

Barnett Clutches & Cables

Low Profile Scorpion Lock-Up Clutch Kit Installation

Story by **Jason Mook** – Photos by **Jesse B. Nelson**

If you have been following the build of our 2009 Bagger, you are aware that we have upgraded the motor with a big bore kit, new heads, and new cams. In order to ensure all that newfound power makes it to the rear wheel, a clutch upgrade is in order. Since 1948, Barnett has been manufacturing direct replacement and performance application clutches and cables. Barnett's Scorpion Low Profile Lock-Up Clutch Kit is an upgrade that can accommodate the horsepower output from the 107 cubic inch performance motor. The Scorpion Low Profile Lock-Up Clutch progressively increases pressure as RPM increases, includes multiple spring sets for a variety of applications, and requires no modifications to the primary housing. To see all of the products available from Barnett, visit www.BarnettClutches.com.

Difficulty Level: 4/5

Estimated Time to Complete: 4.5 hours



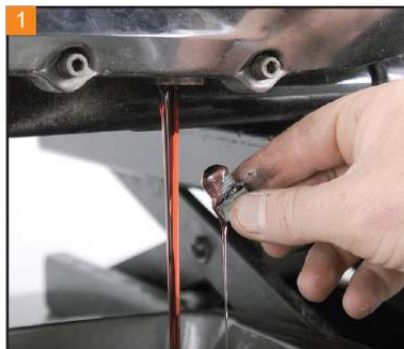
Barnett's Scorpion Low Profile Lock-Up Clutch Kit and Clutch Basket Shell.



The 2009 Bagger with stock clutch.

Tools & Supplies Needed

- SAE Allen Wrenches
- SAE Socket Set
- 10mm Socket
- 3/8" Ratchet With Extensions
- Torx Drivers
- Retaining Ring Pliers
- Impact Wrench
- Torque Wrench
- Primary Locking Bar
- Center Punch
- Drill With Assorted Bits
- Oil Drain Pan
- Hydraulic Press
- Small Clean Container
- Thread Locker (Blue)
- Thread Locker (Red)
- Contact Cleaner
- Eye Protection
- Shop Rags
- Compensating Sprocket Bolt (OEM #10500031)
- Primary Gasket (OEM #34901-07)



1 Use a 5/8" socket to remove the drain plug from the primary housing. Have a drain pan ready to catch the primary fluid.



2 Remove the left side floorboard, rear left floorboard mounting bracket, heel shifter, and left passenger peg mount. Use a T27 Torx to remove the five bolts holding the derby cover. Remove the derby cover.



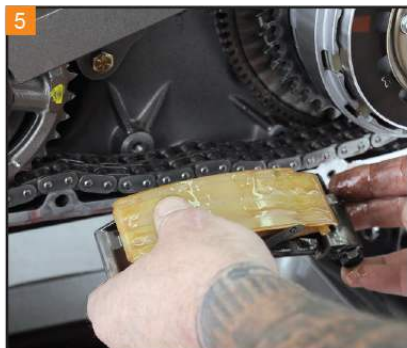
3 With a 3/16" Allen wrench, remove the bolts holding the outer primary cover to the primary housing.



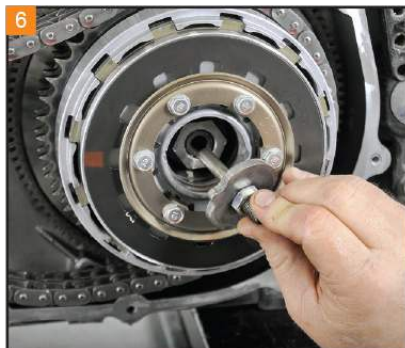
4 Remove the outer primary cover and gasket from the primary housing.

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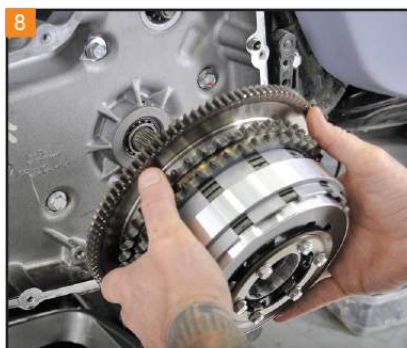
5 Use a 1/2" socket to remove the two bolts holding the primary chain adjuster. Keep a hand on the adjuster while removing it, it is spring loaded.



6 Wear eye protection while removing the retaining ring. With the retaining ring removed, the adjuster and plate are removed in order to access the mainshaft nut.



7 Install the primary locking tool. Use an impact wrench to remove the mainshaft nut. This nut is left-hand thread. Reverse the primary locking tool. Remove the compensator bolt with a T70 Torx.



8 After removing the compensating sprocket and primary chain, remove the clutch assembly from the mainshaft.



9 With a 10mm socket, remove the six bolts holding the spring retainer to the clutch hub.



10 Remove the retainer, spring, pressure plate, and clutch plates from the clutch assembly.



11 With the transmission side up, remove the retaining ring from the clutch hub. Wear eye protection during this step.



12 Use a hydraulic press to press the clutch hub from the bearing.



13 Remove the bearing-retaining ring from the clutch basket.



14 Position the clutch basket back in the hydraulic press. Use a driver matching the diameter of the inner race of the bearing to press the bearing out of the clutch basket.



15 On the transmission side of the clutch basket, center punch the rivets holding the starter ring gear to the clutch basket.



16 With a 1/4" drill bit, drill out the heads of the rivets.



Remove the starter ring gear from the stock clutch basket.



Open the holes in the ring gear with a 3/8" bit.



Position the ring gear over the Barnett clutch basket. Install the included bolts and locking tabs.



Tighten the bolts in a criss-cross pattern. Final torque of 25 foot/lbs. Bend one locking tab per bolt onto a flat of each bolt.



Verify the stock bearing spins freely. Press in the bearing into the Barnett Clutch Basket from the transmission side.



Install the retaining ring into the appropriate groove for your application, flat side facing the bearing.



Press the Barnett Clutch Hub into the bearing.



Install the retaining ring into the clutch hub from the transmission side.



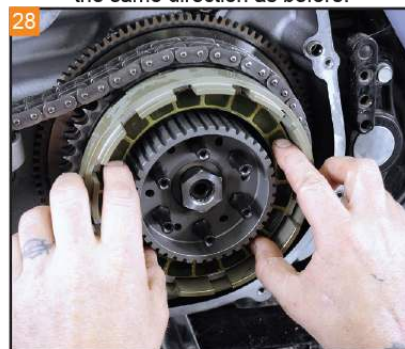
Install the clutch assembly, primary chain, and compensating sprocket. Ensure the primary chain is running the same direction as before.



Apply red thread locker to the mainshaft nut. This nut is left hand thread. Final torque to 50-60 foot/lbs. With a new compensating sprocket bolt, torque to 100 foot/lbs., loosen a 180 degrees, and final torque to 175 foot/lbs.



Allow the clutch plates to soak for 10 minutes prior to installation.



Install the clutch plates, starting with the larger inner diameter plate, and ending with a steel plate.

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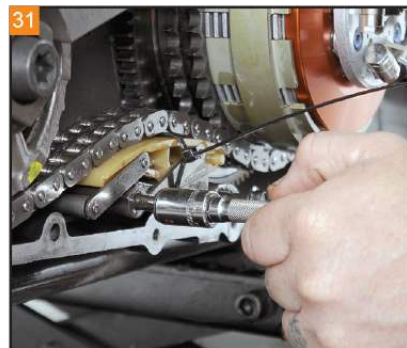
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29 Position the Scorpion Pressure Plate over the clutch hub. Select the springs for your application and install over the posts of the clutch hub.



30 Using a 5mm Allen, install the lock up plate over the pressure plate, capturing the springs. Final torque the bolts to 5 foot/lbs.



31 Apply blue thread locker to the bolts of the chain tensioner. With a zip tie around the tensioner, tighten the bolts to 18-22 foot/lbs.



32 Install the outer primary cover with new gasket. Apply blue thread locker to the bolts. Tighten the bolts in order outlined in the service manual. Final Torque of 120-155 inch/lbs.



33 Reinstall the drain plug O-ring. Torque to 14-21 foot/lbs. Pour 45 ounces of primary fluid through the clutch inspection cover. Reinstall the derby cover.



34 Install the right side floorboard, heel shifter, and passenger peg mount.

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Low Profile Scorpion Lock-Up Clutch Kit fits 2007 - 2010 Big Twins. (Part # 608-30-23710) Clutch Basket Shell, 2007 & later Big Twins. (Part # 321-30-02012)

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AFTER



The 2009 Bagger with Barnett Scorpion Low Profile Lock-Up Clutch Kit and Clutch Shell Basket installed.