



Toyota Supra A90/A91 Rear Diffuser Installation Instructions

By FS Performance Engineering

Professional installation is always recommended - also for the experienced DIY'er.

Tools Needed:

- | | |
|-------------------------------------|---|
| - Oil | - Drill |
| - 5/32 Allen wrench | - 5/16" Drill bit + 1/4" Drill bit |
| - 7/16" Wrench (2 of them) | - Small flat piece of wood |
| - 1/2" Wrench | - Extension |
| - 8mm socket | - Flat head screwdriver |
| - 7/16" socket | - Phillip's head screwdriver |
| - Ratchet wrench | - Isopropyl alcohol if you have edge trim |
| - Rivnut tool w/ 1/4"-20 attachment | - Diagonal cutters if you have edge trim |
| - Friend/helper | |

Included in Kit:

DIFFUSER PIECES

- (6) Diffuser Fins
- (5) Diffuser Sections

DIFFUSER ASSEMBLY

- (36) 1/4"-20 x 0.75" SS Countersunk Bolts
- (36) 1/4" SS Nyloc Nuts
- (36) 1/4" Countersunk washers

INNERMOST FORWARD HOLES (MOUNTING BARS)

- (2) Mounting Bars w/ the following specs:
 - 5 3/8 Long
 - 5/16"-18 Tapped on both sides
 - 7/8" Diameter
- (2) 5/16"-18 x 1" hex head bolts
- (2) 5/16"-18 x 0.75" hex head bolts
- (2) 5/16" ID, 1.25" OD washers
- (1) Blue Threadlocker

**INNERMOST REARWARD HOLES**

- (2) #12 x 4" Screws w/ Phillip's heads
- (2) ¼" ID, 1" OD washers
- (2) 2 11/16" Spacers

OUTERMOST FORWARD HOLES

- (2) #8 x 2.5" Screws w/ Phillip's heads
- (2) #8 Washers
- (2) 1.75" Spacers

OUTERMOST REARWARD HOLES

- (2) ¼"-20 x 4" hex head bolts
- (2) ¼" ID, 1" OD washers
- (2) ¼" ID Small washers
- (2) ¼" Nyloc Nuts
- (2) 2.5" Spacers

CENTER HOLE (ALL-THREAD)

- (1) ¼"-20 x 6" Long all-thread
- (3) ¼"-20 Nuts
- (3) ¼" Lock washers
- (2) ¼"-20 Threaded Rivnuts

Steps

1.) Begin by raising the rear end of your Supra, and placing it on jack stands.

2.) Assemble your diffuser.

Tools Needed:

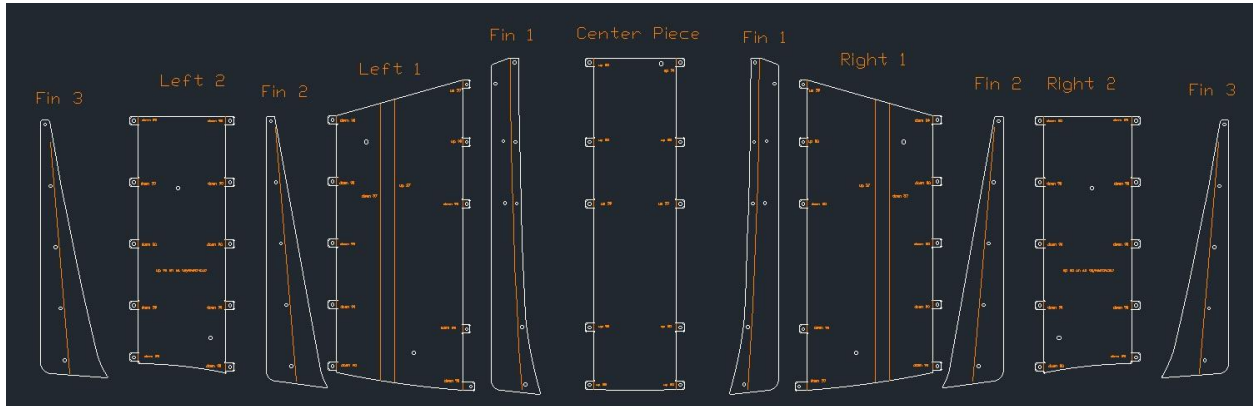
- 5/32" Allen Wrench
- 7/16" Socket
- Ratchet Wrench
- OIL!! (very important)

Hardware Needed:

- (36) 1/4"-20 x 0.75" SS Countersunk Bolts
- (36) 1/4" SS Nyloc Nuts
- (36) 1/4" Countersunk washers

Upon assembly you will need to oil the threads on each and every bolt before tightening them down. Failure to do so will cause nut/bolt welding, and they will be impossible to separate.

Start by laying your entire diffuser onto the floor (carpet or blanket recommended) as shown in the diagram. Refer to this picture as necessary.

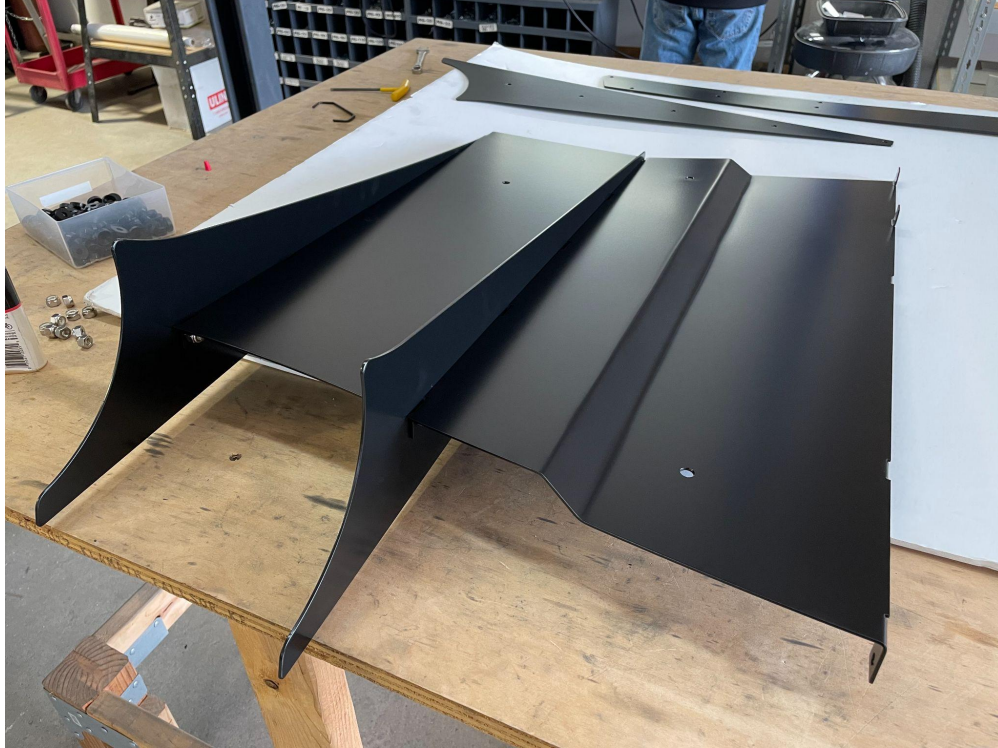


Assemble from the left side and move to the right. Find the shortest fin (fin 3) and bolt it onto the diffuser section (left 2) shown. Point the bolts inward with the 1/4" nyloc nuts on the inside. Tabs on the diffuser section are pointed down. Securely tighten (*assuring you oiled the threads*).

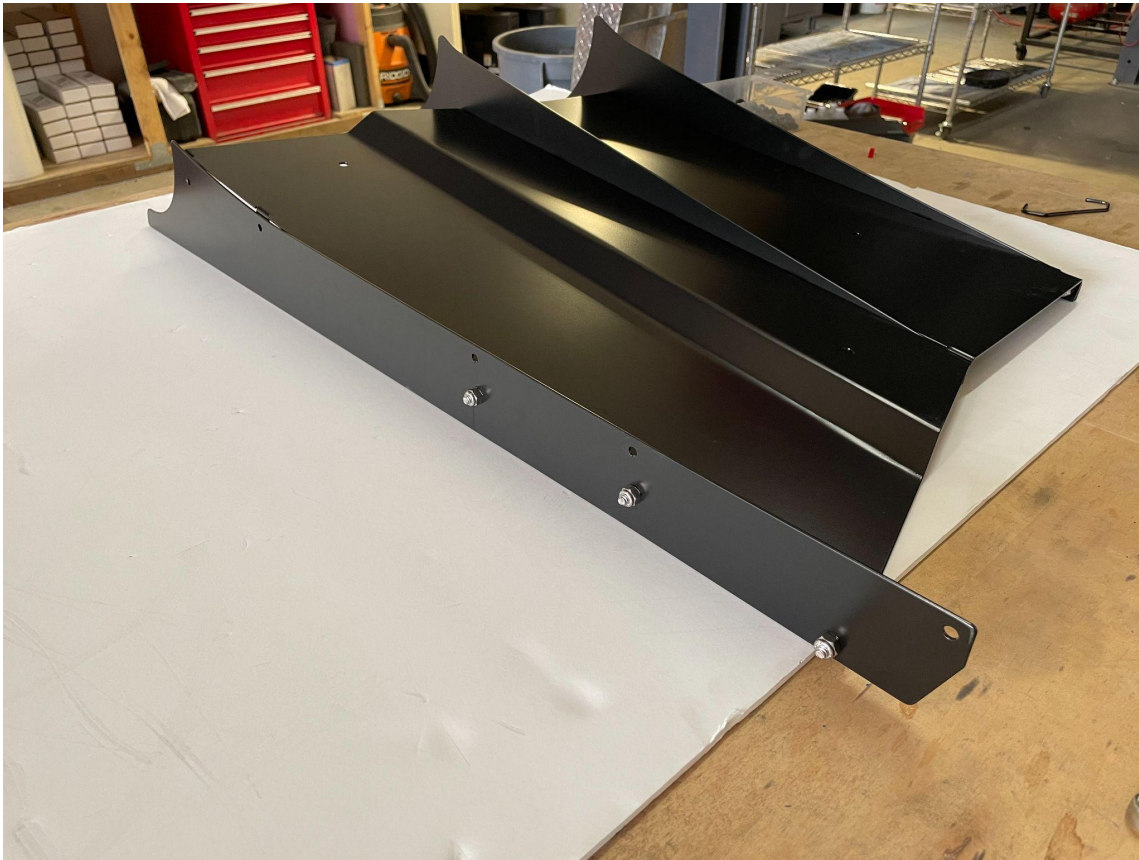




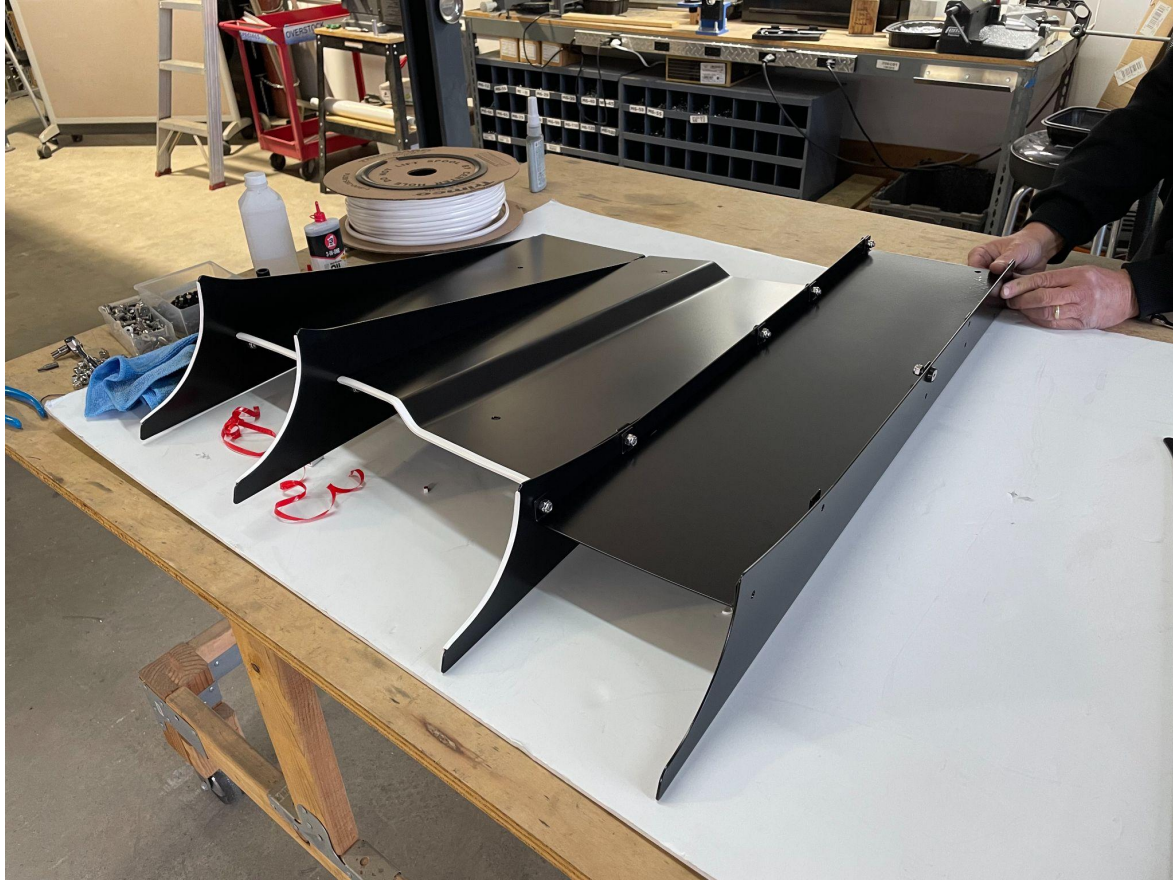
Find the next longest fin (fin 2, midsized) and sandwich it between diffuser sections Left 2 and Left 1. Using the same hardware, pass bolts through all three pieces (left 2, fin 2, left 1) and securely tighten in the same method (don't forget to use oil, last reminder!). Keep in mind that the diffuser section Left 2 will have a step down in the middle of it.



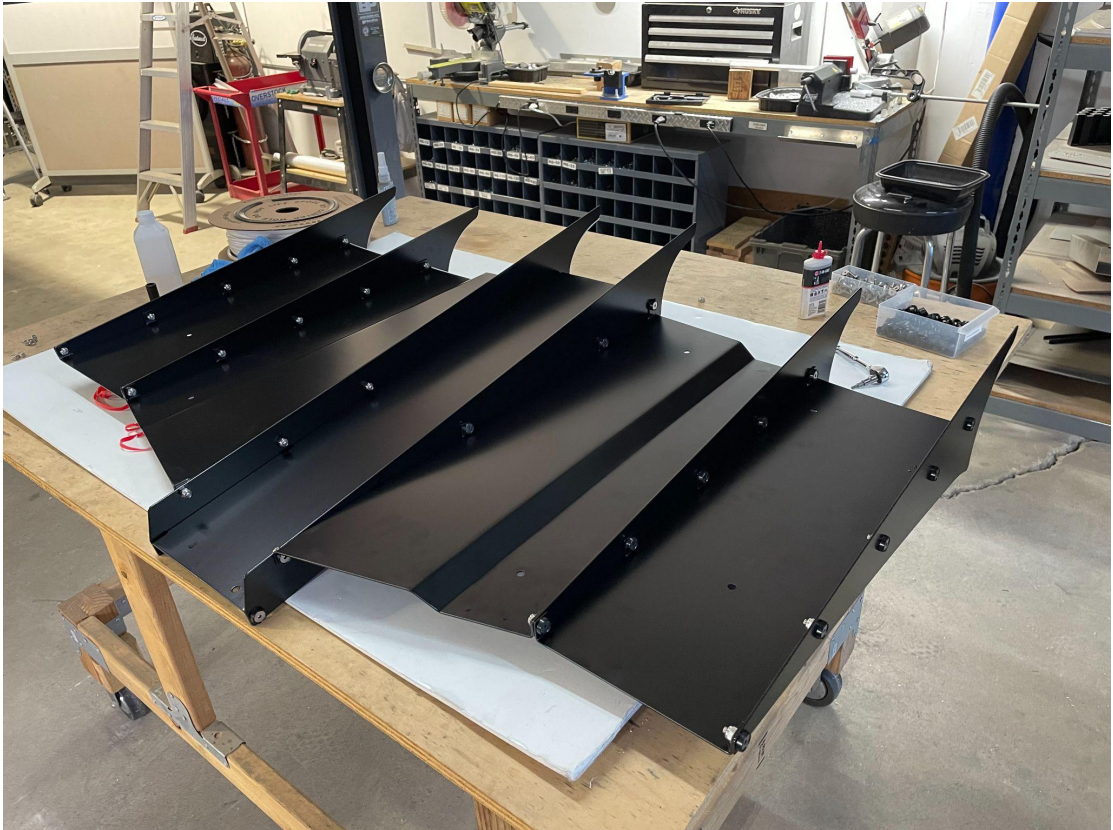
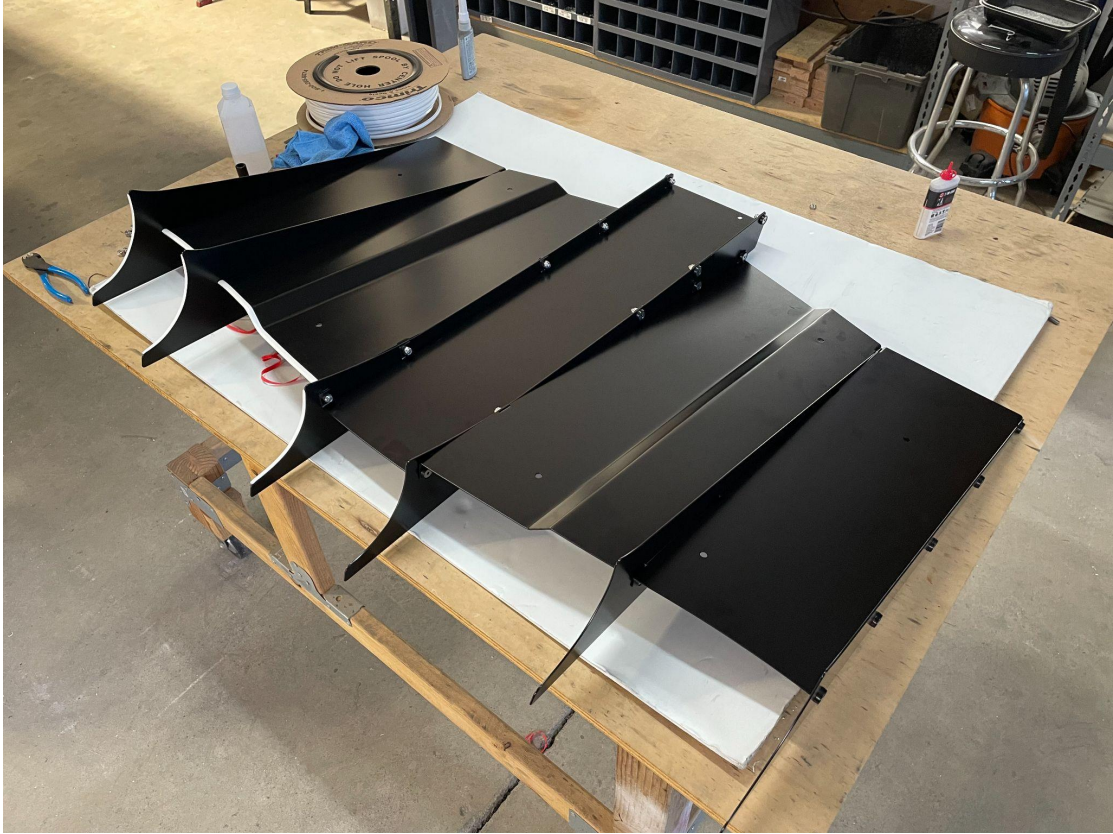
Take Fin 1 and bolt it onto Left 1 at the front most 3 lower holes. The most forward (toward front of the car) three holes have their own holes in the fin.



You can now bolt the center section onto the fin with its own three upper holes toward the front of the car. The rearward two holes are common so 2 bolts must pass through all three pieces here - Fin 1, Left 1, and center. Keep in mind that all of the tabs in the center fold upward. We are also showing the Fin 1 on the right side as well here.



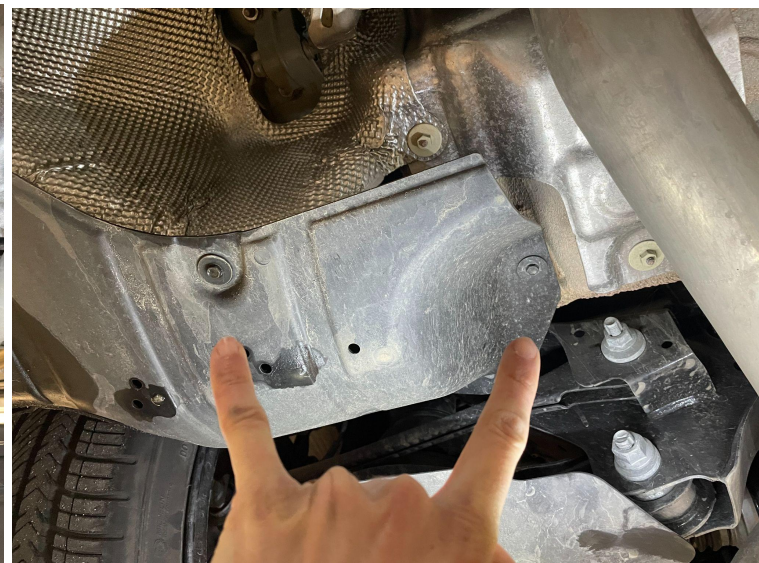
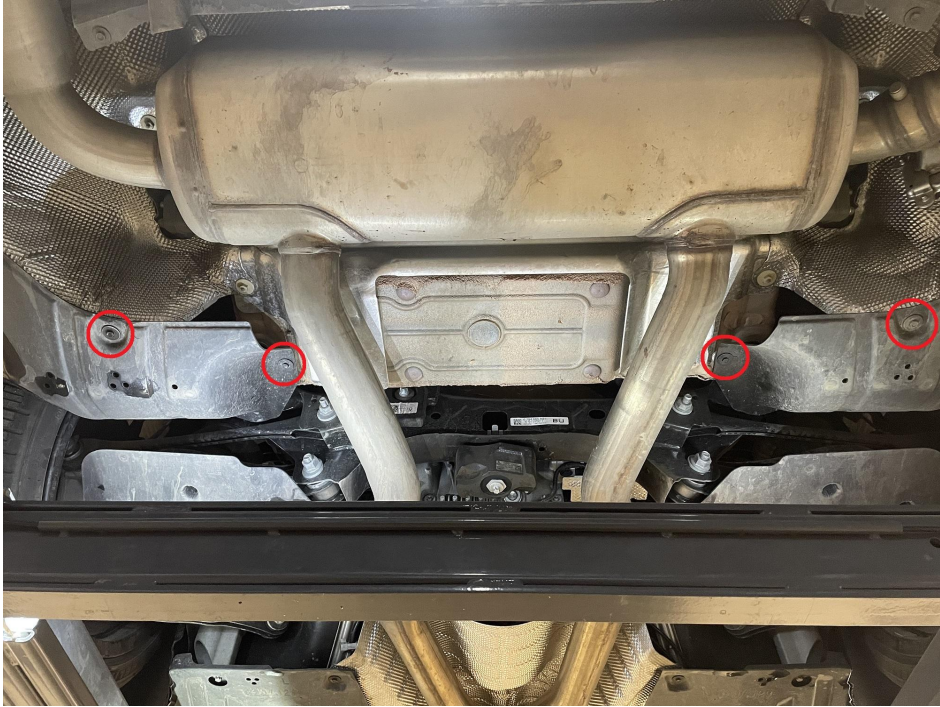
Now that the left side is assembled, mirror the rest of the diffuser onto the right side. Take your time and securely tighten each bolt making sure to use oil on the threads before tightening (pics on next page).



3.) Remove the 4 screws holding the plastic located just behind the rear control arms (2 on each side).

Tools Needed:

- 8mm Socket
- Extension
- Ratchet Wrench



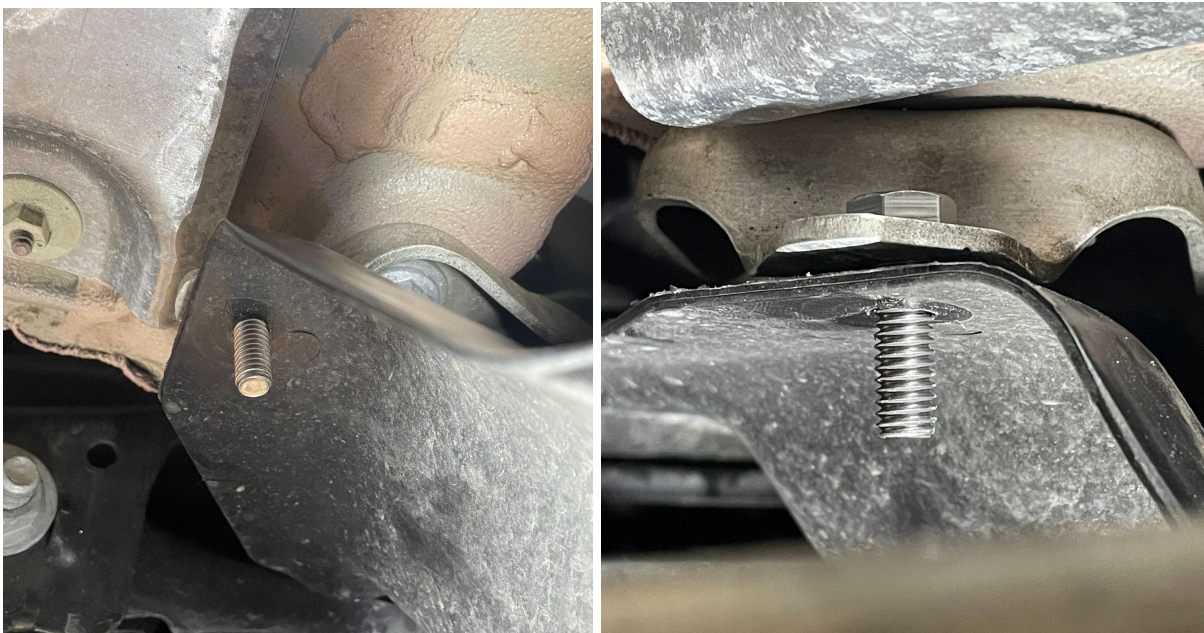
4.) The screws just removed closer to the front of the car were mounted directly to the chassis. They threaded into a plastic nut. Remove the plastic nut on each side using your flat head screwdriver; they will no longer be needed on the car. We broke our clips.



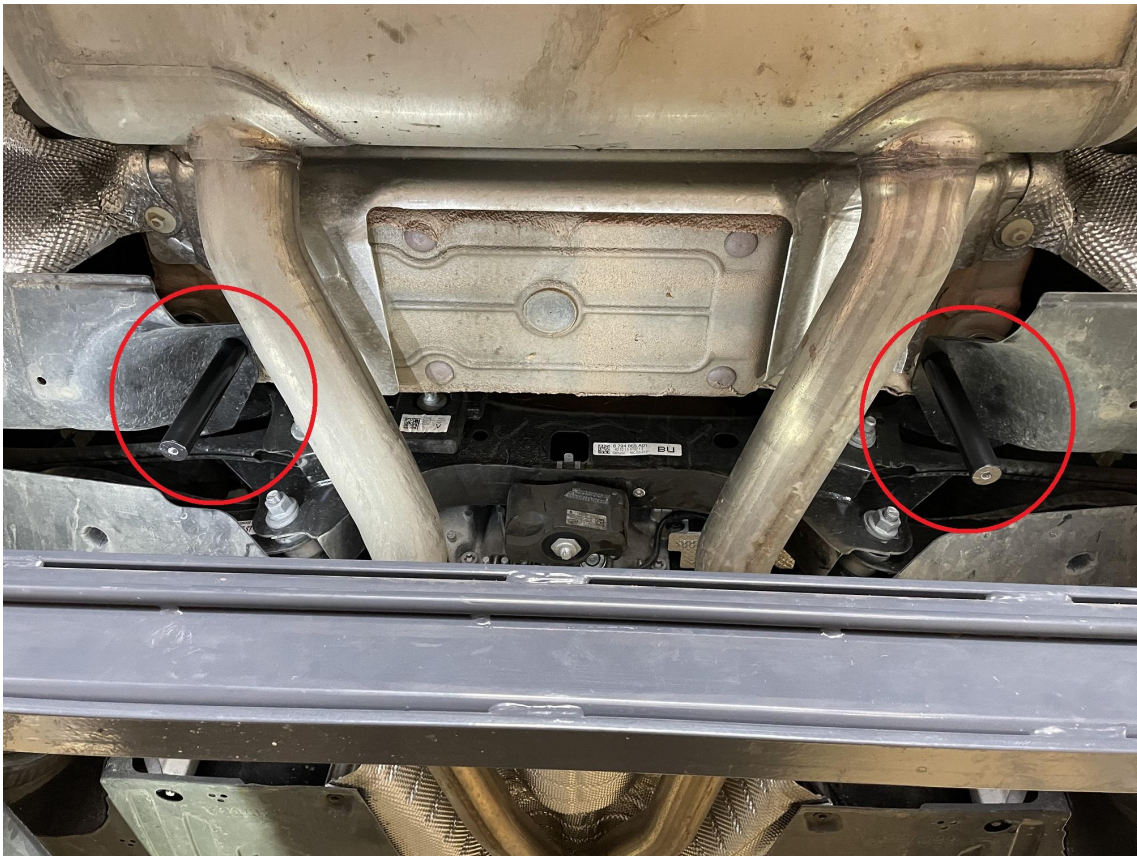
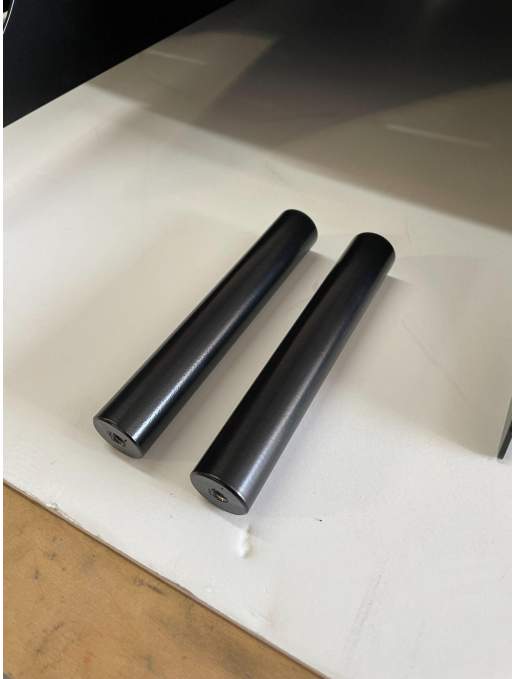
5.) Use your drill and 5/16" drill bit to open up the plastic at these two locations where the clips were just removed. Place wood above the plastic so you don't run your drill bit into the chassis.



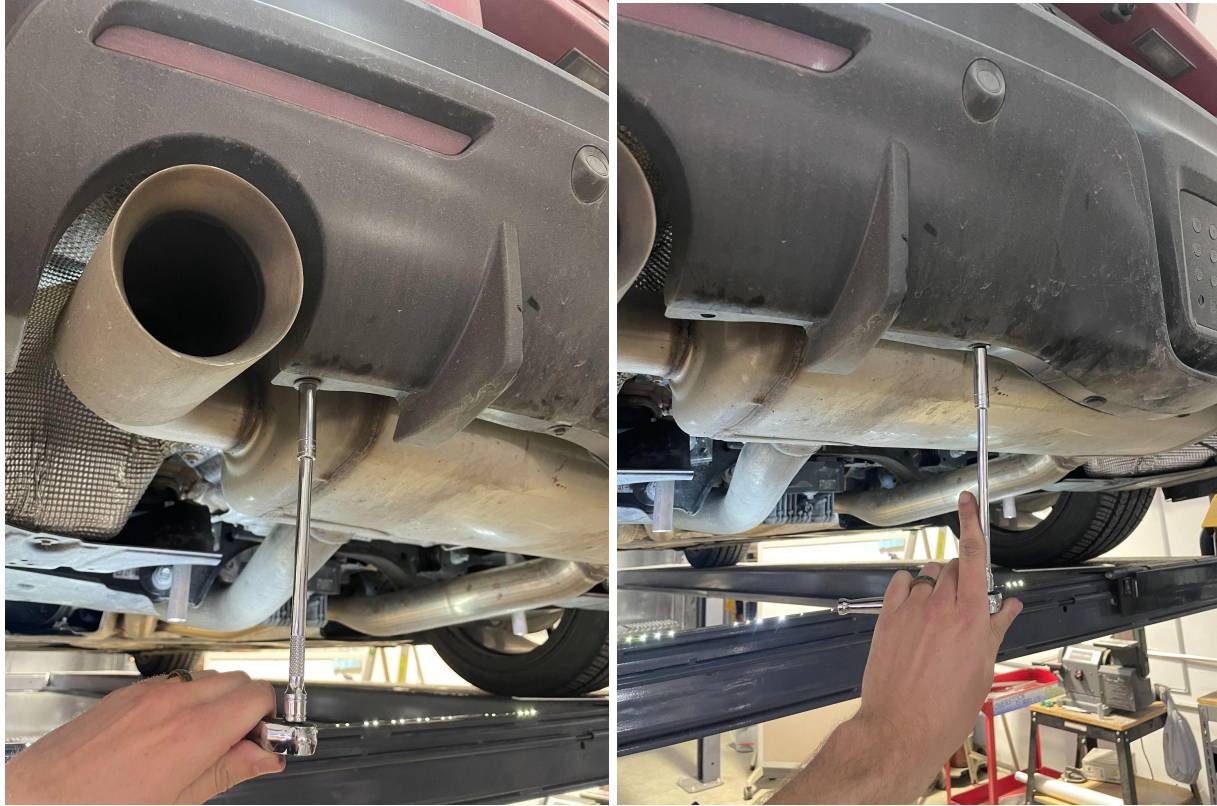
6.) Once the plastic hole has been opened up, drop a 5/16"-18 x 1" long bolt down through the chassis and plastic on both sides.



7.) Place blue threadlocker onto the threads of the 5/16" bolts and thread your mounting bars (either end) onto them. Hold the top with your 1/2" wrench and turn the bar with your hand as much as possible. Let sit for 5-10 minutes before touching them again.



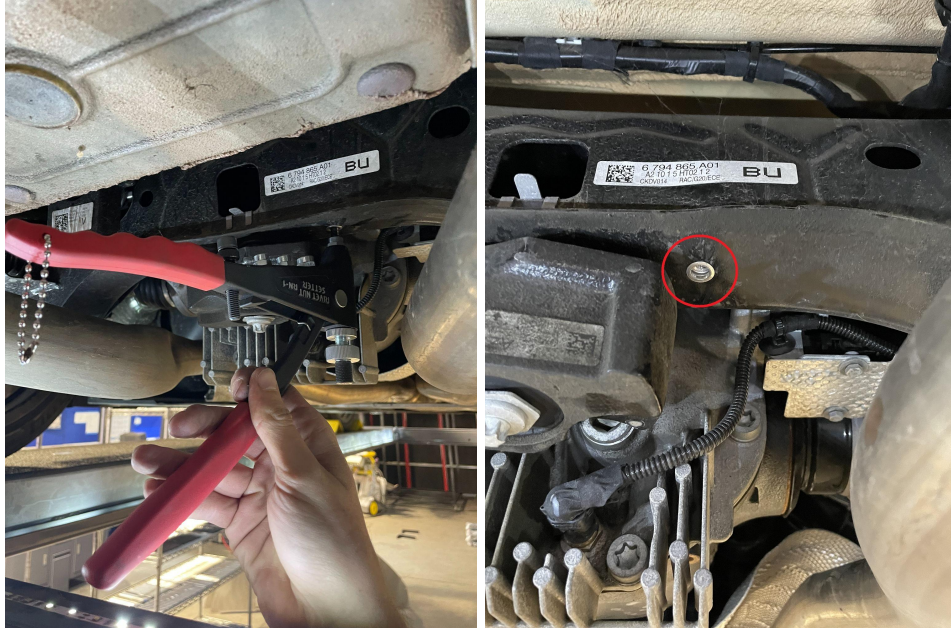
8.) Remove the Four 8mm screws that hold the rear valance/bumper to the car. (2 on each side, between exhaust tips)



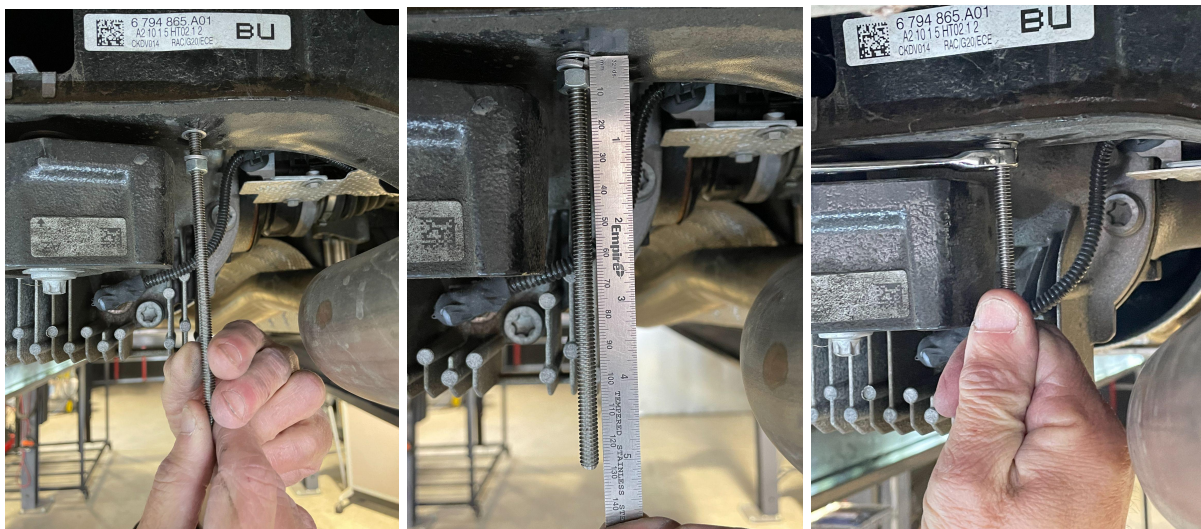
9.) The outer hole above the valance on each side of the car needs to be drilled out to $\frac{1}{4}$ ". It's a plastic bracket. Move the valance out of the way and drill the hole out on both sides. **DO NOT DRILL OUT THE HOLES TOWARD THE CENTER OF THE CAR.**



10.) Now move toward the front of the car and identify the rear differential. To the left of the differential there is a hole in the subframe perfectly sized for a threaded rivnut. Install a supplied $\frac{1}{4}$ " threaded rivnut using your rivnut tool. Here is ours, and what the rivnut looks like installed. Assure it is fully seated. We supply two rivnuts just in case the first doesn't go your way.



11.) Utilize the threaded rivnut. Thread a $\frac{1}{4}$ " nut, and $\frac{1}{4}$ " lock washer onto the 6" long all-thread supplied. Then thread the all-thread into the rivnut so 5 $\frac{1}{8}$ " is protruding. Thread the nut and lock washer against the rivnut and tighten the nut as best as you can using a $\frac{7}{16}$ " wrench. Tighten it firmly while holding the all-thread with your hand/glove.



12.) Your diffuser can now be installed. With help from a friend (or two) loosely install the diffuser onto the mounting bars (you will know which two holes). When doing so, the all-thread from the previous step will want to slide through the hole in the center section of the diffuser. That is OK. Give support to the rear end of the diffuser while doing this step.

Hardware Needed:

(2) 5/16"-18 x 0.75" hex head bolts

(2) 5/16" ID, 1.25" OD washers



13.) While holding up the backside of the diffuser you can now install bolts through the most rearward, outward holes. A bolt with a washer passes through the diffuser, a spacer is placed between the diffuser and bumper / drilled out plastic (step 9), and a small washer on top with a nyloc nut. We recommend you use OIL on the threads/inside of the nut. Securely tighten.

Tools Needed:

- 7/16" Wrench
- 7/16" Socket
- Ratchet Wrench
- OIL

Hardware Needed:

- (2) 1/4"-20 x 4" Hex Head Bolts
- (2) 1/4" ID, 1" OD Washers
- (2) 2.5" Spacers
- (2) 1/4" Small Washers
- (2) 1/4"-20 Nyloc Nuts

It will be a tight squeeze to reach above the bumper while the diffuser is present.



14.) Move back to the all-thread. A ¼” nut needs to be threaded onto the all-thread with a lock washer underneath then the all-thread can pass through the diffuser center section. A lock washer and nut needs to be threaded underneath as well. Securely tighten as shown using 2 wrenches.

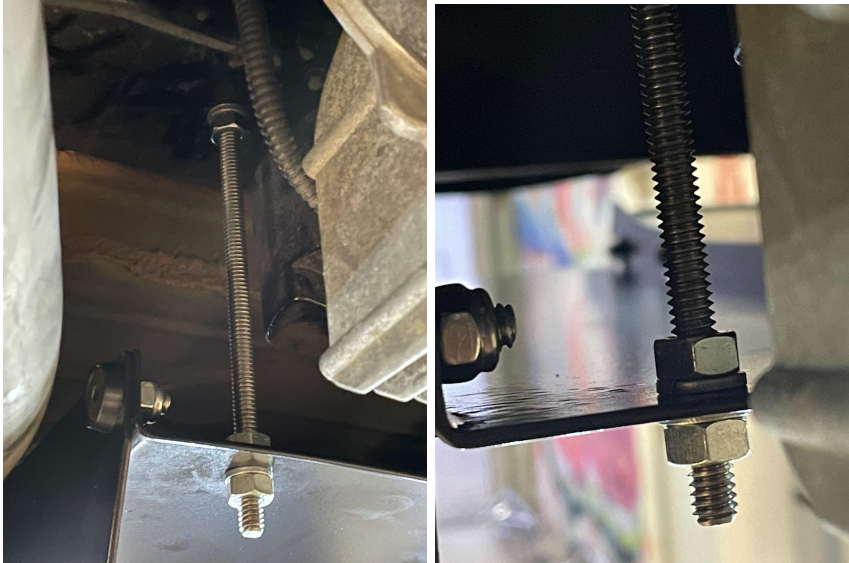
Tools Needed:

- 7/16” Wrench (two of them)

Hardware Needed:

(2) ¼” Lock Washers

(2) ¼”-20 Nuts



15.) Install your phillip’s head screws through the most forward outer holes in the diffuser into the car (outer holes from step 3). Use spacers and securely tighten.

Tools Needed:

- Phillip’s head screwdriver

Hardware Needed:

(2) #8 x 2.5” long phillip’s head screws

(2) 1.75” Spacers



16.) Unthread one 5/16"-18 x 0.75" bolt from a mounting bar. Place blue threadlocker on it. Thread it back in and securely tighten it with a 7/16" wrench / socket. Do the same thing for the bolt in the other mounting bar.



17.) Last screw. Assure all bolts and screws are tightened first. Use the #12 x 4" long screws, 1/4" ID 1" OD washers, and 2 11/16" long spacers in the center rearward holes. This will pull up the diffuser and hold it more steady. An 8mm socket + ratchet wrench is required.



Securely tighten.



18.) Assure all bolts / nuts / screws are securely tightened.

19.) If you have edge trim prepare the edges you'd like to apply it on with isopropyl alcohol. The trim sits on top with the little part of the "L" hanging over the edge. Use light heat to form around edges if necessary. Use diagonal cutters to cut the edge trim.

20.) Enjoy your new Toyota Supra Diffuser!

Feel free to contact us with any questions at (661) 809-0954`

