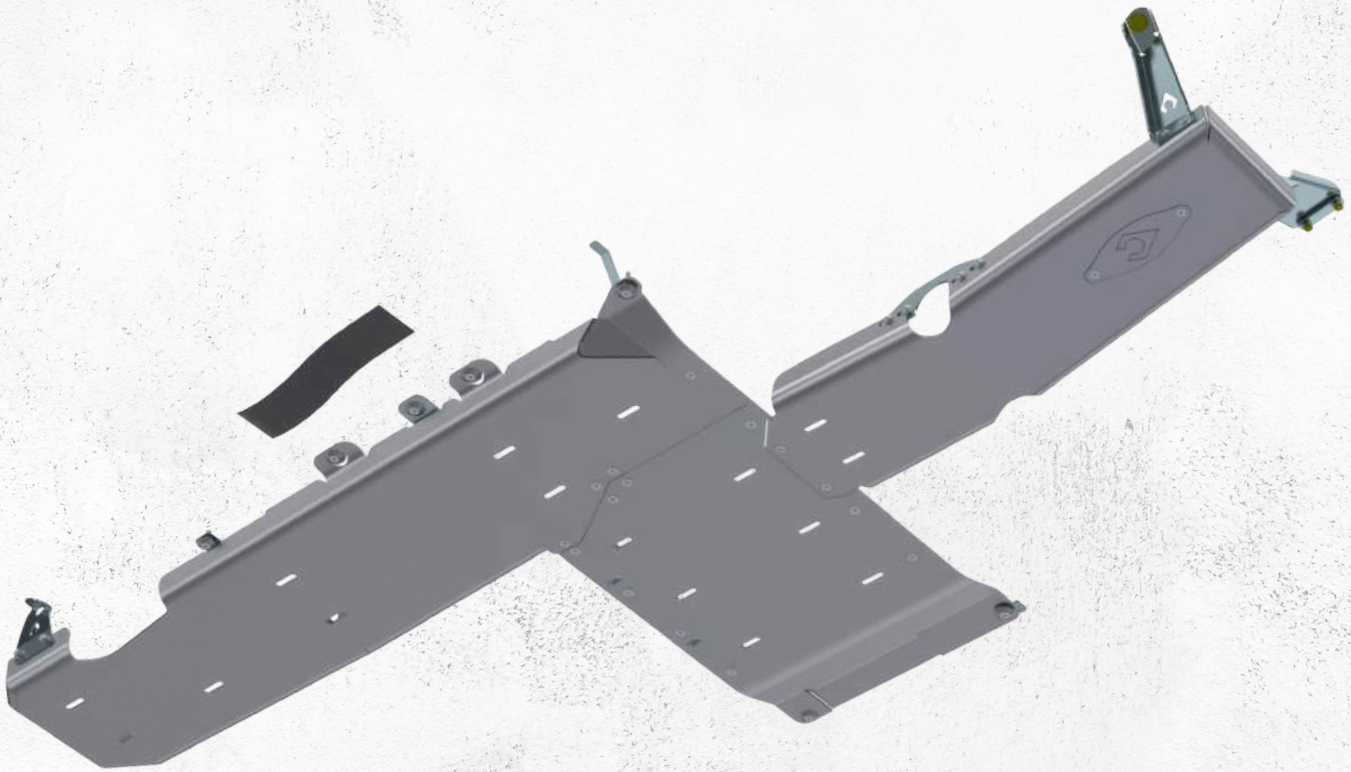




## PART # JL4161

# JLU 2018-20 FULL BELLYPAN WITH OIL DOOR - 3.6L GAS ENGINE ALUMINUM INSTALLATION INSTRUCTIONS



### ESTIMATED INSTALLATION TIME

3-5 hours

### REQUIRED SKILLS

- General Mechanics Skills
- Drilling

### REQUIRED TOOLS & SUPPLIES

- 18mm socket
- 17mm socket
- 15mm socket
- 13mm socket
- 13mm wrench
- Ratchet strap
- 9/16 inch wrench
- 9/16 inch socket
- Electrical tape
- 7/32 inch allen wrench
- ratchet extension 2 inch
- ratchet extension 6 inch
- screw driver
- flat pry bar
- safety glasses
- pliers/vice grips
- screw driver flathead
- jack/vehicle lift (optional)
- 13mm ratchet wrench (optional)
- Drill

### NOTES:

- This kit replaces original SKU JL4102
- Boxes include BP1007, BP1482, BP1536, BP1675
- Component appearance in instructions may vary from those received



## WARNING MESSAGES

This product demands a basic understanding of mechanical procedures and should only be installed by individuals proficient with mechanic's tools. Any tasks involving welding or cutting parts should be performed by trained professionals. Artec Industries disclaims responsibility for mishaps arising from improper installation, or any damage or accidents resulting from cutting or welding tasks. Exercise caution and seek professional help as required

## SAFETY

1. We've furnished a written installation guide, along with relevant details, to aid you in making safety-conscious decisions.
2. While these guidelines will highlight potential risks, it's crucial to exercise your personal judgment when performing any required steps.
3. Before initiating any tasks, it's essential to conduct a job safety analysis to identify specific hazards in your situation and take measures to eliminate or protect against them.
4. Before commencing the installation of this product, make sure you familiarize yourself with and fully understand all safety warnings and guidelines.

## DISCLAIMERS

All Artec Industries products should be installed by a competent, certified individual following the intended installation instructions for each product. Incorrect installations not only nullify any warranties but could also lead to product damage or even damage to the vehicle it's installed on. Prior to installation, carefully read all provided instructions or manuals, and watch any associated videos. For any doubts or queries, reach out to Artec Industries before beginning the installation process.

Many products necessitate lifting and supporting the vehicle off the ground. It is the installer's responsibility to ensure this can be done safely and that the right equipment is at hand to carry out the installation. Artec Industries installation instructions presume the installer is competent to lift the vehicle safely and correctly.

Modified vehicles won't perform identically to their stock counterparts. It's incumbent upon the vehicle owner to understand the alterations such modifications will bring to the vehicle's driving dynamics. These might encompass (but aren't limited to): changes in handling, braking, rollover angle, and potential incompatibilities with the factory-installed anti-lock braking systems, stability control systems, or traction control systems.

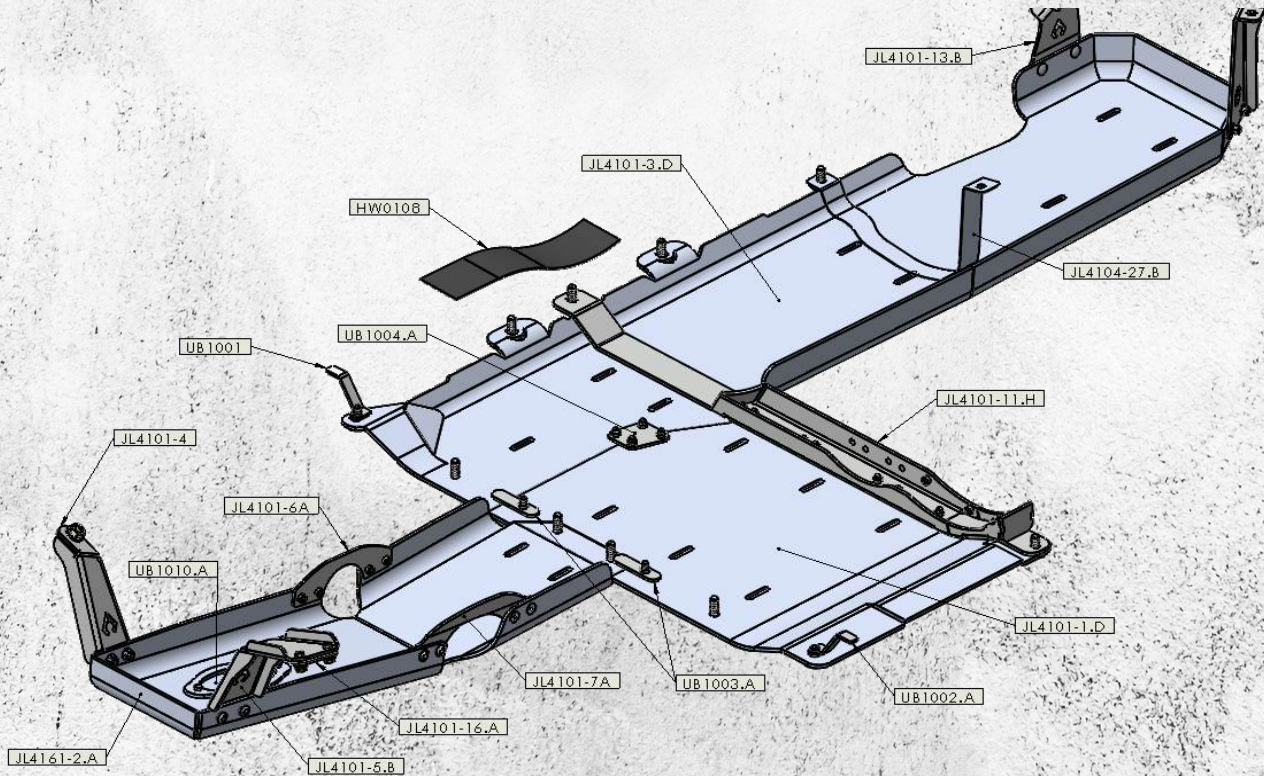
## SPECIAL NOTES

- This product requires removal of the factory fuel tank skid which supports the plastic fuel tank. Prior to beginning installation, ensure that you have 1/4 tank of fuel or less in the vehicle.
- Unless otherwise noted, all hardware should be **LOOSELY** installed by hand until the very end of installation when all components are attached.



## JL4161 PARTS BILL OF MATERIALS

Please confirm you have all the listed parts below BEFORE beginning your installation. If any parts are damaged or missing, KEEP ALL ORIGINAL BOXES and PACKAGING and contact us.



NOTE: The part numbers indicated above end in a "." and "letter" which indicate the revision number for the part. The etched part number on your physical parts do not need to match the above drawing revision exactly.

## HK4161 HARDWARE BILL OF MATERIALS

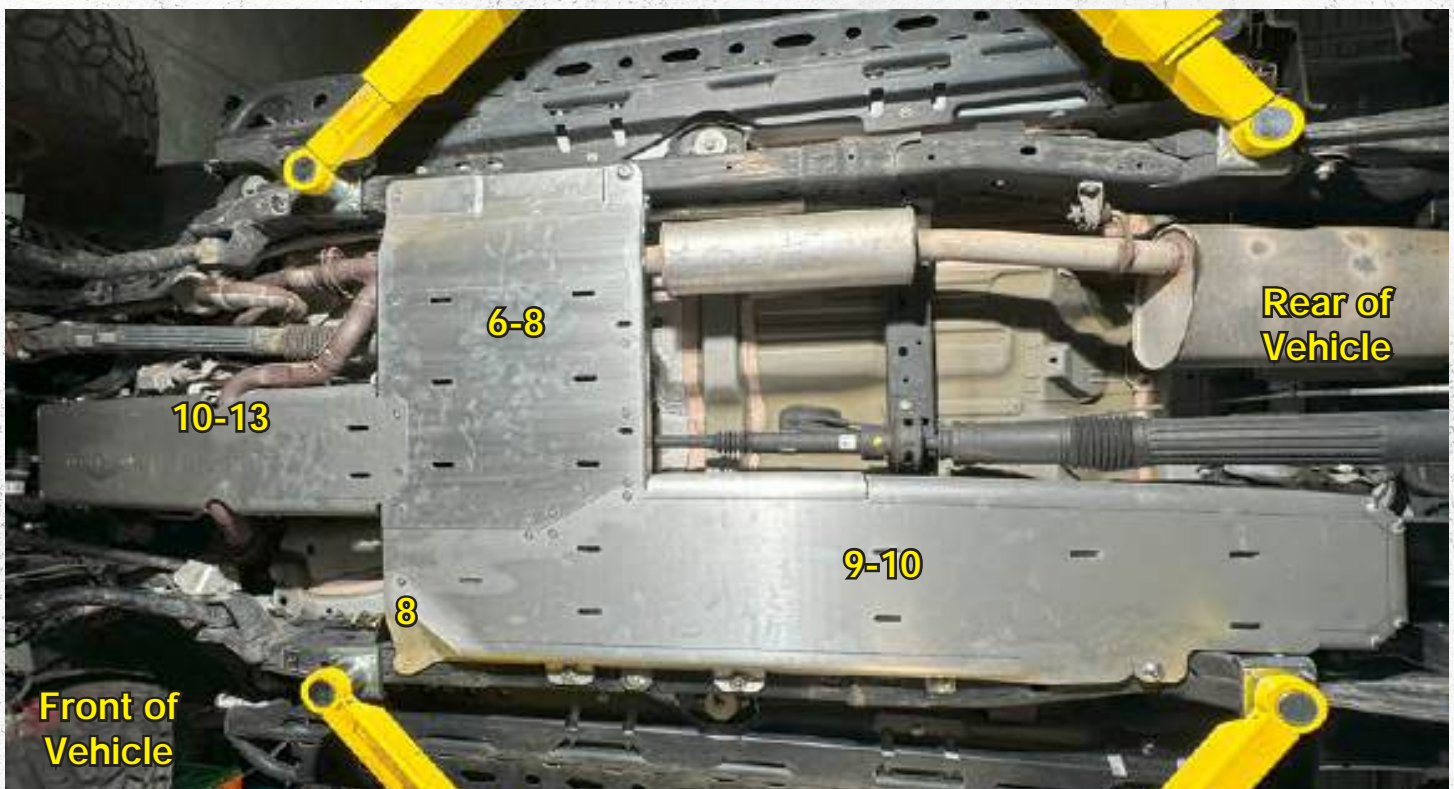
PART NUMBER	DESCRIPTION	QTY.
HW0019	3/8"-16 Nylock Insert Hex Nut Clear Zinc	8
HW0035	3/8" 16 x .75" long button head screws ZINC plated	6
HW0058	3/8"-16 x 1.0" Long Grade 8 Hex Head Cap Screw Yellow Zinc	2
HW0059	3/8" Flat Washer Type 1 Yellow Zinc	20
HW0061	3/8 x 1 flat head bolt	11
HW0067	5/8"-11 x 1.0" Grade 8 Hex Head Cap Screw Yellow Zinc	1
HW0068	5/8 - 11 Serrated Hex Flange Lock Nut Zinc	1
HW0069	5/8" F436 Flat Washer Type 1 Yellow Zinc	1
HW0101	3/8 x 16 x 1 Button Head Cap Screw Alloy Steel Zinc Plated	4
HW0105	3/8 x 1in carriage bolt	4
HW0141	CUSTOM M12 - 1.5 x 40mm long flat head	10



## STEP LOCATION GUIDE

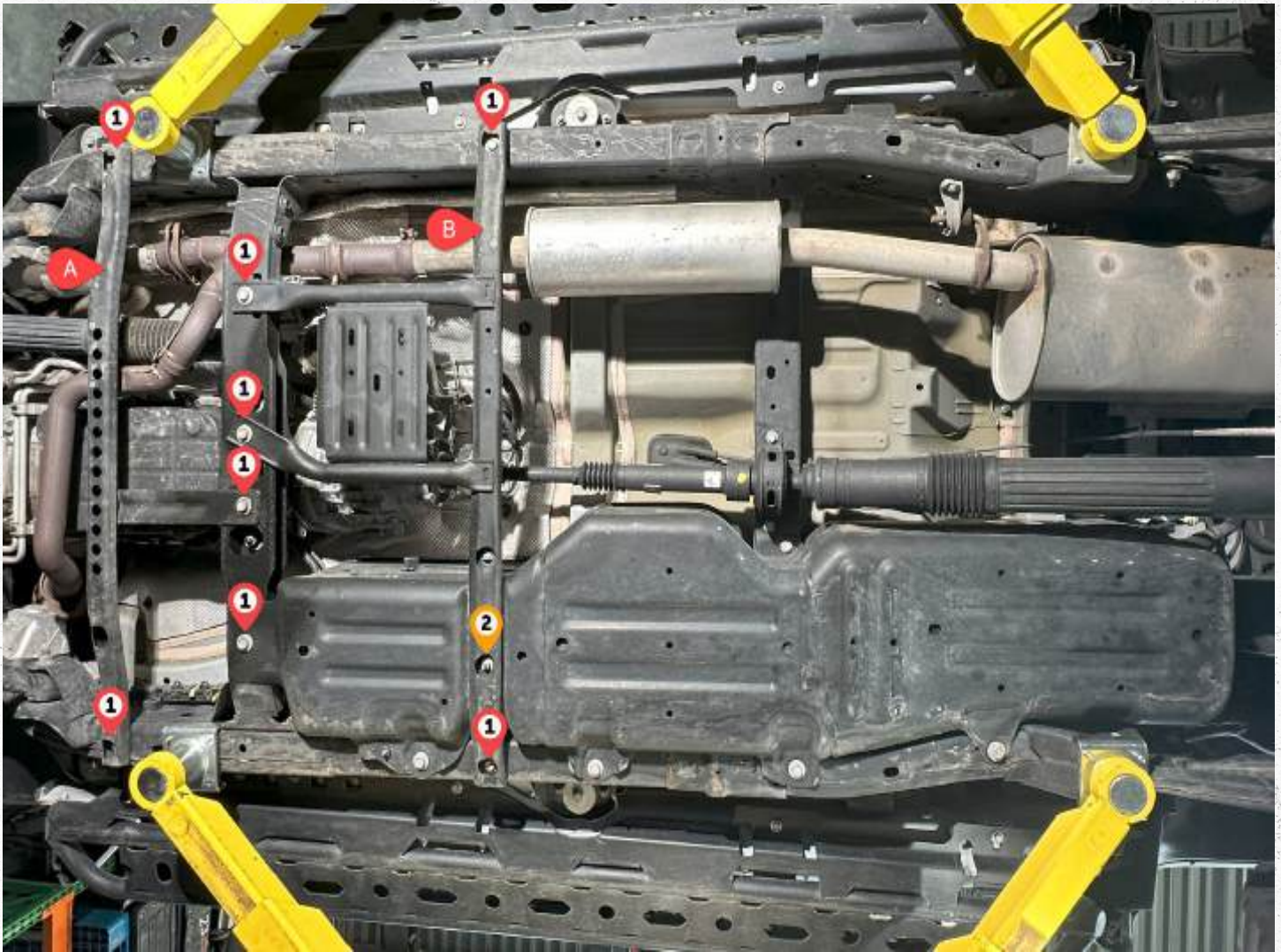


NOTE: Images may differ from your exact model. These are general instructions for JT, JL and JLU models. Some locations may differ slightly.





## DISASSEMBLY INSTRUCTIONAL GUIDE

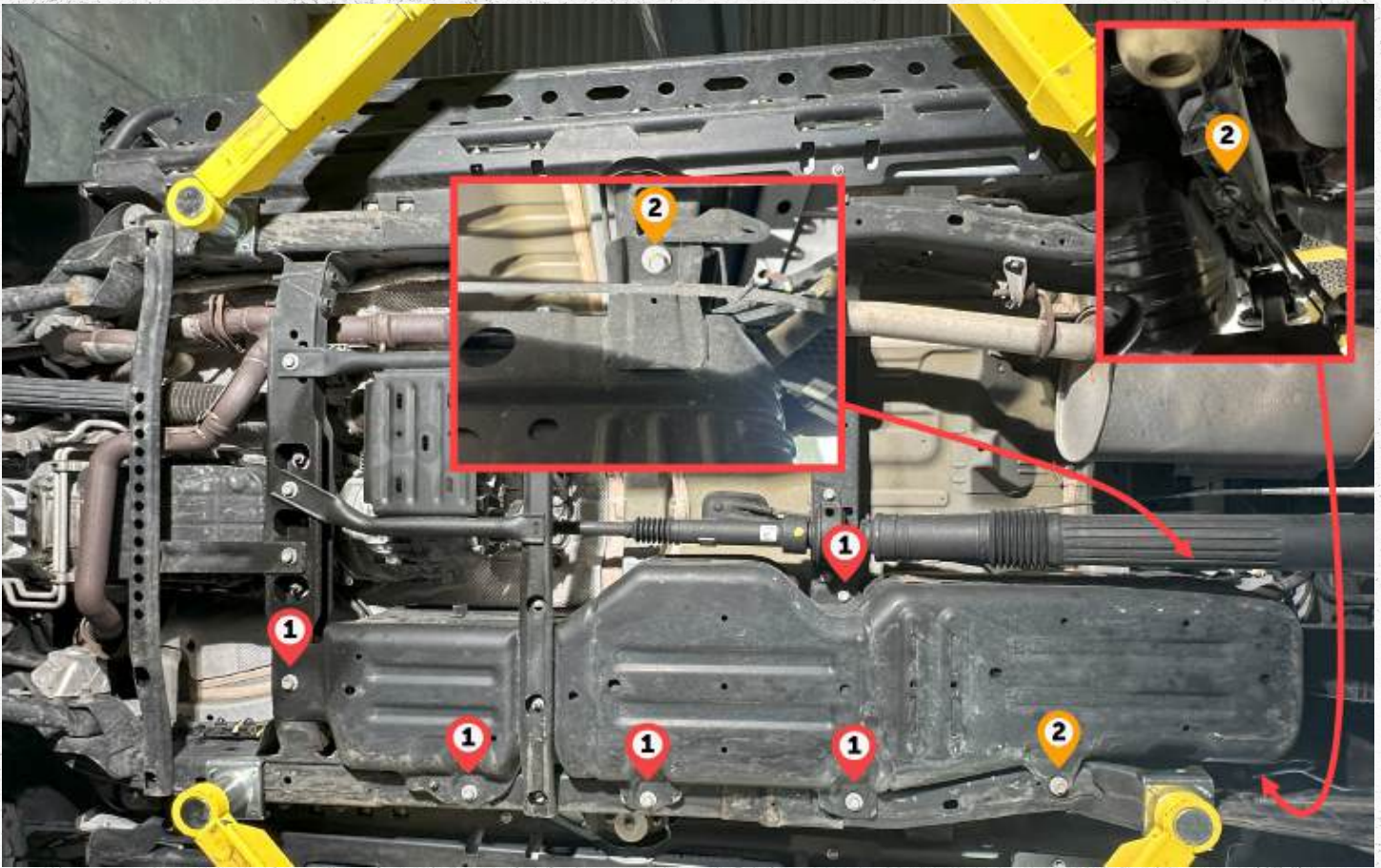


### Step 1:

A: Remove the transmission skid by removing 3 - 12mm bolts **1** using a 18mm socket.

B: Remove transfer case & exhaust skid by removing 1 - 8mm bolts **2** using 13mm socket AND 4 - 12mm bolts **1** using a 18mm socket.





**Step 2:**

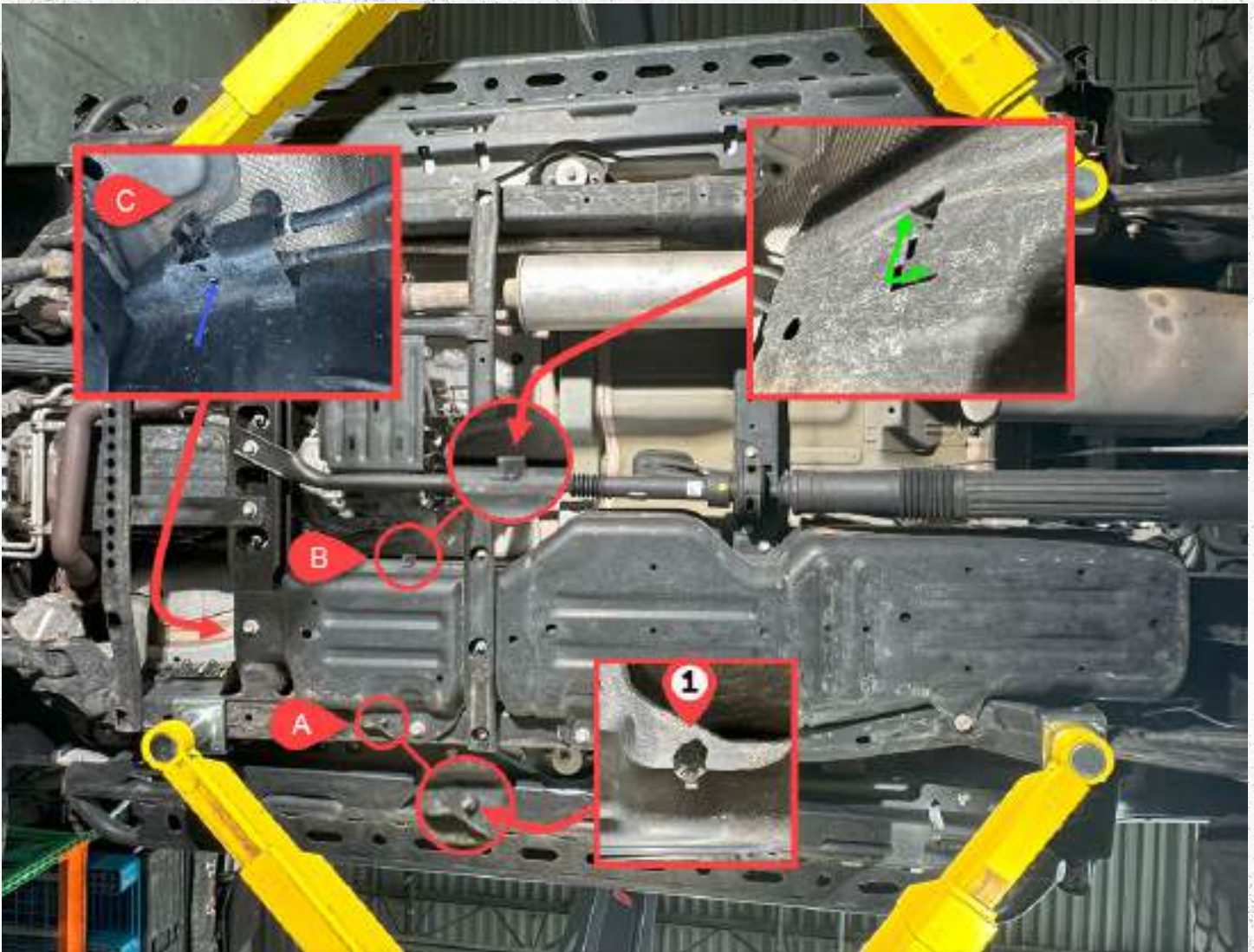
**A:** Remove fuel tank skid by removing 5 - 12mm bolts **1** using a 18mm socket.

**B:** Loosen the 3 - M12 OEM bolts **2** using the 18mm socket.

**C:** Detach the clips holding the fuel lines to fuel tank skid.

**NOTE:** Location **2** on the frame is only on JT Gladiator models. This does not apply to JL and JLU Wrangler models.





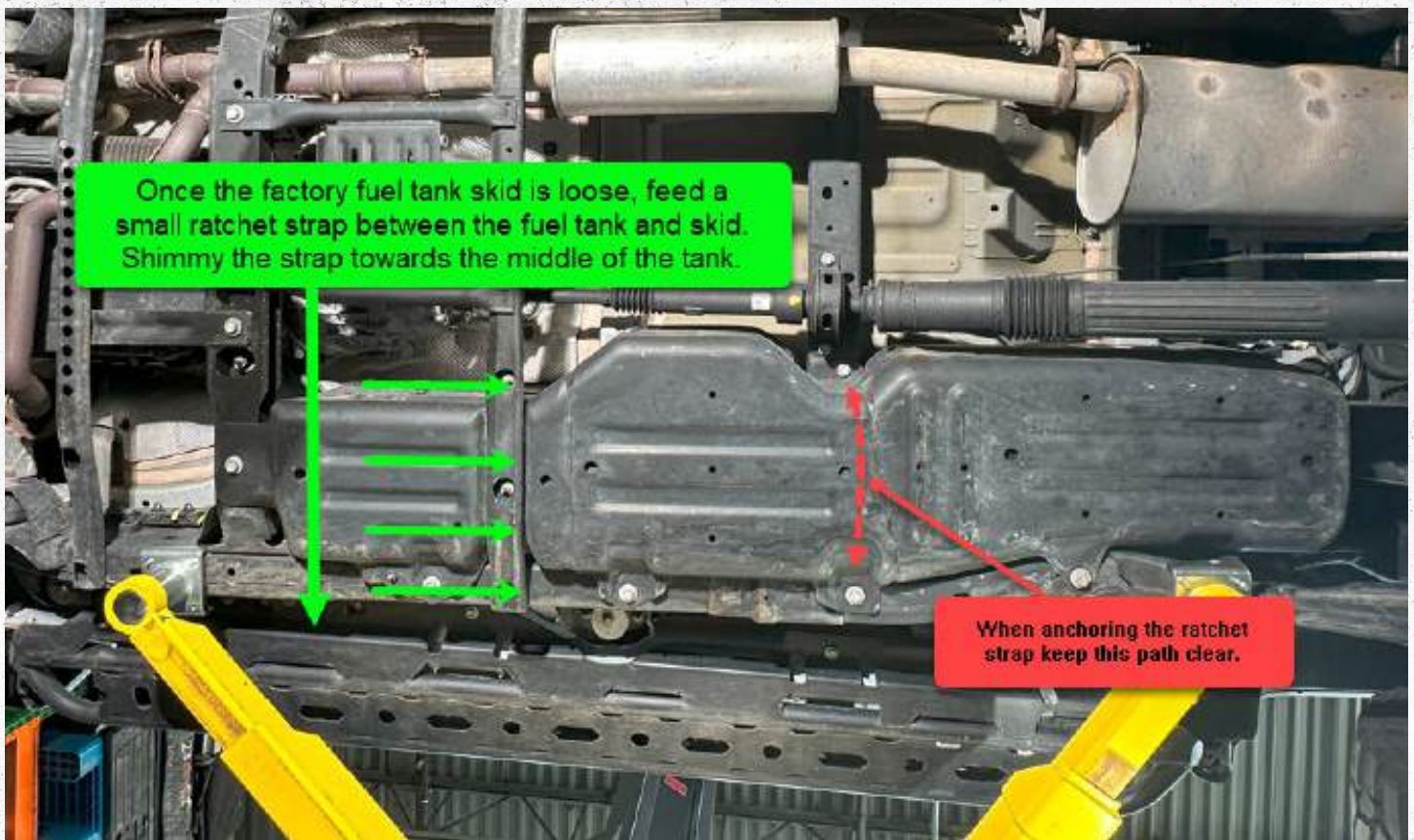
**Step 3:**

**A:** Remove 1 - M8 bolt **1** using a 13mm wrench/socket.

**B:** Using pliers or vise grip pull this tab down and push through the slot to disengage it (**GREEN**) arrow

**C:** Disconnect the fuel line from the front of the factory fuel tank skip by pushing the Christmas tree connector up through the bracket (**BLUE**) arrow.



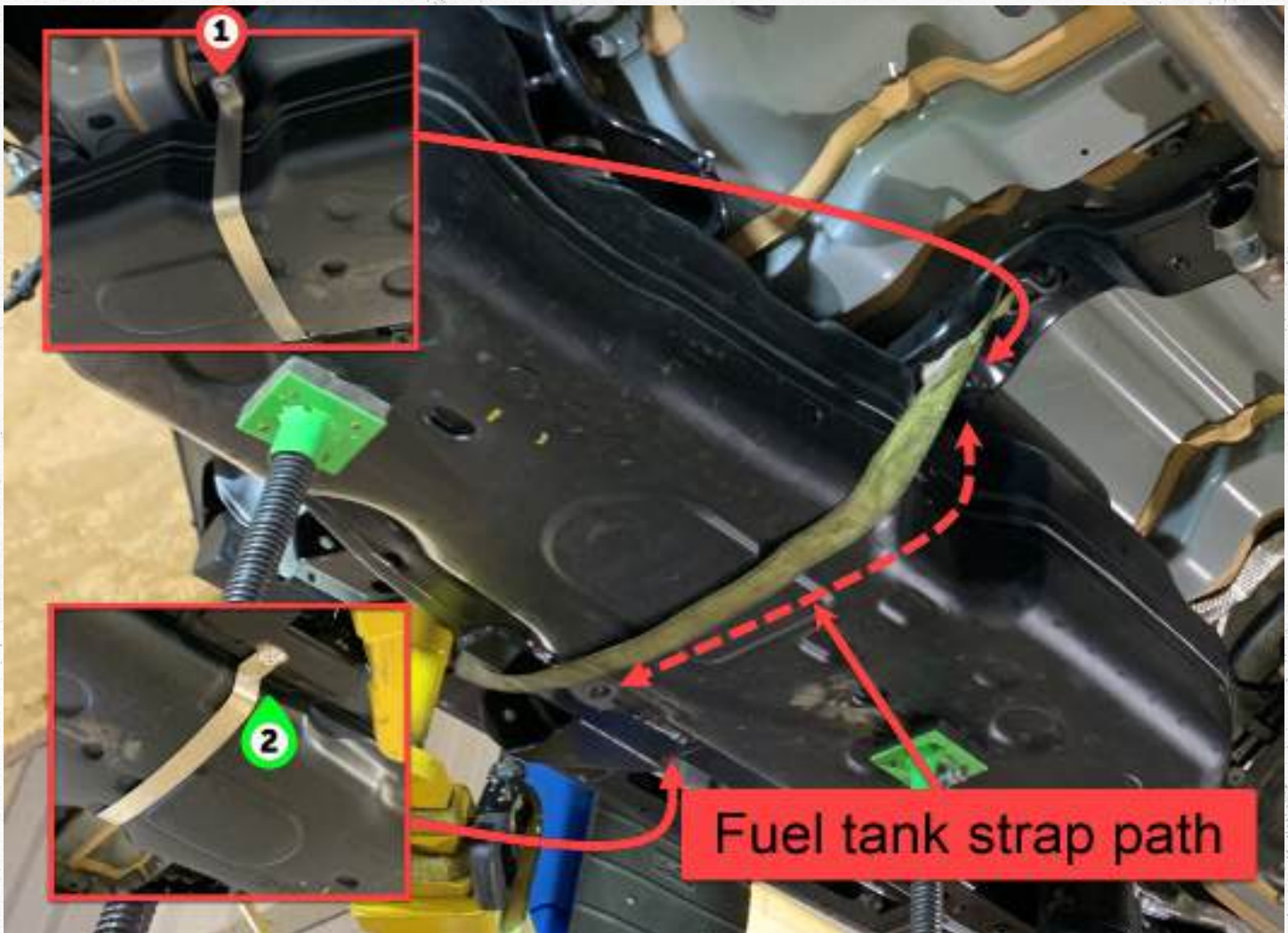


Step 4: Using a small ratchet strap you will suspend the tank so that you can remove the factory fuel tank skid. Make sure to anchor the ratchet strap to something substantial. After suspending the tank you can remove the fuel tank skid. This can take some time, and can be frustrating but it is necessary. Having less than 1/4 tank of fuel helps here.

**SAFETY NOTE:** When manipulating the skid and fuel tank, be careful not to damage or puncture the fuel tank. The fuel tank skid can be heavy and awkward to drop. Have a second person assist or use a jack to support the skid as you remove it. Ensure the ratchet strap is securely holding the fuel tank in place before attempting to remove the skid plate.

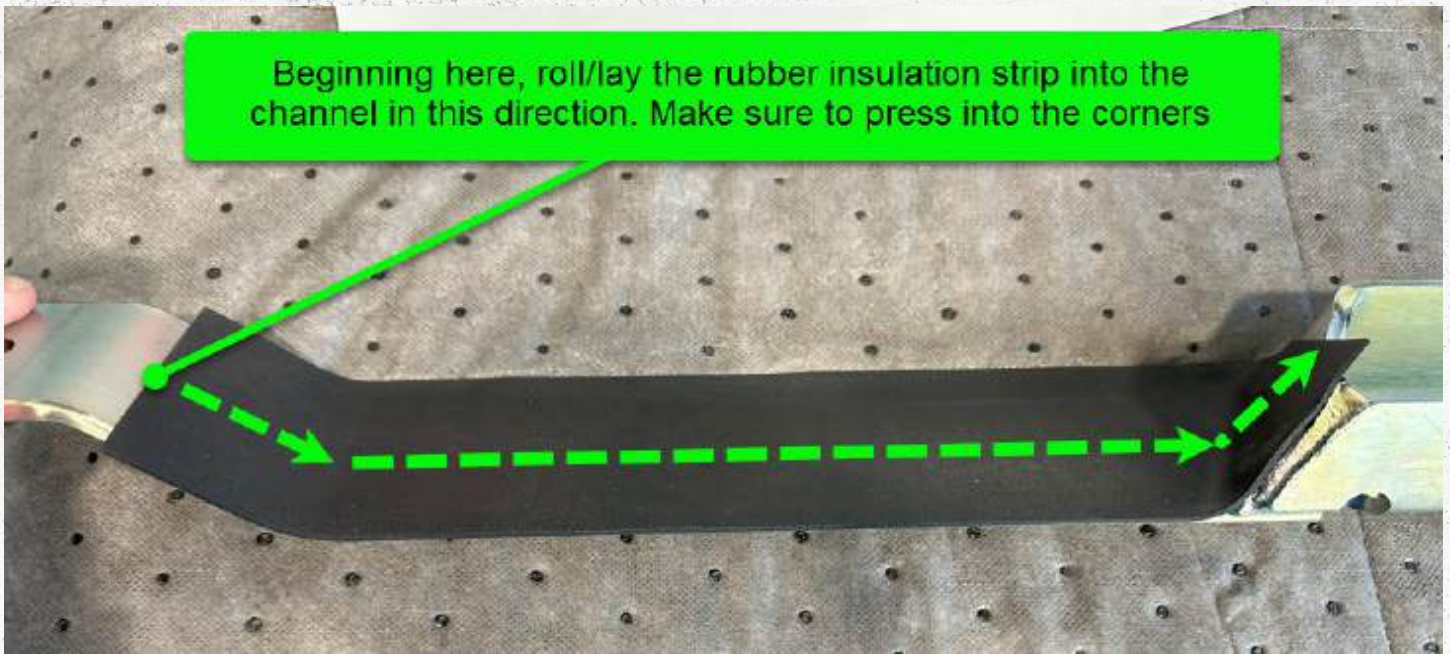


## ASSEMBLY INSTRUCTIONAL GUIDE



Step 5: Once the factory fuel tank skid has been removed, assemble the fuel tank strap JL4104-27 by installing 1 - OEM 12mm bolt **1** with a 18mm socket AND 1 - 12mm x 40mm counter sink bolt & counter sink washer **2** using the 7/32 allen wrench. The fuel tank strap hardware can be tightened at this stage. Once the fuel tank strap is mounted you can remove the ratchet strap.





Step 6. Remove the adhesive backing strip from the rubber insulation and attach it as seen above. Make sure to lay it on squarely and press it into the corners.



Step 7. Loosely install the provided crossmember using 1- M12 x 40 flathead bolt with the tapered washer 1 as shown below.





Step 8: Insert the 2 nut plates as shown above.



Step 9:  
Motor mount location shown above.



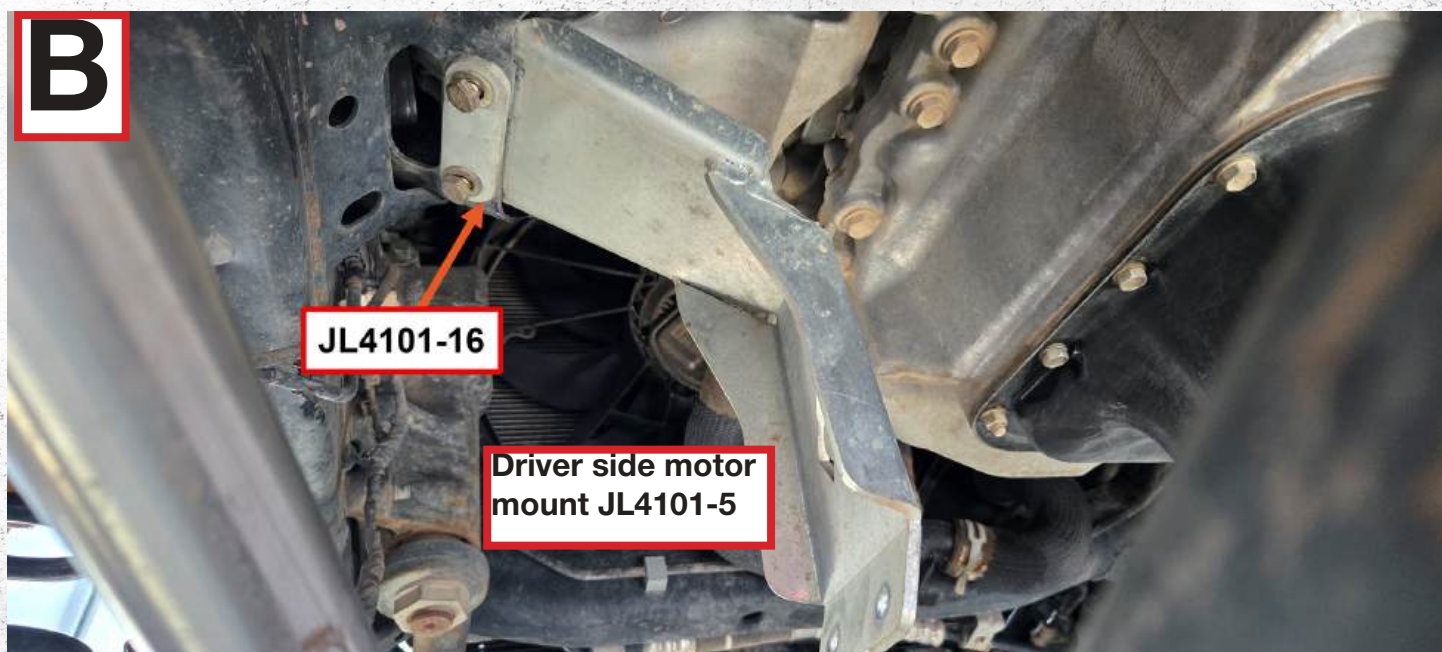
**A**

Passenger side motor  
mount JL4104-4

Step 10:

A: Loosely install the Passenger SIDE motor mount bracket JL4101-4 using 1 - 5/8" bolt with 5/8" nut.

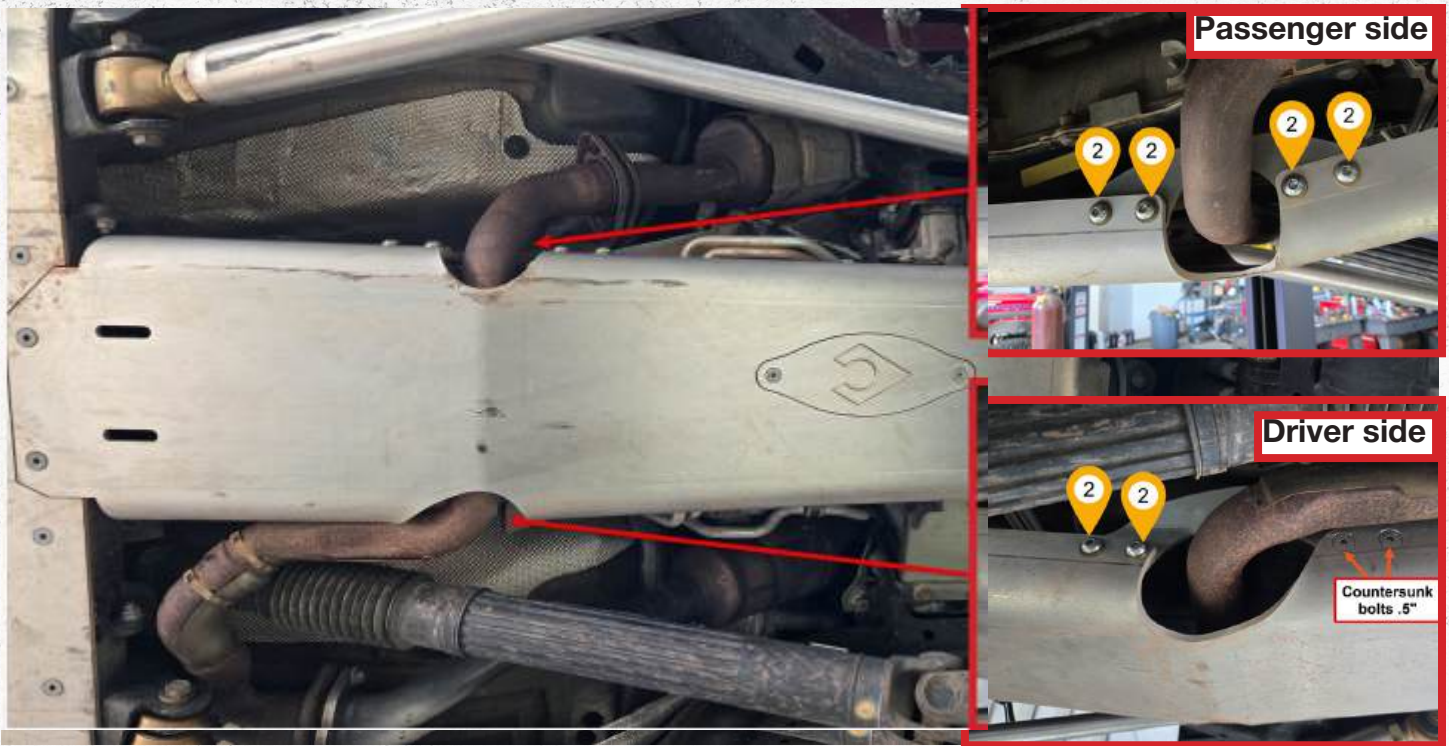
B: Loosely install the Driver SIDE motor mount bracket JL4104-5 using 2 - 3/8" x1" hex head bolt with grade 8 washer with JL4101-16.

**B**

JL4101-16

Driver side motor  
mount JL4101-5





**Step 11:**

With the engine skid in place, Install driver side JL4101-7 two 3/8" button head bolts with zinc washers and two 3/8" countersunk bolts. Tighten the two 3/8 countersunk bolts first, then the button heads before installing the passenger side.

Install passenger side JL4101-6 using four 3/8" button head bolts with zinc washers.



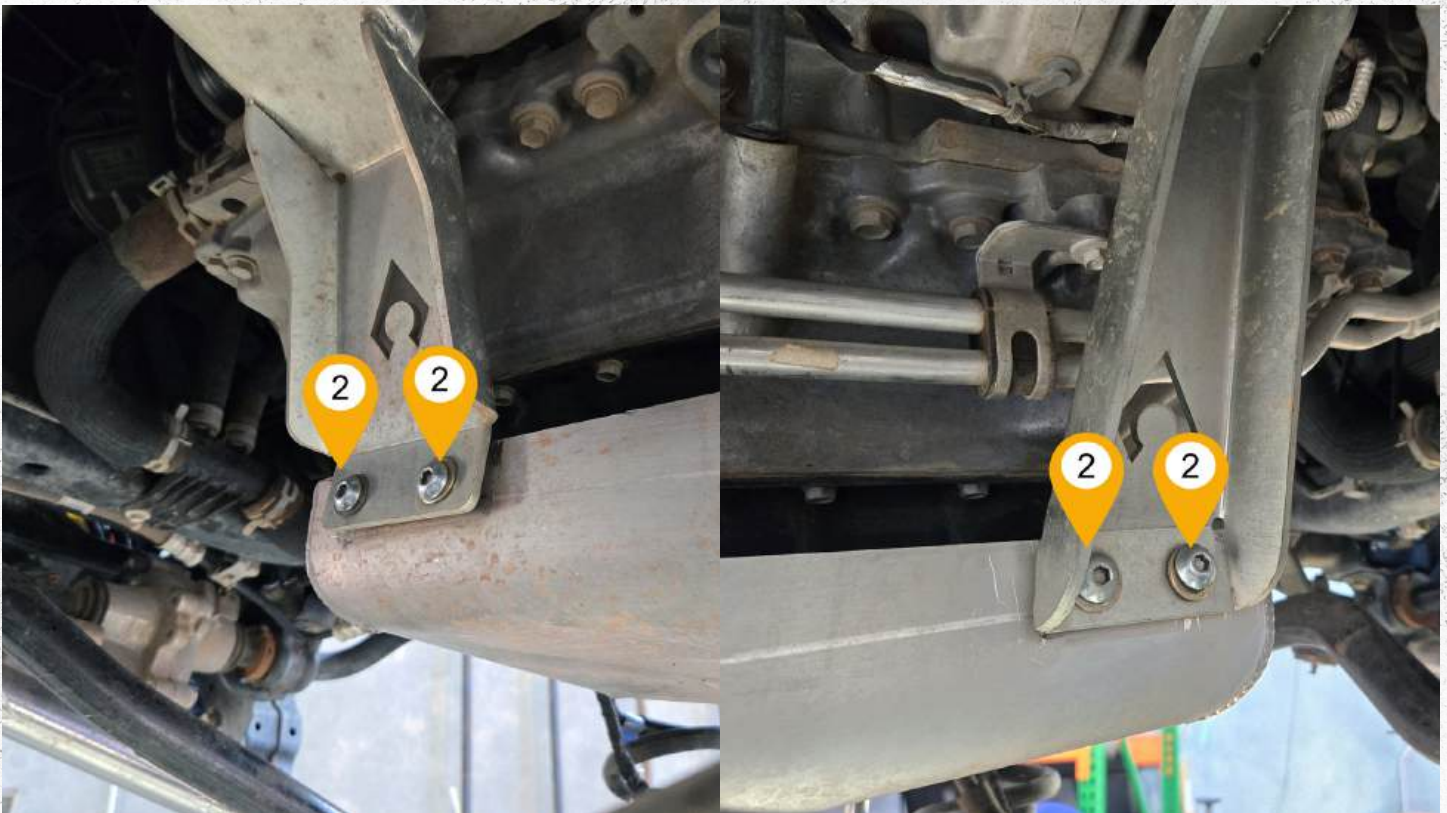


**Step 12:**

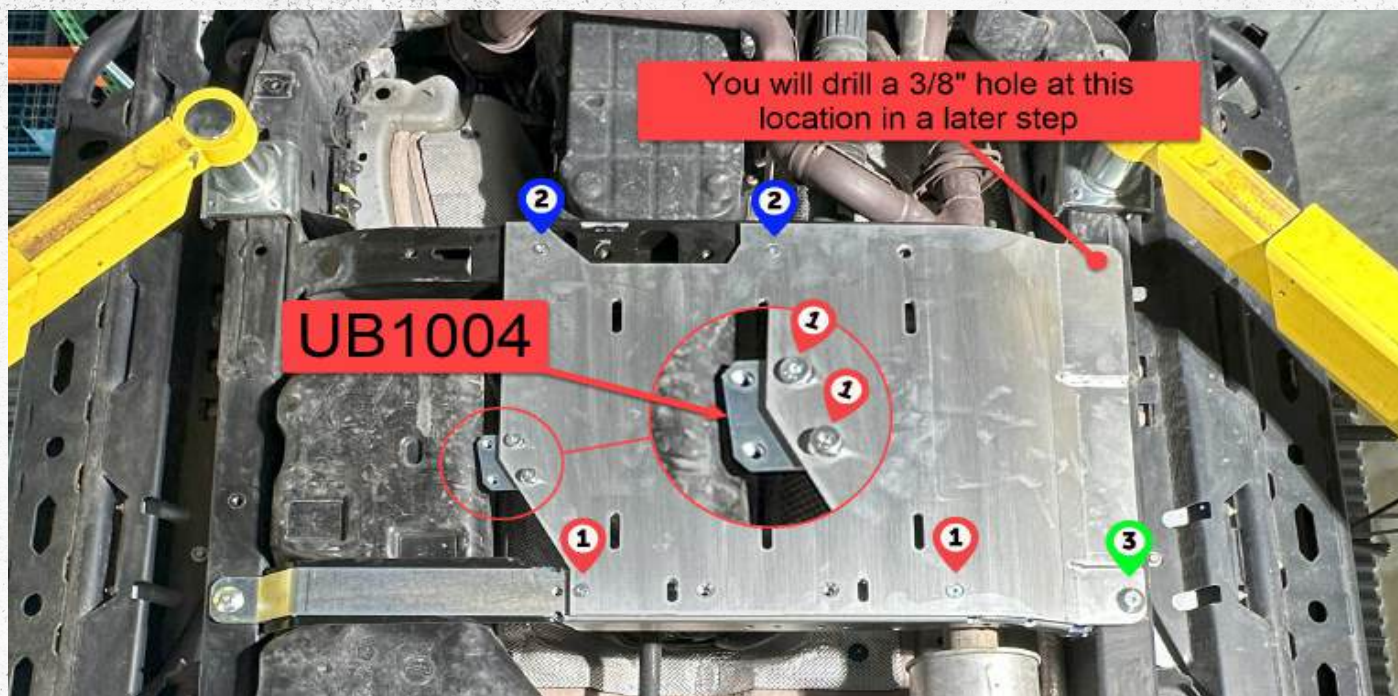
**A:** Loosely install the engine skid using 2 - M12 x 40mm custom flathead bolts **1** using the 7/32 allen wrench.

**B:** Loosely attach the engine skid to the motor mount brackets using using 4 - 3/8 x 1" button head bolts and 3/8 zinc plated washers **2** with the 7/32 allen wrench.

(image may not reflect exact vehicle)





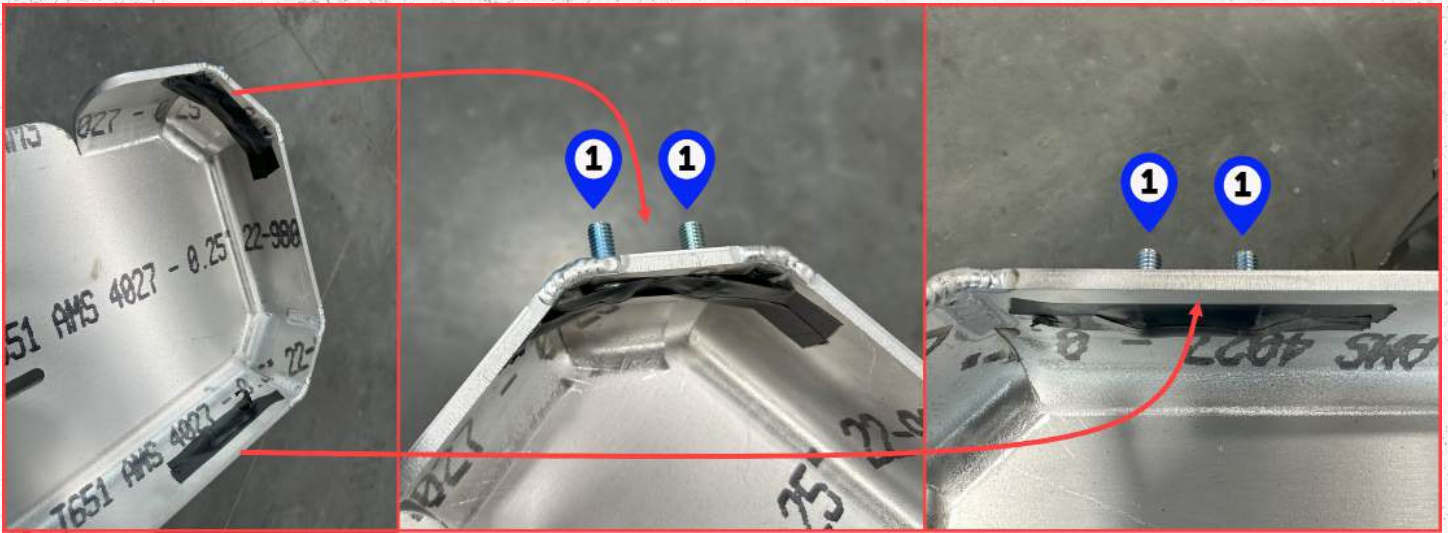


Step 13: Loosely secure the T-case skid onto the support crossmember and factory crossmember using 2 - 3/8 x 1" flat head bolts **1**, 2 - 3/8 x 1.5" **2** and 1 - M12 X 40mm bolts with the tapered washer **3** using the 7/32 Allen wrench. In at later step you will drill a hole in the frame marked above (**RED**).

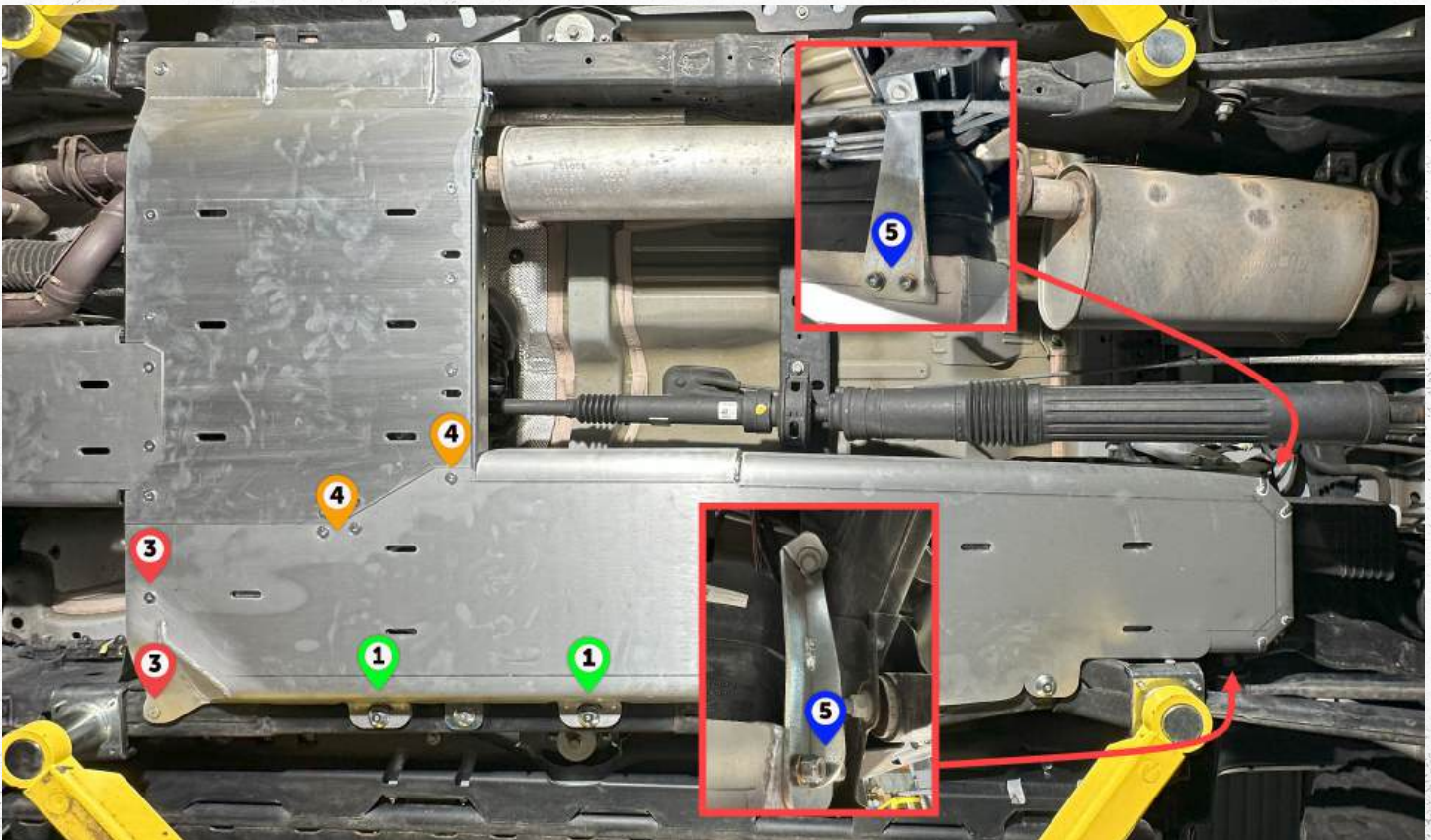


Step 14: Loosely install fuel tank inner JL4101-14 and outer JL4101-13 support brackets using 2 - OEM 12mm bolts **1** (removed from original skid) with a 18mm socket.



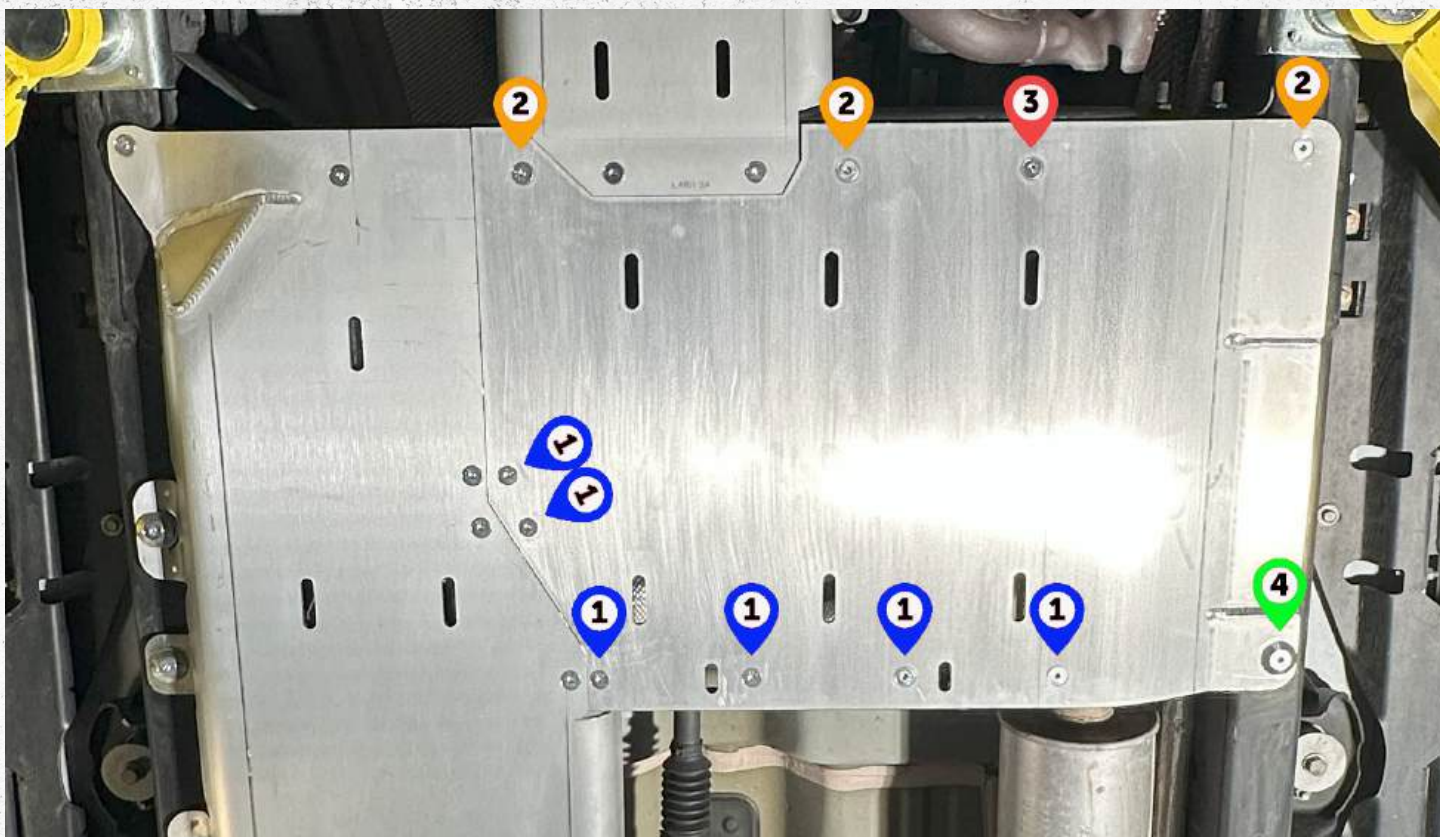


Step 15: Using tape secure 4 - 3/8" x 1" carriage bolts **1** to the fuel tank skid prior to installing the fuel tank skid onto frame and support crossmember. Electrical tape works well.



Step 16: Using the 7/32 Allen wrench loosely assemble the gas tank skid with **4** 3 - 3/8 x 1" flathead bolt, **1** 3 - M12 x 40mm flathead bolts with tapered washers AND **3** 2 - M12 x 40mm flathead bolt. Assemble the fuel tank skid to the fuel tank skid brackets using **5** 4 - 3/8 nyloc nuts with 4 3/8 zinc plated washers using a 9/16 socket or wrench.

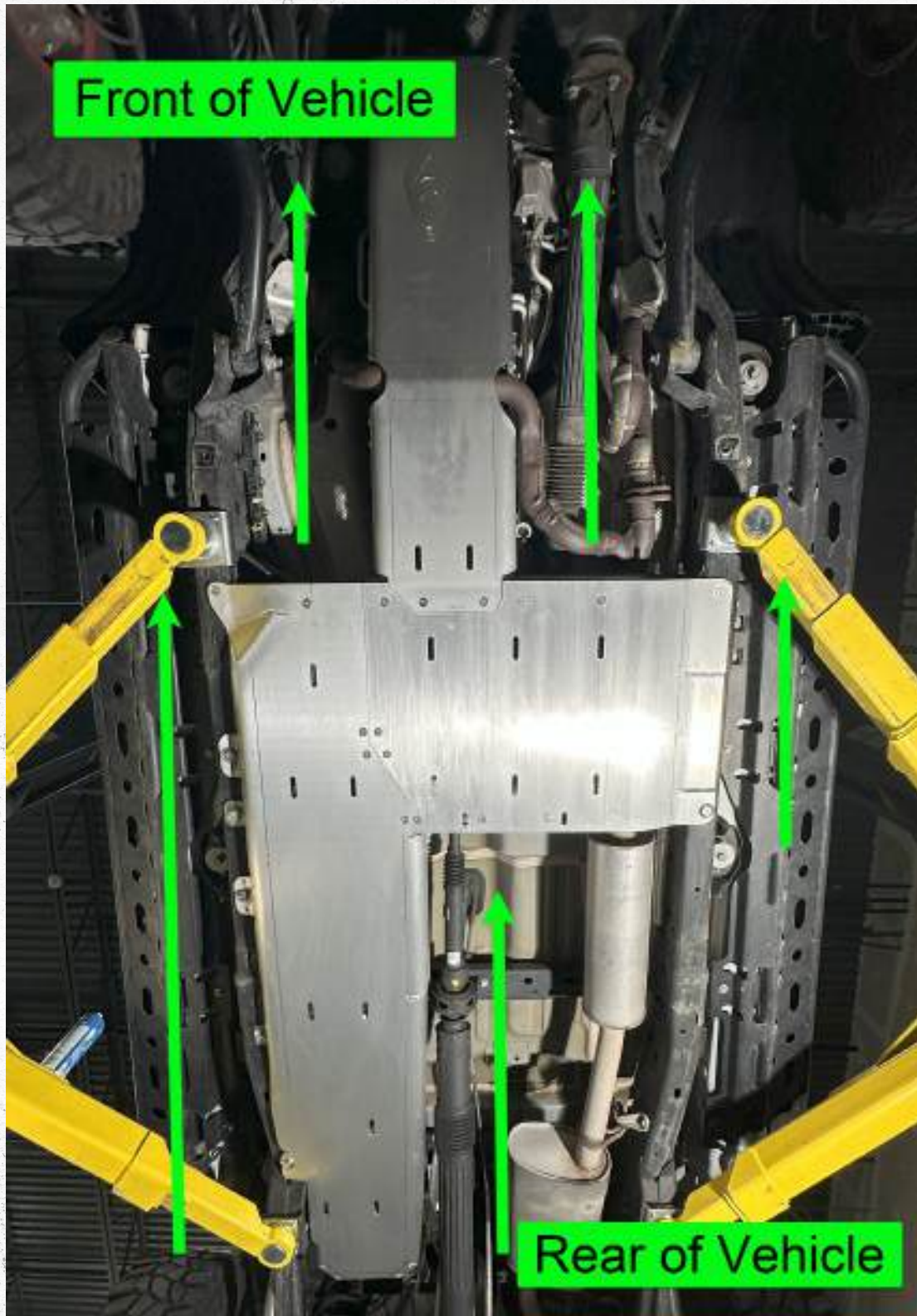




Step 17: Loosely install the balance of the transfer case hardware as shown above. Verify hardware is as follows: 3 - 3/8 x 1.5" flat head bolts **2**. 6 - 3/8 x 1" flat head bolts **1**. 1 - M12 x 40 custom flat head bolt **3**. 1 - M12 x 40 custom flat head bolt with machined tapered washer **4**.

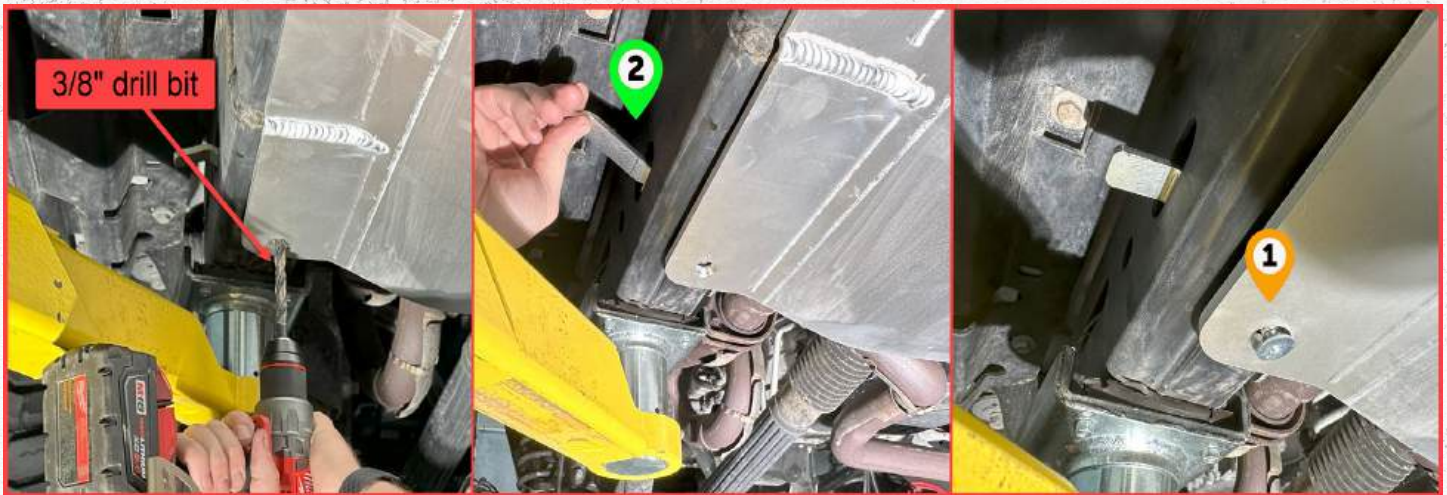


## JT4155 INSTALLATION INSTRUCTIONS



Step 18. Starting from the rear of the vehicle while working your way forward to the front, tighten/torque all skid and bracket hardware that was previously loosely installed on fuel tank skid, T-case skid, and engine oil skid.





Step 19: Once the skid plate hardware is tight, drill a 3/8" hole in the location shown.

NOTE: Using a smaller bit to first drill a pilot hole will help.

Step 19: Insert UB1002 3/8" driver side nut plate **2** into the frame as shown and loosely install **1** - 3/8 x 1.5" flat head bolt **1** with a 7/32 allen wrench. Now loosen all of the transfer case skid hardware.



## CONCLUSION AND MAINTENANCE GUIDE



### CONCLUSION

Congratulations on finishing the installation for your Artec Industries Alpha Series Aluminum Bellypan.

Before driving your vehicle, inspect all bolts again to ensure proper tightness.

If you used a vehicle lift, take proper care to ensure you lower your vehicle safely.

Now take your vehicle out and enjoy the outdoors in confidence.

### MAINTENANCE / CARE

- After 500 miles, inspect all components and hardware to ensure they are properly fastened.
- If driving during the winter where salt is used on the roads, thoroughly and frequently wash underside of vehicle to prevent salt based corrosion.
- If removal of skid panels is required for vehicle maintenance, and bolts will not loosen, tap the bolt heads with a small sledge hammer using moderate force. This will allow the threads to loosen.
- Spray wax or similar products can be used to create a protective barrier on raw metals to protect against long term corrosion.