



## Assembly Instructions for M8 Compensator Ramp (560-0360)

### DISCLAIMER:

Many 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. 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.

### IMPORTANT NOTICE:

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



**WARNING**

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



**CAUTION**

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.*

### 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 an 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.

### 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.

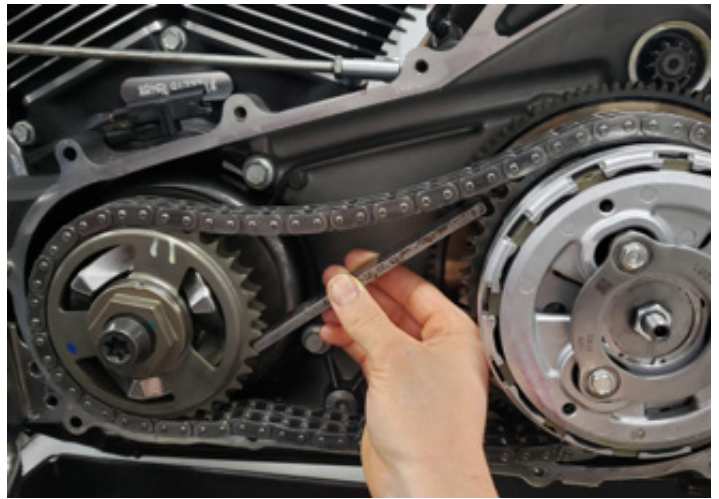
In the event warranty service is required, the original purchaser must call or write S&S immediately with the problem. Some problems can be rectified by a telephone call and need no further course of action.

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.

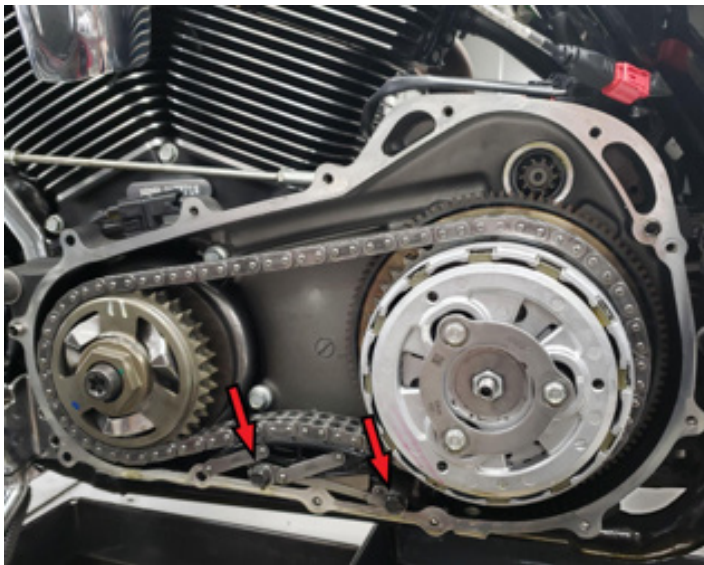
### ADDITIONAL WARRANTY PROVISIONS:

- (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.

1. Start installation with your motorcycle transmission in neutral, and with the key in the "off" position.
2. Locate the drain plug for the primary chaincase ( $\frac{5}{8}$ " head) on the bottom side of the primary. Remove the plug, and drain the primary fluid.
3. If your motorcycle has footrests (driver and/or passenger) that interfere with the removal of the primary cover, they will need to be removed. Locate the  $\frac{3}{16}$ " hex head cap screws that secure the footrest to the frame, and remove the footrest(s) from the motorcycle.
4. Use a  $\frac{3}{16}$ " hex head to remove the (13) primary cover fasteners, and remove the primary cover from the motorcycle. Take care to not damage the primary cover gasket, as it can often be re-used if it doesn't appear to be ripped / torn.
5. Remove the primary chain tensioner by removing its (2) fasteners ( $\frac{1}{2}$ " socket). See picture 1.



Picture 2



Picture 1

**NOTE:** Clutch release plate and clutch assembly DO NOT need to be removed if only replacing the compensator sprocket. If only changing the compensator, do not tamper with the clutch, or you may end up having to perform a clutch adjustment which is otherwise avoidable and unnecessary. If you choose to remove the clutch assembly for some reason, follow the procedure in your factory Harley-Davidson® Service Manual to do so.

6. Remove the compensator sprocket bolt (T70 headed fastener), by rotating counter-clockwise.
  - a. You will need a tool to lock the primary drive sprockets (see picture 2). Contact your local Harley-Davidson® dealer to purchase a primary drive locking tool, or make your own with a piece of flat stock as shown in picture 3.



Picture 3

**NOTE:** Touring and Softail primary chaincases have different lengths between the centerlines of the clutch and crankshaft, therefore the required length of the locking tools will be different depending on which type of motorcycle you have. Our custom locking tools measure ~6.5" for Touring bikes, and ~7.5" for Softail bikes.

7. Remove compensator sprocket bolt, retainer, and thrust washer (picture 4).
  - a. Inspect thrust washer for damage, if damaged, replace with a Genuine Harley-Davidson® replacement.
  - b. Verify that oil holes are clear in the retainer (middle piece in picture 4).



Picture 4

8. Remove the compensator sprocket and compensator ramp. Be careful not to remove any of the spring washers which sit behind the compensator ramp.
  - a. If you accidentally remove the outermost spring washer, the correct orientation to put it back on is so that the outermost diameter of the spring washer is in contact with the compensator ramp. See pictures 5 and 6 for reference.
  - b. If multiple spring washers are removed, refer to your factory Harley-Davidson® Service Manual for the correct orientation and assembly order of the spring washer stack.

9. Prepare to install your new S&S Compensator Ramp by applying a liberal coating of engine assembly lube or primary chaincase oil to the compensator ramp cam faces, splines, and back face. Also apply the lubricant to the splines of the mating sprocket shaft extension. (See pictures 7,8,9–lubricant is red in color)



Picture 5



Picture 7



Picture 6



Picture 8



Picture 9



10. Install your new S&S Compensator Ramp, followed by the compensator sprocket. It helps to mesh the compensator sprocket in with the primary chain first, and then rotate into place over top of the compensator ramp. Rotate the clutch / primary chain as needed to get the compensator sprocket to sit over top of the compensator ramp properly (transmission must be in neutral to allow this).

- a. Clean the threads of the compensator sprocket bolt. Apply a high-strength threadlocking agent to the threads of the compensator sprocket bolt.
- b. Lightly lubricate the thrust washer with primary chaincase oil, then install the thrust washer, retainer, and compensator sprocket bolt hand tight.

11. Insert your primary drive locking tool, and tighten the compensator sprocket bolt. Note that you will need to change the orientation of the locking tool in picture 2, so that the locking tool acts to resist clockwise rotation of the compensator sprocket.

- a. Tighten the compensator sprocket bolt to 100 lb-ft.
- b. Next, loosen the bolt 1/2 turn.
- c. Finally, re-torque the compensator sprocket bolt to 175 lb-ft.

12. Set the primary chain tensioner to its fully collapsed position, and use a cable tie to lock it in this position for re-installation.

- a. Ensure the spring rod is keyed onto the roll pin. (See picture 10)
- b. Slide the tensioner wedge as far as it can go toward the roll pin of the tensioner, ensuring it meshes with the teeth along the bottom side of the tensioner. (See picture 11)
- c. While holding the wedge in place, push the shoe down until it contacts the top of the wedge. Hold tension on the shoe to keep the wedge in place.
- d. While holding tension on the shoe, attach a cable tie around the tensioner to hold the wedge in place and keep the tensioner held at or near its fully collapsed position. (See picture 12)



Picture 10



Picture 11



Picture 12

13. Install the primary chain tensioner.

- a. Torque (2) fasteners to 22 lb-ft.
- b. Cut and remove cable strap

**CAUTION:** At this point, you are ready to replace the primary chaincase cover. Make sure you have removed the cable strap from the tensioner, and the primary locking tool along with any other foreign objects before re-installing the cover.

14. Reinstall primary chaincase cover. Follow the torque sequence outlined in your factory Harley-Davidson® service manual when replacing the (13) cover fasteners (torque to 144 **lb-in**).

15. Replace the primary chaincase drain plug, and fill the primary chaincase with oil following the procedure in your factory Harley-Davidson® service manual.

- a. Check condition of drain plug o-ring, replace if necessary.

16. If removed, replace your footrest(s). Torque footrest fasteners to 38 lb-ft.