



6-Speed Transmission Kit Instruction Manual

Item No. : 0 2 - 0 4 - 0 1 0 8
Compatible Model and Frame No.:
HONDA NSF100 : HR01-1000001 ~

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

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

Please read the following instructions before installation.

- 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.
- Installation of this product requires crankcase disassembly as well as engine removal and mounting, and moreover, use of special tools is needed for some installation work. Further, since this instruction manual, as well as service manuals, is written for those who have acquired basic skills and knowledge in tuning, those who are technically unskilled or inexperienced may fail to install properly.
- This instruction manual covers the installation work only after the procedures of the engine removal from the body, and removal and disassembly of a cylinder head, cylinder, piston, left side crank case cover, flywheel, right side crank case cover, clutch unit and oil pump.
For instructions regarding those procedures, please refer to the HONDA's service manual for your vehicle to work properly.
- Gaskets, O-rings, and packings must be replaced with new ones at the time of disassembly. Since this kit does not include gaskets, O-rings, packings, etc. which are necessary for engine disassembly, please purchase HONDA's genuine ones separately.
- Free play on the clutch will change after installation of this kit. Therefore, please re-adjust the free play after connecting the clutch cable.
- Please be informed beforehand that the product specifications and the instruction manual are subject to change, without prior notice, due to product improvement.

The gearshift pattern is a return system of 1-down-5-up.

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.

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.

This manual should be retained for future reference.

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



CAUTION

The following show the envisioned possibility of injuries and damages to human bodies, and property loss as a result of 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.
(Improper torque could cause these parts to get damaged or fall off.)
- As some products and frames have sharp-pointed or protruding portions, please work with your hands protected.
(Otherwise, you will suffer injuries.)
- The installation of this kit will change the gear-change pattern to the return system of 1-down-5-up. Change gear only when you have completely disengaged the clutch. The gear and other parts will be damaged if you change gear forcibly or without disengaging the clutch.
- 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.)



WARNING

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

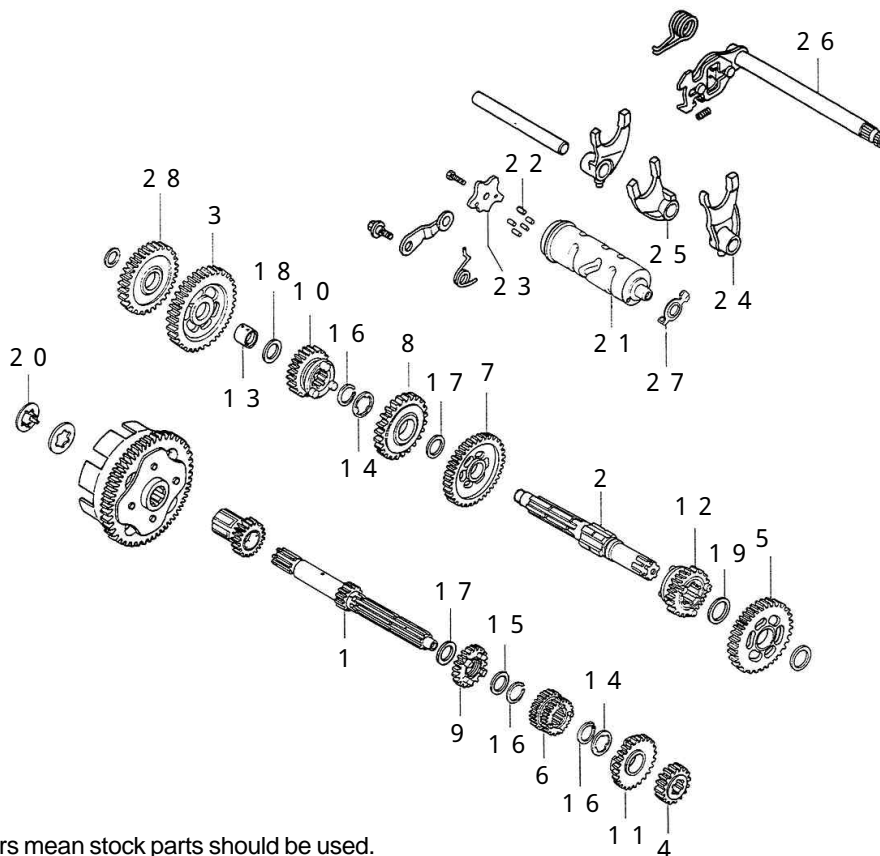
- When you notice something abnormal with your motorcycle while riding down a road, stop riding immediately and park your motorcycle in a safe place. (Otherwise, the abnormality could lead to an accident.)
- Before doing work, place the motorcycle on level ground to stabilize the position of your motorcycle 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.)
- Keep plastic bags for packing products out of infant's reach, or discard. (If infants get them on, there is a danger of their suffocating.)
- 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.)

Features

With the installation of this kit, you can enjoy a 6-speed mission with a gear-ratio designed for sport riding. A wide range of settings will be available in combination with a final gear.

Speed	Standard	Original from TAKEGAWA
1st	3.083 (12 / 37)	2.642 (14 / 37)
2nd	1.882 (17 / 32)	2.000 (17 / 34)
3rd	1.400 (20 / 28)	1.631 (19 / 31)
4th	1.130 (23 / 26)	1.380 (21 / 29)
5th	0.960 (25 / 24)	1.173 (23 / 27)
6th	—————	1.040 (25 / 26)

~ Kit Contents ~



Parts without numbers mean stock parts should be used.

No.	Parts Name	Qty	Repair Part Item No.	Packed in units of
1	Main shaft (14T)	1	23211-GCR-T00	1
2	Counter shaft	1	23220-GEY-T01	1
3	Counter shaft 1st gear (37T)	1	23420-GC-T00	1
4	Main shaft 2nd gear (17T)	1	23441-GCR-T00	1
5	Counter shaft 2nd gear (34T)	1	23450-GCR-T00	1
6	Main shaft 3rd / 4th gear (19T/21T)	1	23461-GCR-T00	1
7	Counter shaft 3rd gear (31T)	1	23471-GCR-T00	1
8	Counter shaft 4th gear (29T)	1	23481-GCR-T00	1
9	Main shaft 5th gear (23T)	1	23491-GCR-T00	1
10	Counter shaft 5th gear (27T)	1	23501-GCR-T01	1
11	Main shaft 6th gear (25T)	1	23511-GCR-T00	1
12	Counter shaft 6th gear (26T)	1	23521-GCR-T00	1
13	Collar, 17mm	1	00-02-0125	1
14	Spline washer, 17mm	2	00-02-0023	5
15	Special spline washer, 17mm	1	00-02-0024	2
16	External circlip, 17mm	3	00-02-0005	5
17	Thrust washer B, 17mm	2	00-02-0056	1
18	Thrust washer, 13.5mm	1	00-02-0126	1
19	Thrust washer	1	00-02-0127	1
20	Set ring	1	00-02-0128	1
21	Gear shift drum	1	24301-NX2-T00	1
22	Gear shift drum pin	1	00-02-0051	1
23	Gear shift drum stopper plate	1	24435-NX2-T00	1
24	Left side gear shift fork	1	00-02-0129	1
25	Center gear shift fork	1	00-02-0134	1
26	Gear shift spindle	1	00-02-0094	1
27	Neutral switch rotor	1	00-02-0131	1
28	Starter idle gear (29T)	1	23531-149-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.

~ Installation Procedures ~

Disassembly

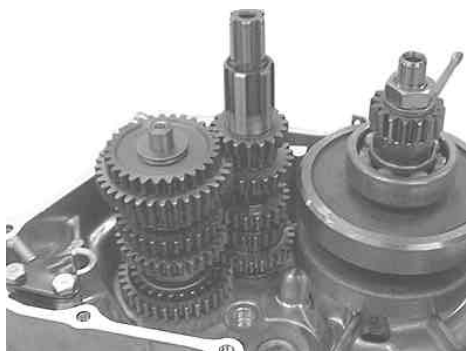
- 1 . Prepare a suitable work stand, on which please set a crankcase with its left-side case facing downward. Unscrew pivot bolts on a stopper arm, and remove the stopper arm and a return spring.
- 2 . Unfasten shift drum stopper plate bolts, and remove a stopper plate.
- 3 . Remove a gear shift spindle.
- 4 . Unfasten a return spring hook on a kick starter spindle, and remove a spring and a spring collar.
- 5 . Unscrew two bolts on a crankcase, and disassemble the right side crankcase, hitting it lightly with a plastic hammer. (Do not hit or touch the mating surfaces of the case with a screwdriver or the like.)
- 6 . Remove two dowel pins and a gasket.
- 7 . Remove a kick starter spindle.
- 8 . Pull a shift fork shaft out, and remove three shift forks from gears.
- 9 . Remove a shift drum.
- 10 . Remove a main shaft assembly and a counter shaft assembly from the crankcase at the same time.
- 11 . Remove a primary starter gear from the main shaft, and also a thrust washer (17.2 mm), a washer (12 mm), and a starter idle gear from the counter shaft. (A washer on the counter shaft is often apt to be left untouched on the bearings at the crankcase side, which please take note.)

Assembly

- 1 . Apply engine oil to the inside of the standard primary starter gear, which please install to a kit's main shaft. Then apply engine oil to the inside of a kit's starter idle gear, which please install to the counter shaft. Install a standard washer (12 mm) and a thrust washer (17.2 mm) to the counter shaft. (Apply a little grease to the thrust washer (17.2 mm), being careful not to drop it. Also, be careful of the directions of each washer.)



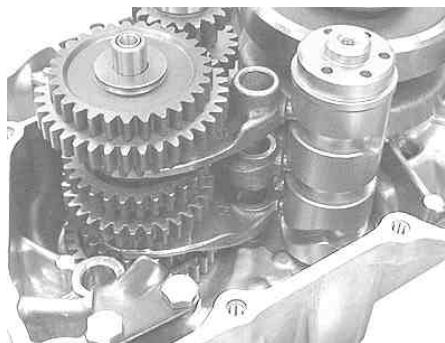
- 2 . Apply engine oil to each gear and friction part on the main and the counter shafts, both of which please fix, as a unit, to the left-side crankcase.



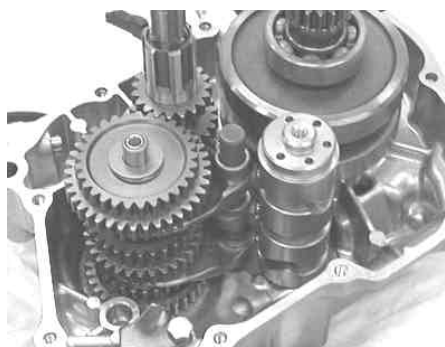
- 3 . Attach kit's center shift fork to the main shaft as a "C" mark on the fork faces up. Fix shift fork's convexity to a groove on the center of kit's shift drum. Then, install the shift drum to the crankcase. (imi rikai dekizu. mi-shuusei)



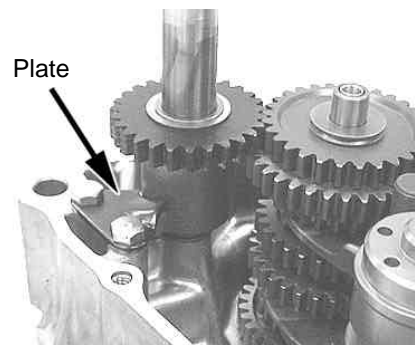
- 4 . Fix kit's left shift fork to the under part of the counter shaft, and also fix the stock shift fork to the upper part of the counter shaft, as "L" mark on the left fork and "R" mark on the stock fork faces up. And attach them to grooves on the shift drum.



- 5 . After applying engine oil to the shift fork shaft, install it to the crankcase. (Do not install it forcibly.)

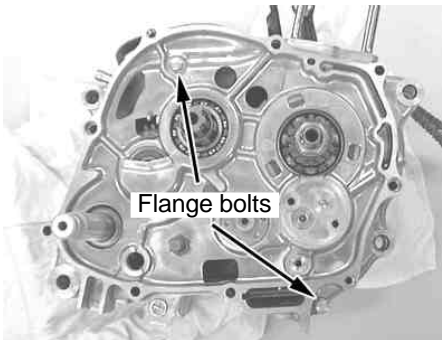


- 6 . Install the kick starter spindle to the case, and hang the claw of the starter ratchet on the hook of the guide plate.

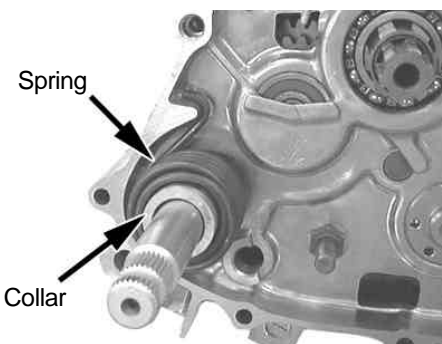


7 . Degrease the mating surfaces of the crankcase, and install two dowel pins and a new crankcase gasket to the crankcase. Then install the right side crankcase and fix flange bolts into two locations in the crankcase, and tighten these bolts one after the other in a few steps to the specified torque.

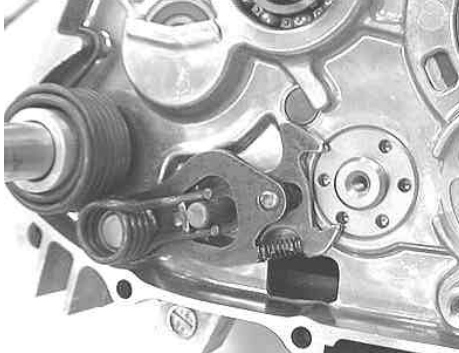
⚠ Caution: Apply the specified torque.
Torque: 12 N · m (1.2 kgf · m)



8 . Attach a return spring to the kick starter spindle. Insert the end inside the spring into a hole in the spindle, and fix a spring collar. (Aligning the notch on the spring collar with the spring end, attach the spring color.)

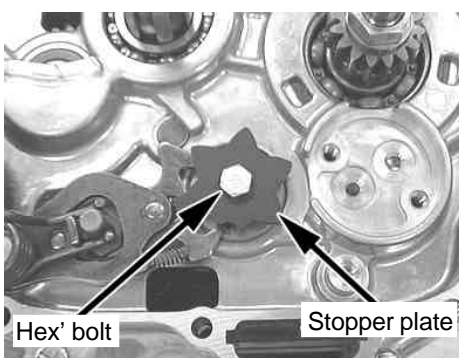
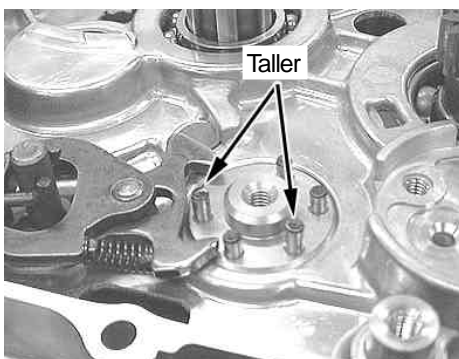


9 Remove a return spring and the shift arm spring from the standard gear shift spindle, and install them to a shift spindle in the kit. (Please be careful when removing a return spring because the tension is strong.) Apply engine oil to all the sliding parts of the shift spindle and install it to the crankcase. (Fix the shift spindle, aligning the return spring end with the stopper pin on the crankcase.)



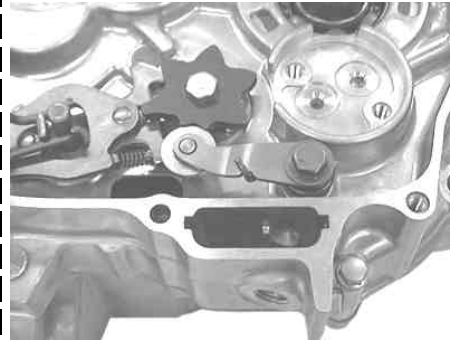
10 . Remove four shift drum pins from the stock shift drum. Then install all four of them and one from the kit to a shift drum. Attach a shift drum stopper plate to the shift drum, and apply screw locking agent to the stock hex' bolt and tighten it to the specified torque. (Two of the shift drum pins stand taller than others when fixed. Fix a stopper plate by fitting the holes into these two pins.)

⚠ Caution: Apply the specified torque.
Torque: 13 N · m (1.3 kgf · m)



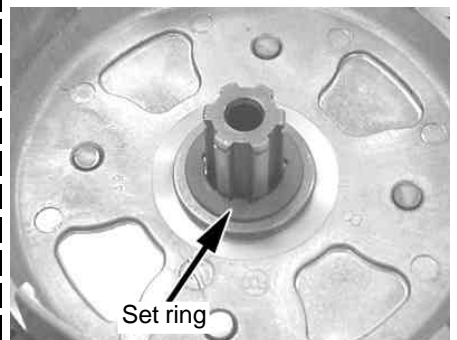
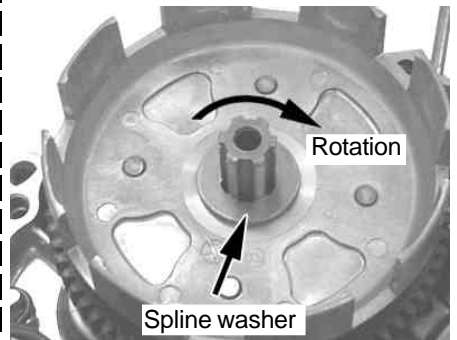
11 . Install a stopper spring and a shift drum stopper to the crankcase with pivot bolts.

⚠ Caution: Apply the specified torque.
Torque: 13 N · m (1.3 kgf · m)



12 . While rotating the main shaft by hand, rotate the hex' bolt which is fixing the shift stopper plate in order to check the operation in each shift (or, position).

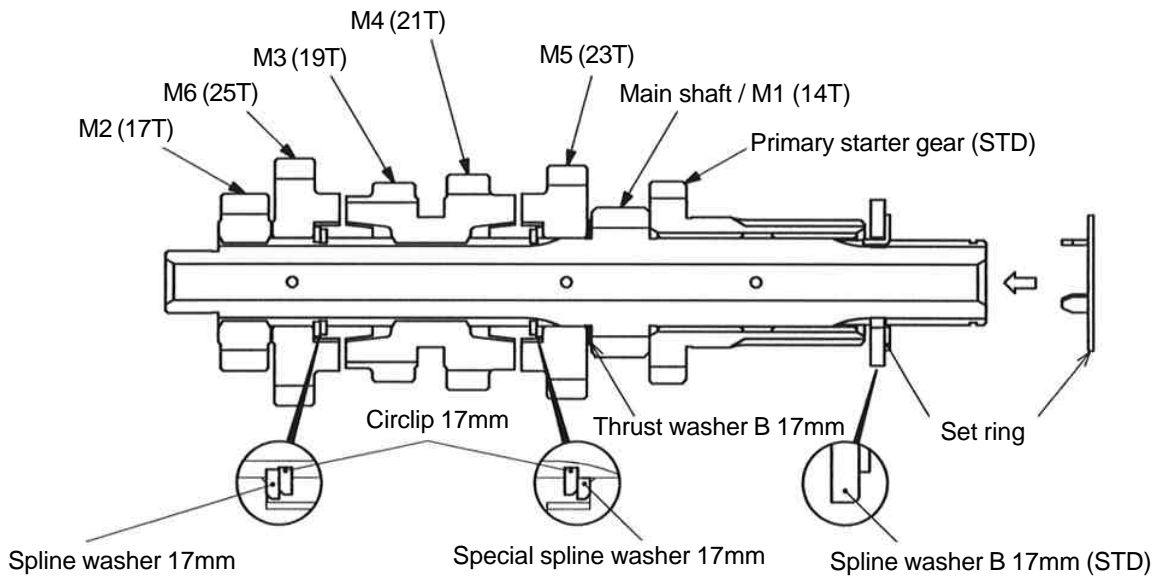
13 . Install the clutch outer to the main shaft. Install a stock spline washer B to the main shaft, being careful about direction, and rotate the spline washer 30 degrees. Fix a kit's set ring (17mm) to the main shaft, and fasten the spline washer.



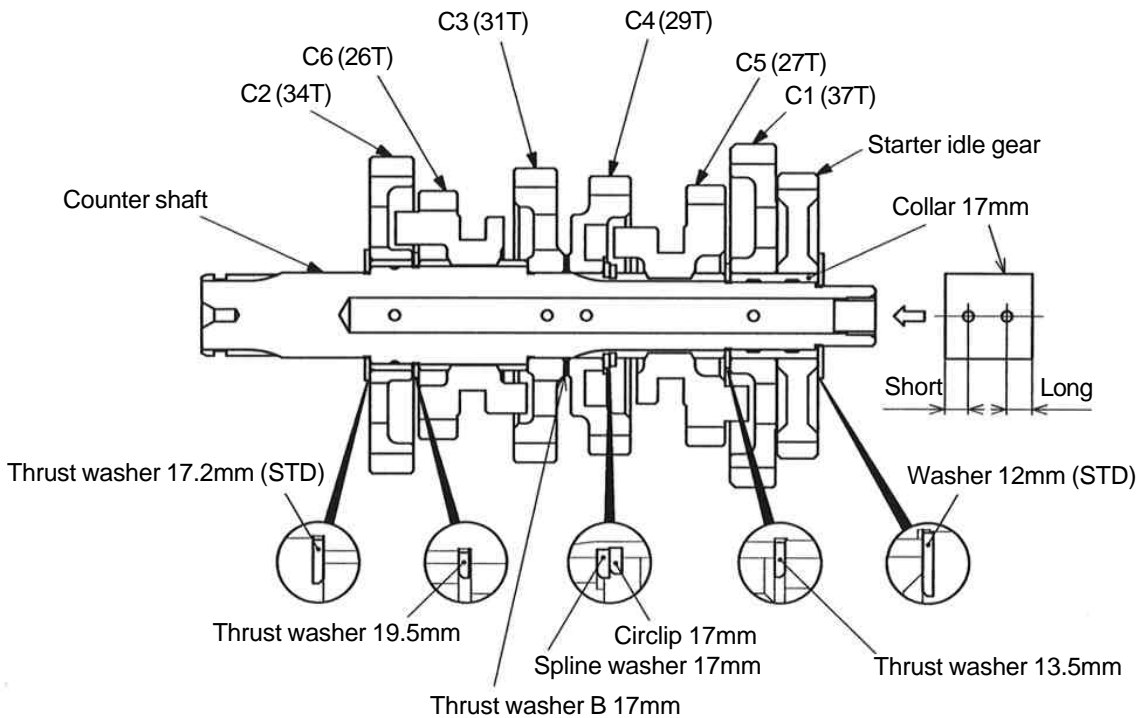
Procedures after this are just in the opposite order of the disassembly procedures.

~ Assembly Diagram ~

Main Shaft Assembly



Counter Shaft Assembly



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