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## REF: Tools - 102

### Piston

### Piston Rings

See also [Removing / Installing Piston Rings](#) in the REF section of the Sportsterpedia.

This tool is cheap at most auto parts stores.

It hooks both ends of the ring and spreads it apart making the inside diameter wider than the piston. Then lift the ring off / on the piston.

**Caution:** only spread the ring just enough to remove / install it. Used on top and second rings. (the bottom oil rings are usually removed by hand)



### Piston Ring Remover / Installer

### Piston Ring Compressor

Ring Pliers <sup>1)</sup>

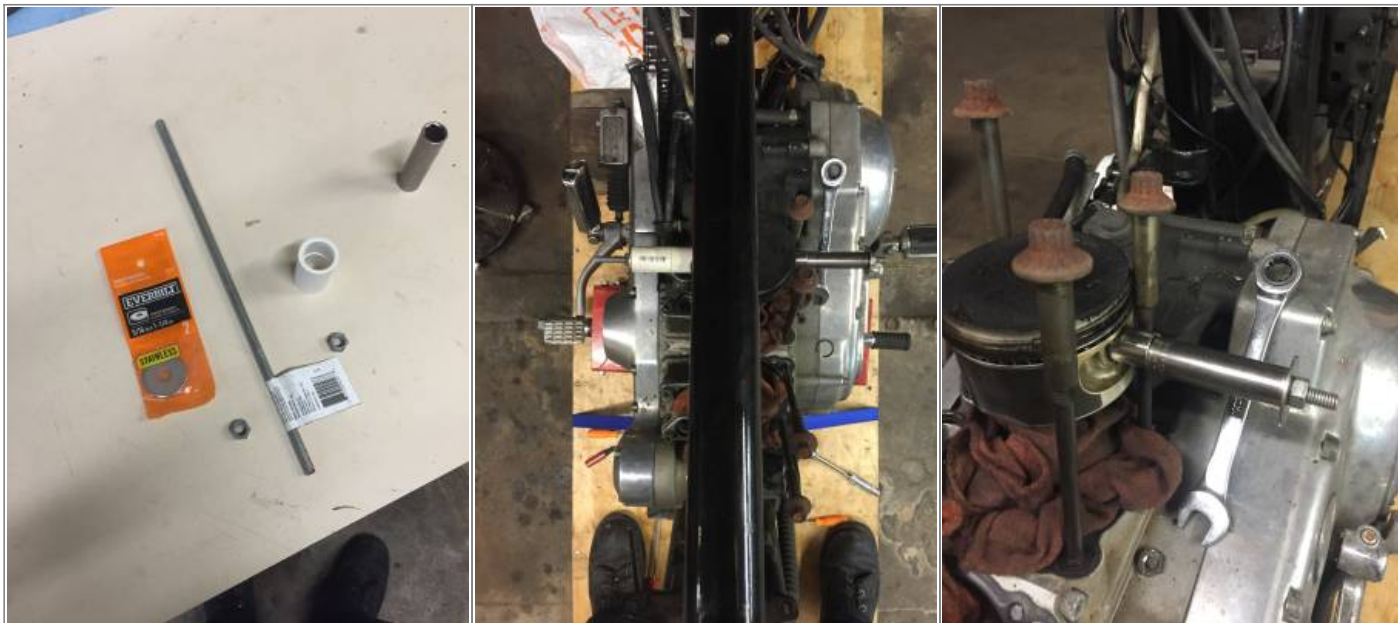
A wooden spacer with slot to hold piston steady as you slide the cylinders on. Also, a Volkswagen “krinkle cut” ring compressor that comes apart after the cylinder is on. The crinkle cuts stop it from jamming up in between the piston and cylinder. Also, use plenty of oil in the rings, piston and cylinder to help it all slide on. <sup>2)</sup>

Cylinder Installing Jig <sup>3)</sup>

## Wrist Pin

See also [How to install a bushing without a press](#)

## Wrist Pin Removal - Installation Tools



Home made wrist pin removal / installation tool. 5/16" all thread, 2 fender washers, two nuts, two PVC spacers and two 1/2" sockets. <sup>4)</sup>



The socket should be slightly smaller than the OD of the wrist pin. This can be used to remove and install the wrist pin. <sup>5)</sup>



9/16 UNF high tensile bolt with stepped collars turned to fit loosely in the new bush, and slightly smaller than the outside diameter and pulled the old bushes out and the new ones in. Make sure the chamfered end of the bushing goes in first. <sup>6)</sup>



**Wrist pin bushing installer: 3/4" bolt with two washers and a nut.** <sup>7)</sup>



**A 1/2x13 carriage bolt set into the pin hole and either pushed or light threading motion with pressure applied to remove the wrist pin.** <sup>8)</sup>

## Wrist Pin Bushing Reaming Jig



A couple bits of timber and four bolts. Holds them nice an steady for reaming. <sup>9)</sup>



Two holes in a rag with some tape stops any bronze chips from getting down in the crankcase. <sup>10)</sup>

## Wrist Pin Alignment



Check to see if the pin is parallel to the crankcase mouth by using two pieces of 3/4" precision key steel from your local bearing supply shop. <sup>11)</sup>

## Connecting Rod

## Balancing

**Jig for Balancing Rods** <sup>12)</sup>

## Wrist Pin Lock Rings

Installing Spira-lock wrist pin lock rings: <sup>13)</sup>



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1)

photo by IronMick of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/144923-piston-rings-76-ironhead?t=1572784>

2)

Hopper of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/63858-special-tools/page2?t=395586&page=2>

3)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/63858-special-tools/page2?t=395586&page=2>

4) , 5)

pics courtesy of humancertainty of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-engine-conversions/181349-stop-hammer-time?t=1952102&highlight=wrst+pin+removal+tool>

6) , 9) , 10) , 11)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/63858-special-tools?t=395586>

7)

photo by arisaka of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/63858-special-tools/page15?t=395586&page=15>

8)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-engine-conversions/116696-philober-s-1250-conversion-thread-pic-heavy/page2?t=1122547&page=2>

12)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/63858-special-tools/page12?t=395586&page=12>

13)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/169834-how-do-i-install-these-cir-clips-kind-urgent#post3620248>

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