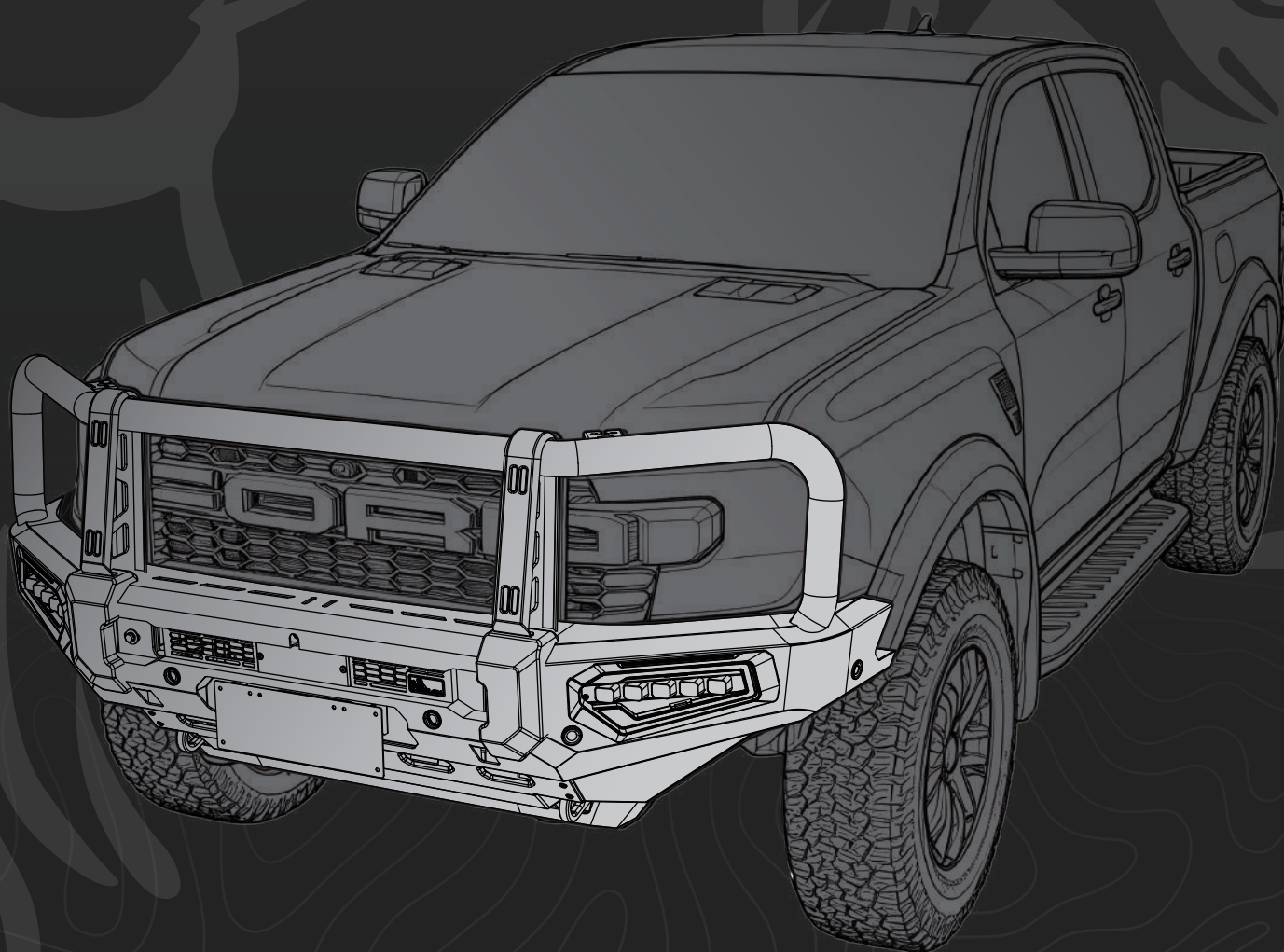




FRONT BULLBAR FOR FORD RANGER RAPTOR

INSTRUCTION GUIDE ▶▶





- Prepare a clean work area.
- We recommend a minimum of 2 people for assembly and 4 people for installation.
- Ensure the required tools are present and all hardware contents are accounted for.
- Never use acetone or thinners on painted parts.
- Read through the entire instruction guide before starting this procedure and follow.
- The steps carefully to avoid any damage to the components or the vehicle.

DIRECTORY

01	INSTALLATION & SAFETY PRECAUTIONS	01
02	INSTALLATION TOOLS	02
03	ACCESSORIES	02
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05	INSTALLATION STEPS	18
06	INSPECTION AND MAINTENANCE	26
07	INSTALLATION OF REAR ASSEMBLY	27

■ BEFORE INSTALLATION

- This product is a heavy-duty off-road modification component and must be installed by a professional with relevant vehicle modification experience.
- Before installation, be sure to read this manual carefully to ensure that all components, fasteners, and tools are complete and undamaged. Missing or damaged parts must be replaced immediately.
- Installation must be performed on a flat, stable surface, and the vehicle must be reliably supported to prevent displacement during installation.
- It is recommended to wear protective gloves to avoid cuts from metal parts and screws; disposable gloves should be worn when handling sealant to prevent skin irritation from chemicals.

■ DURING INSTALLATION

- Strictly follow the installation steps specified in the manual. Do not modify the process or skip key steps without authorization.
- Original Parts Removal: Carefully remove the original bullbar and sensors, retaining the original clip screws. Do not use excessive force to remove them, as this may break the clips.
- Beam Connection: The bullbar must be fixed to the pre-drilled holes in the original vehicle's longitudinal beams. Do not attempt to connect only to the body panels or adjust the original energy-absorbing box base structure. This must be done by two people to avoid damage to components or injury.
- Original Radar and Camera: The original radar and camera must be moved to the new bullbar in their original positions without changing their angle to avoid false alarms or image distortion.
- Lighting Wiring Harness: Wiring harnesses for the added lights must be run through corrugated conduit away from the exhaust pipe. After installation, check that the gap between the bullbar and the exhaust pipe, electric pedal, and license plate frame is no less than 10mm.
- Before installing any electrical components, disconnect the vehicle's power supply to avoid short circuits that could damage the electrical system or create safety hazards.

■ FASTENING & TORQUE SAFETY

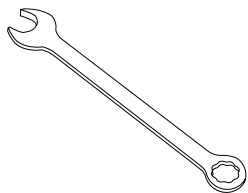
- All fasteners must be tightened using a calibrated torque wrench to the torque value specified in the manual, ensuring tightening accuracy.
- The final tightening process must not be performed using impact drills or power tools to prevent over-tightening and damage to components.
- Over-tightening may cause deformation of aluminum alloy components and damage to threads, thereby affecting structural stability and sealing performance; under-tightening may easily lead to loosening of components, posing a safety risk.

■ SEALING & WATERPROOFING

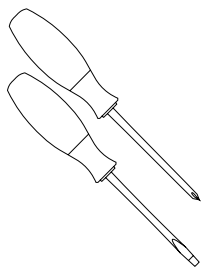
- Verify that all fasteners are tightened to the specified torque, with no loosening or stripping. Pay special attention to critical connections for M6 and M8 fasteners.
- Inspect all seals to ensure they are intact, continuous, without warping, and with tight gaps.
- Functional retest: Reconnect power, clear fault codes, and test the reversing radar, 360-degree camera, and blind spot monitoring for proper function and no persistent false alarms.
Perform a low-speed test drive with the steering wheel fully turned to the left and right, over speed bumps or uneven surfaces, confirming no metallic friction or collision noises.
- Regulatory compliance: Ensure that the original headlights, turn signals, license plate, and license plate light are not obstructed. Otherwise, the license plate must be relocated and the lighting must be compliant to avoid penalty points.
- Post-driving retightening: Retighten all connecting bolts after driving 50-100 kilometers. Afterward, check the torque markings every 5000 kilometers or after each off-road trip.

■ DISCLAIMER

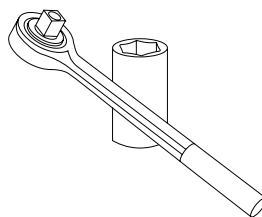
- The manufacturer accepts no liability for damage, injury, or loss resulting from installation, use, or maintenance not carried out in accordance with this manual.



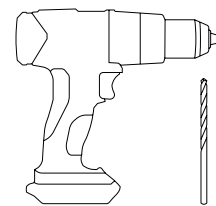
Metric wrench set



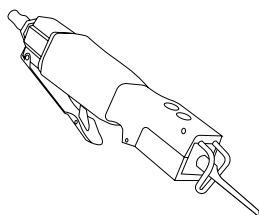
Screwdriver set



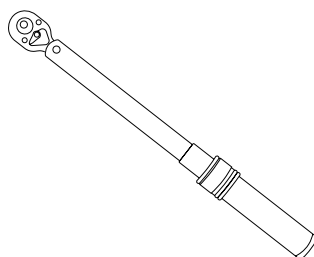
Metric sleeve assembly



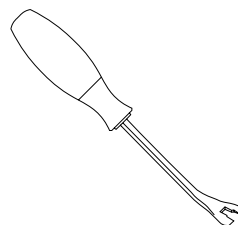
Drill and Drill Bits



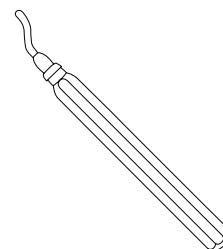
Air Hacksaw



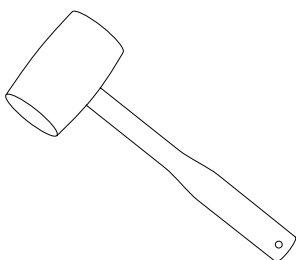
Torque Wrench



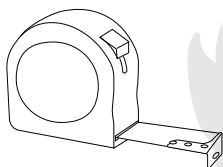
Clip Remover



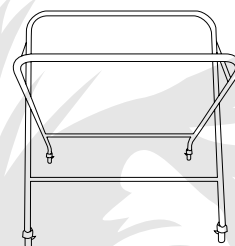
Deburring Tool



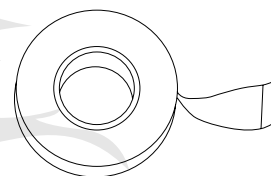
Rubber Mallet



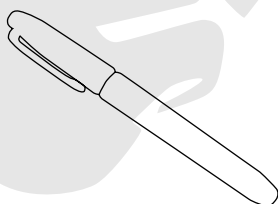
Tape Measure



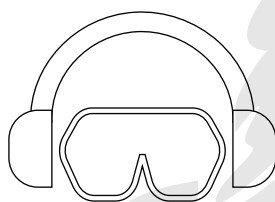
Bullbarr Support Stand



Masking Tape

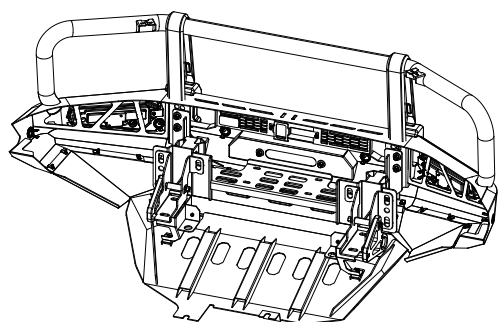


Marker and Paint Pens

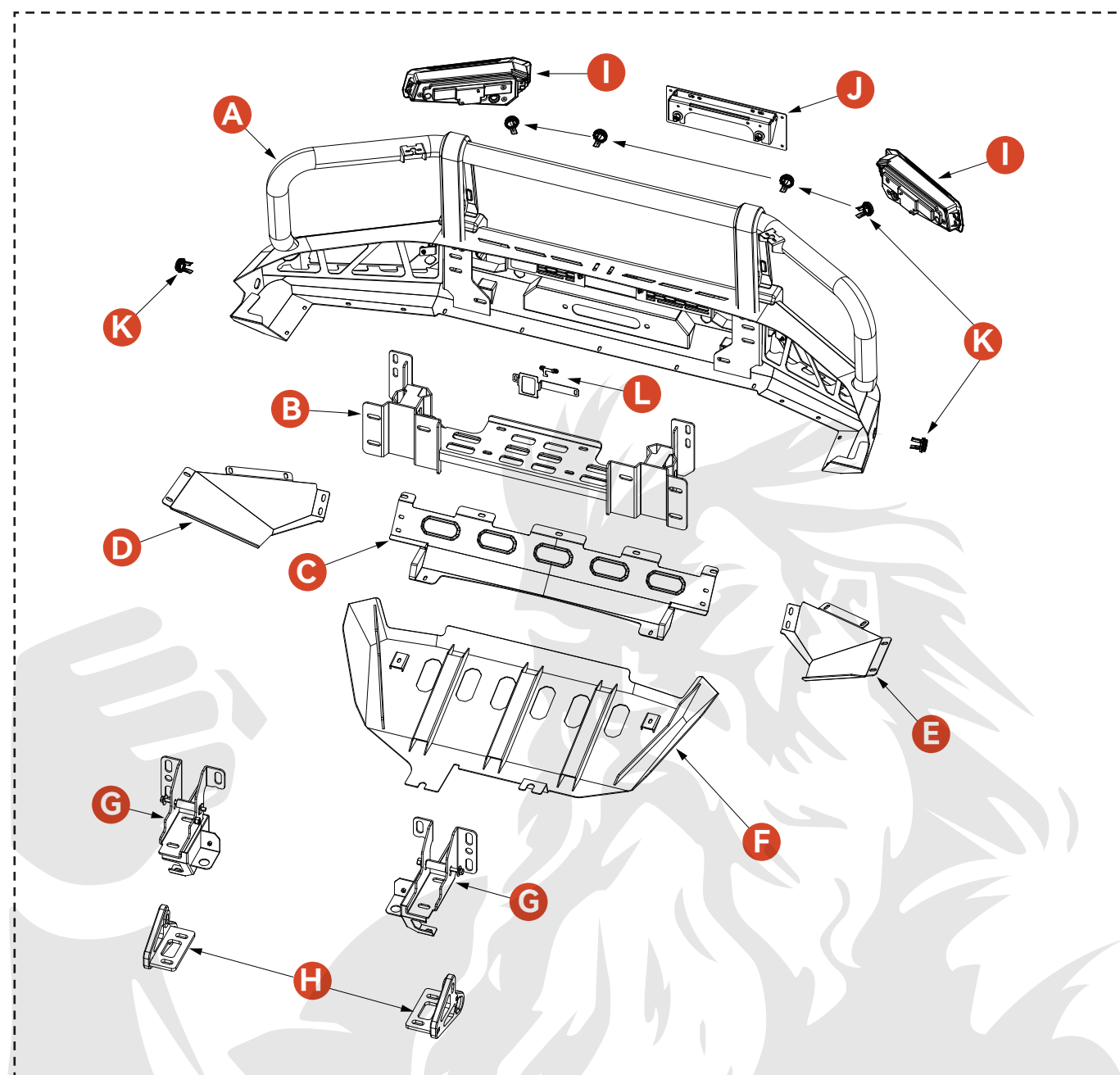


Personal Protective Equipment

■ PARTS 1



NO.	Part name	NO.	Part name
A.	Front bullbar main welded assembly	G.	Beam head reinforcement
B.	Winch bracket	H.	Tow hook
C.	Guard Plate - Middle	I.	Lighting modules
D.	Guard Plate - Right Side	J.	License plate base
E.	Guard Plate - Left Side	K.	Camera bracket
F.	Guard Plate - Bottom	L.	Millimeter-wave radar/camera bracket



■ PARTS 2

● Front bumper body + Winch bracket

1

Large washers, Class A and C
10X30mm



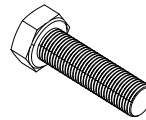
2

Heavy-duty spring washers
10mm



3

Hex head bolts with full thread
M10X35-S



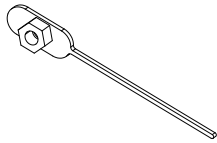
4

Hex nuts
M10-N



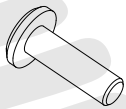
5

Nut plate
M10



6

Pan head socket screws
M6X20



7

Flat washer with chamfered edge
6X12mm



8

Lightweight spring washers
6mm



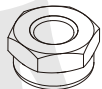
9

Hex nuts
M6-N



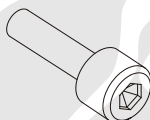
10

Flange Nut
M5-N



11

Hexagon socket head screws
M5X25-S

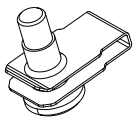


■ PARTS 2

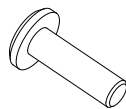
● Guard panel installation

12

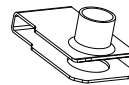
Protective plate screws,
nuts and fasteners

M6

13

Pan head socket screws

M6X20

14

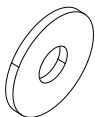
M6 Standard Quick Clip Nut

M6


● Bumper attachments + trailer hitch fixing

15

Large washers, Class A and C

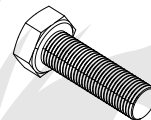
12X12mm

16

Lightweight spring washers

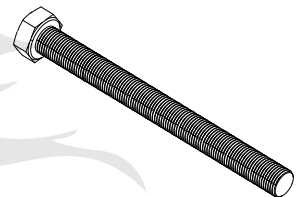
12mm

17

Hex socket flat head screws

M4X12-N

18

Trailer hook fixing

M10X130


● Glue block fixing

19

Flange Nut

M8

20

Lightweight spring washers

M8X20

21

Hex nuts

M8-N

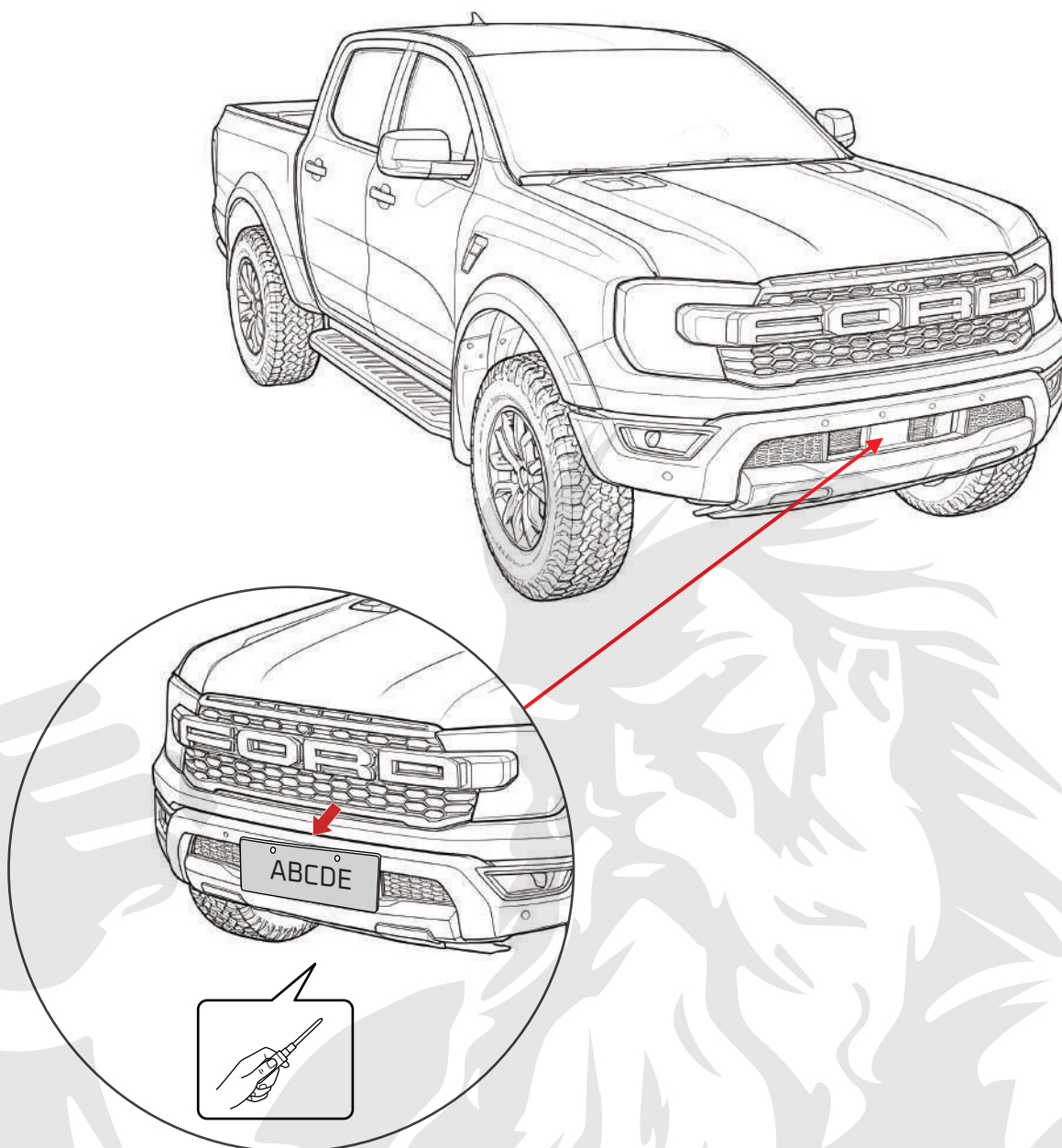

STEP 1

⚠ WARNING:

If Relocating Front Camera – Read and understand camera relocation bracket instructions before beginning work.

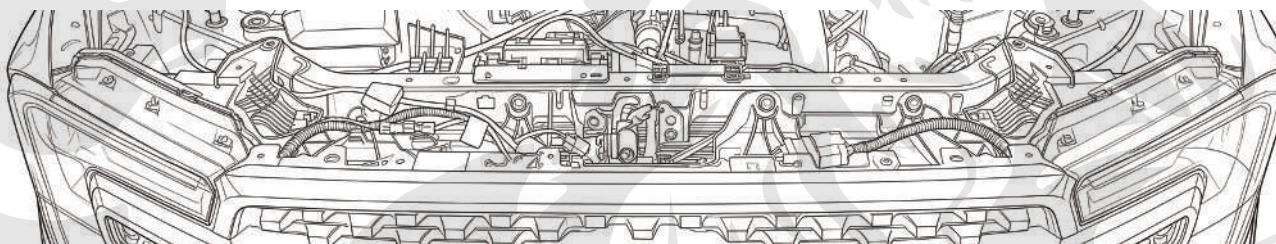
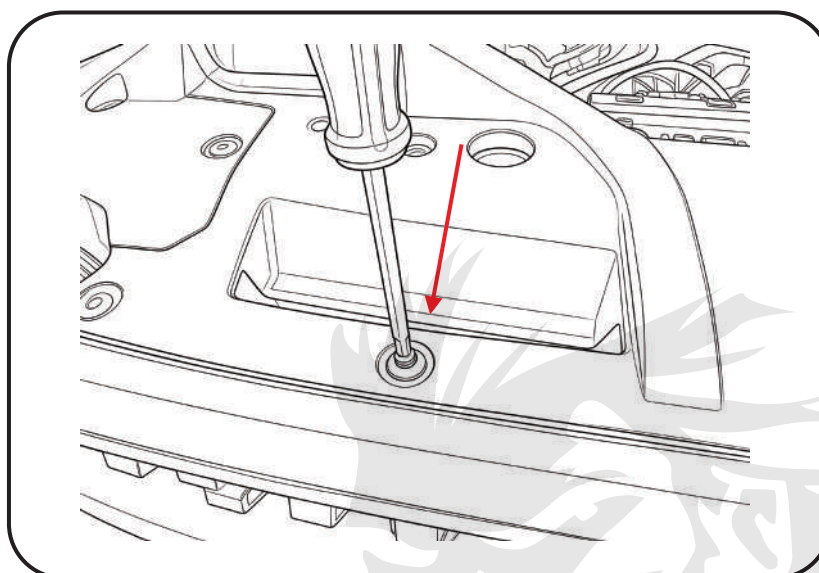
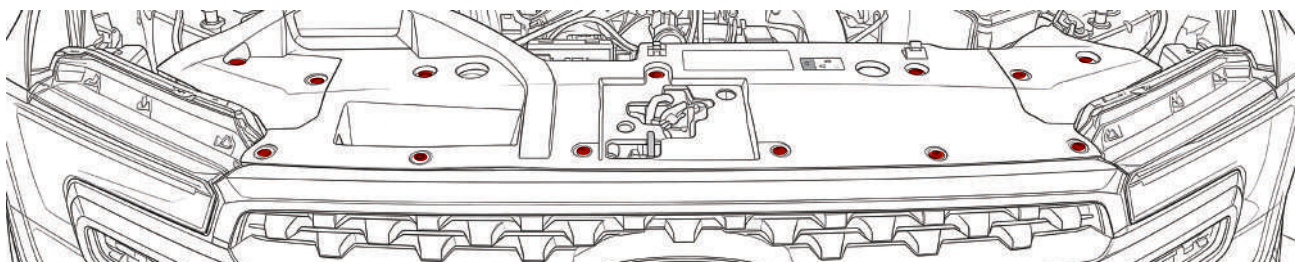
DO NOT turn on or move car whilst any camera or radar systems are disconnected. Failure to observe this precaution will result in system errors that will need car to be taken to Ford Dealership to resolve. Keep proximity keys away from vehicle and out of range to minimize the chances of computers activating whilst modules are disconnected.

- 1. Remove number plate from bumper and set aside.
- 2. Open the bonnet by pulling twice on the lever under the steering wheel on the driver's side.



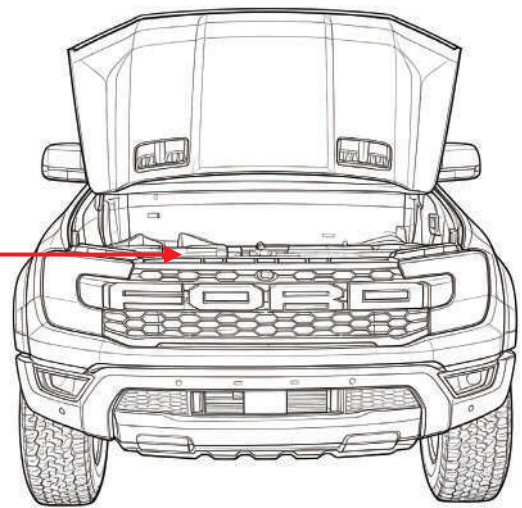
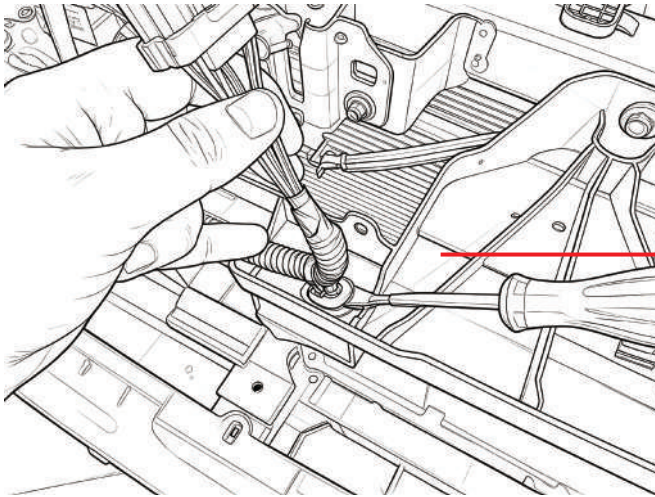
STEP 2

- 1. Open the Bonnet.
- 2. Remove scrivenets securing the top radiator cowling. Unscrew center section with Phillips screwdriver to unlock, then remove clip with trim tool.
- 3. Retain all clips for reassembly.
- 4. Loosen the 2x Bolts securing the grille to the radiator panel.



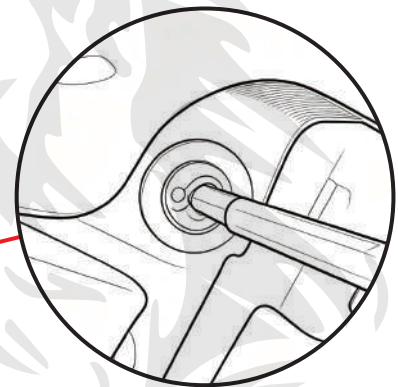
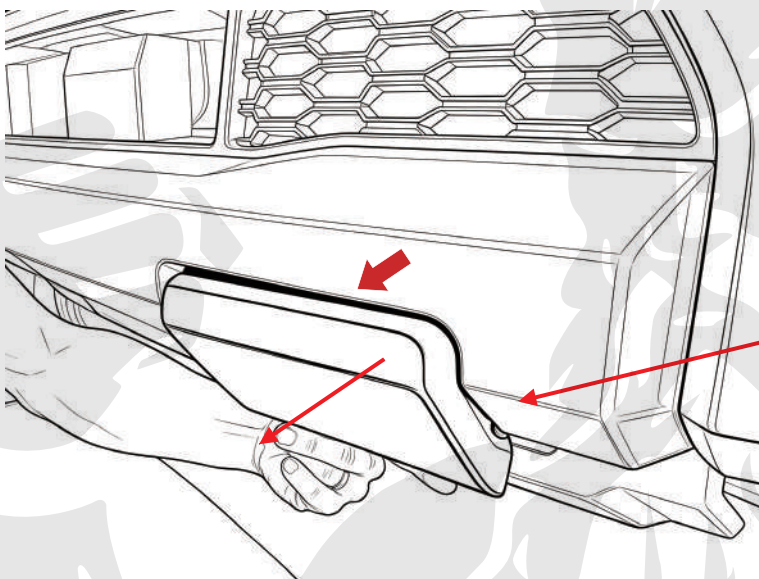
STEP 3

- 1. Unplug the main wiring harness connector, located adjacent to the left-hand headlight.
- 2. Unclip the main wiring harness from all locations where it is secured the radiator support panel.



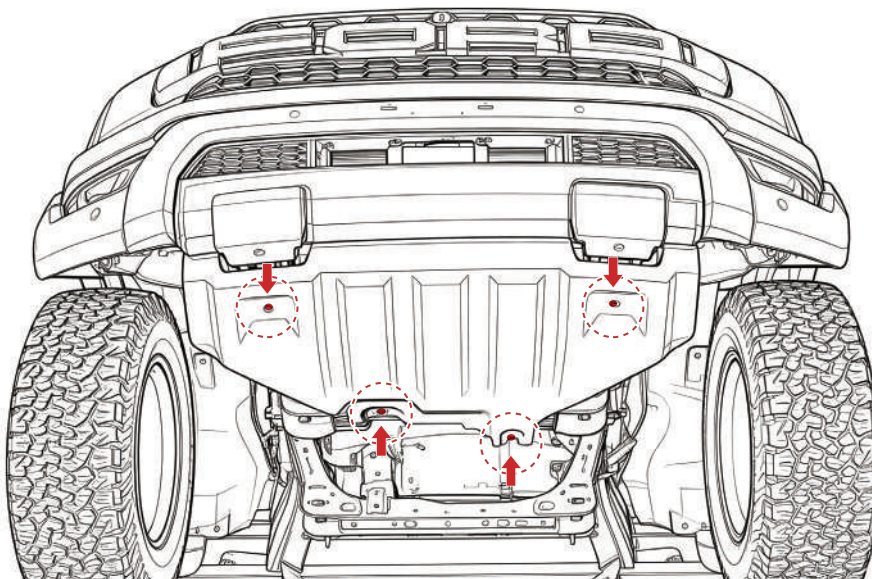
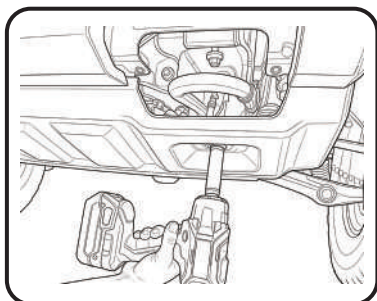
STEP 4

- 1. Using T20 Torx driver remove the screws securing the tow point covers.
- 2. Once removed, pull from lower edge to remove tow point covers.



STEP 5

- 1. Remove the Factory Flange bolts that secure the center front bash plate with 15mm Socket.
- 2. The back two bolts on the engine crossmember can just be loosened to allow the plate to slide forward on removal.
- 3. Set aside bash plate.



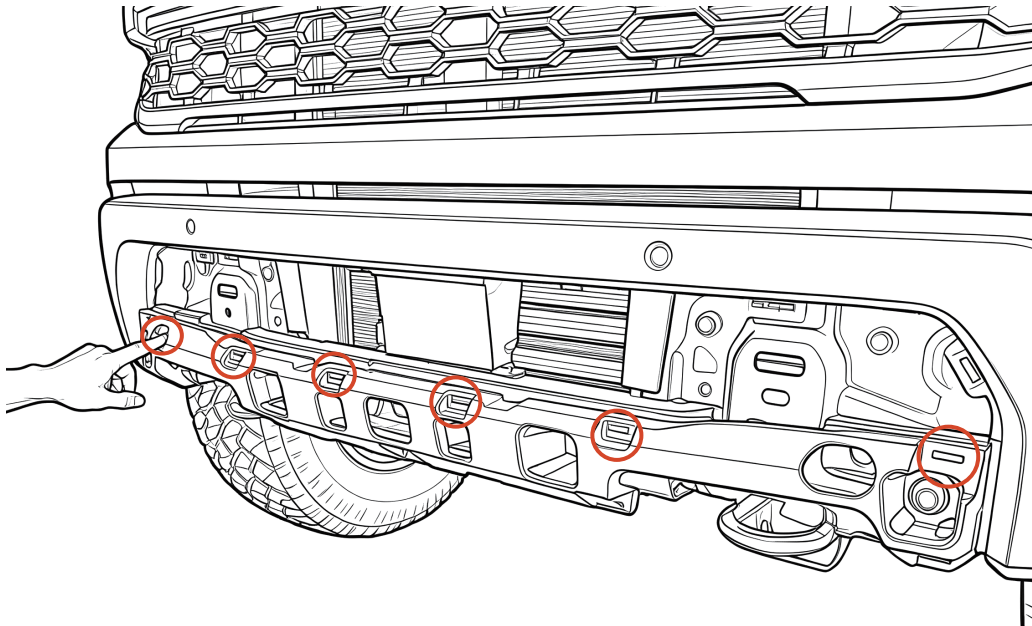
STEP 6

- Remove the center silver trim on the bumper, by pulling firmly to release clips.



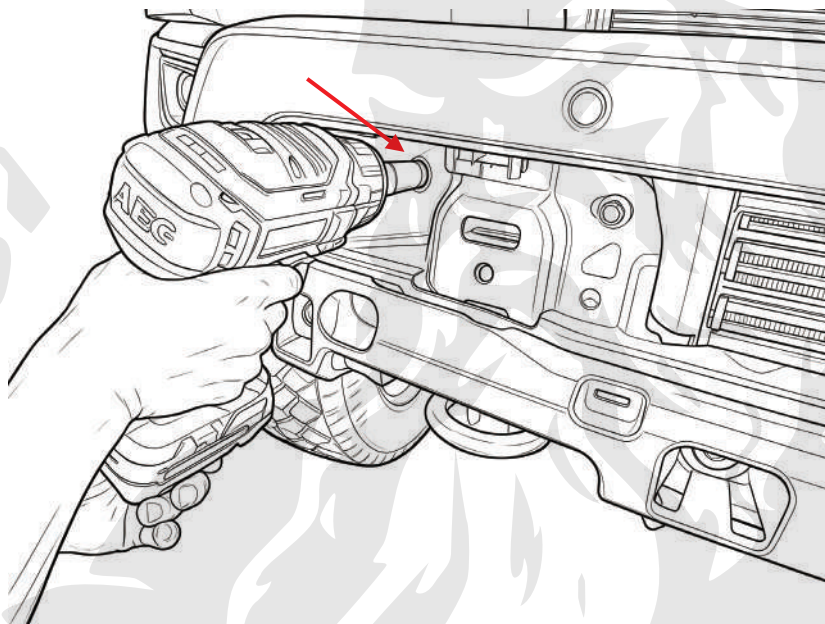
STEP 7

➤ This will reveal the impact beam. The above photo shows the location of the clips securing the silver trim.



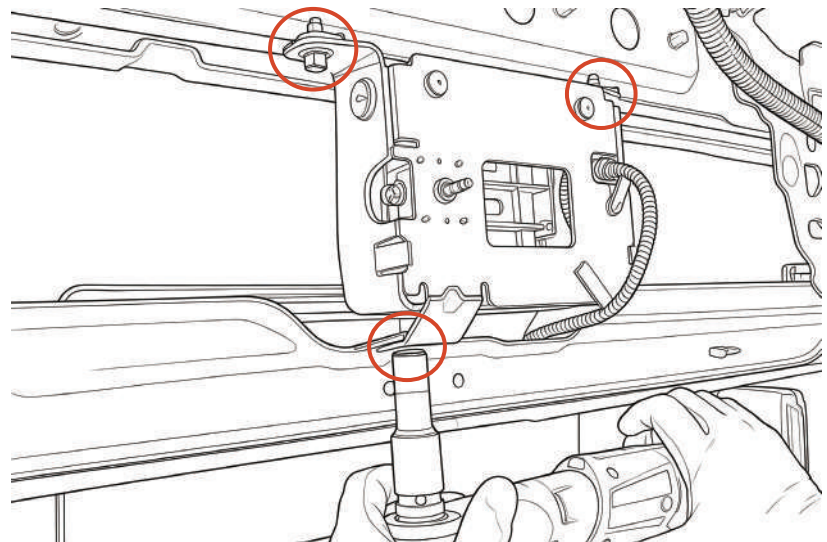
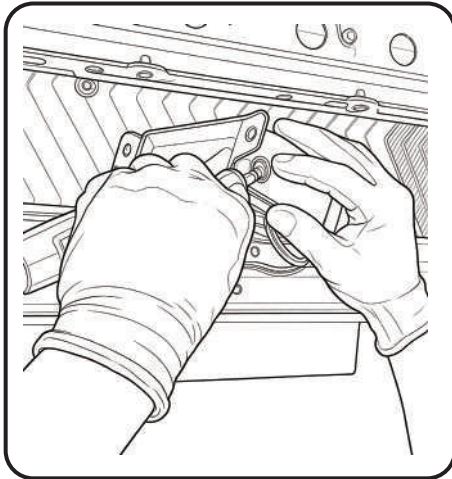
STEP 8

-
1. Using 15mm Socket / Spanner remove the 15mm bolts securing the lower bumper to the chassis rail.
 2. **IMPORTANT:** Release and feed through the main wiring harness before removing the bumper. Unclipping the side of grille from the headlight can make this process easier.
 3. Remove the bumper from the vehicle and set aside on a soft surface.



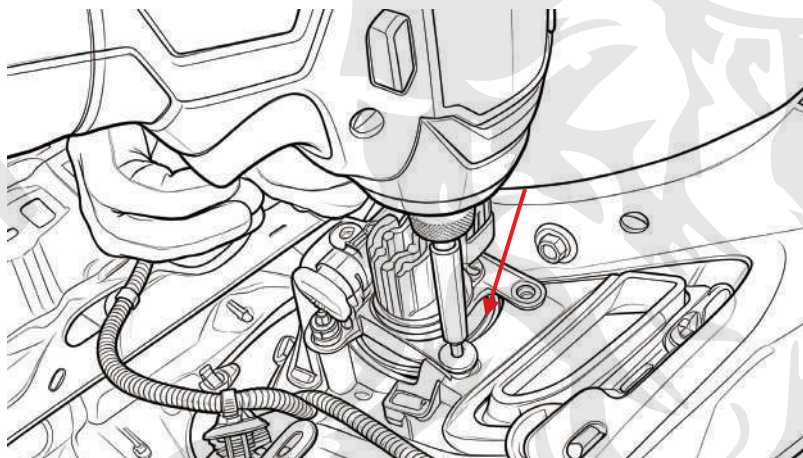
STEP 9

- 1. Remove radar sensor assembly from the bumper.
- 2. It is secured to the bumper with 3x bolts, Remove with 10mm Socket/spanner. The plastic cover will also need to be unplugged and removed to be able to unplug sensor from the harness.
- 3. Set aside sensor module in a safe place for refitment to the bar later.



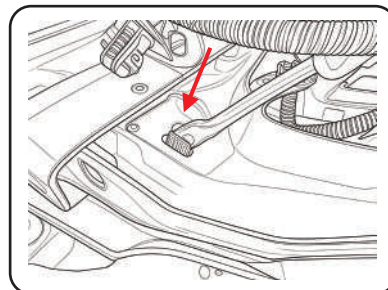
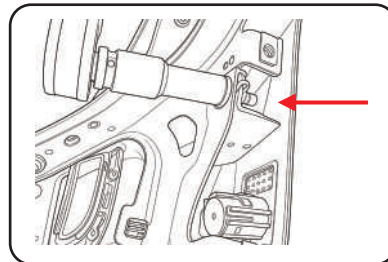
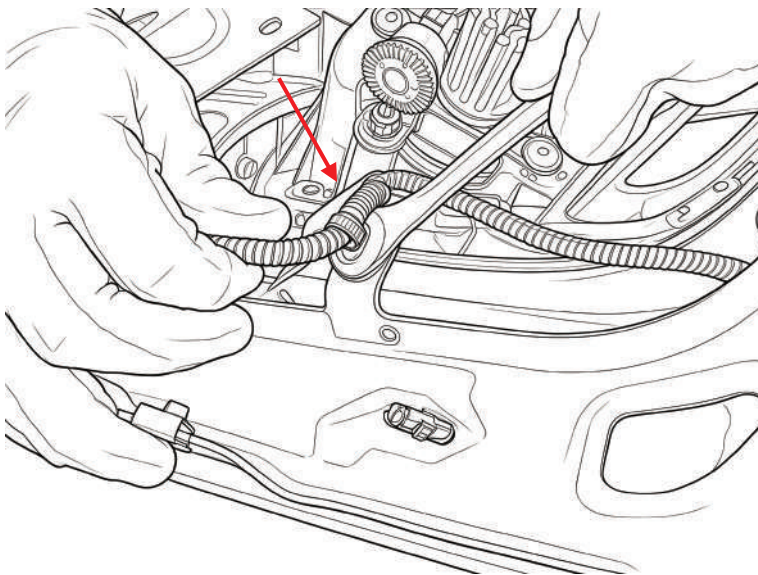
STEP 10

- 1. Unplug and remove the fog lights.
- 2. Remove and discard the T20 Torx screws securing to the bumper.
- 3. Retain fog lights for re-fitment to the bar.



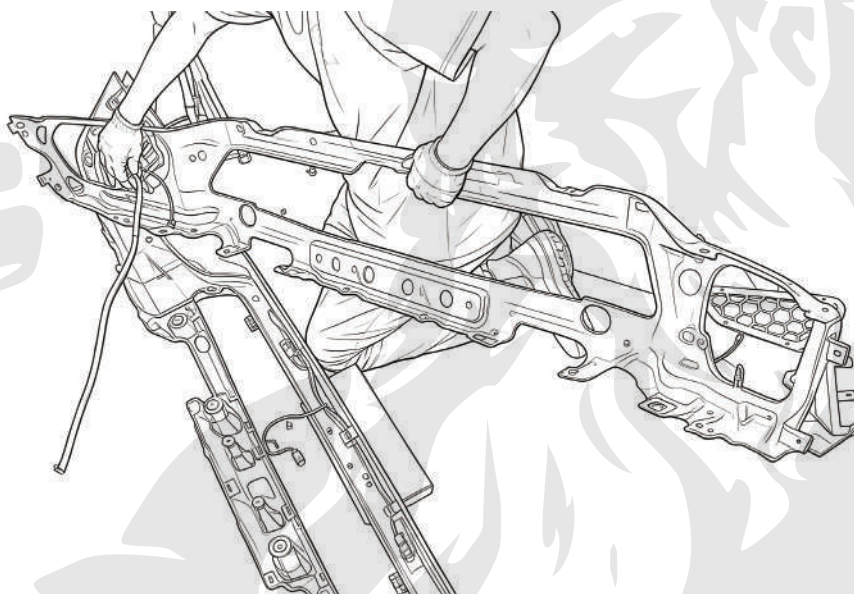
STEP 11

- 1. Unclip the factory wiring harness from the bumper.
- 2. Next, we want to separate the inner metal part of the bumper from the outer piece. Remove the annoyingly large number of bolts securing the two pieces together.
- 3. Finally unclip the zillion or so clips that secure the inner part of the bumper. Work methodically from one end to the other.
- 4. Once you think you have them all done, begin to separate inner. Excessive resistance will show the clips / bolts you have invariably missed, undo then continue.



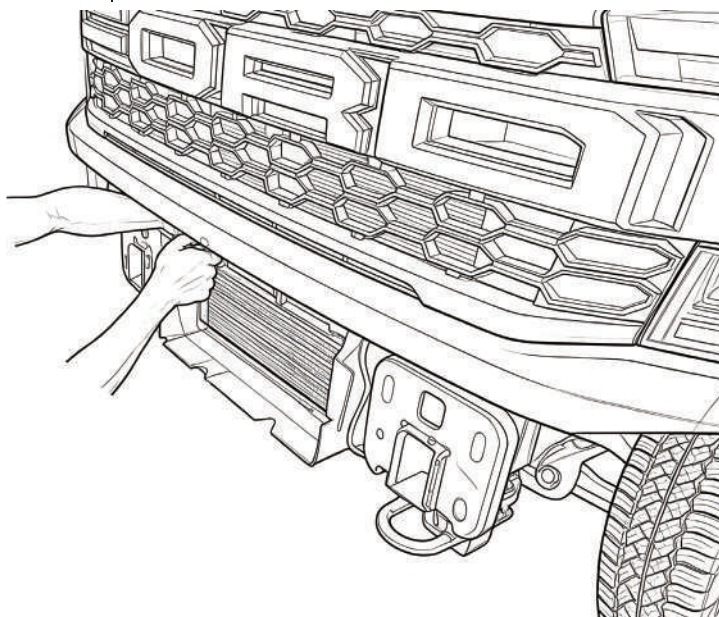
STEP 12

- 1. Finally, success! Throw that blasted center section to the other side of the workshop!
- 2. Now with sufficient access, remove the wiring harness and parking sensors from the outer bumper. Ensure you keep the parking sensors in their correct locations.



STEP 13

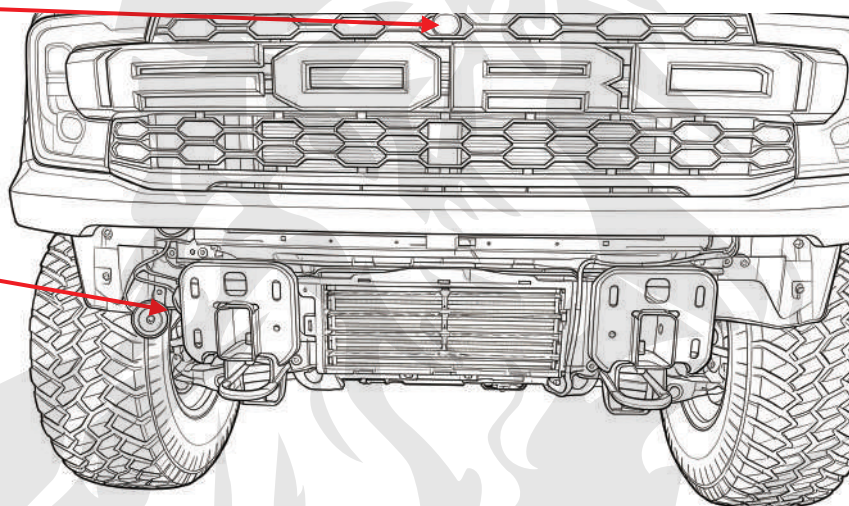
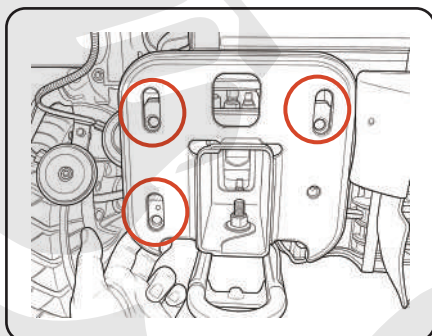
- 1. Remove the plastic intercooler air guide from the intercooler.
- 2. Discard air guide.



STEP 14

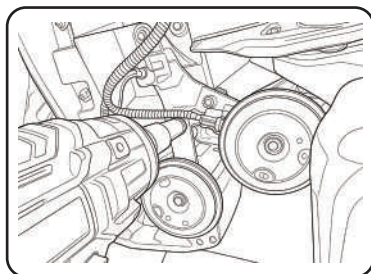
- 1. Remove the factory nut plates from behind the chassis end plates.
- 2. The nut plates are secured by a small plastic nut on a stud on the back side of the end plate. This should be able to be undone by hand.
- 3. If Relocating Front Camera – Camera and washer can be removed from grille. Refer to Camera relocation kit instructions.

Remove if relocating

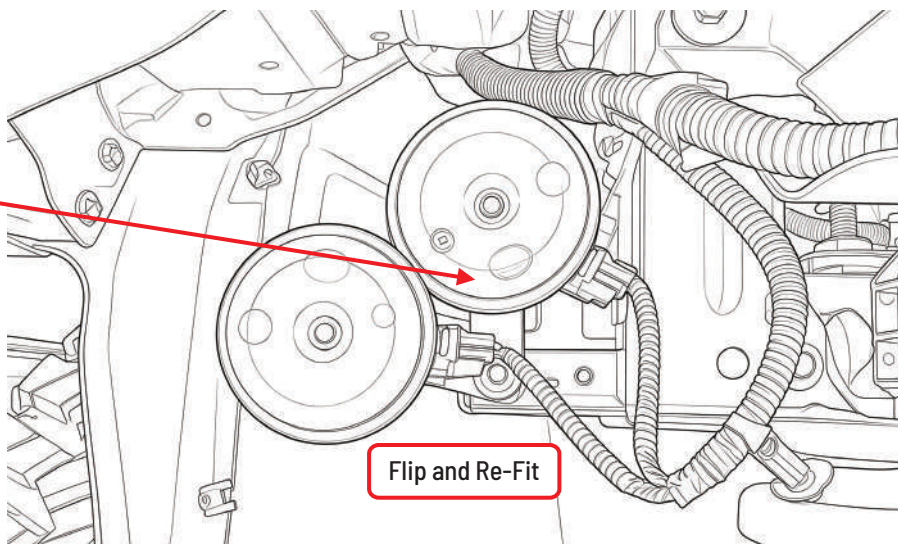


STEP 15

- 1. Remove bolt and clip securing the horns from body underneath the RH headlight. Use 10mm Socket.
- 2. Remove the center Y shaped bracket and re-secure horns, flipped 180 degrees to the chassis, using OE Bolt.



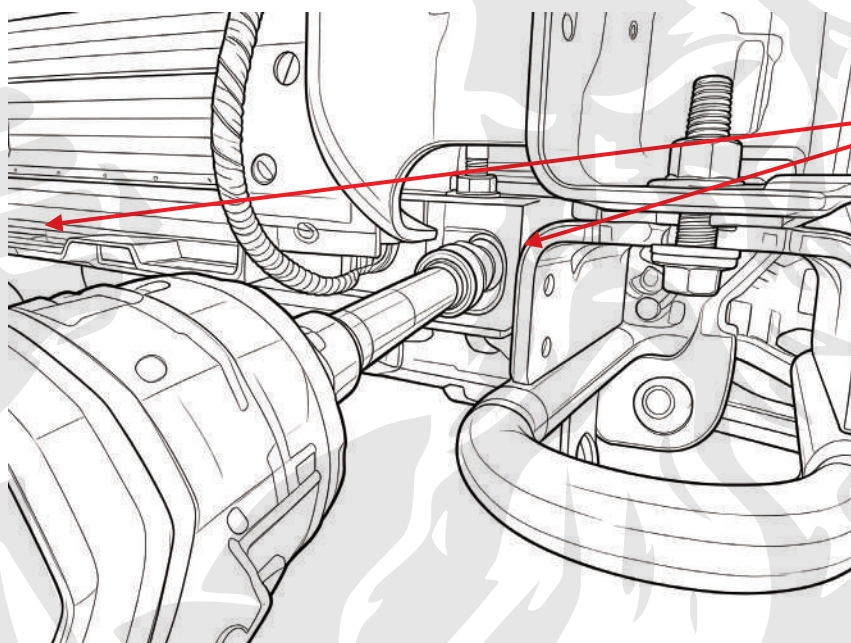
Remove Horns



Flip and Re-Fit

STEP 16

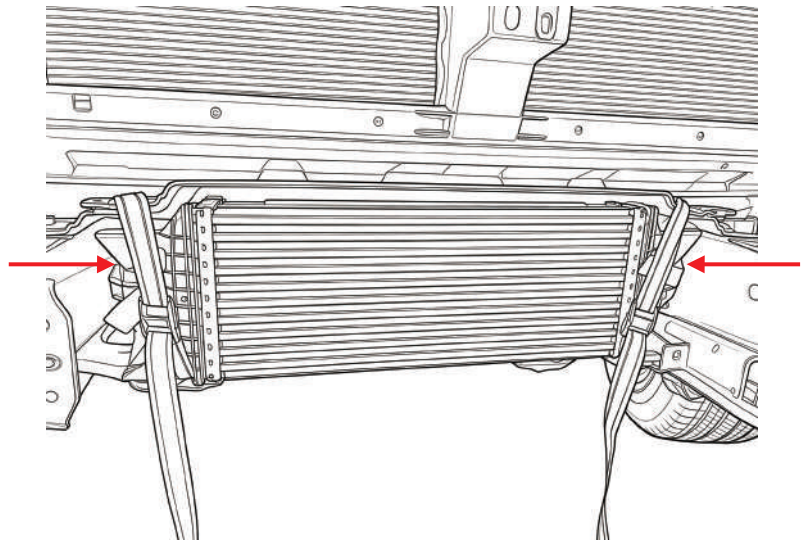
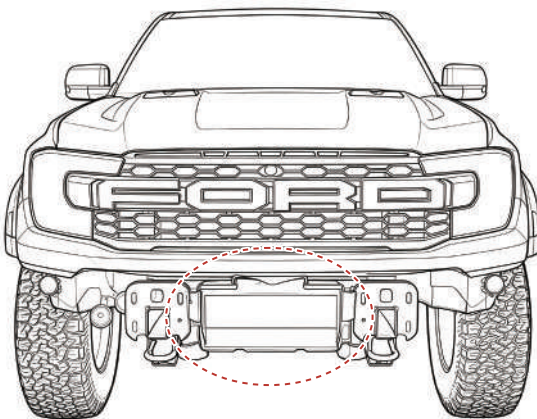
- 1. Remove the fasteners securing the Louvres to the lower tow point mounting bracket.
- 2. Retain fasteners for re-fitment.



2x 8mm Head Bolts

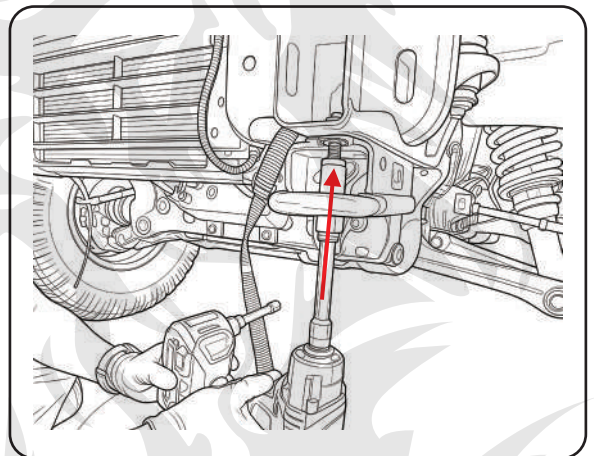
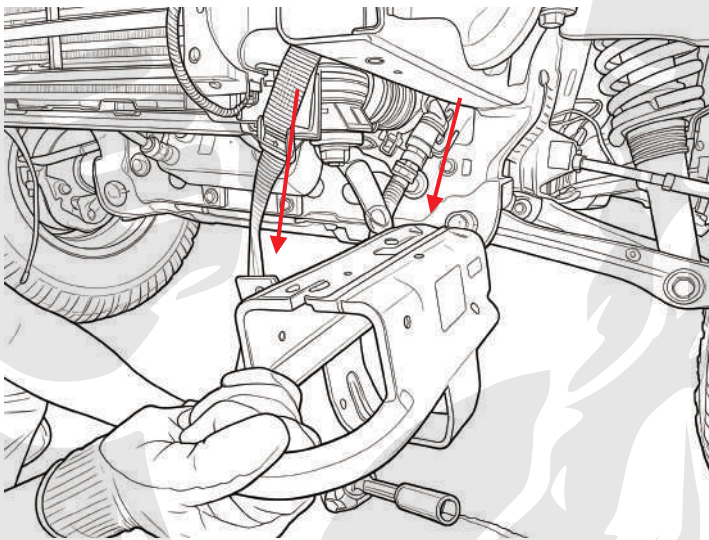
STEP 17

- 1. Temporarily support the intercooler by strapping to the upper intercooler support brackets.
- 2. This is best done with relatively short camlock straps or similar, Ensure the straps do not obstruct the lower rubber intercooler mounts.



STEP 18

- 1. Remove the Tow points from the bottom of the chassis rail, by removing the 2x factory Flange Bolts with 17mm socket.
- 2. An extension bar is required to access the rearmost bolt.
- 3. Complete for both Tow Points. Retain tow points and bolts for re-fitment.

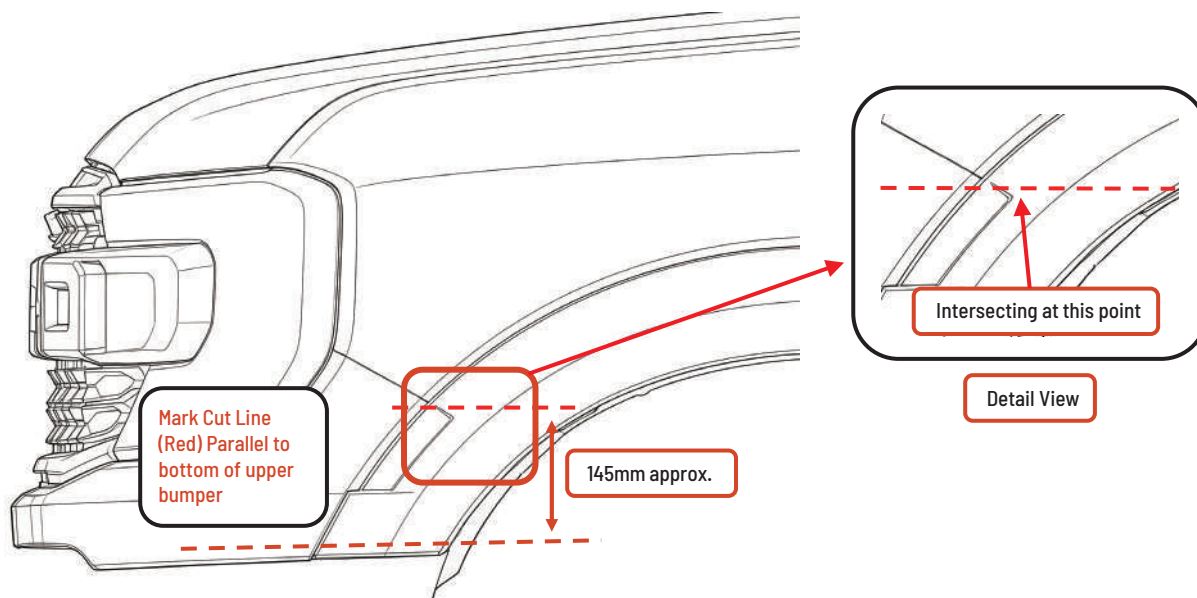


04 DISASSEMBLY STEPS

STEP 19

- 1. Mark the fender flare cut line as shown in the diagram above.
- 2. The cut line is to be parallel to the bottom of the upper bumper / flare and intersecting the corner of moulded flare pressing.
- 3. The vertical spacing should be approximately 145mm from the bottom of the flare.

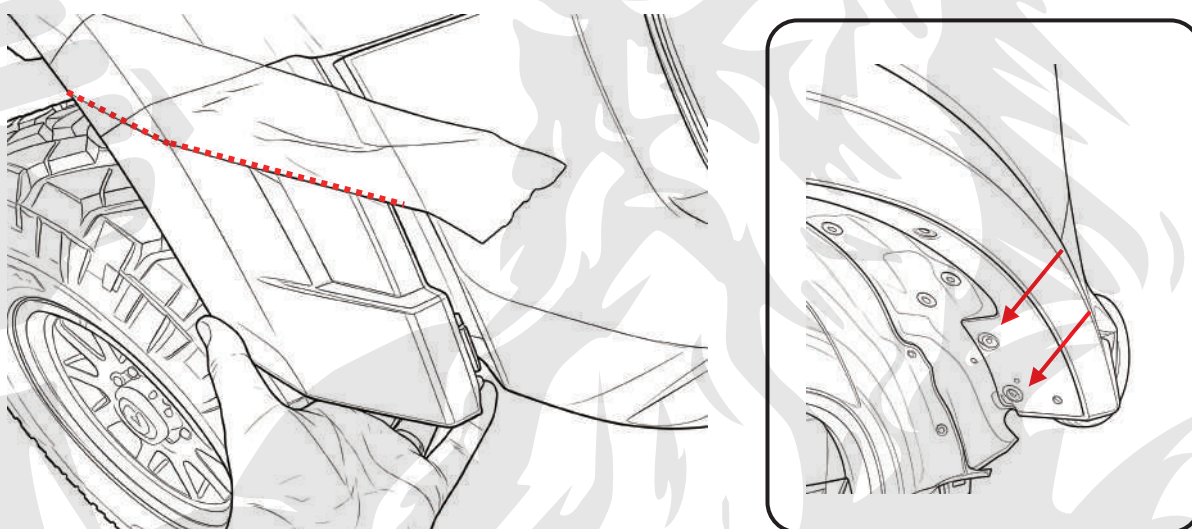
Note: The cut will be the full width of the flare.



STEP 20

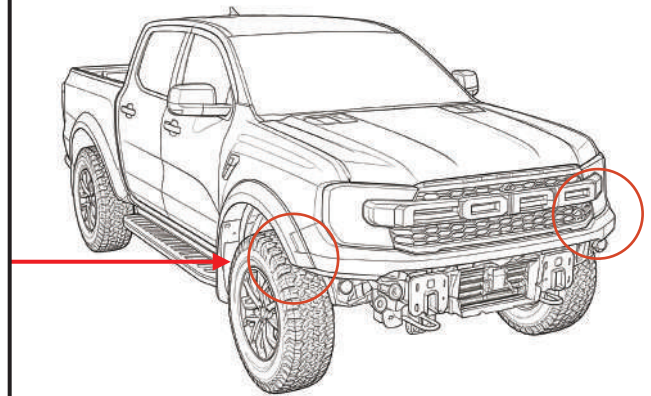
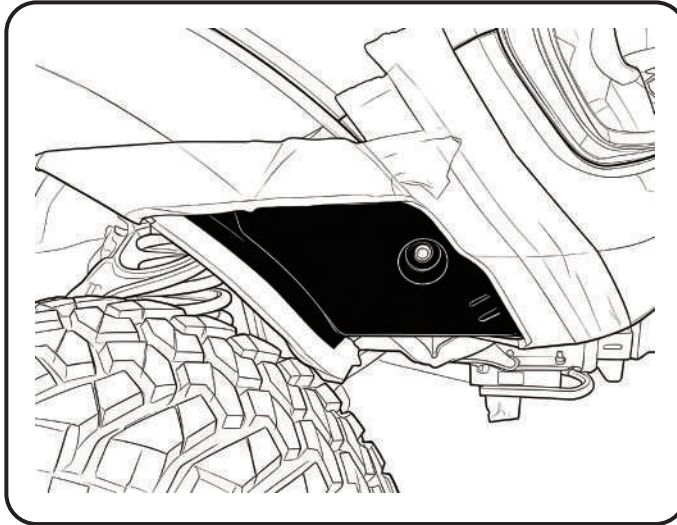
- 1. Remove the 2x T20 Torx head screws securing the flare to the upper bumper.
- 2. Carefully but firmly pull the lower edge of the flare outward to release the clips securing it to the upper bumper panel.
- 3. Carefully trim fender flare along the horizontal tape edge marking the cut line made in previous steps. We recommend using an oscillating multi tool with plastic cutting blade for control and clean edge.

Note: The cut can be cleaned up with a utility knife or deburring tool.



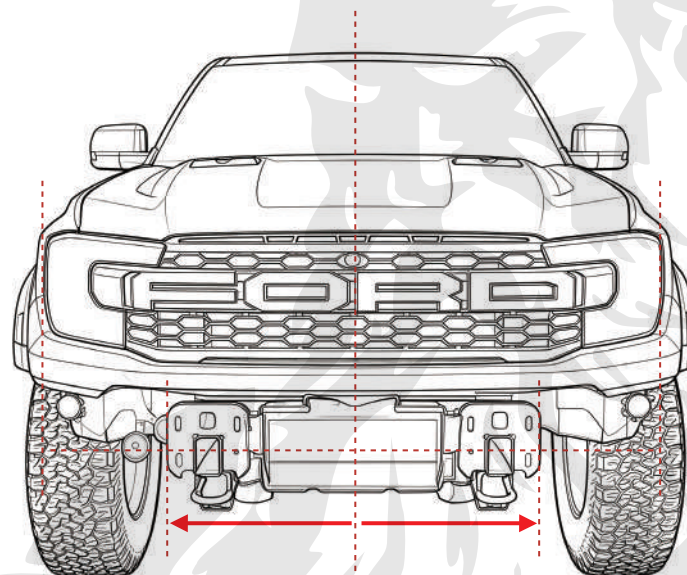
STEP 21

- 1. Mask area underneath flare trim with masking tape.
- 2. Clean area with isopropyl alcohol or other cleaning solvent.
- 3. Paint area with matte black automotive paint.



STEP 22

- 1. Measure Distance between outside edges uprights on bar using tape measure. Write distance below for reference if required.
- 2. Adjust mounts by sliding mounts on slots, such that distance between outside edges of mounts is approximately 2-4mm more than the bar.
- 3. Secure and tighten mounts. Tighten bolts that secure the tow point to chassis first, then impact assembly to chassis bolts.



Adjust



IMPORTANT NOTE:

To ensure the parking sensors function properly, this instruction must be strictly followed.

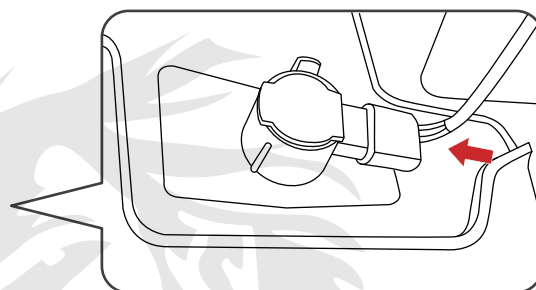
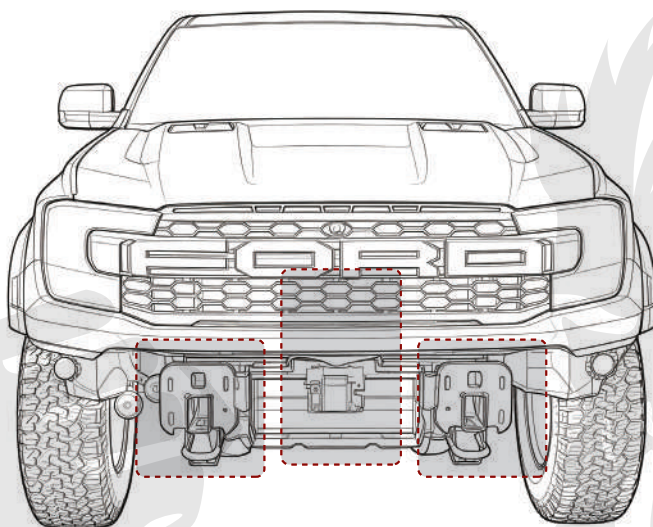
- Before removing the sensors from the original bullbar, record the position and orientation of each sensor. This will allow you to replicate their original position when reinstalling them on the bullbar.
- Do not paint the parking sensors. Parking sensors are precision components in a vehicle's safety system. The sensor's central "eye" is responsible for detecting objects within a specified distance of the vehicle.
- Painting parking sensors will not damage them, but it will inhibit their ability to detect surrounding objects, potentially leading to malfunction or premature triggering. Parking sensors should only be painted once by the original equipment manufacturer (OEM).
- We strongly recommend against color-coding parking sensors when installing bullbar, as excessively thick paint can interfere with the proper functioning of parking assist systems.

STEP 1

- Disconnect the parking sensor from the previously removed original bullbar, unfasten the clip, remove it, and carefully place it aside for transfer to the crash bar.
1. Mark the location and orientation on the rear of each side front radar.
 2. Disconnect these connections and carefully remove them from each side of the original bullbar, removing the three screws securing them.
 3. Carefully remove the radar and set it aside for transfer to the bullbar guard.

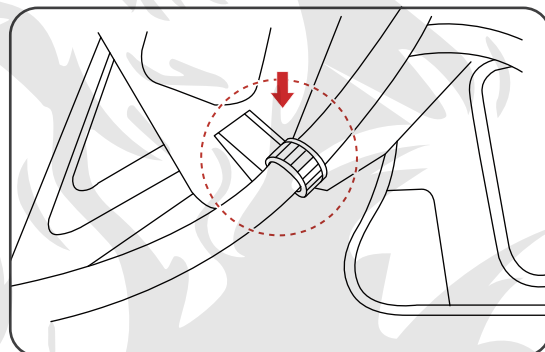
Note: Please pay attention to the position, order, and orientation of each sensor to ensure they are reinstalled in the bullbar with the same configuration.

Note: Please ensure the radar is not dropped, as this may cause damage or malfunction.



-
1. Carefully remove the clips securing the original sensor and radar harness to the lower part of the bullbar, removing the clips on the harness as you go.
 2. There is no need to remove or detach the harness from the grille. Leave it attached and in place.

Note: Do not force or pull, as this may damage the wiring harness.



4 4X	15 4X	16 2X	18 2X

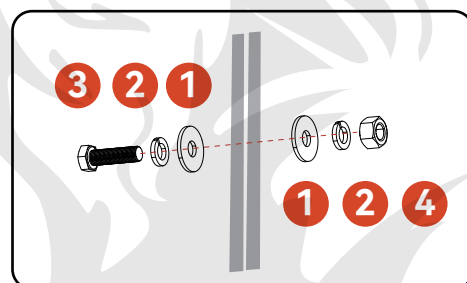
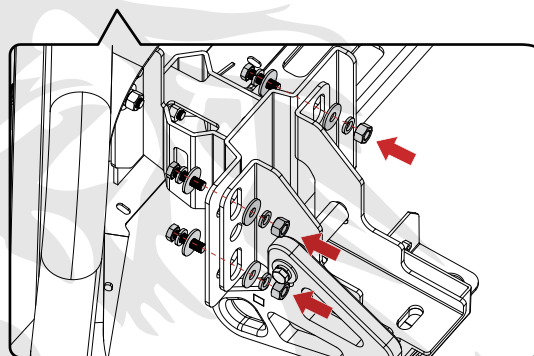
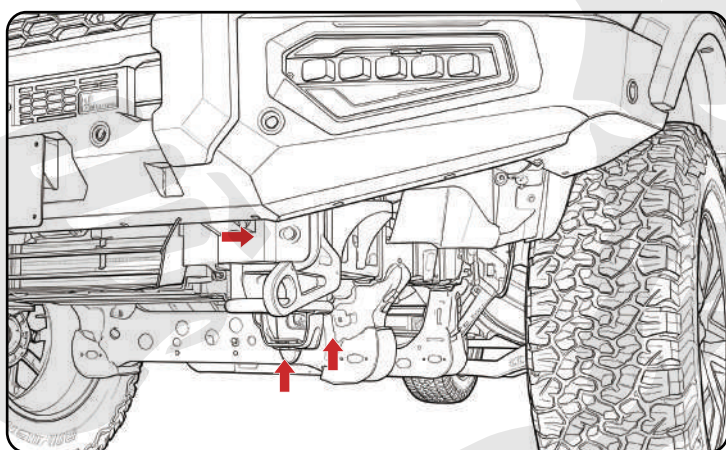
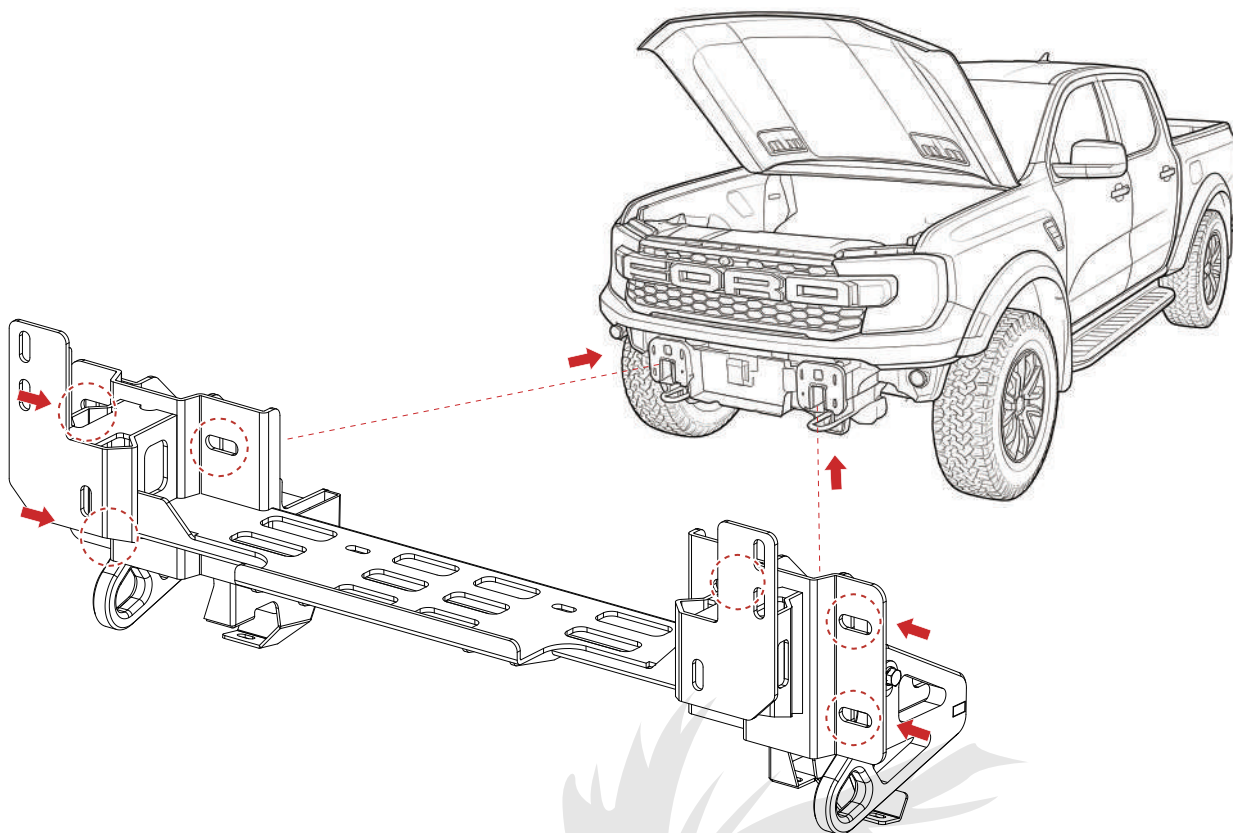
1. Prepare to install the beam head mounting bracket.
2. Install the trailer hook, aligning the holes at the connection point.
3. Secure the bottom with washers and bolts.
4. Secure the side of the trailer hook with M12x120mm bolts and washers.



05 INSTALLATION STEPS

STEP 3

- 1. Install the winch bracket, aligning it with the holes at the connection point to the frame.
2. Use M10x35mm hex head bolts to secure it at the corner holes.



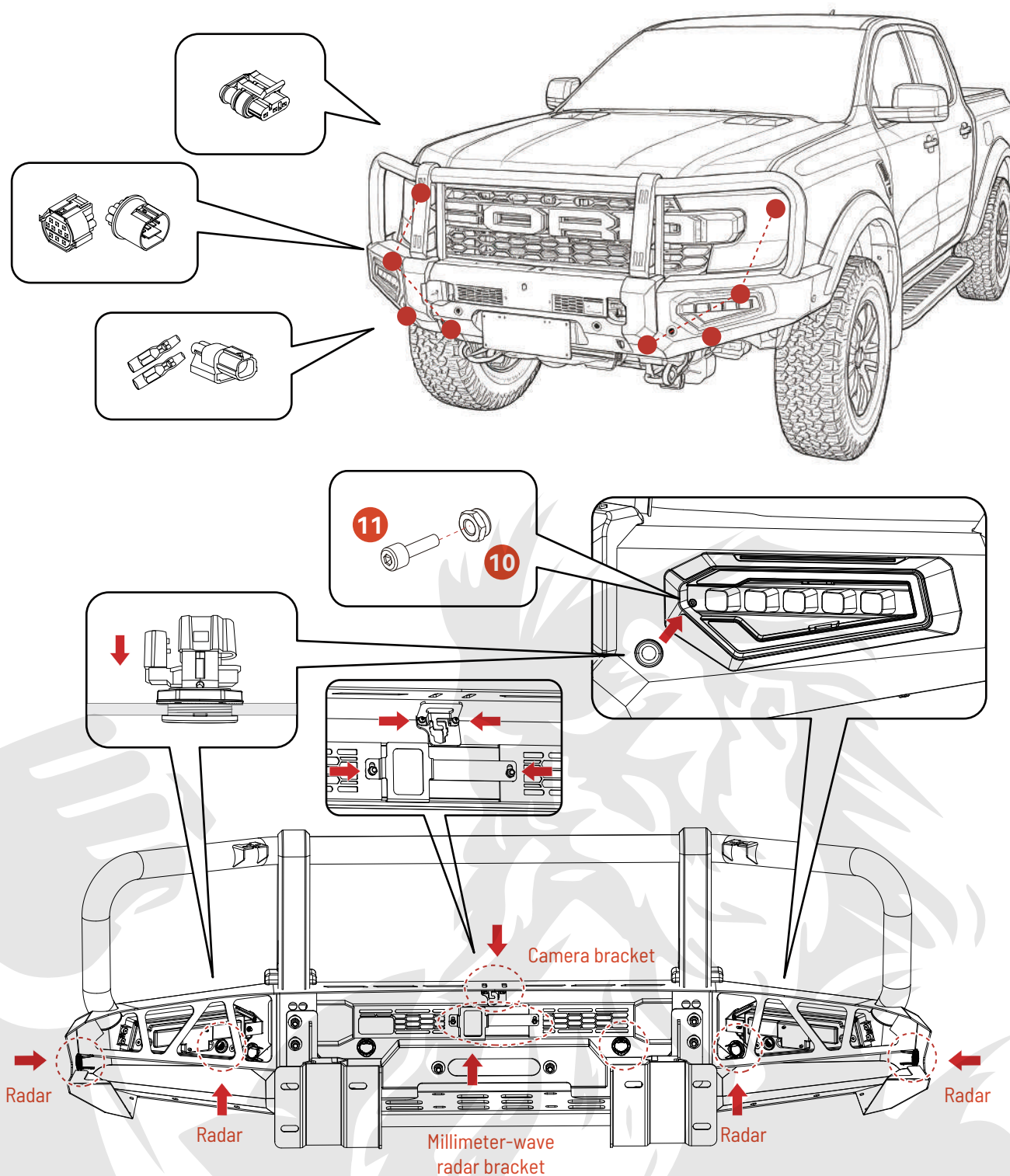
05 INSTALLATION STEPS



STEP 4



- 1. Install and secure the lights and wiring.
2. Install the camera bracket and tighten the screws.
3. The radar bracket is secured with nuts.
4. Use cable ties to secure all wiring and cables to the clips.
5. Test all functions to ensure they are working properly.



05 INSTALLATION STEPS

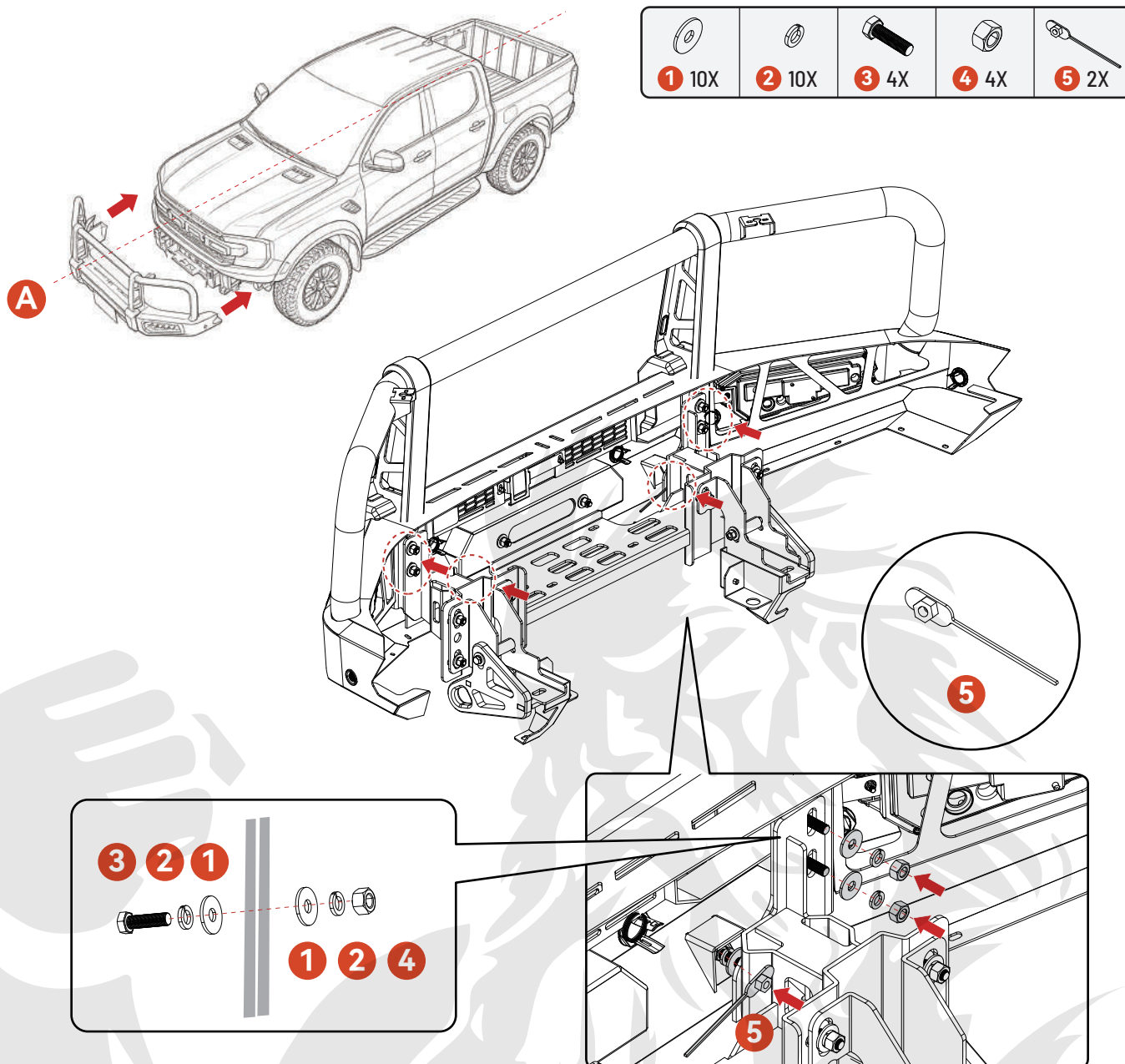
STEP 5



- 1. Position the vehicle on the ground or a four-post crane. Raise the bumper to the correct position and align the side wing protection plates with the chassis mounting holes.
2. Use M10x35mm hex head bolts with full thread to secure the front bumper main weld assembly to the fenders and brackets.
3. Repeat the same steps on the other side.
4. Center the bumper to the vehicle body and lift the lower bolts on both sides to adjust it to the correct position.

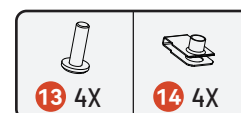
Note: Leave approximately 25 mm of clearance between the bumper and the bumper wing. This is to allow for chassis flexibility and prevent the body panels from contacting the bumper.

Warning: Unless a bumper lift is used, it is recommended that two people work together to avoid personal injury or damage to the vehicle and/or its components.



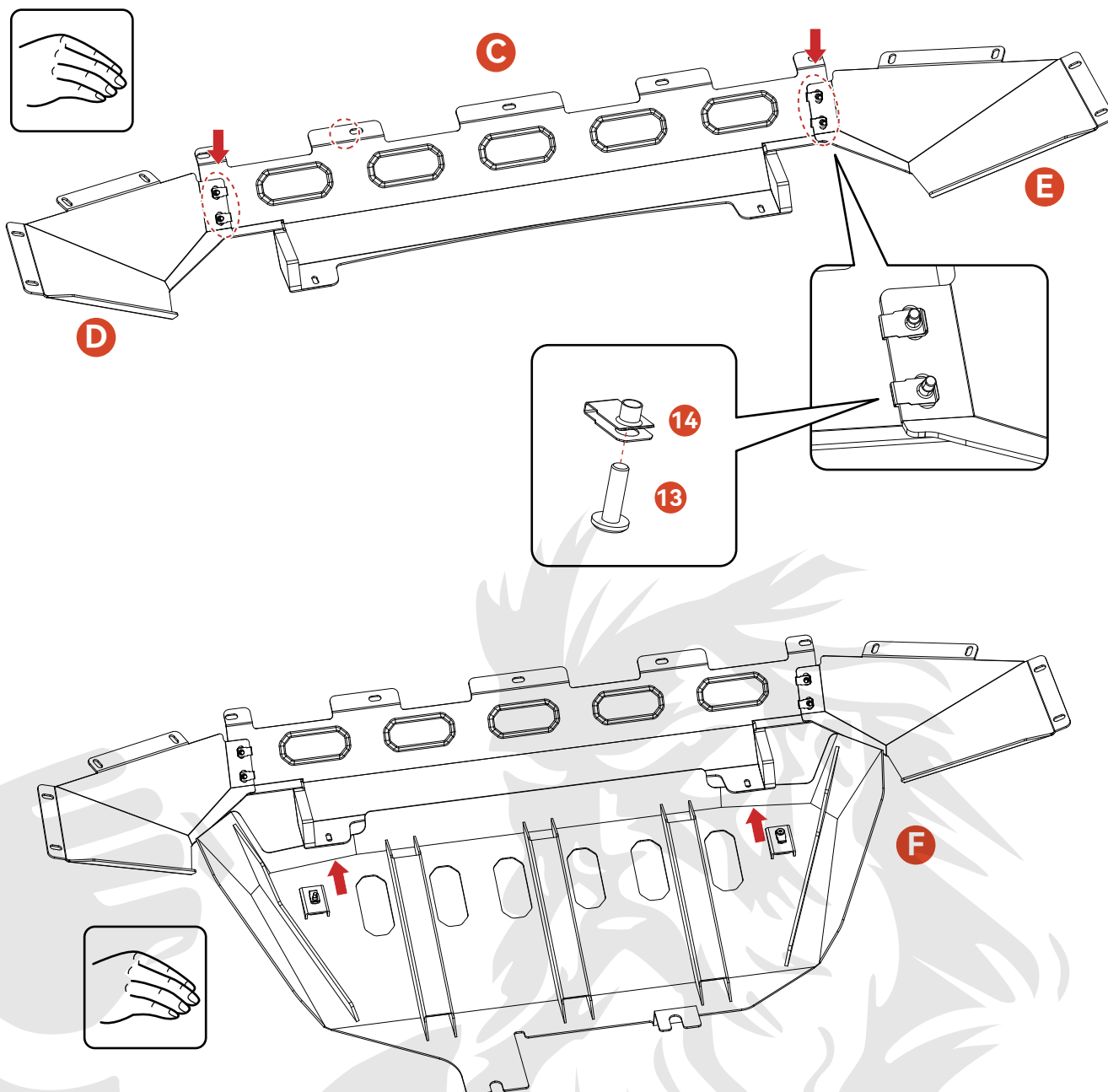
05 INSTALLATION STEPS

STEP 6



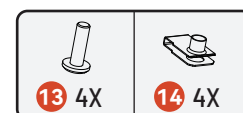
- 1. Install the protective plate, aligning the holes at the joints.
2. Secure the protective plate using M6x20mm bolts and clip nuts.

Note: Connect the skid plates (CDE) first, and install the skid plate (F) last on the bottom of the vehicle.



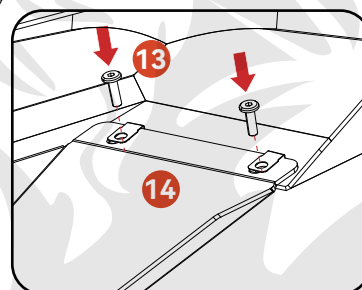
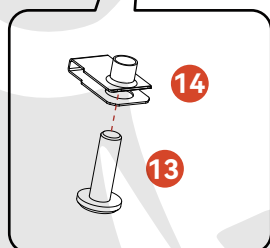
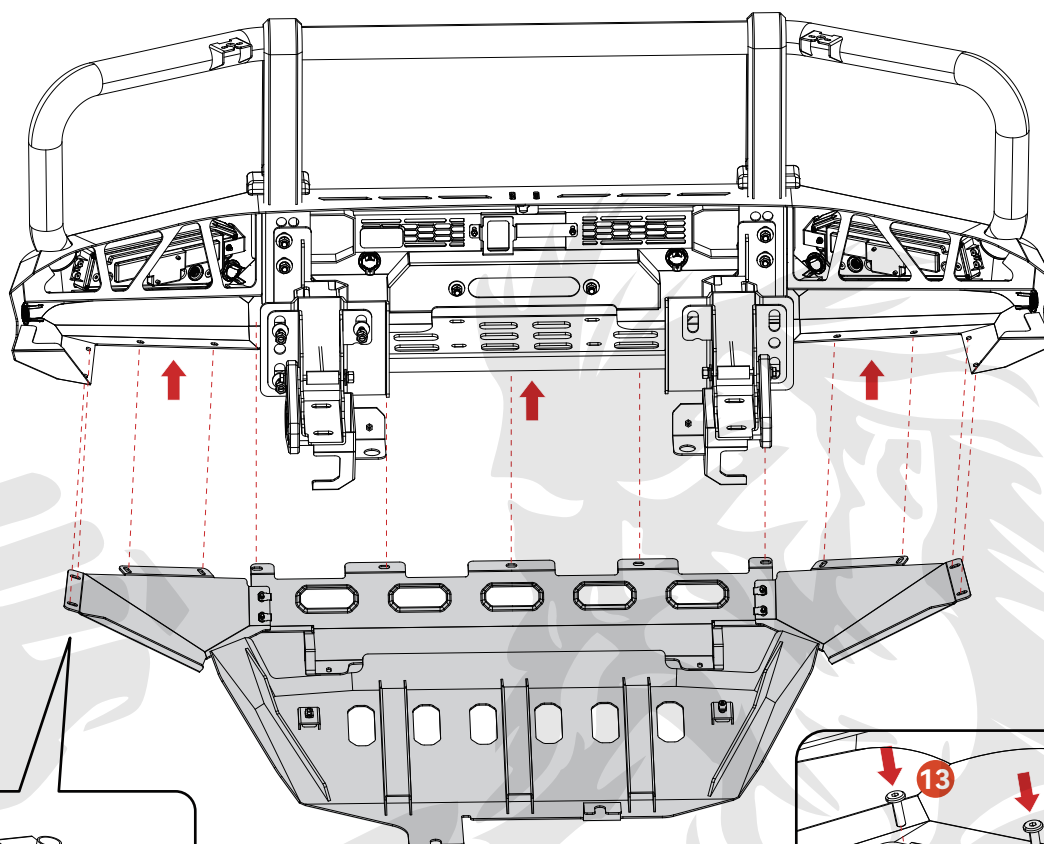
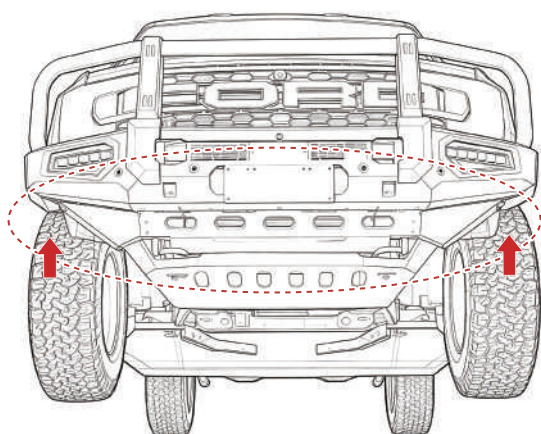
05 INSTALLATION STEPS

STEP 7



- 1. Install the skid plate, connect it to the bottom of the front bumper main assembly, and align the holes at the connection point.
2. Secure the skid plate using M6x20mm bolts and clip nuts.

Note: Install the skid plates (CDE) first, and install the skid plate (F) last on the bottom of the vehicle.

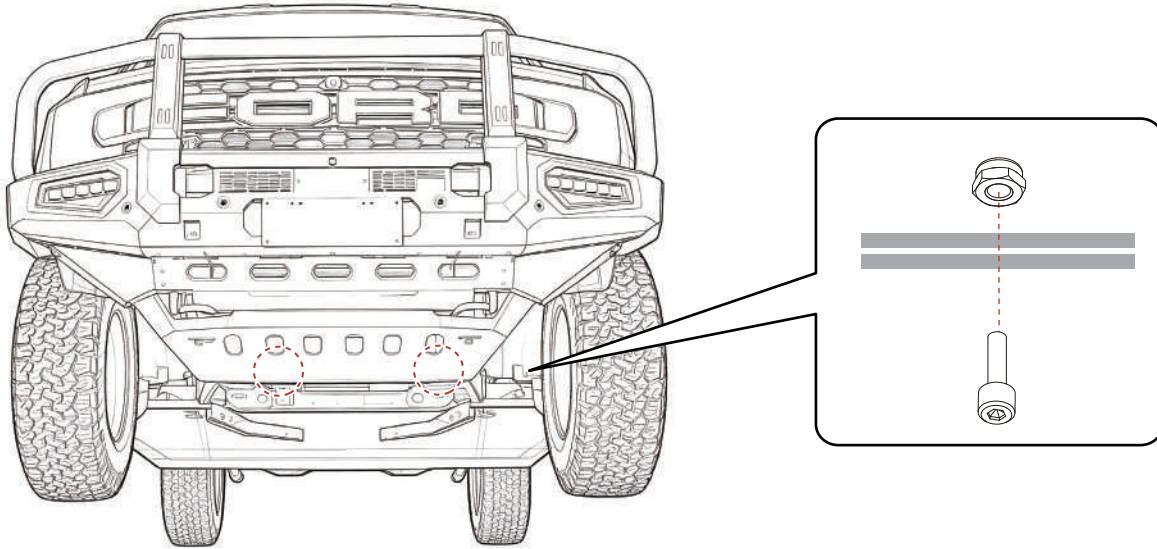


05 INSTALLATION STEPS

STEP 8

- 1. Align the mounting holes on the bottom of the skid plate and bumper.
- 2. Use the original screws from the vehicle to secure the bottom.

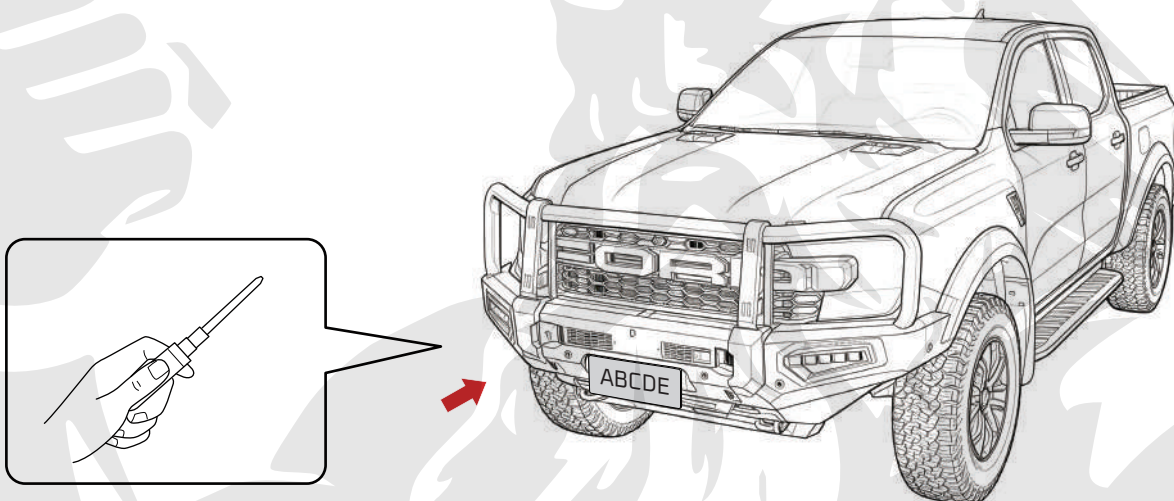
Note: Install the skid plates (CDE) first, and install the skid plate (F) last on the bottom of the vehicle.



STEP 9

- 1. Place safety warning stickers on the left and right edges of the rescue point.
- 2. Place safety warning stickers on the left and right edges of the rescue point.
- 3. Clean the recessed area where the logo badge will be placed.
- 4. Carefully apply the adhesive badge to the front of the bumper bar.
- 5. Reinstall the license plate onto the flip bracket, using the original bolts.

Note: Branding is important. Ensure the brand badge is placed straight and firmly attached to the surface of the bumper.



■ POST-ASSEMBLY INSPECTION



Structural fastening inspection: Confirm that the crash bar has been securely installed in the reserved holes on the main beam using the matching bolts, without any shaking or displacement.



Bolt torque verification: Use a torque wrench to verify that all bolts have reached the specified torque value (M12: 100-120 N.m, M14: 140-160 N.m) and that thread-locking adhesive has been applied.



Wiring harness securely secured: Check that all added wires are not exposed, do not come into contact with sharp edges, and are reliably secured with flame-retardant cable ties, and keep them away from high-temperature components such as exhaust pipes.



Safety warning stickers: Ensure that the ACC adaptive cruise control calibration reminder and rescue towing point marking stickers have been affixed as required to prevent damage caused by accidental operation by others.



Lighting function test: Check in sequence whether the turn signals, brake lights, side marker lights, and added fog lights/strip lights illuminate normally without flickering or error messages.



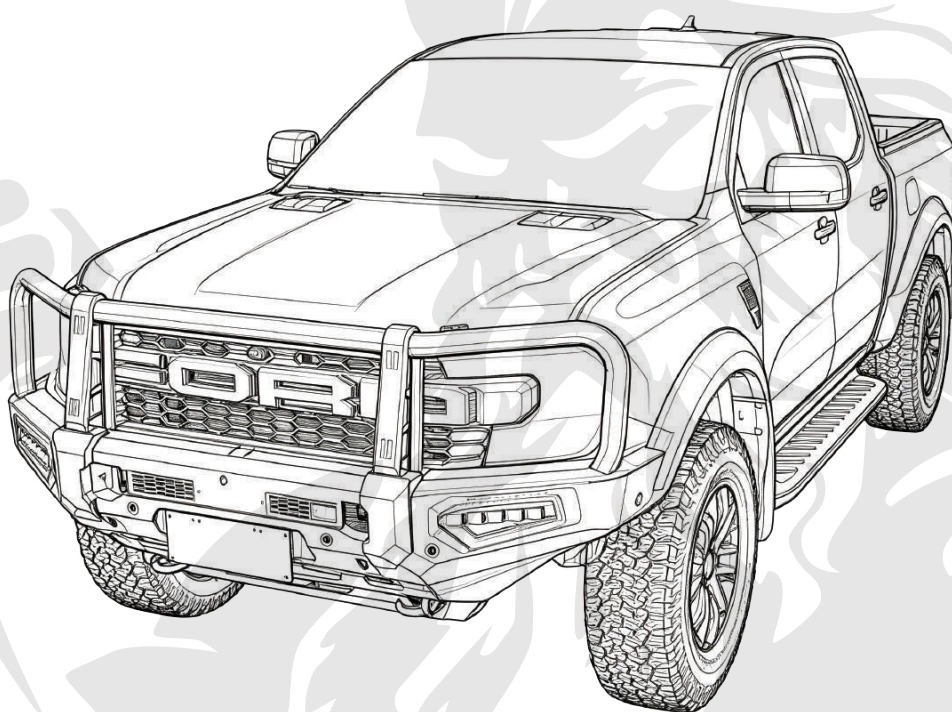
Sensor function verification: Test the working status of the reversing radar, parking sensor, and 360-degree panoramic front camera (if any) to confirm that there are no continuous false alarms and that the images are not obstructed or distorted.

■ MAINTENANCE RECOMMENDATIONS

- **Pre-departure inspection routine:** Before each long-distance or off-road trip, visually inspect the bullbar for any obvious deformation or cracks, and check if the bolt markings are misaligned.
- **Regular tightening and maintenance:** It is recommended to perform a full inspection every 10,000 kilometers (approximately 6,200 miles) and tighten all connecting bolts with a torque wrench.
- **Post-off-road inspection:** After heavy off-roading or a collision, immediately check whether the connection between the bar and the frame is deformed, whether the bolts are loose, and whether the sensors have shifted.
- **Rust prevention and cleaning:** Regularly clean the mud, sand and salt accumulated inside the bar body (especially in the de-icing agent area in winter), check the welds and bolts for rust, and spray rust inhibitor if necessary.



SYMPTOM	POSSIBLE CAUSE	SOLUTION
ACC adaptive cruise control unavailable or forward collision warning error	The front bullbar may have obstructed the millimeter-wave radar, or the radar bracket may have deformed, causing an angle shift.	Inspect and remove any obstructions; replace any deformed brackets; and take the radar to an automotive service center for recalibration.
The front parking radar continues to issue false alarms (alarms even when there is no object).	The gap between the radar probe and the bullbar is too small (less than 15mm), or the probe is installed at an off-center angle.	Increase the gap between the probe and the bullbar, and adjust the probe angle to the original vehicle orientation.
The active grille cannot open or close properly.	The grille linkage mechanism was squeezed or bumped during installation, or the wiring harness was compressed by the bracket.	Check if the grid blades move freely, restore the wiring harness connection, and adjust the bracket to avoid interference.
Front fog lights or added strip lights not working, flashing, or displaying error messages	Power supply and wiring issues or compatibility problems.	The battery was used to draw power independently, and a relay and fuse were added. The grounding point was re-polished, and a decoding harness was used.
metallic noises or resonance from the front of the vehicle while driving	The connecting bolts are loose, or the bar body interferes with the chassis guard plate and water tank frame.	Use a torque wrench to tighten all bolts, check for interference points and grind or add buffer shims.



BUMPERS



THANKS FOR YOUR PURCHASE

PLEASE LET US KNOW IF YOU HAVE ANY QUESTIONS