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## REF: Tools - 145

### Oil Pump Tools

### 57-76 oil pumps

See also in the Sportsterpedia:

- [Main IH Oil Pump Menu Page](#)
- [57-76 Oil Pump Damage and Repair](#) for ideas on a fix for wet sumping from the oil pump.

### Oil Pump Check Ball Seat Lapping Tool

#### Homemade check ball lapping tool:

The tool on the left is a homemade check ball lapping tool used to lap the seat where the check ball sits in the oil pump (57-76). <sup>1)</sup>

It's made with a tool steel shank and a 3/8" carbide ball tip on the end.

The pocket for the ball to sit was cut with a 3/8" ball end mill then a few drops of Loctite 404 to keep it there.

#### Check ball seat burnishing tool:

The tool in the middle is a check-ball seat burnishing set. <sup>2)</sup>

The idea is to turn the ball into the seat several times, thereby smoothing it to a very fine finish.

It works quite well with these old check valve seats, but you can and do use quite a bit of force with the cast iron for a good result.

The aluminum bodies on the Sportster pump would require a somewhat gentler application of the wrench.

But the result would be a micron finish on the seat that will hold those slippery oil molecules.

Problems with this procedure include factory machining of bore and seat rather badly out of alignment on a few pumps.

And pitted or damaged seats that no amount of force will correct.

You'd probably need a lathe, a tap set and the ability to braze or silver solder to make your own tool.

Although you might drill out and tap an un-needed pump nipple for part of the tool.

You can indicate the bolts in the chuck, face off the ends and then center drill them to provide a concentric pocket for the sphere to rest in.

Then, hold the whole mess in tension between centers as you soldered. They surely have to be straight or they aren't much use.

**Check ball tester and oil pump prelube tool:**

The tool on the right was made as a check ball tester and oil pump prelube tool. With this tool, all you have to do is use a grease gun (without grease) filled with oil and pump it into the system so a dry start can be avoided. <sup>3)</sup>



Homemade check ball lapping tool <sup>4)</sup>



Check-ball seat burnishing set <sup>5)</sup>



Oil pump check valve tester / pump prelube tool. <sup>6)</sup>

# 77 and later oil pumps

See also in the Sportsterpedia:

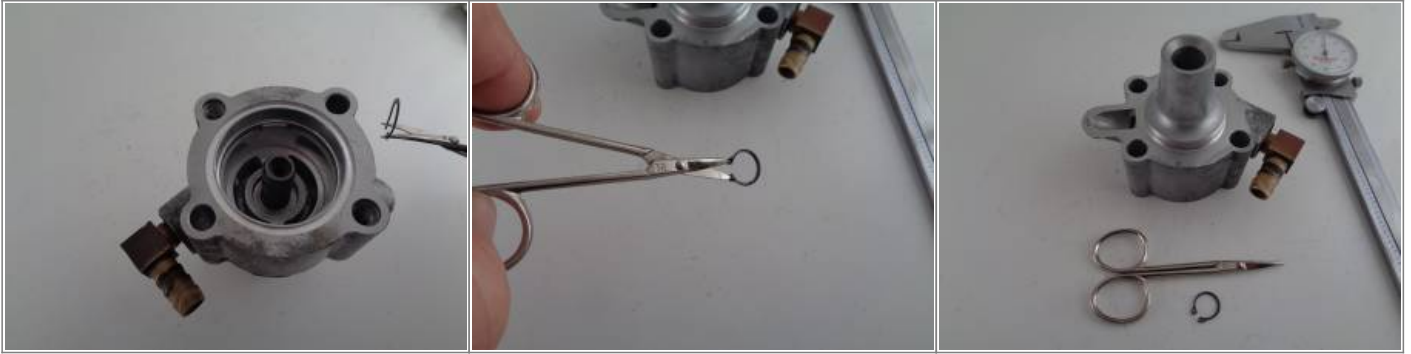
- [Main Evo Oil Pump Menu Page](#)

# Retaining Rings

These precision cuticle scissors are great for removing external retainer rings. Especially the ones on oil pumps or anywhere they are hard to reach. The normal ring pliers are bulky, the end points hardly match the holes and the tool usually slips off the retainer.

These scissors have fine points that won't break or slip on the retainers as the normal ones sometimes do. You can get the points deeper into the holes which helps to hold the retainer more sturdy while removing it. These work for removal and installation of the retainer rings. <sup>7)</sup>





## Oil Pump Removal

Mounting bolts (to the engine):

77-97 models - (4 bolts)

98-Up - (2 bolts - front outside and rear inside)

The Allen head cap bolts have 1/4"x20 threads and a 3/16" socket head.

On 98-Up pumps, the front bolt can be removed / installed with a regular size Allen wrench but the rear bolt is inside the frame.

So you have to go between the frame and the engine to get to that bolt.

A regular size Allen wrench is very difficult to use as the 90° bend on the end hits the frame /engine.

This 3/16"x6" Allen socket makes the job a lot easier.

The Allen wrench doesn't have to be 6" long. This one simply gives you more room to work.



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Toolmaker of the XLFORUM  
<http://xlforum.net/forums/showthread.php?t=499487&highlight=check+ball+lapping+tool>

2)  
DaWind of the XLFORUM <http://xlforum.net/forums/showthread.php?t=1013445&page=2>

3)  
bustert of the XLFORUM <http://xlforum.net/forums/showthread.php?t=1813185&page=2>

4)  
photo by Toolmaker of the XLFORUM

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5)

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