

GEN 2 Front Disc Brake Install

Our goal is to make the install a breeze. Please read the entire guide.

1. Loosen the lug nuts 1/4 turn before jacking the vehicle up.
2. Jack up the front end and place on jack stands.
3. Remove wheels and place them under the vehicle as an additional fail-safe.
4. You must remove the circlip holding the speedo cable on the driver's side and save. I like to use a piece of clear tap to keep the circlip from falling in a crack or getting lost. Stick it to your beer. There are several techniques for removing these dust caps. Our favorite is with an oversized set of channel locks. Grab each edge and rock the cap up and down until it falls off. Repeat on the passenger side.
5. On link pin models, a lock tab must be bent over to remove the spindle nuts in between the lock nuts. Save all the nuts and thrust washers; you will reuse them again.
6. Once removed, it is time to pull off the old drum. Do not try and pry it off. Adjust the brake shoe adjusting stars with a brake spoon to give you slop in the drum to wiggle off. Tap the drum on the edge with a rubber mallet until the drum falls off.
7. Ensure you have a container to catch the brake fluid once you start this step. Remove the bleeder on the back side of the backing plate and loosen/remove the brake line. Remove the three bolts on each side and remove the backing plates.
8. If you are using the stock or drop drum spindle, it is time to clean, wire brush and repaint the spindle and knuckle. Lightly chamfer and steel wool the spindle to remove any light rust. Clean all grease/ residue with a quality brake parts cleaner.
9. It is time to verify you ordered/have the right parts to install the brakes this go around. Remove your bearings from the package and test fit the inner and outer bearings before packing them. Did they fit? If yes, proceed with the installation. Did they not? Call/text us 1-623-518-3537.
10. It would be best to have a drop DRUM spindle or a stock DRUM spindle to attach our caliper brackets. You can safely identify this if you removed drum brakes, have them already, or if you purchased spindles, you should see THREE threaded holes surrounding them. If you have either of these, proceed to the next steps. If not, get in touch with us.
11. Attach the caliper mounting plate with the caliper mounting flange angling downwards to the backing plate holes with the supplied flathead Allen hardware and Loctite. Torque to 35 ft. lbs after initial tightening in a cross pattern.
12. For (LINK PIN) model kits, skip this next step. For (BALL JOINT) models, install an inner bearing spacer on the spindle. The side with the beveled inner edge is installed facing the caliper plate.
13. Clean/chamfer as necessary, then start the bearing races and press them home to the bottom of the seats thin side up. Be careful not to damage the hubs/races. The PRO's use a bearing race install tool but a large socket of appropriate outside diameter can work. Extreme force should not be necessary. Pay attention to the races as they press/

drive in straight, as a cocked race can damage the hub. If a race wants to press in unevenly, **STOP!** Find and correct the cause of the problem. Even a tiny shaving in the race seat can cause rotor "wobble" if not detected and removed, resulting in unsatisfactory braking performance.

14. Once the races are appropriately installed and seated to the bottom of the seat, it's time to pack the bearings with grease and install them in the races. Once placed in the rotors, remove any grease or oily residue on the rotors when the seal may lie.
15. Tap the seal in dry. If you apply grease to the seal to install it, it will pop out. Use a brake cleaner to remove the grease on the seal and hub. Once the seal is in and is not popping back out, grease the seal, specifically in the V-Groove. This will prevent the seal from burning off.
16. Apply some grease to the spindle shaft and seal race area. Now install the rotor with bearings on the spindle. Install the notched thrust washer, then tighten one of the lock nuts OR clamp nut (as originally supplied with your drum brakes). Adjust the wheel bearing end play by spinning the rotor while tightening the spindle nut. Once you can no longer spin the rotor, back the nut off 1/4 turn. Twin nut applications (LINK PIN), install the supplied lock tab with the second lock nut, and tighten. Now bend the tabs over to finish the process. (BALL JOINT applications),tighten the 6mm Allen head screw to complete the process.
17. Now for the grease caps. Two different caps will be supplied with your kit—one for the speedo cable side and one for the other. You can identify which one by looking at the back side of the cap and identifying the square cut out inside the cap. Starting on the driver's side, with the supplied Allen wrench, remove the Airkewld star that covers this connection. Once removed, you should grease your speedo cable and slide it through the spindle. Once it protrudes the spindle, rotate the dust cap until it engages with the square in the cap, and slide the original c-clip to retain the cable to the cap. With the supplied stainless steel cap hardware, apply a thin coat of anti-seize to the screws and install them into the cap and hub using the provided Allen wrench. Do not over-tighten. It is time to install the Airkewld star over the top to finalize the cap install. With the supplied Allen wrench and a thin coat of anti-seize, install the stainless steel screw and do not over-tighten.
18. You are now ready to test-fit the brake caliper. There is an assortment of washers/ shims supplied with the kit. Please do your best to center the caliper cutout on both the top and bottom of the caliper, and the pads contact the rotor dead flat to the surface; IE, it doesn't contact the top of the pad to the rotor while not contacting at the bottom of the pad or vice versa. Thus the brake caliper must be installed in parallel with the brake disc.
19. Once it is determined that the caliper is spaced such that this has been achieved, the caliper can be fixed to the mounting plate with the appropriate shims using Loctite and torqued to 35 ft-lbs. Pay attention that the caliper fixing screws neither stick out the opposite side of the mounting plate and contact the rotor nor do too few threads go into the mounting plate to hold the caliper securely. Too far in is easily corrected with a washer under the bolt head; not far enough to be safe requires a longer fixing screw.

20. Slip the retaining pin assembly out of the caliper by slightly lifting the inside end of the retaining assembly. Install the pads into the calipers (friction sides facing the rotor, of course!) and reinstall the retainer pin assembly, ensuring it's in all the holes in the caliper and pads. Be sure that the retaining pin "locks" on the locking lug.
21. Next, it's time to address the brake lines. (Porsche 356 Kits), comes with a brass-fitting adapter. With a thread sealant of your choice, coat the fitting. To install it into the caliper, look for the sticker on the back. Remove the sticker and install the adapter. You must place the same thread sealant on the fitting to ensure proper sealing properties.
22. Remove the factory master cylinder by breaking loose all the brake lines. Remove the brake light switch, wires, and the lead for the reservoir bottle. From inside the vehicle, near the pedals, you will see two bolts (13mm Socket) attaching the master cylinder to the firewall. Break them loose, but be careful. There are spacers inside, and they can fall inside the channel if you are hasty. Now remove the bolts. Remove the brake lines and allow all fluid to drain from the master cylinder and reservoir.
23. The newly supplied master cylinder must be cleaned and painted to avoid rusting. Once coated, install the provided brake light switches (with the install kit purchase) with a thread sealant of your choice. Place a small amount of grease on the inside of the master cylinder where the push rod will be pushing against. Install the supplied boot and install it in the vehicle. If your car does not have the spacers, you need them, and we offer them. You need these in place to have a proper working system. Add some blue Loctite to the bolts that fasten to the master cylinder. We also offer stainless steel replacements if you need them.
24. When routing the brake lines, the rearmost port goes to the rear, and the top and the forwardmost ports are for the right and left front, respectively. The lower ports are for the brake light switches. Tighten all the fittings to avoid leaks.
25. The brake actuating rod must have free play. It should have about 1/8" of free play. If it does not, we recommend removing the entire actuating rod, breaking the jam nut loose outside the vehicle to make adjusting it much more manageable. Buffing the threads and adding anti-seize to the threads make the job easy. Once adjusted, tighten and check again.
26. Connect the hoses to the reservoir or install your on-top reservoir. Fill with DOT 3 brake fluid and leave the cap off while bleeding the brakes.
27. Common knowledge in bleeding disc brakes tells you to bleed the furthest away. When working with a disc brake master like the one supplied, you need to bleed the first circuit to be able to bleed the second circuit completely. Start with the right side front, left side front, and right side rear, and finish with the left rear. Remember to check and top off the fluid frequently. *NOTE*: Wilwood calipers are designed for "either side" fitment; therefore, ONLY the TOP bleeder valves are used.
28. Properly adjusting the rear brakes will give you an even nicer pedal feel when only installing the front disc brake application. Tip - Tighten the adjustment stars with a brake spoon until the rear drums do not move. Pump up the brakes 3-5 times, and you will notice that the drum will turn again. Adjust them tighter until the drum does not move again. Then pump them up again. Repeat these steps until the drum does not

move after pumping them up. Then back them off so that the drum will turn and not drag. Doing this process will center the shoe in the drum and allow the shoe to wear evenly after doing these steps to adjust your brake shoes correctly and your e-brake cables.

29. Install the front tire/ wheel assemblies. Once the road wheels are installed and torqued remove the car from the Jack stands.**IMPORTANT: BEFORE DRIVING OFF**, press the brake pedal slowly to the floor and release, repeating until the caliper pistons have moved out of their bore into the driving position (firm brake pedal at or about standard height)

IMPORTANT: BEFORE DRIVING OFF, press the brake pedal slowly to the floor and release, repeating until the caliper pistons have moved out of their bore into the driving position (firm brake pedal at or about standard height)

Pad and Rotor Bedding:

Bedding is a "real conditions" heat cycle and the final step in preparing the pads and rotors for service. All pads especially cast iron rotors operated at sustained high temperatures will provide longer service life and smoother braking when adequately bedded. Bedding can be done either in the vehicle or on a unique bedding dyno that can realistically duplicate the torque loads, pressure, and temperature that will be realized in the vehicle.

Rotor Bedding:

Rotor bedding is an essential element to high-level performance and durability. It is most critical with cast iron rotors. Cast iron is exceptionally well suited to use as a brake rotor. Still, it can be susceptible to thermal stress distortion and even cracking if subjected to rapid changes in temperature when it's new. The cracking sound you may hear when pouring a favorite beverage over a glass of ice is thermal shock. A proper bedding cycle will gradually bring the rotors up to temperature, allowing them to cool slowly and entirely to "season" and relieve any remaining stresses from the casting and machining processes. With some compounds, a layer of pad material may also be embedded in the rotor face. It is essential that this "transfer layer" be deposited slowly and smoothly. Otherwise, pedal pulsing and compromised friction values can result.

The bedding process is the final "heat cure" for the pads. This final bedding cure differs from an oven heat cure in that the oven heat cure does not include the pressure torque and elevated surface temperatures necessary to condition the pad for service properly. With the rotors, new pads must be gradually brought to temperature and then slowly cooled. If the pads are put into hard service right from the start, damage from fractures or accelerated deterioration due to extreme temperature variations between the surface and the body of the pad can occur. Overall poor performance with the potential for rotor damage is often the result.

Bedding Steps:

Once the brake system has been tested and determined safe to operate the vehicle, follow these steps for bedding of all pad materials and rotors. Begin with a series of 8-10 light stops from approximately 30 MPH down to 15 MPH allowing 20-30 seconds for cooling between each stop. Progress to a series of 8-10 moderate stops from around 45 MPH down to 30 MPH allowing the 20-30 second cool down period between each stop. Proceed with a series of 8-10 hard stops from 55-65 MPH down to 25 MPH allowing 20-30 seconds of cool-down time between each stop. Drive at a moderate cruising speed with the least brake contact possible until most of the heat has dissipated from the brakes. Avoid sitting stopped with the brake pedal depressed to hold the car in place during this time. Park the vehicle and allow the brakes to cool to ambient air temperature.

Notes:

A more positive feel from the brakes should develop during the bedding process. This is an indication that the bed in the process is working. If any brake fade is observed during the hard stops, it may indicate that the brakes have been more than adequately heated. Begin cooling the brakes with light driving and without brake contact immediately.

Bolt Pattern Removal:

If you plan on changing these, understand the torque settings. You will need a 5/16" Allen socket to remove these bolts. You must add blue Loctite and torque to 75 ft lbs when installing the new one.

Front Rotor Replacement:

If you replace your rotors, you will need a 7/32" Allen socket. When installing, you must use blue Loctite and torque to 33 ft-lbs.

Porsche 356 Tips:

A late model 914 master cylinder is needed to work with these brakes. [You can pick one up here.](#)

You get done installing your brand-new disc brake kit, bleed it out, and the pedal is not there. Pump it up a few times, and it gets harder and harder. Guess what? It still has air in the system.

Here are some things to check when you have a spongy pedal with disc brakes.

Make sure your bleeders are on top of the brake lines. Air rises to the top and cannot be bled out the bottom.

Loose connections with your new stainless brake hoses

Video Tutorial



Tools you need

