Flyin' Miata INSTALLATION INSTRUCTIONS

NANB REAR DRIFT BRAKE KIT
14-16645

Thanks for purchasing our rear drift brake kit! This is a pretty straightforward install, but be aware that it does require significant dust shield trimming. Also bear in mind that since there are so many potential options for the drift calipers' hydraulic system, the kit doesn't include any hydraulic parts for that, aside from the calipers themselves. Refer to the notes for suggestions there. If you have any questions during installation or suggestions for improvement to the product or the instructions, please don't hesitate to call or email.

WARNING: Not everyone can perform every installation. It is critical that you be honest with yourself in regards to your ability. We're more than happy to help, but there are only so many things we can do from the other end of a phone / computer. If in doubt, discuss the install with us before you dive in. Improper installation could cause injury and / or death!

Required tools and supplies:
- **Metric socket set**
- **Metric box wrench set**
- **7/16" flare wrench**
- **9/16" box wrench**
- **1/4" box wrench**
- **6mm Allen wrench**
- **10mm flare wrench**
- **Angle grinder**
- **Tin snips and/or pneumatic hacksaw**

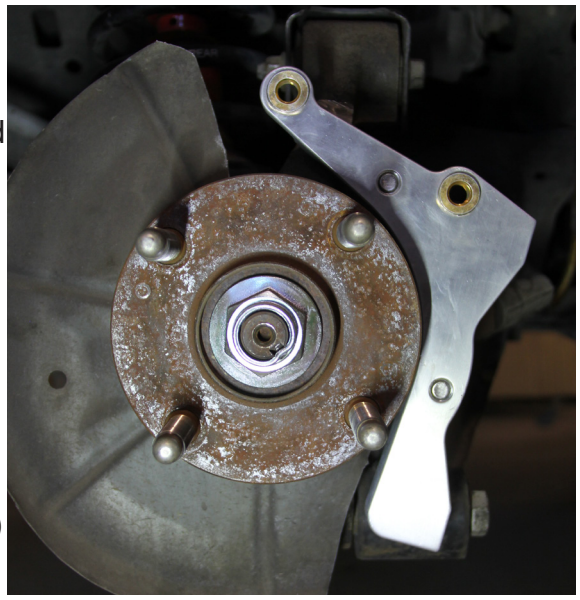
Required supplies:
- **Red Loctite 271**
- **Hydraulic fluid-safe thread sealant**

Torque specs
- **M10x1.5 bolts: 33 lb-ft**
- **3/8-24 bolts: 40 lb-ft**
- **1/8" NPT adapter: hand tight + 1.5 turns**
- **Brake line fittings: hand tight + 1 turn**

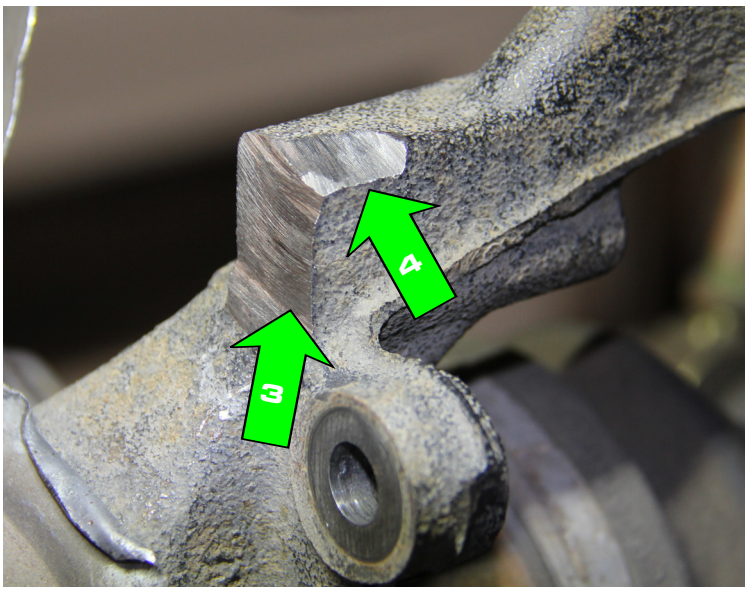
Be careful not to damage the coating on the supplied brake caliper brackets. The anodizing helps to avoid corrosion, which is especially important for cars driven in harsh environments.

1. Start by getting the car in the air and removing the wheels (even if you're not swapping the front brakes you should probably bleed them). Be sure the car is properly supported with jackstands or a lift - never get under a car supported by only a jack. Once the car is in the air, release the parking brake.
2. **If you have the stock rear brakes**, remove the entire caliper + bracket + pads assembly as one piece. Start by disconnecting the parking brake cable, then remove the entire assembly, but *don't* disconnect the hydraulic brake line yet. It's typically easiest if you disconnect the hydraulic line only when you have the new caliper in place and ready to connect. Assuming you don't have Powerlite calipers with parking brake arms, remove the parking brake cable as well. Once both cables have been removed, remove the rest of the parking brake system.
3. **If you already have the FM stage 2 (Wilwood Powerlite caliper) rear big brakes**, and you intend to reuse the caliper, remove the caliper from its bracket (leave the pads in place) and set it on the control arm (no need to disconnect the hydraulic line or PB cable if applicable). Remove its original bracket, it (and its hardware) won't be reused.
4. Remove the rotor. If need be, use the threaded hole on its hat (typically an M8x1.25) to pull it off the hub.
5. **If you have ABS**, unbolt the sheet metal anchor for the ABS wire and (if you intend to keep it) temporarily secure the wire out of the way. You'll be trimming a fair amount of the dust shield, as well as the upright where the mount is, so be sure there's no way the wire could be accidentally cut. Unbolting the sensor as well isn't a bad idea. Bear in mind that locking up the rear wheels with an otherwise-functional ABS system will likely cause an error code.

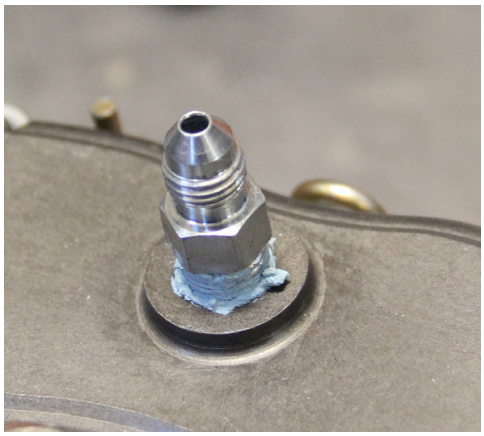
6. Grab the new brackets and find the correct one for that side (they're labeled based on the driver's perspective, passenger / right side shown). Hold it in place to get an idea of what needs to be trimmed on the dust shield and get to work. A pneumatic hacksaw is typically best, although tin snips can also be used. If you're also upgrading to 11" rotors now, you'll need to trim the horizontal edge (that overlaps the rotor axially) off of the dust shield.



7. Once you think you have enough of the dust shield trimmed, temporarily bolt the bracket into place, using the M10x1.5x35 bolts (36-10442) and M10 washers (36-30140). Check for interference between the divot in the bracket and the upright (1) and clearance the upright as necessary. Hold each caliper in place to check the dust shield trimming and trim more if needed. The drift (smaller two piston) caliper will interfere with the upright, but we'll address that later.
8. Temporarily bolt the main (four-piston) caliper on using the M10x1.5 bolts (36-15782). Check to be sure there's no interference between the lower caliper mounting point and the bracket (2). If there's any contact, clearance the upright (not the caliper!) as necessary. Leave the caliper off once you're done.
9. You'll need to grind roughly an 1/8" off the face of the "nub" that sticks out (3), plus a bit off the top forward corner of that nub (4), as shown (passenger side shown). The outboard surface of that "nub" (3) is used to press wheel bearings in, so try to keep it as flat as possible. Remove the bracket, grind, and recheck the clearance. If you have ABS, you'll likely need to trim more, but start with the dimensions suggested. You'll likely need to trim and/or modify the sheet metal bracket that holds the ABS wire as well.



10. Permanently bolt the bracket into place, using the same bolts and washers. Use red Loctite 271 and torque to 33 lb-ft.
11. Slip the rotor into place. If this is a new rotor, be sure to carefully clean all oil off of the friction surface.
12. Bolt both calipers onto the bracket, using red Loctite 271. Use the 3/8-24x1 bolts (36-14205), torqued to 40 lb-ft, and two M10 washers (36-30140) for the drift (two-piston) caliper, and the M10x1.5 button head bolts from earlier, torqued to 33 lb-ft, for the main (four-piston) calipers.
13. Slip the pads into the calipers. Be sure the retaining springs are fully installed.
14. Refer to the "Drift caliper brake line notes" on the last page. We're assuming that you've acquired all of the parts you need for the hydraulic system for the drift (two-piston) calipers. If you haven't, leave the stickers over that caliper's port.



15. Install the adapters (pre-installed in the brake lines) into the calipers. The adapters are NPT threads, so they won't bottom out on anything. The side of the adapter *without* the male flare goes into the caliper. Put some thread sealant on the caliper side of the adapter and tighten it into place. This side of the adapter is the ONLY place thread sealant is used. Get the adapter finger tight, then tighten it another turn and a half. Don't overtighten - again, it won't visibly bottom out on anything, instead, the male and female threads tighten down onto each other.
16. **If you had stock calipers,** now's the time to completely remove them. Disconnect the lines from the chassis (including the junction block on the right side of the car) and set the stock caliper assemblies aside.
17. Install the brake lines, starting with the chassis side. On the driver (chassis) side, one corner of the hex is rounded off. The female receiver for that nut has a corresponding rounded corner, be sure they're lined up. For all of the fittings, spin the nut down by hand, then get it snug. Don't overtighten - these should be tightened to 8.75 lb-ft or hand tight plus one turn. When you're loosening the stock brake fittings, be careful not to strip them - we strongly recommend using a 10mm flare wrench.
18. Repeat for the other side, then bleed the system. Start with the inside (closest to the center of the car) of the left rear caliper, then the outside of that caliper, then work counter- (or anti-) clockwise around the car (using the same "inside then outside" order at each caliper). Make a couple of laps and be absolutely sure you got all of the air bubbles out - if in doubt, keep bleeding. Be careful to not let the master cylinder go dry, check its level frequently.
19. If you hear rattling from the calipers while driving, or a clunk each time you hit the brakes, the pads may be moving within the calipers. Use the extra included shims to take up extra space in the caliper and eliminate the noise.
20. You're done! Go make some tire smoke!

Drift caliper brake line notes

Since there are so many different possibilities for mounting the drift caliper's master cylinder, we don't include any of the hydraulic parts (aside from the calipers). There are some things to know, however:

- The included calipers (Wilwood 120-9687) use 1.375" pistons. We recommend a master cylinder with a 3/4" bore (such as Wilwood's 260-15098).
- A good hand brake setup is Wilwood's 340-14769, but bear in mind that you'll still need a bracket to hold everything.
- Clearance for the brake line is tight on the upright, but as long as your brake line (plus adapter, if applicable) protrudes no more than 40mm, it will clear (barring anything unusual about your setup). A 90° fitting at the caliper should give you enough clearance.
- We use AN-3 hose and fittings for all of our brake lines; that's what we suggest here. The hole in the caliper is 1/8-27 NPT, we use an adapter to get it to a male AN-3.