NEXT VENTURE MOTORSPORTS ALUMINUM BELLY SKID INSTALLATION GUIDE

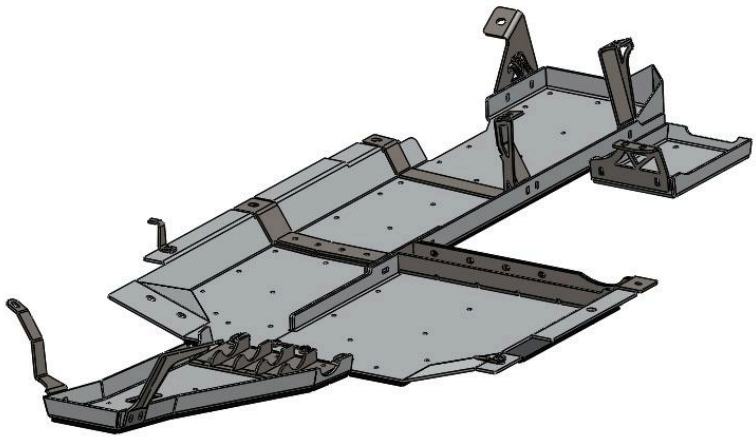
2007-2018 JKU 4 Door Belly Skid Install Guide for NV-JK-00040

Dear fellow Jeeper,

Let me start by saying thank you for choosing Next Venture Motorsports products for your Jeep. Our goal is complete satisfaction, and confidence to go hit the trail for our friends and customers. If you have any questions or feedback, please do not hesitate to reach out to us via email or give us a call.

This is an installation guide for the JKU Aluminum Belly Skid System; it is not a 100% illustrated/photographed step by step guide. This guide should be enough for any individual or shop to get the job done; and if anything should come up as a question, please give us a call.

We know every rig is different once it has started collecting upgrades, trail character, and modifications. We cannot at the time of this writing, confirm that this kit will fit with every other aftermarket skid plate, aftermarket exhaust system, or other modifications. This system *should* fit on every 2007-2011 3.8L or 2012-2018 3.6L JKU regardless of the trim.



These instructions cover the 2007-2011 3.8l and 2012-2018 3.6l skid plate installations.

Pre-Installation Notes
Install will be vastly easier if your JKU fuel tank is nearly empty. This will make removal of the factory fuel tank skid much simpler.

Most of this installation can be completed with basic hand tools. An additional set of hands is helpful in removal of the factory fuel tank skid, and installation of the replacement skid and replacement crossmember. A pair of ratchet straps is recommended on all models in order to hold the fuel tank in position during part of the installation.

For an installation location, a flat driveway or garage will do. If your Jeep is covered in mud, dirt, clay or any other naturally occurring form of earth, we recommend going to your local self service car wash and power washing the bottom of your Jeep where you will be working.

After it's dry, park it on a level surface with the e-brake set, and remove the negative battery cable.

The skids shown in pictures below are pre-productions units and do possess some minor differences to production units, however these changes will not impact installation of the skid system.

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Removing Your Factory Skid Plates and Crossmembers

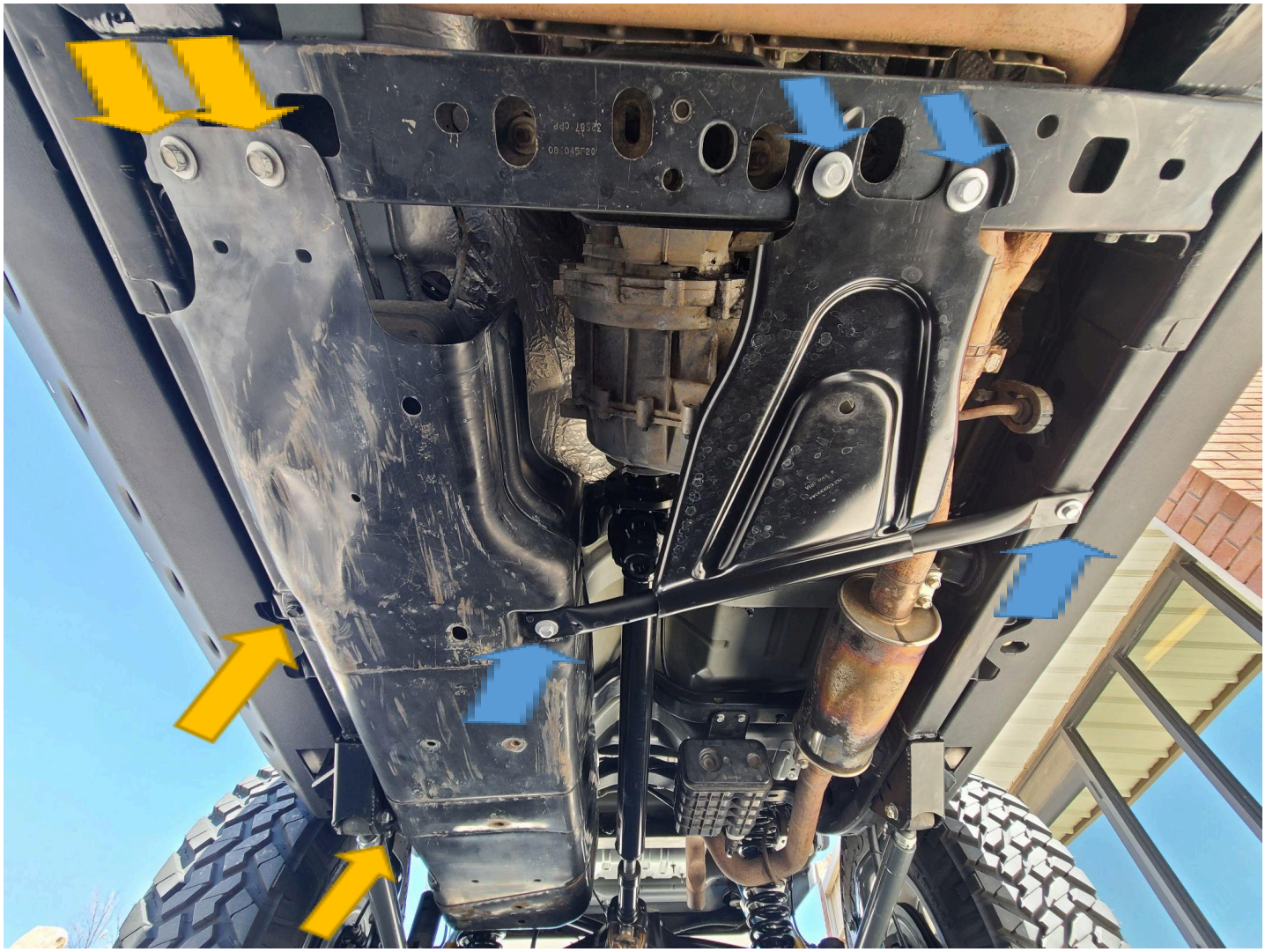


Figure 1. *Note: There may also be an additional crossmember, that is held on with 3 bolts, in front of what is shown here. That can be fully removed at this time.*
Blue Arrows: *Entirely Remove this hardware. Entirely remove the crossmember and factory skid held in place by this hardware. These crossmembers and skids can be discarded and will not be reused. Note that you are not removing the transmission crossmember. Please save the factory hardware as some of it will be reused.*
Yellow Arrows: *Loosen these bolts that hold the fuel tank skid in place; but do not entirely remove them yet. The goal is to make some wiggle room where our ratchet straps can be slid between the bottom of the fuel tank, and the factory skid. See Figure 2. below for the locations of the remaining fuel tank skid bolts.*

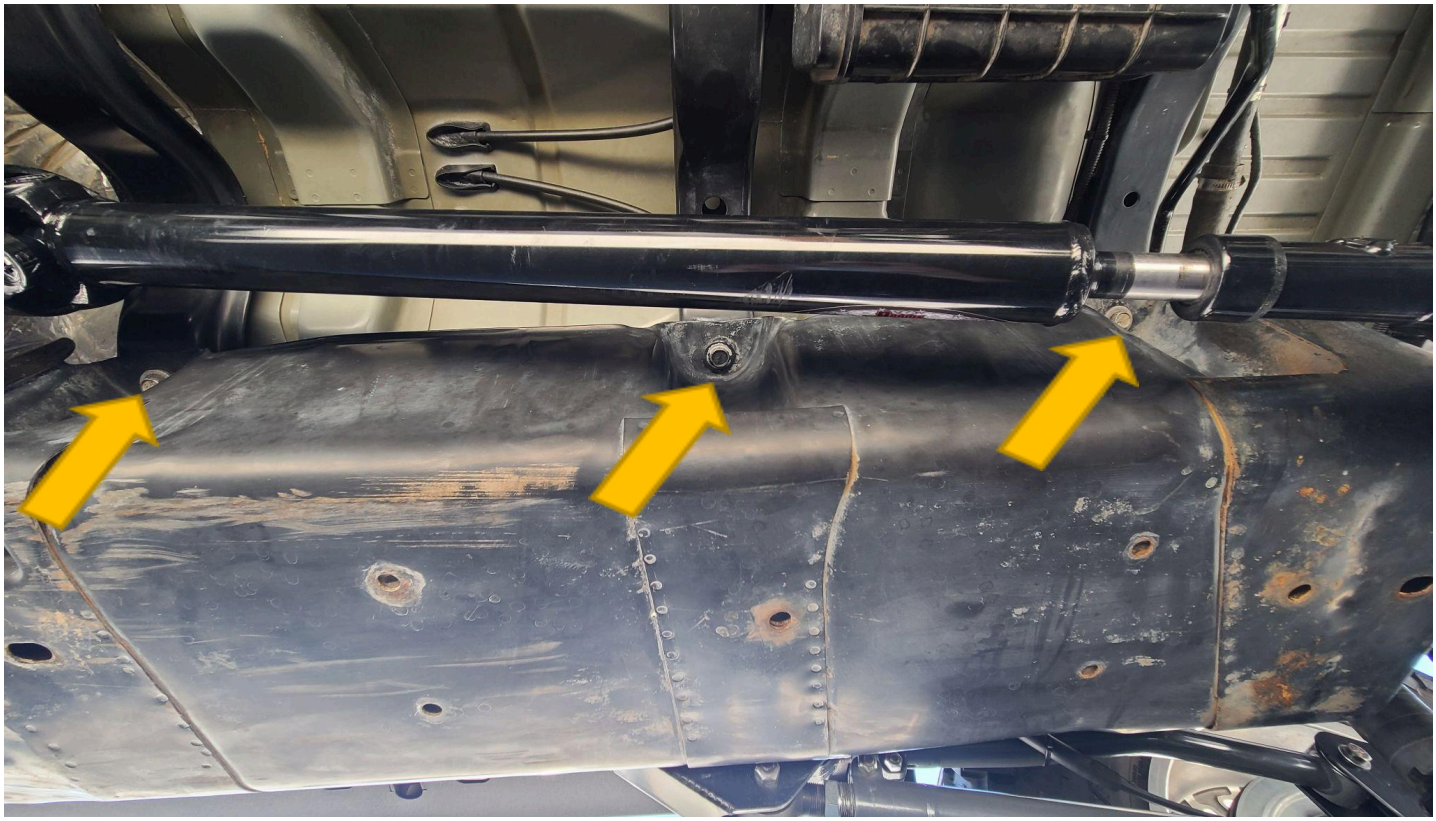
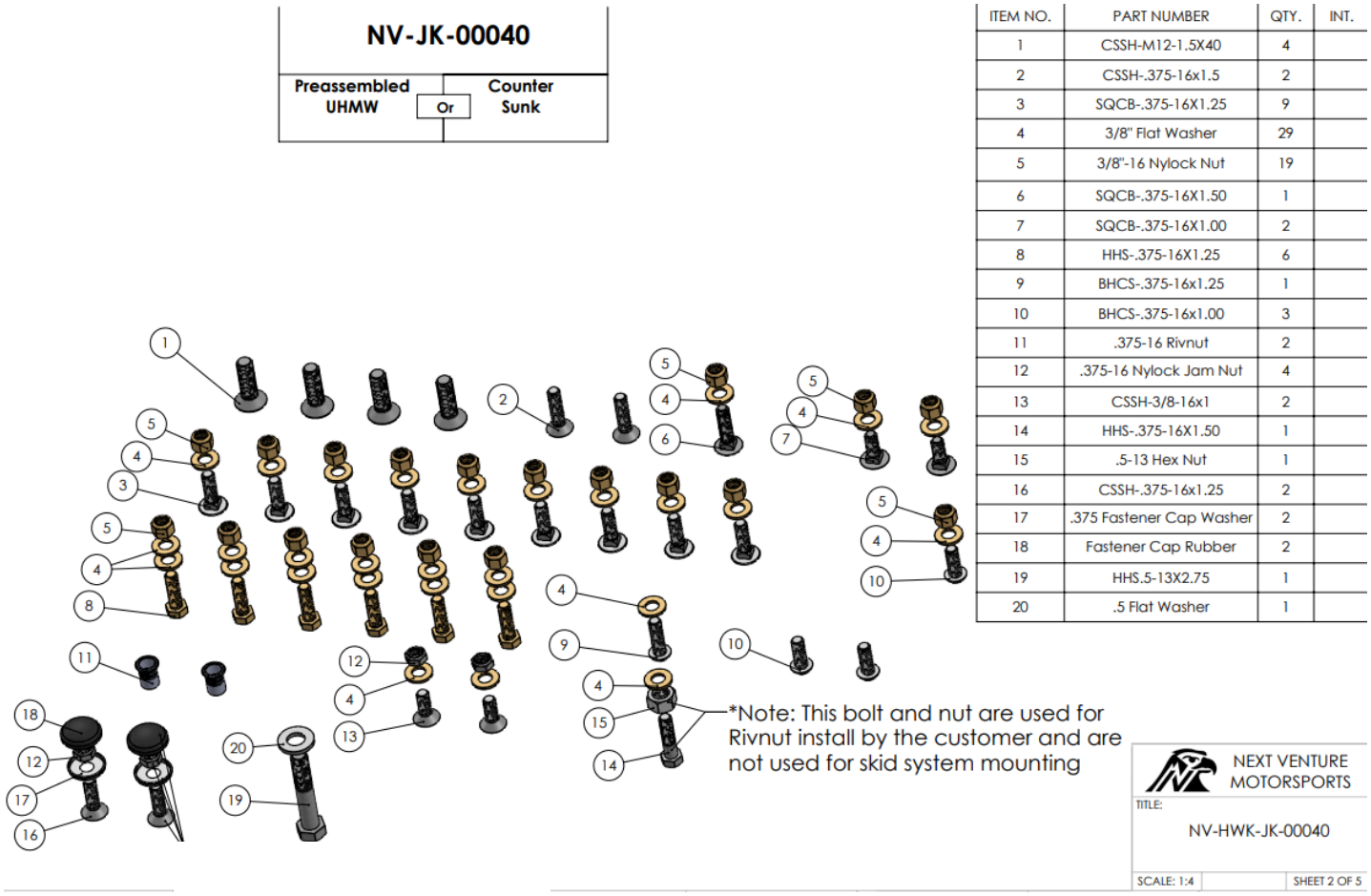


Figure 2.

Yellow Arrows: *In addition to the 4 fuel tank bolts highlighted in Figure 1, also loosen the remaining 3 shown above in Figure 2.*

Once the bolts have been removed and or/loosened up per Figure 1 and 2 above, removal of the factory fuel tank skid can begin. Loosening the fuel tank skid bolts will help create a bit of room between the bottom of the fuel tank, and the factory skid. You want to maintain a little thread engagement, so the bolts aren't able to just fall out. The goal here is to support the fuel tank with 2 ratchet straps; one towards the back, and one towards the front. Again, *make sure the fuel tank is nearly empty for this step*. Fishing the 2 ratchet straps into position requires a bit of patience and a flashlight but is entirely worth the ground clearance and weight improvements. In our experience, starting at the front of the fuel tank skid and working the straps back is easier than working from the back. Having a 2nd set of hands to help guide these into place is immensely helpful. Once they are in place between the tank and skid, secure them to the Jeep (via the frame, rock sliders or holes in the frames upper crossmembers) and drop the skid – ensuring the fuel tank is staying in place.

Figure 3 below will be referenced throughout the install process to outline bolts needed for each connection. Also note that each skid system part is etched with its corresponding part number for ease of identification.



ITEM NO.	PART NUMBER	QTY.	INT.
1	CSSH-M12-1.5X40	4	
2	CSSH-.375-16x1.5	2	
3	SQCB-.375-16X1.25	9	
4	3/8" Flat Washer	29	
5	3/8"-16 Nylock Nut	19	
6	SQCB-.375-16X1.50	1	
7	SQCB-.375-16X1.00	2	
8	HHS-.375-16X1.25	6	
9	BHCS-.375-16x1.25	1	
10	BHCS-.375-16x1.00	3	
11	.375-16 Rivnut	2	
12	.375-16 Nylock Jam Nut	4	
13	CSSH-3/8-16x1	2	
14	HHS-.375-16X1.50	1	
15	.5-13 Hex Nut	1	
16	CSSH-.375-16x1.25	2	
17	.375 Fastener Cap Washer	2	
18	Fastener Cap Rubber	2	
19	HHS.5-13X2.75	1	
20	.5 Flat Washer	1	

Figure 3: JK Belly Skid Hardware

Installing The Aluminum Skids:

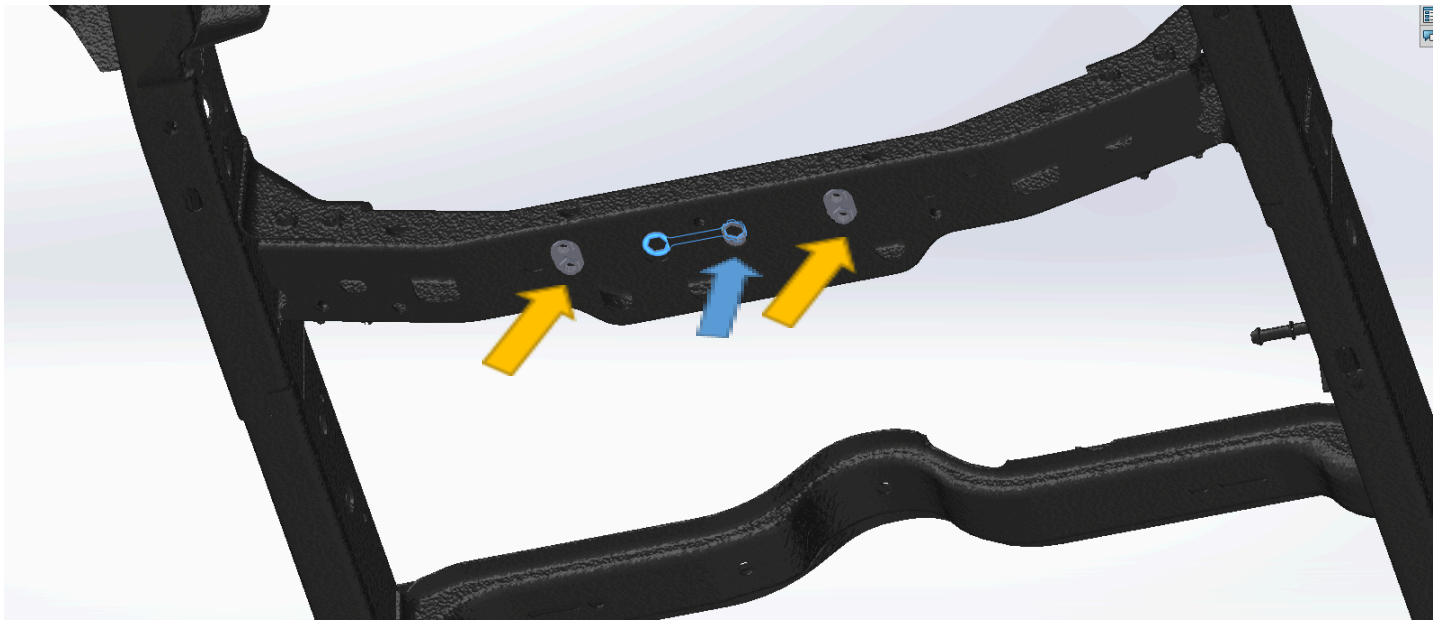
To begin, if your skid system is not equipped with UHMW, bolt aluminum panel Q (Figure 4 Item #17) to the rear of the fuel tank skid (Figure 4 Item #1) as shown using 2 ⅜”-16x1 countersunk bolts and accompanying washers and nuts (Figure 3 Items #13, #4, #12). Install these bolts with the button heads on the bottom of the fuel tank skid and washers and nuts on the top. If your skid system is optioned with UHMW, remove the two countersunk bolts that come loosely installed into your fuel tank skid, position panel Q (Figure 4 Item #17) into place, then reinstall the two countersunk bolts tightly to secure panel Q to the fuel tank skid.

For all remaining brackets please note: all carriage bolts for the following brackets will be installed from the inside of the skids out; the nuts should be outside of the skid so they are accessible once the skid system is installed. See Figure 4 and Figures 5-11 to determine if each bracket is mounted inside or outside of the side flange of the aluminum skid plates.

Loosely bolt crossmember "I" and bracket H (Figure 4 Items #8, #9) to the fuel tank skid. Crossmember "I" (Figure 4 Item #9) will utilize the ⅜"-16x1.50 carriage bolt with washer and nut (Figure 3 Items #6, #4, #5) for the frontmost hole that bolts the crossmember "I", the fuel tank skid, and the transfer case skid together (the transfer case will however be bolted on at a later time). The bolt location directly behind that one that bolts the crossmember "I" to only the fuel tank skid will utilize a ⅜"-16x1.25 carriage bolt and accompanying washer and nut (Figure 3 Items #3, #4, #5). Bracket H (Figure 4 Item #8) will use a ⅜"-16x1.25 carriage bolt and accompanying washer and nut (Figure 3 Items #3, #4, #5) to fasten to the aluminum skid. Once these two brackets are in place, lift that assembly up (we recommend having a second set of hands or utilizing two floor jacks for this step) and start the three factory bolts that will hold it to the frame. This will locate the driver side hole of crossmember "I" so that it can be marked and drilled. Figures 5, 6, 7 and 10 depict these frame mounting locations. Once crossmember "I" is correctly positioned and straight, use a center punch to mark the center of the hole on the driver frame rail.

Once this hole is marked, remove all bolts that are holding the skid to the frame and lower the fuel tank skid assembly. Now, drill a 1/2" hole on the center punch mark. Once this hole has been drilled, nut stick "JK-41-U" (Figure 4 Item 20) can be inserted through a hole on the inside face of the frame. Use the provided ⅜" button head bolt and washer (Figure 3 Items #9, #4) threaded into nut stick "U" to secure the main crossmember to the frame.

Next, you can insert both nut sticks L and nut stick P into the factory crossmember of your Jeep. These will serve as mounting locations for the front of the fuel tank and transfer case skid, as well as the back of the engine skid later on. The Figure below shows how these nut sticks install into the frame. Please note, if your transmission crossmember is significantly bent it may be difficult to fit the skid system and in some cases may require a new transmission crossmember.



Location of Nut Sticks L and P in the frame. The highlighted blue nut stick is nut stick P. The thicker portion of nut stick P will index in the hole noted with the blue arrow. The two outer nut sticks indicated with orange arrows are nut sticks L.

Now, loosely bolt mounting brackets G and N (Figure 4 Items #7, #14) to the fuel tank skid. Bracket N (Figure 4 Item #14) will use the two ⅜"-16x1.00 carriage bolts, washers, and nuts (Figure 3 Items #7, #4, #5) to bolt to the aluminum skids. Bracket G (Figure 4 Item #7) will utilize the provided ⅜"-16x1.00 button head bolt, washer, and nut (Figure 3 Items #10, #4, #5) to fasten it to the aluminum fuel tank skid. Note this button head should be installed from the outside with the

nut installed on the inside of the skid. A closer view of this can be seen in Figure 9 below. The 'top' mounting holes where brackets N, G, and H bolt to the vehicle will be later populated with the factory hardware from your Jeep.

ITEM NO.	PART NUMBER	QTY.
1	NV-JK-00040-A	1
2	NV-JK-00040-B	1
3	NV-JK-00040-C	1
4	NV-JK-00040-D	1
5	NV-JK-00040-E	1
6	NV-JK-00040-F	1
7	NV-JK-00040-G	1
8	NV-JK-00040-H	1
9	NV-JK-00040-I	1
10	NV-JK-00040-J	1
11	NV-JK-00040-K	1
12	NV-JK-00040-L	2
13	NV-JK-0040-M	1
14	NV-JK-00040-N	1
15	NV-JK-00040-O	1
16	NV-JK-00040-P	1
17	NV-JK-00040-Q	1
18	NV-JK-00040 S	1
19	NV-JK-00040 T	1
20	NV-JKU-00041 U	1

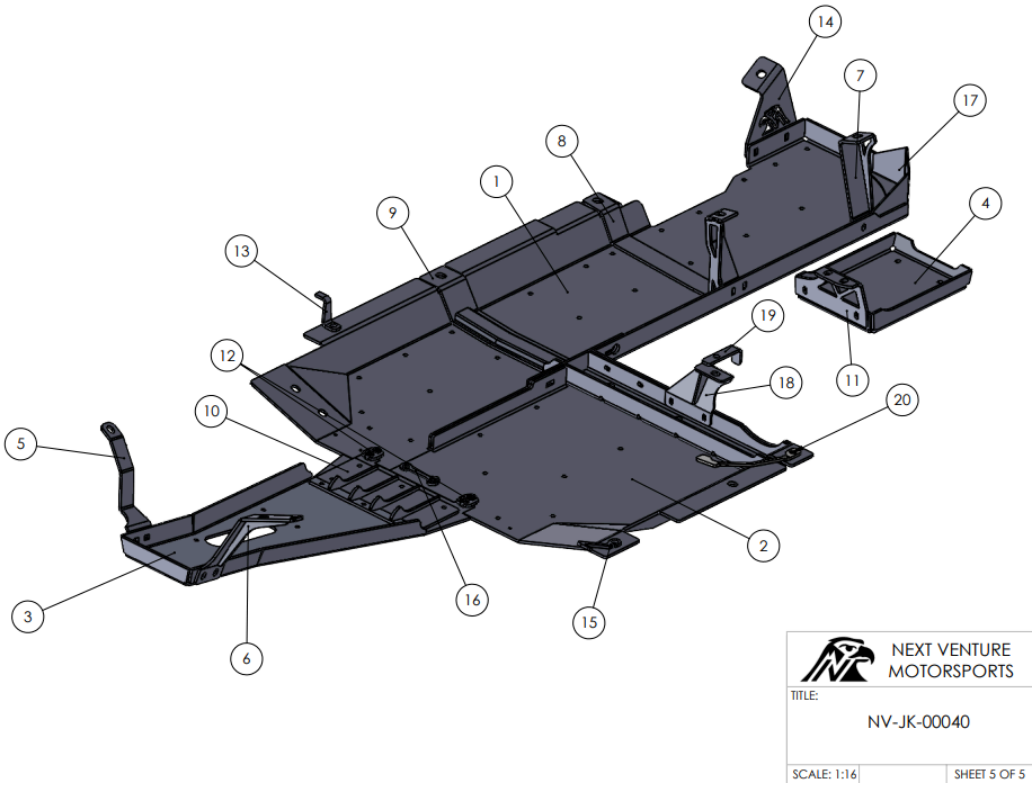


Figure 4: Full assembly of JKU belly skids

By this step, the fuel tank skid (Figure 4 Item #1) and all 4 mounting brackets (Figure 4 Items #7, #8, #9, #14) should be loosely bolted together off of the vehicle.

The fuel tank assembly with brackets can now be lifted back into place and all mounting bolts can be loosely installed. Once the fuel tank skid assembly is loosely installed, the ratchet straps holding the fuel tank can be removed and the transfer case skid can be installed. The 4 holes on the back driver side of crossmember "I" that bolt the crossmember to the transfer case skid will use 4, ⅜"-16x1.25 hex head bolts and accompanying washers and nuts (Figure 3 Items #8, #4, #5). Note the addition of bracket "S" that will also be secured by 2 of these bolts as shown in Figure 4.. The top of bracket "S" will be secured to the frame of your Jeep with the provided ½" hex head bolt and washer (Figure 3 Items #19, #20), threaded into nut stick "T". Finally, 2 of the 4 M12 countersunk bolts (Figure 3 Item #1) can be installed through the fuel tank and the transfer case skid into nut sticks L (Figure 4 Item #12). The provided ⅜" countersunk bolts (Figure 3 Item #2) can also be installed through the transfer case skid into nut stick P (Figure 4 Item #16). Figures 5-11 below depict the various mounting locations used at this step.

Please note that both mounting locations that use nut sticks will require drilling. We recommend saving this step for last to ensure all holes are precisely where they will be once the skid system is tight.

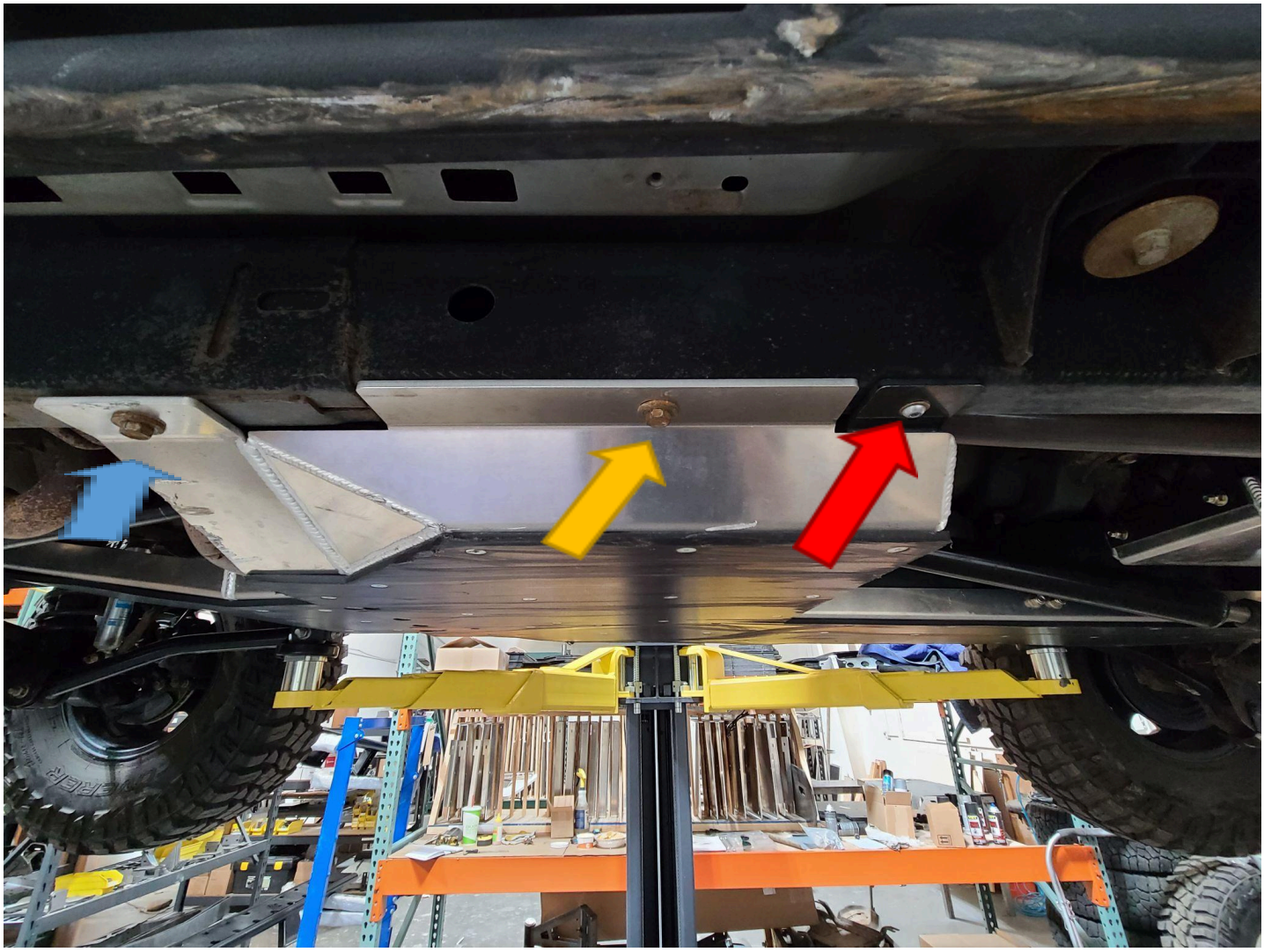


Figure 5. Driver side frame rail transfer case skid mounting locations

Blue Arrow: *This mounting location will use nut stick "O" and require a hole to be drilled in the frame. A specific view of the installation orientation of this nut stick can be found below in Figure 6.*

Red Arrow: *This location will thread into nut stick U that was inserted into the frame via a hole on the inside face of the frame. This must be inserted before the aluminum skids are installed.*

Figure 6. Installation orientation of nut stick “O”

Figure 7. Passenger side skid plate mounting locations

Blue Arrow: *This mounting location will use nut stick "M" and require a hole to be drilled in the frame. A specific view of the installation orientation of this nut stick can be found below in Figure 8.*

Figure 8. Installation orientation of nut stick “M”

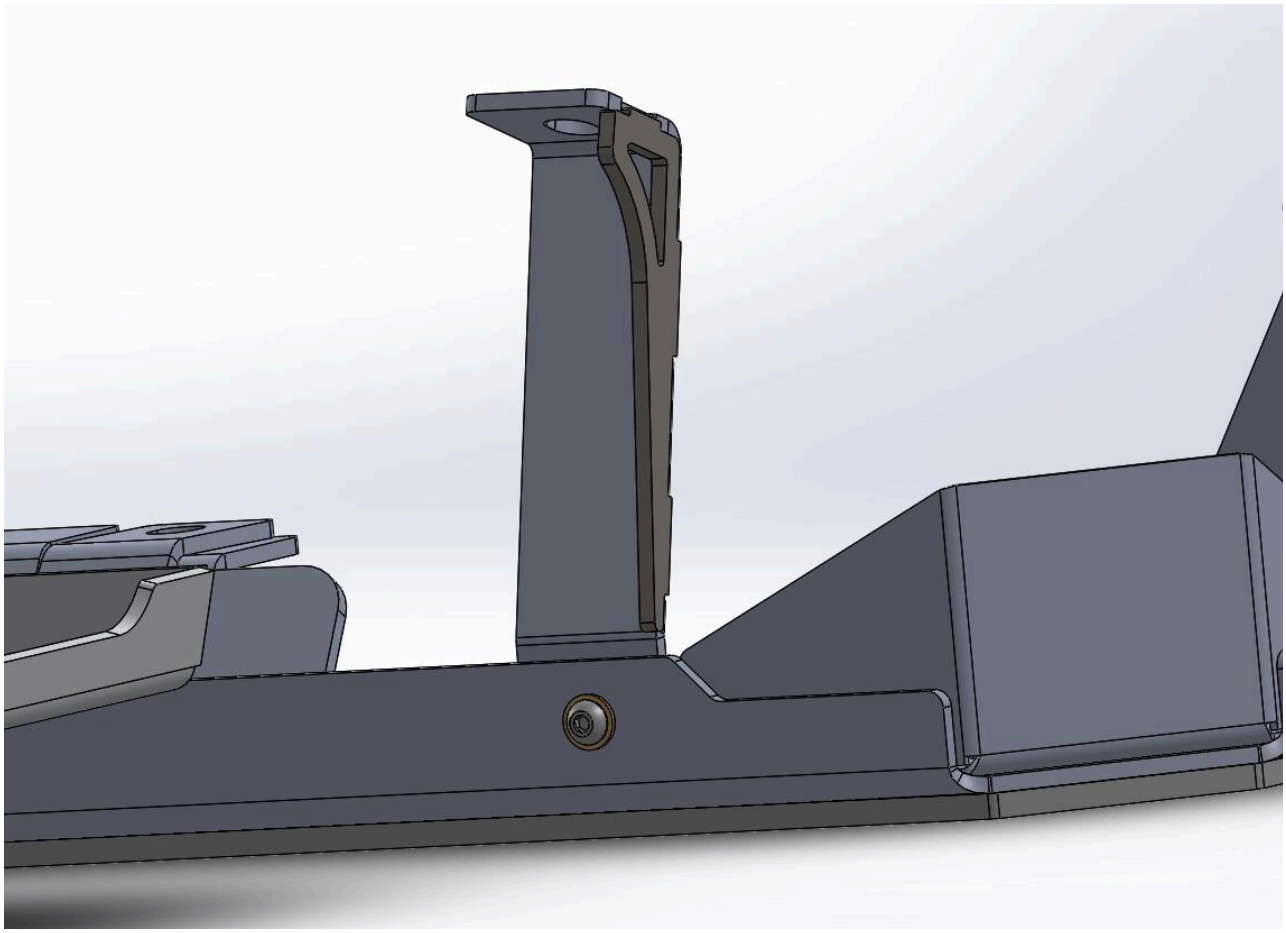


Figure 9. Bracket G installation. Note the use of ⅜”-16x1.00 button head bolt (Figure 3 Item #10)

Figure 10. Bracket H Installation. Note that these bolts should be installed opposite of the photo shown, with the nuts on the inside of the fuel tank skid. This will allow for more clearance with your driveshaft.

Figure 11. Bracket N Installation

Once the transfer case and fuel tank skid plates have been loosely bolted onto the underside of your Jeep, the engine skid can be installed. We recommend loosely bolting the mounting brackets (Figure 4 Items #5, #6) onto the aluminum engine skid before installing it onto your vehicle. These will utilize 4 (2 per bracket) ⅜”-16x1.25 carriage bolts, washers, and nuts (Figure 3 Items #3, #4, #5) installed from the inside of the skid out. The engine skid can now be lifted into position. The engine mount brackets will bolt into the factory engine mounts using the supplied ⅜”-16x1.25 hex head bolts, washers, and nuts (Figure 3 Items #8, #4, #5). The orientation of the engine mount brackets can be seen below in Figures 12 and 13. The rear of the engine skid will bolt into the front holes of nut sticks L (Figure 4 Item #12 x2) using the supplied M12-1.5x45 countersunk bolts (Figure 3 Item #1).

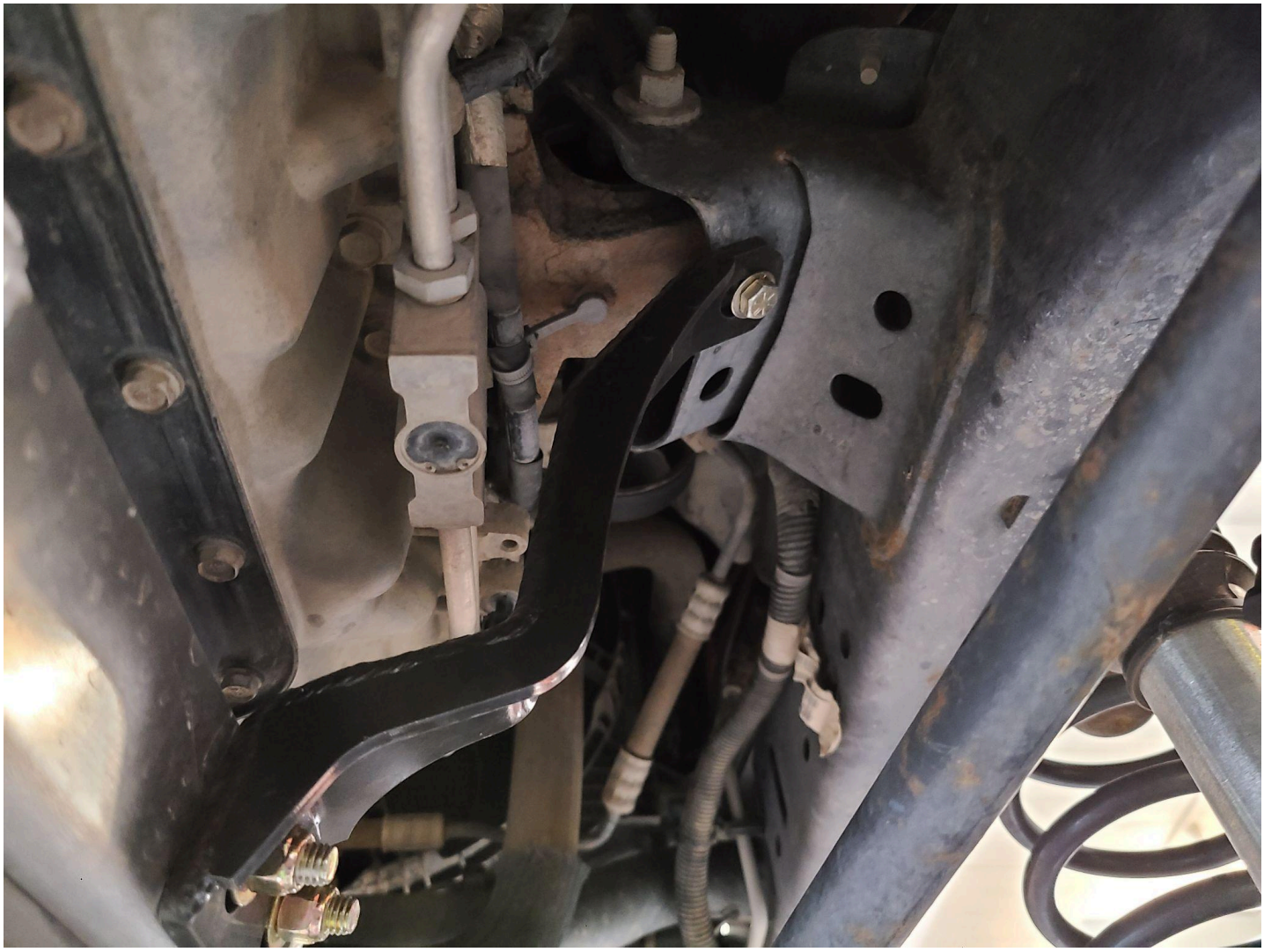


Figure 12. Passenger side bracket E installation

Figure 13. Driver side bracket D installation

At this time, the whole main skid system should be loosely bolted onto your Jeep. You can begin by tightening all bolts that attach skid plate mounting brackets to the frame of your Jeep followed by all remaining bolts on your skid plate system.

Installing the Evap Skid (3.6l only)

The evap skid can now be installed. Bracket K will bolt to aluminum skid D (Figure 4 Items #11, #4) using the final 2 ⅜”-16x1.25 carriage bolts, washers, and nuts (Figure 3 Items #3, #4, #5). The rear two holes in the aluminum skid plate D will be populated by 2 ⅜”-16x1.00 button head bolts (Figure 3 Item #10). These locations may require drilling and installation of the two remaining rivnuts. If this is needed, bolt up the aluminum skid and bracket K, then use the 2 holes to mark the drilling locations. Please note, when drilling these two holes we recommend placing some hard such as a piece of scrap metal or wood underneath the hoses above where the holes are being drilled. This will prevent the drill bit from breaking through the metal and accidentally puncturing the hoses. Figure 14 below shows the final install position of the evap skid.

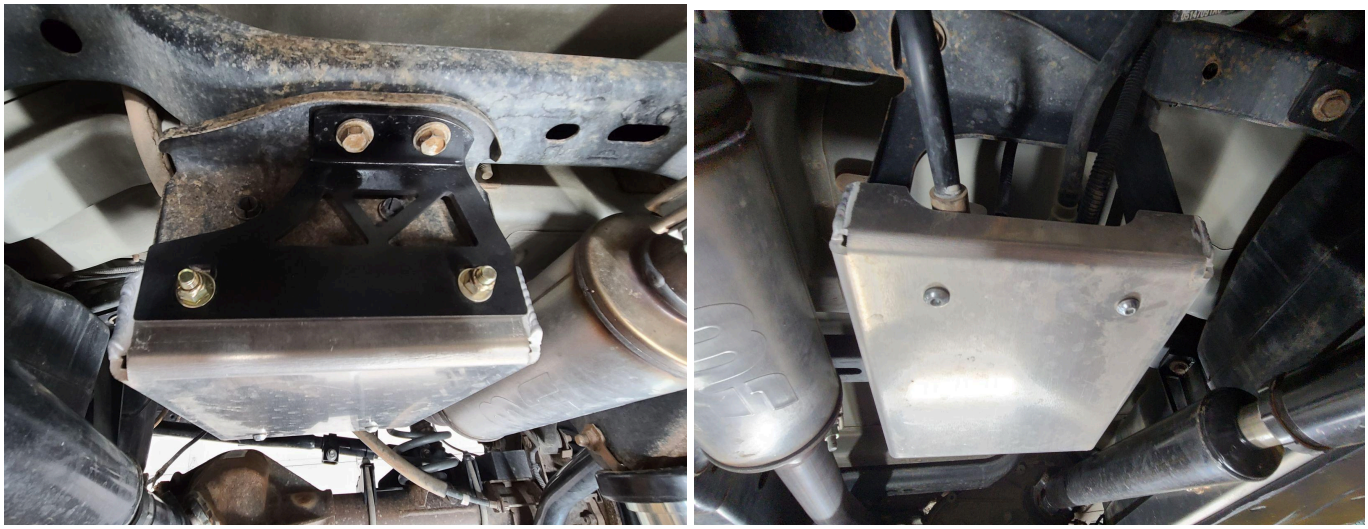


Figure 14. Evap skid fully installed.

Post Installation Notes

Check that all bolts are installed and tight, ensure your wiring is secure and clear of any moving parts or vehicle components that get hot, reconnect your battery…. And go hit the road or the trail! We recommend checking the hardware after the next 500 miles of driving

Questions?

Email us at Info@NextVentureMotorsports.com or give us a call at 970 462 7368

-Dan and the Next Venture Team