

INSTALLATION & USER'S GUIDE

For Yamaha YZF-R7

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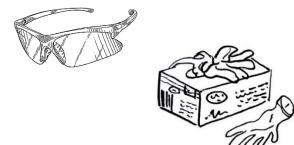
OVERVIEW

This guide shows you how to replace your OE (Original Equipment) or "stock" clutch parts with your new clutch pack.

- This kit will replace all the OE frictions and drive plates with a Rekluse TorqDrive® clutch pack and EXP disk.
- The OE pressure plate springs are replaced with high quality Rekluse springs.

INSTALLATION TIPS

 Read the separate included Safety Information document before operating the vehicle with the product installed.



- Read this entire document before performing any steps.
- If you install this product for a customer or another person, instruct them to read the Safety Information document and the Installation and User Guide before operating the bike with the product.
- Protect eyes and skin wear safety glasses and work gloves.
- Lay the motorcycle on its left side when replacing the clutch. This
 makes working on the clutch easier and eliminates the need to
 drain the oil. Catch any fuel that may drain from the bike.
- Use the torque values listed in the instructions. Otherwise, use the torque specifications found in your OE service manual.
- For optimal clutch performance Rekluse recommends using fresh, clean oil that meets JASO-MA oil rating requirements. Rekluse offers Factory Formulated Oil™ developed specifically for Rekluse products. Rekluse Factory Formulated Oil is a perfect complement to any OEM or aftermarket wet clutch. Visit www.rekluse.com to learn more.

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USE OF OTHER AFTERMARKET PRODUCTS

- If your bike is equipped with an aftermarket clutch cable, you may find that the adjustment range in your cable is different than depicted in this manual.
- Bar risers may limit the travel necessary for your cable adjustment to achieve the necessary installed gap.
- If you prefer the use of an aftermarket clutch lever and/or perch, especially the adjustable variety, note that:
 - Some aftermarket lever/perch combos claim "Lighter Lever Pull" which correlates to less lift of the pressure plate. This may produce more clutch drag or harder shifts. The lever may be lighter, but you will have to pull the lever in farther to disengage the clutch.
 - Some aftermarket lever/perch combos may provide lever "free play" if desirable.
- This product is not compatible with hydraulic conversion kits. These kits make it difficult to achieve the necessary adjustment for installed gap.

TOOLS NEEDED

- Fluid catch container
- Dental picks
- Metric wrench set
- Torque wrench

- Metric hex key set
- Channel-lock pliers
- Needle-nose pliers

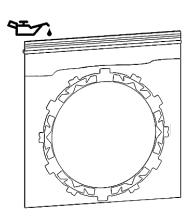
RECOMMENDED PARTS

Rekluse recommends installing a new OE clutch cover gasket when reinstalling the clutch cover. This can be purchased from your local dealer.

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DISASSEMBLE THE CLUTCH

1. Soak the EXP disk and TorqDrive® friction disks in engine oil for 5 minutes. Make sure the EXP and friction disks are coated on both sides.



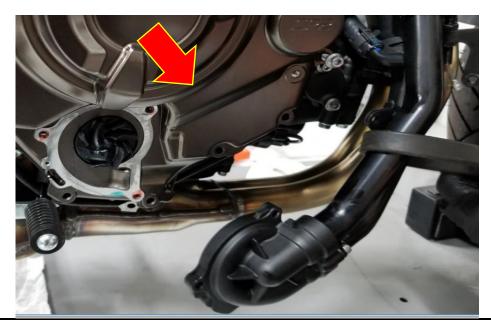
2. Stand the bike on a suitable bike stand and remove the right side cowlings to access the radiator cap and clutch cover.



One Lower panel

Two Upper panels

- 3. Drain the coolant into suitable containers.
- 4. Use a hex key to remove the water pump cover. (The cover can be pulled back and held with a strap to keep it out of the way during installation.)



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- 5. Using the in-line cable adjuster, loosen the tension in the clutch cable so that the lever becomes sloppy at the perch.
- 6. Use a hex key to remove the actuator arm bracket and move it to the side.



7. Bend up the tab on the clutch actuator arm and unhook the clutch cable.



8. Use a 5 mm hex key to remove the clutch cover bolts.

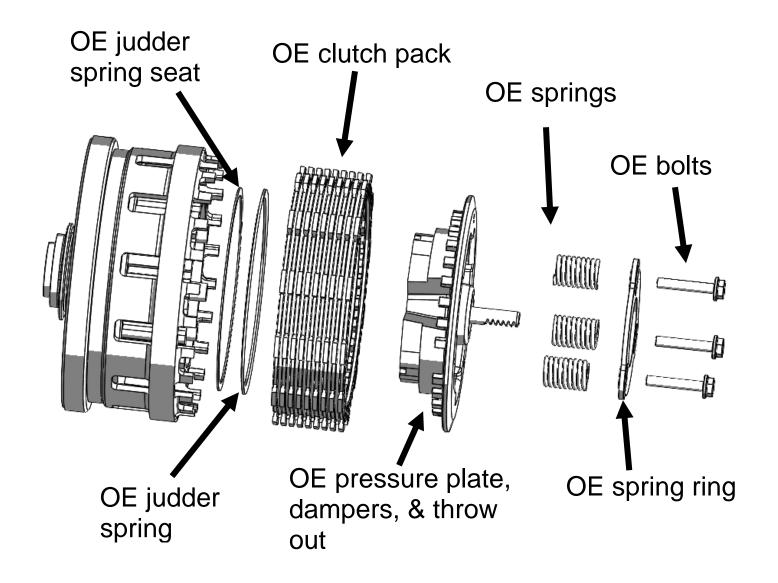
Remove the clutch cover and gasket. Set these aside.
 They will be reused. If the gasket is damaged when removed, you will need to purchase a new one.

Note: Rekluse recommends installing a new OE clutch cover gasket when reinstalling the clutch cover.

Note: Do not move the water pump components in the cover or case out of position as they will need to mate back together during installation.

10. Remove the OE pressure plate bolts and springs, pressure plate, and OE clutch pack.

Note: The pressure plate, throw out, spring ring, and bolts will be reused.

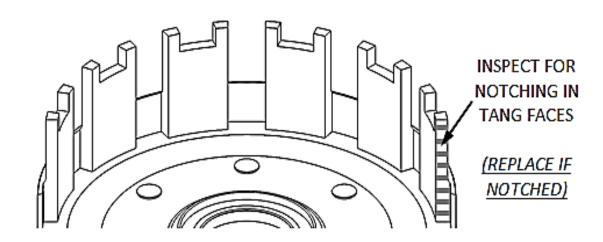


CLUTCH PACK INSTALLATION

1. Inspect the clutch basket for notching. Do not install sleeves or use product with a notched basket. Notched basket tang faces can cause the sleeves to break.

AWARNING

Failure to inspect the basket and replace if necessary could result in death, serious injury, and/or property damage.



Notes for clutch pack installation

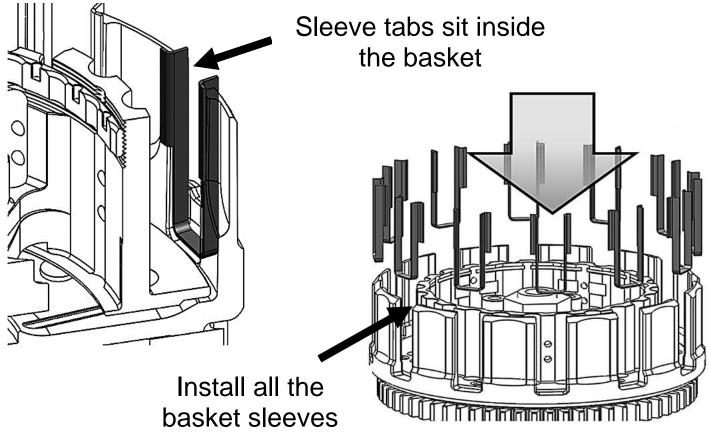
- Some friction disks are marked with a small colored dot. This mark is used for processing and can be ignored.
- Some OE basket have "half slots" at the top of the basket tangs. Rekluse products require the entire clutch pack be installed into the MAIN (deeper) basket slots. Do not use the "half slots." See the following picture for reference.



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2. Install all of the Rekluse basket sleeves into the basket slots. Make sure the bottom of the sleeve is facing down, and the sleeve tabs sit against the inside of the basket. See pictures for reference.

Note: When seated in the basket, the sleeve tops will sit flush or just below flush with the top of the basket.



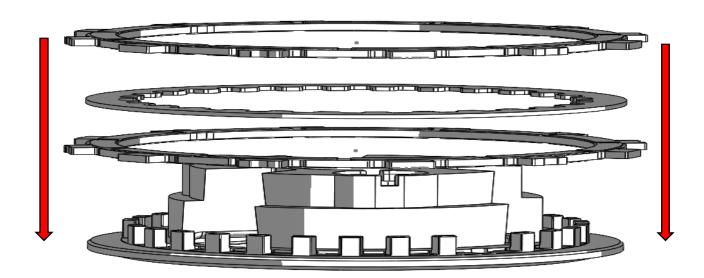
AWARNING

Rekluse basket sleeves are designed to be installed into an OE or Rekluse clutch basket ONLY. The use of non-Rekluse aftermarket clutch baskets may cause clutch damage or failure.

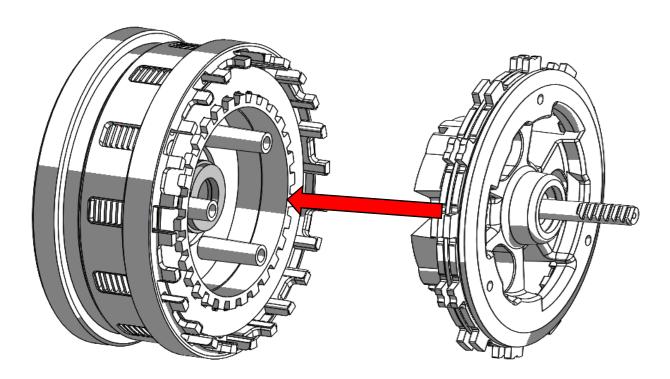
3. Refer to the setup sheet at the back of the manual for the clutch pack installation order and disk specifications.

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- 4. Turn the pressure plate over onto a work bench. Place the one .130" thick friction disk on to the pressure plate.
- 5. Next place the .060" drive plate on to the pressure plate and place the last .130" thick friction disk.



6. Reinstall the OE pressure plate assembly with the throw out.



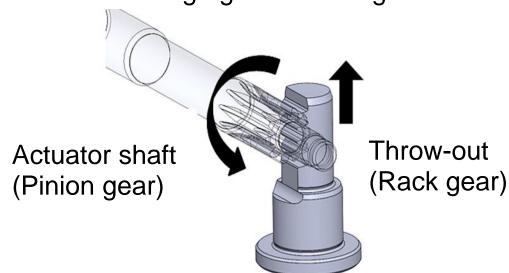
7. Install the pressure plate springs, spring ring, and bolts. Tighten the bolts evenly to OE specifications.

CLUTCH COVER INSTALLATION

Before securing the clutch cover in place or reattaching the clutch cable to the actuator arm, follow the next steps to achieve the correct actuator arm orientation to ensure adequate cable travel during use.

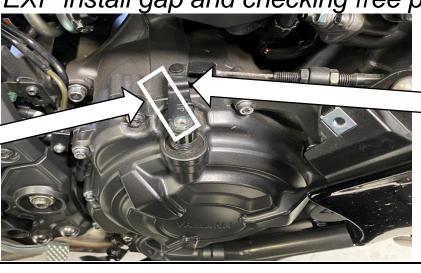
Note: The clutch actuation mechanism is a rack and pinion system. Because there is limited cable adjustment at the inline cable adjuster, you will be performing most of the adjustment at the actuator shaft (pinion gear).

- 1. Reinstall the OE clutch cover gasket (or new OE gasket) on the clutch cover.
- 2. Align the teeth on the throw-out with the actuator shaft in the clutch cover, then push the clutch cover into place over the clutch until it is snug against the engine case.



Note: The target actuator arm position at this step before the cable is installed will be slightly back from the OE position. It will be returned to OE position later when setting the EXP install gap and checking free play gain.

Target arm position before cable is installed



OE arm position

3. If the arm is not close to the "target position" shown above, remove the snap ring on the actuator arm and reposition it.



- 4. When the actuator arm is close to the target position, reinstall the snap ring and lightly tighten the cover bolts to hold the cover in place.
- 5. Attach the clutch cable to the actuator arm. At this point, the arm should now sit in the "OE arm position" shown above. If it is not close to the "OE arm position" return to step 3 and adjust.
- 6.Bend the actuator arm tab down to lock the cable in place. This may require channel-lock pliers to reattach.



- 7. Reinstall the water pump cover, then reinstall the cable actuator arm bracket.
- 8. Tighten the cover bolts in small increments in a star pattern and torque to OE specifications
- 9. Add coolant according to the OE instructions.



SET THE INSTALLED GAP

The "installed gap" is the separation in the clutch pack created by the tension adjusted into the clutch cable. This gap is what allows the clutch to spin freely until the desired RPM is reached for engagement. The installed gap must be set correctly for optimal performance.

The two jam nuts at the clutch cable support bracket are used to set the installed gap. The jam nut that is closer to the front of the bike will be used to tighten the cable slack and set the installed gap. The rear jam nut is used to lock in the optimal setting once it is determined.

- 1. Tighten the front jam nut so there is no slack in the clutch cable (the clutch lever will become tight against its perch). This is your **starting point.**
- 2. From the starting point, tighten the front jam nut about 3 turns, so that the clutch actuator arm starts to move. This should be close to the correct installed gap.



- 3. Make adjustments using the front jam nut and perch adjuster to set the installed gap based on the lever Free Play Gain. (Instructions in the following section.)
- 4. Once Free Play Gain is correct, you will tighten the rear jam nut to secure your cable adjustment setting.

CHECK FREE PLAY GAIN

It is very important that you understand how to verify the correct installed gap by checking Free Play Gain.

Setup, break-in, and rechecking the installed gap is CRUCIAL. Failure to properly maintain your installed gap can result in premature wear or failure of your clutch.

The installed gap is what allows the auto function of the product to perform properly. Use the following steps to verify the installed gap by checking Free Play Gain.

AWARNING

Failure to check and verify Free Play Gain can cause failure or damage to this product. Setting the correct installed gap is critical for clutch performance.

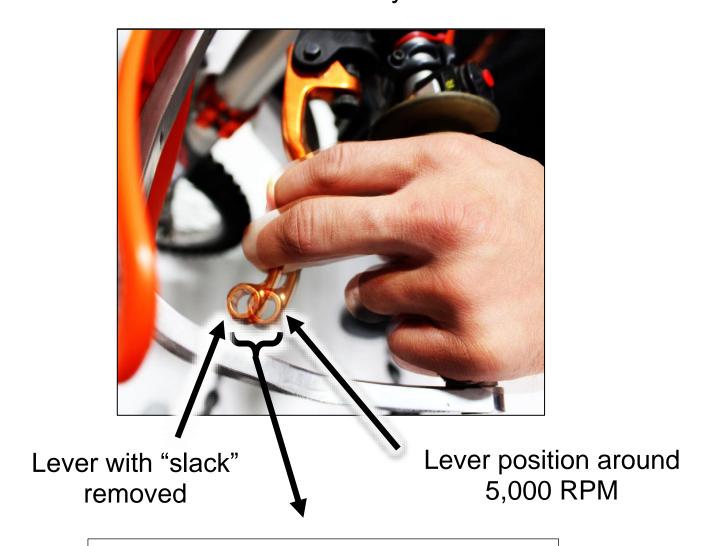
Learn how to check Free Play Gain

If you are familiar with checking Free Play Gain, check for Free Play Gain then skip to the "Adjust the Installed Gap" section.

If Free Play Gain is new to you, follow the instructions below to help you learn this important step. You can also view the video entitled "How to Check Free Play Gain" on our website at www.rekluse.com/support/videos.

Checking Free Play Gain allows you to externally monitor the installed gap so you can know when to make an adjustment if the installed gap is too large or too small.

The correct installed gap is verified by observing and feeling the increased free play movement in the clutch lever. This extra movement is called "Free Play Gain."



Free Play Gain 1/4"-3/8" (6 mm-9.5 mm) lever movement

If there is too much Free Play Gain, the installed gap is too small.

- The bike may drag and stall because it has difficulty disengaging the clutch.
- It may also be difficult to shift.
- Too much Free Play Gain will not hurt the clutch, but it will negatively affect clutch performance.

With too little or no Free Play Gain, the installed gap is too large.

• This means when the EXP is fully expanded it does not lift the pressure plate.

- The clutch may slip and make the bike seem like it is losing power.
- The bike may not move forward even though the engine RPM increases as if the clutch lever is slightly pulled.
- Too little Free Play Gain will cause the clutch system to burn up.

Optimal Free Play Gain yields ¼"- 3/8" (6 mm-9.5 mm) of clutch lever movement, measured at the ball end of the lever. This measurement at the lever correlates to achieving the ideal installed gap.

Two Ways to Check for Free Play Gain

The following steps explain **2 ways** to check Free Play Gain. One way uses the rubber band Rekluse includes in the clutch kit, and one uses your hand. You can use either method to check for Free Play Gain.

Rekluse recommends that you begin with the rubber band method first to check for Free Play Gain and then learn the hand method. The rubber band will help you learn how to recognize Free Play Gain until you are comfortable with the hand method. Learning to check Free Play Gain by hand effectively and comfortably can make it easy to check Free Play Gain every time you ride.

The Rubber Band Method

Use the rubber band method for the initial set up. It can also be used before each ride until you feel comfortable checking the Free Play Gain using the hand method.

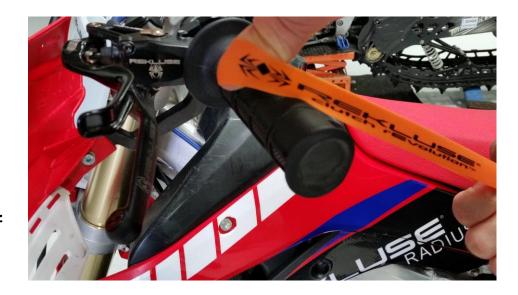
A WARNING

BEFORE YOU BEGIN, verify that the bike is in NEUTRAL before checking Free Play Gain. Failure to do so may result in the bike lurching forward, and loss of control and/or injury may result.

A Rekluse auto-clutch can make your motorcycle appear to be in neutral when in gear, even when the engine is running and clutch lever released.

Motorcycles equipped with a Rekluse auto-clutch can move suddenly and unexpectedly and cause riders to lose control. To avoid death, serious injury, and/or property damage, always sit on the motorcycle to start it.

- a) Before you begin, place the bike in **NEUTRAL**, start the engine and let it warm up for 2-3 minutes to idle down and warm the engine oil.
- b) Stretch the included rubber band between your thumbs, then place the top end of the rubber band on the outer end of the left handlebar grip.



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c) While holding the top end of the rubber band against the handlebar, stretch the band downward, then loop it through itself.



d) Pull the band through the loop, then attach it to the outside end of the clutch lever. This will take up the initial free play (slack) and put the lever in a position to

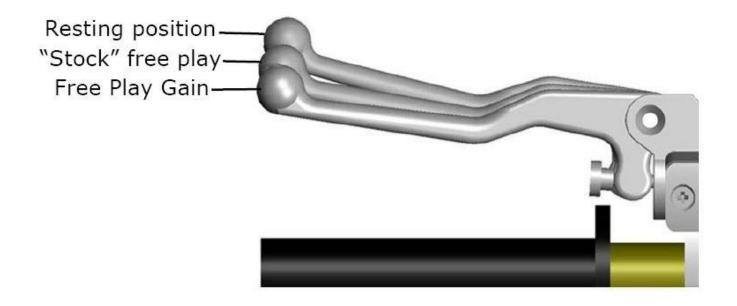


detect the Free Play Gain.

e) While still in **NEUTRAL**, quickly rev the engine between 5,000-7,000 RPM (1/2 to ¾ throttle), then let it return to idle. Notice the movement in the clutch lever when the engine is revved. This is your Free Play Gain.

Note: It is very important the motor returns to idle before revving the engine again or Free Play Gain will not be correct.

f) When the bike returns to idle, rest your hand across the clutch lever. Rev the engine again to 5,000-7,000 RPM so you can observe the movement while feeling for Free Play Gain with your hand.



The Hand Method

Use the hand method to check Free Play Gain before the start of every ride for optimum performance and longevity of your new clutch.

- a) Before you begin, place the bike in **NEUTRAL**, start the engine and let it warm up for 2-3 minutes to idle down and warm up the engine oil.
- b) With the bike at idle, apply enough pressure to the clutch lever to take up the initial free play (slack) in the clutch lever.
- c) While still in **NEUTRAL**, continue to apply light pressure and quickly rev the engine between 5,000-7,000 RPM (1/2 to ¾ throttle), then let it return to idle. Notice the movement in the clutch lever when the engine is revved. This is your Free Play Gain.
- d) When the bike returns to idle, rev the engine between 5,000-7,000 RPM a second time to verify the Free Play Gain again.

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ADJUST THE INSTALLED GAP

After checking for Free Play Gain, you may need to adjust the installed gap. If Free Play Gain is optimal, continue to "Error! Reference source not found.." If Free Play Gain is not optimal, the installed gap needs to be adjusted.

The installed gap should be fine-tuned in small increments and then recheck Free Play Gain. Refer to the table below to set the proper installed gap based on your Free Play Gain.

Adjust the Installed Gap

Symptom	Reason	Solution
 Clutch lever moves in too far (too much Free Play Gain) Clutch has excessive drag or stalls It is difficult to fully override the clutch with the lever 	Installed gap is too small	Tighten the cable: increase the length of the in-line cable adjuster housing until the correct amount of Free Play Gain is achieved. Recheck Free Play Gain.
 Clutch lever only moves slightly or does not move at all (too little Free Play Gain) Clutch slips Bike seems to lose power 	Installed gap is too large	Loosen the cable: Reduce the length of the cable housing (collapse the adjusters) until the correct amount of Free Play Gain is achieved. Recheck Free Play Gain.

Notes: If you are unable to obtain the correct Free Play Gain or you are nearly out of cable adjustment after performing the adjustment, you may need to make adjustments at the actuator arm or your cable may be worn or stretched from wear or use. If this is the case, purchasing a new cable should provide the necessary performance.

BREAK IN THE NEW CLUTCH

Once you install your new clutch, it is important to break it in. A series of roll-on starts are used to break in the clutch. Follow these procedures for breaking in your clutch and any time new friction disks, EXP bases, Teflon pads, or wedges are installed.

AWARNING

Failure to follow the break-in procedure and oil screen inspection process could cause motor oil delivery failure, which can result in motor failure, serious injury, or death.

Break-in Procedure	Number of times
1. Warm up the bike for 2-3 minutes. With the bike in NEUTRAL and your hand the clutch lever, rev the end 10 times, being sure to let it return to idle between each cycle.	gine (1) (2) (3) (4) (5) (6)

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- 2. With the engine still running, pull in the clutch lever, then shift the bike into 1st gear. Slowly release the clutch lever. The bike should stay running and in place, or have a slight amount of forward creep.
- 3. With the bike idling in first gear, slowly apply throttle to begin moving.
- 4. Without using the clutch lever, accelerate moderately to approximately 5,000 RPM to fully lock up the clutch and come to a complete stop. Repeat 10 times.

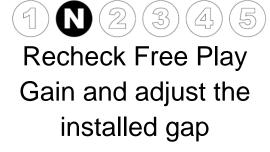
10 roll-on starts

Note: If the engine wants to stall or the creep is excessive, the idle may be too high or the installed gap may be too small. Make necessary adjustments before proceeding.

5. Without using the clutch lever, start in 2nd gear, then accelerate moderately to approximately 5,000 RPM and come to a complete stop. Repeat 10 times.



 Place the bike in **NEUTRAL** and recheck Free Play Gain. Adjust the installed gap if necessary.



Note: Your clutch pack will expand with heat, so final adjustment to Free Play Gain should be made when the bike is warm. Remember not to ride without sufficient Free Play Gain.

ACAUTION

Do not perform 3rd gear starts with this product. Starting in 3rd gear will burn up the clutch and decrease the performance of this product in a short amount of time.

LEVER SAFETY STRAPS

Your kit includes 2 Velcro-type straps to be used to secure both the clutch and front brake levers when the bike is parked.

These straps are intended to reduce the risk of injury or damage that may occur from the bike rolling or launching unexpectedly with or without a rider. Use the lever safety straps every time you park or leave the bike. **Refer to the Safety Information sheet for more information.**

- 1. Pull the lever tight against the handlebar.
- 2. Wrap the Velcro safety strap around the lever and handlebar, pull it tight, then fasten it.

Clutch lever strap: Use to prevent unwanted launching.



Brake lever strap: Use as a parking brake.



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CLUTCH LEVER STICKER

Install the provided warning label on the clutch lever so that the writing is visible to the rider as shown.



TROUBLESHOOTING

Clutch Drag:

- Cold Drag Only If drag occurs only while the bike is cold, oil is the most likely cause. Be sure to warm up the bike before riding/racing. Use of new or lighter weight oil can help to minimize cold drag.
- Hot and Cold Drag –Check for any warped steel drive plates or frictions in the clutch pack, or other signs of wear caused by extreme heat.

Clutch Slip:

 If clutch slip occurs, inspect the clutch for signs of wear or heat.

MAINTENANCE

To keep your clutch performing at its best, perform regular maintenance on your bike and clutch. Clutch longevity and performance is greatly increased with oil quality and other bike factors that reduce engine heat.

- Inspect all of your clutch parts at regular maintenance intervals for signs wear or excessive heat, and replace components as necessary. Clutch wear is dependent on the riders use.
- Inspect and replace basket sleeves if they appear to be notched from friction disks.
- Keep up with regular oil changes as per the bike manufacturer's recommendations. Clutch performance and longevity depend on oil quality.
- Repeat the break-in procedure anytime you replace the friction disks. Always soak friction disks in new oil for at least 5 minutes before installing.

Disk inspection examples

When inspecting the clutch pack, the following pictures can be used as a reference. These are best viewed in color by viewing this install document at www.rekluse.com/support.

Drive Plates — If the clutch pack is getting high amounts of heat, purple, blue, or black color can be seen on the drive plate teeth. See pictures below. Not all drive plates look the same and may look different than pictured.



Normal Heat

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High Heat (Blue)

Excessive Heat (Black)

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Friction Disks — Due to the dark color of the friction material, the friction disks will appear almost black as soon as they are put in oil. During inspection, look for glazing of the friction material. Glazing will appear shiny and feel like glass, even after oil is cleaned from the friction disk. Not all friction disks look the same and may look different than pictured.



Normal Friction



Glazed Friction

EXP TUNING OPTIONS

Adjusting the engine idle speed to match your engagement setting is important and greatly affects the overall feel of how the EXP disk engages.

You can tune the engagement RPM of the EXP disk by changing the spring configuration. The EXP disk comes set with the recommended "**Medium**" setting from Rekluse.

Engagement settings	Spring configuration
Low	3 Silver / 3 Red springs
Medium	6 Red springs
High	3 Blue / 3 Red springs

To prevent freewheeling and maximize engine braking, set the idle so there is a slight amount of drag while the bike is idling in gear and warmed up. The idle should not be so high as to move the bike forward in gear with the throttle closed.

With correct Free Play Gain and the bike in gear, the bike should move forward under slight opening of the throttle. If not, one of the following symptoms is likely:

- HIGH IDLE: The bike moves forward with the throttle fully closed. Solution: reduce idle RPM.
- LOW IDLE: The bike moves forward after engine RPM becomes noticeably higher than idle RPM. Solution: increase idle RPM.

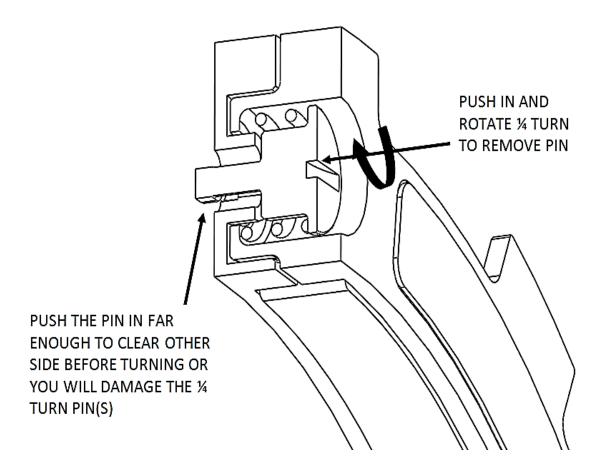
Changing the EXP springs

Use the following steps to change the EXP spring configuration. It is **NOT necessary** to disassemble the EXP halves to change springs!

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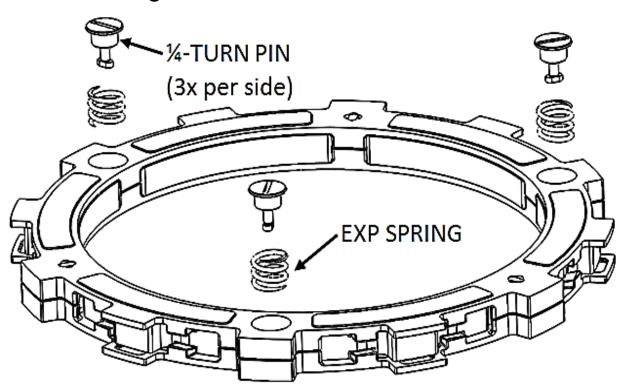
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- Using a flat-blade screwdriver, push the ¼ turn pin in far enough to clear the opposite side of the EXP to unlock the pin.
- 2. With the pin still pushed past the base, turn 90° to remove the pin and spring.



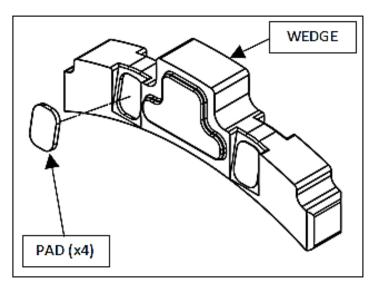
- 3. Remove the remaining 2 pins and springs from the same side of the EXP base.
- 4. Drop a new spring into the spring slot on the base, then add the ¼ turn pin.
- 5. Push the turn pin in far enough to clear the base, then turn 90° and release the pin. The pin should sit almost flush with the EXP base.
- 6. Flip the EXP friction disk over, and repeat on the other side depending on engagement preference.
- If you need to disassemble the EXP disk, you can watch the video on our website under Tech Tips at www.rekluse.com/support/videos/atv-mc-support-videos.

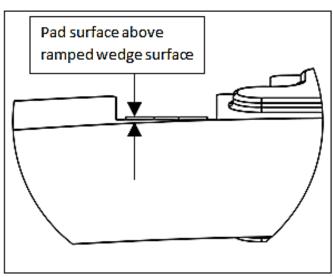
Note: To maintain even pressure, when using two different color spring sets, install one set of 3 on one side of the EXP and the remaining set of 3 on the other side.



ACAUTION

If you disassemble the EXP, the Teflon pads may fall out or be stuck to the ramp surfaces of the EXP bases. Take care to ensure all pads are correctly placed into wedge pockets using gentle pressure to avoid damage to the pad surfaces before reassembling the EXP. Properly seated pads will be secured in place once the EXP is reassembled. Operating the clutch without the pads in place will cause part damage or failure.





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NEED ADDITIONAL HELP?

Website

www.rekluse.com/support

Frequently asked questions

www.rekluse.com/faq

Support Videos

www.rekluse.com/support/videos

Phone

(208) 426-0659

Technical Support

Contact Technical Support for questions related to product installation, tuning, and performance.

Hours:

Monday thru Friday: 8:00 a.m. - 5:00 p.m.

Mountain Time zone

Email: tech@rekluse.com

Customer Service

Contact Customer Service for additional product information, orders, and returns.

Hours:

Monday thru Friday: 8:00 a.m. - 5:00 p.m.

Mountain Time zone

Email: customerservice@rekluse.com



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