

<THESE INSTRUCTIONS MUST BE GIVEN TO THE END USER>



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See Limited Lifetime Warranty at
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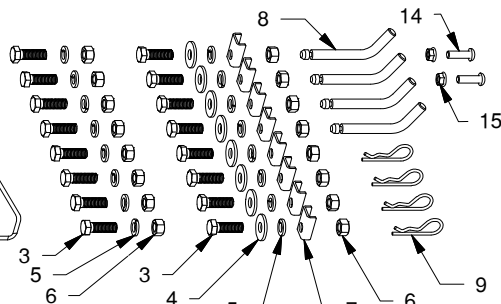
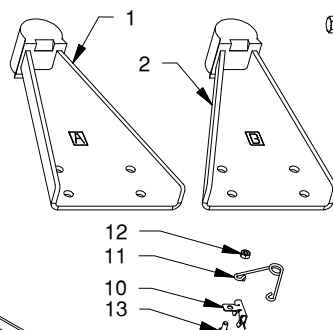
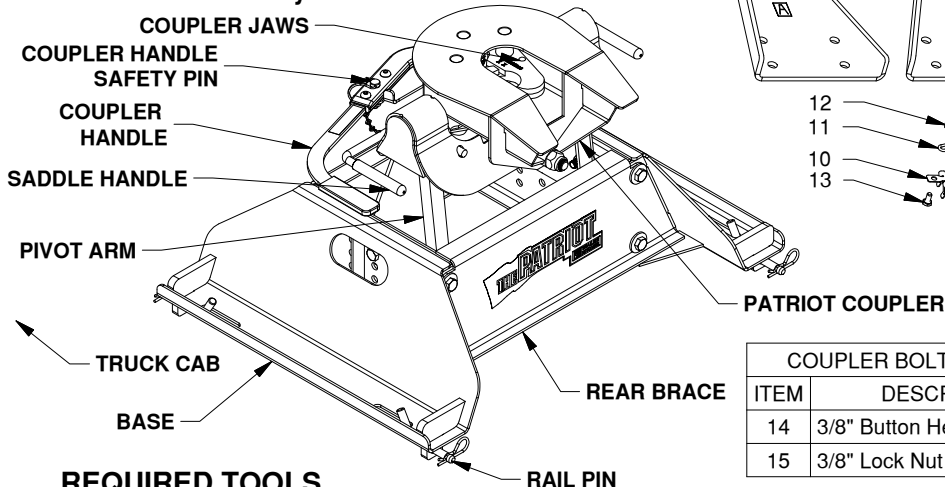
Patriot™ 16K Hitch Installation Instructions

16,000 LBS. TRAILER WEIGHT
4,000 LBS. TRAILER TONGUE WEIGHT

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

Model 3200

Fits Standard Rail Kit Systems



COUPLER BOLT BAG (RVC3200)		
ITEM	DESCRIPTION	QTY
14	3/8" Button Head Cap Screw	2
15	3/8" Lock Nut	2

BASE BOLT BAG (RVB3200)		
ITEM	DESCRIPTION	QTY
1	Pivot Arm A	1
2	Pivot Arm B	1
3	1/2" X 1 1/2" Cap Screw	16
4	1/2" Flat Washer	8
5	1/2" Lock Washer	16
6	1/2" Finish Nut	16
7	Nut Retainer	8
8	Rail Pin	4
9	Hairpin	4
10	Mounting Clip	1
11	Wire Torsion Spring	1
12	1/4" Lock Nut	1
13	1/4" X 1/2" Cap Screw	1

REQUIRED TOOLS

Installation requires a large torque wrench capable of measuring 110 ft-lbs, a 3/4" socket, a 7/16" socket or wrench, a 7/32" Allen wrench, and a hammer.

NOTICE:

Installation of the B&W Patriot 16K hitch requires the use of a rail kit to attach the hitch to the truck frame. See your local B&W dealer for information.



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 to the chassis of any vehicle can be hazardous. There is potential for 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 installation 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.
- 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.
- 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.

PREPARING TO INSTALL

⚠ WARNING: Components of the hitch are heavy and cumbersome to handle. Failure to use proper lifting techniques when moving and handling these parts could result in property damage or serious injury.

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.

ASSEMBLE BASE

1. Mount arms. Mount the pivot arms using one of the twelve different locations illustrated in Table A1 and Figure A2. These twelve locations allow flexibility in coupler height (vertical adjustment) and distance from the cab (horizontal adjustment). Choose a location so that your trailer will be as level as possible and have adequate turning clearance while towing.

Table A1

		HORIZONTAL ADJUSTMENT		
		Position closest to cab.	2" farther back from cab.	4" farther back from cab.
VERTICAL ADJUSTMENT	Highest position 19"			
	Medium position 18"			
	Medium position 17"			
	Lowest position 16"			

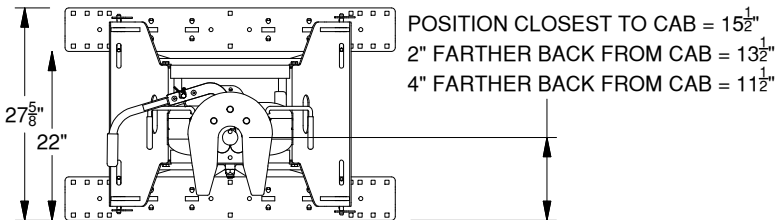


Figure A2: Distance from edge of rear rail to pivot point. (Rails, base, and coupler shown fully assembled.)

⚠ WARNING: Towing without adequate clearance between the trailer and the tow vehicle may lead to property damage or serious injury.

2. Evaluate clearance. Determine if there is clearance between each truck and trailer combination before towing. Measure from the center of the coupler to the cab of the truck and from the king pin or pivot point of the trailer to the furthest forward corner of the trailer, see Figure A3. Compare these measurements to ensure proper clearance when towing. Also, inspect the clearance between the bed sides and the underside of the front of the trailer to ensure there is room for the pitch and roll of the trailer while towing.

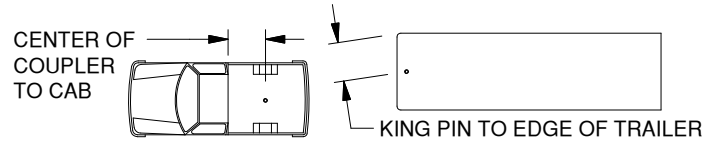


Figure A3: Truck and Trailer

3. Identify mounting holes. Locate both base legs and eight 1/2" cap screws. Identify the mounting holes needed to mount the arms in their optimal location. Pass four 1/2" cap screws through the bottom of the base leg into the bolt plate, as shown in Figure A4.

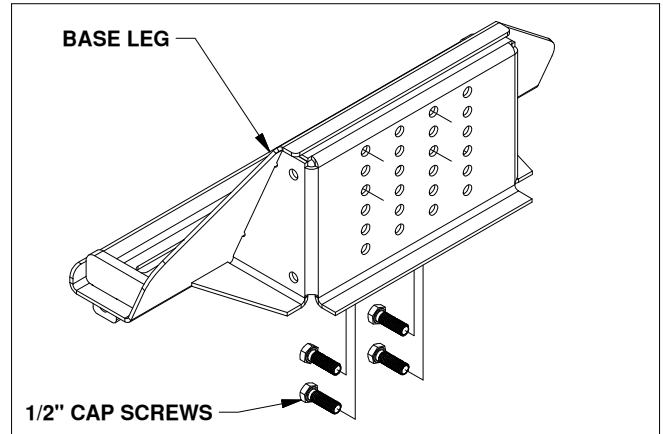


Figure A4: View of base leg.

4. Secure arms. Locate both pivot arms, eight 1/2" lock washers, and eight 1/2" nuts. Place the flat side of the pivot arm over the cap screws and attach eight lock washers and nuts, see Figure A5. Torque each bolt connection to 110 ft-lbs.

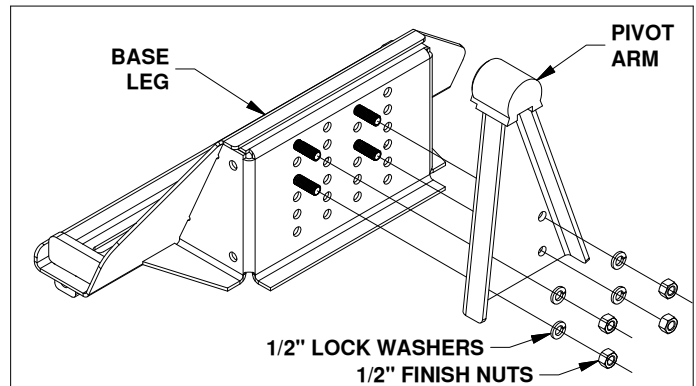


Figure A5: Base leg and pivot arms.

- Attach braces.** Locate the front and rear brace pieces, nut retainers, and the remaining 1/2" cap screws, lock washers, flat washers, and finish nuts. Attach The front and rear brace to the two leg assemblies by passing four 1/2" cap screws with flat washers through each brace and base leg. Inside the leg assembly, place lock washers, nut retainers, and finish nuts on ends of cap screws. See Figure A6. Do not fully tighten the 1/2" cap screws at this time.

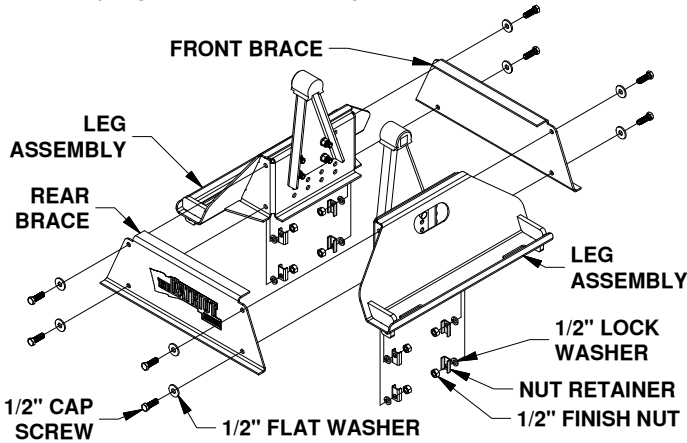


Figure A6: Base assembly.

INSTALL BASE

- Place base.** The base will mount to a rail kit in the truck bed. Remove any debris and/or obstructions from the bed. Position the base over the rail attachment points. Carefully lower it until the pin tabs pass through the attachment points and the base rests flat against the top of the rails, see Figure B1.

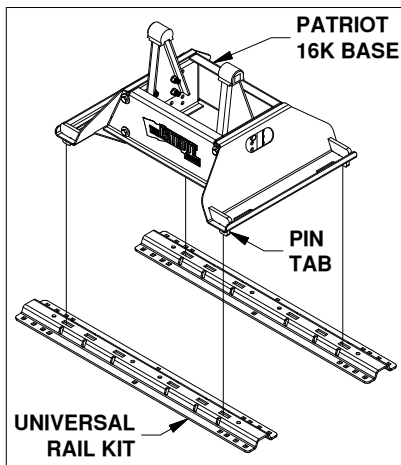


Figure B1: Rail attachment.

- Insert pins.** Locate the four rail pins and hairpins. Insert each pin into the long slots in the base and through the rails. Lock each pin into place with a hairpin, see Figures B2 and B3.

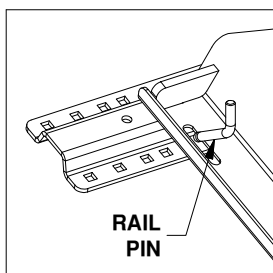


Figure B2: View of base leg.

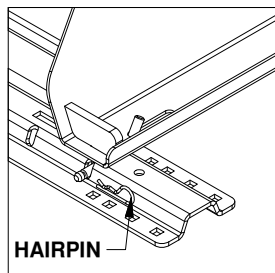


Figure B3: View of base leg.

INSTALL LEVELING KIT

- Assemble kit.** Locate the 1/4" cap screw and nut, along with the wire torsion spring and mounting clip. Pass the 1/4" cap screw through the mounting clip and the wire spring, as shown in Figure C1. Thread the 1/4" lock nut onto the 1/4" cap screw. Tighten the lock nut just enough that the spring will stay in place but will still be able to rotate around the bolt if needed.

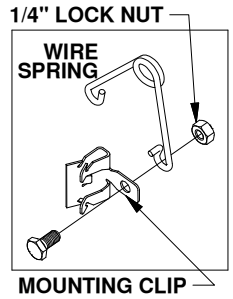


Figure C1: Leveling kit parts.

- Attach kit.** Locate the flange which will be closest to the truck cab on the driver side pivot arm, see Figure C2. The clip should be placed so that when the spring's coil is in the line with the edge of the arm there will be 1/2" of clearance between the bottom of the polyurethane bushing and the top of the spring, see Figure C3. Drive the clip securely onto the flange with a hammer.

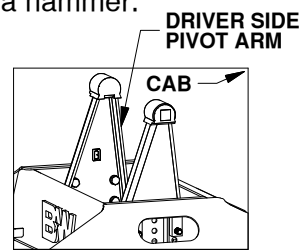


Figure C2: Base view.

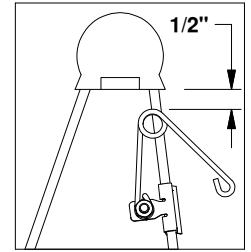


Figure C3: Driver side pivot arm.

INSTALL COUPLER HANDLE

- Install handle.** Locate the two 3/8" x 1-1/4" button head cap screws and the two 3/8" lock nuts provided in a bolt bag. Using the carriage bolts and the nuts, attach the coupler handle to the arm and tighten, see Figure D1.

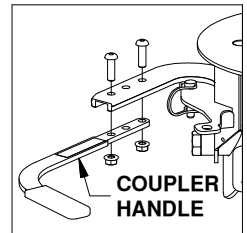


Figure D1: View of coupler handle.

INSTALL COUPLER

- Place coupler.** Lubricate the polyurethane bushings on top of the pivot arms with high grade lithium grease (available at your local hardware/automotive store). Pick up the coupler by lifting up on both saddle handles which will open the saddle latches. Place the coupler over the pivot arms and allow the saddle latches to fall back to their original positions. (The saddle handles should be parallel with the base in the latched position.) See Figure E1.

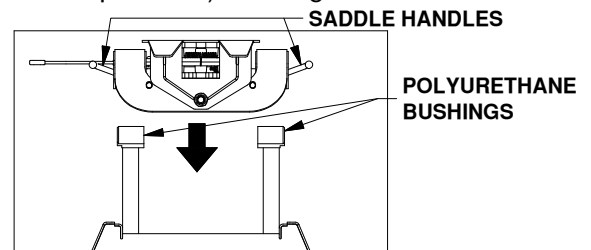


Figure E1: View of coupler and base. (Saddle handles up) PAGE 3 of 4

2. **Set coupler angle.** Adjust the resting angle of your coupler plate by rotating the spring on the driver side pivot arm. Pulling the top of the spring away from the cab will increase the angle of the coupler plate. Set the angle of the coupler so that it will tilt away from the cab when coupling, see Figure E2. Tighten the 1/4" nut once the spring's orientation is set.

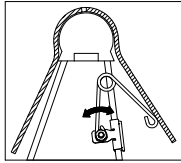


Figure E2: Cutaway view of driver pivot arm and saddle.

TIGHTEN HARDWARE

Tighten and torque each of the eight 1/2" cap screws attaching the front and rear brace to the base legs. The nut retainers installed inside the base assembly will rotate and bottom out eliminating the need for a backer wrench on the inside of the base leg. Each connection must be torqued to 80 ft. lbs.

ATTACHING TRAILER

Remove the safety pin from the coupler handle and open it. Adjust the height of the 5th wheel trailer so that the king pin plate is slightly lower than the top of the coupler. Back the truck toward the trailer, centering the trailer's king pin in the coupler, until the king pin engages the jaws. Close the coupler handle and insert the safety pin through the handle and the coupler. Connect the brake and lighting systems before towing.

⚠ WARNING: Failure to correctly close the handle and attach the safety pin may result in a loss of attachment between the trailer and the tow vehicle, leading to property damage, serious injury, or death.

⚠ WARNING: Towing a trailer without a functioning pivot point between the hitch and trailer will cause significant damage to the hitch which may lead to serious injury or death. Some pin boxes such as a PullRite® SuperGlide capture plate remove the pivot point between a trailer and coupler and should not be used, see Figure F1. Pin boxes with a wedge that relocates the pivot point such as a Reese® Sidewinder or Reese® Revolution may be used, see Figure F2.

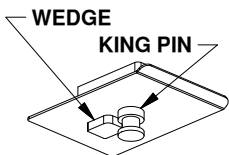


Figure F1: Capture plate.

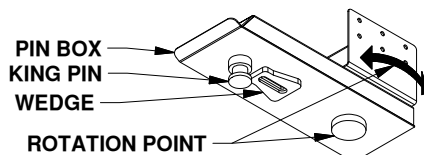


Figure F2: Pin box with rotation point.

PULL TEST

Ensure the truck is stationary with the emergency brake engaged and the tailgate down, trailer wheels chocked, and landing gear down, supporting the trailer's weight. Confirm no one is between the truck and trailer. Release the emergency brake and engage the trailer brakes. Gently attempt to pull the trailer forward with the truck. When properly connected, the trailer will prevent the truck from moving. If the truck and trailer are not correctly attached the trailer will separate from the truck.

UNATTACHING TRAILER

Lower landing gear and chock the trailer wheels. Raise the trailer until the tongue weight is removed from the truck. Then, unpin the coupler handle and rotate to the open position to unlatch the jaws. If the jaws do not open, readjusting the landing gear may relieve pressure and allow them to open. Use the safety pin to lock the handle in the open position and when you are sure that the landing gear will support the trailer, move the truck forward to release the jaws from the king pin. The jaws will always open when the pressure of the trailer is taken off the coupler as the truck pulls away.

UNINSTALL HITCH

To uninstall the hitch, grab the saddle handles and lift to remove the coupler from the pivot arms. To remove the base, remove the rail pins from the base legs and carefully lift and position the base out of the attachment points.

NOTICE: All bolted connections should be checked for the correct torque specification regularly. Always perform a visual inspection before towing.

HELPFUL TIPS:

- Approximately 15%-25% of the trailer weight should be on the hitch.
- The height of the king pin box and pivot arms should be adjusted so that the trailer is approximately level for towing.
- Allow adequate clearance between the bed side and the underside of the front of the trailer for pitch and roll of the trailer.
- Lubricate top surface of coupler with multi-purpose automotive type chassis grease or use a nylon lube plate to provide a lubricated surface.
- Grease jaws with multi-purpose automotive type chassis grease.
- Grease the saddle through the grease zerk approximately every six months with multi-purpose grease. This allows the coupler to pivot freely, see Figure G1.

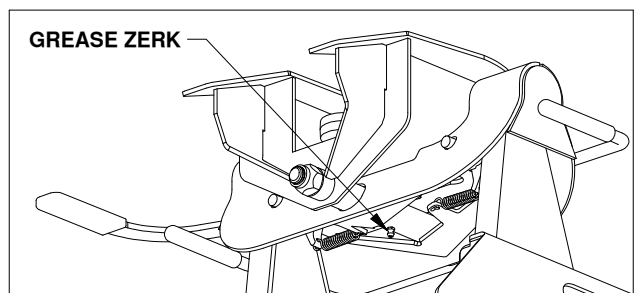


Figure G1: View under saddle.