

REKLUSE



REKLUSE MOTOR SPORTS

The z-Start Pro Clutch

INSTALLATION GUIDE

HUSQVARNA TC/TE 450/510

2006-2009

HUSQVARNA WR 250

2004-2009

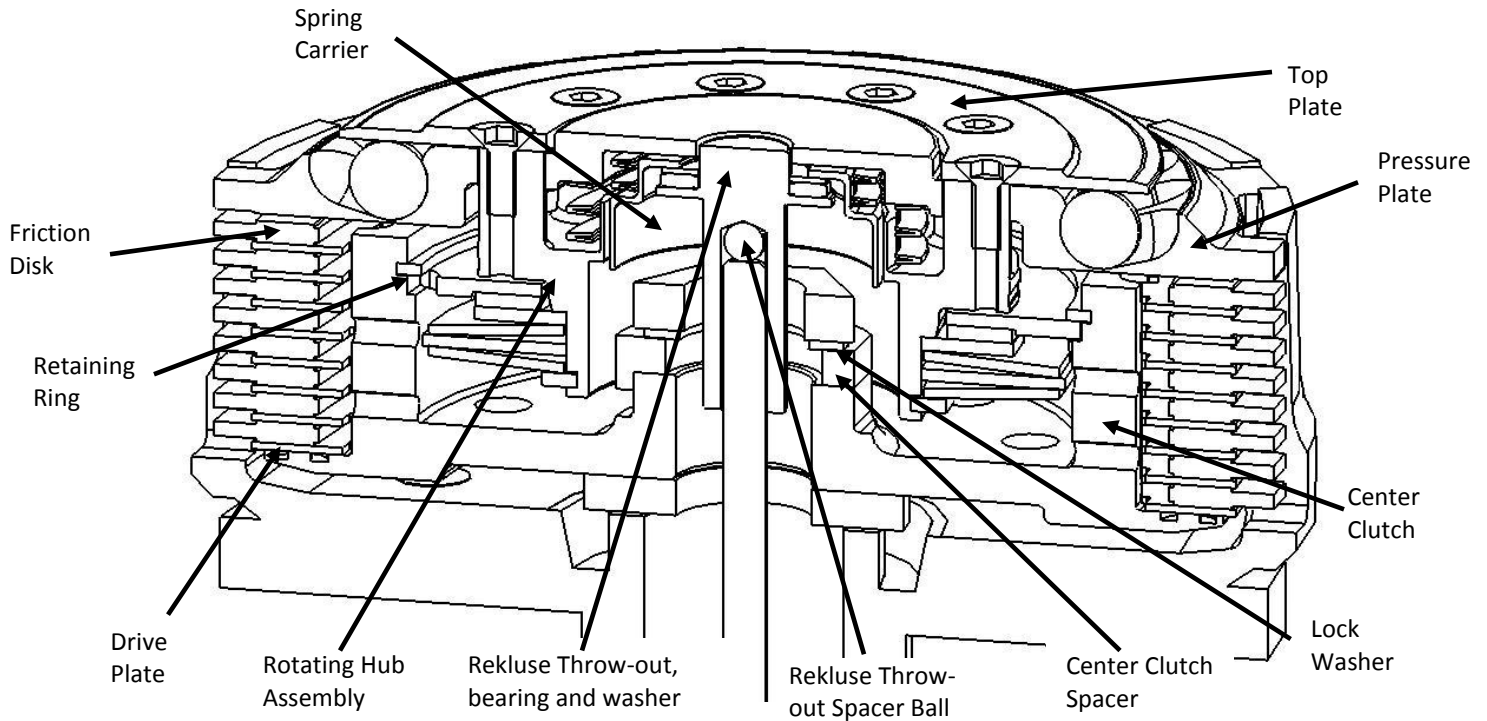
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Z-START PRO CROSS-SECTION VIEW



INCLUDED PARTS

Item

- Top Plate
- Pressure Plate
- Rekluse Center Clutch
- Retaining Ring
- (8) RMS Measured Drive Plates
- (1) RMS 0.048" Drive Plate (Adjustment Plate)
- (1) RMS 0.065" Drive Plate (Adjustment Plate)
- Center Clutch Spacer
- Rotating Hub Assembly
- External Tab Lock Washer
- Throw-out spacer WR250

Item

- Throw-out spacer all other models
- Rekluse Throw-out
- (1) 7/32" Ball Bearing
- C 150 Spring Carrier
- (27) 7/16" Chrome Steel Ball Bearings
- (6) 7/16" Tungsten Carbide Ball Bearings
- (10) M4x12 Torx Head Screws
- Wave Springs (see setup sheet)
- T-20 Torx Bit
- Blue Loctite 243
- Rekluse Wire Gauges

REQUIRED TOOLS

- 8mm socket
- 10mm socket
- 27mm socket (for center clutch nut)
- T-20 Torx bit (supplied)
- Impact Wrench

BIKE PREPARATION AND DISASSEMBLY

1. **(2008 fuel injected models skip to step 2)** Shut off fuel at petcock. Lay bike on left side. **CAUTION:** fuel may drain from carburetor; place a suitable container beneath bike to catch fuel to prevent fire hazard.
2. Remove clutch cover.
3. Remove bolts and springs from OEM pressure plate.
4. Remove OEM pressure plate.
5. Remove OEM clutch throw out and set aside. The OEM clutch throw out is re-used on the **WR250 ONLY**.
6. Remove the clutch pack (friction disks and drive plates). Separate the friction disks from the pack as they will be re-installed.
7. Remove the OEM center clutch hub following the steps outlined in the vehicle manufacturer's service manual. Also, see the center clutch removal tip sheet for further assistance.
8. Retain OEM thrust washer located between OEM clutch basket and OEM center clutch hub.

NOTE: thrust washer may be stuck to bottom of OEM center clutch hub.

CLUTCH BASKET INSPECTION

Note: The following outlines Clutch Basket Dampener Failure. Some Clutch baskets will last a season, and some last only hours. If the dampeners go unchecked clutch damage will result. After inspecting basket, continue with the z-Start Pro installation.

Clutch Basket Dampener Operation

Most OEM Clutches use elastomer dampeners to protect the clutch from shock loading applied to the basket by the drive train and/or engine during normal operating conditions. The dampeners are located between the clutch basket body and the ring gear. The dampeners take up the slack between the ring gear and clutch basket so that under normal loading they rotate as one. Under extreme loading the dampeners provide a cushion so the ring gear and basket can float independently and keep shock loads from being transferred to the clutch.

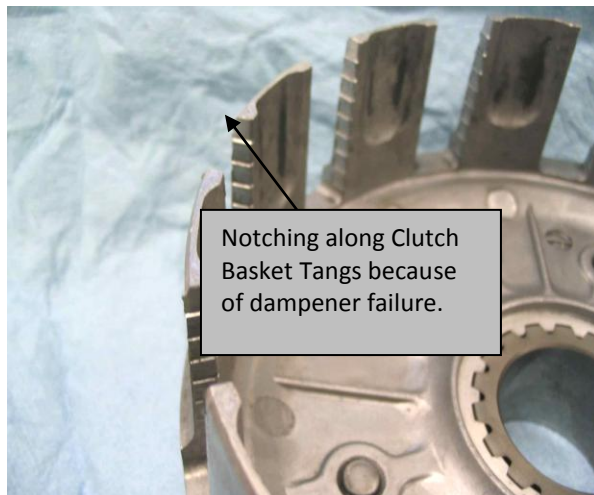
As the dampeners wear, the system gains slack and shock loads start getting transferred to the clutch. This creates a hammering effect between the clutch basket and ring gear. The hammering transfers to the clutch plates and causes the plates to wear away at the clutch basket and center clutch hub. If the dampeners continue to go unchecked, the hammering progresses until the clutch fails.

Checking Your Clutch Basket for Dampener Failure

Prior to installing the z-Start Pro, it is recommended that you check the condition of your Clutch Basket and Center Clutch Hub.

An indication of failing clutch basket dampeners is grooving or notching of the Clutch Basket Ears—where the tabs of the friction discs index into the clutch basket. **See the following picture.**

Another indication of failing dampeners is notching of the center clutch hub where the steel drive plates index to it.



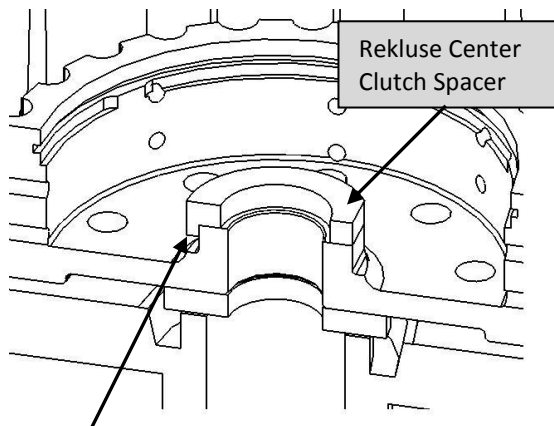
Maintaining Clutch Basket Dampeners

Unfortunately the OEM clutch basket does not provide a means to maintain the dampeners. After the dampeners wear out, the clutch basket must be replaced. The choice is either an OEM clutch basket, or an aftermarket basket. The advantage of an aftermarket basket is that the dampeners are serviceable. Rekluse offers aftermarket clutch baskets specially designed for greater performance with the z-Start Pro.

WARNING: Installing the z-Start into a worn clutch basket can greatly reduce clutch performance, and damage the z-Start Pressure Plate.

INSTALLING THE Z-START PRO CENTER CLUTCH

9. Install the Rekluse Center Clutch with the OEM thrust washer behind it on top of the basket.
10. **All years 250 2-stroke, some '06 and '07 models (if the teeth of the mainshaft stick up above the top of the hub) & 2008 450/510 models ONLY (all others skip to step 11):** Install the Rekluse Center Clutch Spacer on top of the Rekluse Center Clutch. The Rekluse Center Clutch Spacer has a lip on one side. This lip needs to be facing down into the Rekluse Center Clutch. The lip needs to line up with one of the flats on the Rekluse Center Clutch. If installed correctly the Rekluse Center Clutch Spacer will not rotate separately from the center clutch and the top side will be flat. Install the included Rekluse external tab lock washer over the main-shaft on top of the Rekluse Center Clutch and Spacer. Skip to step 12. **See following diagram.**



Lip facing down and aligned to flat side of Rekluse Center Clutch

NOTE: '06-'07 450/510 customers continue to follow instructions for '06-'07 following this step.

11. Install the included Rekluse external tab lock washer over the main-shaft on top of the Rekluse center clutch.
12. Bend middle tab down aligned with flat side of the Rekluse Center Clutch.
13. Torque the center clutch nut to the specified torque found in the manufacturer's service manual.

WARNING: DO NOT over-torque the center clutch nut.

14. Using a pair of adjustable pliers, bend remaining two tabs of external tab washer up against the nut to secure it.

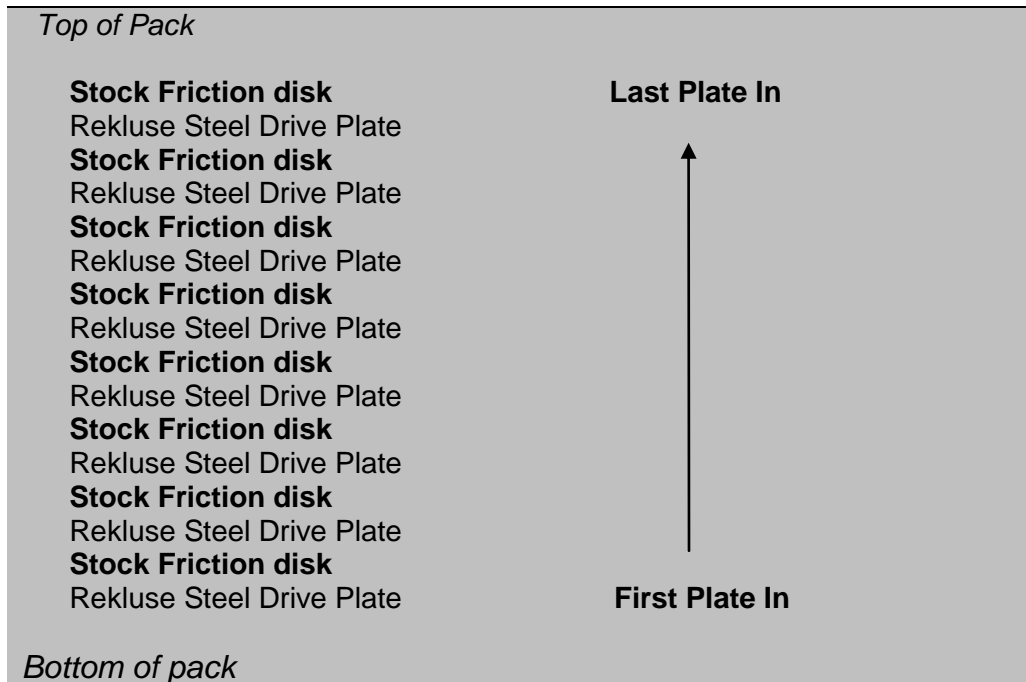


INSTALLING THE CLUTCH PACK

15. The 8 Rekluse steel drive plates packaged with the Rekluse Center Clutch come pre-measured and are the 8 steel drive plates you will start with.

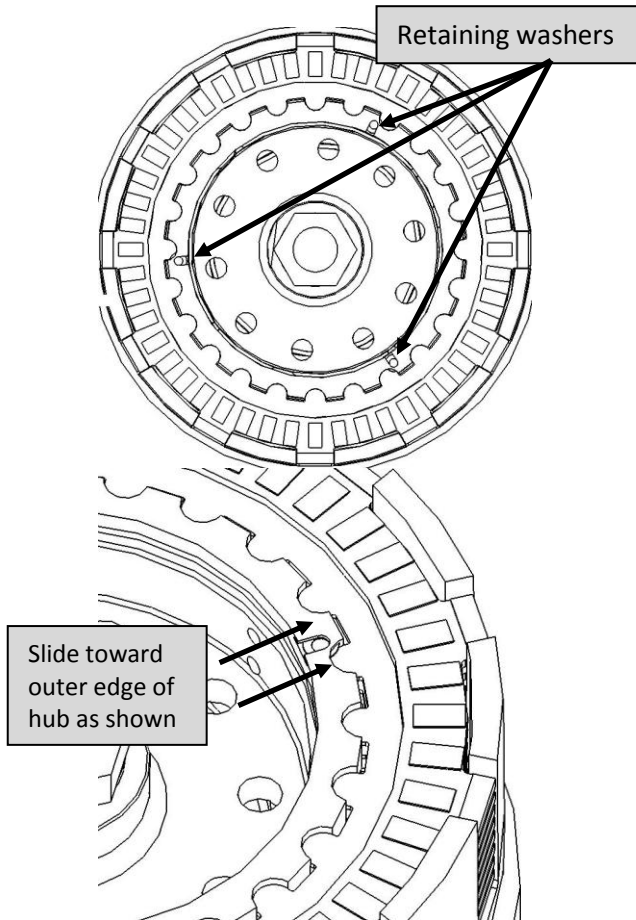
Install 1 Rekluse steel drive plate onto the Rekluse Center Clutch.

16. Install the stock friction disks with a Rekluse steel drive plate between each one. **See chart for configuration.**

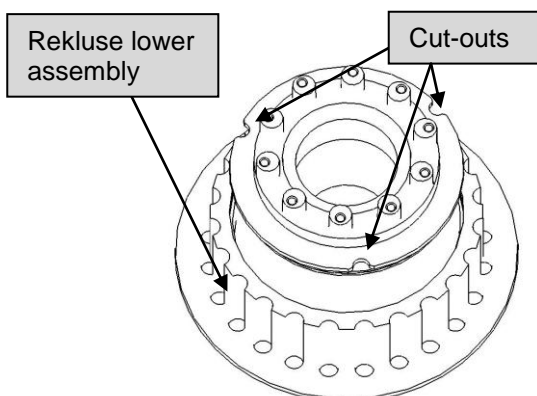


INSTALLING THE Z-START PRO CLUTCH

17. Using a small screwdriver, slide the 3 retaining washers out to limit top drive plate travel. **See diagrams below.**



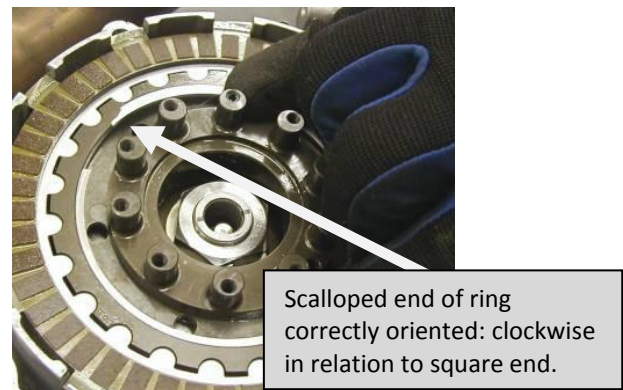
18. Place lower assembly into Rekluse center clutch hub. You must align the three cut-outs in the lower assembly with the corresponding tabs in the center clutch.



19. Using a pair of mechanics gloves (the edges of the ring can be sharp and may cut you), install the retaining ring into the Rekluse Center Clutch ring groove.

You must ensure the retaining ring is snapped into the groove. Start the square end of the ring and thread the ring into the groove as shown, ensuring that the scalloped end of the ring is clockwise in relation to the square end.

WARNING: Scalloped end of ring MUST be oriented as shown below.



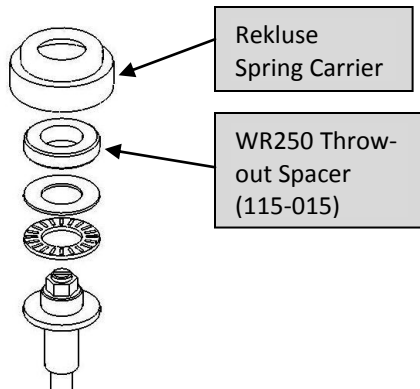
Threading retaining ring into groove



Use a screwdriver to ensure the ring is seated by sliding along the ring's inner diameter.

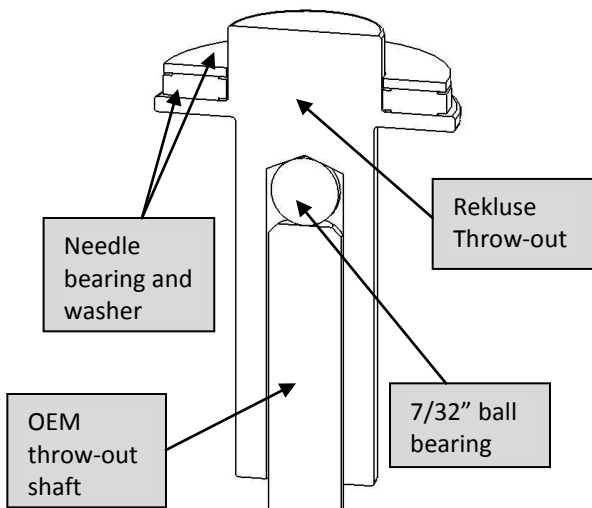
WARNING: It is CRITICAL that the retaining ring is fully seated using a screwdriver, or clutch damage WILL occur.

- 20. WR 250 Only:** Re-use the OEM Throw-out Assembly. You should not need to adjust the OEM throw-out. Install the 115-015 Rekluse Throw-out spacer on top of the OEM thrust washer, followed by the Rekluse clutch lever return spring carrier. Skip to step 25.

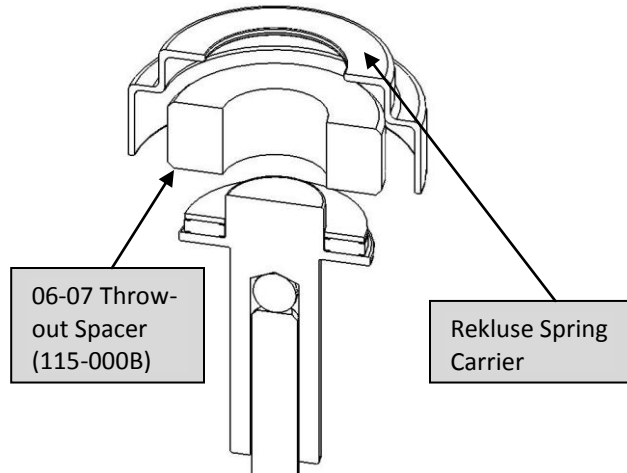


- 21. ALL Years 450 and 510:** Guide the 7/32" Rekluse throw out spacer ball followed by the Rekluse clutch throw-out over the stock OEM throw-out shaft.
- 22.** Place the needle bearing and washer on top of the throw-out. Needle bearing is placed first onto the throw-out followed by the thrust washer.

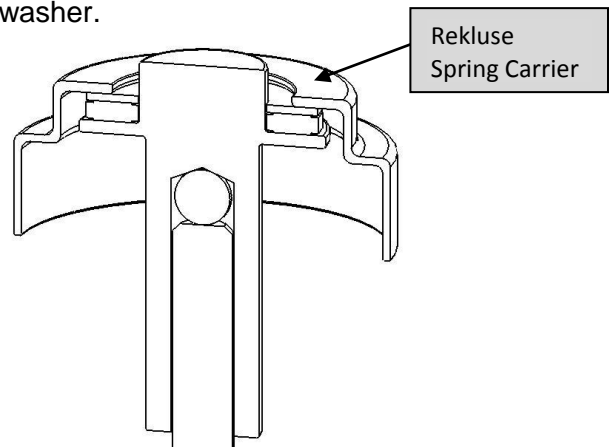
Tip: Placing a small amount of oil into the hole in the backside of the throw-out followed by the 7/32" spacer ball will help keep the ball in place while placing both over the throw-out rod. Be very careful to ensure the spacer ball is in place between the throw-out and rod.



- 23. '06-'07 450/510 models only:** Place the thick Rekluse throw-out spacer (115-000B) on top of the thrust washer on top of the throw-out followed by the Rekluse clutch lever return spring carrier. **All other models do not require using the thick spacer.**



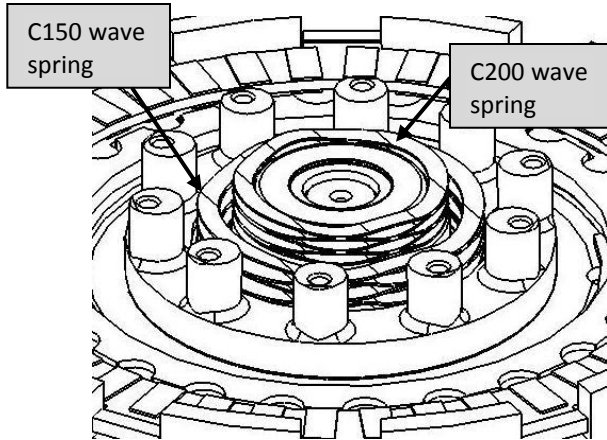
- 24. '08 450/510:** Install the Rekluse clutch lever return spring carrier on top of thrust washer.



- 25.** Place C150 Spring over Rekluse Spring Carrier. Refer to Tuning Chart for proper C150 Spring.

Note: Diagrams are representative. Your parts may differ slightly.

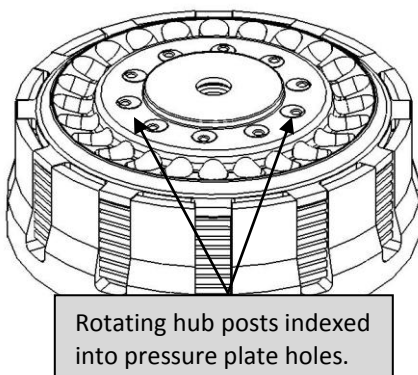
- 26.** Install the C200 wave spring (chosen based on your desired setup from the tuning sheet for your bike) on top of rotating hub into the locating pocket.



- 27.** Place a small amount of oil into the ball grooves of the Rekluse Pressure Plate.
- 28.** Away from the bike, install the steel balls into the pressure plate ball grooves. See Tuning Guide for desired configuration.
- 29.** Place the Rekluse pressure plate, with balls, over the lower assembly. Line the 10 holes in the pressure plate up with the 10 rotating hub posts. Also, line the outer tabs of the pressure plate up with the basket slots.

If your basket has 2 sets of slots, make sure you index the Rekluse pressure plate tabs into the main/deep slots.

- 30.** Push and hold the pressure plate down, overcoming the wave springs and hydraulic clutch pressure, so the 10 rotating hub posts index into the 10 pressure plate holes.



- 31.** While holding down the pressure plate so it is indexed with the basket and 10 rotating hub posts properly, place the Rekluse top plate over the Rekluse pressure plate and thread in 2 torx head screws 180° across from one another. Lightly tighten the 2 screws to secure the Rekluse top plate.



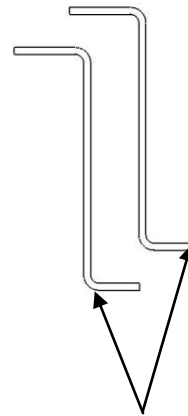
DETERMINE THE INSTALLED GAP OF THE Z-START PRO CLUTCH

Note: Installed gap is measured using two no-go wire gauges. Therefore, if gauges **do not** slide between Rekluse pressure plate and **the pads** of the top friction disk, your **installed gap is correct**.

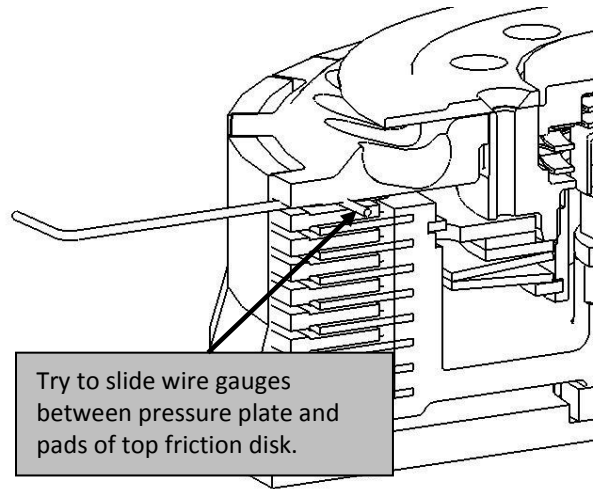
If gauges **do** slide between the Rekluse pressure plate and **the pads** of the top friction disk, you **need to adjust your installed gap** according to step 33.

32. Attempt to slide the shorter legs of the 2 included 0.050" no-go wire gauges **between the Rekluse pressure plate and the friction pads** of the top friction disk 180° apart.

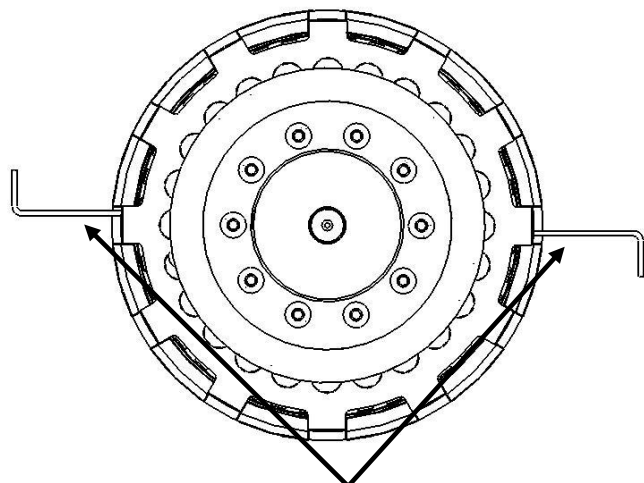
If clutch pack wear exists, gauges will slide in with slight resistance. Do not force the gauges in, if the gauges **do not** slide in smoothly then the Installed Gap is good and you can move on to Step 34.



Use the small leg of wire gauges.



Try to slide wire gauges between pressure plate and pads of top friction disk.



Attempt to slide both gauges in 180° apart simultaneously

33. If the wire gauges slide in smoothly, the clutch pack needs adjustment. Swap the thicker Rekluse .048" adjustment drive plate for the top drive plate. Repeat step 32.

Note: There are 2 adjustment drive plates, a .048" and .065". Use the .048" first. Once both adjustment drive plates have been used, and the clutch wears enough so the wire gauges slide in again, the friction disks need to be replaced.

34. Install the remaining 8 torx head screws using blue Loctite 243 and torque to 25 in-lbs.
35. Remove the 2 screws originally installed without Loctite, apply Loctite and torque.
36. Re-install the clutch cover with OEM Gasket or o-ring.

Lightly tighten all of the cover bolts before full torque is applied, or you may break the cover.

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

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. Clutch break-in re-measurement of the Installed Gap is necessary whenever new clutch plates are installed.

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

38. **WR250:** Refer to next page, "Setting Clutch Cable Slack." ***Failure to follow this procedure will result in clutch damage.***

SETTING CLUTCH CABLE SLACK (WR250 ONLY)

IMPORTANT: Cable slack adjustment is **critical**. The cable slack must be adjusted properly and maintained frequently. Failure to do so will result in clutch failure. Adjusting cable slack is different with a z-Start Pro Clutch installed. Cable slack adjustment requires starting the motor in neutral and revving to a minimum of 4500 RPMs (approximately ½-throttle) while checking for lever free play. **There must be clutch lever free play while holding a minimum of 4500 RPMs.**

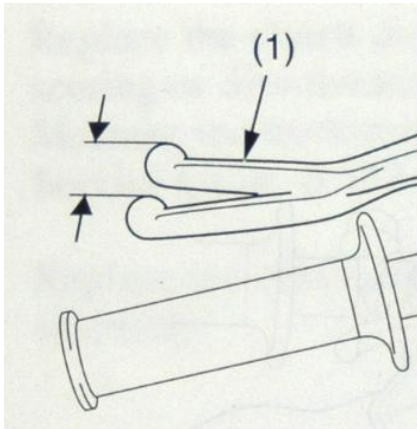
If there is not enough cable slack, the clutch will slip excessively causing the clutch to fail.

Too much cable slack reduces the ability to disengage the clutch at higher RPMs.

WARNING: *Ensure the bike is in neutral* or it could lunge forward unexpectedly when revving the engine.

Place the bike into neutral and start the engine. While holding a minimum of 4500 RPMs, check for 1/2" (1cm) of play at the end of the clutch lever before you feel significant resistance. Adjust cable slack accordingly using stock cable slack adjuster(s).

In other words, when revving the engine, clutch lever free play should feel like stock.



Tip: Use one finger with light pull when checking for lever free play. This will make it easier to distinguish between the light resistance of the lever return spring and the significant resistance felt when disengaging the Rekluse pressure plate.

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

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. Clutch break-in re-measurement of the Installed Gap is necessary whenever new clutch plates are installed.

Refer to the “Safety Warnings” and “Break-in Tuning and Maintenance Guide” before operating the z-Start Pro clutch.

APPENDIX A – CENTER CLUTCH REMOVAL TIP SHEET

The following covers 3 methods for removing the OEM center clutch from your motorcycle or ATV. **At no time should you ever pry against the standoffs of the OEM center clutch because they are easily broken.**

Note: If your bike has an external tab lock washer, use a flat blade screwdriver to pry the tabs away from the nut. Next use a hammer and punch to lightly tap the tabs flat.

- 1. Pneumatic or electric impact gun:**
Place the bike in gear and remove the nut
- 2. Clutch Holding Tool:**
Example: Motion Pro # 08-0008
Use the clutch holding tool to hold the center clutch while using a wrench to remove the center clutch nut.
- 3. Holding the Rear Brake:**
Place the bike in 4th or 5th gear (a higher gear gives you more mechanical advantage). Apply the rear brake firmly and hold firmly while using a wrench to remove the center clutch nut. A second set of hands is helpful.