



# Harley-Davidson Sportster Evolution Transmission/Primary Oil Change

Changing the transmission oil.

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## INTRODUCTION

This guide will show you how to change the oil in the transmission of the Evolution motor of the Harley-Davidson Sportster.

The Evolution Sportsters have wet clutch and primary drives. It is recommended to change the oil at 1,000 miles, then every 10,000 miles after that.

The manufacturer recommends using 20w50 oil. Make sure that the oil you use is approved for wet clutches. Many automotive oils are not, so we recommend purchasing an oil that specifically states it's formulated for use in motorcycle transmissions. 75w90 gear oil is often substituted for 20w50 motor oil in this application.



### TOOLS:

- [5/32" Hex Bit](#) (1)
  - [5/8" Wrench](#) (1)
  - [Funnel](#) (1)
  - [Heavy-Duty Spudger](#) (1)
  - [T27 Screwdriver Bit](#) (1)
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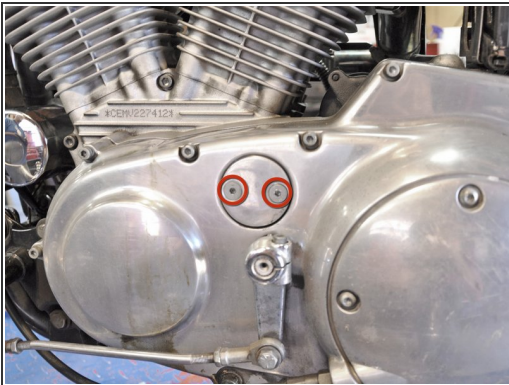


## Step 1 — Workplace Preparation



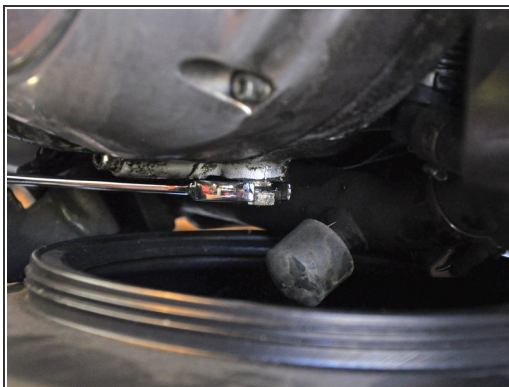
- For the best access to the transmission drain plug, optimal draining, and accurate re-filling, we recommend working with the bike secured in an upright position.

## Step 2 — Removing the Primary Chain Inspection Cover



- Using a 5/32 Hex or Allen screwdriver, unscrew the two screws from the primary chain inspection cover.
- Your inspection cover may not be round, depending on the year. However, it will be in the same location and secured by similar screws.
- Remove the primary chain inspection cover from the transmission housing.

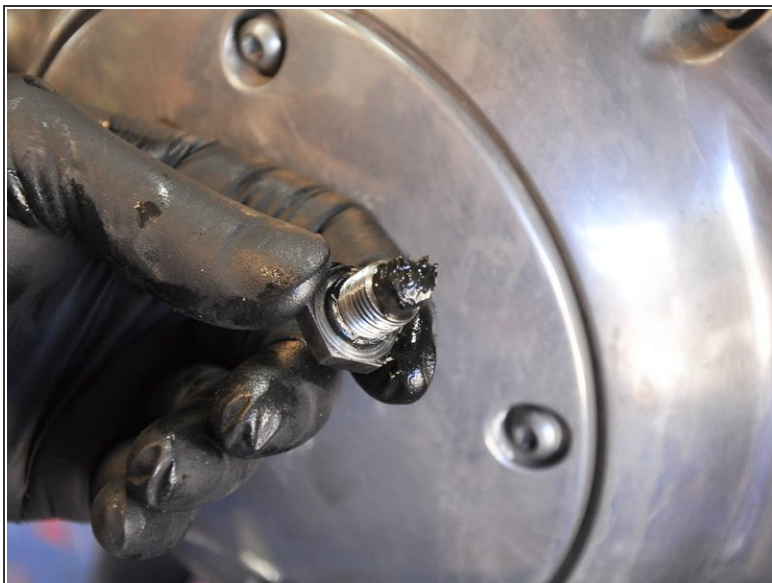
### Step 3 — Draining the Transmission Oil



- The transmission drain plug is located on the underside of the transmission on the left side of the bike, near the kickstand bumper.
- Place a drain pan underneath the drain plug.
- Using a wrench, unscrew the transmission drain plug and remove it.
  - ⓘ Your drain plug may be 5/8" or 3/4" depending on the year.
- Allow all the oil to drain out of the transmission. It should take about five minutes.



## Step 4



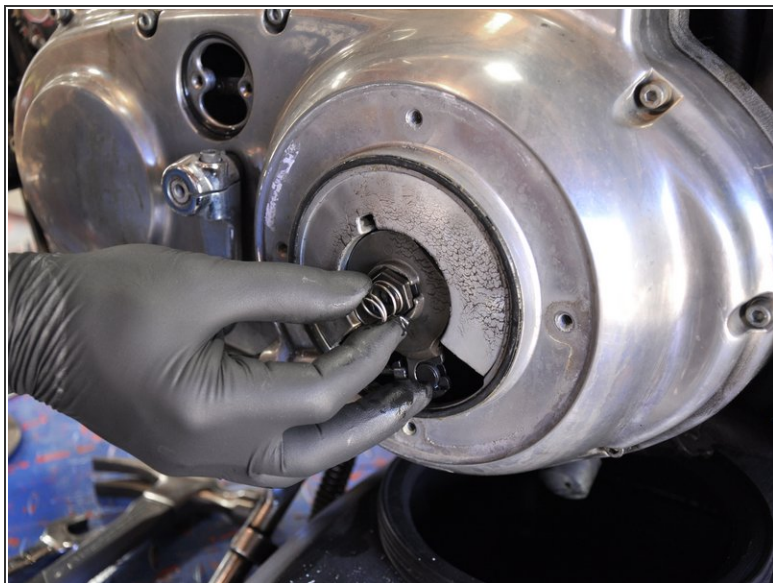
- While the oil is draining from the transmission, clean the transmission drain plug.
- Using a spare rag or paper towel, clean the drain plug, removing excess oil and metal shavings.
- ⓘ There is a magnet on the end of the drain plug to capture any ferrous metal residue.

## Step 5 — Removing the Clutch Inspection Cover



- Using a T27 screwdriver bit, remove the four screws holding the clutch inspection cover in place.

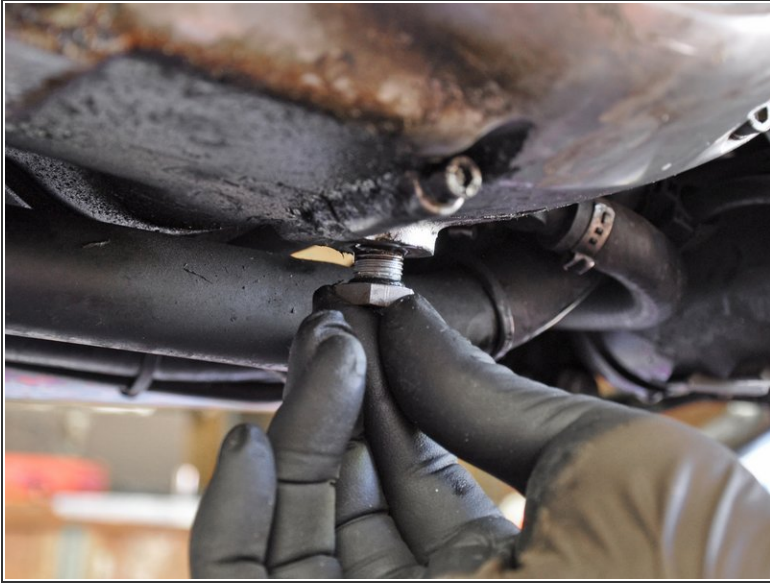
## Step 6



- Insert a heavy duty spudger or similar prying tool into the gap between the clutch inspection cover and the transmission housing near where clutch cable enters the housing.
- Gently pry the clutch inspection cover away from the transmission housing.
- ☑ The clutch cover spring may fall out. Be sure to keep track of this and re-install it before replacing the clutch inspection cover.

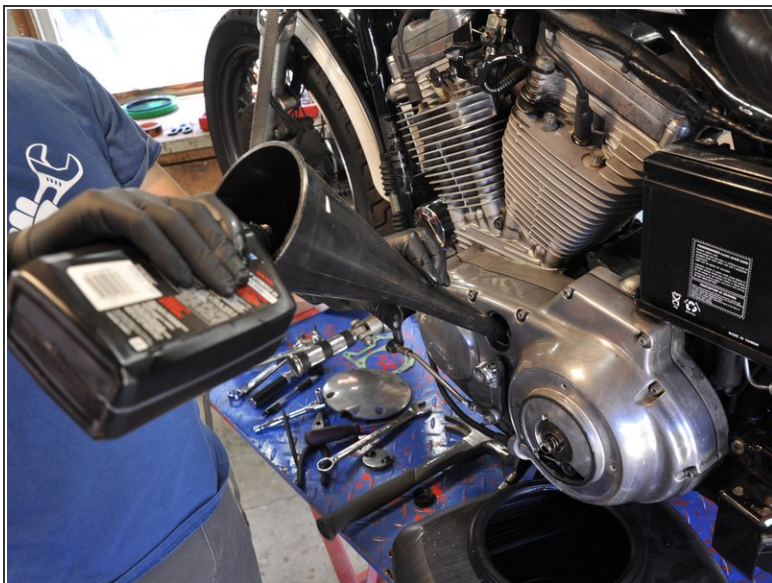


## Step 7 — Installing the Transmission Drain Plug



- Re-insert the transmission drain plug into the transmission housing and hand tighten.
- Using a 3/4" wrench, tighten down the transmission drain plug.
- ⓘ It is important to not over-tighten the drain plug. Tightening the plug too much can strip the threads on the aluminum housing. The plug should be tight, but not too tight. The correct torque specification is 14 - 21 ft-lbs (168 - 252 in-lbs).

## Step 8 — Adding New Oil



- Insert the nozzle of a funnel into the primary chain inspection hole.
  - Pouring slowly, pour approximately 1 qt of oil into the transmission.
  - As you pour, watch the clutch inspection hole. Make sure that the oil level stays below the edge of the clutch inspection hole.
- ⓘ This may require less than the entire quart of oil.

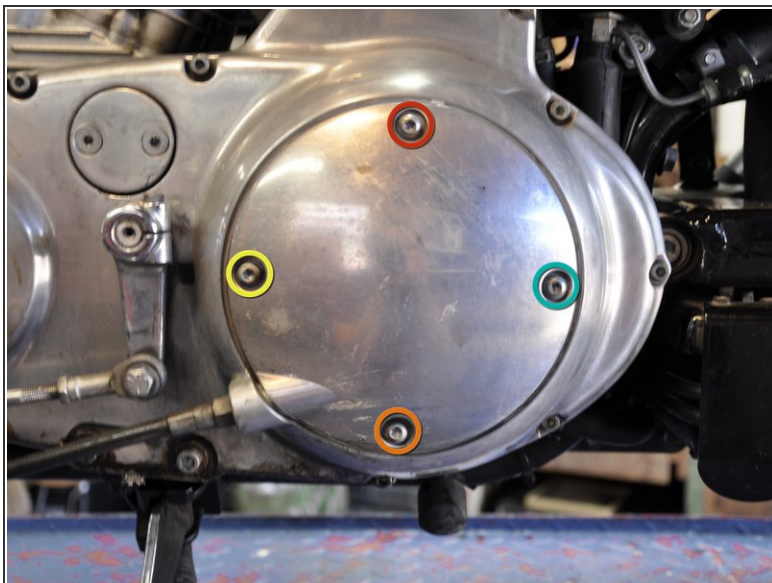


## Step 9 — Re-assembly



- ⓘ Before re-installing the primary chain inspection cover, make sure the rubber O-ring on the inside of the primary chain inspection hole is clean and properly seated.
- ⓘ Also make sure that the rubber o-rings are clean and in proper condition before replacing the screws in the primary chain inspection cover.
- Using a 5/32" Hex or Allen screw head, re-install the primary chain inspection cover.

## Step 10



- Using a T27 Screwdriver head, reinstall the clutch inspection cover. Install the screws in the following order:
  - Top
  - Bottom
  - Left
  - Right
- ⓘ Once all of the screws have been lightly hand-tightened, use a torque wrench to tighten them to their proper specification of 7 - 12 ft-lbs (84 - 108 in-lbs). Tighten the screws in the same order as before.