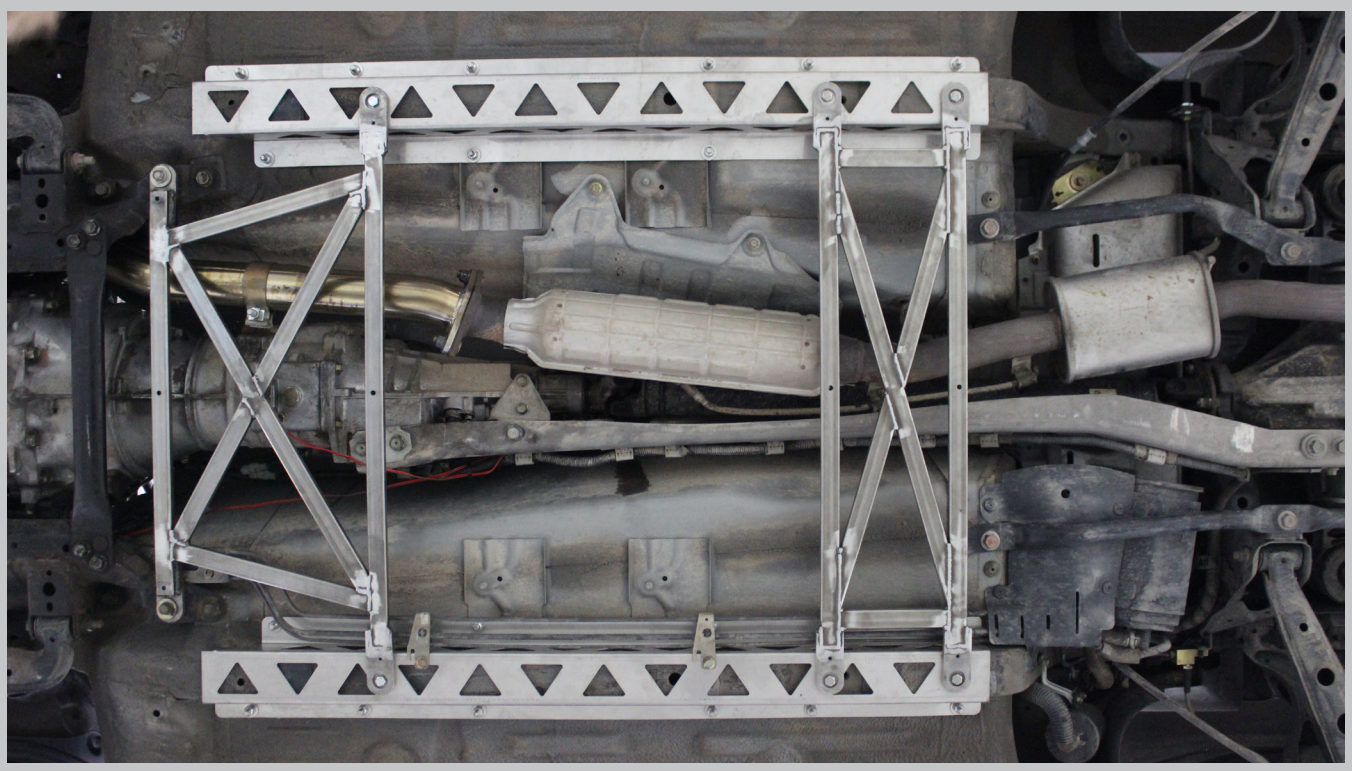
Flyin' Miata INSTALLATION INSTRUCTIONS

BUTTERFLY BRACE KIT V2
13-69016



Thanks for purchasing our second-gen Butterfly Brace kit. This is a very simply install, and will dramatically strengthen the stock chassis. Please don't hesitate to call or email if you have any questions or suggestions.

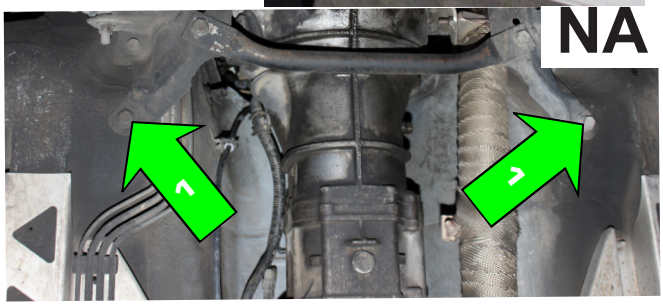
WARNING: Not everyone can perform every installation. It is critical that you be honest with yourself in regards to your ability. We're more than happy to help, but there are only so many things we can do from the other end of a phone / computer. If in doubt, discuss the install with us before you dive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

Required tools:
- **Metric socket set**
- **Metric combo wrenches**
- **Floor jack and jack stands or a lift**

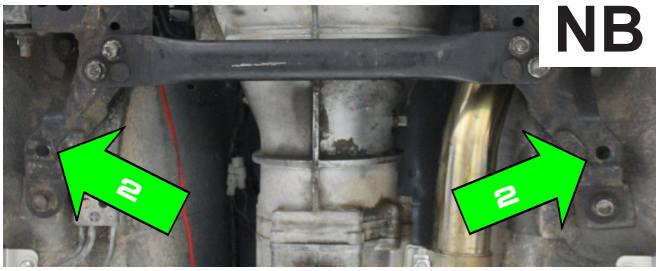
Torque specs
- **M8 bolts: 20 lb-ft**
- **M10 bolts: 50 lb-ft**

The third-generation frame rails must be installed first, these rails won't work with the previous rails or non-FM rails. These instructions cover the Butterfly braces only, not the frame rails.

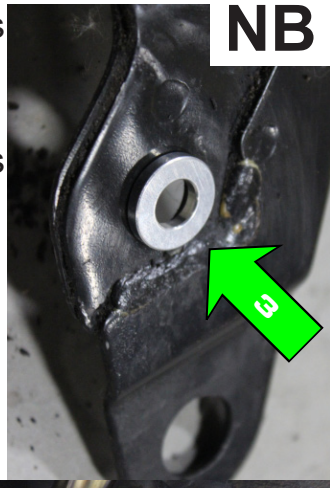
1. Get the car up in the air and support it safely - that means a lift or jack stands (appropriately located), not a floor jack, before you get under the car. For this install, it's best to support the car somewhere that's not the frame rails - the pinch welds should work well.
2. The rear brace is about as straightforward as it gets. Install the brace so that the counterbores (bigger holes around the through-holes) point down. There is no front or back, the brace is symmetrical in that direction. Holding the brace (gently!) in place with a floor jack can be helpful if needed, but be very careful to not bend the brace or let it fall off the floor jack. Use the M8x25mm bolts here. Install the front left bolt loosely, then install the rear right bolt loosely. Install the remaining bolts, then tighten them to 20 lb-ft and you're done in the back. Check to be sure there's no interference with the exhaust and correct accordingly if there is. The most likely culprit is the stock heat shielding, which can be bent or cut to allow clearance. You can also try replacing the exhaust hangers with newer (ideally polyurethane) versions that aren't worn out.
3. **'90-'97 (NA) cars only:** Remove the rearmost bolts (1) on both sides of the front subframe (the rear of the subframe is held in place by other bolts, as long as those are there you don't need to support the subframe). These bolts won't be reused.



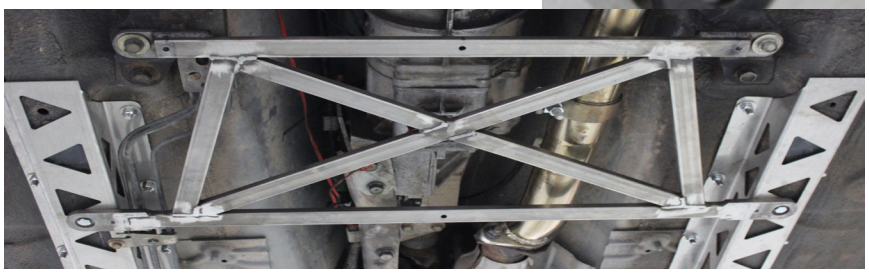
4. **'99-'05 (NB)cars only:** locate the open holes directly in front of the rear-most subframe mounting location (2). Place a supplied M10 flange nut on the flat surface directly above this hole on each side.



5. Install the front brace - again, the counterbores go down, but this one's asymmetrical . The narrower end goes towards the front. This one's slightly angled, so it might be a little weird holding it with a jack, but it should still work. Loosely install opposite corners, like on the rear brace, but start with a rear corner of the brace (using an M8x25mm bolt). The front corners both have one spacer installed between the subframe and the brace - be sure the spacer sits on the flat surface of the subframe and doesn't get caught on any of the lips or welds we're trying to avoid.
6. **On '90-'97s**, use the M10x35mm bolts on the front corners and thread them directly through the butterfly, spacer, subframe, and into the threaded boss on the chassis.
7. **On '99-'05s**, use the M10x30mm bolts on the front corners and thread them directly through the butterfly, spacer (positioned as shown, 3), and subframe and into the nuts previously positioned in step 4.



8. Loosely install the remaining bolts. The rear M8 bolts should be torqued to 20 lb-ft, the front bolts should be torqued to 50 lb-ft. Check for exhaust interference here as well and in addition to the techniques mentioned in step 2, you can also:



- Check for saggy engine mounts. If your engine rocks excessively it's likely time for new engine mounts.
- Check your PPF alignment. Put a straight edge between the frame rails, then measure from that straight edge up to the bottom of the PPF (power plant frame). Since you have framerails installed, the dimension you're looking for is 2.62 - 3.08" (66 - 78 mm).

9. That's it! Go enjoy your newly stiffened car!