

**Instruction 510-1405**  
**06.18.2026**

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# **Installation Instructions:**

## **S&S Camshaft Chaindrive Kit**

### **2007-2017 bt Models**

### **PN: 330-0843, 330-0844**



**Upgrade your ride with our precision machined sprockets, designed for accurate cam timing and smoother chain engagement. Forged from high-quality bearing steel, they deliver exceptional tooth wear resistance and extended life under high loads. Experience premium performance and direct replacement convenience.**

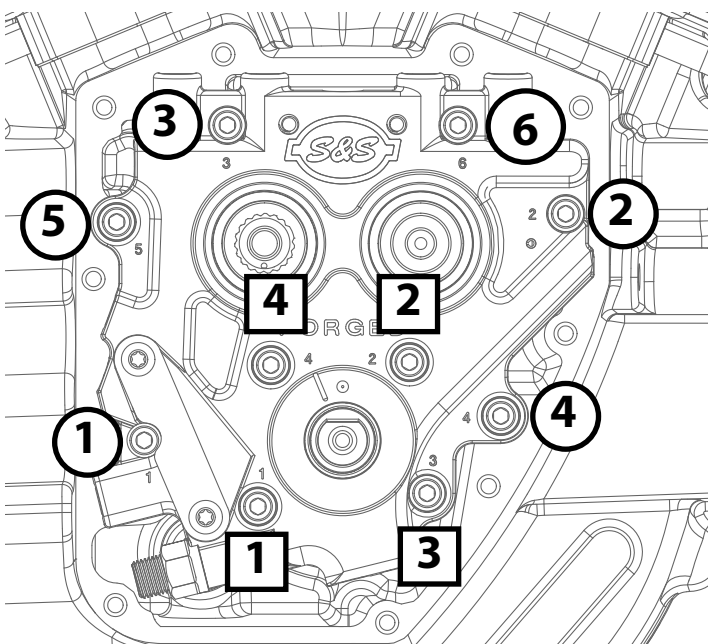
**NOTE:** If replacing cam at same time, use S&S instruction sheet #106-5912 in addition to these instructions.

### Special Tools required

- Harley-Davidson sprocket locking tool H-D #42314

### Disassembly

1. Disconnect negative battery cable or pull main fuse to eliminate potential sparks and inadvertent engagement of the starter while working on the motorcycle.
2. Remove exhaust system and right floor board following factory service manual procedures.
3. Remove spark plugs and pushrod cover clips. Collapse pushrod covers to expose pushrods.
4. Safely elevate and stabilize the rear of the motorcycle. Place transmission in high gear. Turn the rear wheel to rotate the engine until both lifters and pushrods for either cylinder are at the lowest point on the camshaft (TDCC - Top Dead Center Compression). Both intake and exhaust pushrods for that cylinder will not be under pressure from the valve springs and will rotate with light finger pressure.
5. If you wish to retain solid pushrods, follow the procedure in the OEM service manual for pushrod removal. Collapsible pushrods should be collapsed and removed.
6. Rotate the engine and place the other cylinder pushrods at TDCC. Remove pushrods again.
7. Remove the lifter covers from the crankcase.
8. Remove the engine cam cover and gasket.
9. Remove the lifters. A magnetic tappet tool or clip tool can be used.
10. Rotate the rear wheel to align timing marks on the primary cam chain sprockets.
11. Install Harley Davidson sprocket locking tool to secure the sprockets and remove bolts and washers from the cam drive sprocket and crankshaft sprocket.
12. Remove the primary chain tensioner by removing the two retaining bolts.
13. Remove the sprocket locking tool.
14. Gently pry off the crank and cam sprocket off the shaft.
15. Gradually loosen and remove the four oil pump bolts/washers according to the sequence shown in *Picture 1*. (the numbers in the squares)

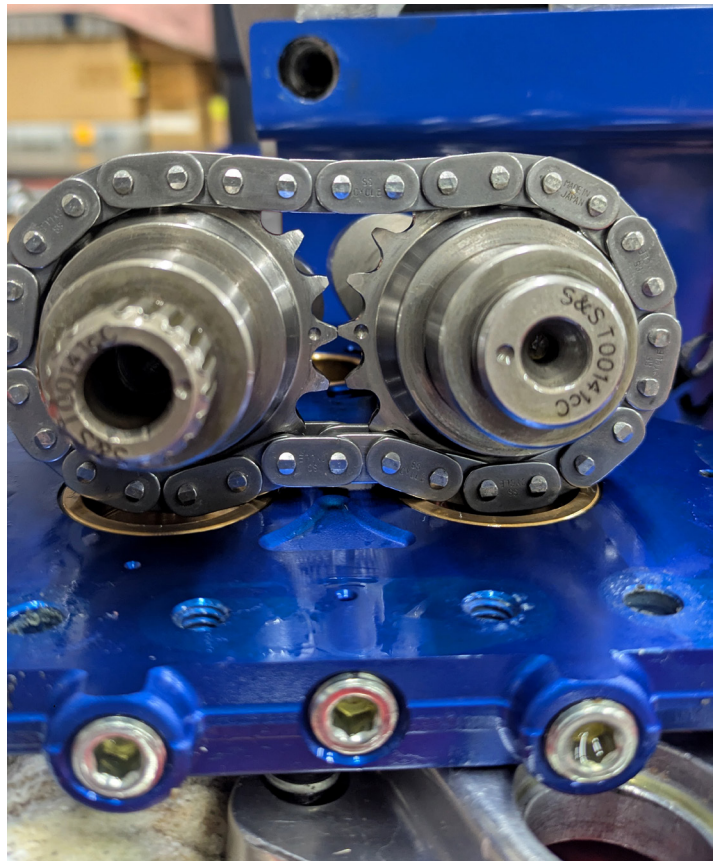


Picture 1

16. Gradually loosen and remove the six support plate bolts/washers according to the sequence shown in figure 1
17. Remove cam support plate and cams from the engine.
18. Remove the spacer from the rear cam, this spacer is thicker than the front spacer.
19. Remove the retaining ring and spacer from the front cam. This spacer is .100" thick.
20. Remove the secondary cam chain tensioner from the rear of the plate.
21. Remove the cams and cam chain.

### Assembly

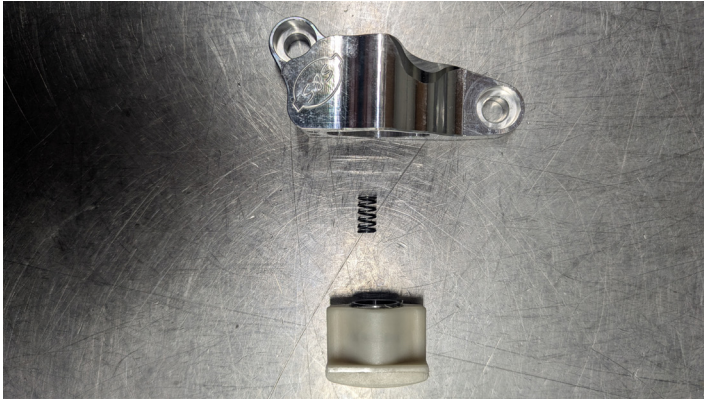
1. Place the cam support plate on a flat surface with the outside of the support plate facing down. Place supports under the cam support plate so that the cams be easily installed.
2. Install the new secondary cam chain around the front and rear cam sprockets. Ensure that the timing marks are aligned as shown in *Picture 2*.



Picture 2

3. Lubricate the cam bearing bores on the cam support plate with assembly lube or clean engine oil.
4. Install the cams into the cam support plate. Be careful not to damage the cam support plate while installing the cams.
5. Turn the cam support plate over. Take care so that the cams do not slide out of the support plate. Install the .100" spacer over the end of the front cam. Install the new retaining ring.

6. Wash the chain tensioner parts in solvent and blow dry. Assemble the S&S cam chain tensioners according to the part order shown in **Picture 3**.



Picture 3

7. Install the inner cam chain tensioner assembly. Press the shoe of the tensioner against the chain to compress the spring inside the tensioner assembly. Apply blue thread locker to the  $\frac{1}{4}$ -20 x 1" Torx fasteners and install in place of the stock hardware.
- A.** Torque: 100 in-lbs
8. Apply a thin layer of assembly lube or clean engine oil to the cam journals, lobe surfaces, and inner bearing surfaces. Align camshaft with needle bearings and carefully slide support plate over crankcase dowels.
9. Loosely install 6 support screws with a drop of blue thread locker. Alternate tightening each screw to 95 in-lbs following the torque sequence in Picture 1 (The circled numbers).
- A.** Note: Support plate screws that pass through the alignment dowels can be easily stripped. Do not exceed torque recommendations.
10. Install oil pump mounting bolts with a drop of blue thread locker according to the procedure found in the factory service manual: Gently bottom screws, then back them out  $\frac{1}{4}$  turn. Center oil pump by rotating the engine by hand while snugging down the bolts. Alternate tightening bolts to 95 in-lbs following the sequence in figure 1. Verify the inner gears rotate freely and no binding is present.
11. Install spacer over the end of the rear camshaft, and install the new rear cam drive sprocket.
12. Install the original crankshaft sprocket on the crankshaft. Snug the bolts to ensure the sprockets are seated.
- A.** The S&S crankshaft sprocket is a light press fit and will require a puller to be removed if installed in this step.
13. Insert the sprocket locking tool and torque both cam and crankshaft bolts to 15 ft-lbs.
14. Push both sprockets towards the left side of the motorcycle to take up any end play. Lay a straight edge across the face of the crankshaft and camshaft sprockets. Measure the gap in alignment between the sprockets with a feeler gauge. The max alignment allowed is .009". If the gap is larger than .009", select the proper spacer to align the sprockets.
15. Remove both sprockets.
16. Install the correct spacer if needed.
17. Assemble the S&S sprockets and chain as shown.
18. Install the sprocket and chain assembly onto the shaft. Make sure the timing marks on the crank and cam sprockets remain aligned.
19. The S&S crankshaft sprocket is a much tighter fit and will require light tapping the sprocket on with a deadblow or nylon hammer. The sprocket can also be drawn on using the crankshaft bolt.
- NOTE:** Ensure the backside of the crankshaft sprocket is against the shoulder on the crankshaft.
20. Insert the sprocket locking tool. Apply red thread locker to the bolts and tighten the crankshaft sprocket bolt to 25 ft-lbs, and the camshaft sprocket bolt to 34 ft-lbs.
21. Apply blue thread locker to the two  $\frac{1}{4}$ -20 x  $\frac{3}{4}$ " Torx head bolts. Install the outer chain tensioner loosely with one bolt. Press the tensioner shoe against the drive chain to compress the spring inside the tensioner. Install the second bolt and tighten both bolts to 100 in-lbs.

# Safety and Warranty Info:

## DISCLAIMER:

S&S parts are designed for high performance, closed course, racing applications and are intended for the very experienced rider only. The installation of S&S parts may void or adversely affect your factory warranty. In addition such installation and use may violate certain federal, state, and local laws, rules and ordinances as well as other laws when used on motor vehicles used on public highways, especially in states where pollution laws may apply. Always check federal, state, and local laws before modifying your motorcycle. It is the sole and exclusive responsibility of the user to determine the suitability of the product for his or her use, and the user shall assume all legal, personal injury risk and liability and all other obligations, duties, and risks associated therewith.

The words Harley®, Harley-Davidson®, H-D®, Sportster®, Evolution®, and all H-D part numbers and model designations are used in reference only. S&S Cycle is not associated with Harley-Davidson, Inc.

## SAFE INSTALLATION AND OPERATION RULES:

Before installing your new S&S part it is your responsibility to read and follow the installation and maintenance procedures in these instructions and follow the basic rules below for your personal safety.

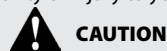
- Gasoline is extremely flammable and explosive under certain conditions and toxic when breathed. Do not smoke. Perform installation in a well ventilated area away from open flames or sparks.
- If motorcycle has been running, wait until engine and exhaust pipes have cooled down to avoid getting burned before performing any installation steps.
- Before performing any installation steps disconnect battery to eliminate potential sparks and inadvertent engagement of starter while working on electrical components.
- Read instructions thoroughly and carefully so all procedures are completely understood before performing any installation steps. Contact S&S with any questions you may have if any steps are unclear or any abnormalities occur during installation or operation of motorcycle with a S&S part on it.
- Consult an appropriate service manual for your motorcycle for correct disassembly and reassembly procedures for any parts that need to be removed to facilitate installation.
- Use good judgment when performing installation and operating motorcycle. Good judgment begins with a clear head. Don't let alcohol, drugs or fatigue impair your judgment. Start installation when you are fresh.
- Be sure all federal, state and local laws are obeyed with the installation.
- For optimum performance and safety and to minimize potential damage to carb or other components, use all mounting hardware that is provided and follow all installation instructions.
- Motorcycle exhaust fumes are toxic and poisonous and must not be breathed. Run motorcycle in a well ventilated area where fumes can dissipate.

## IMPORTANT NOTICE:

Statements in this instruction sheet preceded by the following words are of special significance.



Means there is the possibility of injury to yourself or others.



Means there is the possibility of damage to the part or motorcycle.

### NOTE

*Other information of particular importance has been placed in italic type.*

*S&S recommends you take special notice of these items.*

## WARRANTY:

All S&S parts are guaranteed to the original purchaser to be free of manufacturing defects in materials and workmanship for a period of twelve (12) months from the date of purchase. Merchandise that fails to conform to these conditions will be repaired or replaced at S&S's option if the parts are returned to us by the purchaser within the 12 month warranty period or within 10 days thereafter.

In the event warranty service is required, the original purchaser must call or write S&S immediately with the problem. Some problems can be rectified by a telephone call and need no further course of action.

A part that is suspect of being defective must not be replaced by a Dealer without prior authorization from S&S. If it is deemed necessary for S&S to make an evaluation to determine whether the part was defective, a return authorization number must be obtained from S&S. The parts must be packaged properly so as to not cause further damage and be returned prepaid to S&S with a copy of the original invoice of purchase and a detailed letter outlining the nature of the problem, how the part was used and the circumstances at the time of failure. If after an evaluation has been made by S&S and the part was found to be defective, repair, replacement or refund will be granted.

## ADDITIONAL WARRANTY PROVISIONS:

- (1) S&S shall have no obligation in the event an S&S part is modified by any other person or organization.
- (2) S&S shall have no obligation if an S&S part becomes defective in whole or in part as a result of improper installation, improper maintenance, improper use, abnormal operation, or any other misuse or mistreatment of the S&S part.
- (3) S&S shall not be liable for any consequential or incidental damages resulting from the failure of an S&S part, the breach of any warranties, the failure to deliver, delay in delivery, delivery in non-conforming condition, or for any other breach of contract or duty between S&S and a customer.
- (4) S&S parts are designed exclusively for use in Harley-Davidson® and other American v-twin motorcycles. S&S shall have no warranty or liability obligation if an S&S part is used in any other application.

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