

**Instruction 51-1142  
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**Because every industry has a leader**

## **Installation Instructions: S&S® Rocker Arm Rebuild Kit for 1984-Up Big Twin and 1986-up Harley-Davidson® Sportster® Models**

### **DISCLAIMER:**

S&S parts are designed for high performance, off road, 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 inhaled. 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 judgement when performing installation and operating motorcycle. Good judgement begins with a clear head. Don't let alcohol, drugs or fatigue impair your judgement. 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 inhaled. 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.



**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.**

### **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.

## INTRODUCTION

S&S® rocker arm rebuild kit will rebuild a complete set of S&S rocker arms for 1984-up big twin and 1986-up Harley-Davidson® Sportster® models.

The bushings in this kit also fit stock Harley-Davidson® rocker arms, but they are not a direct replacement for stock bushings. S&S rocker arm bushings are wider than stock.

## KIT CONTENTS:

- 8 Bushings
- 4 Rollers
- 4 Pins
- 10 Retaining Clips (Two extra clips included.)

## INSTALLATION

### A. Remove, install and machine bushings

**NOTE:** *Rocker arm service tools, including bushing pullers and installers, are available from specialty tool suppliers. They should be used according to the manufacturers instructions.*

**NOTE:** *The instructions S&S provides are for the experienced mechanic with access to an arbor press and bench vise for the removal and installation operations.*

**Important: Read before bushing removal.**

- **Bushings must be finish machined after installation.** The method used to finish size the rocker arm ID determines the order of disassembly/assembly.
- **If using a line hone to finish size the bushings, remove and install bushings on both sides of rocker (per bushing removal and installation instructions below) then finish machine both bushings at the same time using the appropriate sized hone.**
- **If using a reamer (H-D® #94804-57 or equivalent) to finish size the bushings, remove and install bushing on one side only (per bushing removal and installation instructions below,) then ream to size using the bushing on the other end to align the reamer.**

**NOTE:** *Some aftermarket reamers allow both new bushings to be reamed at the same time. If using an aftermarket reamer, follow manufacturer's instructions.*

**NOTE:** *All reference to Harley-Davidson part numbers is for identification purposes only. We in no way are implying that any of S&S®Cycle's products are original equipment parts or that they are equivalent to the corresponding Harley-Davidson® part number shown.*

1. Bushing removal.
  - a. Remove old bushing using an arbor press. Turn a 1/8"-18 tap into the bushing. Press out the bushing and tap from opposite side of rocker arm. See **Picture 1**.

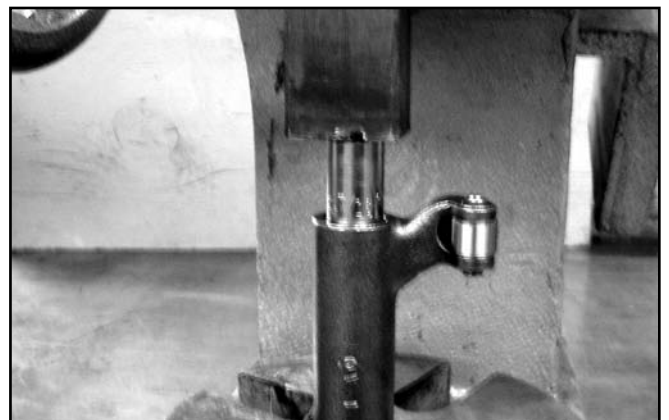


Picture 1

2. Bushing installation and machining.

**NOTE:** *use assembly lube on bushing and rocker arm bore during the press procedure.*

- a. One end of each bushing has a lead-in chamfer. Position new bushing with chamfered end to bore of rocker arm. Align rocker arm and bushing in arbor press, then press in the bushing so the outside edge of the bushing is .005"-.015" recessed into the end of the rocker arm. A socket with a slightly smaller O.D. than the bushing will work as a driver. See **Picture 2**.



Picture 2

- b. Finish machine to .5546"-.5559" per the honing/reaming notes at the beginning of these instructions.
- c. Wash rocker arms clean of all machining residue.

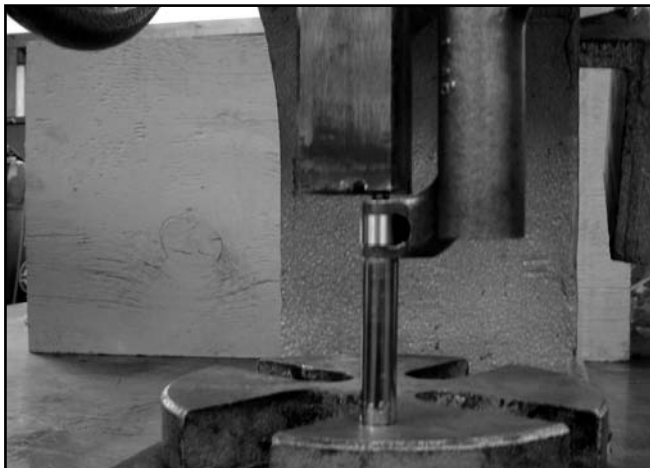
**B. Remove and install retaining clips, pin, and roller.**

**NOTE:** Pin is a press fit in rocker arm.

- 1. Pin and roller disassembly.
  - a. Remove outer retaining clip by grinding end of pin flush to the retaining ring.

**NOTE:** Use care not to nick rocker arm with grinding wheel. A nick could cause a stress riser leading to rocker arm failure.

- b. Press old pin from rocker to remove roller.
- 2. Pin and roller assembly
  - a. Position new roller in fork of rocker.
  - b. Press new pin into place using arbor press or bench vise. **See Picture 3.**



**Picture 3**

- c. Press retaining clip over end of pin and into grooves. A small socket will work as an installation tool. One side of clip has a slightly rounded inside edge. Locate the rounded edge facing down towards pin. Align components carefully in vise jaws before pressing retaining clip squarely onto end of pin. **See Picture 4.**

**NOTE:** Clips are very brittle. Do not force clip over pin, or press on at an angle. Do not use a clip damaged in the installation process.



**Picture 4**

- d. Roller should move freely on pin after clips are installed.

**NOTE:** Apply assembly lube to bushings, pins, and rollers before installing rockers.



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