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## Installation Instructions: S&S® Breather Reed Valve for 1993-1999 Big Twin

### 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 effect 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 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 inhaled. Run motorcycle in a well ventilated area where fumes can dissipate.

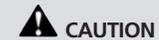
### IMPORTANT NOTICE:

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.

**⚠ WARNING**

Be sure to disconnect the battery before performing any service work on your motorcycle.

The crankcase breather reed valve replaces the stock rotary breather valve in your 1993-1999 big twin engine. It requires no timing or alignment for installation and is available in an oversized (+.30") for engines with damaged breather bores.



Picture 1

The kit includes the breather valve and a spring. Be sure not to lose the spring as the valve will not work properly without it.

**⚠ CAUTION**

Do not attempt to install the breather valve without taking the adjustment out of your pushrods (adjustable type) or removing the rocker boxes and pushrods (non-adjustable type).

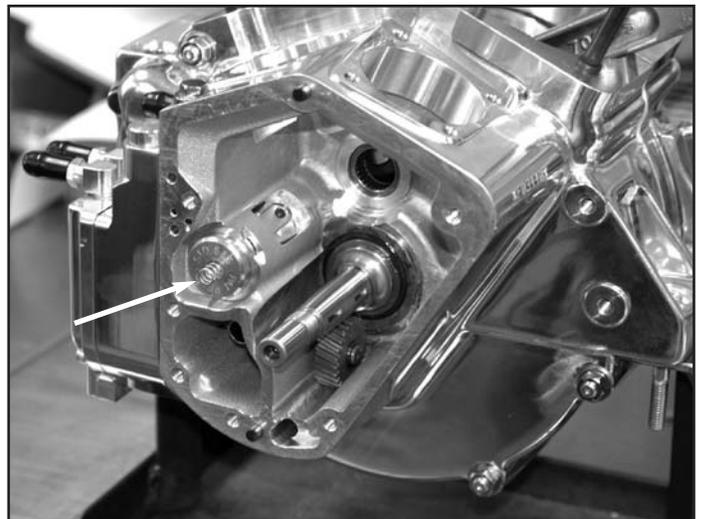
1. Start the installation by disconnecting the battery to prevent the engine from accidentally starting.
2. You need to remove the pressure on the tappets and cams by loosening the adjustment in your pushrods.
3. If you do not have adjustable pushrods, be sure to refer to your factory service manual for the proper instructions on how to remove the rocker boxes and pushrods from your engine.
4. Place a small oil container under the cam cover. Next, loosen the bolts that hold the cover in place. Use a suitable cam cover remover to pull the cover off and let the oil drip into the container.
5. Remove the old rotary breather gear and inspect the bore for gouges and scrapes. If you find any damage you may need to machine the chamber and install the oversized part, 31-2100.

6. Put a small dab of grease on the spring and insert it into the breather valve end.



Picture 2

7. Slide the breather valve into the breather chamber.
8. Be sure the spring stays in place during the installation as shown in the photo below.



Picture 3

9. Replace the gasket and reinstall the cam cover making sure the spring stays in place on the breather valve.
10. Readjust your pushrods or reinstall them as required from the above steps.

**NOTE:** The breather reed valve is not compatible with 1984-'92 case breathing engines. The breather reed valve should only be used in head breathing applications.