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5th Gen 4 Runner Tire Carrier - Installation Instructions:

Thank you for purchasing a ShrockWorks product. We are confident you will enjoy it for many years and find it to be superior in fit, quality and especially durability. If at any time during the installation you have any questions, please give us a call. We also welcome your feedback and suggestions via phone or email on all of our products.

Tools Required:

- 3/8" Ratchet
- Short 3/8" Extension
- 19 mm Socket
- 17 mm Socket
- 14mm Socket
- 13 mm Socket
- 11 mm Socket
- 10 mm Deep Socket
- 19 mm Wrench
- 17 mm Wrench
- Large Adjustable Wrench x2
- Flat/Phillips Head Screw driver
- Body saw, cut off wheel or heavy scissors
- Wire Strippers/Crimpers

Parts Included: 4 Runner Rear Bumper:

- 10 - M12-1.25 x 50mm Bolts
- 1 - M8-1.25 x 35mm Bolt
- 4 - 1/2 x 1 1/2" Bolts
- 4 - 1/2 x 1 1/4" Bolts
- 1 - 3/8" x 1 1/4" Bolt
- 18 - 1/2" SAE Washers
- 18 - 1/2" Lock Washer
- 4 - 1/2" Flange Nuts
- 2 - 1/2" Stick Nuts
- 2 - 1/2" Stick Nuts w/ Plates
- 1 - 3/8" Flat Washer
- 1 - 3/8" Lock Washer
- 1 - 3/8" Stick Nut
- 1 - 5/16" Flat Washer
- 1 - 5/16" Lock Washer
- 10' - Rubber Edge Trim
- 6 - 3/16" Frame Shims
- 2 - Frame Supports

Finishing bare steel 4Runner Rear Bumper:

1. Paint or powder coat products before installing to prevent rust.
2. Clean them thoroughly with a solvent like acetone, prime then paint.
3. We recommend Dupli-Color brand Black primer and semi-gloss black paint. It is available at most auto parts store like AutoZone and Napa. Hammerite brand black paint is also an excellent choice. It is more of a dark grey color though.
4. Let the paint dry hard before attempting installation, usually overnight.

Installation Instructions:

1. Remove Stock Bumper.

- a. Remove the plastic bumper shell. This is held in place by a series of screws in the hatch area, some black plastic fasteners in the wheel well area, as well as a combination of plastic fasteners and screws on the underside of the bumper. To remove the plastic fasteners simply use a flat head to pop up the button on the center. Make sure to keep up with all OEM fasteners as you will be reusing some of them. Also, make sure to disconnect your Back up sensor harness if you have them.
- b. Remove the Styrofoam that is resting on the top of the cross member and the factory receiver if you have one. As well as the factory tie down hooks.



2. Modify Stock Bumper.

- a. Masking tape is a good way to map out your cuts and give you straight lines before you actually start cutting. We recommend using at least 2" wide tape. As long as you keep the tape tight and wrinkle free, you will get a perfect straight edge to follow using the edge of the tape as your cut line.
- b. Measure 9 5/8" from the top edge of the bumper at the inside edge of the tail light and make a mark.
- c. Measure 6" from the top edge of the bumper (rear of the straight portion of where the bumper meets the quarter panel) on the side of the truck and make a mark. (Lower left image)
- d. Measure 5 5/8" from the top edge of the bumper closest to the wheel well on the side of the truck and make a mark. (Lower right image)
- e. Mask off your cut line using these three marks. Use the bottom edge of the tape to connect the marks, spanning from the wheel well all the way around the back corner and into the hatch area of the truck.

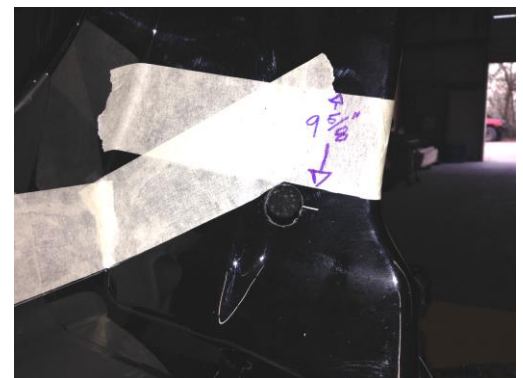




- f. Run a straight edge along the step area of the bumper against the back edge where the bumper mounts to the body and extend it all the way to the side of the hatch area. Trace the bottom edge onto the bumper and follow it with the bottom edge of a strip of tape. Mark line perpendicular to the bottom edge of the tape $\frac{1}{2}$ " inside the second bumper attachment point (U Shaped recession; lower right image)



- g. Finally, connect the two lines you've created with a final line angling upward. The bottom of this line will start at the end of the line you created with the straight edge along the back face of the bumper and to top will end about 2" from the back corner of the bumper in a valley where the corner meets the hatch area of the bumper.
- h. Now that all your lines are mapped out get ready to make your cuts. It's usually a bit easier to make the transitions in the corners if you drill bout



a half inch hole that meets the edges of where your lines intersect. See picture on previous page.

- i. Using a circular cutting blade on a die-grinder, a reciprocating body saw, or simply some heavy-duty scissors, carefully make your cuts, and remember you always cut more away but you are out of luck if you end up cutting away too much.



- j. Once you've made the cuts, run a blade along the corners to clean up any burs and create a nice smooth edge. When that is done you are ready to finish the edges of with the rubber edge trim provided. Start at the wheel well area and begin by cutting tan angle into the end of the trim that matches the angle of the wheel well. Then, simply run one continuous strip from the wheel well all the way down the cut making sure to press the trim into place completely and forming it tightly around the corners and into the bends.
- k. When you get all the way to the end of the bottom edge of your cut and the excess of the remainder of the trim is hanging out into space, cut it away and you are done with that side.
- l. Repeat the process on the other side of the bumper.



3. Install Shrockworks Bumper:

- a. Lift the center section into position allowing each frame bracket to straddle the frame rails and the tabs inside the top face of the bumper to rest on top of the rear cross member.
- b. Line up the holes in the front face and bottom of the bumper with the holes that used to mount your factory receiver. Go ahead and thread in 6 of the M12's provided with $\frac{1}{2}$ " SAE washers and lock washers finger tight
- c. The top mounting holes are accessed through the large holes in the top face of the bumper. To get a nut on the back side of these holes, you will use the provided $\frac{1}{2}$ " stick nuts with the 1" x 2" plates. These will be inserted through the back side of the cross member through a slotted hole at each side. Use your $\frac{1}{2}$ " x 1 $\frac{1}{2}$ " bolts here with a SAE Washer and lock washer. Do not tighten yet.
- d. Now that you have the bumper somewhat in position, go ahead and re-install the modified pieces of your factory bumper from step 2 so that you have an edge to reference while aligning your bumper. The front edge of these pieces will be refastened after the bumper is completely installed.



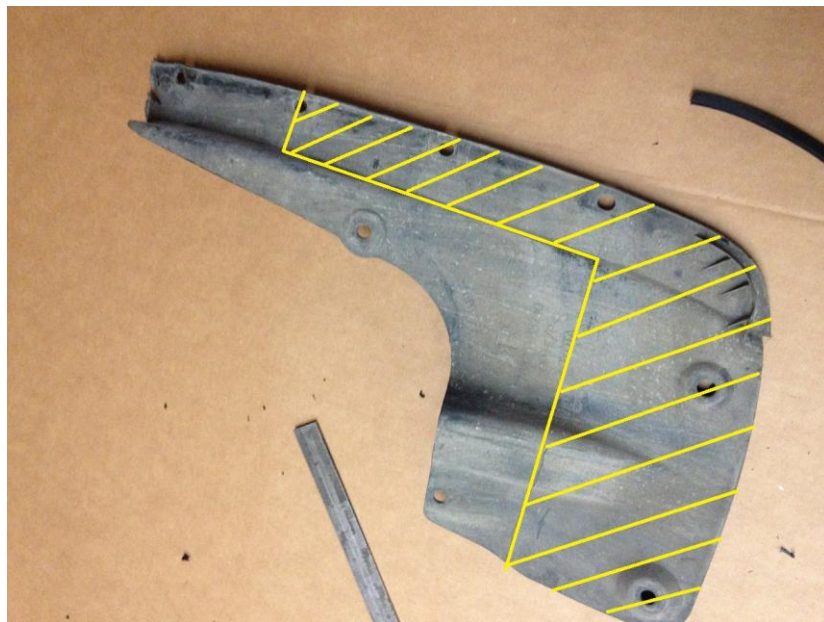
- e. The lower mounting holes will line up where the previous factory tow hooks mounted. There will be a gap between the brackets and the bottom of the frame. Slide in your provided frame shims here, lining up the slot with the bolt holes in the bracket. 2 Shims is standard, but if your bumper is not aligned perfectly with the bottom edge of your cuts you may need to adjust your shim quantity. More shims between the bracket and frame will lower the front edge of the bumper, and less will raise it. You want the gap from the front edge of the bumper to the back to be as even as possible. Go ahead and thread in two M12's on the Drivers side with SAE washers and lock washers.
- f. The passenger side is a bit tricky with the exhaust being directly below the bolt holes, but you can push or pull it out of the way.
- g. Install the wing support brackets starting with the driver side. Slide the bumper end of the bracket up into place first with the bracket being between the mounting tab inside the bumper wing and the wheel well end of the bumper, then lift the frame end into place. There will be a square hole in the bottom of the frame that the bracket will line up with, and a threaded hole in the side of the frame. Use the provided M8 bolt with $\frac{5}{16}$ " washer and lock washer to loosely secure the bracket to the frame. The hole in the bottom of the frame will be fastened using a $\frac{1}{2}$ " x 1 $\frac{1}{2}$ " bolt, SAE washer and lock washer, you will have to fish $\frac{1}{2}$ " stick nut inside the frame using a hole located inside the factory tire carrier cross-member. Back on the bumper side, use 2 - $\frac{1}{2}$ " x 1 $\frac{1}{2}$ " Bolts, SAE Washers, lock washers and Flange Nuts to loosely fasten the bracket to the mounting tab inside the bumper wing. Insert the bolt through the bracket first so that shank of the bolt is pointed toward the rear of the vehicle.
- h. Repeat the last step again on the passenger side, but rather than having a factory treaded location on the side of the frame there is just a blank hole. You will need to use the provided $\frac{3}{8}$ " x 1 $\frac{1}{4}$ " bolt, washer, lock washer and $\frac{3}{8}$ " Stick nut and fasten the hole in the same manner as the hole in the bottom of the frame.



- i. Once you have all the bolts started make sure the bumper is centered side to side and SNUG-UP 2 the bolts on the bottom face of the bumper (do not tighten completely, just ensure the bumper is sitting flush against the bottom of the frame), and follow by doing the same with the 4 bolts in the front face. At this point go around and secure all other fasteners except the bolts in the top face of the bumper.
- j. If you are installing a receiver hitch, remove the 6 bolts that will mount it, slide it up into place and reinstall the bolts and tighten them down as well as the bolts in the top face of the bumper. If not installing a receiver, simply go ahead and tighten all hardware.

4. Trim and Reinstall Fender Liners:

- a. Here you will simply trim the excess away from the plastic fender liners and remount them using the remaining mounting holes. Trim them similar to the illustration to the right here. Simply hold the liner back up in place to get a reference for where to start your horizontal cuts. The vertical cut you can pretty just follow the rib that is about 1.5" from the edge.
- b. Once you have the liner trimmed and mounted, line up the lower edge where the stock bumper meets the liner and drill a 3/8" hole through both of them. Here you'll need to reuse one of the factory push button fasteners to secure the two together.



5. Install Tire Carrier Arm:

- a. First, use the provided grease packets to lubricate that T-pin hole and hinge collar. Use one full packet for each. Apply most of the grease for the T-pin through the bottom side of the arm so that it isn't pushed out the top when the T-pin is inserted. On hinge collar, apply grease to inside of brass bushing, and around the top and bottom edge of collar where bronze washers sandwich collar.
- b. Insert T-pin's pin and spring portion through the bottom side of the arm and thread T-handle on at top side.
- c. Install 1/2" plastic gate stop pad on face of bumper with 1/4" Flat head cap screws and corresponding hardware, and install 1/4" plastic gate slide on top side of latch plate so that the tire carrier arm can rest on it in the closed position.
- d. Place the two 1" bronze washers on top and bottom of the hinge collar and slide assembly between hinge support mounting tabs on bumper. You will have to lift the T-handle up so that the pin slides over bottom tab. Let latch side of arm rest on the plastic gate slide.
- e. Drop 1" bolt with a 1" SAE washer in from the top side of hinge support tabs and thread 1" nylock nut with SAE washer on bottom side. Tighten 1" bolt until desired resistance is achieved in tire carrier arm movement. The more you tighten the bolt, the greater the resistances will build.
- f. Install latch with 1/4" x 3/4" bolts and 1/4" lock washers.
- g. Install inner slide of tire mount, there are 4 different height settings to choose from. For reference, the truck in the last picture of these instructions is pictured with the tire mount in the second from highest setting with a 32" tire. It can be raised another 1 1/4" or lowered as much as 2 1/2".
- h. Install outer tire mount slide over inner slide snugging up bolts but leaving them loose enough so that the slide can still move back and forth. Hang your spare tire on the tire mount and snug up lug nuts (**M12-1.5 thread pitch**) and push tire as close to the tire carrier arm as possible. Remove lug nuts and tire, and crank down all tire slide hardware. Re-install tire.
- i. Install LP/3rd brake light and LP on LP bracket, and mount assembly to tire mount with 1/4" carriage bolt, 1/4" lock washer and 1/4" wing nut.
- j. Remove passenger side tail light assembly and route new LP light harness down tire carrier arm, through hole behind hinge assembly and up to factory harness behind tail light. Tap LP harness into the corresponding colors in OEM harness. Check that all lights are operating as intended, and reinstall tail light making sure not to crimp harness.

- Tail/LP light (Green) - Green wire OEM harness
- Brake(Red) - Blue wire OEM harness
- Ground(Black) - White/Black stripe wire OEM harness

- k. Install the bump plate in OEM LP location and the adjustable rubber bumper on its bracket in center of tire carrier arm. Adjust it out so that it has a fair amount of preload on the bump plate when tire carrier is in the latched position.
- l. *(Optional)* Install hi-lift jack with the base pointed down on the driver side using provided ½" carriage bolts and ½" wing nuts
- m. *(Optional)* Install Jerry can mount with 3/8" hardware. You will need to provide your own lock for the security strap.

6. Final Step:

- a. Make sure all hardware is tight and all parts are secure.
- b. Slowly lower the hatch into place to make sure that everything clears and there is no interference between it and the bumper.
- c. GO WHEELIN!



Shrockworks 4x4 Products