

# Installation Instructions

## Dual Tip Miata Muffler

**Read All Steps Before Proceeding. If you any questions regarding the cutting procedures, contact Racing Beat before proceeding!**

### Installation Steps:

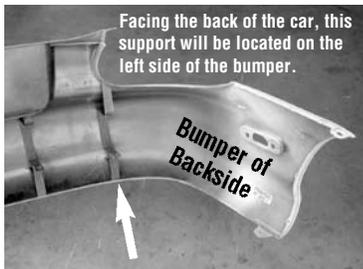
1. Raise the car and place it on jack stands. Never work on a car supported only by a floor jack.
  2. Remove the two nuts that retain the muffler to the connecting pipe. It may be necessary to spray the nuts with a penetrating spray. If the nuts are "frozen", allow the spray to penetrate the threads before attempting to remove them. Work slowly and carefully to prevent damage to the nuts and/or studs.
  3. Spray the muffler hanger at the point at which they extend into the rubber grommets with a spray lubricant. (i.e. silicone spray, WD40, etc..)
  4. Starting with the hanger closest to the connecting pipe, push the muffler towards the passenger side of the car while gently working the muffler off the rubber grommet. You may want to cover the tip of the muffler to prevent it from striking the bumper during the removal procedure. NOTE: Be very careful of the sharp edges on the heat shield located directly above the muffler. For your safety, we strongly suggest the use of gloves when performing this procedure.
  5. Once the driver's side hanger has been removed, push the muffler gently towards the driver's side to remove the remaining hangers from their grommets.
  6. To allow clearance for the second muffler tip, follow the instructions on the "Cutting Guide" to remove a small portion of the bumper. Proceed to step 7 once the bumper has been modified.
  7. Before installing the muffler onto the car, you may want to cover the tips to prevent damage to the bumper. Using the supplied gasket, place the gasket on the length of pipe that extends from the connecting pipe. A small piece of tape may be used to hold the gasket in place.
  8. Spray the passenger's side grommets with lubricating spray, then insert the hangers into the grommets. Start with the forward hanger and work rearward.
  9. Spray the driver's side grommet with penetrating spray, then insert the hanger into the grommet.
  10. Before positioning the muffler onto the connecting pipe studs, check the position of the gasket. Place the muffler onto the studs and tighten the nuts. (During initial driving, the the muffler will "settle" onto the correct position on the rubber grommets.)
- Adjustment Note:** If required, it is possible to adjust the position of the tips relative to the bumper opening by loosening the connecting pipe-to-exhaust front pipe (or header) bolts and rotating the muffler to the desired position. (This is the connection under the center of the car.) Using an assistant, loosen the bolts while the assistant positions the muffler tips in the bumper opening, then tighten the the bolts.
11. Lower the vehicle and start the car. Check for exhaust leaks at the muffler/connecting pipe junction.

# Cutting Guide

## Read All Steps Before Proceeding:

This procedure requires the removal of a small amount of the urethane bumper to allow for clearance of the “left” muffler tip. The bumper is shown off the car for illustration purposes only.

1. Cut out the template as instructed. Reach up under the bumper and locate the outermost vertical support on the backside of the bumper as shown in Photo 1. Center the indicated area on the template with this vertical support. (See photo 2) Tape the template in place, following the taping order as indicated on the template. Trace a line onto the bumper. You may want to place a “dotted” line approximately 1/8” inside of this line as a precautionary cutting guide. (See photo 3)



**Photo 1.** Locate the vertical support on the backside of the bumper cover.



**Photo 2.** Center the indicated area on the template with the vertical support.



**Photo 3.** Mark a “dotted” cutting guide 1/8” inside the template line.

Remove the urethane bumper material following one of these procedures. Proceed slowly to avoid removing too much material. Remember, you can always remove more material, but you can't add it back if a mistake is made!

1. Utility knife (**Recommended Method**) - The use of utility knife can be used in one of the following methods: 1) Working slowly, make a series of small shallow cuts to remove the urethane material. Continue to make the cuts until you have reached the indicated mark, or 2) Slowly make a single cut into the urethane material (see photo 4), following the guide line. Gently rock the knife fore and aft as you make the cut.

After the cuts have been made to within 1/8-inch of the template guide, use a small rounded sanding block with a 150 wet/dry grit sandpaper to finalize the shape (see photo 5), then finish with 300 wet/dry paper to fine tune the shape of the opening.

2. Grinder - The use of a small die grinder will produce a fast cut, but once a cut is made, the work area may “vibrate” and carries a greater risk of making a mistake. Using a carbide cutter bit, cut to within 1/8-inch of the template line. Hold the grinder perpendicular to the portion of the bumper that you are working on. Using a small rounded sanding block (see photo below), fine tune the opening to match the template using 150 wet/dry grit sandpaper, then finish with 300 wet/dry.



**Photo 4.** Making a single cut with a utility knife.



**Photo 5.** Finish the shape of the opening using a round sanding block.

# Cutting Template

1. Cut out the template below, following the **out side** of the marked line.
2. Tape the template to the car, using the alignment bar as a positioning guide.
3. Cut the bumper material to within 1/8" of the template line. Carefully remove the material to the template line using sandpaper and a rounded block.

