

<THESE INSTRUCTIONS MUST BE GIVEN TO THE END USER>



B&W Trailer Hitches

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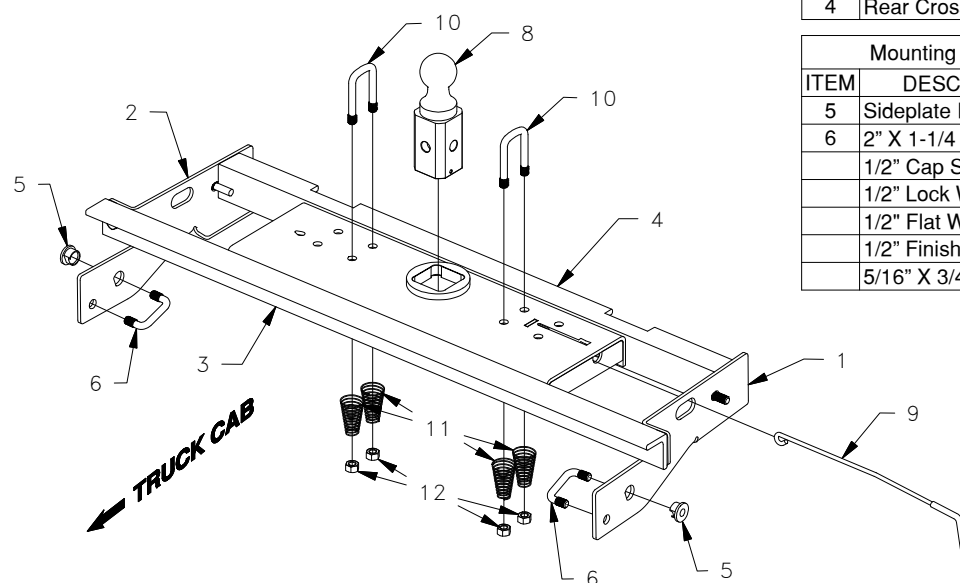
Call or Email us for
Installation Support
hitches@turnoverball.com
bwtrailerhitches.com

See Limited Lifetime Warranty at
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Turnoverball® Gooseneck Hitch Installation Instructions

MODEL 1104R

2004-2014 Ford 1/2 Ton Trucks All Beds
(2004 HERITAGE REQUIRES MODEL # 1197R)



Mounting Kit Box (GNRM1104)		
ITEM	DESCRIPTION	QTY
1	Driver Side Plate	1
2	Passenger Side plate	1
3	Front Cross Member	1
4	Rear Cross Member	1

Mounting Kit Bolt Bag		
ITEM	DESCRIPTION	QTY
5	Sideplate Insert	2
6	2" X 1-1/4" X 1/2" U-Bolt	2
	1/2" Cap Screw	9
	1/2" Lock Washer	15
	1/2" Flat Washer	13
	1/2" Finish Nut	15
	5/16" X 3/4" Cap Screw	1

Center Box (GNRC959N)		
ITEM	DESCRIPTION	QTY
7	Center Section	1
8	2-5/16" Ball	1
9	Latch pin Handle	1

Safety Chain Kit Bolt Bag		
ITEM	DESCRIPTION	QTY
10	1/2" U-Bolt	2
11	Conical Springs	4
12	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

⚠ 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 3/4" & 15/16" sockets.
- 1/2", 3/4" & 15/16" Box end wrench
- 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 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 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. **Remove the spare tire.** 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. **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.

4. **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.

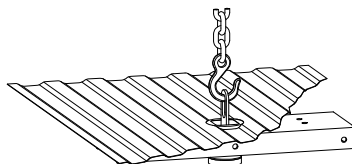


Figure A1.

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 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.

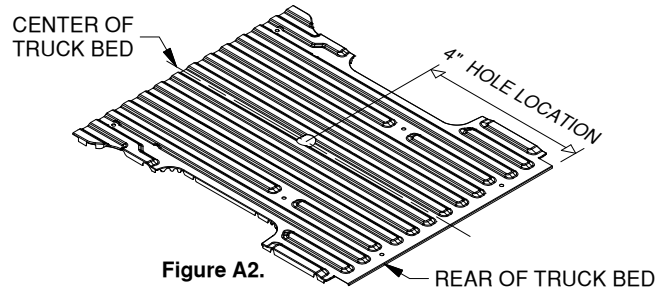


Figure A2.

4" HOLE LOCATION

8' LONG BED AND SHORT BED (BED LESS THAN 8' LONG) - 45-1/8"

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.

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.

INSTALL CROSS MEMBERS AND CENTER SECTION

1. **Place rear cross member.** Select the rear cross member that is notched on one side. With the long (2-1/2") side of the angle iron pointing down and the short (2") side with the notches facing the rear of the truck, position it across the top of the frame rails, between the bed and frame, by pushing it through the opening in the wheel well on the driver's side of the truck, see Figure B1. Make certain that the notches fit tightly against the truck bed cross member on the back of the truck.

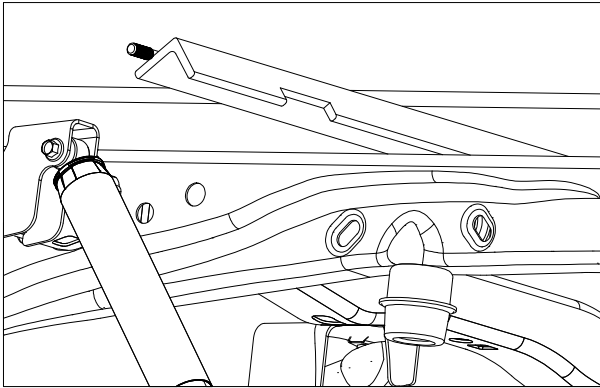


Figure B1: View looking into driver side wheel well.

2. **Place forward cross member.** Select the second cross member without notches and place it between the bed and frame, by pushing it through the opening in the wheel well on the driver side of the truck, see Figure B2. With the two cross members approximately parallel, position them about 9" apart, spaced in front and behind the hole in the truck bed floor and hanging over the same distance on each side of the frame rails.

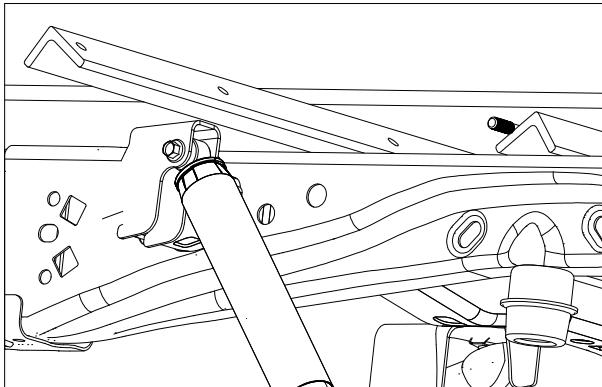


Figure B2: View looking into driver side wheel well.

3. **Install center section.** With the latch pin mechanism on the driver side of the truck, raise the center section of the hitch into position between the cross members from beneath the truck. The round tube hitch receiver that protrudes from the center section must fit through the hole in the truck bed floor. Fasten the center section to the cross members using seven of the 1/2" x 1 1/2" bolts. Start these bolts through the holes in the cross member and place a flat washer, a lock washer and nut on each bolt, see Figure B3. Do not fully tighten at this time.

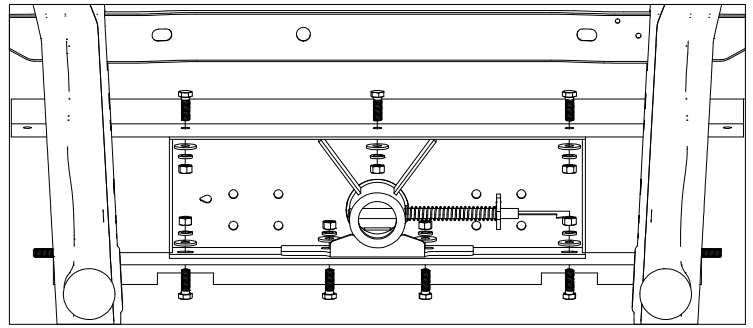


Figure B3: View looking up under truck bed.

INSTALL SIDE PLATES

NOTE: Vehicle equipment with a NO-CAP fuel neck have a drain/vent hose attached to the frame on the driver side in the area where the rear shock mounts to the frame. This hose must be detached from the frame and relocate before installing the side plate for the driver side.

1. **Install Side Plates.** Install the side plates by placing the top back hole over the stud on the rear cross member with a flat washer, lock washer, and nut, then bolt the front flange of the side plate to the front cross member with a bolt, flat washer, lock washer, and nut, see Figure C1. Do not fully tighten hardware at this time.

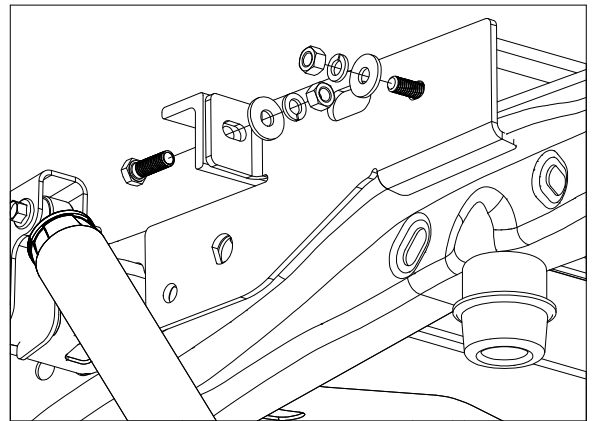


Figure C1: View looking into driver side wheel well.

2. **Place side plate U-bolts.** Place a flat washer, lock washer, and nut on one end of the 2" U-bolt, see Figure C2. Place the other end into the smaller hole at the front of the side plate and twist through the frame until the threaded end is protruding out the other hole of the side plate, as shown in Figure C3. Next place the side plate insert over this end, being sure that the straight edge of the insert lines up with the straight edge of the hole of the side plate and is pushed into the frame all the way. (The insert will not set flush against the side plate when tightened if it is not properly aligned.) Then place a lock washer and nut on the U-bolt and tighten both ends of the U-bolt to 45 ft. lbs., see Figure C4.

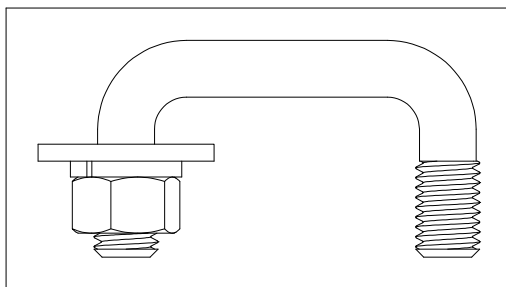


Figure C2: U-bolt preparation.

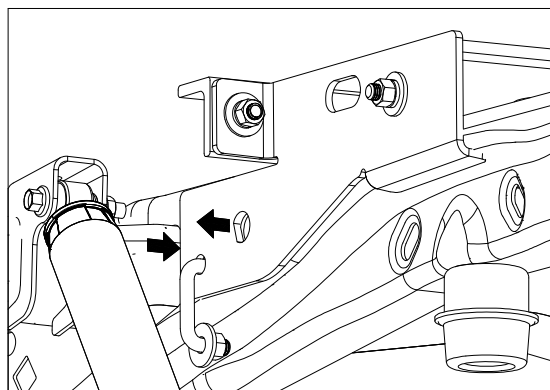


Figure C3: View looking into driver side wheel well.

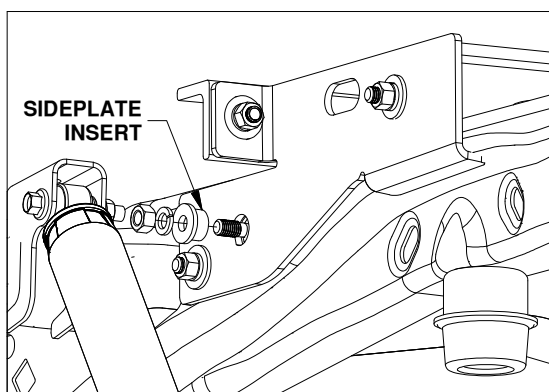


Figure C4: View looking into driver side wheel well.

3. **Tighten hardware.** Next tighten the seven center section bolts to 90 ft. lbs. Then tighten the two bolts that fasten the side plates to the cross members on each side to 90 ft. lbs.

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.** Secure the handle to the pin with the 5/16" X 3/4" carriage bolt and 5/16" locking flange, see Figure D1. 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.

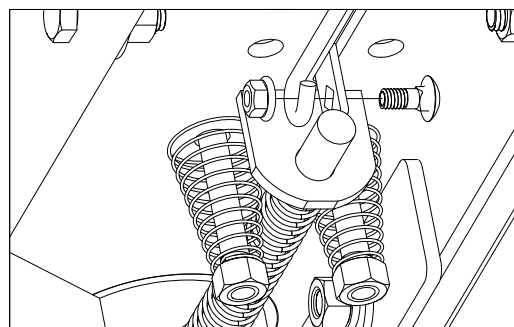


Figure D1: View under center section.

INSTALL SAFETY CHAIN U-BOLTS

WARNING: 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.

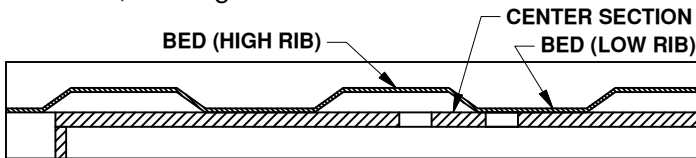


Figure E1: Cut away view of bed and center section.

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.
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 E2. Tighten the lock nut until the nut is flush with the end of the U-bolt.

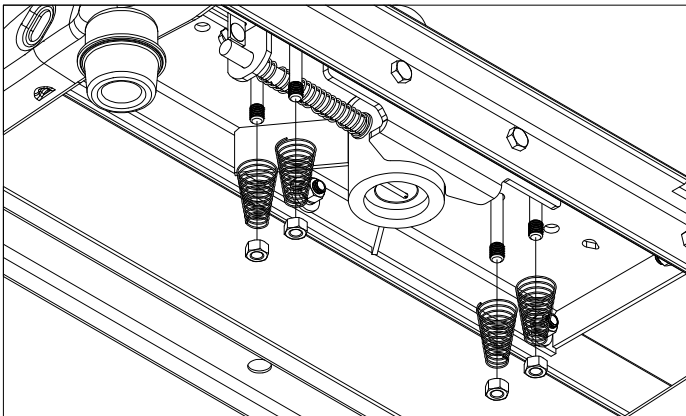


Figure E2: Cut away view from under the bed.

PREPARE FOR TOWING

1. **Replace spare tire** If the spare tire was 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:** 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.
- 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.



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