



REKLUSE MOTOR SPORTS

The Rekluse Core EXP Kit with Adjustable Slave Cylinder

INSTALLATION & USER'S GUIDE

Doc ID: 191-7709A

Doc Rev: 041019

OVERVIEW

- This kit replaces the OEM core clutch components including the center clutch hub and pressure plate with high-quality billet components designed for optimal operation specific to your bike.
- Most of the OEM friction disks will be reused, but all OEM steel drive plates will be replaced with Rekluse drive plates.

INSIDE THIS DOCUMENT

- INSTALLATION
- SETTING THE INSTALLED GAP
- CHECKING FREE PLAY GAIN
- BREAK-IN
- MAINTENANCE
- EXP TUNING OPTIONS & ENGAGEMENT SETTINGS
- SLAVE CYLINDER APPENDIX (only some models)
- TROUBLESHOOTING GUIDE

INSTALLATION TIPS

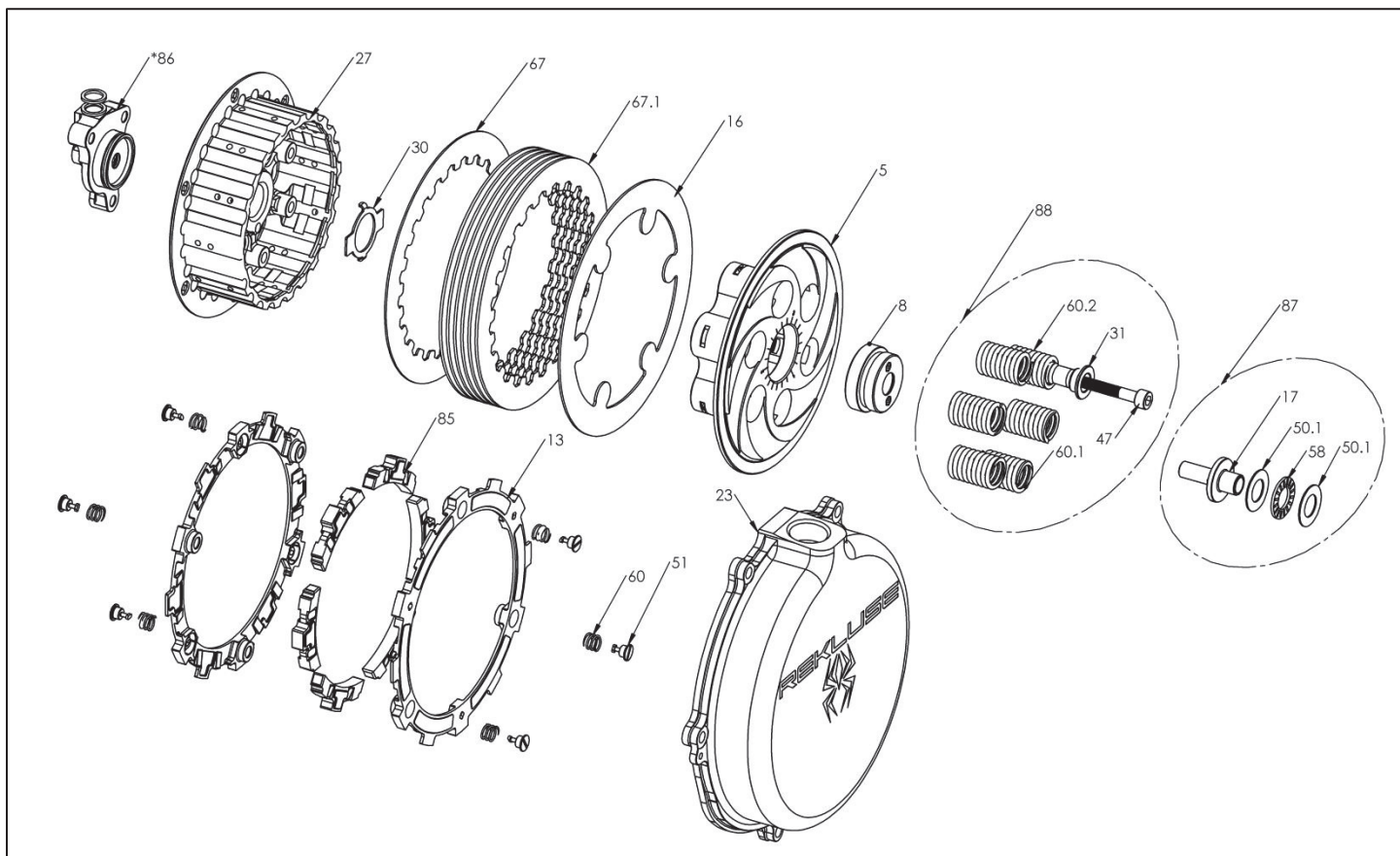


- Watch the “CORE EXP Auto-Clutch Installation Video” by following this QR code or visiting [rekluse.com/videos](https://www.rekluse.com/videos).
- Read this entire document before performing any steps, so you will know what to expect.
- Be sure to use proper eye protection.
- Laying the bike on its left side makes clutch work easier and eliminates the need to drain the oil.
- An air or electric impact wrench works well to remove the center clutch nut, or you can place the bike in top gear and hold the rear brake while loosening the center clutch nut with a socket.
- Channel-lock pliers work best to bend the tabs of the washer up over the center clutch nut.
- 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.
- Bikes with taller gearing or modified engines with increased horsepower may require heavier wedges and/or stiffer pressure plate springs which can be purchased separately from Rekluse.

TOOLS NEEDED

- 8mm socket
- 27mm socket (most models)
- 8mm & 12mm end wrenches
- 4mm & 5mm Allen keys
- Torque wrench (in-lb & ft-lb, or N-m)
- Channel-lock pliers
- Hydraulic clutch fluid

INCLUDED PARTS



Item	Item Type	Qty
5	Pressure Plate	1
8	Pressure Plate Plug	1
13	EXP Base *	2
16	Steel Lining Plate	1
23	Clutch Cover	1
27	Center Clutch Hub	1
30	Lock-Tab Washer	1
31	Screw Sleeve	6
47	Fastener – M6 Screw (requires 5mm Allen tool)	6
51	Fastener - 1/4-Turn Pin *	6
60	EXP Adjustment Spring * (extra included, see last page for tuning options)	6
60.1,2	Pressure Plate Spring (some models come with 2 different colors of springs)	6
67	Steel Drive Plate – Thick (.060" [1.5mm])	6
67.1	Steel Drive Plate – Thin (.040" [1.0mm])	1
85	Wedge Assembly *	6
86	Adjustable Slave Cylinder Assembly (bleeder bolt included)	1
87	Throwout Assembly (<i>only certain models</i>)	1
88	Core Clutch Spring Kit Assembly	1

* Denotes parts assembled as a component of the EXP disk assembly

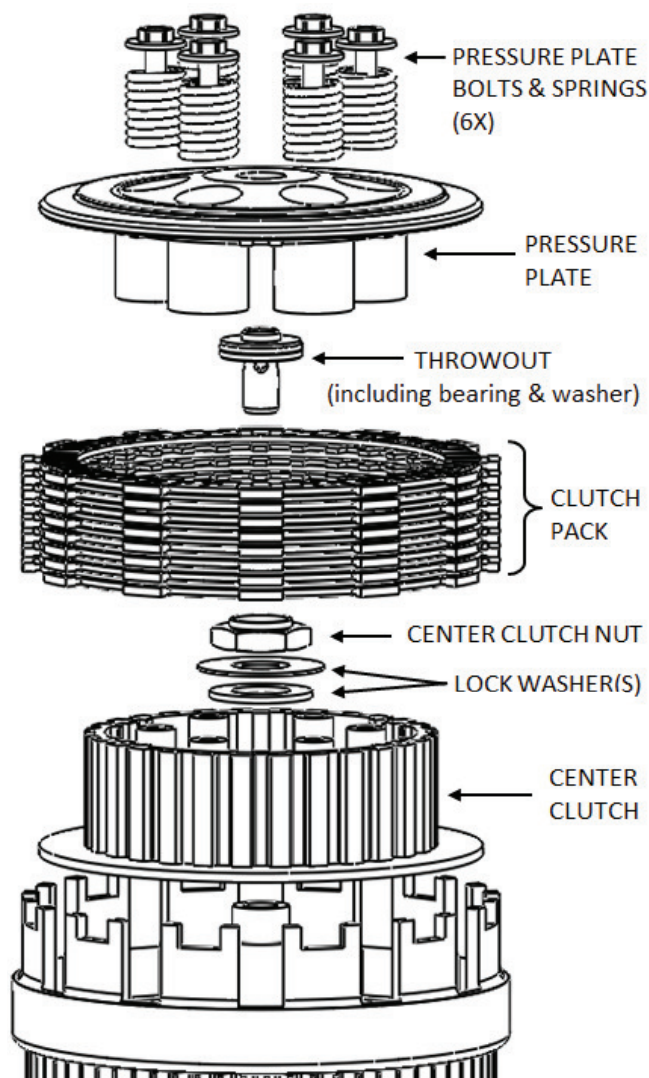
Picture above is representative. See the parts list included with the product or visit Rekluse.com/support for a full parts fiche illustration and part numbers.

PREP & DISASSEMBLY

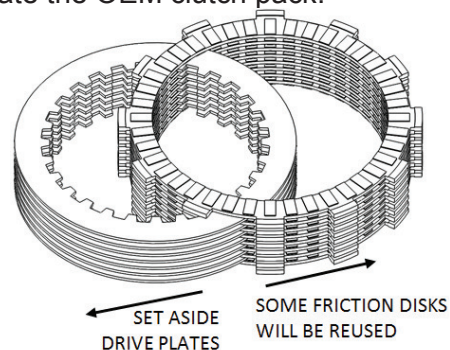
1. Lay the bike on its left side. Catch any fuel that might drain in a suitable container. Remove the clutch cover.



2. Remove the OEM clutch parts named in the following diagram. Leave the basket installed.

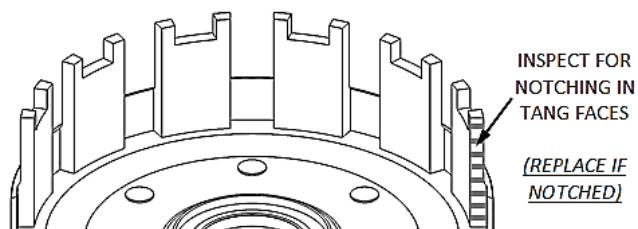


3. Separate the OEM clutch pack.

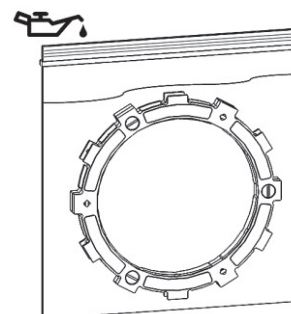


Inspect the friction disks for signs of heat or wear. Replace if they are burnt or worn. For most models, new friction disks can be purchased from Rekluse.

4. Inspect the basket for cushion slop or notching. If notched or worn, it is recommended to install a Rekluse Billet Clutch Basket (available for most models).

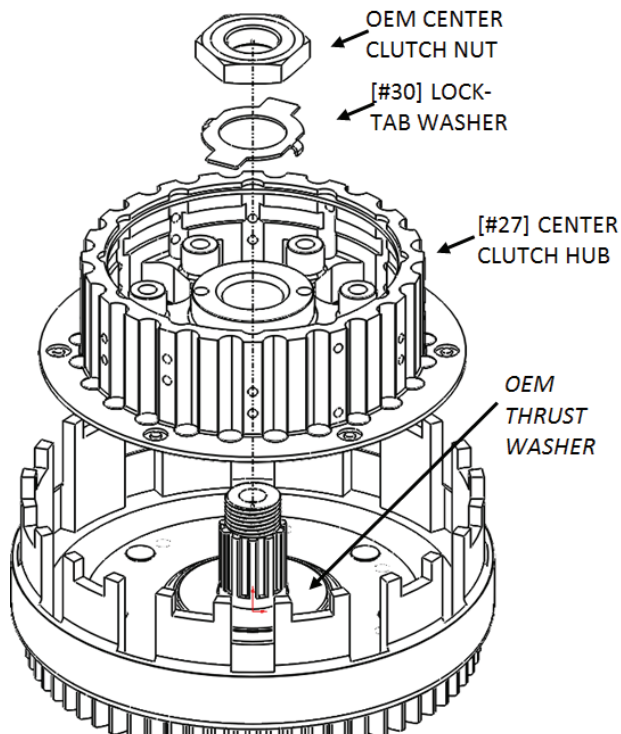


5. Soak the EXP disk in engine oil for 5 min.



HUB & CLUTCH PACK INSTALLATION

6. Install the new center clutch hub on top of the OEM thrust washer.

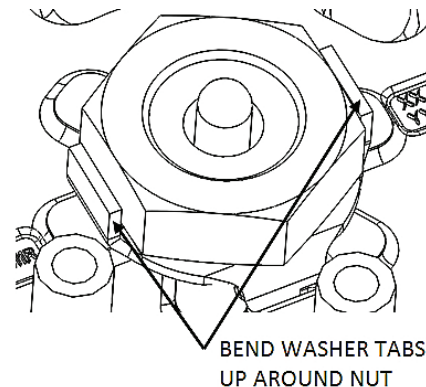


NOTE: Rekluse has determined that some models have slight variance between the center hub and the main shaft. If your Rekluse center hub seems to be too tight to fit on the main shaft please follow these steps:

1. Pre-heat your oven to 200°F (94°C).
2. Using appropriate hot part handling protective gear, place your center hub in the oven for 10 minutes.
3. Using appropriate hot part handling protective gear, remove the center hub from the oven and immediately install on to main shaft.
4. Wait until the center hub has completely cooled.
5. Resume installation at step 6.

This installation process will ensure appropriate center hub fitment.

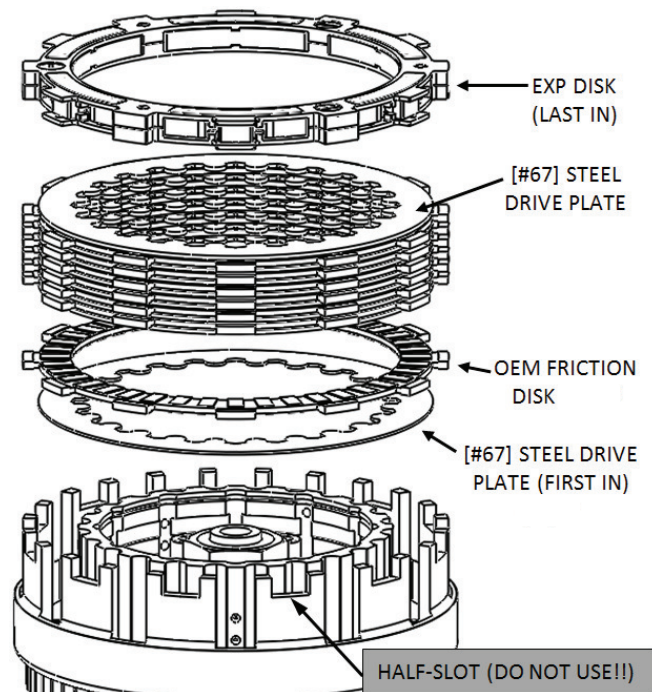
7. Torque the nut to 50 ft-lb (70 N-m). Bend both tabs of the lock washer up. **DO NOT OVER TORQUE**, or the clutch will drag and damage may occur.



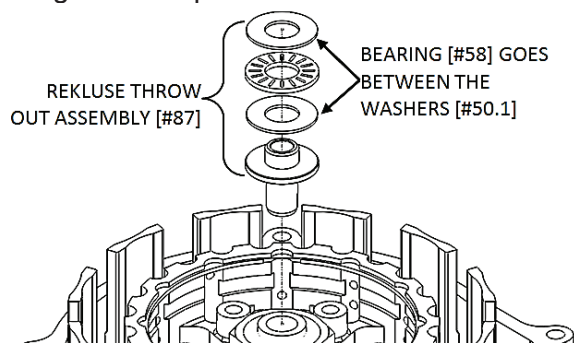
8. Install the new clutch pack.

NOTE: The first plate installed is the 0.040" Rekluse Steel Plate. Proceed to install the rest of the clutch pack alternating frictions (6x) and remaining drive plates (6x).

NOTE: Some OEM Baskets have "half-slots" at the top of the basket tangs. Rekluse products require that **all friction disks, including EXP disk, are seated into the MAIN (deeper) basket slots.**



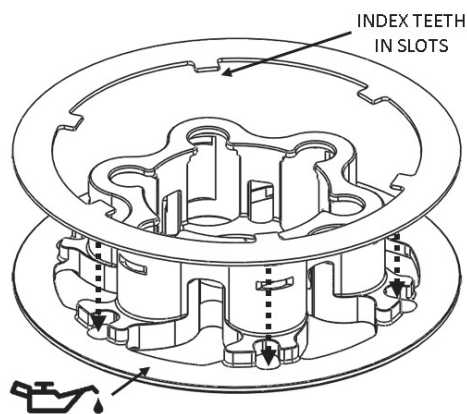
9. Install the included Rekluse throw-out assembly in the order shown in the following diagram on top of the stock throw-out rod.



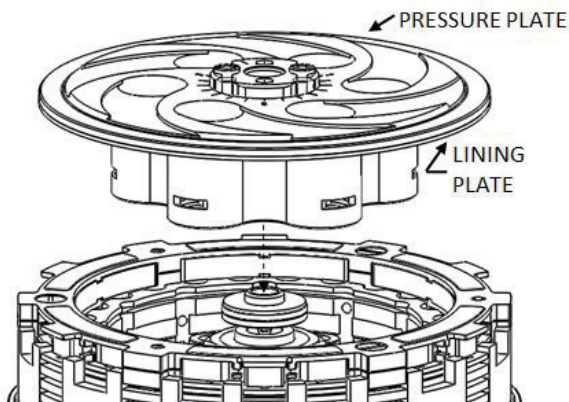
NOTE: If you are missing the top washer, it is probably stuck to the backside of your OEM pressure plate.

PRESSURE PLATE INSTALLATION

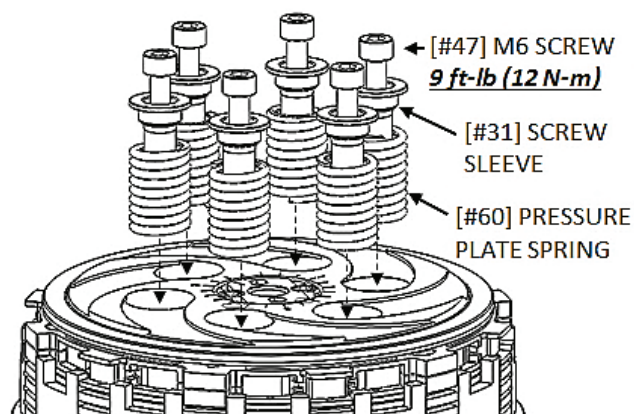
10. Place the Lining Plate [#16] onto the Rekluse Pressure Plate [#5]. Adding an oil film between them will help them stick together for ease of installation.



11. Install this pressure plate subassembly.



12. Install the pressure plate springs.



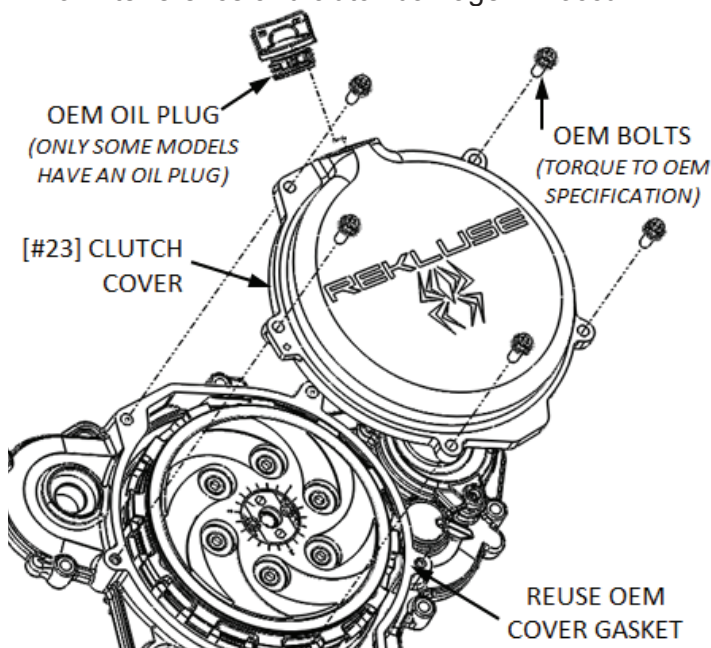
Model-Specific Spring Notes:

Beta 250/300cc 2-strokes only:

Your product includes a bi-colored 6-spring kit, containing 3 of each color: Alternate spring colors clockwise when installing them to ensure even clamping force on the pressure plate.

CLUTCH COVER

13. Your new Core EXP clutch is taller than the OEM clutch, so the Rekluse Clutch Cover has been designed for clearance with all moving parts. You must use the Rekluse Clutch Cover or interference and clutch damage will occur.



SLAVE CYLINDER INSTALLATION

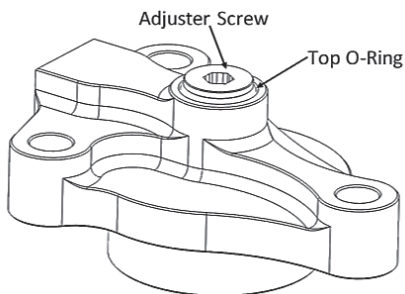
Handle with care! During assembly there is a small ball bearing [#56] installed in the slave piston [#28.3] with a small amount of grease. When installing the Rekluse slave cylinder, make sure the ball does not come loose.

14. Stand the bike up and lean it on its kickstand or place it on a suitable bike stand.

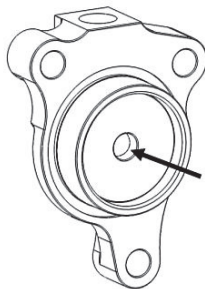


15. On a workbench (away from the engine), bleed the Rekluse slave cylinder by this procedure:

- a. Use a 4mm Allen key to make the top O-Ring [#53.1] visible on the adjuster screw [#28.2].



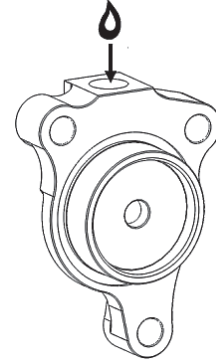
- b. Compress the piston [#28.3] until it bottoms.



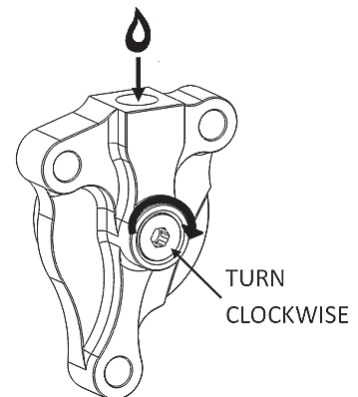
- c. Pour clutch fluid into the slave cylinder port.

WARNING

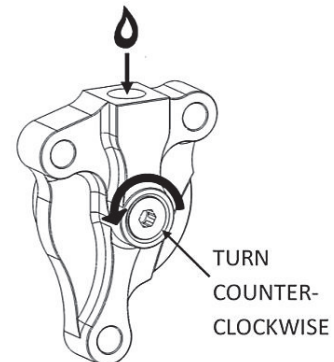
Be sure to use the correct clutch fluid! Check the cap of the clutch master cylinder to determine which clutch fluid to use. Failure to use the correct fluid will result in seal damage and/or failure.



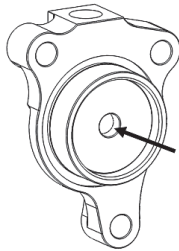
- d. Turn the adjuster screw clockwise until it bottoms, keeping the fluid topped off.



- e. Turn the adjuster screw back to the initial position with the top O-ring visible.

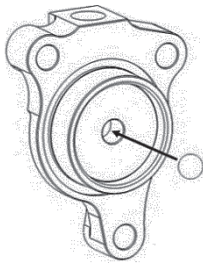


- f. Compress the piston until it bottoms out. Repeat the process until there is no longer air escaping from the top port when the piston is compressed.

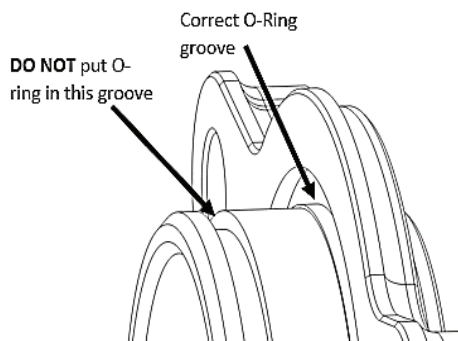
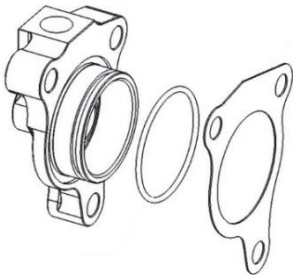


NOTE: When compressing the piston, fluid can shoot out from the slave cylinder port. Be sure to wear eye protection.

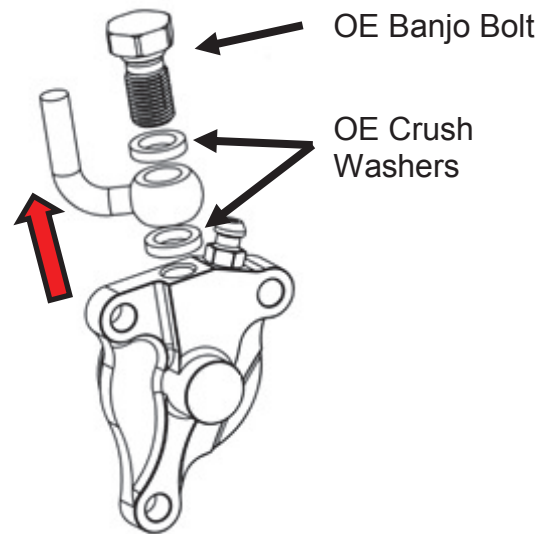
16. Check that the ball bearing [#56] is still in place.



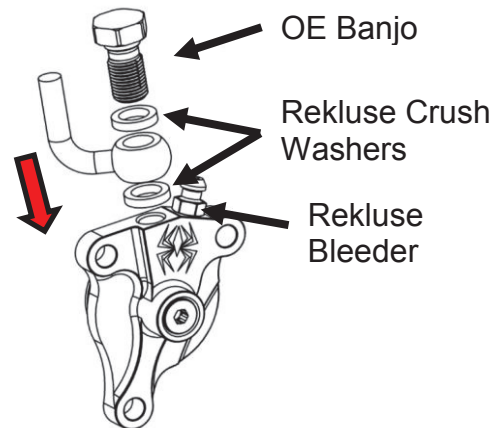
NOTE: The Rekluse slave cylinder comes preassembled in the kit. If the parts become separated, assemble them in the following order: Rekluse slave cylinder, O-ring, then the supplied paper gasket.



17. At the slave cylinder, remove the OE banjo bolt and fluid line from the stock slave cylinder. You can leave the bleeder bolt in the stock slave cylinder, since a new one is provided with the Rekluse slave cylinder assembly.

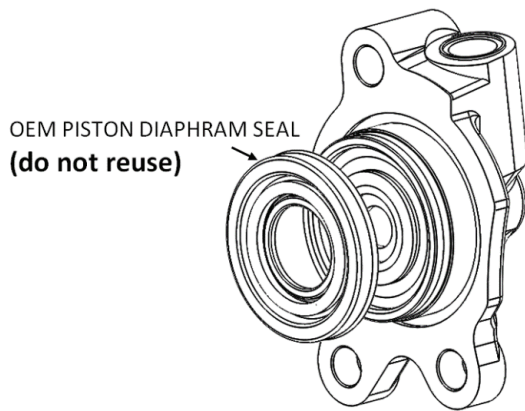


18. Attach the clutch fluid line to the Rekluse slave cylinder using the OE banjo bolt and the 2 new crush washers from Rekluse. Make sure the banjo fitting is between the 2 crush washers.

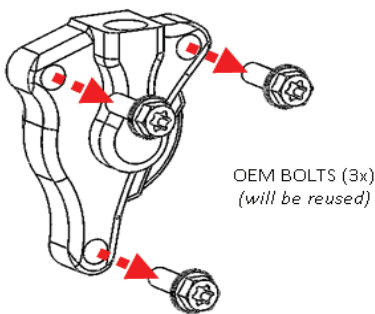


19. Tighten the banjo bolt with your hand until snug. (You will torque it to spec once installed on the bike.)

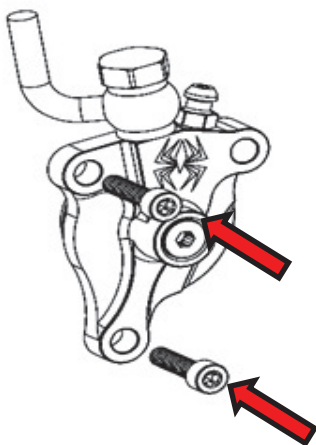
NOTE: Some models have a piston diaphragm seal on the stock slave cylinder. **DO NOT REUSE** this seal if OE equipped.



20. 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.



21. Mount the Rekluse slave cylinder to the engine by lightly threading the two shorter OE bolts on the left side until finger tight.



22. Remove the OE chain guard screw sleeve from the plastic chain guard by gently pushing it out the backside.



23. Insert the new Rekluse chain guard screw sleeve into the screw slot.



24. Reattach the chain guard to the slave cylinder using the longer OE screw.



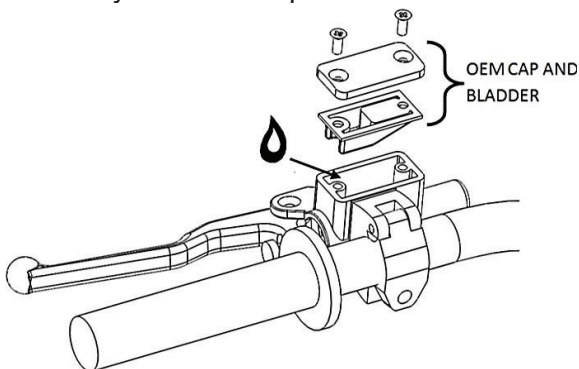
NOTE: The Rekluse screw sleeve is slightly taller than the OE screw sleeve. You will need to use the Rekluse screw sleeve to help ensure a good seal to the engine case.



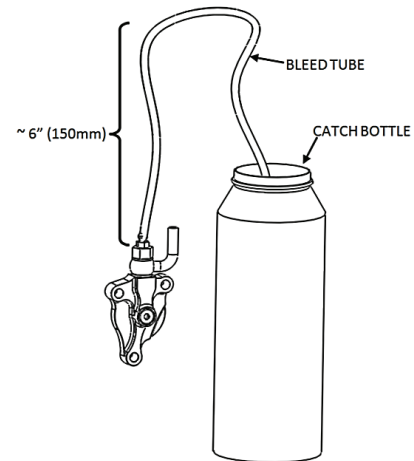
25. Tighten all the slave cylinder screws to OE specifications.
26. Torque the banjo bolt to 18 ft-lb (25 N-m) per OE specification.
27. Optional: If you purchased the Rekluse Slave Guard accessory (available for most models), install it now using the instructions in the kit.



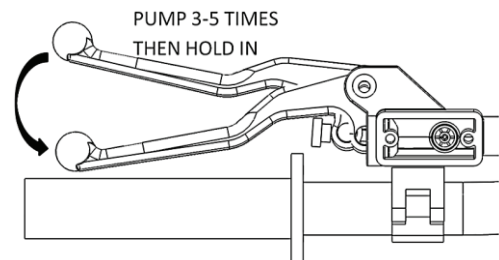
28. Remove the cap and bladder from the clutch master cylinder and top off the clutch fluid.



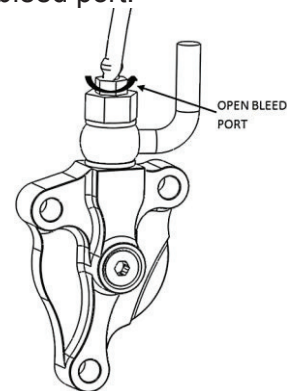
29. Attach the supplied bleed tube to the bleeder bolt port and loop it into a suitable catch bottle.



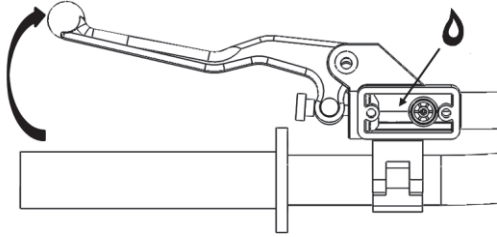
30. Pump the clutch lever 3-5 times then hold it against the bar/grip.



31. Using an 8mm wrench, open the bleed port. Air and fluid should come out of the bleed tube. Tighten the bleed port.



32. Slowly release the clutch lever and check the fluid level in the clutch master cylinder.

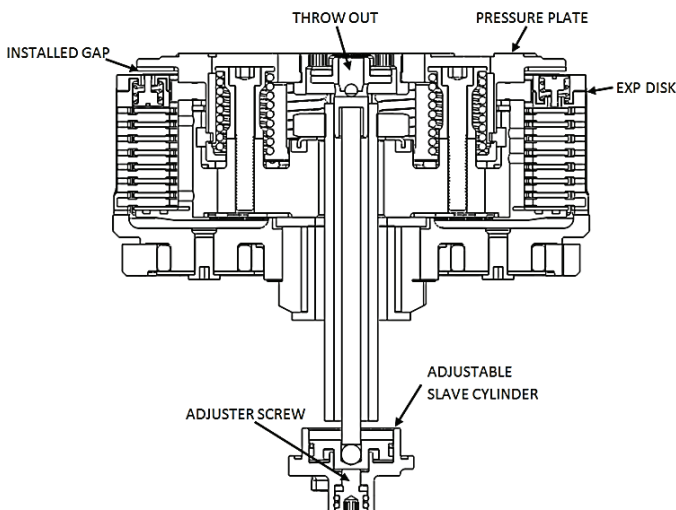


33. Repeat the previous 3 bleeding steps until air no longer comes out of the bleed port. Then, check that the clutch lever functions properly. Repeat the bleeding procedure if necessary.

34. Remove the bleed tube and bottle, then torque the bleed screw to 150 in-lb (17 Nm).

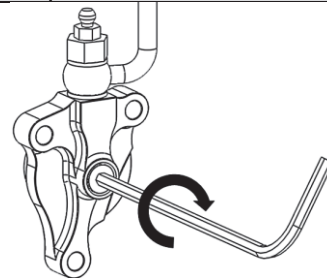
INSTALLED GAP SETTING

DEFINITION: “Installed Gap” is the separation in the clutch pack created by the adjustment of the Adjuster Screw in the Slave Cylinder. This gap is what allows the clutch to spin freely until the desired RPM is reached for engagement; it must be set correctly for optimal performance.



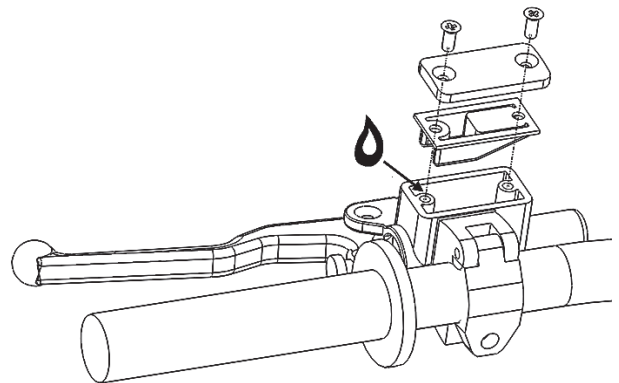
35. Using the long end of a 4mm Allen key, turn the adjuster screw clockwise until it stops under moderate pressure. You are trying to feel for the point at which the throw-out will start to lift the pressure plate. This is the “starting point”.

NOTE: It may take a few tries to find the point at which the system is bottomed out. You should feel a distinguishable change in turning effort at this point.



36. Once you have found the starting point, turn the adjuster clockwise 1 full turn plus 5 marks (or “1+5”). **This is NOT your final setting**, but it is a good reference point for using free play gain to find the correct setting.

37. Top off the master cylinder with clutch fluid and reinstall the OEM cap and bladder.



CHECKING LEVER FREE PLAY GAIN

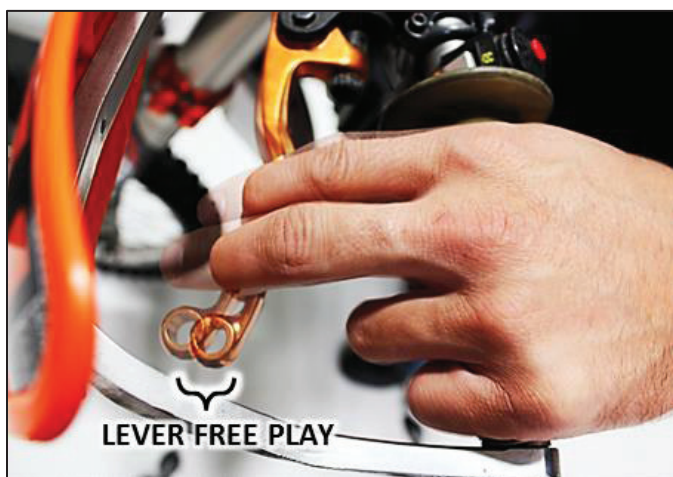
WARNING

Always make sure 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.

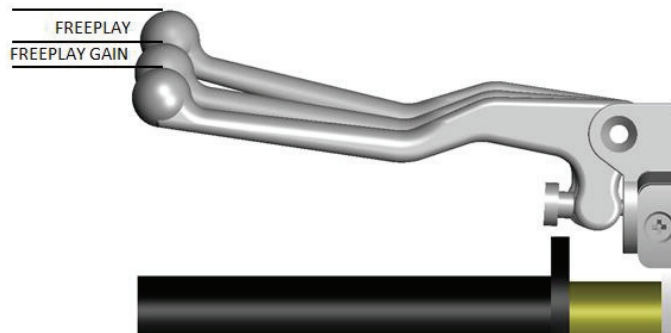
NOTE: Before performing this step, please visit our website at rekluse.com/support to view the TECH VIDEO entitled “How to Check Free Play Gain”.



“**Lever Free Play**” is essentially the “slack” in the clutch lever before it starts actuating the clutch. Applying a light finger pressure will take up this slack.



“**Free Play Gain**” is the increase of lever free play as the auto-clutch engages. This happens when the RPM increase from idle through around 5,000 RPM. Free Play Gain is caused by the expansion of the EXP disk which lifts the pressure plate away from the throwout assembly.



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



The following steps explain two ways to check Free Play Gain. One will use the rubber band that has been included in the clutch kit and one explains using your hand, which you will perform before every ride.

Place the bike in neutral, start the engine and let it warm up for 2-3 minutes.

Rubber Band Method:

It is recommended that you use this method first to find your Free Play Gain so you can see what it is. Then, check it by hand as well so that you can effectively and comfortably check free play gain every time you ride.

Wrap the included rubber band around the outer end of the handlebar grip and attach it to the ball end of the clutch lever.

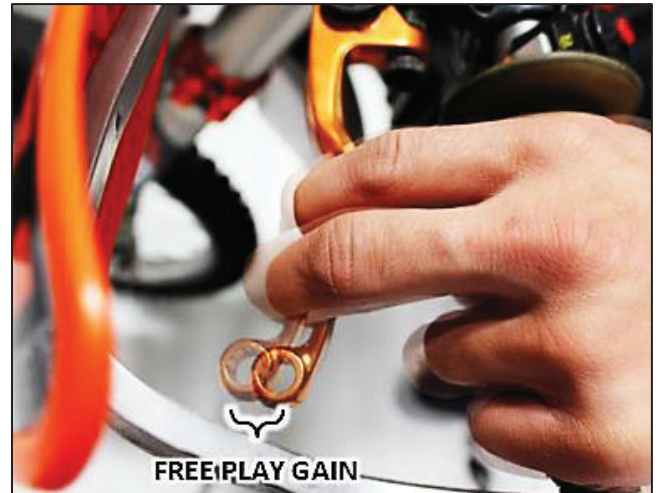


With the bike at idle in neutral, quickly blip (rev) the engine to at least 5,000 RPM and let it return to idle. **The clutch lever should move in about 1/8" (3mm) toward the handlebar as you rev the engine.**

Note: If you are not getting the correct lever movement, see the "Free Play Gain Troubleshooting Guide" on the next page.

Hand Method:

Free play gain should also be checked using your hand, as you will check it by hand before every ride. With the bike at idle, apply enough pressure to the lever to take up the initial freeplay (slack) shown in the photos on the previous page. While continuing to apply light pressure, rev the engine to at least 5,000 RPM. **The clutch lever should move in 1/8" (3mm) under your finger pressure as you rev the engine and the auto-clutch engages.**



BREAK – IN

Follow these procedures for a new installation and any time new friction disks or EXP bases or wedges are installed.

1. Rev cycles: Warm up the bike for 2-3 minutes. With the bike in neutral and your hand **off** of the clutch lever, rev the engine 10 times, being sure to let it **return to idle** between each rev cycle.
2. With the engine running, pull in the clutch lever and click the bike into gear. Slowly release the clutch lever. The bike should stay in place, perhaps with a slight amount of forward creep.
3. Now that the bike is idling in first gear, slowly apply throttle to begin moving. To break in the clutch components, perform the following roll-on starts in 1st and 2nd gear without using the clutch lever: In 1st gear, accelerate moderately to approximately 5,000 RPMs and come to a stop—repeat this 5 times. Next, starting in 2nd gear, accelerate moderately to approximately 5,000 RPMs then come to a stop—repeat this 5 times.
4. Now that the EXP is broken-in and the clutch is warm, re-check free play gain at your clutch lever and adjust if necessary. Your clutch pack will expand with heat, so final adjustments should be made when the bike is warm. Now you are ready to ride!

WARNING: DO NOT RIDE WITHOUT SUFFICIENT FREE PLAY GAIN!

Checking free play gain is easy and takes less than a minute to perform. For optimum performance and longevity, check free play gain when the bike is warm at the start of every ride.

FREE PLAY GAIN TROUBLESHOOTING

Each adjustment should be done in small increments - one tick mark at a time. After each adjustment, repeat the rev-cycle until optimal free play gain is achieved.

Symptom:

- Clutch lever moves in too far (too much free play gain)
- Clutch has excessive drag
- It is difficult to fully override the clutch with the lever

Answer: Installed Gap is too small

Solution: Turn the Adjuster Screw inwardly (clockwise) to increase the Installed Gap.

Symptom:

- Clutch lever does not move enough or does not move at all (too little free play gain)
- Clutch is slipping

Answer: Installed Gap is too large

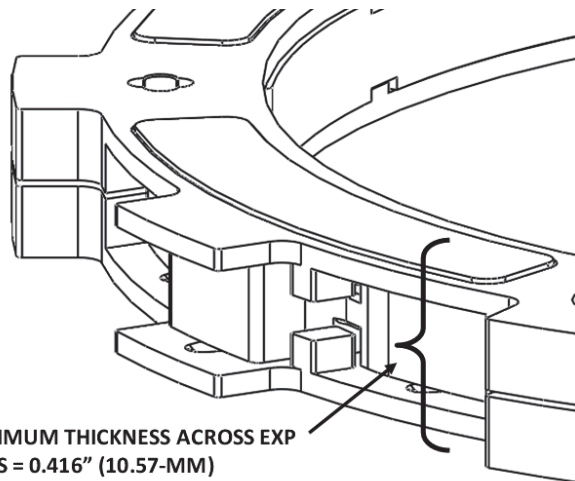
Solution: Turn the Adjuster Screw outwardly (counter-clockwise) to reduce the Installed Gap. It may be helpful to re-find the starting point.

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

- **Oil:** For optimal clutch performance Rekluse recommends using fresh, clean oil that meets JASO-MA oil rating requirements. Dirty or old oil can make the clutch more likely to squeal or chatter.
- **Clutch Basket:** Available for some models, a Rekluse Clutch Basket will eliminate clutch squeal and chatter in most cases because it is precision machined from high quality material and includes long-life clutch dampers. A clutch basket that is damaged or has worn-out dampers tends to increase clutch noise.
- **Installed Gap:** Adjusting the Installed Gap will NOT affect clutch squeal or chatter

- Maintain adequate free play gain, checking before every ride and adjusting if necessary.
- Keep up with regular oil changes as per the bike manufacturer’s recommendations. Clutch function and longevity depends on oil quality.
- Inspect all of your clutch parts **every 40 hours** for signs of wear or excessive heat, and replace components as necessary.



- Repeat the break-in procedure anytime the friction disks or EXP bases or wedges are replaced. Always soak friction disks or EXP bases in oil for at least 5 minutes before installing.

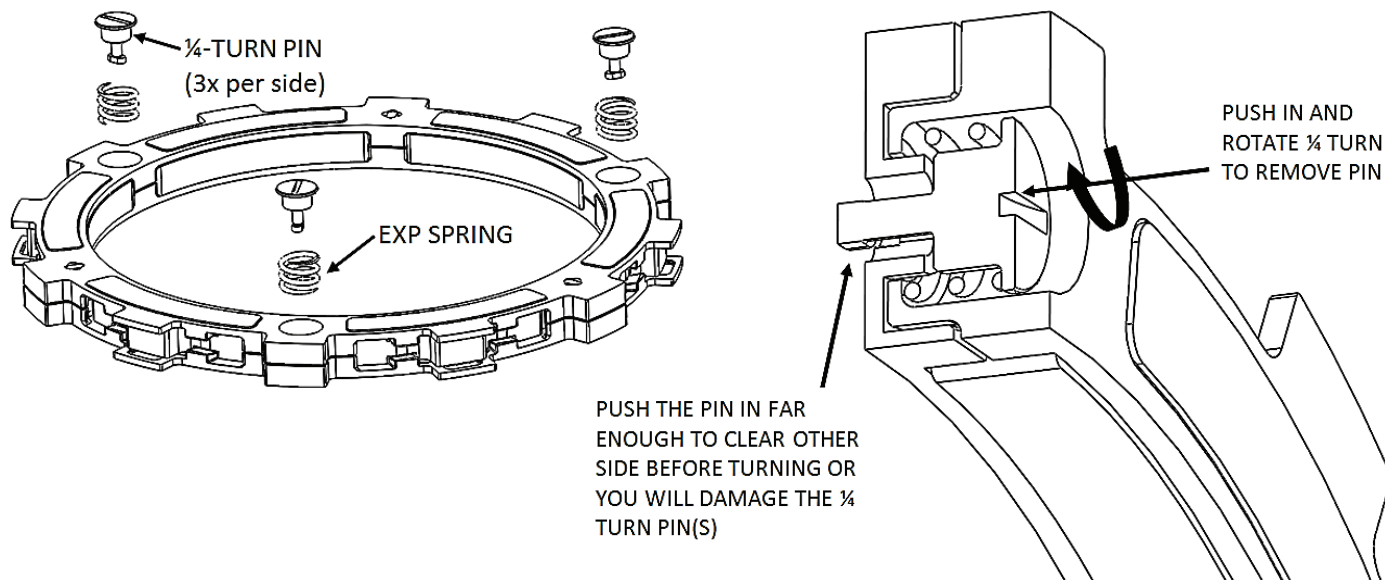
MAINTENANCE

EXP TUNING OPTIONS

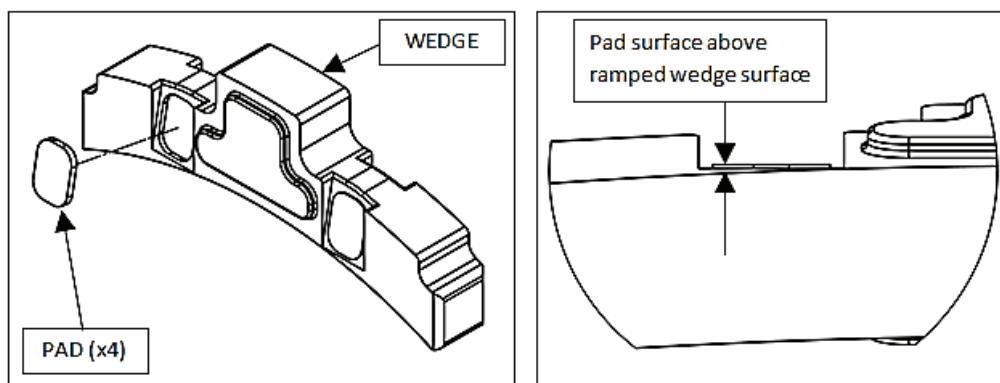
Included are spring options to tune the engagement RPM of the EXP disk. The EXP disk comes set with the recommended “**Medium**” setting from Rekluse. See chart on next page for setting options.

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.

It is **NOT necessary** to disassemble the EXP halves to change springs! To change springs, remove 3 of the ¼-turn pins from one side of the EXP, replace springs, and re-install ¼-turn pins. Next, flip the EXP disk over and repeat on the other side if necessary. To maintain even pressure when using two different color spring sets, install one color set of 3 on one side of the EXP and the remaining color set of 3 on the other side.



CAUTION: If you disassemble the EXP, bearing 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.



EXP ENGAGEMENT SETTINGS BY PRODUCT

Product	Make	Bike Model	Low Springs	Medium Springs	High Springs
RMS-7721	Beta	250/300	6 Red	3 Red 3 Blue	6 Blue
RMS-7723	Beta	350/400/450/498/520	6 Red	3 Red 3 Blue	6 Blue

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Auto Clutch TROUBLESHOOTING GUIDE

Rekluse Troubleshooting Guide Terms

Free Play Gain – The additional movement of the clutch lever under slight pressure as the RPMs are raised from idle to approximately 5000 RPM. Free Play Gain should only be checked in neutral as per the instructions.

Worn Friction Plates – Will be thinner than the factory spec

Overheated Friction Plates – Sometimes referred to as glazed. Most of the time measure within spec, but the surface will look darker than new and the friction surface will be smooth like glass. The steel drive plates will also show signs of bluing or darkness

Squeal – Chirping noise under acceleration, or take off

Chatter/Shutter – Vibration or surge under acceleration as the clutch engages

Drag – When stopped or idling in gear, the bike will try pulling, or on a stand the wheel will spin

Chain Slap – Drag at idle, in gear, causing the chain to slap noisily against the swing arm

Low RPM Slip – Considered engagement slip and will make the initial clutch engagement soft

High RPM Slip – Occurs above half throttle while accelerating, as the engine RPMs raise little or no power is transmitted to the rear wheel resulting in a loss of forward drive causing excessive clutch heat

Rekluse troubleshooting chart located on back of this page

Note: The “possible fixes” contained in the chart below are listed in the order of things to try first for each “symptom”

Core EXP 3.0 & EXP 3.0 Troubleshooting Chart		
Symptom	Possible Cause	Possible Fix
Drag or Stalling	Clutch break-in	Complete the recommended clutch break-in
	Transmission oil	Change the oil if it's not a clean high quality JASO MA certified oil
	Excessive “Free Play Gain”	Re-adjust the installed gap and re-check “Free Play Gain”
	Center clutch nut too tight	Re-torque the center clutch nut if it is binding when spun in neutral
	EXP engagement adjustment	Change the EXP setting to a higher engagement setting
	Worn or glazed friction disks	Replace friction disks (Rekluse or OEM disks recommended)
Low RPM slip	No “Free Play Gain”	Re-adjust the installed gap and re-check “Free Play Gain”
	Modified motor	Replace wedges with a heavier set if slightly modified
		If running Core EXP - Replace the pressure plate springs with a heavier set if highly modified
		If running EXP – upgrading to Core EXP is recommended
	Worn or glazed friction disks	Replace friction disks (Rekluse or OEM disks recommended)
	Tall Bike gearing	Replace wedges with a heavier set if the gearing is taller than stock
High RPM slip	No “Free Play Gain”	Re-adjust the installed gap and re-check “Free Play Gain”
	Modified motor	If running Core EXP - Replace the pressure plate springs with a heavier set if highly modified
		If running EXP – upgrading to Core EXP is recommended
	Pressure plate springs	Be sure the Rekluse springs are being used
		Inspect the springs, if they are out of spec replace
	Worn or glazed friction disks	Replace frictions disks (Rekluse or OEM disks recommended)
Squeal or Chatter	Transmission oil	Change the oil if it's not clean high quality JASO MA certified oil. Over-used oil may cause squeal or chatter
	Clutch basket	Replace the basket and/or cushions if they are worn (Rekluse basket recommended if available for your model)
		The Rekluse basket is known to eliminate most squeal or chatter, even if no wear is present (Not available for all models)
No clutch override	Excessive “Free Play Gain”	Re-adjust the installed gap and re-check “Free Play Gain”
Chain Slap	Adjust idle	Adjust idle closer to the engagement point of the clutch so there is less delay in clutch engagement
	EXP engagement setting	Raise the EXP engagement setting and adjust the idle accordingly