



REKLUSE MOTOR SPORTS

The Rekluse EXP Clutch

INSTALLATION GUIDE

191-6030
Manual Revision: 040919

OVERVIEW

- This kit will replace some of the OEM frictions and drive plates with the EXP disk. The OEM pressure plate springs will also be replaced with high quality Rekluse springs.
- The OEM slave cylinder will be replaced with a Rekluse Adjustable Slave Cylinder.

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- CHECKING FREE PLAY GAIN
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- EXP TUNING OPTIONS & ENGAGEMENT SETTINGS
- SETUP SHEET (model specific)
- TROUBLESHOOTING GUIDE

INSTALLATION TIPS

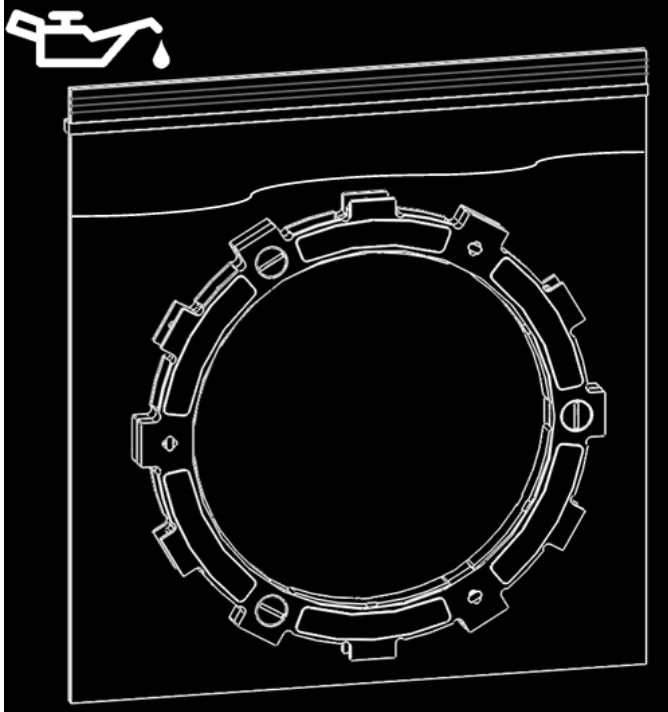
- Be sure to use proper eye protection
- Laying the bike on its left side makes it easier to work on the clutch and eliminates the need to drain the oil
 - Be sure to turn off the fuel, work in a ventilated area and be prepared to catch any fuel that may drain from vent tubes
- Check the clutch master cylinder cap for the proper clutch fluid to be used

TOOLS NEEDED

- 8mm socket
- Torque wrench (inch-pounds or Newton-meters)
- 12mm wrench
- 8mm wrench
- Philips screwdriver
- Clutch Fluid
- 4mm Hex Key

BIKE PREP & DISASSEMBLY

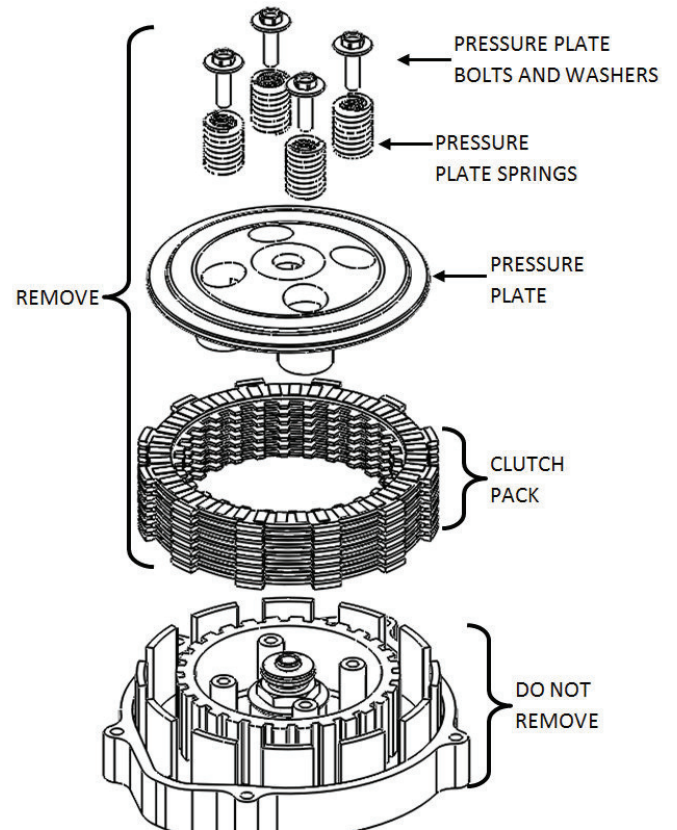
1. Soak the EXP disk in engine oil for 5 min.



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



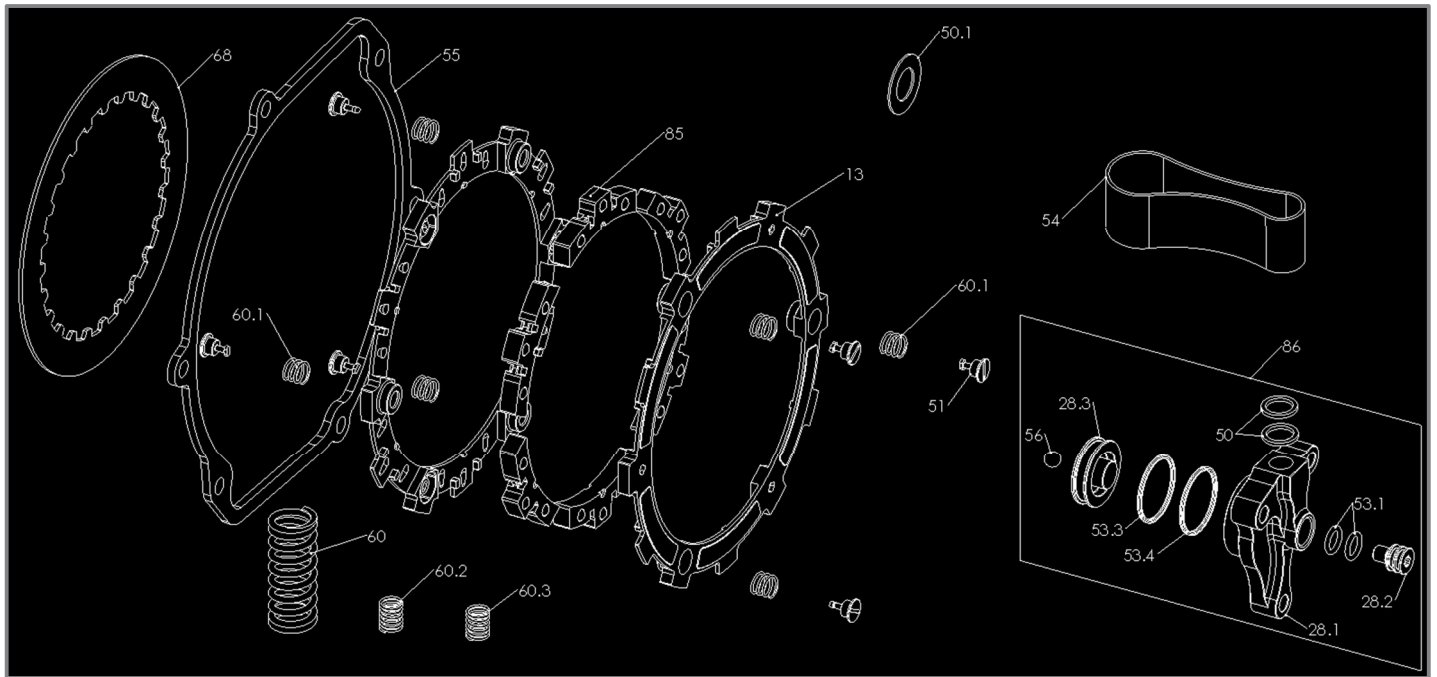
3. Remove the OEM clutch parts named in the following diagram.



NOTE:

Some of the OEM friction disks and OEM steel drive plates will be reused. See setup sheet for specific configuration.

INCLUDED PARTS

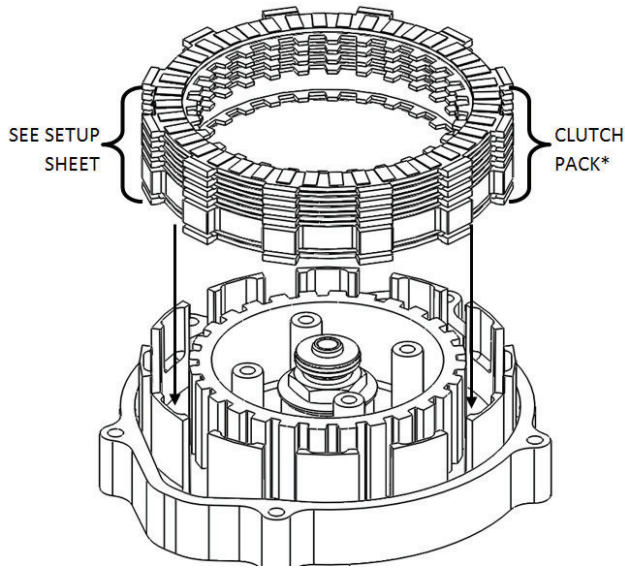


Item	Item Type	Qty
13	EXP Base *	2
50.1	Throw Out Spacer (FOR CERTAIN MODELS)	1
51	Fastener - 1/4-Turn Pin *	6
54	Free Play Gain Rubber Band	1
55	Clutch Cover Gasket (FOR 08-11 KTM 450/505 SXF/XC-F ONLY)	1
60	Pressure Plate Spring (See setup sheet)	-
60.X	EXP Adjustment Spring * (extra adjustment springs are included, see setup sheet)	6
68	Steel Drive Plate (FOR KTM/Husqvarna/Husaberg 125/144/150cc bikes ONLY)	2
85	Wedge Assembly *	6
86	Adjustable Slave Cylinder Assembly (bleed tube included)	1

* Denotes parts assembled as part of EXP disk assembly

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

4. Install the clutch pack with the EXP. See setup sheet for specific configuration.

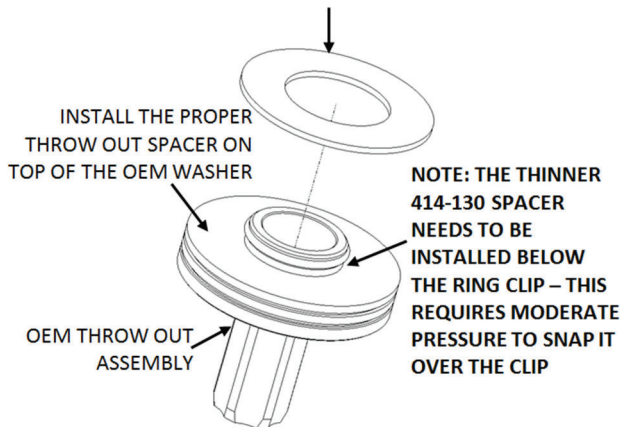


*Clutch pack representative only. See setup sheet for specific configuration.

5. For models listed in the table below **ONLY**, install the Rekluse supplied Throw Out Spacer [#50.1] onto the OEM throw out assembly.

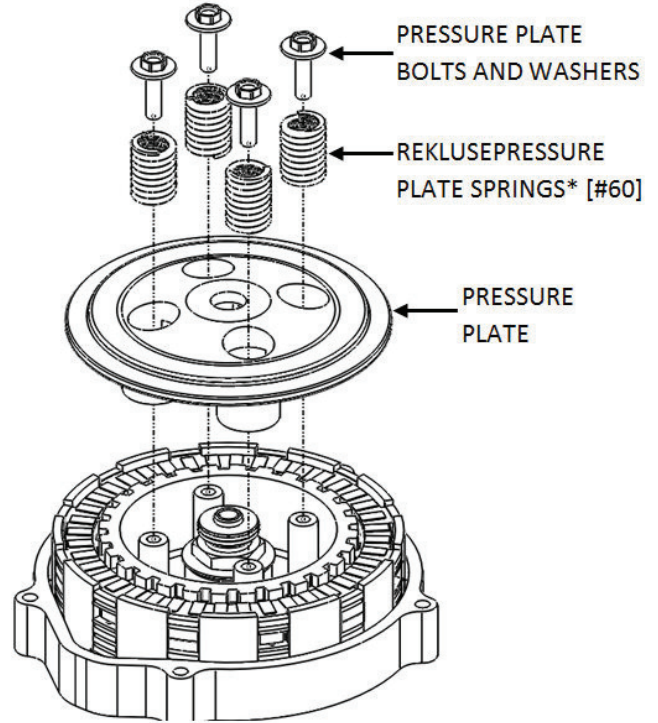
Bike Model and Year	Throw Out Spacer
'99-'12 KTM 250/300cc 2-Stroke	414-141 (1.5mm thick)* 414-151 (2.4mm thick)*
'07-'11 KTM 450/505 SXF/XC-F	414-130 (0.75mm thick)
'98-'05 KTM 125cc	414-130 (0.75mm thick)
'06+ KTM 125/144/150cc '13+ Husaberg & Husqvarna 125cc	414-141 (1.5mm thick)

THROW OUT SPACER – SEE TABLE



*KTM 250/300 2-Stroke: See Setup Sheet for Throw Out Spacer note.

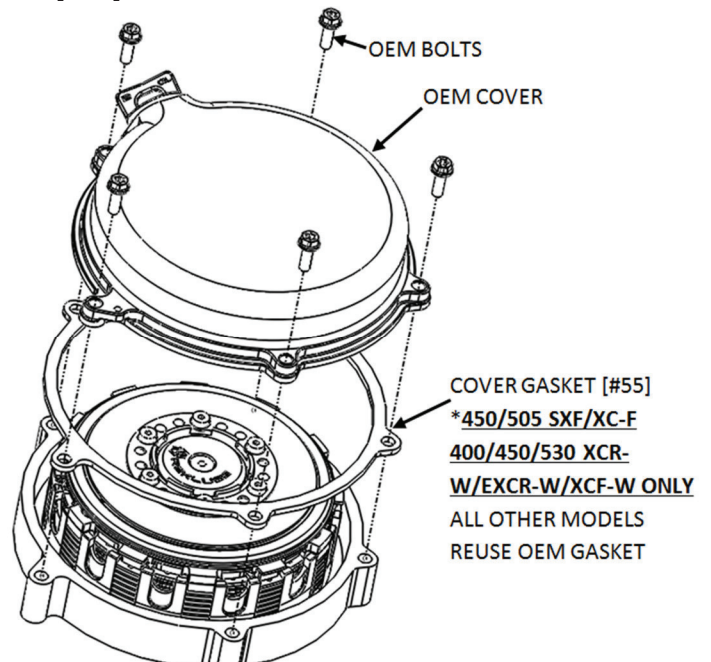
6. Install the OEM pressure plate, Rekluse pressure plate springs* [#60], and OEM pressure plate bolts and washers.



*See setup sheet for Rekluse pressure plate spring configuration.

7. Install the clutch cover and torque the cover bolts OEM specification.

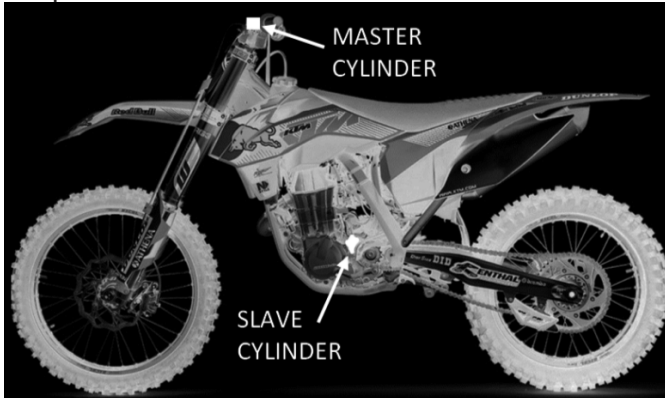
For KTM 450/505 SXF/XC-F, 400/450/530 XCR-W/EXCR-W/XCF-W models ONLY, install the Rekluse supplied thick Clutch Cover Gasket [#55].



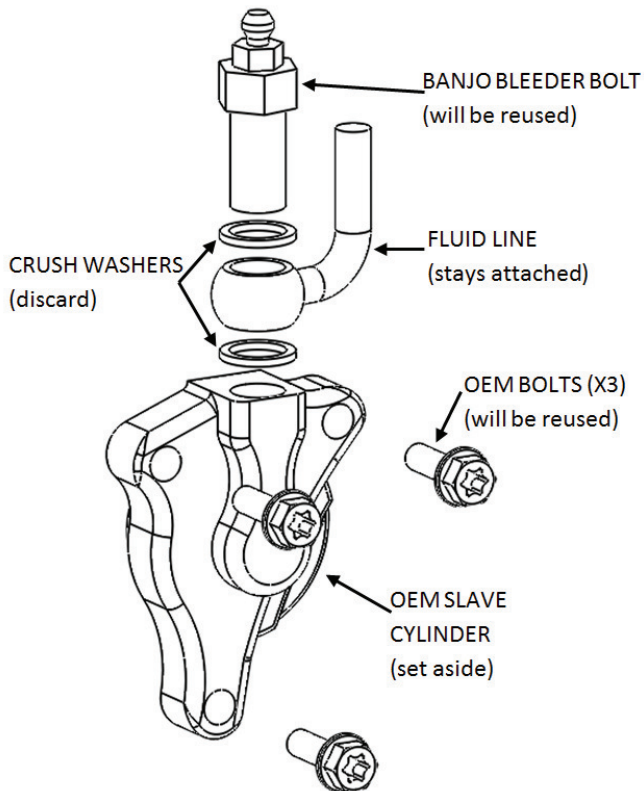
SLAVE CYLINDER INSTALLATION

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, make sure that the ball does not come loose.

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



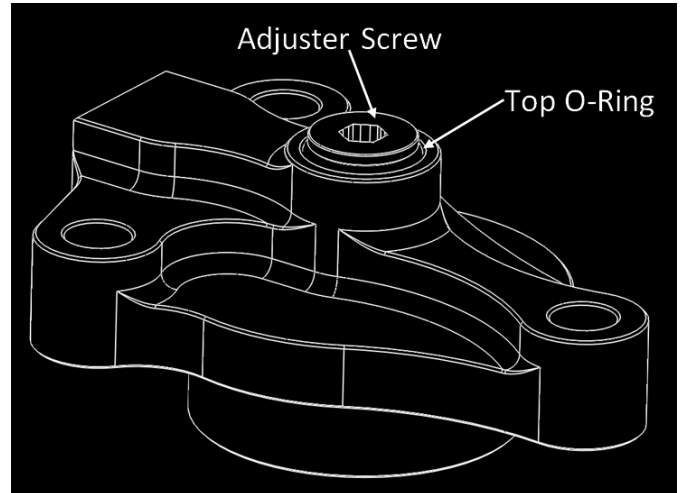
9. Starting at the slave cylinder, remove the OEM parts named in the following diagram beginning with the banjo bolt.



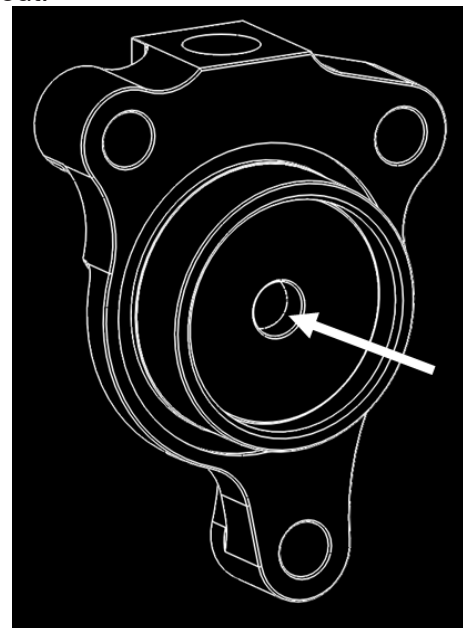
10. Bleed the Rekluse slave cylinder by following the procedure below:

NOTE: Bleed the slave cylinder with it disconnected from the engine.

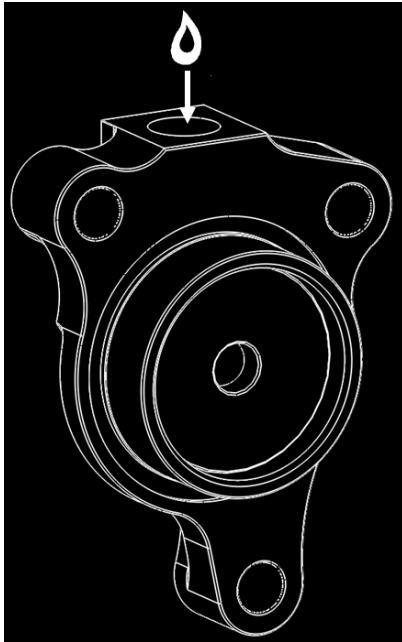
- a. Use a 4mm Allen key to make the top O-Ring[#53.1] visible on the adjuster screw[#28.2].



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



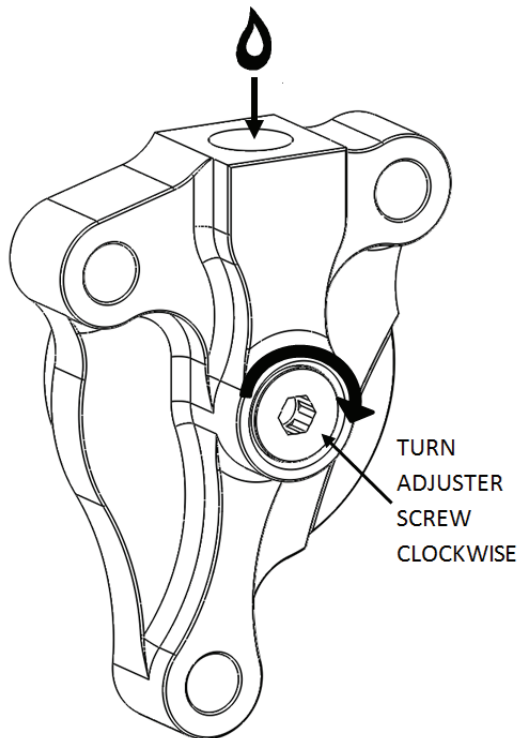
- c. Pour clutch fluid into the slave cylinder port. See note below.



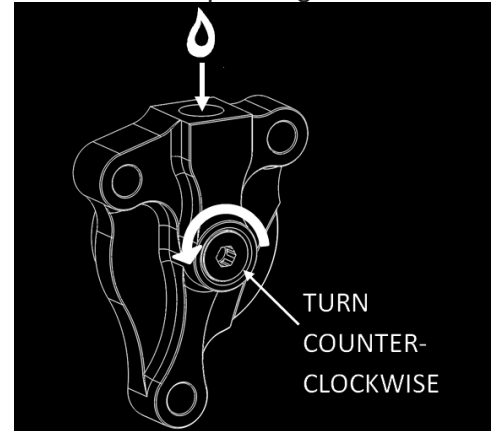
WARNING

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.

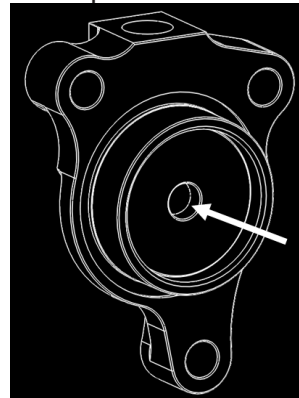
- d. Turn the adjuster screw clockwise until it bottoms, keeping the fluid topped off.



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

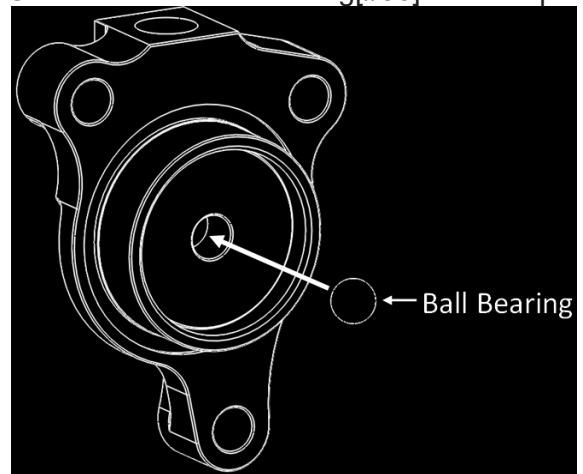


- f. Compress the piston until it bottoms out. Repeat the process until there is no longer air escaping from the top port when the piston is compressed.

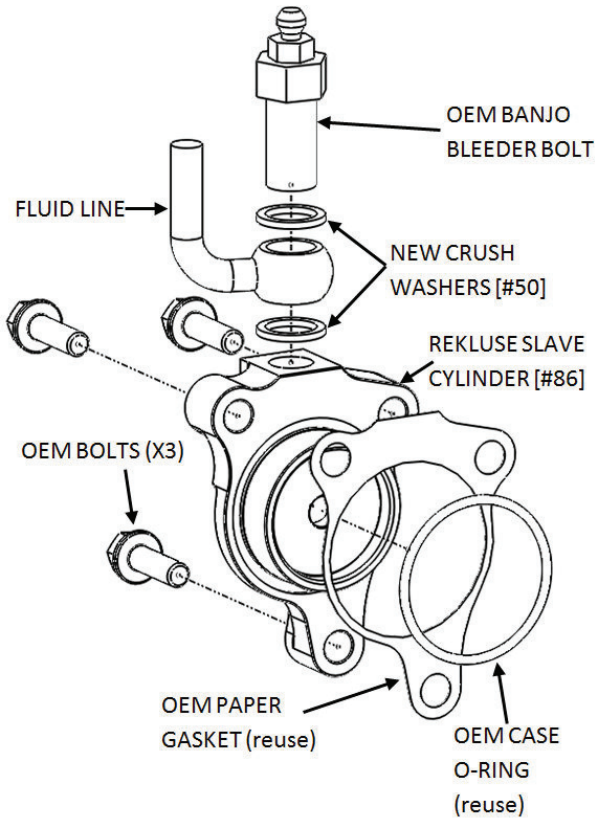


NOTE: When compressing the piston, fluid can shoot out from the slave cylinder port. Be sure to wear eye protection.

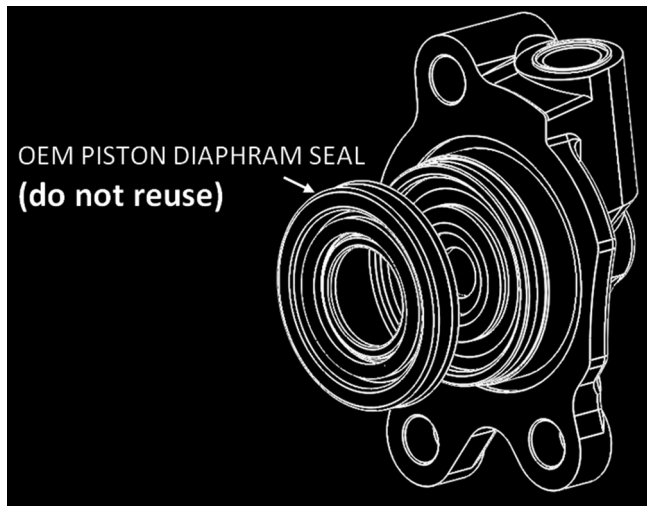
11. Check that the ball bearing[#56] is still in place.



12. Install the Rekluse slave cylinder on the bike using the following parts ending with the banjo bolt. **For 99-05 KTM 250/300 2-stroke owners:** install the included clutch line and banjo bleeder bolt.



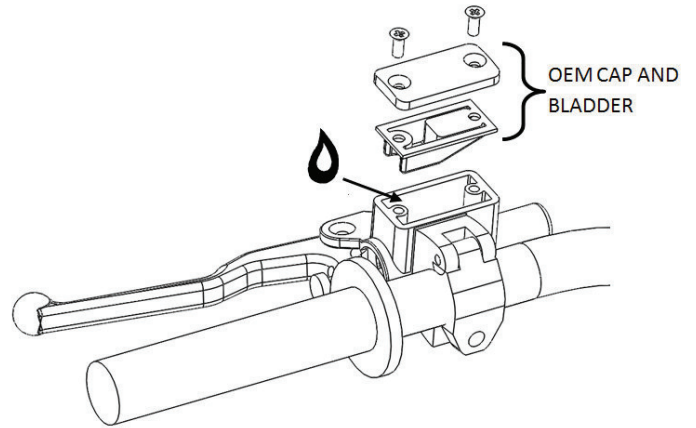
NOTE: Some models have a paper gasket and/or O-ring seal. Reuse them if OEM equipped.



NOTE: Some models have a piston diaphragm seal. DO NOT REUSE them if OEM equipped.

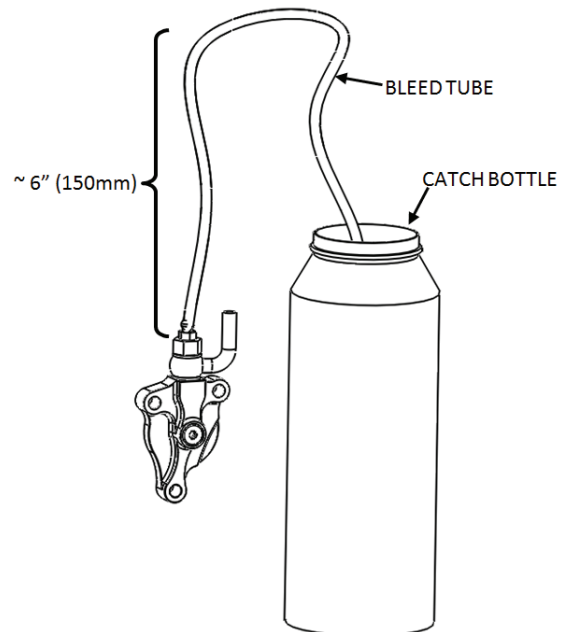
13. Husaberg 390/450/570 FE/FX 09-12 Models: See setup sheet for additional slave cylinder information.

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

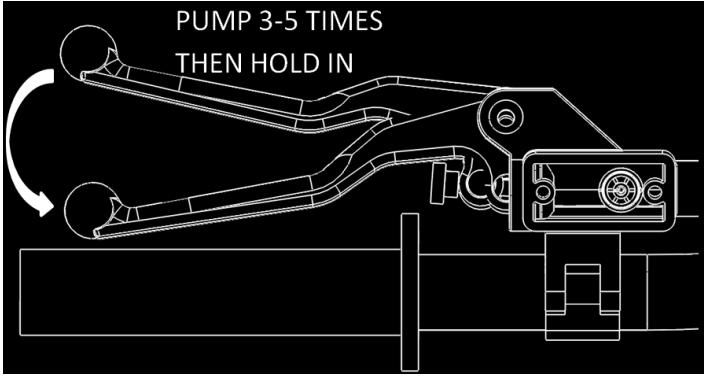


NOTE: If the clutch fluid was drained out of the clutch line the following bleeding procedure will not work. The system will need to be bled by pushing fluid from the slave cylinder up using a syringe. You can purchase one through Rekluse, part number 790-001.

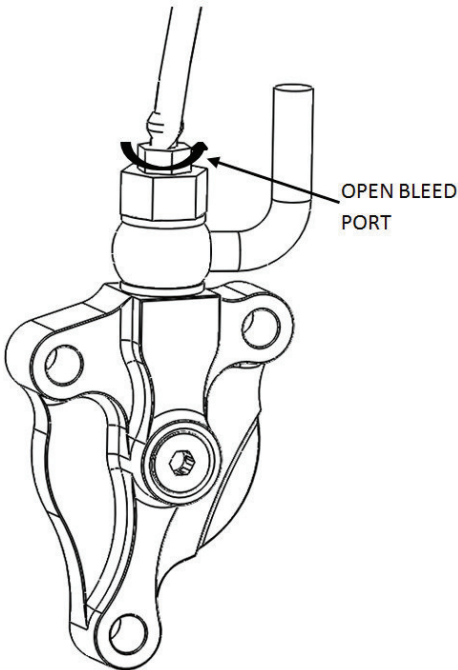
15. Attach the supplied bleed tube to port on top of the banjo bolt and loop it into a suitable catch bottle.



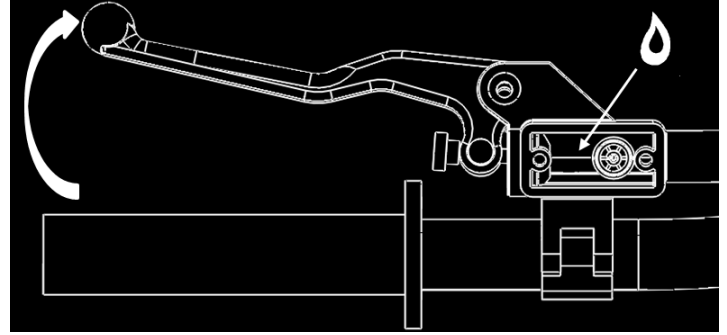
16. Pump the clutch lever 3-5 times then hold it against the bar/grip.



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



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



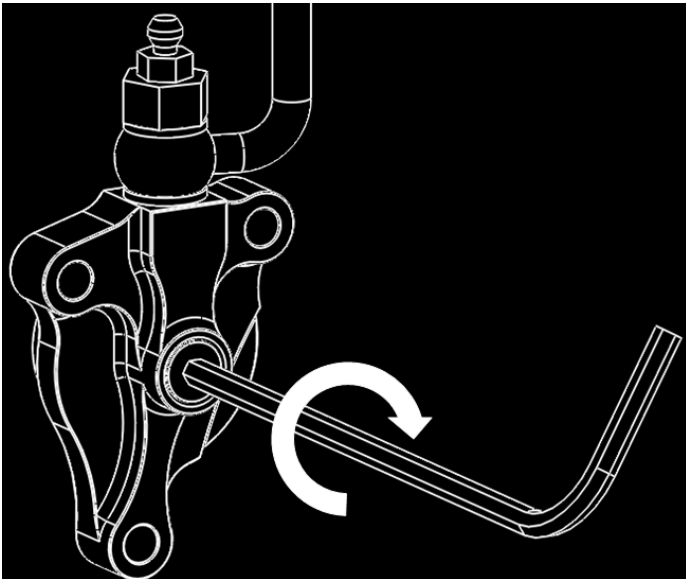
19. Repeat the previous 3 bleeding steps until air no longer comes out of the bleed port.
20. Check that the clutch lever functions properly and repeat bleeding procedure if necessary.
21. Remove the bleed tube.

SETTING THE INSTALLED GAP

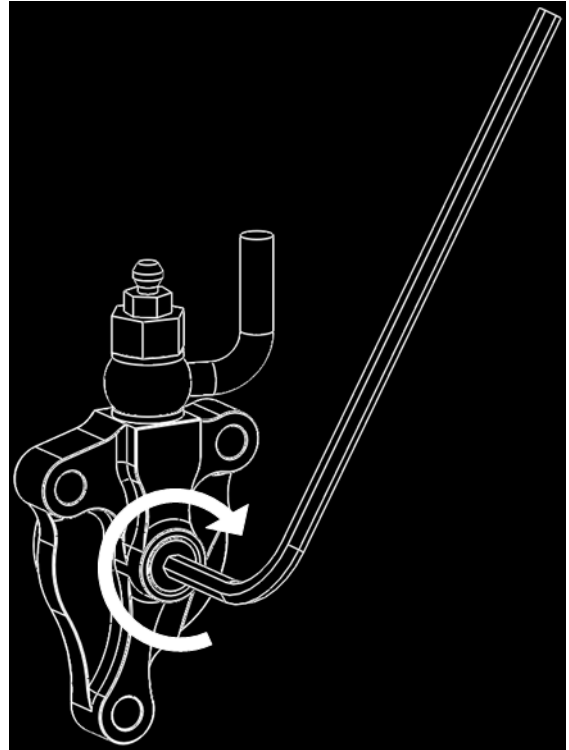
NOTE: The “Installed Gap” is the space between the pressure plate and the EXP disk created by the adjustment at the slave cylinder. This gap is what allows the clutch to spin freely until the desired RPM is reached for it to engage. This gap can be finely tuned for optimal performance (see “Free Play Gain Troubleshooting”) and, with this product, is externally tunable.

22. 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 throwout will start to lift the pressure plate. This is called your **starting point**.

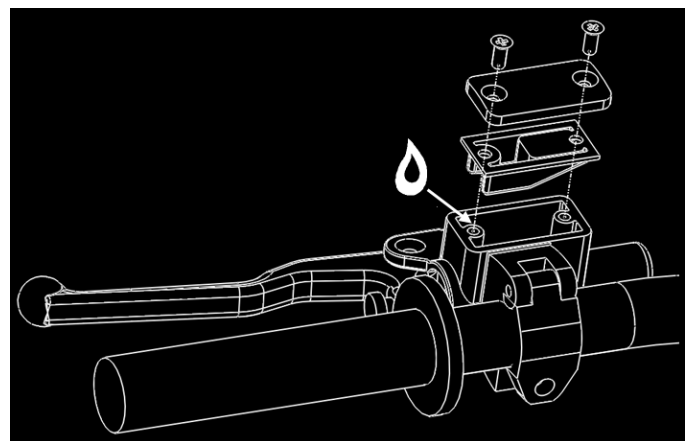
NOTE: It may take a few tries to find the point at which the system is bottomed out. You should feel a distinguishable change in turning effort at this point.



23. Once you have found the starting point, turn the adjuster clockwise 1 full turn plus 5 marks (or 1+5). This is a good **REFERENCE POINT**. Always make final adjustments according to your free play gain.



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



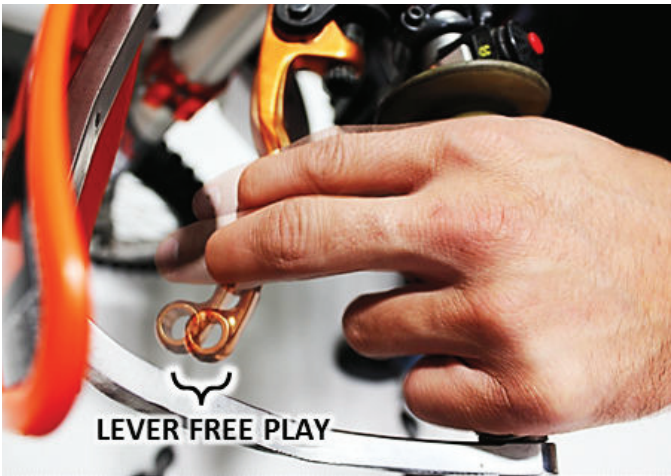
CHECKING “FREE PLAY GAIN”

WARNING

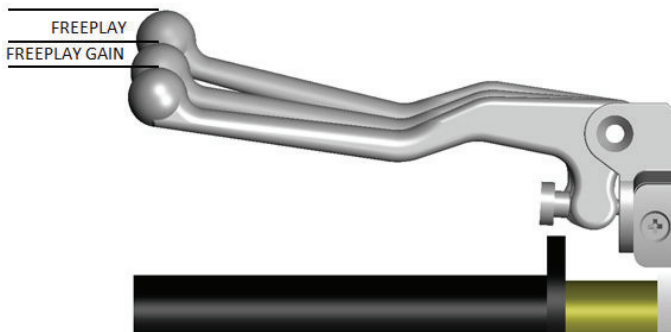
Always make sure that the bike is in NEUTRAL before checking Free Play Gain. Failure to do so may result in the bike lurching forward, and loss of control and/or injury may result.

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 5000 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. See the following three photos.



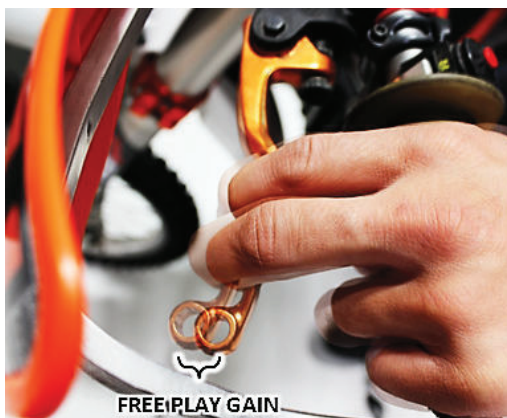


With the bike at idle in neutral, rev the engine to at least 5000 RPM. **The clutch lever should move in about 1/8" (3mm) toward the handlebar as you rev the engine.**

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 5000 RPM. **The clutch lever should move in 1/8" (3mm) under your finger pressure as you rev the engine.**



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.

BREAK - IN

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 20 times to at least 5000 RPM, letting the engine return to idle between each cycle. This allows the EXP to break in.
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 some forward creep. If the bike creeps too much, to the point of taking off or stalling, the idle may be too high or the installed gap may be too small (too much free play gain).
3. Once you have the bike idling with first gear engaged, slowly apply throttle to begin moving.

To break in the clutch components it is best to perform some roll-on starts, without using the clutch lever, in 1st and 2nd gear. In 1st gear, accelerate moderately to approximately 5000 RPMs and come to a stop—repeat this 20 times. Next, starting in 2nd gear, accelerate moderately to approximately 5000 RPMs then come to a stop—repeat this step 10 times.

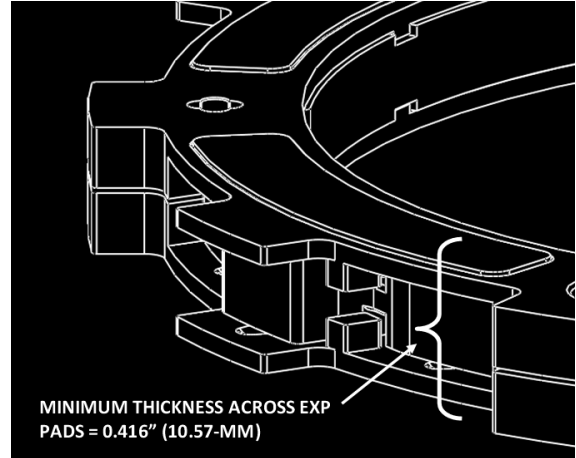
4. Re-check free play gain at your clutch lever and adjust if necessary at this point. **Your clutch pack will expand as it gets hot** during normal riding, so it is a good idea to check your freeplay gain after your bike is warmed up before each ride.

WARNING: DO NOT RIDE WITHOUT SUFFICIENT FREE PLAY GAIN!

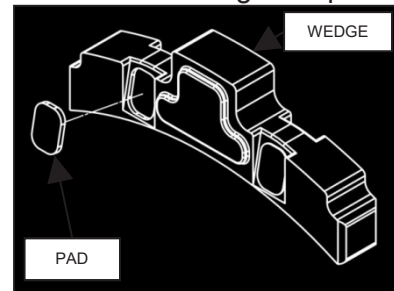
Checking free play gain is easy and takes less than a minute to perform. For optimum performance and longevity, check freeplay gain at the start of every ride or if ever you feel the clutch slipping.

MAINTENANCE

- Keep the adjustable slave cylinder clean and free of dirt and oil.
- Maintain and replace your chain at regular intervals as recommended by the manufacturer. A broken or sloppy chain could damage the adjustable slave cylinder and its ability to function properly.
- Maintain adequate free play gain, checking before every ride and adjusting if necessary.
- Inspect your clutch parts **every 40 hours** for signs of wear or excessive heat, and replace components as necessary.



- During EXP disassembly, oil tension may cause wedge pads to stick to the bases and dislodge from the wedge. If the base ramps appear to be in good shape, these pads can be carefully re-inserted into the wedge pockets without affecting EXP performance.



CLUTCH SQUEAL AND CHATTER

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. 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.
- **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 squeal or chatter.
- **Core EXP:** Upgrading to Core EXP gives you the option to run anti-squeal x-rings that will reduce or eliminate clutch chatter and squeal. Core EXP also has other benefits including increased oil flow and torque capacity, longer life billet parts and stock-like lever feel.

Changing the Installed Gap will **NOT** affect clutch squeal or chatter.

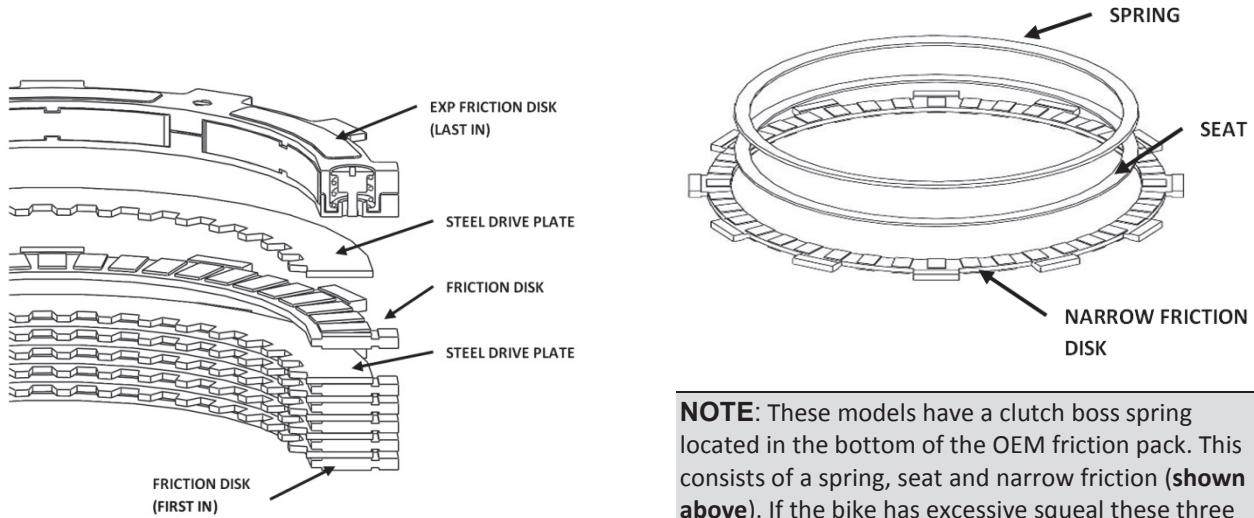


EXP CLUTCH SETUP SHEET – RMS-6027A

Doc ID: 198-6027A
 Doc Rev: 120513

CLUTCH PACK CONFIGURATION

HUSABERG MODELS	QTY OF OEM FRICTION DISKS USED	QTY OF STEEL DRIVE PLATES
FE/FX 390/450/570	6	6 OEM



NOTE: These models have a clutch boss spring located in the bottom of the OEM friction pack. This consists of a spring, seat and narrow friction (**shown above**). If the bike has excessive squeal these three parts can be re-installed in the OEM position which will replace the bottom friction shown on the picture to the left.

PRESSURE PLATE SPRINGS

KTM & HUSABERG MODELS	PRESSURE PLATE SPRINGS USED
FE/FX 390/450/570	4 Orange Rekluse Springs

EXP TUNING OPTIONS:

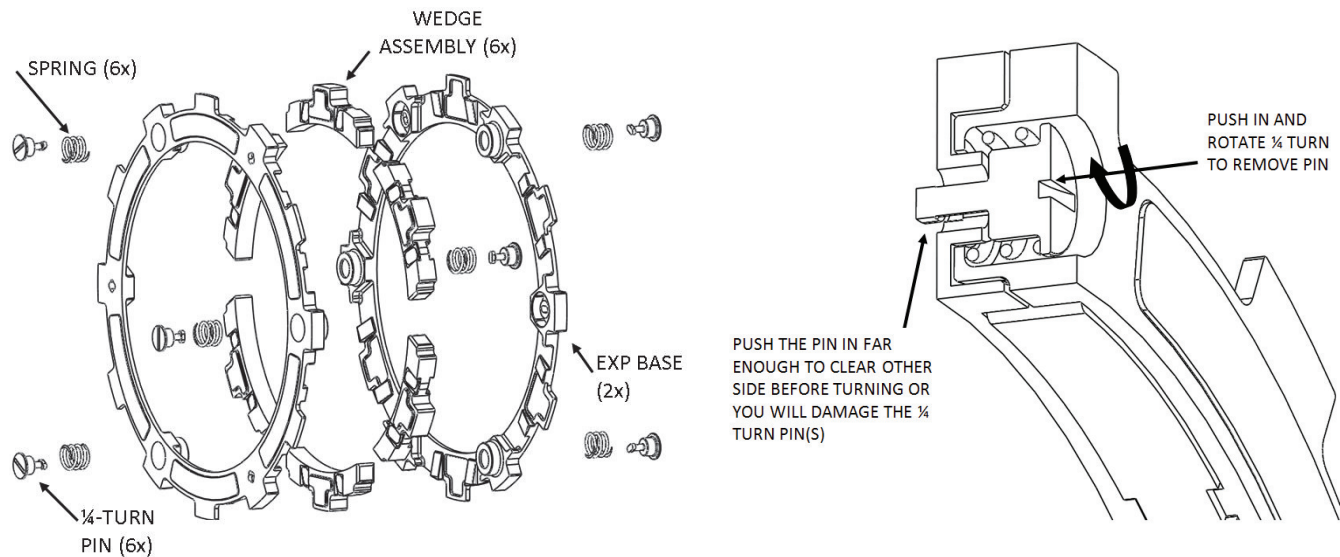
Included are 3 spring options to tune the engagement RPM of the EXP friction disk. The EXP friction disk comes set with the recommended “Medium” setting from Rekluse. See following chart.

HUSABERG FE/FX 390/450/570

ENGAGEMENT SETTING	SPRING CONFIGURATION
Low	6 Red Springs
Medium	3 Red and 3 Blue Springs
High	6 Blue Springs

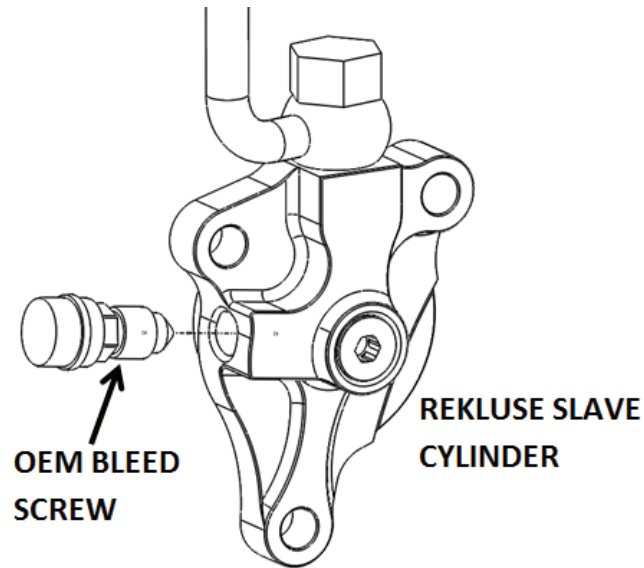
Adjusting the engine idle speed to match your engagement setting is important and greatly affects the overall feel of how the EXP friction disk engages. To prevent freewheeling and maximize engine braking, set the idle so there is a slight amount of drag while the bike is idling in gear and warmed up. 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.

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 friction disk over and repeat on the other side if necessary. 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.



BLEED SCREW

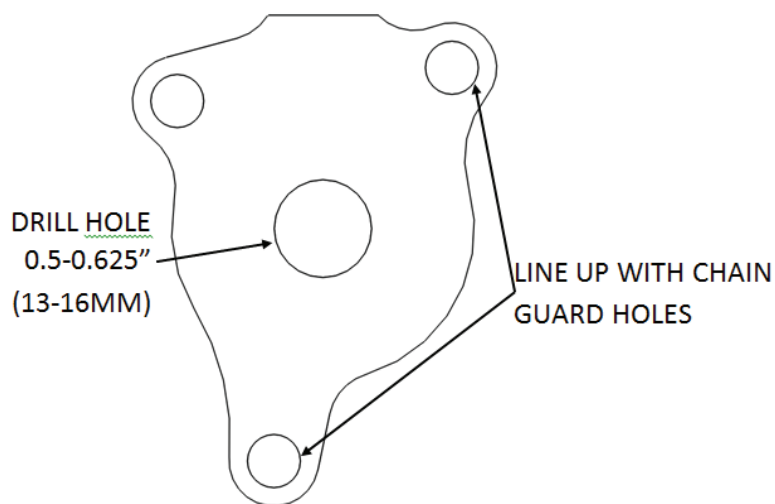
Transfer the Bleed Screw from the OEM slave cylinder to the Rekluse slave cylinder for bleeding the slave cylinder.



CHAIN GUARD MODIFICATION

Drilling a hole in the chain guard is required with the adjustable slave cylinder. Use the included template to align the hole with the slave cylinder adjuster screw. A 0.5-0.625" (13-16mm) hole is recommended so the tick marks on the slave cylinder are visible.

TEMPLATE





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