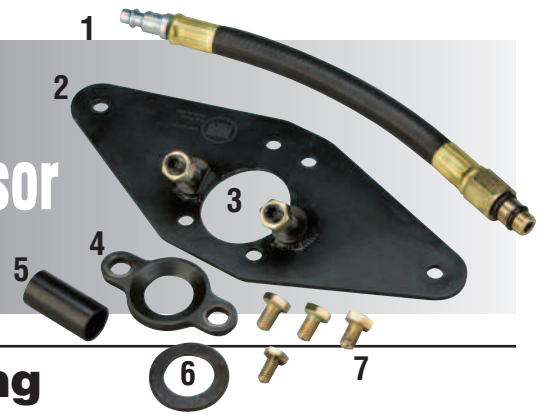


# CF-HDIF

## On-the-Engine Valve Spring Compressor Instructions



**Please read instructions before using**

### GENERAL:

This overhead valve spring compressor is designed to be used on the following Harley-Davidson® engines: • Sportster EVO - 2008 • Evolution • Twin Cam

### WARNING

FOR YOUR SAFETY, PLEASE READ AND FOLLOW ALL OF THE SAFETY AND OPERATING INSTRUCTIONS BEFORE OPERATING THIS SPRING COMPRESSOR. WEAR PROPER EYE PROTECTION. ALL TASKS SHOULD BE PERFORMED BY A QUALIFIED TECHNICIAN. NOTE: ENGINE SHOULD BE CHECKED FOR PROPER COMPRESSOR FOR THIS TOOL TO PERFORM EFFECTIVELY.

### VALVE SPRING REMOVAL

1. Place transmission in gear with rear wheel firmly placed on the working surface and front wheel locked.
2. Disconnect negative battery.
3. Expose top of cylinder head by removing the fuel tank and rocker boxes according to the manufacturer's procedures.
4. Remove both spark plugs
5. Position piston of the cylinder head to be serviced at top dead center.
6. Install cylinder pressurizing hose into spark plug hole (if the 14mm threads are to be used, first remove o-ring at the end of the threaded fitting.
7. Install valve spring compressor base on top of the cylinder head. Position the large hole centered around the valve spring and the two threaded lugs in line with the angle of the valve stem. Fasten the base to the cylinder head using the three  $\frac{5}{16}$ " bolts provided (Sportster heads require two  $\frac{5}{16}$ " bolts and one  $\frac{1}{4}$ " bolt, provided. The  $\frac{1}{4}$ " bolt attaches to the

right outside hole.) Firmly tighten all hardware.

**WARNING: Do not exceed torque values – 5/16" bolt: 15-18 ft.-lbs. (20.3-24.4 nm), 1/4" bolt: 10-13 ft.-lbs. (13.5-176 nm), Exceeding these torque values may result in disruption or destruction of cylinder head threads.**

8. Install two threaded studs into base. Tighten studs.
9. Pressurize cylinder using shop air (90-120 PSI)
10. Install compressing member over studs and spring. If removing conical springs use the reducer washer that is provided.
11. Place the two nuts that are provided over studs and begin evenly rotating the nuts downward a little at a time. Using a ratcheting wrench, compress the valve spring to release the valve spring keepers. Note: If the spring collar and keepers are seized together, apply penetrating lubricant. Then tape the top of the compressing members to break the seal.
12. Remove the valve spring keepers.
13. Rotate the two nuts evenly upward to remove the spring.

### VALVE SEAL REMOVAL

1. Remove valve spring and expose valve seal.
2. Using angular pliers, rotate the valve seal to break its lock on guide. Place nose of pliers under the seal rim. Then using the base of the valve spring compressor as a fulcrum, lift the seal upward along the angle of the valve stem to remove seal.

### VALVE SEAL INSTALLATION

1. Remove the threaded stud closest to the operator.
2. Place new seal carefully over valve stem and valve guide. Take caution not to damage the seal on the valve stem retaining groove.
3. Place seal driver over valve stem and onto head of seal.
4. With a small, heavy hammer, strike top of driver until seal is fully seated onto guide.

### VALVE SPRING INSTALLATION

1. Follow steps 10 - 13 of valve spring removal in reverse order.

### WARNING

Tapping and/or striking of engine components must be carefully engaged. Loss of blood, appendage or life could result from improper valve spring installation or removal.

### LIMITED WARRANTY

A full replacement three (3) year limited warranty will be honored against all manufacturer's defects with return of tool. GOODSON makes no other warranties or representations of any kind whatsoever, expressed or implied, except that of title and all implied warranties including any warranty of merchantability and fitness for a particular purpose are hereby disclaimed.