

<THESE INSTRUCTIONS MUST BE GIVEN TO THE END USER>



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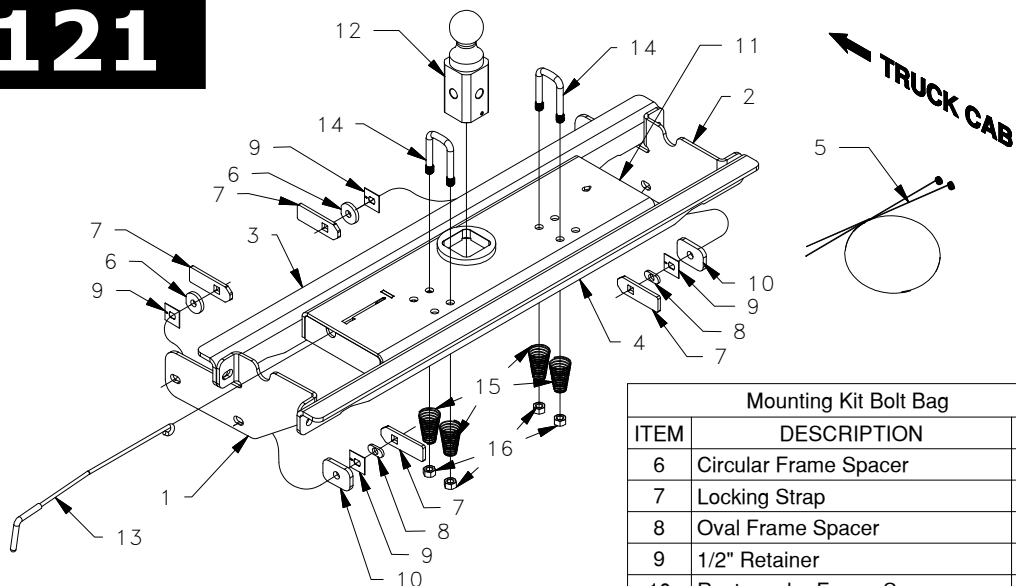
Turnoverball® Gooseneck Hitch Installation Instructions

MODEL 1121

2021 Ford F150
 Except F150 Raptor

Mounting Kit Box (GNRM1121)		
ITEM	DESCRIPTION	QTY
1	Driver Side Plate	1
2	Passenger Side Plate	1
3	Front Cross Member	1
4	Rear Cross Member	1
5	Fish Wire	2
	Polypropylene Tape	1

Safety Chain Kit Bolt Bag		
ITEM	DESCRIPTION	QTY
14	1/2" U-Bolt	2
15	Conical Springs	4
16	1/2" Lock Nut	4
	5/16" X 3/4" Carriage Bolt	1
	5/16" X 3/4" Cap Screw	1
	5/16" Lock Nut	1



Center Box (GNRC900)		
ITEM	DESCRIPTION	QTY
11	Center Section	1
12	2-5/16" Ball	1
13	Latch Pin Handle	1

Mounting Kit Bolt Bag		
ITEM	DESCRIPTION	QTY
6	Circular Frame Spacer	2
7	Locking Strap	4
8	Oval Frame Spacer	2
9	1/2" Retainer	4
10	Rectangular Frame Spacer	2
	1/2" X 2" Carriage Bolt	4
	1/2" X 1-1/2" Cap Screw	11
	1/2" Flat Washer	15
	1/2" Lock Washer	15
	1/2" Finish Nut	15

⚠ 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 with 1/2" & 3/4" Sockets
- 1/2" & 3/4" Box End Wrench
- Marking Tool (Pencil or Permanent Marker)
- 4" Hole Saw
- Drill with 1/2" Drill Bit
- Ear Protection
- Lifting Device (Optional)
- Flashlight
- Eye Protection
- Torque Wrench
- Tape Measure

- 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 this design feature and 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 7 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 (optional).** Following the vehicle manufacturer's instructions, remove the spare tire. This will provide easier access to the area where the hitch will be installed.
- 4. Remove the spare tire heat shield (optional).** Remove the bolts connecting the spare tire heat shield to the frame and set the heat shield aside for later installation.
- 5. Remove and discard the heat shield above the rear axle.** If the truck is equipped with a heat shield attached to the bed above the rear axle, pry it off and discard. The hitch will replace this heat shield as a barrier between the exhaust and the bed.

- 6. 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 A1 for an example. A simple mechanical lifting device is available for purchase from B&W.

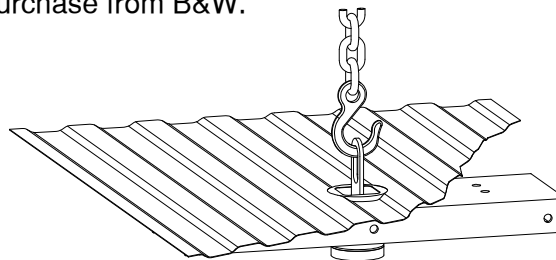


Figure A1: Lifting Device

- 7. 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 A2. 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.

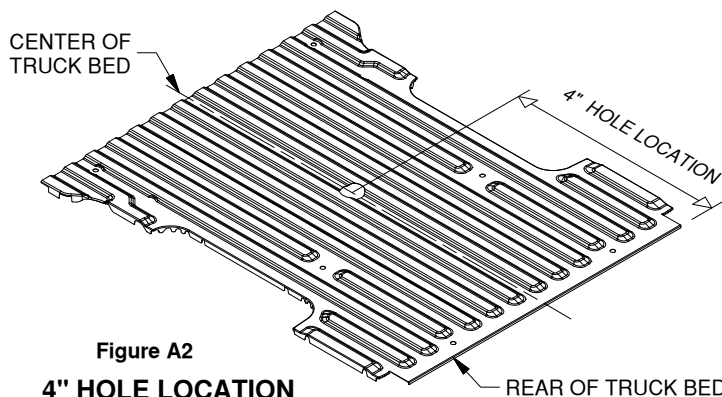


Figure A2

4" HOLE LOCATION

8' LONG BED AND SHORT BED (BED LESS THAN 8' LONG) - 42-5/8"

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.

- 8. Cut the 4" diameter hole.** Cut 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.

NOTICE: Galvanic corrosion information.

When installing the GNRK 1121, B&W recommends that the installer reference Ford SVE Bulletin Q-222R1 for attaching accessories to aluminum panels and structure. It can be found at: www.fleet.ford.com/truckbbas.

Installation of the B&W Turnoverball will not require that steel parts be bolted to the aluminum bed. However, polypropylene tape has been included with the hitch to provide a barrier between the steel and the aluminum in order to reduce the risk of corrosion. Instructions on applying the tape to the center section will be included in the installation step for the center section.

INSTALL CROSS MEMBERS AND CENTER SECTION

⚠ 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 B&W 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.

1. **Place the front and rear cross members.** Locate the front and rear cross members, see Figure B1. Place them in the gap between the bed and the frame directly above the axle, shown in Figure B2. Slide the cross members across the frame until they span both frame rails. Push the front cross member forward and the rear cross member back until they are against the bed braces. The flange of the front cross member with the holes must be toward the rear of the truck. The flange of the rear cross member with the slots must be toward the front of the truck.

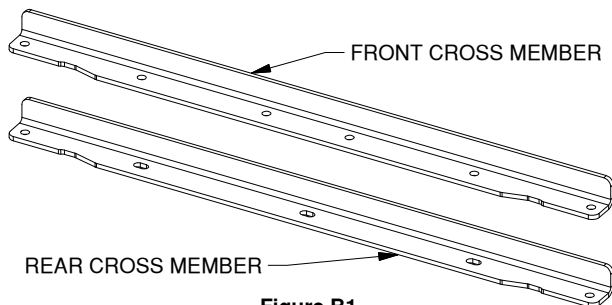


Figure B1

NOTICE: The gap between the bed flange and the frame may be narrower on some trucks than others. Most trucks have more clearance closer to the rear bed brace. If the cross members cannot be placed without damaging the paint, a small notch can be put in the bed flange for added clearance.

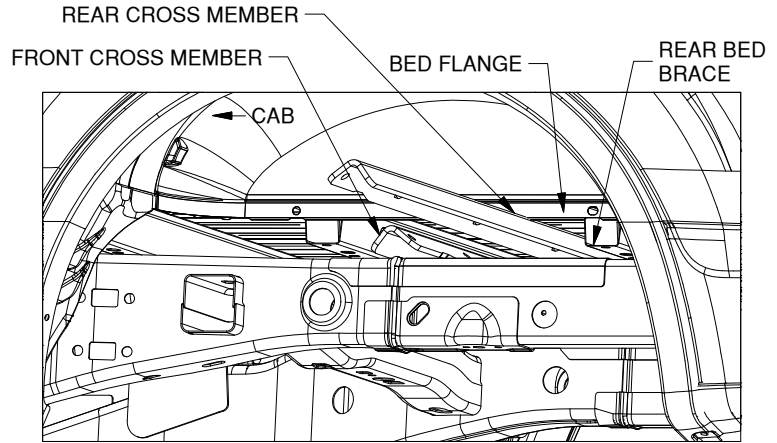


Figure B2: View of driver side wheel well.

2. **Apply polypropylene tape to center section.** As an added layer of protection, a roll of polypropylene tape is included in the mounting kit box. Apply the tape to the top of the center section as follows, see Figure B3:

- Two strips on the edge opposite of the raised portion of the center. Take care not to cover any holes, as shown below.
- Two strips across the edge closest to the raised portion of the center. Cut tape when it crosses with the raised portion, as shown below.
- One strip going around the outside of the raised portion of the center.

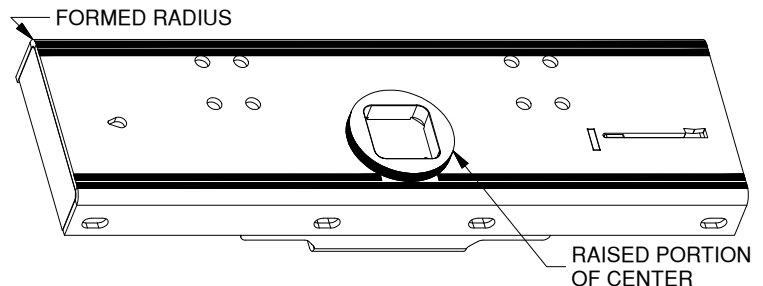


Figure B3: Polypropylene tape application.

3. **Lift center section.** With the latch pin mechanism on the driver side, carefully lift the center section into place under the bed of the truck. Use caution while raising the center section to avoid damage to the tape around the raised portion. Guide the raised portion of the center through the 4" hole in the truck bed. If using a lifting device, attach it to the center and keep the center tight against the floor of the bed.

NOTICE: On some trucks, installation of the center section may be easier if exhaust is lowered. Lower the exhaust by removing the two 10mm cap screws that attach the exhaust bracket to the frame, just behind the rear passenger tire. Re-attach the exhaust bracket after installation is complete.

4. **Attach the cross members to the center.** Locate seven 1/2" X 1-1/2" cap screws, 1/2" flat washers, 1/2" lock washers, and 1/2" finish nuts. Slide the rear cross member forward until the flange with the holes is flat against the center section. Align the holes and attach hardware as shown in Figure B4. Slide the front cross member back until the flange with the holes is flat against the center section. Align the holes and attach hardware as shown in Figure B5. Do not fully tighten hardware at this time. (Hardware should be hand tightened.)

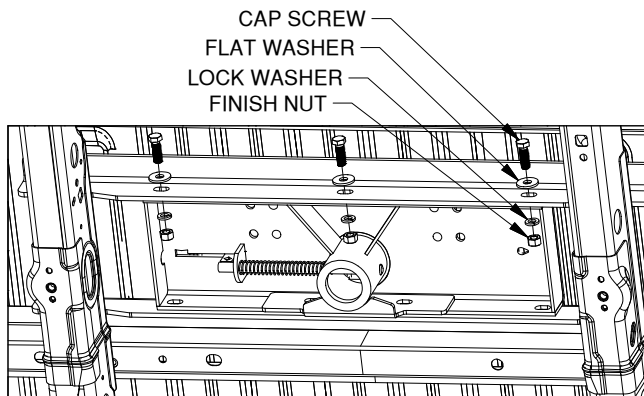


Figure B4: View under bed looking up at center section.

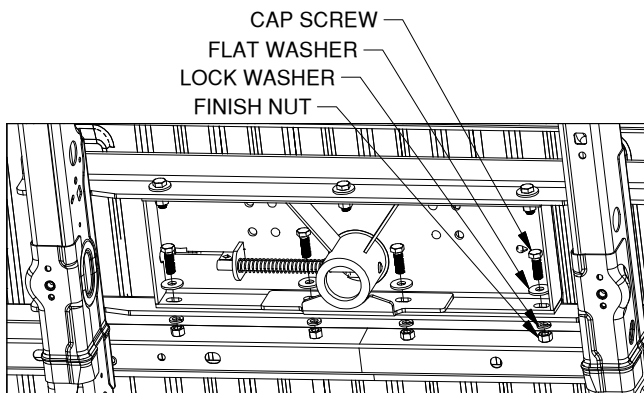


Figure B5: View under bed looking up at center section.

INSTALL SIDE PLATES

1. **Install forward carriage bolt.** Each carriage bolt is held in the frame with a locking strap, frame spacer and 1/2" retainer. Locate the forward mounting hole shown in Figure C1. Attach the carriage bolt to the locking strap by passing the bolt through the strap. Insert the locking strap through the mounting hole, until it is completely inside the frame and only the carriage bolt is passing through the hole, see Figure C2. Install a circular frame spacer onto the bolt, see Figure C3. To prevent the bolt from falling into the frame, thread a retainer onto bolt until it is snug.

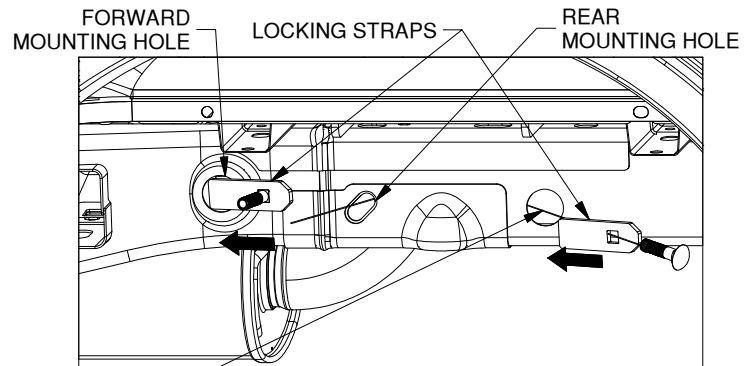


Figure C1: View of driver side wheel well.

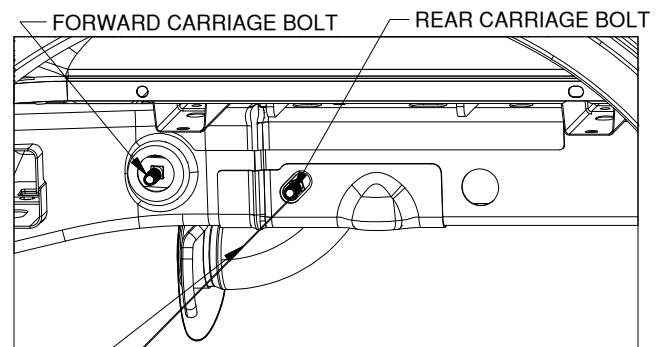


Figure C2: View of driver side wheel well.

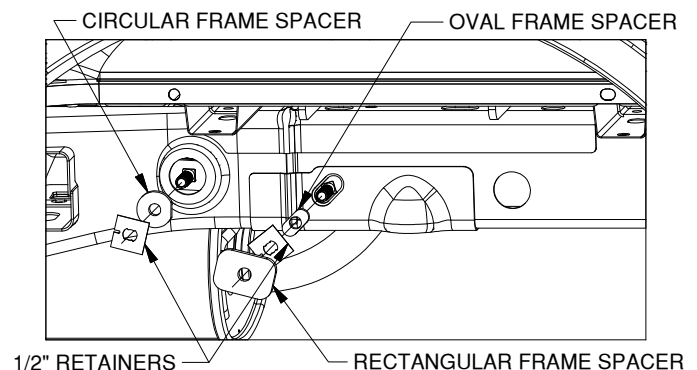


Figure C3: View of driver side wheel well.

2. **Install rear carriage bolt.** Locate the rear mounting hole shown in Figure C1. Use a fish wire to thread the rear carriage bolt and locking strap into the mounting hole, see Figures C1 & C2. Install an oval frame spacer onto the carriage bolt, see Figure C3. Thread a retainer onto the bolt until it is snug against the frame. Place a rectangular frame spacer on the rear carriage bolt. Repeat Steps 1 & 2 on the other side of the truck.

- 3. Install side plates.** Each side plate (driver and passenger side) will install over the carriage bolts previously placed into the frame. Slowly guide the side plate over the carriage bolts and between the cross members. Attach each side plate with two 1/2" washers, 1/2" lock washers, and 1/2" finish nuts. See Figure C4. Do not fully tighten at this time. (Hardware should be hand tightened.)

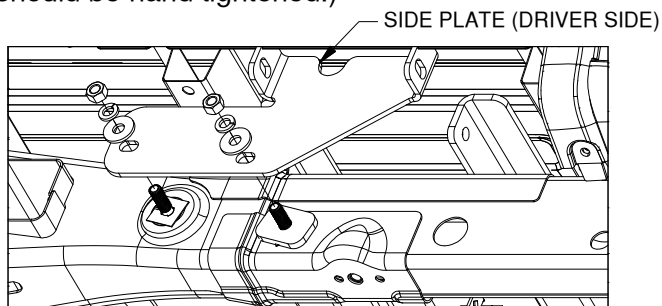


Figure C4: View of driver side wheel well.

- 4. Attach side plates to cross members.** Attach the side plates to the cross members by passing two 1/2" X 1-1/2" cap screws and 1/2" flat washers through the side plate and cross members and securing with 1/2" lock washers and 1/2" finish nuts, as shown in Figure C5. Do not fully tighten at this time. Repeat Steps 3 & 4 on the other side of the truck.

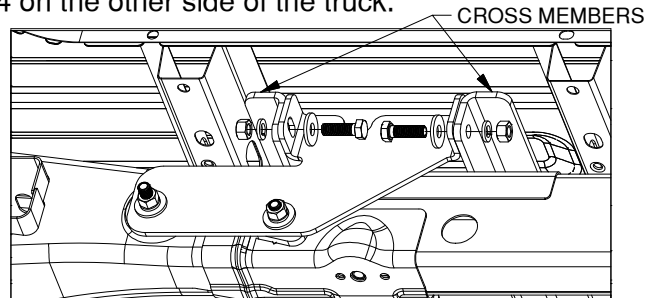


Figure C5: View of driver side wheel well.

SECURE HITCH

- 1. Tighten center section bolts.** With the top surface of the center section firmly against the truck bed, tighten the bolts securing the two cross members to the center section.
- 2. Square the hitch.** With a tape measure, check the distance between the Turnoverball hitch and the nearest bed brace. The distance between the hitch and the bed brace should be consistent on the passenger side and the driver side of the hitch, see Figure D1. Adjust hitch until the distance is the same from side to side.

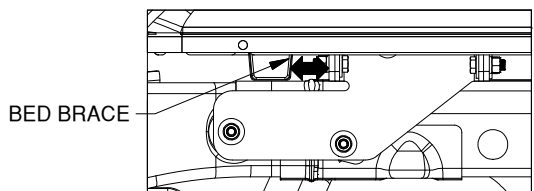


Figure D1: View of driver side wheel well.

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.

- 3. Tighten side plate bolts.** Hold the side plates tight against the frame while tightening. Tighten the bolts that attach the side plates to the cross members first. Next, tighten the carriage bolts in the forward mounting holes followed by the carriage bolts in the rear mounting holes.

- 4. Torque all fasteners.** Torque all the 1/2" hardware connections to 110 ft. lbs.

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, or result in property damage, or serious injury.

- 5. Disengage lifting device.** If a lifting device was used to hold the center section in place during the installation, remove it at this time.

INSTALL LATCH PIN RELEASE HANDLE

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

- 1. Insert the handle.** Install the latch pin release handle by inserting it through the slot in the end of the center section on the driver side of the truck. Align the handle eyelet with the square hole in the latch pin so the handle is in line with the latch, as shown in Figure E1.
- 2. Secure the handle.** Secure the handle to the pin with the 5/16" X 3/4" carriage bolt and 5/16" locking flange nut, see Figure E2. Note: The included 5/16" cap screw can replace the carriage bolt if wrench access on the "cab side" of the handle is limited. Tighten the nut until it is secure. Do not over-tighten and deform the handle eyelet.

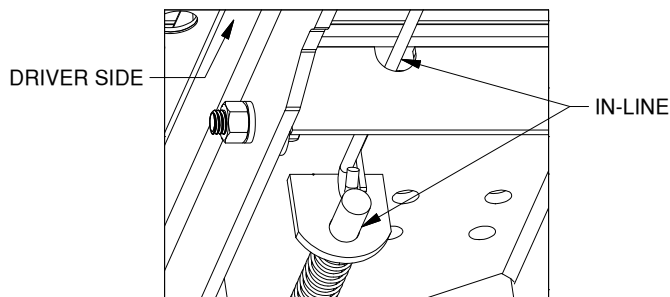


Figure E1: Handle Installation

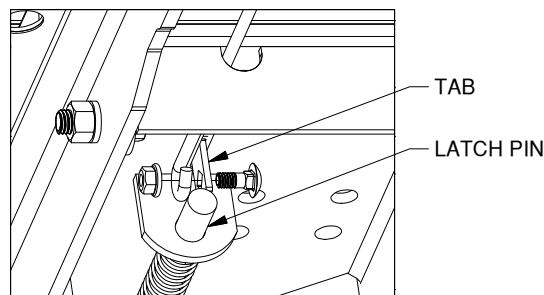


Figure E2: Handle Installation

INSTALL SAFETY CHAIN

U-BOLTS

This Turnoverball hitch is equipped with holes in the center section for mounting safety chain U-bolts. The hitch is designed so that the U-bolts will be in a low rib of the truck bed in order to reduce the amount of obstruction in the bed. The center section of the hitch may have more than one set of holes. One set of holes should match up with a low rib of the truck bed. Carefully examine the safety chain holes in the center section to determine which holes are under a low rib, see Figure F1.

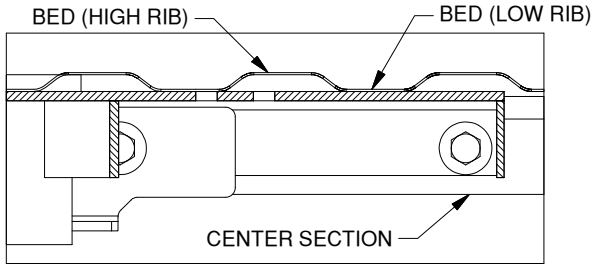


Figure F1: Cutaway view of bed and center section.

1. **Drill the holes.** From under the bed use a drill and a 1/2" drill bit to drill through the bed using the four holes that match up with a low rib in the truck as a guide. Remove any burrs created during the drilling process, see Figure F2.

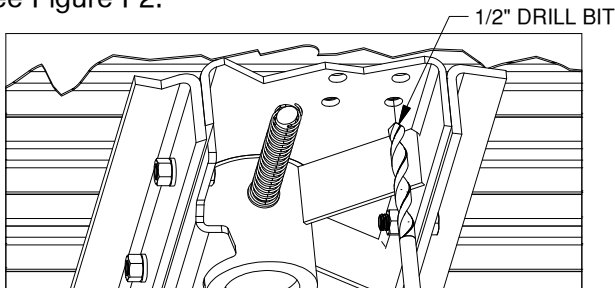


Figure F2: Cutaway view of bed and center section.

2. **Install the 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 1/2" lock nut, see Figure F3. Tighten the lock nut until the nut is flush with the end of the U-bolt.

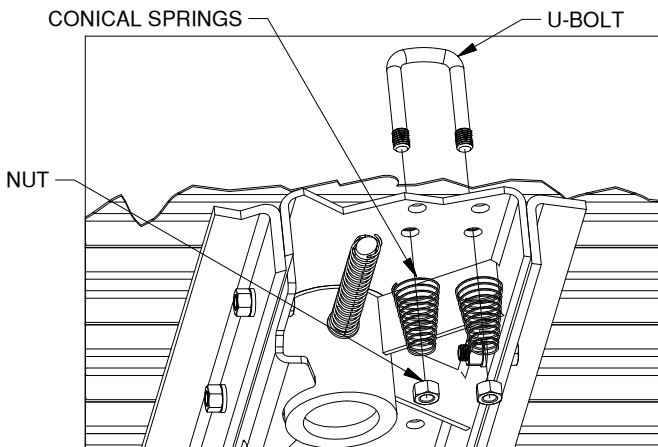


Figure F3: Cutaway view of bed and center section.

PREPARE FOR TOWING

1. **Replace spare tire and spare tire heat shield.** If the spare tire and/or the spare tire heat shield were removed prior to installing the hitch, replace it at this time.
2. **Modify fender liner.** If a fender liner is present that restricts the movement of the handle, it is recommended that it be modified by cutting a relief slot or hole to allow the handle to move freely. If the liner was removed for installation, reinstall at this time.
3. **Retract the pin.** Pull the handle out all the way until it stops then slide 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: 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.** Rotate the handle counterclockwise 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.