

R-Pod Outrigger Installment

This process document corresponds to the YouTube video on [R-Pod Outrigger Installment](#). Please watch this video to gain a visual understanding of the process. If this process is of value, we appreciate it if you would consider supporting the channel by starting your online shopping from our [Amazon Store](#).

Here are the tools and supplies I used to complete the project:

- 5 – Metal Outrigger Supports from Forest River (Number is dependent on installation)
- Black Rustoleum Paint
- Small Foam Paint Brush
- 6-Ton Bottle Jack
- 1 pc. – 2x4 Wood Block – approx. 24” long
- 1 pc. – 2x4 Wood Block Scrap – approx. 3” long
- 2 pcs. – 4x6 Wood Blocks – approx. 12” long ea. (or 1 Cinder Block)
- Zinc Plated Hex Bolts – 5/16” x 3” (to secure Outrigger Upper Hole to Frame Tube)
- Zinc Plated Nylon Lock Nuts – 5/16”-18 (to secure Outrigger Upper Hole Bolt on inside Frame Tube)
- Zinc Plated Fender Washers – 3/8” x 1-1/4” (for inside Frame Tube on Outrigger Upper Hole)
- Teks #12 x 1” Self-Tapping Metal Screws (to secure Bottom Outrigger Holes)
- 3/8” Metal Drill Bit (to drill Outrigger Upper Hole through both Frame Tubes)
- 1/8” or 9/64” Metal Drill Bit (for optional Pilot Holes for #12 Teks Screws on Lower Outrigger Hole)
- Power Drill
- Ratchet Wrench
- 2” Socket Extender for Ratchet Wrench
- 1/2” Socket (for Hex Bolts)
- 1/2” Combination or Box Wrench (for Nylon Lock Nuts)
- 5/16” Nut Driver (for #12 x 1” Teks Screw Heads)
- Safety Goggles
- Work G4. Next, once the... 4. Next, once the... 4. Next, once the... loves
- Colored Painter’s Tape (to Mark Outrigger Locations on Frame Tube)
- Felt Marker (to Mark Outrigger Holes on Painter’s Tape)
- Tape Measure
- Combination Square
- Kneeling Mat or Large Cardboard Box
- Shop Creeper (Optional)

Here are the steps to complete the process:

1. First, identify if your R-Pod is missing outrigger supports under the slide-out area. There should be metal outrigger supports extending from the frame tube to the outer wall of the trailer spaced the length of the trailer. Some of the R-Pod models are missing this key structural support in areas. This seems to be accentuated for the R-Pod 179 model, given the length and corresponding weight of the slide-out. For reference, my 2017.5 R-Pod 179 was missing outriggers for a space of just over 9 feet. If the outriggers are missing, then the outer wall at the slide-out may sag over time or with significant use.

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2. Next, check that the tube frame and floor are square. You can do this by looking underneath the slide-out side wall with a combination square. I ran the square along most of the floor and tube frame to check the squareness of the floor. My floors were square near the existing factory outriggers but sagging under the slide area where there were no supports.
3. If you are missing the outrigger supports and want to order them, contact Forest River via email and provide the following information. I worked with Jenn Weldy (jweldy@forestriverinc.com):
 - Year, Model and VIN of your trailer.
 - The problem you are having with the wall sagging if it is currently an issue.
 - The problem you would like to avoid if you haven't yet experienced any wall sag.
 - Include the part number in your communication:
F100140948 FORMED OUTRIGGER - 4A - USED ON R-PODS 1051177 L & W ENGINEERING
 - Mention the number of outriggers you would like to order.
 - Include your name, address, and phone number.

It is likely that the outriggers will take 2-3 weeks to be delivered. The cost quoted will not include shipping which will be added to the total charge to you after the units are shipped.

4. Next, once the outriggers have arrived, they will need to be painted to avoid corrosion. I used black Rustoleum paint picked up at a local hardware store and a simple foam brush as an applicator. I used a large old cardboard shipping box laid flat to paint the outriggers on. I also let them dry overnight outside covered and came back the next day and did touch up.
5. Next, move the R-Pod to a level surface if possible. Chock the tires and level the trailer to the surface. If you don't have a perfectly flat surface to work on, you will still need to level the trailer to the surface before jacking up the wall. You can do this by lifting or lowering the front tongue jack and measuring the front and rear corners of the slide-side until they are equidistant from the ground surface. For me it was exactly 20" off the ground on both the front and rear corners.
6. Next, locate the outriggers that were installed at the factory and mark them on a diagram. A blank R-Pod diagram is at the bottom of this document.
7. Next, decide on where to place the outriggers on the frame tube and diagram this out in relation to the factory outriggers. The placement of the outriggers will somewhat depend upon the fastener material used and the severity of the issue. In general, you will want less space between outriggers the more severe the wall sag is. Also, you should place outriggers closer together the lower the fastener's tensile pull-out capacity.

Since the upper outrigger frame tube hole will carry a large majority of the load, the fastener used in this upper hole is crucial. The bottom line is that you should seriously consider putting a bolt through the upper hole of the outrigger as the main support that goes through both sheets of the frame tube. This is the decision I made. The strength of using a bolt in the upper hole is far superior to using Teks screws in the upper hole. See the [ICC-ES Service Evaluation](#) for Teks screw

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pull-out strength. I decided to use bolts on the top holes and Teks screws on the bottom holes of the outriggers on the frame tube.

I planned to put outriggers every 11.38" apart under the slide-out, with the fifth outrigger in between the front and new outrigger, however, once I started the work it became apparent that this perfectly equidistant solution wouldn't work given obstacles such as tank hangers, wiring harnesses, and metal work. The general locations were kept, but the exact measurements had to change. Some wiring harness frame clamps had to be temporarily removed to install certain outriggers.

8. Next, after you have diagramed out where to put the outriggers (see blank diagram at the end of this document), place a 3-4" piece of colored painter's tape on the frame tube where you measured the spacing. Place the tape vertical on the frame. It is important at this point that you physically get under the trailer and look at what is on the inside of the frame tube at your tape marks. At several of my marked locations, the black tank and freshwater tank were only 2" behind the inside of the frame tube. Also, there should be nothing else like tank hangers or wiring harnesses on the inside of the frame tube at the tape marks. In several instances, I had to move my tape an inch or two left or right to miss something on the inside the frame tube. The final diagram of my outrigger placements is available at the end of this document.

I used a small 2x4 wood block to wedge between the fame tube and any tank nearby to absorb any drill bit penetration. The space between the inner frame tube and the nearby tanks is almost exactly the size of the thickness of a 2x4, so it wedges right up and will stay there while drilling. Cut a small 3" scrap of 2x4 as this drill bit blocker and you'll likely be happy you did!

9. Next, once you have marked the outriggers with painter's tape, set up your jacking rig using the wood for this and the 6-ton bottle jack. I used a 6-ton bottle jack, but other sizes will work as well. I stacked two stout 4x6 blocks for the bottle jack to sit on. If you have a cinder block and small piece of wood, this will also work as the base. Whatever base you apply, ensure it won't move or break under load, and that it will give the needed height for the bottle jack.

To disperse the concentrated lift from the jack, I used a 24" piece of 2x4 on the lower wall railing for the jack to lift up. Others have used a similar length of angle iron to disperse the lift at the lower outer wall railing. If you don't disperse the lift force from the bottle jack, it will likely bend the wall railing at the point where the bottle jack is applied. For me the 24" 2x4 work perfectly as the piece set against the lower wall railing and properly dispersed the lift from the jack.

10. Next, slowly jack the slide-side wall up. You may hear your R-Pod creak a bit as the wall is set back to square with the frame tube. Use your combination square to check that it is square and jack the wall up as needed to reach this goal. Once my floor and wall were square, I was ready to mark the outrigger holes on the painter's tape.

One caveat here, is that you likely won't be able to drill all the outriggers at one jacking event, given their location close together under the slide and the need for the bottle jack rig to be in the same area.

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11. Next, hand-place an outrigger as high as possible and square against the frame tube and floor on the painter's tape and mark the two holes from the outrigger onto the painter's tape using your felt marker. You should now have the placement on the painter's tape for your drill marks. Put the outrigger down from the frame and out of the way.
12. Next, attach your 3/8" metal cutting drill bit into your power drill. Make sure the drill is safely plugged in, rotating in the right direction, and that the bit is secure in the chuck. Drilling the holes will require significant pressure, so double check that everything is connected securely.
13. Next, if you are drilling near a tank, place your 2x4 scrape between the inner frame tube and tank. I had to look under the trailer to confirm that I had the piece of scrap in the right place with each outrigger install.
14. Next, set your kneeling mat in a place where you can kneel directly in front of the first outrigger and apply leverage to the drill.
15. Next, place the drill bit on the upper hole mark and try to level the drill so that you don't drill upward on the inner frame tube sheet. This will not be easy as the top outrigger hole will be high on the frame, meaning the top of your drill housing will be near the floor's bottom, if not touching. You will drill once but through two layers of 0.1" metal approximately 2" apart. Be aware that the drill may jump on you after breaking through each layer.
16. Next, set the drill bit against the upper hole tape mark and power up the drill slowly while firmly placing the bit onto the mark. After a few seconds, depress the trigger to full power as you apply pressure. You'll want to be kneeling with your torso upright when doing this. Your drill bit should start to work through the metal and break through the first sheet within 30 seconds or so, depending on the quality of your drill, the quality of your bit, and the pressure maintained.
17. Next, once the drill bit has broken through the first metal sheet of the frame tube, keep the drill level and proceed to pierce the second sheet in like manner. Remember that the drill may jump when it fully pierces each sheet, so hold onto the drill firmly.
18. Next, after you have bored the two holes, remove the wood buffer 2x4 scrap if it was used.
19. Next, apply an outrigger to the mark and put one of the 3" hex bolts through the upper outrigger hole and both holes in the frame. It should slide right through.
20. Next, go under the trailer and place a fender washer onto the bolt. You may have to angle this washer to get it onto the bolt. The large fender washer acts to apply the force of the bolt's strength over more of the frame tube's surface.
21. Next, grab a nylon lock nut and thread it by hand onto the bolt's threads. It will be cramped to do this, so be patient. Once it is initially threaded, employ your 1/2" box wrench onto the nut.
22. Next, use your ratchet wrench, extension and 1/2" socket to tighten the hex bolt while holding the lock nut stable with the box wrench. Tighten the lock nut snug plus a bit, but do not overtighten it

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to the point of bending the frame tube. Ensure the outriggers remain plumb to the frame tube when fully tightening the nuts. I repeated the above process on the five outriggers I installed.

23. Next, after the outrigger upper holes were fully attached with the bolts, I drilled pilot holes for the Teks screws using the 9/64" bit in the lower outrigger frame tube holes, I used a 1/8" bit but broke that bit trying to pierce the metal. I moved to the slightly larger 9/64" bit and sat the bit deeply into the power drill's chuck. This seemed to work better, and I was able to drill all the pilot holes for the outriggers into the first frame tube metal sheet.
24. Next, I removed the drill bit and put a 5/16" nut driver into my drill to seat the #12 Teks screws into the pilot holes. This took very little time to do as the Teks screws quickly found the pilot holes and seated very quickly. Remember to hold on tightly to the drill when seating the Teks screws.

At this point, all five outriggers had been installed with bolts through the top holes (through both frame tube sheets), and Teks screws seated in the bottom holes through the outer frame tube sheet. I decided at this point to not add fasteners at the two holes on the flange of the outrigger at the outer wall railing. My reasoning was simple, I didn't want to add any weakness or add moisture points to the outer railing and floor. I could readily see that the outriggers were not going to move at all, and the outer wall would be fine to just sit on the outrigger shelf without fasteners. This is a risk on my part and one you may or may not want to take. It is your call to add these two screws on the outer wall, but if you do, you will want to add the appropriate silicon caulk.

25. Next, slowly release the tension on the bottle jack. The wall will move down with the release of pressure. The wall should now be resting fully on the five new and three factory outriggers unassisted. For me, this solved the issue and using the combination square proved it. The floor and frame tube were now perfectly square. Inside my R-Pod, the slide was sitting higher and had less difficulty being pulled in.

Ok, that should do it. You will find the R-Pod diagrams on the next two pages.

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