

(Gen 1) T-1 Front Disc Brake Install

Our goal is to make the install a breeze. Please read the entire guide before beginning. Something NEW for 2020, is the use of Smart Phone integrations by scanning QR codes with your phone's camera or a QR code app. Any time you see a  that tool is available on our [Amazon tool page](#). If a Video tutorial has been created for this product, you will find it [here](#). Photo tutorial is available [here](#). If you have a tech question, you can [text us here](#).

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 under the vehicle as an additional fail safe.
4. On the driver's side, you will need to remove the cir-clip holding the speedo cable and save. I like to use a piece of clear tap to save the cir clip from falling in a crack or getting lost. Stick it to your beer. There are several techniques in 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, in between the lock nuts is a lock tab that will need to be bent over to remove the spindle nuts. Save all the nuts, lock tabs and thrust washer as you will be re-using 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. Make sure you have a container  to catch the brake fluid once you start this step. On the back side of the backing plate, remove the bleeder and loosen/remove the brake line. Remove the 3 bolts on each side and remove the backing plates.
8. If you are using the stock or drop drum spindle, it is now time to clean wire brush  and repaint  the spindle and knuckle. Lightly chamfer/ steel wool the spindle to remove any light rust. Clean all grease/ residue with a quality brake parts cleaner .
9. It is now time to verify you ordered/have the right parts to install the the brakes this go around. Remove your bearings from the package and test fit both the inner and outer bearings before packing them. Did they fit? If yes, proceed with the

Tools you need



Video Tutorials



Photo Tutorial



Tech Support



install. Did they not? Call/What's App/text us now. 623-518-3537.

10. You should have either a drop DRUM spindles or a stock DRUM spindle to attach our caliper brackets. You can safely identify this if you removed drum brakes, you have them already or if you purchased spindles, you should see THREE threaded holes surrounding the spindles. If you have either of these, proceed to the next steps. If not, get in touch with us.
11. Attach the caliper mounting plate to the backing plate holes with the supplied flat head allen hardware. Torque  to 35 ft. lbs after initial tightening in a cross pattern. Using loctite  is recommended.
12. For link pin model kits skip this next step. For ball joint models, install 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 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 so the races 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 and will result in unsatisfactory braking performance or wheel wobble.
14. Once the races are properly 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.
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, both inner and outer. This will prevent the seal from burning off.
16. Now install the rotor with bearings on the spindle. Install the notched thrust washer and then the two lock nuts with locking plate OR clamp nut (as originally supplied with your drum brakes). Adjust wheel bearing end play by spinning the rotor while tightening the spindle nut. Once you are not able to spin the rotor any longer, back the nut off 1/4 turn.
17. Install the lock tabs on early cars or tighten the 6mm Allen head screw on later cars.
18. Then install the outer nut until tight and bend the lock tab over it. Install the dust caps and speedo cable to finish off the hub installation.
19. You are now ready to test fit the brake caliper. There is an assortment of washers/ shims supplied with the kit. Do your best to center of the caliper cutout on both the top and bottom of the caliper and the pads contact the rotor dead flat to 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.
20. 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 (8mm Allen  head) neither sticks 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 in far enough to be safe requires a longer fixing screw of the same type which should be easily available at any local parts or hardware store in a pinch.

21. 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 making sure it's in all the holes in both caliper and pads. Be certain that the retaining pin "locks" on the locking lug.
22. Next, it's time to address the brake lines. Non-install kit applications, comes with a brass fitting adapter. With teflon tape , coat the fitting. To install it into the caliper, look for the sticker on the back of the caliper. Remove the sticker and install the adapter.. If you purchased the install kit, it came with stainless steel brake hoses. You will need to place the same teflon tape  on the fitting to ensure proper sealing properties.
23. 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.
24. The new supplied master cylinder will need to be cleaned  and painted  to avoid rusting. Once coated, install the supplied brake light switches (with install kit purchase) with the teflon tape . 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 in the vehicle. If your vehicle does not have the spacers, you need them and we offer them. You need these in place to have a proper working system. Make sure to add some blue loctite  to the bolts that fasten to the master cylinder.
25. When routing the brake lines, the rear most port goes to the rear, the top and the forward most port are for the right front and left front respectively. The lower ports are for the brake light switches. Tighten all the fittings to avoid leaks.
26. It is very important that the brake actuating rod has 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 easier. buffing the threads and adding anti seize  to the threads make the job real easy. Once adjusted, tighten and check again.
27. 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.
28. 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, right side rear and finish with left side 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.

29. When only installing front disc brake application, properly adjusting the rear brakes will give you an even nicer pedal feel. 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 step 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 correctly adjust your brake shoes make sure to adjust your e-brake cable as well.
30. 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 driving position (firm brake pedal at or about normal 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 that will be operated at sustained high temperatures will provide longer service life and smoother braking when properly bedded. Bedding can be done either in the vehicle or on a special 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 extremely well suited to use as a brake rotor but 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 that 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 and then allow them to cool slowly and completely in order 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 onto the rotor face. It is important 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 such that the oven heat cure does not include the pressure torque and elevated surface temperatures that are necessary to properly condition the pad for service. As it is with the rotors new pads must be gradually brought up 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 are often the results.

Bedding Steps:

1. 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.
2. 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.
3. Progress to 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.
4. 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.
5. Drive at a moderate cruising speed with the least amount of 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:

During the bedding process a more positive feel from the brakes should develop. This is an indication that the bed in process is working. If any level of brake fade is observed during the hard stops it may be an indication 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. When installing the new one, you will need to add blue loctite and torque to 75 ft lbs.

Front Rotor Replacement:

In the event you replace your rotors, you will need a 7/32" allen socket . When installing, you will need to use blue loctite and torque to 33 ft lbs.

Porsche 356 Tips:

Two piston applications require clearancing  of the stock spindle to fit the allen bolts on the calipers. 4 pistons applications do not. 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 just not there. Pump it up a few times and 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 can not be bled out the bottom

Loose connections with your new stainless brake hoses