

**V-Twin Mfg.**  
**Adjustable Pushrod and Cover Kit**  
**VT Part No. 11-9709**

**This is a custom application and rider safety depends on proper installation. This product should only be installed by a knowledgeable and trained motorcycle technician. V-Twin Mfg. accepts no responsibility for improper installation.**

**Installation Instructions:**

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

**Note:** Pushrod adjustment must be made with engine cold.

**Hydraulic Tappets Procedure**

1. Adjust pushrod length to zero clearance.
2. With the pushrod tube kept from rotating with a 1/2 inch or adjustable wrench, slowly turn the adjusting screw with a 5/16 in. wrench, 2-1/2 complete turns counter clockwise (lengthening the pushrod) as viewed from the bottom. (You may wish to mark adjuster to aid in counting turns.)
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, one to hold the pushrod tube, one to hold adjusting screw and one to turn locknut.

**Note: Wait ten minutes before turning engine over after adjusting front or rear cylinder pushrods. This wait allows tappets to bleed down and prevents bending pushrods or valves. Pushrods should turn freely and valves must be on their seats (closed) before turning over engine.**

4. Wait ten minutes. With transmission in gear, use rear wheel to turn engine over until both rear cylinder tappets are at their lowest position.
5. Repeat same steps for the rear cylinder.
6. Install pushrod spring cap retainers on pushrod covers. Install spark plugs and return transmission to neutral.

**Solid Tappets Procedure**

1. Turn adjusting screw on pushrod until zero clearance exists in valve train. Pushrod should 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, 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 same steps for the rear cylinder.
5. Install pushrod spring cap retainers on pushrod covers. Install spark plugs and return transmission to neutral.

**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, the rocker arm.**

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This is a custom application and rider safety depends on proper installation. This product only be installed by a knowledgeable and trained motorcycle technician.

## HIGH PERFORMANCE QUICK-INSTALL ADJUSTABLE PUSHRODS

### General

This kit is designed for replacement of non-adjustable pushrods in 1999 and later Twin Cam 88 engines without the need to disassemble the top end.

#### NOTE

These pushrods may be used with hydraulic tappets or tappets that have been converted to solid tappets.

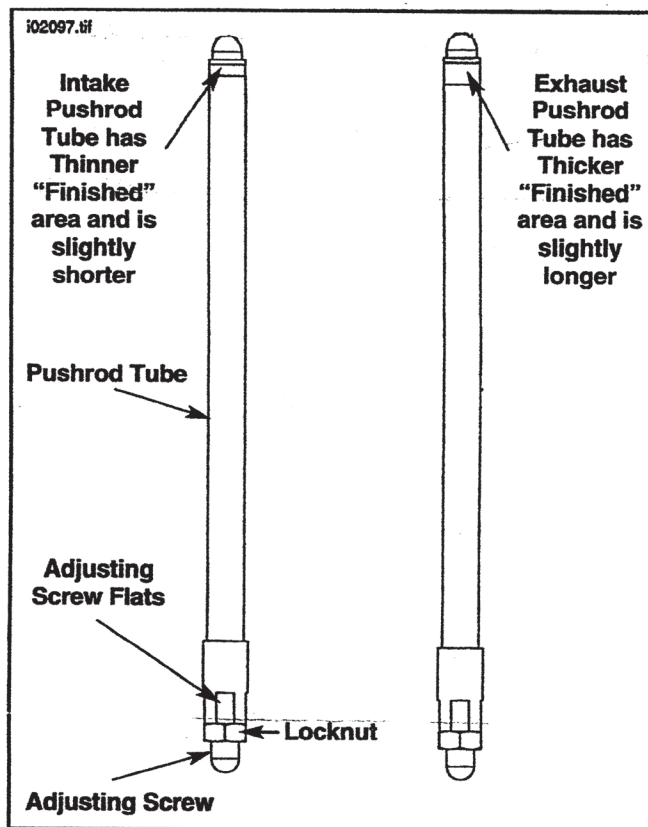


Figure 1. Adjustable Push Rod

### Installation

#### WARNING

A Service Manual is needed to install this kit. The rider's safety depends upon the correct installation of this kit. If the procedure is not within your capabilities or you do not have the correct tools, have your Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury.

#### WARNING

To protect against shock and accidental start-up of vehicle, disconnect the negative battery cable before proceeding. Inadequate safety precautions could result in death or serious injury.

#### WARNING

Always disconnect the negative battery cable first. If the positive battery cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion which could result in death or serious injury.

#### CAUTION

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

#### CAUTION

When removing the stock pushrods as described in step 1 below, do not cut pushrods using a method that creates metal debris, which may end up in the engine (such as using a hacksaw or die grinder) and cause severe damage.

1. Remove stock pushrods using a bolt cutter.
2. Place the motorcycle on a hydraulic center stand with the rear wheel raised off the ground. Remove spark plugs.

3. With transmission in gear use rear wheel to turn engine over until both front cylinder tappets are at their lowest point.
4. Replace O-rings, lower pushrod cover and spring cover keeper with new components supplied in kit.
5. See Figure 1. Loosen locknut on all of the pushrods and adjust them to their shortest length.

**NOTE**

See Figure 1. In Step 6, pushrods with the Thinner "Finished" area on the tubes must be installed to the Intake location on the cylinders; pushrods with the Thicker "Finished" area on the tubes are slightly longer and must be installed to the Exhaust locations on the cylinders.

6. Install pushrods with pushrod covers. Be sure adjuster end of pushrod is down and ball end of adjuster is in tappet socket.
7. If hydraulic tappets are used, adjust pushrods following procedure A. With solid tappets, follow procedure B.

**NOTE**

Pushrod adjustment must be made with engine cold.

**PROCEDURE A (Hydraulic Tappets)**

- 1A. Adjust pushrod length to zero clearance.
- 2A. See Figure 1. With the pushrod tube kept from rotating with a 1/2 inch or adjustable wrench, slowly turn the adjusting screw with a 5/16 in. wrench, 2-1/2 complete turns counter clockwise (lengthening the pushrod) as viewed from the bottom. (You may wish to mark adjuster to aid in counting turns.)
- 3A. 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, one to hold the pushrod tube, one to hold adjusting screw and one to turn locknut.

**CAUTION**

Wait ten minutes before turning engine over after adjusting front or rear cylinder pushrods. This wait allows tappets to bleed down and prevents bending pushrods or valves. Pushrods should turn freely and valves must be on their seats (closed) before turning over engine.

- 4A. Wait ten minutes. With transmission in gear, use rear wheel to turn engine over until both rear cylinder tappets are at their lowest position.

- 5A. Repeat steps 4 through 3A for the rear cylinder.
- 6A. Install pushrod spring cap retainers on pushrod covers. Install spark plugs and return transmission to neutral.
- 7A. Connect battery cables.

**CAUTION**

Always connect the positive battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion which could result in death or serious injury.

**PROCEDURE B (Solid Tappets)**

- 1B. Turn adjusting screw on pushrod until zero clearance exists in valve train. Pushrod should turn with no drag and no up and down "shake."
- 2B. 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, one to hold the pushrod tube, one to hold adjusting screw and one to turn locknut.
- 3B. With transmission in gear, use rear wheel to turn engine over until both rear cylinder tappets are at their lowest position.
- 4B. Repeat steps 4 through 2B for the rear cylinder.
- 5B. Install pushrod spring cap retainers on pushrod covers. Install spark plugs and return transmission to neutral.
- 6B. Connect battery cables.

**WARNING**

Always connect the positive battery cable first. If the positive cable should contact ground with the negative cable installed, the resulting sparks may cause a battery explosion which could result in death or serious injury.

**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, the rocker arm supports should be shifted toward the engine's cam side.