

Frame Rail Braces

PART# 909-348

Installation Instructions

For: 1990-2005 Miata

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NOTE: You will be drilling holes into your floor pans. Read all instructions and be comfortable with the installation process before proceeding. This installation is far easier if you have access to an automotive lift, but can be performed at home with the vehicle on jack stands or ramps.

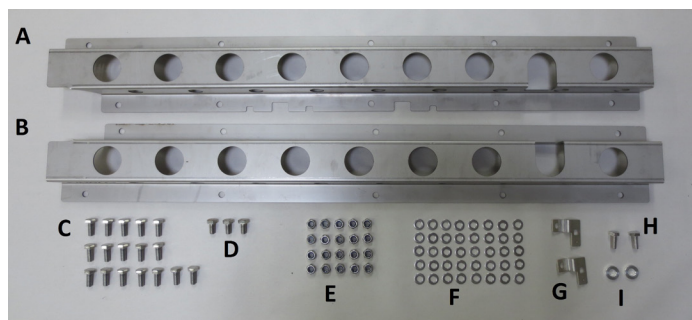
WARNING: DO NOT WORK UNDER THE VEHICLE WITH ONLY THE FLOOR JACK HOLDING IT UP. ALWAYS USE PROPER JACK STANDS.

Tools required:

- Ratchet
- A floor jack and jack stands or ramps
- 10mm socket
- 14mm socket
- 17mm socket
- 17mm wrench
- Large Hammer
- Rubber Mallet
- Hole Center Punch
- Various Drill Bits including $1\frac{3}{32}$ " or $\frac{7}{16}$ " for the final hole size
- Stepped Drill Bit (optional)
- RTV Silicone (optional)
- Spray Paint (optional)
- Rubber Hose (optional)
- Zip-Ties (optional)

Bill of Materials

Ref	Part	Qty
A	Brace, Frame Rail, LH	1
B	Brace, Frame Rail, RH	1
C	Bolt, M10 X 1.5 X 25	17
D	Bolt, M10 x 1.5 x 20	3
E	Nut, M10 X 1.5, Nyloc	20
F	Washer, M10 Flat	40
G	Bracket, Fuel/Brake Lines	2
H*	Bolt, M10 X 1.25 X 25	2
I*	Spacer, $\frac{3}{16}$ " Thick	2



***NOTE:** H and I for NB with factory brace only.

Installation Instructions

1. Using a 14mm socket, remove the bolts holding the seats from the vehicle. Be sure to disconnect any wiring connectors underneath the seats before removing them.



Figure 1

2. Remove the carpet on the floor pans. On some Miatas, this will require removing the door sill plates, the driver's dead pedal, and possibly other interior panels. Position the carpet out of the way or completely out of the vehicle if possible. You will be drilling holes up through the floorboard from underneath and you don't want to risk damaging the carpet. Take note of any wiring harnesses on the floorboard



Figure 2

3. The center set of holes will be drilled just behind the seat support. If your Miata has a harness secured here, disengage the clip and safely secure the harness out of the way.

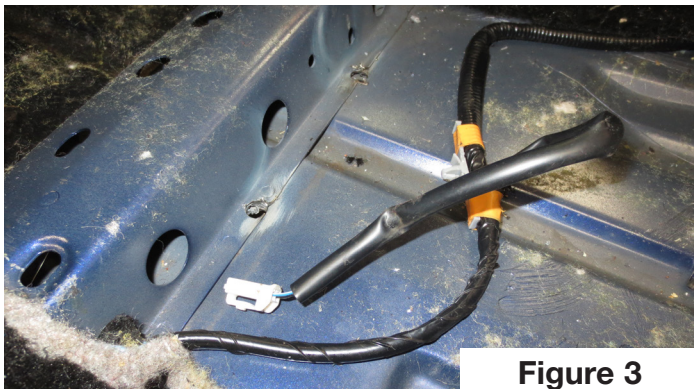


Figure 3

4. Some Miatas have the ECU mounted behind the rear passenger seat. Unbolt it and secure it and the wiring harness safely out of the way as required.
5. Raise the vehicle on a lift, or safely onto jack stands. Support the vehicle from the pinch welds on the sides. Alternatively, you can use drive-on ramps to gain clearance under the vehicle.
6. Using a 14mm socket, remove the center chassis brace bar (if equipped).
7. Using a 10mm socket, remove both fuel/brake line brackets from the frame rail. Pull the plastic clips off the fuel/brake lines. Remove the plastic clips from the brackets by gently prying up on the end with the small hole and rotating 45 degrees to disengage the clips.



Figure 7

8. Remove the clip on the plastic protector in the rear to gain more clearance for the lines.



Figure 8

9. Inspect your frame rails for damage. Our frame rail braces are a snug fit for maximum chassis rigidity. If there are any major dents, you may need to straighten out the frame rail with a large hammer to fit the braces over them.
10. Fit the frame rail brace over the frame rail. On the driver's side, later Maitas will have some body features that should line up with the cutouts on the brace.

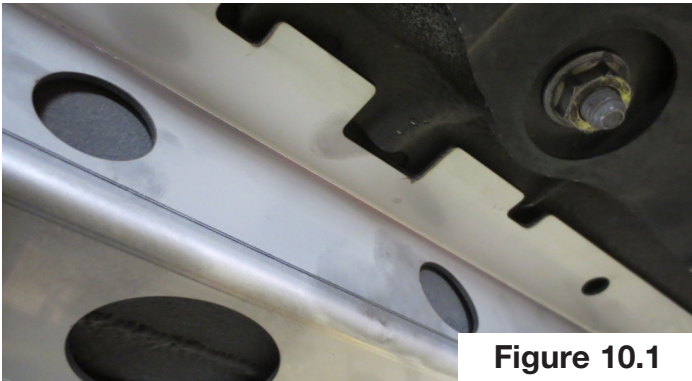


Figure 10.1

The brace should sit $\frac{1}{4}$ "– $\frac{3}{8}$ " back from the 45 degree crease at the outer front of the frame rail



Figure 10.2

11. Once you have positioned the brace properly, you can hold it in place with a floor jack or swivel jack. Tap the corners with the rubber mallet to ensure the brace is fully seated on the frame rail.

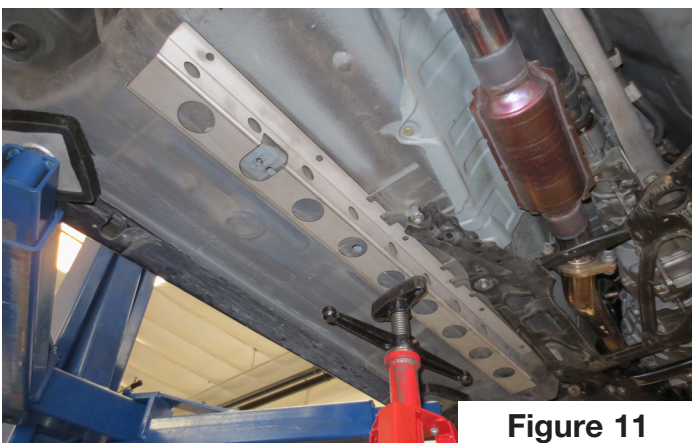


Figure 11

WARNING: Be sure you are not lifting the vehicle off the jack stands with the floor jack! Just lift enough to hold the brace in place, but not lift the vehicle.

12. Mark and center punch the two holes diagonally opposite as shown (Figure 12).

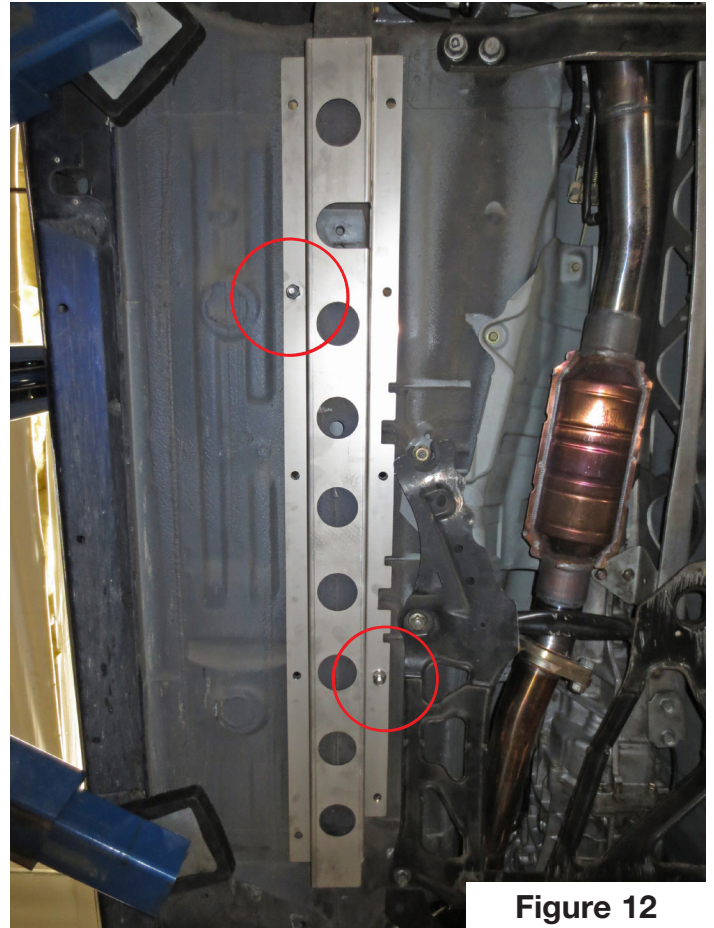


Figure 12

Drill a pilot hole with a small drill bit then step up in drill sizes (or use a stepped drill) until you reach the final size. Clean up and deburr both sides of bolt holes with a file and/or grinder to ensure there is a flat surface for the washers to ride on.

13. Install a bolt with a washer down through the holes from above. Underneath, install a washer and locking nut. It may be helpful to have an assistant hold the bolt from above with the 17mm wrench while you tighten from below with a 17mm socket.
14. Once the two bolts are securely holding the brace in the proper position, you can remove the jack and drill the rest of the holes.
15. On the passenger side, you will need to gently pull the brake and fuel lines out of the way while you install the brace above them. Hold the lines securely out of the way as you drill the holes.

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16. After the rest of the holes are drilled, remove the two bolts and the frame rails and clean out any metal chips that collected in the frame rails. Deburr all the holes. Vacuum and clean out any metal chips off the floor boards. If desired, you can paint the drilled holes now to prevent rust from attacking the bare metal.

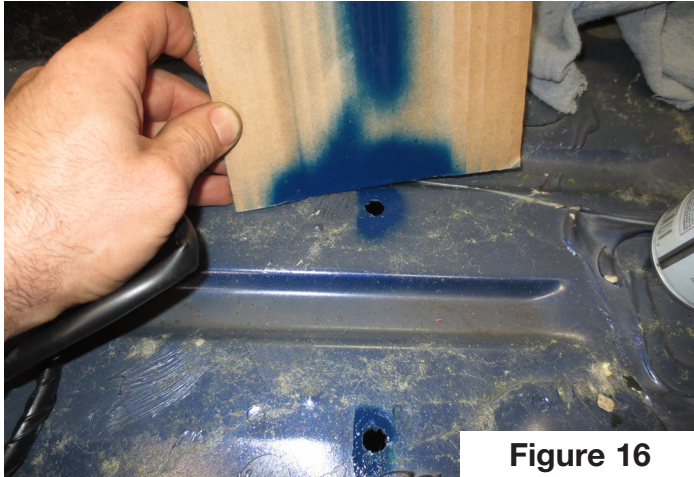


Figure 16

17. Install the plastic fuel/brake line clips onto the provided L-shaped brackets with the openings facing down as shown.

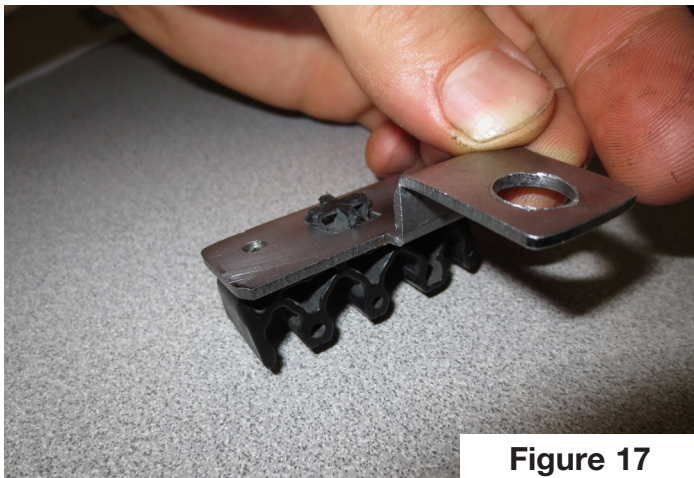


Figure 17

18. Re-install the braces to the car and install all of the hardware. The fuel/brake line brackets are secured using (2) of the 25mm long bolts/nuts nearest the stock locations. Use the (3) 20mm bolts on the other holes on that side to gain more clearance for the fuel/brake lines. On 2001-up Miatas with the factory cross brace bar, we recommend moving the rear bracket up to the middle hole of the brace to give more clearance between the factory cross brace bar and the fuel/brake lines.



Figure 18

19. You may want to apply some RTV gasket sealant to the upper section of all the bolt threads and the washers to seal against possible water intrusion when driving in the rain.
20. Install the lines into the grooves on the plastic clips.

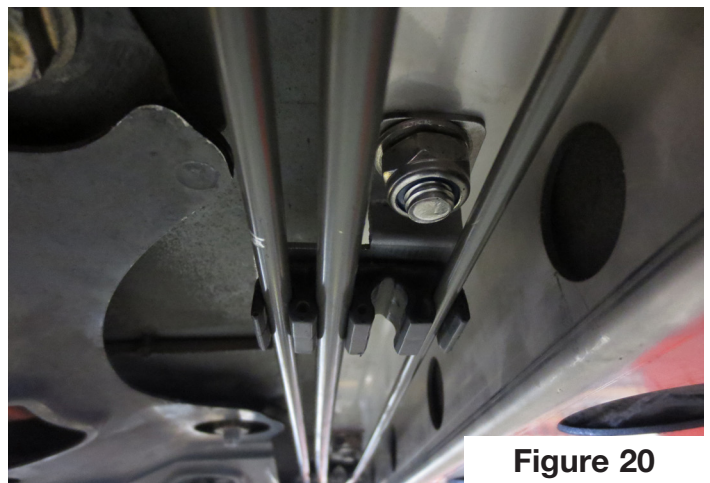


Figure 20

21. Re-install the clip holding the plastic protector at the rear of the brake/fuel lines.
22. Re-install the factory center chassis brace bar (if equipped). Use the (2) provided fine thread M10 x 1.25 x 25 bolts and spacers to space the factory bar a little lower for more brake and fuel line clearance.

23. Inspect your fuel and brake line routing for any possible rubbing on the hardware or other chassis components. We recommend installing a small piece of rubber hose zip-tied onto the line anywhere where there might be contact.



Figure 23

24. Re-install the carpets and seats and enjoy your Miata's increased chassis rigidity!

Although every effort has been made to ensure the accuracy and clarity of this information, any suggestions that you may have that will improve the information (especially detailed installation notes and photos) are welcome. These instructions were developed and written by Moss Technical Support. If you have any questions or difficulties with your installation of this product, telephone 800-667-7872 between 7:00 a.m. and 4:00 p.m., Pacific Time for assistance.

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