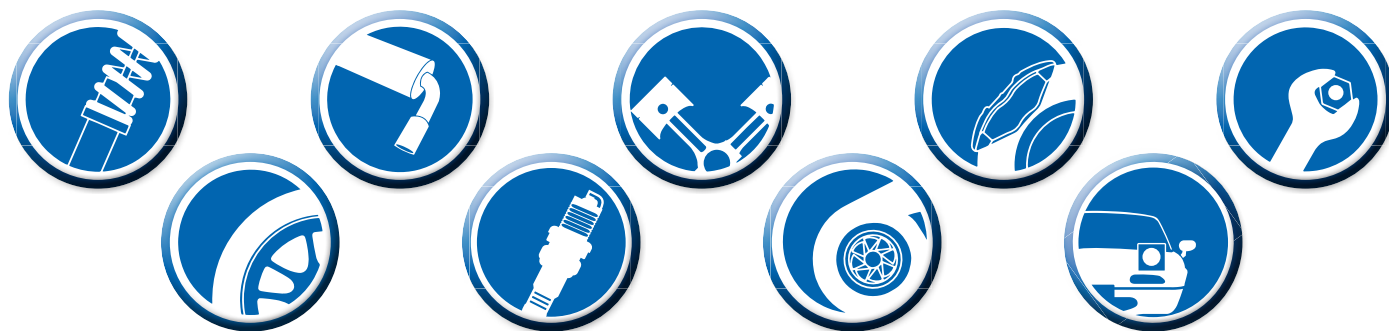


Flyin' Miata

INSTALLATION INSTRUCTIONS



NA/NB LITTLE BIG BRAKE KIT 14-1617X



Thanks for purchasing our Little Big Brake Kit, we're confident you'll be happy with it. The installation should be pretty straightforward, but these instructions will give you a step-by-step process to follow. If you have any questions during installation or suggestions for improvement - to the product or the instructions - please don't hesitate to call the phone number below.

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Little big brake kit, front 14-161XX

1. Believe it or not, the first step is to get the car off the ground and remove the wheels. Be sure to crack the lug nuts loose on all four wheels before lifting the car. As always, be sure that the car is properly supported - this means jack stands, not just a floor jack.
2. Remove the two bolts that hold the caliper bracket to the upright, then pull the caliper and bracket (as an assembly with the brake pads and line) off of the upright and set it aside. Leave the brake line connected, and set the caliper in a position that doesn't apply undue stress to the rubber line.
3. Pull the rotor off if necessary. New rotors aren't required with this kit, so this might not apply to you. If you need to swap rotors but one (or both) is/are stuck, you might need to thread an M8 X 1.25 bolt into the threaded hole on the hat of the rotor to pull the rotor off of the hub.
4. If you have new rotors, slide them onto the hub. It probably won't sit on the studs square, so you can either "deal with it" or thread a couple of the lug nuts onto opposing studs (assuming they're deep enough) to hold the rotor on. Either way will work, but tightening down the rotor will make it a bit easier to mount the caliper. It will also allow you to double-check whether the rotor is centered (only necessary with 11" kits).
5. Bolt the purple front brake bracket to the upright. Be sure you have the correct side; they're labeled appropriately ("L" and "R" from the driver's perspective). Also be sure that the orientation is as shown in the picture. The brackets are almost symmetrical but not quite, so this orientation is critical. Use the hex head bolts at the upright, the socket head bolts should be used at the caliper. Use red Loctite and tighten these bolts to 33 ft-lbs (11" kits shouldn't use Loctite yet).
6. Slip the calipers over the rotors and bolt the brackets onto the uprights, again tightening them down to 33 ft-lbs. Use red Loctite at this junction as well. You may have to trim the heatshield slightly, so pay attention to any interference there. Due to casting inconsistencies, you might also have to grind part of the upright slightly. The front calipers are symmetrical, even though the brackets aren't.



7. **11" kits only:** We've noticed a slight discrepancy in some uprights. There's enough room in all of our kits to account for this - except the 11" front kits. If you have an 11" front kit and the caliper isn't perfectly centered with the rotor tightened down (causing the pads to drag more than normal), use the included shims on the bolts between the upright and the new bracket to center the caliper. The shims are each 1mm thick, be sure to use the same number on the top and bottom bolts. Only 11" kits include these shims, as they're the only ones that might need them. Whether you have to add shims or not, be sure to apply Loctite and torque to 33 lb-ft once everything's centered.
8. Slide the pads into the calipers, after taking the pin out of the caliper. Push the pistons back into their respective bores, if necessary. Once the pads are in place, re-install the pin.
9. Connect the new brake line to the caliper. First, smear some thread sealant on the caliper side of the fitting (skip the first couple of threads). Then thread the fitting in the caliper - the thread is an NPT (national pipe taper (thread)), so it's not going to bottom out. Get it nice and snug, but don't strip it - 1.5-3 turns past hand tight is a good rule. Once that's done, thread the line onto that fitting. Get it finger-tight plus a 1/4 turn, and try to orient the line so that it's natural curve is pointing it towards the stock hard line.
10. Now disconnect the original rubber brake line from the stock hard line, and connect the new stainless braided line to the existing hard line. Be careful not to twist the fitting on the hard line - as long as the braided line is seated into the female hex on the bracket that's attached to the chassis, you should be good. One of the corners on the hex is rounded (on both the bracket and the line), be sure to line those up appropriately.
11. Once the wheel has been mounted, make sure that the brake line has plenty of clearance, regardless of what direction the wheel is pointed. Sweep the wheel back and forth just to be certain. You really don't want to have a brake line wear through! Carefully check for any caliper interference as well, even if you "know" the wheel will clear.
12. Repeat this process for the other wheel, and you're done - almost. The brakes still need to be bled. Start with the left rear wheel, then do the right rear, right front, and finally left front. Bleed the inside of each caliper (closest to the chassis), then the outside (closest to the wheel), then move on to the next caliper. Only bleed to top bleeding screws, not the lowers. If you have a proportioning valve, be sure to bleed with the valve opened all the way (turned all the way in the opposite direction from the "less brake" arrow, don't force anything). You'll have to go around the car a few times, just keep bleeding until you get no more bubbles. Do not forget to torque the wheels when you're done! If you find a soft pedal after driving the car, try bleeding again - it can sometimes take a few times to get all of the bubbles out.

Break-in

After you have broken in the rotors for 50 miles (new rotors only), do six - ten moderate stops from 30 - 35 mph to warm up the rotors, then do at least two to three fairly hard stops from 50-55 mph. Be sure that you do not let the car come to a complete stop while applying the brakes. If you do, the pads can stick to the rotor and warp it. Do this until the brakes actually fade somewhat, then drive back, letting the brakes cool off, and park the car **WITH THE HANDBRAKE OFF** for an hour or so. Now you really are done! If you have squealing issues with the brakes, try bedding them a second time.

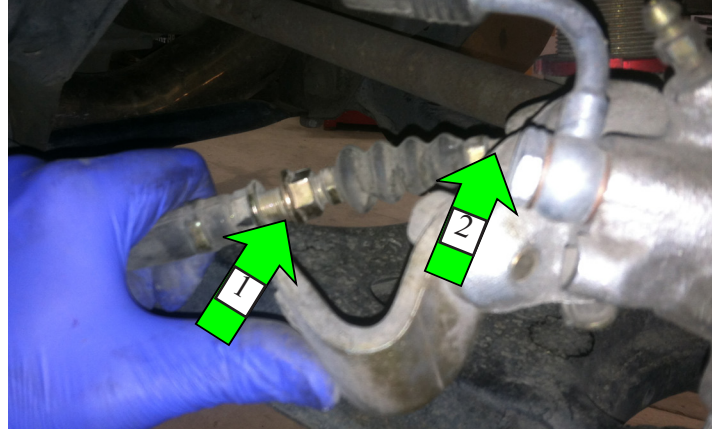
Flyin' Miata

Rear Wilwood big brake kit 14-16XXX

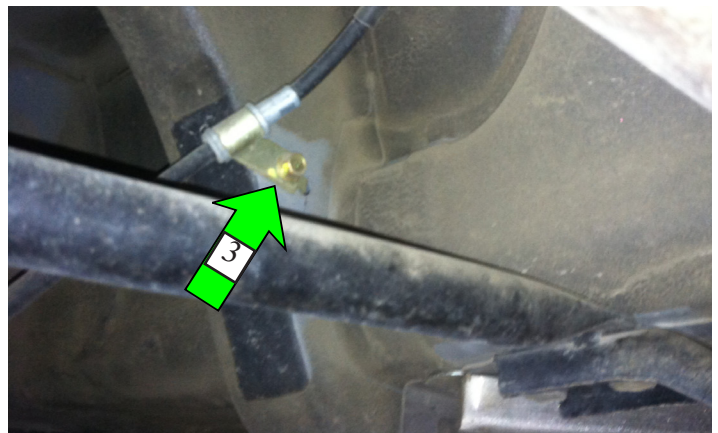
Congrats on purchasing the only four-piston rear brake setup with a parking brake! The installation should be pretty straightforward, but these instructions will give you a step-by-step process to follow.

1. Start by getting the car in the air and remove at least the rear wheels. Be sure the car is properly supported - never get underneath a car that's supported by only a jack. Be sure to release the parking brake once you have the wheels off.

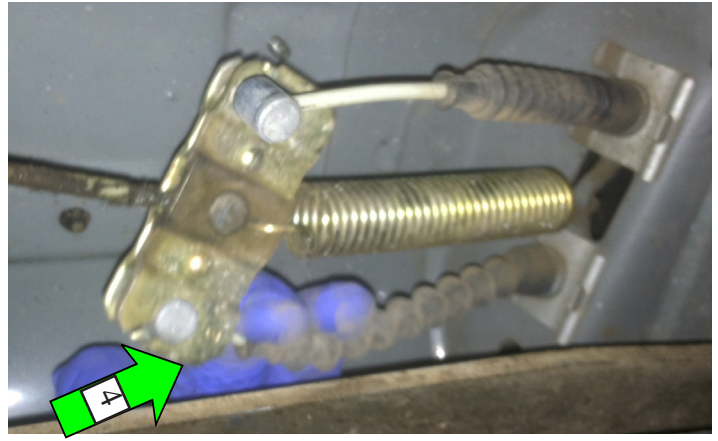
2. First, remove the parking brake cable from the stock caliper. Loosen the nuts (1), slide the cable sideways, then remove the end of the cable from the caliper (2).



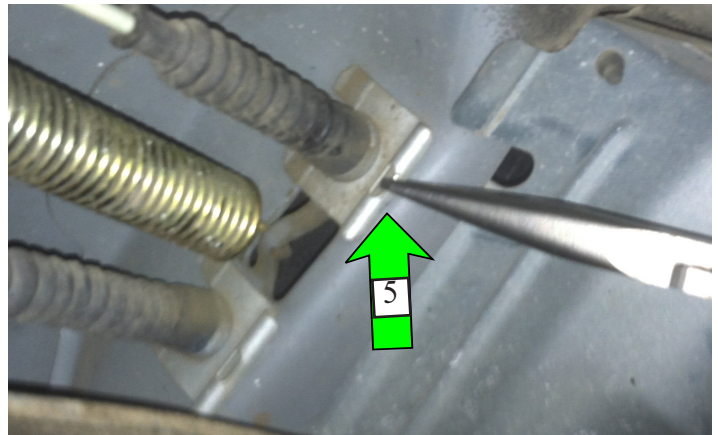
3. Follow the cables away from the caliper, and unbolt them both from the chassis (3). Shown is the driver's side, the passenger side is the same, although there could be more parts in the way. Save these bolts, they'll be reused.



4. Pull the cable towards the balance bar (4) as much as possible, then angle the balance bar and orient the cable so that it slips out of the slot in the balance bar.



5. Pry off the clip (5), then remove the cable from the car. Repeat steps 2-5 for the cable on the other side. If you have the comp / track kit, secure the balance bar or remove the rest of the parking brake assembly, as it will no longer be used. If you have the street kit, leave it in place as it will be reused.



6. Unbolt the stock caliper from the upright (6) and remove it. Take the original brake line off as well. Repeat for the other side. There's no need to remove the caliper from the caliper bracket, as you do when you replace the pads. If you're replacing the rotors, now's the time. Use an M8 x 1.25 bolt to pull the rotor off if need be. Slip the new rotors on before proceeding.



7. Get one of the brackets and install it onto the upright. The brackets are symmetrical, so it doesn't matter which one you grab, but make sure you can read "Flyin' Miata" when you're looking towards the inside of the rotor (as shown). Use red Loctite and tighten these bolts to 33 lb-ft. Use the hex head bolts (36-10442) and 10mm washers (36-30140). Do the same for the other side. You may need to trim the dust shield for caliper and rotor clearance.



8. Be sure the rotors are clean of any oil, then install them. Slotted rotors do have a left and right, install them appropriately. They should be labeled, but if not, install them as shown in the picture - this is the right (passenger) side of the car. The calipers shouldn't be in place yet.



10. Install the new parking brake arms (pieces in the caliper box). Slip the black pin through the hole in the base of the arm, slip the silver "hooks" around it, then use the small button head bolts to help them in place. Be sure the hook piece is on the outside and the slot piece is on the inside. Use the included 5/64" Allen wrench, put red Loctite on the bolts and get the bolts snug but don't over-tighten them - it's easy to strip the bolt heads.



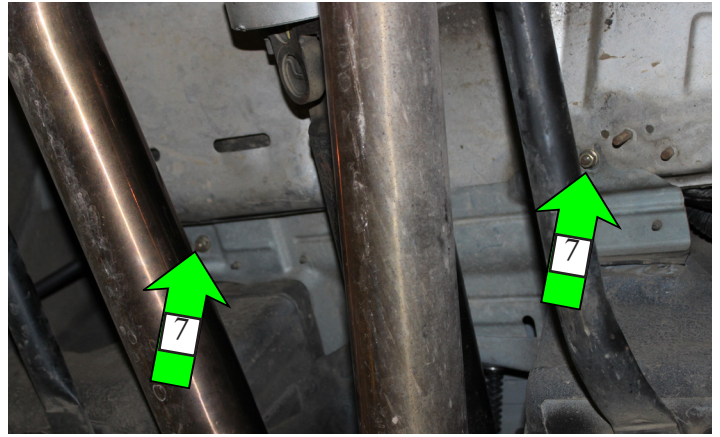
9. Next are the calipers. They're symmetrical (like the brackets, not the rotors), just be sure that you can read "Wilwood" when you're looking at the outside of the rotor. Use red Loctite here also, and torque them to the same value (33 lb-ft). Use the button head screws (36-10785). Slip the pads in, appropriately using the clips, once the calipers have been bolted down.



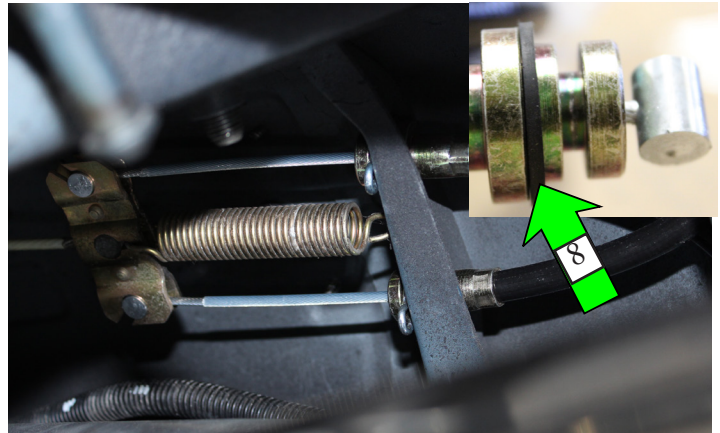
10. The braided brake lines are next. Installation is the opposite of the removal of the stock lines, just be sure all of the parts are very clean - you don't want any dirt in your hydraulic system. Get all of the fittings snug, but don't go crazy. For the fittings going into the calipers themselves, be sure to use thread sealant, then get them hand-tight plus 1.5-3 turns. for the brake lines, hand-tight plus a 1/4 turn.



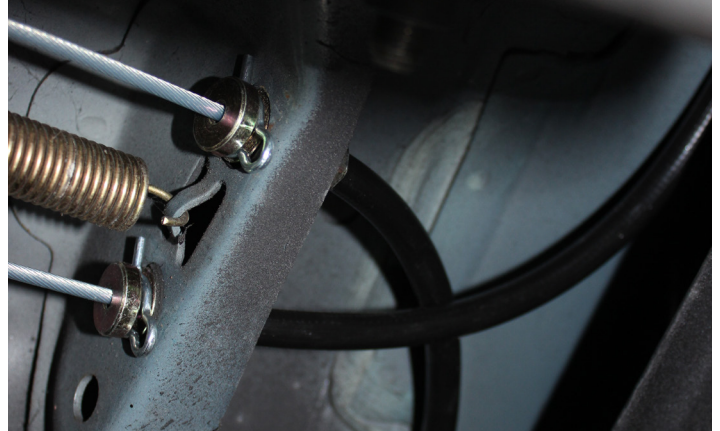
11. If your car has a heat shield blocking access to the car end of the cables, remove it. On this car (a 2002), you need to remove the two nuts (7), then slip the heat shield out. Different years may vary, but they should be similar...ish. Remove the stock parking brake cables from the car.



12. Install the new cables. Their installation is the reverse of the stock cable's removal. Start at the balance bar, connecting both cables here before moving on. Be sure the rubber grommet (inset, 8) is sandwiched between the metal housing end and the sheet metal bracket on the chassis. This grommet is typically in the groove for the clip (next step) initially.



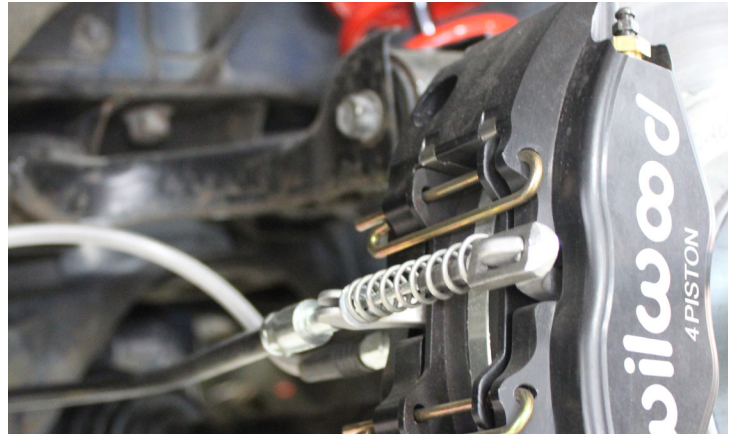
13. Cross the cables at the fuel tank, then route them cleanly to the calipers. Install the clips to hold the housing in place.



14. Use the loom clamps to secure the cables to the subframe with the M8 hardware: bolts (36-10421), washers (36-30130), and nuts (36-20120). Be sure that the cables won't be able to ever contact the wheels.



15. Hook the end of the cable on the hook-shaped outboard arm, then pull the fitting on the end of the housing into place on the inboard arm. Be sure the spring and the washer are between the two arms. Carefully install the wheel to check for clearance. If the end of the cable contacts the inside of the wheel, it can be cleared as necessary. Don't remove so much material as to hurt its strength.



16. Adjust the cable at the lever (in the cabin) as needed (9). There should be about 3 clicks before you feel resistance, but be sure that the cable is loose at the caliper when the parking brake isn't engaged. Don't forget to replace the heat shield from step 11.



17. Bleed the brakes. Start with the left (driver's side) rear, then right rear, right front, then left front (farthest (in length of line) from the master cylinder to closest). Be sure you bleed both sides of each caliper, but you don't need to bleed using the lower bleed screws. Bleed the inside of each caliper first - the side the fluid coming from the master hits first - then bleed the outside.

18. You're ready to drive! You'll need to bed the pads per the instructions included with the pads, but pay attention to your brake bias while you're doing that - these calipers will shift the bias rearward slightly. If you have an adjustable proportioning valve, you can adjust the bias as needed. '01 - '05 Sport cars (including Mazdaspeeds) use electronics to control their brake bias, and can't use our adjustable proportioning valve. If you still have issues with squealing after bedding the pads (and letting them fully cool), try bedding them again. Also, remember that although this is a true parking brake, it's not a very strong one. The cable is strong, so put as much force (within reason) as you'd like, but be smart about where / how you park. Be sure to leave the transmission in gear, turn the wheels towards the curb, etc.