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IH: Oiling & Lubrication - Sub-01L

Oil Scavenge Passages Through Pics

Oil Pump Scavenge

See also the [IH Oil Pump](#) section of the Sportsterpedia.

'57-'76 Cases

An engine sitting for a while not running can “sit-sump” oil into the primary.

Read more on [Sit Sumping](#) in the Sportsterpedia.

On engine start up the excess oil in the primary should be transferred back into the engine (but not all at once).

In the event oil from the oil pump seeps into the crankcase high enough to spill over into the primary, on startup, that oil is sent into the crankcase by way of the transfer valve.

On piston downstroke, positive crankcase pressure closes the transfer valve and seals a small hole preventing flow into the primary.

On piston upstroke, vacuum in the crankcase opens the transfer valve and sends a burst of oil/air into the crankcase.

Read more about the [Transfer Valve](#) in the Sportsterpedia.

The pics below show the oil flow from the flywheel cavity to the return pump.

In stock configuration, most all used oil ends up in the flywheel cavity.

The small amount that gets supplied to the upper pushrod ball/socket goes into the gearcase.

While the splash oil to the exhaust valves enters the crankcase through the head drains.

The two crankcase halves together form the oil scavenging slot where oil is sent out of the sump to the oil pump.

The open slot receives oil by splash from the wheels and oil is forced into and thru the slot by way of positive crankcase pressure (downstroke of the pistons).

The scavenge slot is blocked off on the left side by the crankcase wall.



1)



2)



3)

Oil is pushed by the pistons thru the slot into the right case where it gathers in the oil trap at the oil pump mount.



4)



5)

Oil is picked up through the windows in the breather gear and slung into the gearcase and drained thru a strainer into the oil pump scavenge gears and sent back to the oil tank.



'77 and Later Cases

The “drain plug” on the bottom of the case is simply a threaded plug that caps the oil scavenging passageway.⁸⁾

However, it's not really a drain but rather a plug in a machined oil passage.

The MoCo drilled from the bottom of the case to the horizontal oil passage in the gearcase.

This connects the crankcase sump oil to the scavenge port of the oil pump and the hole is plugged on the bottom.

From inside the case with the plug removed from the scavenge passage;

In the second pic below, you can see that the threads, from the tap, have been machined farther up into this hole.

This is the oil passage from the sump to the scavenge pump.

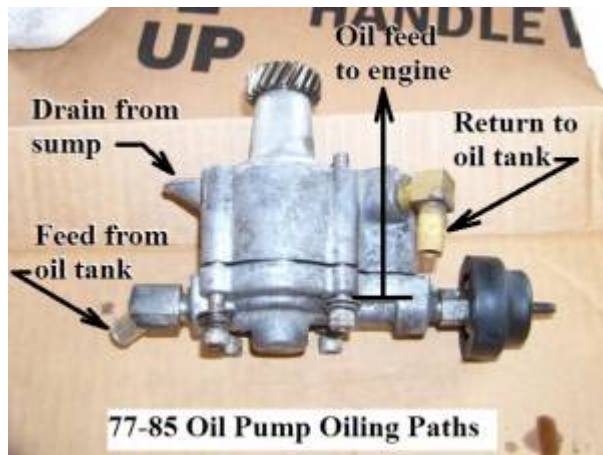
Oil from cylinder drains, crankpin, pushrods and cam chest that collects in the sump is fed to the pump by crankcase pressure and pump suction through this hole.

As you can see, even if you remove the plug, you still cannot drain the entire sump due to the mounting bosses (ribs) for the cover bolts.

In the third pic below, you can see where they drilled the case from the side where the cam cover goes and the bottom where the oil pump return hole goes.

The hole drilled from the cam cover side doesn't go anywhere. It dead ends into the cam cover flange.

Caution: If you use silicone on your gaskets, the silicone could easily enter the oil passage and enter your pump.

Scavenge passage on 77 engines ⁹⁾

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1) , 4) , 6) , 7)

photo by Dr Dick of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/122424-breather-diagrams/page3?t=1204854&page=3>

2)

photo by Dr Dick of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/79838-oil-transfer-valve/page3?postcount=40#post2847834>

3)

photo by ironheadjunkie

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/137835-1975-oil-question?t=1495746>

5)

photo by thefrenchowl of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/200118-info-needed-on-mini-sumps/page2#post4417324>

8)

bobbystat of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/>

[pecific/ironhead-sportster-motorcycle-talk-1957-1985/181232-the-simple-purpose-of-the-case-drain-plug?t=1950691](https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/181232-the-simple-purpose-of-the-case-drain-plug?t=1950691)

9)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/181232-the-simple-purpose-of-the-case-drain-plug?t=1950691>

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Last update: **2024/02/07 03:19**

