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Metal-tech Fabrication

2007-2014 FJ CRUISER Rear Swing Out Bumper

“Red Eye II”

Your rear bumper should contain:

1 Main Bumper	Accessory Pack (cont.)
1 Swing arm	1 Stainless Steel Slide Plate
1 Accessory Pack	1 Spring Loaded Auto Lock
1 Tire Holder/Stinger	2 Upper ¼” Thick Spacers
1 120 lb. Gas Strut	2 Lower “E” ¼” Thick Spacers
1 Latch Plate	1 Swing Out Bearing Kit
1 Stainless Steel Latch	1 Red Eye II Bolt Kit
2 Black HDPE Landing Pads	

SAFETY! Use the appropriate safety devices during installation. **SAFETY!**
SAFETY! Wear safety glasses at all times. **SAFETY!**

Thank you for your purchase of a Metal-tech Fabrication Red Eye II Rear Bumper for your FJ CRUISER. We have taken great pride in their development and manufacturing. We also wheel 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. There are a few key things noted that will make the installation go smoothly.

- 1.0 Remove old parts and prep for the new:
 - 1.1 Remove stock bumper – IF installed on truck.
 - 1.2 First Remove the door link assembly, then the trim that covers the top of the stock bumper.
 - 1.3 To remove the bumper there are a series of 7 bolts, 4 screws and a clip throughout the fender well, underneath, and the top.
 - 1.4 Once all hardware is removed grasp the outer corner on the wheel well portion and pull it back away from its snap fit mounts. It does take some force to pull it off the truck.
 - 1.5 Remove factory pull point on the left side

Red Eye II Installation

- 2.0 Check frame for excessive weld splatter above and below the frame corners. Toyota is inconsistent with the finish since this is usually hidden under layers of plastic. Since we are installing steel directly to these points for strength, the presence of weld splatter can affect the installation of your new bumper. IF there is excessive weld splatter or welding wire lying on the frame where your new bumper mounts remove it with a file or grinder.

3.0 Install the latch mount, landing pads, latch hook, gas strut ball mounts, auto lock, and the stainless steel slide plate as shown in images below.

- 3.1 HDPE Landing Pads use 1/4” hardware
- 3.2 Latch Plate, Latch, and Stainless Plate use 5/16” Hardware
- 3.3 Gas strut balls mount to bumper near the pivot point and the 3-hole mount on the swing out beam.



* At this time, it would be wise to install any other accessories onto the bumper/swing out such as the Outpost Offroad Flange Mount LED Lights, CB antenna,

4.0 Install Main Bumper.

*NOTE: Loosely bolt to the frame so it can be adjusted once all the bolts and spacers have been installed.

- 4.1 With the help of a friend lift the bumper onto the truck. **(Be careful to not scratch your truck!)**
- 4.2 Align the center holes and install the provided 12mm bolts, lock washers and washers.
- 4.3 Use the lower “E” spacer (looks a bit like an E. The two holes will match the two round inside holes on the lower flange mounting point for the bumper.
- 4.4 Use the provided 1/4 spacers on top of the frame (silver in picture)
- 4.5 Install the 12mm bolts, lock washers and washers into the bottom of the frame with the 3/8 bolts, washers, lock washers, and nuts through the lower and upper mounting holes in the bumper. (shown without washers, must install washers!)
- 4.6 Once all is installed loosely, align bumper to desired position and tighten all mounting hardware.



5.0 Install Swing Arm

- 5.1 Hand pack grease (moly or lithium wheel bearing grease) into the two tapered radial bearings.
- 5.2 Wipe any manufacturing dust from the pivot shell at the end of the swing arm. Lightly pre-grease the inner races. (Note we have already installed the inner races for you inside the pivot shell)
- 5.3 With the swing arm upside down drop large radial bearing into pivot shell on swing arm. NOTE: make sure the taper of the bearing is facing the taper of the race already in the shell.
- 5.4 Tap pivot lip seal into place on top of the large radial bearing. (Tip put a little grease on the outer part of the seal can so it seats easier) Use caution to seat the seal evenly, unevenly can damage the seal can rendering it worthless and require replacement. (Metal-tech Fabrication stocks replacement parts for all components)
- 5.5 Install Latch to the end of the swing out arm as shown in step 3.3
- 5.6 Install swing arm on to the pivot. Drop in upper smaller tapered radial bearing, washer then castle nut. Lift swing arm up and down a bit to help the tapered bearing seat into the race. Tighten the nut firmly but still allowing the pivot to swing.
- 5.7 Close the swing arm and adjust the latch U bolt so it pulls down and locks swing arm in place.
- 5.8 Tighten castle nut then back spindle nut off a 1/2 turn and install cotter pin.
- 5.9 Install grease cap tapping it into place with a rubber mallet may be necessary.

* **TIP: Once dome cap is in place you can paint it with Rust-oleum Textured Black #7220830 so it matches the bumper. (This cap is not powder coated since the powder coating would be damaged when it is installed. However, it is zinc plated so left silver is fine.)**

5.10 Install tire stinger into clamp on swing arm. **WARNING!** IF the stinger is mounted too far back IT WILL HIT THE BACK DOOR OF YOUR TRUCK AND DAMAGE YOUR DOOR. Use caution as you do this step. The best thing to do is measure the true back spacing needed for your tire/rim combo.

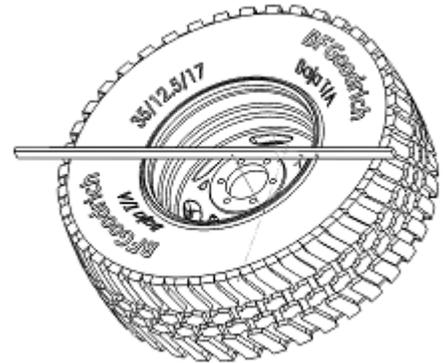
5.10.1 Lay your spare tire face down on the ground.

5.10.2 Place a flat edge across the tire from one side to the other sitting on the rubber.

5.10.3 Measure the distance from that flat edge to mounting flange of the rim.

5.10.4 This is the maximum offset you need for the stinger adjustment. You do not want the inside rubber of the tire to touch the swing arm face. So, subtract ½” from the offset number you got and use that.

5.11 Install the stinger and clamp down so the face of the stinger is the distance to the front of the swing arm, you got to set your offset to.



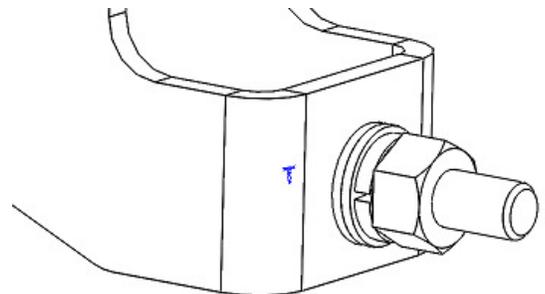
WARNING!!!! SLOWLY CLOSE your swing arm checking that the back of the stinger does NOT contact the back door. Damage to your truck can happen if you do not use caution. If it will hit, you need to shorten the stinger tube by cutting it down.

6.0 **Install Hi-lift** mounting points. These are the lower mounts on the swing arm. They are oblong to allow for adjusting the fit for your Hi-lift jack you use. First bolt the bolts into place then check that your Jack fits over them. Adjust if needed.

6.1 **NOTE:** Remove the bottom foot on your hi-lift, most are on a pull pin and go off and on really easy. Store the foot and pin inside your recovery bag inside the truck. (you will have that bag out if you ever need to use your jack anyway)

6.2 Bolt facing to away from truck, use one flat washer under the head of the bolt as TWO stacked with a lock washer and a nut on the other side. \

6.3 The remaining threads of the two bolts are the mounting studs for the Hi-lift to hang from. The end of the jack with the mechanism goes to the right of the truck. Use the two remaining nuts to secure the jack to the studs.



***The following instructions are for the optional accessories available at www.metaltech4x4.com.**

7.0 Install Utility Rack onto swing arm with provided ½ hardware.

8.0 Install the Small Basket, Large Basket, or Fuel can holder set up using the supplied hardware

8.1 Align the bolt pattern of the utility rack with the accessory of your choosing and install the provided hardware.

* **The 2 front center bolts are used to mount the provided license plate holder.**

8.2 Use the provided hardware or the pair of License Plate Bolt Lights (available at www.metaltech4x4.com) to install the license plate onto the mount.

9.0 Install Metal Tech sticker and you're ready go

Once you have driven about 100 miles with the bumper on the truck, torque all the bolts. Give special care to the frame bolts on the left pod.