

**Instruction 51-1105
4-14-06**

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Because every industry has a leader

Assembly Instructions: Box Assembly #50-9581 S&S® Engine Shipping Crate

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® engine shipping crates are designed to provide a safe, secure method for packing and shipping S&S engines. S&S Cycle assumes no liability for damages incurred during shipping to or from S&S, however, and strongly recommends that contents be insured for an appropriate amount. Should damage occur, the carrier must be notified immediately.

Assembly of an engine shipping crate is simple and straightforward as explained in the following instructions. Prior to assembly, parts should be identified according to the Bill of Materials. It will be helpful to read the following instructions before proceeding with assembly.

⚠ WARNING

Due to heavy weight of assembled engine, care must be taken to avoid back or other injury while placing engine in crate or when moving crate. S&S recommends that a hoist be used if possible.

Tools Required

Ratchet and 9/16" socket, 9/16" open end wrench, and portable drill with 3/8" bit are required for assembly.

Assembly

1. Identify all parts and hardware according to Bill of Materials.

NOTE - 2 x 4 x 20" board #50-9889 is attached to inside of crate.

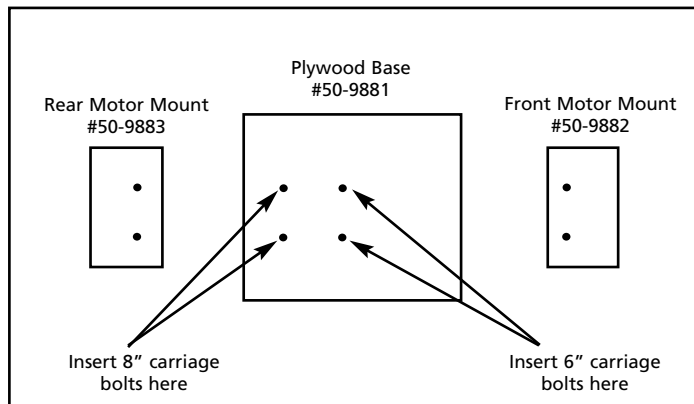


Illustration 1

2. Attach metal motor mount #50-9884 to bottom of crankcase rear motor mount with 3/8 x 3" bolts #50-0002, 3/8" washers #93-4004 and 3/8" nuts #50-5035.
3. Attach metal top bracket #50-9890 to cylinder heads with 3/8 x 1-1/4" bolts # 93-4006 and 3/8" washers #93-4004.

4. Assemble wooden platform as follows:

- a. Rear motor mount. Install 5/8" washer #50-7030 on each 3/8 x 8" carriage bolt #50-0001 and pass bolts through holes closest to side of 1/2 x 24 x 24" plywood base #50-9881. Slide 2 x 6 x 6" wooden block #50-9883 over carriage bolts.

NOTE- Holes in blocks #50-9882 and #50-9883 are drilled off-center. Install blocks so sides closest to holes face center of box.

See illustration 1.

- b. Front motor mount. Install 5/8" washer #50-7030 on each 3/8 x 6" carriage bolt #50-0000 and pass bolts through remaining holes in plywood base. Slide 2 x 4-1/4 x 6" wooden block #50-9882 over bolts. See note above regarding block placement.

5. Place plastic bag #50-9103 closed end down over carriage bolts and front and rear motor mounts on wooden platform.

6. Using a hoist or other means to avoid personal injury, place engine on platform, guiding holes in steel plate #50-9884 over 8" bolts, and holes in front crankcase motor mount over 6" bolts. Place 3/8" washer #93-4004 over end of each bolt, followed by 3/8" nut #50-5035. Tighten all nuts securely.

⚠ WARNING

Lifting heavy objects can cause permanent, disabling personal injury. S&S recommends using a hoist or other suitable means to lift and move engine and assembled crate.

7. Fold cardboard liners and place in box, one on each side of engine.
8. Fit 2 x 4 x 20" board #50-9889 across engine and into notches in liner. From below, insert pencil through hole in steel bracket and mark board.
9. Remove board #50-9889 from crate, drill 3/8" hole through mark and replace board in crate.
10. Insert 3/8 x 3" bolt through holes in board #50-9889 and bracket #50-9890, install remaining 3/8" washer and nut, and tighten securely.
11. Close plastic bag around engine and seal.
12. Attach ends of board #50-9889 securely to cardboard crate. S&S uses a power stapler with heavy duty 3/4" staples. Heavy screws or lag bolts with washers to prevent bolt heads from pulling through cardboard are acceptable alternative.
13. Close top of cardboard box and secure with construction staples or heavy packing tape.

Bill of Materials - #50-9581 Box Assembly

Box (1)	#50-9580	Screw, HHC 3/8-16 x 3" (2)	
Box liner (2)	#50-9880	Rear Motor Mount Crankcase	#50-0002
Plywood Base, 1/2 x 24 x 24" (1)	#50-9881	Nut, 3/8-16 (6)	#50-5035
Mount, Front Motor (1)	#50-9882	Washer, 5/8" ID x 1-3/4" (4)	#50-7030
Mount, Rear Motor (1)	#50-9883	Plate, Motor Mount (1)	#50-9884
Board, 2 x 4 x 20 (1)	#50-9889	Bracket, Top 1/8 x 3/4 x 9"	#50-9890
Bag, Clear Poly. 30 x 42" x 3 mil (1)	#50-9103	Washer, 3/8" ID (8)	#93-4004
Screw, Carriage 3/8-16 x 6" (2)		Screw, HHC 3/8-16 x 1-1/4" (2)	#93-4006
Front Motor Mount	#50-0000		
Screw, Carriage 3/8-16 x 8" (2)			
Rear Motor Mount	#50-0001		



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