

# Installation Instructions

## 1990-97 Miata Dual Tip Exhaust System

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

### Installation Steps:

It is suggested that the exhaust be “cold” before attempting to install these components. Exhaust components (especially the catalytic converter) may retain heat for a substantial period of time after the car has been shut off. Further, you may experience difficulty removing the nuts on “hot” exhaust components. If you experience difficulty removing the nuts on a “cold” component, apply an loosening agent (i.e. WD 40) and slowly and carefully work the nuts off the studs. It is recommended that a “non-seizing” agent is applied to all threaded components during installation.

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 stock exhaust to the catalytic converter. To ease removal of the muffler and connecting pipe, spray the exhaust system hangers at the point at which they extend into the rubber grommets with a spray lubricant. (i.e. silicone spray, WD40, etc..)
  - A. 1994-97 Miata - Remove the lower crossmember bracing from the underside of the rear suspension.
  - B. 1996-97 Miata - Unplug the oxygen sensor from the chassis and remove the sensor along with the exhaust system. Using a 7/8” wrench, remove the sensor and retain for later use.

Remove the stock components from the chassis. NOTE: Be very careful of the sharp edges on the heat shields located above the exhaust components. For your safety, we suggest the use of gloves when performing this procedure.

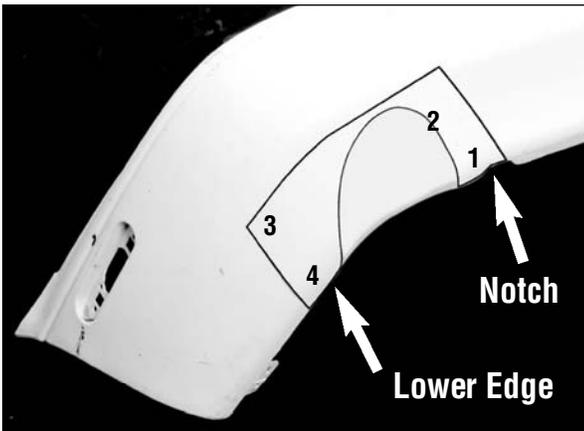
3. To allow clearance for the second muffler tip, follow the instructions on the “Cutting Guide” to remove a small portion of the bumper. Proceed to step 4 once the bumper has been modified.
  4. Before installing the muffler onto the car, you may want to cover the tips to prevent damage to the bumper. Spray the muffler grommets with a lubricating spray, then first install the muffler onto the chassis.
  5. The catalytic converter-to-connecting pipe gasket can be reused if it shows no signs of distress or cracking. If installing the pipe on a 1996-97 Miata, place “never-seize” material on the threads of the oxygen sensor (being careful not to get any non-seizing material on the sensor), then place the sensor in the connecting pipe and tighten to 22-36 ft/lbs. Lift the connecting pipe (using the supplied gasket between the connecting pipe and muffler) into place and use the provided hardware to LOOSELY secure all components.
- Adjustment Note:** If required, it is possible to adjust the position of the tips relative to the bumper opening by loosening the bolts and rotating the muffler to the desired position. Using an assistant, loosen the bolts while the assistant positions the muffler tips in the bumper opening, then retighten the the bolts.
6. Tighten the connecting pipe-to-catalytic converter nuts, and the muffler-to-connecting pipe nuts to 30-41 ft/lbs.
    - A. 1994-97 - Re-install the lower crossmember brace, tighten the bolts to 68-85 ft/lbs.
    - B. 1996-97 Miatas - Reconnect the plug from the oxygen sensor to the plug on the chassis.
  7. Lower the vehicle and start the car and check for exhaust leaks.

# 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 and position as shown in photo 1. Align the template with the “notch” in the bumper and tape position #1 in place. Flatten the template against the bumper and tape position #2 in place. Next, flatten the upper edge of the template against the bumper and apply tape to position #3. Align the lower edge of the template along the lower edge of the bumper and tape position #4 in place. At this point the template should be lying flat against the bumper with the lower edges aligning with the lower edges of the bumper as shown. If not, reposition the template before proceeding. 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 2)



**Photo 1. Center the indicated area on the template with the vertical support.**



**Photo 2. 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**) - A 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 3), 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 4), 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 4), fine tune the opening to match the template using 150 wet/dry grit sandpaper, then finish with 300 wet/dry.



**Photo 3. Making a single cut with a utility knife.**



**Photo 4. Finish the shape of the opening using a round sanding block.**



## 1990-97 Miata Dual Outlet Exhaust System Cutting Template

1. Cut out the template below, following the **outside** of the marked line.
2. Tape the template to the car, using the “notch” and the lower edge of the bumper as alignment guides. (See photo 2 on the “Cutting Guide” for position reference.)
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.

**FOR REFERENCE ONLY-**

**DO NOT USE THIS TEMPLATE AS A CUTTING GUIDE - ONLY USE THE TEMPLATE THAT IS SUPPLIED WITH THE EXHAUST SYSTEM KIT.**