

<THESE INSTRUCTIONS MUST BE GIVEN TO THE END USER>



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Turnoverball® Gooseneck Hitch Installation Instructions

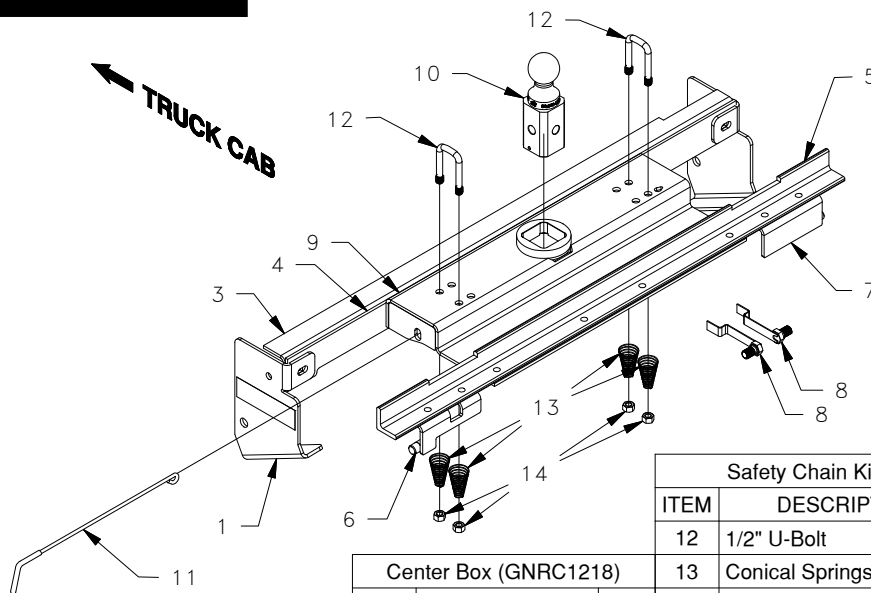
MODEL 1208R

See Limited Lifetime Warranty at
bwtrailerhitches.com/warranty

2004-2017 Nissan Titan
 Except Titan XD Trucks

Mounting Kit Box (GNRM1208)		
ITEM	DESCRIPTION	QTY
1	Driver Side Plate	1
2	Passenger Side plate	1
3	Front Cross Member	1
4	Front Cross Member brace	1
5	Rear Cross Member	1
6	Driver side Pin Bracket	1
7	Passenger Side Pin Bracket	1

Mounting Kit Bolt Bag		
ITEM	DESCRIPTION	QTY
8	Bolt Guide	2
	1/2" X 2" Carriage Bolt	6
	1/2" X 1-1/2" Cap Screw	8
	1/2" Flat Washer	10
	1/2" Lock Washer	14
	1/2" Finish Nut	14
	5/8" Flange Nut	2



Center Box (GNRC1218)			Safety Chain Kit Bolt Bag		
ITEM	DESCRIPTION	QTY	ITEM	DESCRIPTION	QTY
9	Center Section	1	12	1/2" U-Bolt	2
10	2-5/16" Ball	1	13	Conical Springs	4
11	Latch pin Handle	1	14	1/2" Lock Nut	4
				5/16" X 3/4" Carriage Bolt	1
				5/16" X 3/4" Cap Screw	1
				5/16" Flange Nut	1

⚠️ 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.
- ⚠️ 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.
- ⚠️ 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.
- ⚠️ Do not invert the ball in the socket when carrying heavy loads on 2 wheel drive trucks. The ball may hit the top of the differential. Remove the ball from the socket before loading. A plug for the socket is available from B&W.

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 10mm, 1/2" & 3/4" sockets.
- 10mm, 1/2" & 3/4" Box end wrench
- Marking tool (pencil or permanent marker)
- 4" hole saw
- Drill with 1/2" bit
- Ear protection
- Lifting device
- 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 9 will provide ample turning clearance between the nose of the trailers and the cab of the truck.

⚠ 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. 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.
- 3. Relocate vent hose.** Using a small screwdriver remove the vent hose from the bed cross member near the driver side wheel well behind of the truck frame.
- 4. Detach fuel valve canister if needed.** Locate the rectangle shaped fuel valve canister. If it is mounted behind the tube frame cross member it will not interfere with the installation. If it is mounted in front of the tube frame cross member it will need to be lowered during the installation. First remove the 3 small bolts that hold the canister bracket to the truck using a 10mm wrench. Then slide the canister toward the center of the truck far enough to allow the end toward the frame to be pulled downward, see Figure A1. Then slide the canister back toward the frame to allow the complete canister to drop down about 4 to 5 inches providing space for installation, see Figure A2. The canister will be re-attached in a later step.

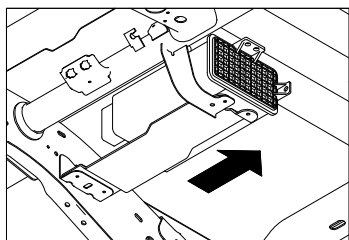


Figure A1: Looking up under the bed.

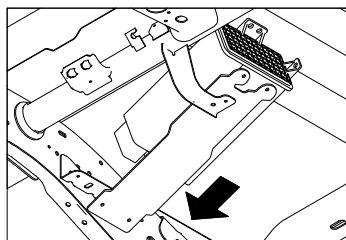


Figure A2.

- 5. Remove inner fender guards.** The inner fender guards toward the front of both rear fender wells will need to be removed to allow the installation of the hitch side plates. This is done by removing two screws and sliding the guard toward the tire. These guards will be replaced in a later step.

- 6. Remove the heat shield.** Remove the 10mm bolts connecting the heat shield to the frame and discard, the hitch will replace this section of the heat shield.

⚠ 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.

- 7. 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. A simple mechanical lifting device is available for purchase from B&W.

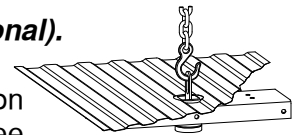


Figure A3.

- 8. 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 A4. 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.

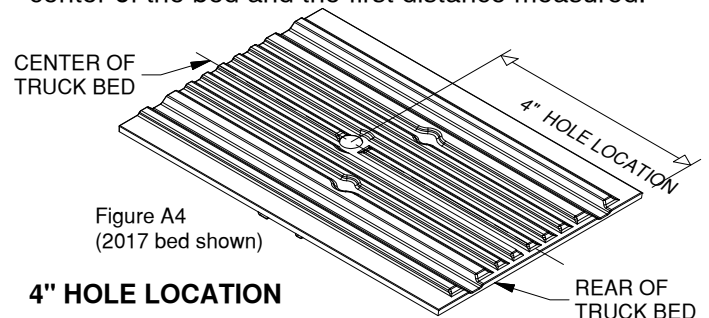


Figure A4
(2017 bed shown)

4" HOLE LOCATION

8' LONG BED AND SHORT BED (BED LESS THAN 8' LONG) - 46-1/2"

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 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.

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.

- 9. 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.

10. 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.

INSTALL CROSS MEMBERS AND CENTER SECTION

⚠ 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.

⚠ 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. Cut V-shaped notches in flange. Before the rear cross member can be installed there must be two small notches cut in the bed floor flange behind the center bed cross member on the passenger side. At 2" behind the center cross member make the first V-shape notch 1/2" tall x 1" wide in the bed floor flange. The second notch will need to be 2 1/4" behind the first, see Figure B1.

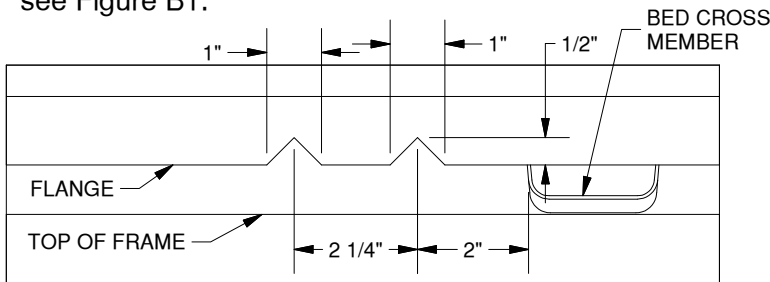


Figure B1. FRONT OF TRUCK →

2. Install the rear cross members. The rear cross member can be installed using the two notches to accept the legs of the cross members. The rear cross member can be identified as the 2" x 2" angle with two cut outs on one of the legs. Slide the angle across the top of the frame using the two notches to accept the legs of the cross member with the leg containing the two cut outs toward the front of the truck. Center the cross member on the top of the frame. Next turn the cross member so that the two cut outs are toward the bed floor and the cross member leg that contains the holes will lay flat on top of the frame, see Figure B2.

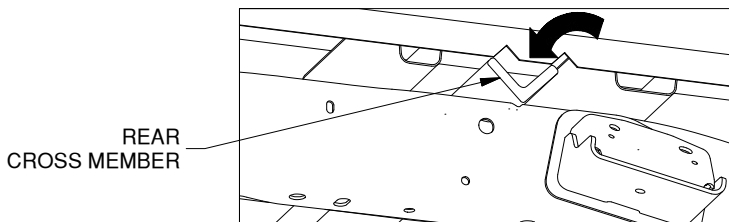


Figure B2: looking into passenger side wheel well.

3. Install the pin brackets. The mounting kit contains a driver side and passenger side pin bracket. The driver side can be identified by having a notch cut in it for clearance of a fuel canister tube on some models. When they are installed correctly the pin will be in the hole on the inside of the frame and the bolt holes will face up and forward and align with the two outside holes on each end of the rear cross member. Place a 1/2" x 1-1/2" bolt with a lock washer and nut in the four holes that bolt the pin brackets to the rear cross member, see Figure B3. Do not tighten hardware at this time.

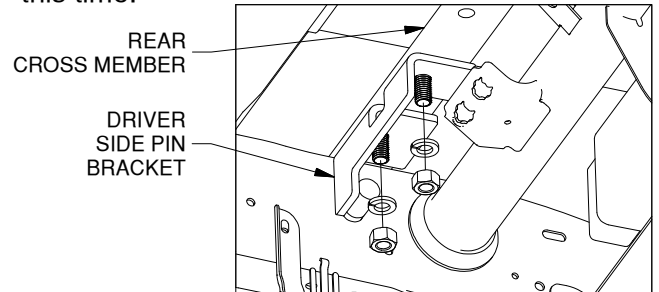


FIGURE B3: View looking up at driver side truck frame.

4. Install the center section. Raise the center section up between the frame on the passenger side of the truck and the exhaust pipe. At the same time turn it flat and slide it over the gas tank, making sure that the spring loaded latch pin assembly is toward the driver side of the truck, as shown in Figure B4. With the center section in the center of the truck slide it toward the rear placing the flat part of the center section that has 4 slotted holes in it between the bed cross member and the round frame cross member. Slide it back until the slotted holes align with the holes in the rear cross member. Install a 1/2" x 1-1/2" bolt through the rear cross member and the slotted holes in the center section and place a flat washer, lock washer and nut on the bolts, see Figure B5. Do not tighten hardware at this time.

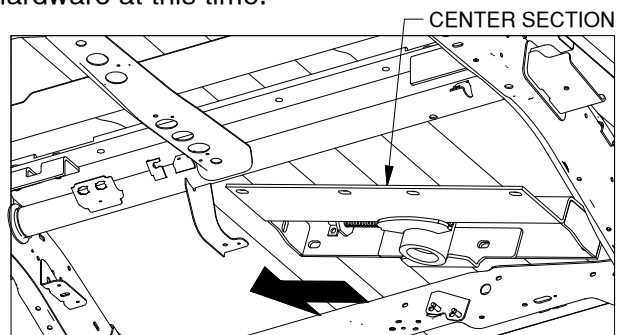


Figure B4: View looking up under truck bed. (Exhaust not shown)

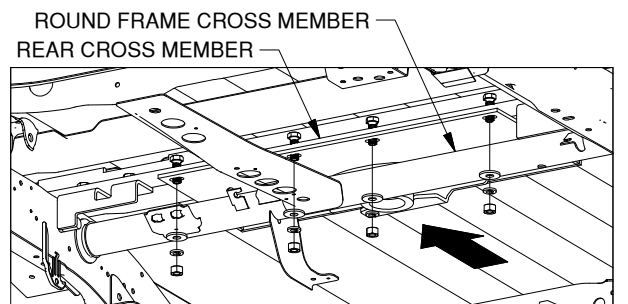


Figure B5: View looking up under truck bed.

5. **Install front cross member and brace.** Install the cross member brace between the frame and truck bed from the driver side. The cut-out area should be facing down and toward the driver side. This will allow clearance for the fuel tank on some models. Slide it back toward the center section as shown in Figure B6. Next install the front cross member. Slide the end with the short notch between the frame and truck bed from the driver side. The notch should be facing up and toward the front of the truck. This will allow clearance around the shock bracket on the passenger side when fully installed, as shown in Figure B6. With the cross member and brace spanning the frame slide both back against the center section. Install a 1/2" x 2" carriage bolt through the cross member and brace on the passenger side, just behind the shock bracket. This will be used later. While pushing up on the center section (so the socket top fits through the four inch hole in the truck bed) align the holes and install the carriage bolts through the cross member, brace, and then the center section. Place a flat washer, lock washer, and nut on each bolt, see Figure B7. Do not fully tighten at this time.

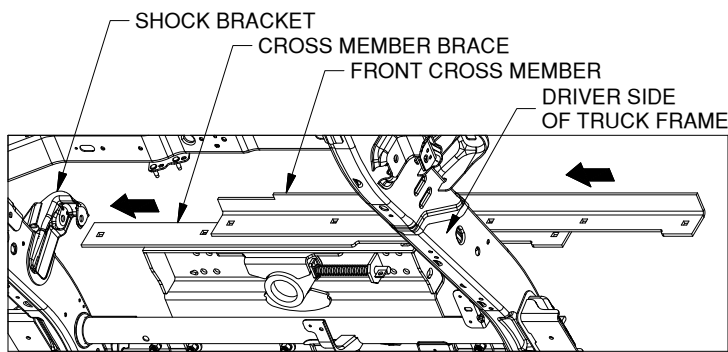


Figure B6: View looking up at center section. (Fuel tank not shown)

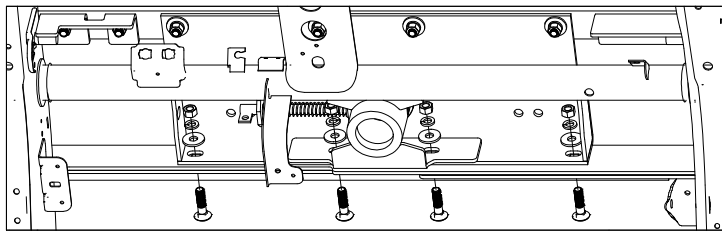


Figure B7: View looking up at center section.

INSTALL SIDE PLATES

1. **Move wiring harness.** Before the passenger side side plate can be installed a wiring harness must be moved. This can be done by pulling the two push in connectors out of the frame directly under the shock bracket on the outside of the frame. Lift the harness up and over the front cross member. The side plate, when installed, will hold it in this location.

2. **Install side plates.** The side plate with the decal goes on the driver side. Place it against the frame with the bent ear with the slotted hole facing inward just behind the cross members, see Figure C1. Place a carriage bolt through the cross member, brace and the side plate ear; secure with a flat washer, lock washer, and nut, as shown in Figure C2. The bottom of the side plate should face in and match the slope of the underside of the frame when installed properly. Place one of the bolt guide assemblies (bolt first) through the larger oval hole just in front of the side plate, twisting it around and back out through the smaller hole in the frame and side plate. Use the tab on the end of the bolt guide assembly to hold in place while a 5/8" flange nut is installed, see Figure C2. Repeat this on the passenger side. The passenger side side plate may not lay perfectly flat against the frame because of the shock bracket that is welded on. This will cause no problems with the fit or function of the hitch.

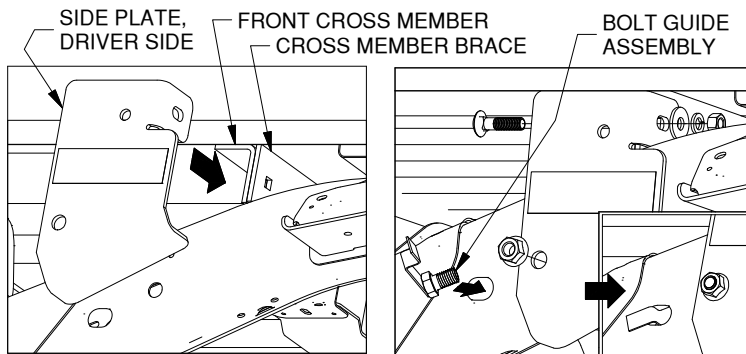


Figure C1: View of driver side frame.

Figure C2: View of driver side frame.

SECURE HITCH

1. **Side plate 5/8" hardware.** Make sure that the side plates are tight against the underside of the frame, then tighten the 5/8" nuts on each side plate to 90 ft. lbs.
 2. **Side plate 1/2" hardware.** Tighten the 1/2" side plate bolts & nuts on each side plate to 80 ft. lbs.
 3. **Pin bracket 1/2" hardware.** While holding the pin brackets toward the inside of the frame tighten the two bolts on each side to 80 ft. lbs. There may be a small space between the brackets and frame on some trucks.
 4. **Center section 1/2" hardware.** Tighten the four front and four rear center section bolts to 80 ft. lbs.
- ⚠ 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 D1.
2. **Secure the handle.** Attach the handle to the latch pin as shown in Figure D2. The head of the bolt must be on the handle side, and the lock nut must be on the tab side. The tab is welded to the pin in an offset position so that the handle will be lined up over the center of the pin. If the handle is fastened to the other side of the tab, the handle will not function properly. When installed correctly the latch pin may be disengaged from the ball by pulling on the handle from the driver side wheel well and rotating the handle clockwise.

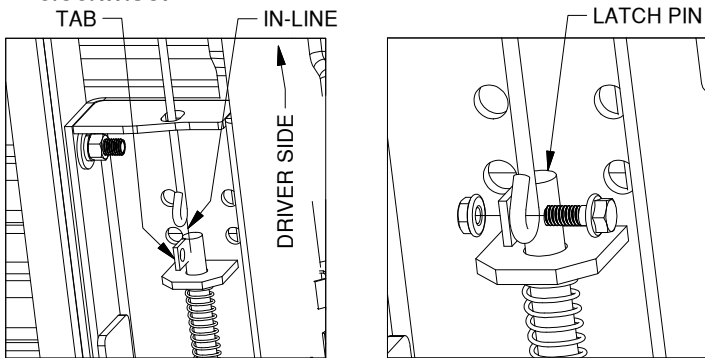


Figure D1: View under center section. Figure D2: View under center section.

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 E1.

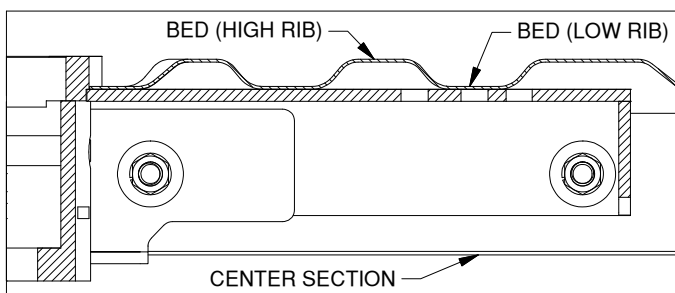


Figure E1: Cutaway view of bed and center section.

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 E2.

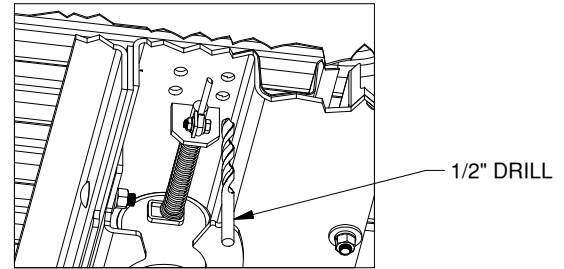


Figure E2: Cut away view of bed and center section.

2. **Install the U-bolts.** From the top side of the truck bed, drop a U-bolt in each set of holes.

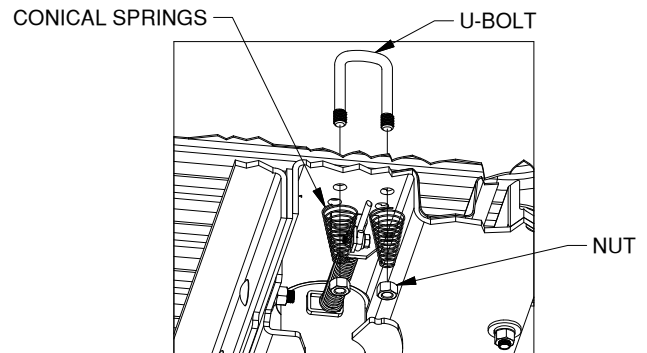


Figure E3: Cut away view of bed and center section.

3. **Add springs.** Place a conical spring over each leg of the U-bolts and secure with a 1/2" lock nut, see Figure E3. Tighten the lock nut until the nut is flush with the end of the U-bolt.

PREPARE FOR TOWING

1. **Replace the fuel valve canister and vent hose.** The fuel valve canister (if removed) can now be bolted back into its original position. However, the vent hose will no longer go into the same hole. Place the open end of the vent hose between the bed cross member and the rear hitch cross member and push in as far as possible. This can be secured with a wire tie or tape if necessary. This new location will put the vent into the same environment as the old location.
2. **Replace the inner fender guards.** Replace the inner fender guards in the reverse order of removal.
3. **Replace the spare tire** If the spare tire was removed prior to installing the hitch, replace it at this time.
4. **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.

Continued on the next page.

PREPARE FOR TOWING (cont.)

- ⚠ **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 frame due to the force of the spring loaded latch pin.**
- ⚠ **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.
- ⚠ **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.**

OPERATION & MAINTENANCE

- Always be sure that latch pin is fully engaged in the socket before towing.
- Inspect hardware connections before towing to be sure that they are secure.
- Measure and determine turning clearance with cab before towing unfamiliar trailers. Additional products for increasing turning clearance are available from B&W.
- When inverting the ball, inspect the ball's relationship with the truck's differential and drive line to ensure proper clearance. **DO NOT INVERT THE BALL WHEN HAULING HEAVY LOADS ON 2 WHEEL DRIVE TRUCKS.** A plug for the socket is available from B&W so that the ball may be removed and the socket may be covered when hauling heavy loads.
- Periodically grease the corners on the square shank of the 2-5/16" ball.