

# <THESE INSTRUCTIONS MUST BE GIVEN TO THE END USER>



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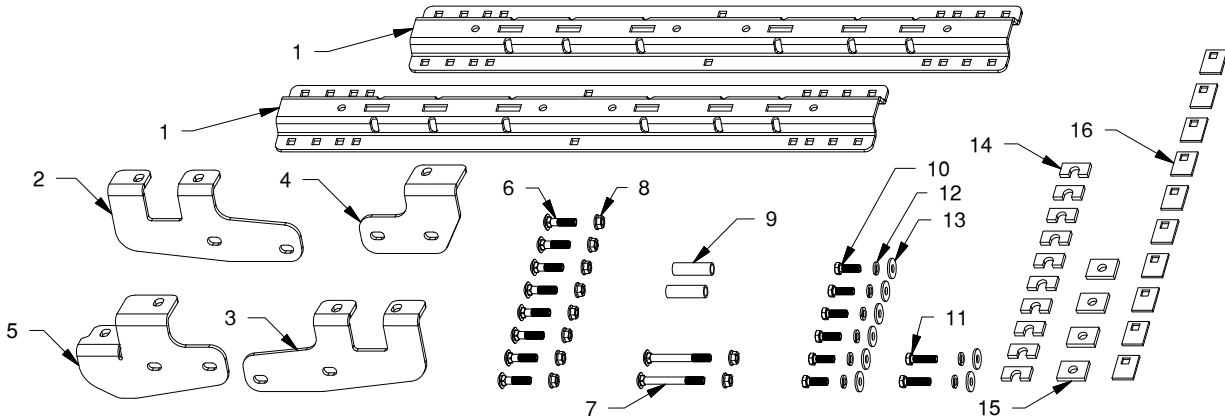
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## Custom 5th Wheel Hitch Mounting Rail Installation Instructions

# MODEL 2602

See Limited Lifetime Warranty at  
[bwtrailerhitches.com/warranty](http://bwtrailerhitches.com/warranty)

2014-2020 RAM 2500 Trucks



PARTS LIST			PARTS LIST		
ITEM	QTY	DESCRIPTION	ITEM	QTY	DESCRIPTION
1	2	Mounting Rail (Separate Box)	9	2	Tube Spacer
2	1	Passenger Side Front Bracket	10	6	M12 X 35mm Hex Head Bolt
3	1	Driver Side Front Bracket	11	2	M12 x 45mm Hex Head Bolt
4	1	Passenger Side Rear Bracket	12	8	1/2" Split Lockwasher
5	1	Driver Side Rear Bracket	13	8	1/2" Flat Washer
6	8	1/2" X 2" Carriage Bolt	14	10	5/16" U-Shaped Spacer
7	2	1/2" X 4 1/2" Carriage Bolt	15	4	Round Hole Rectangle Washer
8	10	1/2" Flange Nut	16	10	Offset Square Hole Washer

## **⚠️ WARNING** Failure to comply with the safety information in these instructions could result in serious injury or death.

- ⚠️** Read all installation and operating instructions along with all labels before using this product.
- ⚠️** Adding components to the chassis of any vehicle can be hazardous. There is potential for damage to vehicle, injury from tool usage and many other hazards. This installation must be completed by someone who is aware of the hazards involved. This person must be knowledgeable of proper safety procedures for a vehicle installation of this nature, and for usage of the equipment required to perform the installation.
- ⚠️** Without proper knowledge, towing can be a dangerous activity. Understand all the risks involved with towing before proceeding. For information on towing safety, see **"The Trailer Handbook: A guide to Understanding Trailer and Towing Safety"** from the *National Association of Trailer Manufacturers*, [www.NATM.com](http://www.NATM.com) and your trailer manufacturer's owner's manual.
- ⚠️** Do not exceed tow or tongue rating of coupler, tow or tongue rating of hitch, or tow or weight ratings of truck or trailer. See vehicle and trailer manufacturer information for ratings. Exceeding these ratings may cause damage to towing components or loss of attachment between the trailer and truck.
- ⚠️** Additional caution must be used when towing a wedge car trailer. Towing stability greatly depends on keeping the center of gravity as low as possible. Load heavy cars over the axles. Never tow with a single car on the front of the trailer. When towing a wedge car trailer, never exceed speeds that are reasonable for the roadway conditions (e.g. turns, going around a curve, etc.). Failure to account for proper trailer center of gravity and speeds that are reasonable for the roadway conditions may cause damage to the truck, trailer, towing components, and loss of attachment between the truck and trailer.
- ⚠️** Do not modify this product in any manner. Doing so could alter its integrity and lead to a loss of attachment between the trailer and the tow vehicle.
- ⚠️** A visual inspection of the hitch should be performed before each time you tow. Regularly check that all pinned connections are secure, and that all bolted connections are at the correct torque specification. Check for cracks or damage to the hitch. Do not tow with the hitch if cracks or damage outside of normal wear is found. Towing with a hitch that has cracks or damage could result in damage to the tow vehicle, trailer, towing components and loss of attachment between the tow vehicle and trailer.

# PREPARING TO INSTALL

**NOTICE:** It may be necessary to remove the spare tire and/or heat shield before installation.

**NOTICE:** If truck is equipped with a removable bed liner or mat, it should be removed or it must be cut to allow the mounting rails to connect directly with the bed. It is acceptable to install the mounting rails over a spray in bed liner.

**NOTE:** Remove all parts from the packaging and familiarize yourself with all the parts and tools required. Use the parts list on the front page to verify that all parts and hardware are present.

**⚠ WARNING:** Do not install frame brackets over wiring or brake lines. Always place the hitch components directly against the frame of the truck. Failure to move such components can lead to property damage or serious injury.

Installation of the mounting rails requires several common tools and a few specialized tools. Below is a listing of equipment used during a typical installation.

- Impact wrench or ratchet with 3/4" and 19mm sockets
- 3/4" and 19mm box end wrenches
- A drill and 1/8", 9/16" and 7/8" Drill bits
- Patriot 5th wheel or Slider Base
- Hammer
- Flashlight
- Tape Measure
- Eye and Ear Protection
- Torque Wrench
- Center Punch Tool
- Spray lubricant or compressed air

## DRILL FORWARD MOUNTING HOLES

- Layout the forward mounting rail.** Place a mounting rail onto the bed of the truck. Hook a tape measure over the rear edge of the bed (not on any part of the tailgate), measure the location for the mounting rail as shown in Figure A1. Next, center the mounting rail in the bed by measuring the distance on either side from the edge of the rail to the sides of the bed. The rail will be centered when both measurements on either side of the rail are the same.

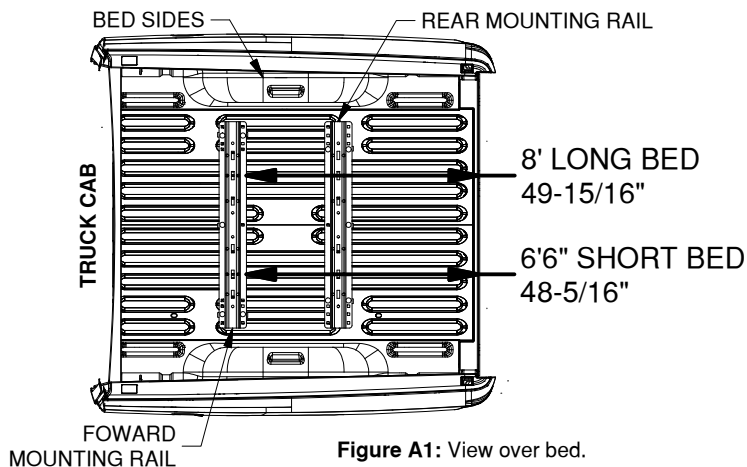


Figure A1: View over bed.

**IMPORTANT:** The mounting rail is designed to install only at the described location. Failure to place the mounting rail precisely may result in added difficulty during installation and/or property damage.

- Mark hole locations:** While carefully ensuring the mounting rail does not move, use a center punch tool to mark the 5 drill locations on the forward rail. See Figure A2 for hole marking locations for this installation (rear rails will install on a later step). Once all 5 forward rail locations are clearly marked, move the bed rail out of the way and drill each location with an 1/8" drill.

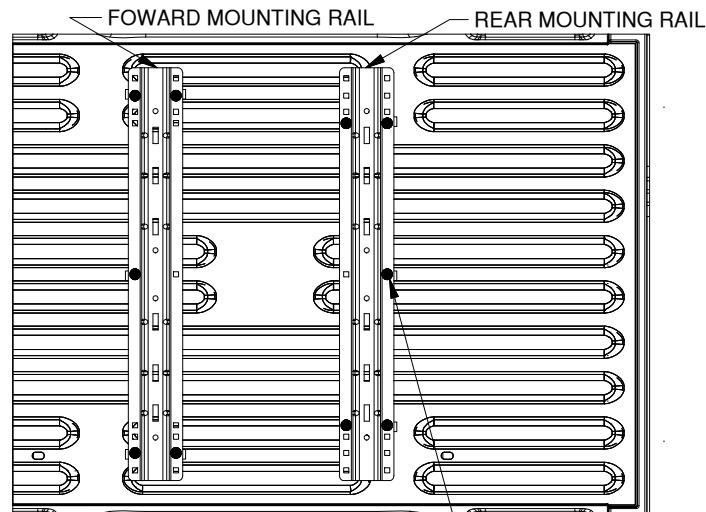


Figure A2: Detail view over bed, showing drill locations for the forward and rear bed rails. DRILL LOCATIONS HIGHLIGHTED BY BLACK DOTS

- ⚠ WARNING:** The fuel tank of the truck may be directly below the area of the bed which needs to be drilled. Always carefully examine the area under the truck where modification will occur. Make certain that the tank, or other equipment, is not damaged during drilling. Damage to the tank may result in property damage, serious injury or death.

- Check hole locations.** Locate the driver side front bracket. Position and hold the bracket flat against the inside of the frame where it will be installed see Figure A3. Check that the 1/8" pilot holes are centered within the slots in the frame brackets. If the 1/8" drilled holes are not centered within the slots, re-drill the 1/8" holes until the brackets and the drilled holes are aligned. Repeat the process for the passenger side using the passenger side rear bracket, see Figures A4.

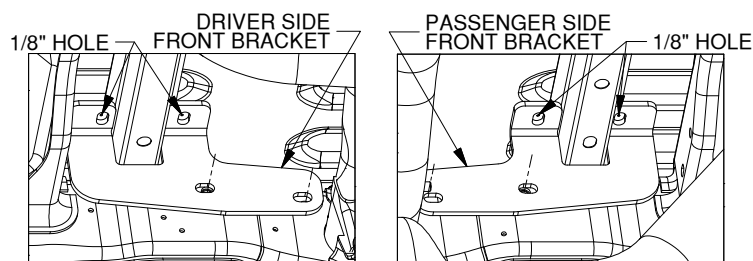


Figure A3: View looking up at the inside of driver side frame. Figure A4: View looking up at the inside of passenger side frame.

- Enlarge the holes.** On top of the bed, using the 1/8" holes as pilots, drill out each hole with a 9/16" bit.

# INSTALL FORWARD MOUNTING RAIL

**NOTICE:** Due to the corrugation of the truck bed, U-shaped spacers are provided to function as space fillers between the mounting rails and the kit attachment hardware. Always place a U-shaped spacer in the gap either above the bed (between the mounting rail and the bed) or below the bed (between the bed and the side mounting brackets). Failure to use U-shaped spacers will result in property damage when hardware is tightened.

1. **The forward mounting rail.** Re-position the forward mounting rail over the drilled 9/16" holes in the bed. Place a 1/2" X 2" carriage bolt through the mounting rail and into each of the 5 drilled locations. Place a U-shaped washer between the bed and the mounting rail at the five drilled positions, see Figure B1.

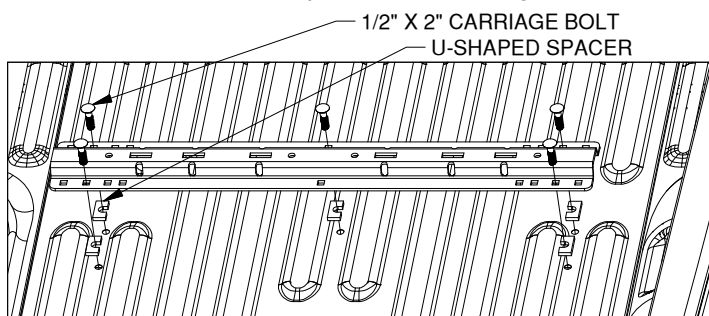


Figure B1: View looking into truck bed from rear of truck.

2. **Clean the mounting locations.** Each front bracket will fasten to the frame using pre-existing weld nuts. Before attaching hardware, debris must be cleaned out of each weld nut. Use spray lubricant or compressed air in each mounting location to remove loose dirt. If larger debris is present use of a small wire brush may be required.
3. **Install the front brackets.** Locate the two front brackets, four round hole rectangle washers, two M12 x 45 mm hex head bolts (longer), two M12 x 35mm hex head bolts (shorter), four 1/2" split lock washers, and four 1/2" flat washers. Due to curvature of the frame the forward hole in each front bracket will need to be supported with two round hole rectangle washers. See Figure B2. Using a 1/2" lock washer and 1/2" flat washer, Thread the longer (45mm) M12 hex head bolt into the frame through the forward holes in the brackets and through both round hole rectangle washers. Again, Using a 1/2" lock washer and 1/2" flat washer, Thread the shorter (35mm) M12 hex head bolt into the frame through the remaining holes. See Figures B3 and B4. Do not fully tighten at this time.

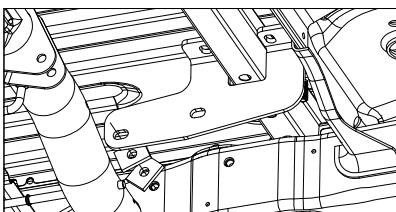


Figure B2: View looking up at passenger side frame.

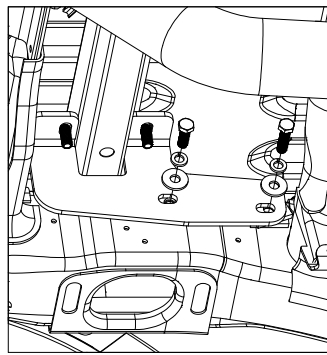


Figure B3: View looking up at driver side frame.

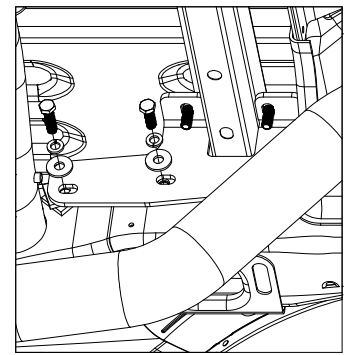


Figure B4: View looking up at passenger side frame.

4. **Fasten the forward mounting rail.** Install an offset square hole washer and 1/2" flange nut on each of the carriage bolts passing down through the bed as shown in Figure B5. Do not fully tighten at this time.

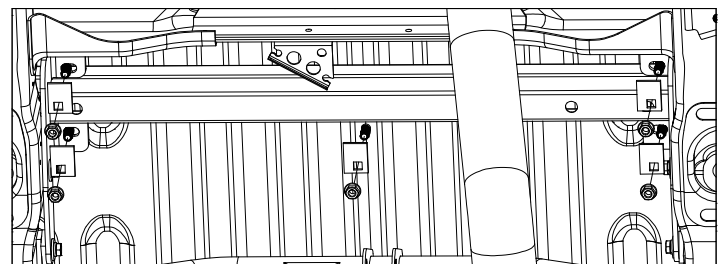


Figure B5: View looking up at bed.

# INSTALL REAR MOUNTING RAIL

2. **Position the rear mounting rail.** For this step the base which will be used in the mounting rails is required. Place a mounting rail into the truck bed behind the forward mounting rail. Place the base over the rail attachment points and carefully lower it until the pin tabs pass through the attachment points on the forward mounting rail. Attach the rear mounting rail to the rear mounting points on the base. The base should rest flat against the top of the rails, See Figure C1. With the base still attached ensure that the rear rail is centered in the truck bed.

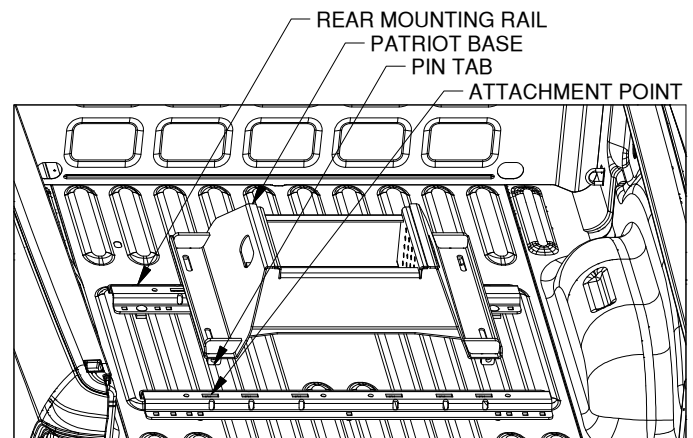


Figure C1: View into truck bed looking towards tailgate.

2. **IMPORTANT:** Before drilling rear mounting holes pull the RV base towards the cab of the truck and push the rear rail towards the rear of the truck to correctly space the mounting rails, see Figure C2.

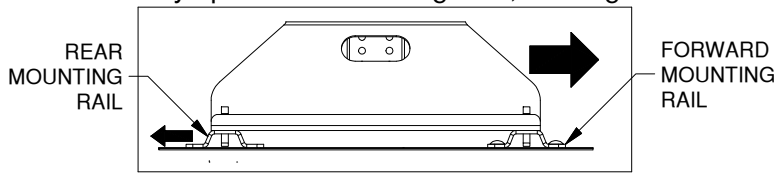


Figure C2: Side view of RV base and mounting rails.

3. **Drill rear mounting holes.** Using the same methods as used for the forward mounting rail, mark and drill the 1/8" holes for the rear mounting rail. Refer to "DRILL FORWARD MOUNTING HOLES" section, step 2, on a previous page. Notice that the hole locations are slightly different than the forward rail, see Figure A2 (on the second page).

**NOTE:** The two forward drill locations on the rear rail are directly above a bed cross member. The drill must pass through both the bed and the cross member and should be as straight as possible when drilled.

4. **Enlarge the holes.** Remove the base and move the rear rail out of the way. Using the 1/8" holes as pilots, drill out the 3 rear most drill locations with a 9/16" bit. Drill out the 2 forward drill locations with a 7/8" drill. The 7/8" holes should be in the bed only, do not drill up through bottom of the cross member.
5. **Place the rear mounting rail.** Locate the two tube spacers, place a tube spacer into each of the 7/8" drilled holes. Re-position the rear mounting rail over the drilled 9/16" and 7/8" holes in the bed. Install two 1/2" X 4 1/2" carriage bolts into the two forward drilled positions (7/8" holes over the cross member) and install three 1/2" X 2" Carriage bolts through the three rear drilled positions, as shown in Figure C2. Place a U-shaped washer between the bed and the mounting rail at the three rear drilled positions

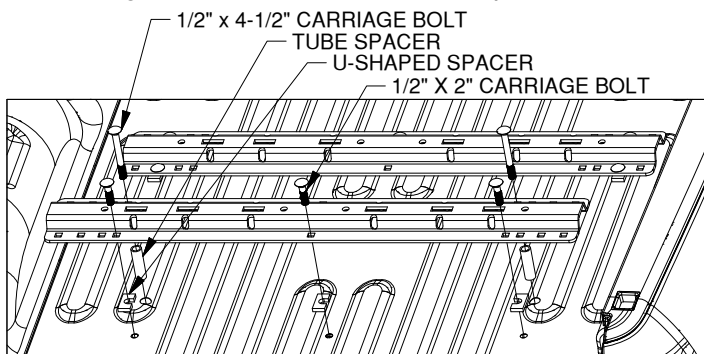


Figure C2: View looking down into the bed of the truck.

6. **Install the driver side rear bracket.** Locate the driver side rear bracket, two M12 x 35mm hex head bolts (shorter), two 1/2" split lock washers, and two 1/2" flat washers. Position the bracket under the installation location of the two driver side carriage bolts. Maneuver the bracket so that the 1/2" carriage bolts passes through the slots at the top of the bracket. Using 1/2" lock washers and 1/2" flat washers, Thread the shorter (35mm) M12 hex head bolts into the frame through the holes in the bracket, see Figure C4.

7. **Install the passenger side rear bracket.** Locate the passenger side rear bracket, two M12 x 35mm hex head bolts (shorter), two 1/2" split lock washers, and two 1/2" flat washers. Position the bracket under the installation location of the rear passenger side carriage bolt. Maneuver the bracket so that the 1/2" carriage bolt passes through the slot at the top of the bracket. Using 1/2" lock washers and 1/2" flat washers, Thread the shorter (35mm) M12 hex head bolts into the frame through the holes in the bracket, see Figure C5.

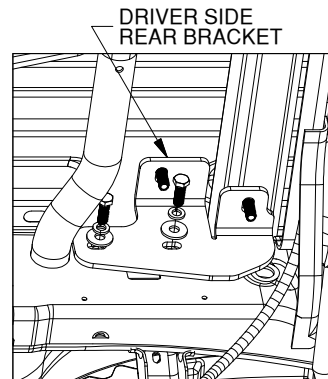


Figure C4: View looking up at driver side frame

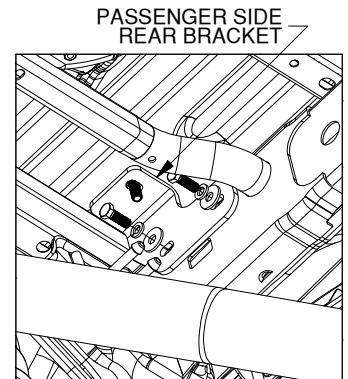


Figure C5: View looking up at passenger side frame.

8. **Fasten the rear mounting rail.** Install an offset square hole washer and 1/2" flange nut on each of the carriage bolts passing down through the bed as shown in Figure C6. Do not tighten at this time. The passenger side 1/2" x 4 1/2" carriage bolt can be accessed from a space in the frame geometry next to the bolt, see Figure C7. Use the space to thread the offset square hole washer and 1/2" flange nut. Use a box end wrench to tighten this nut.

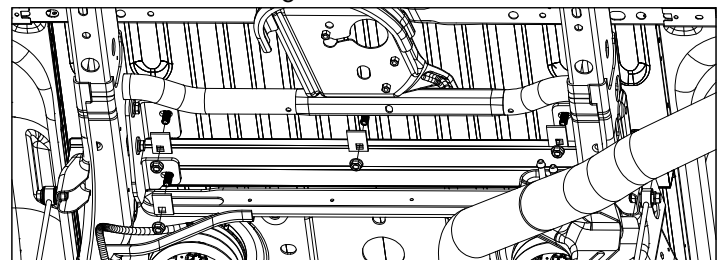


Figure C6: View looking up at the bottom of the truck bed.

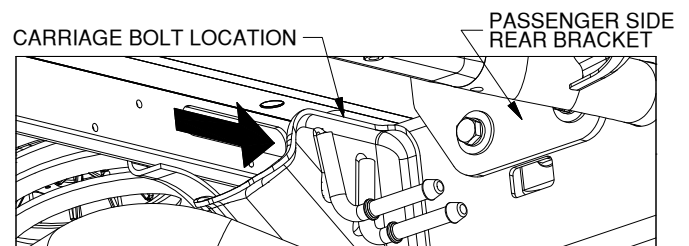


Figure C7: View looking at passenger side frame and bed cross member  
Arrow indicates access area

9. **Tighten hardware.** Hand tighten all hardware, then using a torque wrench, first torque all the 1/2" nuts in the mounting rails to 80 ft-lbs. Second, torque all M12 nuts in the frame brackets to 96 ft-lbs.
10. **Secure frame elements.** If any wiring was moved or detached during installation, check that it has been re-secured to the frame. Reinstall the heat shield and spare tire if necessary.