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EVO: Oiling & Lubrication - Sub-031

86-90 Oil Pump (26204-86) Individual Parts and Pics

See also See also [86-90 Oil Pump \(26204-86\) Parts \(approximate\) Dims](#)

Oil Pump Body and Cover

Oil Pump Body

- The pump body is HD catalog part number (26484-86)
- The body casting number is (26485-)
 - The casting number is in return cavity.
 - It has a "2" stamped next to the casting number.
 - There is also a "T" stamped into the opposite return cavity.





Oil Pump Cover

- The bottom cover is HD catalog number (26486-86).
- The casting number (26487-86) is in the feed cavity.





Gearshaft

The gear shaft part number (26488-75) was used from 77-90.

The gear has 20 teeth.

The gear dims and teeth pitch are all the same nominally from 77 to present oil pumps.

However, there are variations of the exact length of the shaft.



Gearshaft Retaining Ring

Gear shaft retaining ring (26497-75) was used on 77-90 model oil pumps.

It keeps the inner plate, return gerotors and gearshaft locked in the pump.

It also sets the lowest position for the inner plate and return gerotors inside the pump.



Gearshaft Pins

The gear shaft solid pin (26430-76), was used in 77-90 oil pumps.

The diameter and lengths of the pins vary.

The shaft pins don't have to run out and touch the gerotors.

They simply turn both gerotors at the same time.

So, the exact length shouldn't be an issue for the gerotors.

The installed upper pin holds the gearshaft in the pump body during disassembly.

The length of this pin shouldn't be an issue for the gearshaft.

The retaining ring and return gears set the upper positioning of this pin inside the pump.

There is a clearance between the pump bore and the gearshaft.

The upper gearshaft bushing does reach to the end of it's bore in the housing where the pin resides.

So, there is extra clearance between the gearshaft and pump housing bore.

After the retaining ring comes out, the shaft can drop into this tapered bore clearance and the lower pin can scratch the aluminum sides.

The installed lower pin also holds the outer plate in the pump body.

The length of this pin could be a potential issue under the right conditions.

Too short and it could get make it's way into the hole in the plate and upset the center of the pressed in seal.

This could induce slop in the plate and allow it to try to spin the plate against the roll pin in the body.

As well as create a leak from the feed side and allow oil to float up into the engine thru the gearshaft bore.



Separator Plates

The 77-90 oil pumps used two plates to separate the feed and scavenge gerotors. Both plates sit between the feed and return gears and remain stationary during operation. The plates are separated by a spring washer that puts tension against each plate in opposite directions. Thus sealing off the feed and scavenge sections.



Inner Plate

The inner plate part number (26463-77) was used in all 77-90 oil pumps. It is the top plate (with the pump installed). The return gerotors sit on this plate.



Outer Plate

The outer plate is the bottom plate (with the pump installed). The feed gerotors sit under this plate.

- (26493-75A) was an upgrade for the E83 pump assembly.
It also was used in the re-designed L83-85 assemblies as well as all 86-90 oil pumps.

Notice the difference of the cut out or recessed area of the inside diameter of the outer plates.

This is for the different style of seals.³⁾

Either plate will fit 77-90 oil pumps with their respective seals.



Outer plate comparison⁴⁾



Outer Separator Plate Seal

Outer plate seal (12036A) was used on 83-90 models. It is supposed to prevent oil from rising into the scavenge gears / engine from the feed section of the pump.

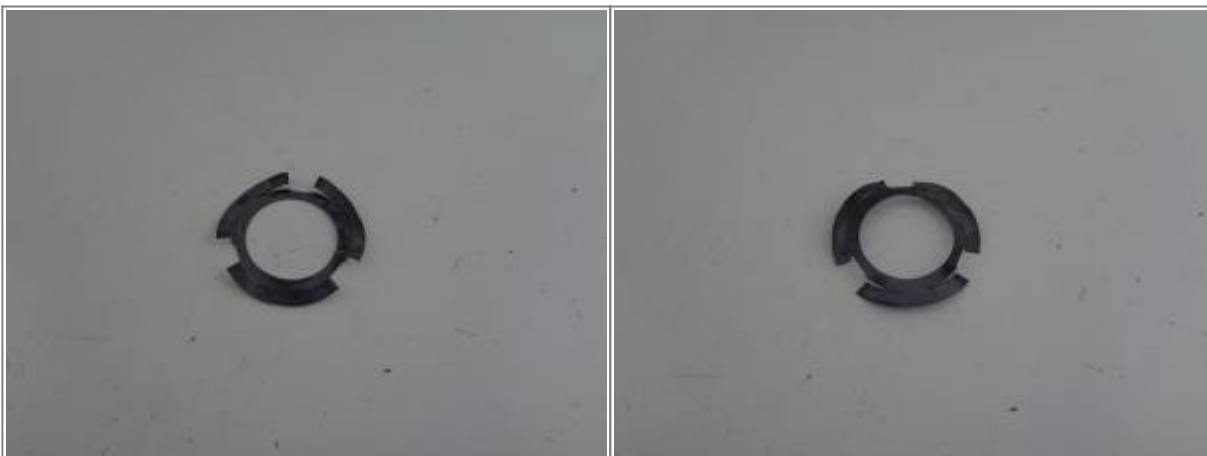
- Sold for use with outer separator plate (26493-75A)
- It has a metal outside band with bonded rubber inside.
- It is pressed into the outer plate hole.

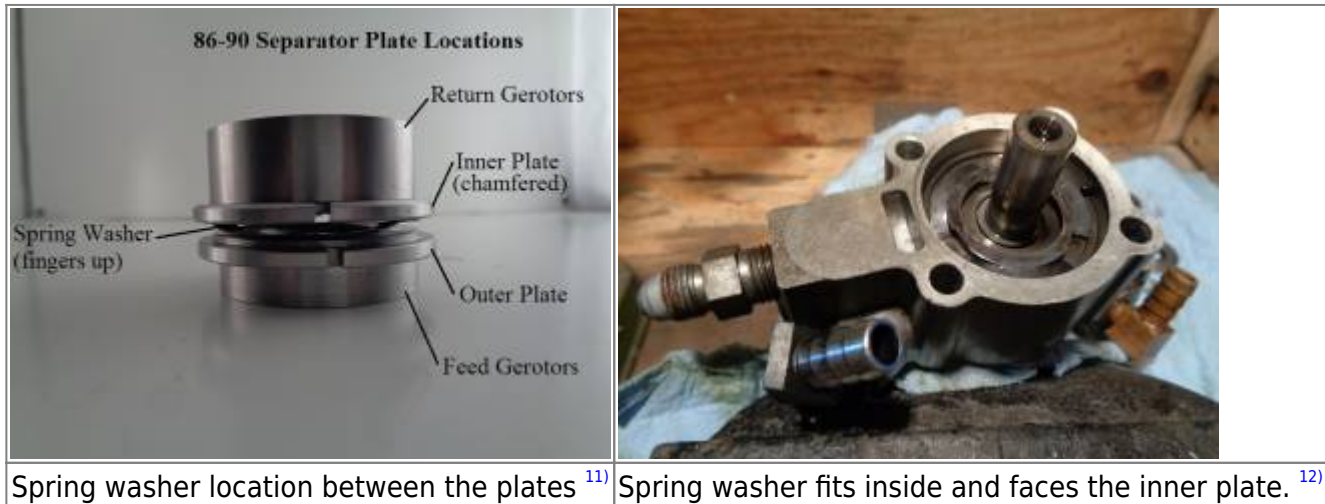
The seal below is used and partially destroyed upon removal.

Outer plate seal (12036A) (destroyed during removal) ⁸⁾Outer seal (12036A) installed position. ⁹⁾

Spring Washer

The spring washer part number (26461-77) was used on all 77-90 oil pumps. It sits between the two separator plates and induces pressure against both plates and gerotor sets. The spring washer is what creates the tension on the drive gear.

Spring washer (26461-77) ¹⁰⁾

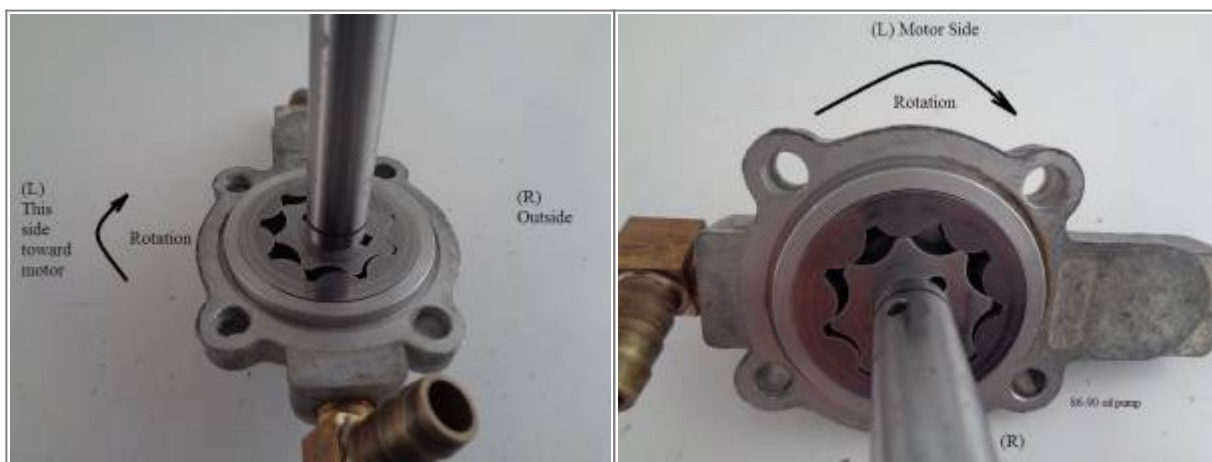


Gerotors

See also;

[Gerotor Dims](#)

- The inner gerotor gears are locked in place by the solid steel pins protruding from the gearshaft.
 - They turn in the same direction as the gearshaft.
- The outer gerotor gears spin by the teeth of each inner.
 - They also turn in the same direction as the gearshaft.
- The gearshaft is off center to the outside gerotors both feed and return.
- There are 8 teeth on each inner and 9 on each outer gerotor set.
 - This allows for the cavity between the inner and outer gears for oil transfer.
- The side toward the motor is where oil is transferred to and from the pump.
- The inner and outer gears come together on the other side (right side).
- This spacing relationship doesn't change between the motor side or the outside of the pump due to the offset gearshaft.



- The same set of gerotors were used in all 86-90 oil pumps.
- The outside edges are all straight cut without a chamfer.
- The feed gerotors were an upgrade for 86 pumps. They were made taller and thinner from their 85

counterpart.

- The scavenge (return) gerotors are the same as used in the L83-85 oil pumps.



Feed Gears

86-90 Feed gerotors (26492-86):

This was a new part for 86 pumps.



Feed gerotors installed location ¹⁵⁾

Return (scavenge) Gears

L83-90 return gerotors (26491-83):



L83-90 return gerotors (26491-83) ¹⁶⁾



Return (scavenge) gerotors installed position ¹⁷⁾

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1) 5) 6) 7) 9) 11) 12) 15)

photo by Hippysmack

2) 8) 10) 13) 14) 16) 17)

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3)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/194881-let-s-study-the-77-85-oil-pump-parts-and-changes-and-when?t=2071153>

4)

photo by DirtyCory of the XLFORUM, annotated by Hippysmack

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