



# INSTRUCTIONS

-J04545

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## HIGH PERFORMANCE QUICK-INSTALL ADJUSTABLE PUSHRODS

### GENERAL

#### Kit Number

18404-08, 17900032, 17900033

#### Models

This kit is designed for replacement of non-adjustable pushrods in 1999 and later Twin Cam 88 and 96 engines. The pushrods can be installed without disassembling the top end.

#### Installation Requirements

See the P&A retail catalog or the Parts and Accessories section of [www.harley-davidson.com](http://www.harley-davidson.com) (English only) for a list of required parts or accessories.

#### ▲ WARNING

**The rider's safety depends upon the correct installation of this kit. Use the appropriate service manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333a)**

#### NOTE

*This instruction sheet references service manual information. A service manual for your model motorcycle is required for this installation. One is available from a Harley-Davidson dealer.*

#### Kit Contents

Table 1. Kit Contents

tn	Description (Quantity)	Part Number
1	Chrome Pushrod cover, lower (4) (Used in Kit 18404-08)	17938-83
2	Chrome Keeper, pushrod spring cover (4) (Used in Kit 18404-08)	17634-99
3	Gloss Black Pushrod cover, lower (4) (Used in Kit 17900032 and 17900033)	Not Sold Separately
4	Gloss Black Keeper, pushrod spring cover (4) (Used in Kit 17900032 and 17900033)	Not Sold Separately
5	Pushrod assembly (intake) (2)	18422-08
6	Pushrod assembly (exhaust) (2)	18413-08
7	O-ring, pushrod cover, upper (4)	11293
8	O-ring, pushrod cover, lower (4)	11145
9	O-ring, pushrod cover, middle (4)	11132

#### NOTE

*These pushrods can be used with hydraulic tappets, tappets that have been converted to solid tappets or with Screamin' Eagle hydraulic tappets.*

*The installation of this kit may void the Harley-Davidson limited warranty.*

*Solid tappets **must not** be used with the stock camshaft. Severe engine damage can result.*

### INSTALLATION

#### ▲ WARNING

**To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect negative (-) battery cable before proceeding. (00048a)**

1. Disconnect the battery, negative (-) battery cable first, following the instructions in the appropriate Service Manual.

#### NOTE

*When removing the stock pushrods as described in Step 2, do not cut pushrods using a method that creates metal debris. Debris can end up in the engine (such as using a hacksaw or die grinder). Severe damage can result.*

2. Remove stock pushrods using a bolt cutter.
3. Place the motorcycle on a hydraulic center stand with the rear wheel raised off the ground. Remove spark plugs.
4. With transmission in gear, use rear wheel to turn engine over until both front cylinder tappets are at their lowest point.
5. Replace O-rings, lower pushrod cover and spring cover keeper with new components supplied in kit.
6. See Figure 1. Loosen locknut on all of the pushrods and adjust them to their shortest length.
7. Install pushrods with pushrod covers. Verify that adjuster end of pushrod is down and ball end of adjuster is in tappet socket.
8. For hydraulic tappets or solid tappets, follow the appropriate Adjustment procedure.

### ADJUSTMENT

#### Hydraulic Tappets

#### NOTE

*Pushrod adjustment must be made with engine cold.*

1. Adjust pushrod length to zero clearance.
2. See Figure 1. Mark the flats of the adjuster closest to the alignment mark (3) to aid in counting the number of turns. Keep the pushrod tube from rotating with a 1/2 in or adjustable wrench. Slowly turn the adjusting screw with a 5/16 in wrench 2-1/2 complete turns counterclockwise (lengthening the pushrod) as viewed from the bottom.

#### NOTE

*Wait 10 minutes before turning engine over after adjusting front or rear cylinder pushrods. This allows tappets to bleed*



down and prevents the pushrods or valves from bending. Pushrods must turn freely. Valves must be on their seats (closed) before turning over engine.

3. Hold adjusting screw and tighten locknut with 1/2 in open-end wrench against the pushrod tube. If pushrod turns with locknut, use three open-end wrenches. Use one to hold the pushrod tube, one to hold adjusting screw and one to turn locknut.
4. Wait 10 minutes. With transmission in gear, use rear wheel to turn engine over until both rear cylinder tappets are at their lowest position.
5. Repeat Steps 4 through 8 in the Installation section and Steps 1 through 4 of this procedure for the rear cylinder.
6. Install pushrod spring cap retainers on pushrod covers. Install spark plugs and return transmission to neutral.

**▲ WARNING**

**Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)**

7. Connect the battery cables, positive (+) battery cable first, following the instructions in the appropriate Service Manual.

### Solid Tappets

*NOTE*

*Pushrod adjustment must be made with engine cold.*

1. Turn adjusting screw on pushrod until zero clearance exists in valvetrain. Pushrod must turn with no drag and no up and down "shake."
2. Hold adjusting screw and tighten locknut with 1/2 in open-end wrench against the pushrod tube. If pushrod turns with locknut, use three open-end wrenches. Use one to hold the pushrod tube, one to hold adjusting screw and one to turn locknut.
3. With transmission in gear, use rear wheel to turn engine over until both rear cylinder tappets are at their lowest position.
4. Repeat Steps 4 through 8 in the Installation section and Steps 1 through 3 of this procedure for the rear cylinder.
5. Install pushrod spring cap retainers on pushrod covers. Install spark plugs and return transmission to neutral.

**▲ WARNING**

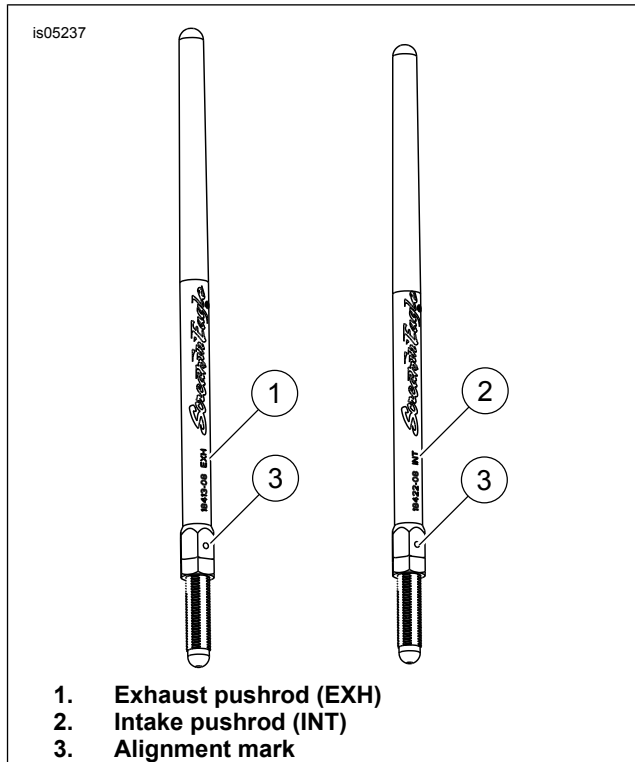
**Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)**

*NOTE*

*Due to the large number of heads and cams available for Twin Cam engines, check for contact between the pushrods and upper pushrod covers. Check by rotating engine slowly until both valves are in closed position on the cylinder you*

*are checking. If contact occurs, shift the rocker arm supports toward the cam side of the engine.*

6. Connect the battery cables, positive (+) battery cable first, following the instructions in the appropriate Service Manual.



**Figure 1. Quick-Install Adjustable Pushrods**