



S&S GEAR DRIVE KIT

419

FITS '99-UP TWIN CAM MODELS (EXCLUDING '06 DYNAGLIDE). THIS INSTALLATION REQUIRES ANDREWS GEAR DRIVE INSTALLATION KIT, P/N 418, SOLD SEPARATELY.

PART #	INCLUDED
419	1 Gear Drive Kit
300419	1 Installation Instructions

Please read and understand entire instructions before starting installation.

THANK YOU FOR CHOOSING KÜRYAKYN!

PLEASE NOTE

It is the installers' responsibility to make sure all fasteners (including pre-assembled) are tightened before operation of motorcycle. Kuryakyn will not warranty components that are lost due to improper installation. Periodic maintenance may be required.

TOOLS SUGGESTED

Allen wrenches, combination wrenches, bolt cutters (if replacing stock pushrods), cam chain tension arm tool (H-D PN 42313), and crankshaft/camshaft sprocket locking tool (H-D PN 42314).

ATTENTION! A factory service manual will be helpful in performing this installation. Pay close attention to the procedure for retracting and removing the sprocket chain tension devices. Do not attempt to perform this installation if you are not confident in your ability to complete all steps in the procedure; consult a trained technician.

ATTENTION! This procedure requires making permanent modifications to the motorcycle; this may void your warranty. Consult your dealer for more information.

PROCEDURE – DISASSEMBLY

STEP 1 Before beginning disassembly, shift the transmission into 4th or 5th gear and remove the spark plugs.

STEP 2 Reusing the stock pushrods? If you plan to reuse the stock pushrods, remove the fuel tank and rocker boxes; refer to your factory service manual for specific instructions. The pushrods are not identical; mark the pushrods so that they can be identified and correctly installed in their original locations later.

Replacing the stock pushrods with Fast Times™ pushrods (Kuryakyn P/N 438)? You do not need to remove the fuel tank or rocker boxes. Cut the stock pushrods with bolt cutters then remove the pieces.

STEP 3 Remove the ten bolts securing the outer cam cover.

STEP 4 Rotate the rear wheel of the motorcycle until the camshaft timing marks are aligned; this will simplify installation of the new cams.

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CUSTOMER SERVICE

877.370.3604 (toll free)

INSTALLATION QUESTIONS

techsupport@kuryakyn.com
or call 715.247.2983

LIMITED WARRANTY

Kuryakyn warrants that any Kuryakyn products sold hereunder, shall be free of defects in materials and workmanship for a period of one (1) year from the date of purchase by the consumer excepting the following provisions:

- Kuryakyn shall have no obligation in the event the customer is unable to provide a receipt showing the date the customer purchased the product(s).
- The product must be properly installed, maintained and operated under normal conditions.
- Kuryakyn makes no warranty, expressed or implied, with respect to any gold plated products.
- Kuryakyn shall not be liable for any consequential and incidental damages, including labor and paint, resulting from failure of a Kuryakyn product, failure to deliver, delay in delivery, delivery in nonconforming condition, or for any breach of contract or duty between Kuryakyn and a customer.
- Kuryakyn products are often intended for use in specific applications. Kuryakyn makes no warranty if a Kuryakyn product is used in applications other than intended.
- Kuryakyn electrical products are warranted for one (1) year from the date of purchase by the consumer. Components of Kuryakyn products containing L.E.D.s will be warranted for defects in materials and workmanship for 3 years from the date of purchase.
- Kuryakyn makes no warranty of any kind in regard to other manufacturer's products distributed by Kuryakyn. Kuryakyn will pass on all warranties made by the manufacturer and where possible, will expedite the claim on behalf of the customer, but ultimately, responsibility for disposition of the warranty claim lies with the manufacturer.

ABOUT OUR CATALOG

You'll find all our innovations for H-D, GL and Metric Cruisers in our annual catalogs. Order online today—select the "CATALOGS" icon. Each Kuryakyn™ product comes with a Proof-of-Purchase good for a complimentary catalog. Details in packaging.

Be sure to ask your local dealer about other Kuryakyn products, the motorcycle parts and accessories designed for riders by riders.

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STEP 5 Retract the outer chain tension shoe; use an H-D cam chain tension arm tool (H-D P/N 42313).

STEP 6 Remove the retaining bolt securing the crankshaft sprocket, then remove the retaining bolt securing the rear camshaft sprocket; use an H-D crankshaft/camshaft sprocket locking tool (H-D P/N 42314).

STEP 7 Remove the cam support plate and both stock cams.

STEP 8 Remove the internal and external cam chain tension arms and springs from the support plate; discard the cam chain tension arms and springs – they will not be reused.

NOTE We recommend replacing both inner camshaft needle bearings with Torrington B148 drawn cup needle bearings. The bearings are included in the Andrews Gear Drive Installation Kit, P/N 418. Remove the original bearings from the right side engine case and replace with the new bearings.

PROCEDURE — REASSEMBLY

STEP 9 Before installing the drive gears, **verify that the timing marks face the cam lobes and that the drive keys are in place.** Press the camshafts into the drive gears; the drive gears are specific for front and rear camshaft applications so be sure to use the correct gear.

STEP 10 If you are using cams with 0.55 or higher lift, you may need to modify the case bearing boss to ensure proper clearance of the lobe tips. Cut away enough material from the top of the case bearing boss to allow for proper clearance.

STEP 11 Install the camshafts into the cam support plate. Coat the cam lobes with engine oil or assembly lubrication. **Verify the timing marks on both cam drive gears are aligned correctly before proceeding.**

STEP 12 Check the cam gear backlash. Using a wooden rod through the exhaust lifter bore, press down on the front cam to prevent it from rotating. Turn the rear cam back and forth, verifying backlash is present and the cams move freely without binding. Recommended backlash for cold gears is 0.0005 to 0.001".

ATTENTION! Cams with too little backlash (0.000) may whine when operating; replace the cam gear with an undersized gear to ensure sufficient backlash. Cams with too much backlash (0.002) will be noisy at lower RPMs; replace the cam gear with an oversized gear to prevent excess noise.

STEP 13 Install the rear cam drive gear (62T) and the crankshaft drive gear (31T). Secure with the retaining cap screws. Check the timing; refer to your factory service manual for specific instructions. If necessary, adjust the position of the gears so that the timing marks are aligned.

ATTENTION! Secure the drive gears with the stock retaining bolts; be sure to use Loctite compound on the bolt threads. Do not over-tighten the bolts. The crankshaft drive gear bolts must not exceed 25 ft/lbs; the rear camshaft bolt must not exceed 35 ft/lbs.

STEP 14 Check the crankshaft gear and rear cam drive gear backlash. Rock the rear cam gear back and forth; verifying backlash is present between the two gears. Rotate the crankshaft 90 degrees and check for backlash again. Continue around the crankshaft, rotating 90 degrees each time until you have checked four different points on the gears.

CAUTION! Operating your motorcycle with insufficient backlash could damage the gear teeth and harm your engine. If necessary, use an undersized crankshaft gear to ensure sufficient backlash.

STEP 15 The new rear camshaft drive gear is larger than the original chain sprocket, check for proper clearance between the gear teeth and the outer cover. Minimum acceptable clearance is 0.030". Modify the inner surface of the cover, if necessary, for proper clearance.

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STEP 16 Reinstall the outer cam cover; refer to your factory service manual for specific tightening sequence.

PROCEDURE — INSTALL PUSHRODS

STEP 17 Installing stock pushrods? Install the pushrods into their original location, refer to the identifying marks you made earlier during the disassembly procedure. Replace the rocker boxes and fuel tank.

STEP 18 Installing Fast Times™ pushrods? Before installing the pushrods, adjust them to their shortest length. Position each pushrod in the engine, rocker arm ends first, then swing the lower ends into the lifters. Lengthen each pushrod adjuster until all free play is gone, and then adjust the pushrods 3.5-4 full turns longer (21-24 flats). Tighten the locknuts.

NOTE When adjusting the pushrods, verify that the cam lobe for each pushrod is at the low lift point. Remove the lifter housing covers temporarily to gain an additional 1/4" of clearance, if necessary.

STEP 19 Check for minimum clearances; refer to cam installation instructions for details.

ATTENTION! AS WITH ANY PERFORMANCE MODIFICATION, PROPER TUNING IS CRITICAL FOR OPTIMUM PERFORMANCE AND ENGINE LIFE. KURYAKYN STRONGLY ENCOURAGES YOU TO HAVE YOUR MOTORCYCLE PROFESSIONALLY TUNED AT A QUALIFIED SHOP.

Ride On!

Kuryakyn

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