



Installation Instructions: S&S Throttle Hog Throttle Bodies For 2001 Harley-Davidson® Softail® Models and All 2002-'05 Fuel Injected Big Twins

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.

**NOT LEGAL FOR SALE OR USE IN CALIFORNIA ON
ANY POLLUTION CONTROLLED MOTOR VEHICLE.**

Not legal for sale or use on any EPA pollution controlled motor vehicle.

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.

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.

Installation Procedure

1. Remove the fuel tank and top motor mount. Refer to the factory service manual for the particular bike for the correct procedure.
2. Remove the stock throttle body from the engine, and remove the stock fuel injectors, MAP sensor, Air Temp Sensor, Throttle Position Sensor (TPS) and IAC motor. Set these parts aside for re-use.
3. Clean the manifold mounting surface of the cylinder heads to assure a positive manifold seal.
4. Prepare Throttle Hog throttle body for installation.
 - a. Inspect the stock fuel injector o-rings to ensure that they are reusable. Replace if needed. Lubricate o-rings with engine oil or assembly lube, and insert into stock fuel rail. See **Picture 1**.



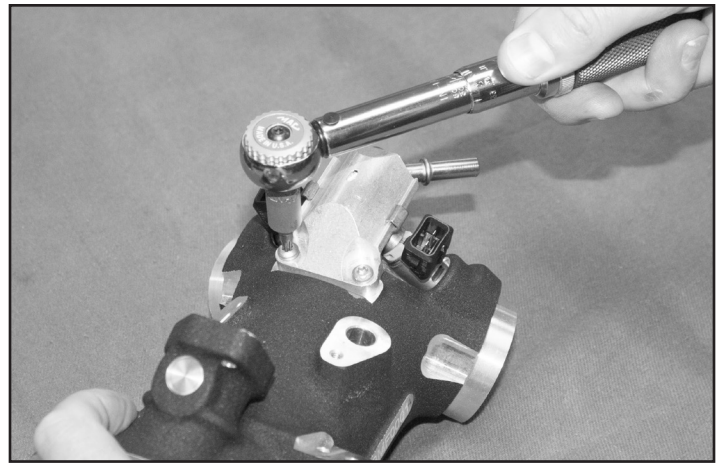
Picture 1

NOTE – Stock fuel injectors are generally adequate for stock displacement engines, but large displacement engines may require larger fuel injectors.

- b. Install the fuel rail on the throttle body by pressing the fuel injectors into the fuel injector ports on the Throttle body.
- c. Install the injector retaining clips and the fuel line retaining clip. Use red thread locker on the fuel line retaining clip screw and torque to 25 in-lb. See **Picture 2**. Fasten the fuel rail to the throttle body with the stock mounting hardware. Use red thread locker and torque to 25 in-lb. See **Picture 3**.



Picture 2



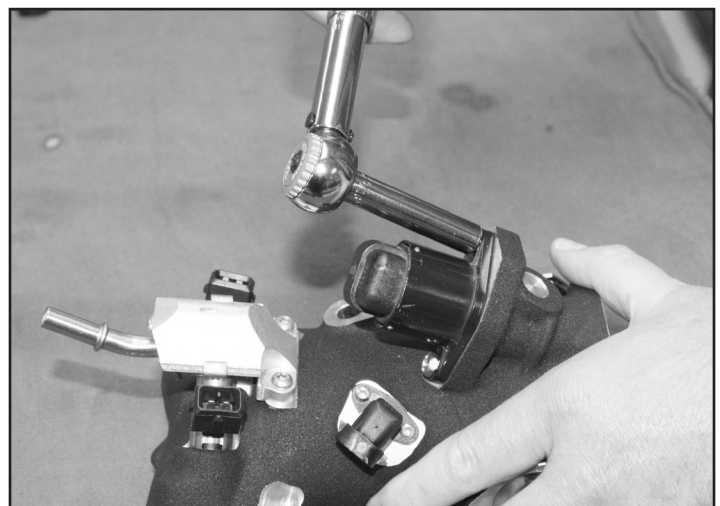
Picture 3

- d. Inspect the air temperature sensor gasket for damage. Replace as needed. Apply blue thread locker the sensor retaining screw and install sensor in throttle body. Tighten fastener to 10 in-lb. See **Picture 4**.



Picture 4

- e. Inspect the IAC motor o-ring. Replace if damaged. Lubricate the o-ring and insert the IAC into the mounting hole with the connector facing the front cylinder head. Apply blue thread locker to the supplied mounting hardware. Install and torque to 25 in-lb. See **Picture 5**.



Picture 5

- f. Install stock Throttle Position Sensor (TPS) on the throttle shaft. Apply blue thread locker to the supplied mounting hardware and tighten to 25 in-lb. See **Picture 6**. TPS is spring loaded and will center itself in correct position.



Picture 6

NOTE - Do not install the MAP sensor at this time.

- g. Apply blue thread locker to the throttle cable guide mounting screws, and install cable guide on the throttle body. Make sure the cable guides are aligned with the throttle spool before tightening the screws. See **Picture 7**.



Picture 7

NOTE – Manifold flange screws must be installed before flanges are installed on the Throttle Hog throttle body, because the larger size does not allow adequate clearance to install the screws after the flanges are installed.

- h. Install provided steel manifold flanges and manifold seals. Flanges are marked F & R for front and rear. Make sure to use the correct flange on the intake runners. Place a manifold screw through the top (unslotted) hole of the manifold flange, and install flange with the flat side toward the manifold and with the slotted screw hole facing down. Install seal with the beveled

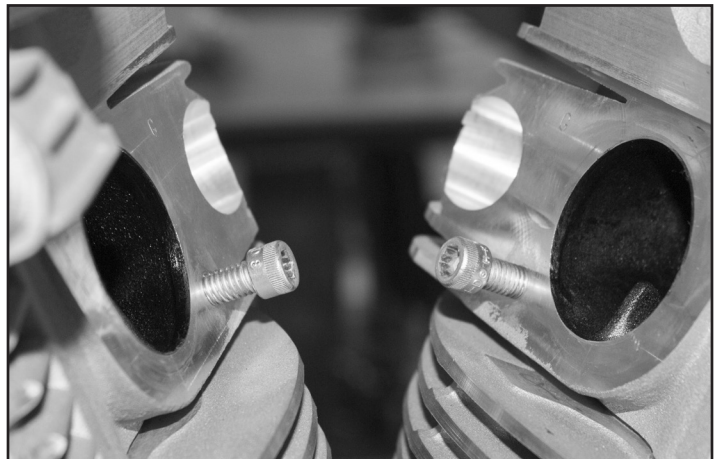
side toward the flange, and the flat side outward to contact the cylinder head. See **Picture 8**.



Picture 8

5. Install throttle body

- a. Reinstall stock manifold screws in lower manifold screw holes in the manifold mounting surface of the cylinder heads. Leave enough room for the manifold flanges to fit under the heads of the screws. See **Picture 9**.



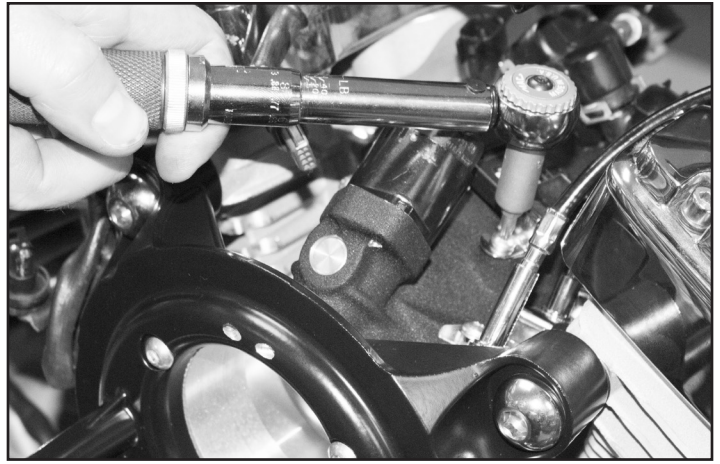
Picture 9

- b. Hold the Throttle Hog in place between the heads and slide the slotted ends of the manifold flanges under the heads of the lower screws. See **Picture 10**.



Picture 10

- c. Thread the top manifold flange screws through the flanges into the heads. Using a long ball-end Allen driver, snug, but do not tighten.
- d. Install throttle cables in the throttle spool and cable guides. Cable with the spring over the inner wire is the closing side cable and goes in the longer of the two cable guides.
- e. Install the air cleaner back plate according to the manufacturer's instructions provided with the air cleaner kit.
- f. Using a long ball-end Allen driver, tighten top manifold screws. Tighten the bottom screws with a short L-shaped Allen wrench.
- g. Adjust throttle cables to take up excess slack, but ensure that cables are loose enough to allow the throttle to snap back to the closed position any time the throttle is released.
- h. Lubricate the seal on the MAP sensor and install in the manifold end of the throttle body. Apply blue thread locker to the provided retaining screw. Install the provided retaining bracket and tighten screw to 20 in-lb. See **Picture 11**.



Picture 1

- i. Plug wiring connectors into sensors and IAC motor, and push fuel line on to inlet tube until the locking connector snaps into place.
6. Complete installation of the air cleaner, replace top motor mount and re-install the fuel tank.

Replacement Parts

1. Throttle Body, Assembly, Cable Operated, S&S® 2002-2005 bt NA
2. Clamp, Kit, Hold-Down, MAP Sensor.....160-0169
3. Flange, Set, Packaged, 2002-2005 bt.....160-0175
4. Guide, Assembly, Throttle Cable, VFI, S&S® 66 mm160-0172
5. Gasket, Throttle Body
58mm.....160-0050
66mm.....160-0035
6. Screw,Torx,M4 x 12mm,Zinc,Steel.....50-0358-S
7. Screw, HH, #10-24 x 1/2", Zinc, Steel50-0356-S

