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# EVO: Oiling & Lubrication - Sub-01A

See also in the Sportsterpedia:

- [Evo Engine Oiling System](#).
- [Pics and installation of the plunger and spring](#) for 86-90 models.
- [86-90 Oil Filter Mount Mods](#) for modifications to the pressure regulator system.

## 86-90 Oil Filter Mount Parts, Specs and Dims

### Oil Lines





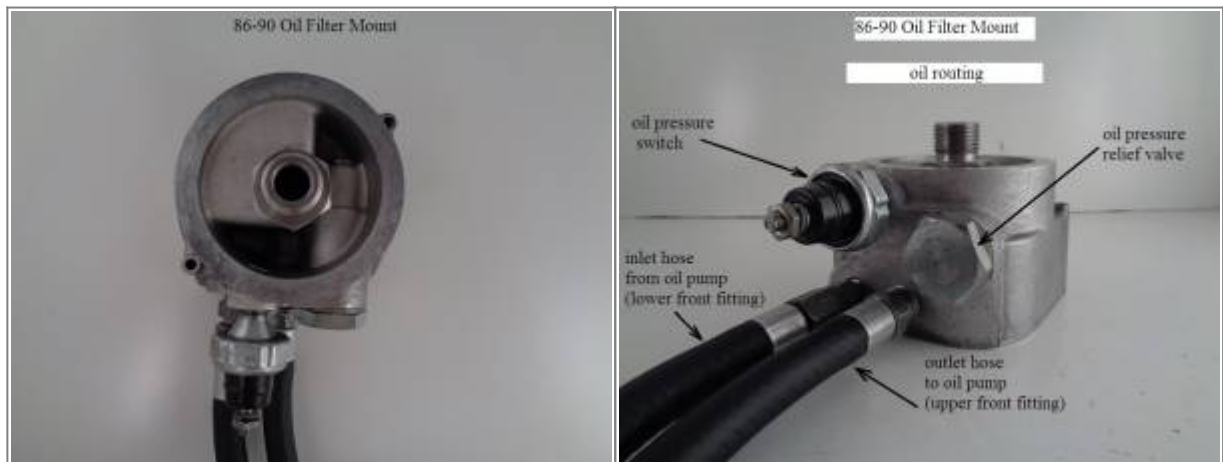
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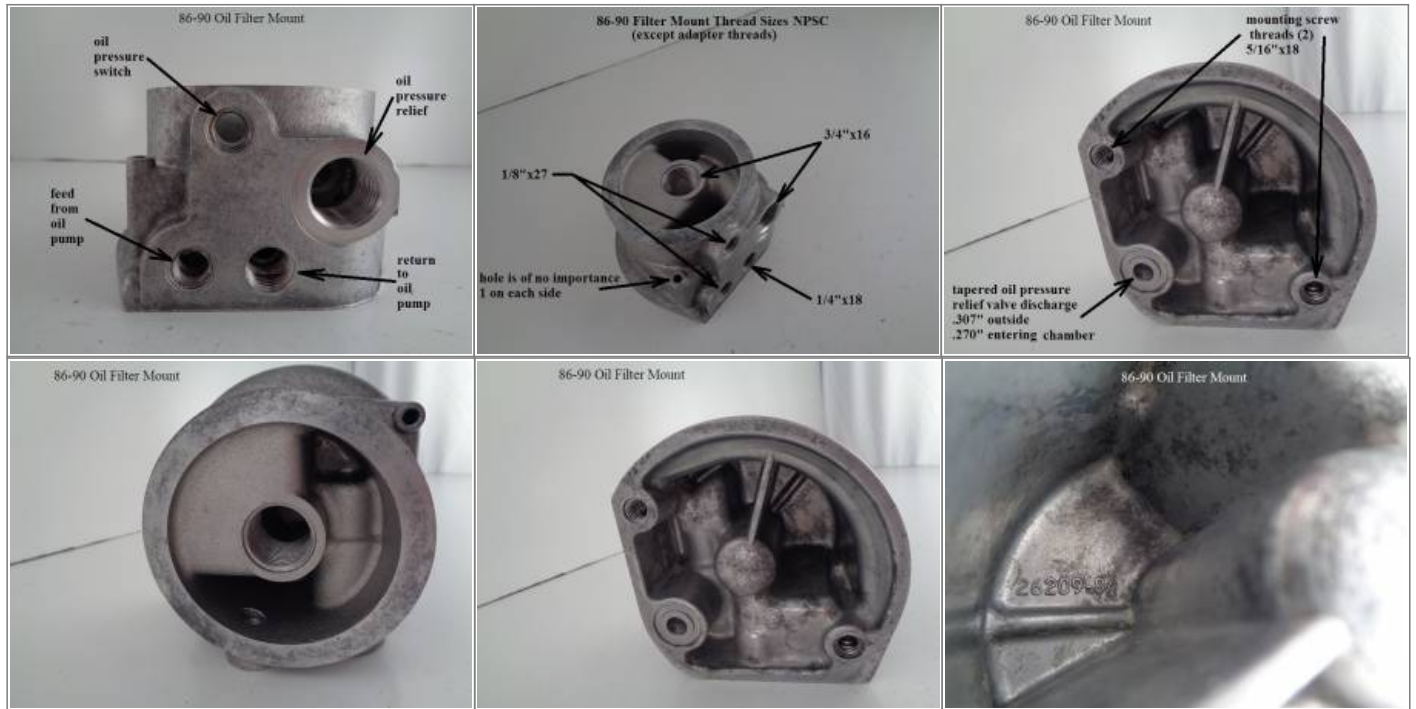


6)

## Oil Filter Pad

**Note:** Use Teflon tape or Hylomar on all fittings installed to the oil filter mount (not shown below). <sup>7)</sup>





# Oil Filter Adapter

The threads on each end of the oil filter adapter are the same.  
 The adapter is installed with the larger ID outward regardless of which oil check system is used.  
 (smaller ID end installed first into the filter pad)

However, it can be physically installed backwards with the smaller diameter pointed outward when using a ball check.

This is not advisable. The sharp ends of the larger ID will lock the ball in place.  
 If the ends are reversed, the ball will not seat properly and this will allow oil to drain into the crankcase (creating a wetsumping condition).

### Installation:

The end with the smaller ID must be placed into the filter housing first.  
 (looking into the inside, the thicker walled end is threaded into the filter pad)

Torque: 8-12 ft/lbs. <sup>8)</sup>



**Dims:**

86-90 Oil Filter Adapter: Each end has a different ID. Installs with larger I.D. outward <sup>9)</sup>



## Oil Check Valve / Check Ball

The oil pump check valve plays a role in the operation of the oil pressure switch. It also stops oil from entering the engine when the engine is shut off (in theory).

### Oil Check Valve (77-E87)

See also;

[Check Valve Dims](#) in the IH section of the Sportsterpedia

[More on how the check valve works](#)

Made by Circle Seal.

Manufacturer Part# P106-376.

HD Part# (26435-76A).

Patent #3626977.

The oil check valve (26435-76A) was an upgrade in L77 and used on all L77-E87 models. It has an arrow on the side for proper installation pointing up showing the direction of flow. Properly place, the arrow should point to the oil filter pad.

- The check valve had 2 different part numbers.
  - The original was (26435-76) in early 1977.
- The part number was upgrade (26435-76A) for L77-78 models <sup>10) 11) 12)</sup>

On 77-85 models, the check valve is located inside the oil pump.

On 86-E87 models, the check valve is located at the oil filter pad (inside the oil filter adapter).

The oil check valve can be used in place of the ball check and spring on all 86-90 models.



**Installation:** <sup>13)</sup>

Install a new O-ring in the ring groove of the check valve.  
 Assemble the check valve in the larger outside ID of the filter adapter.  
 Properly place, the brass portion of the check will be easily visible from the outside.  
 The arrow stamped on the side of the check should point toward the filter pad (direction of flow).



**Dims:**

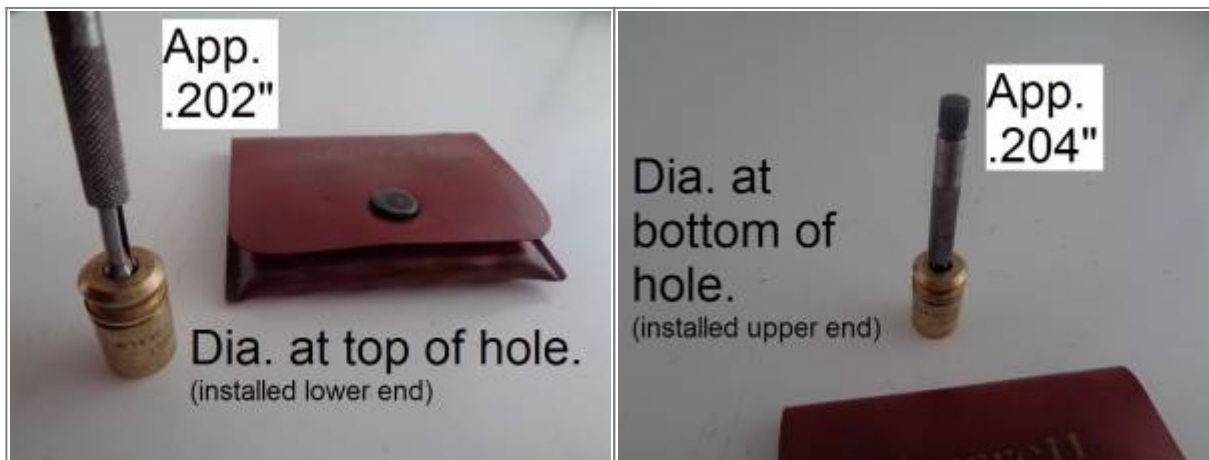
A small rod was inserted into the check valve to measure the plunger travel which is app. .0845"



The installed upper end is slightly smaller than the lower end.  
 The body is a two piece compressed design.



App. .002" difference in diameter was noticed between the top and bottom of the hole in the check valve.



## In search of a comparable check valve

**The closest on the Circle Seal website** is a [2900 series cartridge check valve](#).

Click on the 2900 series in the catalog section to the left on the their site.

In the Products-Engineering-Terminology PDF;

Flow capability ( $C_v=0.55$ ). Flow capability indication commonly accepted by the valve industry. The literal definition is that a component with a  $C_v$  of one (1);  
 Can flow one (1) gallon of water with a  $\Delta P$  of one (1) PSI.  
 The calculated results from  $C_v$  equations must be considered reasonable approximations only.

**Link to the Circle Valve site with comparable dims and specs:**

<https://catalog.circlevalve.com/item/check-valves/c2900-series-cartridge-check-valve-0-to-3000-psig/cs-c2949b-4q>

This one has a back-up O-ring on the valve.

That link came from this XLF thread:

<http://xlforum.net/forums/showthread.php?t=1979566&highlight=gerotor&page=2>



## Oil Check Ball and Spring (L87-90)

The check ball replaced the check valve in L87 and up models.  
Read further information here: [Oil Check Ball \(L87 and Up\)](#).

The check ball (26437-86A) and spring (26436-86) can be used in place of the check valve on 86-E87 models.

If the ball check is replaced or substituted on earlier models, apply Loctite 242 (blue) to the threads on the end of the smaller ID side of the filter adapter. <sup>14)</sup>



### Installation: <sup>15)</sup>

Place the spring first and then the ball in the threaded hole in the filter adapter.  
Push the adapter against the ball to compress the spring.  
Thread the adapter into the center of the mount.  
Torque to 8-12 ft/lbs.



### Dims:



# Oil Pressure Switch

See also in the Sportsterpedia;

[Testing the Oil Pressure Switch](#) in the REF section of the Sportsterpedia.

More on [how the oil pressure switch works](#).

## Installation:

Torque:

Pressure switch: 5-7 ft/lbs. <sup>16)</sup>

Wire nut: 4-10 in/lbs. <sup>17)</sup>

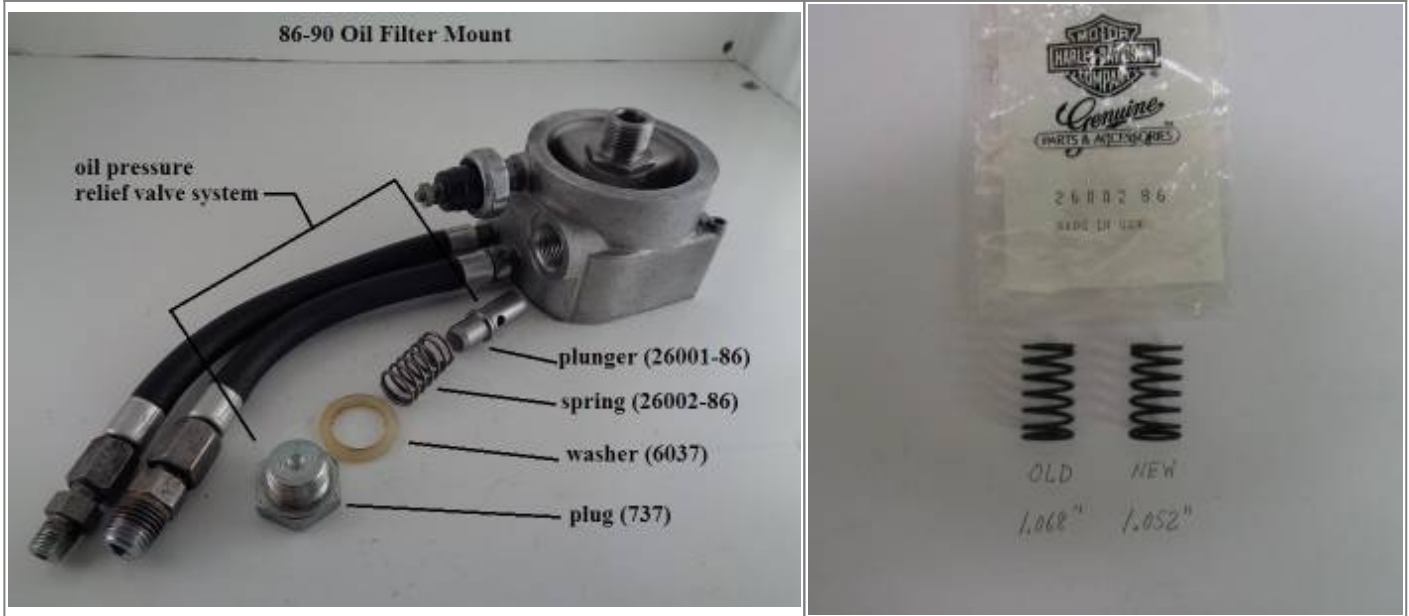


# Oil Pressure Regulator

See more on [how the oil pressure regulator works](#) in the Sportsterpedia.

Regulator parts. <sup>18)</sup>

Old vs new spring height:  
Old 1.068" - New 1.052" <sup>19)</sup>



**Installation:**

**Note:** The plastic washer on the plug replaces the need for thread dressing.

Plug torque: 15-20 ft/lbs. <sup>20)</sup>



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1) , 2) , 3) , 4) , 5) , 6) , 18)

photo by Hippysmack

7) , 8) , 13) , 14) , 15) , 16) , 17) , 20)

1986-1990 HD Sportster FSM pg 3-42

9)

photos by Hippysmack

<sup>10)</sup>

1954-1977 HD Sportster XLH/XLCH-1000 Parts Catalog Supplement (99451-77A)

<sup>11)</sup>

1954-1978 HD Sportster XLH/XLCH-1000 Parts Catalog Supplement (99451-78)

<sup>12)</sup>

1954-1977 HD Sportster XLH/XLCH-1000 Parts Catalog pg 23 (99451-78A)

<sup>19)</sup>

photo by Gary E of the XLFORUM of the XLFORUM

<http://xlforum.net/forums/showthread.php?t=1971026&page=20>

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