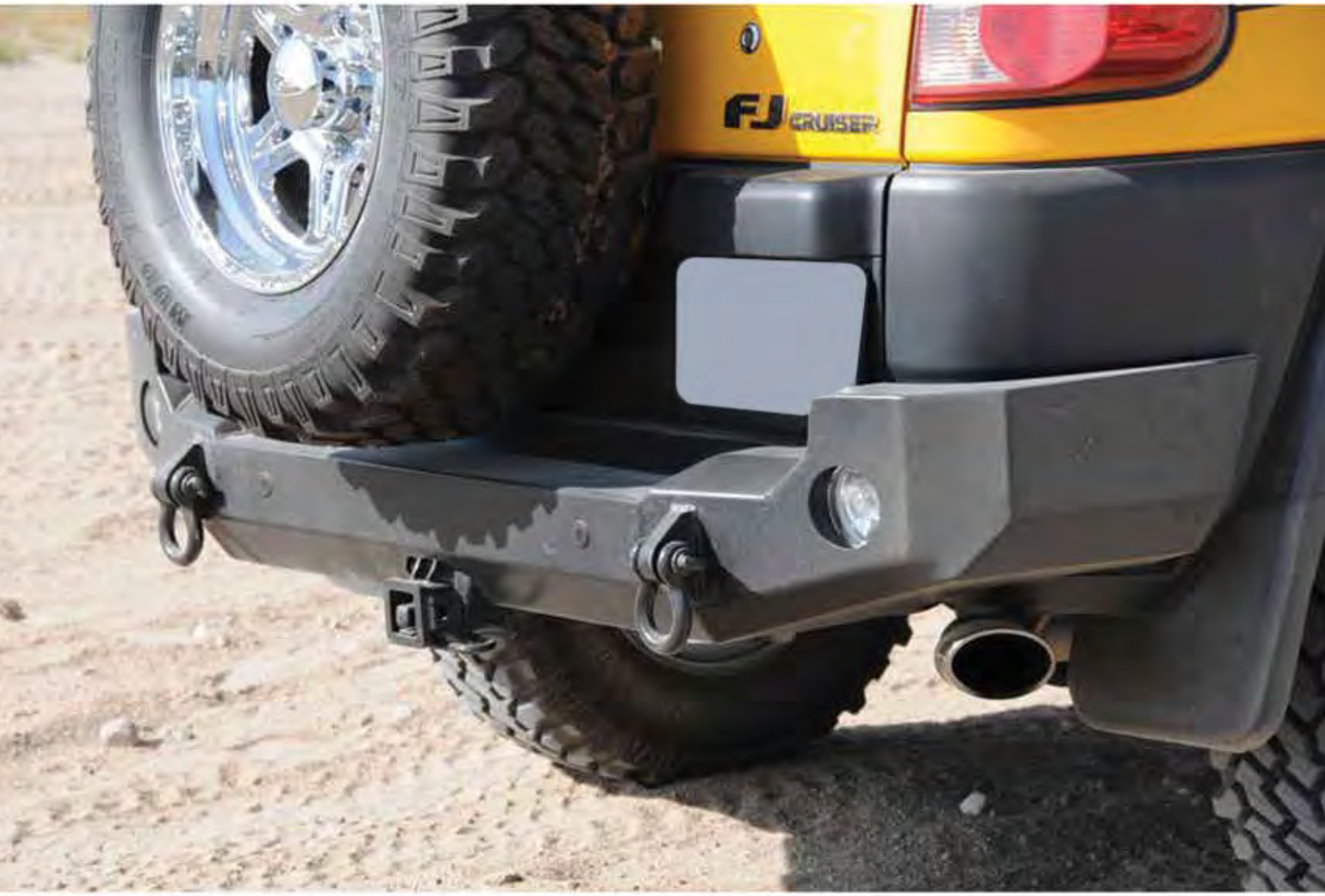
EXPEDITION ONE
OFF-ROAD RESEARCH & EQUIPMENT

FJ CRUISER

INSTALLATION GUIDE

TRAIL SERIES REAR BUMPER INSTALL



Included Hardware:

1 Expedition One Rear Bumper
• 16 large 1/2" washers
• 8 1/2" bolts
• 8 1/2" Nylock nuts
• 4 M12 metric Bolts
• 4 large 1/2" washers
• 2 1/4" thick Spacer Plates
• 2 Boxed Sheet metal mounting plates

Tools:

Standard and metric socket set
Standard and metric wrench set
Cutting tools (dremel tool, razor blade, etc.)

Skill Level:

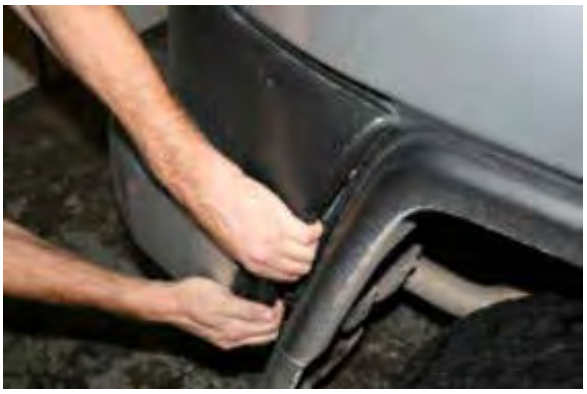
4/5 stars (Professional install recommended)

FJ Carrier Hardware:

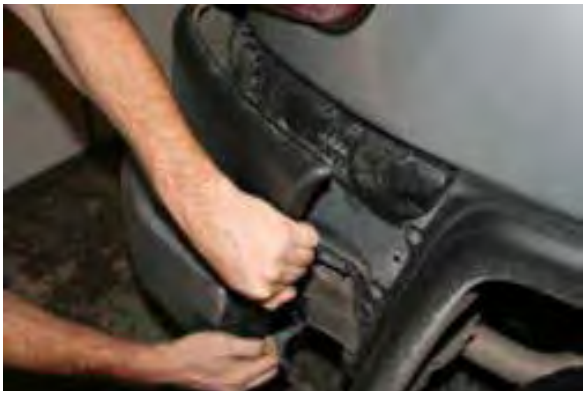
1⁄2 "x13x4 1⁄2 " GR 5 ZP Hex Cap Bolt (qty 1)
1⁄2 "x13 x 4" GR 5 ZP Hex Cap Bolt (qty 1)
1⁄2 " SAE GR 8 ZP Hard Flat Washer (qty 4)
1⁄2 "x13 GR 8 ZP Nylon Locking Nut (qty 2)
1" SAE ZP Hard Flat Washer (qty1)
1" ZP Nylon Locking Nut Thread pitch14 (qty1)
Tire Mount Bolts, nuts and washers
3– 1⁄2 x 1 1⁄2 grade 8 bolts
3– 1⁄2" Nylon Locking Nut
6– SAE grade 8 hard flat washers

Remove the stock rear bumper.

The bumper is held in place by a series of small bolts and plastic retainers. Using a 12 MM socket or wrench, remove the bolts along the top inside edge of the bumper (this will require opening rear door) along with the plastic retainer clip on the passenger side of the bumper. Next remove the bolts along the bottom edge of the bumper, and un-clip the 2 wire connections for the back-up sensors, found on the underside of each side of the vehicle respectively. After the sensors have been un-clipped and all other hardware has been removed the bumper is ready to be removed.



Starting at the lower edge of the bumper (this step can be done on either side of the vehicle) near the lower edge of the rear fender flare, begin pulling the bumper away from the vehicle. After applying adequate pull force the bumper will separate from the vehicle (this can be loud and abrupt). Once released the other side will follow as you pull the bumper away from the vehicle. Remove the Styrofoam piece along with the bumper. Also remove the tow-loop on the bottom driver side of the bumper using a 16mm socket The rear frame should now be exposed.



Quick Tip: Check the frame for excess weld spatter and/ or large weld build up, particularly on the top side of the bumper, toward the outer edge. Excess weld may cause the bumper to pitch backwards undesirably. If weld is excessive, it can be hit with a hammer or lightly ground to ensure desired fit.

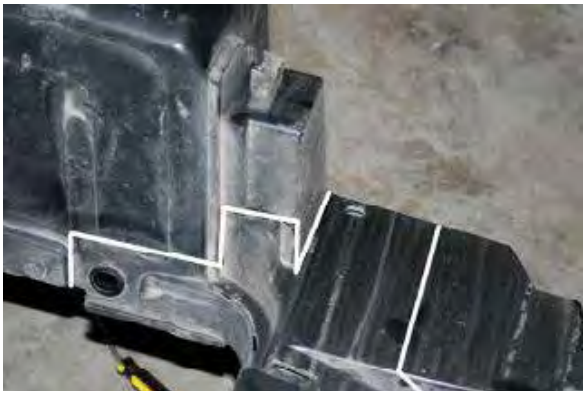
Installing Reverse lights and Back up sensors:

Before the bumper goes on, the reverse lights must be installed along with the OEM backup sensors. The wiring harness for the lights does not need to be fully installed yet, but you may want to attach the wire ends to the harness before putting the bumper on. Insert back up sensors gently though the back face of the bumper. Sensors can be gently tapped in place using the ball of ones hand or a soft hammer.

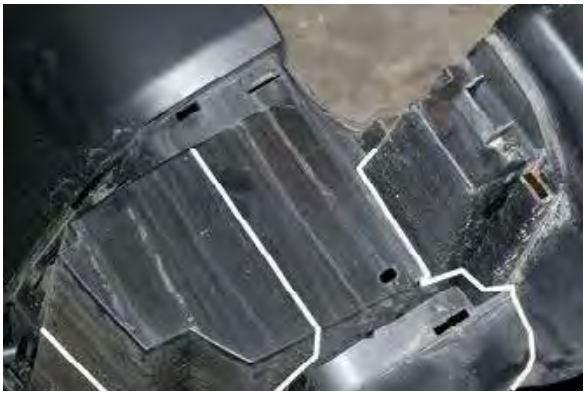
CAUTION: Vehicle reverse sensors can be fragile and expensive to replace. Treat them accordingly.

Cutting the stock rear bumper:

Before cutting begins, remove the silver end caps on the OEM bumper. WARNING: THIS IS THE POINT OF NO RETURN!
Once the plastic is cut a return to stock will require purchasing a new OEM bumper. Using the provided pictures follow the lines refer- enced on the OEM bumper for proper cutting.



Be careful when cutting!!! always avoid cutting toward yourself or anyone else. Cut both sides of the bumper to match. Once finished, the OEM bumper sides can be put back in place in there stock position. Passenger side plastic clip can be re-installed, as well as 1 top side bumper bolt on each side of the OEM bumper sides.



Quick Tip(s): Before putting the Expedition One bumper in place we recommend putting masking tape on the edges of the plastic where the bumper comes close. Contact with the plastic & metal bumper can cause small marring in the plastic.

Removing the Spare tire can make the install of the rear bumper easier.

Installing The FJ Cruiser Expedition One Rear Bumper

Slide the Expedition One rear bumper over the frame and align the bumper so that it is even on both sides. Place the 1/4" spacers in between the frame and forward bumper mounts, on the bottom side of the frame. Place 12MM bolts in place through the 1/4" spacers into the OEM nuts inside the frame. LEAVE LOOSE!!!
Place boxed sheet metal mounts on the inside of the frame with the flat face contacting the frame. Using the supplied 1/2" bolts, washers, and nylock nuts (2 washers per bolt), loosely bolt the bumperin place. Once finished placing all bolts and nuts

check that the alignment of the bumper is as desired and tighten bolts starting with the top bolts on the boxed sheet metal mounts using a 3/4" socket and wrench. Tighten all bolts including bolts going directly into the frame.

Torque bolts to 80 -100 psi, do not exceed 110 psi.

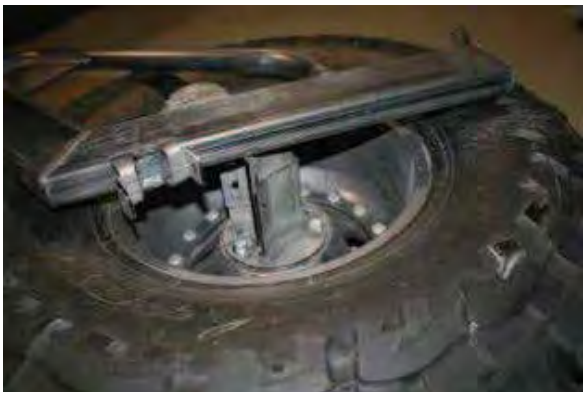
Be sure all bolts are tightened and wiring harnesses are in place.

Smooth Motion Tire Carrier Arm (If Applicable)

Prepare to Install Spare Tire Carrier onto Bumper:

Prepare tire mount for later installation of tire: THIS MUST BE DONE BEFORE INSTALLING CARRIER ARM TO BUMPER When installing the tire mount, IT IS IMPORTANT to have the tire snug against the tire carrier. The best thing to do is to fit the tire on the tire carrier mount while on the ground to avoid lifting a heavy tire and wheel repeatedly.

PLEASE MAKE SURE YOUR TIRE IS NOT INFLATED OVER 35 LBS.

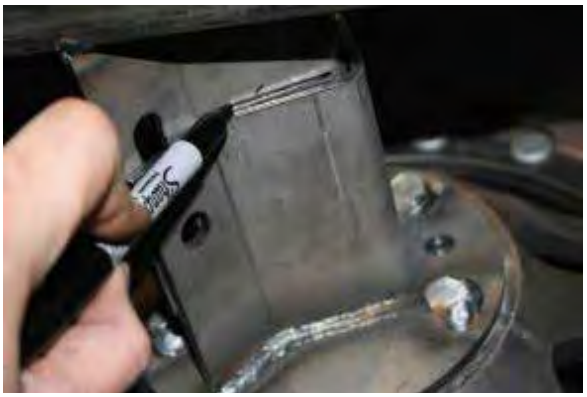


We recommend this method:

1. Lay the tire and wheel face down. Set the tire mount on the backside of the hole pattern.

2. Slide the carrier in place and lay it on the tire. (Picture 1A)

3. Make a mark using a marker (or something you can see) to indicate the flush mounting point (Picture 1B).



4. Install the tire mount on the carrier moving it back about 1/4" to 3/8" from the marked position JUST FAR ENOUGH TO COVER YOUR MARKING LINE. Use the 3 supplied 1/2" x 1 1/2" bolts with washers and nylock nuts. The tire should then fit snug on the carrier when installed later.

Attach Door Mount Plate to FJ rear gate
(after removal of OEM tire mount bracket)

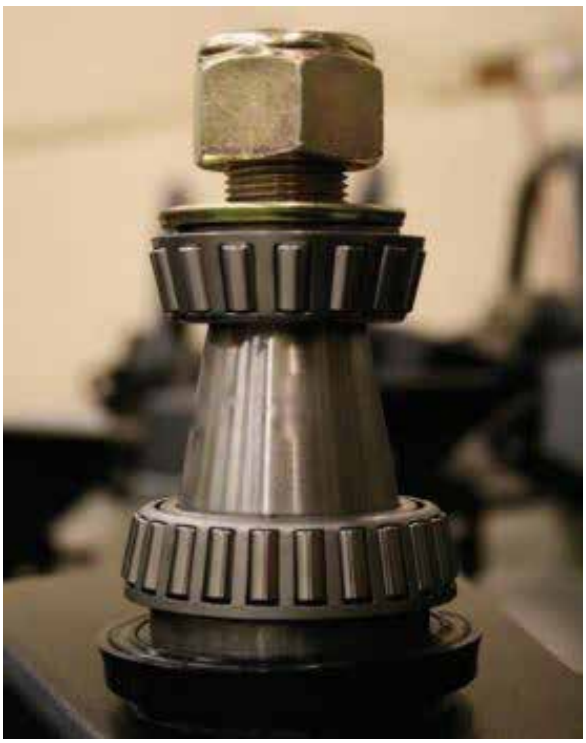
Install the rubber bump-stop on the carrier.

Installing the Spare Tire Carrier:

Prepare Hub/Spindle

APPLY PLENTY OF GREASE TO BEARINGS AND GREASE SEAL– USE HIGH TEMPERATURE WATERPROOF GREASE. IMPORTANT NOTE: Installing the grease seal. The grease seal can be installed 2 ways. It can be put on the spindle and pushed in place while installing the carrier hub over the spindle. For some this way is easier, but we would recommend the 2nd method. This method requires putting the bearing in the hub first and then putting in the grease seal (See YouTube video) before placing hub on spindle.

Grease both bearings as directed. Then install the greased large bearing into the lower hub opening (and the grease seal if you use that method). With the small bearing greased and ready to install, you are ready to put the carrier assembly loosely on the spindle. Put the hub over the spindle, resting it on the bottom bearing, then insert the top bearing and seat the bearing.

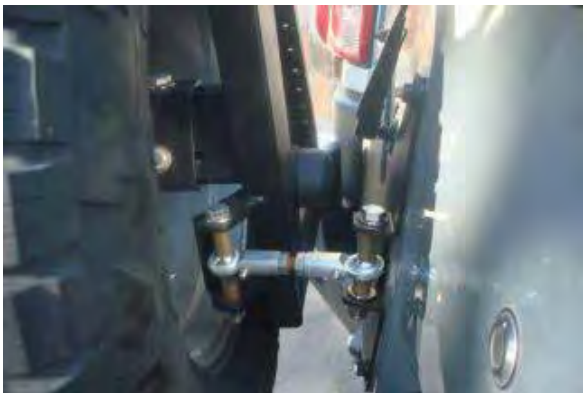


If everything is correct the carrier should be able to stand up in correct position without being held. Install washer and nylock nut to top of spindle and tighten until snug.

DON'T WALK AWAY FROM THE CARRIER WHILE IT IS OPEN!!! IT COULD SWING INTO YOUR VEHICLE. You can gently rest the carrier against the bump-stop. The large spindle nut can now be tightened to snug. BE CAREFUL NOT TO OVER TIGHTEN. There is a difference between the effort needed for a petite young woman (install video) and a typical guy.

NOTE: Picture to right shows the proper configuration for the bearing assembly.

Connect Carrier Arm to Door Mount Plate using bolts, joints, and spacers as shown in these photos:



DO NOT TIGHTEN BOLTS WITH NUTS UNTIL ADJUSTMENTS ARE COMPLETE

Overall, you want the carrier to be snug against the rear door. The coupling joints are the key to this. With the rear gate and carrier in the closed position, you can now start the adjustment of the coupling joints. You may need to adjust the height of the coupling joints with the spacers so it doesn't bottom-out.

NOTE: The door and the carrier swing at slightly different angles. With the tire carrier installed and the door in the closed or almost closed position, the bump-stop needs to be making contact with the door. Adjust the coupling joint so that when the door is open and is 1 to 2 inches from closing, the bump-stop initially contacts the door mount plate on the tail gate (this may need to be adjusted later when the spare tire is mounted to the carrier). You want the carrier to shut and be snug but not overly tight.

If the door swings with little or no binding the installation can now be completed. Once it is tight, check the swing. If there is little or no binding you may move to the post install section and finish the install.

Post installation

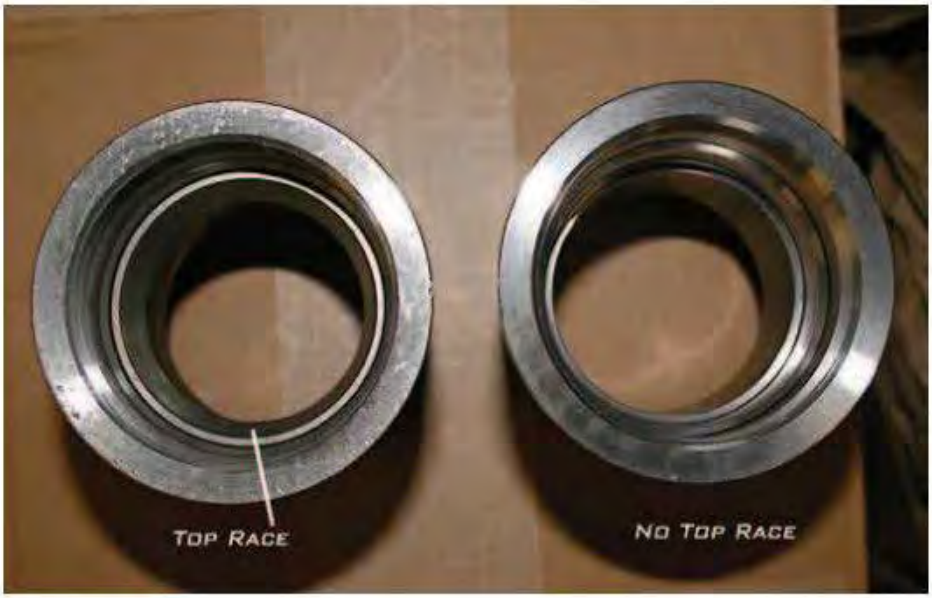
If the carrier is swinging properly free of binding on the door and the joints, you can now tighten down all bolts and install the engraved aluminum cap or hub cover. It is a good idea to use an anti-seize lubricant on the cap threads Install the spare tire on the tire mount plate, which was previously secured to the carrier after insuring proper fit in the "Prepare tire mount for later installation of the tire" section above.

NOTE::: You may want to come back and check all the bolts in a few weeks or after a nice off road trip. The bolts can loosen a bit.

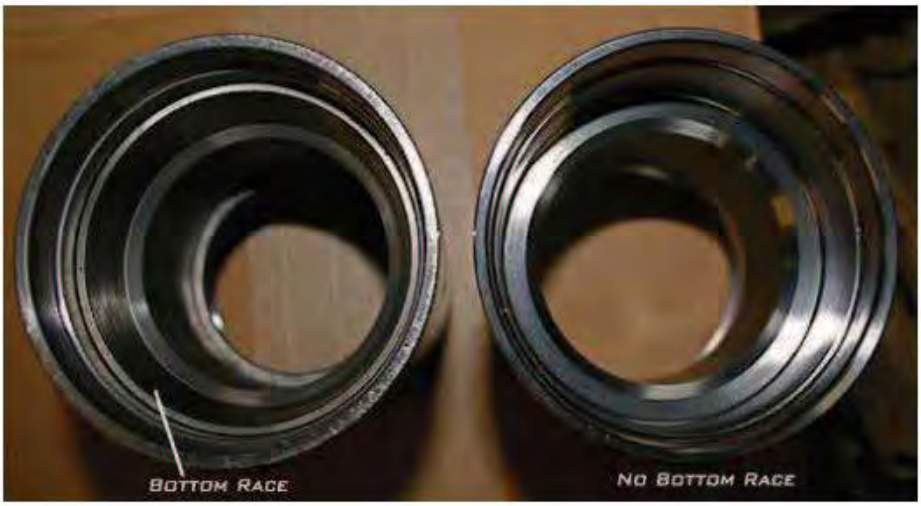
Extra pictures for install help:

Top bearing race check:

Picture 2A



Picture 2B



THANKS FOR PURCHASING THE EXPEDITION ONE REAR BUMPER AND SMOOTH MOTION SPARE TIRE CARRIER SYSTEM!!