

# INSTALLATION GUIDE

JK Rear Bumper w/ Tire Carrier System



Parts List

- 1 Expedition One Trail Series Rear Bumper W/ spindle
  - 1 Smooth Motion Spare Tire Carrier
    - 1 Slide on Tire Mount Plate
- 1 CNC cut threaded aluminum Hub (hinge) cover
  - 1 Small tapered bearing (top bearing)
  - 1 large tapered bearing (bottom bearing)
    - 1 Grease seal
  - 2 L brackets with welded nut
  - 1 rear door mounting plate
    - 1 Coupling assembly
- 1 Package of 4 urethane bushings
  - 2 Rubber bump-stops
  - 2 aluminum spacers
- 1 large bearing race (pre-installed in lower end of hub)
- 1 small bearing race (pre-installed in upper end of hub)

Hardware

- 1 Large washer
- 1 Large Nylock Nut
- 1 3/4" (large) Jam Nut for the coupling assembly
  - 7 1/2" large O.D. grade 8 washers
  - 2 5/8" grade 8 washers
  - 2 5/8" x 2" grade 8 bolts
  - 3 1/2" x 2" grade 8 bolts
  - 1 1/2" x 4" grade 8 bolt
  - 1 1/2" x 4.5" grade 8 bolt
  - 5 1/2" grade 8 nylock nuts
- 2 M8x 30mm socket cap screws (may be in rubber bump-stops).

Tools:

- Metric & Standard socket set up to 3/4"
- Wrenches up to 3/4"
- Large 1.5" Socket

Skill Level:

4/5 stars (Professional install recommended)

NOTE:

We STRONGLY recommend watching our YouTube install video in addition to completely reading these instructions

PREINSTALL NOTES:

Keep all stock bolts and hardware when removing stock (OEM) bumper. You will use some of them for the install. Be sure to check that races have been installed into the hub of the tire carrier. Comparison photos to assist in checking the race installment can be found on the last page of these install instructions (ref. Pictures 7A,7B).

Grease: We recommend using a water resistant-high temp grease on all bearings, seals, and cap threads.

**IMPROPERLY MOUNTED OR OVER-INFLATED SPARE TIRE CAN VOID YOUR WARRANTY AND DAMAGE YOUR CARRIER.**

Remove stock rear bumper and tire carrier:

1. Remove the spare tire on the vehicle.
2. Before removing the carrier make sure to un-plug the 3rd brake-light wire. This is done by opening the rear gate and popping the plastic ventilation access panel on the driver's side of the vehicle. Remove by pulling from the passenger side of the panel to the driver's side. Inside you will see the wiring connection. Unclip the wire connector and then pop the piece from the rear gate.
3. Remove the stock tire carrier - 4 bolts on each side of the unit.

With the stock rear bumper and carrier removed you can now prepare to install your Expedition One rear bumper and Smooth Motion Spare Tire Carrier system.

Install the Expedition One Rear bumper:

1. Insert the L shaped brackets in the rear frame facing outward, one in each frame rail respectively. The nut in the bracket should line up roughly in the center of the large oval shaped 3/4" hole in the side of the frame. See Picture 1.
2. THIS PART IS EASIER WITH ANOTHER PERSON HELPING YOU. You may now install the rear bumper. If you have a stock receiver hitch you are going to have to slide the bumper on while lifting the back of the bumper up slightly to clear the hitch - 1 person on each side of the bumper will make this step quick and easy.
3. Put OEM mounting bolt that came from the outside mounting holes back in place. Do not tighten down fully. Leave some room for adjustment.
4. Inside the bumper on the outer ends (directly back from the stock mounting position mentioned above) is the mounting position for the L- brackets that are inside the frame. Using the 2 5/8"x 2" bolts and 1 5/8" washers (one for each bolt),install the bolts but again, do not tighten all the way. See Picture 2.



Prepare to Install Spare Tire Carrier onto Bumper:

**Bumpstops:** Install the rubber bump-stops on the rear tail gate of the vehicle using the stock tire carrier bolt pattern and 8mm socket cap screws. The top most mounting point on the passenger side and the 3rd mounting point down on the passenger side are the 2 locations for the rubber bump-stops (Picture 3). You may also use the bottom most hole for the lower bump-stop if so desired.

Rear gate mounting plate:

You will need to adjust the mounting plate so before installing you may want to put some masking tape on the gate to protect it from being scratched during adjustment (Picture 4 07-09 model. Later models mount horizontally). Using the stock mounting points and stock mounting bolts of the OEM tire carrier, on the driver side of the tail gate, install the mounting plate but do not tighten all the way.

NOTE: IF YOU HAVE A HEAVY TIRE AND WHEEL COMBINATION (OVER 150LBS) YOU MAY WANT TO WAIT UNTIL AFTER YOU INSTALL THE SPARE BEFORE ADJUSTING THE DOOR PLATE. THE EXTRA WEIGHT CAN SLIGHTLY ALTER THE HEIGHT WHERE THE PLATE SITS ON THE DOOR.



Coupling: Using the supplied urethane bushings and grease, install the urethane bushings into each end of the coupling. Install the jam nut on the coupling. This will require separating the coupling fully. When putting the coupling back together collapse it down most of the way.

Prepare tire mount for later installation of the tire: THIS MUST BE DONE BEFORE INSTALLING CARRIER ARM TO THE 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. ( Bottom Left Photo)
3. Make a mark using a marker (or something that you can see) that gives you an indication of the flush mounting point ( Photo Bottom Right).
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 2" bolts with washer and nylock nut. The tire should then fit snug on the carrier when installed later.



### Preparing Hub/Spindle

APPLY PLENTY OF GREASE TO BOTH BEARINGS – USING 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 on the grease seal (See YouTube video) before placing hub on spindle.

Installing the Spare Tire Carrier:

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 and tighten until snug.

**DON'T WALK AWAY FROM THE CARRIER WHILE IT IS OPEN!!! IT COULD SWING INTO YOUR JEEP AND MAKE YOU SAD.**

You can gently rest the carrier against the rear door bump-stops. 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 6 (below) shows the proper configuration for the bearing assembly.



### Bumper and tire carrier alignment::

This part of the install is crucial to the function of the rear tailgate and carrier. Pay attention!!

With the rear gate and carrier in the closed position, you can now start the adjustment of the coupling. Overall, you want the carrier to be snug against the rear door. The coupling is the key to this, but it requires a balance. Adjust the coupling so the door is open and is 1 to 2 inches from closing when the carrier initially contacts the bump stops on the tail gate (this may need to be adjusted later when the spare tire is mounted to the carrier). Install the 4" bolt on the tail gate side. You want the carrier to shut and be snug but not overly tight. **DO NOT TIGHTEN THE BOLT WITH NUT! YOU'LL PROBABLY HAVE TO TAKE IT APART AGAIN.**

With the carrier in the closed position and everything looking even, tighten the forward most bolt on the bumper **DON'T OVER TIGHTEN**, you may need to undo them again to adjust the alignment. There are 2 methods for getting proper pitch. Most of the time, the first method achieves the correct pitch first thing. With the tire carrier installed and with the door in the closed or almost closed position, the carrier needs to be contacting both bumpstops evenly. If the contact is even and the door swings with little or no binding the carrier pitch is good and the installation can now be completed. If it's tilting away from the vehicle, push in the top part of the carrier so that both bump stops hit evenly (you will most likely need help from another person in order to tighten the bumper bolt to keep the carrier in its correct position.) 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.

The 2nd method for getting proper pitch is described as follows: Open the carrier until the door is perpendicular with the rear of the vehicle. You want the coupling to be situated parallel to the ground. You also want there to be little or no binding on the coupling. If there is excessive binding on either side of the coupling you need to adjust it out by using the carrier as a lever to move the carrier up or down until the coupling sits level and/or there is no binding on the coupling. Getting it just right may require minor adjustments on each side of the bumper in the up and down position. Once it sits relatively level in both the closed and open position, and the carrier and door open and close as one unit, you can tighten the bumper bolts snug and adjust the coupling until it is at the desired tension.

### Post installation

If the carrier is swinging properly free of binding on the door and coupling, 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

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:



Bottom bearing race check:



Expedition One provides the best in off-road bumpers.