INSTALLATION & USER'S GUIDE

Suzuki DR650

Doc ID: 191-6106010A
Revision: 013124

customerservice@rekluse.com

TABLE OF CONTENTS

OVERVIEW

The parts in this kit are designed specifically for your motorcycle to optimize performance. This kit will replace several OE (Original Equipment) components with high-quality Rekluse components.

- The OE drive plates will be replaced with Rekluse thin plates.
- Some OE frictions will be replaced by the Rekluse EXP disc.

Note: *It is recommended to install this kit with new friction discs (not included). However, the OE discs may be reused if desired. Inspect frictions before reusing them.*

INSTALLATION TIPS

- Read the included **Safety Information** document before operating the vehicle with the product installed.
- Read this entire document before performing any steps.
- If you install this product for a customer or another person, instruct them to read the **Safety Information** document and the **Installation and User Guide** before operating the vehicle with the product.

- Protect your eyes and skin – wear safety glasses and work gloves.
- Lay the motorcycle on its left side when replacing the clutch. This makes working on the clutch easier and eliminates the need to drain the oil. Catch any fuel that may drain from the bike.
- Use the torque specifications found in your OE service manual.

- For optimal clutch performance, Rekluse recommends using fresh, clean oil that **meets JASO-MA** oil rating requirements. Rekluse offers Factory Formulated Oil™ developed specifically for Rekluse products. Rekluse Factory Formulated Oil is a perfect complement to any OEM or aftermarket wet clutch. Visit www.rekluse.com to learn more.

TOOLS NEEDED

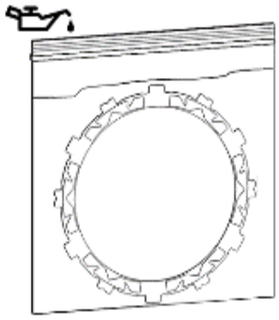
- Sockets: 8mm, 10mm, 14mm, 17mm
- Wrenches: 10mm, 12mm
- Picks
- Fluid Catch Container
- Funnel

INCLUDED PARTS

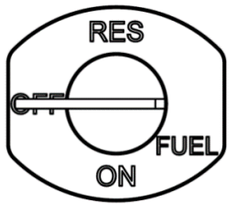
The parts included in the kit depend on the bike model. See the included sheet **Setup Sheet** for a list of included parts and diagrams.

You can also visit our website at www.rekluse.com/support for a full parts fiche diagram and part numbers.

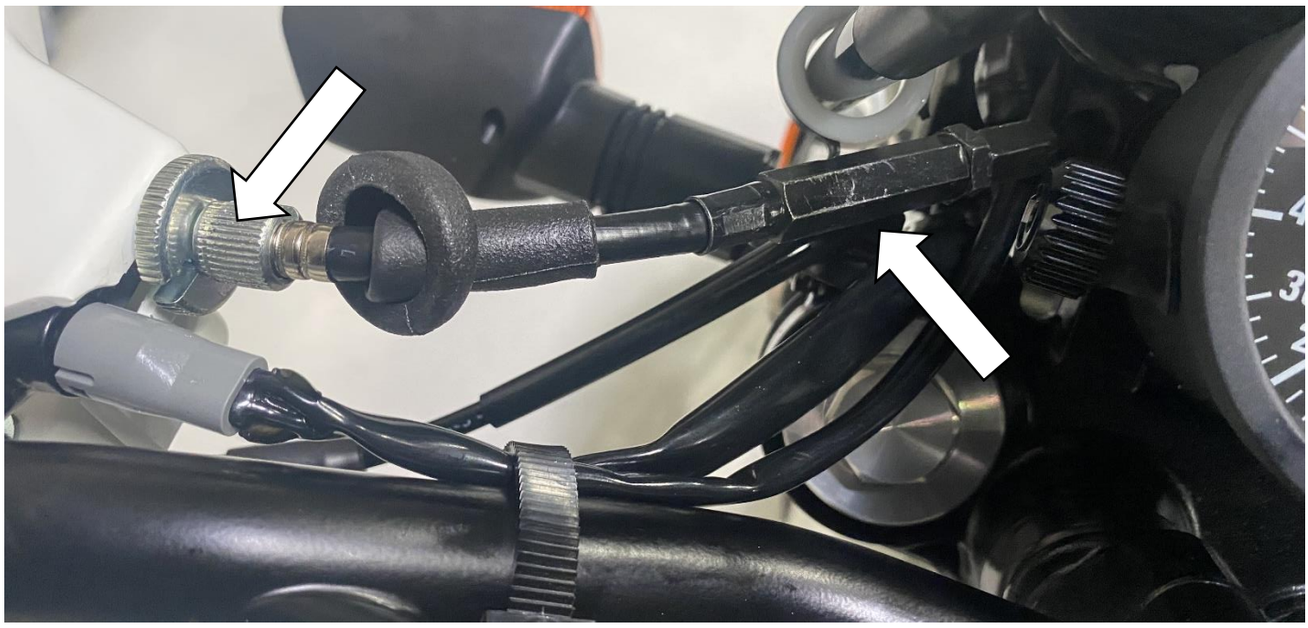
REMOVING THE OE CLUTCH



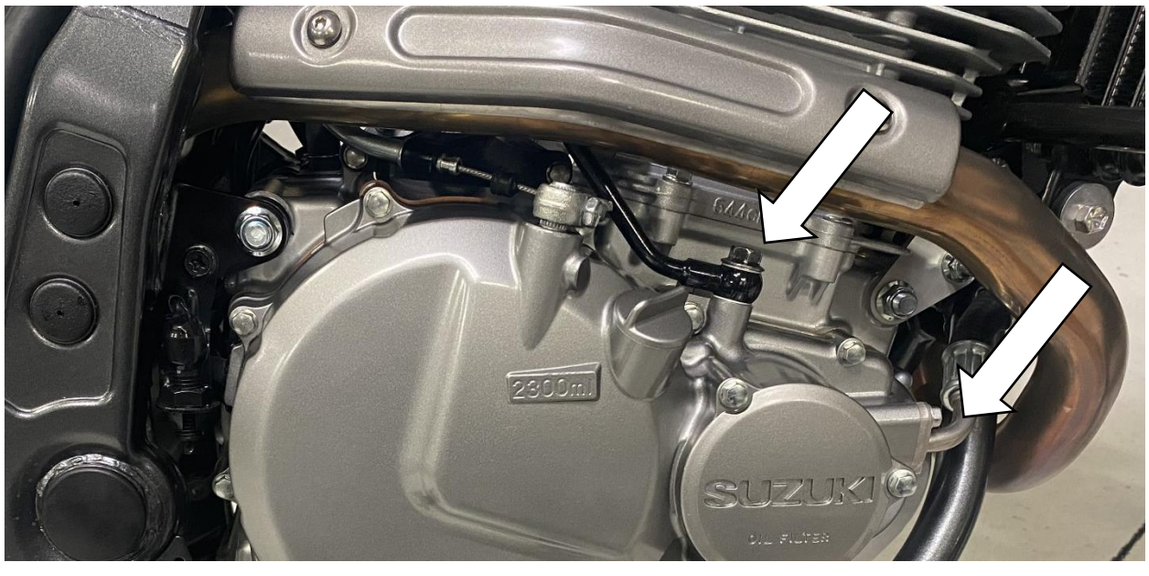
1. Soak the Rekluse EXP (and any new friction discs) in new oil for at least 5 minutes. Make sure it is coated on both sides.
2. If applicable, turn the fuel petcock to “OFF.”



3. Drain the oil into a suitable container.
4. Collapse the clutch cable perch adjuster.

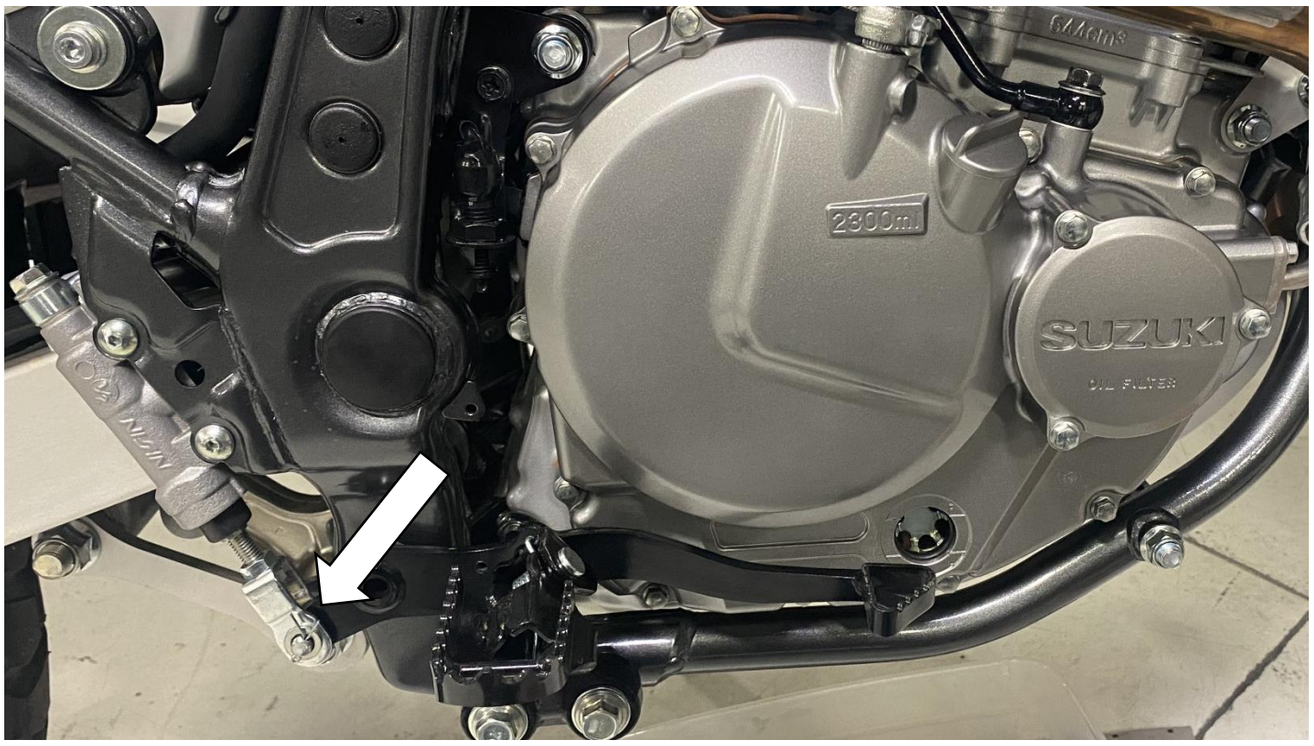


5. Disconnect the two oil lines from the clutch cover.



S

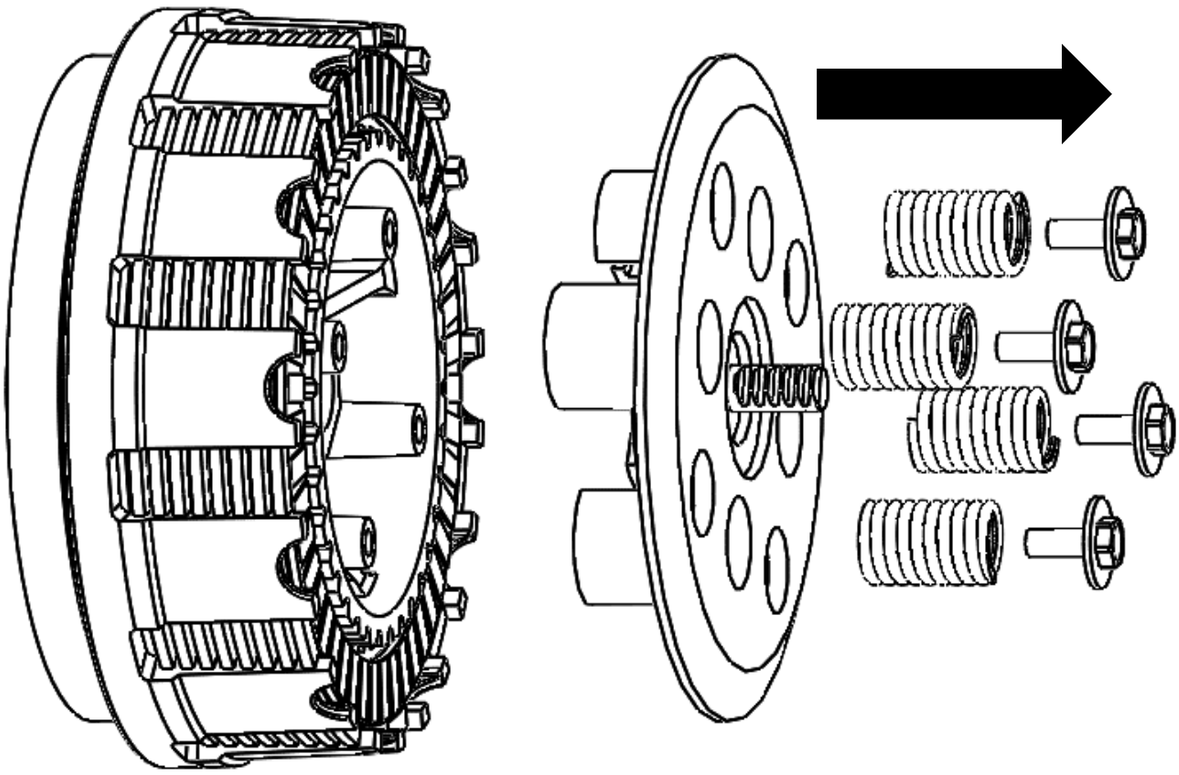
6. Remove the clevis pin and springs from the brake pedal and pivot the pedal down and out of the way of the cover.



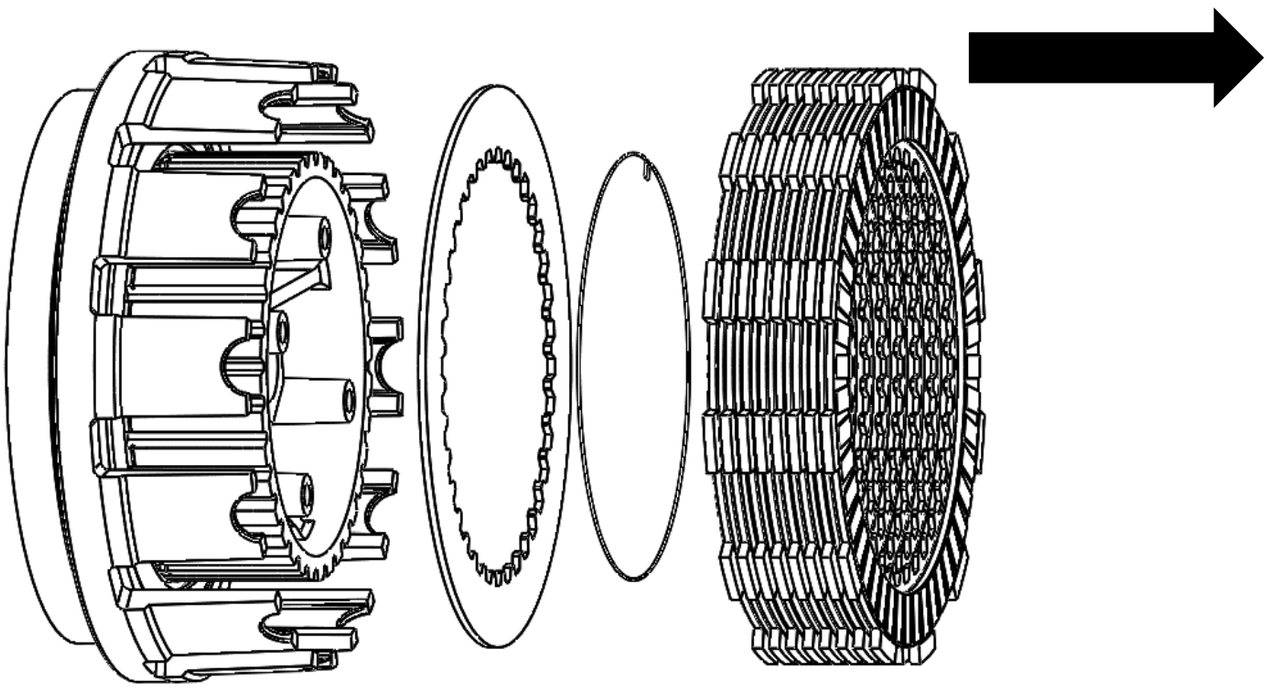
7. Disconnect and remove the clutch actuator arm.

8. Remove the clutch cover bolts and the clutch cover.

9. Remove the clutch springs and the pressure plate.

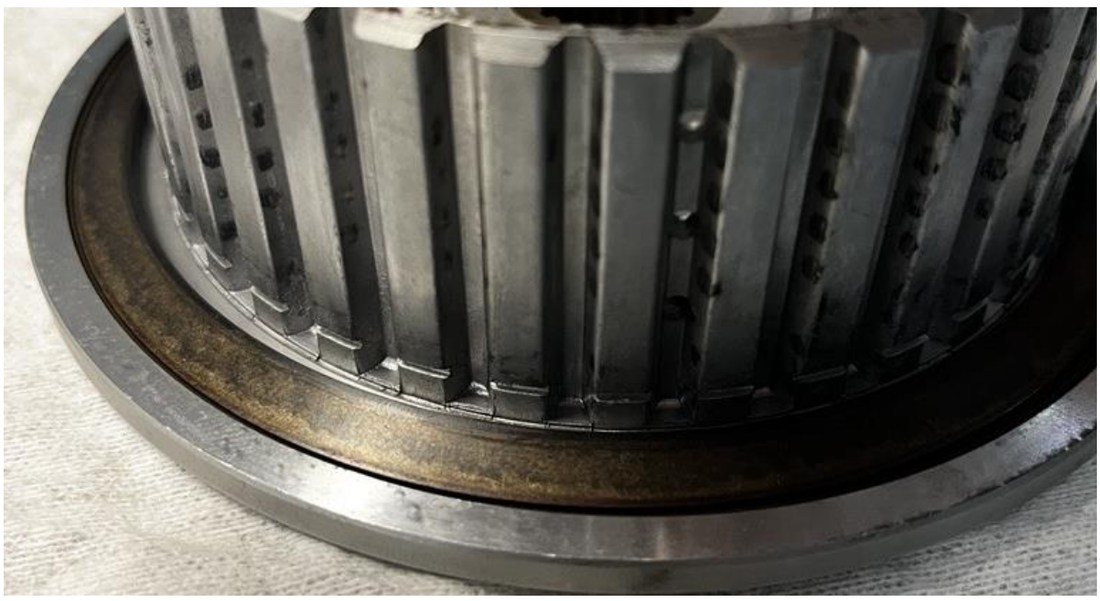


10. Remove the clutch pack.

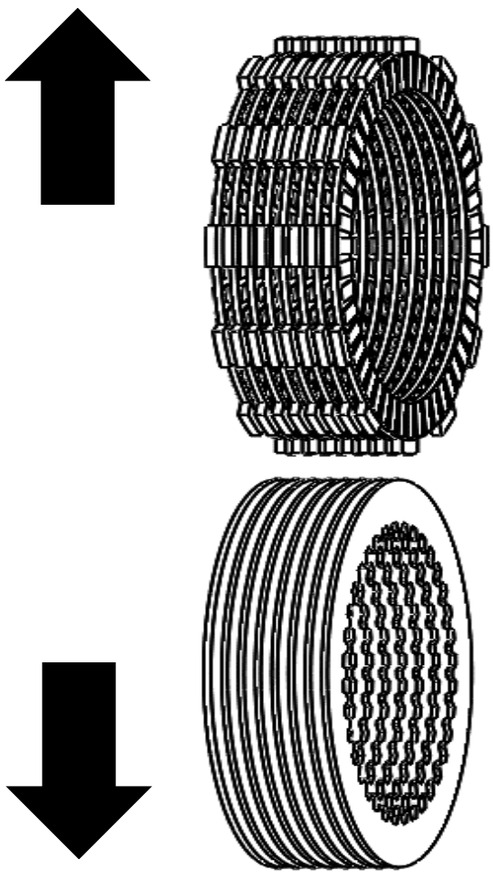


Note: *The final drive plate is retained by a wire. This plate* ***must be removed.*** *Remove the wire retainer and remove the final drive plate*.

11. Below the final drive plate is a judder spring. **Do not remove** this spring.

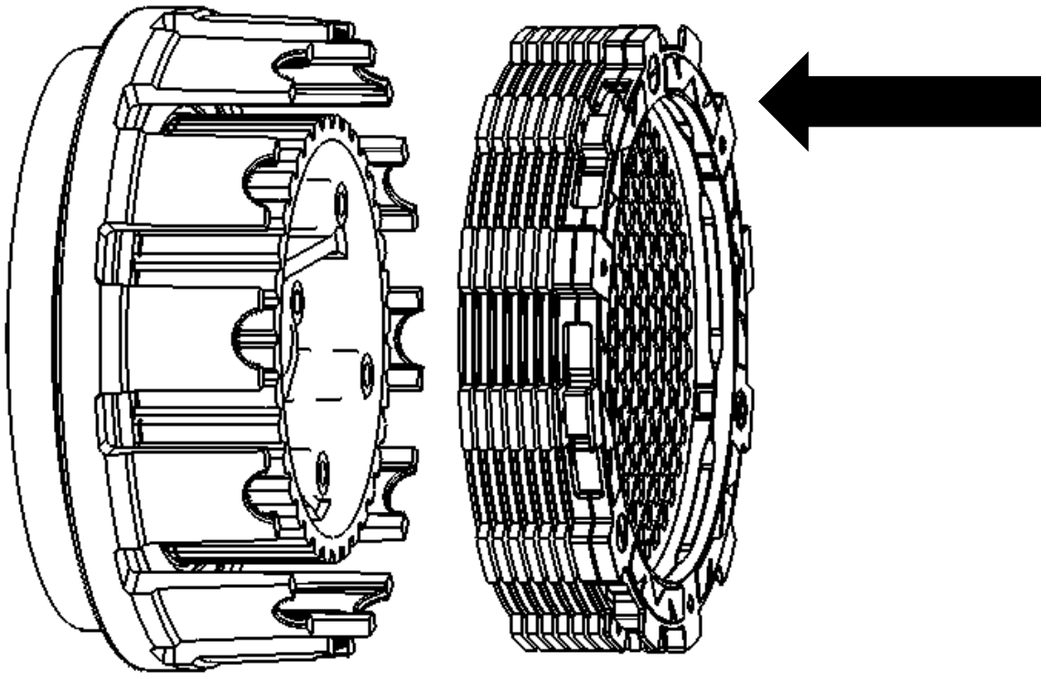


12. Separate the friction discs from the drive plates if the frictions will be reused. Frictions may only be reused if they are in good condition and meet the OE minimum thickness specification.

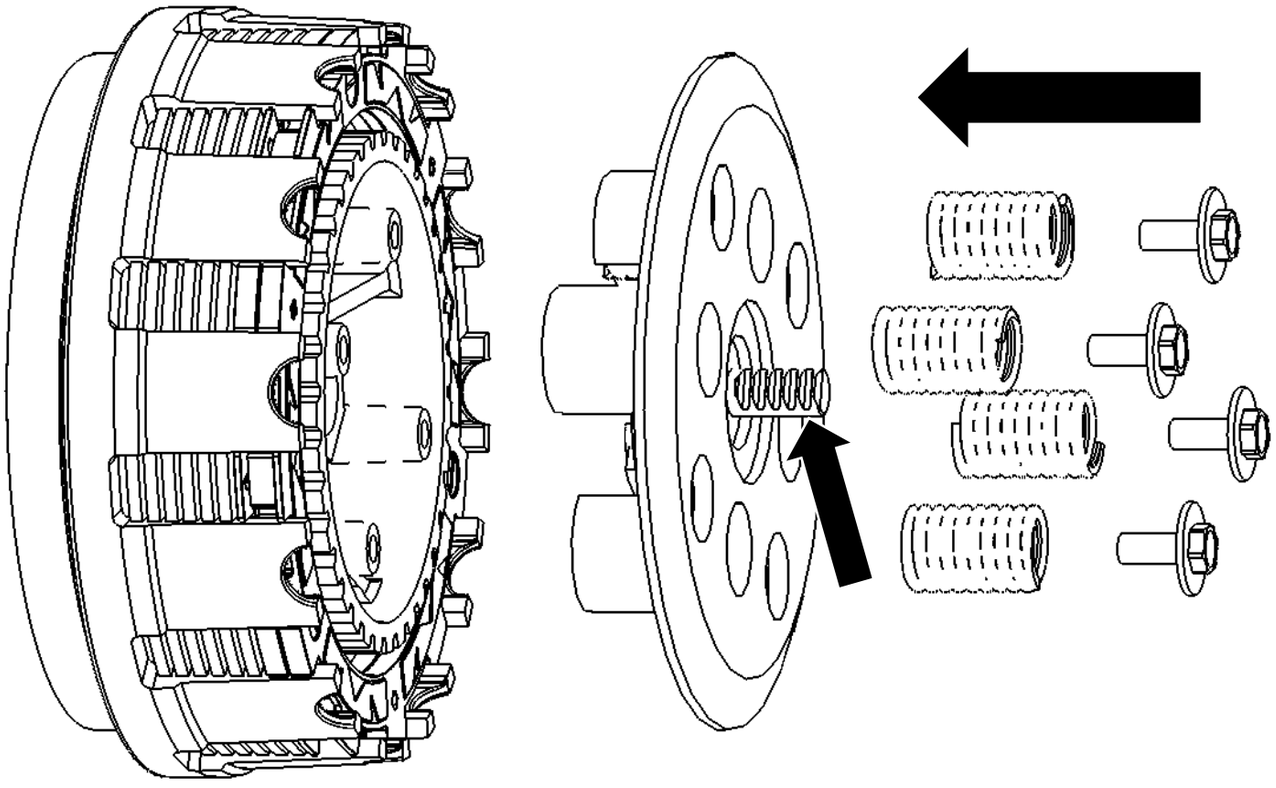


INSTALLING THE CLUTCH PACK

1. Install the clutch pack into the clutch basket one plate at a time. Refer to the **Setup Sheet** at the back of this manual for specific setup.



2. Install the pressure plate followed by the included springs and the OE screws. Ensure that the throwout is still on the pressure plate.



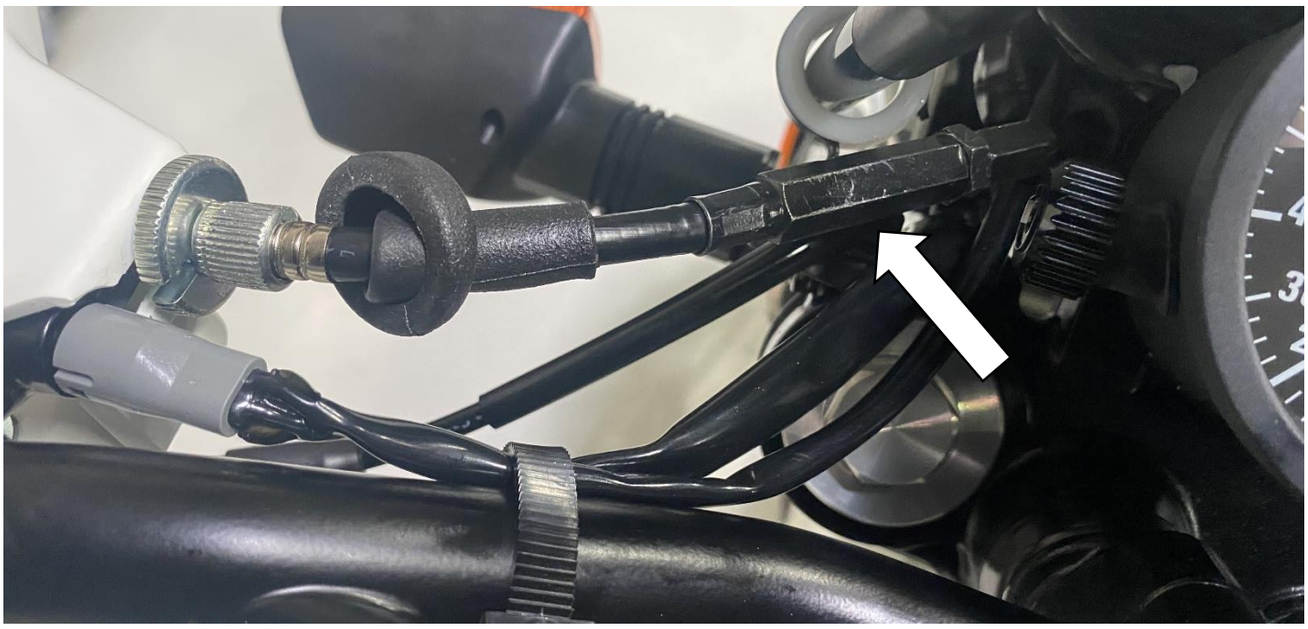
Note: ***Heavier springs*** *are recommended for bikes with* ***built motors****. These springs can be purchased from Rekluse.*

3. Install the clutch cover and torque the cover bolts in a star pattern to OE spec. Make sure that the throwout is aligned properly with the gear on the inside of the clutch cover.

4. Reattach the actuator arm to the cable. Position the arm on the shaft so the cable is tight. This is your starting position. Install the actuator arm screw and tighten it to OE specification.

SETTING THE INSTALLED GAP

1. Tighten the in-line cable adjuster until there is no free play at the lever. It is important to find the point right where the lever becomes tight against the perch.



2. Turn the in-line adjuster 3-5 turns tighter. Tightening beyond the initial point creates the installed gap.
3. Continue the installation by checking for Free Play Gain.

CHECKING FREE PLAY GAIN

The proper installed gap is verified by checking Free Play Gain.

Correct Free Play Gain = Correct installed gap

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

⚠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.

Learning How to Check the Free Play Gain

If you are familiar with checking Free Play Gain, skip to the "*Adjusting the Installed Gap*" section.

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

Optimal Free Play Gain yields 1/8"-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 Methods to Check Free Play Gain

There are two ways to check for 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.

The Rubber Band Method

Use the rubber band method for the initial setup. 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 or vehicle is in NEUTRAL before checking Free Play Gain. Failure to do so may result in the bike or vehicle lurching forward, and loss of control and/or injury may result.

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

Motorcycles or vehicles 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, and 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, and then loop it through itself.

d) Pull the band through the loop, and then attach it to the outside end of the clutch lever.

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

Note: *It is very important the motor returns to idle before revving the engine again or the 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 Free Play Gain with your hand.

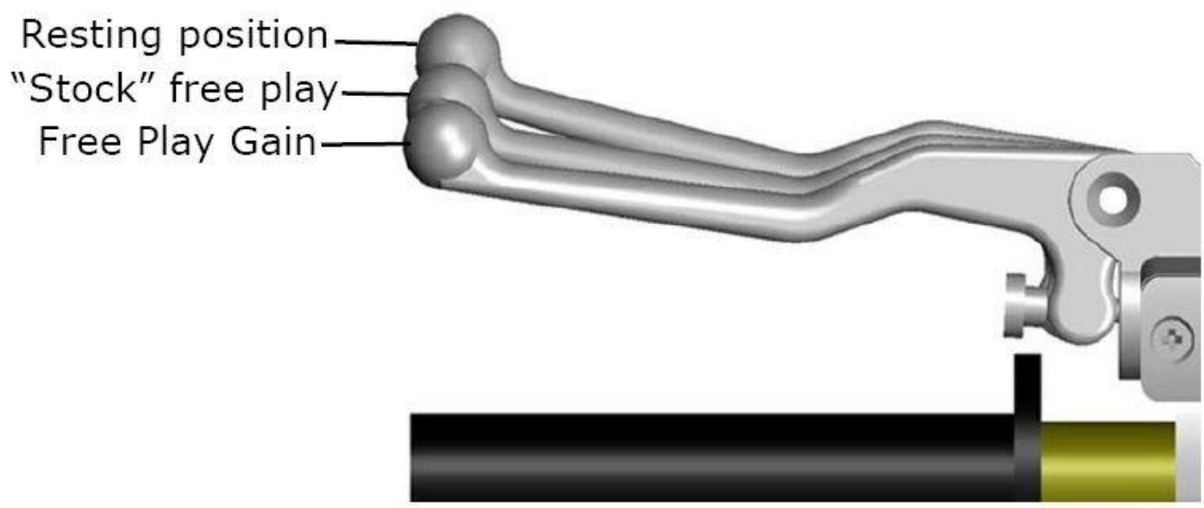
The Hand Method

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, use one finger to apply pressure at the end of the clutch lever.

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

d) When the bike returns to idle, rev the engine between 5,000-7,000 RPM a second time to verify the Free Play Gain again.



ADJUSTING THE INSTALLED GAP

If the Free Play Gain is optimal, continue to “Breaking In the New Clutch”. If the Free Play Gain is not in the recommended range, the installed gap needs to be adjusted. Refer to the table below to set the proper installed gap based on your Free Play Gain.

Notes: *If you are unable to obtain the correct Free Play Gain or you are nearly out of cable adjustment after performing the adjustment, the actuator arm may be moved to allow more adjustment room. Collapse the adjusters and move the arm further clockwise on the shaft.*

Adjust the Installed Gap

Symptom	Reason	Solution
• The 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	The installed gap is too small	Tighten the cable: Increase the length of the in-line cable adjuster housing until the correct amount of Free Play Gain is achieved. Recheck Free Play Gain.
• The clutch lever only moves slightly or does not move at all (too little Free Play Gain) • Clutch slips • The bike seems to have lost power	The installed gap is too large	Loosen the cable: Collapse the adjusters until the correct amount of Free Play Gain is achieved. Recheck Free Play Gain.

TUNING THE EXP

This kit includes multiple spring settings to adjust the engagement RPM of the EXP friction disk. The EXP friction disk comes preinstalled with the recommended “Medium” setting. See the included Setup Sheet for a chart of the available EXP spring configurations.

You may have to adjust the engine idle speed to prevent free-wheeling and maximize engine braking. There should be a slight amount of drag when the bike is warmed up and idling in gear. The idle should not be so high that the bike moves forward while in gear with the throttle closed. However, with a small opening of the throttle, the bike should move forward.

Changing the EXP Springs

1. Using a flathead 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. Drop a new spring into the spring slot on the base, then add the ¼ turn pin.
4. Push the ¼ 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.
5. If using different colored springs alternate spring colors to maintain even expansion.

BREAKING 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 steps 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**
Rev Cycles: 1. Place the bike in **NEUTRAL.** 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.	 10 rev cycles
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. 4. With the bike idling in first gear, slowly apply the throttle to begin moving.	**Continued on next page**

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. ***Note:*** *If the engine wants to stall or the creep is excessive, the idle may be too high or the installed gap may be too small. Make necessary adjustments before proceeding.*	 10 roll-on starts
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.	 10 roll-on starts
7. Place the bike in **NEUTRAL** and recheck Free Play Gain. 8. Continue to step 4 to adjust the installed gap until the Free Play Gain of the clutch lever is 1/8” to ¼” (3 mm-6 mm).	 Recheck Free Play Gain and adjust the installed gap

Note: *Your clutch pack will expand with heat, so a 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.

MAINTENANCE

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

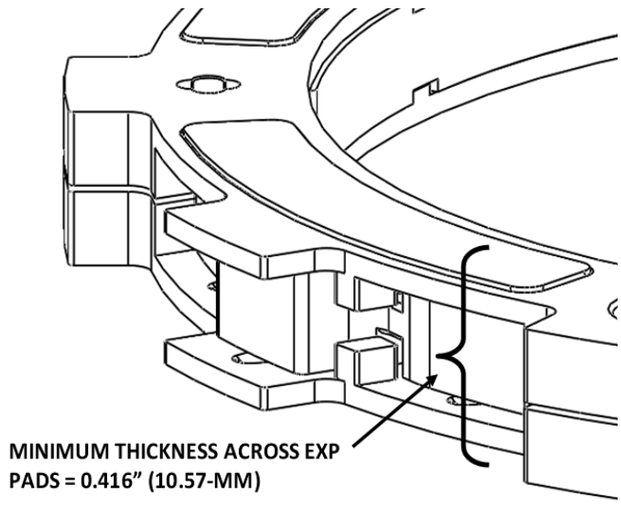
Clutch Wear

Rekluse clutches are built using high-quality materials but do wear based on the rider's use, type of terrain, and natural wear and tear. To keep your clutch performing at its best, perform regular maintenance on your bike and clutch based on your riding style.

- Maintain adequate Free Play Gain. Check before every ride and adjust as necessary.
- Repeat the break-in procedure when you replace any components of the EXP disk or friction disks. Always soak new friction disks in fresh oil before installing.

Clutch Parts

- Regularly inspect and replace all clutch components showing signs of wear or excessive heat. Rekluse recommends inspecting after the first 10 hours of use, and then every 20 hours after that.
- Measuring the clutch pack and the EXP disk can help determine if the components need to be replaced.
- Replace friction disks or drive plates if they are glazed or burnt. See the following section for examples.



- Regularly change the oil 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.

Basket

- Inspect the basket dampers and springs by checking the play between the ring gear and the basket. Replace the dampers or springs if you feel any play in the assembly.

Disk Inspection Examples

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

Drive Plates – If the clutch pack is getting high amounts of heat, purple, blue, or black color can be seen on the drive plate teeth. See the 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

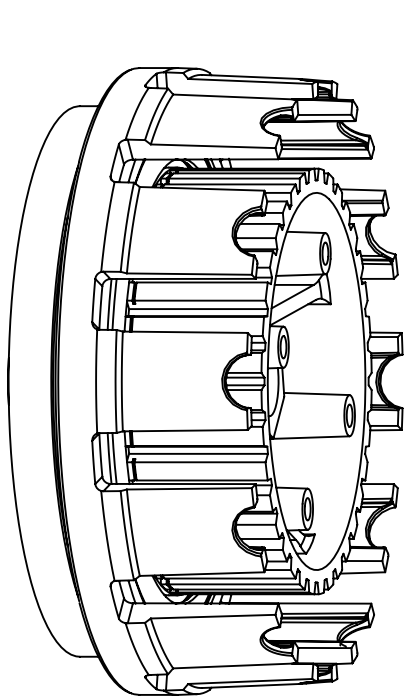
Phone
(208) 426-0659

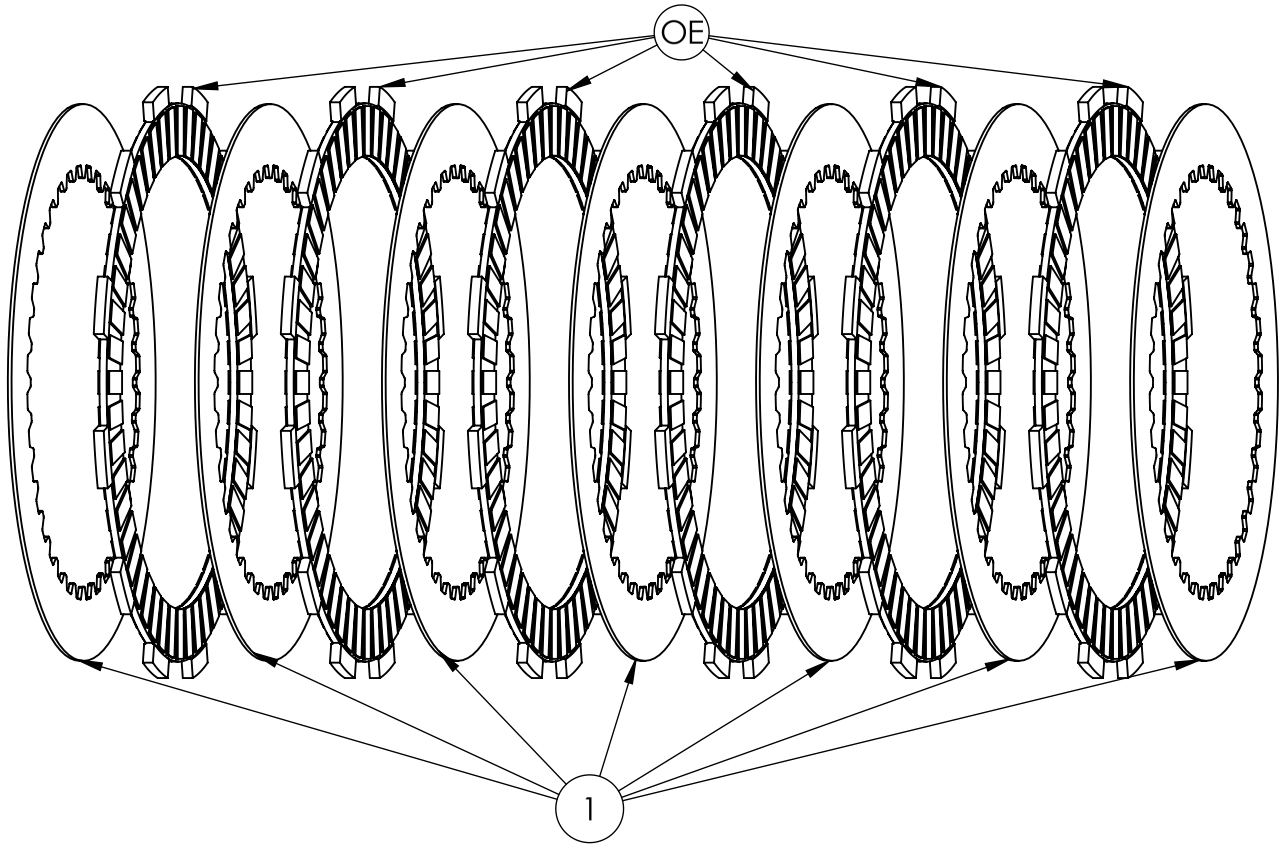
Monday thru Friday: 8 am – 5 pm Mountain Time

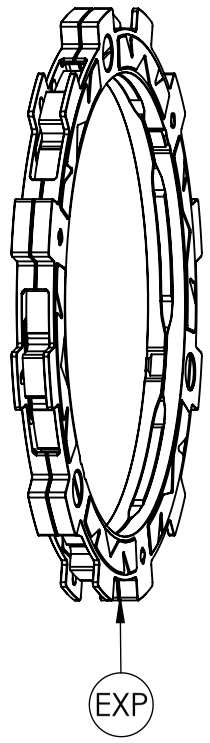
Email

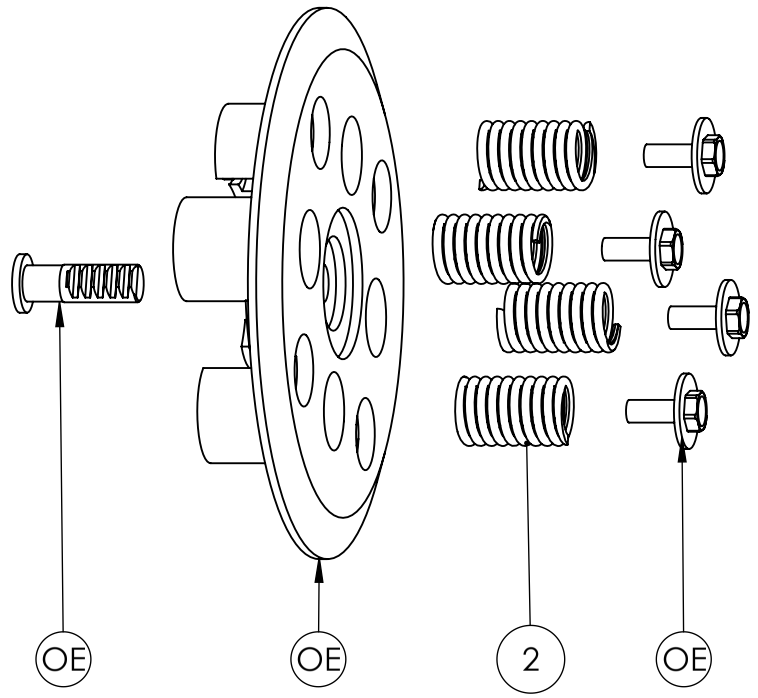
customerservice@rekluse.com

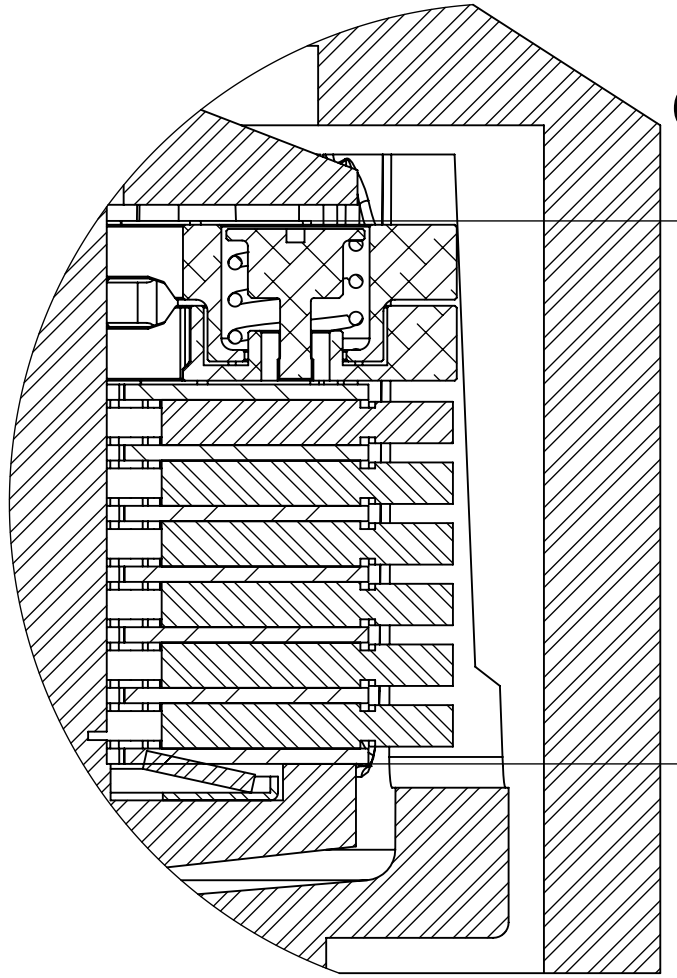
SETUP SHEET 198-6106010











CLUTCH PACK THICKNESS

1.446in MAX
1.414in MIN
[36.73mm MAX
35.92mm MIN]

TUNING OPTIONS

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

* MEDIUM SETTING IS PREINSTALLED IN THE EXP DISC

COMPONENTS

ITEM NO.	DESCRIPTION	QTY.
1	DRIVE PLATE	7
2	REKLUSE CLUTCH SPRING	4
EXP	EXP	1
OE	OE COMPONENTS	Var.

SERVICE LIMITS

COMPONENT	STANDARD	SERVICE LIMIT
EXP	.426-.446in 10.8-11.3mm	.416in 10.6mm

REKLUSE MotorSports
12000 FRANKLIN RD
BOISE, IDAHO 83709
WWW.REKLUSE.COM
PH (208) 426-0559
FAX (208) 672-1318