



## FS Performance Engineering

Chevy / GMC Express / Savanna Catalytic Converter Installation Instructions (2021-2023)  
Professional Installation Recommended as Always - A car LIFT is HIGHLY Recommended

### **Tools Needed:**

- Ratchet Wrench(es)
- ¼" Socket
- ½" Socket & Wrench
- 17/32" Drill Bit (for the 5/16" Rivnuts) - a step drill works wonders as well
- Drill (wear safety protection when drilling)
- Rivnut (threaded rivet nut) Installation Tool (a heavy duty one is necessary) with a 5/16"-18 mandrel
- Helper
- Marker / Pencil / Pointy Tool / Sharpie
- 2 to 4 C-clamps

### **What's Supplied:**

#### **CARGO VAN Parts:**

- (1) Left Cat Guard
- (1) Right Cat Guard
- (4) Interior Bolt-on Shields
- (1) Right Rear L Shield
- (1) Right Rear Shield with Pipe Cut Out
- (1) Small Cargo Van Frame Bracket
- (4) ½" Spacing Plates - 2 front, 2 back

#### **CUTAWAY Parts:**

- (1) Left Cat Guard
- (1) Right Cat Guard
- (4) Interior Bolt-on Shields
- (1) Right Rear L Shield
- (1) Right Rear Shield with Pipe Cut Out
- (1) Small Cutaway Frame Bracket
- (2) ½" Spacing Plates for Front

### **Hardware:**

#### **BAG 1**

- (1) 5/16"-18 x 1" SECURITY Bolt
- (8) 5/16"-18 x 2" SECURITY Bolts
- (9) 5/16" x 1.25" Washers
- (1) Security Bit (3/16")

#### **BAG 2 (CUTAWAYS ONLY)**

- (2) 5/16"-18 x 1" SECURITY Bolts
- (2) 5/16"-18 NYLOC Nuts
- (4) 5/16" x 1.25" Washers

#### **BAG 3**

- (10) 5/16"-18 LONG Rivet Nuts (2 are extra)
- (1) Threadlocker

#### **BAG 4**

- (29) 5/16"-18 x 1" HEX Bolts
- (29) 5/16"-18 NYLOC Nuts

#### **BAG 5 (CARGO VANS ONLY)**

- (1) 5/16"-18 X 4" HEX Bolt
- (1) 5/16" Lock Washer
- (1) 5/16" x 1.25" Washer

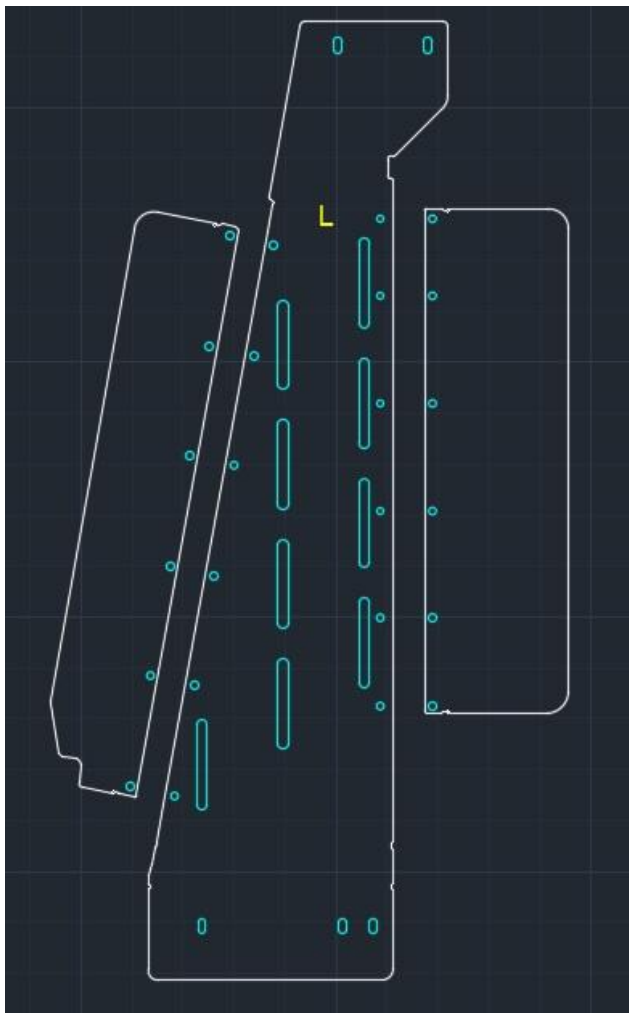
If you need help using or understanding a threaded rivet nut (rivnut) tool, scan the QR code here:



**Steps:**

- 1.) Begin by raising your Chevy/GMC. Place it securely on jack stands. Or alternatively use a vehicle lift (highly recommended). The vehicle must be high enough for you to use your rivet nut installation tool (rivnut tool).
- 2.) Assemble your catalytic converter guards using the (29) 5/16" x 1" hex bolts & nyloc nuts. Point all bolts upward. We've provided computer generated pictures showing how each piece lines up, and a real life picture.

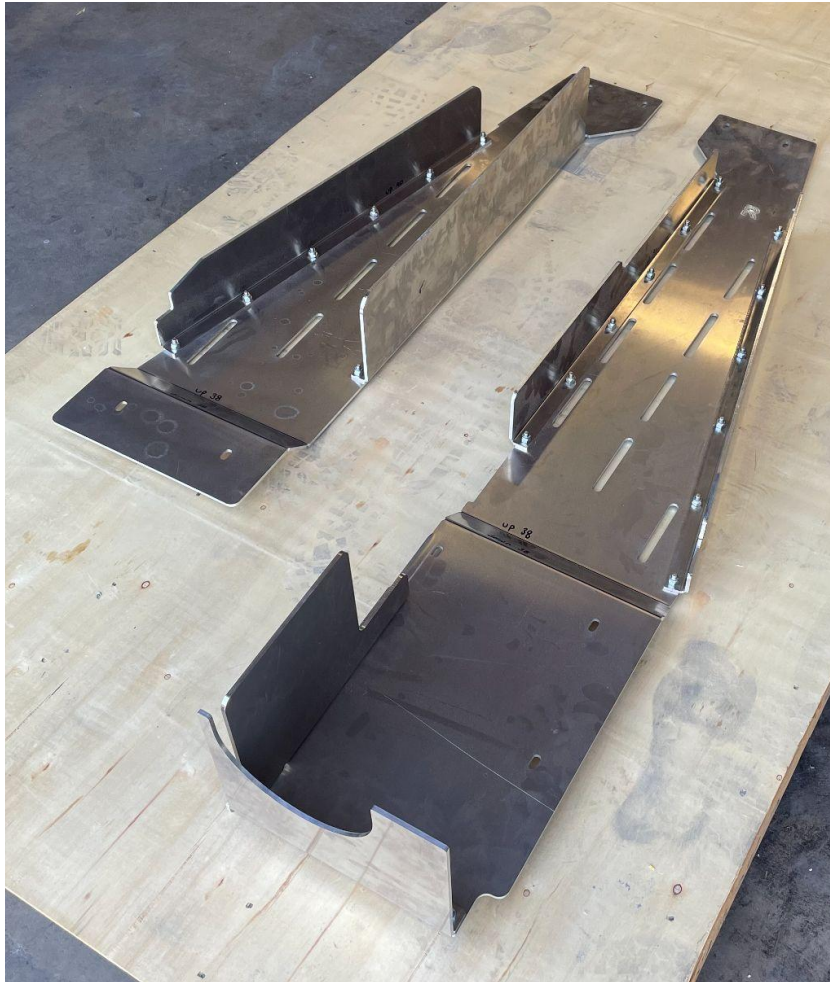
**LEFT**



**RIGHT**



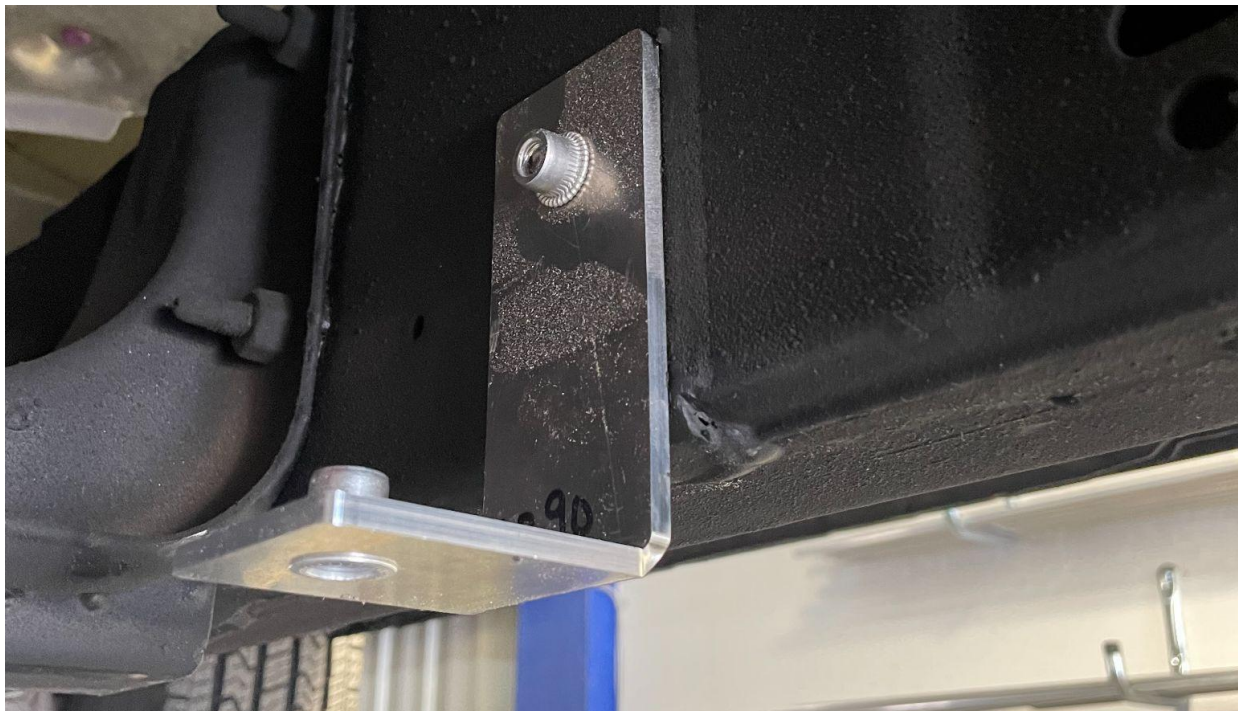
### FULLY ASSEMBLED



3.) Bolt on your small frame bracket. It mounts just behind the transmission crossmember onto the right side frame rail in the hole(s) shown.

- If you have a cargo van, the bracket is shaped like an L from the side and has nuts pre-installed into 2 holes. This bracket sits on the inside of the frame rail. Use the supplied 5/16"-18 x 4" Hex Bolt, lock washer, and 5/16x1.25" washer. Only snug it up for now.
- If you have a cutaway, the bracket is bent at a 90 degree angle and has (4) 5/16" rivnuts pre-installed into it. Bolt it onto the outside of the frame using (2) 5/16"-18 x 1" security bolts, 5/16"x1.25" washers onto the inside/outside of the frame, and nyloc nuts. Point bolts inward - the bracket should point inward. Securely tighten at the two holes shown. Your guard will bolt onto this bracket later.

CARGO VAN

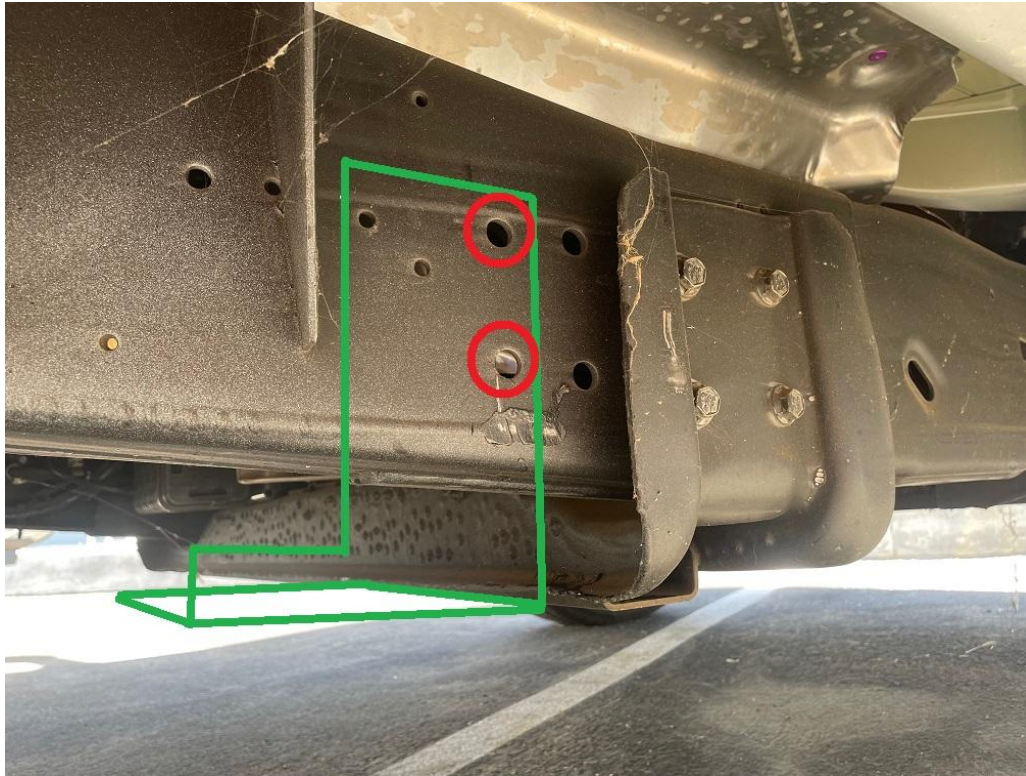




CUTAWAY



GREEN REPRESENTS HOW IT SITS ON VEHICLE, RED IS WHERE IT MOUNTS



INSIDE OF FRAME



4.) Hold your guards up against the frame (left goes on the left, and vice versa).

The guard should sit on the frame at the front and on the crossmember that supports the transmission at the rear. (**IMPORTANT: see note below**)

The outer edges should match with the outer edges of the frame and crossmember. Use C-clamps at the front and rear of each cat guard to hold them up. **Make sure the right side most rearward hole lines up with the bracket installed from the previous step - install a 5/16"-18 x 1" long security bolt & 5/16"x1.25" washer there to assure this happens. Cutaway vans have 4 rivnut nuts to choose from.**

If needed, slightly adjust the cat guards forward / backward so the mounting slots align with the frame.

Note: 1/2" thick spacers were provided with this kit since there are a couple different engine/exhaust setups from the factory. These spacers allow additional clearance between the frame & cat guard so there is no exhaust interference.

- Cargo vans receive spacers for the front & rear, a total of 4.
- Cutaway vans receive spacers only for the front.

#### **CAT GUARDS MOUNTED TO FRAME WITH C STYLE CLAMPS**

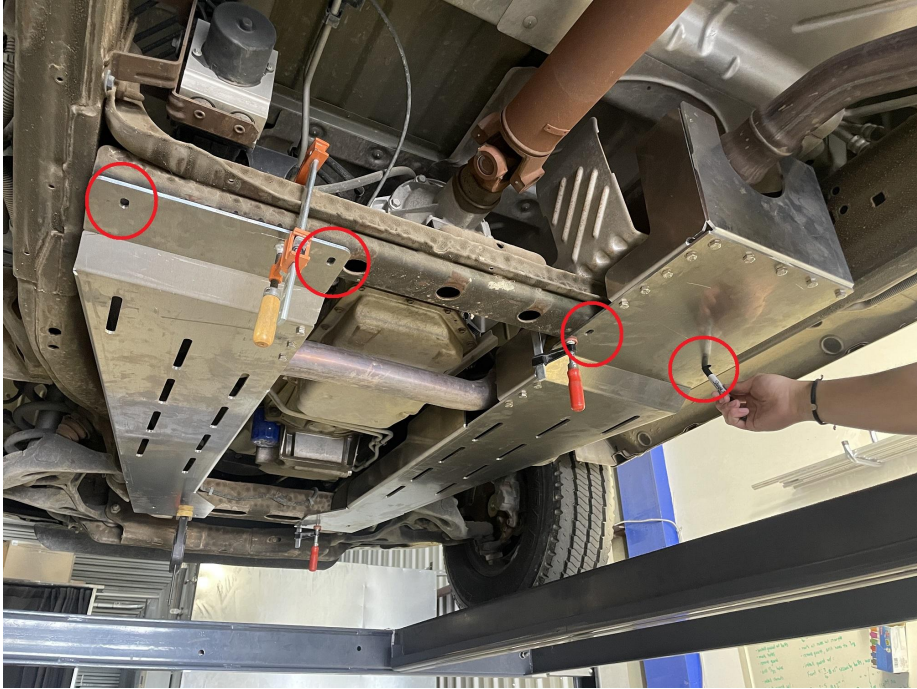




5.) Mark the 8 slots in the cat guard onto the frame using a marker/sharpie of some type. Note that there may be different holes to choose from at the rear. Make sure to choose the holes that line up with the frame so you have something to drill into.





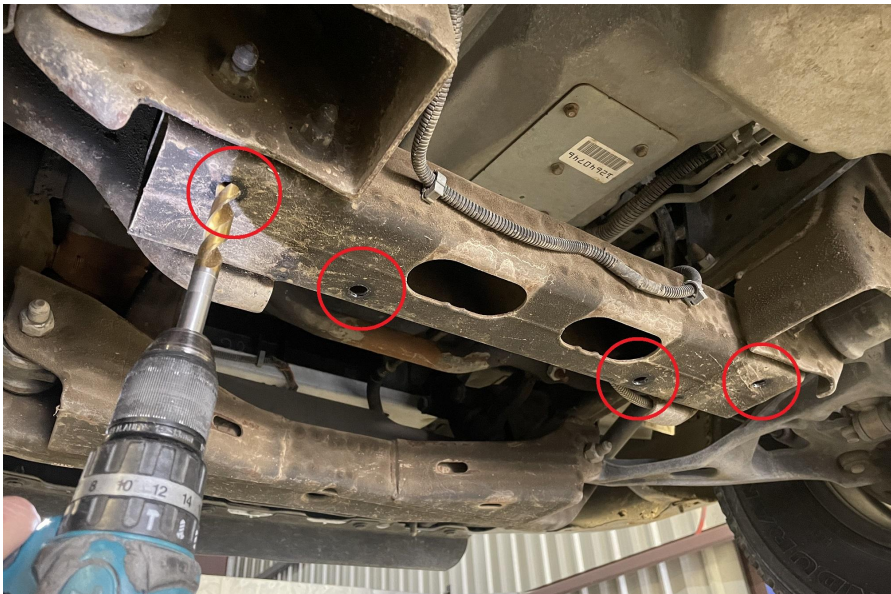


5.) Remove the cat guards and drill eight 17/32" holes into the center of the slots just marked.

When drilling holes we recommend using a step drill (looks like a Christmas tree) to build up to that size.

If you are unfamiliar with rivnuts please see the QR code earlier in these instructions and/or use online resources. A rivnut tool is necessary for installation.

#### FRONT



**FRONT**  
Left side



**Right Side**



**REAR**



**Left Side**



**Right Side**



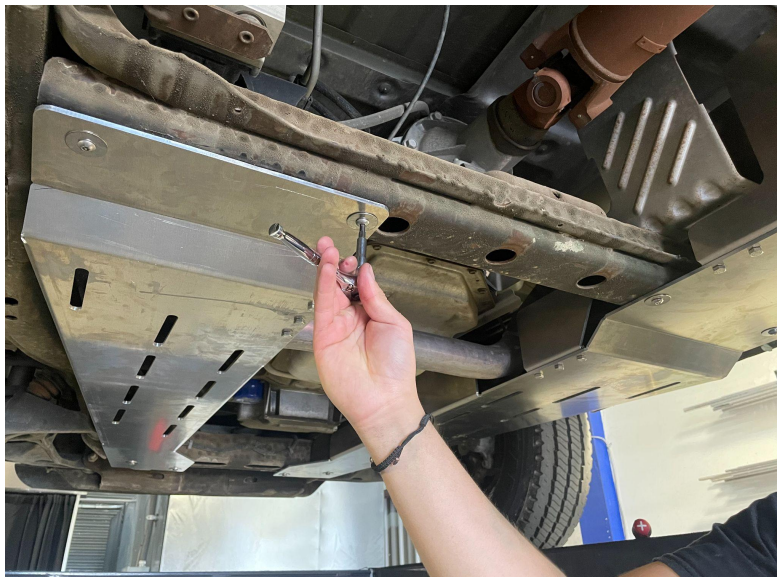
6.) Install your cat guards. Use the supplied 5/16"-18 x 2" security bolts and 5/16x1.25" washers into the 8 rivnuts on the frame. Use the 5/16"-18 x 1" long security bolt and washer on the small frame bracket at the rear.

A security bit was provided that fits into a 1/4" socket.

When installing into the rivnuts, **use threadlocker on the bolts** - do not tighten so hard that you strip the bolts.

**NOTE:** Cargo vans may use the 1/2" spacers to avoid exhaust interference depending on engine size. Cutaway vans will use both 1/2" spacers at the front to avoid exhaust interference.

**EXAMPLE INSTALL WITHOUT SPACERS**



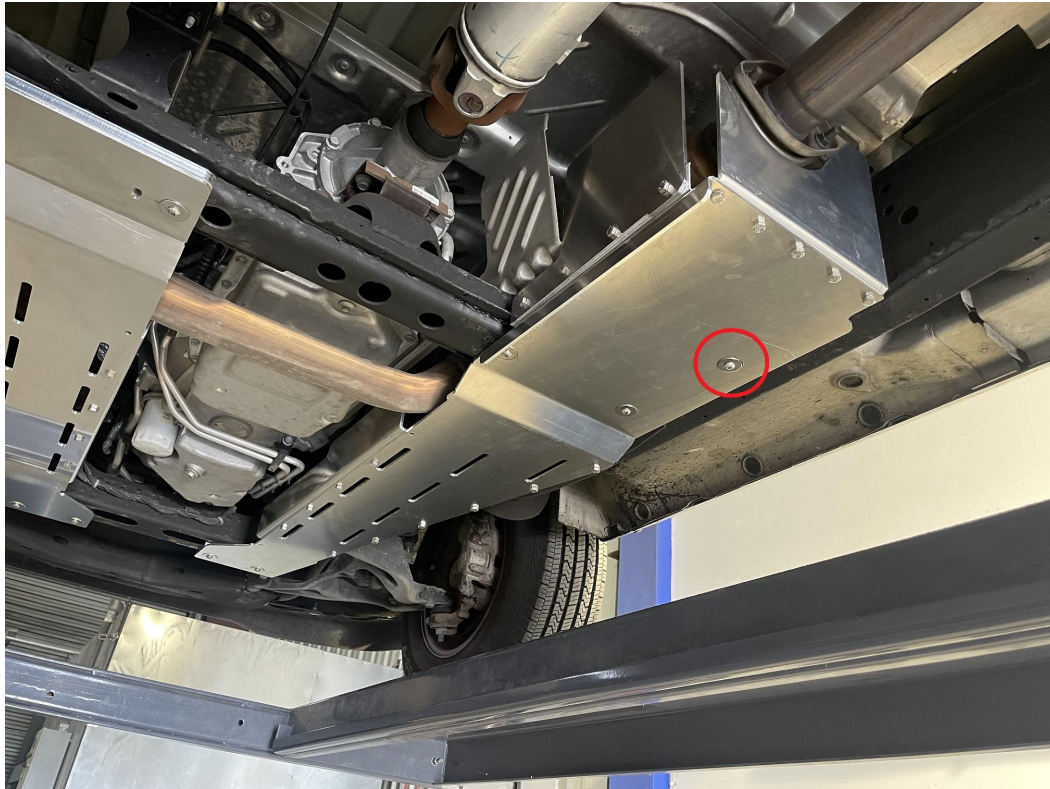
**EXAMPLE INSTALL WITH SPACERS**





### REARWARD RIGHT BOLT (5/16"-18 x 1" long security bolt)

**Note:** If you have a cargo van, after all 9 bolts are installed, tighten the long 4" bolt that holds the rear frame bracket.



7.) Double check all bolts are secure and you are done! Feel free to tag us online using #FSPerformanceEngineering or #FSPEinc. If you have any questions don't hesitate to contact us.



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THANK YOU :)