

<THESE INSTRUCTIONS MUST BE GIVEN TO THE END USER>



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Turnoverball® Gooseneck Hitch Installation Instructions

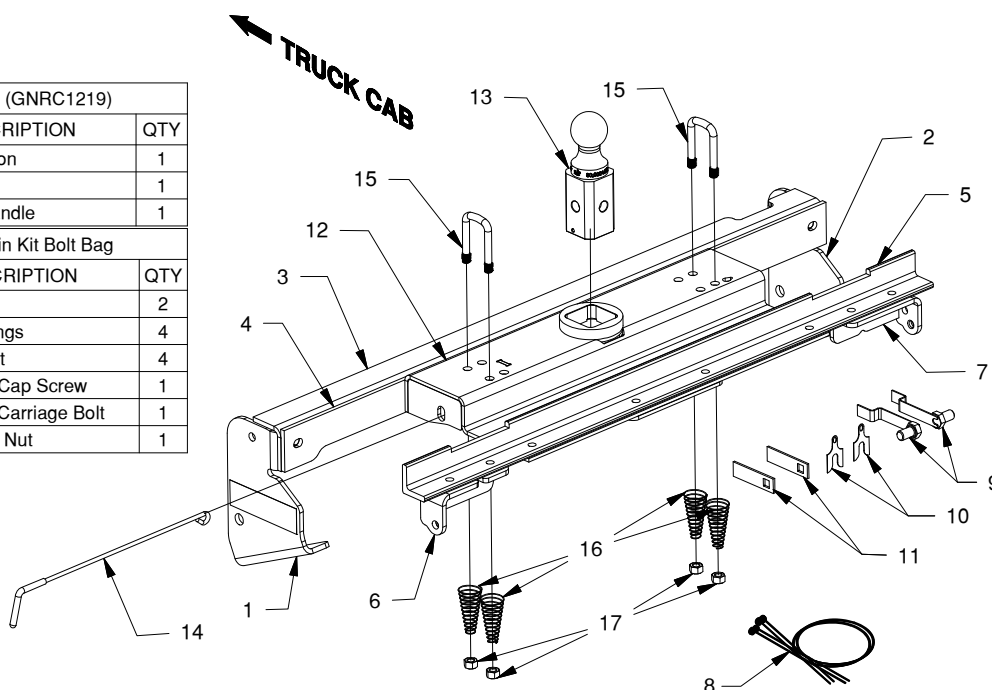
MODEL 1208

See Limited Lifetime Warranty at
bwtrailerhitches.com/warranty

2004-2018 Nissan Titan
Except Titan XD Trucks

Mounting Kit Box (GNRK1208)		
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
8	1/2" X 48" Fish Wire	4
Mounting Kit Bolt Bag		
ITEM	DESCRIPTION	QTY
9	Bolt Guide Assembly	2
10	Bolt Retainer	2
11	Locking Strap	2
	O-Ring	2
	1/2" X 1-1/2" Cap Screw	8
	1/2" X 1-1/2" Carriage Bolt	2
	1/2" X 2" Carriage Bolt	6
	1/2" Flat Washer	10
	1/2" Lock Washer	16
	1/2" Finish Nut	16
	5/8" Flange Nut	2

Center Box (GNRC1219)		
ITEM	DESCRIPTION	QTY
12	Center Section	1
13	2-5/16" Ball	1
14	Latch Pin Handle	1
Safety Chain Kit Bolt Bag		
ITEM	DESCRIPTION	QTY
15	1/2" U-Bolt	2
16	Conical Springs	4
17	1/2" Lock Nut	4
	5/16" X 3/4" Cap Screw	1
	5/16" X 3/4" Carriage Bolt	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", & 15/16" sockets
- 10mm, 1/2", 3/4", & 15/16" Box end wrenches
- Marking tool (pencil or permanent marker)
- 4" Hole saw
- Drill with 1/2" bit
- Ear protection
- Pry Bar
- Lifting device
- Flashlight
- Eye protection
- Torque wrench
- Tape measure
- Pilot hole drill 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 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.** Locate the vent hose that is attached to the rear side of the bed cross member that is behind the fuel tank, as shown in Figure A1. Use a small screwdriver to remove the vent hose from the bed cross member. The hose will be relocated after the hitch is installed.

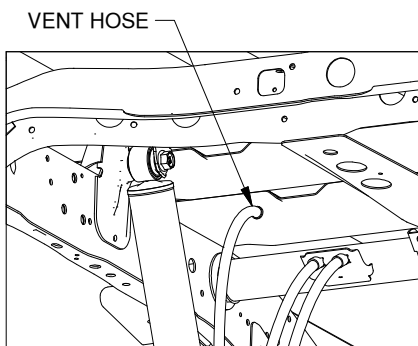


Figure A1: Looking inside driver side frame.

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 three 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 A2. 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 A3. The canister will be re-attached in a later step.

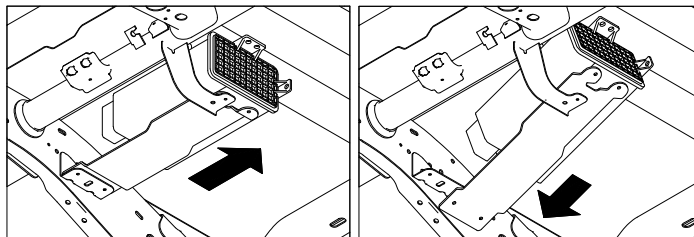


Figure A2: Looking up under the bed.

Figure A3

5. **Remove inner fender guards.** Most trucks are equipped with inner fender guards toward the front of the rear fender wells. These 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. Some trucks may have more extensive liners or guards in the fender wells. If these obstruct installation, they will need to be removed also. In some cases, these liners may have to be modified to allow access to the latch pin handle.
6. **Remove the heat shield.** Remove the 10mm bolts connecting the heat shield to the bed cross members and discard. The hitch will replace this section of the heat shield.
7. **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.

⚠ 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.

8. **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 A4 for an example. A simple mechanical lifting device is available for purchase from B&W.

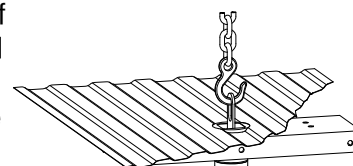


Figure A4

Continued on next page.

9. **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 A5. 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.

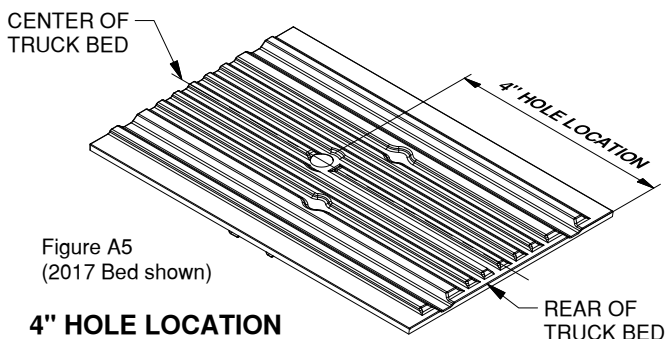


Figure A5
(2017 Bed shown)

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.

10. **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.

11. **Modify bed flange.** Cut two small notches in the bed flange, just above the frame in the passenger side wheel well, as shown in Figure A6. These notches are required for installing the hitch's rear cross member. Some trucks may not need as much cut if the flange is shorter or has existing reliefs.

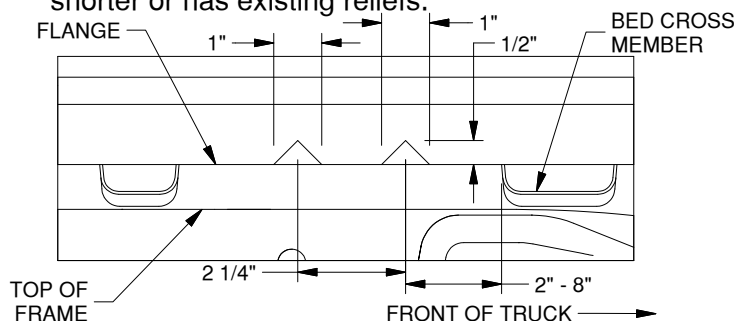


Figure A6: Looking at passenger side wheel well

⚠ 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.

INSTALL REAR CROSS MEMBER MOUNTING BRACKETS

NOTE: Install hardware so it is snug, but do not fully tighten hardware connections at this time.

1. **Prepare for mounting bracket installation.** Locate the rear cross member mounting brackets, two fish wires, the locking straps, the 1/2" x 1-1/2" carriage bolts, the O-rings, two 1/2" lock washers, and two 1/2" finish nuts. Identify the 3/4" hole on the inside of the frame rails behind the rear axle where the brackets will mount, and the larger hole in the frame ahead of the axle, see Figure B1.

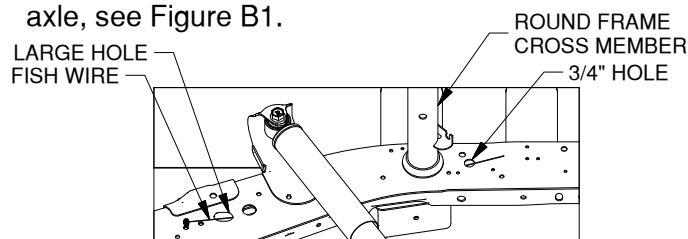


Figure B1: Looking at inside of frame rail.

2. **Thread fish wire through frame.** Insert the coil end of the fish wire into the 3/4" hole and fish it through the frame towards the front of the truck and out the larger hole as shown. Make sure the fish wire goes under the round frame cross member that goes through the inside wall of the frame. If the fish wire does not stay under the round cross member the hardware could get stuck inside the frame and not be able to be retrieved.

3. **Prepare hardware.** Thread the locking strap on the fish wire and attach the coil end of the fish wire to the carriage bolt, as shown in Figure B2. To keep the hardware from getting hung up inside the frame, the locking strap and the bolt need to go through the frame separated, as shown, and not with the bolt through the square hole in the strap.

IMPORTANT: There are two different lengths of carriage bolts, the shorter ones must be used in this step.

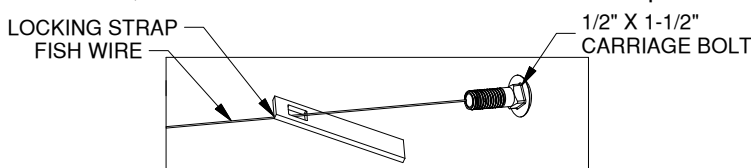


Figure B2

Continued on next page.

- 4. Pull fish wire through frame.** With the fish wire through the locking strap, push the locking strap completely into the frame. Next, pull the carriage bolt into the frame. Continue pulling on the fish wire until the threaded portion of the bolt is sticking out of the frame. Turn carriage bolt until square shoulder engages square hole of strap. Thread the mounting bracket and an O-ring over the fish wire and onto the bolt. Push the O-ring tight against the bracket, see Figure B3. This will prevent the bolt from accidentally falling back into the frame. The O-ring will stay on the bolt after the washer and nut are installed and tightened.

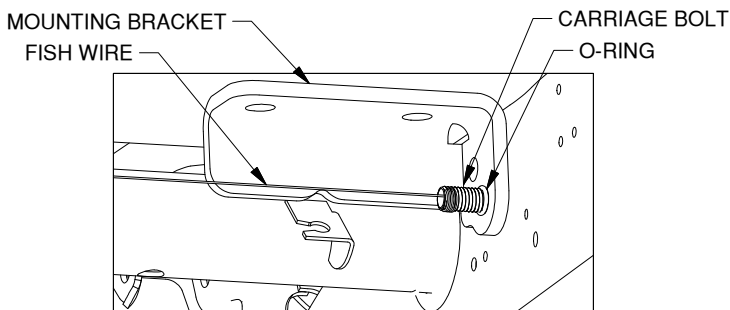


Figure B3: Looking at mounting bracket installation.

- 5. Secure hardware.** Remove the fish wire from the carriage bolt and secure the bolt with a lock washer and finish nut.
- 6. Repeat these steps for other side to install the second bracket.**

NOTE: If the truck has hoses or wiring that run from the fuel canister to the rear of the truck, fit these into the clearance notch provided on the driver side mounting bracket. Be sure that these items rest below the top surface of the bracket.

INSTALL REAR CROSS MEMBER

NOTE: Install hardware so it is snug, but do not fully tighten hardware connections at this time.

- 1. Position rear cross member.** Locate the rear cross member and the area where the V-shaped notches were cut. Orient the rear cross member so the leg with the rectangular notches is toward the front of the truck. Slide the rear cross member through the V-shaped notches and between the bed and the frame until it spans the driver and passenger frame rails, as shown in Figure C1. Rotate the rear cross member so the leg with the rectangular notches is vertical. The leg with the holes should be flat against the top of the frame toward the rear of the truck.

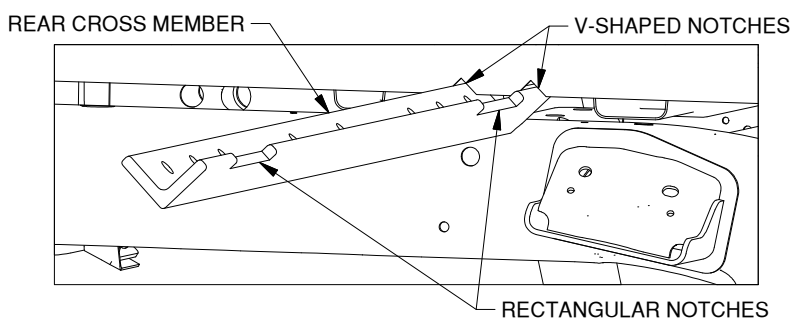


Figure C1: Looking into passenger side wheel well.

- 2. Secure rear cross member.** Attach the rear cross member to the cross member brackets, as shown in Figure C2, with 1/2" x 1-1/2" cap screws, 1/2" lock washers, and 1/2" finish nuts.

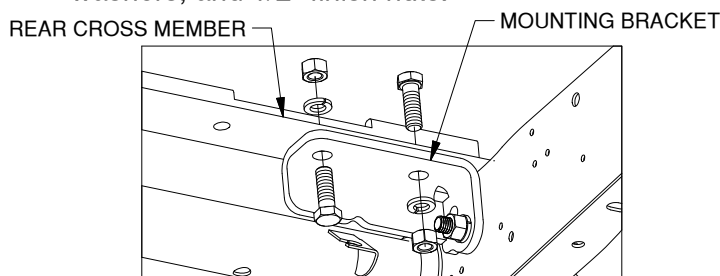


Figure C2: Looking at passenger side mounting bracket.

INSTALL CENTER SECTION

NOTE: Install hardware so it is snug, but do not fully tighten hardware connections at this time.

- 1. Maneuver center section into place.** Raise the center section up between the frame on the passenger side of the truck and the exhaust pipe with the latch pin toward the driver side, as shown in Figure D1. Once it is over the exhaust, turn it flat and slide it over the gas tank.

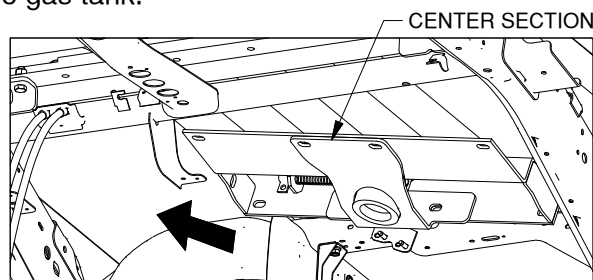


Figure D1: Looking up under truck bed. (Exhaust not shown.)

- 2. Attach the center section to rear cross member.** 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 four slotted holes between the bed cross member and the round frame cross member. Slide it back until the raised portion of the center section lines up with the 4" hole in the truck bed. Insert the raised portion into the truck bed hole. If using an overhead lifting device, secure it to the center section at this time and apply enough force to hold the center section against the truck bed. Align the slots in the rear flange of the center section with the holes in the rear cross member. Install a 1/2" x 1-1/2" cap screw in each location and secure with a flat washer, lock washer, and nut; see Figure D2.

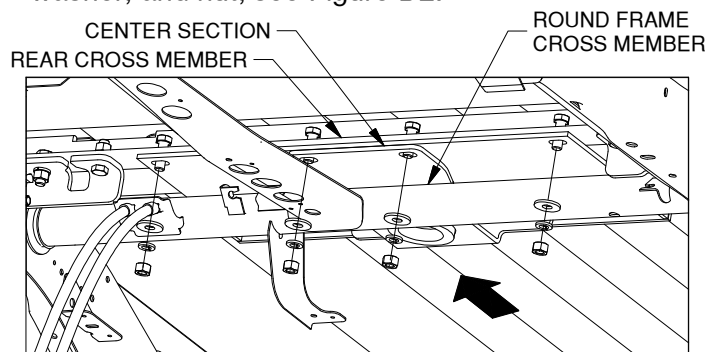


Figure D2: Looking up under truck bed.

INSTALL FRONT CROSS MEMBERS

NOTE: Install hardware so it is snug, but do not fully tighten hardware connections at this time.

- 1. Position front cross member.** Locate the front cross member. Orient the front cross member so the leg with the holes is vertical, as shown in Figure E1. Slide the end with the short notch between the frame and truck bed from the driver side. The notch in the top leg will allow clearance around the shock bracket on the passenger side when fully installed.

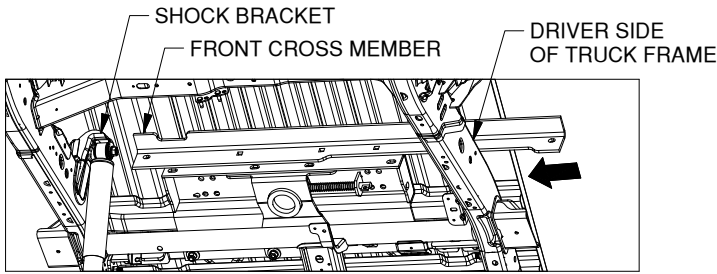


Figure E1: Looking up at center section. (Fuel tank not shown.)

- 2. Place the front cross member brace.** Locate the front cross member brace. Install the brace between the frame and truck bed from the driver side. The cut-out area should be facing down. This end of the brace will go into the truck last and provide clearance for the fuel tank on some models, see Figure E2. Once it spans both frame rails, slide the brace back toward the center section.

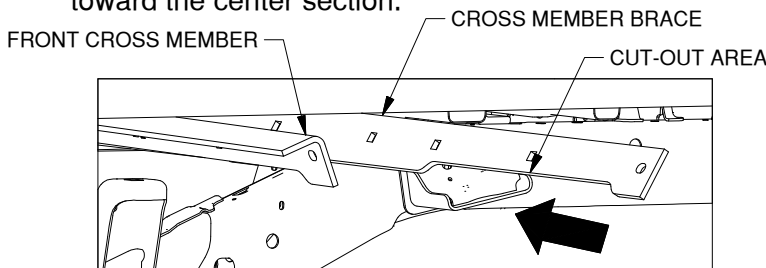


Figure E2: Looking into drive side wheel well.

- 3. Attach front cross members.** With the cross member and brace spanning the frame slide both back against the center section. While pushing up on the center section (so the raised portion fits through the 4" hole in the truck bed), align the holes and install 1/2" x 2" carriage bolts through the cross member, brace, and the center section. Place a flat washer, lock washer, and nut on each bolt, see Figure E3.

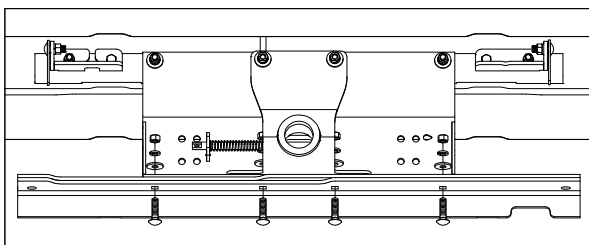


Figure E3: Looking up at center section. (Frame not shown.)

INSTALL SIDE PLATES

NOTE: Install hardware so it is snug, but do not fully tighten hardware connections at this time.

- 1. Relocate wiring harness.** Locate wiring harness on the outside of the passenger side frame in the wheel well. Detach the two connectors that are securing the wiring to the frame. This wiring will be left loose so that the side plate can be installed under the wiring. Once the side plate is installed, secure wiring harness by reattaching the connectors to the frame, or tying the harness to the frame or side plate.
- 2. Locate hardware for side plate installation.** Locate the side plates, the 5/8" bolt guide assemblies, the bolt retainers, the 5/8" flange nuts, and fish wires. Use the diagram on the front page to identify the driver side and passenger side parts.
- 3. Position side plate.** Place the driver side plate against the frame with the bent ear with the square hole facing inward on the cab side of the cross members, see Figure F1. The bottom flange of the side plate should face in and match the slope of the underside of the frame when installed properly.

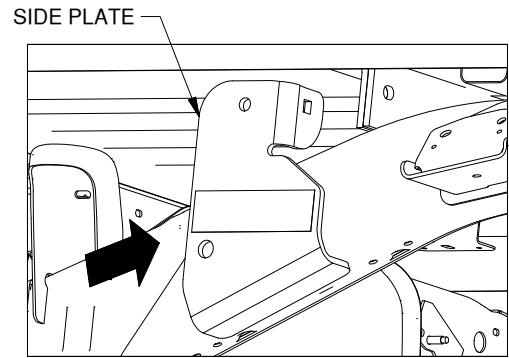


Figure F1: Looking in driver side wheel well.

- 4. Secure side plate.** 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, see Figure F2. Use the tab on the end of the bolt guide assembly to hold in place while a 5/8" flange nut is installed.

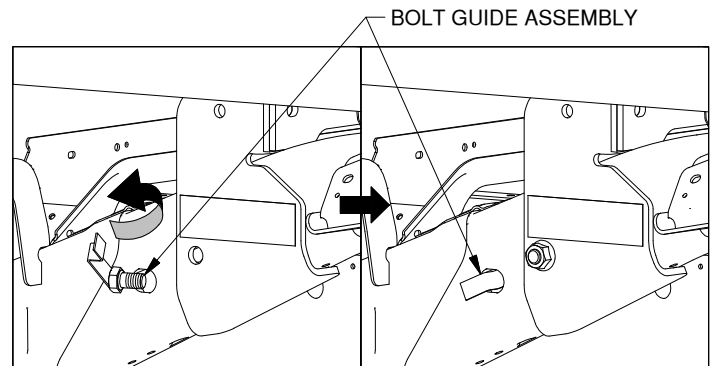


Figure F2: Installing bolt guide assembly, looking at driver side frame.

5. **Install carriage bolt in side plate ear.** If the area directly in front of the side plate is not accessible, a fish wire is provided to allow the carriage bolt to be pulled up through the side plate. Feed the coil end of a fish wire through the holes in the front cross member parts, and the hole in the driver side plate. Move the end of the fish wire into an open space below the fuel tank and other obstacles, see Figure F3. Attach a 1/2" x 2" carriage bolt and pull the fish wire and bolt through all three parts.

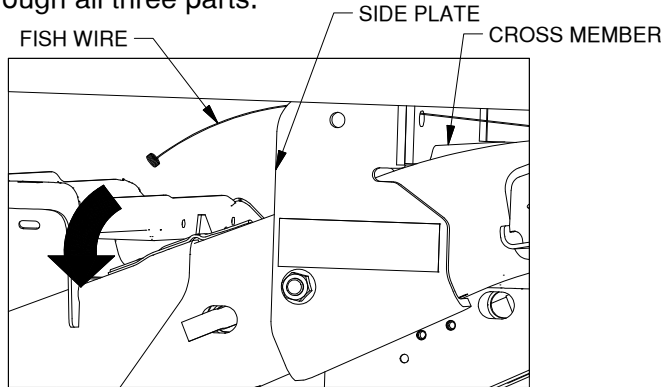


Figure F3: Looking at driver side frame.

6. **Secure cross members to side plate.** Make a small bend in the tail of one bolt retainer, see Figure F4. Slide the groove of the retainer over the threads as close to the cross member as possible, as shown in Figure F5. Rotate the tool clockwise to temporarily secure the tool to the carriage bolt while the fish wire is removed and the hardware is added.

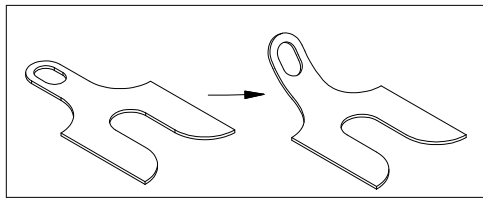


Figure F4: Bolt retainer, before and after.

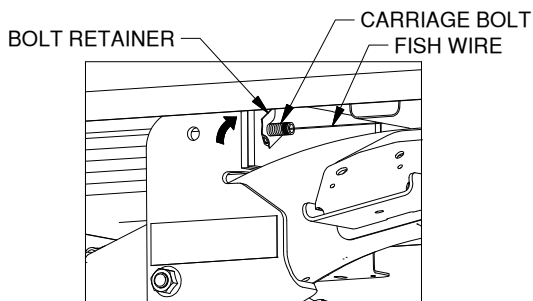


Figure F5: Carriage bolt installation.

7. **Secure hardware.** Remove the fish wire and secure the carriage bolt with a flat washer, lock washer, and finish nut. Remove the bolt retainer by pulling on the bent tail.
8. **Repeat these steps to install the passenger side plate.**

Note: The side plate for the passenger side 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.

SECURE HITCH

1. **Square the hitch.** With a tape measure, check the distance between the Turnoverball hitch and the nearest bed cross member. The distance between the hitch and the cross member should be consistent on the driver side and the passenger side of the hitch, see Figure G1.

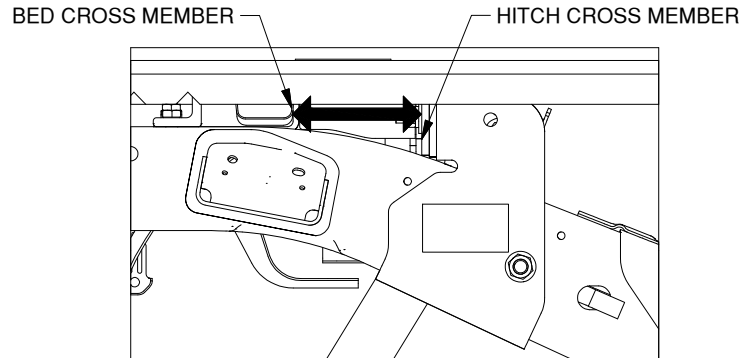


Figure G1: Looking at passenger side frame.

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.

2. **Tighten center section.** With the top surface of the center section firmly against the truck bed, and the side plates tight against the bottom of the frame rails, tighten the 1/2" hardware attaching the center section to the front and rear cross members. Then tighten the 5/8" flange nuts securing the side plates to the frame.
3. **Continue tightening hardware.** Use the following sequence to tighten all remaining fasteners:
- **First;** Tighten the bolts attaching the cross member brackets to the rear cross member.
 - **Second;** Tighten the carriage bolts attaching the front cross members to the side plates.
 - **Third;** Tighten the bolts attaching the cross member brackets to the inside of the frame.
4. **Torque all fasteners.** Torque all 1/2" hardware connections to 110 ft. lbs. and all 5/8" hardware connections to 150 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 the 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 hole in the latch pin tab so the handle is in line with the latch, as shown in Figure H1.

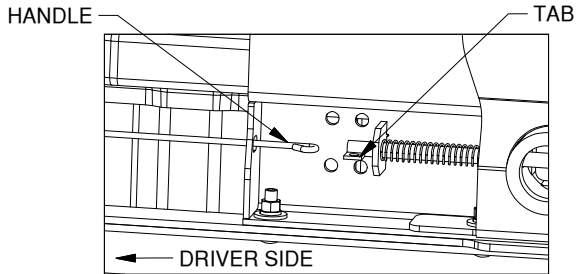


Figure H1: Looking up at center section.

2. **Secure the handle.** Attach the handle to the latch pin as shown in Figure H2. 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.

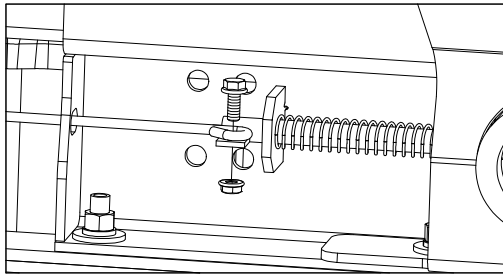


Figure H2: Looking up at center section.

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 I1.

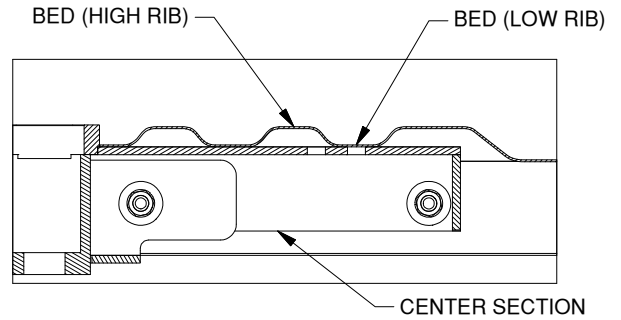


Figure I1: Cutaway view of bed and center section.

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 I2.

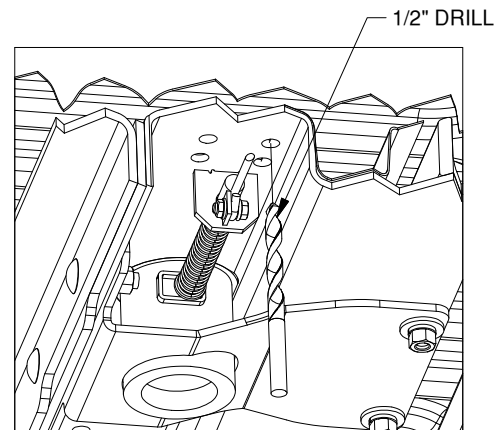


Figure I2: Cutaway view of bed and center section.

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

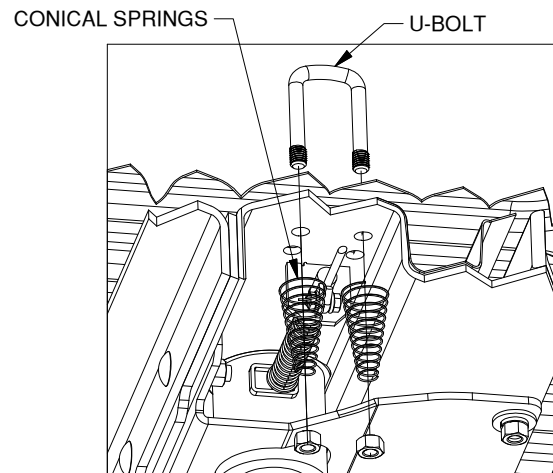


Figure I3: Cutaway view of bed and center section.

3. **Add springs.** Place a conical spring over each leg of the U-bolts and secure with a 1/2" lock nut, see Figure I3. 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. Route the vent hose around obstacles so that the end is up between the bed cross member and the hitch as far as possible, without kinking the hose. See Figure J1. Secure the hose in this location. This new location will put the vent into the same environment as the old location.

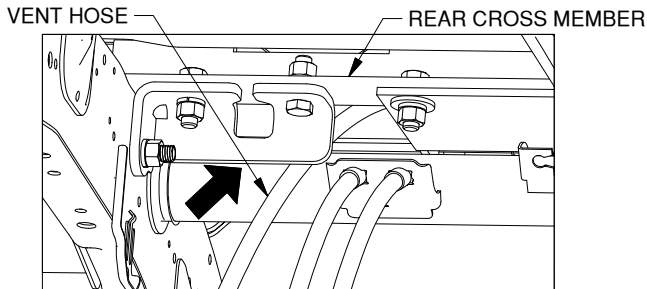


Figure J1: Looking inside driver side frame.

2. **Replace the inner fender guards.** Replace the inner fender guards in the reverse order of removal. Make modifications to these guards as needed to allow access to the latch pin handle.
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 rotate it clockwise. 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.

⚠ 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.

5. **Lubricate 2-5/16" ball.** Apply a light coating of grease to the corners on the square shank of the 2-5/16" ball.
6. **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.