

Instruction 510-0041

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Installation Instructions: Billet Aluminum Rocker Arm Kit for X-Wedge® Engines P/N 900-0213

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.

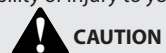
IMPORTANT NOTICE:

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.

! WARNING

The safety of the motorcycle rider is dependent of proper installation of this product. If you are not certain of your capabilities or do not have the correct tools for this installation, please consult a shop to have it done. Improper installation of this product could result in injury or death to the rider.

Kit Contents:

X-Wedge® Billet Aluminum Rocker Arm Kit Part Number 900-0213

Part Number	Item	Qty
900-0239	Billet Aluminum Rocker Arm	4
900-0241	Rocker Arm Stud	4
930-0017	Pushrod Set (4pcs)	1
36758PS	Rocker Arm Pedestal Stand	4
500-0123	Adjusting Screw $\frac{5}{16}$ " cup	4
900-0242	Jam Nut $\frac{5}{16}$ " 12 point	4
50-0283-S	Jam Nut $\frac{3}{8}$ " 12 point	4
51-9004	Loctite® 262 Red 5mL	1

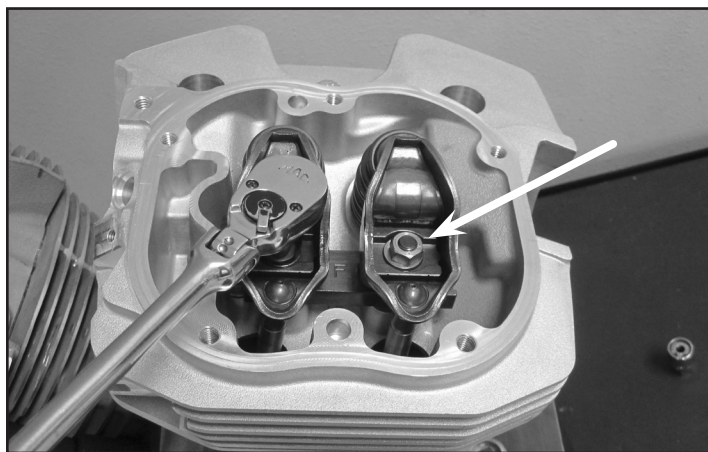
Tools needed:

- $\frac{1}{4}$ " Allen wrench
- $\frac{5}{32}$ " Allen wrench
- $\frac{3}{8}$ " 12 point socket
- $\frac{7}{16}$ " 12 point wrench
- $\frac{1}{2}$ " socket
- Ratchet
- Stud remover/installer
- Ft.-lb Torque Wrench

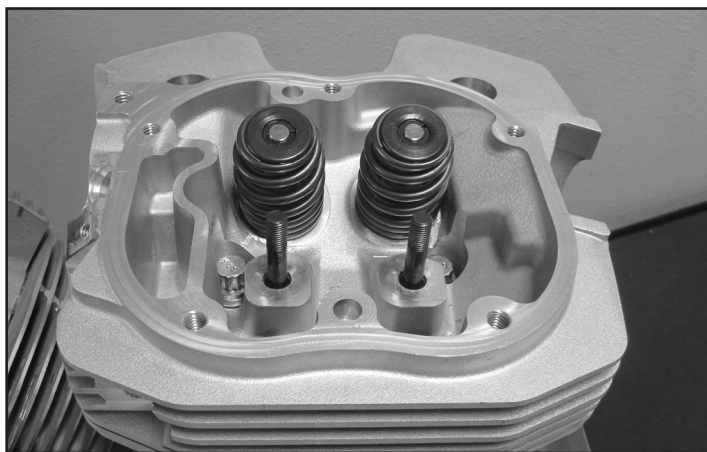
NOTES: The intake pushrods may need additional clearance to the cylinder head. Follow steps 1 thru 14 to mock up the rocker arm assembly to determine if clearance is required. If the engine is still in the chassis, secure the motorcycle on a suitable work stand or lift. Disconnect the negative battery terminal and secure away from the battery. Remove the fuel tank and necessary bodywork to gain access to the top of the engine. If the engine is out of the chassis, bolt the engine to a work stand and secure to the bench.

Disassembly

1. Remove the spark plugs.
2. Remove the rocker box covers
3. Starting on the front cylinder, rotate the engine so that both valves are in the closed position (TDC compression).
4. Remove the two $\frac{5}{16}$ " nuts and washers that secure the steel rocker arms. **See Picture 1, below left**
5. Remove the rocker arm supports, rocker arms, rocker arm alignment channel and pushrods. Only the alignment channel will be re-used. **See Picture 2, below right.**

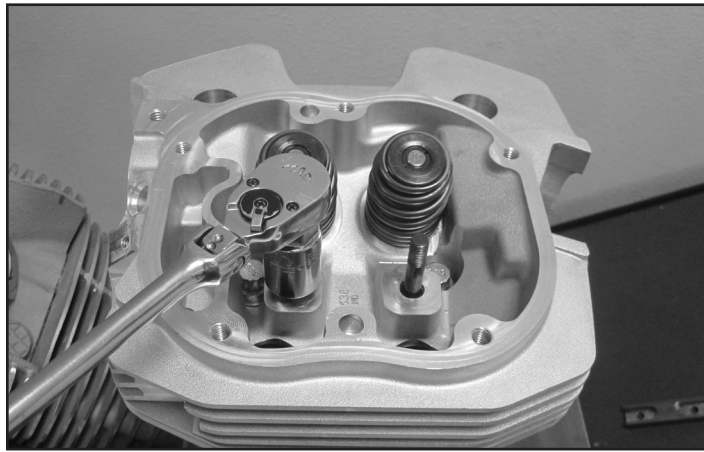


Picture 1



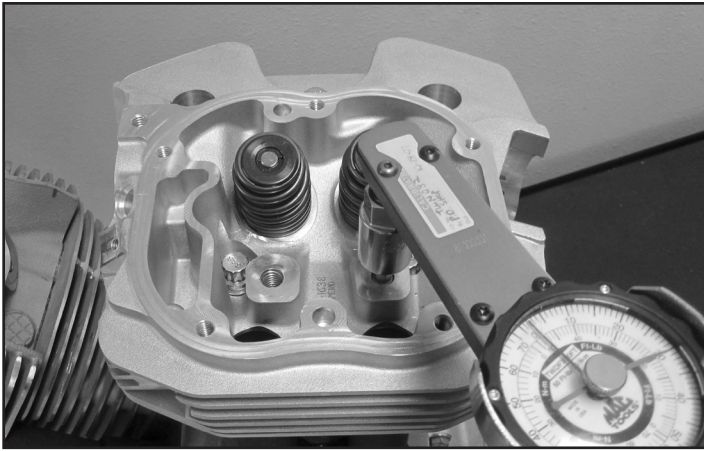
Picture 2

6. Using a suitable stud remover, remove both studs from the cylinder head. **See Picture 3.**

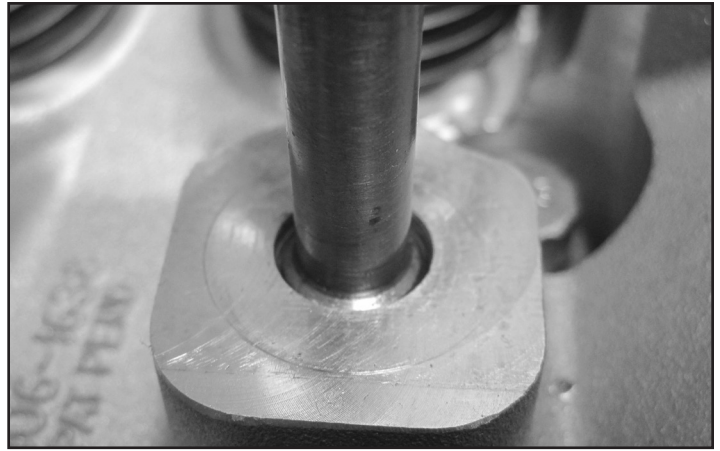


Picture 3

7. Apply Loctite® 262 to the $\frac{7}{16}$ " threads of the new studs and install using a suitable stud installer. Torque to 30 ft-lbs. **See Picture 4, below left.** Make sure that there aren't any of the $\frac{7}{16}$ " diameter threads showing above the surface of the rocker arm pad. **See Picture 4a, below right.** This situation will cause the rocker arm alignment channel to not sit flat on the head.

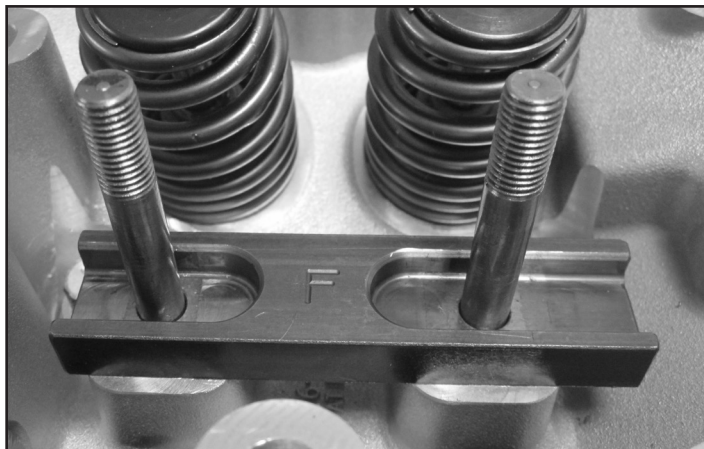


Picture 4



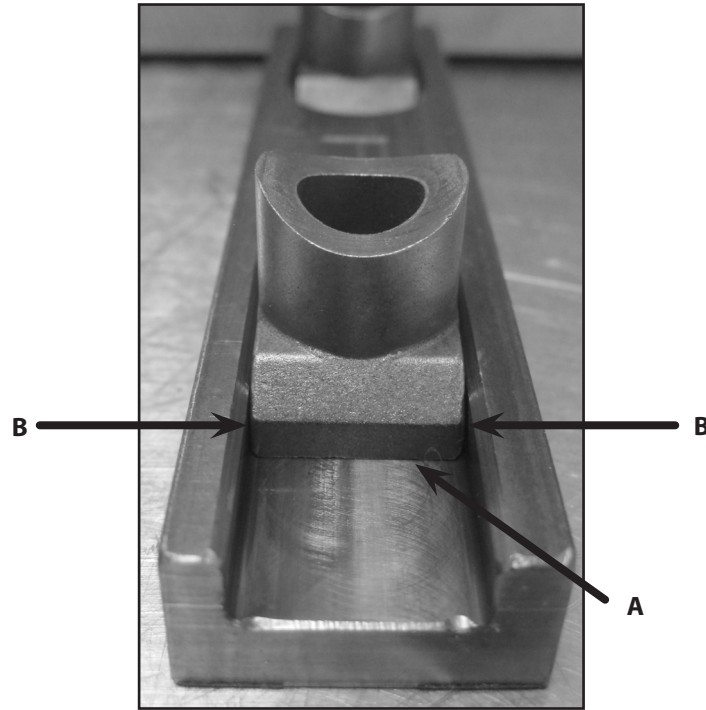
Picture 4a

8. Place the rocker arm alignment channel over the studs. Make sure it is sitting flat against the head. **See Picture 5 below.**



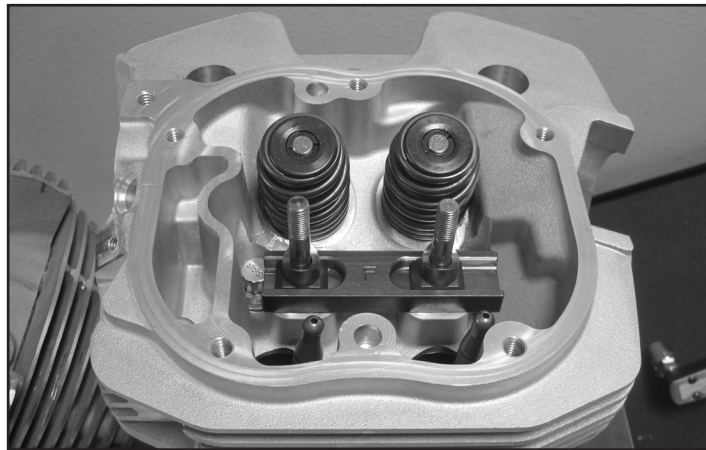
Picture 5

9. Place a rocker arm pedestal on each stud. Make sure the pedestal sits flat in the channel **(A)**. If the pedestal does not fit, carefully remove small amounts of material from the sides **(B)** of the pedestal until it fits squarely into the groove. **See Picture 6 below.**



Picture 6

10. Install the new pushrods into the pushrod tubes making sure they seat properly into the lifters. **See Picture 7 below.**



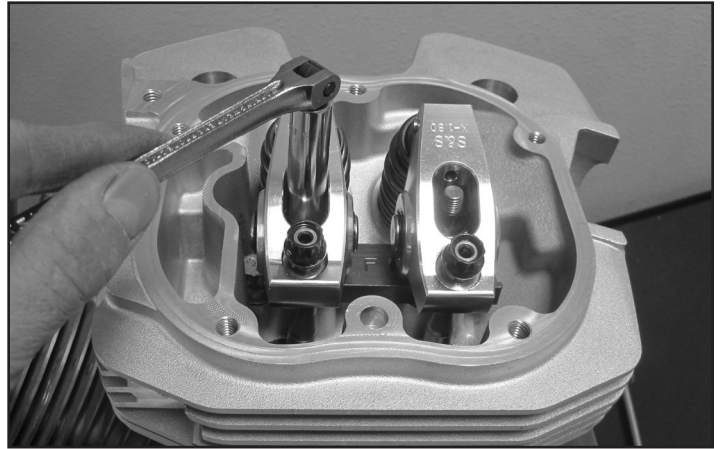
Picture 7

NOTE: The tapered end of the pushrod faces up toward the rocker arms. The new intake and exhaust pushrods are the same length and can be installed in any location.

11. Install the adjuster screws into the rocker arms. Thread the adjuster screws all the way into the body until the adjuster cup end contacts the rocker arm body. **See Picture 8, below left.**
12. Install the intake and exhaust rocker arms onto the studs, the flat portion of the rocker arm fulcrum should be pointing up and the curved lower surface will sit against the pedestal. Make sure the pushrod end is under the adjusting screw.
13. Install the $\frac{5}{16}$ " 12 point nut to temporarily fasten down the rocker arms. **See Picture 9, below right.**

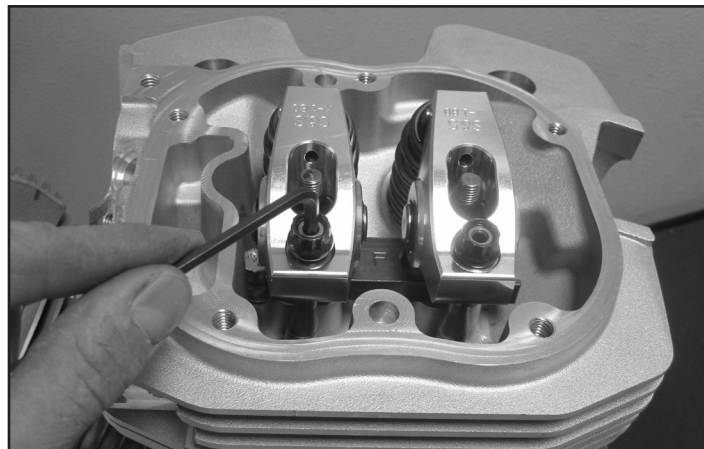


Picture 8



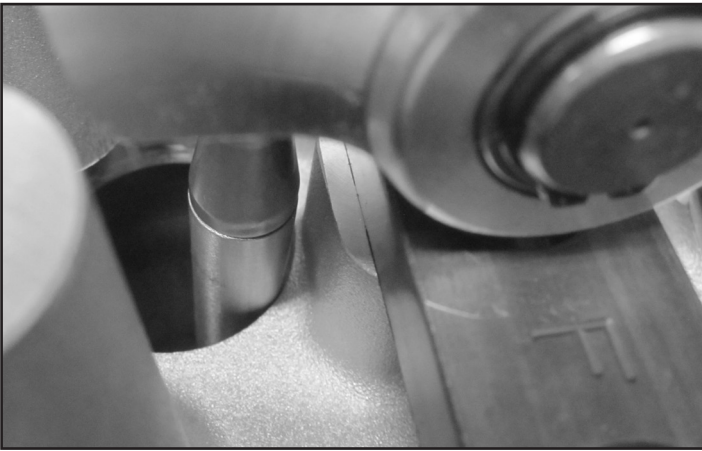
Picture 9

14. Tighten the adjusting screw to remove lash in the rocker arm. **See Picture 10 below.**

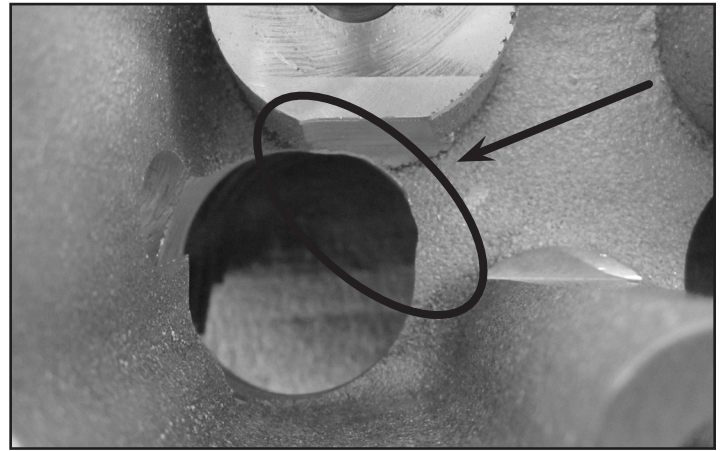


Picture 10

15. Confirm the clearance between the intake pushrod and the cylinder head. **See Picture 11, below left.** It may be necessary to remove some material from the cylinder head to gain additional clearance. **See Picture 12, below right.** If this procedure is necessary, remove the rocker arms, pedestals, alignment channel and pushrods. Place a rag down the pushrod tubes to block metal shavings and sufficiently cover the rest of the engine.



Picture 11



Picture 12: Close up of clearance cut made for intake pushrods

16. Thoroughly clean the area when finished.

17. Re-install the pushrods, alignment bar, pedestals and rocker arms.

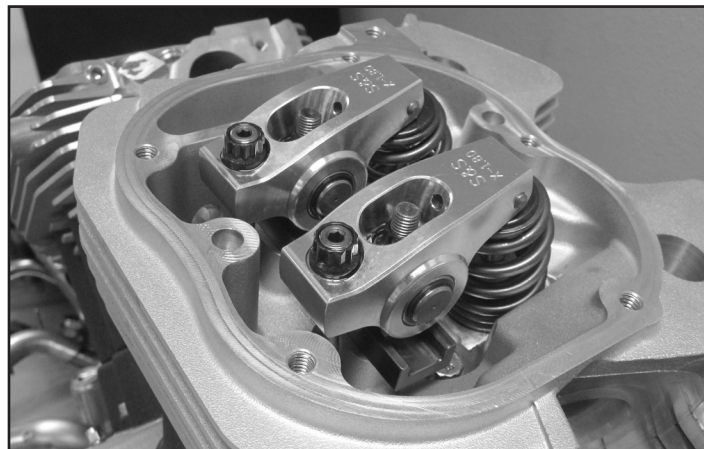
18. Apply Loctite® 262 to the $\frac{5}{16}$ " 12 point nut and install on the stud. Tighten to 30 ft-lbs.

19. Tighten the adjuster screw until the lash is removed. After this point, tight the adjuster screw an additional 2 full turns.

20. Install the $\frac{3}{8}$ " 12 point to lock the adjuster screw and torque to 26 ft-lb.

21. Allow the lifters to bleed down for 15 minutes before rotating engine.

22. Repeat procedure for rear cylinder.



Picture 13

