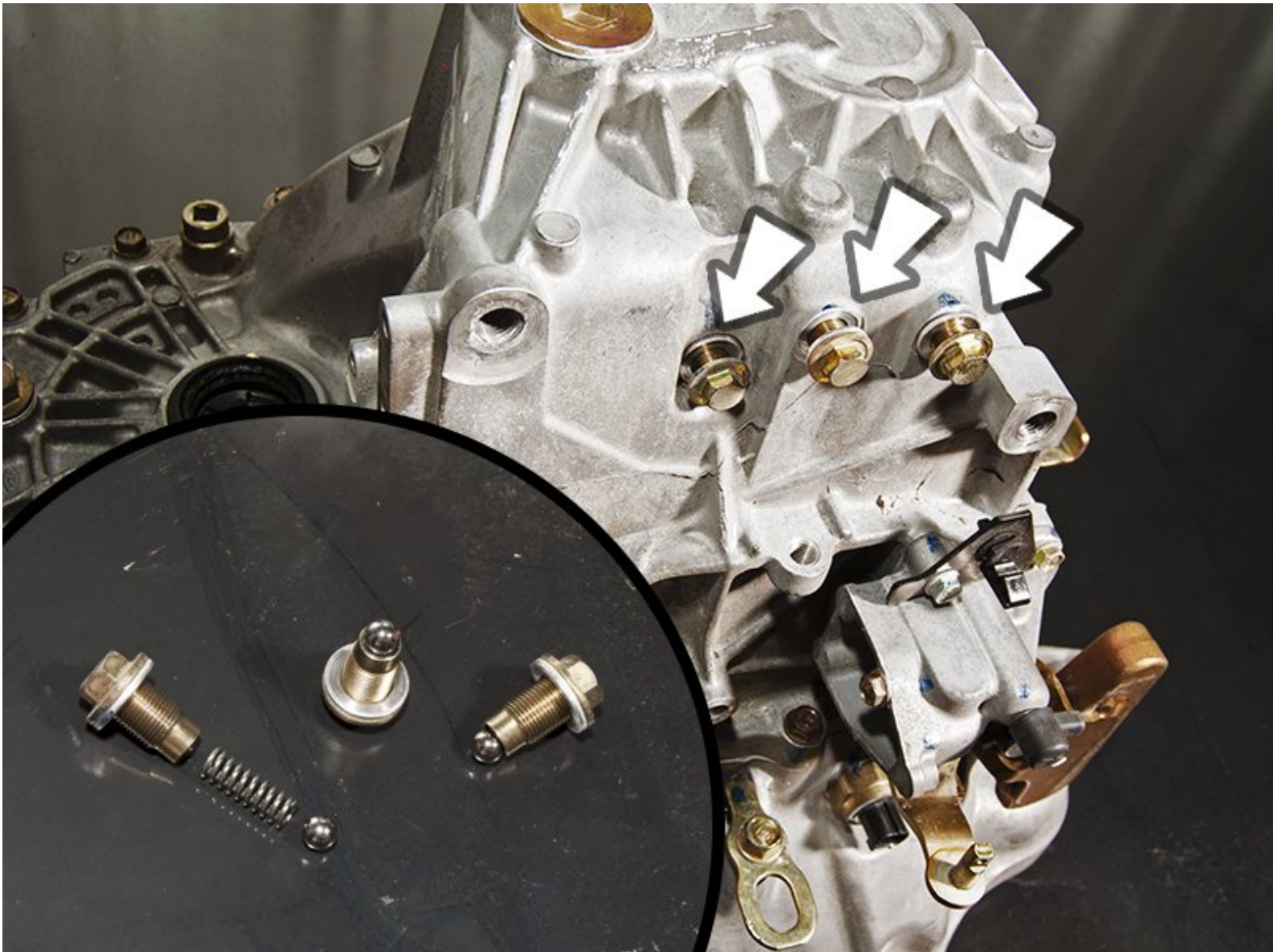




LSD Install on K-Series Transmission

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Written By: Hybrid Racing



INTRODUCTION

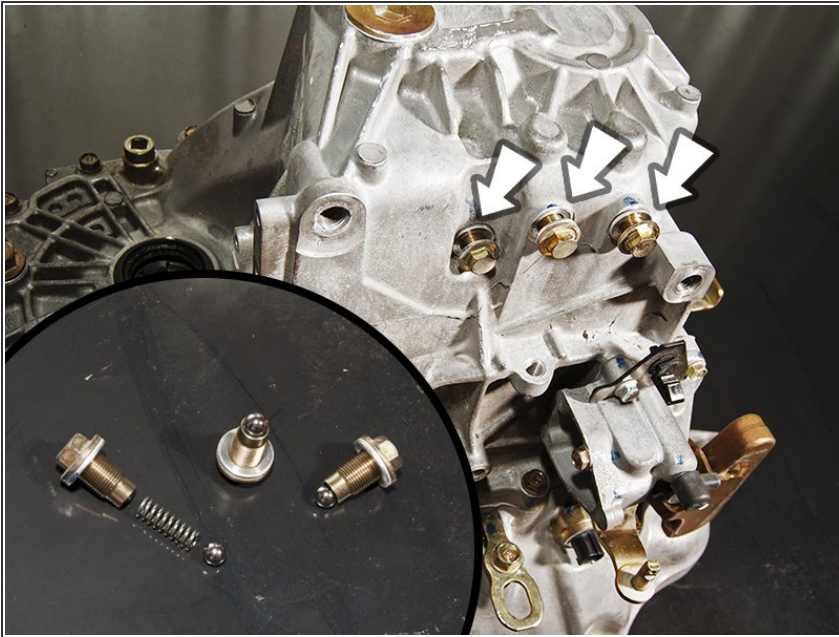
So imagine you've bought all of the bolt-on power adders for your car: a cold air intake, header, exhaust, programmable ECU, cams, and maybe a few other bells and whistles. Dyno pulls are telling you that you're making decent power, but you can't seem to get the 1/4 mile times that you should be making. Assuming there isn't a large margin of driver error, you may want to look into replacing your stock open differential with a Limited Slip Differential. By this time, you're probably pretty tired of shelling out cash for performance upgrades. That's understandable. The good news is that with a small set of tools and some patience, you can install your new LSD yourself.

This article specifically describes how to install a Wave Trac LSD (made by Auto Tech) into a 5 speed RSX transmission, but the general process is very similar for most FWD manual transmissions. The process described below is nearly identical to the way a Honda technician would do it, and we've included ample illustrations to make the process as clear as possible.

Before you begin disassembling your transmission, find a flat, clean workbench to work on. You'll want to carefully lay out all of the parts as you remove them so that you can keep track of them for when reassembly begins. To properly assemble the transmission, the tranny should be placed on the workbench with the input shaft facing down. Use wood blocks to lift the bellhousing up so that the input shaft is not touching the bench. Note: Make sure that all fluid has been drained from the tranny before disassembling it.

Follow the black text in steps 1-16 for disassembly. For reassembly, follow the steps in reverse and refer to the red text for torque specs and other important information.

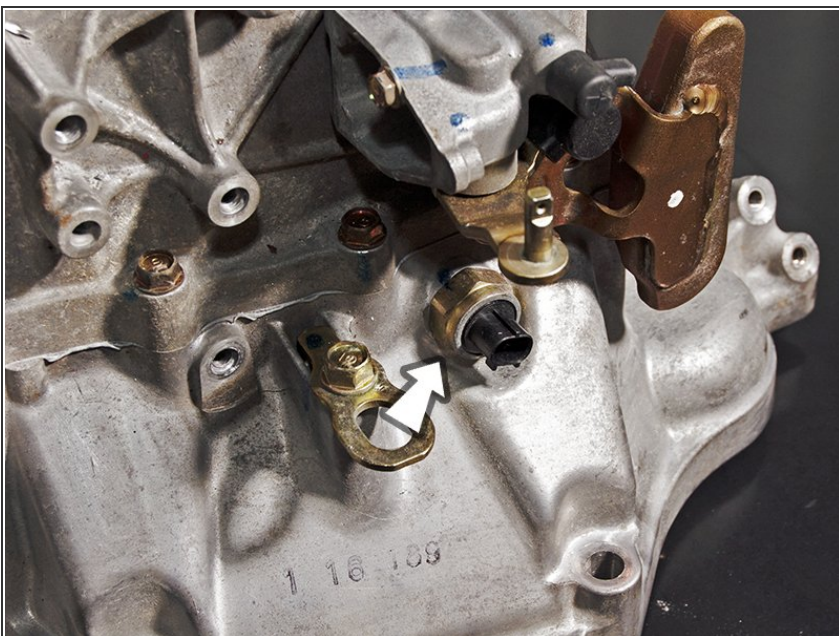
Step 1 — Remove Ball Spring



- Remove the (3) ball spring detents using a 12mm socket. These are what keeps the transmission in gear after you've shifted. Handle these with care as they tend to fall apart when removed.

(i) Reassembly Tips: Reinstall balls, springs, and bolts. Torque to 16 ft-lb (22 N-m).

Step 2 — Remove Backup Light



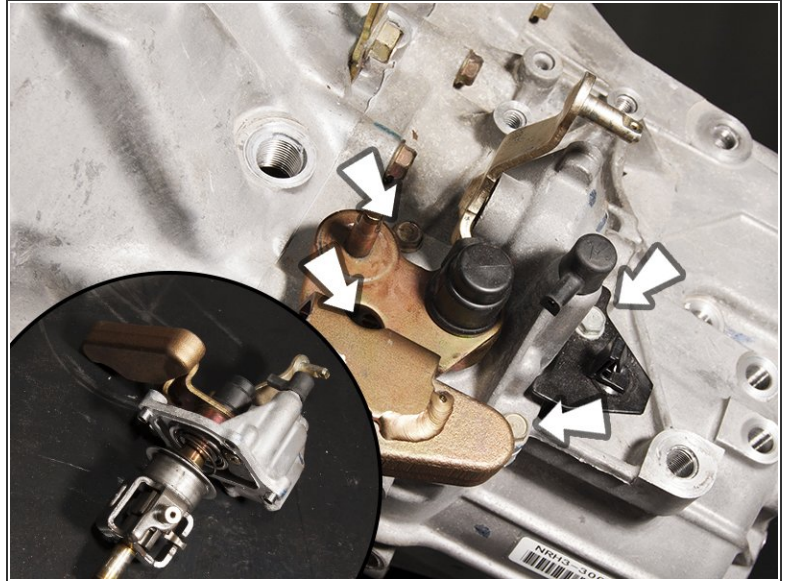
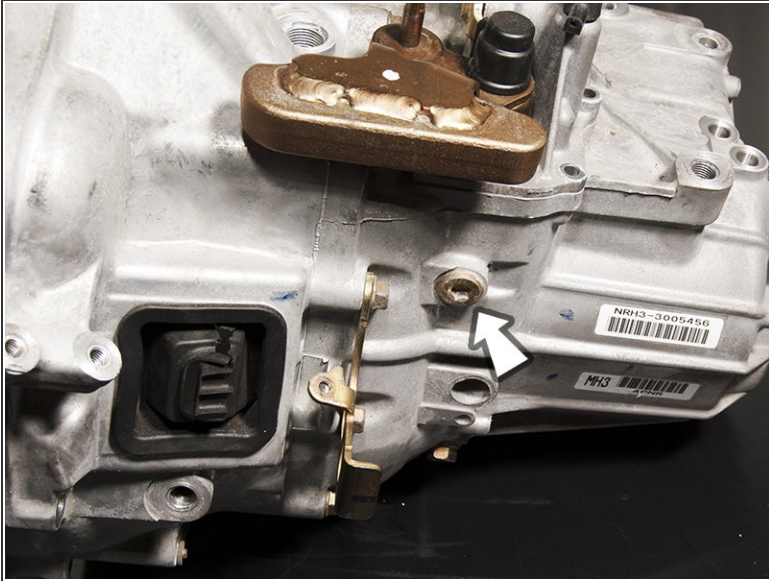
- Remove the backup light switch using a 27mm socket. Unbolt (using a 12mm socket) and

(i) Reassembly Tips: Apply Honda Bond to the threads before reinstalling. Torque to 22 ft-lb (29 N-m).

- Remove the vehicle speed sensor and its o-ring. You may have to twist the speed sensor back and forth a bit to get it loose.

(i) Reassembly Tips: Torque the 12mm bolt to 16 ft-lb (22 N-m).

Step 3 — Remove interlock & unbolt



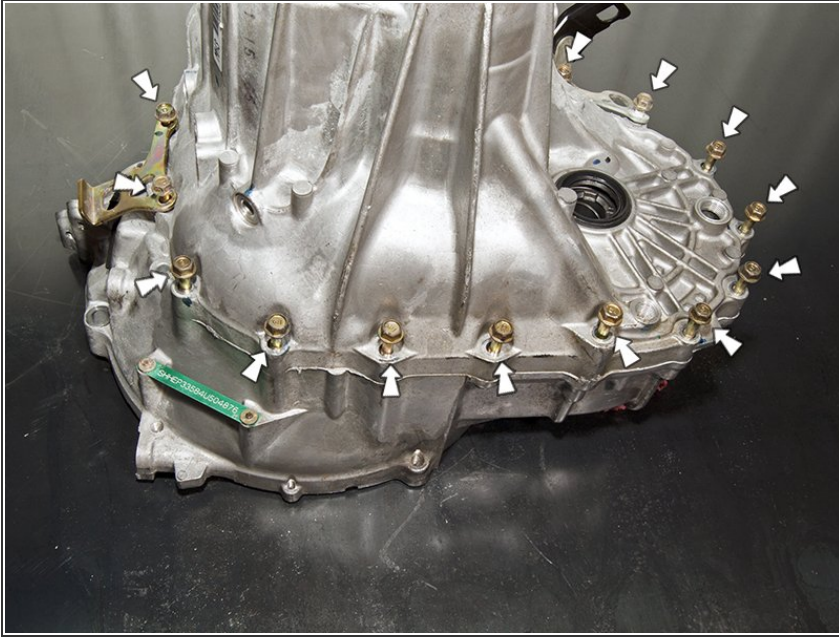
- Remove the interlock bolt using a 7mm allen wrench.
 - *Reassembly Tips: Apply Honda Bond to the threads and torque to 29 ft-lb (39 N-m).*
- Unbolt and remove the shift lever assembly and the two dowel pins that line it up with the transmission case.
- ☑ There should be 4 bolts alltogether. Again, you may have to twist this part back and forth to get it loose.
- ① *Reassembly Tips: Remember to install the two dowel pins to aid in alignment. The 4 bolts should be torqued to 9 ft-lb (12 N-m).*

Step 4 — Remove the Flange & Drain Plug



- Remove the 10mm flange bolt using a 14mm socket.
 - ⓘ *Reassembly Tips: Torque to 33 ft-lb (44 N-m).*
- Remove the drain plug (using the end of a 3/8" socket wrench or extension) and filler plug (using a 17mm socket).
 - ⓘ *Reassembly Tips: Torque the drain plug to 29 ft-lb (39 N-m) and the filler plug to 33 ft-lbs (44 N-m).*

Step 5 — Remove Flange bolts

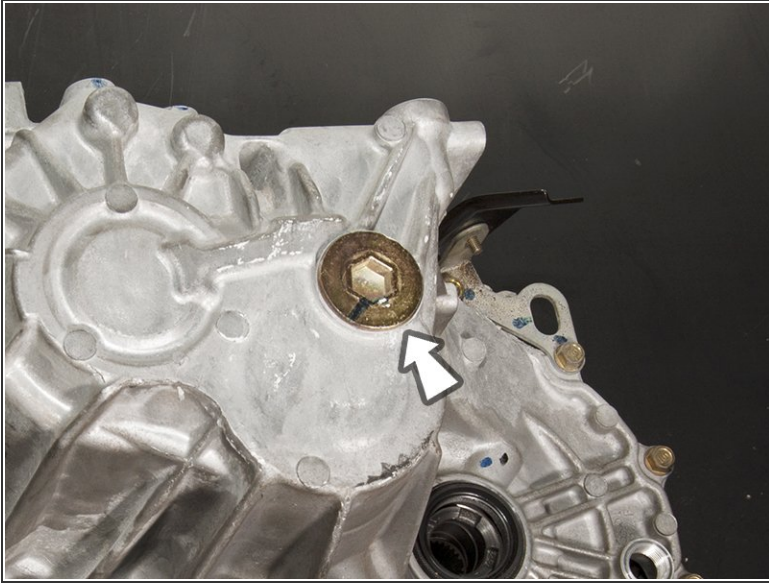


- Using a 12mm socket, remove all of the 8mm flange bolts that hold the two halves of the transmission together.

★ All of the bolts should be loosened in several steps before any are removed. The bolts should be loosened in a criss-cross pattern to avoid unnecessary stress on the bolts that are still tight.

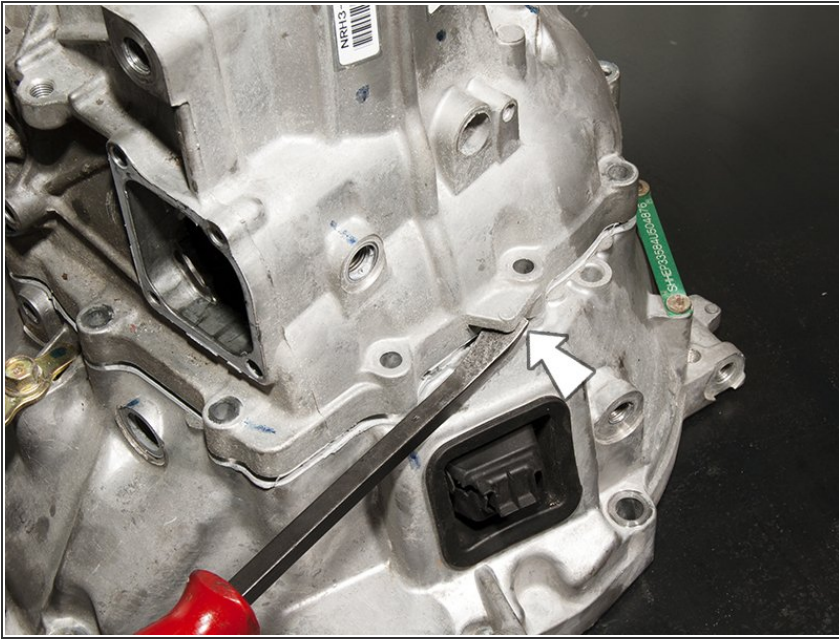
i *Reassembly Tips: First install and hand tighten all of the flange bolts. Then torque the flange bolts to 20 ft-lb (27 N-m) in a criss cross pattern.*

Step 6 — Remove sealing cap



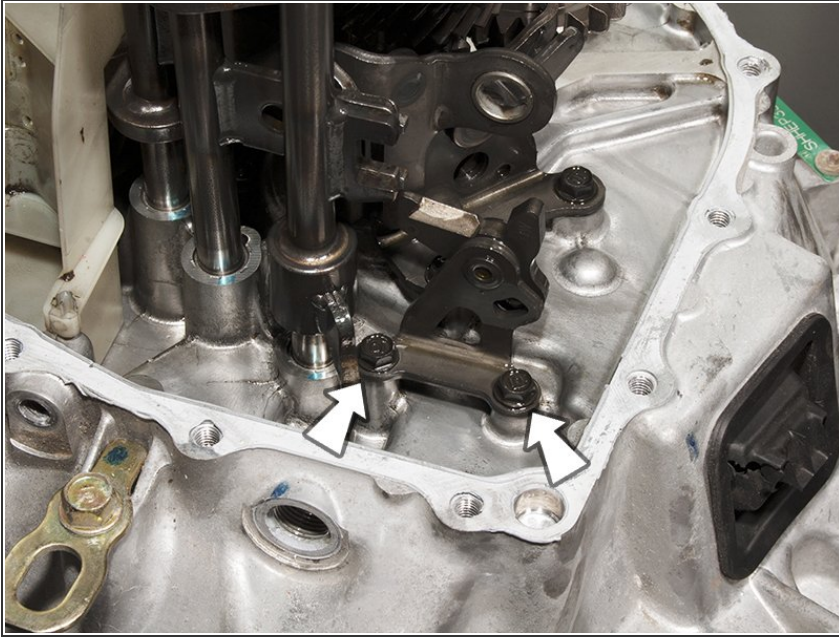
- Remove the 32mm sealing cap using a 14mm allen wrench.
- Scrape off any Honda Bond that is on the mating surfaces between the sealing cap and the transmission.
- ❗ *Reassembly Tips: Remember to put the 72mm snap ring back in the groove on the counter shaft bearing before screwing the 32mm sealing cap back in. Also, apply Honda Bond to the threads of the cap before reinstalling it. Also, apply Honda Bond to the threads of the cap before reinstalling it.*
- Use a set of snap ring pliers to expand the 72mm snap ring and remove it from the groove it sits in on the countershaft bearing. The snap ring can not be removed from the transmission at this point. It only needs to be removed from the groove it sits in.
- ❗ *Reassembly Tips: Remember to put the 72mm snap ring back in the groove on the counter shaft bearing before screwing the 32mm sealing cap back in. Once installed, there should be a 3.3-6mm gap between the tips of the spring clip.*

Step 7 — Pry transmission



- Using a pry bar, gently pry the two halves of the transmission case apart. Lift and remove the upper half of the case. Before moving on, use a razor to scrape off the HondaBond that was sealing the joint where the two halves of the case met.
- ⓘ *Reassembly Tips: Reinstall the 3 14x20mm dowel pins that align the transmission case. Before mating the two halves of the transmission back together, apply Honda Bond to both mating surfaces. Make sure to apply the Honda Bond around each bolt hole, to avoid possible leaks.*
- ⓘ *Also, make sure to place the 72mm snap ring back onto the secondary shaft before putting the case back together. The two halves will not seal completely until the 72mm snap ring has been put back in place. "*

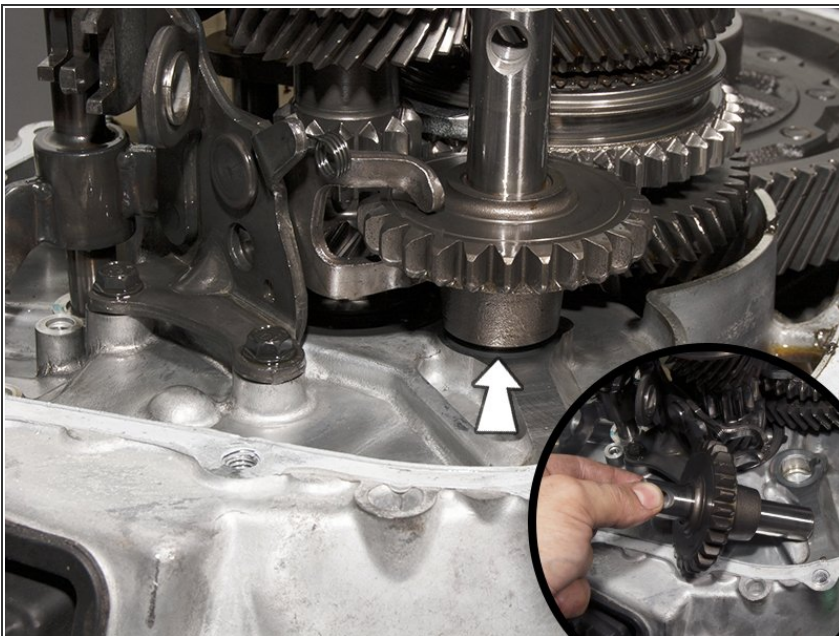
Step 8 — Unbolt & remove lock-out cam



- Unbolt and remove the reverse lock-out cam using a 10mm socket. This only applies to the 5 speed model as is shown here. 6 speed models do not have this part.

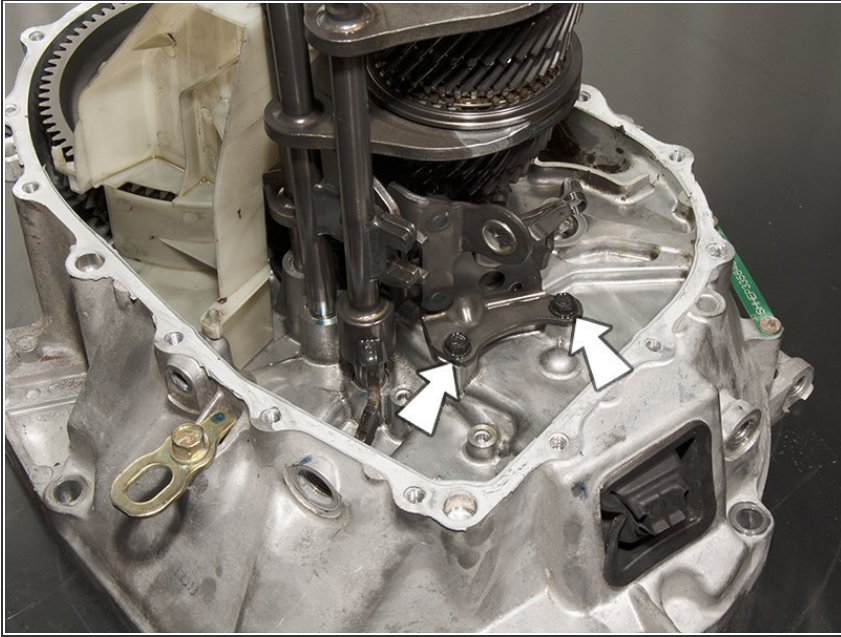
i *Reassembly Tips: These should be torqued to 11 lb-ft (15 N-m).*

Step 9 — Remove the gear



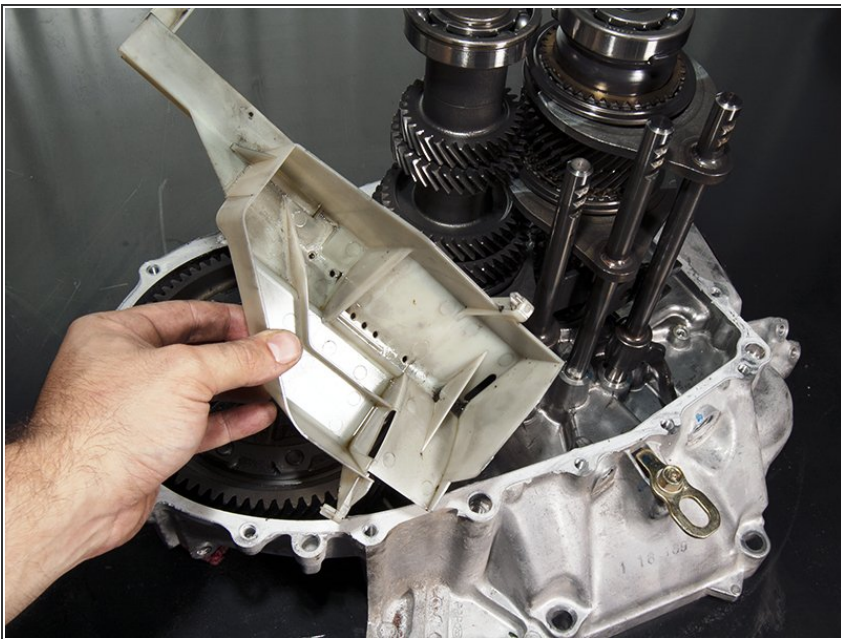
- Remove the reverse gear idler and reverse gear shaft.

Step 10 — Unbolt & remove shift fork



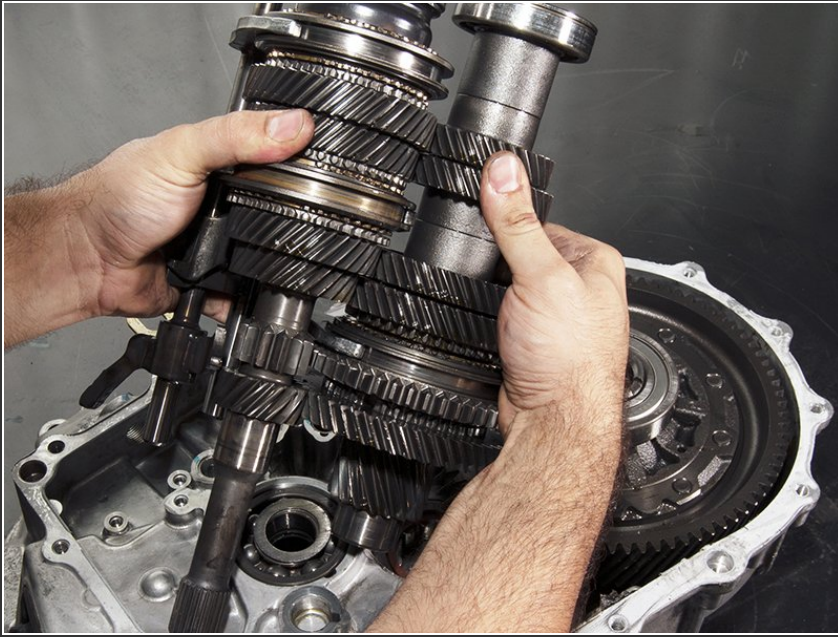
- Unbolt and remove the reverse shift fork using a 10mm socket.
- ① *Reassembly Tips: These should be torqued to 11 lb-ft (15 N-m).*

Step 11 — Remove the Oil Gutter plate



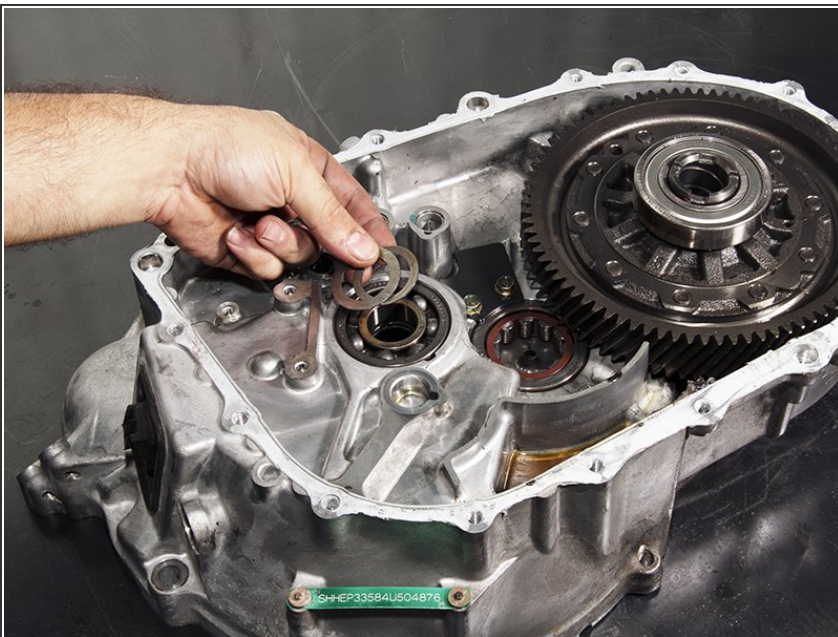
- Remove the oil gutter plate.

Step 12 — Wrap input shaft's splines



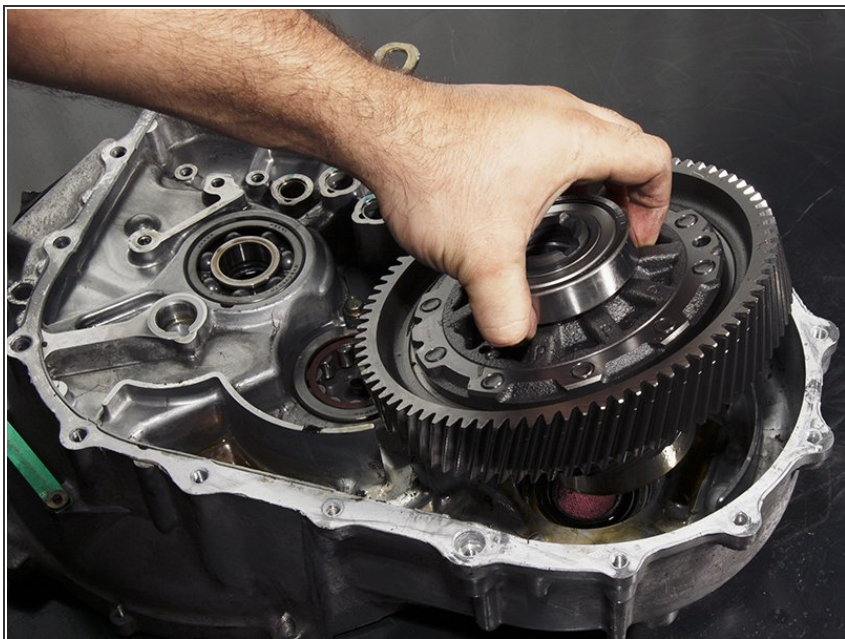
- Wrap the input shaft's splines with masking tape. This is done to avoid damaging the input shaft seal as the gearset is removed.
- ① *Reassembly Tips: Don't remove the tape from the mainshaft spline until after the gearset has been reinstalled. This will help to protect the oil seal during reassembly. Next, hold the gearset and shift forks as shown in figure 12 and gently lift the gearset and shift forks out of the transmission case.*

Step 13 — Remove spring washer



- Remove the 28mm spring washer and the 28mm washer that were sandwiched between the mainshaft and the mainshaft bearing.
- ① *Reassembly Tips: The cone-shaped spring washer should be installed first, with the narrow end against the transmission.*

Step 14



- Lift the differential assembly out of the transmission.
- ⓘ *Reassembly Tips: Drop it back in, and make sure it's facing the right direction.*

Step 15




- Remove the 10 bolts that attach the final drive to the differential. Note that the bolts have a left hand thread and should also be removed in a criss cross pattern.
- ① *Reassembly Tips: First hand tighten all 10 bolts, then torque each bolt to 89 ft-lbs (121 N-m).*

Step 16



- The bearings on the differential can be removed using a standard commercial bearing puller. If you don't have access to one of these, you can just purchase new carrier bearings (part#91005-PPS-003) from us here at Hybrid Racing.

 *Reassembly Tips: Honda uses a special tool and a hammer for pressing carrier bearings back onto differentials. However, the tool can be substituted with pipe that is the right diameter to rest on the bearing's inner race. Do not apply pressure to the outer race, as it will destroy the bearing by forcing it apart.*

If you have any questions or comments, please email support at

support@hybrid-racing.com

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Should you need to contact us our details are as follows:

Hybrid Racing LLC, 12231 Industriplex Suite B, Baton Rouge, LA 70809

www.hybrid-racing.com