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EVO: Oiling & Lubrication - Sub-01A

Feed Oil Passages Through Pics

Right Crankcase Feed Galley

1986-1990 Engines

The lifter oil feed galley is a hole located along the top of the case between both intake tappets.

- The feed galley is responsible for carrying oil to the lifters.
- It gets it's oil from the cam cover.
 - A hole is internally routed from the top to the bottom of the cover with a hole exiting in a corresponding hole in the case.
 - The cam cover gets it's oil from the oil pump via intersecting holes between the bottom of the case and the cover.
 - Feed oil is routed inside the cover but not to the gearcase.
- The hole in the middle of the case at the top intersects into the internal oil feed galley.
- Cross drilled passages intersect the main feed galley and carry oil to each intake lifter. Exhaust lifters are fed oil (bore to bore) from a drilled passage into each one's respective intake lifter bore.
- **This is the end point of static oil pump pressure to the top end.**
 - The lifters supply oil pressure to the rocker boxes.

86-90 main oil feed path ¹⁾



1991-Up Engines

The main oil feed galley is a horizontal passage located along the top of the case beside the tappet blocks and lifters.

It runs from the filter pad to the last lifter bore (lifter for #1 cam).

This oil galley feeds the lifters, cam cover / pinion shaft / hole in pinion gear to the rod bearings and also the gears on cam #2.

- The feed galley is responsible for carrying oil into the engine.
- It gets it's oil from the filter / check ball.
- **91-99 engine** feed galley is an internally drilled hole in the case.
 - It runs behind and into on both sides of the small cavity (small slot) milled into the outside edge of the case.
- **2000 and up engine** feed galley is an external slot milled into the outside edge of the case.
 - The oil passage runs on the outside (right) of the lifter bores as in 91-99 cases with a hole drilled through it into each lifter bore.
- Cross drilled passages intersect the main feed galley and carry oil to each lifter from the feed galley.
 - **This is the end point of static oil pump pressure to the top end.**
 - The lifters supply oil pressure to the rocker boxes.
- A small amount of oil sprays down onto the rear intake (#2) cam gear through a tiny hole in the middle of the feed galley.
- The cam cover gets it's oil from an intersecting passage in the feed galley at the top of the cover. (the gearcase gets no oil from this passage in the cover, outside of spill from the pinion shaft bushing)

In examining the area directly behind the filter inside the gearcase;

You can see the oil path (channels from the filter to the engine).

There is a plug on the outside case in the area of the filter.

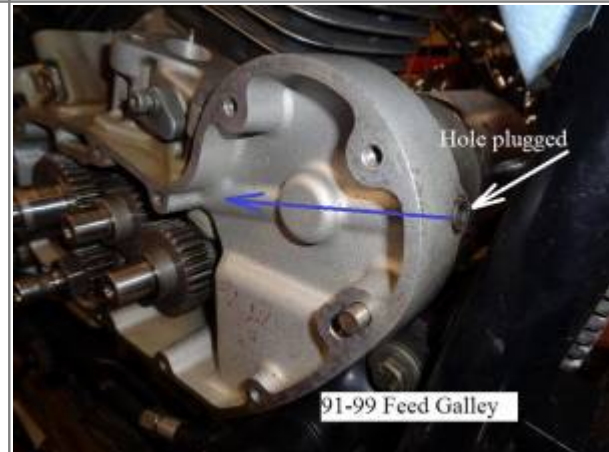
The plugged hole is from where the MoCo drilled the oil passage to connect the outlet of the oil filter to the lifters. ²⁾

After they drill it, they stick a plug in it.

There are other plugged holes like that on your motor where the drilling operation left a hole that had to be plugged.

On 91-99 engines, the oil feed galley is internal from the filter pad. Oil travels to each lifter individually from this cavity. ³⁾

Rifling hole for the feed galley is plugged outside the case near the filter. ⁴⁾



On 2000 and up engines, the oil feed galley is external. Oil travels to each lifter individually from this cavity. ⁵⁾

The rifling hole for the feed galley is plugged outside the case near the filter. ⁶⁾



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¹⁾

photos by Mini_blitz of the XLFORUM, labeled by Hippysmack

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-bottom-end/183493-1986-evolution-sportster-cam-cover-install-help/page3?t=1974615&page=3>

²⁾

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-bottom-end/153560-doing-my-560-cam-swap-and-have-a-couple?threadid=1652078>

³⁾

photo by ehrgeiz of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-engine-conversions/85487-ehrgreiz-s-stage-3-1250-build-thread/page2?t=654598&page=2>

⁴⁾

photo by Hippysmack

5)

drummerboy4as of the XLFORUM, labeled by Hippysmack

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-engine-conversions/46850-another-nrhs-883-1250-conversion-thread?threadid=175003>

6)

photo by Helibee of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-motor-engine/sportster-motorcycle-bottom-end/153560-doing-my-560-cam-swap-and-have-a-couple?threadid=1652078>

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