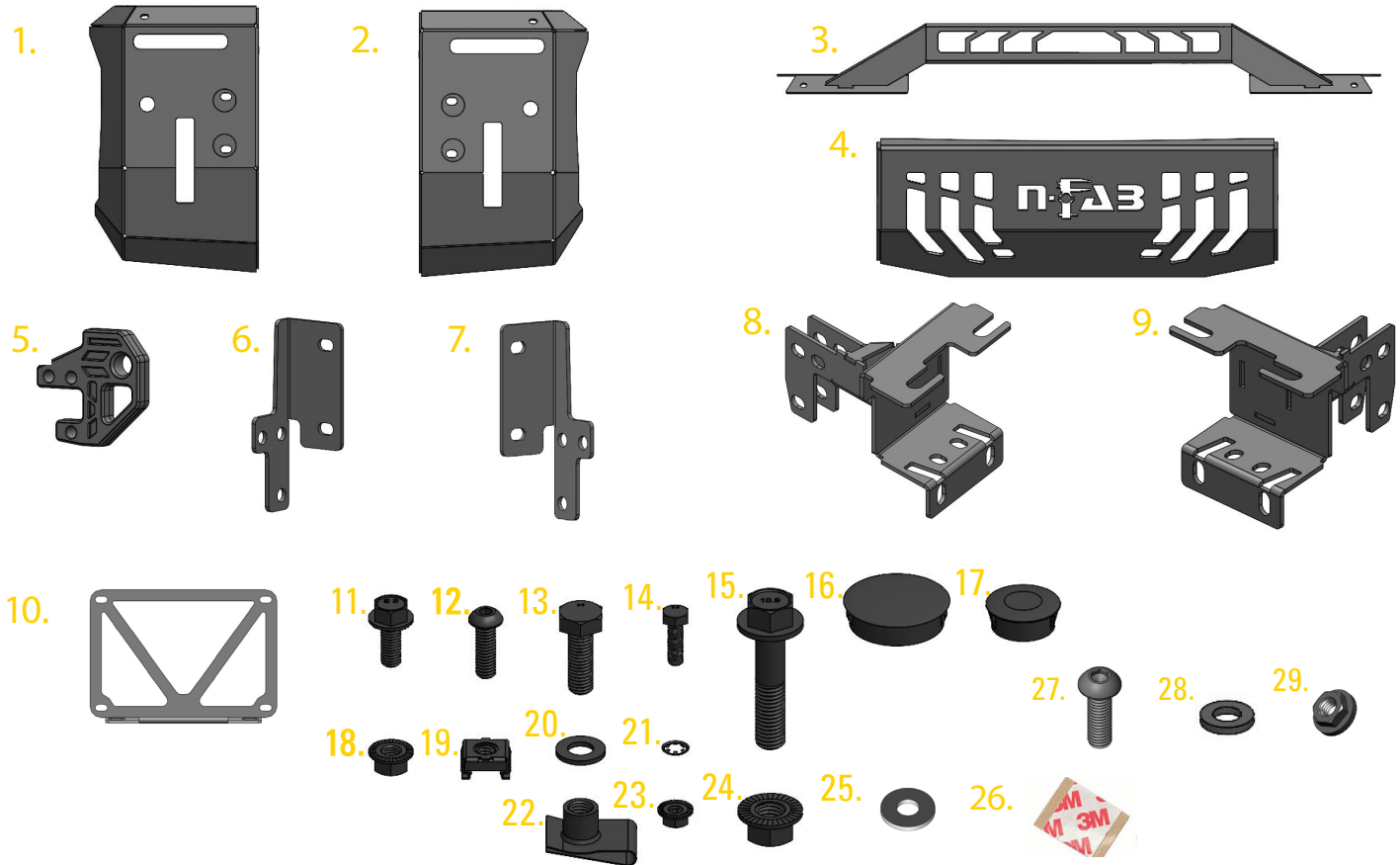


## Components and Hardware: HWKT-14664X



### Components and Hardware:

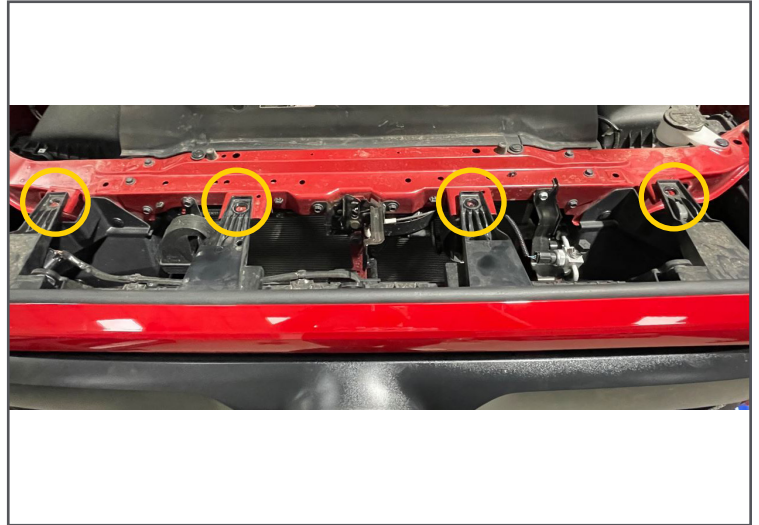
1. Passenger side upright.....(1)	14. M6-1.0x20mm hex bolt.....(4)
2. Driver side upright.....(1)	15. M12-1.75x55mm flange bolt....(6)
3. Light hoop.....(1)	16. Locking panel plug.....(4)
4. Skid plate.....(1)	17. Locking panel plug.....(2)
5. Tow hook.....(2)	18. M8 serrated flange hex nut....(4)
6. Driver side vertical mounting plate.....(1)	19. 5/16"-18 clip-on nut.....(6)
7. Passenger side vertical mounting plate....(1)	20. M10 flat washer.....(4)
8. Driver side frame bracket.....(1)	21. M6 11mm OD retaining ring....(4)
9. Passenger side frame bracket.....(1)	22. M10x1.5mm barrel clip.....(4)
10. License plate relocation bracket.....(1)	23. M6 serrated flanged nut.....(4)
11. M8X1.25X20mm flange bolt.....(4)	24. M12-1.75 flanged nut.....(6)
12. 5/16"-18 x 1" button head cap screw....(6)	25. 5/16" flat washer.....(6)
13. M10-1.5x30mm Hex bolt.....(4)	26. 1"x1" double side tape.....(4)
	27.M6-1x20mm button head bolt..(4)
	28.M6washer.....(4)
	29. M6 flanged nut.....(4)

### Tools for Installation:

- Box end wrenches( 10mm, 17mm, 18mm)
- Sockets ( 13mm, 14mm, 16mm, 17mm )
- 3/16" hex tip socket
- Phillips head screw driver
- Dremel tool or air saw

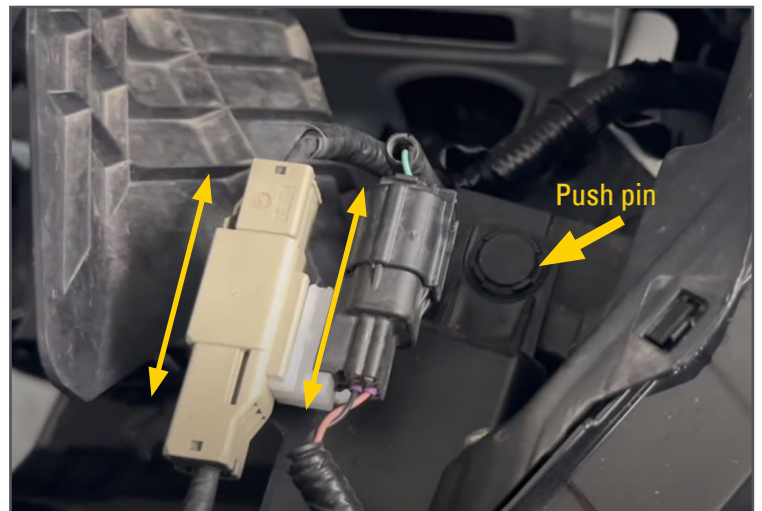
## INSTALL

**Step 1. Open hood and remove the top (4x) 10mm bolts that attach the grill to the radiator support.**



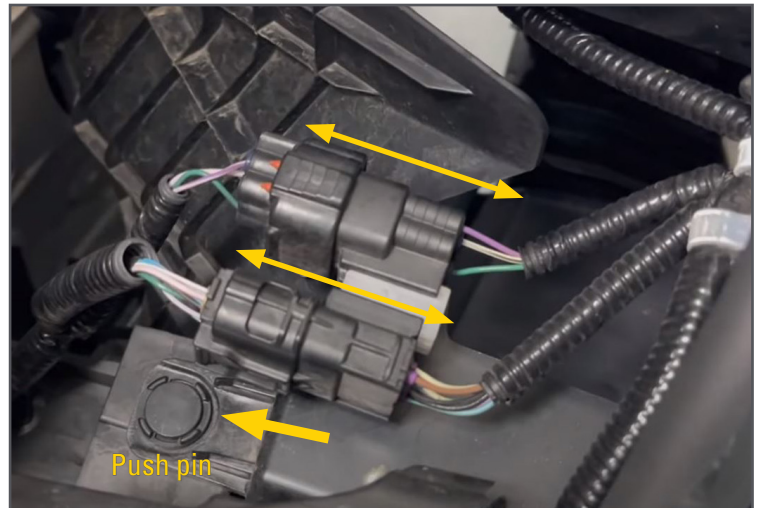
**Step 2. Remove the (2x) plug connectors located to the right hand side corner of grill.**

**Step 3. Use a flat head screw driver to release the push pin and remove.**



**Step 4. Remove the (2x) plug connectors located to the left hand side corner of grill.**

**Step 5. Use a flat head screw driver to release the push pin and remove.**

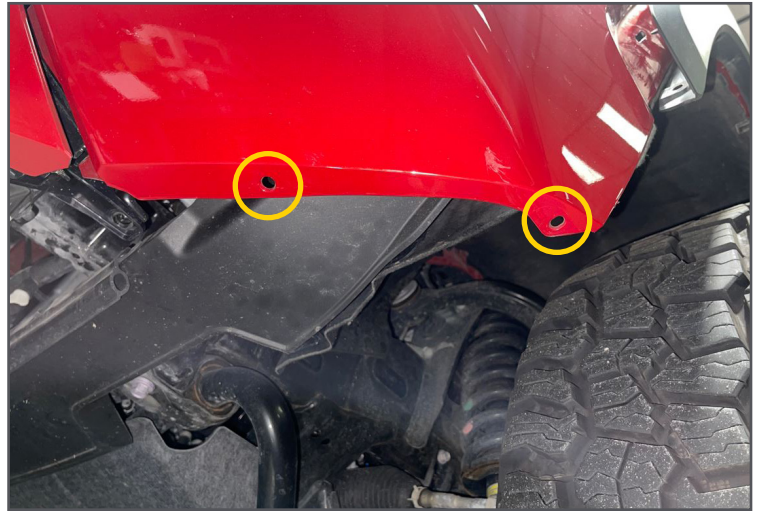


## INSTALL

Step 6. Remove the (4x) 10mm bolts in the inner fender liner.



Step 7. Remove the bottom (2x) 10mm bolts from fender.



Step 8. Remove the bottom (4x) 10mm bolts that attach the grill to the crash bar.





## INSTALL

**Step 9.** Starting at the bottom of the black plastic fender flare, place your fingers between flare and bumper. Pull back on fender flare to disengage plastic tabs and separate from bumper.



**Step 10.** Once you have separated fender trim, pull plastic portion of bumper away from metal fender.



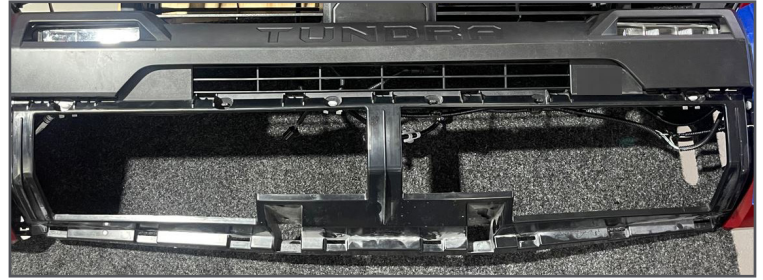
**Step 11.** From center of grill, lift bumper up, out, and away from vehicle. Your bumper will come out in one piece.



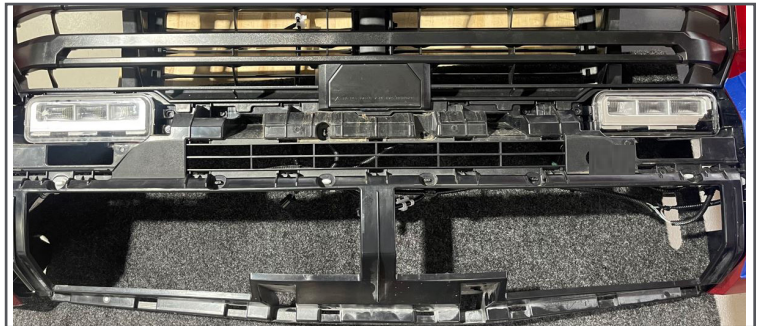


## INSTALL

**Step 12. Remove center bumper panel by disengaging (19x) body clips and set aside.**



**Step 13. Remove fog light cover by disengaging (17x) body clips and set aside.**

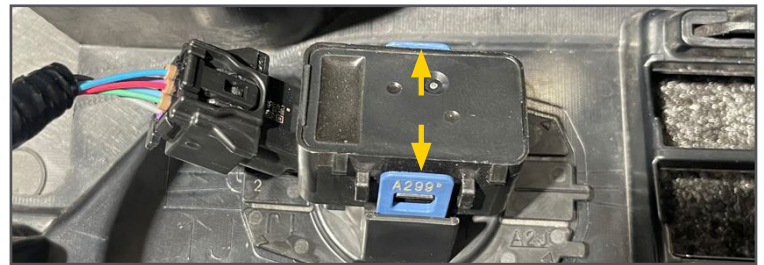
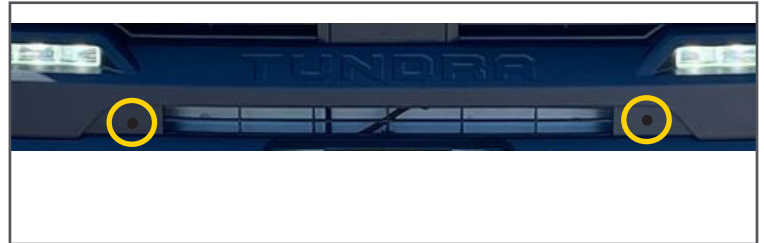


**Step 14. Use a Phillips head screwdriver to remove (2x) screws holding fog lights to grill assembly. Remove lights and set aside.**



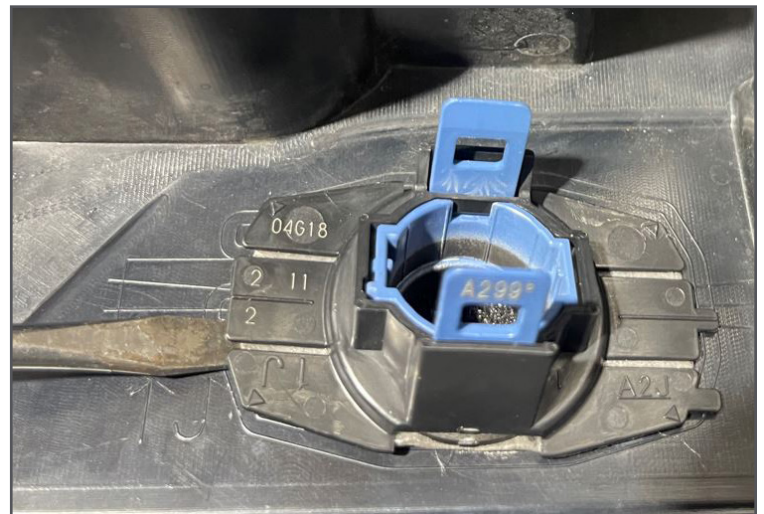
# INSTALL

Step 15. If your vehicle is equipped with parking sensors, you will have to relocate to the HVM Bull Bar uprights.  
Step 16. Carefully spread tabs to release parking sensor from bezel.

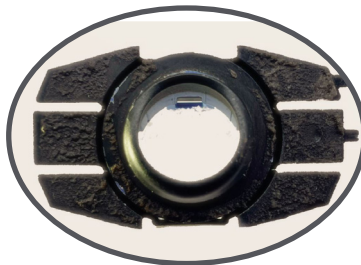


**⚠ NOTE: Tabs are fragile, remove with caution.**

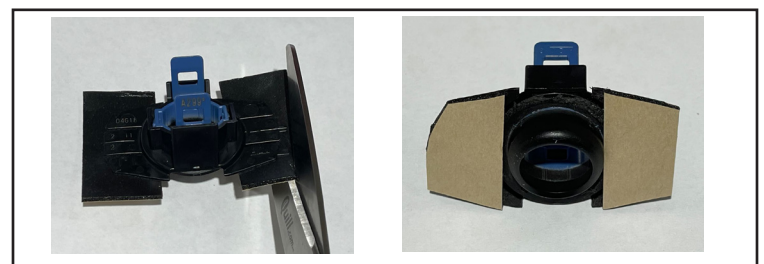
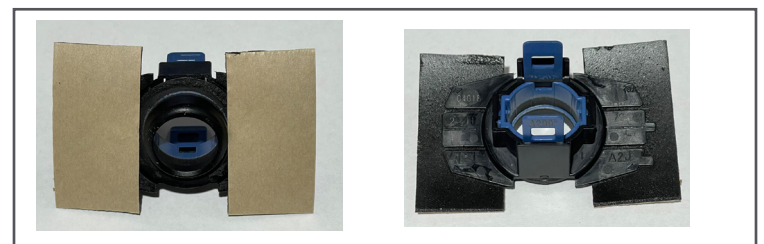
Step 17. Use a flat head screw driver and gently remove sensor bezel and set aside. **\*\*Be careful not to break tabs on top.\*\*** Note the orientation of the bezel to ensure it is installed in Bull bar correctly.



**⚠ Use a wire brush and/or razor blade to remove the adhesive backing. Be careful not to break tabs.**



Step 18. Install the #26 (2x) double sided tape to each of the bezel wings and trim off excess using scissors or razor blade. Repeat for additional bezel.





## INSTALL

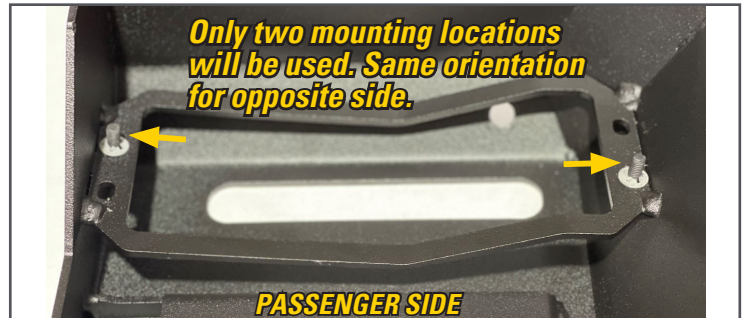
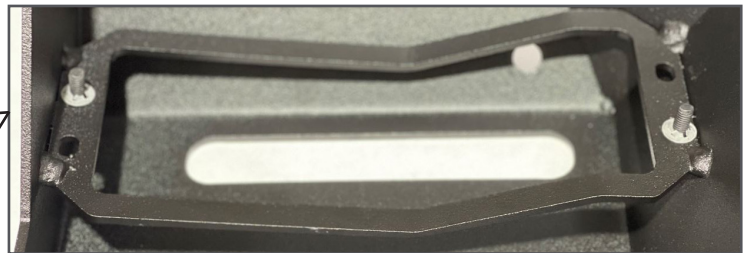
Step 19. Locate sensor hole on back side of (#1) passenger side upright. Remove the double sided tape backing and place bezel in opening. Press down firmly on both sides to ensure adhesion. Repeat process for driver side upright.  
**NOTE: Ensure bezel is clocked in same orientation as removed from factory bumper.**



Step 20. Install #14 (2x) M6x20mm hex bolt with #21 (2x) push nuts in the designated fog light bracket holes. Repeat steps with driver side upright.



**TECH TIP**  
Use a small socket to press push nut onto bolt.



Step 21. Locate the (3x) slotted holes on top of upright. From underneath, install the supplied #19 (3x) clip-on nuts. Repeat this step with opposite side.





## INSTALL

Step 22. Install fog light labeled **"R"** in #1 passenger side upright using supplied #23 (2x) M6 flanged hex nuts.

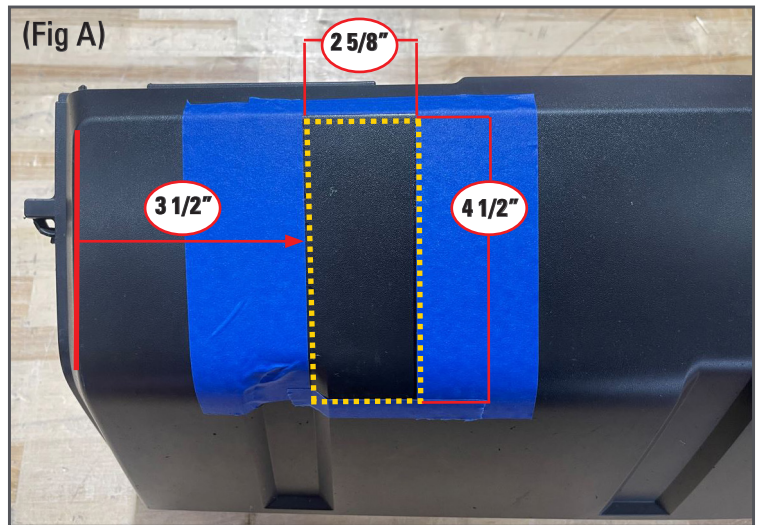
⚠ **Do not over tighten**

Step 23. Repeat step with driver side upright.



Step 24. Use dimensional layout in **(Fig A)** to cut holes in the lower valance for passenger and driver side tow hooks.

✂ **A dremel tool or air saw is recommended.**

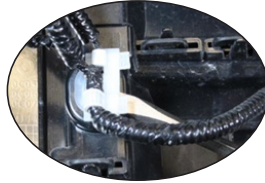


Step 25. Use a file or razor blade to clean rough edges around the cut out.



## INSTALL

Step 26. Detach fog light plug and sensor harness from back side of grill to allow more extension. Remove a section of loom from sensor harness to allow wires to pass through fog light and lower bumper covers.



Step 27. Re-install fog light and lower bumper cover. Pull harness through fog light opening and feed sensor harness between upper and lower cover. Re-repeat steps for opposite side.



Step 28. Wrap exposed harness (2x) wire with electrical tape.



Step 29. Remove the (4x) bolts from bottom of crash bar to remove bracket and discard. *Factory hardware will be re-used.* Repeat step for opposite side.

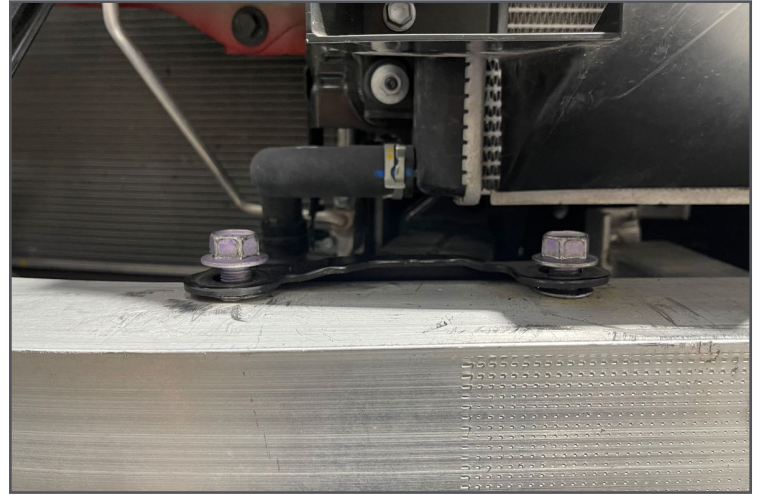




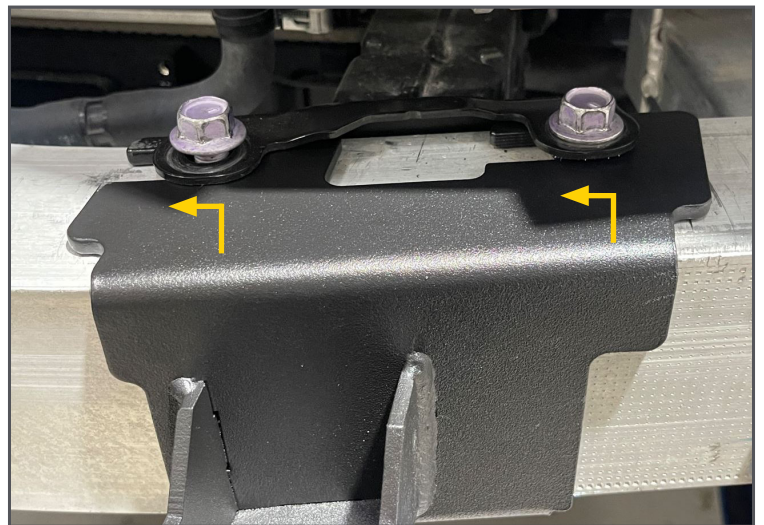
## INSTALL

Step 30. Loosen the (2x) bolts on top of crash bar so it hangs down approximately 1/2" from the frame bracket.

⚠ ***Do not completely remove bolts.*** Repeat this step with opposite side.

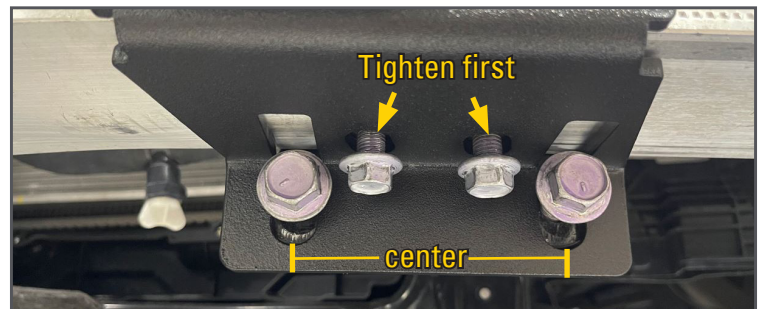


Step 31. Install #8 driver side mounting bracket in between factory frame bracket and crash bar.



Step 32. Install factory bolts in bottom bracket and tighten to factory specs.

***NOTE: Center bracket with bolts before tightening.***



Step 33. Tighten (2x) top bolts to factory specs. Repeat steps with #9 passenger side frame bracket.





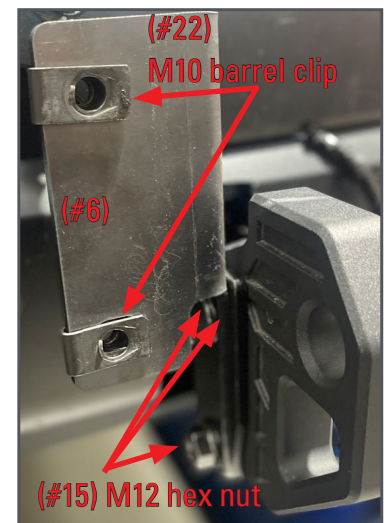
## INSTALL

**Step 34.** Align cut outs in grill with tow hook brackets and carefully install grill back on vehicle.

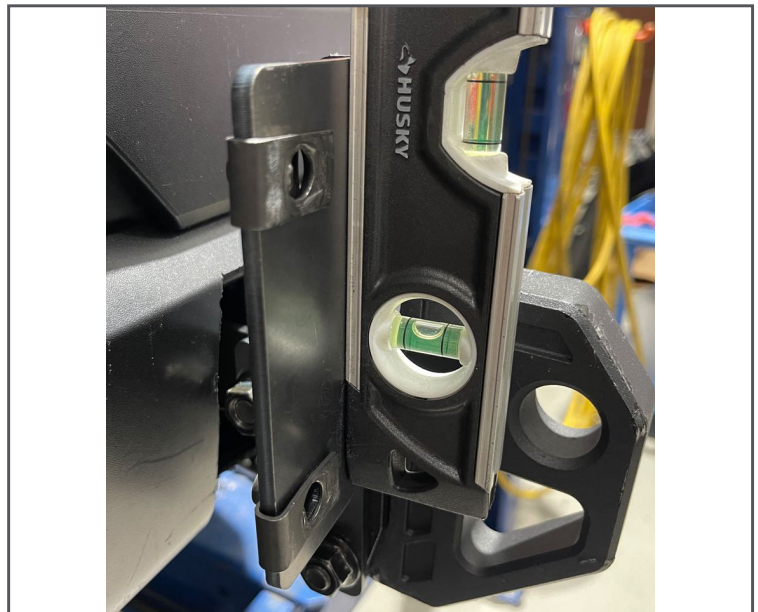


**Step 35.** Install #5 tow hook and #6 driver side vertical mount plate using the supplied #15 (3x) M12x55mm hex bolts and #24 (3x) M12 flanged hex nuts.

**Step 36.** Install #22 (2x) M10 barrel clip nuts.

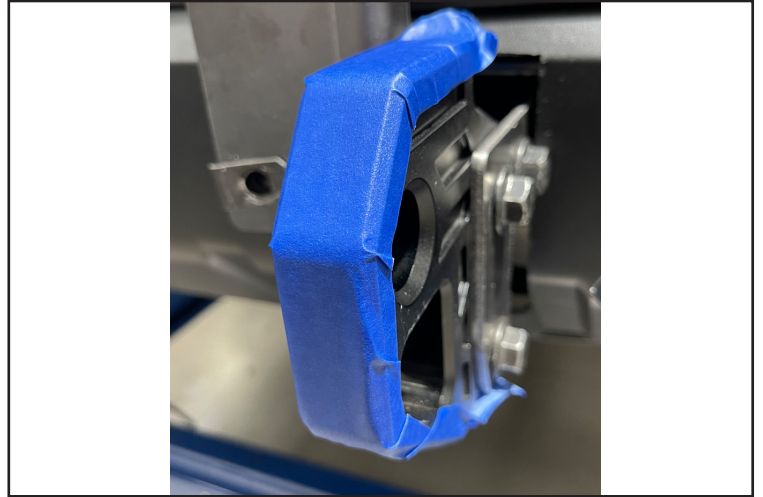


**Step 37.** Level upright bracket and tighten hardware to (65 ft-lbs). Repeat step with opposite side.



## INSTALL

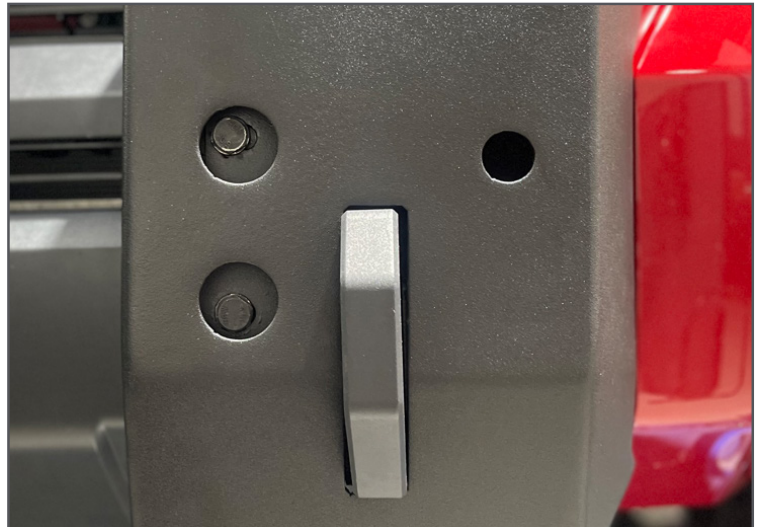
Step 38. Add masking tape or drape a rag over the face of tow hooks. This will add protection when installing up-rights.



Step 39. Carefully slide #2 driver side upright over tow hook. Plug in fog light and install sensor into bezel.



Step 40. Use the supplied #13 (2x) M10x30mm hex bolt and #2 (2x) M10 flat washer to install up right. **Leave loose for now.** Repeat step for passenger side.







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PART# T22BB01-TX  
22-24 TUNDRA

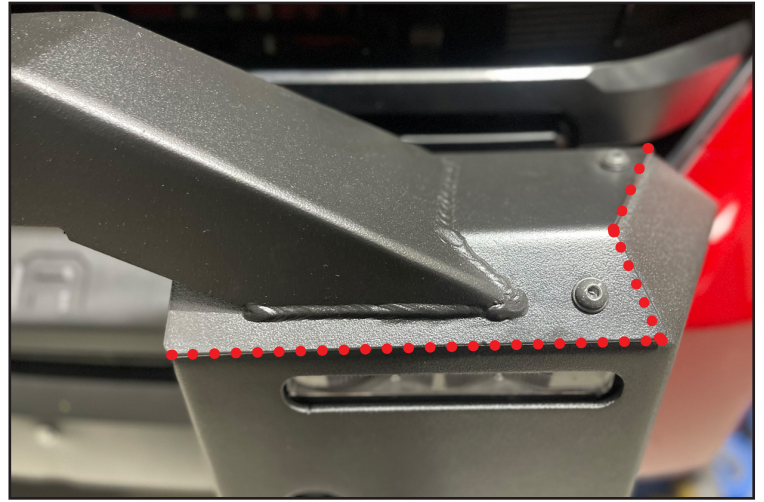
HVM BULL BAR  
INST-02731

## INSTALL

Step 41. Install #3 light hoop using #12 (3x) 5/16"x1" button head bolt and #25 (3x) flat washer.

Step 42. Line up edges on driver and passenger side. After final adjustment, tighten hardware to 13 (ft-lbs).

**NOTE: Installing LED light in light hoop first before install is recommended.**



Step 43. Install #4 skid plate using #11 (4x) M8x20mm flanged hex bolt and #18 (4x) flanged hex nut. After final adjustment, tighten hardware to (20 ft-lbs).



Step 44. Confirm that light hoop and skid plate are in alignment and fully tighten (4x) up right bolts to (32 ft-lbs).

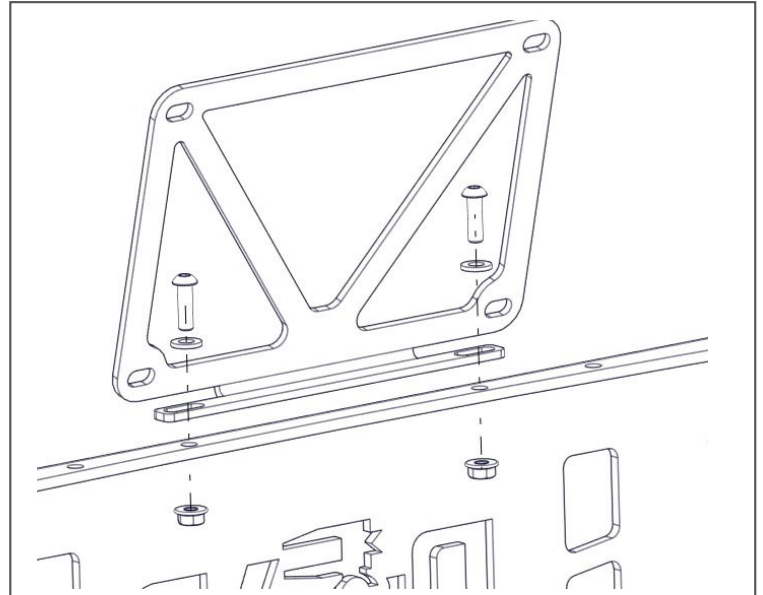
Step 45. Install #16 (4x) locking panel plugs in uprights to cover hardware. If parking sensors were not relocated, install #17 (2x) locking panel plug to cover sensor hole.





## INSTALL

**Step 46.** Install #10 license plate bracket to one of the three mounting position located on top edge of skid plate using the supplied #27 (4x) M6x20mm button head bolt, #28 (4x) M6 washer, and #29 (4x) flanged hex nut.



**Step 47.** Install license plate to bracket using #27 (4x) M6x20mm button head bolt, #28 (4x) M6 washer, and #29 (4x) flanged hex nut.

