There are 2 ways two ways of working on the installation of your transmission, either in the bike or out of the bike (on the work bench). It would appear at a 1st chance that it would be less work to do the change out in the bike however it generally is easier, quicker and better to remove the engine and do the change out on the work bench. This will also allow you to survey everything in the surrounding areas properly in which you may catch something that would otherwise go undetected.
Before installing the new transmission it is worth inspecting all related parts during the tear down and installing new upgraded components. These include generator drive bearing, seal, bushing, King clutch, etc. Many of these upgrades can be found in our online catalog “Technical” sections. Ensure bosses that the 4 transmission feet fit against are perfectly clean. Remove transmission top from body so as the 2 top transmission mounting bolts can be accessed. Place a clean rag or paper towels in the top of the transmission just in case something is accidentally dropped.

Fit transmission to engine but leave bolts loose. Align transmission to engine by either using a straight edge or straight inner primary cover. If using an inner primary cover (without gaskets at this point) fit the bolts that hold it to the engine flange. Fit bolts through the inner primary cover and the transmission flange. This will now properly align the engine to the transmission. Tighten 4 bolts that hold the transmission to the engine ensuring they are sitting flat. If they are not sitting flat or there is a gap, it will be necessary to use the Kiwi shim kit p/n 22B59/0. Loosen inner primary bolts that fit through the transmission flange to double check with a feeler gauge that it is still sitting flat against each other. If not, loosen the 4 transmission to engine bolts and repeat this procedure until alignment is achieved.

Remove inner primary cover. Fit engine sprocket to drive shaft. Fit clutch sprocket to transmission (without its locating key and lock washer for now) and tighten nut. Always ensure mating surfaces are spotlessly clean. No chain is to be fitted at this time. Check alignment with a straight edge by placing it against the teeth of the sprocket. As a double check it can be placed on the outside of the sprockets but ultimately the trueness must be between the sprocket teeth themselves. If alignment is off fit the supplied shims behind the clutch sprocket until alignment is achieve.

Remove sprockets. Fit inner primary to engine and transmission with their respective gaskets. Originally there were no gaskets fitted between the engine and transmission flanges however since this is a common leakage area we designed gaskets to eliminate any chance of an oil leak. Gasket p/n KI-10106 engine, KI-10107 transmission.
Fit the 3 countersunk screws into position but make sure a good sealant is applied under the screw heads otherwise oil leaks will be present. The next step is to prefit the generator drive shaft in order to get the sprocket centered between the chain side links using the appropriate size thrust washer.

While at this point it is worth checking the condition of the generator drive shaft sprocket rivets. If they are loose or if the sprocket has shown signs of side wear from the chain it is suggested to replace the rivets. At the time of writing there are some sprockets and shafts on the market that are soft as they have not been heat treated. The easiest way to check for this at home is by running a file over it. If it marks either the shaft or sprocket, they are soft and should not be used.

Fit the thickest thrust washer to the generator drive shaft and fit shaft into its chain track.

Slide sprockets back into position (w/o keys) and check generator drive sprocket alignment. The sprocket MUST be centered between the links. To achieve this use 1 of the 3 thrust washer thickness that is in the package. This sprocket must be centered and have no side loading on it otherwise the rivets will come loose and cause damage during operation.

Remove chain/sprocket assembly.

Clean engine sprocket and drive shaft tapers with lacquer thinner. Oil must never be present on tapers.

Fit woodruff key to drive shaft and roller key to transmission shaft.

Slide assembly back into position ensuring the generator drive assembly also goes in at the same time.

Tighten sprockets onto their shafts using their respective lock washers. Torque is 100 ft lbs. Clutch sprocket lock washer only requires 1 tab to locate into the nut slot.
Install clutch hub over the splined shaft and fit the external snap ring to the splined shaft. Fit snap ring hat and the large inside diameter snap ring. It may be necessary to pull the clutch hub towards you in order to get the OD groove to align up.

Check primary shoe spring to see that it is not broken. Since this is a common problem, we recommend replacing it at this time. Fit primary chain shoe and lever assembly into position. Install clutch plates ensuring the gap between the 2 pressure plates when installed is between 1/8 and 3/16". Use Kiwi clutch compression installation tool #23T269

It is highly recommended to replace the pressure plate springs at this time however over the years some replacement springs on the market have too little tension which can cause the clutch to slip.
Fit outer cover ensuring both the perimeter gasket and the small penny sized gasket (fits over protruding boss in center of inner cover) bolt holes align up properly.

Tighten screws evenly.

To obtain the correct end float, wind adjuster screw all the way in until it bottoms out and then back it out ¼ to ½ turn. Pull back and forth on shaft to double check end float. NEVER adjust shaft end float while engine is running. Due to the rotation of the shaft it will pull the adjuster bolt in and explode your primary. Big bucks

Adjust chain tension by undoing the locknut and turning the screw inside of it. Chain slack should be 3/8” when viewed through the inspection plug hole. It is recommended to use Loctite 567 teflon paste on the adjuster screw where it screws into the inner primary cover in order to reduce any chances of an oil leak.

Oil quantity: 10-12 fl oz. NOTE: The oil level plug in front and just under the output sprocket is NOT to the correct level for this transmission. At this level it will only have approx 7-8 oz.

Oil type: 85/90 synthetic gear oil.

Replace transmission lid by having the gears in neutral and the drum cam (in lid) in its neutral position. Fit lid using a gasket or gasket sealant. We recommend using a gasket which is the same one we designed for the stock 3 speed transmission p/n KI-10108.
Please note that more clutch and generator drive technical information and exploded view drawings can be found in the "Clutch" and "Generator Drive" technical sections within our website.