

Metal Tech 4x4 "Raven" GX470 Front Hybrid Bumper Installation Guide

Tools needed:

- Metric sockets 10mm, 14mm, 17mm
- SAE Sockets 9/16", 3/4"
- Box wrenches 9/16", 3/4" *
- Body Panel Tool or Flat Head Screwdriver
- Drill with 1/2" drill bit
- Cold chisel
- Hammer
- Angle Grinder with cut off disc**
- Optional blue thread locker for all threads

*This needs to be a thin head box wrench. Most double end box wrenches work well.

**Needed to trim excess from the ends of the fenders that are underneath the stock bumper.



Standard Parts:

- 1 Main Bumper Body
- 1 Left & Right Side Support Plates
- 2 Universal Spacers
- 1 Bolt Kit (BK-MT-120-33202)

Safety:

Please note that this work should be done by a competent mechanic. If you feel you are not competent to do this work please have a professional mechanic do this installation. Metal-tech Cage, LLC is not responsible for any modifications you make to your vehicle. These instructions are meant to be a guide to assist a competent mechanic.

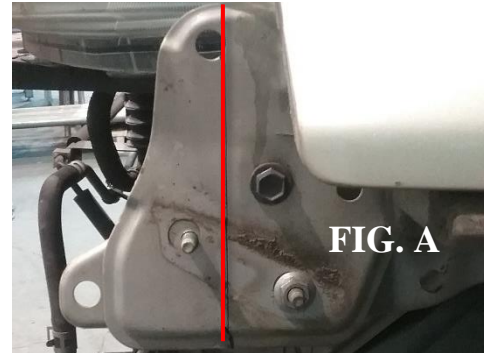
- Always wear safety glasses.
- Always chalk the opposite end of wheels when working on a vehicle, chock the rear when working on the front, and vice versa.
- Always use jack stands if the vehicle is to be off the ground. Never work on a vehicle solely suspended by a jack.

All Modifications are done at the owners' risk, check local laws for compatibility.

- Thank you for your purchase! We have taken great pride in our product development and manufacturing. We also use what we make and look forward to the opportunity to see you on the trail! Before you begin your installation take a moment to read through this write up.
- We welcome your feedback on our products and your experience with Metal Tech 4X4. You can reach us toll free at **800-839-0684** Mon-Fri 8:30 AM to 5 PM PST. Or via e-mail at **info@metaltech4x4.com**

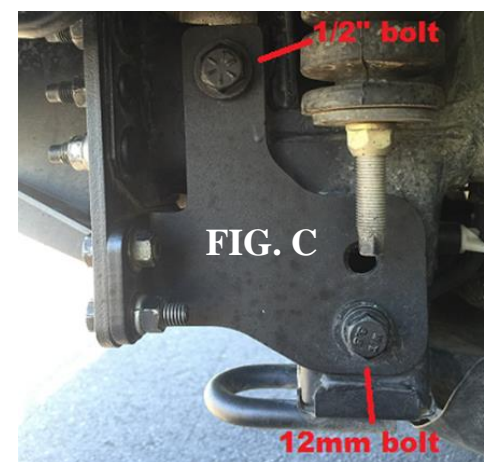
1. Stock Bumper Removal and Prep

- 1.1. [Tool: 10mm socket] Remove air filter cover by removing the 3 push-in plastic rivets and the 2 - 10mm plastic nuts
- 1.2. [Tool: Body Panel Tool/Flat Head] Remove radiator cover by removing the 12 plastic pop-up rivets.
- 1.3. [Tool: 10mm socket] Remove the 2 - 10mm bolts and 1 plastic pop-up rivet from each wheel well.
- 1.4. [Tool: 10mm socket, Body Panel Tool] Remove the 5 - 10mm bolts and plastic pop-up rivets holding on the bottom of the bumper.
- 1.5. [Tool: 10mm socket] Remove the 3- 10mm bolts and plastic 1 pop-up rivet to remove plastic radiator skid plate.
- 1.6. [Tool: Hands] Remove bumper by pulling on one side and working your way around to the other. This may take some force. This is best if done with two people.
- 1.7. [Tool: 14mm deep socket] Remove the 4 - 14mm nuts that hold the crash bar to the horns then remove the 8 - 14mm nuts holding on the horns. Both of these require a breaker bar and a deep socket.
- 1.8. [Tool: Angle grinder with cut off disc] **You will need to trim the excess from the ends of the fenders that are not used. (Fig. A)**



2. Side Support Plates Installation

- 2.1. [Tool: Drill with 1/2" Drill Bit] Drill out the small threaded hole on the outsides of the frame directly behind each front bumper flanges. Drill out only outermost sides of the frame not through. (FIG. B)
- 2.2. [Tool: Cold Chisel and Hammer] Use a cold chisel and knock off any remaining inner nut fragments from inside the frame on both sides.
- 2.3. [Tool: 17mm, Socket] Mount the side support plates (Proper placement shown in Fig C) Start by loosely installing the lower 12mm bolt with 1/2" lock washer and 1/2" washer into pre-threaded frame hole.
- 2.4. [Tool: 3/4" socket and 3/4" box wrench] Install the 1/2" bolt with a lock washer and washer on the outside into side plate and spacer then the upper hole you drilled in step 2.1.
- 2.5. [Tool: 3/4" socket, 3/4" box end wrench] Install a 1/2" washer and nut on the bolt you just installed. Tip: To hold and thread the 1/2" nut using the 3/4" box end wrench, put a small piece of packing tape over one side of the box end wrench and fold over to trap the nut inside. (Fig D) It is best if you loosely assemble the bracket for now.



3. (OPTIONAL STEP) Winch Installation

- 3.1. Install your winch at this point following manufacturer's instructions. Your winch should have come with mounting hardware. There is room for most planetary style winches tucking back almost entirely under the front grill with the control solenoid remote mounted under the hood. (wiring the winch is best done after step 5)

4. (OPTIONAL STEP) Install Light Bar

- 4.1. It is ideal at this time to install the 30" Outpost Offroad LED Combo Light Bar (included in stage 3 **OR** sold separately at www.metaltech4x4.com or other lighting in the center light cutout).

5. Bumper Installation

- 5.1. **[Tool: 14mm deep socket]** Place the Bumper on the frame studs and loosely reinstall the 14mm nuts from step 1.7.
- 5.2. **[Tool: 9/16 socket, 9/16 wrench]** Loosely install the two each side 3/8 bolts with a washer through the Bumper Mounting Feet, Side Support Plates, flat washer, lock washer, and nut.
- 5.3. **[Tool: 17mm, 3/4" sockets]** Tighten Support Plate bolts to the frame.
- 5.4. Set the desired bumper alignment and tighten all remaining hardware.

6. (OPTIONAL STEP) Accessory Installation

- 6.1. Install Outpost Offroad Pod Lights and/or Metal Tech Raven Fill Plates Kit or other lighting (1 set of Pod lights included in stage 2 and 3 **OR** sold separately at www.metaltech4x4.com).

7. Install Metal-tech 4x4 sticker on your truck for 5.3hp gain. Enjoy a beverage and admire your GX470 with its new armor ready for the trails.

8. After 500 miles or time on the trail, check tightness of all hardware.

Install Metal-tech 4x4 sticker on your truck for 5.3hp gain. Enjoy a beverage and admire your FJ Cruiser with its new armored look ready for the trails.