



Perfect Installation of Magnaflow 14816 Mufflers on a BMW E38

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Disclaimer: Use these instructions at your own risk. These instructions were written based on the installation of Magnaflow 14816 mufflers on a 2001 BMW 740iL. If you are installing these mufflers on a slightly different car, then you may need to modify these instructions slightly to fit your needs. Work slowly, and use common sense. The author disclaims any and all liability from your use of these instructions.

Required Parts & Tools:

2 x Magnaflow 14816 mufflers, available online for less than \$120 each. I bought mine at [PerformancePeddler.com](#) using discount code "bestoffer2e" at checkout.

2 pieces of self-adhesive door edge trim (available at most auto parts stores)

A heat gun, blow dryer, or oven pre-heated to 350° F

4 printed templates (available in this guide)

Masking tape to attach the templates to the car

A Dremel tool and routing bit

A standard file (with one side rounded and one side flat)

Tin snips or very strong scissors

A pair of pliers

Safety goggles (cutting plastic generates lots of shavings)

Step 1: Print this guide

Print out this entire guide to reference while you work. This will also generate four copies of the cutting templates. Verify that your printer did not resize the templates by checking to make sure the width of the printed template (as it would appear on your car) is exactly **eight (8) inches**. This width allows for enough clearance for the tips (which are 7 1/8" inches wide) to fit through the cutouts with the door edge trim in place.

Step 2: Prep your work surface

Clean and dry the rear-bumper area where you are going to work. This will help both the masking tape and the door edge trim stick to the bumper.

Step 3: Jack up the rear of the car (optional)

It is helpful to have the rear bumper as high as possible when cutting the rear bumper. If you do not have a floor jack and jack stands, however, or are not comfortable jacking up a car, then **do not do this step**. If you do jack up the car, the use of jack stands is a must both for safety, and also because it keeps area behind the car free for you to work.

Step 4: Mount your template

Using scissors, trim out **only two** of the four paper templates you printed out. Start on the passenger side (we'll explain why in a moment). Mount an uncut paper template on the bumper using the masking tape. For top-to-bottom alignment, mount the template so that top part of your cutout is **3 inches** from the bumper seam above the cutout area (do not measure 3 inches from the bumper seam to the top of the paper, measure it from the bumper seam to the top of where your cutout will be). For left-to-right alignment, line up the left edge of the template with the inside edge of the stock cutout, so that your cutout will continue the line of the stock cutout (see Image 1).

Step 5: Visually inspect before cutting

Before starting your cut, stand a good distance behind the vehicle to visually check that you are satisfied with the location, and that your template is level. If you prefer your cutouts higher or lower, now is the time to make that decision. Once you're happy with the placement, it's time to fire up the Dremel.

Step 6: Make your first cut

The reason I said to start on the passenger side is practical: when cutting plastic with a Dremel tool, you will generate melted plastic slag from the heat of the bit as it cuts through the plastic. Because the Dremel's bit spins clockwise, if you always cut in a clockwise direction (or from driver's side to passenger's side as you look at the bumper) the slag will remain on the piece you remove, requiring much less hand filing after the cut. If, however, you cut from passenger's side to driver's side, the slag will remain on the bumper, requiring a lot of filing and trimming to make it usable. Wherever possible during this task, cut in a clockwise direction from driver's side to passenger's side.

You will make your two cutouts using a total of **four** cuts. The reasons for this have to do with making sure the radius of the curved cuts are correct, and will become more apparent as you continue through this guide.

Put on your safety goggles. Lie down under the bumper and make the inside cut first. Using the Dremel tool, make your first cutout by following the line created by the stock cutout, and continue it to the rear edge of the bumper. Next, position yourself behind the car and continue the cut you made, working up to the first curve, then across to the right. **Stop before you begin the second curve.** Cut straight down to the bottom of the bumper and in under the car. Remove the cutout (see Image 2). The reason for cutting in this manner may not be obvious, but it is important. Because of the curvature of the outside edge of the bumper, the right edge of the template will not create the correct radius when taped directly on to the bumper. By making the cutout in two steps, you can compensate for this curvature and not end up with two different radius curves in your cutout. Remove and discard the first template.

Step 7: Cut out the heat shield

Using tin snips or strong scissors, cut out part of the heat shield that was exposed by your first cut (see Image 3). Use the pliers to bend the remaining metal up and out of the way.

Step 8: Replace your template for the second cut

Now that you have approximately 2/3 of your first cutout completed and the heat shield removed, you are ready to prepare for your second cut. Attach one of the trimmed paper templates on the bumper so that it lines up with the left and top edges of the cuts you already made, then visually line it up and tape it so that the right edge is parallel to the left edge (see Image 4).

Step 9: Make the second cut

Using your Dremel, start where you finished your first cut, cutting right, then continue around the radius of the curve, then down to the bottom of the bumper. Lie down under the car to finish this second cut under the bumper (see Image 5).

Step 10: Hand file to perfection

Using the metal file, remove any pieces of remaining slag and file the cutout to the perfect shape (see Image 6). This takes time and patience, so make sure you have plenty of both. The results are worth the effort (see Image 7).

Step 11: Apply the door edge trim

Even if you're not lucky enough to own a black car, the addition of door edge trim around your cutouts can make a major difference to their final look (and cover a multitude of imperfections from cutting). Most auto parts stores can supply this trim in black or chrome, so use whichever you think will look best for your application. It may even be possible to paint the trim with a small brush after you're done to match your paint perfectly. Both contributors to this guide happen to own black E38s, so black trim was ideal.

Door edge trim is far more flexible (and therefore much easier to work with) when it is warm. You can use a heat gun or blow dryer to warm it up, or use the approach I tried: pre-heat your oven to 350° F (my wife happened to be cooking something when I did this), put on an oven mitt, open the oven door, and hold the trim inside the oven (without touching the rack, the sides, or the dish that is cooking) until the trim starts to become visibly softer. Run back out to the garage before it cools off, and apply it to the edge of your cutout. Cut off any remaining trim and inspect your handiwork (see Image 8).

Step 12: Wash, rinse, repeat

You may not need to wash or rinse, but you do need to repeat steps 4-11 on the driver's side. However, because you will want to make sure the inside line of your cutout aligns with the inside line of the stock cutout, you can make your third cut (the first on the driver's side) by cutting up from the middle of the template (four inches in from either edge) to the top of the template, then cut across to the radius on the right, and following the template down to meet the existing line from the stock cutout. This will assure that you have the correct radius in your first cut, then you can swap to the trimmed template, put it in the correct location based on the radius you just cut, and then make your fourth and final cut from driver's side to passenger's side based on the trimmed template. Again, this is helpful because of the amount of melted plastic slag the Dremel generates, but spending the extra time is worth the perfect results (see Image 9).

Step 13: Visit your friendly neighborhood muffler shop

Make an appointment at a reputable muffler shop. In about an hour, they should be able to cut out your stock mufflers and install your new ones (see Image 10). Be very specific with the installer concerning how far you want your tips to stick out from the rear bumper, keeping in mind that because of the curvature of the bumper, the outside tip will be more exposed than the inside tip. I chose to have the inside tip barely stick out past the lip of the cutout, which allowed the outside tip to have the perfect amount exposed. Of course, "perfect" is a relative term in this case, so tell your installer exactly how you want your tips to look when completed.

Take your Dremel and file with you to the muffler shop, as you may need to make some minor adjustments once you try and place the mufflers.

Make sure your installer welds plenty of brackets to properly attach the mufflers to the car (see Image 11). The Magnaflows have a tendency to want to expand outward when they heat up, which can cause rubbing and vibration on your bumper if they are not properly secured.

Step 14: Take a photo and post it on BimmerForums.com

The only thing that beats the satisfaction of a job well done is the congratulations of your peers. So snap a photo, post it in the 7 Series Forum on BimmerForums.com, and let us all tell you how cool your new exhaust looks!

See Images 12-14 to see how cool mine looks! ☺

Step 15: Rev it up!

You've worked hard. You were patient and steady handed. Now it's time to hit the roads and enjoy the sounds of your success. Enjoy – you've earned it!

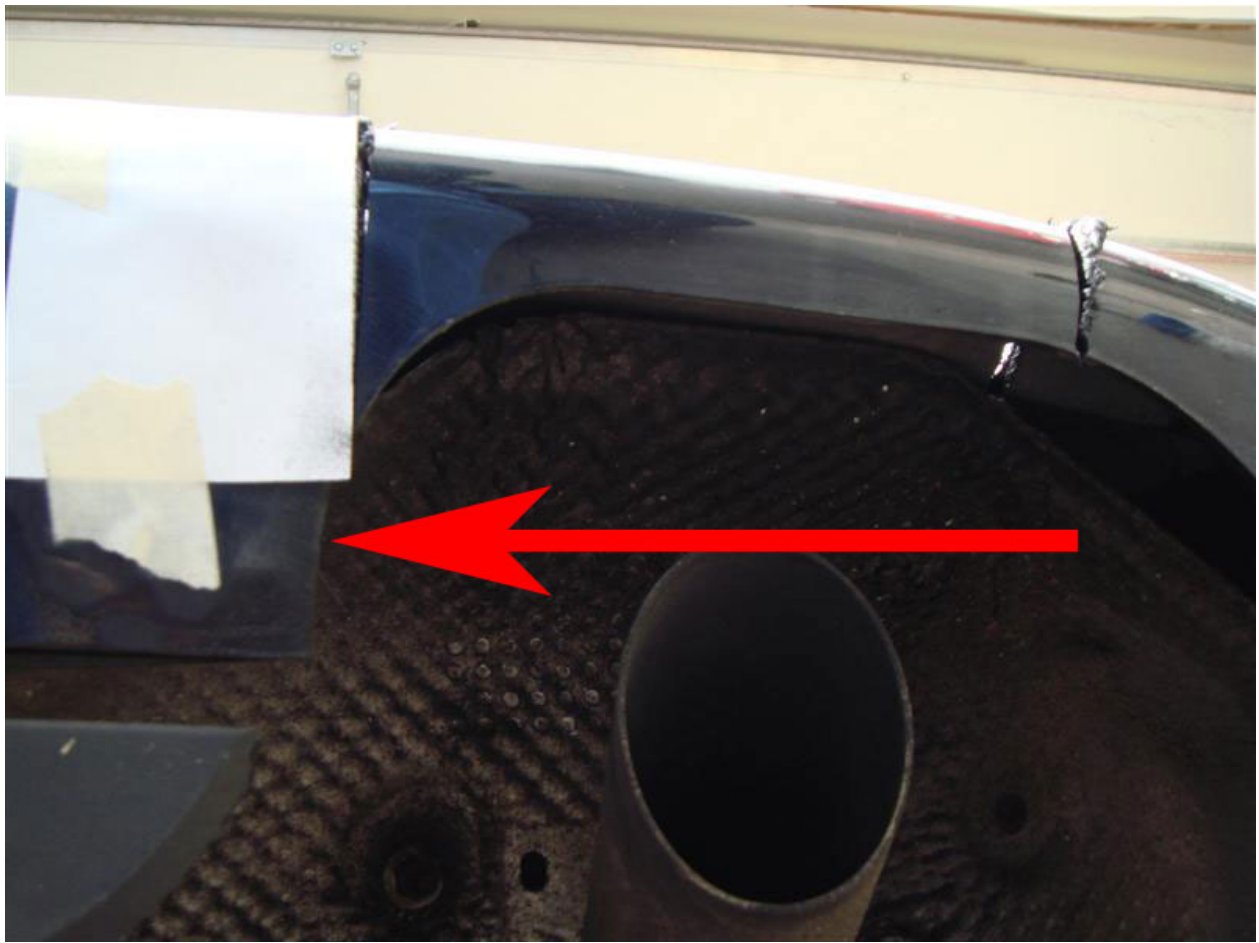


Image 1: Alignment location for template.



Image 2: First cut completed.



Image 3: Removing heat shield material.



Image 4: Placing the template for the second cut.



Image 5: Finishing the second cut.



Image 6: Filing away slag and imperfections.



Image 7: Hand filing completed.



Image 8: Door edge trim installed.



Image 9: Both cutouts completed.

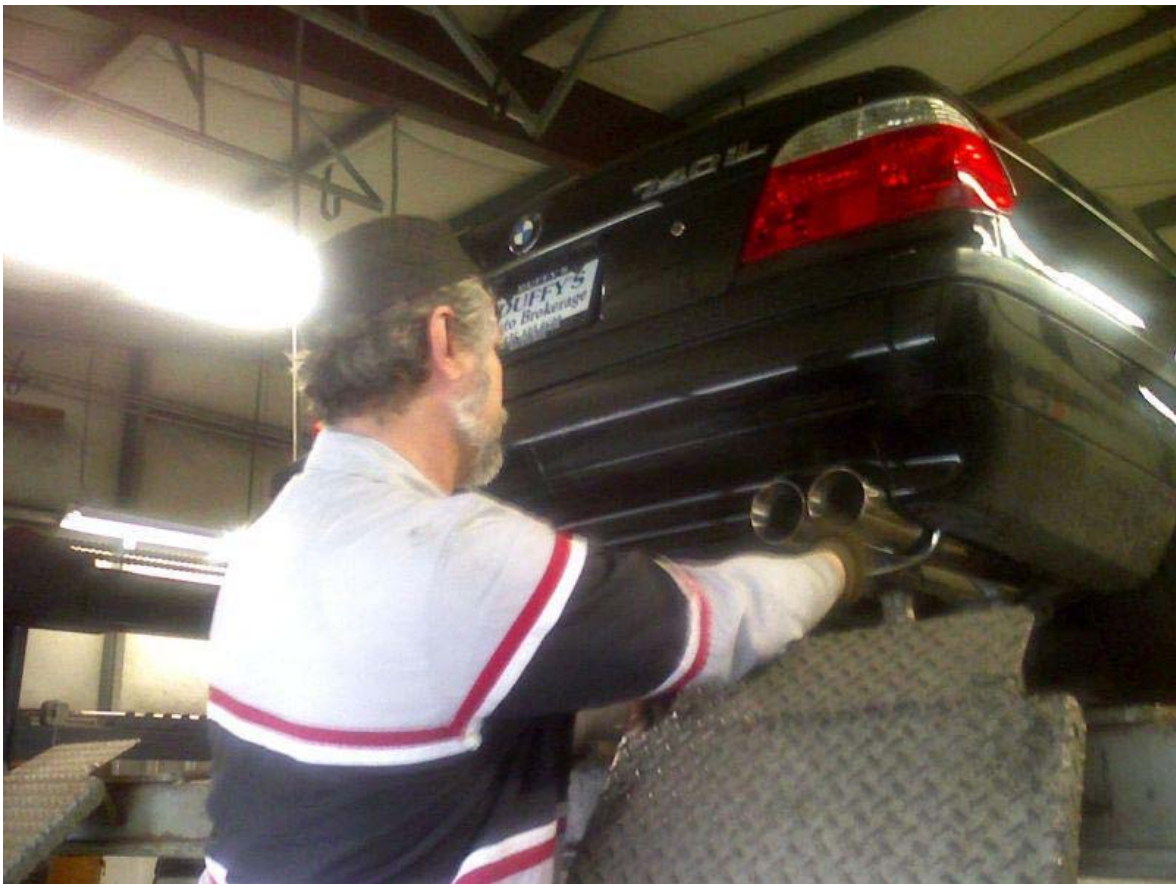


Image 10: Muffler installer placing the tips at proper depth.

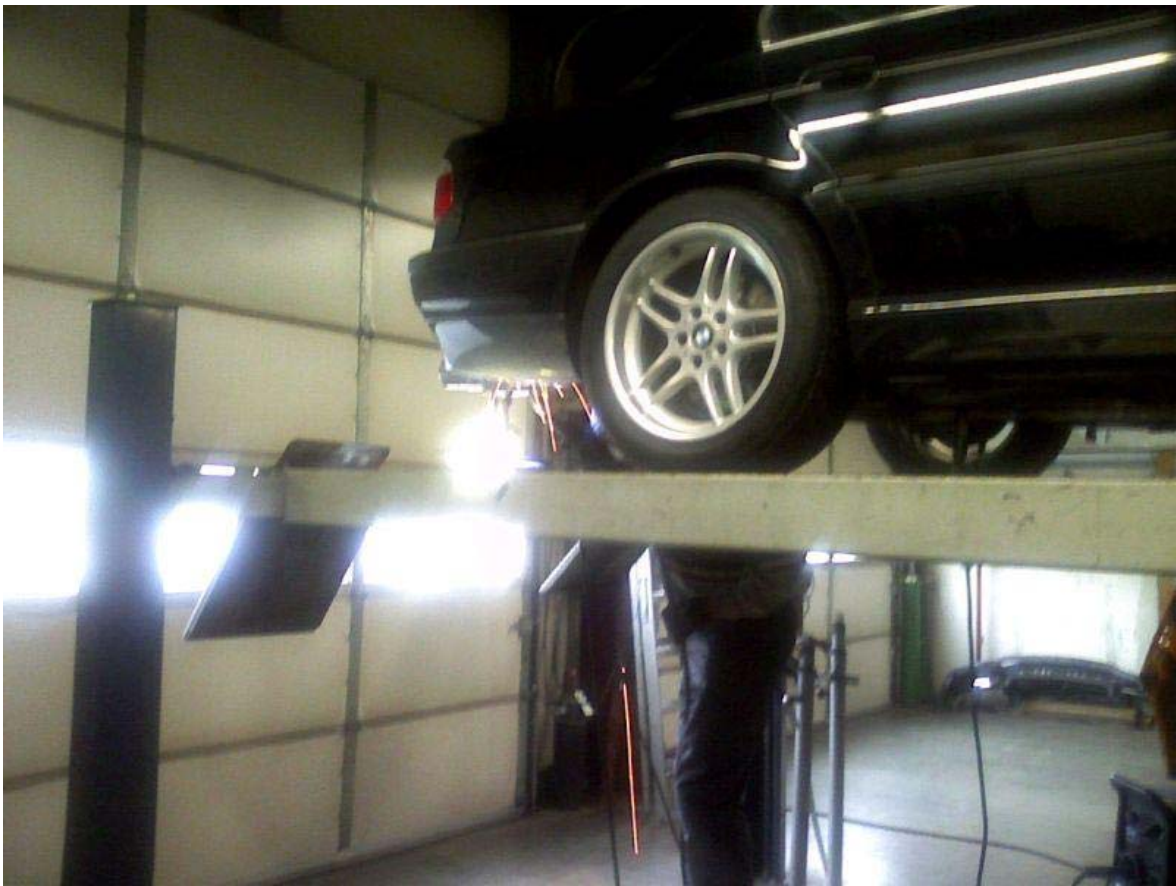


Image 11: Muffler installer welding brackets.



Image 12: Close-up of completed install.



Image 13: Side view of completed install.



Image 14: Rear view of completed install.

