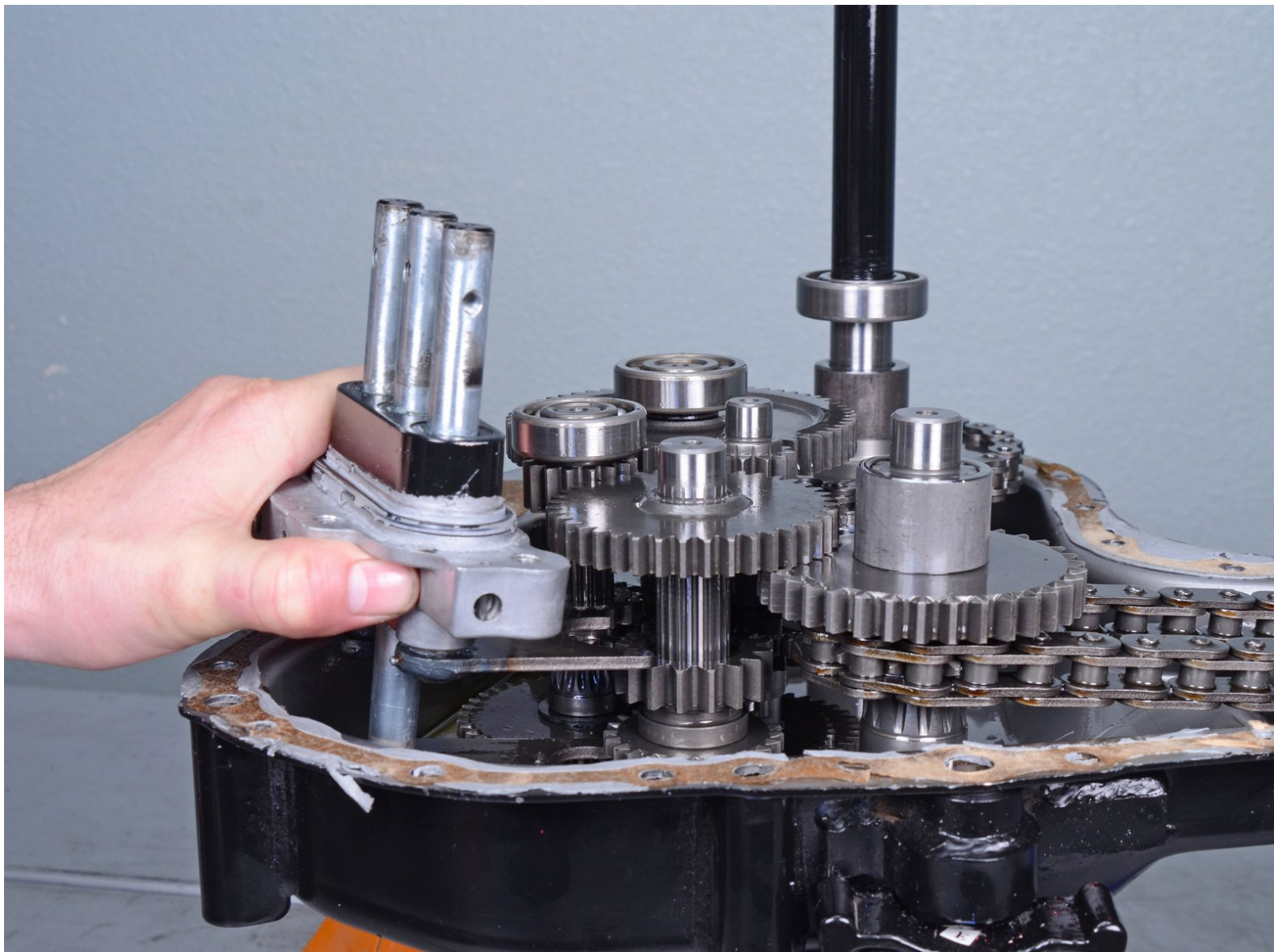




Honda Rear Tine Tiller FRC800K1A Shift Holder Assembly Replacement

This guide shows how to remove or replace the...

Written By: Carsten Frauenheim



INTRODUCTION

This guide shows how to remove or replace the transmission shift holder assembly on a Honda FRC800K1A Rear Tine Tiller.

Drain the oil from the transmission before beginning this process.

Take plenty of additional reference photos during the transmission opening procedure in case internal components shift. Reference **official Honda service documentation** for more detailed schematics.

Review all reassembly tips before attempting transmission reassembly. Follow proper torque specifications for transmission case bolts. Use HondaBond 4, ThreeBond 1216 or an equivalent liquid gasket for reapplication.

After completing this procedure, refill the transmission with **5.3 quarts of SAE 10W-30** oil.



TOOLS:

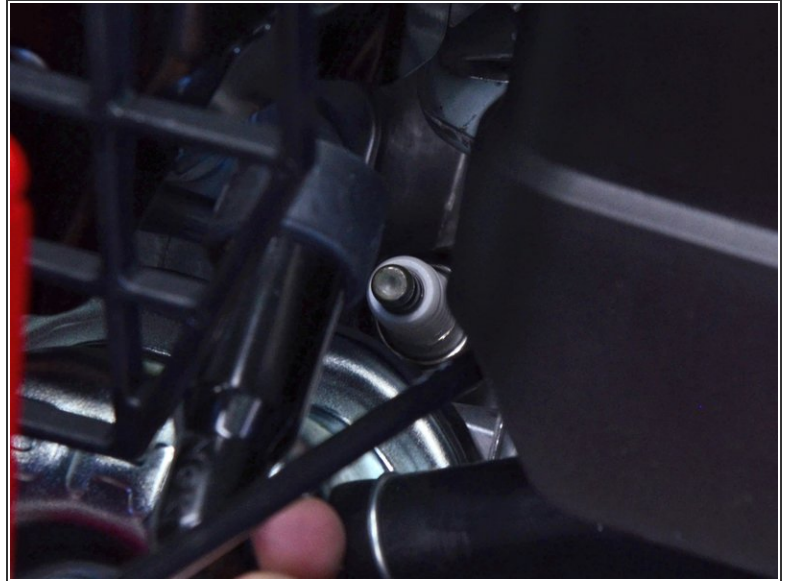
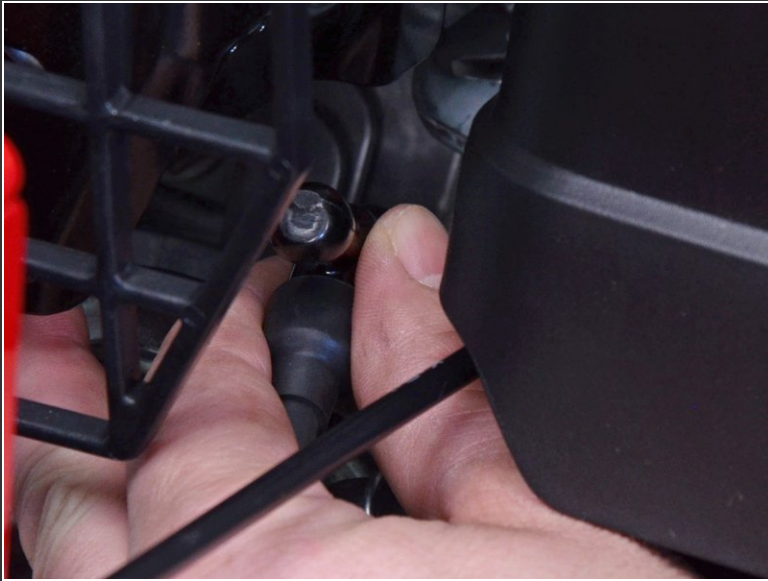
- [14mm Socket](#) (1)
- [Socket Wrench](#) (1)
- [12mm Socket](#) (1)
- [10mm Socket](#) (1)
- [Snap Ring Pliers](#) (1)
- [17mm Socket](#) (1)
- [Phillips #1 Screwdriver](#) (1)
- [Large Needle Nose Pliers](#) (1)
- [12mm Wrench](#) (1)
- [14mm Wrench](#) (1)
- [17mm Wrench](#) (1)
- [Jack Stands](#) (4)
- [Razor Blade](#) (1)
- [6-in-1 Screwdriver](#) (1)
- [Mallet](#) (1)
- [Chisel Scraper](#) (1)
- [Scotch Brite Heavy Duty Scouring Pad](#) (1)
- [Isopropyl Alcohol](#) (1)



PARTS:

- [Honda Holder Sub-Assy., Shift 21123-V20-003](#) (1)

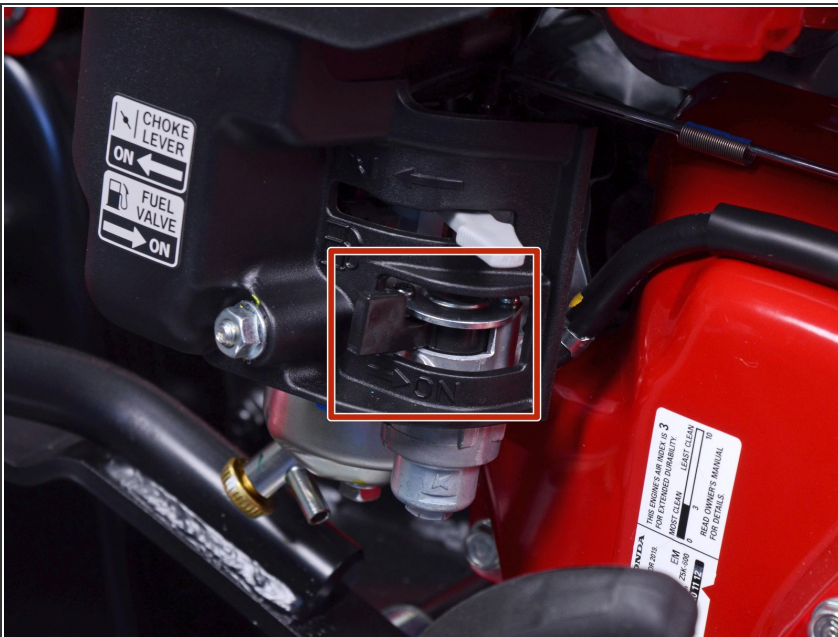
Step 1 — Disconnect the spark plug wire



i Before you begin the repair, disconnect the spark plug wire.

- Firmly grip the base of the connector and pull it away from the spark plug to disconnect it.

Step 2 — Turn off the fuel valve



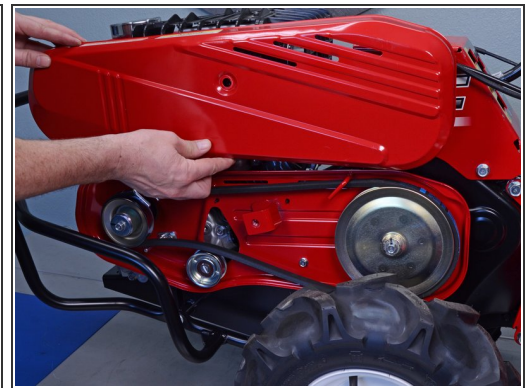
- Flip the fuel valve switch to the off position.

Step 3 — Remove outer belt cover



- Use a 14 mm socket to remove the bolt securing the outer belt cover.

Step 4



- Tilt the outer belt cover down and pull it off of the lip on the inner belt cover to remove it.

Step 5 — Loosen the transmission pulley bolt



i This step may require two people.

- Pull the tine engagement lever to put belt tension on the transmission pulley.
- With the belt taut, use a 12 mm socket to loosen the transmission pulley bolt without fully removing it.
- i** The pulley will rotate with the bolt and the bolt will not be able to be removed if belt tension is not applied.

Step 6 — Remove the V-belt



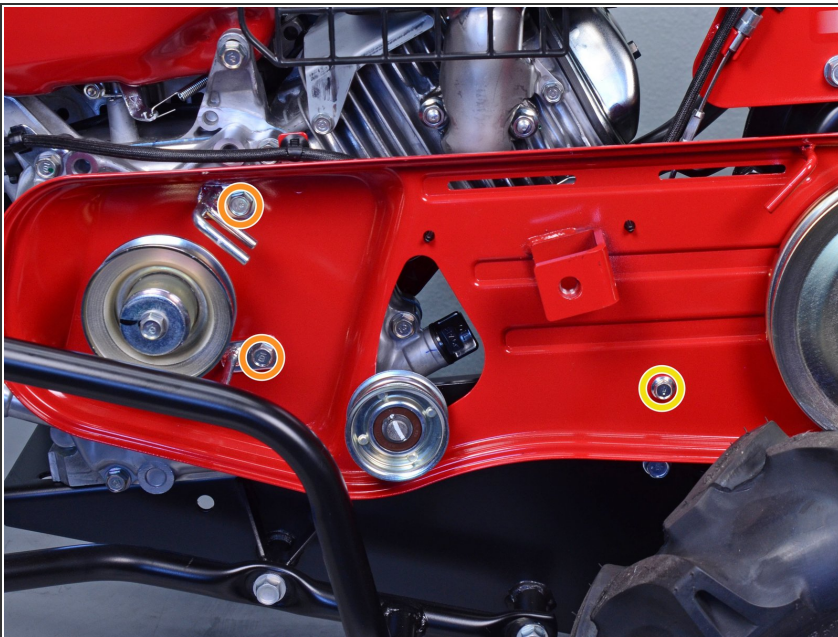
- Push the V-belt towards the transmission pulley to release tension.
- Slip the V-belt off of the groove in the pulley.

Step 7



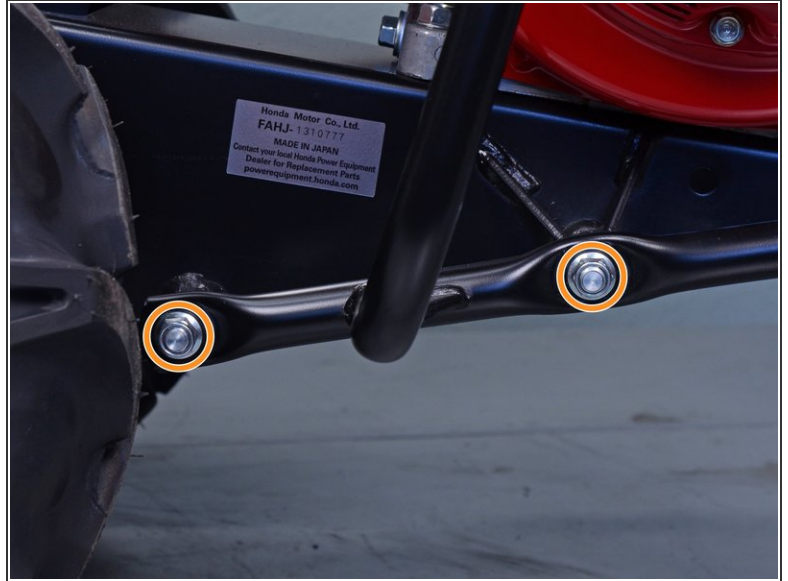
- Pull the V-belt down and out of the way of the two-prong belt guide.
- Push the V-belt around and off of the motor pulley to remove.

Step 8 — Remove the belt guides



- Use a 12 mm socket to remove the two bolts securing the belt guides to the inner belt cover.
- Use a 10 mm socket to remove the bolt securing the inner belt cover to the frame.

Step 9 — Lower the guard



- Use a 14 mm socket to loosen the two bolts securing the guard to the frame.
 - These bolts have corresponding 14 mm nuts on their opposite ends. You will need to keep the bolts steady with a wrench or socket for the nuts to become loose.
- Remove both nuts, but do not remove the bolts yet.

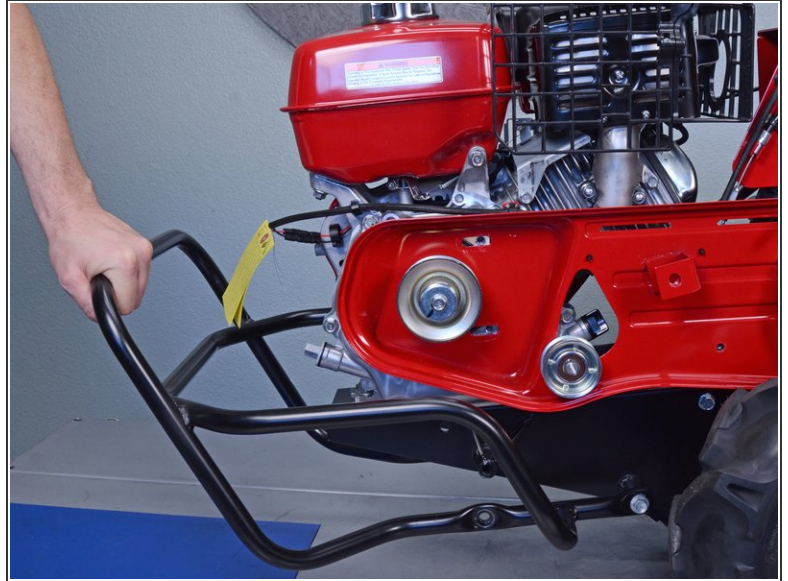
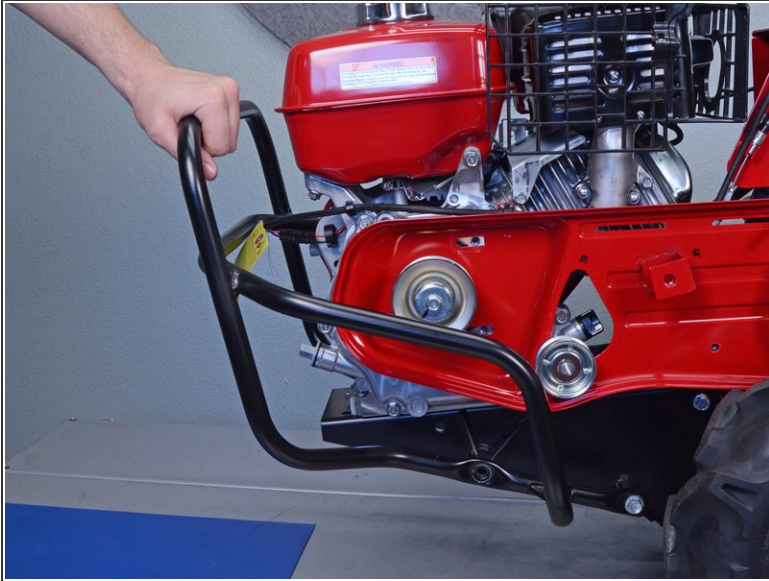
Step 10



- Remove the frontmost guard bolt.

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Step 11



- Grab the guard and lower it to the ground, pivoting it on the rear guard bolt.

Step 12 — Remove the pulley bolts



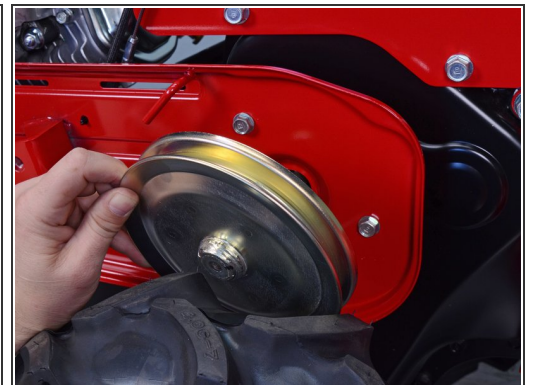
- Use a 12 mm socket to remove the motor and transmission pulley bolts.
- Hold the pulleys steady to more easily remove the bolts.

Step 13 — Remove the motor pulley



- Remove the motor pulley.
- ⓘ Keep track of the [key](#)—which may fall out on its own—and keep it with the motor pulley.

Step 14 — Remove the transmission pulley



- Pull the transmission pulley straight off of the splined shaft to remove.

Step 15 — Remove the tensioner pulley



- Use snap ring pliers to remove the snap ring securing the tensioner pulley to its shaft.

Step 16



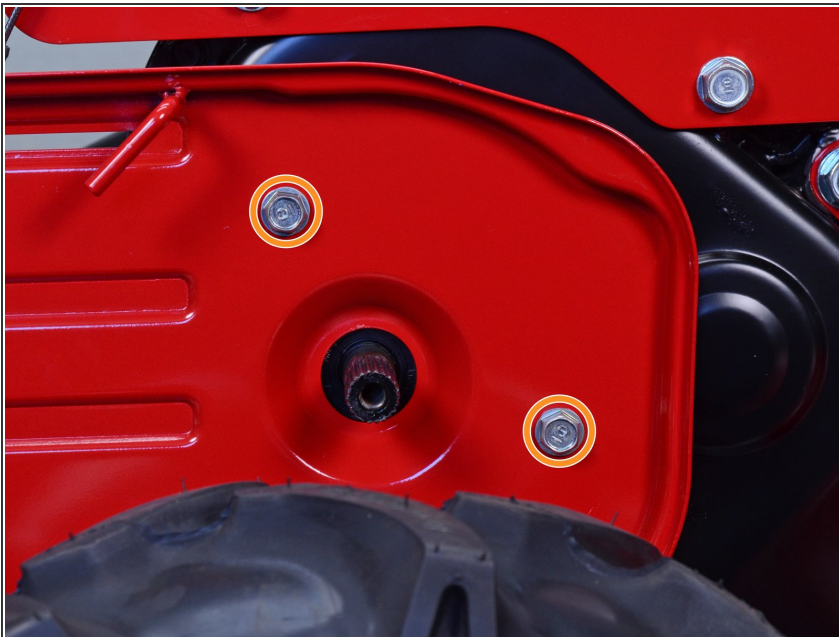
- Remove the tensioner pulley.

Step 17 — Remove the wire clips



- Use needle nose pliers to remove the three wire clips securing various cables to the back of the inner belt cover.

Step 18



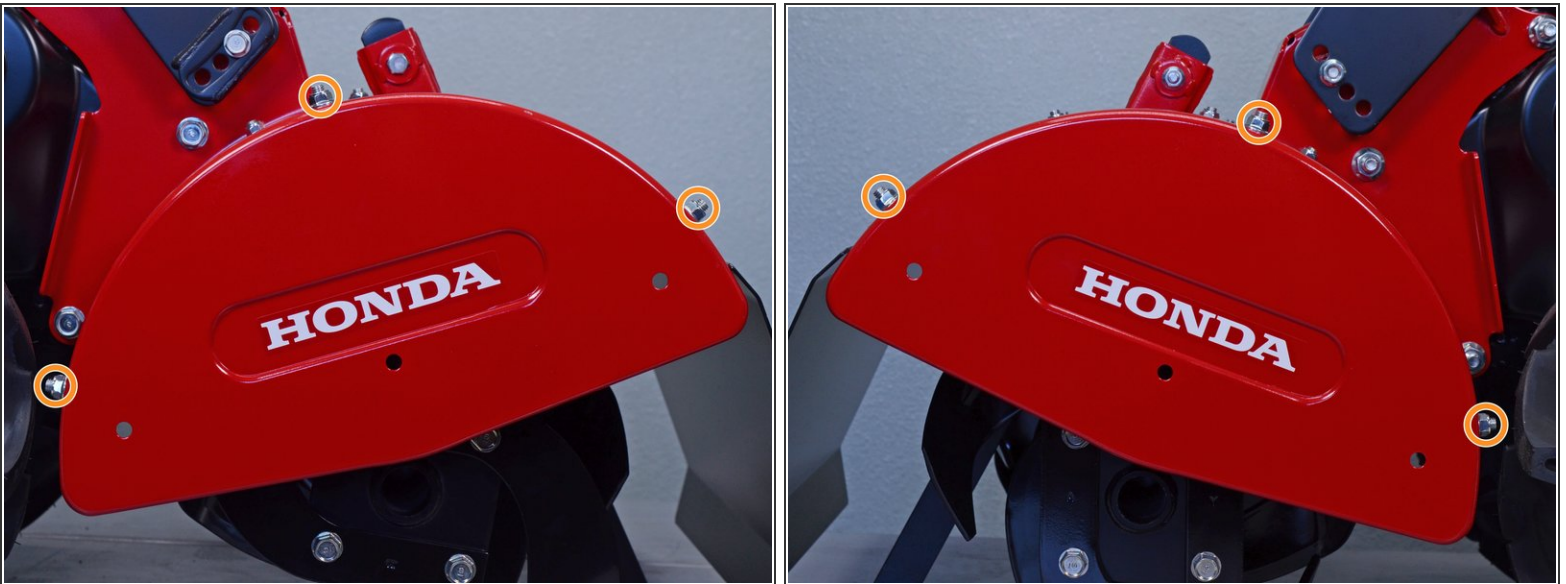
- Use a 12 mm socket to remove the two remaining inner belt cover bolts behind the transmission pulley.

Step 19 — Remove the inner belt cover



- Pull the inner belt cover clear of the motor and transmission shafts.
- Remove the inner belt cover.

Step 20 — Remove the side tine guards



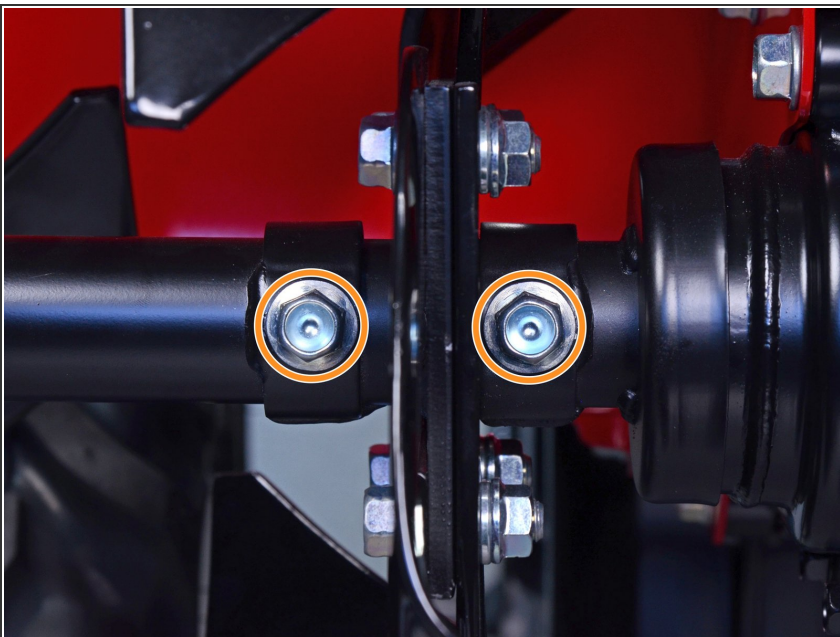
- Use a 12 mm socket and wrench to remove the six sets of side guard bolts and nuts, three on each side.

Step 21



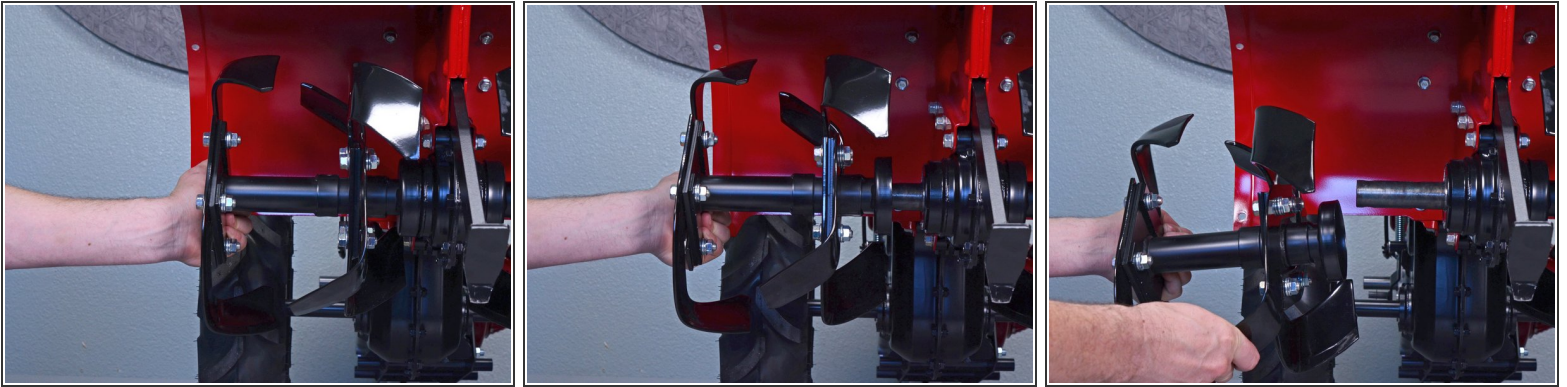
- Slide the side guard off of the curved main guard to remove.
- ⓘ Repeat the same process on the opposite side.

Step 22 — Remove the rotary tine



- Use a 14 mm socket to remove the two rotary tine retaining bolts.
- ⓘ Repeat the same process on the opposite rotary tine.

Step 23



- Slide the rotary tine off its axle to remove it.
- ① Repeat the same process on the opposite rotary tine.

Step 24 — Remove the drag bar



- Use a 14 mm socket to remove the bolt holding the drag bar in place.
- Remove the drag bar.

Step 25 — Remove the cable guide



- Use a Phillips #1 screwdriver to remove the cable guide screw.

Step 26



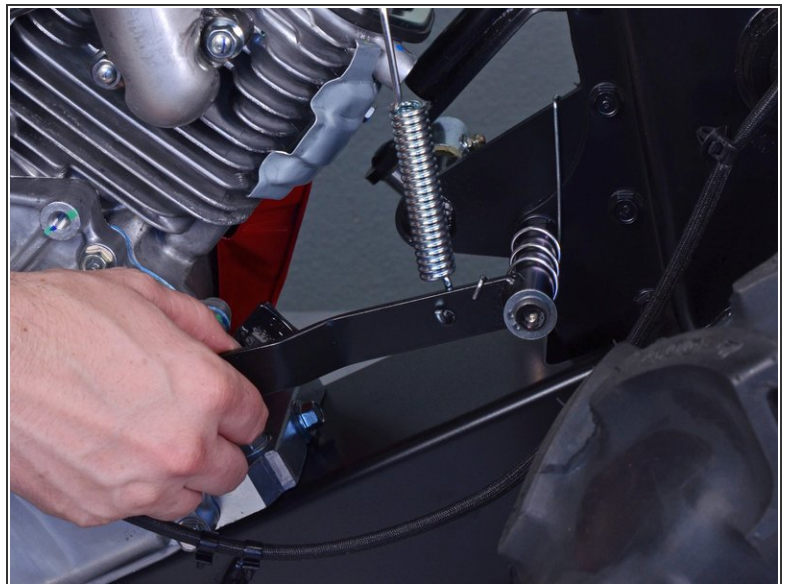
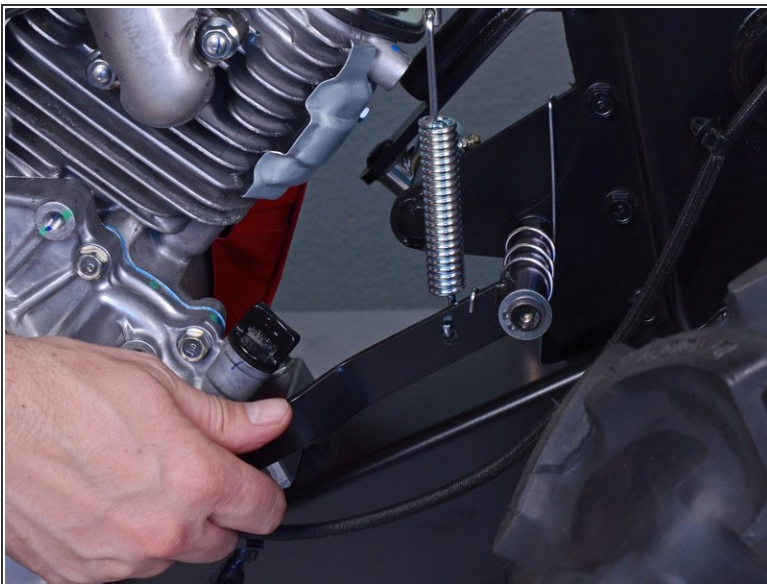
- Pull the cable guide's metal clip out of the shifter frame.
- Unwind the cables from the cable guide.
- Remove the cable guide.

Step 27 — Remove the cable clips



- Use needle nose pliers to [remove the cable clips](#).

Step 28 — Remove the tensioner spring



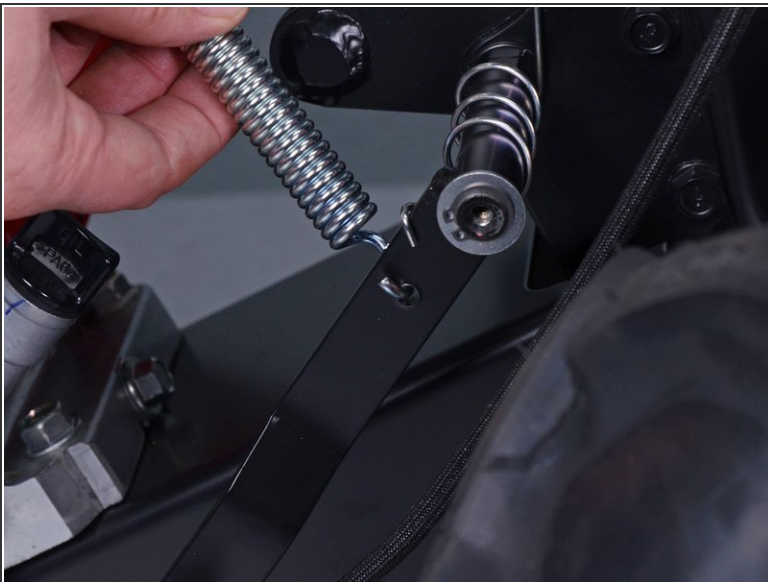
- Lift up on the tensioner pulley arm to loosen the tension on the tensioner spring.

Step 29



- Remove the top of the tensioner spring from the end of the clutch cable.

Step 30



- Remove the bottom side of the tensioner spring from the tensioner arm.
- Remove the tensioner spring.

Step 31 — Remove the clutch cable



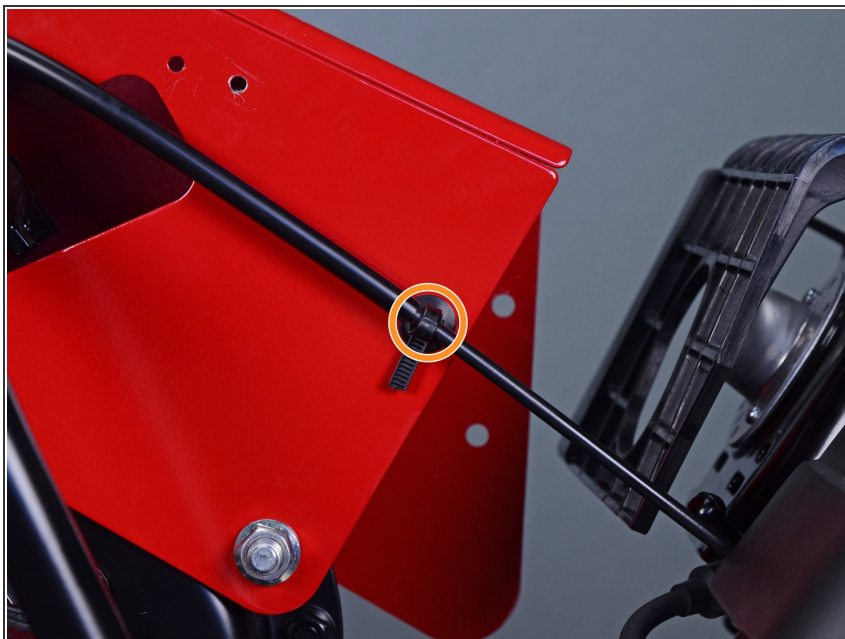
- Pull up on the clutch cable to remove it from its slot.

Step 32



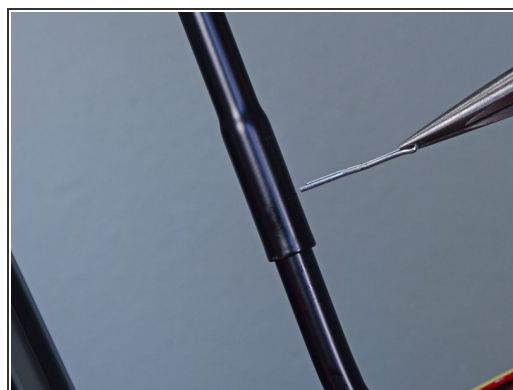
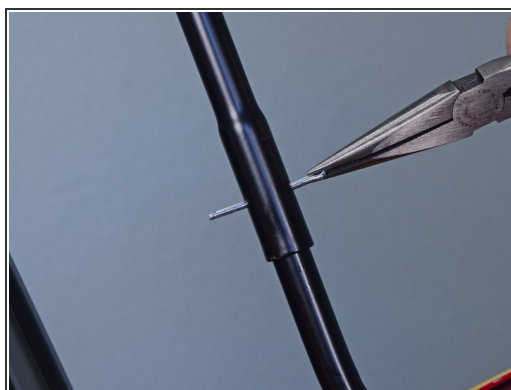
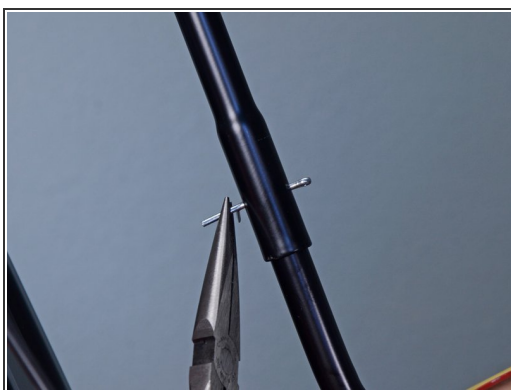
- Use a Phillips #1 screwdriver to remove the cable guide screw.
- [Remove the cable](#) from the cable guide.

Step 33



- Use needle nose pliers to [remove the cable clip](#).

Step 34 — Remove change lever extension



- Use needle nose pliers to straighten the change lever pin.
- Pull the pin straight out to remove.

Step 35



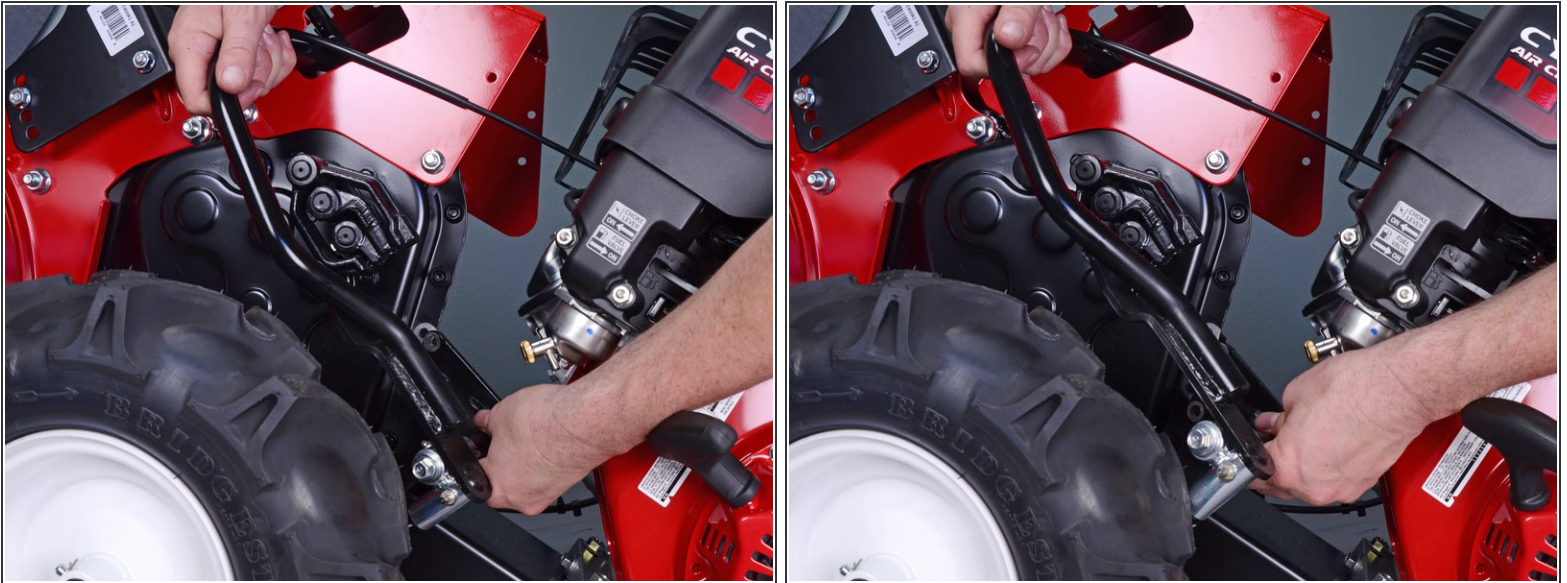
- Slide the change lever extension off its base to remove.

Step 36 — Remove the shift linkage mounting bracket



- Remove the three shift linkage mounting bracket bolts and nuts:
 - Two 12 mm bolts and nuts
 - One 14 mm nut
 - ⓘ This nut is holding the [tensioner pulley arm assembly](#) to the bracket. It may fall away once you remove this nut.

Step 37



- Pull the shift linkage mounting bracket away from the frame.
 - ❗ If it hasn't already come off, [the tensioner pulley arm assembly](#) may fall away once you remove the mounting bracket.

Step 38



- Pivot the shift lever out and away from the shift gate to remove it.

Step 39 — Remove the shift gate



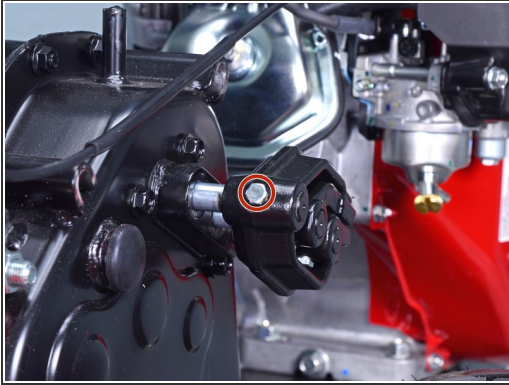
- Use a 14 mm socket to remove the two shift gate through-bolts.

Step 40



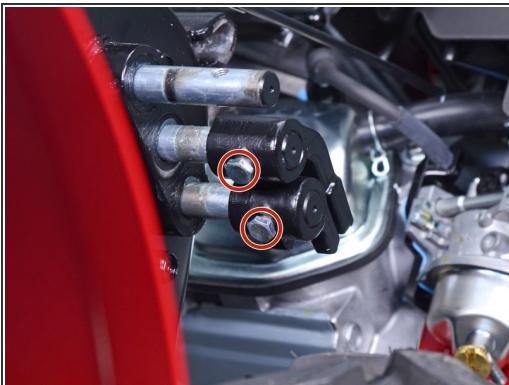
- Lift the shift gate off of the transmission to remove it.

Step 41 — Remove the shifting arms



- Use a 10 mm socket to remove the rotary change shifting arm bolt.
- Remove the rotary change shifting arm.

Step 42



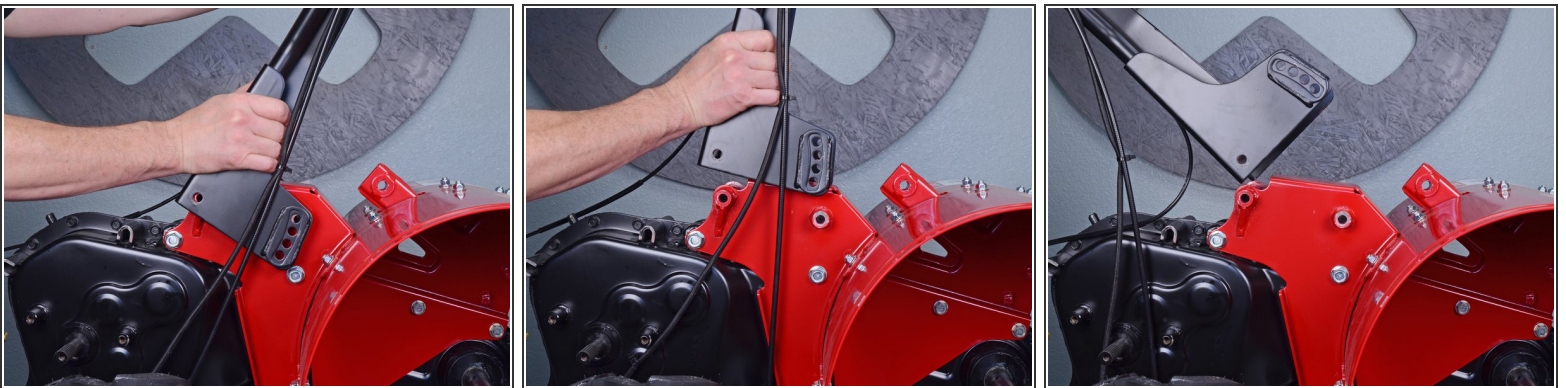
- Use a 10 mm socket to remove the two remaining shifting arm bolts.
- Remove the two remaining shifting arms.

Step 43 — Remove the handle



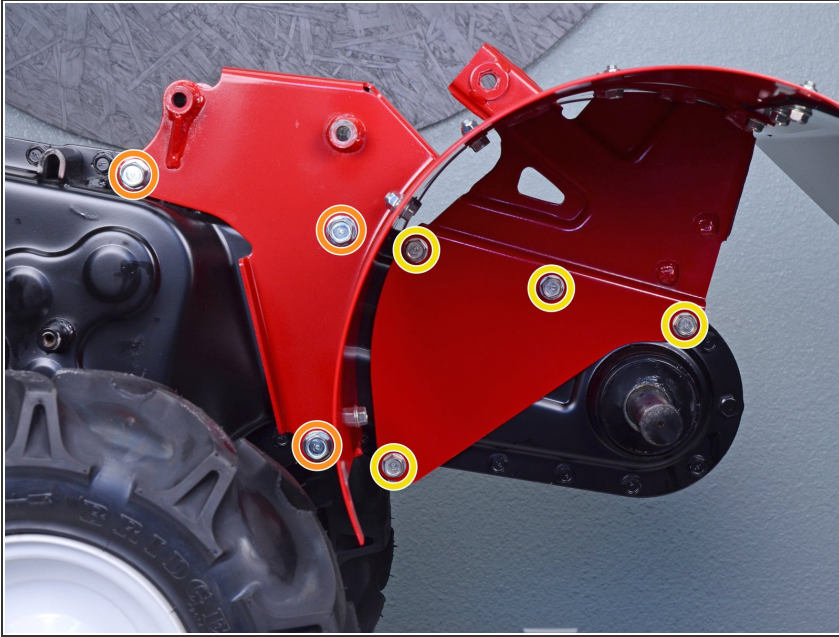
- Use a 14 mm socket to remove the front handle bolt.
- Use a 14 mm socket to remove the shouldered handle angle selection bolt.

Step 44



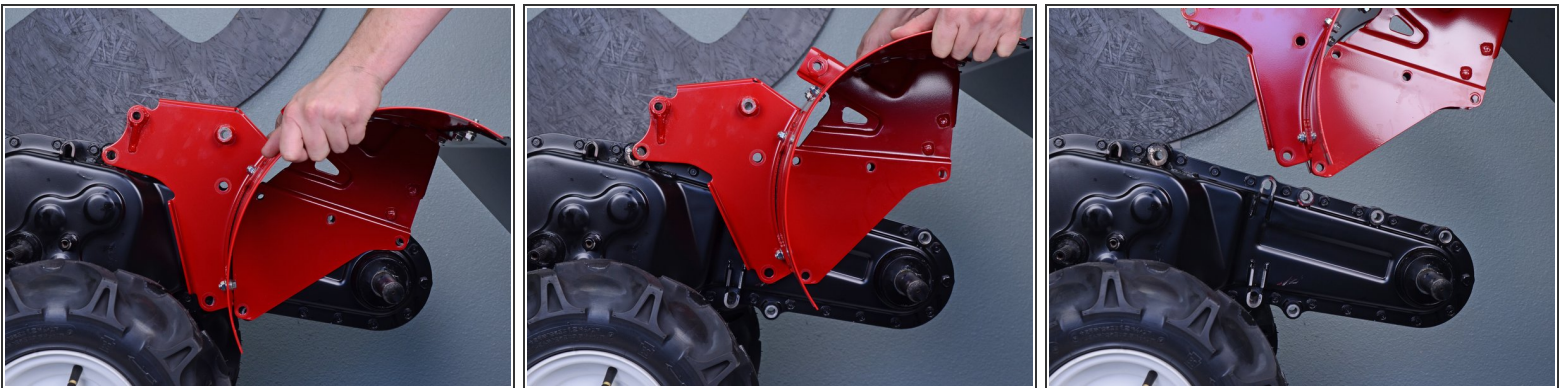
- Grab and rotate the handle off of the frame towards the motor.
⚠ Be careful not to snag, bend, or rip any cables as they are all still attached to the handle.
- Set the handle near the motor.

Step 45 — Remove the blade guard



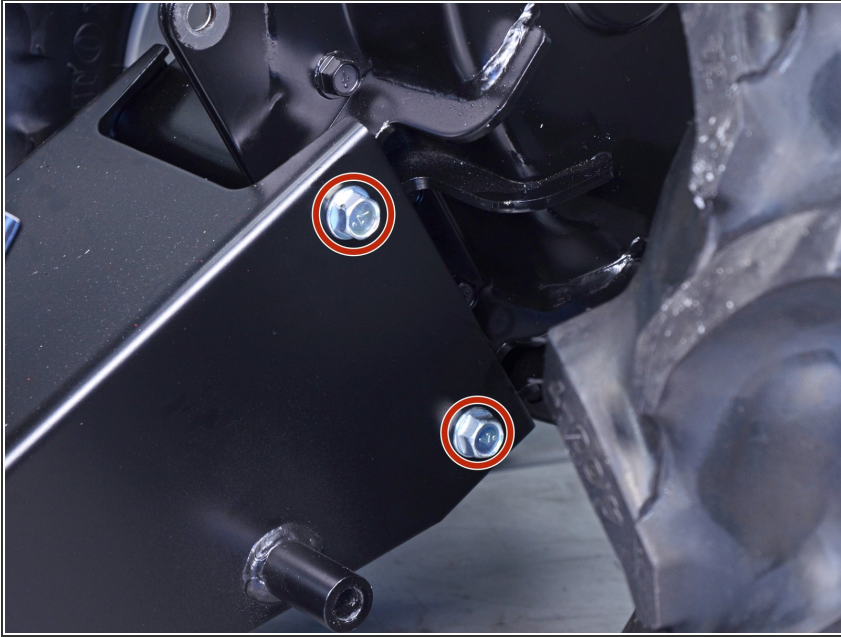
- Use a 17 mm socket to remove the three frontside blade guard bolts.
- Use a 14 mm socket to remove the four backside blade guard bolts.

Step 46



- Rotate the blade guard up and off of the transmission to remove it.

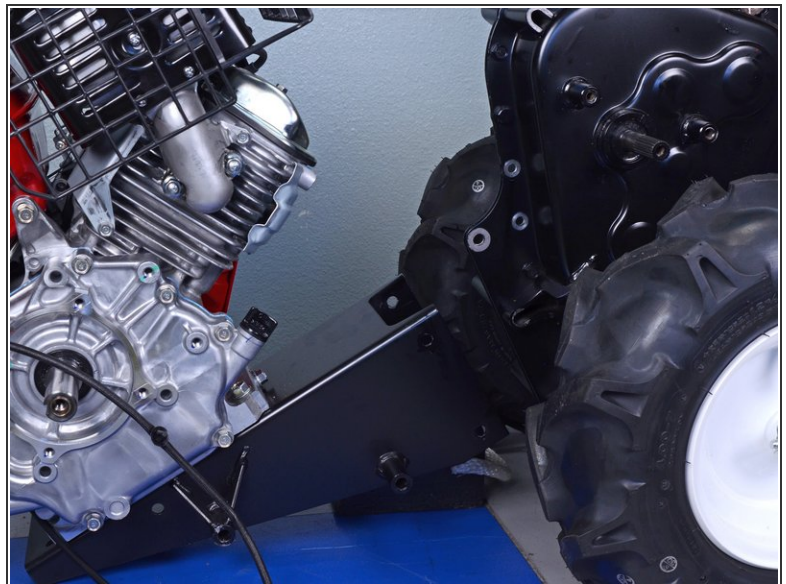
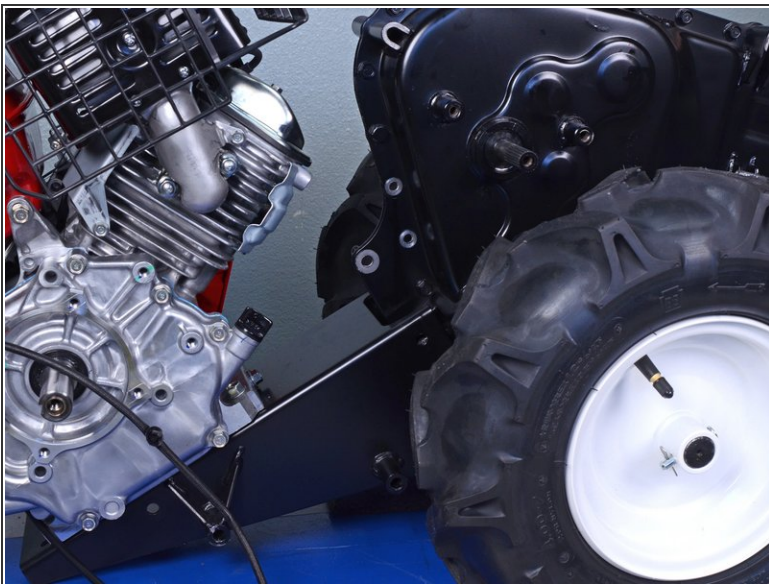
Step 47 — Separate the transmission from the frame



⚠ The motor may fall away from the transmission during this step if it is not properly supported. Take care to ensure both the transmission and motor are supported.

- Use a 14 mm socket to remove the two frame bolts.

Step 48



- i** The transmission and motor are both very heavy. This may require two people.
- i** Consider [supporting the transmission with jack stands](#) so you can easily remove the wheels in the coming steps.
- While supporting both sides, roll the transmission away from the motor and frame.

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Step 49 — Remove the wheels



- [Remove](#) the wheels.

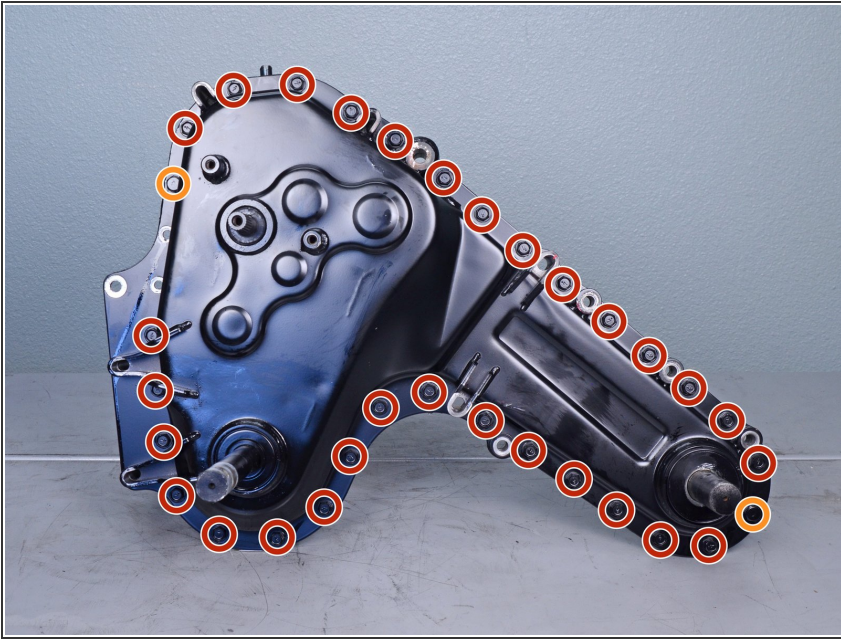
- ⓘ Make sure the transmission is supported such that there isn't too much pressure on the now-exposed axles.

Step 50 — Support the transmission



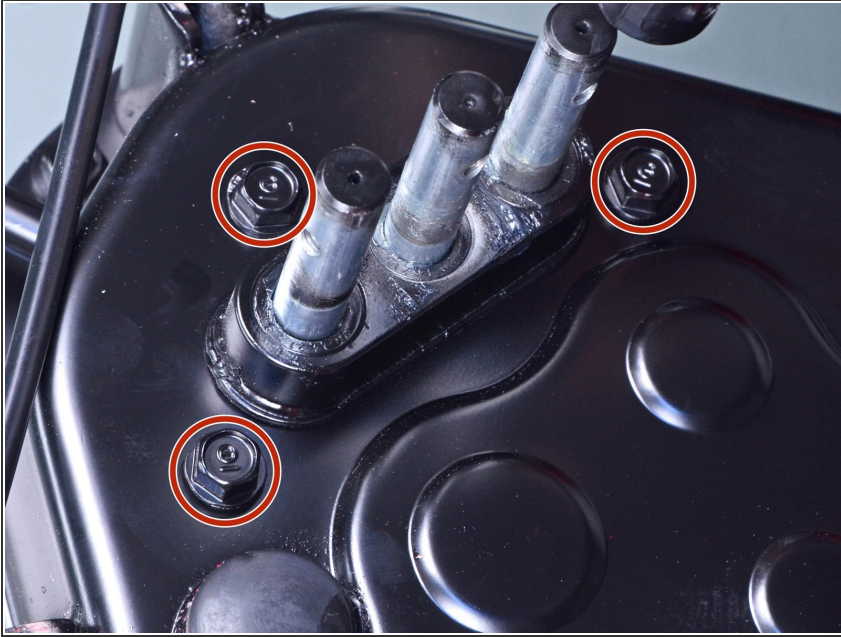
- Support the transmission with jack stands so the seam between the two halves is level with the work surface.
- Orient the transmission such that the right half of the case is facing up. This is the side containing the shift holder assembly.

Step 51 — Separate the two halves of the case



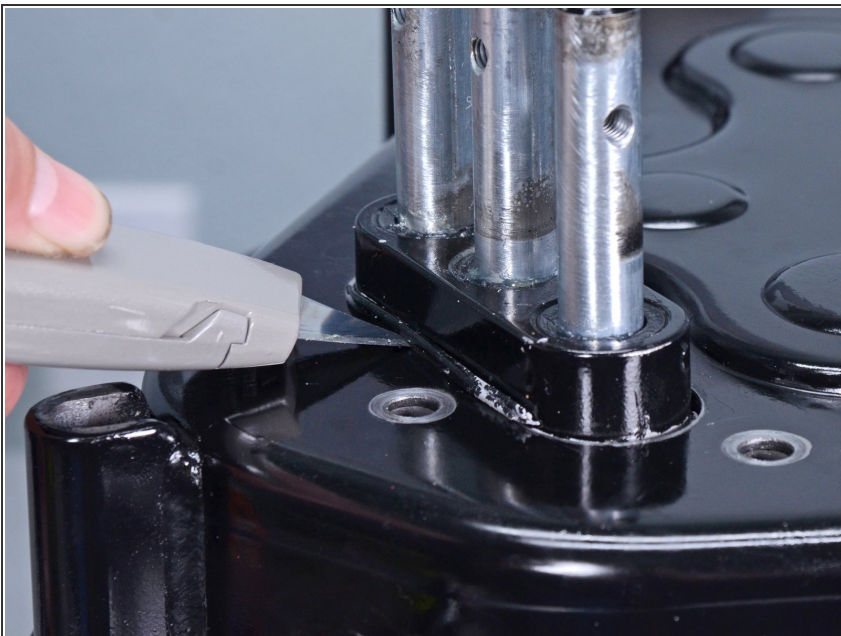
- Remove the thirty-two transmission case fasteners:
 - Thirty 12 mm bolts and nuts
 - Two 14 mm bolts and nuts
- ☑ **Reinstallation tip:** Install five to eight 12 mm transmission case bolts equidistant around the circumference of the two halves of the case to tighten the two halves together. Once the two halves are mated, reinstall the rest of the 12 mm and the two 14 mm transmission case bolts in a criss-cross pattern.
- Torque all transmission case bolts to 16 ft-lb (22 Nm). Re-torque all transmission case bolts after five hours. Wipe off any excess liquid gasket that squeezes out after you start tightening the two halves together.

Step 52



- Use a 12 mm socket to remove the three bolts securing the shift holder to the right transmission case.

Step 53




- Use a sharp blade to cut away any gasket material around the shift holder assembly.
- ⚠ Always cut away from yourself and others.

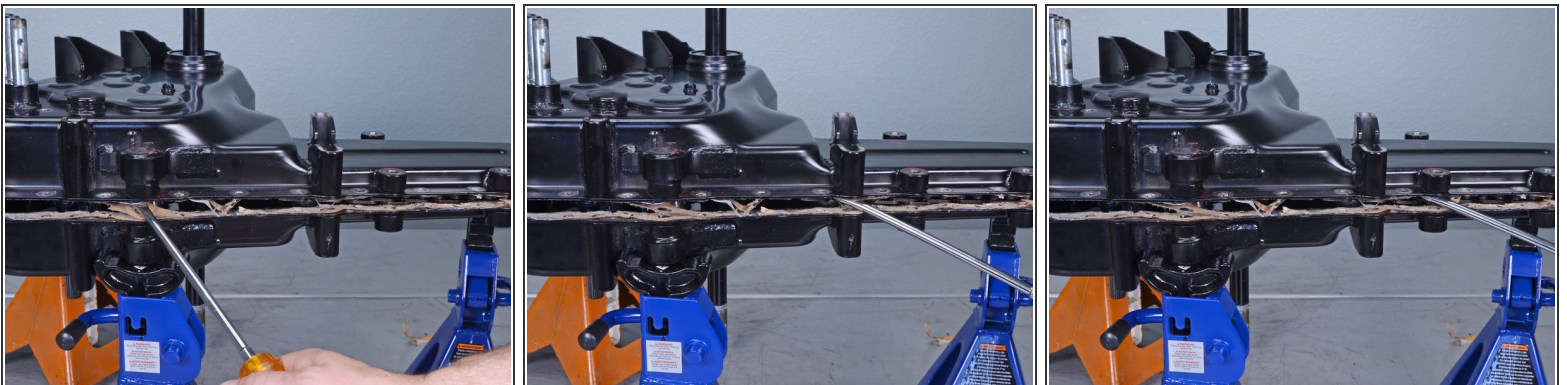
Step 54



- Insert a large flathead screwdriver in between the two halves of the transmission case to pry them apart and break the gasket seal.

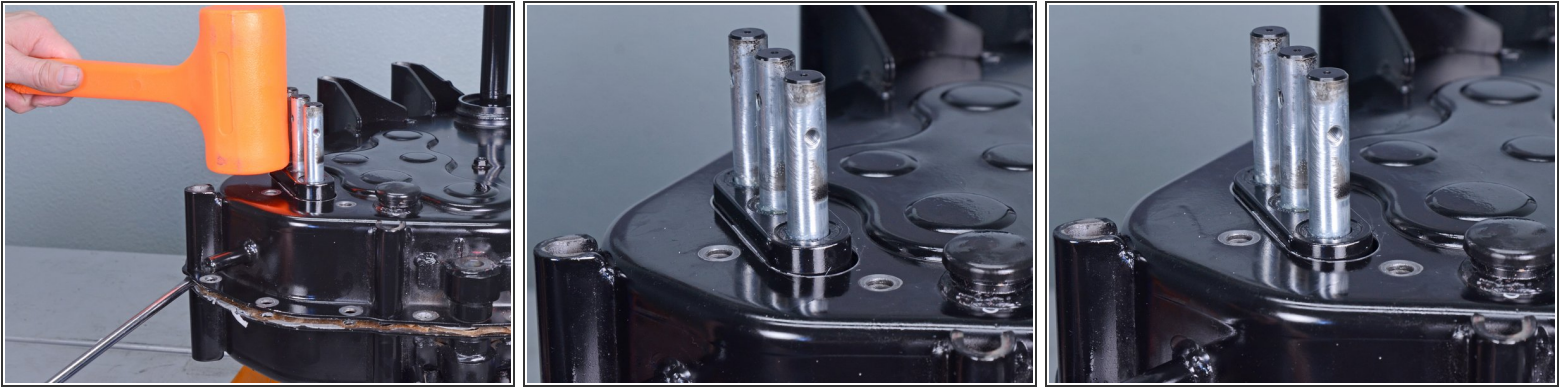
 This may require a lot of force.

Step 55



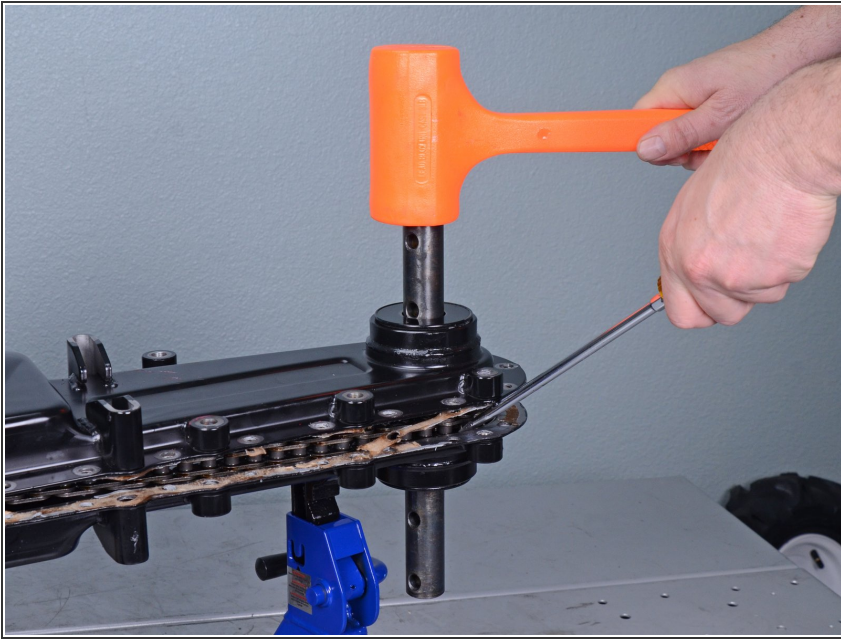
- Work the flathead screwdriver around the transmission to create a small gap along the entire perimeter of the case.

Step 56



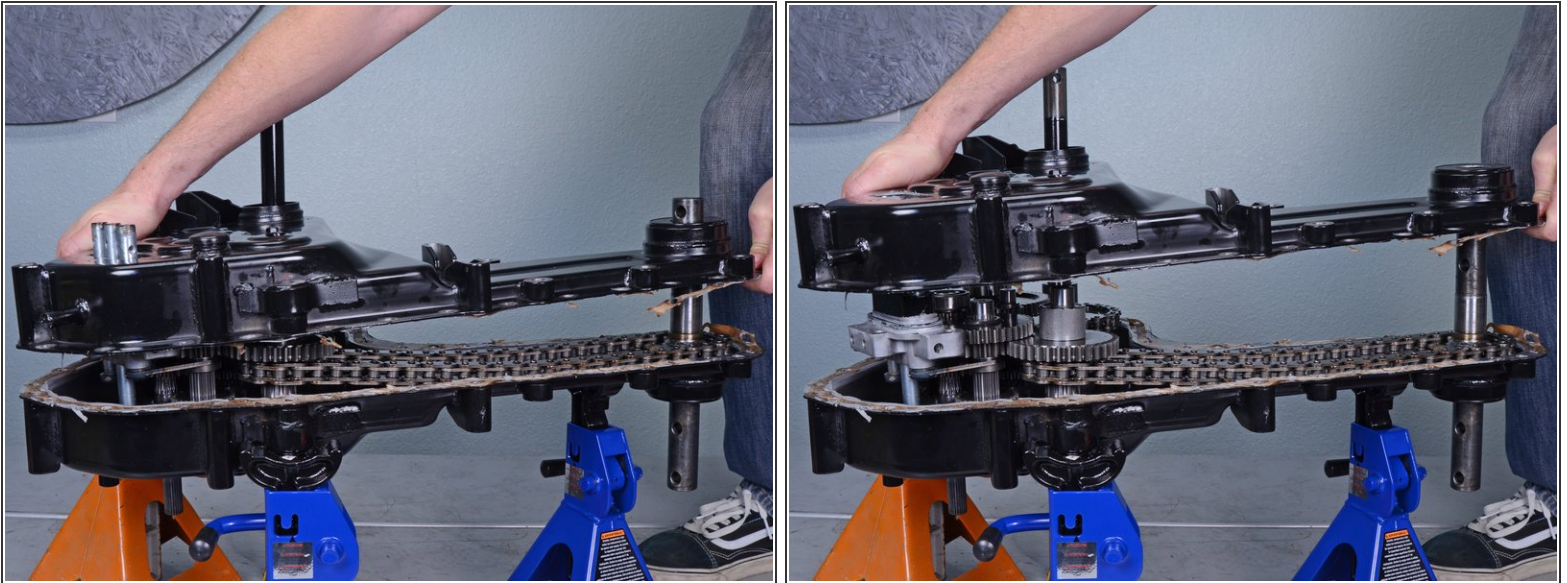
- ⓘ After the top case is removed, the transmission gearing becomes exposed and has a tendency to move around. If gears, bearings, or washers fall out of their positioning, you will need to consult official Honda schematics to ensure proper reinstallation.
- Use a mallet to lightly tap on the base of the shift holder assembly as you pry up the transmission case.
- ⓘ When removing the right half of the transmission case, make sure that the shift holder assembly is **not** coming up with the case as it is being pried up.
- ✦ Reinstallation tip: If any of the bearings fall out of the right transmission case when installing it onto the left transmission case, install them onto their corresponding shaft on the left transmission case instead.

Step 57



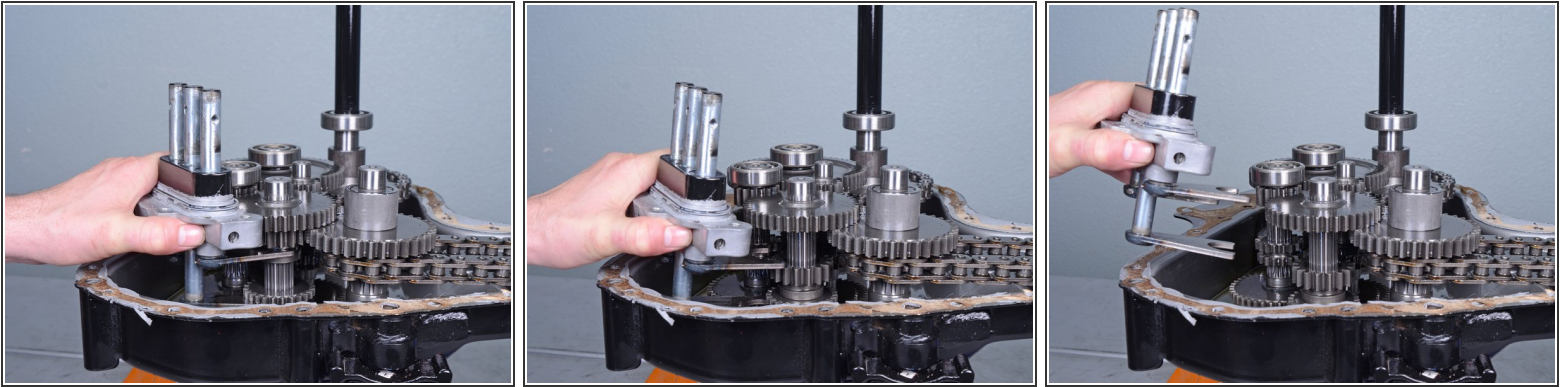
- Lightly tap on the tine shaft while prying up on the case to make removal easier.
- ⓘ Ensure the rotary chain stays seated in the bottom half of the transmission case.

Step 58



- Slowly pull up to work the top case away from the bottom case.
 - ❗ Make sure **no internal components come out with the top case**. However, there are bearings installed in the top case that **may stay with the bottom half of the case**.
- Completely remove the top half of the transmission case. You may have to "walk" the top half of the case off of the shafts it is slotted through.
- ✦ Reinstallation tip: [Scrape off old gasket](#) before putting the transmission back together. Use a Scotch-Brite pad to remove any stubborn gasket from all mating surfaces, and do a final cleaning with isopropyl alcohol.
 - ⚠ Be extra cautious to not let any old gasket fall into the transmission case oil basin, as debris could potentially harm future performance.
- ✦ Reinstallation tip: When reapplying liquid gasket to the transmission case, [run a 2-4 mm bead along all gasket mating surfaces](#) on both the left and right transmission cases. Use HondaBond 4, ThreeBond 1216, or an equivalent liquid gasket. Reassemble both transmission halves within 10 minutes of applying the liquid gasket.
- ✦ Reinstallation tip: If necessary, use a mallet to lightly tap the right transmission case until mostly flush with the left transmission case when putting the two halves back together.

Step 59 — Remove the shift holder assembly



- Slowly pull the shift holder assembly away from the transmission gearing to unseat the shift forks.
- Lift the assembly out and away from the rest of the transmission to remove.
- ⓘ Some gears are supported by the shift forks, so they may shift during removal.
- ✦ Reinstallation tip: Ensure the three shift forks line up with each of their [corresponding gear shift slots](#).

To reassemble your device, follow these instructions in reverse order.

Refill the transmission with **5.3 quarts of SAE 10W-30** oil.