



INSTALLATION & USER'S GUIDE

RadiusX

KTM 690, Husqvarna 701, GASGAS 700
- LC4

Doc ID: 191-6380A

Revision: 110223

TABLE OF CONTENTS

OVERVIEW	3
INSTALLATION TIPS	3
TOOLS NEEDED.....	4
INCLUDED PARTS	5
DISASSEMBLE THE CLUTCH	5
CLUTCH PACK INSTALLATION.....	8
SLAVE CYLINDER INSTALLATION	13
Adjustable Slave Cylinder Access.....	13
Modifying Chain Guard.....	14
Step 2: Bleed the new slave cylinder	15
Step 3: Replace OE slave cylinder.....	18
SET THE INSTALLED GAP AND CHECKING FREE PLAY GAIN	22
Step 1: Find the starting point	23
Step 2: Learn how to check Free Play Gain.....	24
Two Ways to Check for Free Play Gain	26
The Rubber Band Method	27
The Hand Method.....	30
Step 3: Break-in the new clutch.....	31
Step 4: Adjust the installed gap and Recheck Free Play Gain	33
FREE PLAY GAIN ADJUSTMENTS	34
LEVER SAFETY STRAPS.....	35
TROUBLESHOOTING.....	36
Performance issues	36
Clutch noise.....	36
EXP TUNING OPTIONS.....	37
Changing the springs	37
BUMP-STARTING	38
MAINTENANCE.....	39
Disk inspection examples.....	40
NEED ADDITIONAL HELP?.....	41

OVERVIEW

This kit replaces the OE (Original Equipment) or “stock” clutch pack with a Rekluse-designed high-quality clutch pack designed specifically for your bike model.







For MY2016 bike owners only: Refer to the **Slave Cylinder Appendix** document before installing the Rekluse-provided slave cylinder on your bike. It may be necessary to change the fluid seals.

INSTALLATION TIPS

- Read the safety information sheet included with your kit.
- 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 thin disposable work gloves. Work in a well-ventilated area.
- Read this entire document before performing any steps.
- Lay the motorcycle on its left side when replacing the clutch. This makes the clutch work easier and eliminates the need to drain the oil.
- 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.
- Use the torque values listed in the instructions. Otherwise, use the torque specifications found in your OE service manual.



TOOLS NEEDED

			
4 mm Hex Key	8 mm Socket	10 mm Socket	Torque Wrench
			
Recommended Clutch Fluid	Fluid Catch Container		

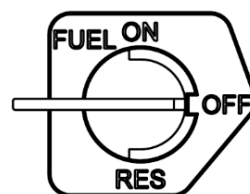
INCLUDED PARTS

Visit www.rekluse.com/support for a full parts fiche illustration and part numbers.

DISASSEMBLE THE CLUTCH

1. If applicable, turn the fuel petcock to “OFF.”

2. Lay the bike on its left side. Catch any fuel that might drain in a suitable container.

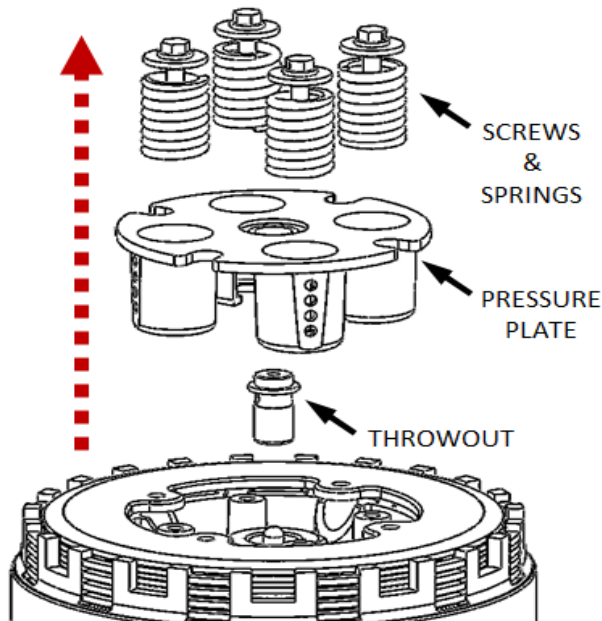


3. Remove the right side swingarm bolt, and move the foot peg assembly out of the way of the clutch cover bolts and clutch cover

4. Remove the oil filter cover from the engine and move it up out of the way.

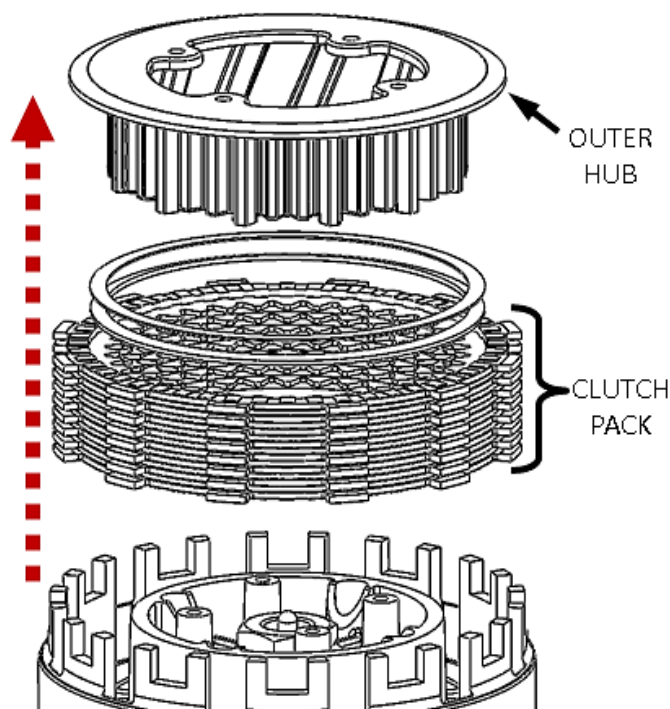


5. Remove the clutch cover bolts and clutch cover, taking care to not damage the cover gasket. Replace this gasket if it is torn or damaged.
6. Remove the OEM screws and springs, followed by the pressure plate and throw-out.



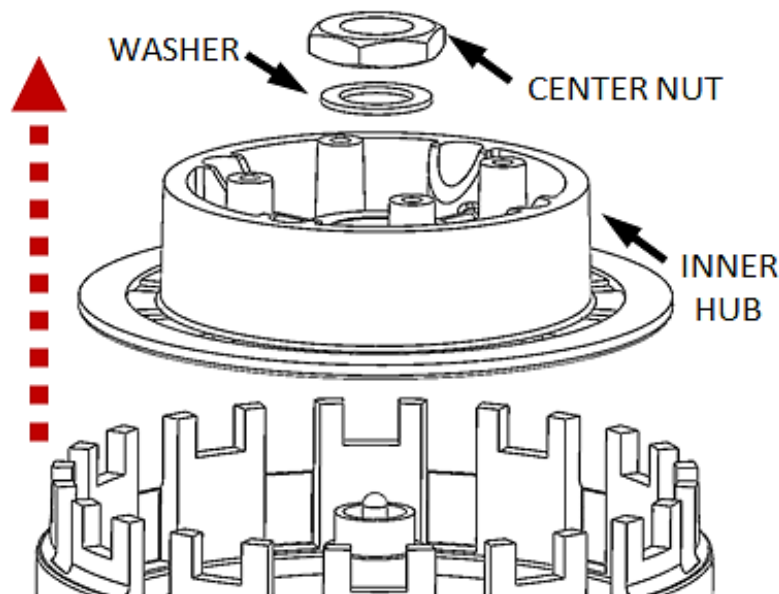
7. Remove the outer hub and the entire OEM clutch pack including the Judder Spring and Seat

Note: *None of the OEM clutch plates, the judder spring, or judder seat will be reused with this kit. Often, the spring seat washer will be stuck via an oil film to the outer hub flange.*



Note: *Failure to remove the judder spring and seat before installing the Rekluse clutch plates will result in poor performance or clutch malfunction.*

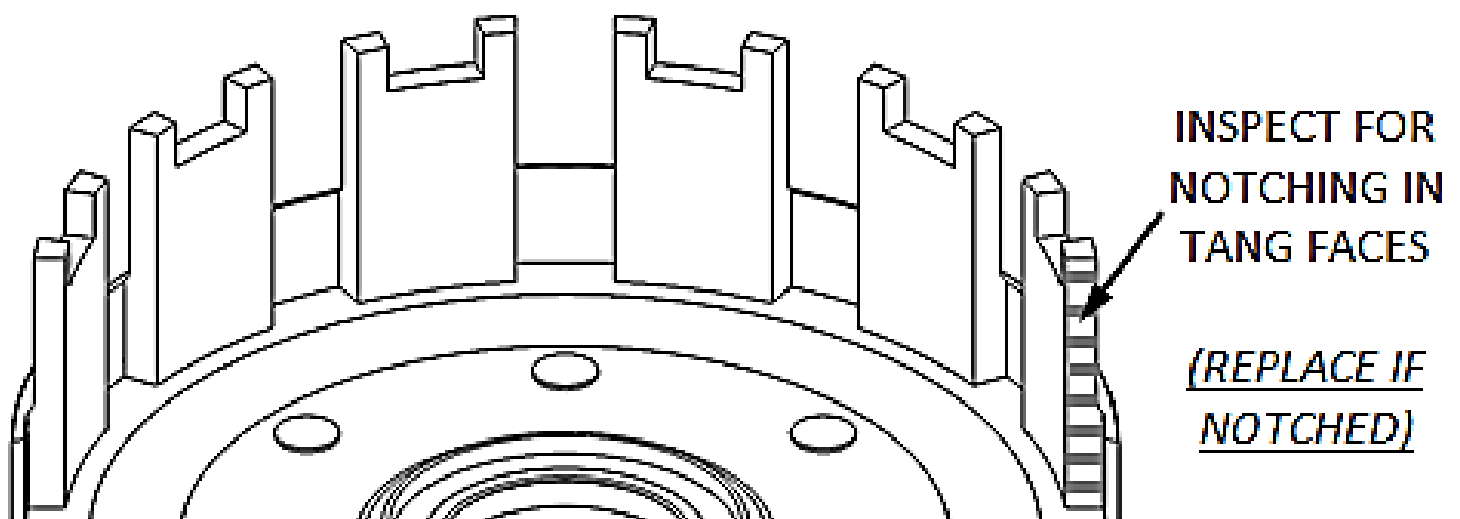
8. Remove the inner hub from the engine by loosening the center nut and washer.



9. Inspect the clutch basket for damper and/or spring rotational play. Dampers/springs should not move. 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. Do not use baskets that have been filed, machined, or modified on the tangs. Replace basket if necessary.

⚠ WARNING

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

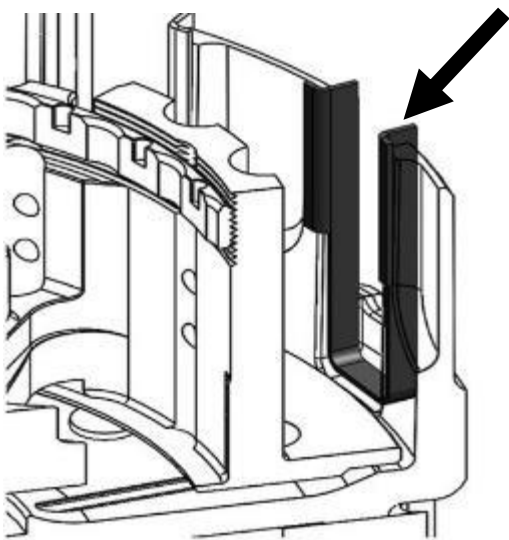


CLUTCH PACK INSTALLATION

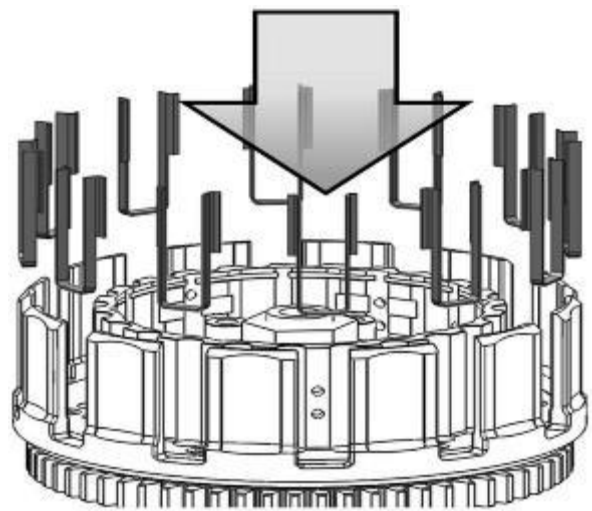
Note: This bike has a slipper clutch with a “backwards” design, you will assemble the clutch pack between the two hubs before placing this assembly into the bike.

1. Install **ALL** the Rekluse basket sleeves into the basket slots. Make sure the sleeve tabs sit against the inside of the basket, then push the sleeves down until they contact the bottom of the tang slot. See pictures for reference.

Sleeve tabs sit inside
the basket



Insert all the basket
sleeves

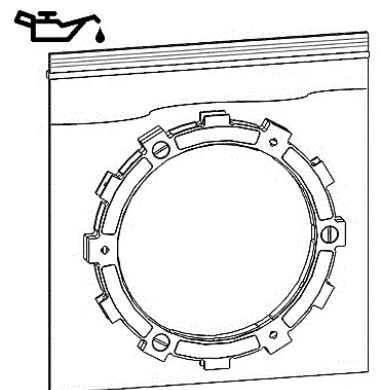


⚠ WARNING

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.

Note: Some friction disks are marked with a small colored dot. This mark is used for processing and can be ignored.

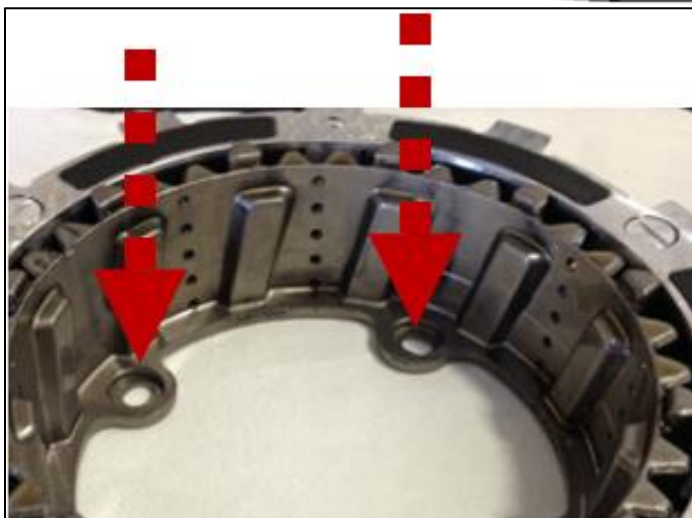
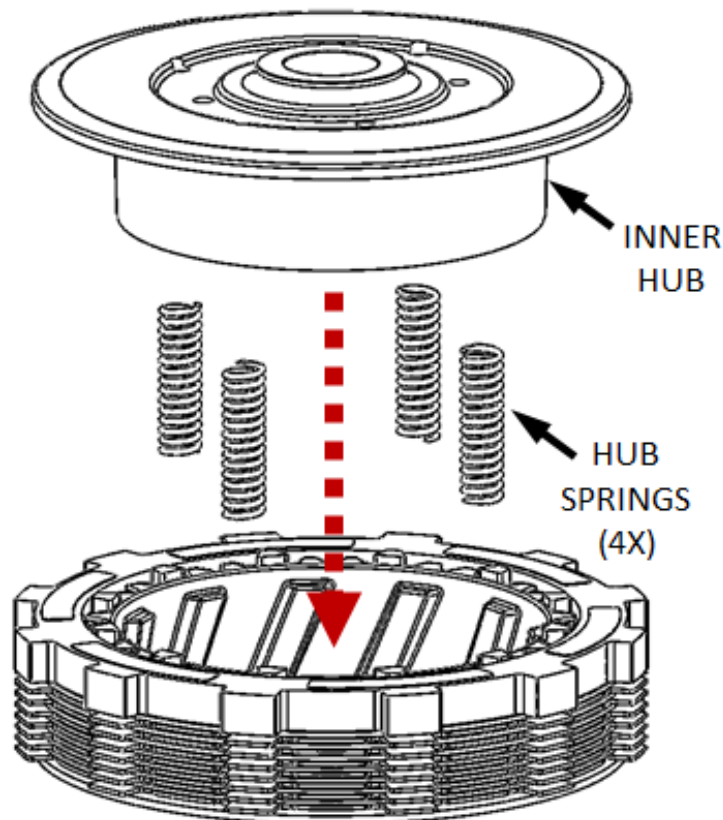
1. Soak the friction disks and EXP disk in new oil for at least 5 minutes. Make sure the EXP and friction disks are coated on both sides.



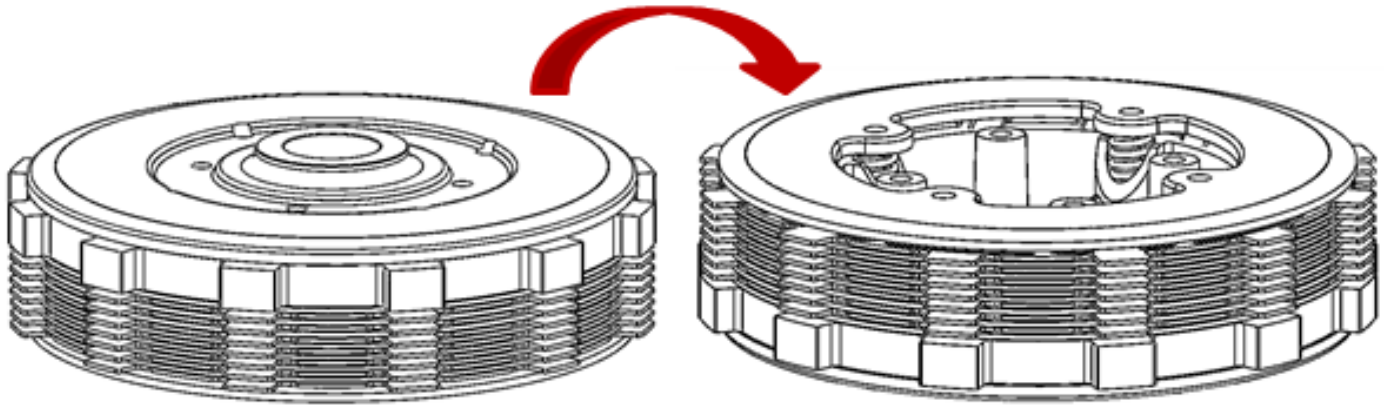
2. Place the outer hub on a clean workbench, then install the oil-soaked clutch pack clutch pack one plate at a time according to the order in the included **Setup sheet**.

Note: *Be sure to align the tabs on the friction disks with each other. This will make placement into the basket much easier later.*

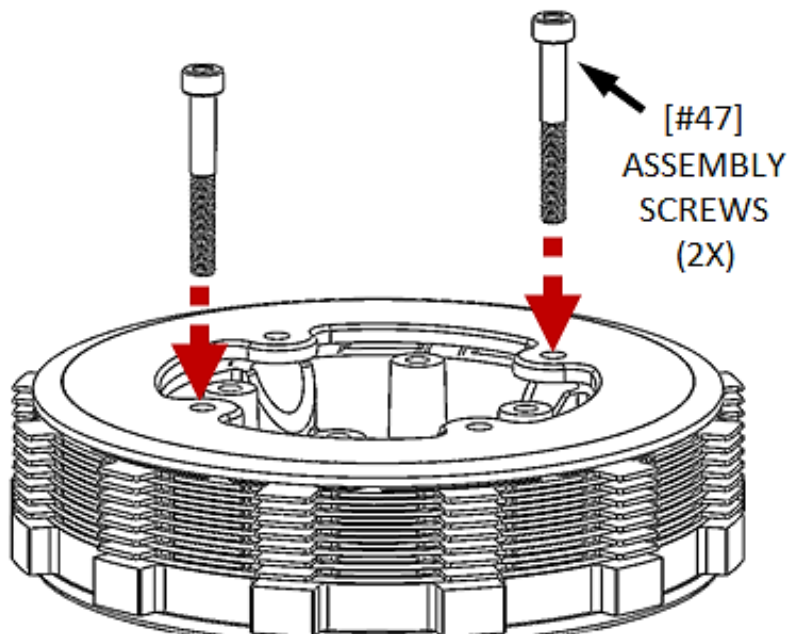
3. Place the 4x OEM hub springs in their pockets in the outer hub, then install the inner hub, taking care to align the arrows of the two hubs.



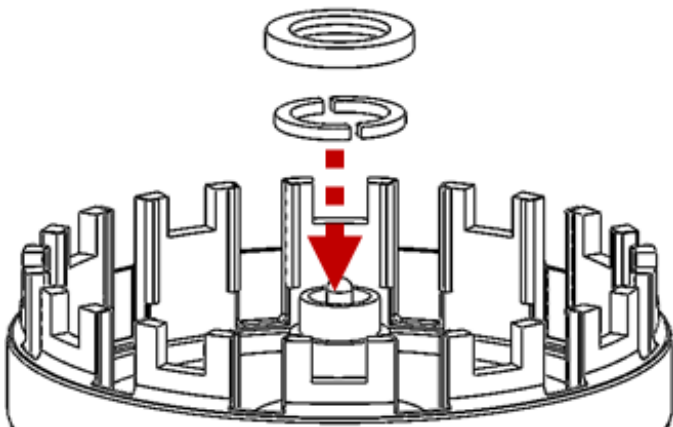
4. With your hands, compress this assembly together and flip it over so that none of the plates become unindexed from the outer hub.



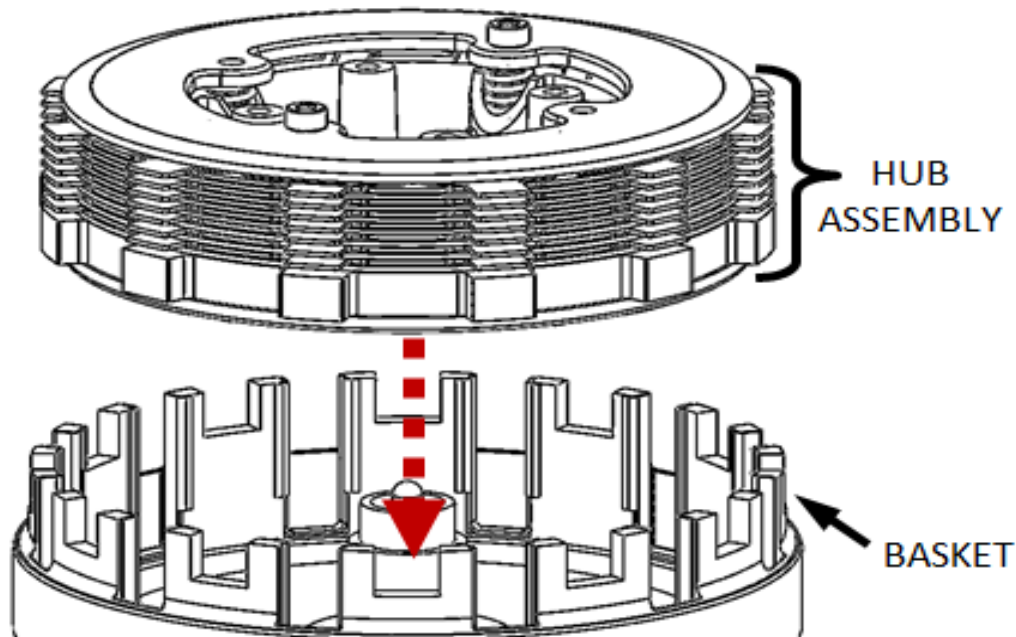
5. Using a 4mm Allen key, thread the 2x provided assembly screws through opposing spring pockets. Tighten just until the springs are compressed enough to contain the clutch pack, but not fully clamping the clutch pack. **Do not over-tighten!** This step is designed to make it easier to drop the assembly into the bike as one unit.



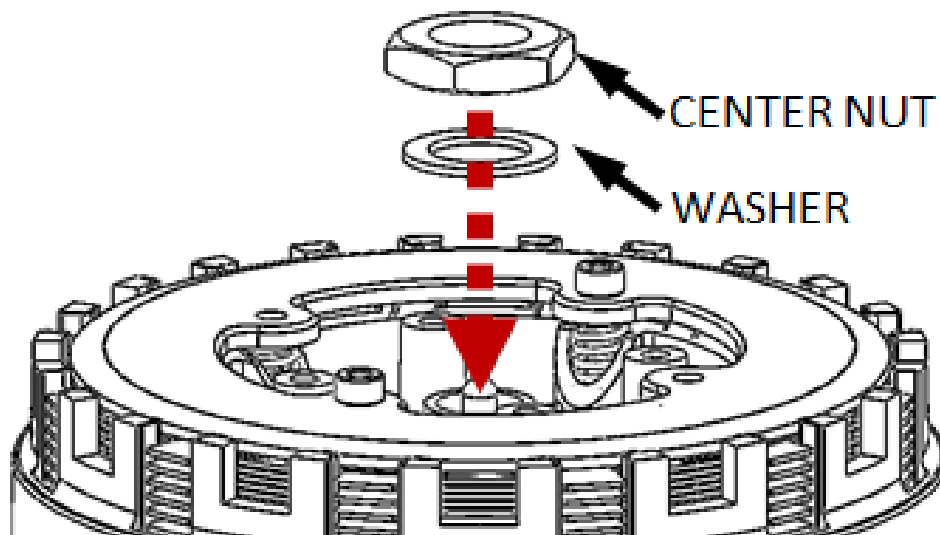
6. Check to ensure that the 3-piece thrust washer assembly is correctly in place on the mainshaft. These may have moved when the hubs were removed from the bike.



7. Install the hub assembly into the clutch basket, making sure that all the friction disk tabs index into the steel basket sleeves and the inner hub spline indexes correctly to the mainshaft.



8. Reinstall the OEM washer and center nut, applying Loctite® 243 or equivalent thread-locking compound to the threads.



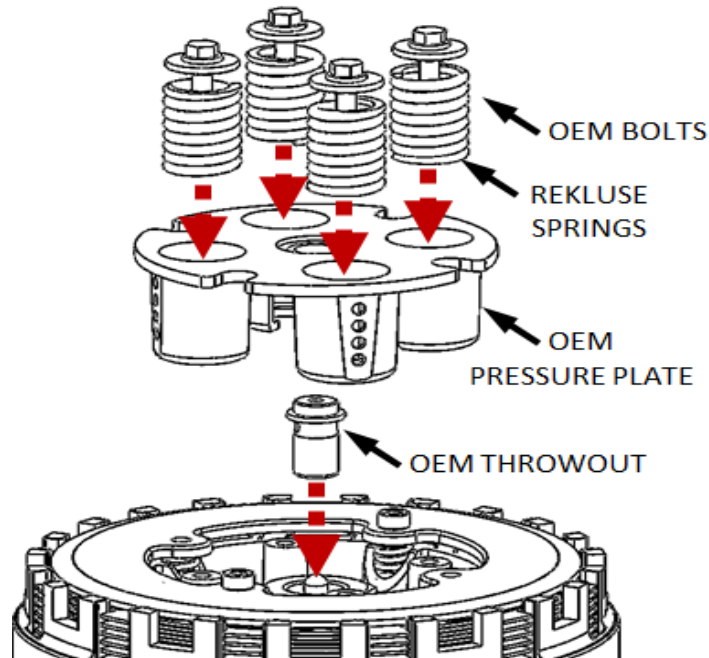
9. Use a torque wrench to tighten the center nut to **74 ft-lb (100 N-m)**. ***Do not over-torque!***

Note: *Placing the transmission in the highest gear and having a friend hold the brake pedal to keep the clutch from spinning may help reaching the appropriate torque.*

CAUTION

Over-torquing the center nut will cause drag and can damage your engine's bearings or transmission components.

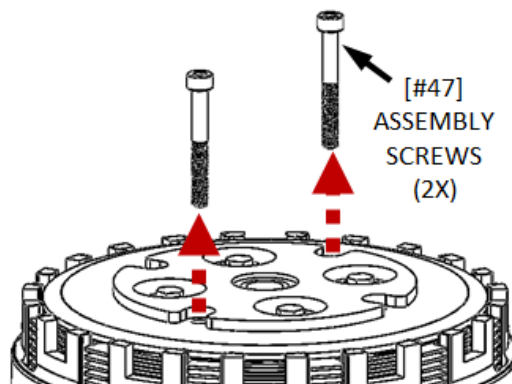
10. Reinstall the OEM throwout and pressure plate, followed by the springs and OEM bolts.



NOTE: Use the provided Rekluse Pressure Plate Springs

11. Torque the spring bolts to **4.4 ft-lb (6 N-m)**.

12. With the clutch installed, you can now remove the screws that were used to hold the assembly together during installation.



13. Reinstall the clutch cover and oil filter cover, torquing the bolts to the OEM spec:

Clutch Cover Bolts: **7.4 ft-lb (10 N-m)**

Oil Filter Cover Bolts: **4.4 ft-lb (6 N-m)**

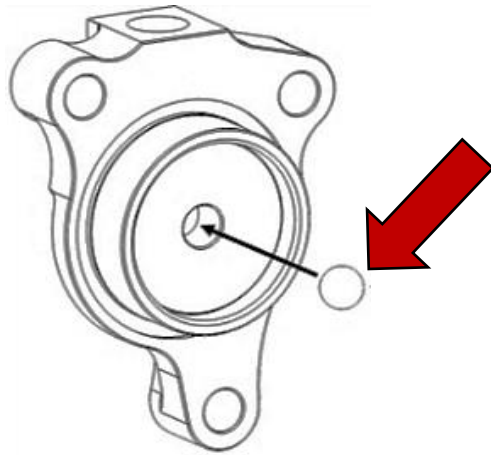
14. Reinstall the foot peg assembly and swingarm bolt, applying thread-locking compound to the swingarm bolt and torquing to **59ft-lb (80N-m)**.

SLAVE CYLINDER INSTALLATION

Installing the new Rekluse slave cylinder takes several steps. Please read the entire section before beginning the process to ensure you have the right equipment and clutch fluid needed for the replacement. Rekluse recommends wearing gloves and safety glasses for the installation.

⚠ CAUTION

During the bleed and assembly, note that there is a small ball bearing installed in the slave piston with a small amount of grease. When installing the Rekluse slave cylinder, make sure the ball is in place and has not come loose.



Adjustable Slave Cylinder Access

To ensure access to the adjuster screw on the new Rekluse slave cylinder, there are 3 options:

1. Modify the OEM plastic chain guard by drilling a small hole.
2. Purchase an aftermarket chain guard which allows access to the adjuster screw.
3. Remove the OEM chain guard when making adjustments (however, the guard must be securely in place to start the engine or it will leak oil).

Modifying Chain Guard

1. Stand the bike up and lean it on its kickstand or place it on a suitable bike stand.
2. Remove the plastic chain guard that covers the slave cylinder.



3. Measure 1.20" (30.5mm) from the center of the bolt sleeve and make a mark in the center of the valley between embossments as shown below.



4. Drill a ~5/16" (~8mm) hole at this location.

Step 2: Bleed the new slave cylinder

IMPORTANT CLUTCH FLUID NOTE:

For MY2016 bike owners only:

Refer to the *Slave Cylinder Appendix* document before installing the Rekluse-provided slave cylinder on your bike. It may be necessary to change the fluid seals in the cylinder housing and piston.

For all other model years:

Read the fluid information located on the reservoir cap of your bike's clutch master cylinder. This will inform you of which clutch fluid to use in the following steps, either mineral oil or DOT brake fluid.

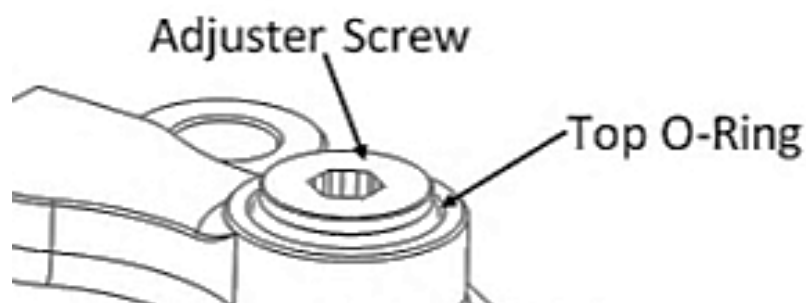
Generally:

- MY2015 and older: uses **mineral oil**
- MY2016 and newer: uses **brake fluid**

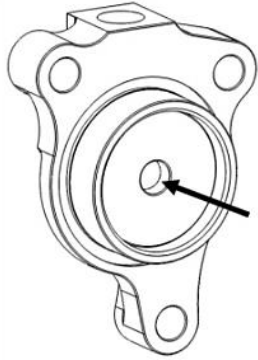


This step prepares the new slave cylinder for installation. Bleed the cylinder on a workbench or an area away from the bike.

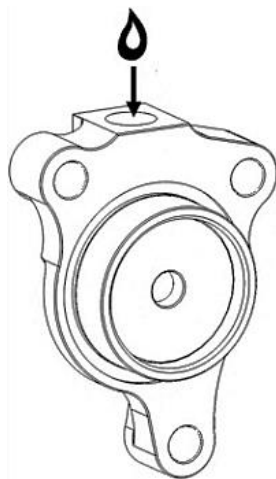
1. Using a 4 mm Allen wrench, turn the adjuster screw counterclockwise so that the top O-ring is visible under the adjuster screw.



2. Use your thumbs to compress the piston until it bottoms out, then release it.



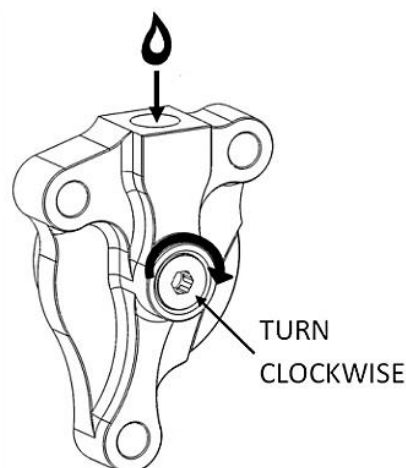
3. Pour the recommended clutch fluid into the slave cylinder port.



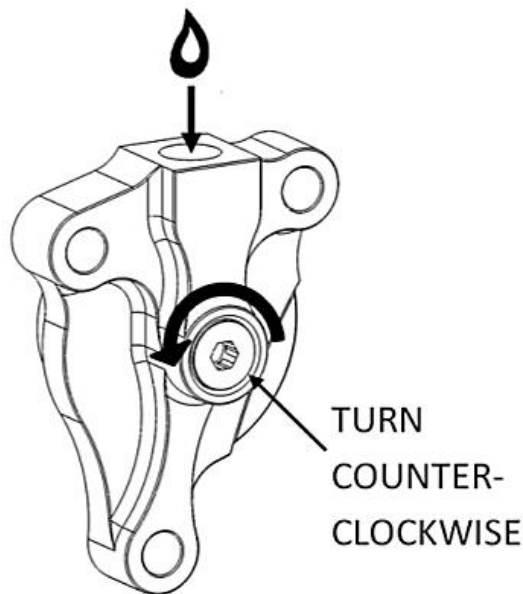
⚠ CAUTION

Be sure to use the correct clutch fluid. Check the cap of the clutch master cylinder to determine which clutch fluid to use. Failure to use the correct fluid will result in seal damage and/or failure.

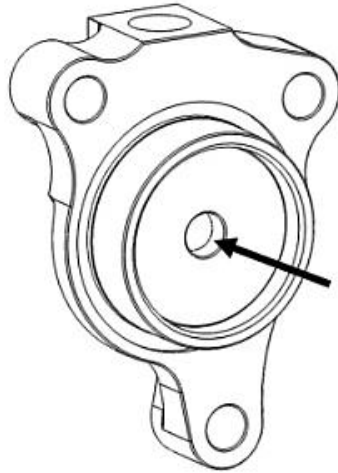
4. Use a 4 mm Allen wrench to turn the adjuster screw clockwise until it bottoms out and the O-ring is no longer visible. Keep the fluid topped off as you go.



5. Use the wrench to turn the adjuster screw counterclockwise back to the initial position, with the top O-ring visible. Keep the fluid topped off as you go.



6. Use your thumbs to compress the piston again until it bottoms out while looking for air bubbles.

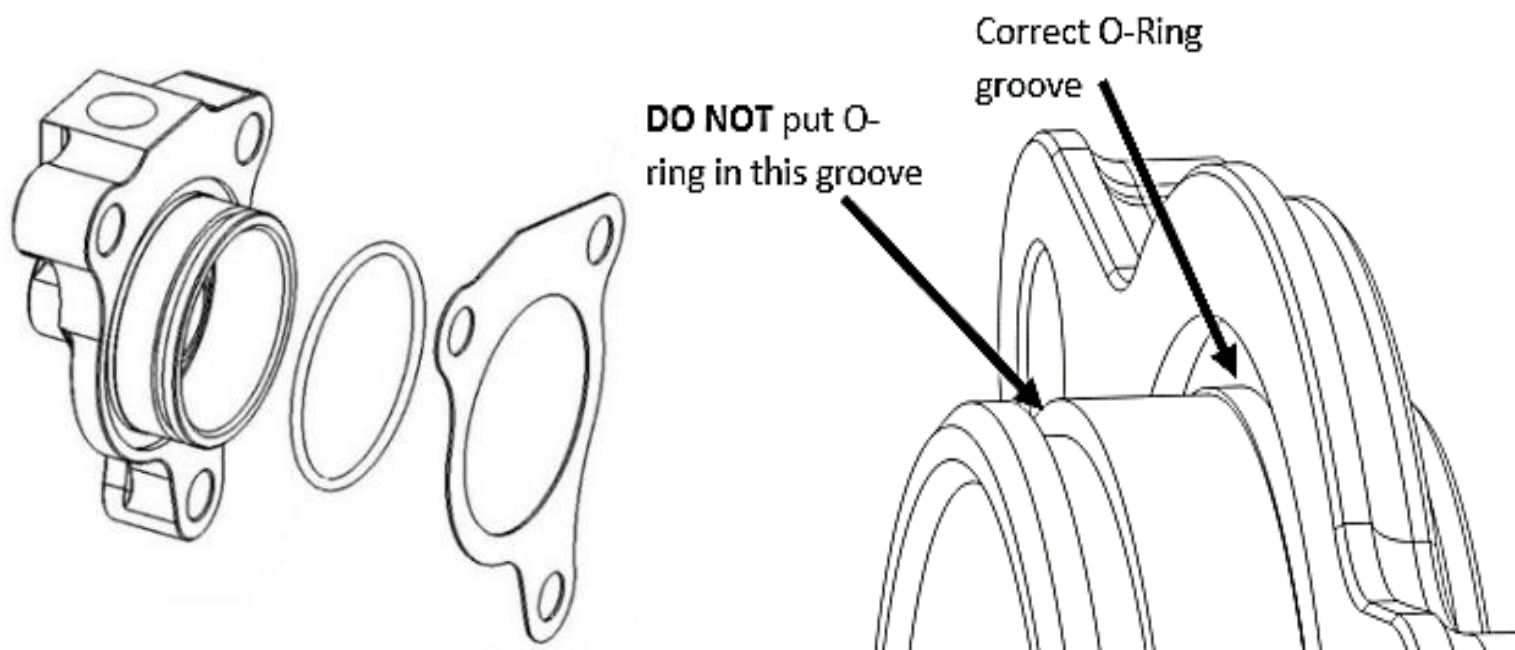


CAUTION

When compressing the piston, fluid can shoot out from the slave cylinder port. Be sure to wear eye protection.

7. Repeat steps 3 - 6 until there are no air bubbles coming out in the fluid when the piston is compressed.
8. When the bleeding is complete, turn the adjuster screw counterclockwise so that the top O-ring is visible.
9. Compress the piston until it bottoms out, and top off with fluid.
10. Check that the ball bearing is still in place.

Note: The Rekluse slave cylinder comes preassembled in the kit. If the parts become separated, assemble them in the following order: Rekluse slave cylinder, O-ring, then the supplied paper gasket.



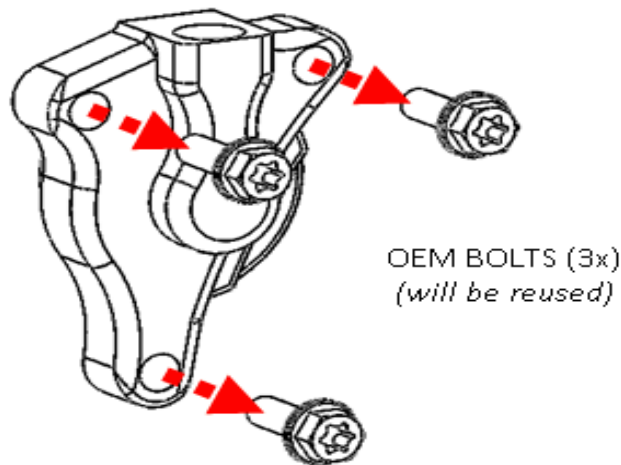
Step 3: Replace OE slave cylinder

In this step, the OE slave cylinder is replaced with the Rekluse slave cylinder. Work quickly when performing the following steps. This method retains the fluid inside the line from the master cylinder, and makes the final bleeding step easier.

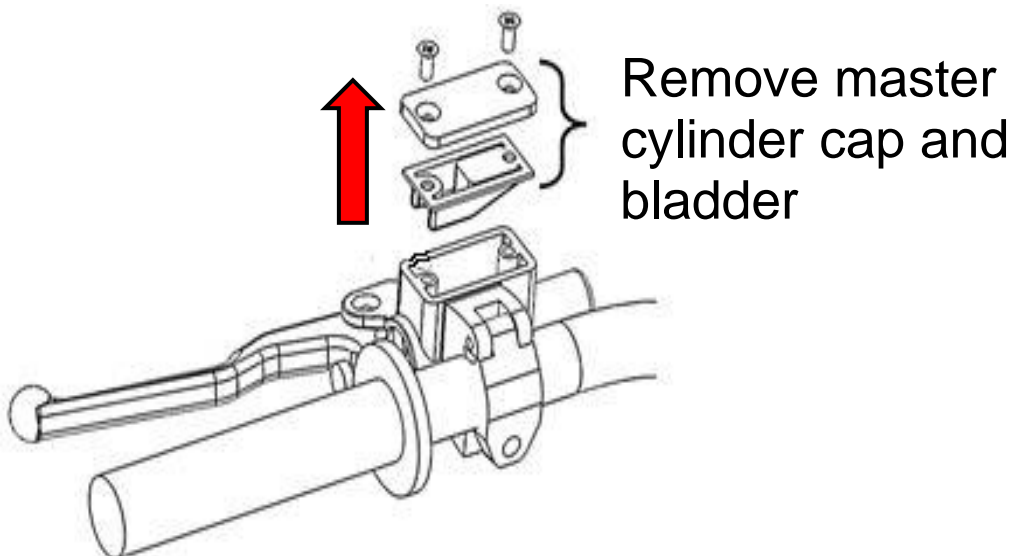
1. On the left side of the bike, while leaving the OE slave cylinder bolted on the engine, use a wrench to remove the input line fitting from the OE slave cylinder.
2. Install the inline fitting and OEM bleeder bolt onto the Rekluse slave cylinder. Tighten the inline fitting and OEM bleeder bolt with your hand until snug then Torque OE specification.

Note: A quick transfer of the fluid line will result in less bleeding in the following steps.

3. With the clutch fluid line attached to the Rekluse slave cylinder, remove the OE slave cylinder from the engine. Keep the OE bolts for reuse.



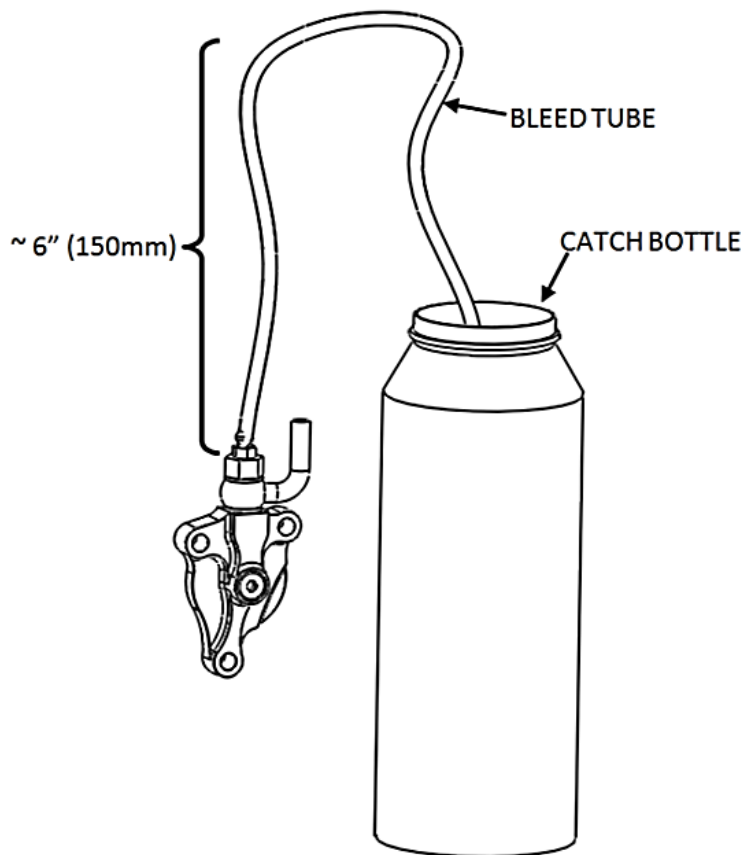
4. Remove the cap and bladder from the clutch master cylinder.



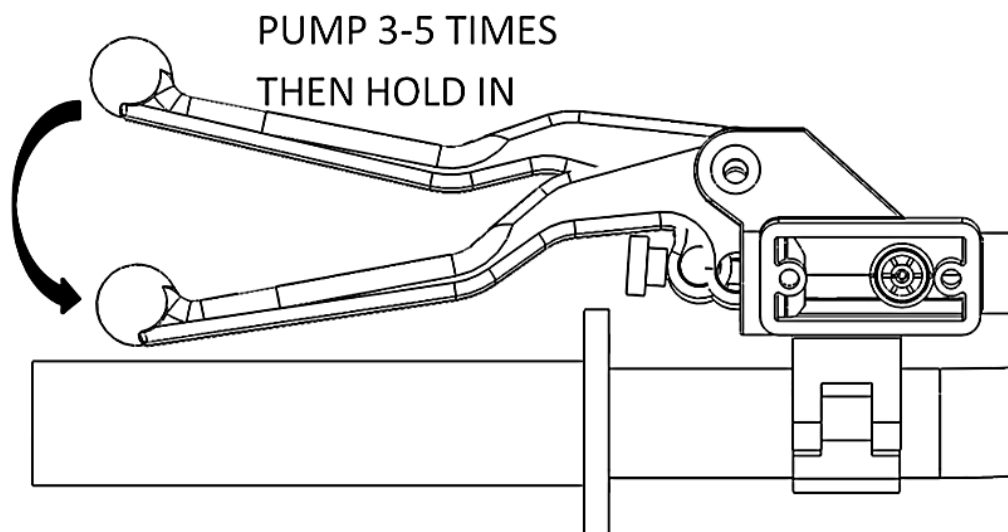
5. Mount the Rekluse slave cylinder and the stock chain guard to the engine by lightly threading OE bolts until finger tight.

6. Tighten all the slave cylinder screws to OE specification

7. Attach the supplied bleed tube to the banjo bolt port and loop it into a suitable catch bottle.

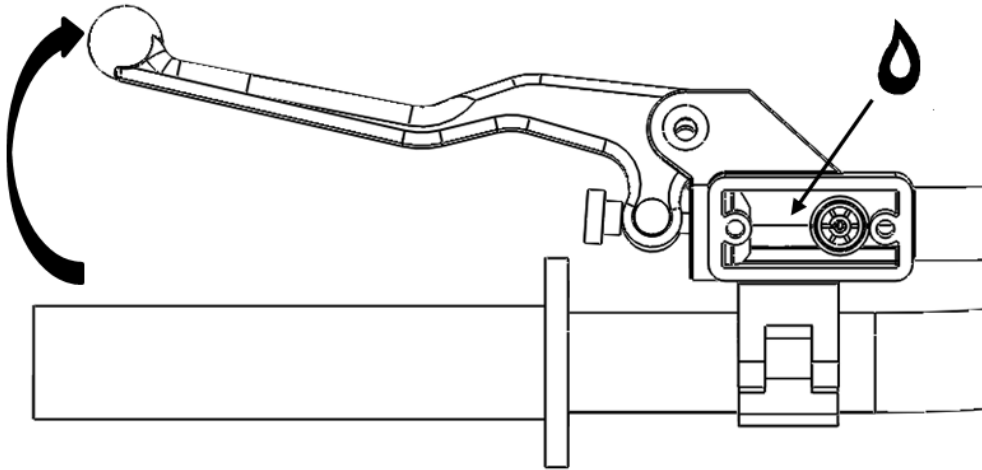


8. Pump the clutch lever 3-5 times then hold it against the bar/grip.

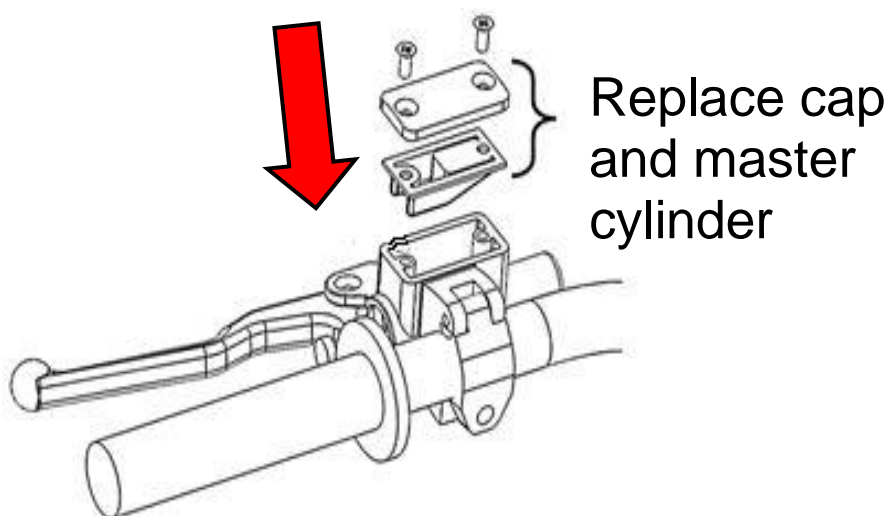


9. Using an 8 mm wrench, open the bleed port on top of the banjo bolt. Air and fluid should come out of the bleed tube. Tighten the bleed port.

10. Slowly release the clutch lever and check the fluid level in the clutch master cylinder.
11. Repeat the previous 3 bleeding steps until air no longer comes out of the bleed port and the clutch lever functions properly. Repeat the bleeding procedure if necessary.



12. Check that the clutch master cylinder is 75% full, and then replace the cap and bladder on the clutch master cylinder.



13. Remove the bleed tube and bottle.
14. Torque the bleed screw to **150 in-lb (17 N-m)** with a socket or the closed end of an 8 mm wrench.

Note: *Be sure to use a socket or closed end wrench when torquing the bleed screw. Using an open-ended wrench can strip the hex screw.*

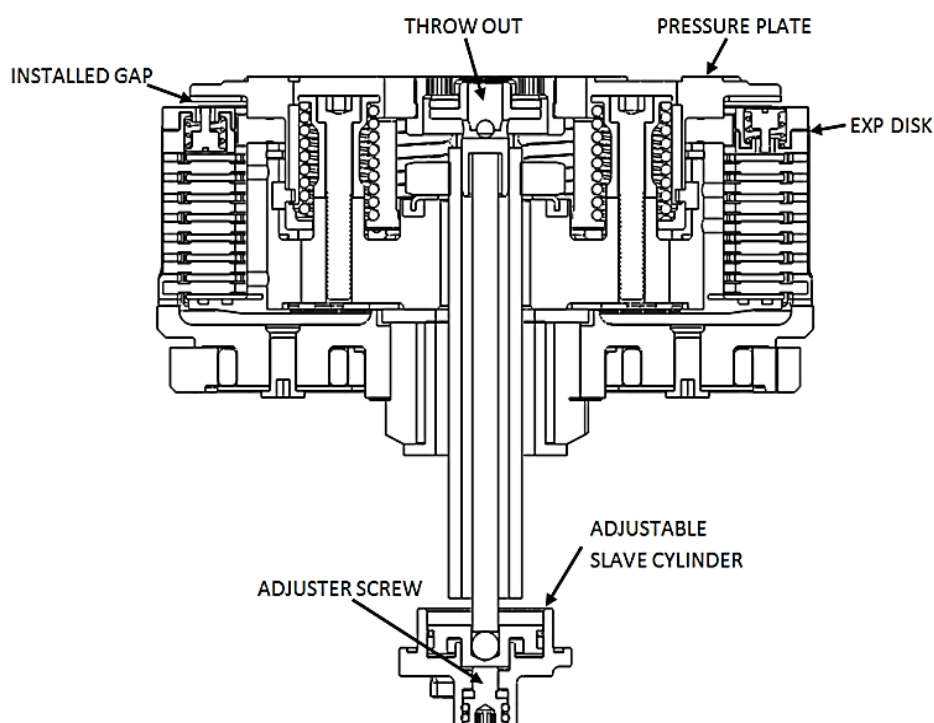
SET THE INSTALLED GAP AND **CHECKING FREE PLAY GAIN**

It is very important that you understand how to set the installed gap in your new clutch, and be able to verify the 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 the free space in the clutch pack when the EXP disk is disengaged (collapsed). This gap allows the clutch to spin freely until the engagement RPM is reached and the EXP disk expands to close the gap and apply pressure to the pressure plate, which in turn drives the motorcycle forward.

The installed gap is what allows the auto function of the product to perform properly. Use the following steps to set the installed gap and check the Free Play Gain.



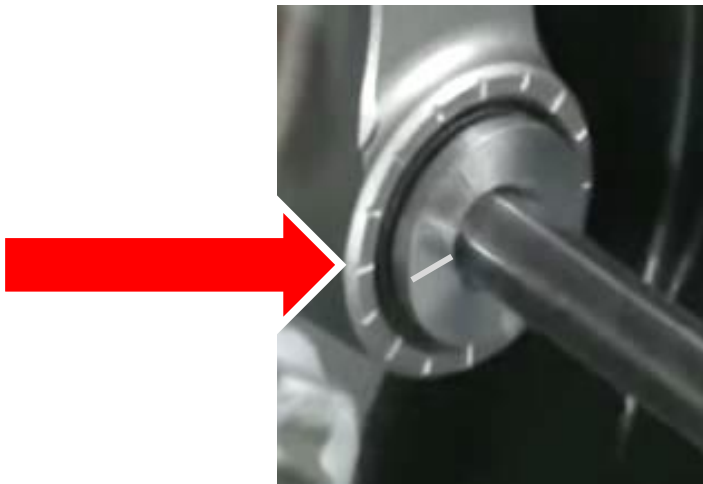
⚠ WARNING

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.

Setting the installed gap and checking Free Play Gain is a 4-step process. It is important to follow each step to ensure that your new clutch functions as designed.

Step 1: Find the starting point

- a) With the bike standing up, locate the adjuster screw in the center of the adjustable slave cylinder.
- b) With the O-ring showing, use a 4 mm Allen wrench to turn the adjuster screw clockwise until it stops under light pressure. This is your “starting point.”



Note: *The resistance you feel is where the throw-out begins to lift the pressure plate. Finding the right starting point may take a few tries, but you will feel a noticeable change in turning effort once you reach that point. Stop when you feel the pressure increase. The “starting point” will change as the clutch pack wears over time.*

- c) Once you have found the starting point, note the position of the Allen wrench using the tick marks on the slave cylinder housing and the small etch mark located on the screw. You will begin here to adjust the installed gap.



Use the tick marks on the cylinder and the etch mark on the screw to remember the starting point for adjusting the gap.

- d) Use a 4 mm Allen wrench to turn the adjuster screw clockwise 1 full turn + 5 tick marks from your starting point. **This may NOT be your final setting**, but it is a beginning adjustment for finding the correct setting.
- e) Continue with Step 2 to check for Free Play Gain.

⚠ CAUTION

Do not ride your bike without the adjusting the installed gap. You will not be able to disengage the clutch until you set the installed gap.

Step 2: Learn how to check Free Play Gain

Feeling Free Play Gain with the beginning adjustment to the slave cylinder aids in learning to recognize Free Play Gain.

If you are familiar with Free Play Gain, check for Free Play Gain then skip to Step 3 -“Break-in the new clutch.”

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.

Free Play Gain is different from the “normal” free play (slack) you are used to with your stock clutch. With the Rekluse auto clutch, Free Play Gain is the result of the EXP disk expanding and lifting the pressure plate to engage the clutch.

Free Play Gain happens when the engine’s RPM increases from idle to above approximately 5,000 RPM and the EXP closes the installed gap. The amount of Free Play Gain you feel in the lever corresponds to the amount the pressure plate has been lifted by the EXP disk expansion.

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.”



Lever with “slack” removed

Lever position around 5,000 RPM

Free Play Gain
3/16”-1/4” (4.7 mm-6 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 1/8" to 1/4" (3 mm-6 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.

⚠ 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.



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



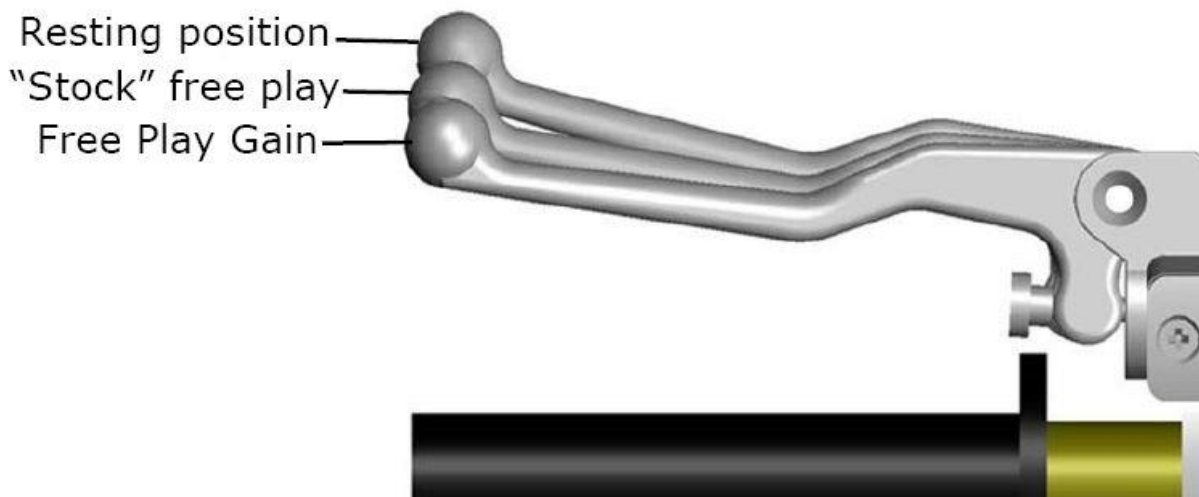
d) Pull the band through the loop, then attach it to the outside end of the clutch lever. This will take up the initial free play (slack) and put the lever in a position to detect the Free Play Gain.



e) While still in **NEUTRAL**, quickly rev the engine between 5,000-7,000 RPM (1/2 to 3/4 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 3/4 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 feel the Free Play Gain again.
- e) Continue with Step 3 to break-in the new clutch



Step 3: 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.

⚠ WARNING

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
<p>Rev Cycles:</p> <p>1. Place the bike in NEUTRAL.</p> <p>2. With your hand off the clutch lever, rev the engine 10 times, being sure to let it return to idle between each rev cycle.</p>	<p>① N ② ③ ④ ⑤</p> <p>10 rev cycles</p>
<p>3. With the engine still running, pull in the clutch lever, then click the bike into 1st gear. Slowly release the clutch lever. The bike should stay in place or have a slight amount of forward creep.</p> <p>4. With the bike idling in first gear, slowly apply throttle to begin moving.</p>	<p>① 1 ② N ③ ④ ⑤</p> <p>10 roll-on starts</p> <p>Continued on  next page</p>

<p>5. 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.</p> <p>Note: <i>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.</i></p>	
<p>6. 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.</p>	 <p>10 roll-on starts</p>
<p>7. Place the bike in NEUTRAL and recheck Free Play Gain.</p> <p>8. Continue to step 4 to adjust the installed gap until the Free Play Gain of the clutch lever is 1/8" to 1/4" (3 mm-6 mm).</p>	 <p>Recheck Free Play Gain and adjust the installed gap</p>

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.*

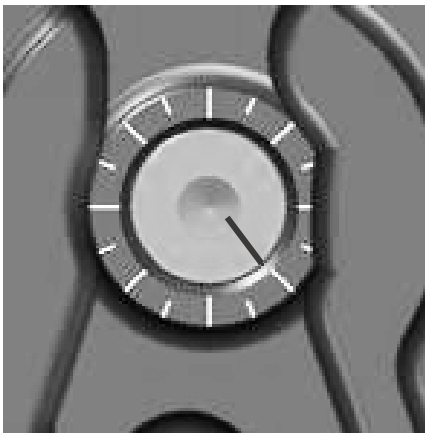
⚠ CAUTION

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.

Step 4: Adjust the installed gap and Recheck Free Play Gain

Once you have learned how to check Free Play Gain, you need to finish adjusting the installed gap, then recheck the Free Play Gain until the clutch lever moves only 1/8" to 1/4" (3 mm-6 mm). The gap is adjusted by turning the slave cylinder screw.

- a) With the bike running and in **NEUTRAL**, locate the adjuster screw in the center of the adjustable slave cylinder.
- b) Use a 4 mm Allen wrench to turn the adjuster screw clockwise 1 tick mark from the last setting, then recheck Free Play Gain.



Tick marks are located on the slave cylinder, and an etch mark is on the screw. If you need to re-position the Allen wrench, you can use these marks for reference.

- c) Continue to adjust the slave cylinder 1 tick mark at a time until optimal Free Play Gain is achieved.
- d) Refer to the following pictures and chart in the next section for additional adjustment information.
- e) The Free Play Gain will change as the clutch pack wears over time.
- f) Checking the Free Play Gain is easy and indicates when the install gap needs adjusting.

FREE PLAY GAIN ADJUSTMENTS

Make each adjustment in small increments - one tick mark at a time. After each adjustment, recheck Free Play Gain until you achieve the optimal 1/8" to 1/4" (3 mm-6 mm) of clutch lever movement.



Symptom	Reason	Solution
<ul style="list-style-type: none"> • 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	Turn the adjuster screw clockwise 1-2 marks to increase the installed gap and decrease Free Play Gain. Recheck Free Play Gain.
<ul style="list-style-type: none"> • 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	Turn the adjuster screw counterclockwise 1-2 marks to reduce the installed gap and increase Free Play Gain. Recheck Free Play Gain.

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.**

Break Lever Strap: for use as a parking brake



Clutch Lever Strap: to prevent unwanted launching



⚠ WARNING

To avoid death, serious injury, and/or property damage:

- Use the included brake lever strap to secure the front brake lever to the handlebar as a parking brake.
- Use the included clutch lever strap when the motorcycle is parked to secure the clutch lever to the handle bar, thereby completely disengaging the clutch.

TROUBLESHOOTING

Performance issues

If you find yourself adjusting the slave cylinder to fix Free Play Gain or drag, the clutch disks might be worn. Excessive heat or clutch slip can cause premature clutch failure as well. Once extreme temperatures are reached, irreversible damage will occur.

- Inspect all of your clutch parts for signs of wear or excessive heat, and replace components as necessary. Clutch wear is dependent on the riders use.
- Measuring the clutch pack and/or the EXP disk can help determine if the components need replacing.

Clutch noise

Although it is harmless, some bike models may have “squeal” or “chatter” coming from the clutch at low RPM as it engages. Clutch squeal is caused by the clutch components vibrating as the clutch engages and can become more audible as the clutch gets hot. Adjusting the installed gap will NOT affect clutch squeal or chatter.

For bike models that have clutch squeal or chatter here are some recommendations to reduce or eliminate it:

- Change the oil: Rekluse recommends that you have fresh, clean JASO-MA or JASO-MA2 rated oil for best clutch performance. Dirty or old oil can make the clutch more likely to squeal or chatter.

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. 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. However, with a small opening of the throttle the bike should move forward.

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

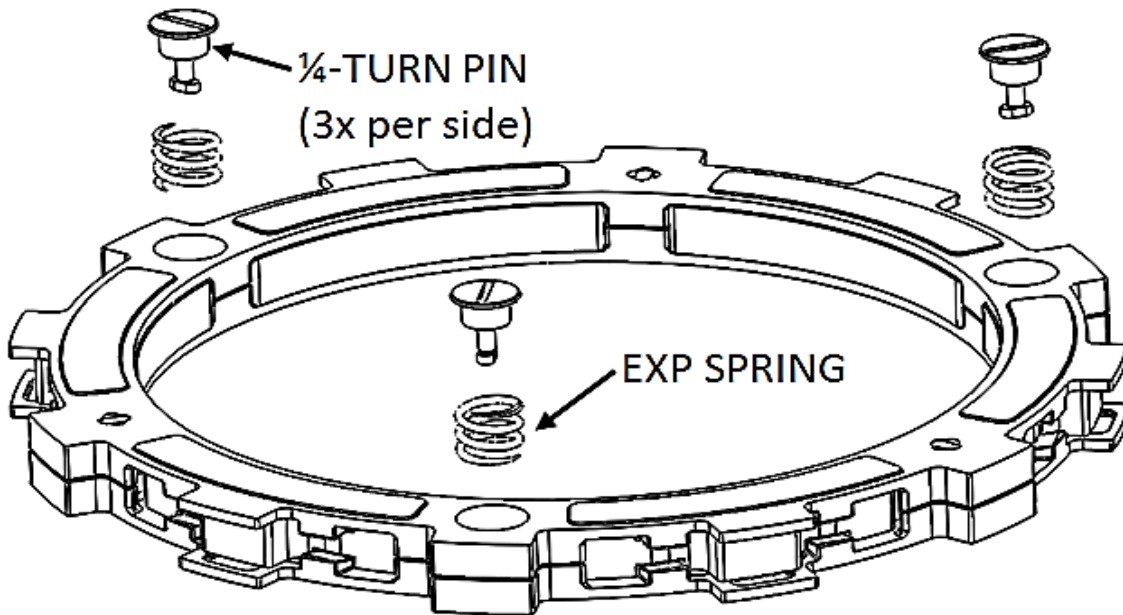
Roll Pin EXP Wedges	
Engagement setting	Spring configuration
Low	6 Gold Springs
Medium	3 Gold Springs / 3 Green Springs
High	6 Green Springs

Teflon Ramp EXP Wedges	
Engagement setting	Spring configuration
Low	6 Red Springs
Medium	3 Red Springs / 3 Blue Springs
High	6 Blue Springs

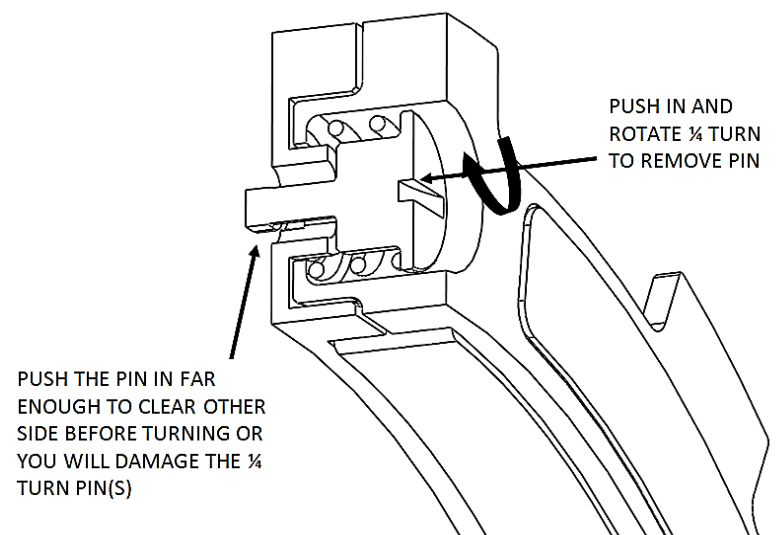
Changing the springs

1. 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.
7. 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 **BUMP-STARTING** the other side.

If your bike needs to be bump-started due to a dead battery or any other reason, follow the steps below to quickly bump-start your bike.

1. Turn the adjustable slave cylinder counterclockwise to collapse the gap until no resistance is felt.
2. Bump start the bike. The clutch will function like a manual clutch at this point, but the clutch will not be fully over-ridable at high RPMs.
3. Once the bike is started, readjust the installed gap.

MAINTENANCE

To keep your clutch performing at its best, perform regular maintenance on your bike and clutch.

- Keep up with regular oil changes as per the bike manufacturer's recommendations. Clutch performance and longevity depend on oil quality. Oil recommendations can also be viewed under Tech Tips on our website at www.rekluse.com/support/videos/atv-mc-support-videos.
- For optimal clutch performance Rekluse recommends using fresh, clean oil that **meets JASO-MA** oil rating requirements.
- Inspect all of your clutch parts at regular maintenance intervals for signs of wear or excessive heat and replace components as necessary. Clutch wear is dependent on the riders use.
- Inspect the dampers and replace them if you feel any movement between the two hubs. Refer to the section on inspecting the dampers for more information.
- Inspect and replace basket sleeves if they appear to be notched from friction disks. Rekluse recommends replacing them every 25 hours for abusive riding/racing,

every 50 hours for moderate riding, or every time friction disks are replaced.

- Maintain adequate Free Play Gain. Check before every ride and adjust if necessary.
- Replace friction disks if the disks are glazed and/or burnt.
- Measuring the clutch pack and/or the EXP disk can help determine if the components need replacing.
- Repeat the break-in procedure anytime you replace the EXP bases, Teflon pads, EXP wedges, or frictions disks. Always soak friction disks or EXP bases in 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 from www.rekluse.com/support.**

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

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

High Heat
(Blue)

Excessive Heat
(Black)

NEED ADDITIONAL HELP?

Website

www.rekluse.com/support

Hours

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

Phone

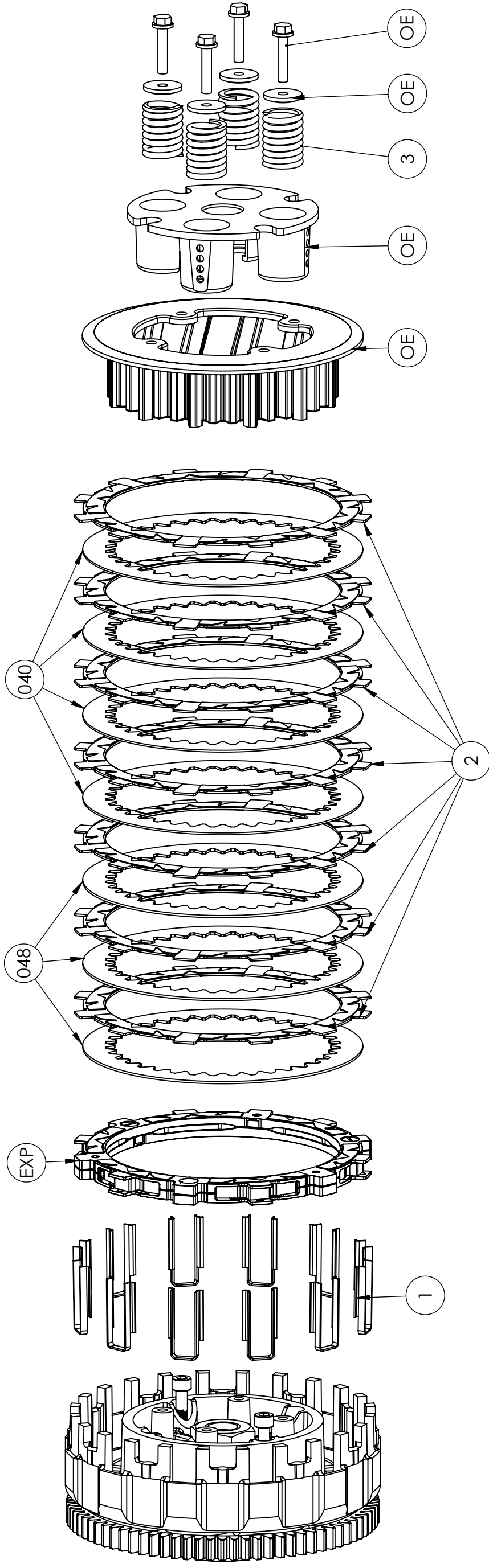
(208) 426-0659

Email

customerservice@rekluse.com



SETUP SHEET 198-6380



TUNING OPTIONS

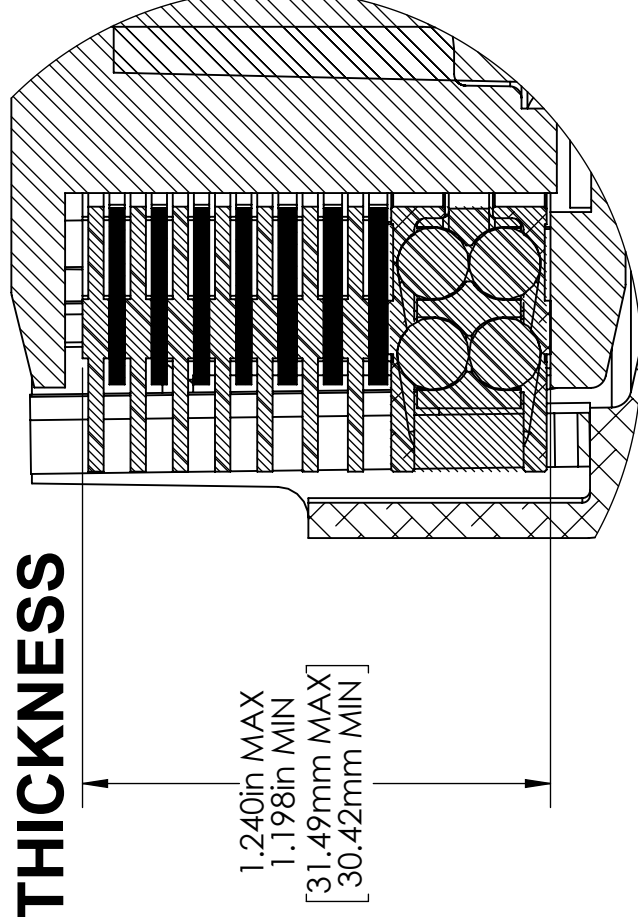
ENGAGEMENT RPM	EXP SPRINGS
LOW	6 GOLD
MEDIUM *	3 GREEN & 3 GOLD
HIGH	6 GREEN

* MEDIUM SETTING IS PREINSTALLED IN THE EXP DISC

SERVICE LIMITS

COMPONENT	STANDARD	SERVICE LIMIT
TORQDRIVE FRICTION	.068-.072in 1.73-1.83mm	.065in 1.65mm
EXP	.426-.446in 10.8-11.3mm	.416in 10.6mm

CLUTCH PACK THICKNESS



COMPONENTS

ITEM NO.	DESCRIPTION	QTY.
1	BASKET SLEEVE	12
2	FRICTION DISC	7
3	REKLUSE PRESSURE PLATE SPRING	4
OE	OE COMPONENTS	VAR.
040	DRIVE PLATE 0.040" (1.0mm)	4
048	DRIVE PLATE 0.048" (1.2mm)	3
EXP	EXP DISC	2

RIDER'S GUIDE

How to get the most out of your new clutch

LET'S RIDE

This guide is to help get the best experience riding with your new Rekluse RadiusX centrifugal auto clutch.

It doesn't matter if you, a mechanic, or a dealer installed your new clutch, take a moment to read this Rider's Guide. It will help you understand some important points about how to shift with the new clutch, how the auto clutch functions, some important safety information, and how to check Free Play Gain.

What it does

The Rekluse auto clutch is designed to eliminate the need for clutching when starting and stopping. The auto clutch provides smooth acceleration without loss of power. It also prevents stalling when riding at slower speeds or maneuvering through traffic. You retain full control of shifting and can continue to use the clutch lever if you like.

What it doesn't do

The Rekluse auto clutch is not an automatic transmission. You still need to shift to maintain the proper gear selection when accelerating, cruising, and decelerating.

Items to Note

- Thoroughly read and understand the **Safety Information** before operating any vehicle with this product.
- Videos related to this product can be viewed online at <https://rekluse.com/support/videos>.
- **Do not "rev" the throttle while in gear and not moving.** Revving the engine without the clutch lever pulled in will lurch the bike forward or move it unexpectedly.
- Check your Free Play Gain before the 1st ride of the day. Instructions for checking Free Play Gain are included in the guide.
 - If Free Play Gain is not correct, adjust the installed gap and recheck Free Play Gain before continuing. Continuing to ride when the clutch is not adjusted properly may cause damage to the clutch.
 - If Free Play Gain cannot be corrected (too much or too little), stop riding the bike until the issue can be resolved.

GETTING STARTED

There are a few basic steps you need to know when shifting with your new auto clutch. Learning these steps will keep your ride smooth and prevent damage to the clutch.

- Always start your bike in **Neutral** and let the engine warm up. If the bike is cold, there may be clutch drag. Clutch the bike manually until it is warm.

- **Always shift your bike from Neutral to 1st gear with the clutch lever pulled in.**
- To move or start, let the clutch lever out and slowly roll on the throttle.
- Upshift gears as you normally would, using the clutch lever as you shift.
- Your Rekluse auto clutch engages during normal riding from idle to 4,500 RPM. See section 3 below for suggestions regarding optimal RPM for riding conditions.

SHIFTING

1. Upshifting:

- For normal riding situations, upshift as you normally would.

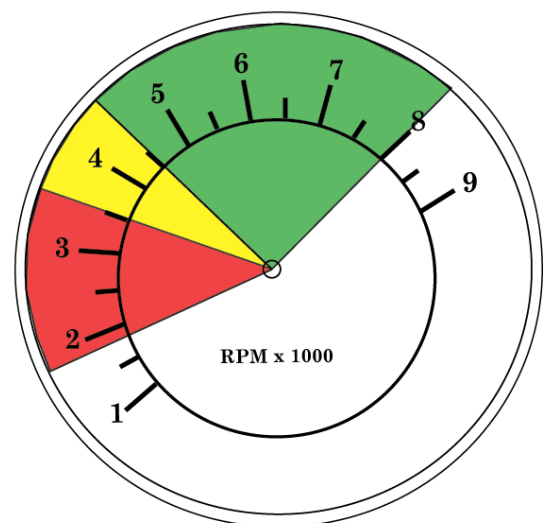
2. Downshifting:

- For normal riding situations—including slowing down from a tall gear—**downshift as you normally would.** Downshift if the engine is jerking or “lugging.”
- Downshift one gear at a time and allow the engine braking to engage like normal.
- When downshifting, apply a small amount of throttle then slowly release the clutch lever to reactivate the clutch.
- If you are traveling at a high rate of speed in a tall gear, you **MUST** apply a small amount of throttle to reactivate the clutch. If you pull the clutch lever in or allow the RPM to drop to idle without reactivating the clutch, free-wheeling occurs.
- Do not ride in a gear higher than you need. Adjust your gear selection to match your ground speed, engine RPM, and terrain.
- When you slow down to stop, you do not need to touch or modulate the lever. The EXP disk will release the clutch automatically when the RPM drops below the engagement point.
- **Once you are stopped, shift into 1st gear using your clutch lever before accelerating again.**

3. Maintaining proper RPM for best performance :

Shift points will vary by bike and your riding style. However, these are some general guidelines to help you get the most out of your clutch and reduce slipping.

- Red Zone: This zone is from idle to around 3,500 RPM. This is a caution zone where the clutch is in a transitional state. Cruising below 3,500 RPM should only be done in 1st gear or below ¼ throttle. Cruising in a tall gear without downshifting is hard on your clutch as well as your engine.
- Yellow Zone: This zone is from about 3,500-4,500 RPM. This is a healthy zone for easy trail riding and cruising situations. It is acceptable to cruise in this range unless you are carrying a heavy load, riding uphill, riding into the wind, or riding well above 1/3-1/2 throttle.
- Green Zone: For best clutch performance and longevity, it is best if most riding is done above



4,500 RPM. The clutch is fully clamped at this point. Any technical trail riding or ascending a grade should be done in this range. Upshift and downshift as you normally would using the clutch lever.

PARKING WITH YOUR AUTO CLUTCH

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

To keep your bike from rolling away without you, use the 2 Velcro lever safety straps every time you park or leave your bike. Using these straps will reduce your risk of injury and/or damage. Refer to the Safety Information sheet for more information.

1. Pull the brake lever tight against the right grip.
2. Wrap the Velcro safety strap around the front brake lever and grip, pull it tight, then fasten it to use as a parking brake.
3. Wrap the other strap around the clutch lever and the grip in the same way to prevent unwanted launching.

LONG LIVE YOUR CLUTCH

In order to keep your clutch functioning properly and prevent damage, you need to check your Free Play Gain before the 1st ride of the day.

Don't know how to check your Free Play Gain?

- **Watch the video:**
<https://rekluse.com/support/videos>
- **Read about it:**
Read the following instructions in this guide and/or the Information Guide that came with your kit.

⚠ WARNING

BEFORE YOU BEGIN, verify 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.

CHECK FREE PLAY GAIN

Optimal Free Play Gain yields **1/4 - 3/8" (6 mm - 9 mm)** of clutch lever movement, measured at the end of the lever. This measurement at the lever correlates to achieving the ideal installed gap.

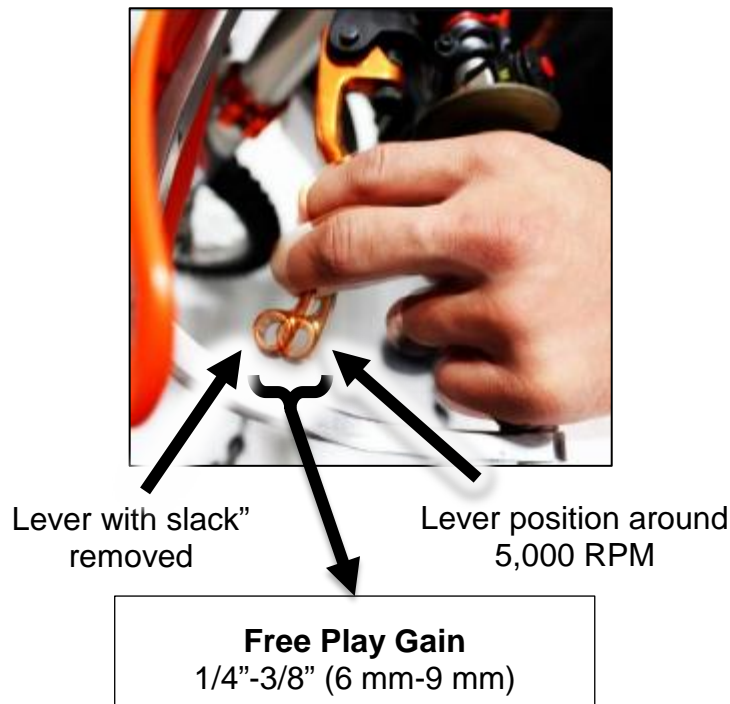
- a) Before you begin checking Free Play Gain, place the bike in **NEUTRAL**, start the engine and let it warm up for 2-3 minutes to idle down and warm the engine oil.
- b) Stretch the included rubber band between your thumbs, then place the top end of the rubber band on the outer end of the left handlebar grip.
- 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 to about 5,000 RPM, 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.



When the bike returns to idle, rest your hand across the clutch lever. Rev the engine again to 3,000-5,000 RPM so you can observe the movement while feeling for Free Play Gain with your hand.

- f) If your Free Play Gain is correct, then enjoy the ride. If you have too little or too much Free Play Gain, adjust the installed gap and recheck Free Play Gain. Instructions for adjusting the gap are found in the Information Guide that came with your kit or on our website.

NEED ADDITIONAL HELP?

Visit our website at www.rekluse.com/support or call us at (208) 426-0659.



SLAVE CYLINDER APPENDIX

Converting to Mineral Oil Clutch Fluid Compatibility – KTM LC4 models

Doc ID: 195-6380A
Doc Rev: 031517

NOTE: Affects MY2016 690cc KTM bikes only! Husqvarna 701 models come standard with DOT brake fluid.

OVERVIEW

KTM Tech Bulletin #1603 — published December 10, 2015 — states that some bike models received a revision to their Magura clutch fluid systems during mid-production for MY2016 bike models. This will affect the functionality of your clutch kit if your bike was assembled before the production revision was enacted by KTM.

The fluid seals in the clutch control system (Rekluse Adjustable Slave Cylinder) are compatible with **only one** clutch fluid type and **cannot** be used interchangeably. As per the photos in the tech bulletin, read the information located on your bike's clutch fluid reservoir cap to determine which fluid system was installed by KTM.

- If the cap calls for **DOT Brake Fluid** (4 or 5.1 or both), then you can skip the rest of this document and proceed with installing the Rekluse Adjustable Slave Cylinder as it was pre-assembled.
- If the cap calls for **Mineral Oil**, then *you must* perform the following steps to change both the O-ring seals on the adjuster screw and the X-ring seal on the piston before installing the slave cylinder assembly onto your bike. *Failure to change the seals will result in poor slave cylinder performance and eventual fluid leaks.*

NOTE: Rekluse's O-ring & X-ring seals are color-coded for ease of identification:

BROWN = mineral oil compatible

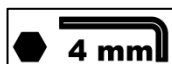
BLACK = DOT brake fluid compatible

INCLUDED PARTS

- 2x Replacement **BROWN** rubber O-ring seals for the Adjuster Screw
- 1x Replacement **BROWN** rubber X-ring seal for the Piston
- 1x Silicone grease packet for lubricating the seals before installing them

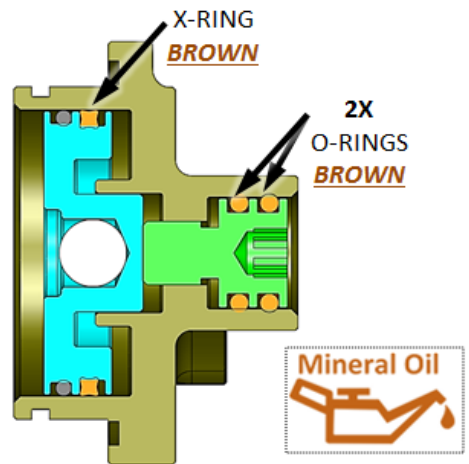
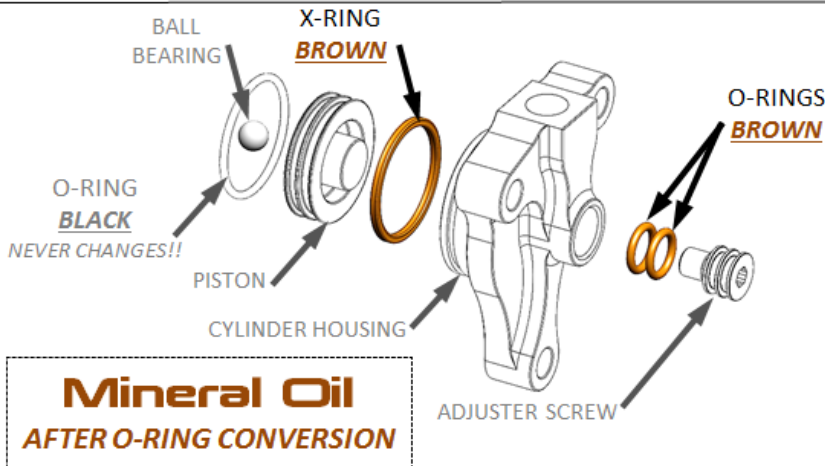
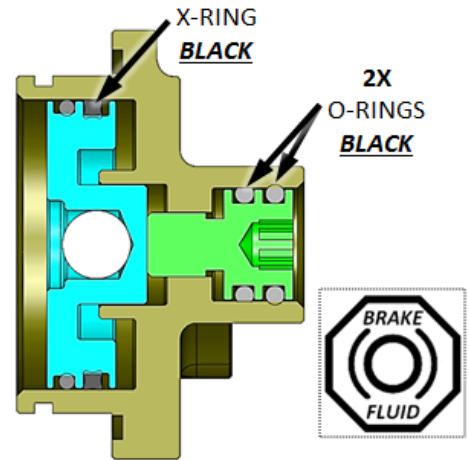
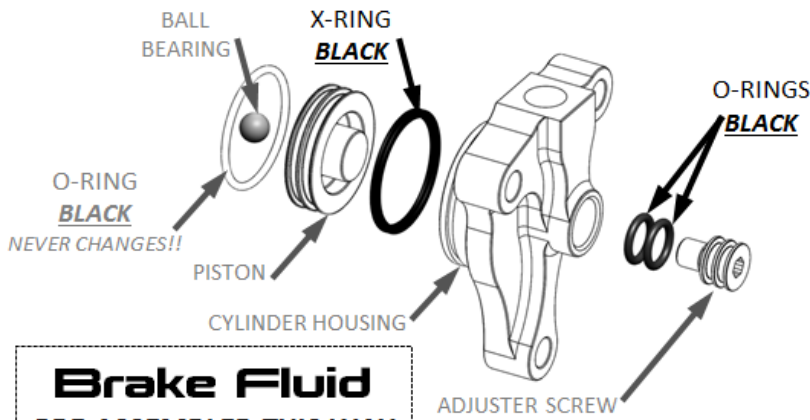
TOOLS NEEDED

- 4mm Hex Key
- Dental Pick Tool
- Rubber Gloves & Safety Glasses



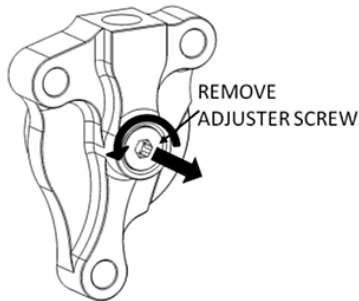
©2017 Rekluse Motor Sports Inc.
208-426-0659 support@rekluse.com

EXPLODED & CUTAWAY VIEWS

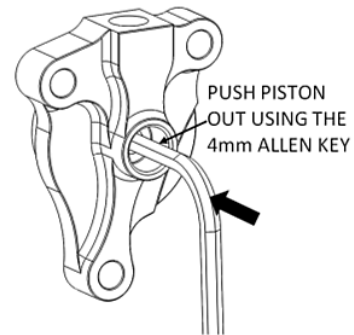


DISASSEMBLY

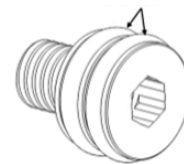
1. Using a 4mm hex key, remove the adjuster screw from the slave cylinder housing by turning it counterclockwise.



2. Use the hex key to push the piston out of the cylinder housing.

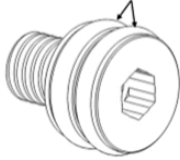


3. Using a dental pick tool, remove the one **black** X-ring seal from the piston and set it aside.
4. Remove the 2x small **black** O-ring seals from the adjuster screw.

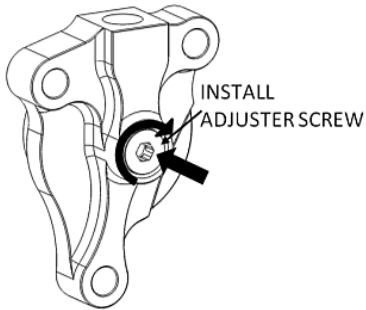


INSTALLATION

1. Using the provided silicone grease packet, apply ample grease to the new seals and wipe some inside the cylinder bore with a finger.
2. Install the **2x** new small **brown** O-ring seals into the grooves of the adjuster screw.

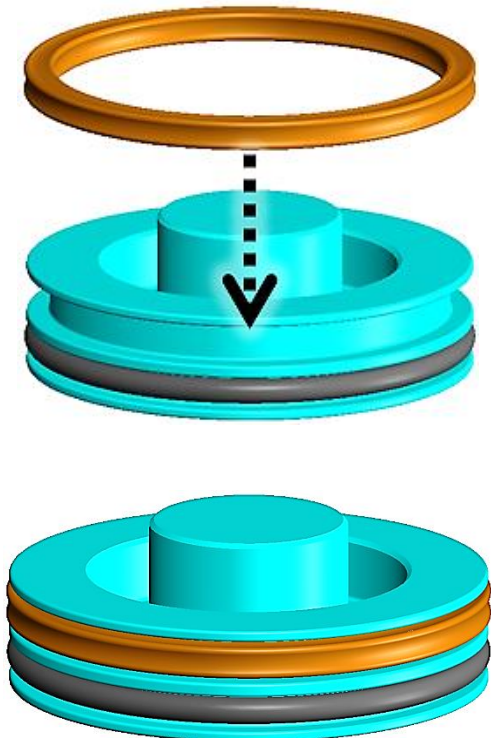


3. Reinstall the adjuster screw into the housing using the hex key.

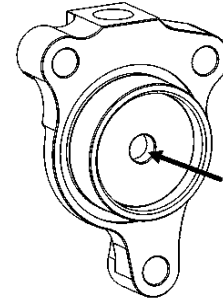


4. Taking care not to twist or rip the seals, install a new large **brown** X-ring seal into the piston groove.

NOTE: Twisted X-ring seals will not function properly when installed.



5. Applying constant, gentle thumb pressure, reinstall the piston into the housing.



The ball-bearing side of piston must face outward.

6. Make sure that the ball bearing has remained in place inside the piston before installing the slave cylinder onto your bike.
7. Proceed back to the *Installation Guide* document for instructions regarding bleeding the clutch fluid system, setting the Installed Gap, and making clutch adjustments.

