



## INSTRUCTION SHEET FOR #2456-1



### POWER GLIDE TAPPET

BIG TWIN - FITS 1984-PRESENT

SPORTSTER - FITS 1986-1990

BUELL® - 1987-90

Install tappets per H.D.® Service Manual.

1. These tappets will work best in JIMS® Tappet Blocks #1094 with a running clearance of .0007" to .0012".
2. JIMS® Power Glide™ Tappet can also be run in H.D.® blocks with a running clearance of .0007-.00012.
3. JIMS® Power Glide™ Tappets are assembled with a small amount of oil to ease in the adjustment.
4. If the pushrods you are using are adjustable proceed as follows.
5. With the Power Glide™ Tappet installed, start with the front tappet at the lowest point on the cam, extend the pushrod to zero lash (no up and down play, but has a light spin.)
6. Extend the pushrod adjuster 15 wrench flats if pushrods have 24 threads per inch, 17 wrench flats if pushrods have 28 threads, 18 wrench flats if your push rods have 32 threads per inch, 24 wrench flats if your push rods have 40 threads per inch and 30 wrench flats if your pushrod has 52 threads per inch. Tighten lock nut. Note: Popular Pushrod adjustments on back of page.  
**IMPORTANT NOTE:** This adjustment will make the pushrod tight, which will bleed the hydraulic lifter. It can take 10-15 minutes, or longer, to bleed off. It is very important that the engine is not rotated while pushrods are tight. The pushrod will spin with your fingers after the tappet has bled off.
7. Recheck lock nut, close covers and install clips.
8. Repeat exact procedure on rear set.
9. Turn motor over several times to pump oil into the Power Glide™ Tappet or until the oil light goes out, or oil is returning to the oil tank.

**CAUTION: USE MOTORCYCLE OIL 20-50W AT BEST AND CLEAN THE TAPPET FILTER SCREEN.**

### CONGRATULATIONS

YOU AND YOUR HARLEY® HAVE JUST TAKEN THE FIRST STEPS TOWARDS OWNING THE FINEST PRECISION DESIGNED AND ENGINEERED VALVE TRAIN COMPONENTS KNOWN TO THE HARLEY-DAVIDSON® MARKET. JIMS® TAPPETS, TAPPET BLOCKS AND CAM COVERS SURPASS THE STOCK REQUIREMENTS AND DEMANDS OF THE PRESENT AND FUTURE HARLEY-DAVIDSON® MOTORCYCLE.

TO ACHIEVE THE BEST LIFE POSSIBLE FROM THIS TAPPET (OR ANY OTHER VALVE TRAIN PART) YOU MUST BE AWARE OF SOME VERY IMPORTANT ISSUES.

1. **CLEAN! CLEAN! CLEAN!** YOU MUST USE THE BEST POSSIBLE OIL AND OIL FILTER AVAILABLE FOR YOUR HARLEY-DAVIDSON®. USE ONLY MOTORCYCLE OR AIR COOLED TYPE ENGINE OIL. NO SUBSTITUTES!
2. IF THESE TAPPETS ARE BEING INSTALLED IN A MOTOR THAT HAS HAD MOTOR PROBLEMS, OR WAS REBUILT, WASH OUT OIL TANK, OIL FEED LINES AND MOTOR.
3. IF THESE TAPPETS ARE REPLACING A PREVIOUS TAPPET AND CAM PROBLEM, PLEASE MAKE SURE YOU KNOW WHAT CAUSED THE PROBLEM IN THE FIRST PLACE.
4. THE FIRST AREA OF CONCERN IS THAT THE TAPPET ROLLER MUST SEAT FLAT ON CAM. JIMS® TAPPETS ARE SQUARE FROM THE TAPPET BODY TO THE AXLE BORE WITHIN .0002". IF THE ROLLER IS NOT SEATED FLAT ON THE CAM, IT WILL FAIL WITHIN A SHORT PERIOD OF TIME.
5. SECOND CONCERN: THE SAME HOLDS TRUE FOR THE TAPPET BLOCKS. JIMS® TAPPET BLOCKS ARE MACHINED TO HOLD THE BORES PERPENDICULAR TO THE MOUNTING FLANGE WITHIN ±.0002 OF AN INCH.
6. THE NEXT IMPORTANT CONCERN IS ALIGNMENT OF THE CAM ITSELF. FIRST, THE CAM WILL BE, OR SHOULD BE, PARALLEL FROM THE TWO BEARING JOURNALS TO THE LOBES WITHIN ±.0002, (THIS IS JUST THE CAM). WITH THE CAM INSTALLED IN THE MOTOR THIS CAN BE A LOT DIFFERENT. FOR THIS REASON, JIMS® HAS A PRECISION MACHINED CAM COVER TO HOLD YOUR CAM TO WITHIN .0002" OF CAM CENTERLINE.

AS YOU CAN SEE FROM SOME OF THE EXAMPLES THERE ARE A LOT OF POSSIBLE REASONS FOR YOUR VALVE TRAIN TO HAVE A SHORTENED LIFE. FOR THIS REASON JIMS® IS CONTINUOUSLY HELPING YOU ACHIEVE THE LONGEST POSSIBLE LIFE FOR YOUR VALVE TRAIN.

# FOUR POSSIBLE REASONS THAT MAY KEEP NEW HYDRAULIC UNITS FROM WORKING PROPERLY

IMPROPER FIT • MECHANICAL • CONTAMINATION OF OIL SUPPLY • LOW OIL SUPPLY

## 1. IMPROPER FIT

- Not likely, each unit goes through (2) two tests.
- First the fit is checked twice, .00015" to .0002".
- Second, a hydraulic bleed down test is performed first dry, then with 5 weight oil.

## 2. MECHANICAL

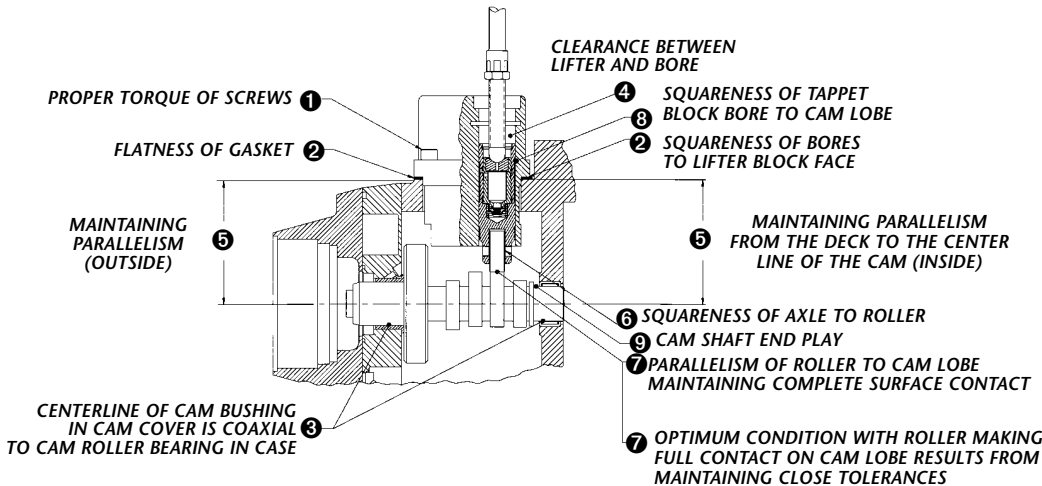
- Not adjusted properly, readjust per instruction sheet. For 18523-86, 18526-89 and 18522-53PG, the hydraulic unit itself needs to be at  $.100 \pm .010$  below snap ring. For 1029-53 kit the hydraulic unit itself needs to be  $.050 \pm .010$  below the snap ring. Some shovel models from 1978-1980 have tappet blocks with oil drain holes to low. If running a higher lift cam then stock, and sometime even stock, these blocks will allow oil pressure to bleed off from the tappets, this is most common in the front tappet block.
- A bent pushrod, loose valve guides, broken valve spring, valve hitting piston, valve hitting valve, rocker bushing loose, rocker tip wear at valve stem, and lifter roller hitting tappet block. All will cause a noisy valve train.
- Gear lash: if you did not change the cam at the time you installed new hydraulic units and had no gear lash, but a slight whine motor when motor was cold, it is safe to say you are OK in this area.
- Hydraulic valve spring broke, is not allowing valve to seal. We have not seen this on any JIMS® hydraulic units.
- If this is the case the hydraulic unit will not hold oil pressure, to check this hold pushrod with your hand (with lifter on the heel of cam valve shout) push down on pushrod. Hydraulic unit will feel spongy. Do not mistake this for no oil getting to tappet. If all tappets are spongy this is no oil. If just one tappet is spongy and has been readjusted, and still will not pump up, replace tappet.

## 3. CONTAMINATION OF OIL

- Hydraulic unit may work for a minute and then become noisy, most of the time it is more then one hydraulic unit that will be contaminated to the point of being stuck in the downward position.
- Readjust per instruction sheet. If hydraulic unit will not come back up to the top of snap ring, replace hydraulic unit and wash out the entire oil system.

## 4. OIL PRESSURE AT NORMAL OPERATING TEMPERATURE, AT ABOUT 2,000 R.P.M., SHOULD BE 12-35 P.S.I..

- Check lifter filter screen. ( Big Twin )
- Make sure your getting oil to the lifters. Install oil pressure gauge for top end oil.
- Lifter to tappet block clearance is best at .0007"-.0012".
- Lifters work best with 20w-50w motorcycle oil.
- If lifters are quiet when cold or low r.p.m., and become noisy as r.p.m. is increased, there is not enough oil pressure or too much clearance from lifter to block bore. (see "C")
- To isolate a possible noisy hydraulic lifter start with a cool motor and the lifter you think is making the noise. With that lifter on the heel of cam, valve shut, adjust pushrod so lifter unit is all the way compressed down ( very important ) this adjustment will make the pushrod tight which will bleed down the hydraulic lifter. It will sometimes take (5) five minutes, or longer, to bleed down. Do not rotate engine while pushrods are tight. Go to the point where pushrod will spin with your fingers. Adjust down a little more until pushrod becomes tight ( you can just barely turn with your fingers ). Start bike, if it is quiet then you have found the lifter that was not working properly. If it's still noisy continue with the next lifter until you have located the the noisy one. Readjust per instruction sheet, or replace lifter.



PUSHROD ADJUSTMENTS				
Distance per turn	Distance per flat	Threads per inch	Wrench Flats	Total Travel Distance
.0417	.0069	24	15	.1042"
.0357	.0059	28	17	.1011"
.0313	.0052	32	18	.0937"
.025	.0042	40	24	.100"
.0192	.0032	52	30	.0962"

POPULAR PUSHRODS		
JIMS®	32	Slim-Jims
Andrews	28	
Andrews	32	
Crane	24	Time Savers
Crane	32	
H.D.	32	
S & S	32	
Rivera	40	Taper Lite

THE FOLLOWING IS SOMETIMES MISTAKEN FOR NOISY TAPPETS:

- The most common being the clearance between cam gear and pinion gear (referred to as gear lash). If you did not change the cam at the time of installing this kit and had no gear lash but a slight whine when motor was cold it is safe to say you are OK in this area.
- Rocker arm end play .004" to .010" is good.
- Oil pressure at normal operating temperature about 2000 r.p.m. should be 12-35 p.s.i. on Big Twin models, and 10-17 p.s.i. at 2500 r.p.m. on XL models.
- Check valve to guide clearance.

**"From the Track... To the Street!"**

When it comes to quality motorcycle tools, JIMS is the brand you can depend on.