

<THESE INSTRUCTIONS MUST BE GIVEN TO THE END USER>



B&W Trailer Hitches
 1216 Hawaii Rd / PO Box 186
 Humboldt, KS 66748
 P:800.248.6564
 F:620.869.9031

Call or Email us for
Installation Support
 hitches@turnoverball.com
bwtrailerhitches.com

See Limited Lifetime Warranty at
bwtrailerhitches.com/warranty

Turnoverball® Gooseneck Hitch Installation Instructions

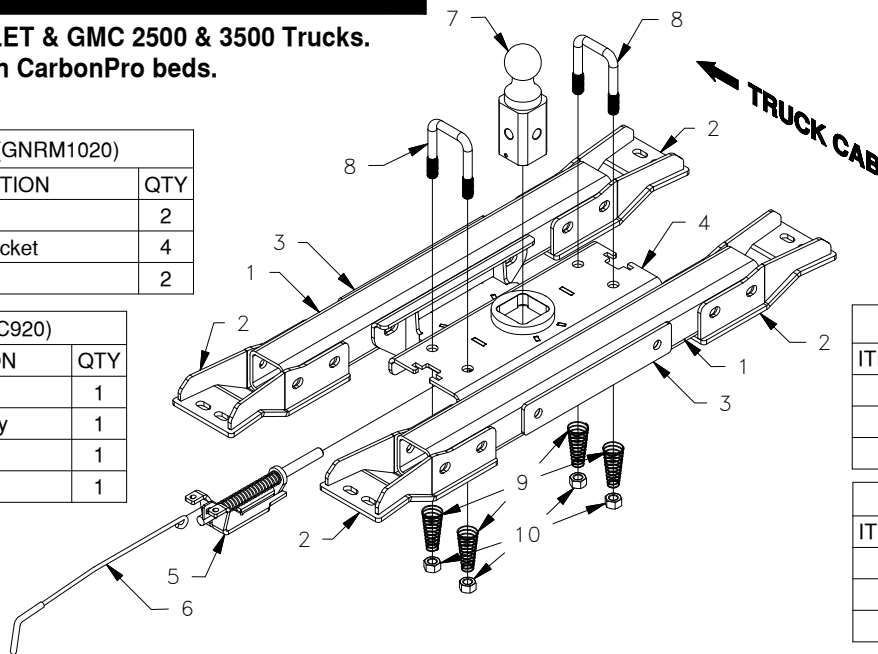
MODEL 1020

2020-2021 CHEVROLET & GMC 2500 & 3500 Trucks.
 Excludes Trucks with CarbonPro beds.

NOTE: All diagrams and figures shown are specific to installation on a short bed truck. Installation on a truck with an 8' bed requires installing the center section in a different orientation. See step 1 under "INSTALL LATCH PIN" on page 4.

Mounting Kit Box (GNRM1020)		
ITEM	DESCRIPTION	QTY
1	Cross Member	2
2	Cross Member Bracket	4
3	Washer Plate	2

Center Box (GNRC920)		
ITEM	DESCRIPTION	QTY
4	Center Section	1
5	Latch Pin Assembly	1
6	Latch Pin Handle	1
7	2-5/16" Ball	1



Center Section Bolt Bag		
ITEM	DESCRIPTION	QTY
8	5/8" U-Bolt	2
9	Conical Springs	4
10	5/8" Lock Nut	4
	5/16" X 1" Carriage Bolt	2
	5/16" X 3/4" Carriage Bolt	1
	5/16" Flange Nut	3

Mounting Kit Bolt Bag 1		
ITEM	DESCRIPTION	QTY
	5/8" X 4-1/2" Flange Bolt	6
	5/8" Flange Nut	6
	M14 X 35mm Flanged Head Bolt	4

Mounting Kit Bolt Bag 2		
ITEM	DESCRIPTION	QTY
	5/8" X 4-1/2" Flange Bolt	6
	5/8" Flange Nut	6
	M14 X 35mm Flanged Head Bolt	4

⚠ 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 such as a Turnoverball hitch to the chassis of any vehicle can be hazardous. There is potential for unexpected combustion of fuel, electric shock, burns, shifting or falling of unstable vehicle, 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 modification 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 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.
- ⚠ 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.
- ⚠ 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.
- ⚠ This product was designed to fit vehicles in their original, "as manufactured" condition. Compatibility with vehicles having replacement parts, or other modifications is not guaranteed. Inspect vehicle for modifications before installation of this product.
- ⚠ The Turnoverball hitch comes equipped with a 2-5/16" ball. Trailers towed with the ball provided must have a 2-5/16" coupler. Towing with a larger coupler could cause 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 or loss of attachment between the tow vehicle and trailer.

PREPARE TO INSTALL

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.

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

TOOLS REQUIRED

- Impact wrench or ratchet.
- Sockets sized 15/16", 13mm, & 18mm
- 15/16", 1/2", 13mm & 18mm Box end wrench
- Marking tool (pencil or permanent marker)
- 4" hole saw
- Drill with 11/16" bit
- Ear protection
- Pry bar
- Lifting device (optional)
- Screw driver with T-15 bits
- Flashlight
- Eye protection
- Torque wrench
- Tape measure
- Pilot hole bit

- 1. Determine cab clearance.** The Turnoverball hitch is designed so that the ball can be inverted and stored below the surface of the truck bed while not in use. The ball location is determined by the truck geometry. Measure the trailers to be towed with this hitch to be sure that the location of the 2-5/16" ball listed in Step 5 will provide ample turning clearance between the nose of the trailers and the cab of the truck.

⚠ WARNING: Cab clearance on short bed trucks is very limited when towing certain trailers. Failure to ensure that there will be adequate clearance, may result in significant property damage, or serious injury.

- 2. Position the vehicle.** Installation of the hitch requires the installer to be under the truck bed in the area of the rear axle. Lifting the vehicle makes this area more accessible to the installer, and improves the installation process.

⚠ WARNING: Lift vehicle using only equipment designed for lifting and positioning vehicles for service. Failure to do so may result in property damage, serious injury, or death.

- 3. Remove the spare tire and shield.** Following the vehicle manufacturer's instructions, remove the spare tire. The spare tire shield is held in place with two bolts. Using a 13mm socket, remove the shield and set aside for later re-installation. This will provide easier access to the area where the hitch will be installed.

- 4. Remove the heat shield.** Locate and remove the heat shield located above the rear axle. Use a 13mm socket to remove the four bolts holding the heat shield to the frame.

- 5. Mark the 4" hole location.** Using a tape measure hooked over the rear edge of the bed (at tailgate end), measure the location for the hole as shown in Figure A1. Next, locate the center of the bed by measuring the distance between the wheel wells and dividing by two. The center of the hole will be at the intersection of the center of the bed and the first distance measured.

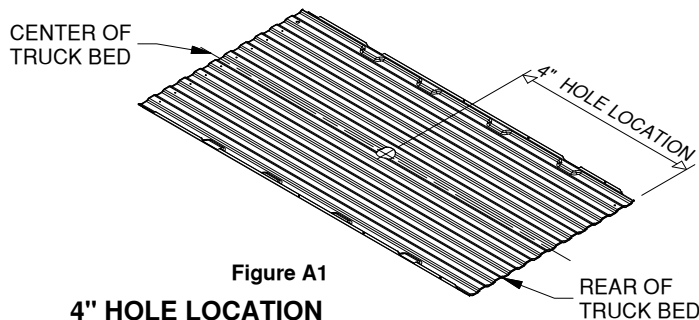


Figure A1

4" HOLE LOCATION

8' LONG BED: 45-5/16"

SHORT BED (BED LESS THAN 8' LONG): 37-1/8"

IMPORTANT: The hitch is designed to install only at the described location. Failure to place the 4" hole precisely may result in added difficulty during installation or property damage.

IMPORTANT: If the bed is equipped with a plastic bed liner, the hole may be cut through both the liner and the bed. However, the center of truck bed may be more difficult to locate, and the mark may be harder to hit if the liner slides or moves. Failure to cut the hole in the correct location may adversely affect the install and may result in property damage.

IMPORTANT: If your truck has a spray-in bed liner you will need to take this into account when you are measuring, and add the thickness of the applied liner that has been sprayed over the end of the bed.

- 6. Cut the 4" diameter hole.** Cut the hole in the marked location using a 4" hole saw or by marking out the 4" hole and using a saber saw equipped with a metal cutting blade. Remove any burrs created while cutting hole.
- 7. Lower the exhaust (optional).** On some trucks, installation may be easier if exhaust is lowered. Un-attach the rear most tail pipe hangers from the frame and allow the exhaust to hang freely. Re-attach the exhaust brackets after installation is complete.
- 8. Un-attach the wheel well liners.** Check for the presence of flexible wheel well liners in the truck wheel wells. If present, three T-15 Torx screws will need to be removed so that the liners can be folded up and allow access to the frame, see Figure A2. Retain screws for later re-installation.

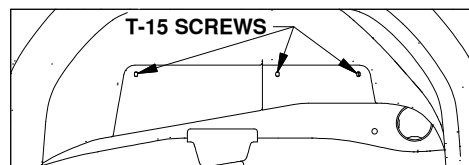


Figure A2: View looking into driver side wheel well.

9. Prepare a lifting device (optional).

The purpose of the device is to safely hold the hitch in position during part of the installation. See Figure A3 for an example. A simple mechanical lifting device is available for purchase from B&W.

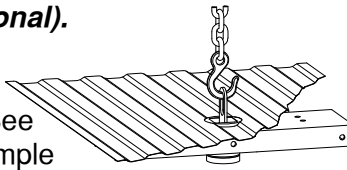


Figure A3.

WARNING: Turnoverball hitch components are heavy and may be cumbersome to handle. Failure to use proper lifting techniques and caution when handling these items could result in serious injury.

WARNING: Most trucks have fuel lines, brake lines, electrical wires or other vehicle systems located along the frame rails or in the general area where Turnoverball hitches install. Carefully examine the locations of these systems before installation. Make certain that these are not damaged during positioning hitch components, drilling holes, or tightening fasteners. Damage to these systems may result in property damage, serious injury, or death.

INSTALL CROSS MEMBERS

1. **Cross member installation location.** The cross members for this hitch installation are designed to rest on top of the truck frame and mount to existing threaded holes on the top of the frame rail. To make installation as easy as possible, locate and familiarize yourself with these threaded holes before installing the cross members. See Figure B1 for a top down view of the frame with the cross members installed.

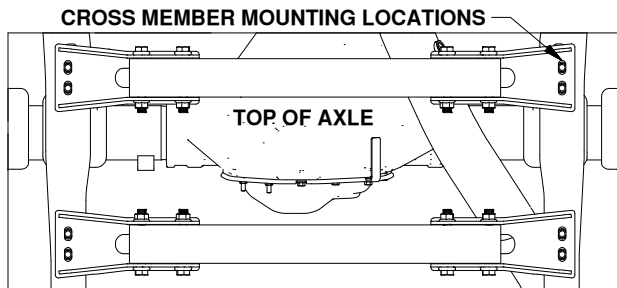


Figure B1: View looking down over truck frame (bed not shown).

2. **Locate parts and hardware.** Locate the two cross members and the four cross member brackets. These will be assembled together using 5/8" x 4-1/2" flange bolts and 5/8" flange nuts, see Figure B1.

3. **Forward cross member assembly.** Inspect one of the cross member tubes, find the wall that contains the welded seam. Bring a cross member bracket and cross member together so that the tubing wall that contains the welded seam is down inside the cross member bracket, see Figure B2. Attach the cross member bracket to the cross member by passing the 5/8" bolts through the two parts, as shown in Figure B2. Align the bolts so they are centered in the cross member brackets slots. Attach each bolt with a 5/8" flange nut. Push the cross member tightly into the cross member bracket so there is no gap between the two parts. Tighten and torque the 5/8" nuts to 150 ft. lbs.

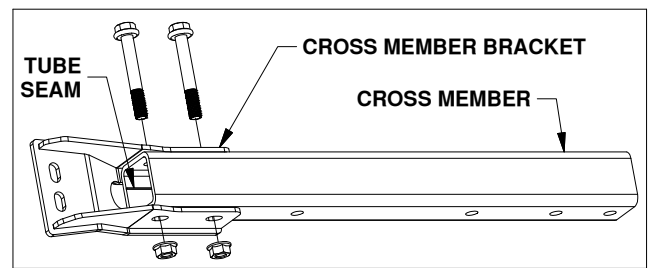


Figure B2: Cross member and bracket assembly.

4. **Place the forward cross member.** Under the truck, lift the end of the cross member assembly without the cross member bracket over the exhaust towards the passenger side shock mount, as shown in Figure B3. Bring the cross member bracket over the brake line bracket on the driver side of the truck and rest the flat end of the cross member bracket on the frame. Move the cross member so the end of the cross member assembly with no cross member bracket is resting on the exhaust.

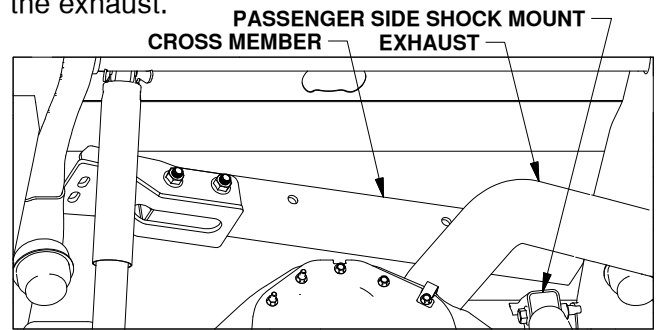


Figure B3: View looking up at bottom of bed over axle.

5. **Complete the cross member assembly.** Pass a cross member bracket between the exhaust and the passenger side of the frame, see Figure B4. The flat end of the cross member bracket will go over the frame and the other side will bolt up to the cross member. Bolt the two parts together so the connections match the other side of the cross member. Once assembled move the cross member assembly so its just forward of the mounting holes in the frame, see Figure B5. Hand tighten hardware only at this time.

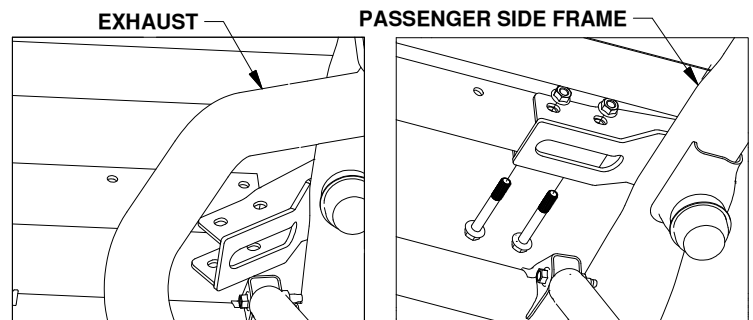


Figure B4 & B5: View looking up at bottom of bed over axle.

6. **Place the rear cross member.** Attach another cross member bracket to the remaining cross member as shown in Figure B2, leave the 5/8" bolts loose. Position the cross member behind the bed cross member and 4" hole drilled in the bed, see Figure B6. Attach a second cross member bracket to the cross member as shown in Figures B4 & B5. Hand tighten hardware only at this time.

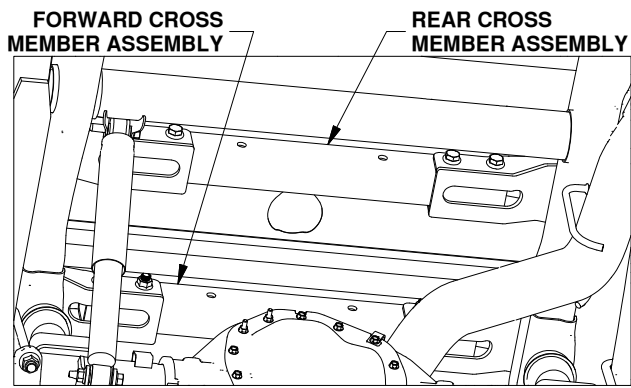


Figure B6: View looking up at bottom of bed over axle.

INSTALL LATCH PIN

1. **Assemble the center section.** Before the center can be installed the latch pin assembly needs to be attached to the center section. When installed, the latch pin assembly must be positioned so the handle will be on the driver side of the truck. For short bed trucks installing the latch pin assembly on the driver side will put the bed cross member cutout towards the cab, see Figure C1. On 8' bed trucks installing the latch pin assembly on the driver side will put the bed cross member cutout towards back of the truck, see Figure C2. To assemble, locate the center section and the latch pin assembly. Pass the end of the latch pin assembly through the hole in the ball socket inside the center section, as shown in Figure C1 & C2. While pushing the latch pin assembly firmly against the socket, align the two mounting holes in the pin assembly and secure with two 5/16" X 1" carriage bolts and flange nuts, as shown in Figure C3.

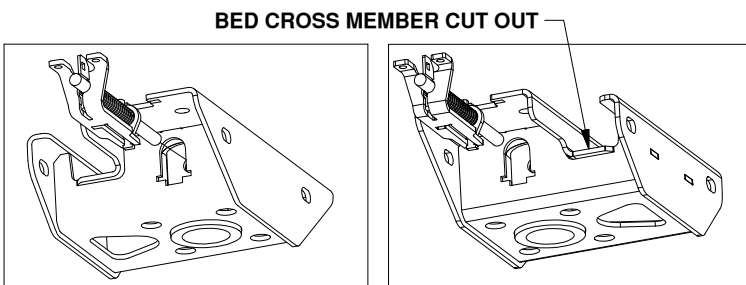


Figure C1: Short bed installation.

Figure C2: Long bed installation.

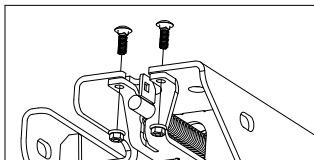


Figure C3: Latch pin assembly (short bed installation).

INSTALL CENTER SECTION

1. **Prepare center mounting hardware.** Locate four 5/8" x 4-1/2" flange bolts and the two washer plates. Pass two bolts into each washer plate. Pass the bolts into the cross members so that the bolt threads are sticking out into the area where the center will install, see Figure D1.

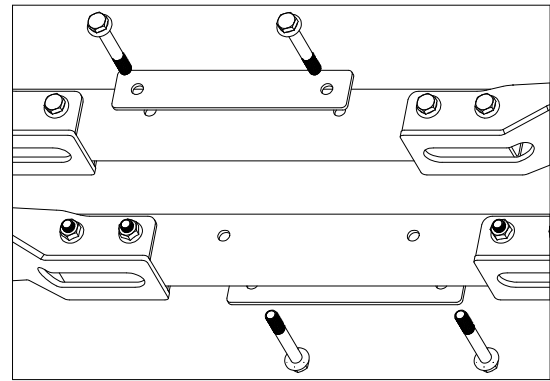


Figure D1: View of cross members.

2. **Mount center section between cross members.** Push the front cross member forward and the rear cross member rearward so that there is room between them for the center section. With the latch pin assembly on the driver side, lift the center section into place so the raised portion of the center section passes into the 4" hole drilled into the bed, see Figure D2. Slide each of the cross members towards the center section and push 5/8" bolts in to place.

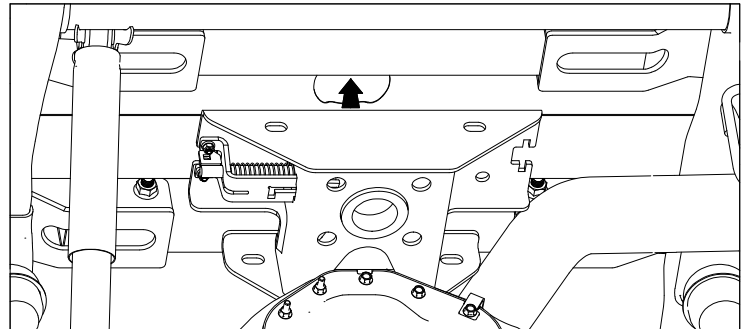


Figure D2: View under truck looking above differential.

3. **Finish center assembly.** Secure each bolt in the center section with 5/8" flange nuts. Hand tighten hardware only at this time.

ATTACH CROSS MEMBERS TO FRAME

1. **Install M14 bolts.** Locate the eight M14 X 35mm flanged head bolts. Pass each bolt through the cross member brackets and into the threaded holes in the frame as shown in Figure E1. Refer back to Figure B1 for frame bolt locations. Do not fully tighten hardware connections at this time.

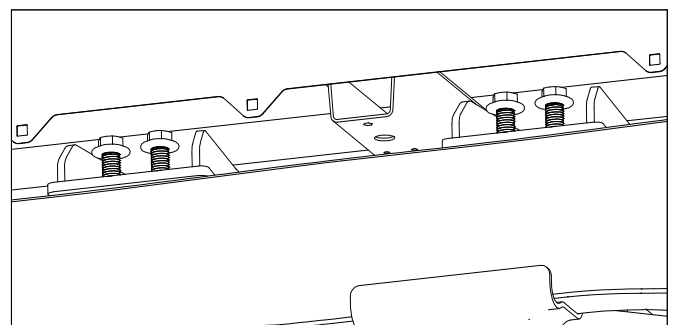


Figure E1: View looking into passenger side wheel well.

SECURE HITCH

IMPORTANT: The hitch must be square in the truck. If the center section is not parallel with the axle, certain accessories to the Turnoverball hitch will not be square with the truck.

- Tighten hitch hardware.** Follow the sequence below to tighten the hitch.
 - Step 1.** Before beginning, Adjust the raised portion of the center section so it is centered in the 4" hole in the bed.
 - Step 2.** If a lifting device has not been attached to the center section, attach a hoist or other lifting device to the latch pin and pull the center section up so it is tight against the bottom of the truck bed.
 - Step 3.** Tighten the four 5/8" bolts attaching the center section to the forward and rear cross members.
 - Step 4.** Adjust the position of the hitch so that the cross members are parallel to the cross members in the truck bed. This will align the center section so it is square with the axle.
 - Step 5.** Tighten the eight M14 bolts connecting the cross member brackets to the frame.
 - Step 6.** Tighten the six remaining loose 5/8" bolts in the cross member brackets.

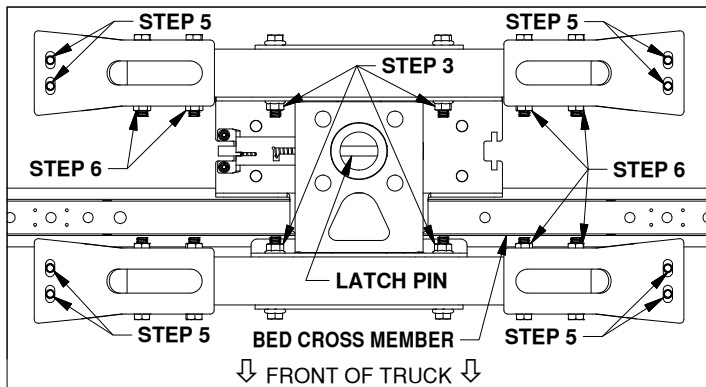


Figure F1: View looking up under bed. (Short bed installation)

- Torque hardware.** Once hitch is secure, torque all 5/8" hardware to 150 ft. lbs., and all M14 hardware to 110 ft. lbs.
- Re-torque hardware.** After torque on all hardware has been set, recheck torque level on each of the 5/8" bolted connections a second time.

NOTE: Due to the limited space between the frame and the bed it may not be possible to torque the M14 bolts without lifting the bed. If bed lifting is not possible, tighten each of the eight M14 bolts as tightly as can be achieved using hand tools. Do not over tighten by using extensions on tools.

- ⚠ WARNING:** Failure to follow the bolt tightening sequence as listed above may result in the hitch components being misaligned which could affect the performance of the hitch, result in property damage, or cause serious injury.

INSTALL LATCH PIN RELEASE HANDLE

IMPORTANT: The latch pin will not function properly if handle is not installed correctly.

- Install handle.** Install the latch pin release handle by inserting it from the outside of the truck in the driver side wheel well between the two cross members, see Figure G1. Align the handle eyelet with the square hole in the latch pin so the handle is in line with the latch pin. Secure the handle to the pin with a 5/16" X 3/4" carriage bolt and 5/16" flange nut, see Figure G2. Tighten the nut until it is secure. When tightening the handle, position it so that it will not rub on the frame. Do not over-tighten and deform the handle eyelet.

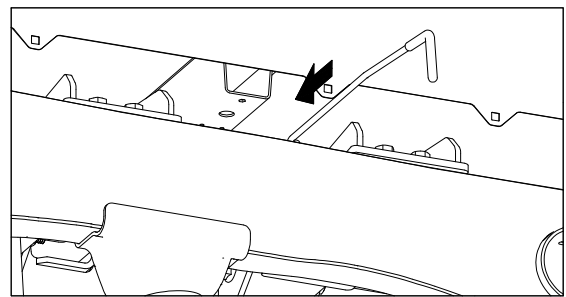


Figure G1: View looking into driver side wheel well.

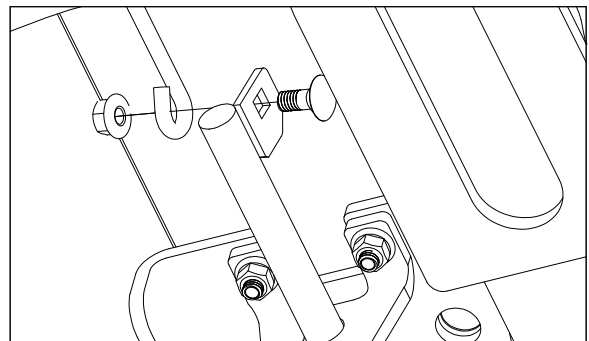


Figure G2: View looking up under center section.

- Modify fender liner.** If a fender liner is present, it will need to be modified by cutting a relief to allow the handle to move freely. See Figure G3 as a guide to cut the rear fender liner in the driver side wheel well.

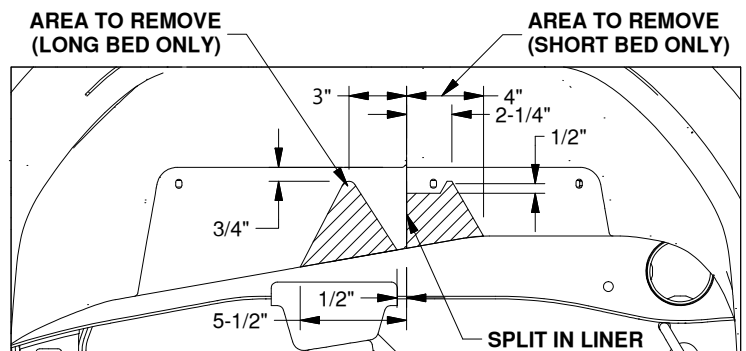


Figure G3: View looking into driver side wheel well.

INSTALL SAFETY CHAIN

U-BOLTS

1. **Drill the holes.** To install the safety chain brackets, it is necessary to drill four 11/16" holes through the truck bed floor. Drill the holes so that they match up with the two sets of holes on each side of the center, see Figure H1. This may be done by drilling the 11/16" holes from the bottom using the center as a guide, or by drilling a smaller pilot hole from the bottom and drilling the 11/16" holes from the top side of the bed.

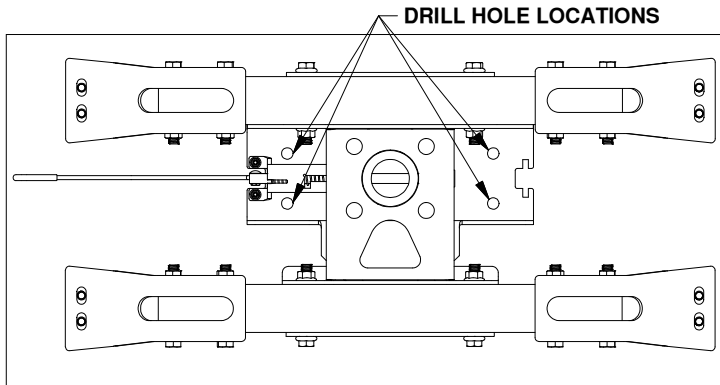


Figure H1: View of center section assembled.

2. **Install U-bolts.** From the top side of the truck bed, drop a U-bolt in each set of holes.
3. **Add Springs.** Place a conical spring over each leg of the U-bolts and secure with a 5/8" lock nut, see Figure H2. Tighten the lock nut until the nut is flush with the end of the U-bolt.

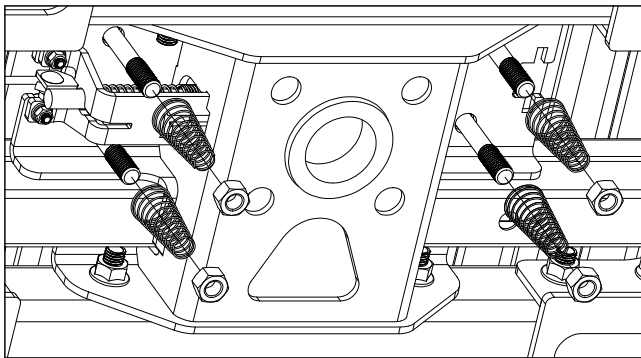


Figure H2: View looking up under center section.

PREPARE FOR TOWING

1. **Replace truck components.** Replace the spare tire heat shield which was removed in the PREPARE TO INSTALL section. If the exhaust was lowered re-attach the tail pipe hangers. If wheel well liners were present, re-install the T-15 Torx screws that were removed earlier.
2. **Replace spare tire.** If the spare tire was removed prior to installing the hitch, replace it at this time.
3. **Retract the pin.** Pull the handle out all the way until it stops then rotate it toward the cab. The handle should stay in this position. The latch should only be put in this open position when inverting the 2-5/16" ball or installing a B&W towing accessory.

⚠ WARNING: The handle operates in a very tight space within the wheel well of the truck. Use caution when operating the handle so that your hands and fingers do not get injured on the sharp edges of the truck, or by getting pinched against the truck due to the force of the spring loaded latch pin.

⚠ WARNING: Operating the tow vehicle while the latch is in the open position may allow the handle to come into contact with the rear tire. This may damage the tire or the handle and could lead to serious injury or death.

4. **Lubricate 2-5/16" ball.** Apply a light coating of grease to the corners on the square shank of the 2-5/16" ball.
5. **Engage pin.** Move handle toward rear of truck until the handle retracts and engages the 2-5/16" ball.

⚠ WARNING: When installed properly the latch pin will pass through the 2-5/16" ball and fully engage through both walls of the hitch receiver. Failure of the pin to engage the ball and hitch properly could result in a loss of attachment between the trailer and the tow vehicle.

⚠ WARNING: Inverting the ball while hauling heavy loads may cause the ball to strike the truck's differential, drive line, or other components. Inspect the relationship between the ball and truck components to ensure the proper clearance. Failure to remove the ball when hauling heavy loads may result in property damage, injury or death. A cover to prevent debris from entering the socket while operating without the ball in place is available from B&W.

6. **Re-read front page.** Re-read all warnings on front page of these instructions. If you are not the end user, make sure that users of this product receive a copy of these instructions.