

Almost anyone that has an Isuzu truck with a suspension lift will have to deal with cracked or torn CV boots sooner or later (at least those that still have IFS). Unfortunately, the torsion bar lift and increased CV angles go hand in hand. This angle puts additional stress on the boots and can cause premature wear. The increased angle also reduces the overall strength of the front axle, making it prone to breakage if you happen to be pushing the limits of your vehicle. Basically, the more flat your CV angles are, the better off you will be.

Now anyone that has had the pleasure of replacing CV boots can tell you that it isn't much fun. It's messy, the boots and band clamps can be tedious, and if you've got a lift, you can pretty much count on having to do it a few times over the life of your vehicle. Until recently, you had to choose between a decent suspension lift, and good CV angles. Thanks to a new product from Darlington-Offroad, we can now have both!

The 1.5" Diff Drop Brackets are a set of stock brackets that have been modified to relocate the front axle 1.5" lower than stock. Essentially, if you were to lift your truck 1.5" by cranking the T-bars, this kit would put your CV angles back to stock. For those of us with more lift, the improvement is still significant. Installing the drop brackets will have no effect on your alignment, steering or wheel travel.



Here is my front suspension before the installation of the Diff Drop brackets.



And after



The installation of these brackets can be a bit intimidating for someone who has never had to drop the front axle, but with a little preparation, it's something that can be accomplished in a weekend, with basic tools. I began my research by reading the procedure for the front 3rd member removal in my Haynes Manual. Since the steps are basically the same to get to the diff brackets, it's good information, but a little lacking in detail. The following will hopefully, provide a better understanding of how to do this mod yourself, and give you some heads up on some of the things that slowed me down.

With a few small differences, this procedure should apply to any Isuzu truck with IFS and reticulating ball steering. The brackets for the models with rack and pinion are currently under development.

Tip:

In order to install the modified brackets, you must remove the front axle assembly and steering linkage. This is an excellent time to replace any worn out ball joints, CV boots or axles, or do any work in the front differential, such as re-gear or add a locker or limited slip.

It's also not a bad idea to start hitting the bolts a few days ahead of time with some penetrating lube, like PB Blaster to make things a little easier on yourself. These bolts probably haven't been moved in a while.

Tools:

The basics you will need to have on hand:

- Metric sockets, extensions & ratchet
- 22mm socket and/or box end wrench (7/8 wrench will work well, and is easier to locate)
- A good size breaker bar
- Jackstands (two pair recommended)
- Jacks (three is recommended, but can get by with additional jackstands)
- A good size hammer and pry bar (or other means of separating ball joints)
- Torque wrench
- Manual with torque specifications

The following tools are recommended and will help with the ease of disassembly, but should not be necessary;

- Impact wrench and sockets
- Fixed jaw puller
- Adjustable puller

Getting started:

- Set the emergency brake, and chock the rear wheels,
- Raise the front of the vehicle with a jack under each lower control arm
- Remove front wheels and support vehicle on jack stands, leaving the jacks under the control arms
- Remove the front skid plate
- Remove the entire steering linkage as one piece. A small puller makes separating the center link from the idler and pitman arms, and the outer tie rod end from the spindle very easy.
- Remove both front calipers and hang out of the way
- Remove the front cross member
- Separate both upper ball joints

My preferred method is to lower the jack under the control arm so that the upper control arm is resting on the bump stop. Remove the cotter pin and loosen the castle nut a few turns. Place a pry bar between the spindle and upper control arm and apply pressure while striking the spindle with a hammer at the ball joint. When the ball joint breaks loose, it will drop down onto the castle nut. Then jack up the lower control arm, and remove the castle nut.

- Disconnect the front driveshaft from the differential
- Drain the differential fluid. Try to get as much out as possible, because everything that's left will be on the ground before it's over.

(I didn't find it necessary to remove the hub cover or the snap ring, although if you plan on replacing the CV axle, you will want to do this)

-support the front axle under the differential, and loosen the four bolts (two in each bracket) that mount the differential bracket upward to the frame. The two rear bolts are captive, and the two front ones have nuts on top, that can be accessed through the wheel well.

(Tip: The nut and bolt are 22mm, the same as the tie rods, ball joints and center link connections. A 7/8" wrench works great for these, since a 22mm wrench can be difficult to find.)

-Disconnect the axle breather, and any vacuum lines if so equipped.

Before removing the bolts, loosen the four bolts that connect the passenger side diff bracket to the axle housing. The lower two bolts are easy enough to get to, but I had to remove the frame mounting bolts and lower the diff in order to get to the upper two bolts on each side. I ended up having to use a socket, multiple extensions, and a universal joint to get to the upper two bolts through the control arms.

Once you get everything un-bolted, you can separate the passenger side shaft from the axle housing. This is where things get tight. The CV axles are connected to the diff brackets with two snap rings, and the diff brackets will not fit between the upper and lower control arm. You need to shift the axle housing as far to the drivers side as possible. This will give you just enough room to pull the splined end of the passenger side axle, and lower the differential.



This is when you will find out how much fluid is left in the differential, so have some rags handy. Now you can remove the bolts connecting the drivers side diff bracket to the axle housing. This will allow the axle housing to be completely removed.

If your truck is equipped with SOTF, the drivers side axle shaft is short, similar to the passenger side. Non SOTF models will have a long axle shaft that extends to the differential.

Now you need to remove the stock diff brackets. On SOTF equipped models, this procedure will apply to both sides. Remove the snap ring retaining the bearing on the axle shaft. The bearing is pressed onto the shaft, and can be easily removed with an adjustable puller.

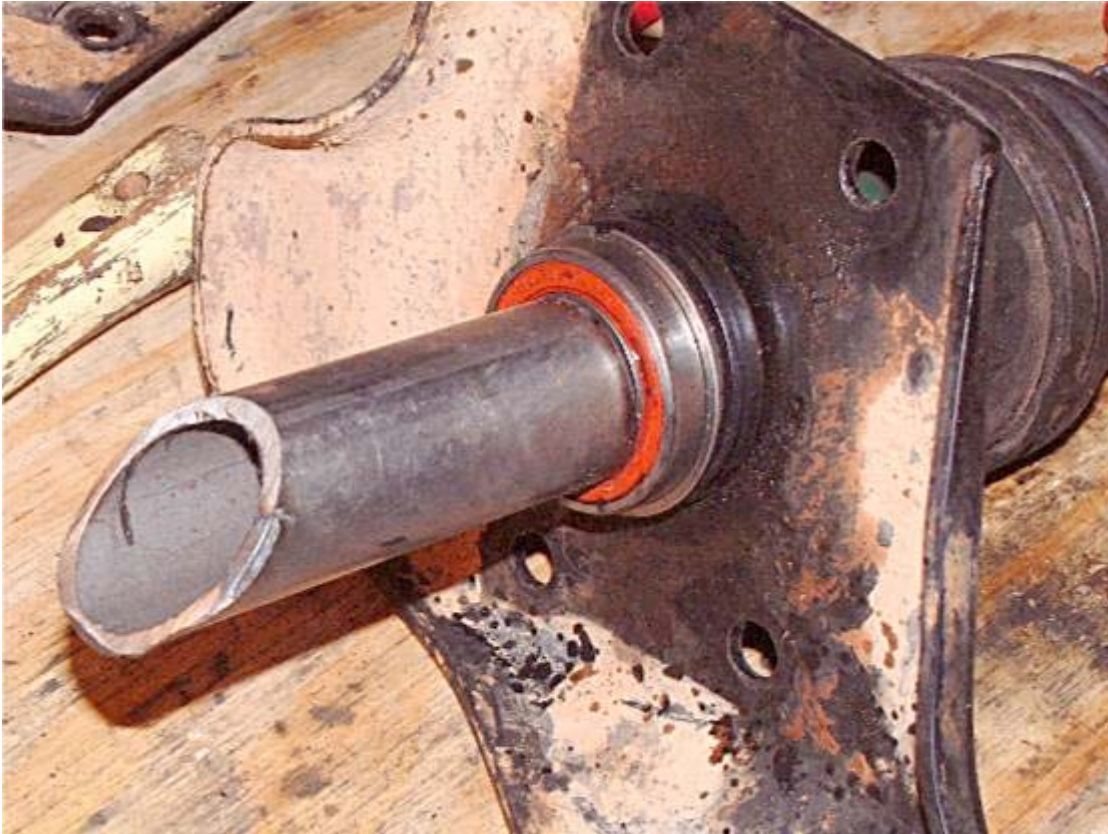


The press fit is not extremely tight, and can be carefully pried out with a screw driver if a puller is not available. Behind the bearing is another snap ring retaining the oil seal. Removing both will allow the bracket to be removed.



On non SOTF axles, the length of the drivers side axle shaft will not allow the use of a puller. I found that the easiest way to remove the bearing was to remove the snap ring and carefully pry the bearing out about $\frac{1}{2}$ " with a screw driver. This should allow access to the snap ring behind the bearing. Releasing this snap ring from the groove will allow you to use the bracket itself to pull the bearing the rest of the way off.

My bearings and oil seals were in good shape, and I was able to re-use them on the new brackets. I used a small piece of tube that fit over the axle shaft to press the bearings on.



I only had a short piece of pipe, so for the long side axle, I had to tap the side of the pipe, moving around the bearing to press it into place. If you chose to open the hub and release the outer end of the CV, you can pull the CV's and do this on the work bench. I left them in place, and it wasn't too tough to do under the truck.

With the new brackets in place, you can re-install the axle housing the same way it came out. Once you get the axle shafts back in, bolt the new brackets to the housing. Lining up the bolts to the frame can be tricky. It's best to start the two rear captive bolts, but leave them loose. Then you can maneuver things to get the fronts started. Torque the mounting bolts and brackets to axle bolts to spec.

Now you can put everything back together, being sure to torque bolts to spec, and replace the cotter pins in the steering linkage and ball joints.

The Diff Drop kit is available with brackets that will relocate the cross member down about 2" to clear the differential.



I first installed my Calmini cross member with these brackets, but later opted to modify the stock cross member to clear the differential and driveshaft with out the drop brackets.

Two areas on the stock cross member need to be cut. One is a rectangle that was removed to clear the bottom of the differential. The other is a radius at the rear to clear the driveshaft flange. Both were cut with a cutting wheel on an angle grinder, and finished with a grinding wheel.



This removal of material could compromise the strength of the member, so I opted to reinforce the area with a 3/16" plate welded to the bottom of the cross member.



The result is the ability to mount the stock cross member without the drop brackets, and no loss of clearance.



A radius was cut out of the edge of the transmission /exhaust skid plate to clear the driveshaft.



This is not an endorsement for the procedure for modifying the cross member. I have yet to really test it out, so I can't comment on the long term strength. The stock cross member with the drop brackets is a workable alternative to avoid the fabrication.