



**Instruction 51-1042**

**04-12-21**

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## Installation Instructions: S&S® Super Stock® Cylinder Heads for 1984-1999 Harley-Davidson® Big Twin and 1986-2003 Sportster® Models

### 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.

Installation of an S&S Super Stock cylinder head kit is easy and can be performed by any repair shop equipped to do Harley-Davidson® engine overhauls. No special tools other than those used in normal overhaul repair work are required. Super Stock heads require special S&S pistons and intake manifold, which may be purchased separately.

#### NOTES:

- Not all parts in kit will be used.
- Special pistons with a dome shaped to match the shape of combustion chamber are required. Not compatible with stock or other flat-topped pistons. Pistons must be purchased separately.
- Due to larger 1.780" intake port diameter, a special S&S manifold is required. Manifold must be purchased separately.
- The exterior dimensions of these heads are similar to stock, - no clearancing is normally required when replacing stock heads on engines installed in stock chassis
- Compatible with stock components such as exhaust pipes, rocker covers, and rocker arms. Also compatible with most aftermarket roller rocker arms.
- Compatible with cams of up to .640" lift
- Adjustable pushrods are required
- S&S Super Stock 3½" bore pistons are designed to replace stock 1200cc and 1340cc pistons without requiring flywheel rebalancing. Rebalancing is recommended when converting 883cc and 1100cc stock bore Sportster® models to 3½" bore.
- Technician must ensure the engine is in generally good condition before proceeding with installation. If engine is in need of repair, installation should be done as part of an engine overhaul.

#### Installation Instructions

Read instructions thoroughly before starting work. When they are completely understood proceed with installation.

##### 1. Following procedures outlined in appropriate Harley-Davidson® service manual, prepare motorcycle for top end service.

- a. Disconnect battery
- b. Drain all gasoline from gas tanks
- c. Remove gas tanks and any other parts needed allow top end service.

**WARNING**  
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.

##### 2. Disassemble top end.

Remove carburetor, rocker covers, pushrods and pushrod tube assemblies, cylinder heads cylinders and pistons.

##### 3. Thoroughly clean and inspect all parts that are to be reused.

Any parts that show signs of wear or damage should be replaced.

**4. Although stock pistons will not be reused, inspect used pistons to verify piston alignment in cylinder bore.** Observe pistons for wear spots on sides above top compression ring. If either side near wristpin is worn clean while side opposite is carboned up, piston was not running straight and true in cylinder bore. Piston will also generally show diagonal wear pattern on thrust faces of skirts and possibly signs of connecting rod to

wristpin boss contact inside piston. If any of these conditions exist, they should be corrected before proceeding with cylinder head installation.

##### 5. Fit pistons to cylinders according to specifications and procedures in S&S Piston Instruction sheet 51-1028, included in the piston kit.

#### NOTES:

- For maximum piston and ring life, fit pistons using appropriate close fit dimensions. Close fit requires strict adherence to new engine break-in procedures.
- For immediate drag strip use, fit pistons using appropriate loose fit dimensions. Attempt to break in rings and pistons with 50 easy miles if possible. Piston and ring life will be reduced when using loose fit dimensions.
- It is recommended that flywheels in 883 & 1100 Harley-Davidson® Sportster® models be rebalanced. 1200cc models do not require rebalancing.

##### 6. Thoroughly clean cylinders, pistons and all parts required to reassemble engine.

Use lacquer thinner on crankcase, cylinder, and cylinder head gasket surfaces.

- WARNING**
- Some solvents, degreasers and other chemicals are harmful to skin, eyes and other body parts. Many items are flammable and present a fire hazard. Read manufacturer's instruction label for proper use. Use in well ventilated area and wear protective clothing when using them to avoid personal injury.
  - Compressed air and particles dislodged by compressed air are harmful to eyes and body. Wear protective goggles when using compressed air and always direct air stream away from body parts such as hands and eyes. Never direct compressed air toward other people.
7. **Clean threads of head bolts and cylinder studs.** Spin each head bolt down on its respective stud to be sure threads are clean and free of contamination. If abnormal resistance is encountered, the cause must be determined and eliminated.
  8. **If removed, reinstall cylinder head alignment dowels in cylinder.** (Do not re-use any dowels that are damaged, or have flanges or an o-ring groove machined into them.)
  9. **Ensure that the head gaskets are correct for the application.** Do not use 3½" stock bore gaskets for 3⅝" big bore engines, or vice versa.

#### NOTES:

- Depending on the design of the head gasket used, an o-ring may or may not be required around the oil return dowel. If the gasket is designed for an o-ring, make sure you install the correct o-ring for the application.
- There are two sizes of alignment dowel o-ring commonly used: .070" diameter o-rings are to be used with .045" thick gaskets. .0825" diameter o-rings are to be used with .0625" thick gaskets.
- S&S head gaskets do not require o-rings. S&S .045" thick head gaskets are recommended for Super Stock® cylinder heads.

**CAUTION**  
Using thin o-rings with thick gaskets, thick o-rings with thin gaskets or using o-rings on gaskets not designed to use them, may cause oil leaks or possible ruptured head gaskets around line-up dowels due to incorrect o-ring compression.

**10. Install base gaskets over cylinder studs on crankcase.**

**11. Install pistons on connecting rods, but do not install piston rings or wristpin clips.**

**12. Slide cylinders over pistons without rings.** Secure each cylinder with a nut on one cylinder stud.

**13. Rotate flywheels one full revolution to check for contact between pistons and flywheels, and between the piston skirts at the bottom of the stroke.** If any contact or resistance is encountered, the cause must be determined and corrected.

**14. Rotate flywheels so front piston is positioned at top dead center.** Note where piston deck is positioned in relationship to head gasket surface. The piston deck should be flush with or slightly below the top surface of the cylinder (with a .020" thick cylinder base gasket in place). After installing heads, there should be .045" piston-to-head clearance at TDC. The clearance is provided by the thickness of the head gasket used. **See Figure 1, below** to identify piston deck and piston dome.

**15. Repeat procedure to check rear piston to cylinder gasket surface relationship.**

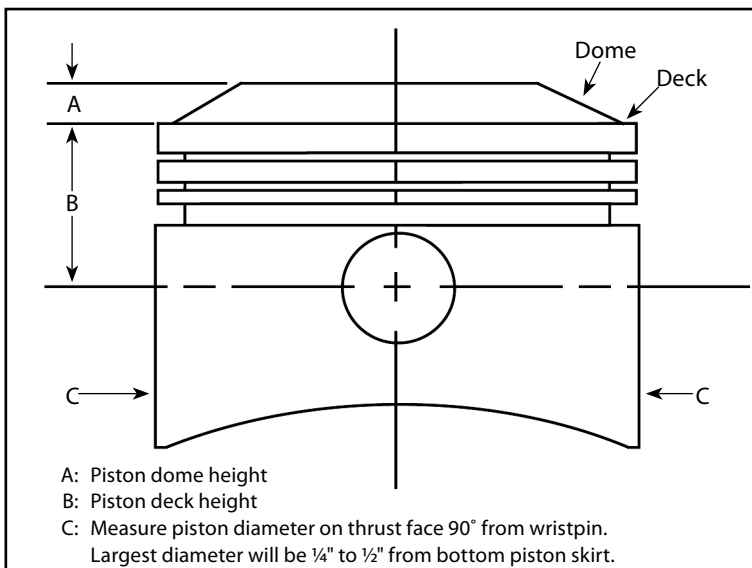
**NOTE:** Insufficient clearance between piston skirts, pistons and flywheels, piston domes and cylinder heads, or piston domes and valves will cause damage to pistons, heads and/or valves. It is the engine builder's responsibility to check for adequate clearances. S&S® considers checking and establishing all running clearances as standard engine building practice that must be performed during engine assembly. Engine failure due to improper clearances between moving parts is not covered under warranty.

**CAUTION**

**Contact between moving engine components may cause damage or destruction of the parts involved and produce abrasive particles which may cause damage or premature wear to other engine components.**

**16. Remove cylinders and install piston rings and wristpin clips per S&S piston instruction sheet 51-1028.**

**17. Coat piston skirts with engine oil or assembly lube and install cylinders using a ring compressor to ensure rings are not damaged during installation.**



**Figure 1**

**18. Place head gaskets on cylinder.** If required, install o-rings over cylinder head alignment dowels. Gaskets are to be installed clean and dry. Do not use gasket-sealing compounds on cylinder head gaskets.

**19. Install heads on cylinders.**

**20. Place one or two drops of oil on threads of each head bolt and spin head bolts on to appropriate cylinder studs.** Oiling the threads reduces friction and insures accurate and consistent torque readings.

**21. Tighten head bolts in stages.** If using S&S or stock crankcases, follow the torque and sequence chart. **See Figure 2, below.** If using other aftermarket crankcases, contact the manufacturer for recommended head bolt torque specifications.

**NOTE:** Light coating of oil on head bolt threads minimizes friction so torque values are not distorted. Maintaining a good head gasket seal depends on it.

**CAUTION**

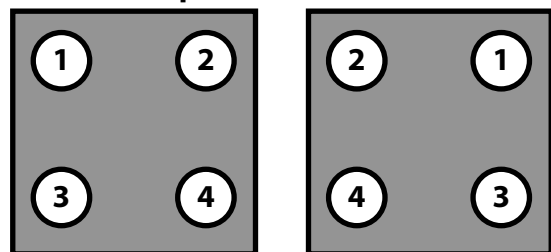
**Improper torquing sequence and/or head bolt torque values may cause head gasket failure. Excessive torque values may cause studs to pull out of crankcase.**

**22. Air Cleaner Mounting Holes**

a. For 1984-91 big twin models, install screw thread reducing inserts, part 50-8151, in air cleaner backplate mounting holes in cylinder heads. Threadsert will reduce hole from 1/2"-13 thread to 5/16"-18 thread to accept stock 1984 to '91 air cleaner mounting bolts. If threadserts do not have a locking compound preapplied, Loctite® or equivalent thread locking compound should be applied sparingly to threads during installation. Threadserts with preapplied thread locking compound should be installed in desired position and left in place. Surface of insert should be just slightly below machined surface of head so backplate rests against head and not insert. **See Picture 1, next page.**

**NOTE:** Screwing threadsert in hole activates preapplied thread locking compound and locks it in position making it difficult to change after compound has set up.

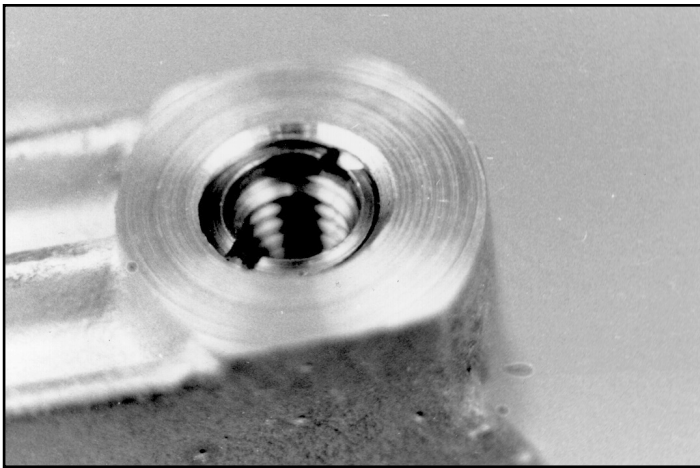
**Top View Driveside**



**Head Bolt Torquing Sequence**

Stage	S&S® Crankcases	Stock Crankcases
Stage 1	8 ft-lbs	7-9 ft-lbs.
Stage 2	18 ft-lbs.	12-14 ft-lbs.
Stage 3	Turn Additional 90°	Turn Additional 90°

**Figure 2**



Picture 1

**CAUTION**

**If threadsert protrudes above machined surface of head, it may damage air cleaner backplate.**

- b. For 1992-99 engines, DO NOT install the thread reducing inserts. Heads are machined with the correct 1/2"-13 thread for air cleaner mounting bolts and vent fittings.

**23. Finish Assembling Top End**

- a. Install rocker covers, rocker arms, and pushrods per Harley-Davidson® service manual guidelines or instructions provided by aftermarket manufacturer.
- b. Replace all components removed in preparation for top end service according to Harley-Davidson service manual or instructions provided with any aftermarket products installed

**NOTE:** Special S&S manifold must be used with S&S heads because intake port diameters of S&S heads are larger than stock. Special S&S manifold requires o-ring seals which also have larger than stock diameter to fit O.D. of manifold runners. These o-rings, S&S part 16-0235, cannot be used in stock applications.

**24. Initial start up – Sealing Head Gaskets**

- a. Run engine approximately one minute at 1250-1750 rpm. DO NOT crack throttle or subject to any loads during this period as head gaskets are susceptible to failure at this time. During this time check to see that oil pressure is normal, that oil is returning to the oil tank, and that no leaks exist.
- b. Shut off engine and thoroughly check for any leaks or other problems. Let engine cool to the touch
- c. After engine has cooled, start up again and allow the motor to build some heat. Engine should be run no longer than three to four minutes. When the cylinders become warm/hot to the touch (approximately 150°) shut the motor down and let it cool to room temp. Follow the same cautions as for the initial start-up, and continue to watch for problems.
- d. Repeat this procedure 3 or 4 times. Each successive time it should take slightly longer to warm up and you can increase the temp slightly each time (+10°). You can be more liberal each time with the rpm, gently vary rpm continuously from idle up to 2500 rpm in the final cycle. Don't be too concerned with final carb settings at this time because idle speed and mixture cannot be correctly set until the motor reaches full operating temperature. The motor should not reach that temperature during these cycles. Do not allow engine temperature to become excessive. After the motor has cooled to room temperature for the final time you are ready to start the 1000 mile engine break-in process.

**25. Break-In Procedure**

- a. The first 50 miles are most critical for new rings and piston break-in. Engine damage is most likely to occur during this period. Keep heat down by not exceeding 2500 rpm. Avoid lugging the motor, riding in hot weather or in traffic. Vary the engine speed. Do not lug the engine. We recommend changing the oil at 50 miles.
- b. The next 500 miles should be spent running engine no faster than 3500 rpm or 60 mph. Avoid continuous steady speeds, and do not lug the engine. Vary engine rpm. We recommend changing the oil again at 500 miles.

S&S® Super Stock® Piston And Cylinder Head Information 3 1/2" and 3 5/8" Bore Engines										
Engine Specifications					Compression Ratio/Piston Dome Volume					
Displacement	Stroke	Bore	Cylinder Length	Piston Deck Height	Standard Compression	Dome Volume	Intermediate Compression	Dome Volume	High Compression	Dome Volume
<b>Harley-Davidson® Big Twin Models</b>										
80"	4 1/4"	3 1/2"	5.550" (Stock)	1.3750"	10:2	23cc	—	—	—	—
89"	4 5/8"	3 1/2"	5.550" (Stock)	1.1875"	10:1	15cc	—	—	12.2:1	31cc
88"	4 1/4"	3 5/8"	5.375"	1.200"	9.4:1	11cc	10.2:1	18.2cc	12.2:1	33cc
93"	4 1/2"	3 5/8"	5.500"	1.200"	9.9:1	11cc	10.7:1	18.2cc	12.9:1	33cc
96"	4 5/8"	3 5/8"	5.565"	1.200"	10.1:1	11cc	11:1	18.2cc	13.2:1	33cc
98"	4 3/4"*	3 5/8"	5.625"	1.200"	10.4:1	11cc	11.3:1	18.2cc	13.6:1	33cc
103"	5"*	3 5/8"	5.750"	1.200"	10.9:1	11cc	11.8:1	18.2cc	14.2:1	33cc
<b>Harley-Davidson® Sportster® Models</b>										
1200cc	3 13/16"	3 1/2"	4.650"	1.1875"	9.8:1	—	—	—	—	—
89"	4 5/16"	3 5/8"	5.087"	1.200"	9.4:1	11cc	10.3:1	18.2cc	12.2:1	33cc
103"	5"	3 5/8"	5.750"	1.200"	10.9:1	11cc	11.8:1	18.2cc	14.2:1	33cc

Note: All Super Stock® cylinder heads have a XXcc combustion chamber volume



## CAUTION



**Lugging or running engine prematurely at sustained high rpm may result in damage to pistons and other engine components. S&S® voids its guarantee if engine is not broken in properly.**

- c. For the balance of the first 1000 miles the motor can be run in a normal but conservative manner. You can be more liberal with the rpm range and motorcycle can be operated at normal highway speeds. Avoid overheating or putting any hard strain on the engine: no drag racing, dyno runs, excessive speed, trailer towing or sidecar operation.
- d. After 1000 miles, verify carburetor jetting and adjustment. Change the engine oil. Motorcycle can now be operated normally.

### PERFORMANCE NOTES

#### 1. Ignition Systems

- a. An aftermarket high performance electronic unit is recommended. This allows flexibility in engine timing not possible with stock ignition systems.
- b. Timing - The best performance was achieved with the ignition timing set at 30°-32° total advance for both 3½" and 3⅝" bore engines.



## CAUTION



**Improper ignition timing may cause excessive engine heat which may damage pistons and/or other engine components.**

#### 2. Spark plugs

- a. All S&S Super Stock cylinder heads are machined for 14mm long reach spark plugs. This is the same as stock for big twins, but is different than Harley-Davidson® heads for Sportster® models which use smaller 12mm spark plugs.
- b. Use spark plugs that are compatible with your ignition system. If you are in doubt, most manufacturers can recommend which plugs they prefer you use with their system. We have had good results with Champion RN12YC in most applications.

**3. Carburetion** – Installation of S&S Super Stock cylinder heads is typically accompanied by installation of a performance camshaft, carburetor, and exhaust system. The carburetor should be re-jetted for maximum performance, drivability and fuel mileage.

**4. Compression Ratio** – Compression ratio is determined by the dome volume of the piston. Different pistons are available for most applications to provide a range of compression ratios. See that chart below.

**NOTE: DO NOT** deck Super Stock cylinder heads to increase compression ratio. Piston dome and combustion chamber are very close at TDC and decking heads will likely cause piston to contact the cylinder head.

## S&S® Super Stock™ Cylinder Head Replacement Parts for 1984-'99 Big Twin 3-1/2" To 3-5/8" Bore

<b>1.</b> Cylinder head (See Catalogues)	
<b>2.</b> Valves	
Intake	
2.000" diameter.....	<b>90-2000</b>
2.000" diameter+.005" stem diameter.....	<b>90-2029</b>
Exhaust	
1.605" diameter.....	<b>90-2001</b>
1.605" diameter,+.005" stem.....	<b>90-2030</b>
<b>3.</b> Valve seats	
Intake - 2.000" diameter.....	<b>90-2002</b>
Exhaust - 1.605" diameter.....	<b>90-2003</b>
<b>4a.</b> Valve guide - intake or exhaust	
Standard Diameter .5625/.5620 18112-92	
.....	<b>90-2210</b>
+.001" Diameter .5635/.5630 18130-83C.....	<b>90-2211</b>
+.002" Diameter .5645/.5640 18133-83A, 18133-83D.....	<b>90-2212</b>
+.003" Diameter .5655/.5650 18131-83C.....	<b>90-2213</b>
+.030" Diameter .5925/.5920.....	<b>90-2219</b>
<b>4b.</b> Valve Guide - Powder Metal - Intake/Exhaust	
Standard.....	<b>900-0553</b>
+.001.....	<b>900-0554</b>
+.002.....	<b>900-0555</b>
+.003.....	<b>900-0556</b>
<b>5.</b> Head mount bolt - 3/8"-16 x 1 1/4" 4716W	
each.....	<b>50-0168</b>
<b>6.</b> Flat washer - 3/8"	
Zinc (each).....	<b>50-7051</b>
Chrome (each).....	<b>50-7106-S<sup>±</sup></b>
<b>7.</b> Head bolt assembly - Includes head bolt washer (See Catalogues)	
<b>8.</b> Head bolt washer	
.150" (each).....	<b>50-0418-S</b>
.250" (each).....	<b>50-7091</b>
<b>9.</b> Exhaust port stud 16715-83 (each).....	<b>50-0493</b>
5 pack.....	<b>50-1028</b>
<b>10.</b> Lock washer - 5/16" (each).....	<b>50-7032</b>
<b>11.</b> Nut, HH - 5/16" - 24 7833, 7883 (each).....	<b>50-5023</b>
<b>12.</b> Exhaust pipe gasket 65324-83B, 65324-83A (each).....	<b>106-5029</b>
10 pack.....	<b>93-1072</b>
<b>13.</b> Thread conversion insert 1/2"-13 to 5/16"-18.....	<b>50-8151</b>
<b>14.</b> Intake manifold (See Catalogues)	
<b>15.</b> Screw, manifold mounting	
SH - 5/16"-18 x 1" 3201WA, 2708 (each).....	<b>50-0101</b>
HH - 5/16"-18 x 1" 3987 (each).....	<b>50-0108</b>
<b>16.</b> Washer, flat - 5/16" 6320, 70907-07, 6016, 6702 (each).....	<b>50-7034</b>
<b>17.</b> Flange, manifold mounting	
Front 27009-86A (each).....	<b>16-0232</b>
5 pack.....	<b>16-0600</b>
Rear 27010-86A (each).....	<b>16-0233</b>
5 pack.....	<b>16-0601</b>
Set.....	<b>106-3516</b>
<b>18.</b> O-ring, manifold (each).....	<b>16-0235</b>
10 pack.....	<b>16-0243</b>
<b>19.</b> Head gasket 3 1/2" Bore	
.045" thick (no o-rings required) 16770-84D, 16770-84F	
each.....	<b>93-1011-S</b>
10 pack.....	<b>93-1024</b>
.0625" thick (no o-rings required) 16770-84D, 16770-84F, 10773-85	
each.....	<b>93-1313-S</b>
3 3/8" Bore .045" thick (no o-rings required) (each).....	<b>93-1037-S</b>
10 pack.....	<b>93-1052</b>
.062" thick (no o-rings required) (each).....	<b>93-1016-S</b>
10 pack.....	<b>93-1053</b>
4" Bore	
.045" thick (each).....	<b>93-1040-S</b>
10 pack.....	<b>93-1071</b>
.070" diameter 26432-76A.....	<b>50-8034-S</b>
<b>20.</b> Alignment dowel 16574-99A, 16573-83, 16573-83A (each).....	<b>50-8023</b>
10 pack.....	<b>50-8109</b>
Dowel pin - 1/4" diameter x 1/2" - 4" bore 358, 366 (each).....	<b>50-8022</b>
2 pack.....	<b>50-8022-2</b>
5 pack.....	<b>50-8105</b>
<b>21.</b> Plug, HH - 14mm (each).....	<b>90-4916</b>
2 pack.....	<b>90-4916-2</b>
<b>22.</b> Washer, compression release- 14mm	
.507" x .705" x .047" (each).....	<b>50-7094</b>

### TOP END REBUILD GASKET KITS FOR S&S® ENGINES

Engine Family	Year Group	Bore Size	Part #
V-Series	1984-'99	4"	<b>90-9503</b>
V-Series	1984-'99	3 3/8"	<b>90-9502</b>
SB-Series	1986-'03	4"	<b>90-9503</b>
SB-Series	1986-'03	3 3/8"	<b>90-9509</b>

±  WARNING: Cancer and Reproductive Harm — www.P65Warnings.ca.gov

All reference to HD® Part #s 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 HD Part # shown.

