



## Installation and Jetting Instructions for S&S Super E and G Series “Shorty” Carburetors For 1999–’06 Harley-Davidson® Big Twins

### 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.



#### 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:

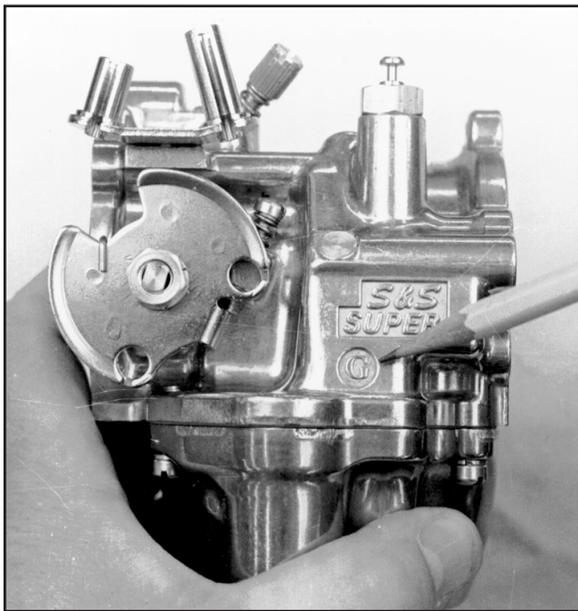
- (1) S&S shall have no obligation in the event an S&S part is modified by any other person or organization.
- (2) S&S shall have no obligation if an S&S part becomes defective in whole or in part as a result of improper installation, improper maintenance, improper use, abnormal operation, or any other 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® Super E and G Shorty carburetors are butterfly type carburetors with fully adjustable idle mixture and circuit and changeable mid range and high speed jets. The high speed circuit features a changeable air bleed. Both carburetors also feature an adjustable accelerator pump and variable enrichment/fast idle device for improved throttle response, engine starting and warm ups.

The Super E has a 1.875" (47.6mm) bore and 1.563" (39.6mm) venturi (or 1.662"/42.2mm for the increased venturi versions). It is identified by an "E" cast into the throttle linkage side of the body below the letters "S&S SUPER". The Super E is recommended for use on 111" or smaller displacement big twin or Sportster® model.

The Super G has a 2.063" (52.3mm) bore and 1.750" (44.5mm) venturi (or 1.865"/47.4mm for the increased venturi versions). It is identified by a "G" cast into the carb body. See **Picture 1**.



**Picture 1**

The Super G is recommended for use on modified engines of 100 cubic inches or more. While both carburetors can be made to work on most engines, the Super G is not recommended for small, low compression engines. If there is doubt as to which carburetor to use, S&S suggests the Super E.

### IMPORTANT NOTES

- Recommended for Racing Only - S&S Super E & G carburetors covered by these instructions are not legal for use in California on motor vehicles operated on public highways or in other states where similar pollution laws apply. The user shall determine the suitability of the product for his or her use and shall assume all risk and liability in connection therewith.
- All manufacturer warranties become void if any part of the carburetor is polished, chrome plated or otherwise altered.

### THROTTLE REQUIREMENTS

*NOTE: S&S Super E and G carburetors require the use of a two cable, pull open - pull closed throttle assembly. S&S offers these throttle assemblies but does not include them with any carburetor kit because of the multitude of chassis designs and fitment requirements.*



### WARNING



**Single, braided wire cable throttle mechanisms cannot mechanically close the throttle. If throttle inadvertently sticks in open position, loss of control of motorcycle and personal injury to operator or others may result.**

Big twins from 1999 to present have a two cable throttle system designed for the stock, constant velocity (CV) type carburetor. These cables can be installed on the S&S Super E or G throttle linkage with no cable modification.

### CARB INSTALLATION

Read instructions thoroughly to familiarize yourself with all procedures before beginning installation.

*NOTE: Installation of S&S® Super E and G carb kits on certain models is easier with gas tanks removed. Some owners may elect to perform installation without removing gas tanks. This is left to individual discretion. If installer elects to remove tanks or other stock parts, S&S recommends referring to appropriate Harley-Davidson® service manual for correct removal procedure as necessary.*

1. Remove Old Carburetor And Manifold
  - a. Shut off fuel petcock and disconnect battery.
  - b. Remove air cleaner assembly. Drain fuel from existing carburetor. Remove carburetor, manifold, choke cable and any carburetor mounting hardware.



### WARNING



- Gasoline is extremely flammable and explosive under certain conditions. Do not smoke around gasoline. Gasoline fumes are toxic when inhaled. Perform installation in a well ventilated area away from open flames or sparks. Any gasoline leak or spill constitutes a health and fire hazard.
- If motorcycle has been running, wait until engine and exhaust have cooled to avoid getting burned during installation.
- Electrical sparks can ignite explosive gasoline fumes. Failure to disconnect battery while working on motorcycle can also result in inadvertent engagement of starter and personal injury.

### NOTES

- Removing and tightening hard to reach Allen bolts like carb-manifold mounting bolts and manifold flange bolts can be greatly simplified by using some special tools. The S&S rocker cover wrenches work very well for this application. See **Picture 2**.
- Allen ball-end drivers are also very helpful, and are available at most automotive and tool supply houses. See **Picture 3**. As an alternative, standard hex wrench can be shortened for convenience.



Picture 2

*NOTE: Fast idle lever screws must not be over tightened. Threadlocker or other thread locking compound may be used sparingly on threads to prevent screws from vibrating loose.*

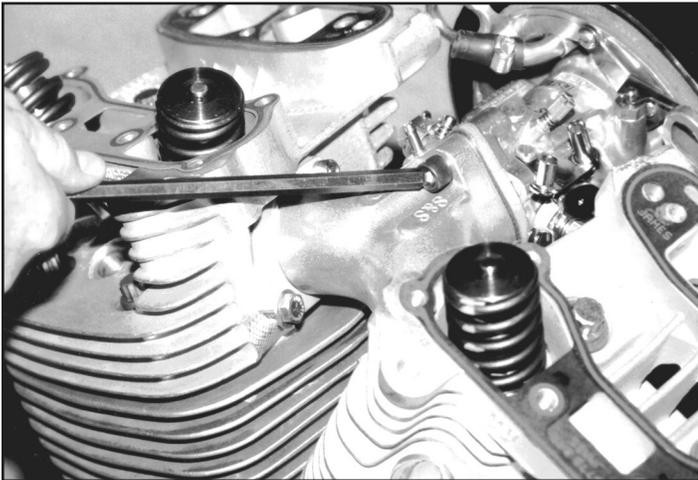
**CAUTION**

**Over tightening fast idle lever screws may damage backplate.**

- b. Install plugs into both holes in air cleaner backplate as shown in **Picture 4**.



Picture 4



Picture 3

### 3. Throttle Preparation

*NOTE: Throttle grip assembly must be assembled correctly and work freely to prevent possible sticking during operation. Throttle must snap closed when released. Cable routing must be free of tight bends to minimize friction between cable and housing.*

**WARNING**

**If throttle does not work freely, it may inadvertently stick open possibly causing loss of control of motorcycle and personal injury to operator or others.**

- a. Loosen cable freeplay adjustment locknuts and thread adjusting screw so half of threads are exposed. See **Picture 5**.

### 2. Prepare Air Cleaner Backplate

- a. Assemble fast idle mechanism as shown in **Figure A**. On current backplates the pivot point for the enrichener does not have a screw holding it; a boss has been cast onto the backplate to replace this

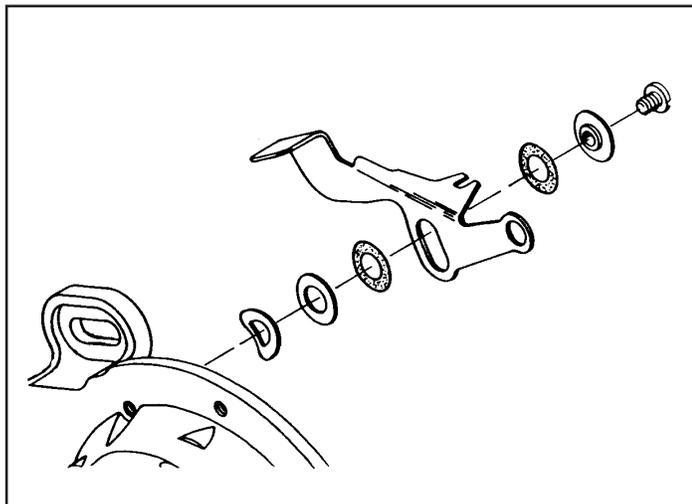
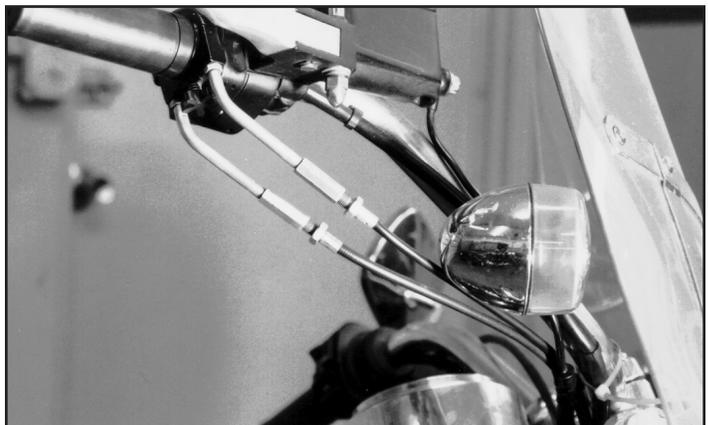


Figure A



Picture 5

- b. Clean any grease and dirt off cables, cable housings and cable fittings.
- c. Apply light coat of cable lubricant to cables and fittings.
- d. Install New Manifold and Mounting Hardware

*NOTE: When applicable, all carburetor mounting brackets and hardware supplied in kit must be installed to secure carburetor and air cleaner backplate assembly or air horn rigidly to engine.*

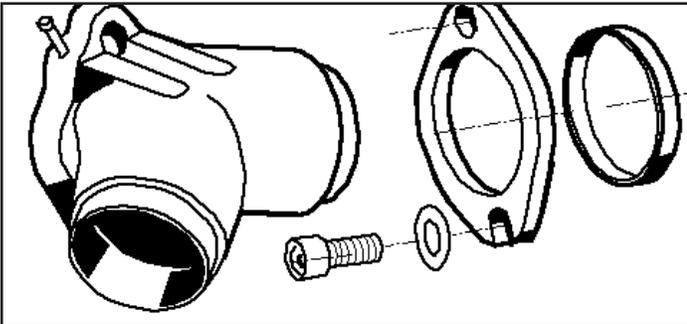
**CAUTION**

- **Improperly mounted carburetor could loosen unexpectedly, resulting in air leak, poor performance and possible damage to engine or carburetor.**
- **Incorrect combinations of mounting hardware may cause mounting bolts to bottom out in holes or inadvertently contact other parts possibly causing damage to engine or carburetor components.**

**WARNING**

**Improperly mounted carburetor may break free in event of collision or other vehicle accident creating a fire hazard with potential personal injury to operator/others.**

- 4. Clean intake ports on cylinder heads to insure proper manifold to head seal.
- 5. Install S&S® intake manifold. For manifold flange and seal assembly order, See **Figure B**. Note that bevel side of seal goes toward recess in manifold flange, flat side of seal against head. Do not completely tighten manifold clamps or flange bolts at this time.



**Figure B**

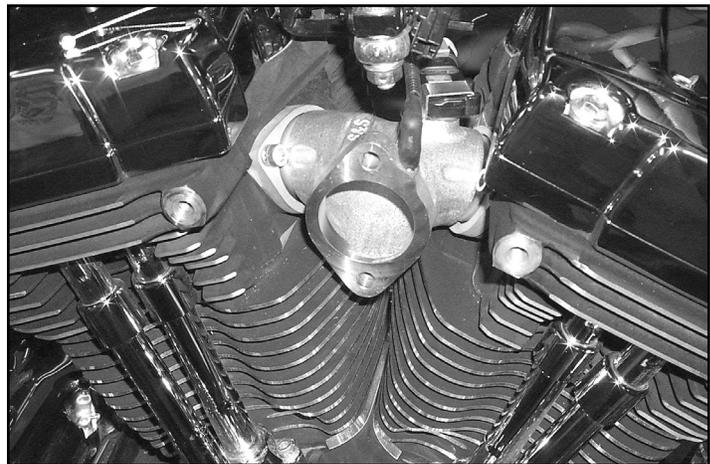
- 6. Install stock map sensor in S&S manifold. See **Picture 6**. Secure sensor to manifold with stock clip and screw. See **Picture 7**. Install manifold on engine with stock hardware. Connect fuel petcock vacuum hose to manifold fitting and connect wiring harness to map sensor. See **Picture 8**.



**Picture 6**



**Picture 7**



**Picture 8**