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# REF: Oiling & Lubrication

## Aftermarket Sportster Oil Pumps

### Pro-Flow for 1977-Present Sportsters

The Pro Flow oil pump for 1991-up Sportsters was developed by Zippers according to Buz Buzzellie's Sportster Performance Handbook. <sup>1)</sup>

Billed as compact Cad/Cam design, made of 6061 aluminum, O-ring sealing throughout and modular construction.

The ProFlow oil pumps and accessories for XLs, BTs and TCs in the year 2000 at least were sold thru Zippers Performance as well as Zodiac International B.V. (The Netherlands)

These pumps are no longer in production. <sup>2)</sup> There were two versions for Sportsters; a 3 stage and a 4 stage.

In 2000, the pump was redesigned with improvements, one of which was the addition of an oil strainer cap / cover over the cam chest port. <sup>3)</sup>

The drive gear and gerotor systems were improved for less drag while maintaining reportedly superior scavenge and feed rates.

### 3 Stage Pump

The 3-stage pump uses 3 independent gear sections for oil delivery to and fro.

The different stages as starting from the top down;

- The top section has a gerotor stage to scavenge the cam chest. Oil is sucked through the neck by the gerotors in the top section of the pump.
  - Cam chest strainer cap holes: The strainer cap over the cam port has holes in it's upper section for oil intake. There were 3 variations of this strainer; <sup>4)</sup>
    - **Street use:** holes are pre-drilled in circumference of the upper portion of the cap.
    - **Racing:** the holes were punched lower down the cap to scavenge all of the oil in the cam chest.
    - **Custom:** the strainer cap was left blank with no holes so the builder could drill holes to suit needs of the build.
- The middle section has a high volume spur gear stage to scavenge the crankcase sump.

There is also an extra suction port into the spur gear cavity that is plugged with a 1/8"x27 NPT pipe plug.

That port can be used if someone for example wants to connect the pump via external plumbing to the sump.

- The bottom section has a gerotor stage that feeds oil to the engine and plumbed just like the OEM pump feed section.

**Fitment:**

This pump is a direct "bolt-on" for 1991-up Sportsters.

It can be installed on 1986-1990 engines with the addition of a feed fitting kit to plumb to the feed passage in the bottom of the engine.

It can also be installed on 1977-1985 engines with the addition of the feed fitting kit which includes feed line plumbing and also an inline check valve.

Further plumbing is the responsibility of the builder.

Click on a pic to enlarge:

Pro Flow 3 stage oil pump. <sup>5)</sup>



More pics of the Pro Flow 3 stage oil pump <sup>6)</sup>





## 4 Stage Pump

The 4 stage pump has an additional set of gerotors utilizing 4 independent gear sections for oil delivery to and fro.

The 4th stage can be used for various things.

Basically, it has 3 independent scavenge sections (draining the rocker boxes, draining a turbo or whatever the engine builder wants)

It is also possible to use the additional stage to pump more feed oil into the motor with additional

plumbing.

The different stages as starting from the top down;

- The top section has a gerotor stage to scavenge the cam chest. Oil is sucked through the neck by the gerotors in the top section of the pump.
  - Cam chest strainer cap holes: The strainer cap over the cam port has holes in it's upper section for oil intake. There were 3 variations of this strainer; <sup>7)</sup>
    - **Street use:** holes are pre-drilled in circumference of the upper portion of the cap.
    - **Racing:** the holes were punched lower down the cap to scavenge all of the oil in the cam chest.
    - **Custom:** the strainer cap was left blank with no holes so the builder could drill holes to suit needs of the build.
- The next section down has a high volume spur gear stage to scavenge the crankcase sump. There is also an extra suction port into the spur gear cavity that is plugged with a 1/8"x27 NPT pipe plug. That port can be used if someone for example wants to connect the pump via external plumbing to the sump.
- The next section down is the additional gerotor (4th) stage and it is plumbed the same as the bottom feed section. It has it's own "in and out" fittings separate of the other sections. Plumbed just like the OEM pump feed section.
- The bottom section has a gerotor stage that feeds oil to the engine and plumbed just like the OEM pump feed section.

#### Fitment:

Bolt-on fitment is the same as the 3 stage pump but due to the additional stage, the frame rail has to be modified to accept the taller oil pump.

This pump is a direct "bolt-on" for 1991-up Sportsters.

It can be installed on 1986-1990 engines with the addition of a feed fitting kit to plumb to the feed passage in the bottom of the engine.

It can also be installed on 1977-1985 engines with the addition of the feed fitting kit which includes feed line plumbing and also an inline check valve.

And of course, further plumbing is the responsibility of the builder.

## Parts Lists

REPLACEMENT PARTS FOR PRO-FLOW SPORTSTER TYPE OIL PUMPS <sup>8)</sup>		
<b>These are Zodiac NL part numbers</b>		
721756	Rebuild kit	For Sportster type Pro-Flow 3 & 4 stage pumps. Contains all clips, keys, pins and O-rings needed for complete reassembly of the Pro-Flow Sportster style oil pump.
721845	Pro-Flow main body	With gerotor set.

721846	Pro-Flow scavenge section	With spur gears.
721847	Pro-Flow feed section	With gerotor set for ZPN 721184
721848	Pro-Flow feed section	With gerotor set for ZPN 721183
721849	Auxiliary section	With gerotor set for ZPN 721184
721850	Pro-Flow oil pump cover	
721851	Pro-Flow drive shaft	Only for ZPN 721183
721852	Pro-Flow drive shaft	Only for ZPN 721184
722121	Dowel pins	For oil pump set ZPN 721183 and ZPN 721184
722069	Mounting bolts	For ZPN 721183
722139	Mounting bolts	For ZPN 721184
<b>These are Zippers Performance part numbers</b>		
613-140	Pro Flow 3 Stage XL oil pump	Comes with street oil strainer cap (filter)
613-150	Pro Flow 4 stage XL oil pump	Comes without oil strainer cap (filter)
613-103	Fitting kit	For 1986-1990 XL cases and all S&S cases
613-104	Fitting kit w/ check valve	For 1977-1985 XL cases and and Delkrom 4 cam cases
613-141	Rebuild kit	For Sportster type Pro-Flow 3 & 4 stage pumps. Contains all clips, keys, pins and O-rings needed for complete reassembly of the Pro-Flow Sportster style oil pump. Also contains "street" filter for standard oil level.
613-145	"Street" filter	Oil strainer for standard oil level
613-145	"Race" filter	Oil strainer w/ low oil holes to reduce oil in gearcase
613-146	"Blank" filter	Oil strainer w/ no holes for custom build
613-143	Filter set	Oil strainer set w/ street, race and blank strainer caps
613-142	Silver / bronze drive gear	Oil pump shaft gear upgrade for extreme load applications

## Drag Specialties

### Oil Pump Assembly (09320189) for 1991-2020 Sportsters

This oil pump is comparable to the 2007-up Sportster oil pump (26204-91A) with the taller scavenge gerotors.

However, **the parts in this pump will not interchange with the factory oil pump.** The gerotor and middle spacer dims are different.

[Click Here](#) to view parts dims for the factory 07-up oil pump.

\* Noticeable markings:

... Cover has CL stamped into the bottom center.

... Cover reads RPLS 26204-91A







• Features

- Cast aluminum body with steel gears and shaft
- Raw cast aluminum finish
- Gaskets and seals included
- (2) mounting bolts and hose clamps (sold separately)
- (2) 1/8"-27 x 3/8" hose bibb fittings (for feed inlet and return hose attachments) (sold separately)
- (1) 1/8"-27 x AN5 feed hose fitting (sold separately)

Notes:

Parts Europe lists the flow rate as "standard" <sup>9)</sup>

**Pics of parts**

Cover ID <sup>10)</sup>	Pump body (minus cover) <sup>11)</sup>	Spacer between the gerotors <sup>12)</sup>
 <p>Drag Specialties Replacement Oil Pump (09320189) for 1991-2020 Sportsters</p>	 <p>Oil pump housing height</p>	 <p>Gerotor cavity spacer OD</p>
Spacer between the gerotors <sup>13)</sup>	Feed gerotor OD and height <sup>14)</sup>	
 <p>Gerotor cavity spacer height</p>	 <p>Feed gerotor height</p>	 <p>Outer feed gerotor OD</p>
Feed gerotor dim <sup>15)</sup>	Scavenge gerotor OD and height <sup>16)</sup>	





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1)

88inchsporty of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/lubrication-and-lubricants/68354-rebuilding-a-pro-flow-oil-pump?t=454717>

2)

Jorgen of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/lubrication-and-lubricants/148571-oil-change-fail/page3?highlight=pro+flow#post3177632>

3)

Thanks goes to Ebay seller, jacha6090 for the 2000 Zippers Catalog information

4) 7)

2000 Zippers Catalog information provided by jacha6090

5)

photos by Jorgen of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/lubrication-and-lubricants/148571-oil-change-fail/page3?highlight=pro+flow#post3177632>

6)

photos courtesy of Ebay seller jacha6090, [Link to Ebay Items for Sale](#)

8)

parts list provided by Jörgen of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/lubrication-and-lubricants/68354-rebuilding-a-pro-flow-oil-pump?t=454717>

9)

<https://www.partseurope.eu/en/product/oil-pump-assembly/09320189?s=88164>

10) 12) 13) 14) 15) 16) 17)

photos by Sportyheizer of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-bottom-end/205147-oil-pump-replacement/page2#post4632387>

11)

photo by Sportyheizer of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-bottom-end/205147-oil-pump-replacement/page2#post4632387>

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