

Rekluse Motor Sports

The ProStart™ Clutch

H-D Sportster

(1994 – 2003)

Installation Guide

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ProStart Revision 1.000

RMS686– H-D Sportster

195-686

Manual Revision: 121206

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Required Tools

ProStart Install Tools	Snap Ring Pliers
3/16" Hex Key	Torque Wrench
1/4" Hex Key	Blue Loctite 243 (oil resistant)
Small Flat Blade Screw Driver	Safety Glasses
Diaphragm Spring Compression Tool	

Included Parts for the ProStart Clutch

ProStart Clutch Assembly with Retaining Ring	
9 x .047" (1.2mm) Drive plates	
3 x .040" (1.0mm) Drive plates	
2 x Rekluse Friction Disk	
1 x Rekluse Narrow Friction Disk	
1 x Rekluse Friction Disk	
Rekluse Jutter Spring Seat	
Rekluse Jutter Spring	
Compression Spring	491-006 In-Line Adjuster Sticker
2 x .030" Wire Gauges	
2 x .040" Wire Gauges	



ProStart Install Tools



Basic Pro-Start Clutch Operation

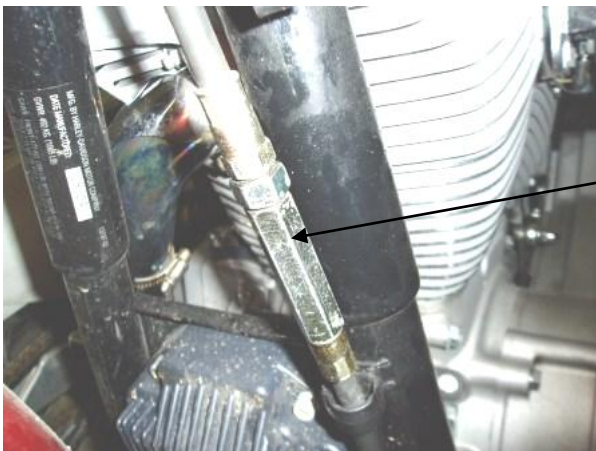
The ProStart Clutch functions through centrifugal force. As engine RPM increases, the balls contained in the ProStart Pressure Plate travel up the ball ramps and push against the Top Plate. This action forces the Pressure Plate to engage the clutch pack.

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 Installed Gap is **critical**. If the Installed Gap is too big the clutch will slip excessively and cause rapid clutch wear. If the Installed Gap is too small, the clutch will drag and cause engine stall.
- 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. Following the guidelines in the H-D Service Manual, drain the transmission oil from the Primary.
3. 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

4. Following the guidelines in the H-D Service Manual, remove the derby cover (clutch inspection cover).
5. 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

6. 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.
7. 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

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

Configuring the Clutch Pack

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



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

11. Installing Rekluse Jutter Spring and Narrow Friction Disk

Note: The following pictures depict a bench top install of the Rekluse Jutter Spring components **for illustrative purposes**. You will be installing these parts onto the center clutch in your bike.

12. Slide the Rekluse Jutter Spring Seat (thin flat ring) over the center clutch and down against the base of the flange. See following picture.

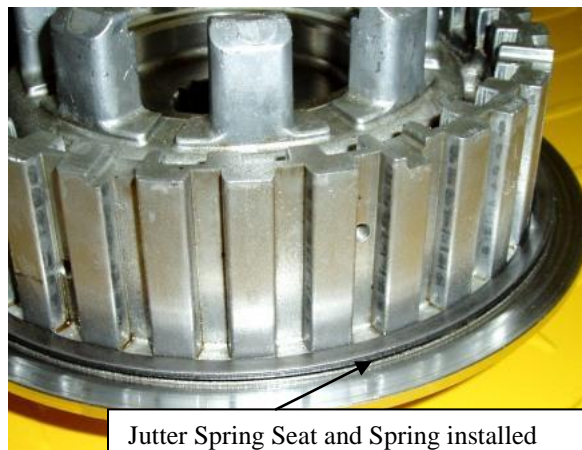


Installing the flat Spring Seat

13. Slide the Rekluse Jutter Spring (curved ring) **concave side out** over the center clutch and down against the previously installed Rekluse Jutter Spring Seat. See following picture.



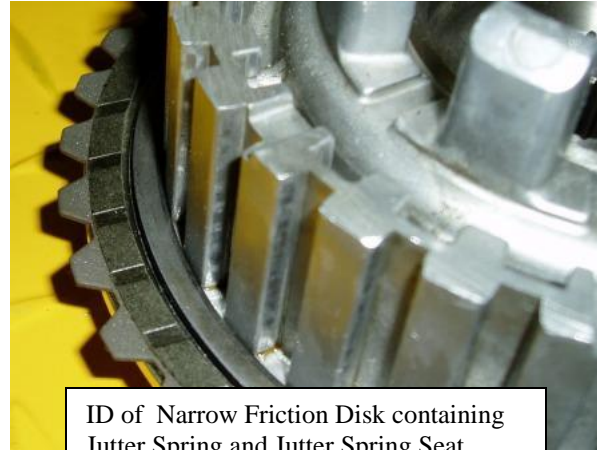
Install Jutter Spring Concave side up/out



Jutter Spring Seat and Spring installed against Center Clutch Flange

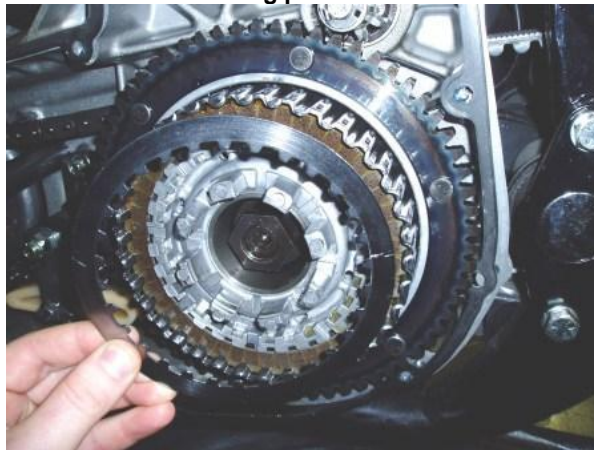
Next, slide the Rekluse **Narrow Friction Disk** over the center clutch and down against the base of the flange around the Jutter Spring Seat and Jutter Spring. See following picture.

Warning: Rekluse **Narrow Friction Disk** must be the first clutch disk installed to accommodate the Rekluse Jutter Spring or severe clutch damage will result.



ID of Narrow Friction Disk containing Jutter Spring and Jutter Spring Seat.

14. Install a Rekluse .047" (1.2-mm) steel drive plate on top of the Rekluse Narrow Friction Disk.
15. Install 7 of the stock friction disks with 1 Rekluse .047" (1.2-mm) steel drive plate between each friction disk on top of the previously installed Rekluse .047" (1.2-mm) steel drive plate.
16. Next, install 1 Rekluse .040" (1.0-mm) steel drive plate on top of the stock friction disk followed by the last stock friction disk. **See following picture.**



17. Install 1 stock .062" (1.6-mm) steel drive plate on top of the last stock Friction disk. Then install the 1 Rekluse Friction Disk. **See Following chart.**

The new clutch pack consists of 10 Friction disks and the 8 Rekluse .047" (1.2-mm) steel drive plates, 1 Rekluse .040" (1.0-mm) steel drive plate, and 1 Stock .062" (1.6-mm) steel drive plate. **See following pictures. See following chart.**



New Clutch Pack Configuration

- (1) **Rekluse Narrow Friction Disk**
Rekluse 0.047" steel drive plate
- (2) **Stock Friction Disk**
Rekluse 0.047" steel drive plate
- (3) **Stock Friction Disk**
Rekluse 0.047" steel drive plate
- (4) **Stock Friction Disk**
Rekluse 0.047" steel drive plate
- (5) **Stock Friction Disk**
Rekluse 0.047" steel drive plate
- (6) **Stock Friction Disk**
Rekluse 0.047" steel drive plate
- (7) **Stock Friction Disk**
Rekluse 0.047" steel drive plate
- (8) **Stock Friction Disk**
Rekluse 0.040" steel drive plate
- (9) **Stock Friction Disk**
Stock 0.062" steel drive plate
- (10) **Rekluse Friction Disk**

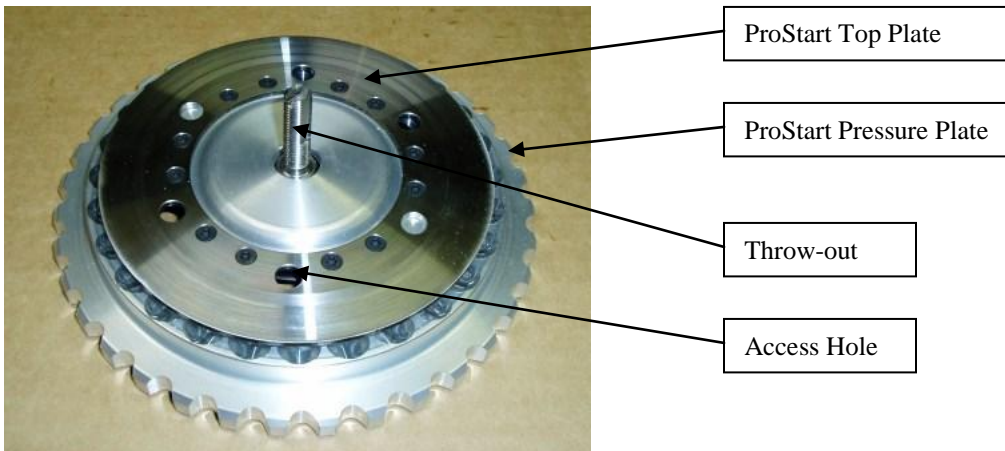
Inner most disk (1st disk installed)



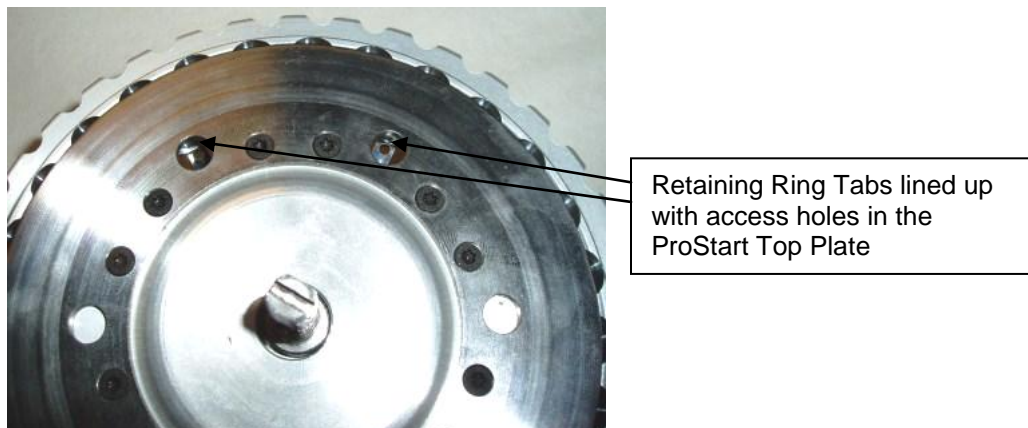
Outer most disk (last disk installed)

Installing the ProStart Assembly

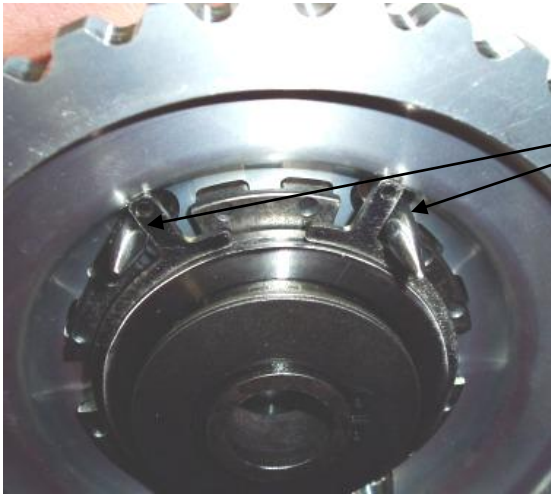
18. See the following picture for part identification.



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

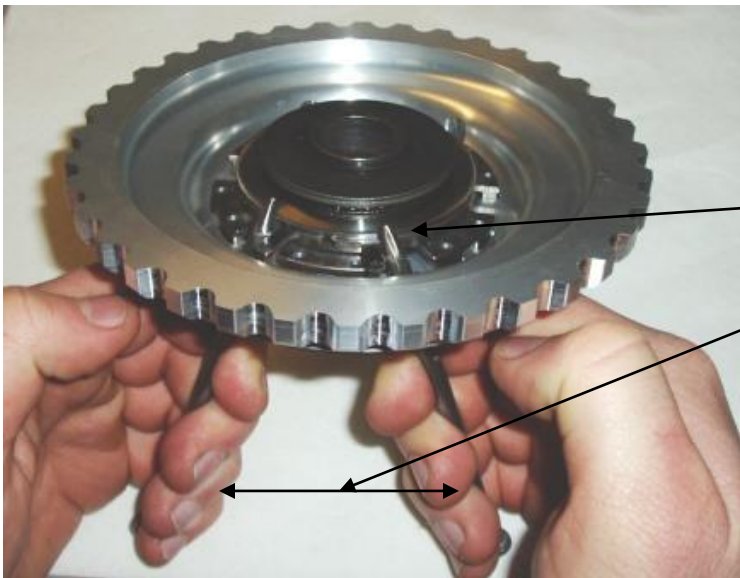


20. Insert the 2 Rekluse Retaining Ring Tools into the 2 access holes lined up with the Retaining Ring tabs. The 2 tools need to be in place along the outer edge of each tab. See following picture.



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

21. 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.

22. 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. Guiding the Throw-out into the hole in the main-shaft will help keep The ProStart centered, making it easier to line everything up.

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.

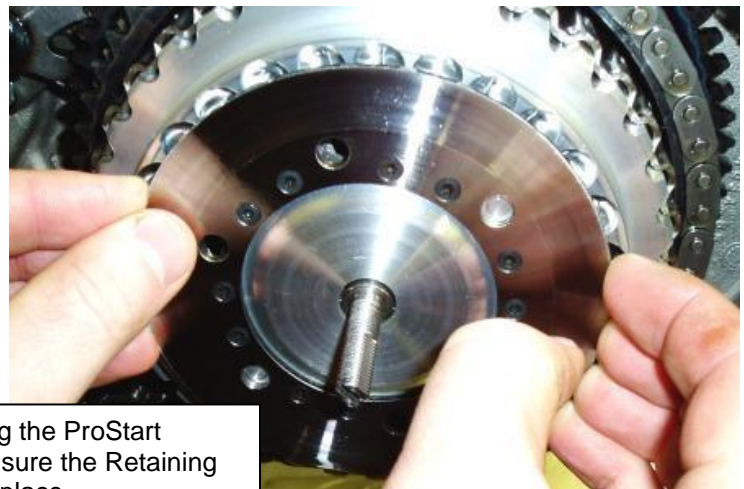


Gap between the 2 Retaining Ring tabs centered over one of the 8 center clutch posts.



Checking that Retaining Ring is properly seated

23. 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.



Pushing and Pulling the ProStart Assembly to make sure the Retaining Ring is locked into place.

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

24. 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.

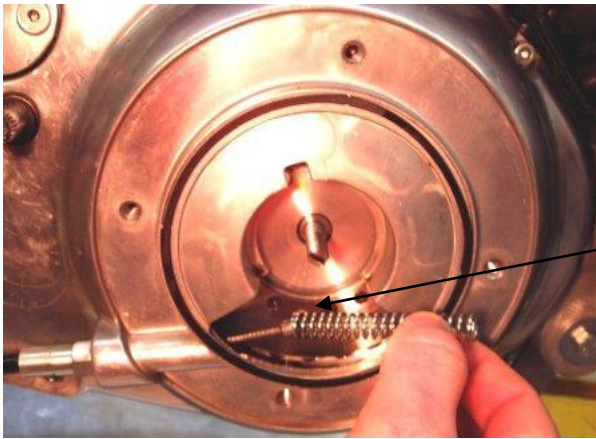
If Installed Gap is too large: If the gap was larger than the large set of wires replace the .040" (1.0-mm) Rekluse steel drive plate with a .047" (1.2-mm) Rekluse steel drive plate and Repeat steps 20 – 24. If the installed gap is still too loose, replace one of the .047" (1.2-mm) Rekluse steel drive 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 20 – 24.

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

25. 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.
26. Slide Rekluse Return Spring over the exposed end of the clutch cable. See following picture.



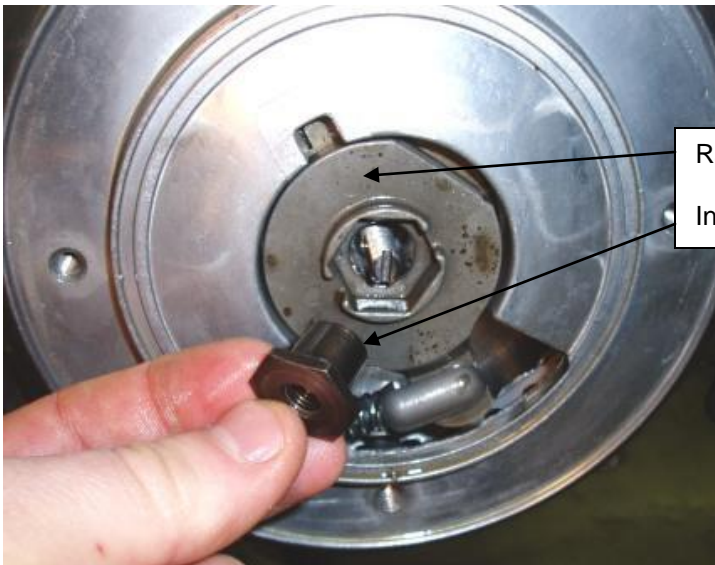
Slide the Return Spring over the end of the clutch cable.

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



Ramp Coupler installed on to cable end.

28. 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.



Ramps installed into the Primary Cover.

Installing Nut on to Rekluse Throw-out

Adjusting the Clutch Throw-out

29. 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.



Throw-out turned all the way counter-clockwise with Nut is located in hex-pocket of Outer Ramp and Throw-out is seated against ProStart Pressure Plate.

30. Now, back the Rekluse Throw-out away from the ProStart Pressure Plate by turning it clockwise / in 1-1/2 to 1-3/4 turns.
31. 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

- 32. Following the guidelines in the H-D Service Manual, fill the primary with the proper transmission oil to the proper level.
- 33. Re-install the Derby Cover making use of the stock o-ring/gasket.
- 34. Take the motorcycle down off of the lift and insure the transmission is in neutral.
- 35. Start the motorcycle and allow it to warm up.
- 36. **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 set the proper amount of clutch cable slack.

While the engine is revved adjust the in-line cable adjuster out until you can pull the clutch lever in about ¼" 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 ¼" to before feeling significant resistance to ensure proper cable slack.



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

37. 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.



38. 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.
39. Please refer to the ProStart owners guide for operation, break-in, and maintenance of the ProStart Clutch.