



# REKLUSE<sup>®</sup>

## EXP<sup>™</sup>

## REKLUSE MOTOR SPORTS

EXP Kit for Harley-Davidson Big Twin – Hydraulic-Actuated

# INSTALLATION GUIDE

Doc ID: 191-6200A

Doc Rev: 061215

## OVERVIEW

- This kit replaces the OEM clutch pack (friction disks and drive plates) to achieve the necessary performance.
- No modification of OEM parts is necessary.
- Replacement of the OEM primary chaincase cover gasket is recommended with this installation.
- This kit includes extra EXP springs which can be used to tune for your desired engagement. See the *User's Guide* document for specific tuning information.
- For trikes or highly-modified engines see **Belleville Spring Options** section for information regarding spring tuning options beyond what is included with this kit.

**Trike Owners:** It is highly recommended, for best performance, that you purchase the Screamin' Eagle spring.

## RESOURCES

- Thoroughly read and understand the **Safety Information** and **User's Guide** documents for this product.
- Videos related to this product can be viewed online at [rekluse.com](http://rekluse.com)
- A detailed parts fiche can be found online at [rekluse.com/support](http://rekluse.com/support)

## INSIDE THIS DOCUMENT

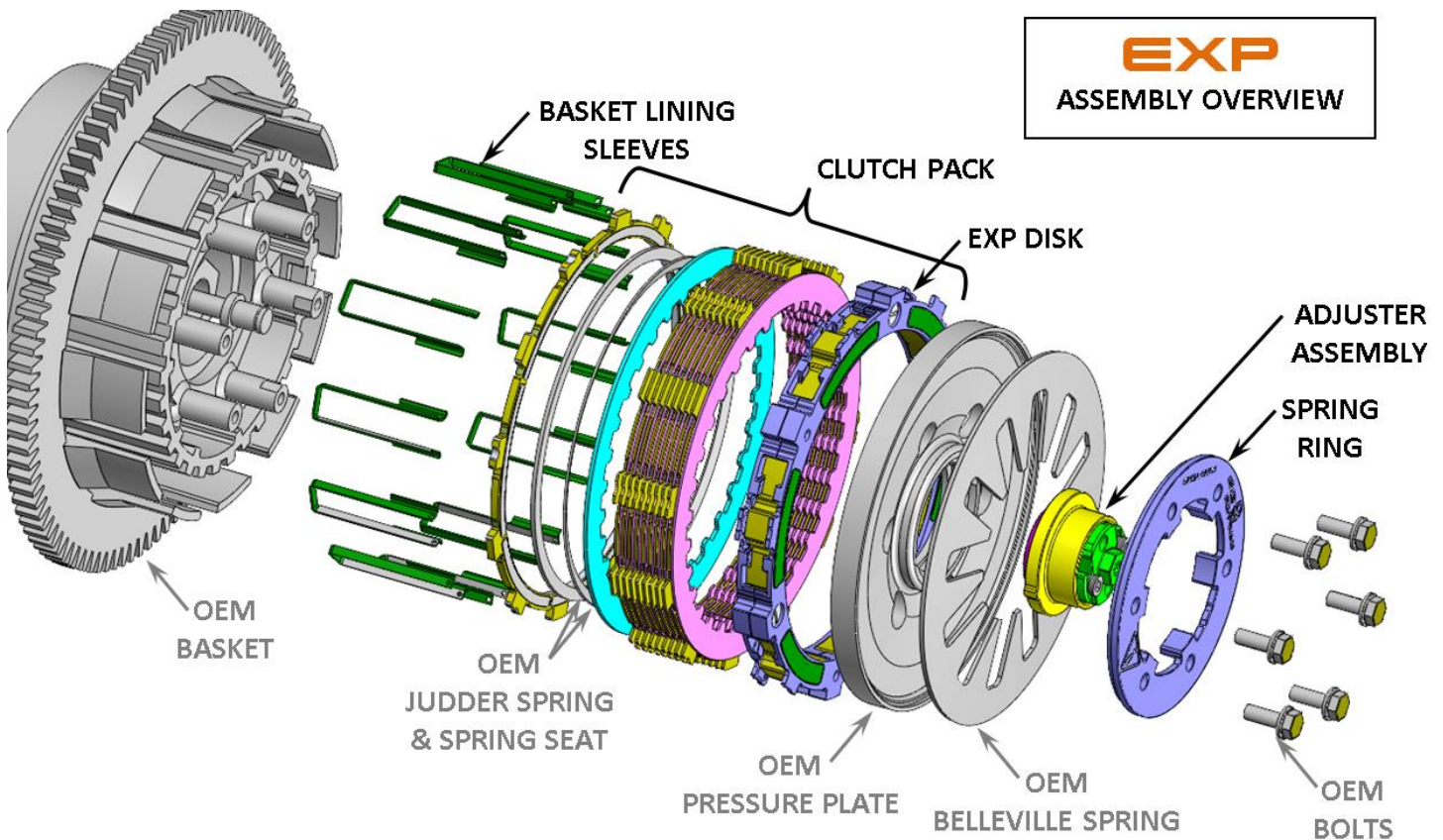
- INSTALLATION
- SETTING THE "INSTALLED GAP"
- CHECKING "FREE PLAY GAIN"
- BREAK-IN

## TOOLS NEEDED

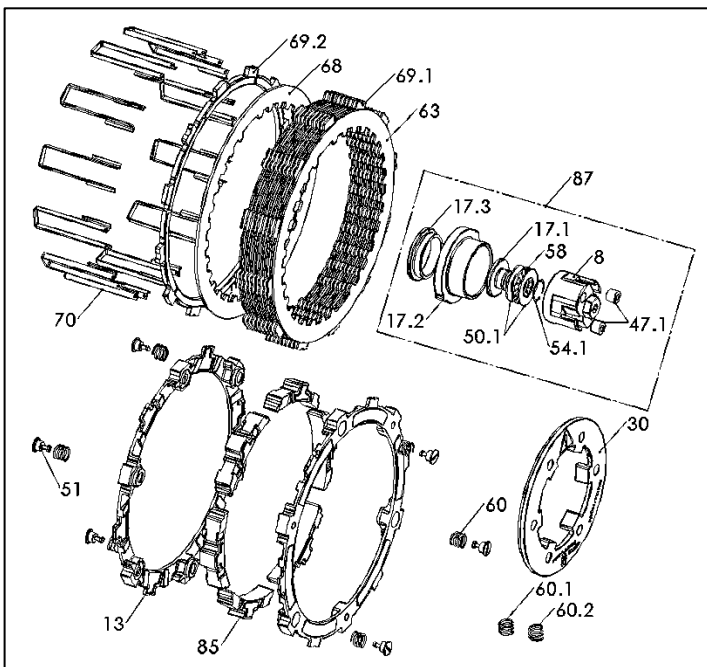
- Allen key set (Standard SAE)
- T27 Torx bit, and possibly other Torx sizes
- 10mm socket
- Snap Ring Pliers
- Phillips Screwdriver
- Torque wrench (in-lb & ft-lb, or N-m)
- End wrenches (Standard SAE)
- 2x dental pick tools

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# ASSEMBLY OVERVIEW



## INCLUDED PARTS



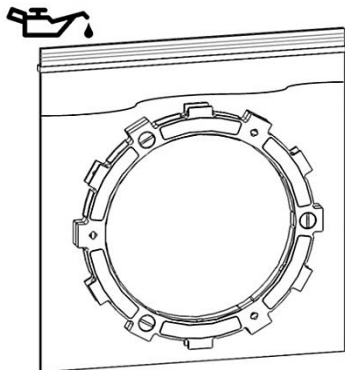
Item	Item Type	Qty
30	Spring Ring	1
51	Fastener – ¼-Turn Pin *	6
60	EXP Adjustment Spring * (extra included)	6
63	Steel Drive Plate (.040" thick)	9
68	Steel Drive Plate (.065" thick)	1
69.1	TorqDrive Friction Disk	9
69.2	Judder Spring Friction Disk	1
70	Basket Lining Sleeve	12
85	Wedge Assembly *	6
87	Adjuster Assembly for Hydraulic Models	1
17.1	Throwout Bearing Seat (Steel)	1
17.2	Threaded Adjuster Housing (Steel)	1
17.3	Adjuster Base Collar (Steel)	1
47.1	Pipe Plug	2
50.1	Throwout Washer	2
54.1	Retaining Ring	1
58	Throwout Bearing	1

\* Denotes parts in EXP disk assembly

Visit [Rekluse.com/support](http://Rekluse.com/support) for a full parts fiche illustration and part numbers.

## PREP & DISASSEMBLY

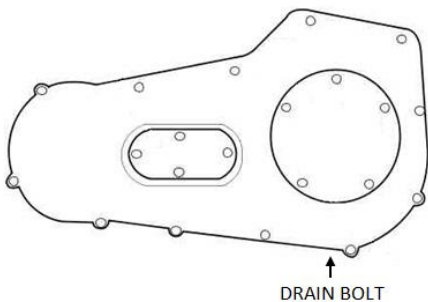
1. Soak the EXP disk and all friction disks [#69] in new primary chaincase oil for at least 5 min.



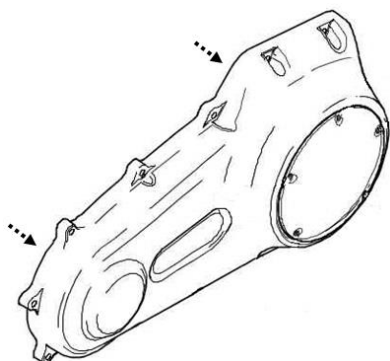
2. Place the bike upright in a lift or suitable stand.



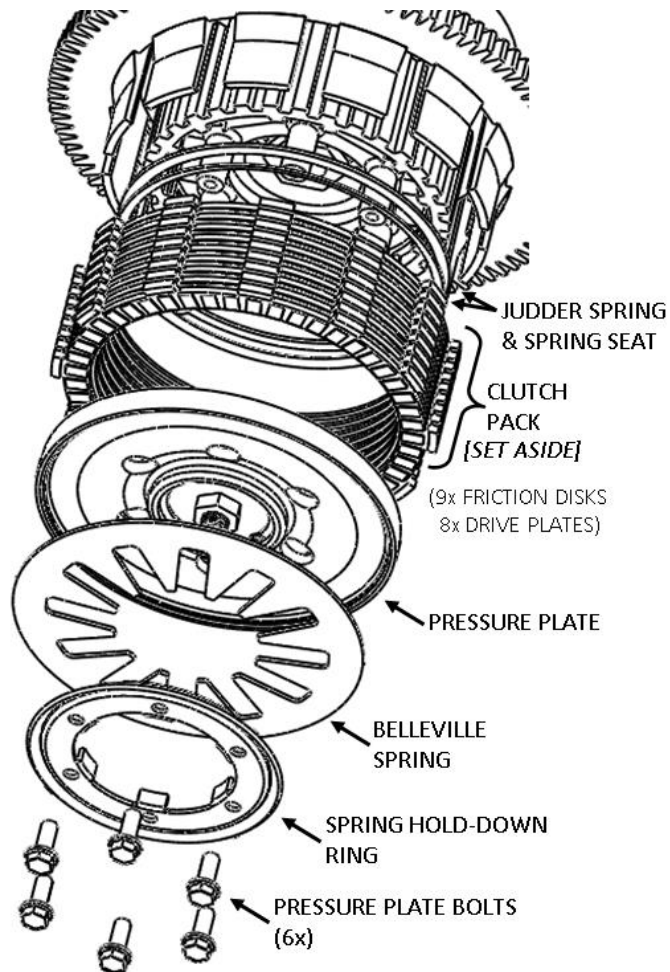
3. Drain the oil from the primary chaincase into a suitable container.



4. Remove the primary chaincase cover. This may require removing the left floorboard, foot peg(s), shift lever and/or side stand.



5. Remove the OEM parts named in this diagram.

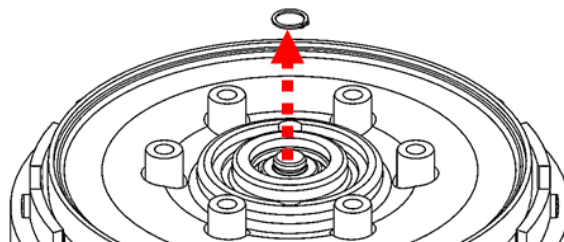


### NOTE:

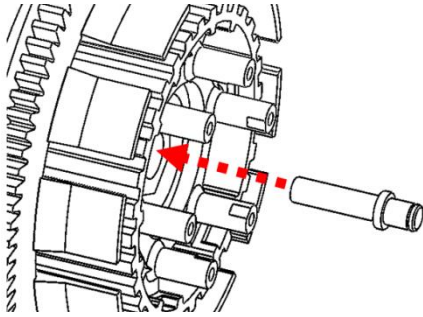
1. The OEM Judder Spring and Spring Seat WILL be reused.
2. The rest of the OEM clutch pack will NOT be reused.

You may need to use dental pick tools to reach and remove the bottom plates and judder spring.

6. On a workbench, remove the small retaining ring that holds the throwout rod in the pressure plate bearing using snap-ring pliers. This retaining ring will NOT be reused.

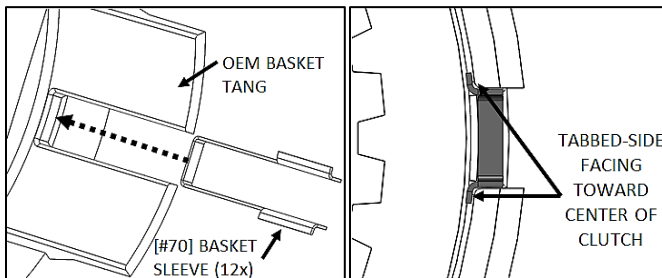


7. Reinstall the throwout.



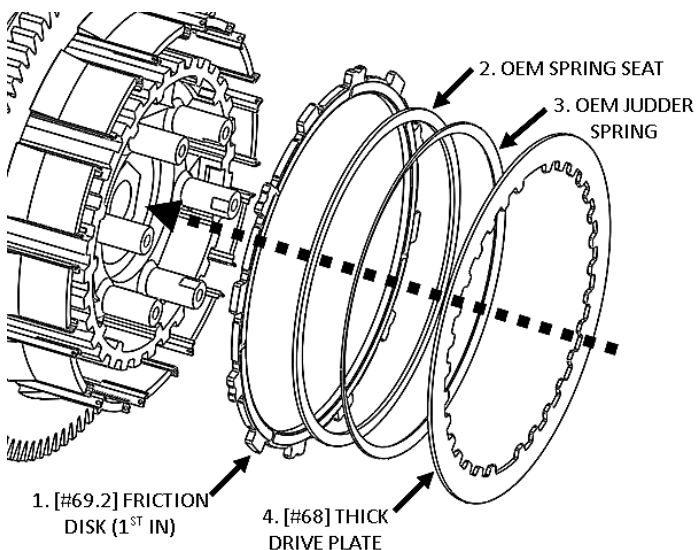
## CLUTCH PACK INSTALLATION

8. Install the 12 Basket Sleeves [#70] into the tang slots of the OEM basket, pushing them in until they contact the bottom of the tang slots.

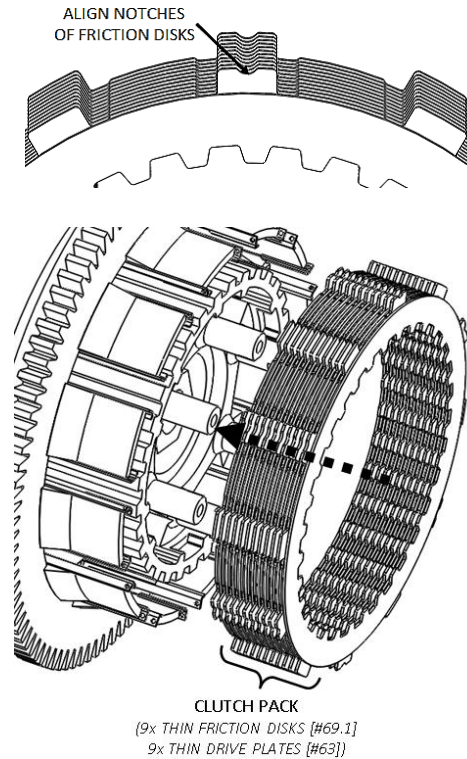


**NOTE:** In some models, the sleeves will fit deeper into the basket than others.

9. Install the Judder Spring Friction Disk [#69.2] first, followed by the OEM Spring Seat, Judder Spring, and the one Thick Drive Plate [#68] in the orientation shown below. Using dental pick tools to manipulate the basket sleeves may aid with installing the plates.

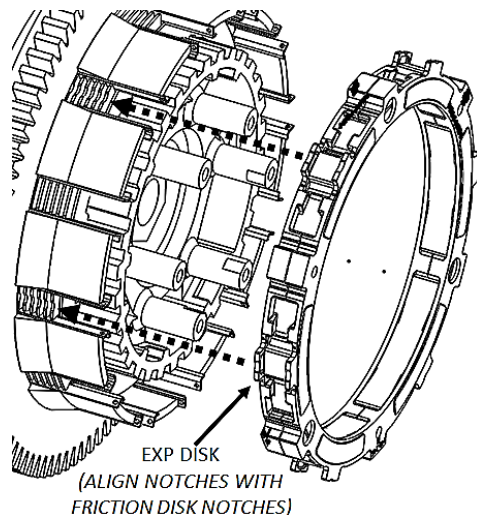


10. Taking care to align the notches on the friction disk tabs, install the rest of the clutch pack, one item at a time, alternating friction disks with drive plates. *Correct alignment is critical for optimal performance.*



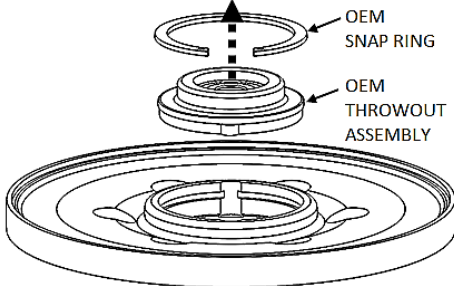
11. Install the EXP disk after the last drive plate. This disk is symmetrical and can be installed with either side facing out, but the tab notches must align with the notches on rest of the friction disks.

**NOTE:** If your bike's idle RPM has been changed from stock – meaning that it idles either higher or lower than the stock (around 1050 RPM) setting – see the **EXP Tuning Options** section of the **User's Guide** document to determine the best EXP spring setting before installing the EXP disk.

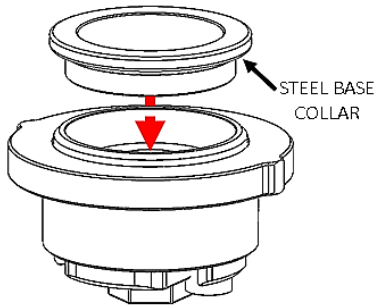


## PRESSURE PLATE INSTALLATION

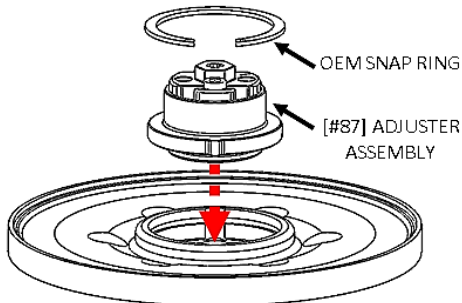
12. Using snap-ring pliers, remove the OEM retaining ring and throwout assembly from the pressure plate.



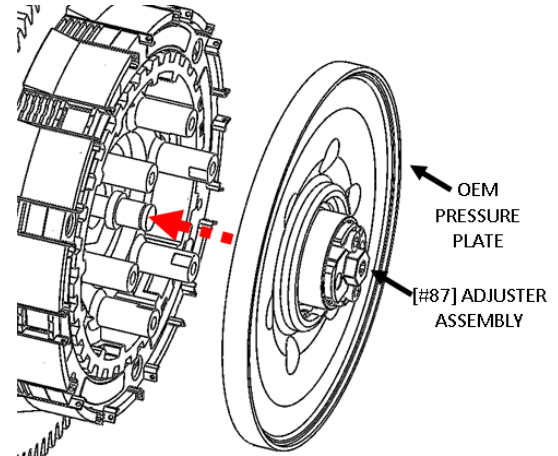
13. Verify that the Steel Base Collar [#17.3] is securely in place inside the new Rekluse Adjuster Assembly [#87]. If necessary, engine assembly grease can be applied to hold it in place until it is installed.



14. Reusing the OEM snap ring, install the Rekluse Hydraulic Adjuster Assembly [#87].

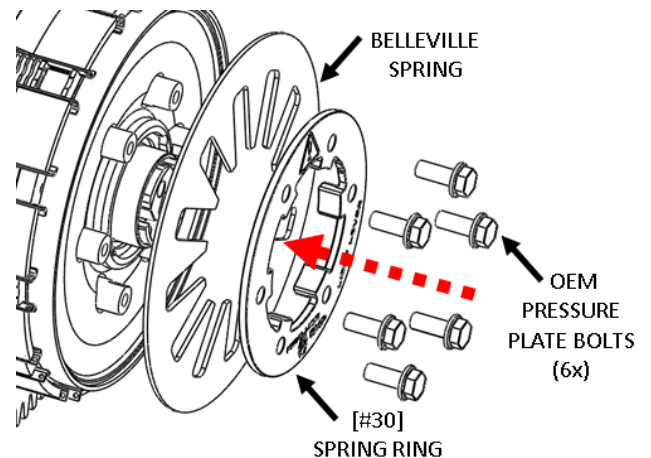


15. Install this new pressure plate assembly, ensuring that OEM push-rod is in place.



**NOTE:** Before installing the spring in this step, see the “Belleville Spring Options” section on the next page for performance options.

16. Install the appropriate Belleville spring and the provided Spring Ring [#30].



Using a 10mm socket, torque the pressure plate bolts to OEM specification.

## BELLEVILLE SPRING OPTIONS:

**Note:** Typically, you will reuse the OEM Belleville spring that was installed in your bike. However, if you have a highly-modified engine and your OEM clutch currently does not provide enough torque capacity, alternate springs can be purchased from Harley-Davidson to optimize your clutch setup.

The following numbers reflect the engine torque output that the clutch can comfortably withstand for a given clutch spring.

<b>EXP Clutch Torque Capacity</b>			
Spring Part Number	Spring Marking	Max Engine Output Torque (ft-lb)	
		'98-'06 Models (excluding '06 Dynas)	07+ Models (including '06 Dynas)
37882-06	Blue	86	91
37871-04	Yellow	103	109
37807-03	Pink	125	133
37951-98 (Screamin' Eagle After-Market Only)	None	137	146

**Note:** Changing the Belleville spring requires removing the primary cover to gain access to the spring.

**For Trikes:** Rekluse *highly* recommends purchasing the 37951-98 Screamin' Eagle spring for best results with this clutch product. Because trikes are heavier and create more inherent drag than a 2-wheeler, their clutches are more susceptible to creating excessive heat during regular use, and thus may cause premature wear, slip, or poor performance. Installing a higher-force spring can significantly improve clutch life and performance by reducing this heat.

# SET THE INSTALLED GAP

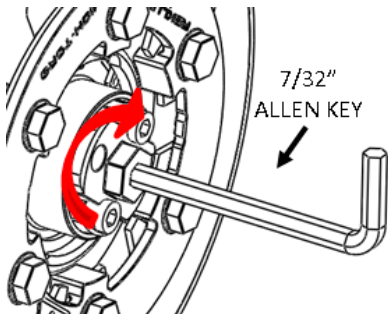
**NOTE:** The “Installed Gap” is the space in the clutch pack created by the adjustment at the Rekluse Adjuster Assembly. This gap is what allows the clutch to spin freely until the desired RPM is reached for engagement.

## NOTICE

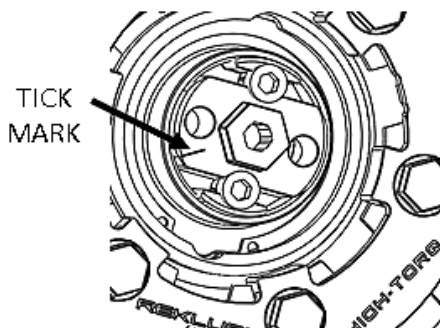
Failure to check and verify Free Play Gain can cause failure or damage to this product. Setting the correct gap is critical for clutch performance.

1. Using the long end of the 7/32” Allen key, gently turn the adjuster screw **CLOCKWISE** until it stops under moderate pressure. You are trying to feel for the point at which it bottoms out and starts to lift the pressure plate (you will feel an abrupt increase in turning effort).

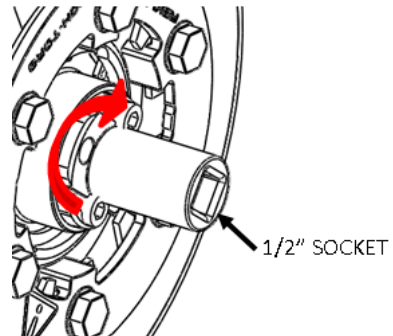
This position is called your **starting point**.



2. At this starting point, note the location of the tick mark on the aluminum adjuster.

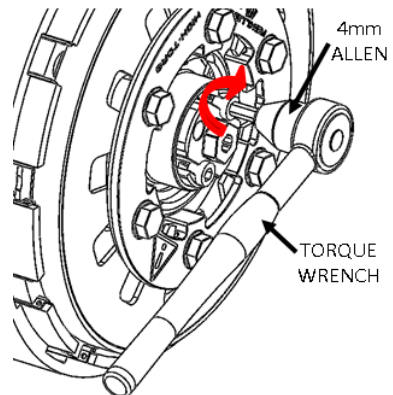


3. Using either a 7/32” Allen key or a 1/2” socket, turn the adjuster **CLOCKWISE** 1 + 3/8 turns from the starting point.



4. With the installed gap established, use a 4mm Allen socket and torque wrench to tighten the two pipe plugs, locking the adjuster in place.

Tighten the plugs evenly in 3-4 steps to **40 in-lb (4.5 N-m)**. When torqued correctly, the tops of the plugs should be nearly flush with the top of the aluminum adjuster piece.



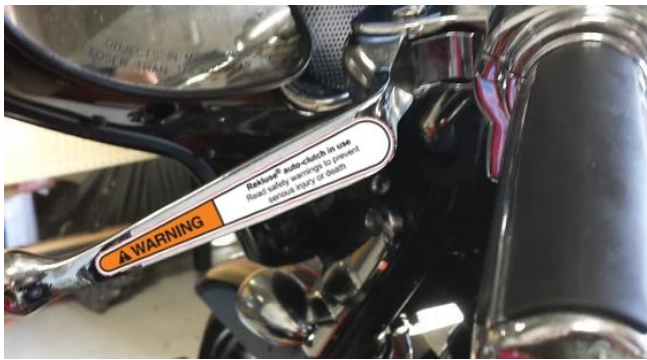
It is **NOT** necessary to apply thread locking compound to the pipe plugs.

**NOTE:** When the bike is fully reassembled, the “Installed Gap” can be tuned or reset by removing only the derby cover instead of removing the primary cover.

5. Check the hydraulic fluid level at the master cylinder reservoir, and add fluid if required. The system may need to be bled if the fluid level is below the intake port in the reservoir.

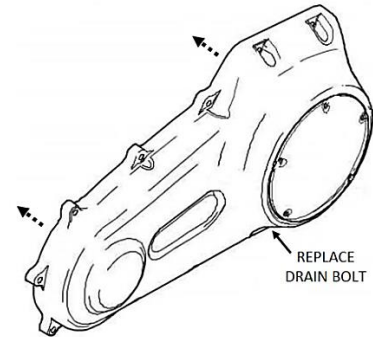


17. Install the provided warning sticker on the backside of the clutch lever, such that it is visible to the rider.



## PRIMARY COVER INSTALLATION

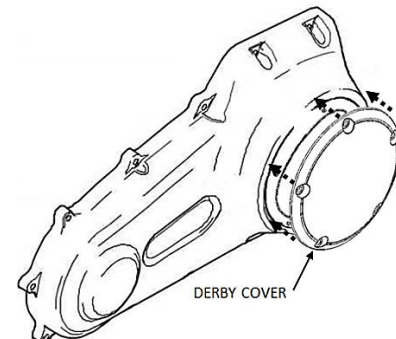
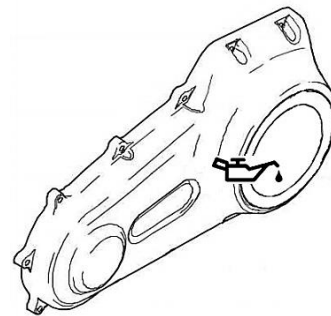
6. To avoid leaks, thoroughly clean both mating surfaces on the primary cover and the engine case.
7. Reinstall the drain bolt and the primary cover.



8. With the primary cover installed, remove the derby cover using a T-27 Torx bit.



9. Using a funnel, add 1 quart of oil to the primary case through the derby cover cavity. **See oil recommendations in the User's Guide document.** Then, reinstall the derby cover.



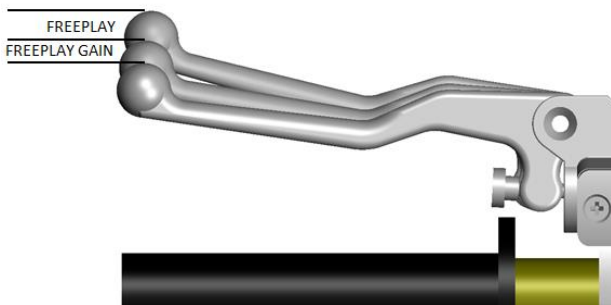


# CHECKING LEVER FREE PLAY GAIN

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



“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 2500 RPM. Free Play Gain is caused by the expansion of the EXP disk which lifts the pressure plate and removes tension from the clutch cable.



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 to idle down.

## 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.**



**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 left handlebar grip and loop it through itself, attaching it to the ball end of the lever.



With the bike at idle in neutral, quickly blip (rev) the engine to at least 3500 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 3500 RPM. **The clutch lever should move in 1/8" (3mm) under your finger pressure as you rev the engine and the auto-clutch engages.**



FREE PLAY GAIN

## 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 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 without using the clutch lever, in 1st and 2nd gear: In 1st gear, accelerate moderately to approximately 3500 RPM and come to a stop—repeat this 10 times. Next, starting in 2nd gear, accelerate moderately to approximately 3500 RPM then come to a stop—repeat this 10 times.

4. Re-check free play gain at your clutch lever and adjust if necessary at this point. **Your clutch pack will expand slightly 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.

## FREE PLAY GAIN

### TROUBLESHOOTING

Each adjustment can be performed just by removing the derby cover, and should be done in small increments. After each adjustment, repeat the rev-test 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

**Reason:** Installed Gap is too small

**Solution:** Turn the Adjuster 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

**Reason:** Installed Gap is too large

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

# 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.

**REKLUSE®**



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