

**Rekluse Motor Sports**

**The ProStart™ Clutch**

**H-D Sportster**

**(2004 +)**

**Installation Guide**

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ProStart Revision 1.000  
RMS687– H-D Sportster

195-687

Manual Revision: 111308

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## Required Tools

1-1/8-inch Socket	Snap Ring Pliers
30mm Socket	Torque Wrench
5/16-inch Hex Key	Press
3/16-inch Hex Key	Blue Loctite 243 (oil resistant)
1/4-inch Hex Key	Safety Glasses
Small Flat Blade Screw Driver	ProStart Install Tools (included)
Diaphragm Spring Compression Tool	Calipers

## Included Parts for the ProStart Clutch

ProStart Clutch Assembly with Retaining Ring	
ProStart or Rekluse Center Clutch	
Rekluse Main-shaft Nut	
35-mm Center Clutch Retaining Ring	
8 x .040" (1.0mm) Drive plates	
4 x .048" (1.2mm) Drive plates	
1 x .065" (1.4mm) Drive plates (For wear adjustment)	
2 x Rekluse Friction Disk	
Compression Spring	491-006 In-Line Adjuster Sticker



## Basic Pro-Start Clutch Operation

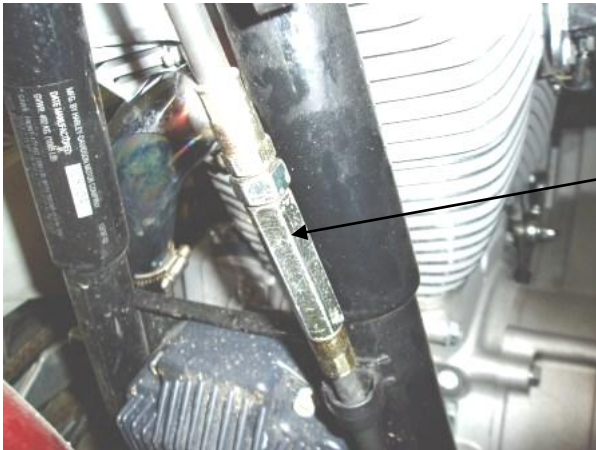
The ProStart Clutch functions through centrifugal force. As engine RPM increases, the balls contained in the ProStart Pressure Plate travel up the ball ramps and push against the Top Plate. This action forces the Pressure Plate to engage the clutch pack.

## Installation Tips

- In order for the ProStart Clutch to perform properly, it must be mounted properly—read each step of this manual to guarantee proper installation.
- The ProStart Clutch comes assembled and should never be disassembled.
- Measuring and maintaining the clutch pack is very important.
- A pair of calipers is useful for measuring steel drive plates.

## Bike Preparation and Disassembly

1. Place the motorcycle on a suitable lift in an upright level position.
2. Place the motorcycle in gear.
3. Following the guidelines in the H-D Service Manual, drain the oil from the Primary.
4. Adjust the in-line clutch cable adjuster so that it is all the way in. **See following picture.**



Cable adjuster adjusted all the way in.

## Removing the Derby Cover

5. Following the guidelines in the H-D Service Manual, remove the derby cover (clutch inspection cover).
6. Following the guidelines in the H-D Service Manual, remove the Spring, Lockplate, Nut, Coupling, and Outer and Inner Ramps, from the primary cover. All of these parts will be re-installed. See following picture.



## Removing the Primary Cover and Stock Pressure Plate

7. Following the guidelines in the H-D Service Manual, remove the Primary cover. On some models this will require you to remove the shift lever and foot peg. The clutch cable does not need to be removed from the primary cover.
8. Following the guidelines in the H-D Service Manual, and using a spring compression tool, remove the snap ring, retaining ring, diaphragm spring, and pressure plate.



Stock pressure plate,  
diaphragm spring, snap ring  
and retaining ring removed

9. Remove the clutch pack (8 friction disks and 7 drive plates) and set aside.

## Installing the ProStart/Rekluse Center Clutch.

10. Following the guidelines in the H-D Service Manual, remove the Primary Sprocket, Primary Chain, and Clutch Basket.

**Note:** The main-shaft (clutch) nut has left handed / reverse threads.

11. Remove the snap ring from the stock center clutch shaft. See following picture.



12. Using a press, press the stock center clutch out of the clutch basket. See following picture.

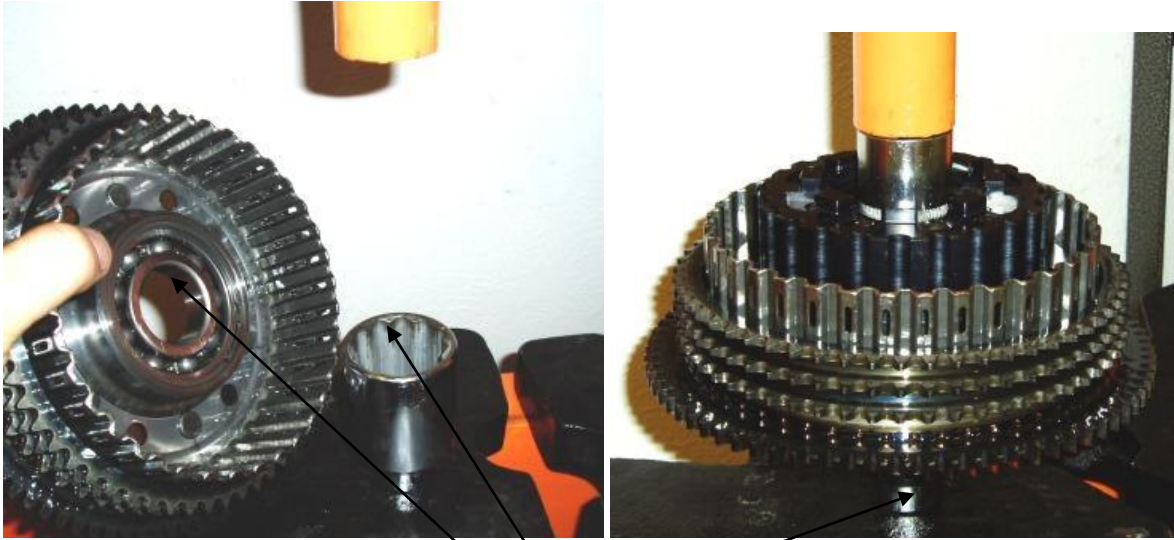


**Warning:** A press must be used or you will damage the basket bearing and it will need to be replaced.

After the center clutch is pressed out, check the basket bearing for smooth operation. If damage to the basket bearing is suspected or the bearing is worn, it must be replaced. If at any time a striking force was used to remove the center clutch from the basket, the basket bearing must be replaced.

- Using a press and a suitable tool, like a socket, to support the inner race of the basket bearing, press the Rekluse Center Clutch into the stock basket. See following picture.

**Warning:** You must support the inner race of the basket bearing when pressing in the Rekluse Center Clutch, or you will damage the basket bearing and it will need to be replaced.



Support the backside of the inner race of the basket bearing with something suitable like a large socket

- Using snap ring pliers, install the included 35mm snap ring into the groove of the Rekluse Center Clutch. See following picture.



- Following the guidelines in the H-D Service Manual, install the Primary Sprocket, Primary Chain, and Clutch Basket with Rekluse Center Clutch.

16. Using a 30mm socket, install the included Rekluse main-shaft nut in place of the stock main-shaft nut. Be sure to install the stock Belleville locking washer behind the Rekluse main-shaft nut.

Torque the Rekluse main-shaft nut to the specified torque in the H-D Service manual.



**Warning:** The included Rekluse main-shaft nut must be used in place of the stock nut or the ProStart will not mount properly.

17. Install and torque the Primary Sprocket Nut to the specified torque in the H-D Service manual.

### Configuring the Clutch Pack

18. Remove the Spring Plate from the clutch pack and set aside. The Spring Plate will not be re-installed. See following picture.



19. Remove the 6 stock steel drive plates (steel disks) from the clutch pack and set aside.

20. Configure the clutch pack as per the following chart so you can measure its overall thickness.

### **New Clutch Pack Configuration**

- (1) **Stock Friction Disk**  
Rekluse 0.040" steel drive plate
- (2) **Stock Friction Disk**  
Rekluse 0.040" steel drive plate
- (3) **Stock Friction Disk**  
Rekluse 0.040" steel drive plate
- (4) **Stock Friction Disk**  
Rekluse 0.040" steel drive plate
- (5) **Stock Friction Disk**  
Rekluse 0.040" steel drive plate
- (6) **Stock Friction Disk**  
Rekluse 0.040" steel drive plate
- (7) **Stock Friction Disk**  
Rekluse 0.047" steel drive plate
- (8) **Stock Friction Disk**  
Rekluse 0.047" steel drive plate
- (9) **Rekluse Friction Disk**  
Rekluse 0.047" steel drive plate
- (10) **Rekluse Friction Disk**

Inner most disk (1<sup>st</sup> disk installed)



Outer most disk (last disk installed)

### **Measuring the Clutch Pack**

21. The clutch pack needs to be maintained at the proper overall height for the ProStart to function properly.

Using calipers, measure the overall height of the clutch pack—the clutch pack should be no more than 1.28" (32.5-mm) and no less than 1.260" (32-mm) tall.

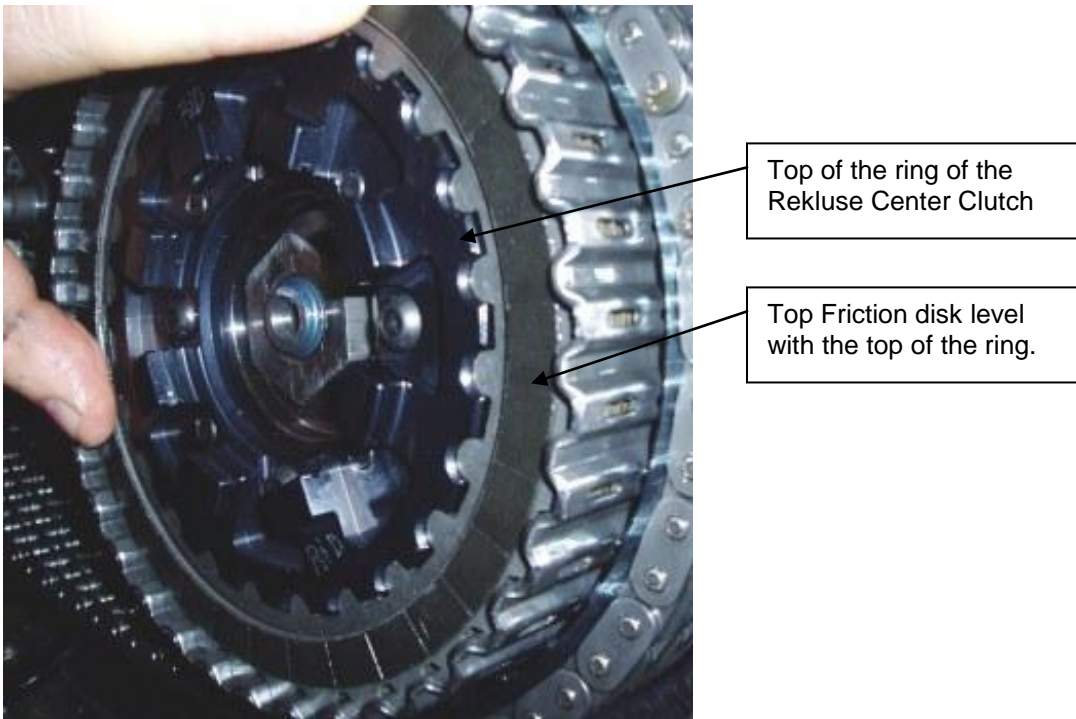
If the the clutch pack is greater than 1.28" (32.5-mm) tall, then remove one of the Rekluse 0.047" (1.2-mm) steel drive plates and replace with one of the Rekluse 0.040" (1.0-mm) steel drive plates.

If the the clutch pack is less than 1.26" (32-mm) tall, then remove one of the Rekluse 0.040" (1.0-mm) steel drive plates and replace with one of the Rekluse 0.047" (1.2-mm) steel drive plates. Re-measure and adjust accordingly.

**Note:** 1 Rekluse 0.065" (1.65-mm) steel drive plate is included for long term wear adjustment

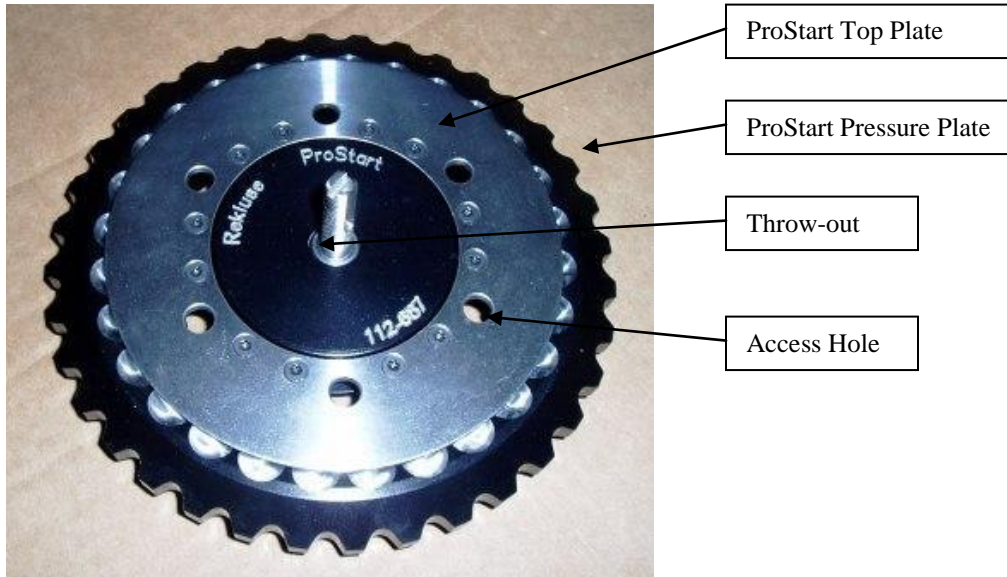


22. Install the measured clutch pack, 10 friction disks and 9 steel plates, over the center clutch and into the basket. **Make sure the first disk installed is a friction disk.**
23. With the clutch pack installed onto the Rekluse Center Clutch the top friction disk should be about level with the top of the ring or slightly below. See following picture.

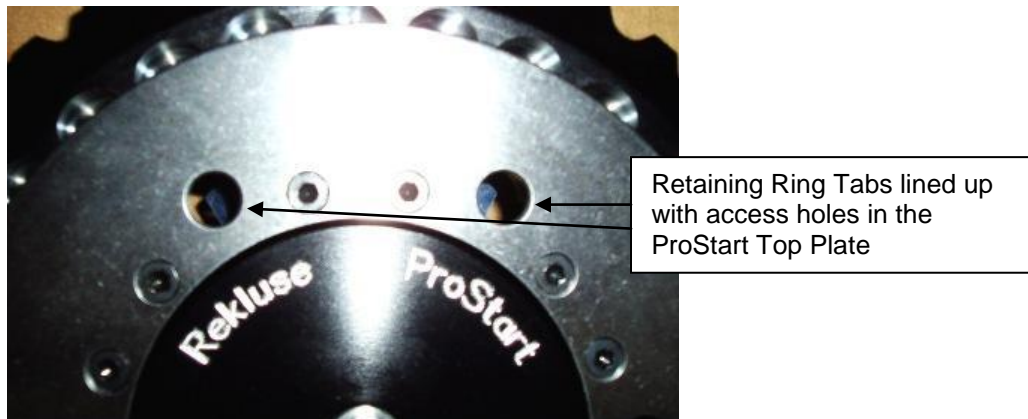


## Installing the ProStart Assembly

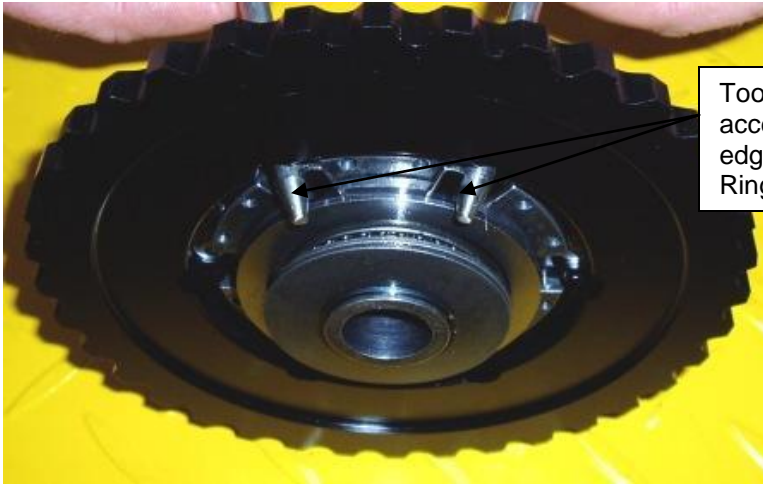
24. See the following picture for part identification.



25. Line the tabs of the Retaining Ring up with access holes in the ProStart Assembly. See following picture.

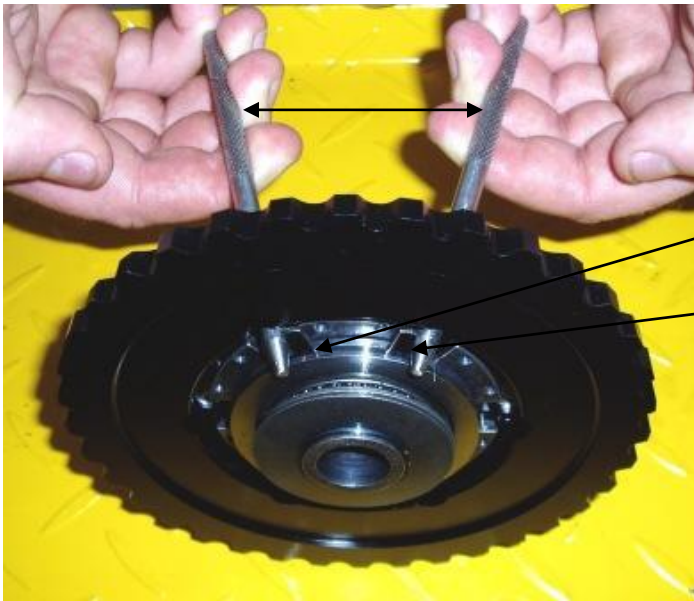


26. Insert the 2 Rekluse Retaining Ring Tools into the 2 access holes lined up with the Retaining Ring tabs. The 2 tools need to be in place along the outer edge of each tab. See following picture.



Tools inserted through the access holes along outer edge of each Retaining Ring Tab.

27. Using the tools to pry outward will compress the Retaining Ring into the groove of the ProStart Assembly. Compressing the Retaining Ring will allow you to snap the retaining ring into the groove in the 8 Center clutch posts. See following pictures.



Prying the tools out and compressing the Retaining Ring into the ProStart Groove.





Retaining Ring  
Groove.

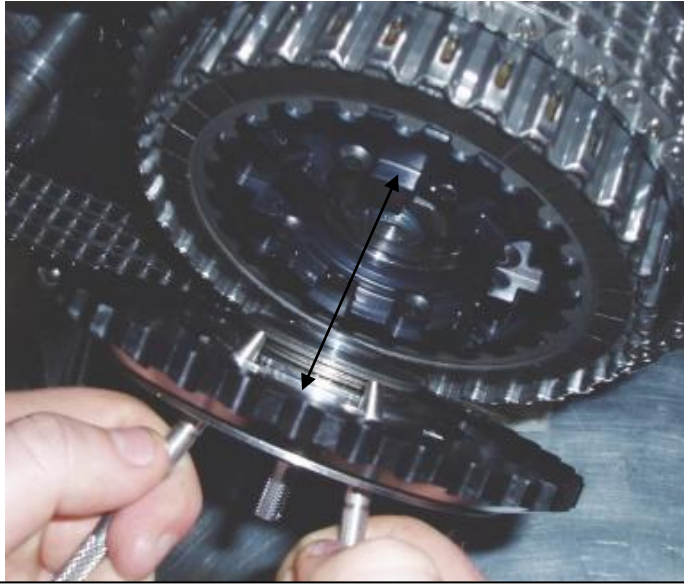
**Note:** Picture above is of a Stock Center Clutch, the Rekluse Center Clutch maintains the same feature.

28. While compressing the Retaining Ring, guide the ProStart Assembly over and onto the center clutch.

Center the gap between the 2 Retaining Ring tabs on one of the 8 center clutch posts.

Lastly, as you are snapping the ProStart into place, index the outer tabs of the ProStart Pressure Plate into the clutch basket. See following pictures.

**Note:** Keep the install tools because they will be used for removing the ProStart Assembly for maintenance

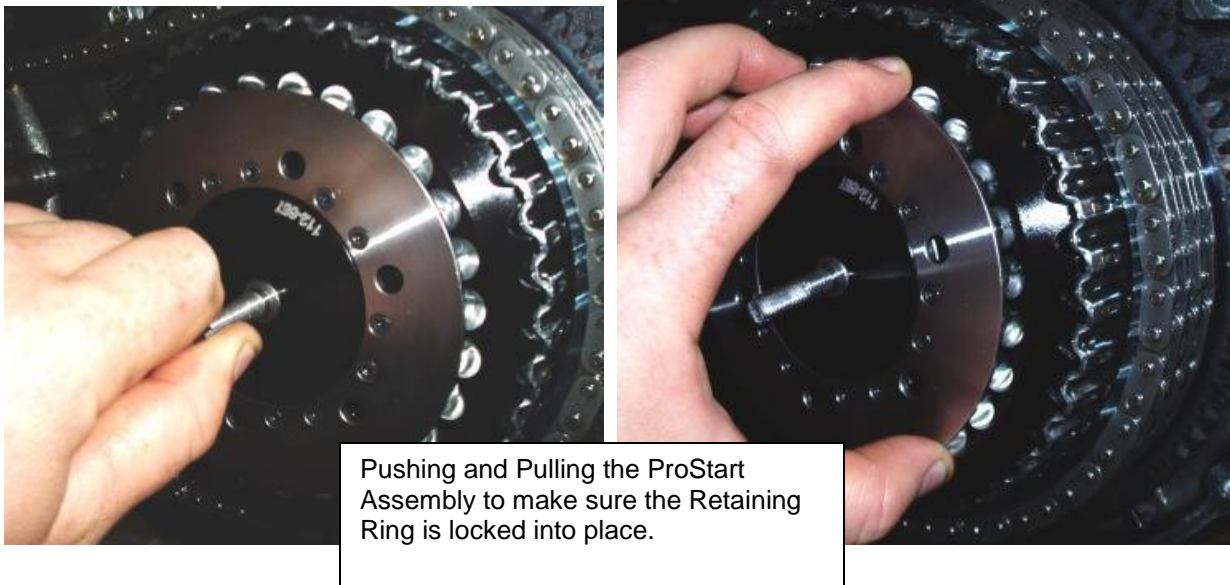


Gap between the 2 Retaining Ring tabs centered over one of the 8 center clutch posts.



## Checking that Retaining Ring is properly seated

29. You must ensure the Retaining Ring is snapped into the groove in the 8 center clutch posts. Grab the exposed part of the Throw-out or the Top Plate and push in and pull out making sure that the ProStart is locked into place. See following pictures.



**Warning:** If the Retaining Ring holding the ProStart in place is not properly located into the groove of the 8 center clutch posts, considerable damage to the clutch will result.

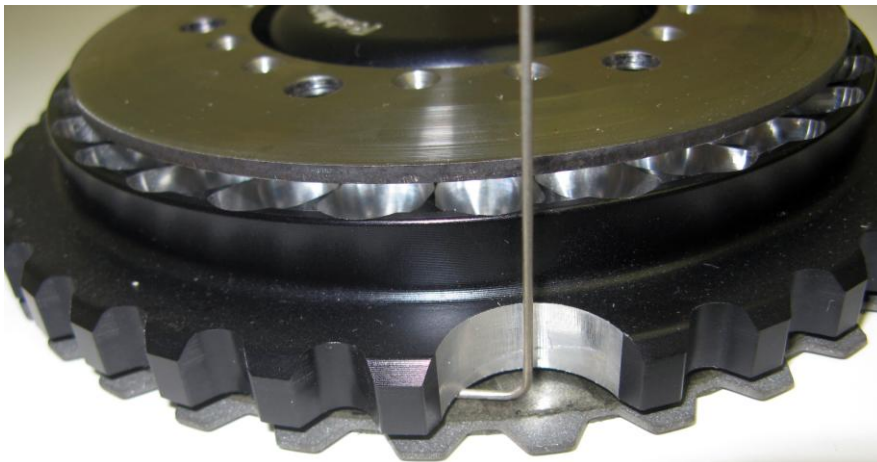
## Determine the installed gap of the ProStart Clutch

30. Two sets of 2 wire gauges are included for measuring the Installed Gap. The Installed Gap is the distance the ProStart Pressure Plate must travel to clamp the clutch pack.

To measure the Installed Gap, start with the .030" (smaller) set of wire gauges and insert them 180° apart between the top friction plate and the pressure plate at the **cutout shown below**.

**Angle the wire gauges as much as possible to be sure that you are measuring across the pads of a friction disk**—if the wire gauges are slid into the space between friction disk pads, you will get an inaccurate reading.

Once the gauges are slid in, slide them in and out to feel how much drag there is on the wires.



You want to have some drag on the wires, but it should not be overly tight or overly loose. If it is loose, repeat the measurement with the .040" (larger) set of wire gauges. Ideally, we want the Installed Gap to be somewhere between the .030" set and .040" set of wire gauges. If you determine the Installed Gap to be between the smaller and larger set of wire gauges then the Installed Gap is within the proper range and you can move to next step.

If the Installed gap is tighter than the small set of wires, or looser than the large set of wires then the clutch pack needs to be adjusted. You must remove the ProStart Assembly by compressing the Retaining Ring with the 2 provided tools and pulling outward on the ProStart assembly.

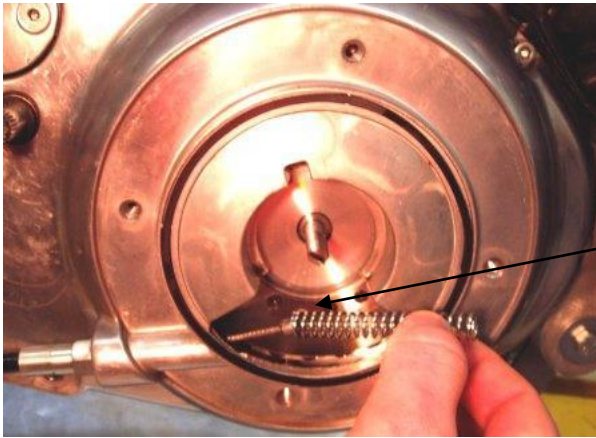
**If Installed Gap is too large:** If the gap was larger than the large set of wires replace the .040" (1.0-mm) Rekluse steel drive plate with a .047" (1.2-mm) Rekluse steel drive plate and Repeat steps 21 – 30. If the installed gap is still too loose, replace one of the .047" (1.2-mm) Rekluse steel drive plates with a .062" (1.6-mm) Stock steel drive plate and replace one of the .047" (1.2-mm) Rekluse steel drive plates with a .040" (1.0-mm) Rekluse steel drive plate.

**If Installed Gap is too tight:** If the gap was tighter than the small set of wires replace one of the .047" (1.2-mm) Rekluse steel drive plate with a .040" (1.0-mm) Rekluse steel drive plate and Repeat steps 21 – 30.

**Warning:** If the Installed Gap is too tight or too loose, the clutch will slip excessively and accelerate clutch pack wear.

## Re-installing the Primary Cover and Ramps

31. Following the guidelines in the H-D Service Manual, re-install the Primary cover, shift lever, and foot peg. You may need to replace the primary gasket if it was damaged upon removal.
32. Slide Rekluse Return Spring over the exposed end of the clutch cable. See following picture.



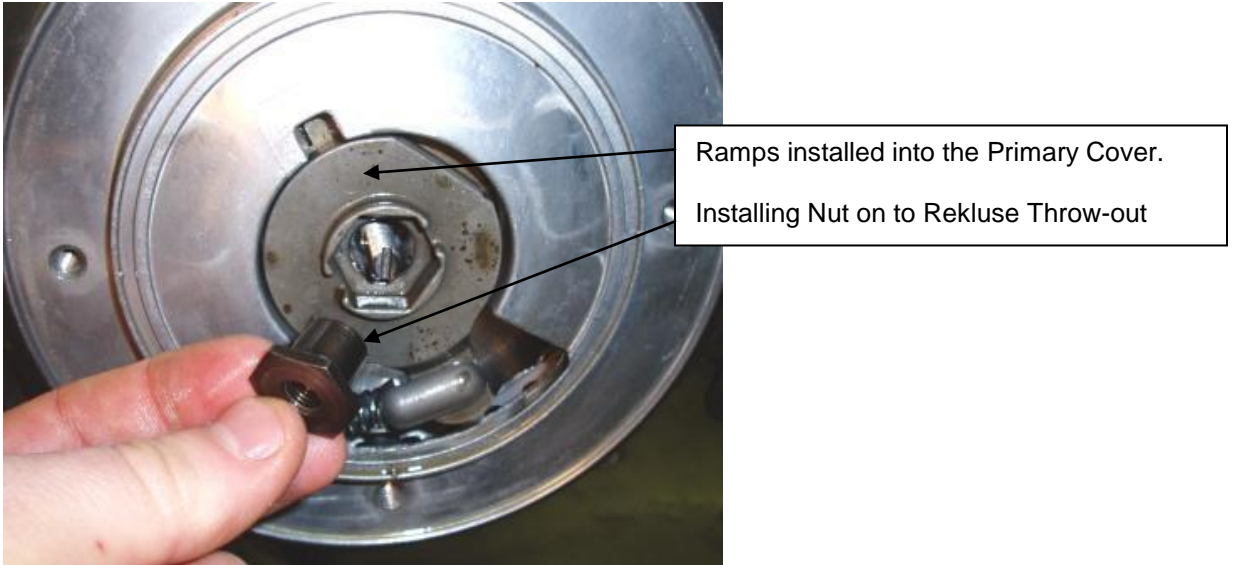
Slide the Return Spring over the end of the clutch cable.

33. Compress the Rekluse Return Spring and re-attach the Coupler to the cable end. See following picture.



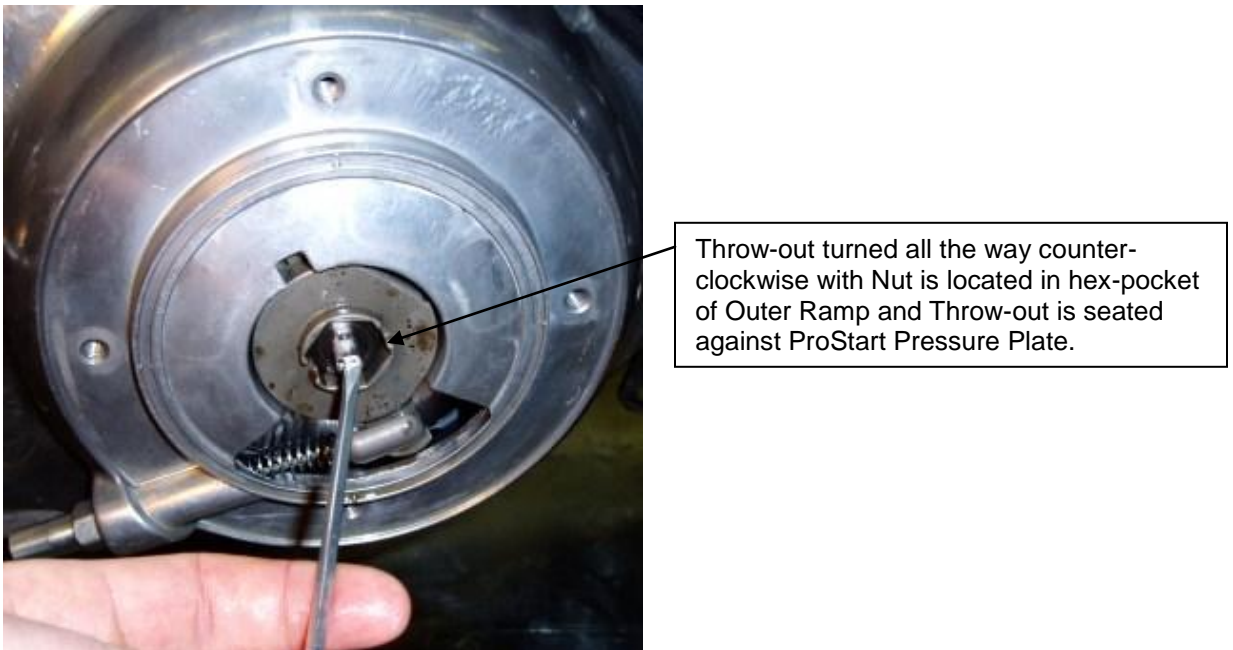
Ramp Coupler installed on to cable end.

34. Attach the Ramps to the Coupler and install the Ramps into the Primary Cover. Then thread the nut all they way on to the Rekluse Throw-out. See following picture.



### Adjusting the Clutch Throw-out

35. Using a flat bladed screwdriver, turn the Rekluse Throw-out counter-clockwise which will force the Nut to locate into the hex-pocket of the Outer Ramp. Turn the Rekluse Throw-out counter-clockwise until the Throw-out seats against the ProStart Pressure Plate. See following picture.



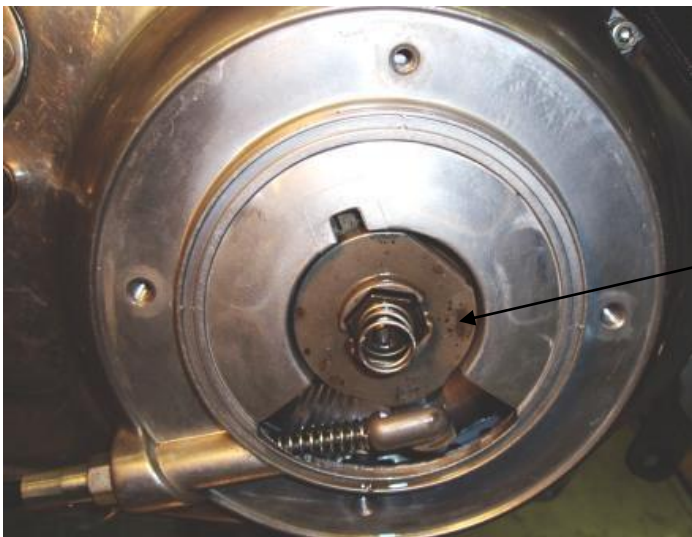
36. Now, back the Rekluse Throw-out away from the ProStart Pressure Plate by turning it clockwise / in 1-1/4 to 1-1/2 turns.

**Important:** Failure to complete step 35 will cause excessive clutch slip and clutch wear.

37. Lock the Rekluse Throw-out position by installing the Locking Plate and Spring. Be sure not to change the position of the Throw-out when installing the Locking Plate and Spring. See following picture.



Installing Locking Plate and Spring on to Throw-out.



Ramps etc. installed properly

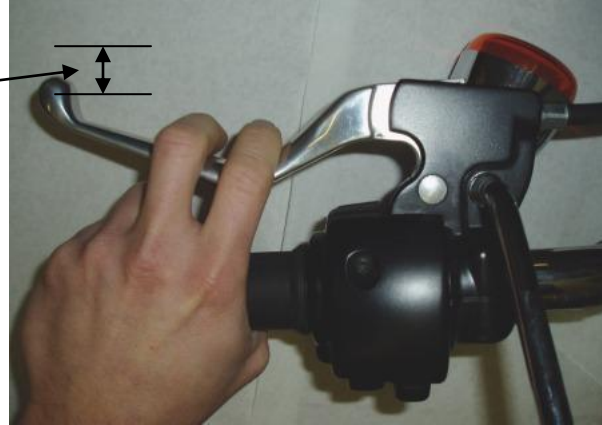
### Final Installation Steps

38. Following the guidelines in the H-D Service Manual, fill the primary with the proper transmission oil to the proper level.
39. Re-install the Derby Cover making use of the stock o-ring/gasket.
40. Take the motorcycle down off of the lift and insure the transmission is in neutral.
41. Start the motorcycle and allow it to warm up.

42. **With the motorcycle in neutral**, rev the engine to a minimum of 2500 RPM's and adjust the clutch cable slack so that there is adequate lever free-play—because the ProStart is only engaged when the engine is being revved, you must have the engine revved to at least 2500 RPM's to check the clutch cable slack.

**While the engine is revved** adjust the in-line cable adjuster out until you can pull the clutch lever in about a 1/4-inch before feeling the lever pull get harder—this will guarantee proper cable slack setup. **See following pictures.**

While the engine is revved, you need to be able to pull the clutch lever in a 1/4-inch before feeling significant resistance to ensure proper cable slack.



**Warning:** Proper cable slack must be maintained or premature clutch wear will result.

43. Install the Orange In-Line Adjuster Sticker at this time as shown. This alerts any mechanic in the future that you have a Rekluse Pro-Start installed and that the in-line adjuster needs to be adjusted properly.



44. The engine idle speed affects when the ProStart engages and disengages. Higher idle speeds increase clutch drag at low RPM's. Engine idle speeds between 900 and 1050 RPM work best. If necessary, adjust the engine idle speed according to the H-D Service Manual.
45. Please refer to the ProStart owners guide for operation, break-in, and maintenance of the ProStart Clutch.

## Long Term Clutch Pack Maintenance

46. Included are 2 Rekluse 0.055" (1.4-mm) steel drive plates to adjust the clutch pack as it wears over time.

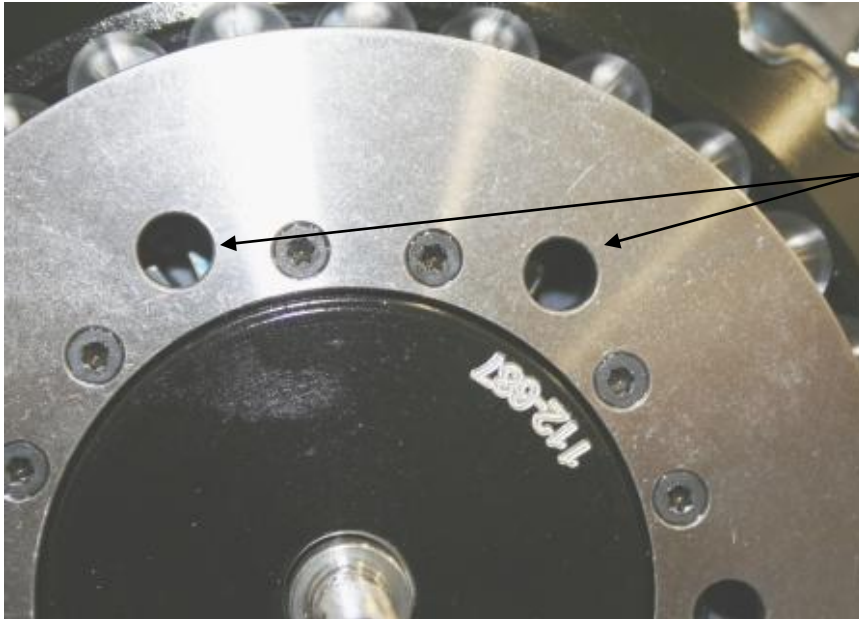
Typically, the clutch pack should be checked every 10,000 miles or if you notice any significant change in clutch performance, especially an increase in initial engagement RPM.

**See next page for measurement instructions.**

## Removing the ProStart Clutch for Clutch Pack Adjustment

To measure the clutch pack you will need to remove the ProStart Assembly from the center clutch.

To remove the ProStart Assembly you will need to place the bike in gear and turn the primary drive sprocket with a 1-1/8 socket. Turn the sprocket until the Retaining Ring Tabs are lined up with 2 of the access holes in the Top Plate. Insert the Install Tools through the Access Holes at an angle so you can pry the Retain Ring closed allowing you to pull the ProStart Assembly off of the Rekluse Center Clutch.



Retaining Ring Tabs lined up with access holes

Remove the clutch pack and measure its overall height.

Using calipers, measure the overall height of the clutch pack—the clutch pack should be no more than 1.28" (32.5-mm) and no less than 1.26" (32-mm) tall.

If the clutch pack is less than 1.26" (32-mm) tall, then remove one of the Rekluse .047" (1.2-mm) steel drive plates and replace with the Rekluse .065" (1.65-mm) steel drive plates. Re-measure and adjust accordingly.

