

Rekluse Motor Sports

The z-Start™ Clutch

CR 500R

Installation Guide

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z-Start Revision 3.000
RMS117 – CR 500R

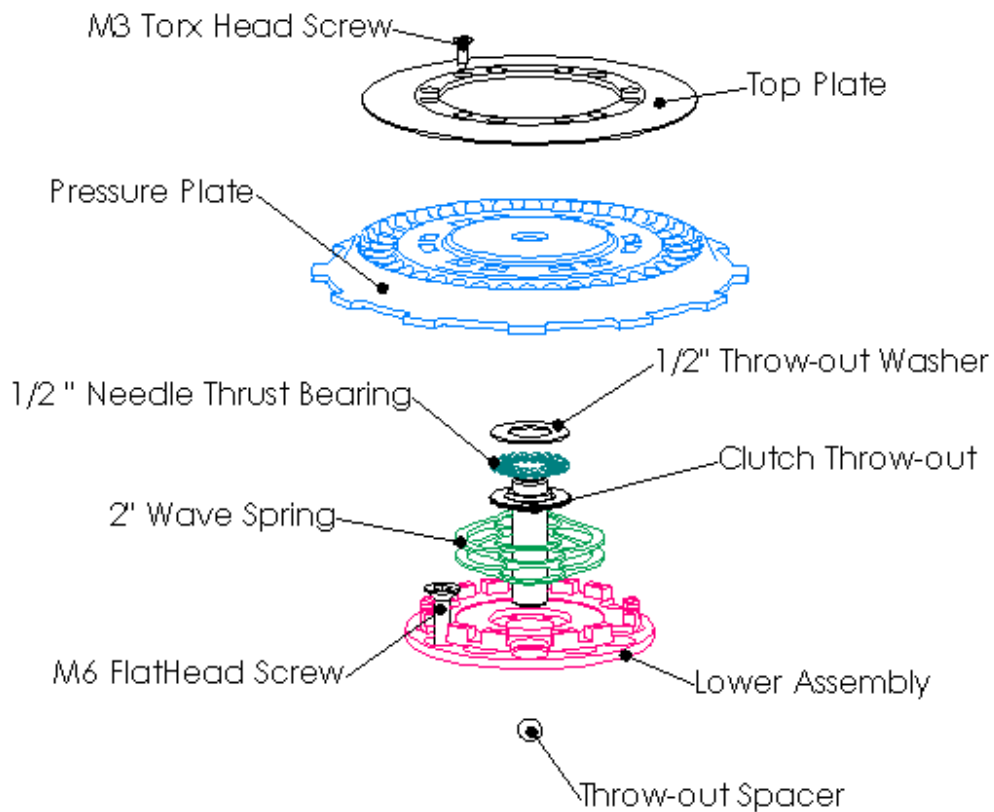
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Required Tools

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	2" (51mm) Wave Spring (CS200L1)
Pressure Plate	12 x M3 #10 torx screws
Lower Assembly	15 x 3/8" (9.53mm) steel balls
4 x .062 (1.6mm) Drive Plates	15 x 3/8" (9.53mm) Tungsten Carbide balls
6 x .047 (1.2mm) Drive Plates	18 x .010" (0.25mm) Mounting Shims
7/32" (5.56mm) ball Throw-out Spacer	1 Clutch Cover Gasket
6 x M6 Flat Head Screws	
6 x M6 Threaded Studs (to assist mounting)	

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. Disconnect your clutch cable from the perch and 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.
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**. Keep the clutch throw-out in its original configuration because it will be re-installed later.
Stock Pressure plate, and 6 bolts and springs are not reinstalled.

6. Remove the center clutch hub and replace with the CRF450 center clutch hub (obtained separately). To do this you will need to remove your clutch pack, but keep it in order because it will be re-installed.

Clutch Pack Configuration

7. Remove 5 of the stock .062 (1.6mm) aluminum drive plates from the clutch pack and replace them with 5 of the provided *Rekluse .047 (1.2mm) steel drive plates*. The remaining two stock aluminum drive plates need to be replaced with 2 of the provided *Rekluse .062 (1.6mm) steel drive plates* (Remaining *Rekluse .062 (1.6mm) steel drive plates* are used for clutch pack wear adjustment).

Note: At this point you will have 7 stock drive plates 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 2 Mounting Shims over each standoff. **See picture below.**

Install M6 studs and carefully place exactly 2 *Mounting Shims* over each stud.

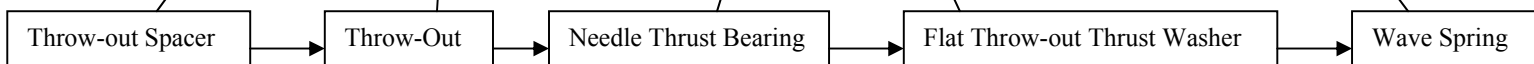


9. Place the z-Start *Lower Assembly* over the M6 Threaded Studs so the Threaded Studs pass through the corresponding set of 6 countersunk holes in the z-Start *Lower Assembly*.
10. Carefully remove M6 Threaded Studs one at a time and replace them with M6 Flat Head Screws. **Apply a small amount of blue Loctite 243 to each screw** and torque to 96 inch pounds with a torque wrench. **Make sure none of the *Mounting Shims* fall out from under the z-Start *Lower Assembly*.** After the screws are torqued-down, check to ensure the *Rotating Hub* spins freely.

Assembling the Rekluse Throwout, Pressure Plate, and Top Plate

11. Guide the $\frac{7}{32}$ " **Rekluse throw-out spacer ball** followed by the **Stock Clutch throw-out** into the hole in the transmission input shaft. Be sure that the spacer ball is in place between the Clutch throw-out and the throw-out shaft.

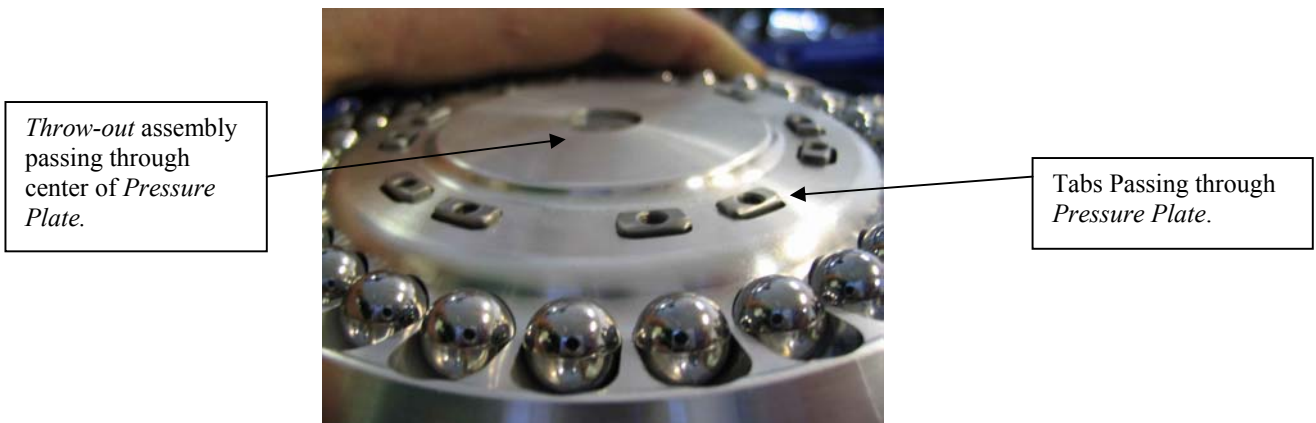
Place the $\frac{1}{2}$ " **Needle Thrust Bearing** on top of the **Stock Throw-out** followed by the $\frac{1}{2}$ " **Throw-out Thrust Washer**. Place the **Wave Spring** on top of the Lower Assembly. **See following pictures.**



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 15 $\frac{3}{8}$ " **Steel Balls** and the 15 $\frac{3}{8}$ " **Tungsten Carbide Balls** alternating Steel and Carbide Tungsten Balls evenly.
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.**



Holding down *Pressure Plate* until *Top Plate* is securely fastened.

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 should measure between .030" (0.76mm) and .042" (1.07mm). 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 .042"* replace one *Rekluse .047" (1.2mm) drive plate* with a *Rekluse .062" (1.6mm) drive plate*. If the measurement is *less than .029"* replace one *Rekluse .062" (1.6mm) drive plate* with a *Rekluse .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 T10 driver, 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 included Rekluse *Clutch Cover Gasket*. Hand-tighten each of the clutch cover bolts, then torque to 6 to 8 foot/pounds in 2 steps.

Warning: Rekluse gasket must be used or considerable clutch damage will result.

18. Refer to the included z-Start External Perch Adjuster instructions to complete the installation.

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.