



Instruction Manual for Hydro-Clutch Conversion Kit for KSR110

Item No. : 0 2 0 1 0 3 0 3

Compatible models and frame Nos:

KAWASAKI-made KSR110: KL110A-000001 ~

KLX110: LX110A-000001 ~

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

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 the manual.

We shall be held free from any responsibility or compensation whatsoever for any glitch in the parts other than ours if the glitch takes place after the installation and use of the kit.

If you make modifications to any product of the kit, 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'.

Please note that this kit is designed for exclusive use in the above-mentioned applicable models and frame numbers only and that it cannot be mounted on other models.

This kit is not for changing the transmission. So, the shift pattern remains to be a stock one: N 1 2 3 4

Installation of this kit requires the disassembly and assembly of the clutch and other work. Moreover, the use of Kawasaki's genuine special tools is specified in installing some parts. Do the installation work properly referring to the Kawasaki's genuine instruction manual for the right compatible motorcycle models.

Please consult with your local Kawasaki motorcycle dealer about Kawasaki's genuine service manual and their specified special tools.



CAUTION

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

- Please try to ride a motorcycle at legal speed on the public road, abiding by the law.
- Work only when the engine and muffler are cool. (Otherwise, you will burn yourself.)
- Do the installation with right tools. (Otherwise, breakage of parts or injuries to yourself may take place.)
- Always use a torque wrench to screw bolts and nuts tight and securely to the specified torque. (Otherwise, these parts may get damaged or fall off, resulting in accidents.)
- As some products and frames have sharp edges 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. (Otherwise, improper tightening may cause parts to come off.)
- Always use new gaskets, and packings. And check those parts to be reused for wear and damage. If you find worn or damaged parts, replace them with new ones.



WARNING

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

- Those who are technically unskilled or inexperienced are required not to do the work. (Improper installation because of insufficient skill and knowledge could lead to parts breakage and subsequently to accidents.)
- 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 while riding, stop riding immediately and park your motorcycle in a safe place. (Otherwise, the abnormality could lead to accidents.)
- Before doing work, make sure your motorcycle is secure on level ground for safety's sake. (Otherwise, your motorcycle could overturn and injure you while you are working.)
- 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 checking and performing maintenance of your motorcycle, 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.)

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.

Characteristics

This is a kit for changing the clutch of KSR110 to the manual type.

The change of the clutch to the manual type will give you real riding pleasure.

Install the hydraulic-method clutch release into the inside of the stock clutch cover.

~ Kit Contents ~



No.	Part Name	Qty
1	Clutch release cylinder COMP.	1
2	Clutch release piston COMP.	1
3	O-ring, 23.5x2.0	1
4	O-ring, 21.8x2.4	1
5	Clutch lifter rod	1
6	Banjo nut	1
7	Clutch release spring	1
8	Clutch cover gasket	1
9	Change shaft return spring (*)	1
10	Left master cylinder assembly	1
11	Clutch hose	1
12	Banjo (straight)	2
13	Air-free banjo bolt	1
14	Breeder screw	1
15	Breeder cap	1
16	Sealing washer, 10 mm	4
17	O-ring, S-16	1
18	Brake fluid	1
19	Shim ring, 9x20x0.5	1

The part marked with an asterisk (*) will not be used if this kit is installed onto KLX110.

~ Installation Procedures ~

Tools marked with  are Kawasaki's genuine special tools.

(Preparations)

- 1 . Check the kit contents.
- 2 . Make sure that the motorcycle is secure on a maintenance stand.

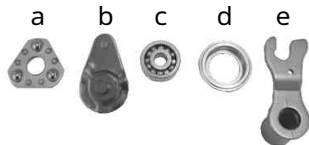
(The work around the clutch)


The pieces of work from 7 to 9 are not needed in case this kit is to be installed onto KLX110.

- 1 . Drain engine oil.
- 2 . Loosen a locking nut for adjusting the clutch on the clutch cover. Detach a kick starter arm, brake pedal and others to remove a clutch cover.


3 . Detach the following parts:

- a. Release ball assembly
- b. Release cam
- c. Ball bearing
- d. Ball-bearing holder
- e. Release lever



- 4 . Holding a primary clutch with a primary clutch holder ( 1), unfasten a primary clutch hub nut. And then, detach a primary clutch hub.

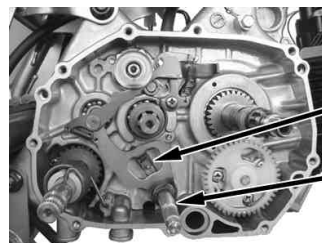
1. Special tool: Primary clutch holder, Item No. 57001-1507

- 5 . Holding a secondary clutch with a clutch holder ( 2), unfasten a secondary clutch hub nut.

2. Special tool: Clutch holder Item No. 57001-1508

- 6 . Detach the primary and secondary clutches at the same time. Be careful not to detach a one-way clutch from the primary clutch.

- 7 . Detach a change pedal on the left, and remove a change shaft and change shaft return spring.



Change shaft return spring

Change shaft

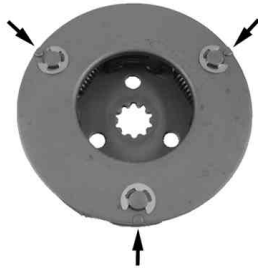
- 8 . Replace the stock change shaft return spring with the one included in the kit, and assemble the change shaft.

Beware of the direction in which the spring is to be installed. In assembling, be careful not to get injured by the spring.

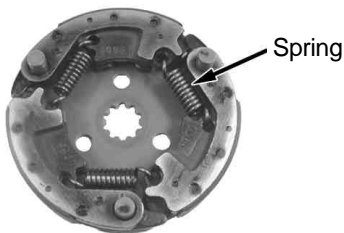
- 9 . Install the change pedal.

(Primary clutch)

- 1 . Detach three E-rings and disassemble the primary clutch hub assembly.



- 2 . Detach three springs, and re-assemble the primary clutch hub assembly.

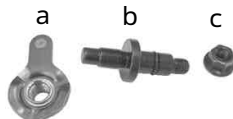


(Clutch Installation)

- 1 . Insert a secondary clutch to the counter shaft, and a primary clutch to the crank shaft.
- 2 . Holding the secondary clutch with a clutch holder (2), fasten a secondary clutch nut.
Torque: 72 N · m (7.3 kgf · m)
- 3 . Holding the primary clutch with a primary clutch holder (1), fasten a primary clutch hub nut.
Torque: 72 N · m (7.3 kgf · m)
- 4 . Attach the detached ball bearing and ball bearing holder to the secondary clutch.

(Installation of Clutch Release Cylinder)

- 1 . Detach the following parts from the clutch cover:
 - a. Release plate
 - b. Release shaft
 - c. Locking nut

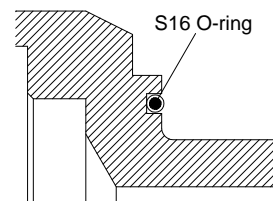
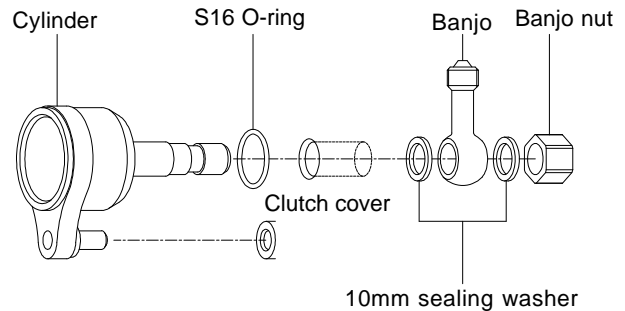


- 2 . Fix and fasten temporarily to the clutch cover the clutch release cylinder COMP. (hereinafter referred to as "release cylinder"), S16 O-ring, banjo, 10mm sealing washer, and banjo nut.
Be sure to fix the O-ring right in the groove.
Fit the pin of the release cylinder right into the hole in the clutch cover.

- 3 . First fix an angle to attach the banjo, and then tighten the banjo nut to the specified torque.

Torque: 15 N · m (1.5 kgf · m)

Please do follow the specified torque to tighten the banjo nut.
The weaker torque than the specified one will cause oil leak.

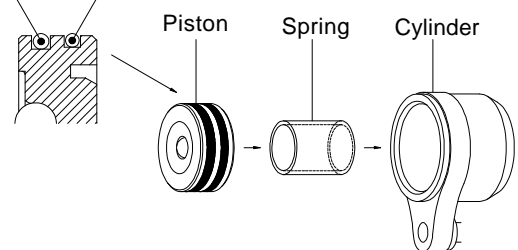


Attach the O-ring.

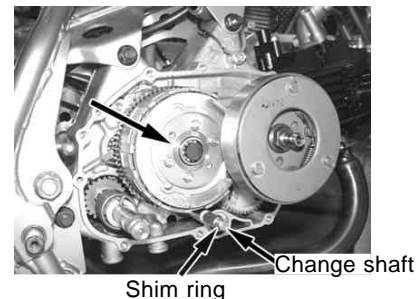
- 4 . Apply grease to the O-ring of the clutch release piston.
Attach the clutch release spring to the piston and then insert it to the release cylinder.
After the disassembly of the clutch release cylinder, never reuse the old O-ring but replace it with a new one.

21.8x2.4 O-ring

23.5x2.0 O-ring



- 5 . Attach the clutch lifter rod to the ball bearing on the secondary clutch.



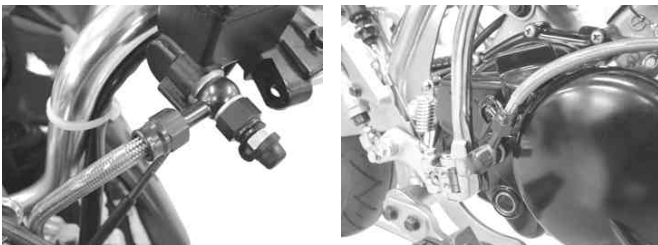
Attach the shim ring to the change shaft.

(Clutch Cover Installation)

- 1 . Apply grease to the oil seal lip on the kick shaft of the clutch cover.
- 2 . Degrease the mating surfaces of the crankcase, and attach two dowel pins and clutch cover gasket to the crankcase.
- 3 . Attach the clutch cover. Temporarily fasten it to the crankcase with clutch cover screws, and tighten it to the specified torque in the specified order starting from the center of the crankcase. In tightening, check that the clutch lifer rod is not off the ball bearing on the secondary clutch.
As for the order of tightening screws, please see the service manual.
Torque: 5.2 N · m (0.53 kgf · m)

(Master Cylinder Installation)

- 1 . Detach a mirror and the mirror holder on the left side.
- 2 . Attach a left-side master cylinder to the handle with a socket cap screw, and tighten the screw to the specified torque.
Torque: 10 N · m (1.0 kgf · m)
- 3 . Attach a sealing washer, banjo, and sealing washer in this order to the left-side master cylinder with the air free banjo and tighten them temporarily.
Attach a clutch hose to each banjo. After the angle to attach the banjo is fixed, and after the way to route the clutch hose is decided, tighten the banjo bolt and the fitting on the clutch hose to the specified torque.
Torque:
for banjo bolt : 13 ~ 15 N · m (1.3 ~ 1.5 kgf · m)
for fitting : 5 ~ 6 N · m (0.5 ~ 0.6 kgf · m)
In routing the clutch hose, see to it that the clutch hose does not interfere with the muffler or get in the way of steering.



- 4 . Fix the breeder screw, attached with the breeder cap, to the air free banjo bolt.
Torque: 5 N · m (0.5 kgf · m)

(Letting out the air)

- 1 . Tighten securely the breeder valve, fill the reservoir with brake fluid, and attach a diaphragm and set plate.
- 2 . Apply the clutch lever repeatedly, and fill the clutch release, clutch hose and master cylinder with brake fluid, paying attention to the level of the fluid amount. Repeat this operation till no bubbles are produced from the hole in the reservoir (or, to the extent that you feel resistance in applying the lever).
- 3 . Repeat the gripping and releasing of the clutch lever a few times. While gripping the clutch lever, give a 1/2 turn to slacken the breeder screw, and tighten it up again.
Don't release the lever until the breeder screw is tightened up.
- 4 . Slacken your grip on the clutch lever slowly, and when the clutch is fully back at its original position, keep the lever untouched for a few seconds.
- 5 . Repeat the pieces of above work No.3 and 4 until no more bubbles are produced in the breeder screw or reservoir.
- 6 . Tighten the breeder screw.
Torque: 5 N · m (0.5 kgf · m)
- 7 . After letting out the air, check the brake fluid level. Add the fluid, when necessary.
- 8 . Attach the reservoir cover.

Caution : If the air is not removed completely, it's likely that the clutch doesn' disengage when the engine gets hot to high temperatures.

(After Installation)

- 1 . First, make sure that the drain bolt is tightened to the **torque of 29 N · m (3.0 kgf · m)**, Then add 1,100 cc of engine oil and attach the hole cap.
Apply engine oil slightly to the O-ring of the hole cap.
When the crankcase is not disassembled (at the time of oil change), fill 900 cc of engine oil, and fill 1,000 cc of engine oil when the oil filter is to be exchanged.
- 2 . Detach the spark plug, and push down the kick a few times so the engine oil gets circulated all around the engine. And then, attach the spark plug.
- 3 . With the engine turned off, shift the transmission to the first gear. Then, gripping the clutch lever, check that the rear wheel rotates when you move the mahine, and that the rear wheel does not rotate when you have released the clutch lever.
When the engine is turned off and the transmission is in gears other than neutral with the clutch being not disengaged, and when you move the motorcycle backward, the rear wheel will rotate without locking.
This is a characteristic of the one-way clutch of a centrifugal clutch, and this is not a malfunction of the clutch.
- 4 . Shift the transmission into NEUTRAL, and start the engine. Then check each section for oil leak. If nothing is wrong, do a test run at slow speed in a safe place to check the clutch operation.

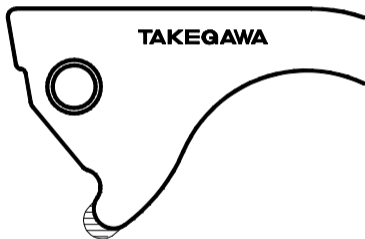
SPECIAL PARTS TAKEGAWA

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About the use of master cylinder

When you dismount the lever from the master cylinder, the looseness of the piston and the lever might be changed.

In that case, rasp the shaded area of the lever and adjust.



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