

# Table of Contents

**REF: Engine Mechanicals - Sub-01E** ..... 1

**Tapping or Installing a Helicoil on a Drain Plug with the Engine in the Frame** ..... 1



[Go To Technical Menu](#)

## REF: Engine Mechanicals - Sub-01E

# Tapping or Installing a Helicoil on a Drain Plug with the Engine in the Frame

- Drain the engine / primary oils and the gas tank.
- Remove the battery.
- Lay the bike over on it's side on a sheet or blanket for protection.
- Slip some plywood under the sheet if your on asphalt or concrete to keep from scratching things.



1)



2)

- Using a drill with a handle will help keep the hole square. The hole needs to be good and straight for the new plug to seal.
- You can also buy a bushing with a good flush end and drill thru it while keeping it tight against the case to help keep the hole straight.

Helicoiled threads have to be tapped straight with the sealing surface to allow a 360° seal underneath the plug head or the plug will leak. <sup>3) 4)</sup>



- Before drilling, the hole was packed with grease and a small piece of stainless was put on the other side to keep from drilling anything and (hopefully) stopping some of the chips from falling further into the engine. <sup>5)</sup>



- This Helicoil kit (1/2" UNF) was used. <sup>6)</sup>



- Tapped straight, cleaned up with the Helicoil installed. <sup>7)</sup>
- With a pair of extremely sharp cutters, a couple of turns were cut off the insert before winding it into the case to shorten it. <sup>8)</sup>





- The new drain plug was fabricated using an ordinary bolt (1/2" UNF) and a spare magnet.
- The end of the bolt was drilled out and the magnet was glued in with some impact adhesive.
- Finished it up with a copper washer on the bolt (not pictured).<sup>9)</sup>





**Go To Technical Menu**

1)

photo by Freewheeler of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/172781-helicoiling-the-primary-drain-plug?t=1852458&highlight=stripped+plug>

2) 3)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-general-discussion-and-problems/122189-what-did-you-do-for-your-sporty-today/page58?t=1200190&page=58>

4)

photo by sevenyears of famine of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/135180-oil-drain-plug-leaking-woes/page6?t=1461031&highlight=stripped+primary+drain&page=6>

5) 6) 7) 8) 9)

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-era-specific-and-model-specific/ironhead-sportster-motorcycle-talk-1957-1985/172781-helicoiling-the-primary-drain-plug?t=1852458&highlight=stripped+plug>

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