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# REF: Service Procedures 16


## Hydraulic Lifter - Disassembly / Inspection / Assembly

### Disassembly

Disassembling a lifter is not very difficult.

The plunger is under slight spring load from the retaining ring when the oil is bled off of the lifter.

A pumped up lifter can be bled by removing the check valve on the bottom and pressing a pushrod in the lifter hole.

<p>A doglegged pick works good for removing the retainer clip and removing the internals. <sup>1)</sup></p>	<p>This is not a good idea as the clip may fly off once removed and you can lose it. <sup>2)</sup></p>	<p>Push slightly on the plunger to remove pressure on the clip and use the pic to pull the clip away from the groove in the top. <sup>3)</sup></p>
		
<p>Now you can remove the clip. You can dump the lifter into a rag to keep from losing parts and the guts may fall out when turned upside down. Notice the springs natural positioning of the top of the cup. <sup>4)</sup></p>		
		

Or, you can use the pick to hook and pull them out. <sup>5)</sup>

Remove the pushrod cup

You may can just can pull the plunger from the body with your fingers. If not, remove the plate in the plunger and use the pick. <sup>6)</sup>



Once the plunger is out, turn the body upside down and let it drain. Pull the plate out if you haven't already. <sup>7)</sup>



This is the lifter's check valve (some have a plate and spring, others have a ball and spring). The cup pries off with a screwdriver. Careful not to lose the cup or the tiny spring under it. <sup>8)</sup>



This plate, spring and cup make up the check valve for this lifter. <sup>9)</sup>





# Inspection

## Visual

Clean all parts inside and out with solvent <sup>10)</sup>



Check for scratching or galling on the inside shoulder of the housing and outside body of the piston. <sup>11)</sup>



Check for excessive wear on the outside of the housing. Excess scratches should signal you to check the lifter bore clearance in the case. <sup>12)</sup>

Wear marks from lifter rising above the anti-rotation pin. <sup>13)</sup>



## Mechanical

Specs <sup>14)</sup>	New Install	Service Limit
Fit in guide	.0008" - .0023" .020 mm -.058 mm	.003" .08 mm
Roller Fit	.0006" - .0013" .015 mm -.033 mm	No spec

Roller End Clearance	.008" - .022" .203 mm - .559 mm	.026" .660 mm
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Check roller end clearance with a feeler gauge. <sup>15)</sup>



## Assembly

There is a small amount of pressure on the hydraulic lifter plunger holding the top retainer clip in place on a dry lifter.

It can be pushed down with your finger to install the clip.

But with a lifter half or more full of oil, it's harder to work the plunger with your fingers as the pressure behind the plunger is greater.

In fact, it's nearly impossible to assemble a lifter completely full of oil.

If you install the lifter into a holder, that frees up both hands and gives better leverage on the plunger.

The holder below is fabbed from a steel sheet and a welded bushing to hold the lifter.

A 2x4 block of wood with a 1" hole drilled into it can also be used to hold the lifter.

Below is a fabbed steel holder.

The block is used to press the plunger down. A spare pushrod or screwdriver can also be used to depress the plunger.



<sup>16)</sup>





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1) , 2) , 3) , 5) , 15)

photo by Hippysmack

4) , 6) , 7) , 8) , 9) , 10) , 11) , 12) , 13)

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14)

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16)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-engine-conversions/199567-converting-from-1250-to-1275/page4?t=2076454&page=4>

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