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Installation and Adjustment Procedures for All S&S Pushrods Kits and Travel Limiters

NOTE – If pushrod kit contains four different length pushrods, the longest pushrod is for the front exhaust, next longest is the rear exhaust. Of the two shorter pushrods, the longer one is the front intake, the shortest pushrod is the rear intake. The pushrod kits for the Twin-Cam that have two different lengths – short ones for the intakes, long ones for the exhausts.

- A. Pushrod kits for Ironhead Sportster engines.
- B. Pushrod kits for Knucklehead & Panhead engines.
- C. Pushrod kits for Shovelhead engines.
- D. Pushrod kits for Evolution style Big Twins, Sportsters, and Buells. (Including S&S Supersidewinder™ Plus engines.)
- E. Pushrod kits for Twin-Cam engines.
- F. S&S Hydraulic Lifter Limited Travel Kit (HL₂T)

NOTE - All installation and adjustments must be made when engine is cold. Read instructions thoroughly and follow all recommended steps and procedures

CAUTION - Failure to follow recommended steps and procedures may result in damage to engine components.

WARNING - Installing or adjusting pushrods while engine is hot could result in burns from contact with hot engine parts.

NOTE – 1/2" diameter alloy pushrod kits, for the Ironhead Sportsters & Knuckleheads, may contact the pushrod tubes. It is advisable to chamfer the lower, inside diameter of the top pushrod cover tube when installing these pushrod kits. See Figure 1.

A. Pushrod kits for Ironhead Sportster engines.

(Part #93-5030 and #93-5035.)

1. Remove pushrod cover clips and lift cover assemblies to view lifters.
2. Remove spark plugs and rotate engine until the rear exhaust lifter is at it's highest point.
3. Loosen front exhaust adjuster and remove pushrod and tube assembly.
4. Clean & inspect pushrod tubes. Prepare top cover as per above note. Replace all cork and/or o-ring seals. Apply a light coat of engine oil to o-rings.
5. Insert new pushrod through tube assembly and install in front exhaust position.
6. Extend lifter to remove lash in pushrod. Adjust lifter to be able to spin pushrod with fingertips with a slight drag, and tighten locknut.
7. Rotate engine until front exhaust lifter is at it's highest point, and repeat above procedure for rear exhaust pushrod.
8. Rotate engine until rear intake lifter is at it's highest point and replace front intake pushrod as per above procedure. Repeat for rear intake pushrod.
9. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

B. Pushrod kits for Knucklehead & Panhead engines.

1. 1936-'47 Knuckleheads 61" & 74".

(Part #93-5041, #93-5044, and #93-5045)

NOTE – The Knucklehead solid lifter pushrod kit requires stock-style adjustable tappets.

Check top pushrod cover tube inside diameters for sharp corners. Bevel corners with file or hand grinder. In instances where pushrods are made with 1/2" diameter tubing, sharp edges lift on covers may rub pushrods.

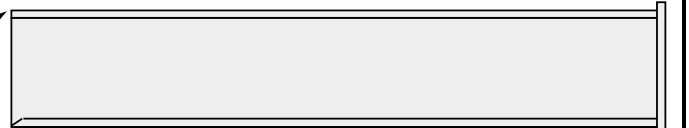


Figure 1

- a. Remove pushrod cover clips and lift cover assemblies to view lifters.
- b. Remove spark plugs and rotate engine until front piston is at the top of it's stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
- c. Loosen front lifter adjusters and remove pushrod and tube assemblies.
- d. Clean & inspect pushrod tubes. Prepare top covers as per above note. Replace all cork and/or o-ring seals. Apply a light coat of engine oil to o-rings.
- e. Insert new pushrods through tube assemblies and install in appropriate positions.
- f. Extend lifters to remove lash in pushrods. Adjust lifters to be able to spin pushrods with fingertips with a slight drag, and tighten locknuts.
- g. Repeat above procedures for rear cylinder.
- h. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

2. 1948-'65 Panheads 61" & 74".

(Part #93-5029, #93-5059, and #93-5027.)

NOTE – These kits are intended to replace the stock pushrods found in 1948-'52 engines that contain a hydraulic unit built into the pushrods. These kits require the stock 1948-'52 style adjustable lifters.

- a. Remove pushrod cover clips and lift cover assemblies to view lifters.
- b. Remove spark plugs and rotate engine until front piston is at the top of it's stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
- c. Loosen front lifter adjusters and remove pushrod and tube assemblies.
- d. Clean & inspect pushrod tubes. Replace all cork and/or o-ring seals. Apply a light coat of engine oil to o-rings.
- e. Insert new pushrods through tube assemblies and install in appropriate positions.
- f. Extend lifters to remove lash in pushrods. Adjust lifters to be able to spin pushrods with fingertips with a slight drag, and tighten locknuts.
- g. Repeat above procedures for rear cylinder.
- h. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

3. 1953-'65 Panhead Stock Replacement Hydraulic Pushrod Kit. (Part #93-5091 and #93-5092.)

NOTE – These kits are intended to replace the stock pushrods found in 1953-'65 engines. These kits require the stock-type adjusting screws, which are not included.

- a. Remove pushrod cover clips and lift cover assemblies to view lifters.
- b. Remove spark plugs and rotate engine until front piston is at the top of it's stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
- c. Loosen front lifter adjusters and remove pushrod and tube assemblies.
- d. Clean & inspect pushrod tubes. Replace all cork and/or o-ring seals. Apply a light coat of engine oil to o-rings.
- e. Install stock-style adjusting screws & locknuts into pushrods.
- f. Insert new pushrods through tube assemblies and install in appropriate positions.
- g. Extend adjusting screws to remove lash in pushrods. Compress hydraulic unit in exhaust lifter 4 complete turns (24 flats) and tighten locknut. Allow sufficient time for lifter to bleed down (5 to 10 minutes) before adjusting intake pushrod.

CAUTION – Failure to allow hydraulic unit to bleed down before rotating engine or adjusting the other pushrod could result in valve-to-valve contact and serious valve train damage. Lifters are bled down when pushrod can be turned with fingertips.

- h. Repeat above procedures for rear cylinder.
- i. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

4. 1953-'65 Panhead Solid Lifter Conversion Kit.

(Part #93-5081, #93-5082, #93-5083, #93-5084, #93-5058, and #93-5028.)

NOTE – These kits are intended for converting 1953-'65 stock style hydraulic lifters to adjustable solid lifters.

NOTE – Panheads, 1953 & later, and Shovelheads with solid lifters, should have tappet block hydraulic lifter oil feed holes plugged to prevent excess oil escaping above lifters and filling pushrod tubes, causing potential oil leaks. Thread 8-32 tap into oil feed passage from gasket surface of tappet block until tap end just starts to enter lifter bore. Plug hole with an 8-32 x 3/16" set screw. Repeat for other tappet block.

NOTE – If hydraulic lifters are to be reinstalled, plugs must be removed.

CAUTION – Restricted oil flow to hydraulic lifter assemblies causes lifters to operate with improper oil pressure which may damage the lifters or other valve train components.

- a. Remove pushrod cover clips and lift cover assemblies to view lifters.

- b. Remove spark plugs and rotate engine until front piston is at the top of it's stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
- c. Loosen front lifter adjusters and remove pushrod and tube assemblies.
- d. Clean & inspect pushrod tubes. Replace all cork and/or o-ring seals. Apply a light coat of engine oil to o-rings.
- e. Remove tappet block and perform plugging step detailed in above note.
- f. Remove hydraulic unit from tappet and replace with solid lifter adapter, adjusting screw, and locknut assembly.
- g. Insert new pushrods through tube assemblies and install in appropriate positions.
- h. Extend adjusting screws to remove lash in pushrods. Adjust to be able to spin pushrods with fingertips with a slight drag, and tighten locknuts.
- i. Repeat above procedures for rear cylinder.
- j. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

C. Pushrod kits for Shovelhead engines.

1. 1966-'84 with 1948-'52 lifters.

(Part #93-5069 and #93-5026.)

NOTE – These kits are intended for use with 1948-'52 style adjustable lifters.

- a. Remove pushrod cover clips and lift cover assemblies to view lifters.
- b. Remove spark plugs and rotate engine until front piston is at the top of it's stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
- c. Loosen front lifter adjusters and remove pushrod and tube assemblies.
- d. Clean & inspect pushrod tubes. Replace all cork and/or o-ring seals. Apply a light coat of engine oil to o-rings.
- e. Remove tappet block and perform plugging step detailed in above note.
- f. Remove hydraulic unit from tappet and replace with solid lifter adapter, adjusting screw, and locknut assembly.
- g. Insert new pushrods through tube assemblies and install in appropriate positions.
- h. Extend adjusting screws to remove lash in pushrods. Adjust to be able to spin pushrods with fingertips with a slight drag, and tighten locknuts.
- i. Repeat above procedures for rear cylinder.
- j. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

2. 1966-'84 with hydraulic lifters.

(Part #93-5070 & #93-5071.)

NOTE - These kits are intended to replace the stock pushrods found in 1966-'84 engines. These kits require the stock-type adjusting screws, which are not included.

- a. Remove pushrod cover clips and lift cover assemblies to view lifters.
- b. Remove spark plugs and rotate engine until front piston is at the top of it's stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
- c. Loosen front lifter adjusters and remove pushrod and tube assemblies.
- d. Clean & inspect pushrod tubes. Replace all cork and/or o-ring seals. Apply a light coat of engine oil to o-rings.
- e. Install stock-style adjusting screws & locknuts into pushrods.
- f. Insert new pushrods through tube assemblies and install in appropriate positions.
- g. Extend adjusting screws to remove lash in pushrods. Compress hydraulic unit in exhaust lifter 4 complete turns (24 flats) and tighten locknut. Allow sufficient time for lifter to bleed down (5 to 10 minutes) before adjusting intake pushrod.

CAUTION – Failure to allow hydraulic unit to bleed down before rotating engine or adjusting the other pushrod could result in valve-to-valve contact and serious valve train damage. Lifters are bled down when pushrod can be turned with fingertips.

- h. Repeat above procedures for rear cylinder.
- i. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

3. 1966-'84 Solid Lifter Conversion Kit –

Adjustable Lifter (Part #93-5068 and #93-5062.)

NOTE – These kits are intended for converting 1953-'84 stock-style hydraulic lifters to adjustable solid lifters.

NOTE – Shovelheads with solid lifters should have tappet block hydraulic lifter oil feed holes plugged to prevent excess oil escaping above lifters and filling pushrod tubes, causing potential oil leaks. Thread 8-32 tap into oil feed passage from gasket surface of tappet block until tap end just starts to enter lifter bore. Plug hole with an 8-32 x 3/16" set screw. Repeat for other tappet block.

NOTE – If hydraulic lifters are to be reinstalled, plugs must be removed.

CAUTION – Restricted oil flow to hydraulic lifter assemblies causes lifters to operate with improper oil pressure which may damage the lifters or other valve train components.

- a. Remove pushrod cover clips and lift cover assemblies to view lifters.
- b. Remove spark plugs and rotate engine until front piston is at the top of its stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
- c. Loosen front lifter adjusters and remove pushrod and tube assemblies.
- d. Clean & inspect pushrod tubes. Replace all cork and/or o-ring seals. Apply a light coat of engine oil to o-rings.
- e. Remove tappet block and perform plugging step detailed in above note. Remove hydraulic unit from tappet and replace with solid lifter adapter, adjusting screw, and locknut assembly.
- f. Insert new pushrods through tube assemblies and install in appropriate positions.
- g. Extend adjusting screws to remove lash in pushrods. Adjust to be able to spin pushrods with fingertips with a slight drag, and tighten locknuts.
- h. Repeat above procedures for rear cylinder.
- i. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

4. 1966-'84 Solid Lifter Conversion Kit – Adjustable Pushrod (Part #93-5014, #93-5015, #93-5016, #93-5063, #93-5067, & #93-5080)

NOTE – These kits are intended for converting 1953-'84 stock-style hydraulic lifters to non-adjustable solid lifters.

- a. Remove pushrod cover clips and lift cover assemblies to view lifters.
- b. Remove spark plugs and rotate engine until front piston is at the top of its stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
- c. Loosen front lifter adjusters and remove pushrod and tube assemblies.
- d. Clean & inspect pushrod tubes. Replace all cork and/or o-ring seals. Apply a light coat of engine oil to o-rings.
- e. Remove tappet block and perform plugging step detailed in above note.
- f. Remove hydraulic unit from tappet and replace with solid lifter adapter.
- g. Insert new pushrods through tube assemblies and install in appropriate positions.

- h. Extend adjusting screws to remove lash in pushrods. Adjust to be able to spin pushrods with fingertips with a slight drag, and tighten locknuts.
- i. Repeat above procedures for rear cylinder.
- j. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

D. Pushrod kits for Evolution style Big Twins, Sportsters, & Buells. (Including S&S SSW+ engines.)

NOTE – The following instructions are for installing S&S adjustable pushrods with the stock-style hydraulic lifters. If the S&S HL₂T kit is to be used, refer to that section of this instruction sheet for installation of the kit, and pushrod adjustment.

NOTE – If unsure that the HL₂T kit is installed in the lifters of an assembled engine, take note of the following: After the hydraulic piston assembly is compressed 4 complete turns of the pushrod, and after 10 minutes the pushrod is unable to be spun with fingers, the HL₂T kit is installed in the lifters and the adjustment procedure for this kit must be followed. Detailed instructions for the HL₂T kit are listed below.

NOTE – Due to strength and durability concerns with S&S replacement pushrod kits for Evolution-style engines, they are not designed to be a "quick-install". Installation of these pushrod kits will require partial rocker cover disassembly. Refer to appropriate service manual for instructions for rocker cover disassembly.

1. 1986-'90 Sportsters & Buells

- a. Remove pushrod cover clips and lift cover assemblies to view lifters.
- b. Remove spark plugs and rotate engine until front piston is at the top of its stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
- c. Remove front pushrods, disassembling the rocker arms, as per the appropriate service manual.
- d. Clean & inspect pushrod tubes. Replace all o-rings. Apply a light coat of engine oil to o-rings.
- e. Insert new pushrods through tube assemblies and install in appropriate positions.

NOTE – Make certain that new upper pushrod cover o-rings have been installed into the cylinder head before proceeding further.

- f. Reinstall rocker assemblies according to appropriate service manual procedures.

- g. Extend adjusting screws to remove lash in pushrods. Compress hydraulic unit in exhaust lifter 4 complete turns (24 flats) and tighten locknut. Allow sufficient time for lifter to bleed down (5 to 10 minutes) before adjusting intake pushrod.

CAUTION – Failure to allow hydraulic unit to bleed down before rotating engine or adjusting the other pushrod could result in valve-to-valve contact and serious valve train damage. Lifters are bled down when pushrod can be turned with fingertips.

- h. Repeat above procedures for rear cylinder.
- i. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

2. 1991 & later Sportsters & Buells.

NOTE – In order to be able to adjust the pushrods in 1991 & later Sportsters and Buells, it will be necessary to use the pushrod cover adapter, S&S part #33-5360, the pushrod cover assembly for 1986-'90 Sportsters, S&S part #93-4028, and the appropriate length pushrod cover keepers.

- a. Remove spark plugs and rotate engine until front piston is at the top of it's stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
- b. Refer to the appropriate service manual and remove the rocker assemblies from the front cylinder. Remove the two front pushrods, the pushrod cover retainers, and the one-piece pushrod covers.
- c. Assemble the new pushrod covers. Install the pushrod cover adapters in the cover retainers.
- d. Install the pushrods through the cylinder head and the pushrod cover assembly in the appropriate positions.

NOTE – Make certain that new upper pushrod cover o-rings have been installed into the cylinder head before proceeding further.

- e. Reinstall rocker assemblies according to appropriate service manual procedures.
- f. Extend adjusting screws to remove lash in pushrods. Compress hydraulic unit in exhaust lifter 4 complete turns (24 flats) and tighten locknut. Allow sufficient time for lifter to bleed down (5 to 10 minutes) before adjusting intake pushrod.

CAUTION – Failure to allow hydraulic unit to bleed down before rotating engine or adjusting the other pushrod could result in valve-to-valve contact and serious valve train damage. Lifters are bled down when pushrod can be turned with fingertips.

- g. Repeat above procedures for rear cylinder.
- h. Replace spark plugs and install pushrod tube clips. Start motorcycle and check for leaks.

3. 1984-'99 Evolution-style Big Twin and S&S Super Sidewinder™ Plus engines.

- a. Remove pushrod cover clips and lift cover assemblies to view lifters.
- b. Remove spark plugs and rotate engine until front piston is at the top of it's stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
- c. Remove front pushrods by disassembling the rocker cover assembly, as per the appropriate service manual.
- d. Clean & inspect pushrod tubes. Replace all o-rings. Apply a light coat of engine oil to o-rings.
- e. Insert new pushrods through tube assemblies and install in appropriate positions.
- f. Reinstall rocker assemblies according to appropriate service manual procedures.
- g. Extend adjusting screws to remove lash in pushrods. Compress hydraulic piston assembly in exhaust lifter 4 complete turns (24 flats) and tighten locknut. Allow sufficient time for piston assembly to bleed down (at least 10 minutes) before adjusting intake pushrod.

NOTE – Typically, SSW+, and Evolution style engines produced after 2000, from S&S are supplied with the HL₂T Hydraulic Lifter Limited Travel Kit installed in the lifters. If the piston assembly is compressed 4 complete turns of the pushrod, and will not bleed down after 10 minutes, the HL₂T kit is installed in the lifters and the adjustment procedure for this kit must be followed. Detailed instructions for the HL₂T kit are listed below.

CAUTION – Failure to allow hydraulic unit to bleed down before rotating engine or adjusting the other pushrod could result in valve-to-valve contact and serious valve train damage. Lifters are bled down when pushrod can be turned with fingertips.

- h. Repeat above procedures for rear cylinder.
- i. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

E. Pushrod kits for Twin-Cam engines.

NOTE – S&S pushrod kits for the Twin-Cam engine are available as a kit containing pushrods only, however, it will be necessary to use S&S pushrod covers, or similar aftermarket product, in order to be able to access the adjuster units on the pushrods. S&S has a kit available, part number 93-5095, for stock height Twin-Cam engine, 88" & 95", that contains the four adjustable pushrods, pushrod tube set, gaskets & o-rings for a complete assembly.

NOTE – The following instructions are for installing S&S adjustable pushrods with the stock-style hydraulic lifters. If the S&S HL₂T kit is to be used, refer to that section of this instruction sheet for installation of the kit, and pushrod adjustment.

NOTE – Replacement of the stock pushrods will require either rocker arm disassembly, or cutting of the original pushrods. If the original pushrods are to be cut, S&S recommends that a bolt cutter be used.

CAUTION – If pushrods are cut with a saw, metal chips may enter engine and cause extensive damage not covered under warranty.

1. Remove pushrod cover clips and lift cover assemblies to view lifters.
2. Remove spark plugs and rotate engine until front piston is at the top of it's stroke, with both front lifters at their lowest position (TDCC – top dead center, compression).
3. Remove front pushrods, either by cutting the pushrods as described in the note above, or by disassembling the rocker arms, as per the appropriate service manual.
4. Remove lifter cover from crankcase.
5. Reinstall rocker assembly if removed in above step, following procedures & torque specifications recommended in appropriate service manual.

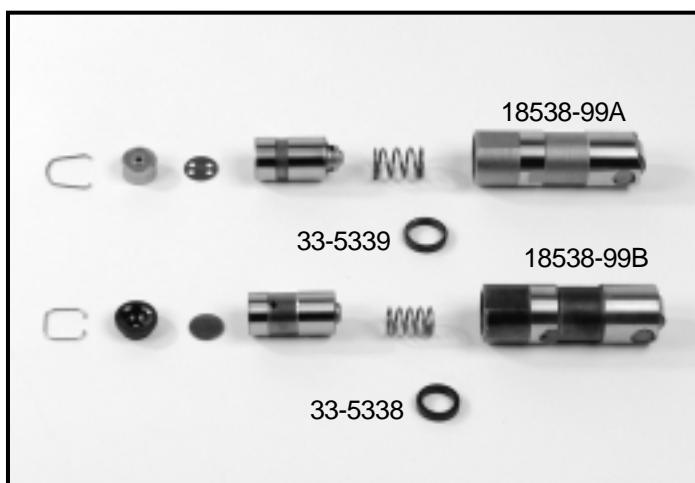
6. Apply a light coat of oil to o-rings and assemble pushrod covers.
7. Insert pushrods through pushrod cover assemblies. Install intake and exhaust pushrod assemblies, along with the tappet cover and new gasket, into position in front cylinder.
8. Install and tighten lifter cover screws to 90-110 **in-lbs**.
9. Extend adjusting screws to remove lash in pushrods. Compress hydraulic unit in exhaust lifter 4 complete turns (24 flats) and tighten locknut. Allow sufficient time for lifter to bleed down (5 to 10 minutes) before adjusting intake pushrod.

CAUTION – Failure to allow hydraulic unit to bleed down before rotating engine or adjusting the other pushrod could result in valve-to-valve contact and serious valve train damage. Lifters are bled down when pushrod can be turned with fingertips.

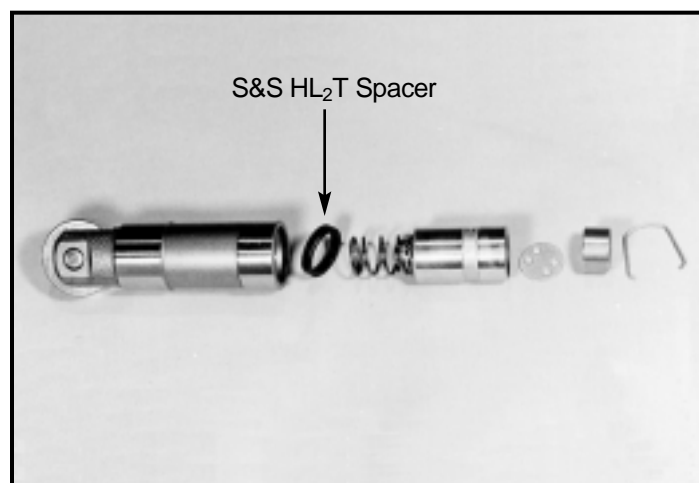
10. Repeat above procedures for rear cylinder.
11. Replace spark plugs and pushrod tube clips. Start motorcycle and check for leaks.

6. S&S Hydraulic Lifter Limited Travel Kit (HL₂T)

NOTE – The S&S HL₂T kit is designed to limit the travel of the hydraulic lifter making it impossible for the lifter to collapse. Stronger valve springs are often used to avoid valve float at high rpm. The HL₂T kit prevents high valve spring pressure from collapsing lifters. With the HL₂T kit installed, stock hydraulic lifters work like solid lifters at high rpm, while retaining normal hydraulic function for minimal noise and maintenance under normal conditions. Another advantage of the HL₂T kit is that if a valve is held open when the engine is not running, valve spring pressure will not cause lifters to bleed down and collapse. Collapsed lifters can cause hard starting and excessive valve train noise when engine is restarted. Adjustable pushrods must be used with the HL₂T kit.



Picture 1



Picture 2

NOTE – S&S Kit #33-5338 for 1984 & 1985 V²s, early V² tappets, have smaller diameter hydraulic plunger bodies which measure about .612". S&S Kit #33-5339 for 1986 to present V²s, late V² tappets, have larger diameter hydraulic plunger bodies which measure about .655". An early S&S kit must not be used in a late set of tappets. Installation procedure is the same for either kit.

*NOTE – The earlier Twin-Cam lifters, H-D part numbers 18538-99 & 99A, require the S&S HL₂T kit number 33-5339. The later Twin-Cam lifters, H-D part number 18538-99B, require the S&S HL₂T kit number 33-5338. Both kits are included with the Sidewinder engine kits, and either kit is installed & adjusted the same way – remove the retaining clip from the top of the lifter, and remove the piston assembly and spring from lifter body. Place the appropriate HL₂T travel limiter into the bore of the lifter and replace removed components in the order that they were removed. **See Picture 1.***

Installation

1. Remove tappet assemblies from engine being sure that each one is kept with it's original tappet block.

NOTE – This procedure is the preferred method of installation. However, kit can be installed without removing lifters from engine.

2. Remove hydraulic piston retaining wire clip from one assembly at a time.

CAUTION – Be careful not to bend wire clip during disassembly.

3. Completely disassemble tappet removing all parts.
4. Thoroughly clean all parts including tappet body. Remove any oil which might prevent hydraulic unit from fully collapsing during adjustment.
5. Insert one spacer from S&S HL₂ T kit in tappet body.
6. Reassemble tappet in reverse order making sure original parts are returned to their original positions. **See Picture 2.**
7. Replace wire retaining clip in tappet body.

8. Put tappet back in original tappet block.
9. Repeat Steps 2 through 8 for three remaining tappets.
10. Reassemble engine with modified tappets.
11. Adjust pushrods.

NOTE - In all cases engine must be cold and lifter must be at lowest point of travel for pushrod adjustment

CAUTION – To prevent accidents, remove ground cable from battery.

- a. Remove spark plugs.
- b. Bring piston to TDC on compression stroke in cylinder to be adjusted. Normally both tappets will be at their lowest point of travel.
- c. Extend pushrod until it contacts the hydraulic piston assembly in the lifter body, then extend pushrod an additional four complete turns, until piston assembly is in contact with HL₂T spacer and the valve is lifted off of it's seat. If tappets contain oil, as when pushrods are readjusted after engine has been run, or if all oil was not removed during installation, allow at least 10 minutes for piston assembly to bleed down.
- d. Loosen pushrod adjustment until pushrod can be rotated with the fingers with slight drag. Continue loosening (shortening) pushrod one full turn (6 flats).

NOTE – Shortening adjuster an additional six flats or full turn from zero lash often results in quieter pushrod operation. This provides additional travel for the hydraulic piston assembly, which can improve the ability of the hydraulic unit to maintain zero lash under normal operating conditions.

- e. Tighten lock nut.
- f. Follow the same procedure for all four push rods.

NOTE - Perform this operation on one cylinder at a time. Do not turn engine until pushrod adjustment is complete, and pushrod can be spun with fingers.

CAUTION – Turning engine while valve is held off the seat could result in valve to valve or valve to piston contact and serious valve train damage.



Because every industry has a leader