Hyper S-Stage KIT (88cc) Instruction Manual

This Kit is to bore up the engine displacement to 88 cc, using a standard cylinder head.
The ceramic-coated cylinder is used.
Oil lines in this cylinder with oil outlets lead the oil to the outlets.
Also, set M5 threaded hole in the oil plug bolt, it can be installed in our M5 temperature sensor.

Item No. **０１－０５－５０１０** (With oil outlets)
Monkey (FI) : AB27-1900001～

• Thank you for purchasing one of our products. Please strictly follow the instructions to install and use the kit.
• Before installing the kit, please be sure to check the kit contents. If you have any questions about the kit, please contact your local TAKEGAWA dealer.

Notice

Please note: Illustrations and photos may vary from actual hardware.

⚠ About fuel to use ⚠

This S-Stage Kit is so designed to achieve a higher compression ratio than stock engines. Therefore, high-octane gasoline should always be used. In case regular gasoline is used, you cannot get the performance of this Kit. Moreover, it is possible that the piston will be damaged, leading to a serious failure of a motorcycle. Before installing this kit, make sure that no regular gasoline remains in the fuel tank. In case regular gasoline is remaining in the fuel tank, do replace it with high-octane gasoline.

⚠ About the spark plug ⚠

Be sure to replace a spark plug with a CR8HSA (NGK) or U24FSR-U(DENSO).

⚠ About quick starting and sudden acceleration ⚠

Please note that idling, sudden acceleration, and sudden engine braking will put a heavy load on the engine, and that it may result in crank shaft and engine damages in the worst case.

⚠ Instructions for use of FI controller ⚠

If you start the engine only with the S-Stage Kit installed, the major malfunction of the engine is likely to take place. So, be sure to install the FI controller.

Read all instructions first before starting the installation.

◎ We do not take any responsibility for any accident or damage whatsoever arising from the use of the Kit not in conformity with the instructions in this Instruction Manual.
◎ Please drive safely and follow the local traffic law.
◎ We shall be held free from any kind of warranty whatsoever of products other than this product if any defect takes place on the other products than this one after the installation and use of this product.
◎ If you make modifications to any product of the Kit, we shall be held free from any guarantee of the product.
◎ We do not have any information or service data on the combination of our products and other manufacturer's products.
◎ Please note that this Kit is designed for exclusive use in the above-mentioned fitting models and frame numbers only and that it cannot be mounted on any other models.
◎For installation, please prepare tools and work with reference to the installation procedures with enough care. Besides, this instruction manual, as well as a HONDA's genuine parts service manual, is prepared for persons who have acquired basic skills and knowledge. We recommend those who are technically inexperienced or without enough tools to ask a technically-reliable specialist shop for the installation work.
◎ Bolts, nuts, dowel pins and seals will be reused. However, be sure not to use the worn-down or severely-damaged ones, which please do replace with new ones.
◎ This Instruction Manual is prepared mainly for installation on the Monkey (FI).
◎Fuel must always be supreme unleaded high-octane gasoline.
◎ Since the crankcase emission control system is easy to plug the filter with dust, check to see the plugging every about 1000km trips.
If plugged, clean the filter or use a new one.
NOTE: Continuing use of it, it may cause the lack of performance.

⚠ CAUTION The following show the envisioned possibility of injuries to human bodies and property damage as a result of disregarding the following cautions.

• Please drive safely and follow the local traffic law.
• Work only when the engine and exhaust system are cool to avoid burns.
• Prepare appropriate tools and work properly to avoid the breakage of parts or injuries.
• Always use a torque wrench to tighten bolts and nuts securely to the specified torque to avoid these parts getting damaged or loose.
• As some products and frames have sharp edges or protruding portions, work with your hands protected to avoid injuries.
• Before riding, always check such parts as screws for loose. If you find loose ones, screw them securely up to the specified torque to avoid parts coming off.
• Always use new gaskets and seals. About the reused parts, please check carefully for wear or damage and be sure to replace them with new ones if necessary.

⚠ WARNING The following show the envisioned possibility of human death or serious injuries to human bodies as a result of disregarding the following warnings.

• Always start the engine in a well-ventilated place, and do not turn on the engine in an airtight place. (Otherwise, you will suffer from carbon monoxide poisoning.)
• When you notice something abnormal with your motorcycle, stop riding immediately and park your motorcycle in a safe place to avoid an accident.
• Before working, place the motorcycle on level ground to stabilize its position for safety to avoid the motorcycle overturning.
• Check or carry out maintenance of your motorcycle correctly according to the procedures in the instruction manual or service manual.
(Improper checking or maintenance could lead to accidents.)
• If you find damaged parts when inspecting or performing maintenance of your motorcycle, do not use these parts, and replace them with new ones.
(The continued use of these damaged parts could lead to accidents.)
• As gasoline is highly flammable, never place it close to fire. Make sure that nothing flammable is near the gasoline. Since vaporized accumulation of gasoline is at high risk of explosion, work in a well-ventilated place. (Otherwise it may cause a fire.)

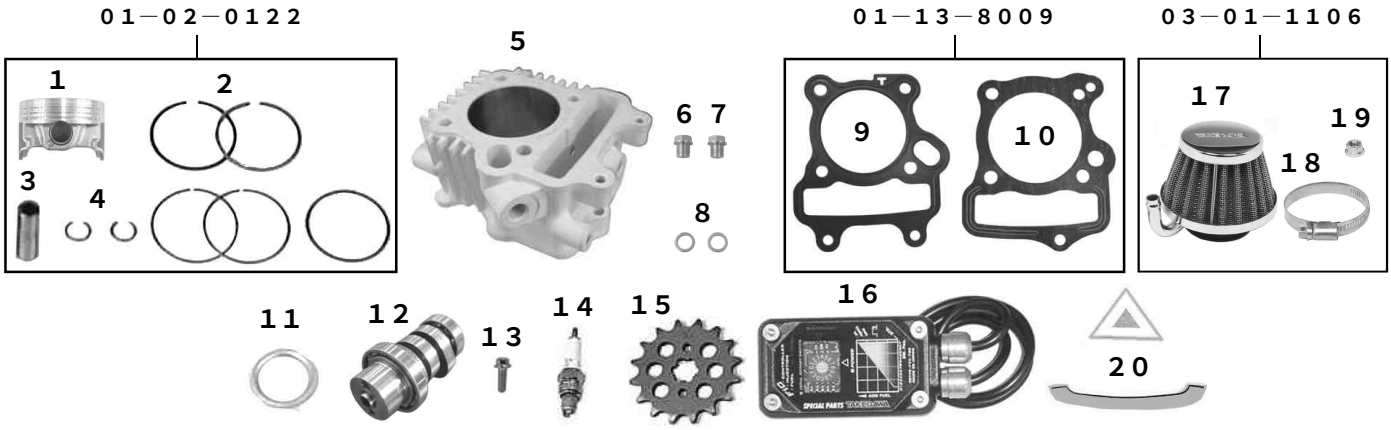
◎Please be informed that, mainly because of improvement in performance, design changes, and cost increase, the product specifications and prices are subject to change without prior notice.
◎ This manual should be retained for future reference.

Oct./21/'10 rev.Nov./19/'15

Lesson

◇ Bolts and nuts will get loose when turned counterclockwise, and tighten when turned clockwise(some exceptions).
◇ At the beginning, hand tighten a screw without using a tool until it stops. If it stops turning after giving it one or two turns, the screw may be fixed improperly.
◇ To loosen a screw means turning a tightened screw three or four times to the counterclockwise, and to remove it means turning it 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 a top of a bolt or screw.

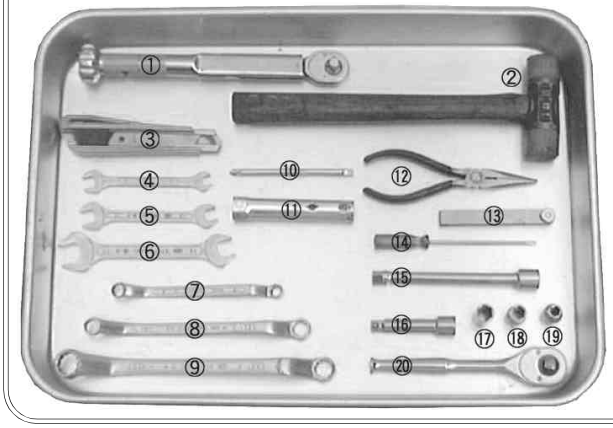
◇ Kit includes:



No.	Part Name	Qty	Repair Part Item No.	In packs of
1	Piston	1	13101-GBJ-T01	1
2	Piston ring	1	13011-181-T10	1
3	Piston pin	1	00-01-0091 (with two circlips)	1
4	Piston pin circlip	2	00-01-0003	6
5	Cylinder, 52 mm	1	12101-GBJ-T02	1
6	Oil plug bolt	1	00-07-0072 (with Sealing washer)	1
7	Oil plug bolt with M5 holes	1	00-07-0090 (with Sealing washer)	1
8	Sealing washer, 10 mm	2	00-07-0010	10
9	Cylinder head gasket	1	01-13-8009	1set
10	Cylinder gasket	1		
11	Exhaust pipe gasket	1	00-01-0064	2
12	Camshaft	1	01-08-0332	1
13	Flange bolt, 6x25	1	00-00-0115	5
14	Spark plug	1	NGK-CR8HSA	1
15	Driven sprocket (with plate) 16T	1	02-05-051	1
16	FI Controller (for S-Stage)	1	03-05-0019	1
17	Air filter COMP.	1	———	
18	Clamp band	1	00-00-0014	1
19	Flange U nut, M6	1	00-00-0091	6
20	Mark set	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.

◇ Tools to use for the installation



1	Torque wrench	11	Spark plug wrench (in-vehicle tool)
2	Plastic hammer	12	Needle-nose plier
3	Cutter knife	13	Thickness gauge
4	Open-end wrench 8-10	14	Fine-shaft flat tip screwdriver
5	Open-end wrench 12-14	15	Extension (medium)
6	Open-end wrench 14-17	16	Extension (small)
7	Offset box wrench 8-10	17	Socket 14 mm
8	Offset box wrench 12-14	18	Socket 12 mm
9	Offset box wrench 14-17	19	Socket 10 mm
10	Spark plug wrench handle (in-vehicle tool)	20	Ratchet wrench

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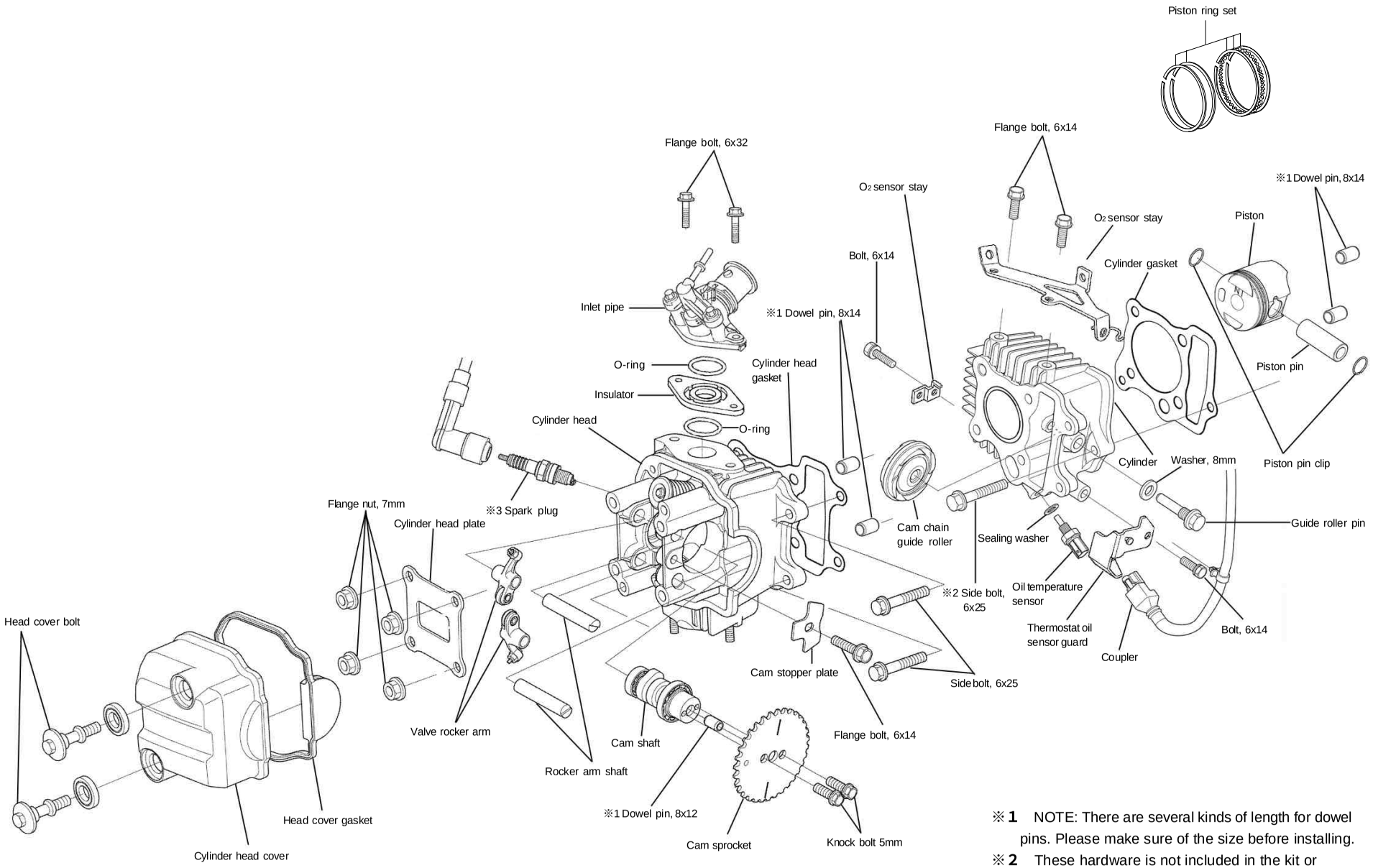
Part names



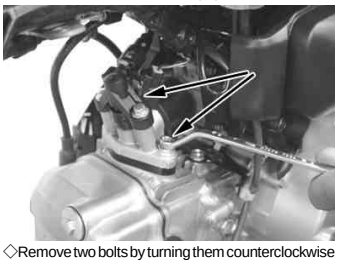
※**1** NOTE: There are several kinds of length for dowel pins. Please make sure of the size before installing.

※**2** These hardware is not included in the kit or will not be used for the installation of this kit.

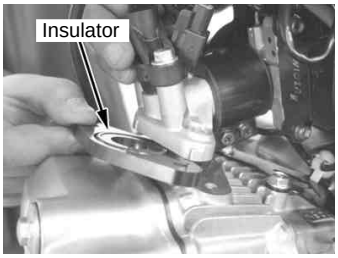
※**3** Be sure to use CR8HSA (NGK) or U24FSR-U (DENSO).

Removal of standard hardware

1 . Remove the inlet pipe.



◇Remove two bolts by turning them counterclockwise which hold a cylinder head and inlet pipe.
After removing as above, remove the insulator as well.
Tool:
Offset box wrench, 8mm

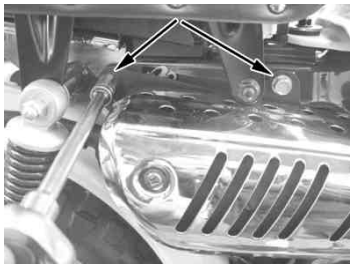


2 . Remove the O_2 sensor bracket.

◇Remove an O_2-sensor bracket on the cylinder.
Tool:
Offset box wrench, 10mm

3 . Remove the exhaust system.

◇Remove two nuts on the exhaust pipe by turning them counterclockwise.
Tool:
Offset box wrench, 10mm

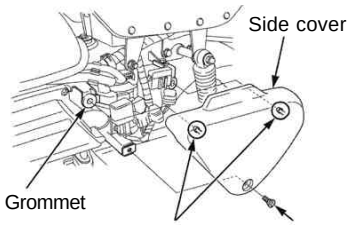


◇Remove two hex bolts, which are holding the exhaust system, by turning them counterclockwise.
Tool:
Ratchet wrench
Extension (medium)
Socket, 12mm & Extension (small)

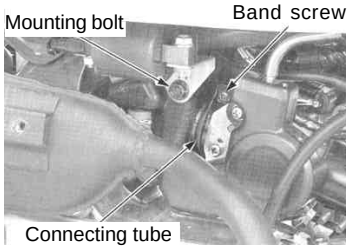
◇Remove the exhaust system from the vehicle by pulling it outwards. Take care NOT to lose ring-shaped exhaust system gaskets.

4 . Remove the air cleaner box.

◇Unfasten the screw and remove the side cover.

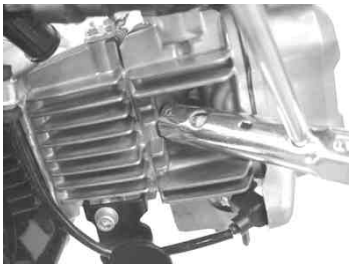


◇Remove the mounting bolt of air cleaner box and loose the band screw. Then remove the connecting tube of air cleaner box.



◇Pull out the air cleaner box to the left (of the driving direction) of the vehicle, and disconnect the breather hose of crankcase. (The genuine hose will be reused.)

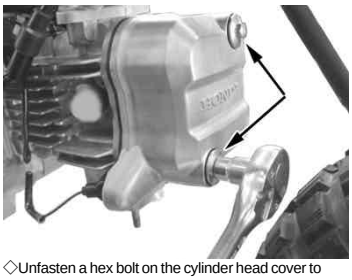
5 . Remove a spark plug.



◇Remove a plug cap from the plug by pulling it out. Be sure to hold the cap in pulling it out.

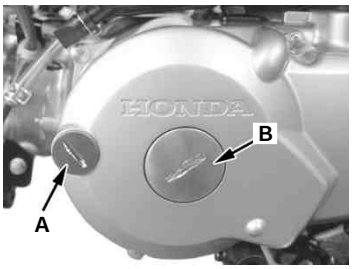
◇With an in-vehicle tool of a plug wrench, turn the plug counterclockwise to remove it.

6 . Remove a cylinder-head cover.



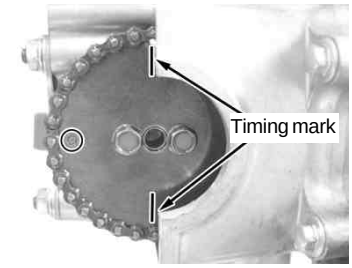
◇Unfasten a hex bolt on the cylinder head cover to remove the cover.
Tool:
Socket, 10mm

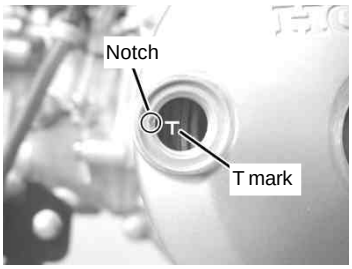
7 . Remove a crankcase left-side cover.



◇Turn both A and B counterclockwise to remove them.
Tool:
Flat tip screwdriver

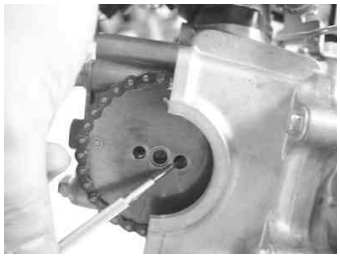
8 . Remove a cam sprocket.





◇Set the flywheel and cam sprocket so the "T" and "O" marks on them respectively face forward. And set the timing marks to be in contact with the cylinder head surfaces. And turn the flywheel counterclockwise so it meshes with each notch.

◇Holding the flywheel, remove two hex bolts on the cam sprocket by turning them counterclockwise.
Tool:
Offset box wrench, 8mm
Socket, 14mm & Extension (medium)
(used for holding the flywheel)

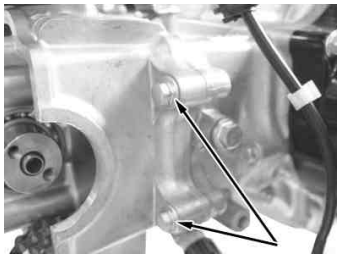


◇Gently pry the cam sprocket loose to remove from the camshaft with a small-sized slotted screwdriver.

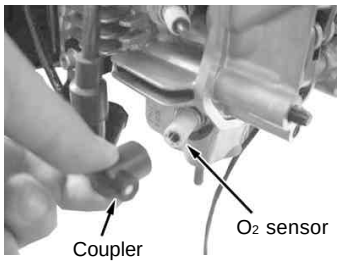
◇Remove the cam chain from the cam sprocket, and take out the cam sprocket.

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

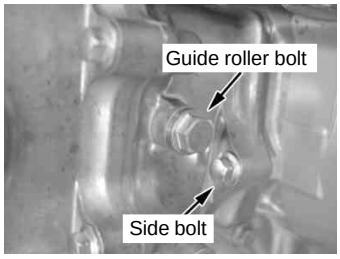
9 . Remove cylinder-head side bolts.



◇Remove the cylinder-head side bolts holding the cylinder head and cylinder by turning them counterclockwise.
Tool:
Offset box wrench, 10mm

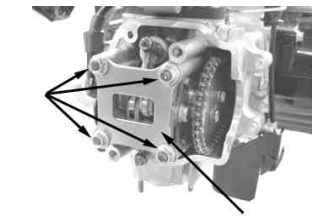


◇Remove the coupler of the O_2 sensor.



◇Loosen the guide roller bolt on the cylinder and the side bolt between cylinder and crankcase by turning them counterclockwise.
Tool:
Open-end wrench, 8mm & or Offset box wrench, 10mm

10. Remove the plate.

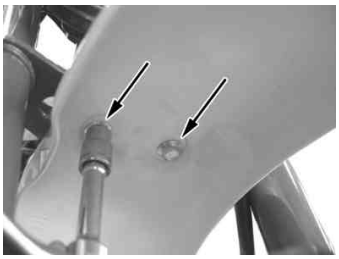


Cylinder head plate

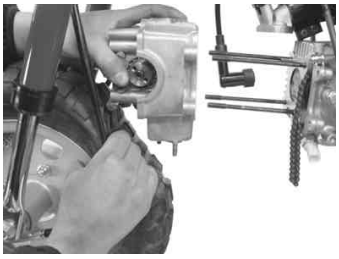
◇Turn four nuts, which are holding the cylinder head, diagonally and counterclockwise in a few steps to remove them.

◇Remove the cylinder head plate.
Tool:
Offset box wrench, 10mm

11. Remove the cylinder head.



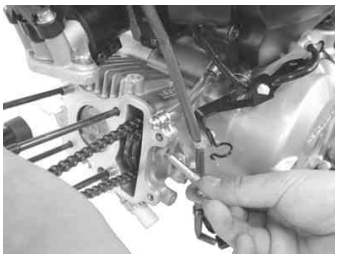
◇Remove a front fender.



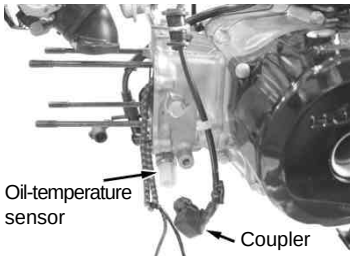
◇Let out the air of the tire. Pushing the tire as shown in the photo, pull out the cylinder head forward out of the cylinder. (If it does not move smoothly, tap the head with a plastic hammer.)

◇Take care NOT to lose two dowel pins as they are reused.

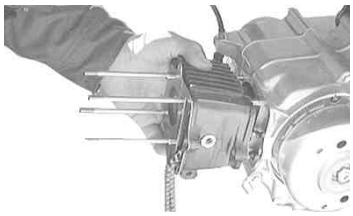
12. Remove the cylinder.



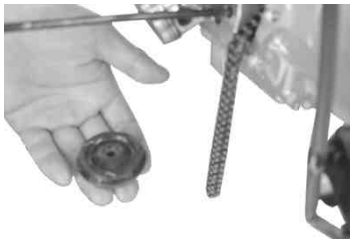
◇Remove the loosened guide roller bolt and cylinder side bolt by turning them counterclockwise.



◇Remove the oil temperature sensor by removing its coupler.
Tool:
Open-end wrench, 17mm



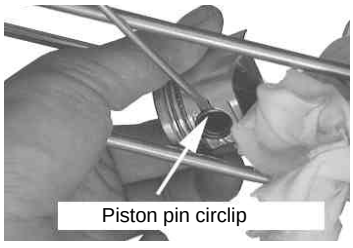
◇Pull out the cylinder. (If it is hard to pull it out, tap the cylinder with a plastic hammer.)



◇While removing the cylinder, the cam chain guide roller will come out, which please remove.

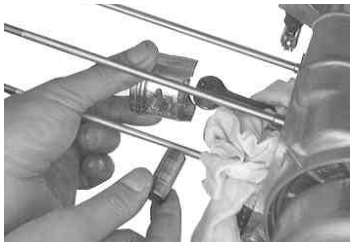
13. Remove the piston.

◇Plug the cylinder hole in the crankcase with a waste cloth so as never to let the dirt, dust or hardware into the cylinder hole and cam chain.



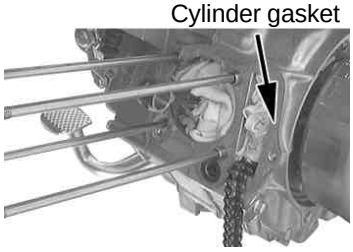
◇Remove one of the two piston pin circlips. You can remove it by prying it open with a screwdriver tip being placed on the notch.
Tool:
Fine-shaft flat tip screwdriver

◇Remove the piston pin in the direction where the piston circlip is not attached. You can easily remove the piston pin by pressing it with a flat tip screwdriver from the direction where a piston pin circlip is attached.



◇Remove the piston.

14. Remove a cylinder gasket, rubber seal and dowel pin.



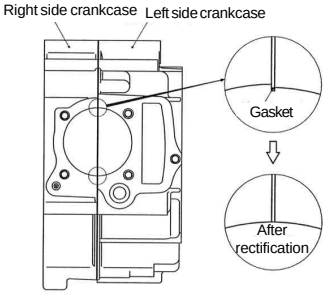
◇If the gasket does not remove smoothly, please use the scraper or cutter but NOT scratch the crankcase. Also remove the excess of the gasket if necessary.

⚠Keep off any dirt or unwanted parts.

How to rectify

As shown in the figure below, at this point rectify the crankcase to be even without bumps.

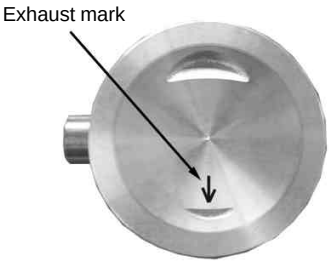
1. Plug the entire hole in the crankcase securely with a waste cloth so the cutting chips and shavings won't get into the crankcase.
2. Rasp the higher mating surface of the crankcases till it becomes level with the lower one.
3. After rasping the surface, remove the waste cloth with care not to let the shavings get into the crankcase.
4. After removing the waste cloth, stuff up the crankcase opening with a clean waste cloth. After the installation of the Kit, idle away the engine for a few minutes, and then, immediately replace the engine oil with new one without delay. And there is nothing more to do.



Installation of S-Stage Kit:

1. Assemble and install a piston.

◇Fix a supplied piston pin circlip securely to the grooves for circlip on one side of the piston. Be sure to set a circlip so its end gap is not on the notch.

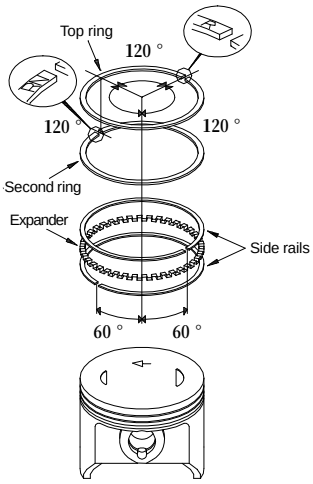


◇You can rather easily install the piston pin circlip by pressing it with a screwdriver, but taking care not to damage the piston with the screwdriver.

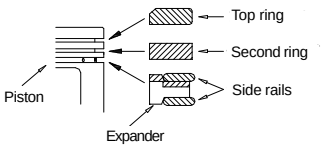
◇Fix the piston pin circlip first on the left side.
Tool:
Fine-shaft flat tip screwdriver

◇Apply engine oil to the piston-ring grooves, and fix piston rings in the order of an oil ring expander, lower oil ring side rail, upper oil ring side rail, second ring, and top ring.

◇Arrange the positions of piston ring-end gaps so they do not align with each other.



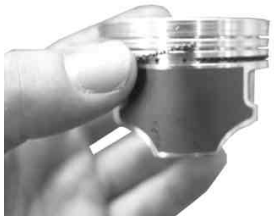
On the top surface of the top ring is stamped "R", and "RN" on the top surface of the second-ring.



Pay attention to the cross section as well !!

◇Apply engine oil to the ring grooves.

◇Put the expander.



◇Put the lower side rail.

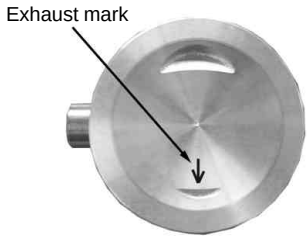
◇Put the upper side rail.

◇Put the second ring.

◇Put the top ring.

◇Apply engine oil to the piston.

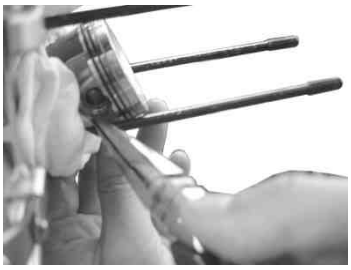
◇Apply engine oil to the piston pin on the con'rod.



◇Fix the piston so the arrow on the piston head faces downward, or to the exhaust side.

◇Pass the piston pin into con'rod and piston.

◇Fix securely the supplied piston pin circlip to the circlip groove.

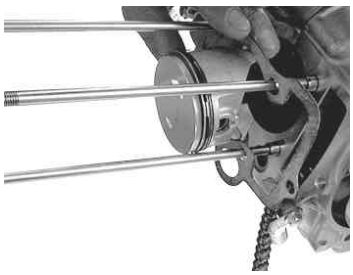


◇Install the piston pin circlip to the piston, with a needle-nose plier when necessary, being careful not to damage the piston.
Install the circlip so its end-gap is not on the notch.
Do the work carefully as, in some cases, the circlip comes off flying while you are pressing it inside.
⚠So, wear protective eyeglasses lest it should get into your eyes.

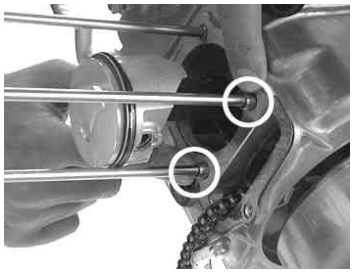
◇When you are through with the work, remove the waste cloth which was plugged into the hole.

2 . Installation of cylinder.

◇Degrease with thinner the cylinder gasket surfaces on both cylinder and crankcase sides.

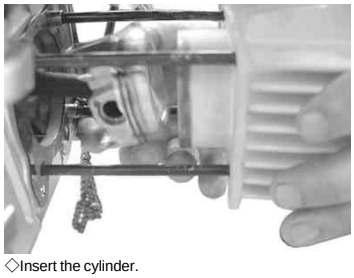


◇Install the cylinder gasket.

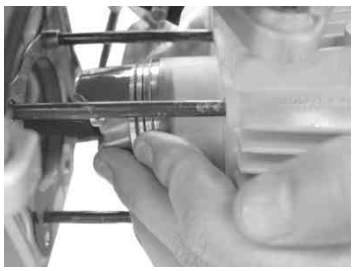


◇Check if the dowel pin is present.

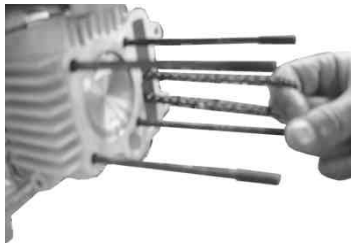
◇Apply engine oil onto the inside of the supplied cylinder and spread the oil evenly with fingers.



◇Insert the cylinder.



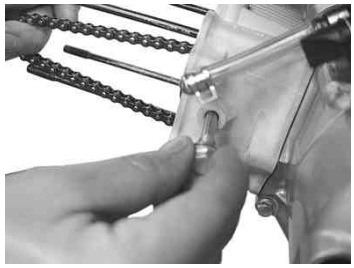
◇Fit the cylinder by pressing it with a finger bit by bit, taking care so the piston ring-end gaps do not get out of position.



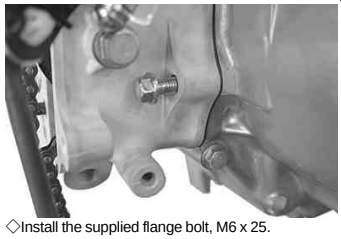
◇Once the ring has been placed inside the cylinder, route the cam chain through the cylinder, and fix the cylinder into the crankcase.

◇Pulling the cam chain, fix the guide roller.

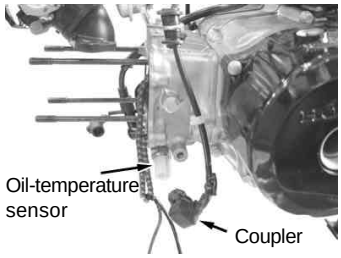
◇Press in the guide roller so the center of the guide roller and the guide-roller bolt hole on the cylinder just mesh together.



◇Install the guide roller bolt.
(Fasten it only finger tight for now at this point.)

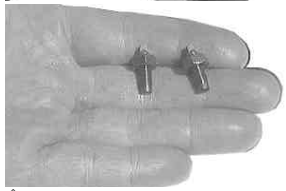


◇Install the supplied flange bolt, M6 x 25.
(Fasten it only finger tight for now at this point.)

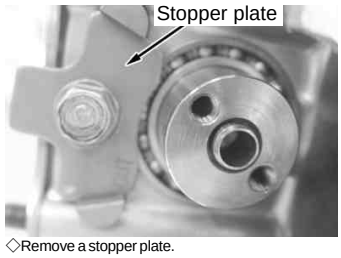


◇Install the oil-temperature sensor, which please tighten to the specified torque.
After the installation, fix a coupler.
Tightenning:14.5N•m(1.5kgf•m)
Tool:
Open-end wrench, 17mm

3 . Change of camshaft.



◇ Loosen a tappet adjusting nut of the rocker arm assembled into the cylinder head. And by turning the tappet adjusting screw counterclockwise, detach the tappet adjusting nut together with the tappet adjusting screw at the same time.
Tool:
Offset box wrench, 9mm



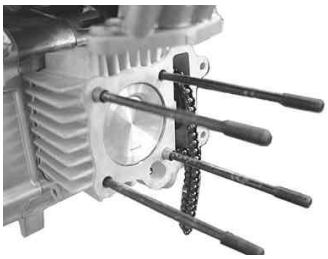
◇Remove a stopper plate.

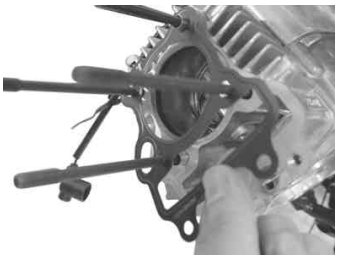
◇Removing a stock camshaft, and install the supplied camshaft in the reverse order from removal.
Apply clean engine oil to the camshaft and its bearings. Even if you cannot easily fix the camshaft, fix it manually without striking it with a hammer.

◇Attach the dowel pins, originally attached to the stock camshaft, to the supplied camshaft.
Stopper plate bolt
12N • m (1.2 kgf • m)

4. Installation of cylinder head.

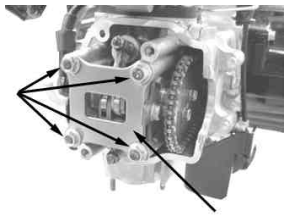
◇With thinner, degrease the cylinder head surface and upper surface of the cylinder.



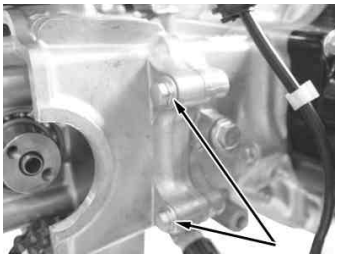


◇Fix dowel pins to the cylinder, and then head gaskets.

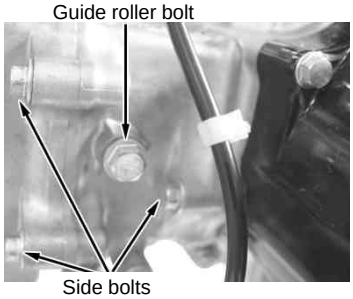
◇Install the cylinder head, fitting the cam chain and stud bolts in place.



◇Attach the cylinder head plate and tighten the head nuts evenly.
Tightening torque:14 N•m (1.4 kgf•m)
Tool:
Socket, 10mm

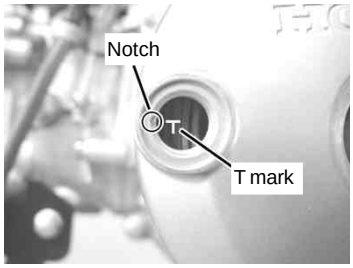


◇Attach a head side bolt. Fully tighten the guide roller bolts and the cylinder side bolts which were tightened temporarily.
Tool:
Open-end wrench, 8mm
Offset box wrench, 10mm



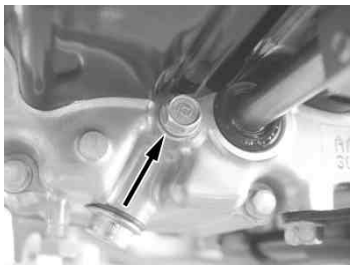
Tightening torque:
10 N•m (1.0 kgf•m) for a guide roller bolt
10 N•m (1.0 kgf•m) for lower and upper side bolts
Tool:
Socket, 8mm, 10mm

5. Installation of cam sprocket.



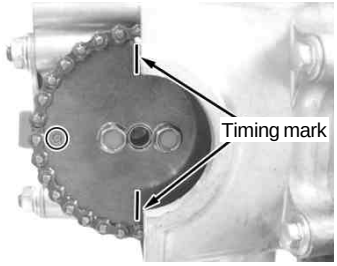
◇Align the T mark on the flywheel with the notch on the crankcase, and set the piston at the compression top dead center position.

◇Set the shaft so the cam top faces the piston when the cam sprocket bolt hole is turned toward the notch on the cylinder head. This arrangement places the cam shaft at TDC (Top Dead Center) on the compression stroke.



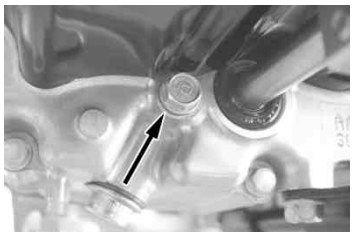
Oil will flow out a little after the bolt is tightened. Wipe off the oil.

◇Unscrew a hex bolt on the side of the change-pedal shaft. (As the cam chain tensioner slackens, you will find it easier to install the cam chain.)



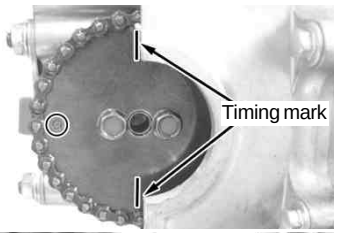
◇Set the cam sprocket so its "O" mark faces the front. And mesh the timing marks with mating surfaces of the cylinder head cover. Aligning the notches together, place the cam chain on the camshaft.

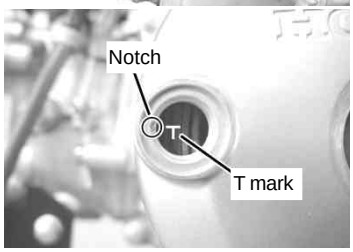
◇Holding the flywheel, tighten up two cam sprocket bolts.
Tightening torque: 9 N•m (0.9 kgf•m)
Tool:
Socket, 8mm
Socket, 14mm & Extension (medium)



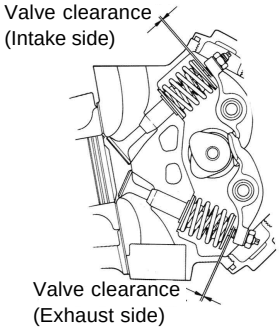
◇Install the just-removed bolt next to the change pedal shaft, and tighten it up.
Tightening torque: 10 N•m (1.0 kgf•m)
Tool:
Socket, 10mm & Extension (medium)

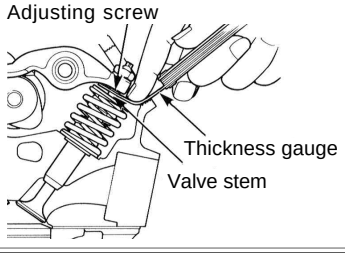
6. Valve timing adjustment and tappet clearance adjustment.

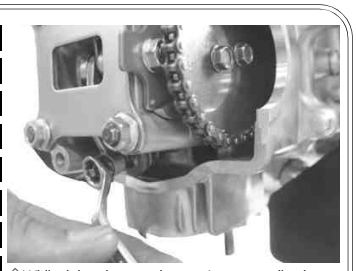




◇Give the crankshaft two clockwise turns. And check that all the alignment marks are meshing with one another with the T mark on the flywheel, the notch on the crankcase and the timing sprocket mark facing the front.



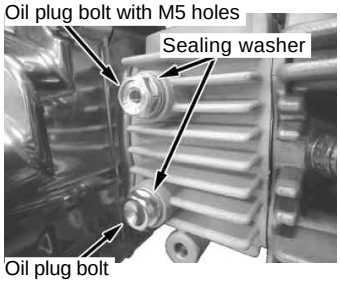




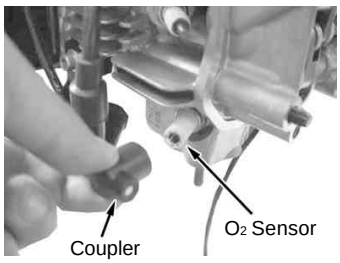
◇While tightening a rocker arm's tappet adjusting screw, tighten the tappet adjusting nut to the extent that you can pull out a thickness gauge, placed between the tappet adjusting screw and the valve stem end, feeling only a little resistance.
IN: 0.10 mm
EX: 0.12 mm
Tool:
Needle-nose plier
Offset box wrench, 9mm
Thickness gauge
Fit together the crankcases with a 14mm box wrench and medium-sized long joint.

◇After adjusting the tappet, give the flywheel two turns counterclockwise by hand, and then, align the "T" with "O" marks.

◇Check if there is any change in the tappet clearance. If the clearance has not changed, there is no need to readjust it. However, in case there is a change, readjust the clearance. Repeat this readjustment until you get a right tappet clearance.

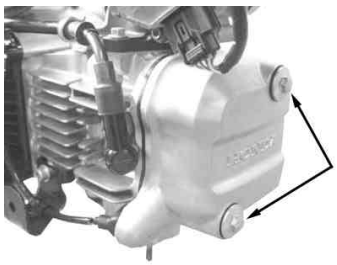


◇The boss two places of the supplied cylinder, attach the oil plug bolt / sealing washer.
Oil plug bolt with M5 holes, mounted so as to be on the upper side when the engine mounting.
※If you are installing the oil cooler kit, that you follow the instruction manual of the kit.
Tightening torque:12 N•m (1.2 kgf•m)



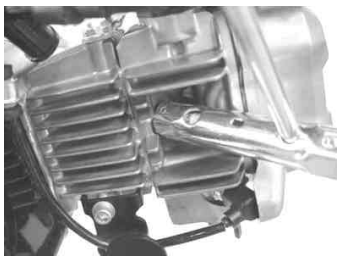
◇Attach an O_2 sensor coupler.

7. Installation of cylinder head cover.



◇Attach a cylinder-head cover and gasket.
Tightening torque:12 N•m (1.2 kgf•m)
Tool:
Socket, 10mm

8. Installation of spark plug.



◇Install the plug with either an in-vehicle tool or spark plug wrench.
Tightening torque: 16 N•m (1.6 kgf•m)
Tool:
Spark plug wrench
◇Attach a plug cap to the plug.

9. Installation of stock muffler.

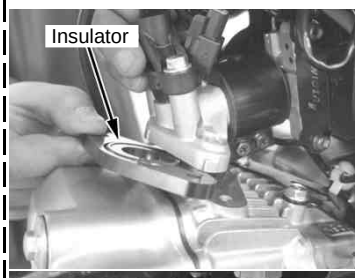
◇Install an exhaust system.
◇Squeeze the muffler gaskets into the space between cylinder head and muffler. And install the muffler unit into the pivot shaft. Tighten the nut to hold the muffler unit. (Finger-tighten the nut for the moment.)

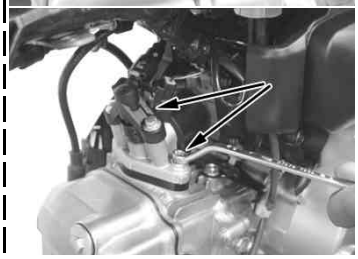
◇Tighten two nuts on the exhaust pipe loosely for now.
Tool:
Open-end wrench, 10mm

◇Tighten the nuts to hold the flange and vehicle.
Tightening torque:
10 N•m (1.0 kgf•m) for flange
20 N•m (2.0 kgf•m) for the vehicle
Tool:
Socket, 12mm

10. Installation of inlet pipe.

◇Install an O_2-sensor bracket.
Tightening torque: 10 N•m (1.0 kgf•m)
Tool:
Socket, 10mm





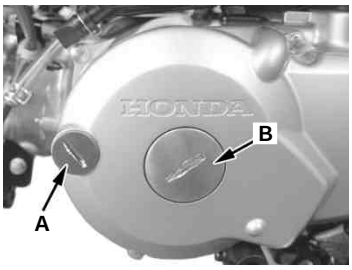
◇Attach two bolts which hold the cylinder head and inlet pipe.
Tightening torque: 10 N•m (1.0 kgf•m)
Tool:
Socket, 8mm

11. Installation of air filter

◇Install the flange nut (M6) in the kit on the back of the bracket which the genuine air cleaner box fixed, and settle the ignition coil bracket with the genuine mounting bolt.
Tightening torque:10 N•m (1.0 kgf•m)

◇Put the clamp band on the rubber of air filter and install on the genuine throttle body.
The logo of TAKEGAWA is to be on the level.
◇Put the genuine crank case breather hose into the outlet of the air filter. Cut out the hose length as required.
◇Tighten the clamp band of the air filter.
◇Restore the side cover and the exhaust heat protector.

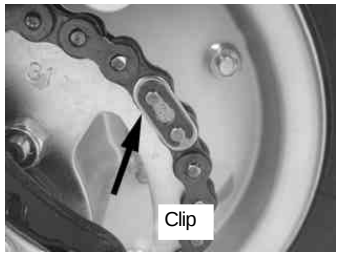
12. Installation of a hole cap.



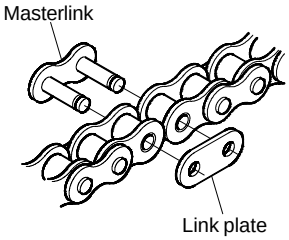
◇Fix and tighten both A and B.
Tightening torque:
A 1.5 N•m (0.15 kgf•m)
B 3 N•m (0.3 kgf•m)
Tool:
Flat tip screwdriver
◇Attach a change pedal.
Tightening torque:10 N•m (1.0 kgf•m)
Tool:
Socket, 10mm
◇Check bolts for slack which have just been installed up to now on the engine, muffler, inlet pipe and other pieces of hardware.

13. Installation of drive sprocket. (on the engine side)

◇Make sure the motorcycle is secure on the stand like a racing stand, and remove the step bar, and (L) crankcase cover.
◇Remove the drive sprocket cover, chain cover and steps.



◇Detach a clip from the drive chain.



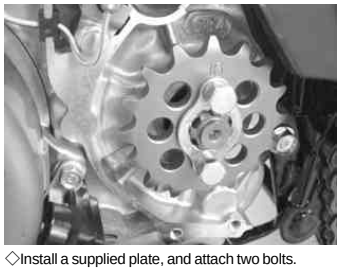
◇Detach a link plate and master link to remove the drive chain.
※Be sure to stop the engine while you are working.

◇Unfasten two bolts.
Tool:
Socket 10 mm
Extension, (short)

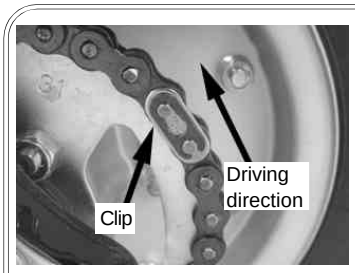
◇Remove a plate

◇Pull out a stock sprocket from the shaft to detach a chain.

◇Fit a supplied sprocket into the shaft.



◇Install a supplied plate, and attach two bolts.
◇Loosen a rear axle nut and chain adjuster nut.
◇Fit the master link from inside to connect the drive



◇Attach a clip.
※Be sure to attach the clip with its end-gap in the opposite direction of driving.

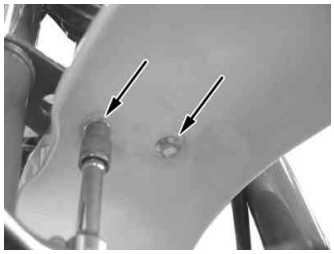
◇Fully tighten the loosely-tightened bolt on the drive sprocket.
Tightening torque:12 N•m (1.2 kgf•m)
Tool:
Socket,10mm
Extension (small)
◇Install the removed (L) crankcase cover (※1) and step bar.
※1: Never forget to attach a dowel pin back to the (L) crankcase cover or a coupler.

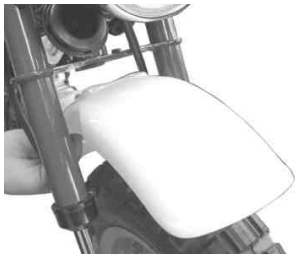
◇Adjust the drive chain.

14. Installation of an F.I. controller.

◇Install the controller following the installation procedures for the F.I. controller.

15. Installation of leg shield.





◇Install a front fender.
Tightening torque: 12 N•m (1.2 kgf•m)
Tool:
Socket, 10mm & Extension (small)

●Cautions Before Running

1 About fuel:

◇ High-octane gasoline should always be used.
◇ Always replace the gasoline with high-octane gasoline when regular gasoline is remaining in the fuel tank.

2 Additional hardware to be installed:

◇ For driving your bike with this kit installed, the following hardware need to be installed additionally. We disclaim all responsibility for any consequential and incidental damages or any other losses arising from the use of the provided products or parts, if your bike is not equipped with these additional hardware.

2－1 Oil pump:

The installation of this kit increases the heat release value of the engine, set off by the increase in power. The installation of Super Oil Pump is essential in order to circulate large amounts of oil and to help cool hardware and to alleviate the burden.

Essential Super Oil Pump

Part No.:01-16-0051

2－2 Clutch:

The stock clutch cannot respond to the high engine power, and, therefore, causes clutch slippage, and consequently cannot transmit the engine power fully to the driving side.
Therefore, it is necessary to install a heavy duty clutch.

Part No. : **02－01－0202** (Primary reduction gear ratio remains the same.)
: **02－01－0214** (The primary reduction gear ratio is changed to 18 / 67 from 16 / 69.)

3 Change of sprocket

◇ The installation of this kit will increase the power of your vehicle. So with the stock sprocket, you will find it uncomfortable to drive your bike because of too low gear, and will cause severe wears of hardware, not only adversely affecting the engine life, but also possibly breaking the engine in the worst case. Therefore, please replace the drive and driven sprockets to make the gear ratio high.
※ Please note that a sprocket is not included in the kit.
※ Furthermore, the gear ratio of the sprocket changes according to the clutch type and wheel size. The list below is just for your reference because the configuration in the list below needs to be changed according to the driver's weight, purpose of use, desire, taste and the like.
※When changing the driven sprocket, remove hardware around the rear wheel. Raise the rear wheel off the ground by placing a racing stand under the engine for safe work.

Recommended sprocket for use with S-Stage (with a driver weighing 65 kg)

Models	Specifications			Recommended Sprocket	
	Rear wheel size	Clutch	Transmission	Drive sprocket (Front)	Driven sprocket (Rear)
Monkey (FI)	8 inch	Manual	4-speed	16	23
		Heavy-duty special	4-speed	16	25
	10 inch	Manual	4-speed	16	25
		Heavy-duty special	4-speed	16	28

◇When the stock sprocket is changed to the recommended driven sprocket, the drive chain becomes too slack or too short. However, it is impossible to take up the slack of the drive chain just by adjusting the free play. You need to either shorten the chain by cutting it with a chain cutter, or to prepare a new drive chain.
※ The "Heavy-duty special clutch" described above refers to our special clutch and that of Item No. 02-01-0214 with the primary reduction gear ratio changed to 18 / 67 from 16 / 69.

●F. I. Controller setting

Specification of the engine	F.I.controller setting
Air filter kit ＋ the stock exhaust system	7
Air filter kit ＋ TAKEGAWA's Z-style exhaust system	B
Air filter kit ＋ TAKEGAWA's basic exhaust system	B

●About F.I. controller:

Be sure to start the engine only after the installation of the F.I. controller. If you start the engine without the installation of the F.I. controller, the air-fuel ratio will become so thin that the major malfunction of the engine may take place.

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