

VacuBrain™
Mechanical Engineering

PTI-XCM-1
Revision 1

XCM-1

2005-2015 (N50) Xterra

ARB Twin Motor Compressor Mount



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1. Introduction

The second generation 2005-2015 (N50) Nissan Xterra has very limited space under the hood and once an intake, winch relay control box, etc. are added there is almost no room left for something like the ARB Twin Compressor. Having also installed an amplifier and subwoofer under my front driver and passenger seats, there was no other option than to look at the trunk.

After looking around and finding no mount solutions for the trunk side walls, I decided to fabricate my own mount. The mount was designed using FreeCAD and then machined on a Langmuir MR-1 CNC machine. The mount is extremely solid as it is made from 11-gauge plate steel (1/8" inch thick) and mounts to the driver's side trunk wall to the metal frame of the body behind the plastic. Unfortunately, there are no existing bolt holes or mounting locations to secure this plate so holes must be made through the plastic of the trunk wall so plus nuts can be installed to the metal behind using a plus nut installation tool however, this does not require you to remove any of the factory plastics so the installation is very simple.

I mocked up the inner metal structure of the Xterra trunk side wall using FreeCAD to precisely locate the 5 holes to receive the plus nuts. This way the plate can be simply held/taped in place, holes marked, and holes drilled right through the factory plastic after which the plus nuts can be installed and the plate mounted. The compressor can be mounted before or after you mount the plate as there is plenty enough room to reach behind the plate and tighten bolts for the compressor, manifold, etc. Follow the steps below to get your plate mounted and installed.

2. Installation Disclaimer

Our installation manuals try to detail each and every step of the process to install our products. The installation difficulty ratings we provide on our website are only meant to serve as guidelines to help you understand the knowledge and experience required (in our opinion) to install products we sell. By providing this information, VacuBrain assumes you know your own limits, knowledge, and understanding of automotive repair, modification, and product installation and assumes no liability for your installation decision or quality. VacuBrain recommends all of our products be installed by a professional, certified mechanic. If you choose to perform the installation of any of our products on your own, you assume all risk and liability. If you are unsure about installing a product, we recommend you find a certified mechanic in your area to perform the installation.

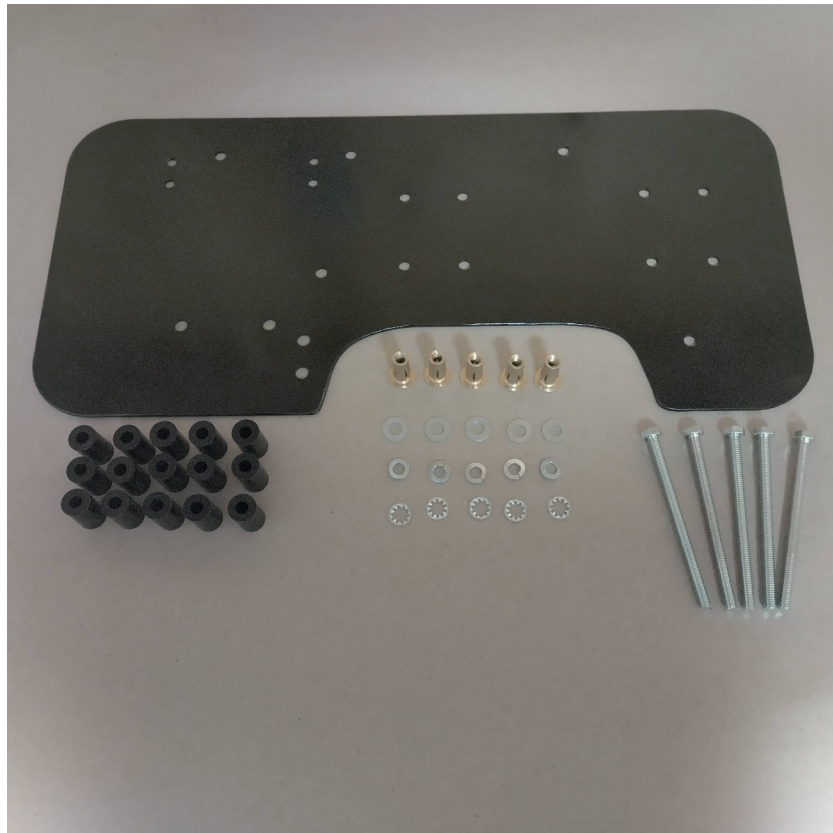
3. Contents and Requirements

!! THIS KIT REQUIRES A PLUS/RIV NUT TOOL FOR 5/16" x 18 TPI PLUS NUTS, 1/8" AND 7/16" DRILL BITS, AND 1 1/8" HOLE SAW TO COMPLETE INSTALLATION! DO NOT BEGIN INSTALLATION UNTIL YOU HAVE THE TOOLS !!

This mounting plate has been designed specifically to fit on the left side (the driver's side in the US) trunk wall of the 2005-2015 Nissan Xterra.

Each kit includes:

- The compressor mounting plate
- 5 – 5/16"-18 plus nuts
- 5 – 5/16-18 x 4-1/2" hex bolts
- 5 – 5/16" flat washers
- 5 – 5/16" lock washers
- 5 – 5/16" internal lock washers
- 15 – 3/4" black nylon spacers



You'll need the following tools and plus nuts that are not included:

- Plus nut installation tool with tool head for 5/16" x 18 TPI plus nuts
- 1/8" drill bit
- 7/16" drill bit
- 1" or 1 1/8" hole saw

4. Installation

Follow the steps below to get your compressor mounting plate installed to the driver's side wall of your trunk.

!! PLEASE READ ALL INSTRUCTIONS BEFORE BEGINNING INSTALLATION AS HOLES MUST BE DRILLED AND FACTORY WIRING IS PRESENT! IF MISLOCATED, YOU COULD POTENTIALLY DRILL INTO YOUR FACTORY WIRING. ADDITIONALLY, A PLUS NUT INSTALLATION TOOL FOR 5/16" 18TPI PLUS NUTS IS REQUIRED TO COMPLETE THE INSTALLATION !!

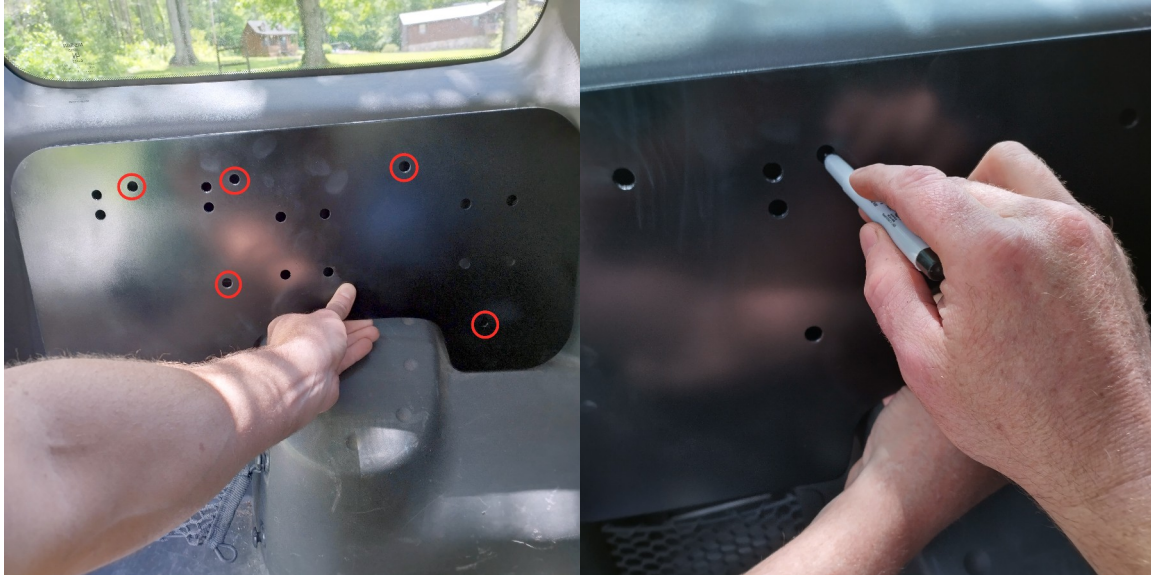
4.1. *Aligning the Mounting Plate*

Start by aligning the plate on the driver's side of the trunk side wall. You want to align the plate so that the top edge of the plate is flush with the edge of the plastic below the glass as shown in the picture below. The plate can either be held in place by another person, and/or taped in place. Take your time here, it's very important that the top of the plate is properly aligned in place.



4.2. Mark Plate Mounting Holes

After aligning and affixing the plate in place, use a fine tip permanent marker to locate the center of the 5 mounting holes as shown in the picture below. The 5 mounting holes are circled in red.



4.3. Setup Hole Saw for Drilling Holes in Plastic

Remove the metal plate from the side wall and set up a drill with a hole saw that is just slightly larger than the head of your plus nut installation tool. The head of the tool needs to be able to pass through the hole in the plastic so the plus nuts can be installed into the inner metal wall of the body of the truck. In our case, a 1 1/8" hole saw was just the right size.



4.4. Drilling Holes Through Plastic Only

PLEASE READ THIS ENTIRE DESCRIPTION BEFORE MOVING ON! Being very careful, use the drill to drill the 5 holes. You want to just cut through the plastic, just barely with the hole saw to verify there are no wires in the way behind the plate.

!! THERE IS A LOOM OF WIRES THAT RUNS PARALLEL ALONG THE EDGE OF THE PLASTIC BELOW THE WINDOW AS SHOWN WITH THE RED LINE IN THE PICTURE BELOW !!

You only want to cut just through the plastic as you'll need to switch to the proper size drill bit before drilling the holes for your plus nuts into the metal behind.



4.5. Drilling Mounting Holes In Metal

!! BEFORE YOU BEGIN DRILLING HOLES INTO THE INNER METAL WALL, PLEASE REALIZE THE OUTSIDE WALL OF YOUR TRUCK IS ONLY ABOUT 2-3" BEHIND THE INNER METAL WALL WE'RE DRILLING THROUGH. TAKE GREAT CARE NOT TO DRILL A HOLE ALL THE WAY THROUGH THE SIDE OF YOUR VEHICLE !!

You should now have the 5 holes drilled through the plastic but not into the metal behind. Carefully mark the metal in the center of the 5 holes you drilled through the plastic. Using a center punch and hammer, mark/dimple each of the 5 holes in the metal you will be drilling to keep the drill bit from walking. We want the hole in the metal to be centered in the hole in the plastic as shown below.

Now drill a starter hole in the 5 locations using a 1/8" drill bit. After you make these starter holes, switch to the correct size drill bit that matches your 5/18" 18 TPI plus nuts. For our plus nuts, a 7/16" drill bit is the perfect size. Optionally, you could use a step bit to work up to the 7/16" diameter. Drilling large holes in metal takes time. Take your time and don't rush so that your holes are perfectly centered.



4.6. Install 5 Plus Nuts

After drilling all 5 holes into the metal behind the plastic, we can install the 5/16" 18 TPI plus nuts into the holes using the installation tool. Please read the instructions for your plus nut installation tool and possibly even practice installing a plus nut into a piece of scrap metal or wood to get an understanding of how it works if it's your first time using one. Using a plus nut installation tool is not complicated however, if a plus nut is crimped without being fully inserted all the way into its respective hole it can be an absolute bear to cut back out using a Dremel and very time consuming! Install all 5 plus nuts as shown below.



4.7. Install Mounting Hardware on Plate

You should now have all 5 plus nuts installed and you are ready to mount your plate! Take the plate and install the hardware as shown in the picture below. A bolt with a lock washer, and then flat washer should be installed through the front of the plate in each of the 5 holes. On the back side of the plate, three plastic spacers should be installed followed by a metal keeper to keep the bolts, washers, spacers, etc. from falling off during installation.



4.8. Install Mounting Plate

You are now ready to install your plate. Carefully lift the plate into position and thread each of the 5 bolts into the plus nuts you installed. Thread each bolt only a few turns before moving on to the next bolt. Slowly work in a circular pattern tightening each bolt only a few turns until the plate is fully seated.

!! DO NOT OVER TORQUE THE BOLTS OR THE PLUS NUTS CAN LOSE THEIR GRIP AND THE PLATE WILL BE NEAR IMPOSSIBLE TO REMOVE. 15 FT/LBS SHOULD BE SUFFICIENT TO SECURE THE PLATE WITHOUT OVER TIGHTENING THE FASTENERS!!



4.9. Install ARB Compressor and Accessories

Your mounting plate is now installed! You can begin to install the ARB Twin Compressor and Manifold if this is your intended purpose for the plate (*ARB Compressor, ARB Manifold, and ARB accessories not included!). This plate can be used to mount a vast array of accessories and is extremely sturdy! If you are installing the ARB Compressor and Manifold, they should be installed in the locations as shown below.



4.10. Enjoy

Enjoy! Thank you for your purchase and stay tuned for additional accessories in the future!

5. Suggestions and Feedback

We hope you enjoy your Nissan Xterra ARB Compressor Mount and are satisfied with its quality and function. If you have any suggestions for this product, its installation manual/use, or future products, please let us know by sending email to suggestions@vacubrain.com. We greatly appreciate you and your feedback!