Rekluse Motor Sports

The z-Start™ Clutch

YZ/WR 426F

Installation Guide

z-Start Revision 3.000

RMS173 – YZ/WR 426F

191-273

Manual Revision: 020905

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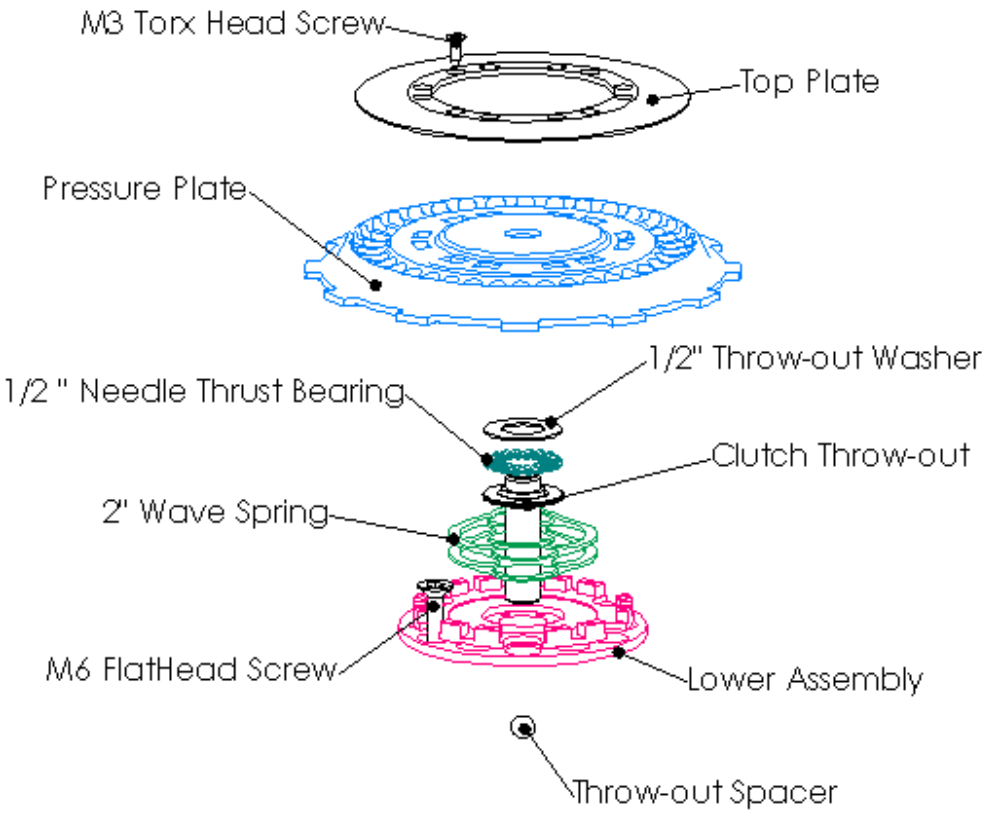
Required Tools

8mm socket	2 Sets of feeler gauges
10mm socket	Inch Pound Torque Wrench
4mm allen key socket	Torx T10 driver tip (included)
3mm allen	Blue Loctite 243 (oil resistant)
1/4 inch driver (for included Torx T10 driver tip)	

z-Start Overview



Note: The Lower Assembly is packaged underneath the Pressure Plate and held in place with two screws through the Top Plate.

Included Parts for the z-Start Clutch

Note: spare screws, balls and shims may be included with your clutch

Top Plate	6 x M6 Flat Head Screws
Pressure Plate	2" (51mm) Wave Spring (CS200L1)
Lower Assembly	12 x M3 #10 torx screws
Clutch Throw-out	30 x 3/8"(9.53mm) balls
½" (12.7mm) Throw-out Needle Thrust Bearing	External Adjuster Bolt and 2 External Adjuster Nuts
½" (12.7mm) Flat Throw-out Thrust Washer	Light External Extension Spring
5 x .055 (1.4mm) Drive Plates	Medium External Extension Spring
6 x M6 Threaded Studs (to assist mounting)	2 Clutch Cover Gaskets
48 x .010" (0.25mm) Mounting Shims	

Basic z-Start Clutch Operation

The z-Start Auto Clutch functions through centrifugal force. As engine RPM increases, the balls contained in the z-Start Pressure Plate travel up the ball ramps and push against the Top Plate. This action forces the Pressure Plate to engage the clutch pack.

Installation Tips

In order for the z-Start Clutch to perform properly, it must be mounted properly.

- Measuring and maintaining the Installed Gap is **critical**. If the Installed Gap is too big the clutch will slip excessively and cause rapid clutch wear. If the Installed Gap is too small, the clutch will drag and cause engine stall.

- Recognize that the Pressure Plate travels along the tabs of the Lower Assembly as it engages and disengages. Anything preventing this travel will prevent full engagement and cause the clutch to slip excessively.

- If you will be installing the Rekluse *Perch Adjuster* as a manual override for your z-Start Clutch, it is critical to have the cable slack adjusted properly. First complete the installation of the z-Start Clutch using this manual and ensure proper installed gap. Then refer to the Rekluse *Perch Adjuster* manual to ensure proper cable slack adjustment.

- ***Be very careful not to drop any screws, washers, balls, or springs into the crankcase opening!*** It is surprisingly easy to drop a little screw or washer down into your crankcase. It is not always so easy to get it out. Make sure all parts going in and coming out are accounted for before you finish the installation. A strong magnetic probe can often be used to retrieve little parts if you happen to drop something in.

Bike Preparation and Disassembly

1. Unhook the return spring on the clutch actuator arm located on top of your engine case (not all bikes have these). Use a flat blade screwdriver to push the hook of the spring off of the clutch actuator arm so the spring no longer pushes against the clutch actuator arm.

   If you did not purchase the Rekluse *Perch Adjuster*, remove the clutch cable, clutch lever and rubber clutch perch cover. If you have an after-market hot-start lever you can remove your clutch perch. If you did purchase the Rekluse *Perch Adjuster* only disconnect your clutch cable at your clutch lever.

2. Turn the gas petcock to the off position and route the gas cap vent tube into the air. When you lay the bike over on it's side, the gas in the bowl will drain out of the overflow tube. Be prepared to catch the gas in a suitable container to prevent a fire hazard.

3. Lay the motorcycle over on its left side. Remove the cotter pin on the back of the rear brake lever bolt and remove the bolt so you can rotate the rear brake lever away from the clutch cover.

4. Remove the clutch cover bolts with a 8mm socket and carefully remove the clutch cover.

5. Using a 10mm socket, remove the bolts holding the stock pressure plate to the inner clutch hub. Lift off the pressure plate and the clutch lifter assembly. The clutch lifter assembly consists of the ***Clutch Throw-out***, a **bearing**, and a ***washer.***

Stock Pressure plate, stock throw-out, 6 bolts and springs are not reinstalled.

Note: Make sure the stock throw-out ball spacer remains in the transmission output shaft.

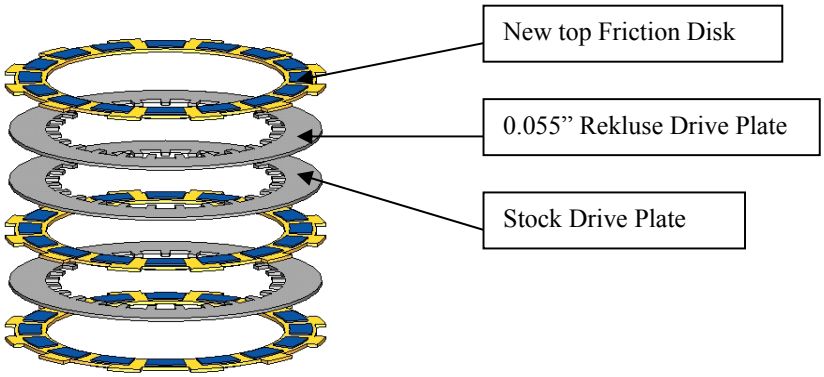
6. Remove the clutch boss spring form the bottom of your clutch pack. This will require you to pull out your entire clutch pack, but keep it in order because once you've removed the clutch boss spring you need to re-insert your clutch pack in the exact same order.

Note: The clutch boss spring consists of two rings, one bevel shaped and one flat, that locate in the inner diameter of the bottom friction disk. **You must remove both rings.**

Clutch Pack Configuration

7. Remove the top friction disc and top steel drive plate (these are not re-installed). Take one *Rekluse .055 drive plate* and stack it under the new top most friction disc on top of the stock .047 drive plate. **See following picture.**

Note: At this point you will have 1 stock friction disk, and 1 stock drive plate removed from you clutch pack.



Warning: The top of the clutch pack must be a **friction disk**.

Installing the Lower Assembly

8. Place the included M6 studs into the bike's center clutch standoffs and place 7 Mounting Shims over each standoff. **See picture below.**

   Install M6 studs and carefully place exactly 7 *Mounting Shims* over each stud.

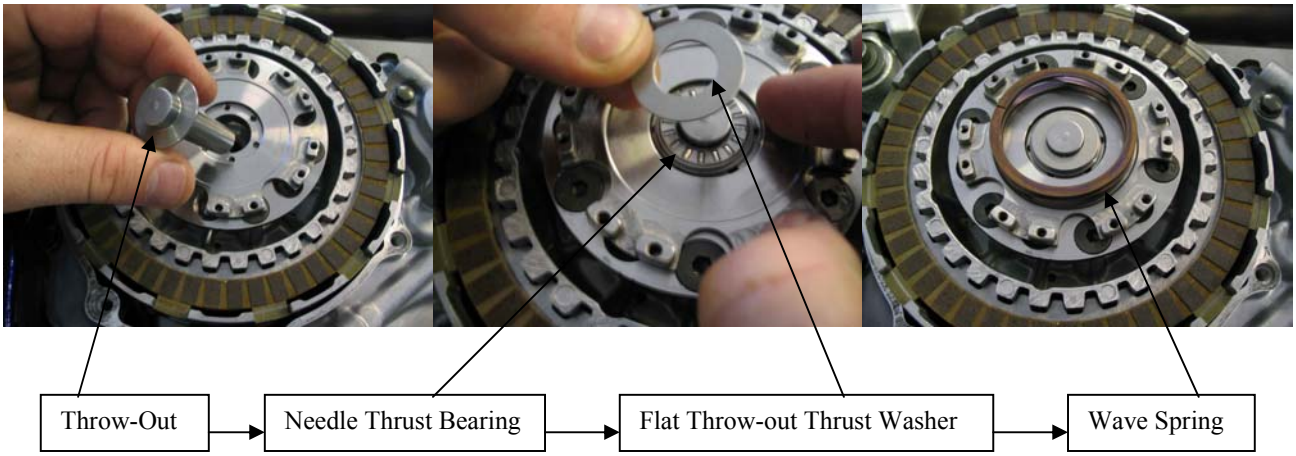
9. Place the z-Start *Lower Assembly* over the M6 Threaded Studs so the Threaded Studs pass through the corresponding set of 6 countersunk holes in the z-Start *Lower Assembly.*

10. Carefully remove M6 Threaded Studs one at a time and replace them with M6 Flat Head Screws**. Apply a small amount of blue Loctite 243 to each screw** and torque to 96 inch pounds with a torque wrench. **Make sure none of the M*ounting Shims* fall out from under the z-Start *Lower Assembly*.** After the screws are torqued-down, check to ensure the top part of the *Lower Assembly* spins freely.

Assembling the Rekluse Throwout, Pressure Plate, and Top Plate

11. Guide the ***Rekluse Clutch throw-out*** into the hole in the transmission input shaft. Be sure that the stock spacer ball is in place.

    Place the *½" Needle Thrust Bearing* on top of the *Rekluse Throw-out* followed by the *½" Throw-out Thrust Washer*. Place the *Wave Spring* on top of the Lower Assembly. **See following pictures.**



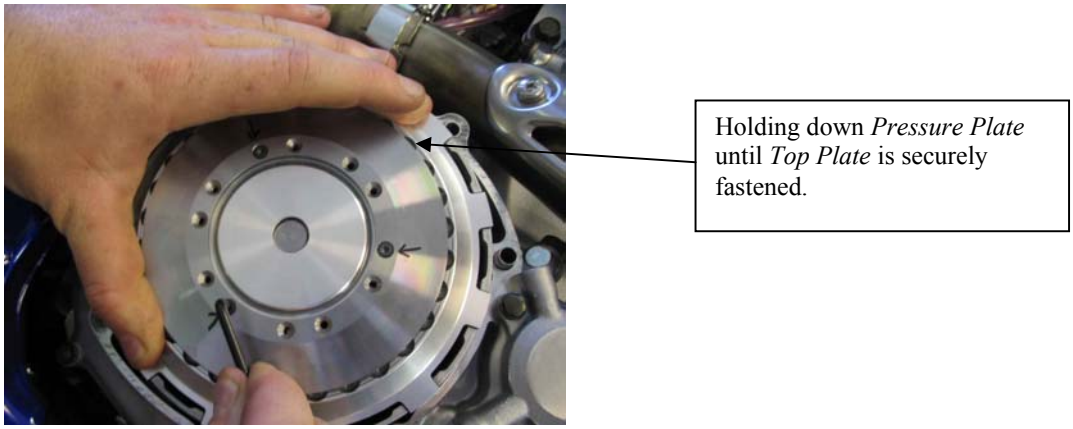
Warning: Perform the next step away from the bike to keep the balls from falling into the transmission.

12. Place a small amount of oil into the ball slots of the *Pressure Plate* and insert the 30 *3/8" Balls.*

13. Place the *Pressure Plate* with the 30 Balls in place over the z-Start *Lower Assembly*. Index the outer tabs of the *Pressure Plate* into the windows of the clutch basket. **The outer tabs of the Pressure Plate must rest in the same clutch basket windows that the outer tabs of the friction disks do.**

    Also insure that the tabs of the *Lower Assembly* pass through the associated cut-outs in the *Pressure Plate.* Make sure the top of the *Rekluse Throw-out* assembly passes through the hole in the center of the z-Start *Pressure Plate*. **See following picture.**

14. While holding the *Pressure Plate* down place the *Top Plate* over the *Pressure Plate* and fasten it to the tabs of the Lower Assembly with three of the M3 screws, through the three marked holes in the *Top Plate*. Lightly tighten each screw using a 1/4 inch driver and the included Torx T10 driver tip. **See following picture.**

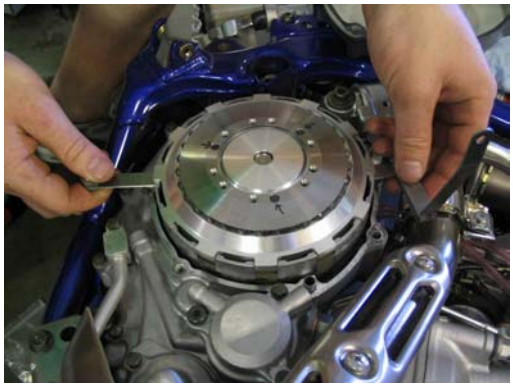


Note: You will have to overcome the z-Start *Wave Spring* and hold the Pressure Plate down until the 3 screws are securely fastened in order to tighten the Top Plate down properly.

Determine the installed gap of the Z-Start

15. Measure the installed gap of the z-Start. Two sets of feeler gauges are required to measure the Installed Gap. The feeler gauges must be placed between the top most **friction disk** and the top-most **steel drive plate** in the clutch pack 180 degrees apart. **See following pictures**.

    Note: Insert the 2 sets of feeler gauges directly across from one another (180 degrees apart) to avoid the clutch pack from rocking resulting in an inaccurate measurement. Find the thickest feeler gauge that still slides back and forth with slight resistance.



The installed gap must be between .030" (0.76mm) and .037" (0.94mm). If the gap is correct, move on to the next step. If the installed gap measurement is off, then the installed gap needs to be adjusted due to manufacturing variances in the bike's center clutch. If the measurement is *greater than .037"* replace one stock .047" (1.2mm) drive plate with a *Rekluse .055" (1.4mm) drive plate*. If the measurement is *less than .028"* replace one *Rekluse .055" (1.4mm) drive plate* with a stock .047"(1.2mm) drive plate.

Note: Be sure to review the included Break-in and Maintenance Guide for clutch pack wear adjustments.

Final Installation Steps

Note: Use 243 Loctite (Blue, oil resistant) to secure all M3 Torx screws

16. Using a small amount of Blue Loctite 243, install the rest of the M3 torx head screws and torque to 10 inch/pounds. 10 inch-pounds requires a good crank with the included Torx T10 driver tip, but be careful not to bend the head of the T10 driver tip. Remove the three marked M3 screws, add Loctite, and tighten.

17. Re-install your clutch cover with the 2 included Rekluse *Clutch Cover Gaskets* (stacked together). Hand-tighten each of the clutch cover bolts, then torque to 6 to 8 foot/pounds in 2 steps.

Warning: Both gaskets must be used or considerable clutch damage will result.

18. If you did **NOT** purchase the z-Start Perch Adjuster continue on to **step 19**.

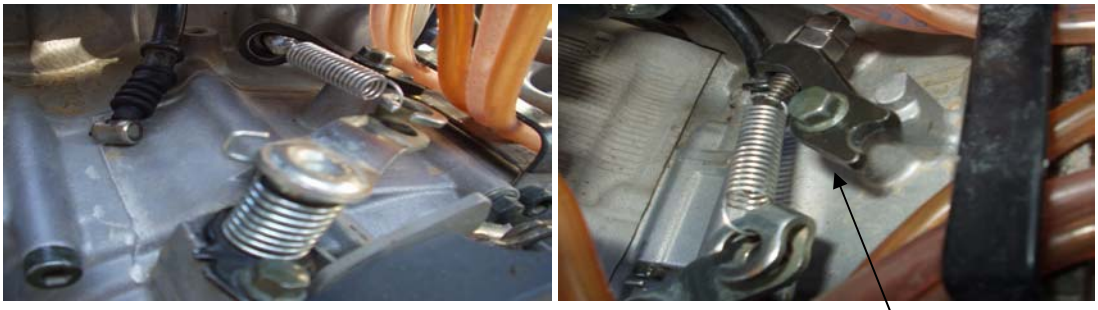
    If you did purchase the z-Start Perch Adjuster, proceed to the z-Start Perch Adjuster Instructions included with the Perch Adjuster.

WARNING: After a 20 minute break-in period, the clutch plates will seat in and you must re-measure the Installed Gap to guarantee the Installed Gap is within the prescribed range—make drive plate adjustments if necessary. See step 15. Clutch break-in re-measurement of the Installed Gap is necessary whenever new clutch plates are installed.

WARNING: Refer to the "Safety Warnings" and "Break-in Tuning and Maintenance Guide" before operating the z-Start clutch.

19. Basic External Adjuster Install outlined below.

Basic External Adjuster Install



Note: Insure the return spring on the actuator arm is unhooked and no longer applying force to the actuator arm.

An extension spring is used to set the resistance on the pressure plate, which sets the engagement RPM of the z-Start Clutch. Two extension springs are provided in your kit:

- The light spring will give a narrow adjustment range for RPM engagement settings and will engage the clutch rapidly.
- The medium spring will allow for a wider range of RPM engagement settings and a medium engagement rate.

In order to provide the necessary tension to the spring, you must reset the cable support bracket so there is more space between it and the clutch actuator arm**. See above picture.**

Slip one end of the spring into the portion of the bike's clutch actuator arm that holds the clutch cable. Thread the other end of the spring into the *External Adjuster Bolt*. Slide the *External Adjuster Bolt* into the clutch bracket and screw down one of the nuts onto the adjuster bolt.

Adjust your engagement by loosening the nut for a lower RPM Engagement or tighten the nut for a higher RPM Engagement. After making your initial adjustments, use the other nut to lock the *External Adjuster Bolt* into place.

Note: After adjustment is complete and spring anchor is set correctly remove spring and anchor, tighten lock nut against adjustable nut and put spring and anchor back in place, attach spring to clutch arm, **see pictures above.**