



REKLUSE MOTOR SPORTS

The Rekluse EXP Kit for BMW & Husqvarna
Single-Cylinder 650cc Models

INSTALLATION & USER'S GUIDE

Doc ID: 191-6307A
Doc Rev: 101916

OVERVIEW

This kit replaces the OEM clutch pack with a Rekluse-designed clutch pack designed for optimal operation specific to your bike.

NOTE: Depending on your specific bike model, one of two potential clutch pack configurations has been provided in your kit. These configurations are required because of the differences in the OEM clutch designs between the two bike types. The two options are as follows:

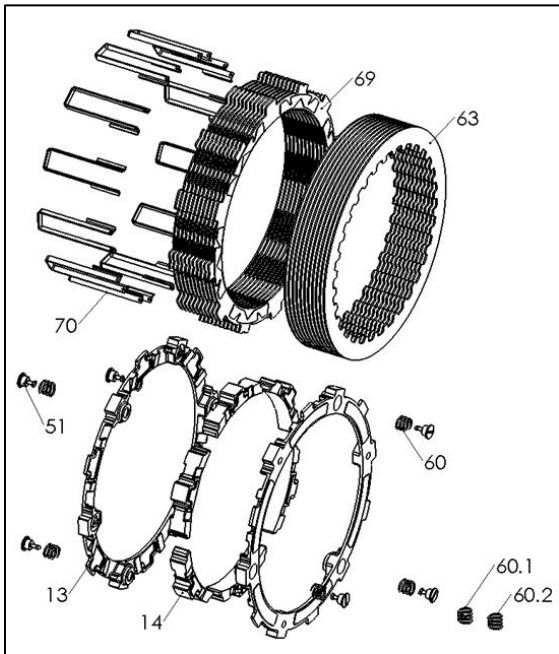
- 2007 BMW G650 X-Challenge, X-Country, and X-Moto (OEM hub has 30 teeth)
- 2008 and newer BMW all G650 models, & 2013-2014 Husqvarna TR650 Terra/Strada models (OEM hub has 36 teeth)

Be sure to follow the specific instructions for your particular model.



INCLUDED PARTS

BMW 2007 X-MODELS



Item	Item Type	Qty
13	EXP Base *	2
14	Wedge Assembly *	6
51	Fastener - 1/4-Turn Pin *	6
60.X	EXP Adjustment Spring * (see EXP tuning options)	6
63	Drive Plate	9
69	TorqDrive™ Friction Disk	9
70	Basket Lining Sleeve	12

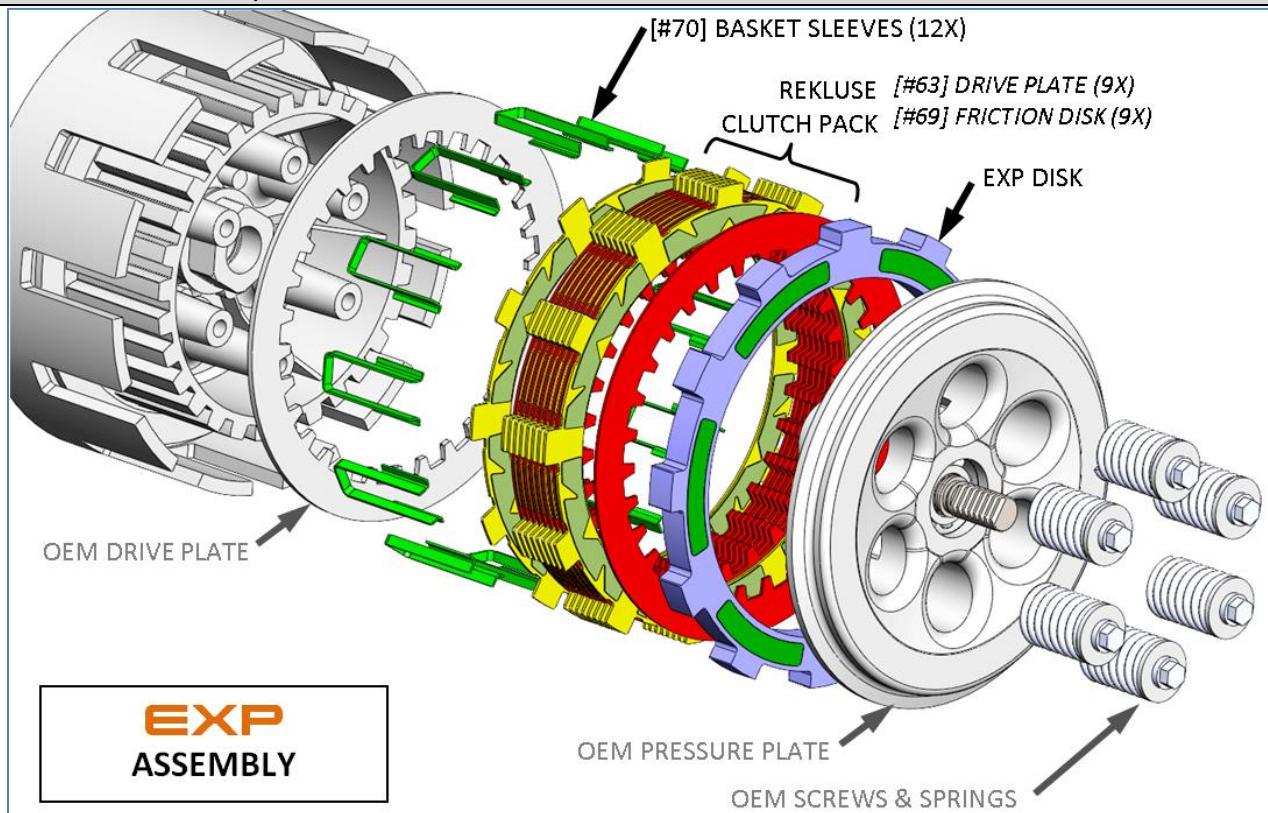
* Denotes parts assembled as part of EXP disk assembly

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

ASSEMBLY OVERVIEW

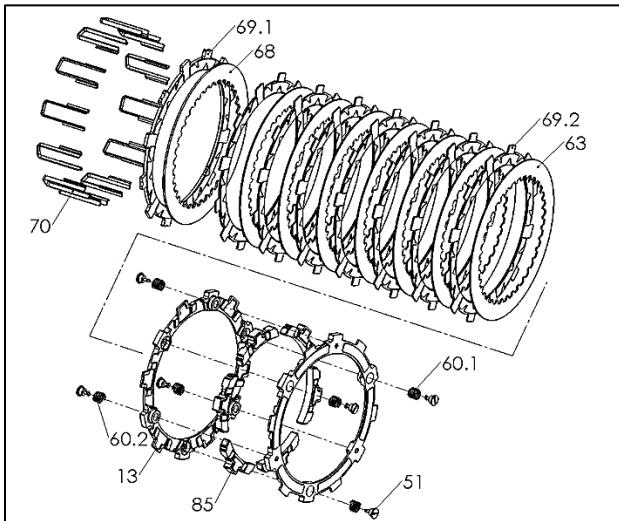
BMW 2007 X-MODELS

NOTE: One OEM drive plate will be reused; it will be the first disk installed with the Rekluse kit.



INCLUDED PARTS

BMW 2008+ MODELS & HUSQVARNA TR650 TERRA / STRADA MODELS



Item	Item Type	Qty
13	EXP Base *	2
51	Fastener - 1/4-Turn Pin *	6
60.X	EXP Adjustment Spring * (see EXP tuning options)	6
63	Drive Plate (.040" thick)	7
68	Drive Plate (.060" thick)	8
69.1	TorqDrive™ Thick Friction Disk	1
69.2	TorqDrive™ Thin Friction Disk	7
70	Basket Lining Sleeve	12
85	Wedge Assembly *	6

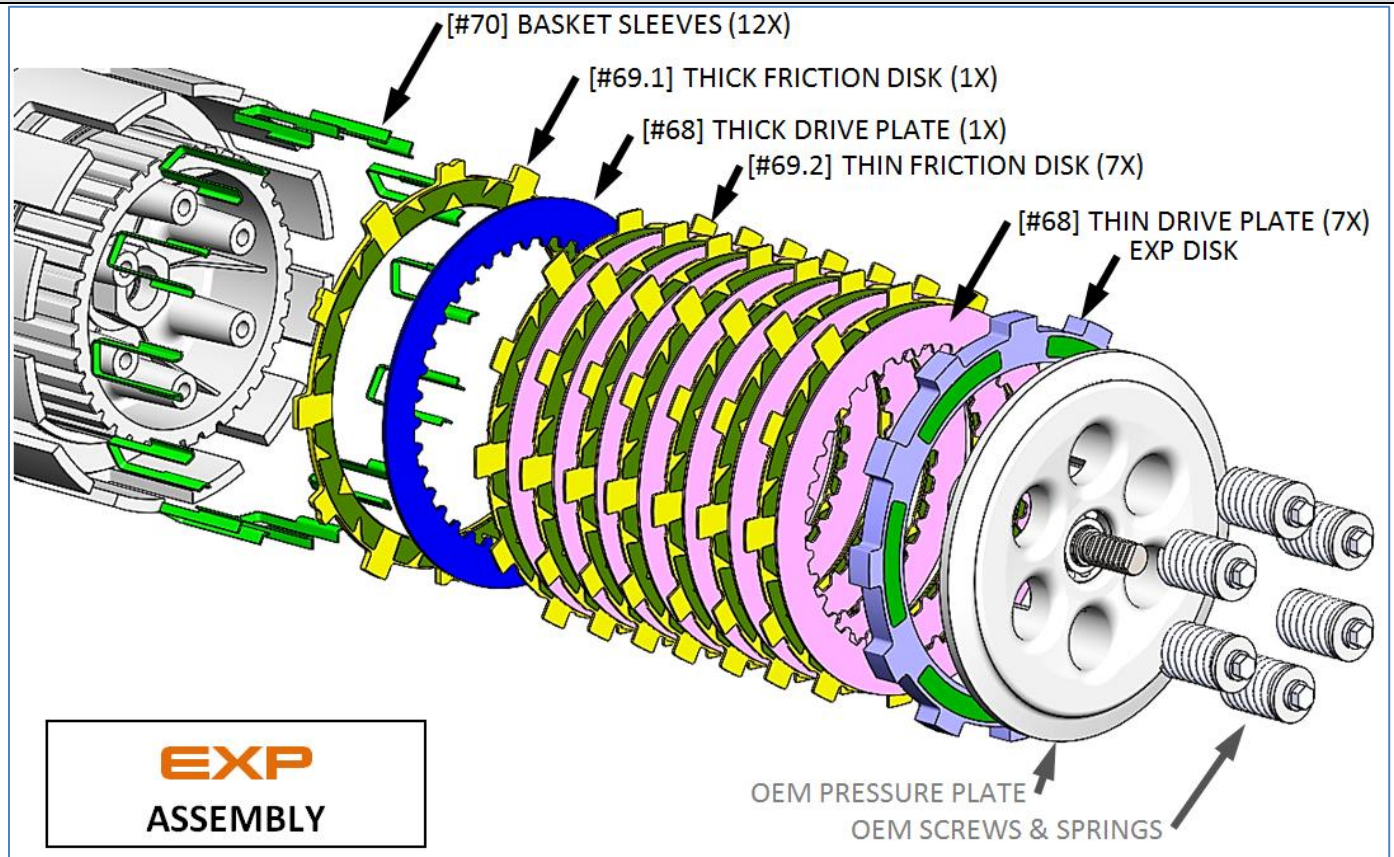
* Denotes parts assembled as part of EXP disk assembly

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

ASSEMBLY OVERVIEW

BMW 2008+ MODELS & HUSQVARNA TR650 TERRA / STRADA MODELS

NOTE: No OEM clutch plates will be reused; all necessary clutch plates are included with this Rekluse kit.



INSIDE THIS DOCUMENT

- INSTALLATION
- SETTING THE INSTALLED GAP
- CHECKING FREE PLAY GAIN
- BREAK-IN
- CLUTCH PACK ADJUSTMENT
- EXP TUNING OPTIONS & ENGAGEMENT SETTINGS
- MAINTENANCE

INSTALLATION TIPS

- Watch the “EXP Auto-Clutch Installation Video” by following this QR code or visiting rekluse.com/videos.
- Read this entire document before performing any steps, so you will know what to expect.
- Be sure to wear proper eye protection.
- It is recommended to replace any gaskets that you may remove during installation.
- Laying the bike on its side allows for easy clutch access and eliminates the need to drain oil
- Use clean, quality JASO MA certified oil for motorcycle transmissions for best performance.
- When reinstalling components, use the torque specifications found in your OEM service manual



USE OF OTHER AFTERMARKET PRODUCTS

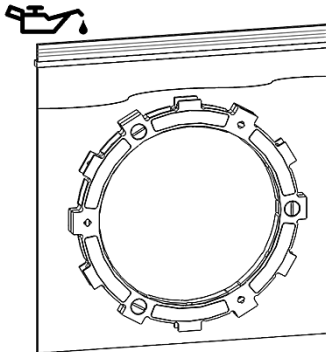
- If your bike is equipped with an aftermarket clutch cable, you may find that the adjustment range in your cable is different than depicted in this manual.
- Bar risers may limit the travel necessary for your cable adjustment to achieve the necessary installed gap.
- If you prefer the use of an aftermarket clutch lever and/or perch, especially the adjustable variety, note that:
 - Some aftermarket lever/perch combos claim “Lighter Lever Pull” which correlates to less lift of the pressure plate (the mechanical advantage is increased, so the distance the pressure plate lifts must decrease). This may have an adverse effect by producing more clutch drag or harder shifts. The lever may be lighter, but you will have to pull the lever in farther to disengage the clutch.
 - Some aftermarket lever/perch combos may provide lever “free play” if desirable.
- This product has not been proven to be compatible with hydraulic conversion kits, as it is difficult to achieve the necessary adjustment for installed gap.

TOOLS NEEDED

- Metric socket set
- Channel-Lock style pliers
- 2x Dental Pick Tools
- Metric Allen key set
- Torque wrench (in-lb, or N-m)

BIKE PREP & DISASSEMBLY

1. Soak the EXP disk and all the Rekluse friction disks in engine oil for at least 5 minutes.



2. To avoid draining the oil, lay the motorcycle on its right side. Or, you can stand the bike vertically on its center stand and drain the oil.

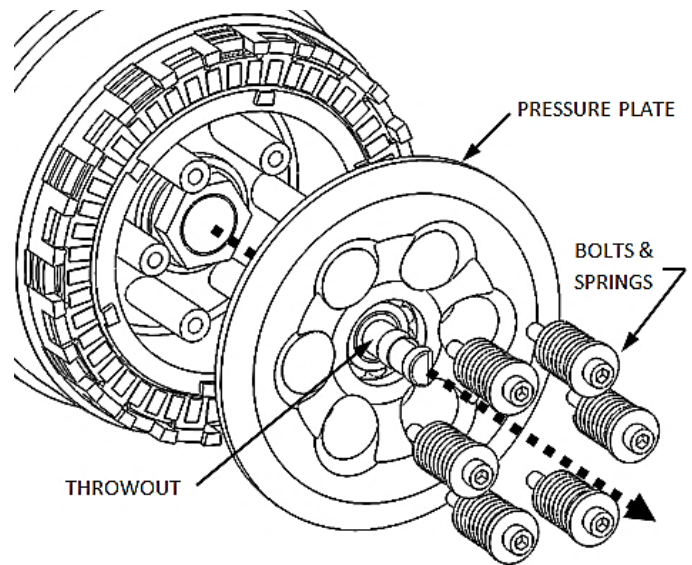
3. Loosen all clutch cable tension and detach the cable end from the actuator arm.



4. Remove the clutch cover bolts and clutch cover.

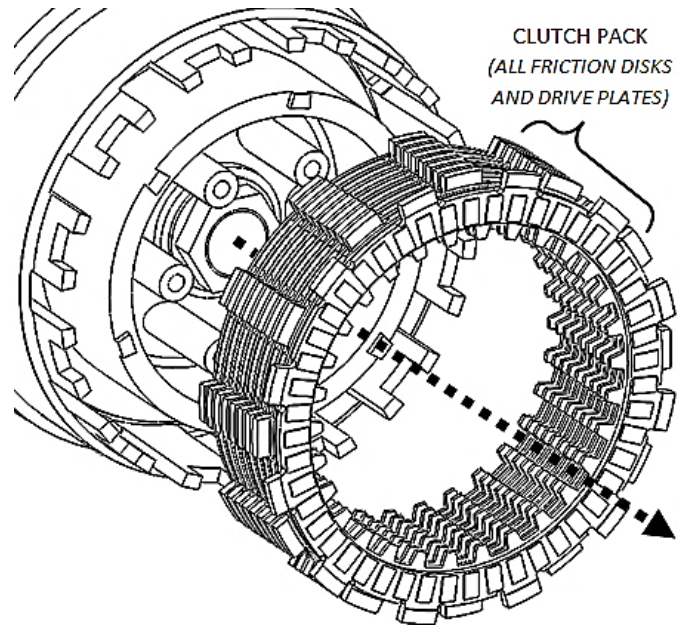


5. Remove the OEM springs followed by the pressure plate and throwout:



6. Remove the entire OEM clutch pack (all plates).

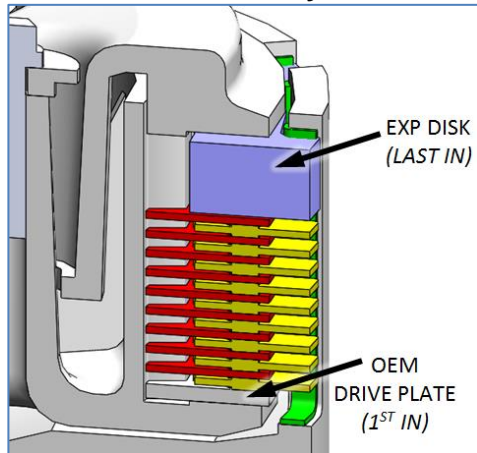
NOTE: You will reuse 1x OEM drive plate.
All other OEM clutch plates WILL NOT be reused.



PACK INSTALLATION

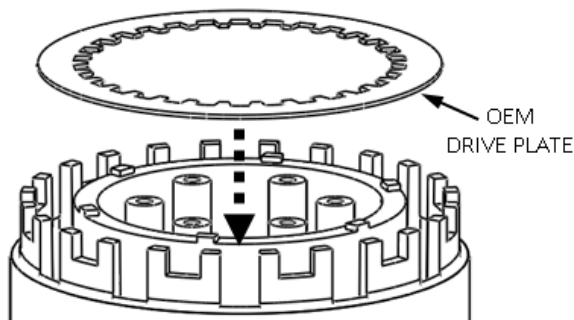
BMW 2007 X-MODELS

Clutch Pack Cutaway Overview

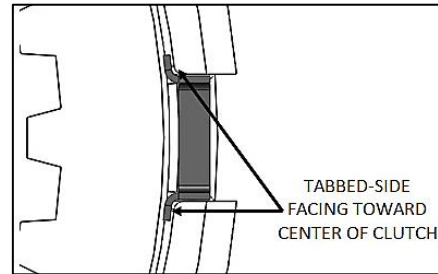
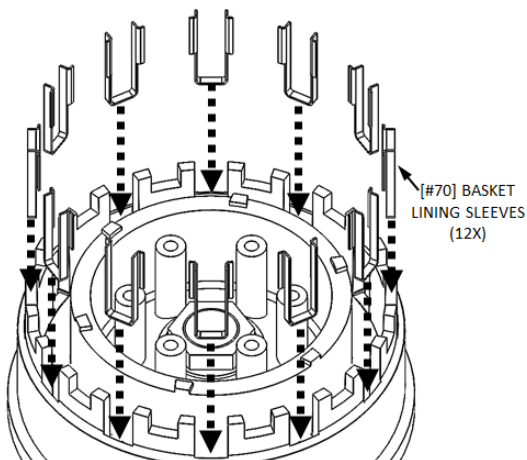


- A.** The first disk into your clutch should be one of the OEM drive plates removed in the last step. It is easiest to reuse the OEM drive plate that was at the bottom of the clutch pack when you first disassembled it.

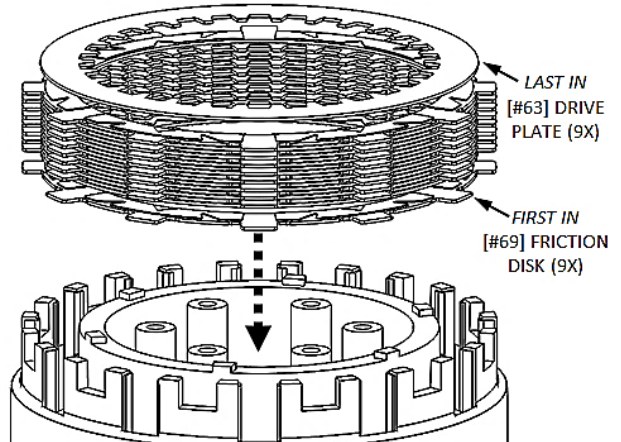
Install this OEM drive plate first.



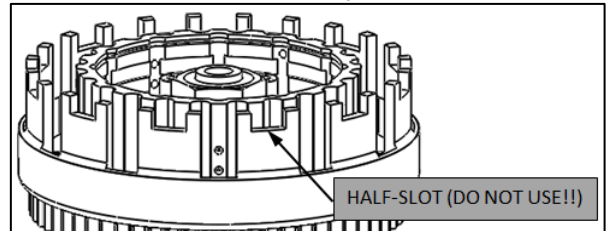
- B.** Install the 12x Basket Sleeves [#70] into the tang slots of the basket, pushing each down until it seats in the bottom of each basket slot.



- C.** Install the Rekluse clutch pack as shown, starting with a thin friction disk [#69] and alternating drive plates [#63] with friction disks.

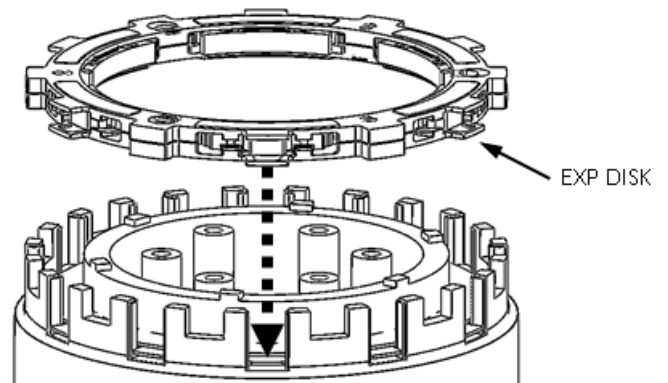


Use only the full tang slots. Never install any disks into the half-slots, if your basket has them.



- D.** Install the Rekluse EXP disk last.

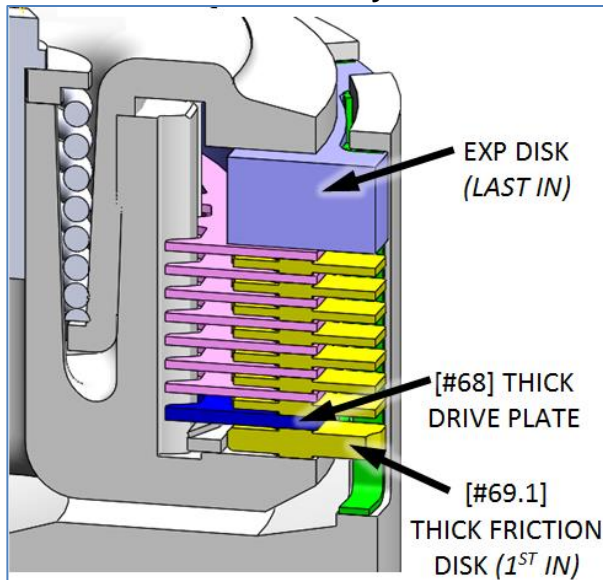
The EXP disk is not directional; it can be installed in any orientation.



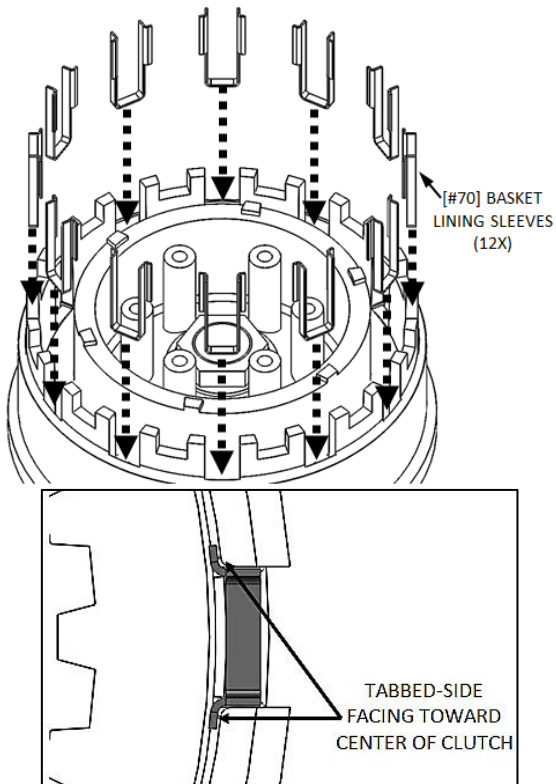
PACK INSTALLATION

BMW 2008+ G650 MODELS, & HUSQVARNA TR650 MODELS

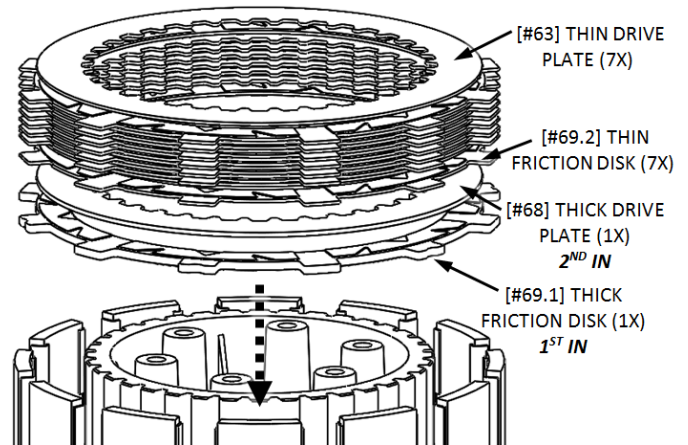
Clutch Pack Cutaway Overview



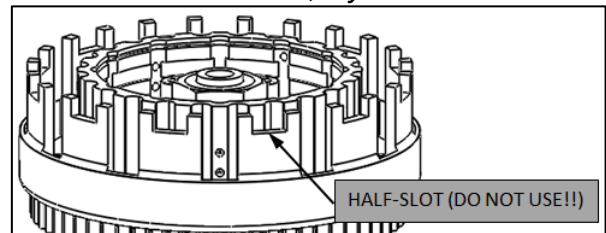
- A. Install the 12x Basket Sleeves [#70] into the tang slots of the basket, pushing each down in until it seats in the bottom of each basket slot.



- B. Install the Rekluse clutch pack as shown, starting with the thick friction disk [#69.1] followed by the thick drive plate [#68] provided, then alternating between thin friction disks [#69.2] and thin drive plates [#63] so that the last disk in is a thin drive plate [#63].

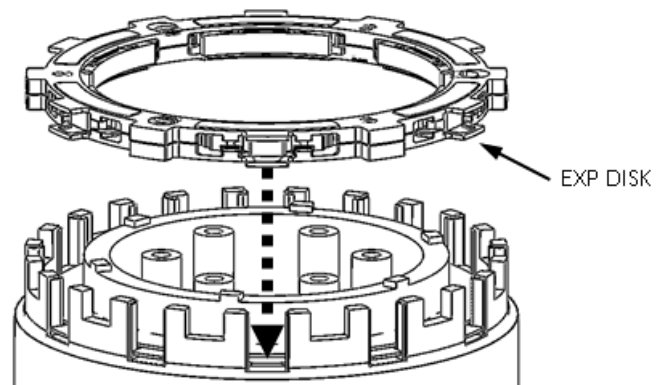


Use only the full tang slots. Never install any disks into the half-slots, if your basket has them.



- C. Install the Rekluse EXP disk last.

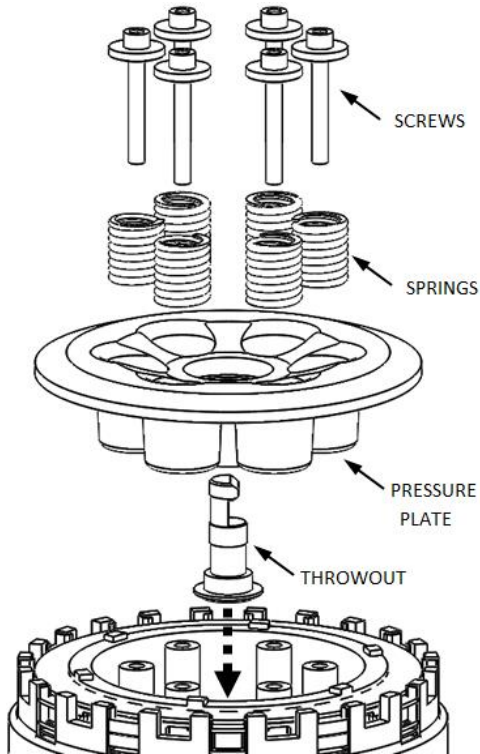
The EXP disk is not directional; it can be installed in any orientation.



FINAL INSTALLATION

ALL MODELS

7. Reinstall the OEM throwout and pressure plate, followed by the springs and screws. Torque to OEM spec.



8. Reinstall the clutch cover, ensuring that the throwout teeth are aligned correctly with the actuator mechanism in the clutch cover. Torque the cover bolts in a star pattern to OEM spec.



9. Before reattaching the clutch cable to the actuator arm, follow this procedure to ensure adequate cable travel and actuator arm angle during use:

NOTE: Because there is limited cable adjustment at the clutch perch on the handlebar, you will be performing the major adjustment at the actuator arm. In order to orient the actuator arm in the optimal position, it will be necessary to move its rotational position on the splined shaft.

- a. Remove the actuator arm from its splined shaft using an 8mm socket.
- b. Spin the splined shaft COUNTERCLOCKWISE until it stops (any further and it would start to lift the pressure plate).
- c. Locate the orientation of the arm on the shaft that situates the arm nearest to 90 degrees relative to the cable.
- d. Now orient the arm one spline-tooth CLOCKWISE, past this 90 degree orientation, and index the arm back onto the shaft. The arm's orientation should resemble that in this photo:



10. Ensure that the cable adjuster at the lever perch is bottomed out, meaning that it is in the position that would provide the least amount of cable tension.



11. Use channel-lock pliers to reattach the clutch cable to the actuator arm. The cable should be tight at this point.



NOTE: After you complete the steps in the next section (setting and verifying the installed gap), the actuator arm will rest at nearly 90 degrees to the cable, as shown here.



12. Stand the bike up, supporting it on its kickstand or center stand.

INSTALLED GAP SETTING

DEFINITION: “Installed Gap” is the separation in the clutch pack created by the tension adjusted into the clutch cable. This gap is what allows the clutch to spin freely until the desired RPM is reached for engagement; it must be set correctly for optimal performance.

In this bike model, the installed gap is set by lifting the pressure plate a pre-set amount using cable tension. By performing the steps in the previous section—advancing the actuator arm one tooth from its stock position—you’ve completed the main adjustment. Next, you will fine-tune the adjustment based on free play gain (explained in the next section) using the threaded cable tension adjuster at the perch on the handlebar.



NOTICE

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

CHECKING LEVER FREE PLAY GAIN

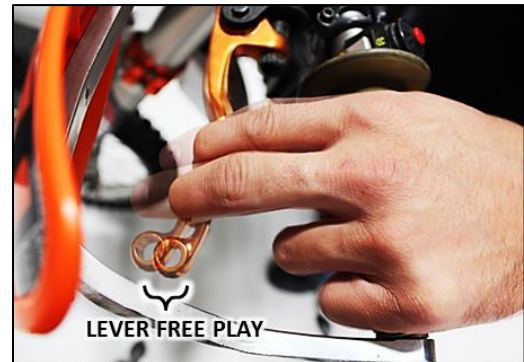
WARNING

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.

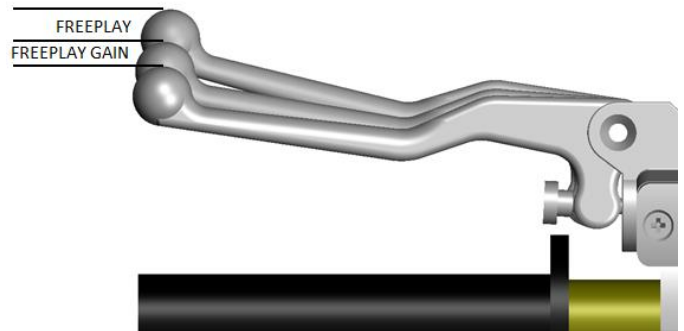
NOTE: Before performing this step, please visit our website at rekluse.com/support to view the TECH VIDEO entitled “How to Check Free Play Gain”.



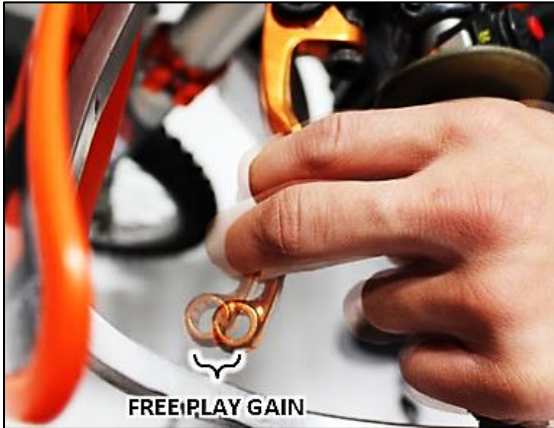
“Lever Free Play” is essentially the “slack” in the clutch lever before it starts actuating the clutch. Applying a light finger pressure will take up this slack. *With this clutch kit installed, there will be NO lever free play, as the cable is always under tension.*



“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.

NOTICE

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

WARNING

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.

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.



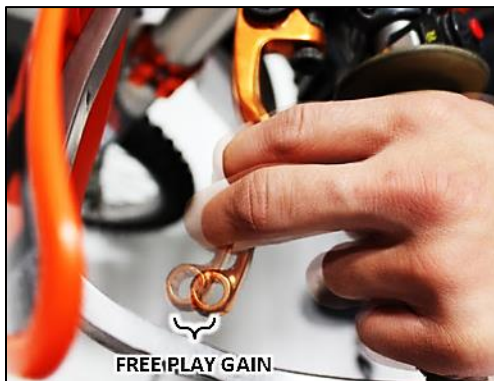
With the bike at idle in neutral, quickly blip (rev) the engine to at least 5,000 RPM and let it return to idle. **The clutch lever should move in about 1/8" (3mm) toward the handlebar as you rev the engine.**

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.

NO FREE PLAY GAIN MEANS THE CLUTCH WILL SLIP!

5. When optimal free play gain—and therefore the optimal installed gap—is achieved, it is important to ensure that the actuator arm is close to 90 degrees relative to the cable, as shown below. This ensures optimal mechanical performance of the cable system, and will keep the actuator arm from contacting the cover.



CLUTCH LEVER STICKER

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



FREE PLAY GAIN

TROUBLESHOOTING

Each adjustment should be done in small increments (one turn of the threaded adjuster—at the lever perch—at a time). After each adjustment, repeat the rev-cycle until optimal free play gain is achieved.

NOTE:

If you are unable to obtain the correct free play gain or you are nearly out of cable adjustment after performing the steps below, your cable may be worn or stretched from wear or use; if this is the case, purchasing a new cable should provide the necessary performance.

Symptom:

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

Answer: Installed Gap is too small

Solution: TIGHTEN THE CABLE by turning the threaded perch adjuster to ADD tension to the cable, thus increasing the Installed Gap.

If the threaded perch adjuster is maxed-out, meaning you have threaded it out as far as is desirable while maintaining at least 3 threads engaged with the perch, and yet there is still too much free play gain, then repeat **steps 9-10** on **page 6**, reorienting the actuator arm one more tooth CLOCKWISE on the actuator shaft. Do this until the desired installed gap is achieved with the perch cable adjuster in a relatively centered position.

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: LOOSEN THE CABLE by turning the threaded perch adjuster to reduce the cable tension, and thus reduce the Installed Gap.

CLUTCH NOISE & DRAG

Noise:

Although it is harmless, some bikes may have “squeal” or “chatter” coming from the clutch at idle or 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 bikes that tend to have clutch squeal or chatter here are some recommendations to reduce or eliminate it:

- **Oil:** Rekluse recommends that you have fresh, clean JASO-MA rated oil for best clutch performance. Dirty or old oil can make the clutch more likely to squeal or chatter. Some heavy-duty oil stabilizers or other additives have been known to reduce noise and make shifting smoother. Be sure that any additives you might use are approved for use in wet-clutch motorcycles.
- **Installed Gap:** Adjusting the Installed Gap will NOT affect clutch squeal or chatter

Drag:

Now that your clutch has more friction disks and therefore surfaces than stock, the clutch may drag more than stock, and possibly may drag more noticeably more when cold. If this occurs, warm the bike up by allowing it to idle for a few minutes before riding.

EXP TUNING OPTIONS

Included are 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 the following chart for settings.*

2007 BMW G650 X-models

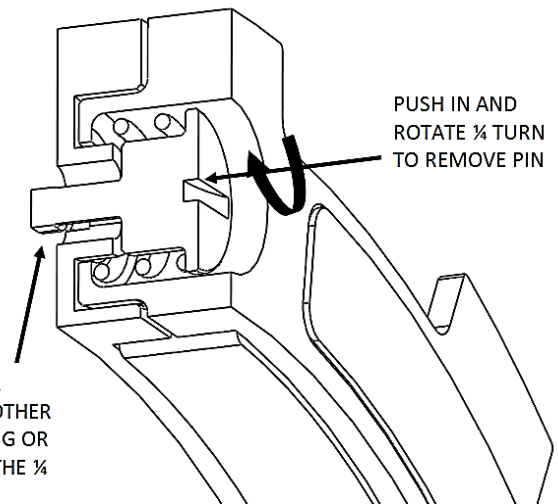
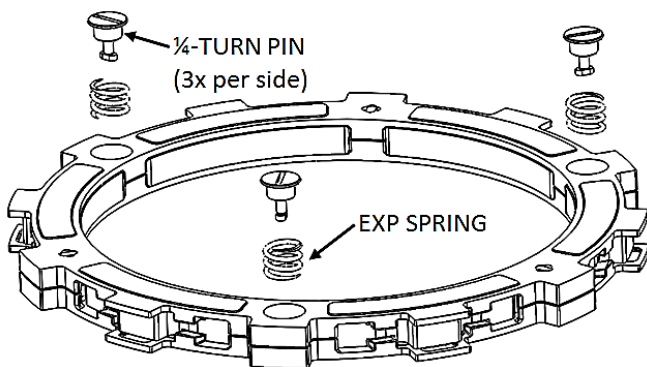
ENGAGEMENT SETTING	SPRING CONFIGURATION
Low	6 Red Springs
Medium	3 Red & 3 Blue Springs
High	6 Blue Springs

2008+ BMW G650 & Husqvarna TR650 models

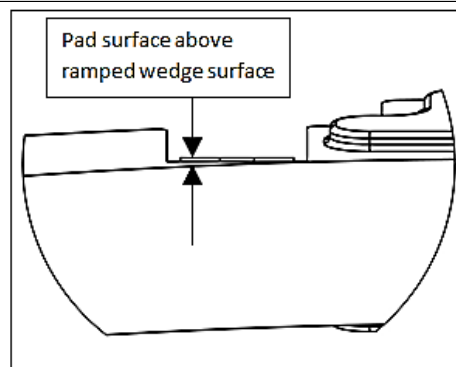
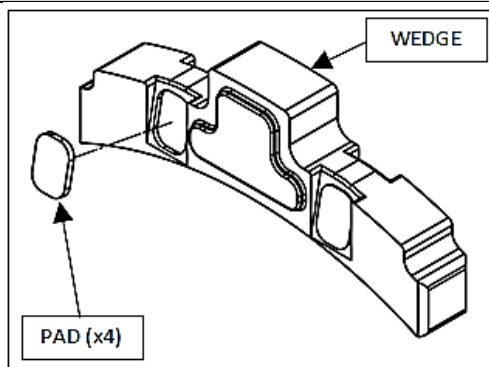
ENGAGEMENT SETTING	SPRING CONFIGURATION
Low	3 Red & 3 Blue Springs
Medium	6 Blue Springs
High	3 Blue & 3 Gold Springs

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.

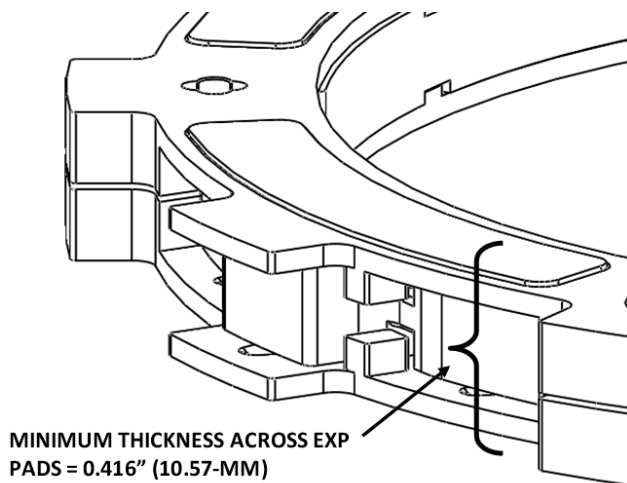


CAUTION: If you disassemble the EXP, bearing pads may fall out or be stuck to the ramp surfaces of the EXP bases. Take care to ensure all pads are correctly placed into wedge pockets using gentle pressure to avoid damage to the pad surfaces before reassembling the EXP. Properly seated pads will be secured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



MAINTENANCE

- 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.



- If you find yourself making frequent cable adjustments to fix free play gain, drag, or performance, it is likely time to replace worn clutch disks. Measure your friction disks and replace as necessary.
 - o Rekluse friction disk minimum allowable thickness = **0.068" (1.73mm)**

Excessive heat or clutch slip can cause premature clutch failure. Once extreme temperatures are reached, irreversible damage will occur. Inspect your clutch plates; if the friction disks look burnt or glazed, or the drive plates are warped, it is best to replace the entire clutch pack.

- 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.

LEVER SAFETY STRAPS

This kit includes 2 Velcro-type straps to be used to secure both the clutch and front brake levers when the bike is parked. These 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 on it. Use the straps to pull both levers as tight to the bar as possible as shown in the photos every time you park or leave the motorcycle. Refer to the Safety Information document for more information.

Brake Lever Strap: for use as a parking brake.



Clutch Lever Strap: to prevent unwanted launching.



Rekluse auto-clutch-equipped motorcycles may roll back or move suddenly and unexpectedly and cause riders to lose control.

An auto-clutch-equipped motorcycle will move in gear with the engine off because the clutch is only engaged when engine RPM is greater than the engagement threshold of the auto-clutch. Engine compression will not prevent motorcycles from moving while in gear.

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.

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.

