

## **'63-'82 Rear Suspension Removal**

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(<http://www.vettenet.org/sharkrear.html>)

Sooner or later, most people end up having to remove the rear suspension of their Stingray. The basic chassis is the same for '63 to '82 but the '80-82 cars have a different, and possibly easier to remove, differential mounting method.

Since you want to work on separate components (You don't want to lug 350 lbs of rear suspension onto your bench vise), you are better off disassembling it in the car piece by piece.

The most common reason to remove the rear suspension is to replace a worn out or broken part. You can use this to remove all or just the parts you need. If you are removing the differential to change gears or replace as it is broken, you do not need to remove the trailing arms. Also, if you are removing the trailing arms to replace bearings or bushings, you do not need to remove the differential. This is a rough sketch of what you need to do:

- Support your Corvette on sturdy jack stands. Use good ones unless you are very good at bench pressing 2000 lbs. The newspapers seem to like putting in pictures that have a set of legs sticking out from under a car after a cheap jackstand has collapsed.

CAUTION - do not run the car on the jackstands and DO NOT engage any gear with the engine running. The rear axle is at a severe angle at the limits of the u-joints and may cause severe damage.

- Remove the rear tires
- Remove the exhaust pipes and mufflers.
- Remove the spare tire carrier.
- Remove the rear sway bar, if you have one.
- Remove the half shafts. If original, there are French locks that fold over the bolt heads to keep them tight on the outside flange. Remove these to remove the four bolts. Install new French locks when you reassemble.
- Remove the spring. Use a floor jack to hold the spring, remove the nut and bolt on the end, and let the jack back down. I typically clamp Visegrips (R) on the leaf where it can wedge against the end of another leaf so the jack has something to grip and not slip. Do Not use a bottle jack but a roll around floor jack. A bottle jack could tip over and be flung by the spring.
- When both ends are loose, remove the 4 center bolts at the differential mounting plate, if you are removing the differential. If you are only removing the trailing arms, you can leave the spring.

CAUTION: The steel spring is heavy, roughly 50 lbs. You may want to have some help to remove it.

- Remove the shocks. You will need to jack under the trailing arm slightly to remove pressure on the shock. Lower the arm slowly after you remove the shock so it rests in the frame stop

- Remove the camber strut rods at the shock end and the 4 bolts in center to the diff. You must remove the shock mount to remove the outer end of the camber rod. Do not hammer on the mount as you can destroy the threads and possibly break it.
- Remove the brake lines. You need to disconnect the rubber hoses to the trailing arms and the emergency brake cable.
- Remove the trailing arm front bolt. Expect this to take longer than you can imagine as they are usually rusted in and there is little space to work. Renting a reciprocating saw with a hacksaw blade (several) can make life easier. Many find that it is easy to use a cutting torch to cut the shims and bolt out and then just replace the old bushings. If you are removing the arm, it is probably because the front bushings are bad so they are possibly correct in their method. Just use care to not set the Corvette on fire and have someone standing by with either a fire extinguisher or a water hose.
- Disconnect the driveshaft at the diff. Remove the diff front mount.
- 1963-1979 - Choose whether you cut some holes in the rear floor or take three times as long. If your rear crossmember has been removed before, it may remove easily. If not, it can be quite firmly attached.

There are 4 bolts from above that hold the diff to the crossmember accessible ONLY through the floor. Two small holes, quick patch afterwards, and you are in and out. Actually, the location is such that nothing splashes through this hole anyway and the carpet will cover it nicely. If you run stock under the car exhaust, you will wish to seal it to prevent carbon monoxide from entering the car.

The other way can be quick or it can take forever. You remove the diff and crossmember as a unit. Have the floor jack about 1" under the diff. Remove the 2 bolts in the cups. Use the biggest crowbar you can find to pry the crossmember off the cups that hold it.

CAUTION - The diff and crossmember are very heavy and can do severe damage to you if they fall. DO NOT lay under the car while doing this.

•1980-1982 - The crossmember and differential cover are one item. The mounting of the crossmember is located on horizontal bolts rather than on vertical cups and the removal is sometimes easier. After removing the two bolts, you may still need to pry on the ends to get them out of the mounting bracket.

CAUTION - The diff and crossmember are very heavy and can do severe damage to you if they fall. DO NOT lay under the car while doing this.

To reinstall the rear suspension, you basically just put everything back where it was. Check the torque for the rear spring center mounting bolts, the trailing arm pivot bolts, the camber rods center mounting bolts, the half shaft outer flange bolts, the differential front mounting bracket bolts, and the crossmember mounting bolts.