

## FS Performance Engineering

Chevy / GMC Gen 4 2500/3500 6.6L Gas Catalytic Converter Installation Instructions  
Professional Installation Recommended as Always - A car LIFT is HIGHLY Recommended

### Tools Needed:

- Ratchet Wrench(es)
- ¼" Socket
- 15mm and 17mm Socket (IF YOU HAVE 4WD OR SKID PLATE)
- 7/16" Socket OR wrench
- 1/2" Socket AND Wrench
- 25/64" Drill Bit (for the ¼" Rivnuts)
- 17/32" Drill Bit (for the 5/16" Rivnuts)
- Drill (an large electric drill works best)
- Rivnut (threaded rivet nut) Installation Tool (a heavy duty one is necessary) with a 1/4"-20 mandrel and a 5/16"-18 mandrel
- Helper
- Marker / Pencil / Pointy Tool
- Blue Threadlocker
- Diagonal Cutters (IF YOU HAVE 4WD OR SKID PLATE)

### What's Supplied:

#### **Parts:**

- (1) Cat Guard
- (1) Oil Drain Cover
- (1) Rearward Shield

#### **Hardware:**

##### **1ST BAG:**

- (2) 1/4"-20 x 1.5" Security Bolts (non-skid plate apps)
- (4) 1/4"-20 x 1" Hex Head Bolts
- (1) 1/4"-20 x 3" Hex Head Bolt
- (5) 1/4" Lock Washers
- (3) 1/4"-20 **TALL** Rivnuts (non-skid plate apps, 1 extra)
- (2) 1/4"-20 **SHORT** Rivnuts (1 extra)
- (2) 1/4"ID, 1" OD Washers
- (1) 5/32" SECURITY Bit

##### **2ND BAG:**

- (4) 5/16"-18 x 2" Security Bolts
- (1) 5/16"-18 x 3" Hex Head Bolt
- (1) 5/16"-18 Nyloc Nut
- (6) 5/16" ID, 1.25" OD Washers
- (5) 5/16-18 Rivnuts (1 is extra)
- (1) 3/16" SECURITY Bit

##### **3RD BAG:**

- (2) 60mm Spacers

##### **4TH BAG:**

- (2) 10mm Spacers
- (4) 20mm Spacers

##### **5TH BAG: (skid plate applications)**

- (2) M10-1.5 x 30mm Security Bolts
- (2) M10 Washers
- (1) 7/32" SECURITY Bit

##### **LAST ITEM:**

- (1) Blue Thread Locker

**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).

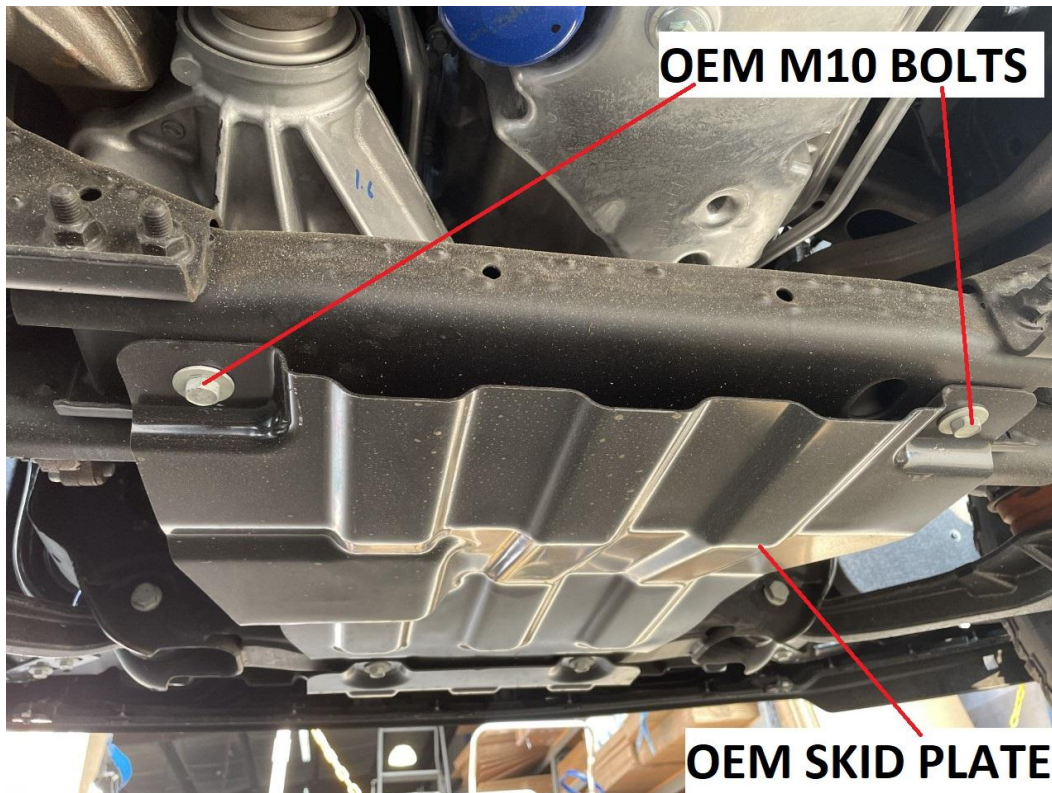
2.) Determine if you have a 2-wheel drive (2WD) or 4-wheel drive (4WD) vehicle. The 4WD vehicles have an OEM skid plate under the engine. The 2WD vehicles do not unless it was requested from the factory or has an upgraded underside.

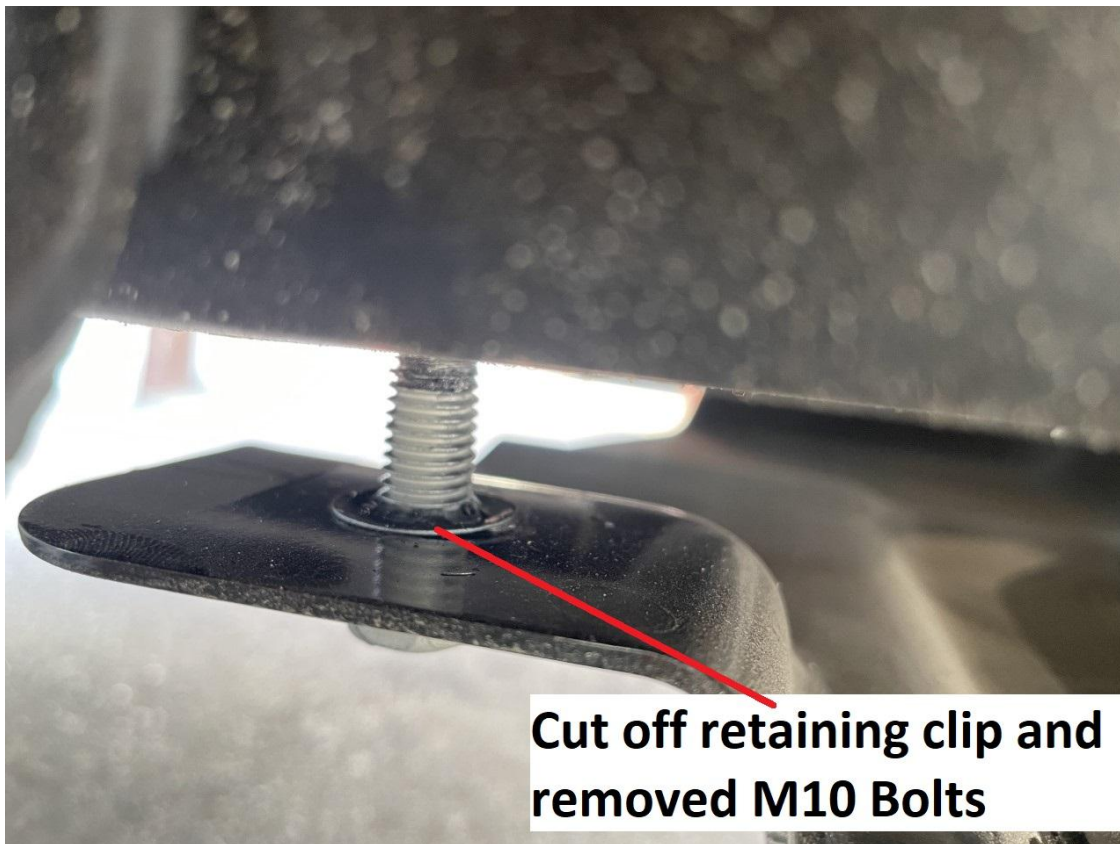
Below are the two hole locations you will be mounting the front of the cat guard to. If you have a skid plate, you're going to remove the OEM M10 bolts with a 15mm wrench (PICS 1-3). You'll need to use a pair of diagonal cutters to cut the retaining clips, or just remove them by holding onto them and unthreading the bolt.

If you don't have an OEM skid plate, you will need to open the holes with a drill using a 25/64" drill bit. Then install 1/4"-20 **TALL** rivnuts into these holes using your rivnut installation tool.

**NOTE 1:** We recommend a heavy duty rivnut tool with handles squeezed with both hands. If you need to learn how to use a rivnut tool, use online resources.

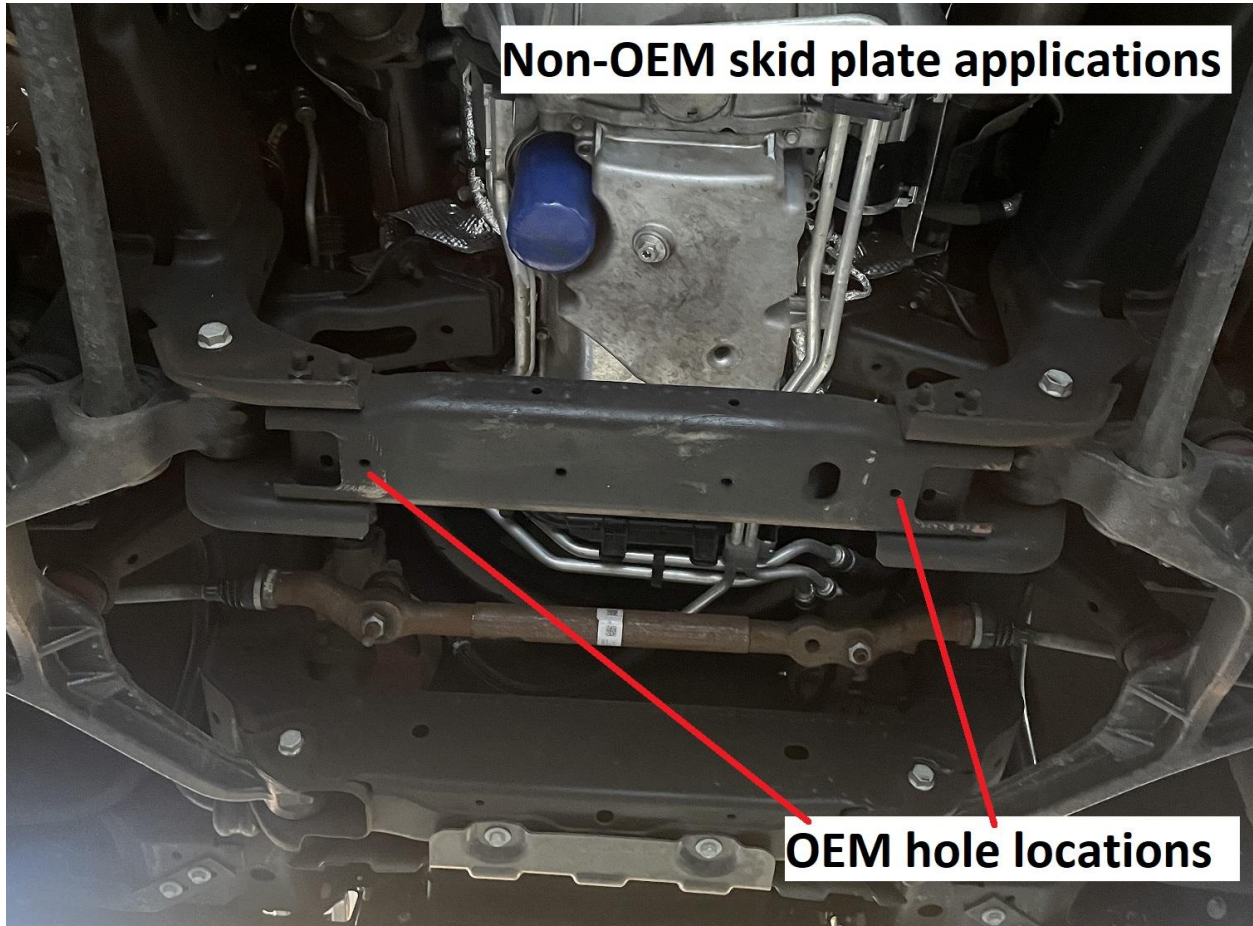
**NOTE 2:** There are TALL and SHORT 1/4" rivnuts. Use the TALL rivnuts here since we're mounting onto thicker metal.







If you don't have a skid plate here is what the process looks like:

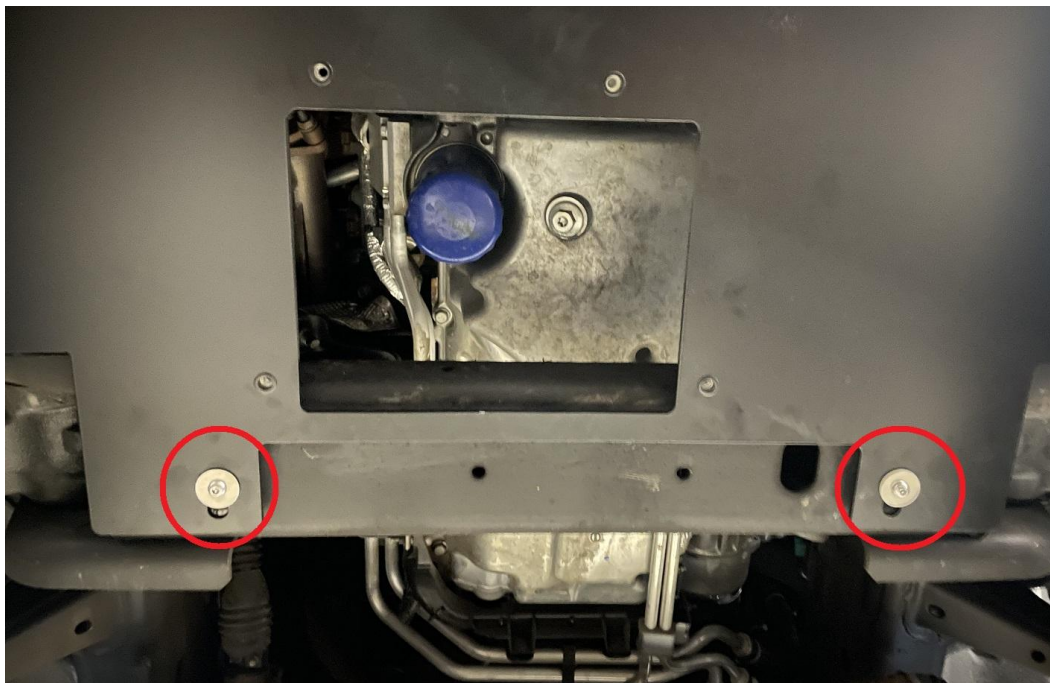






3.) Install the front end of the cat guard into the two holes from the previous step, *hand tight*. Have a helper hold up the back end of the cat guard.

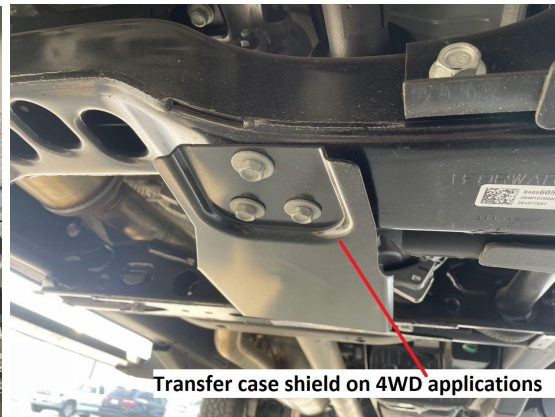
- **Both non-skid and skid plate applications use a 10mm spacer between the frame/skid plate and cat guard.**
- Non-skid plate applications use the 1/4"-20 x 1.5" security bolts (use the 5/32" security bit with a 1/4" socket) and 1/4" ID, 1" OD washers provided in the kit.
- Skid-plate applications use the M10-1.5 x 30mm security bolts and M10 washers provided in the kit (please use the 7/32" security bit here).



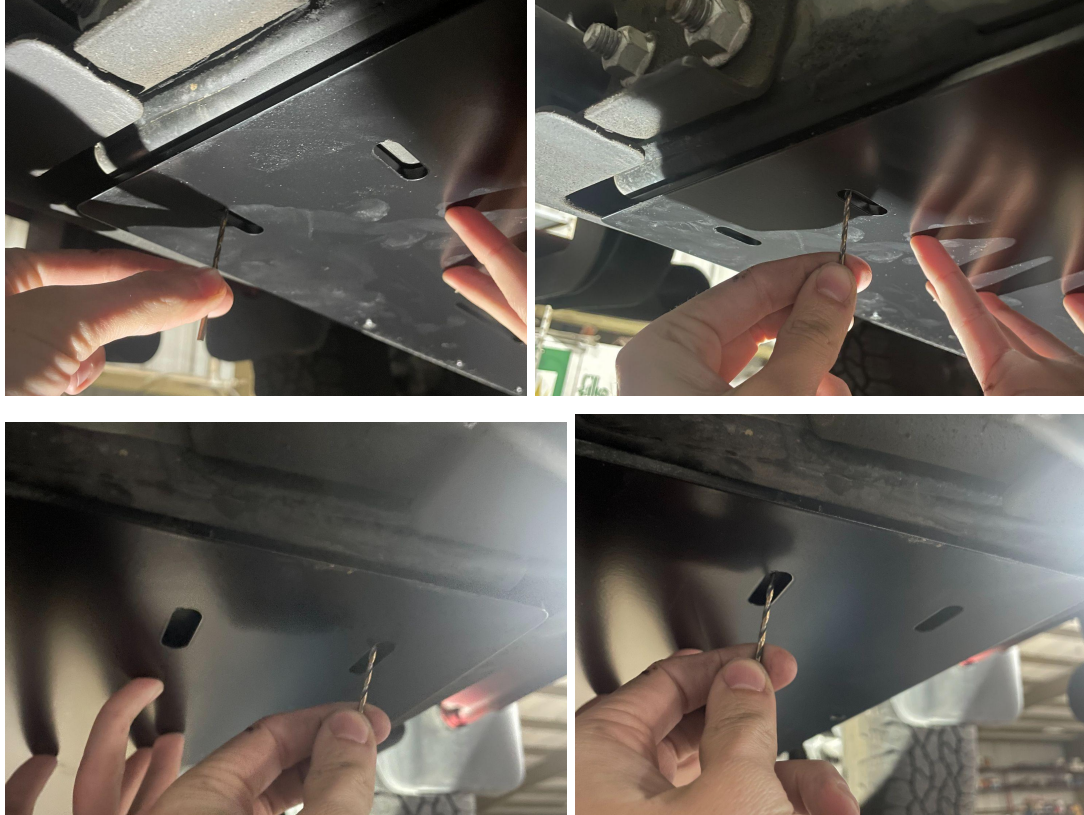


4.) Position the back end of the cat guard against the rear crossmember that supports the transmission. Align it so the same amount of guard hangs off the crossmember on the left and right sides. Align the front end of the cat guard so the bolts are centered in the slots (front-to-back). Use a marker (we used the end of a drill bit) to mark the 4 slots onto the crossmember.

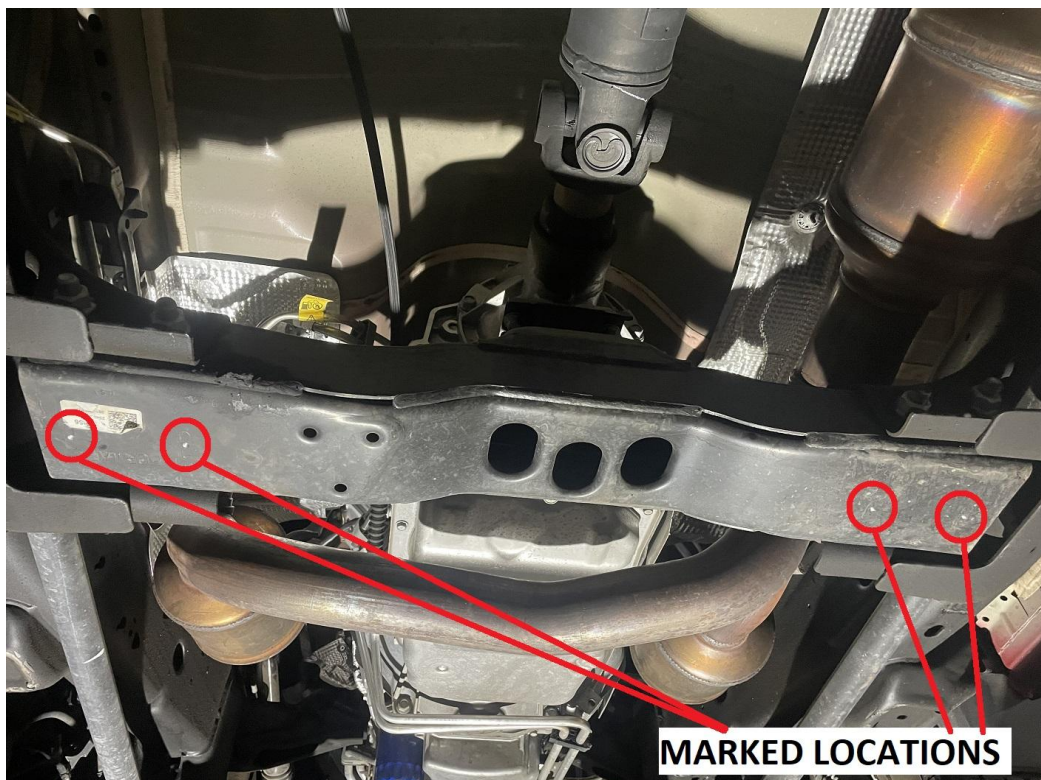
NOTE: 4WD applications will have a transfer case shield in the way. This is OK. Still hold it up against the transfer case shield and cross member and make your marks. The cat guard will be sitting below the transfer case shield. Alternatively you can remove the transfer case shield and reinstall it before cat guard installation (recommended).



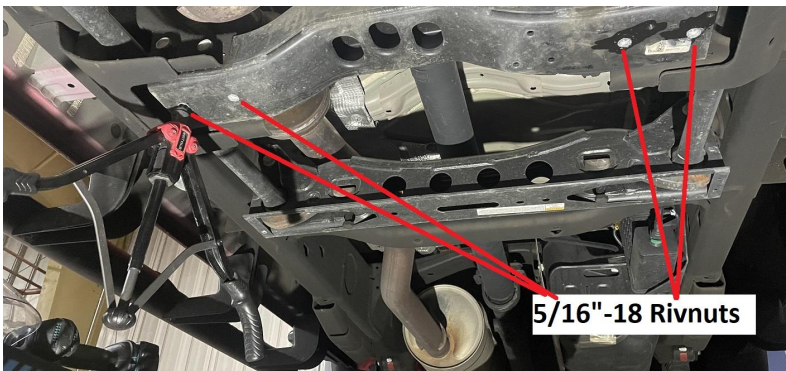




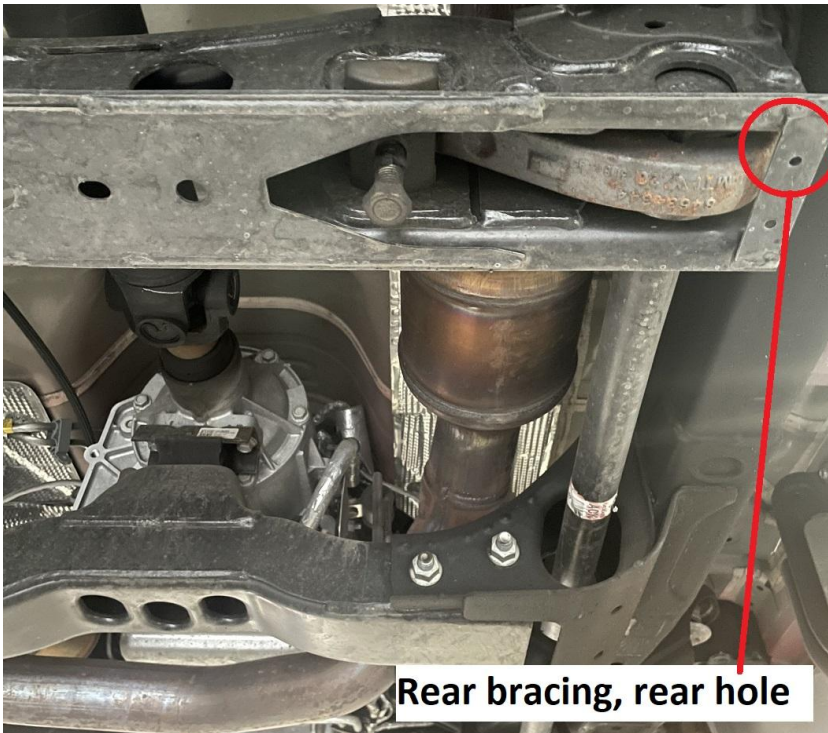
5.) Once you have all 4 of the slots marked, remove your cat guard. Then at the center of each slot drill a  $17/32$ " hole and install the  $5/16$ "-18 rivnuts.



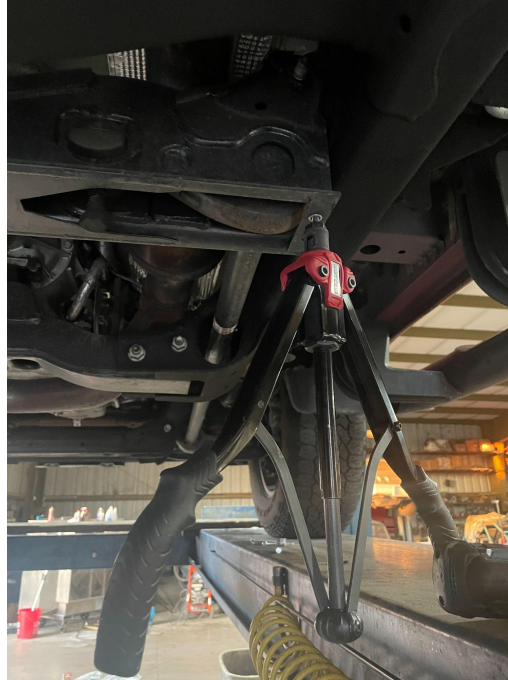




6.) Located the OEM hole in the rear bracing on the vehicle located on the passenger side. There will be two holes. Drill out the rear hole with a  $\frac{25}{64}$ " drill bit and install a  $\frac{1}{4}$ -20 **SHORT** rivnut.

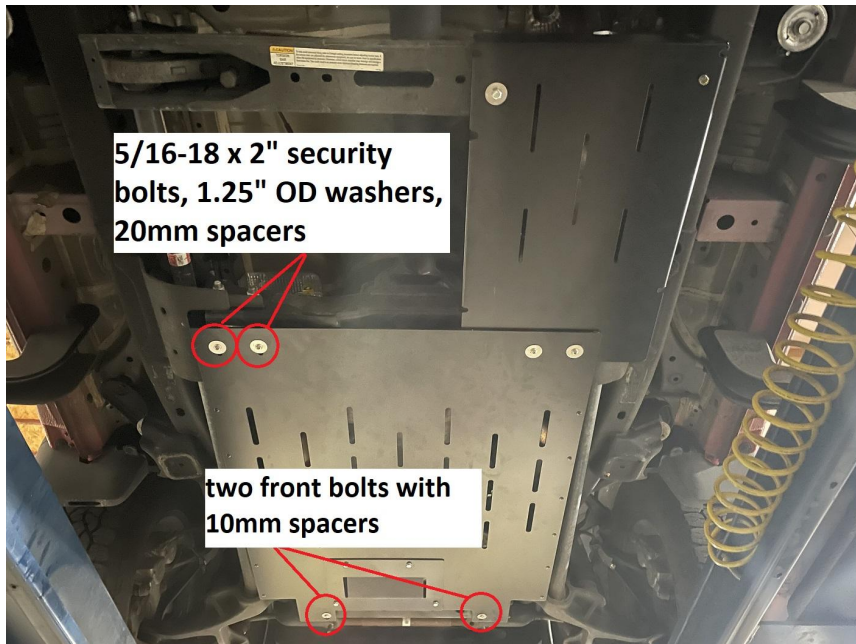




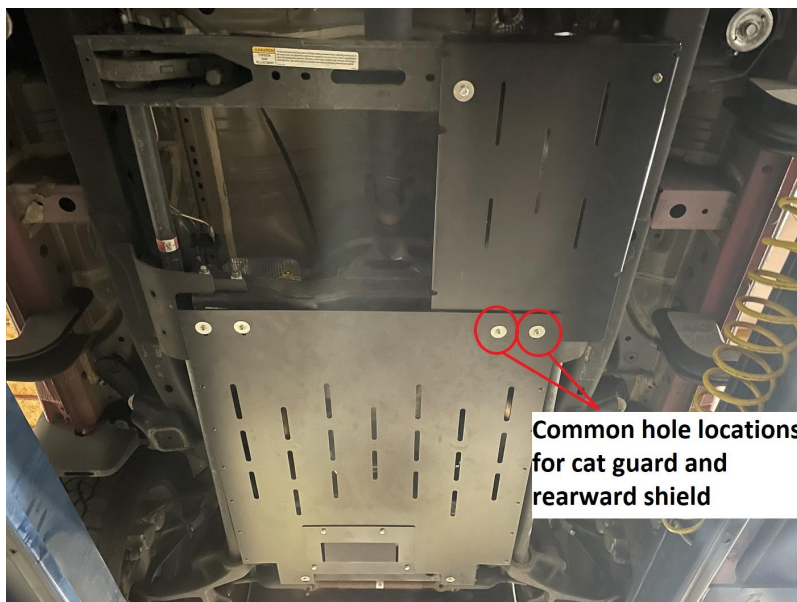


7.) You can now install your cat guard. If you removed your transfer case shield, reinstall it now. The front two holes in the cat guard, as discussed from step (2) will utilize either a M10 security bolt/washer, or ¼”-20 x 1.5” security bolt/washer. In either application you will use a 10mm spacer between the guard and frame. **Hand tighten.**

Along the crossmember you will be using 5/16”-18 x 2” long security bolts, 1.25” OD washers, and 20mm spacers. **For now, only install the two on the left side of the crossmember.** **Hand tighten.**



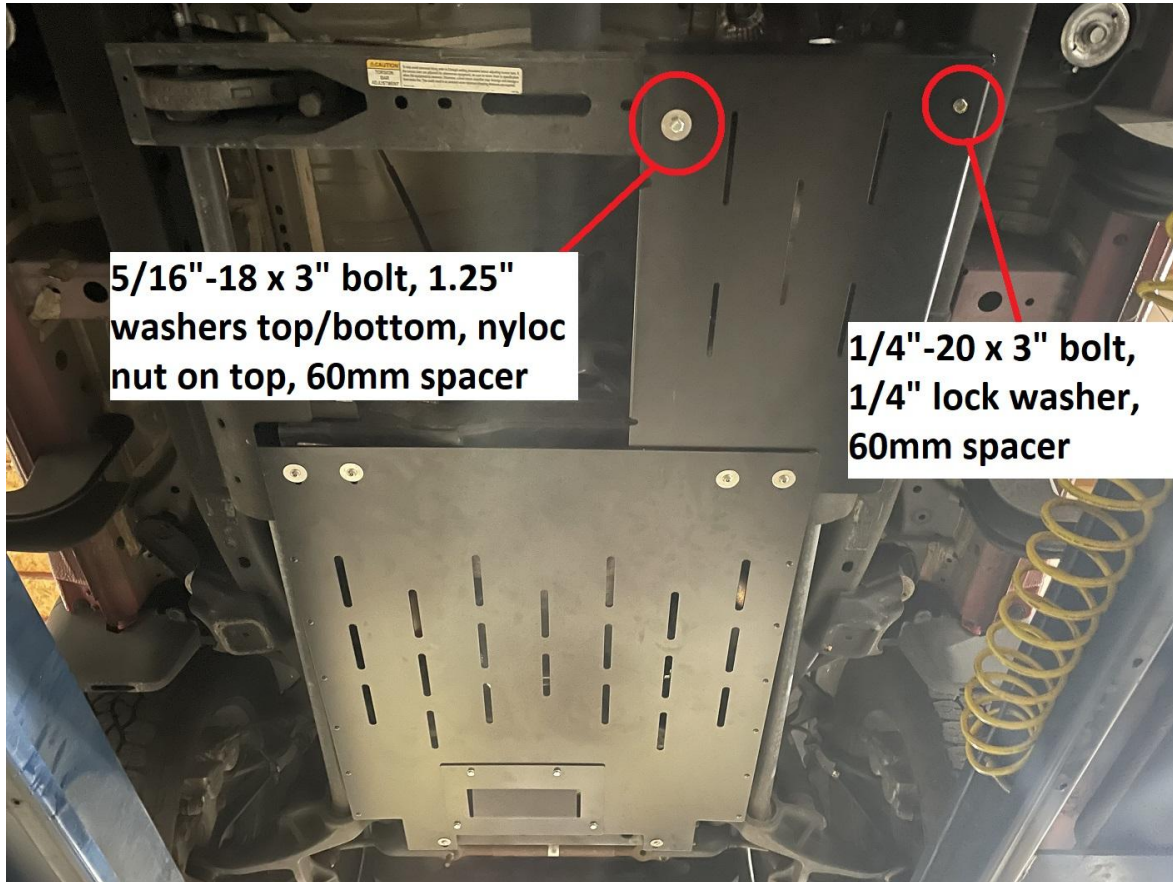
8.) Now install the rearward shield simultaneously. It sits on top of the cat guard using two of the common holes on the right side. Use 5/16”-18 x 2” long security bolts, 1.25” OD washers, and 20mm spacers. **Hand tighten.**





9.) Now install the last rearward two bolts... **Hand tight.**

- The leftmost bolt uses a 5/16-18 x 3" bolt with 1.25" OD washers under the shield, and on the inside of the rear bracing (using an OEM hole here). On top install a 5/16 nyloc nut. **Between the shield and bracing use a 60mm spacer.**
- The right most bolt uses a 1/4-20 x 3" bolt with a 1/4" lock washer under the head, and a 60mm spacer between the shield and bracing.



10.) Once all pieces are installed, remove one bolt and apply blue threadlocker onto the threads, then reinstall it securely. Do this to **ALL** bolts except the 5/16" bolt with a nyloc nut on top. **SECURELY TIGHTEN ALL BOLTS.** Let the threadlocker sit for at least 30-60 minutes before driving the vehicle.

11.) Lastly, install the oil drain cover. It sits on the bottom side of the cat guard with **FOUR** 1/4-20 x 1" long bolts and lock washers. The opening must open toward the back and be upward to direct air above the guard.

**Top Side -  
air duct is upward**

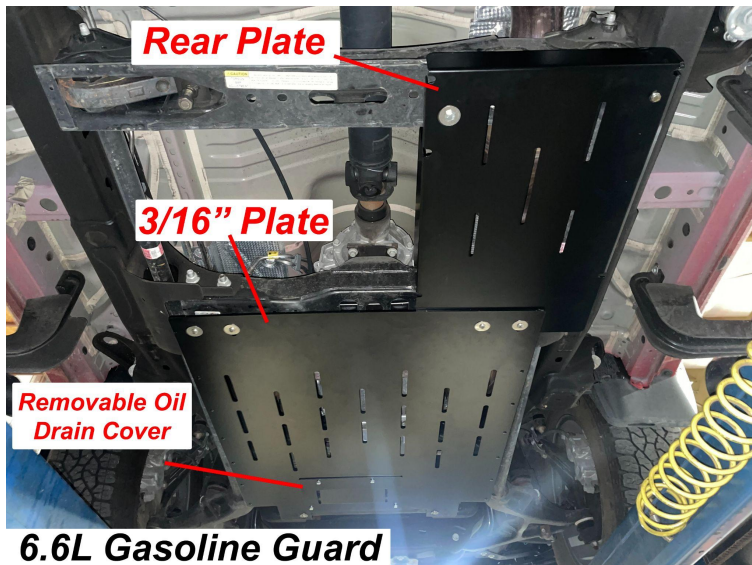
**Front of  
vehicle**



**Back of vehicle**



12.) 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.



PHONE: 661-809-0954 EMAIL: [costas@fspeinc.com](mailto:costas@fspeinc.com)  
THANK YOU :)