



## B&W Trailer Hitches

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**NOTE:** *we recommend reading instructions before beginning the installation.*

# Heavy Duty Receiver Hitch Installation Instructions

## Model HDRH25211

Call or Email us for Installation Support

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www.turnoverball.com

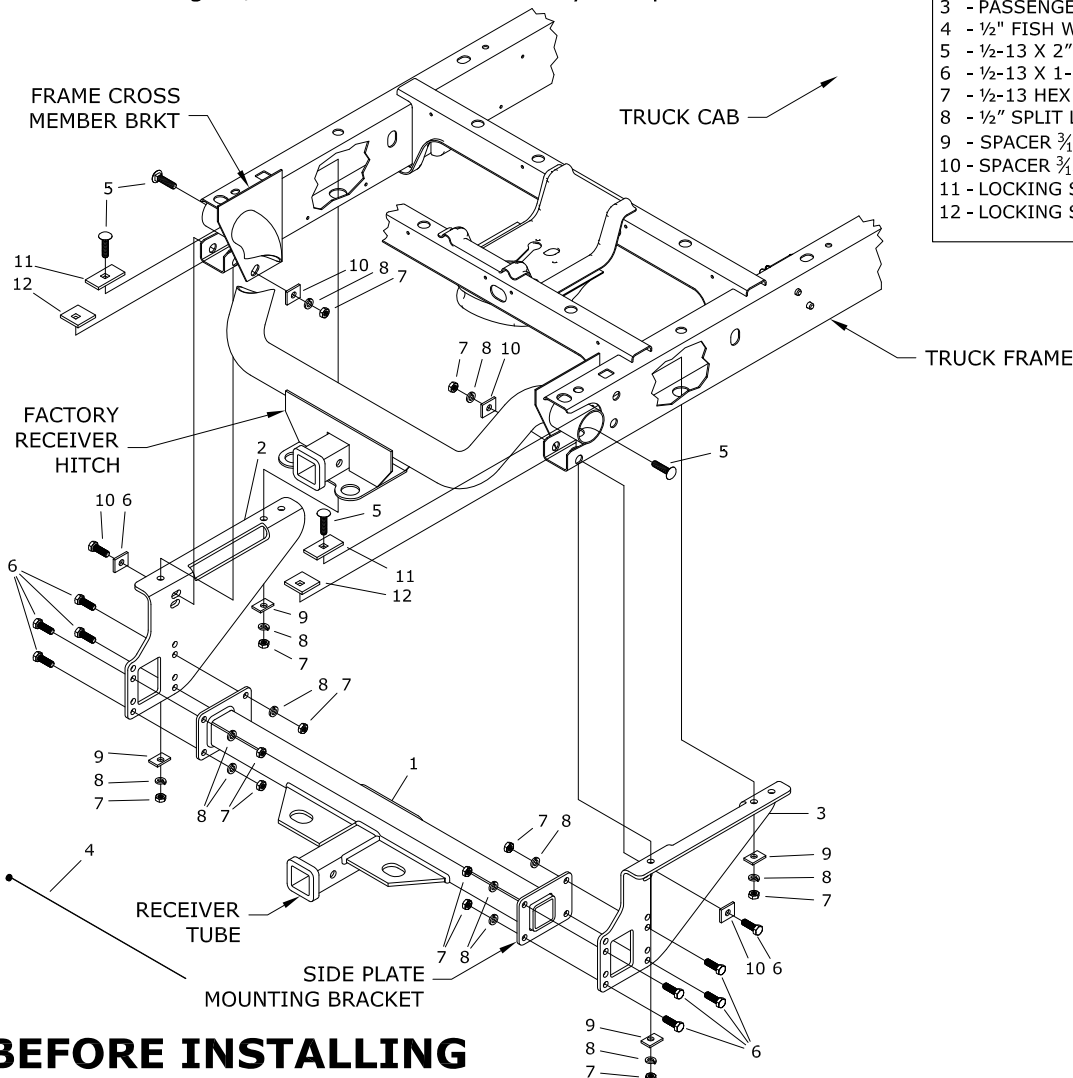
### Vehicle Make and Years

2003-2013 Dodge 3/4, and 1 Ton trucks with factory bumper

2003-2008 Dodge 1/2 Ton Trucks with factory bumper

#### PARTS LIST

| ID | DESCRIPTION                          | QUANTITY |
|----|--------------------------------------|----------|
| 1  | - HITCH CENTER SECTION               | 1        |
| 2  | - DRIVER SIDE PLATE                  | 1        |
| 3  | - PASSENGER SIDE PLATE               | 1        |
| 4  | - 1/2" FISH WIRE                     | 2        |
| 5  | - 1/2-13 X 2" CARRIAGE BOLT          | 4        |
| 6  | - 1/2-13 X 1-1/2" HEX HEAD CAP SCREW | 10       |
| 7  | - 1/2-13 HEX FINISH NUT              | 14       |
| 8  | - 1/2" SPLIT LOCK WASHER             | 14       |
| 9  | - SPACER 3/16 X 1 X 1 1/2            | 4        |
| 10 | - SPACER 3/16 X 1 1/4 X 1 1/2        | 4        |
| 11 | - LOCKING STRAP 1/4 X 1 3/8 X 3      | 2        |
| 12 | - LOCKING STRAP 1/4 X 2 X 2          | 2        |



## BEFORE INSTALLING

### WARNING

Although this hitch contains a V-5 rating of 16,000 lb. WC, the tow vehicle manufacturers recommended towing capacities should under NO circumstances be exceeded.

### WARNING

B&W Receiver Hitches are designed to fit vehicles as produced by the factory. Any equipment or accessories added to the vehicle may affect the fit of the hitch. B&W will not warranty the hitch if any alterations are made during the installation process. Occasionally there are rare vehicle options that may prohibit the hitch from installing properly. Please contact the manufacturer for support if this is the case.

### WARNING

Always use safety chains while towing. Crossing the safety chains under the tongue of trailer may prevent some damage to the trailer if detachment occurs.

### WARNING

Periodically inspect hitch, making sure that all fasteners are tightly secured.

## Before Installing

This receiver hitch may require slight modification to the frame or other structure of the vehicle such as drilling or relocating equipment so that the hitch may be installed in the proper location. It is very important to make sure that you have the correct hitch for your application before any modifications to the vehicle are made.

Any brackets or accessories not critical to the structure of the vehicle that are mounted to the bottom of the frame at the rear may need to be removed. See the steps on positioning and mounting the hitch for the hitch location to see if there will be any interference. Bumper reinforcement brackets can be removed if the bumper will not be used for towing.

Be sure that the vehicle frame where the hitch will mount is free from debris or other material that may interfere with the installation.

This hitch is designed to fit vehicle models with or without factory receivers based on how the hitch is assembled in step 1. The hitch can be assembled so that it installs directly under the existing receiver tube, or in the same general location. Mounting the new receiver tube under the existing one will significantly reduce the ground clearance and will lower the tow point. If the existing receiver tube is cut off of the vehicle, use the hitch assembly instructions in Step 1 for vehicles without a factory hitch. DO NOT remove or damage the round frame/bumper support that the factory receiver tube is attached to.

## STEP 1: HITCH ASSEMBLY

This hitch is designed to fit four different vehicle applications. The center section may be inverted so that the receiver tube is offset to the bottom or the top of the cross tube. There are also two sets of hole in the side plates allowing the center section to be located at two different heights. The side plates will be attached to the center section so that the side plate ears are toward the outside. For 1/2 ton pickups with a factory receiver hitch the center section should be bolted to the side plate in the bottom set of holes and oriented so the receiver tube is under the cross tube, See Figure 1.1. For 1/2 ton pickups without a factory receiver hitch or with the factory receiver tube cut off of the round frame/bumper support, the center section should be bolted to the side plates in the bottom set of holes and oriented so the receiver tube is on top of the cross tube, See figure 1.2. For 3/4 and 1 ton pickups with a factory receiver hitch the center section should be bolted to the side plate in the top set of holes and oriented so the receiver tube is under the cross tube, See figure 1.3. For 3/4 and 1 ton pickups without a factory receiver hitch or with the factory receiver tube cut off of the round frame/bumper support, the center section should be bolted to the side plates in the top set of holes and oriented so the receiver tube is on top of the cross tube, See figure 1.4. Assemble the hitch in the required orientation using the 1/2" x 1-1/2" long bolts, lock washers and nuts. Do not fully tighten the hardware at this time.

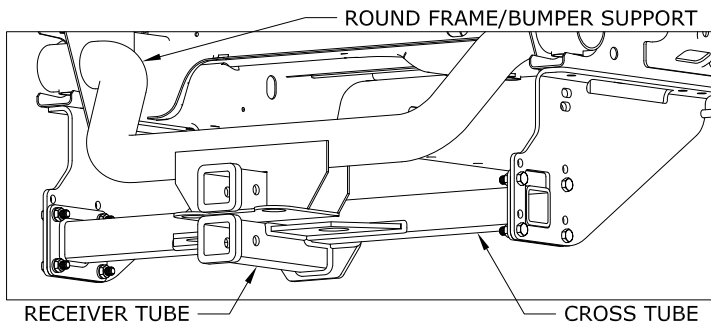


FIGURE 1.1: 1/2 ton trucks with the factory receiver hitch in place.

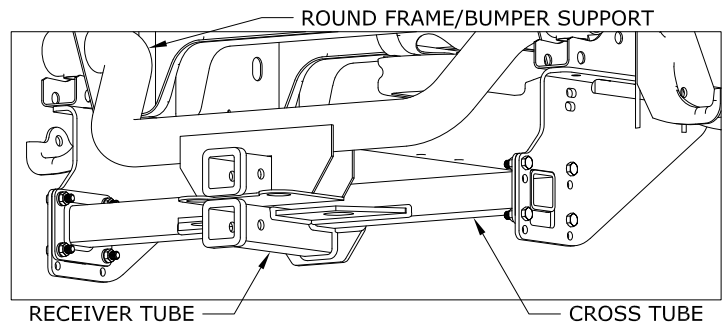


FIGURE 1.3: 3/4 and 1 ton trucks with factory receiver hitch in place.

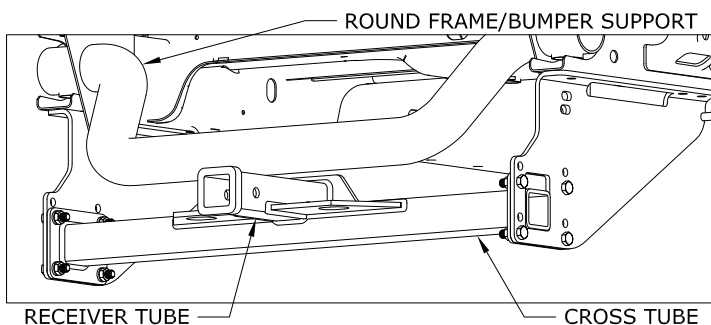


FIGURE 1.2: 1/2 ton trucks without factory receiver hitch

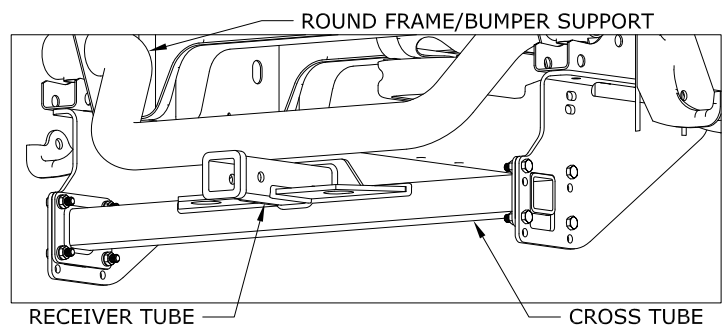


FIGURE 1.4: 3/4 and 1 ton trucks without factory receiver hitch

## STEP 2: INSTALLING LOCKING STRAP AND 1/2" CARRIAGE BOLTS

The pickup frame will have a large hole about 1-3/8" in diameter in the bottom of the tube frame at the very rear of the vehicle. There should be another large hole in the bottom of the frame that is 11.75" or 13.75" closer to the cab. If front holes do not exist, skip to step 3. Depending on your truck model, you will need to install the forward locking strap from either the end of the frame or the side of the frame. Determine if the inside of the frame is clear of obstructions past the cross tube, see figure 2.1. If there is an obstruction skip to step 2B. If the frame is open, continue to step 2A.

### STEP 2A: FROM END OF FRAME

Install the carriage bolts and the locking straps into the frame. Use the open end of the tube frame or the opening inside of the round frame/bumper support to get locking straps and carriage bolts into the frame. First, position the 1/4 X 1-3/8 X 3 locking strap into the frame so that you can see its square hole through the rear frame hole, see figure 2.2. Next thread a carriage bolt onto the coil end of the fish wire as shown in figure 2.3. Then string the fish wire through the square hole of the locking strap and out the front hole in the frame, see figure 2.4. Pull the carriage bolt and the locking strap through the frame and pull the threads of the carriage bolt out of the front hole as shown, figure 2.5. Make sure that the square shoulder of the carriage bolt is fully engaged in the square hole of the locking strap. Uncoil the fish wire and repeat this process for the other side. Skip to step 2C.

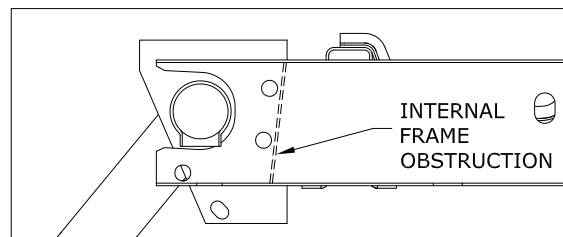


FIGURE 2.1: view of passenger side frame looking from the outside.

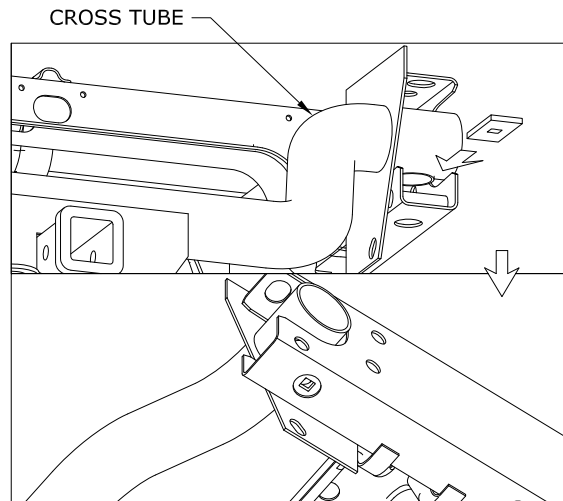


FIGURE 2.2: View looking at passenger side of frame looking towards the cab. (bumper and bed not shown) Showing possible entry point for locking strap.

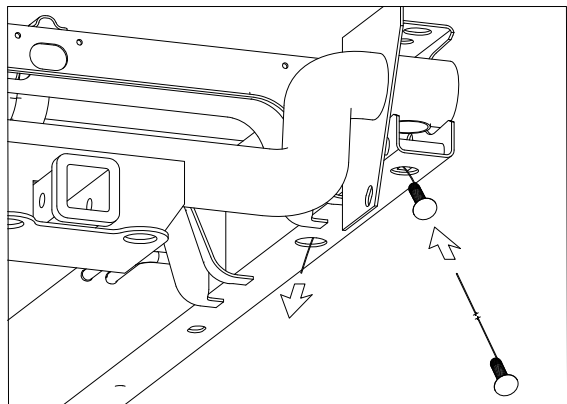


FIGURE 2.4: View looking at passenger side of frame looking towards the cab. (bumper and bed not shown)

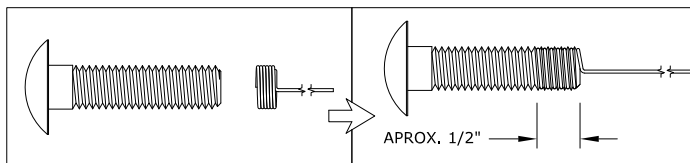


FIGURE 2.3: Fish wire diagram.

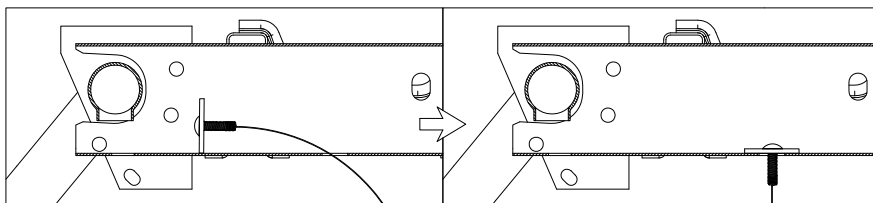


FIGURE 2.5: Cutaway view of passenger side frame looking from the outside.

### STEP 2B: FROM SIDE OF FRAME

A hole in the side of the frame will allow the locking trap to be installed in the event that the end of the frame is blocked, See figure 2.6. position the 1/4 X 1-3/8 X 3 locking strap into the hole in the side of the frame as shown. Thread a carriage bolt onto the coil end of the fish wire as shown in figure 2.3. Then string the fish wire through the square hole of the locking strap (while the locking strap is half-in half-out of the hole in the frame) and out the front hole in the frame, see figure 2.6. Push the Locking strap all the way into the frame. Pull the carriage bolt and the locking strap through the frame and pull the threads of the carriage bolt out of the front hole. Make sure that the square shoulder of the carriage bolt is fully engaged in the square hole of the locking strap. Uncoil the fish wire and repeat this process for the other side.

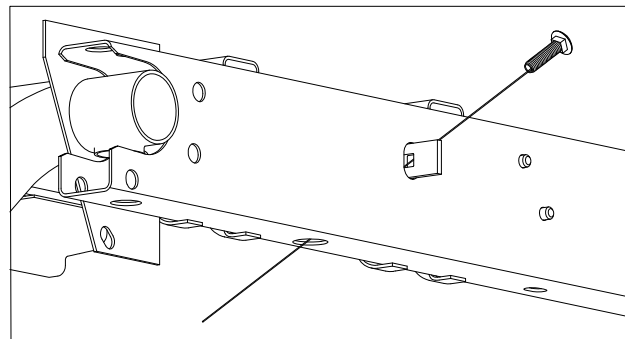


FIGURE 2.6: view of passenger side frame looking from the outside.

## STEP 2C: INSTALL REAR LOCKING STRAP AND 1/2" CARRIAGE BOLTS

Place the 1/4 X 2 X 2 locking strap inside the frame so that you can see its square hole through the rear frame hole, see figure 2.6. String the coiled end of the fish wire up through the locking strap and out of the frame. Thread a carriage bolt onto the coil end of the fish wire and pull the bolt through the frame and down through the square hole in the locking strap, see figure 2.7. Make sure that the square shoulder of the carriage bolt is fully engaged in the square hole of the locking strap. Uncoil the fish wire and repeat this process for the other side. Once all four carriage bolts are installed, skip to step 4.

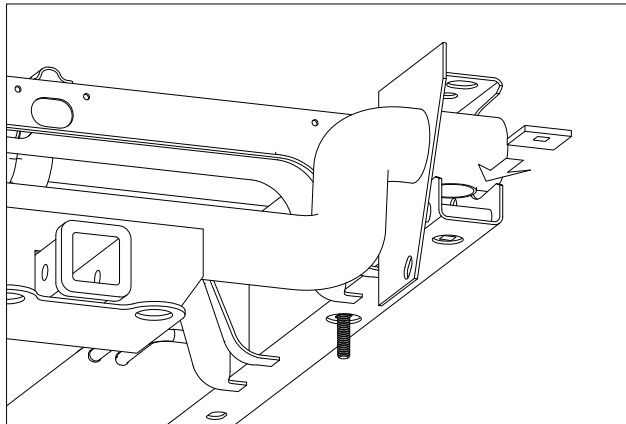


FIGURE 2.6: View looking at passenger side of frame looking towards the cab. (bumper and bed not shown)

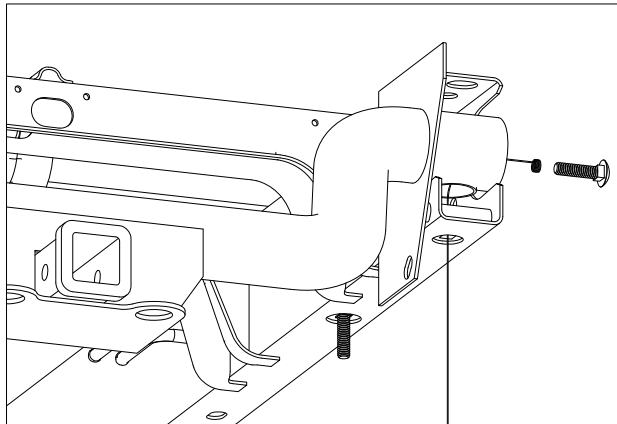


FIGURE 2.7: View looking at passenger side of frame looking towards the cab. (bumper and bed not shown)

## STEP 3: DRILLING FRAME

If the front set of holes does not exist they will need to be drilled. Position the hitch so that the rearward hole in the side plate ear lines up with the large hole in the rear part of the frame. Temporarily secure the hitch into place with clamps or other method. The opening of the receiver tube should be relatively flush with the end of the bumper. The cross tube should also clear the spare tire, see figure 3.1. The hole in the side plate does not have to be in the center of the hole in the frame. The edge of the side plate ear will be approximately 1/2" from the end of the frame, see figure 3.2. Make sure that the hitch is centered between the frame rails of the vehicle and that the receiver tube is parallel to the centerline of the truck. Drill a 1/2" hole through the forward most hole in the side plate ears and into the frame. Remove the hitch and refer to step 2 for installing the hardware.

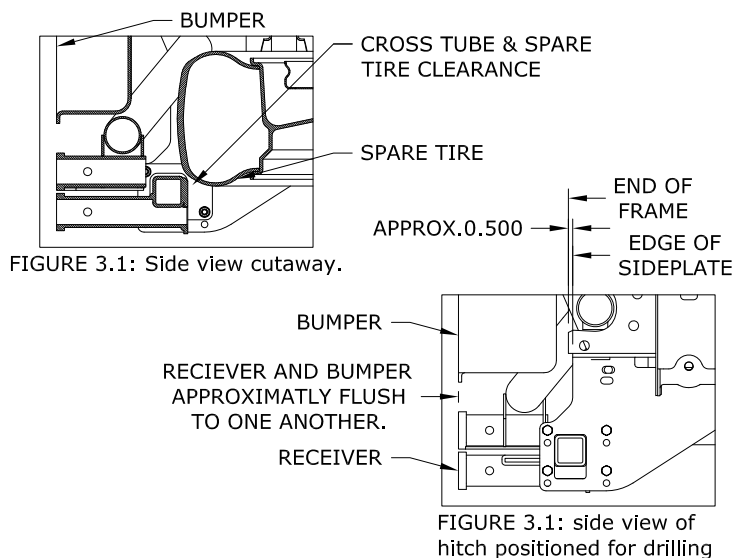


FIGURE 3.1: Side view cutaway.

FIGURE 3.1: side view of hitch positioned for drilling

## STEP 4: POSITIONING/MOUNTING HITCH

Position the hitch, placing the holes in the ears of the side plates over the bolts installed in step 2. Secure these connections with spacers, lock washers, and nuts as shown in the main diagram. Hand tighten the hardware only at this time. Next, secure both side plates to the frame cross member brackets with 1/2" x 1-1/2 long bolts, spacers, lock washers and finish nuts, see diagram 4.1.

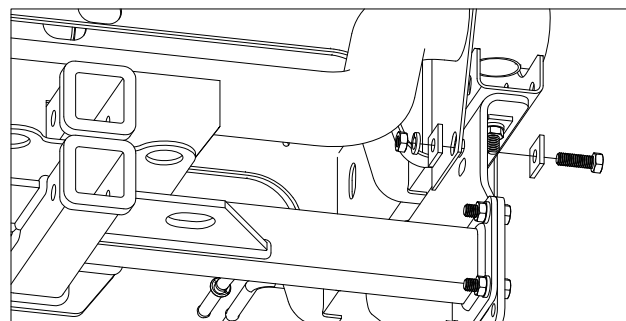


FIGURE 4.1: View looking at passenger side of frame looking towards the cab. (bumper and bed not shown)

## STEP 5: TIGHTENING HARDWARE

Tighten the hardware on the connections between the frame and the side plates first. Then tighten the side plates to the frame cross member brackets. Torque the bolts to 80 foot pounds. Next make sure that the edges of the side plate mounting brackets on the center section match up with the rearward edges of the side plates and tighten these connections. Torque these bolts to 80 foot pounds as well.