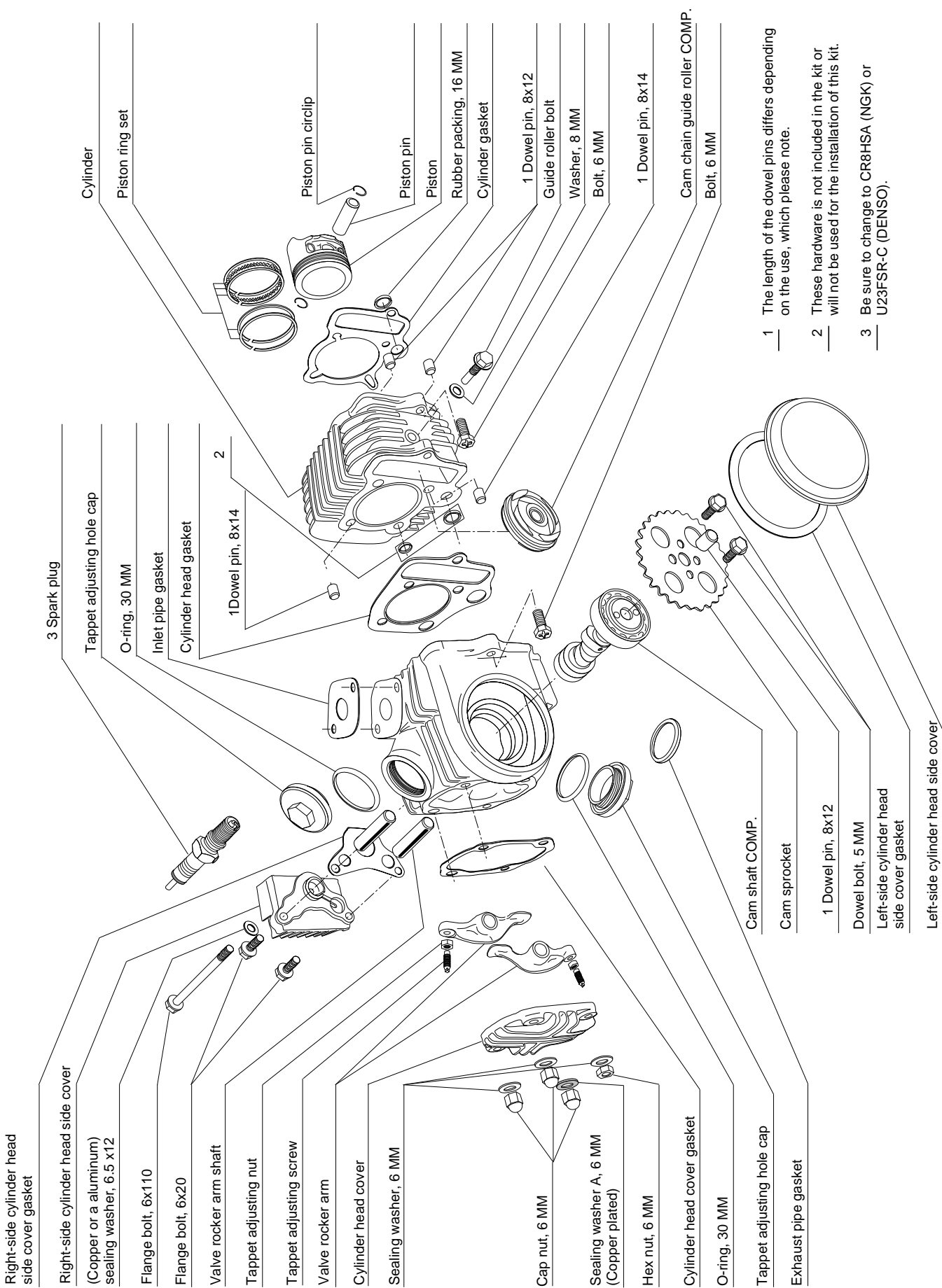


| No. | Parts' Name | Qty | Repair Part Item No. | in packs of | No. | Parts' Name | Qty | Repair Part Item No. | in packs of |
|-----|----------------------------|-----|----------------------|-------------|-----|--------------------------|-----|---------------------------------|-------------|
| 1 | Piston | 1 | 13101-NSH-T00 | 1 | 17 | Air filter (with a band) | 1 | 03-01-110 (Paper-type filter) | 1 |
| 2 | Piston ring set | 1 | 01-15-014 | 1 | | | | 03-01-1105 (Sponge-type filter) | 1 |
| 3 | Piston pin, 13 x 36 | 1 | 13111-GEF-T01 | 1 | 18 | Carburetor gasket | 1 | 16201-GEY-T01 | 1 |
| 4 | Piston pin circlip | 2 | 00-01-0003 | 6 | 19 | Inlet pipe gasket | 1 | 91301-181-T01 | 1 |
| 5 | Cylinder | 1 | 01-01-0222 | 1 | 20 | 6x20 socket cap screw | 2 | 00-00-0043 | 10 |
| 6 | Cylinder gasket | 1 | 00-01-0067 | 2 | 21 | 6x25 socket cap screw | 2 | 00-00-0089 | 10 |
| 7 | Cylinder head gasket | 1 | 12251-GFL-T10 | 1 | 22 | 710 mm throttle cable | 1 | 09-02-0071 | 1 |
| 8 | Cylinder head cover gasket | 1 | 00-01-0156 | 2 | 23 | Spark plug CR8HSA | 1 | | |
| 9 | R side cover gasket | 1 | 00-01-0157 | 2 | 24 | Main jet #85 | 1 | 00-03-0041 | 1 |
| 10 | L side cover gasket | 1 | 00-01-0158 | 2 | 25 | Drive sprocket, 15T | 1 | 02-05-022 | 1 |
| 11 | Tappet cap O-ring | 2 | 00-01-0034 | 4 | 26 | Tank spacer | 2 | 16954-GEL-T00 | 1 |
| 12 | Exhaust pipe gasket | 1 | 00-01-0064 | 2 | 27 | Flange bolt, 8x25 | 1 | 00-00-0318 | 5 |
| 13 | Rubber packing (black) | 1 | 00-01-0066 | 2 | 28 | Flange bolt, 8x30 | 1 | 00-00-0181 | 4 |
| 14 | Camshaft | 1 | 01-08-0009 | 1 | 29 | Spacer, 8.2x10x9.5 | 1 | 00-00-0199 | 4 |
| 15 | DENI18 carburetor assembly | 1 | 03-03-0061 | 1 | 30 | Washer | 1 | 00-00-0201 | 6 |
| 16 | Intake manifold | 1 | 17111-GBO-T00 | 1 | | | | | |

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.

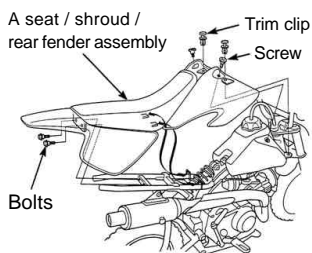
Some parts are only available as a set. Please order them with the set number.

Names of components

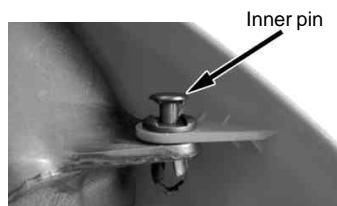


Stock Parts Removal

1 . Exterior Parts Removal



Remove each two of trim clips, screws, and bolts first, and then remove a seat / shroud / rear fender assembly.



A trim grip can be removed by lifting an inner pin with a slotted screwdriver or other tools.

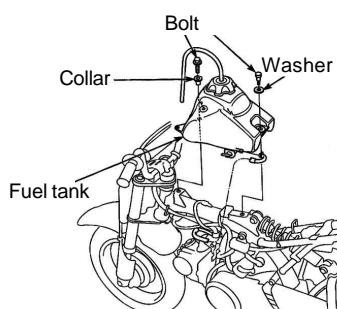
Tools to use:
10 mm offset box wrench
Slotted screwdriver (Midsized)



Turn off the fuel cock.



Shift the tube clip to disconnect the fuel tube.

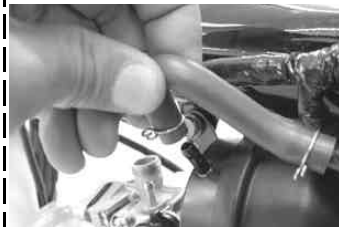


Detach a fuel hose from the carburetor, and then two bolts on the fuel tank to remove the tank.

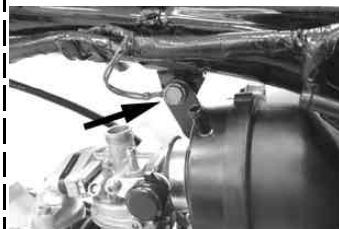
2 . Carburetor Removal



Remove carburetor's top cap, and then take the throttle valve out from the carburetor.



Remove a storage tank hose.



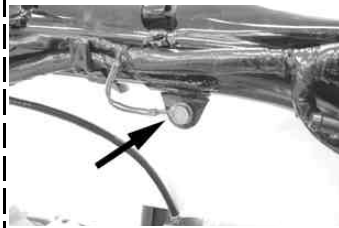
Remove the bolts on the air cleaner stay.

Tools to use:
10 mm socket
Extension bar (Small)



Remove two bolts which are fixing the inlet pipe to the cylinder head. Then, remove the inlet pipe, the carburetor, and the air cleaner.

Tool to use:
8 mm offset box wrench



Install the earth wire on the frame with the bolts of air cleaner stay.

Tools to use:
10 mm socket
Extension bar (Small)

⚠ Caution: Apply the specified torque.

Torque: 12 N · m (1.2 kgf · m)

3 . Muffler Removal



Remove two nuts in the exhaust pipe.

Tool to use:
10 mm open-end wrench



Remove muffler stay's bolts and then, the muffler.

Tool to use:
12 mm offset box wrench

4 . Front Fender Removal



Remove three bolts on the reverse side first, and remove the front fender.

Tools to use:
10 mm socket
Extension bar (Small)

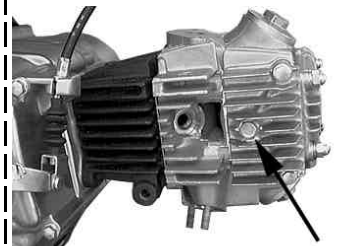
5 . Spark Plug Removal



Pull out the plug cap from the plug to remove it. Be sure to hold the cap in pulling it out.

Remove the plug with the in-vehicle spark plug wrench.

6 . Cylinder Head Left Cover Removal



By removing the hex bolt in the center of the right-side cover of the cylinder head, you can remove the left cover. (If you cannot remove the left cover in this way, screw in the hex bolt by two to three screw threads, strike top of the bolts lightly, and then you can remove the cover.)

Tool to use:
10 mm socket



7 . Crankcase Left Cover Removal



Remove shift pedal's hex bolt and then, the shift pedal.

Tool to use:
10 mm offset box wrench



Remove three bolts which are fixing the crankcase left cover.

Tool to use:
8 mm deep socket

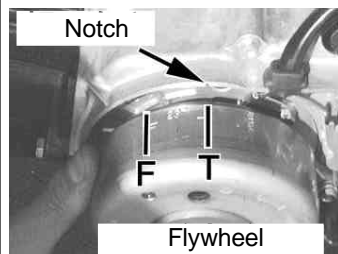
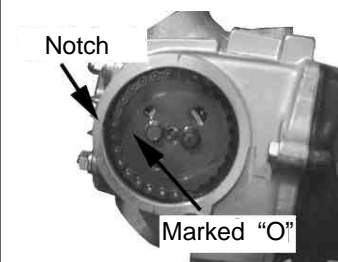
8 . Two Tappet Caps Removal



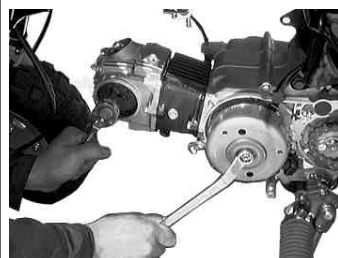
Remove two tappet caps.

Tool to use:
17 mm offset box wrench

9 . Cam Sprocket Removal



Rotate the flywheel counterclockwise to align flywheel's "T" mark with the cam sprocket's "O" mark.



Fix the flywheel and remove two cam sprocket's hex bolts.

Tools to use:
8 mm socket
14 mm offset box wrench (For flywheel fixing)

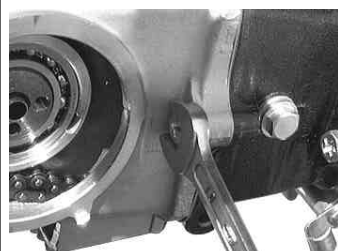


Remove the cam sprocket from the camshaft with a slotted screw driver or the like by prising open the cam sprocket.

Remove the cam chain from the cam sprocket, and take the cam sprocket out.

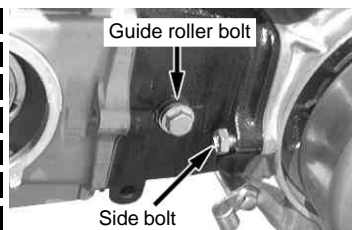
Remove the dowel pin which is stuck in the center of the camshaft.

10 . Cylinder Head Side Bolt Removal.



Remove the cylinder head side bolt(s) which are used to fix the cylinder head and cylinder.

Tool to use:
10 mm open-end wrench



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

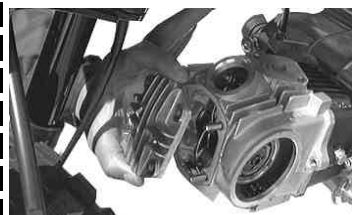
Tools to use:
10 mm open-end wrench
10 mm offset box wrench

11 . Cylinder Head Cover Removal.



Remove the four nuts, diagonally across the cover, which are used to fix the cylinder head cover. Remove four washers under the nuts.

Tool to use:
10 mm socket

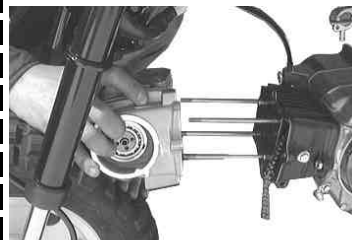


Remove a head cover. (If you cannot dismount the cover easily, remove the cover by striking it with a plastic hammer lightly.) Completely get rid of the gasket remaining on the cylinder head with a scraper or a cutter.

12 . Cylinder Head Removal



Pull the cylinder head away from the cylinder to remove it. (If it is not easy, strike it with a plastic hammer lightly.)

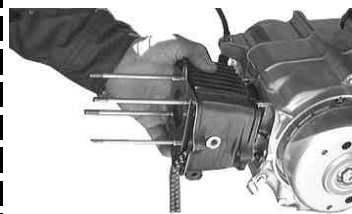


Remove the cylinder head. Keep the two dowel pins for reuse.

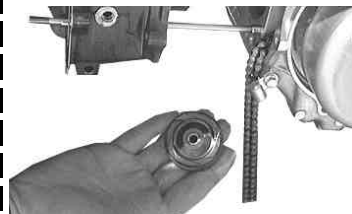
13 . Cylinder Removal



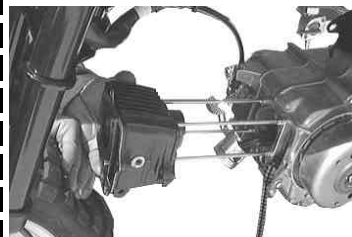
Remove the already-loosened guide roller bolt and the cylinder side bolt.



Pull and remove the cylinder. (When it is difficult, with a plastic hammer, strike a cylinder lightly and remove it.)



In the process of cylinder removal, a cam chain guide roller will come out, which do remove.

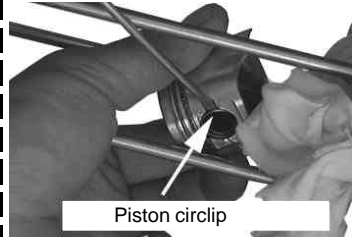


After the piston has been taken out, remove the cylinder forward.

14 . Piston Removal



Stuff a waste cloth into the crankcase's cylinder hall and the cam chain not to let any foreign material fall into it.



Piston circlip

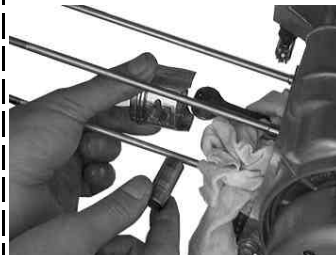
Remove one of the two piston circlips.

You can remove it easily by placing the end of a screw driver at the notch on the piston pin hole and prising the circlip open.

Tool to use:
A tapered slotted screwdriver

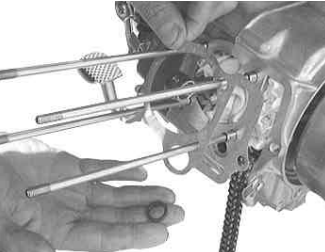
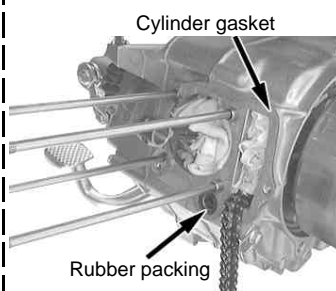


Remove the piston pin, turning it in the direction in which the piston pin circlip has already been removed. You can remove it easily by pushing it with a slotted screwdriver from the side which still has a circlip.



Remove the piston.

15 . Clearing Mating Surfaces



Remove a cylinder gasket and a rubber packing. When gaskets do not come off completely, wipe them off with a scraper or a cutter.

If the crankcase center gaskets stick out into the cylinder base surface and / or cylinder hole, cut them off.

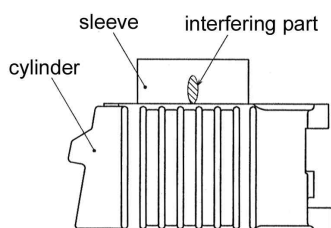
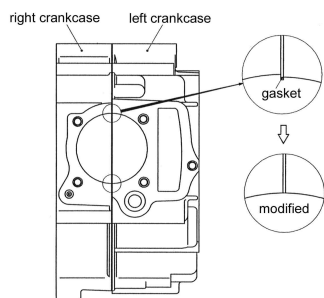
Be careful not to let any foreign material into the crankcase.



If gaskets stick out into the portion pointed by a thumb, cut them off. (See the picture above.)

Cautions to observe when installing an aluminum cylinder

Due to the misalignment of the R and L crankcases and for other reasons, there may be interference in sleeve hole of the crankcase's mating surface, "O" mark, shaded areas of the cylinder sleeve, and inside the case when installing the cylinder. Since interference will lead to sleeve deformation and engine troubles, do not fail to check and rectify the interference.



Modification Procedures

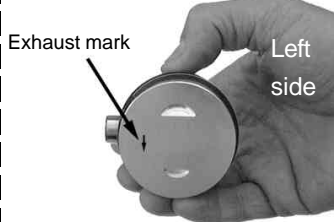
1. Stuff up cloth inside the crankcase not to let any shaving fall into it.
2. Rasp the convex surface on the mating surfaces of the crankcase till the surface becomes level.
3. Then, remove the waste cloth with care not to let swarf go inside the case.
4. Then stuff up the case hole with a clean cloth.
5. Right after running the engine idle for several minutes after the kit assembly is over, exchange the engine oil for new one. Then, all set.

S - Stage Kit Installation

1. Piston Installation



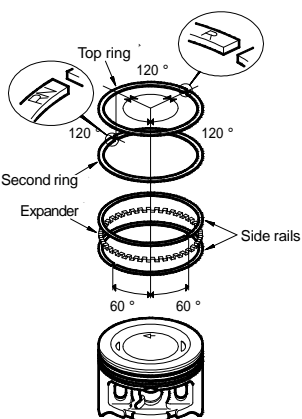
Fit a piston pin circlip, attached to the left side of the piston, in the circlip groove firmly. At this point, fix the circlip so the circlip's end gap does not meet with the notch on the pin hole.



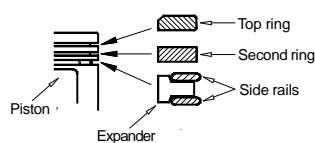
It is relatively easy to install the circlip if you push it with a driver. But be careful not to damage the piston itself. Tool to use: A tapered slotted screwdriver

Apply engine oil to the ring grooves and install the piston rings in the following order: oil ring expander, lower oil ring side rail, upper oil ring side rail, second ring, and top ring.

Arrange the piston rings so the ring-end gaps are to be in the correct positions as shown in the figure below.



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



Take note of cross section



Attach the oil ring expander.



Attach the lower oil ring side rail.



Attach the upper oil ring side rail.



Attach the second ring (black) with the engraved side up.



Attach the top ring (brown) with the engraved side up.



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



Install the cylinder.

Exhaust mark

Install the piston so the arrow on the piston head points downward (exhaust side).



It is also an easy way to install it by inserting 1/3 of the piston pin into the piston.

Fit the kit's piston pin circlip to the groove precisely.



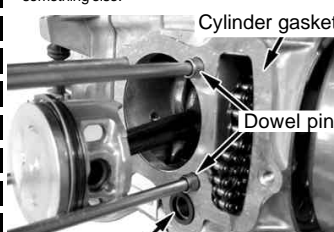
It is relatively easy to install the circlip, if you push it with a driver. But be careful not to damage the piston itself.

Push it with care because there may be a case where the circlip is sent flying while you are pushing it.

Remove the cloth.

2. Cylinder Installation

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



Rubber packing (black)

Make sure that two dowel pins B (12mm) are attached, and install a cylinder gasket and a rubber packing (black).



Apply engine oil to the inside of kit's cylinder, and then spread the oil evenly with fingers.



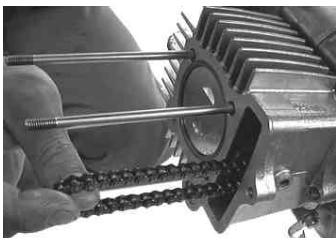
Install the cylinder.



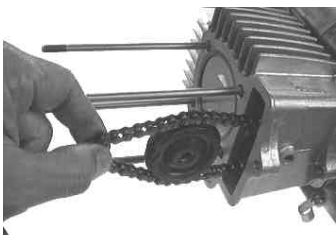
To install the cylinder, press it little by little with fingers carefully so the piston ring-end gap will not get out of position.
This work is rather difficult. So do your best here!



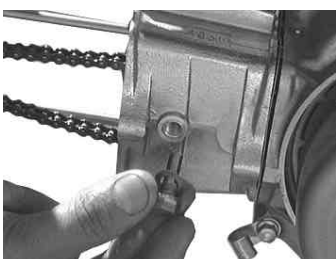
After the rings are inside the cylinder, fit the cylinder in the crankcase, passing the cam chain through the cylinder.



Pulling the cam chain, install the guide roller.



Push it so the center of the guide roller meets with the cylinder's guide roller bolt hole.



Install a guide roller bolt. (Temporarily tighten it just to the full extent possible with your fingers.)



Install a cylinder side bolt. (Temporarily tighten it just to the full extent possible with your fingers.)

3 . Camshaft Replacement

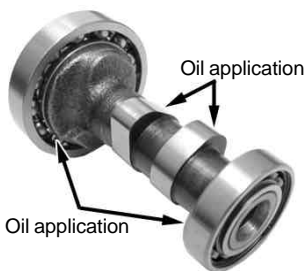


Remove the tappet nut and bolt on a rocker arm which are installed to the cylinder head. Only after you have loosened the tappet nuts, remove the tappet bolts together with nuts.

Tool to use:
9 mm offset box wrench



After installing the cam sprocket bolt to the camshaft, pull the camshaft or strike the head of the camshaft with a plastic hammer lightly. So, take out the camshaft, rotating it but without pulling it out by force.



Apply clean engine oil to the cam and bearings of kit's camshaft.



Install kit's camshaft in reverse order of that mentioned above. Never strike it with a hammer even if you cannot easily insert it. Just insert it by your hand.



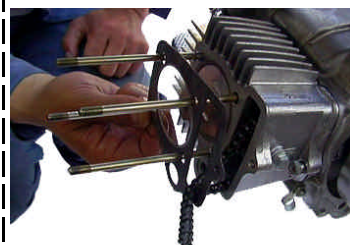
Install stock cam's dowel pin to kit's cam.



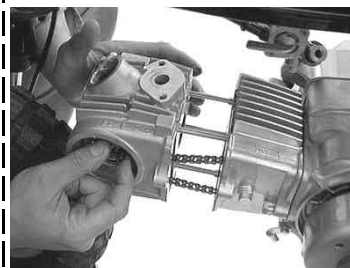
Install the tappet screw of the rocker arm.

4 . Cylinder Head Installation

Degrease the head and the upper surfaces of the cylinder with thinner or the like.

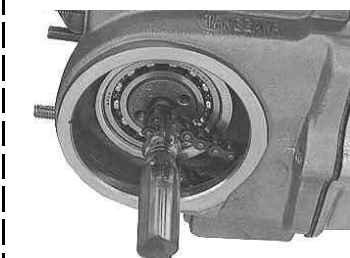


Attach a head gasket.
A black rubber packing or green rubber gasket will not be used.

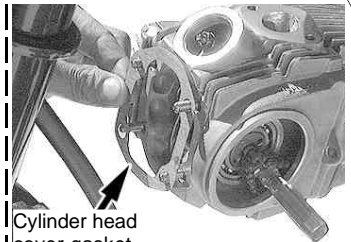


Pass the cylinder head through the stud bolt.

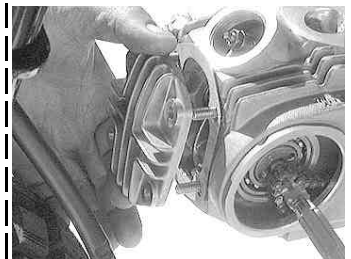
Install it, passing the cam chain through the cylinder head.



Fix the cam chain by inserting a screwdriver into the hole in the center of the camshaft lest the cam chain should fall down toward the cylinder.



Cylinder head cover gasket

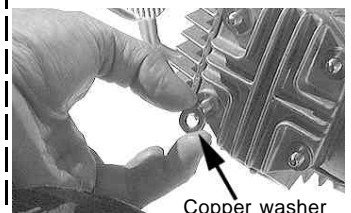


Install the cylinder head cover gasket and head cover.



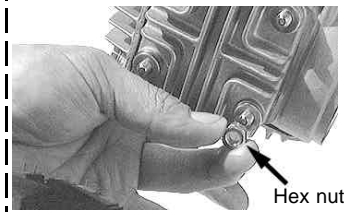
Pay attention to the arrow

The arrow have to face down (EX side).



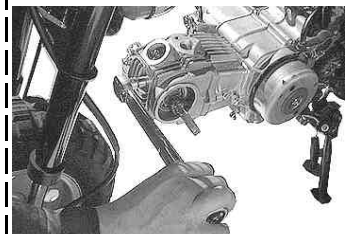
Copper washer

Attach head cover's washers paying attention to their positions. (A copper washer has to be at the lower left when the engine is seen from the front.)



Hex nut

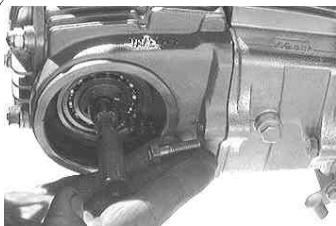
Install the head nuts paying attention to their positions (The hex nut has to be at the lower right when the engine is seen from the front.)



Tighten up the head nuts evenly. (If you do not have a torque wrench, tighten them little by little diagonally across the surface.)

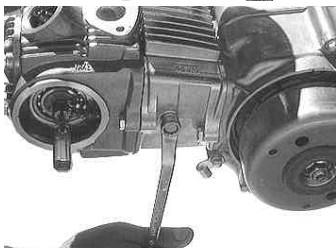
Tool to use:
10 mm socket

⚠ Caution: Apply the specified torque.
Torque: 12 N · m (1.2 kgf · m)



Install the head side bolt. Fully tighten the guide roller bolt and cylinder side bolt which were temporarily tightened.

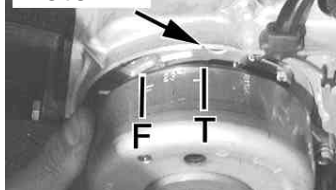
Tools to use:
10 mm open-end wrench
10 mm offset box wrench



Caution: Apply the specified torque.
For guide roller bolt 10 N · m (1.0 kgf · m)
For upper and lower side bolts 10 N · m (1.0 kgf · m)

5 . Cam Sprocket Installation

Notch

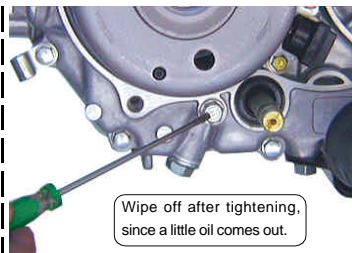


Align "T" mark on the fly wheel with the notch on the crankcase.



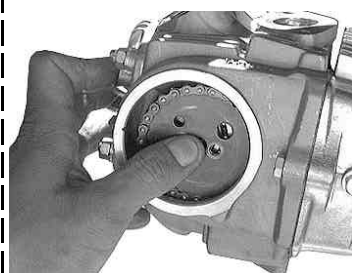
Set the camshaft so that cam's top faces the piston side when you turn the cam sprocket bolt hole to the cylinder head's notch. The cam shaft is right at the top dead center on the compression stroke.

If you install the optional cam, follow the instruction manual for the cam.



Wipe off after tightening, since a little oil comes out.

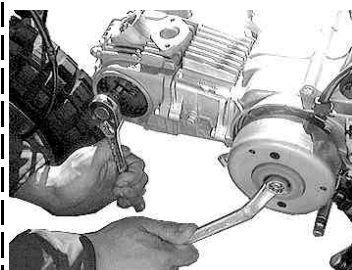
Remove the hex bolt next to the change pedal's shaft. Thus, the cam chain's tensioner, which is pulling at the cam chain, gets loosened; then you can easily install the sprocket.



This is a difficult work, so do your best here!
Fit the cam chain so the "O" mark on the cam sprocket and the notch on the cylinder head meet each other, and then install it on the cam shaft.



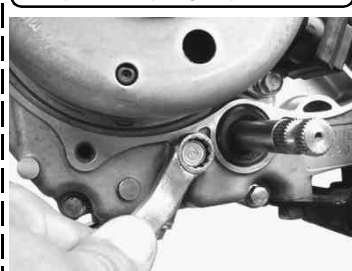
After fitting the cam sprocket, install and tighten bolts.



Fix the flywheel and tighten the two cam sprocket bolts.

Tools to use:
8 mm socket
14 mm offset wrench

Caution: Apply the specified torque.
Torque: 9 N · m (0.9 kgf · m)



Reinstall the hex bolt next to the change pedal shaft.
Tool to use:
10 mm offset box wrench

Caution: Apply the specified torque.
Torque: 10 N · m (1.0 kgf · m)

6 . Tappet Clearance Adjustment

Very difficult work. Do your best!

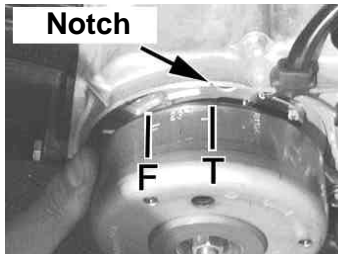
Notch



Engraved "O" mark

Cylinder head side

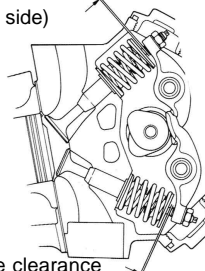
Notch



Flywheel side

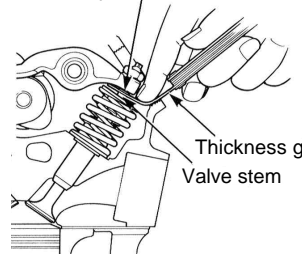
Align the "O" mark on the camshaft and "T" mark on the flywheel with each notch. Though the flywheel cannot stop at the precise position due to magnetic repulsion, it will be all set if "T" and "O" marks meet together after installation of cam sprocket.

Valve clearance
(Intake side)



Valve clearance
(Exhaust side)

Adjustment screw

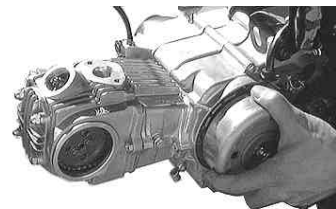


Thickness gauge
Valve stem

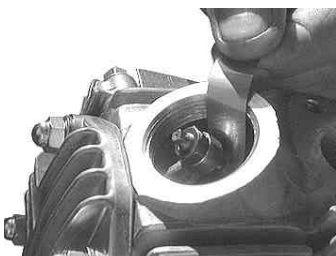


Tighten a rocker arm's tappet screw, and put in a 0.05 mm thickness gauge in between the tappet screw and the valve stem end. And tighten a tappet nut securely to the extent that you can pull out the 0.05 mm thickness gauge only with a little resistance. (If you have no idea about the right resistance in pulling out the gauge, prepare a 0.07 mm and a 0.03 mm gauge. If the 0.07 mm thickness gauge does not fit in between the tappet screw and the valve stem end, and, at the same time, if you can put in the 0.03 mm gauge with almost no resistance, this means that the clearance is about 0.05 mm. Adjust the clearance at 0.05mm both at EX and IN sides.

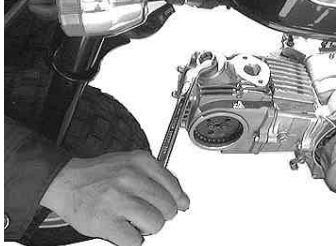
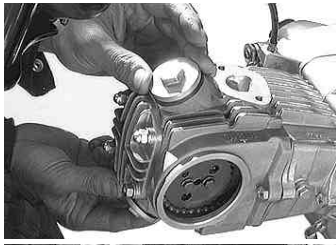
Tools to use:
Needle nose plier
9 mm offset box wrench
Thickness gauge



After tappet adjustment, turn the flywheel counterclockwise two times by hand, and then align the "T" and "O" mark with each other.



Check for the alteration to the tappet clearance. If altered, adjust again. If there is no change, it's all right.



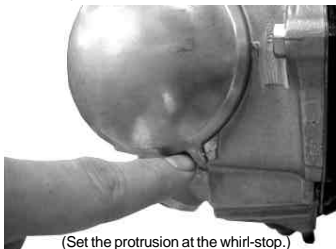
Install two tappet caps.
Tool to use:
17 mm offset box wrench

Caution: Apply the specified torque.
Torque: 12 N · m (1.2 kgf · m)

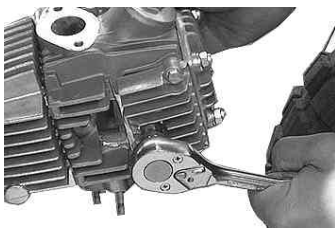
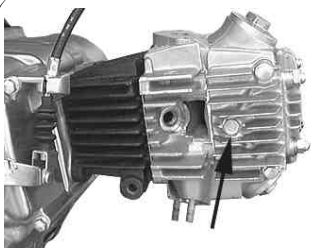
7 . Cylinder Head Left Cover Installation



Install the cylinder head L cover gasket and the L cover. (Set the protrusion at the stopper so left-side cover does not move right as the bolt is screwed.) See the picture below.



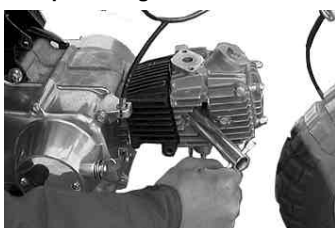
(Set the protrusion at the whirl-stop.)



Tighten the hex bolt (indicated by an arrow) on the right side of the cylinder head.
Tool to use:
10 mm socket

⚠ Caution: Apply the specified torque.
Torque: 12 N · m (1.2 kgf · m)

8 . Spark Plug Installation



Install kit's plug with in-vehicle tool or a spark plug wrench.
Tool to use:
Spark plug wrench

⚠ Caution: Apply the specified torque.
Torque: 11 N · m (1.1 kgf · m)

Install a plug cap to the plug.

9 . Stock Muffler Installation



Install the muffler first, and then the bolt for the muffler stay. (Temporary tightening)
Tool to use:
12 mm offset box wrench



Tighten two nuts on the EX pipe side. (Temporary tightening)
Tool to use:
10 mm open-end wrench
Tighten fully those bolts and nuts which were temporarily tightened.

⚠ Caution: Apply the specified torque.
Bolt 26 N · m (2.7 kgf · m)
Nut 10 N · m (1.0 kgf · m)

10 . Front Fender Installation



Install the front fender with three bolts.
Tool to use:
10 mm socket
Extension bar (small)

11 . Throttle Cable Installation

Disconnect the wiring of the stock throttle cable.



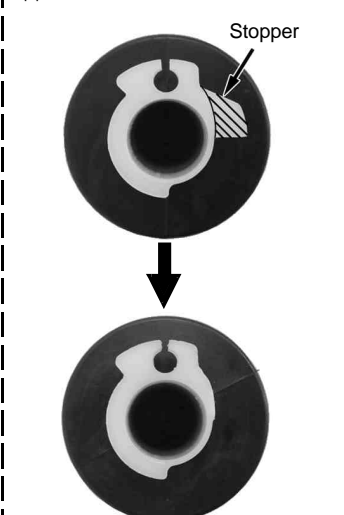
Loosen the hex nut.
Tool to use:
14 mm open-end wrench



Remove two screws, and take the upper throttle housing out.



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



Take a throttle pipe out from the handle, and process and remove the stopper of the throttle pipe as shown in the pictures above.



Remove the stock throttle cable from the lower throttle housing.



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



Connect it with the processed throttle pipe.



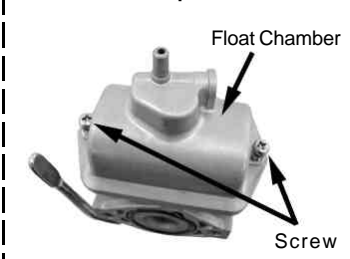
Install the upper throttle housing with two screws.
Tighten the front-side screw first, and then the back-side screw.



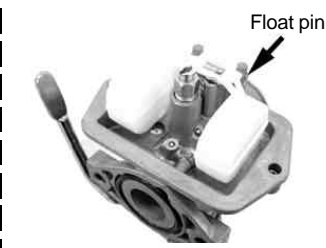
In the case of a stock handle, align the divided part of the throttle housing with the "O" mark as shown in the picture above.

Wire the throttle cable.

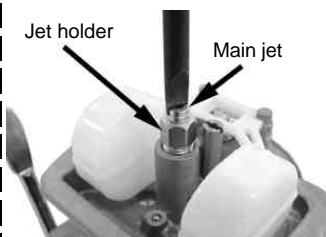
12 . Main Jet Replacement



Remove two screws first, and then, a float chamber.
Tool to use:
Cross chip driver (middle size)



Take note that the float pin will easily come off.



Take out the main jet from the jet holder.
Tool to use:
Slotted screw driver (middle size)



Install kit's main jet.
Tool to use:
Slotted screwdriver (middle size)



Install the float chamber and install it to the carburetor with two screws.

13 . Carburetor Installation

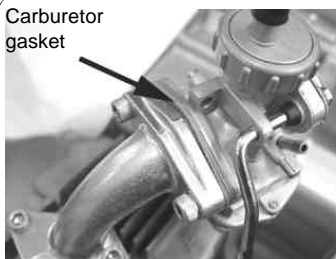


Place the inlet pipe gasket between the intake manifold and the cylinder head, and install it with two 6x25 socket cap screws.

Tool to use:
5 mm hex wrench

⚠ Caution: Apply the specified torque.
Torque: 12 N · m (1.2 kgf · m)

Carburetor gasket



Place the carburetor gasket between the carburetor and the intake manifold, which please fix with two 6 x 20 socket cap screws.

Tool to use:
5 mm hex wrench

⚠ Caution: Apply the specified torque.
Torque: 12 N · m (1.2 kgf · m)



Remove carburetor's top cap, and take out the spring and the throttle valve.



Join the concave section of the carburetor and the convex section of the top cap together.

14 . Throttle Free Play Adjustment

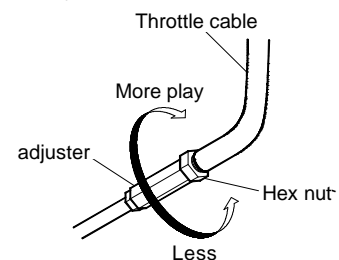


Pull down the boot at the tip of the throttle cable to expose the adjuster.

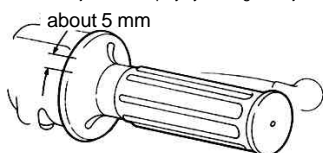


Hold the hex nut and loosen the adjuster.
Tools to use:

8 mm open-end wrench
10 mm open-end wrench



You can adjust the free play by rotating the adjuster.



Adjust the free play to be approx. 5 mm at the throttle grip.

Fix an adjuster and screw a hex nut tight.

Tools to use:

8 mm open-end wrench
10 mm open-end wrench

Turn the throttle to check that the throttle valve moves smoothly.

Check that the throttle has certain free play even when you turn the handle all the way to left and right.

Put back the boot in its original place.

15 . Air Filter Installation



Install a band to the air filter and insert it into the carburetor. Tighten the band.

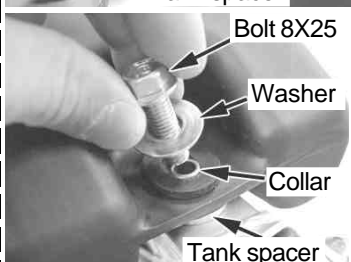
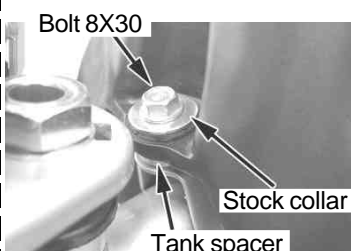


Install the storage tank hose to the air filter.



Connect a fuel tube to the carburetor.

16 . Exterior Parts Reinstallation

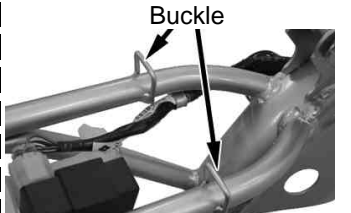
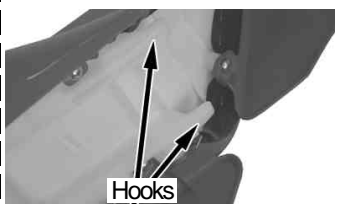


Place a tank spacer between the fuel tank and frame at the front part of the fuel tank and fix it with a bolt. And at the rear part of the fuel tank, place a tank spacer between the frame and fuel tank, and put a collar and a provided washer to fix a bolt.

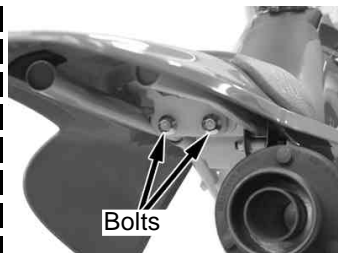
⚠ Caution: Apply the specified torque.

Torque: 26 N · m (2.7 kgf · m)

Insert the claw at the backside of the seat into the hook on the frame, and install an assembly of a seat, shroud and rear fender with each two pieces of trim clips, screws and bolts.



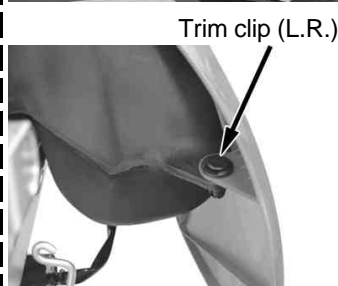
Insert the claw at the backside of the seat into the hook on the frame, and install an assembly of a seat, shroud and rear fender.



Bolts



Screw (L.R.)



Trim clip (L.R.)

Attach two pieces of bolts, screws, and trim clips each.

Tools to use:

10 mm offset box wrench
Cross chip screwdriver (middle size)

⚠ Caution: Apply the specified torque.

for bolts 10 N · m (1.0 kgf · m)

for screws 4 N · m (0.4 kgf · m)



Pulling the shroud, align the mounting holes with the screw holes on the fuel tank to put in two screws. In case you cannot easily put in the screws, file down the holes to elongate them.

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>