

Introduction



Rennline’s kit allows you to convert your AWD Carrera to RWD by eliminating the front axles, differential, and torque tube. With 80 pounds of weight saving (measured from C4 non-LSD car), and 100% of your power sent to the rear wheels, you can improve throttle response, steering response, and handling with this modification. However, it does require a decent amount of work. Fear not, it is achievable even in the humblest of home garages with most of the standard tools you already have for basic Porsche maintenance.

Here’s what you’ll need to complete the job:

Tools:

- Floor Jack
- Four Jack Stands
- (Alternatively, a two-post lift if you have one, or a set of QuickJacks)

- Set of metric Allen sockets
- Set of E-Torx Sockets
- Set of metric wrenches, including 22mm wrench
- Set of metric sockets up to 19mm
- 34mm Socket (for the axle hub nut)
- A hefty impact
- Socket extensions
- Standard 3/8th drive ratchet
- Schwaben Ball Joint Separator Tool
- A mallet
- Large round punch
- A friend or two

- What I suggest having (but you don’t absolutely need)
- A transmission jack
 - A cordless electric ratchet (for tight spaces)

Parts Required:

- Rennline Axle Delete Kit
- Two new OEM Axle Hub Nuts

Parts Suggested:

- New Front Lower Control Arms
- New End Links
- New Outer Tie Rods
- New Thrust Arms

Now, let’s get started if you have all the equipment.



Step 0

Remove the Porsche wheel caps from the center of your wheels. Do this with either the Porsche center cap removal tool or by removing the wheels first, pushing them out, and then reinstalling the wheels.

With the wheels on the ground and the vehicle in gear with the parking brake set, use your 34mm socket and a breaker bar to free the hub nuts. These can take quite a bit of force as they are installed with 300lbs of torque per Porsche. If you have a beefy impact driver, you can usually break those nuts off without this step, but to be safe, go ahead and loosen them using the resistance of the wheels while they are on the ground.



Step 1 Jack up your car.

Safely lift the car off the ground from the front and place jack stands at the appropriate lifting points on the left and right sides of the car. Then, move to the rear and jack that up as well so that all four wheels are off of the ground. Ensure you lift the car high enough to have a comfortable workspace below the car as you will eventually need enough room to maneuver the front differential and torque tube out from under the car.

Step 1.1

If still intact, use a 10mm socket and driver to remove all the plastic nuts retaining your splash guards. You will want to remove everything from the front bumper to the transmission. Also, remove the two forward braces from the subframe to the core support for more space to access the axles



Step 2 Remove Wheels

Use a 19mm socket (unless you have differently sized aftermarket wheel bolts) and remove the front two wheels.

Step 3.1 Lower Control arm Ball Joint

Loosen Lower Control Arm Ball Joint (if removing lower control arm for replacement, otherwise skip this step)

From the steering knuckle on each side, remove the lower control arm ball joint from the knuckle. This is a through bolt and can usually be spun off with an impact or electric ratchet. It may require you to put pressure on the underside of the ball joint either by hand or carefully with a floor jack so that the stud from the ball joint does not spin with the nut. Remove this nut for now.



Step 3.2 Remove Lower Control Arm Inboard Side

The inner side of the control arm is retained with a through bolt. Counter hold one side and use a ratcheting wrench to remove the nut from the bolt. It can only be removed one way, somewhat un-intuitively, by feeding it into a cutout provision in the subframe where it is retained. Feed it back to the rear of the car for removal. The process is reversed for installation. The bolt only goes one way, so don't worry about remembering. You won't be able to install it incorrectly.



Step 4 Remove Thrust Arm from Lower Control Arm

There is a through-bolt on the outboard side of the lower control arm that locates the thrust arm. Remove this bolt and swing the thrust arm away from the lower control arm. (This can really be done in any order, as noted by my pictures above. I just went for it knowing everything was coming out anyway).



Step 4.1 (Litronics Headlight Sensor)

If you have Litronics headlights, on the driver's side lower control arm you will find a sensor attached with a press-fit retainer on the upper side of the control arm. The connector to the sensor looks like a little plastic end link. This is most easily removed by pinching the tabs on the pop clip from under the control arm, then pushing the entire retainer up and out of the control arm. Alternatively, with two 8mm wrenches, you can remove the lower part of the connector from that retainer if you plan to reuse your original control arm. Counter-hold the inner nut and use a ratcheting closed-end wrench to carefully remove the nut on the control arm side of the connector and swing it carefully out of the way from your control arm so it is not damaged or pulled violently when dropping the control arm.



Step 5 Remove Lower Control Arm Ball Joint (Optional)

If removing control arm for replacement -
 With either the Schwaben Ball Joint Separator, a pickle fork and hammer, or an impact socket and hammer, knock the ball joint from the lower control arm free of the knuckle. I found the best way to do this is by giving the knuckle itself a solid thwack with a mallet where the ball joint is located, then, using your ball joint separator, press the stud out easily. Alternatively, you can use a pickle fork to wedge below the knuckle on the ball joint boot itself and hit it repeatedly until it pops the ball joint free. This will almost certainly destroy the ball joint boot and possibly damage the ball joint itself, so only use this method if you have a replacement on hand. A last-ditch method if you do not have any of the mentioned tools is to use a large impact socket, placed directly on top of the stud with the nut hand-threaded on top so as not to damage the threads. Hit vigorously with a hammer until free. You may need to use some heat on the knuckle housing (carefully so as not to damage the boot) to free it this way.



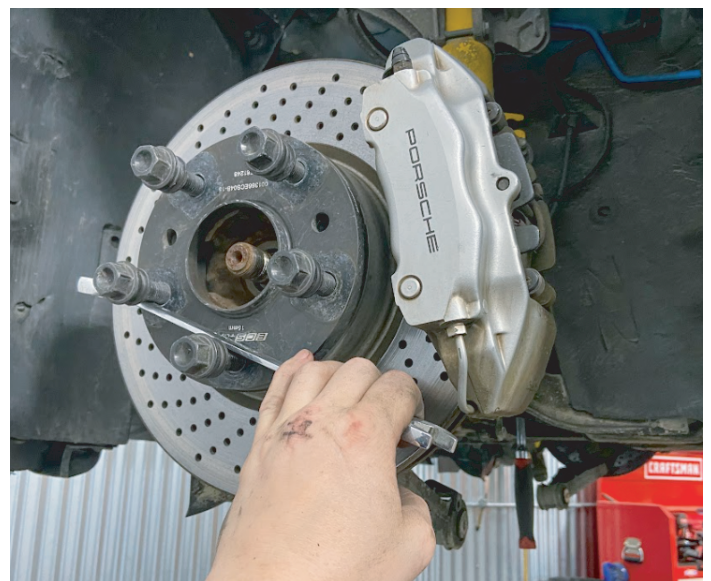
Step 5.1 Remove Outer Tie Rod Ball Joint

Just like the control arm, you will want to first remove the nut on the tie rod end from the knuckle. Then, use any of the previously mentioned ball joint freeing methods to remove the tie rod end. If using the separator, you will safely be able to reinstall your tie rod end without needing an alignment afterward. However, if you damage or intend to replace your tie rod end, it is best practice to mark the threads of the inner tie rod where the outer rod is located with a sharpie or paint. This will allow you to install the new tie rod end almost exactly where it was so the alignment won't be atrocious when you take it for a professional alignment.



Step 6 Remove Inner Axle CV Joint from the Differential

With the control arms, thrust arms, and tie rod ends removed from the knuckle, you'll be able to easily swing it around for access to the inner boot. If you haven't already, put your car in neutral and release the parking brake so the wheels can spin freely. With all five of the wheel bolts installed in the hub by at least a few threads, use a large wrench, screwdriver, or pry bar to insert between the lower two wheel bolts to prevent the hub from spinning. Take a 6mm Allen Socket and ratchet and remove the six bolts that retain the axle to the diff. I like to hold the wheel hub in place for loosening each bolt in turn until they are simply hand loose, then go back around and remove each bolt and half-moon washer (3x per side) from the diff output flange.



Step 7 Swing Inboard Axle Side Away from the Diff and Remove Axle

Do just that. You want enough room to knock the axle from the steering knuckle without the axle bottoming out against the diff. If you have a friend around, have them hold the knuckle as if it was turned all the way out (left on DS, right on PS) for the most room. With your big hammer and round punch, locate the punch on the divot in the axle shaft inside the steering knuckle and give it some good thwacks. It may require some force and quite a few taps to come out. If you don't have a punch, put the axle nut on by hand for a few threads and use an impact socket similar to what was described for the ball joint removal method. A few good hits should back the axle splines out of the wheel hub, but heat may be required. If you have an air hammer, this is an extremely effective method for doing this step.

You will likely need to move the axle around a bit to clear everything once you have completely removed the splined section from the wheel hub. With the wheel hub swung out of the way, carefully remove the axle. This is the same for both sides of the car.

Step 8 Remove Giubo Bolts from Transmission Output Flange

On the car's rear, locate the output flange and rubber flex coupler (Giubo). It is held on by three torx head bolts. With a long extension and an impact, you can reach these bolts to remove them. Spin the drive shaft to locate each bolt in turn at the 6 o'clock position so you can access them with the socket and extension on your impact. They should be fairly easy to remove. Once all three have been removed, use a pry bar or large flathead screwdriver to decouple the output flange from the Giubo. You will likely need to use some force and do this for each of the spots you just removed those bolts. It should pop forward once completely separated.



Step 10 Remove Center Support Bearing and Brace

In the middle of the car, remove the CSB and brace from either side of the torque tube tunnel. Once this comes down, you will see a plastic retainer that clips onto the fuel line and coolant lines. Remove this as well and separate it from the CSB unit with the 10mm bolt holding it to the CSB. This locator clip piece will be reinstalled but set it aside for now.



Step 11 Remove the Rearward Gas Tank Straps and Girdle

On the engine side of the gas tank, you will see two metal straps held on by two bolts each (one front, one rear) supporting the rear portion of the gas tank that sits "around" the differential. You only need to remove the two rear bolts (one for each strap) to lower them enough to remove that girdle. Leave the straps loosened once the girdle is removed from the gas tank.



Step 12 Unbolt the Differential and Remove Diff/torque tube

This is where your friend or transmission jack (or floor jack with a piece of wood on it) will come in handy. Have whichever method you're using support the differential directly in the middle of the unit. On either side, you will find a bolt locating the differential on its mounts. Remove those nuts so that only the stud is left. The stud has a 6-point male head that accepts a 6-point socket. Remove the studs themselves with an impact driver. Once removed, the diff will be able to drop straight down.



When removing the differential, be careful not to separate the rear half of the driveshaft from the torque tube. These are balanced together and must be installed exactly in the correct clocking, or else they will vibrate. I suggest having a friend guide the driveshaft out and between the transmission brace, coolant lines, and toward the front of the car while you or another friend lower the diff straight down, and then begin moving it forward once it is clear of the subframe. The entire unit can come out as one piece in this method and will allow you to keep your driveshaft installed on the torque tube should you ever want to reinstall it without compromising the balance between the halves.

Step 13 Reinstallation

Now that your axles are out, the diff is out, and the torque tube/driveshaft came with it, you're ready to reassemble everything! Don't forget, if you removed your tie rod ends, you'll need an alignment. If you are re-using your old control arms/thrust arms/tie rods, be sure to inspect all the boots for tears, cracking, or other signs of wear (like floppiness). This will indicate they are ready to be replaced and now is the best time to do it.

Remember that you have left the car in neutral without the parking brake on before you begin dropping the car back to the ground once everything has been bolted up and torqued to spec. With the wheels installed and the car in gear with the parking brake actuated, you may now apply full torque (300lb/ft) to the axle hub nuts with an impact or by hand.

