

# <THESE INSTRUCTIONS MUST BE GIVEN TO THE END USER>



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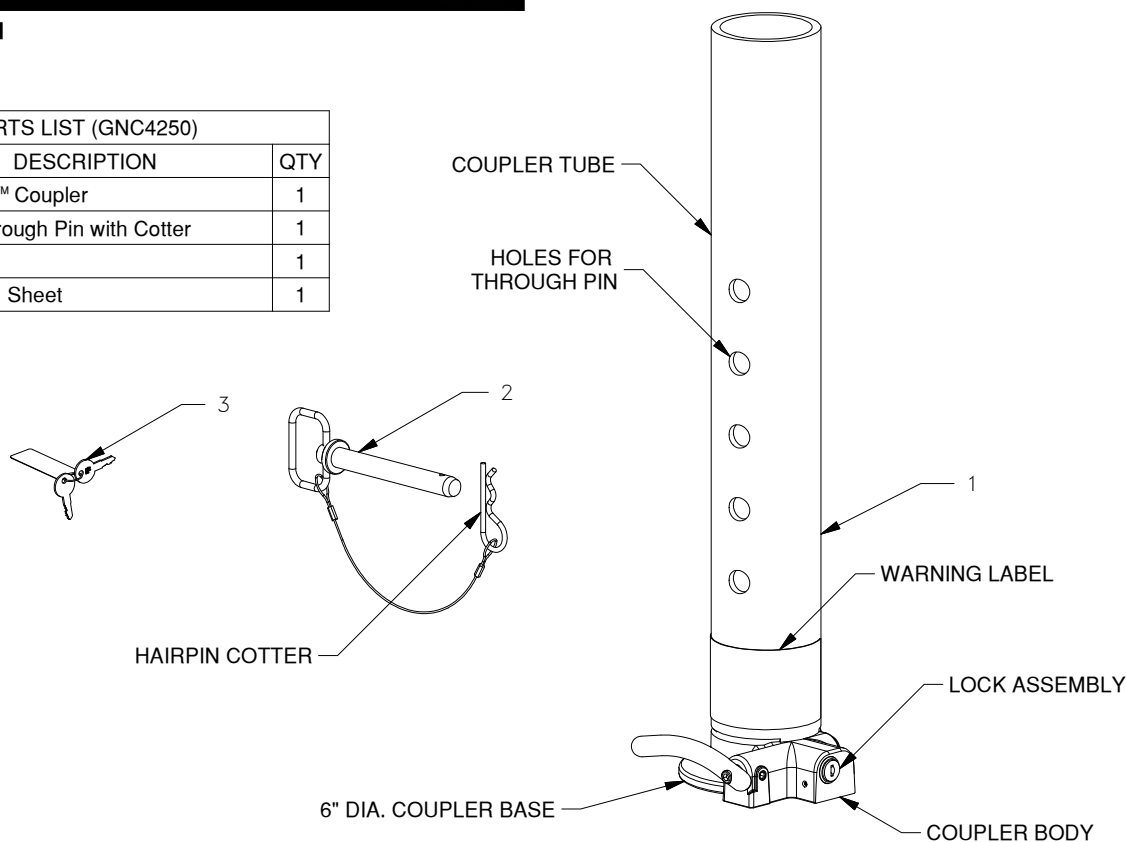
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## Gooseneck Coupler Installation Instructions

# MODEL GNC4250

## Defender™

PARTS LIST (GNC4250)		
ITEM	DESCRIPTION	QTY
1	Defender™ Coupler	1
2	Safety Through Pin with Cotter	1
3	Key Set	1
4	Instruction Sheet	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.
- ⚠** 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](http://www.NATM.com).
- ⚠** 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.
- ⚠** 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 and loss of attachment between the tow vehicle and trailer.

# INSTALLING THE COUPLER

**⚠ WARNING:** The installation of the defender coupler requires two people. One person will need to hold the coupler in place while the other secures it to the trailer. Failure to support the coupler properly during installation may result in minor injury, or may cause damage to the coupler.

1. **Check compatibility.** Measure your towing equipment to ensure that it is compatible. The ball must be an SAE 2-5/16" ball having a 2.283 to 2.313 inch diameter. The trailer tongue must be equipped with a conventional 4" inside diameter round sleeve. At a minimum, the sleeve must have at least one set bolt with jam nut and a through pin, or two set bolts with jam nuts. It is recommended, if possible, that a through pin be used to ensure that the coupler tube cannot rotate. Drill a 7/8" through hole in the coupler sleeve if necessary. Coupler must be mounted so that it is aligned with the centerline of trailer, see Figure A1.

**⚠ WARNING:** Failure to use the proper towing equipment may result in serious injury or death.

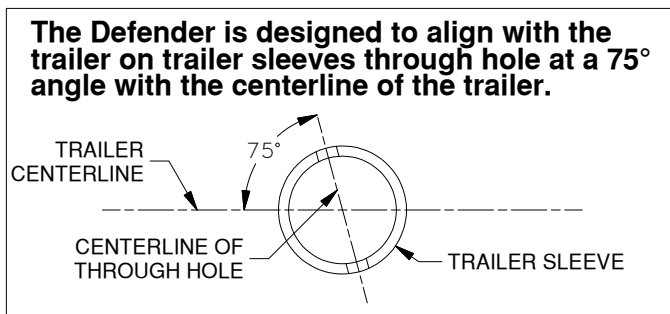


Figure A1: Trailer sleeve hole orientation.

2. **Mark coupler.** With the trailer jacks adjusted so the trailer is in its optimum towing position, determine the distance between the bottom of the trailer sleeve and where the bottom of the coupler will be when coupled to the ball. See figure A3. Mark this position on the coupler.

**⚠ WARNING:** Installing the Defender with more than 12" of the coupler tube exposed past the end of the coupler sleeve could result in serious injury, or death.

3. **Secure the coupler.** With the handle toward the driver's side of the truck, insert Defender coupler tube into the trailer sleeve to the position determined in step 2. **Lower** the coupler to align the trailer sleeve hole (if so equipped) with the nearest coupler tube through pin hole, and secure by installing the safety through pin and cotter. Torque the trailer sleeve set bolts to 125 lbs.

**⚠ WARNING:** Failure to torque set bolts, and/or failure to install cotter on safety through pin, could result in serious injury or death.

**⚠ WARNING:** B&W recommends that you check the clearance between the truck cab and the trailer. Compare the measurement taken from the center of the 2-5/16" ball to the cab, to the measurement taken from the center of the coupler to the farthest forward corner point of the trailer. These measurements will allow you to see how much clearance you will have between the cab and the trailer while towing and turning.

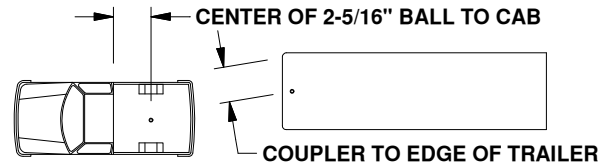


Figure A2: Truck and trailer diagram

**⚠ WARNING:** B&W also recommends that you check the clearance between the bed side and the underside of the front of the trailer and to allow adequate clearance for the pitch and roll of the trailer while towing.

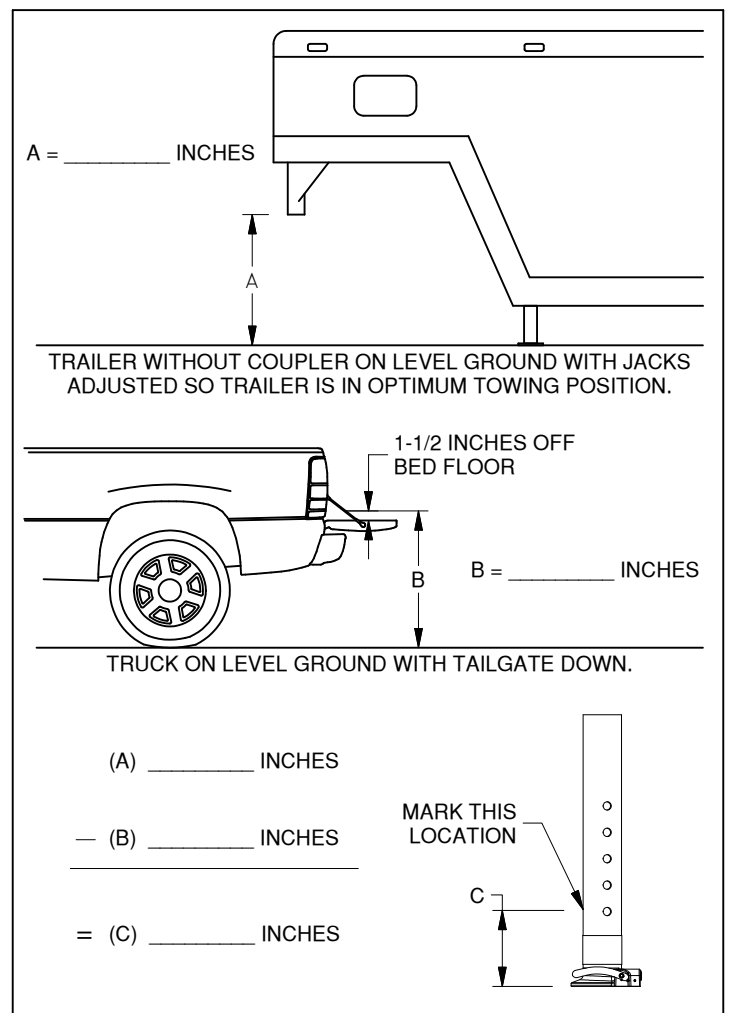


Figure A3: Coupler height determination.

# COUPLING TO A TRAILER

**⚠ WARNING:** Always use safety chains. Failure to use safety chains could result in serious injury or death.

**⚠ WARNING:** Inspect all towing components before towing, including hitch, coupler, trailer, and safety chain system for structural damage. Towing with damaged equipment could result in serious injury or death.

1. **Unlock coupler.** The coupler is locked when the face of the lock assembly is even with body of the coupler, see figure B2. To unlock, insert key and rotate 1/4 turn. When disengaged, the lock assembly will "pop" out so that the face of the lock assembly sticks out from the body of the coupler by about 1/2", see figure B1.

2. **Set coupler position.** Set the coupler to the "open" position. To do this, pull the handle straight out from the coupler about 1", rotate the handle clockwise until it stops, then release. The handle should stay in this near vertical position with about 1" between it and the coupler. See figure B1.

**⚠ WARNING:** Attempting to couple with the coupler locked and handle in the closed position will prevent the coupler from accepting the ball. If coupling is attempted, the ball may appear to be coupled when it is not, and could result in serious injury or death.

3. **Position truck.** Maneuver the truck so that the 2-5/16" gooseneck ball is under the Defender. The center of the ball must be within 2" of the center of the 6" diameter base of the coupler.

**⚠ WARNING:** Keep at least 6" around the coupler free from obstructions and loose objects during towing. Failure to do so could result in a loss of attachment between the truck and the trailer, serious injury or death.

4. **Lower the trailer.** Slowly lower the trailer onto the ball. When the ball is fully engaged in the coupler, the handle will automatically rotate counter clockwise and retract firmly against the coupler housing. This is referred to as the "closed" position. See figure B2.

**⚠ WARNING:** Ensure the ball is fully in the coupler cavity and the handle of the coupler is in the "closed" position before towing. Failure to do so could result in a loss of attachment between the truck and the trailer, serious injury or death.

5. **NOTE:** If desired, it is possible to lock the Defender for added security. With the coupler handle in the "closed" position, push the lock assembly in until it engages. If the lock is engaged, the face of the lock assembly will be flush with the body of the coupler. The coupler cannot be uncoupled while the lock is engaged.

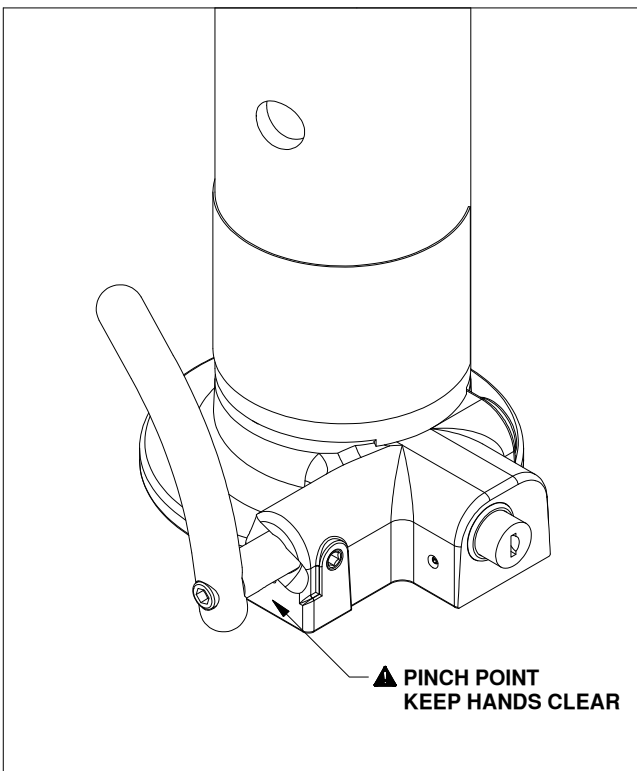


Figure B1, Coupler open position.

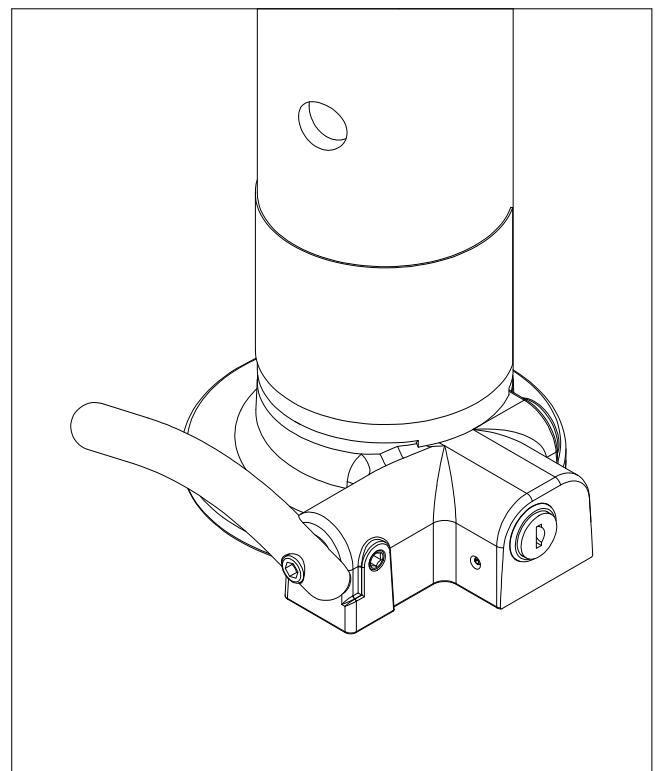


Figure B2, Coupler closed & locked position.

# UNCOUPLING FROM A TRAILER

- 1. Unlock the coupler.** The coupler is locked when the face of the lock assembly is even with body of the coupler. To unlock, insert key and rotate 1/4 turn. When disengaged, the lock assembly will "pop" out so that the face of the lock assembly sticks out from body of the coupler by about 1/2".
- 2. Set the coupler position.** Set the coupler to the "open" position. To do this, pull the handle straight out from the coupler about 1", rotate the handle clockwise until it stops, then release. The handle should stay in this near vertical position, with about 1" between it and the coupler. See figure B1.

**⚠ WARNING:** Attempting to uncouple with the coupler locked and handle in the closed position will prevent the coupler from releasing the ball. If uncoupling is attempted the trailer jacks may begin to "lift" the truck. This could result in significant property damage.

- 3. Raise trailer.** Slowly raise the coupler off of the ball.

**⚠ WARNING:** Use caution when jacking the trailer up and raising the coupler off of the ball the trailer and truck may shift abruptly when they become disconnected, this may cause physical injury.

- 4. Lock the defender.** If desired, it is possible to lock the Defender for added security. With the coupler handle in the "closed" position, push the lock assembly in until it engages. The lock is engaged when the face of the lock assembly is even with body of the coupler. The coupler cannot be coupled to a 2-5/16" ball while the lock is engaged.

## CARE AND MAINTENANCE

*Keep the coupler clean, store it out of the weather, and avoid corrosive environments to maintain peak performance.*

*The Defender should not require extensive maintenance. If a problem with the coupler persists, contact B&W Trailer Hitches for support.*

## TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
Handle will not retract.	Lock is engaged.	Use key & disengage lock.
	Ball is forcing latch against latch pin.	Ensure adequate tonque weight. Rock trailer to make sure the ball is not putting pressure on latch.
	Debris trapped in latch mechanism.	Contact manufacturer for support.
Handle will not rotate to "open" position.	Handle is not pulled out far enough.	Pull handle out until pin bottoms out on set screw, then rotate into "open" position.
	Debris trapped in latch pin mechanism.	Contact manufacturer for support.
Coupler will not accept ball.	Handle is not in "open" position.	Move handle to "open" position.
	Ball is too big.	Use a 2-5/16 sized ball with a diameter between 2.283" to 2.313".
	Debris will not allow latch to swing rearward and accept the ball.	Clean debris from coupler cavity.
Coupler will not release ball.	Handle is not in "open" position.	Move handle to "open" position.
Lock does not disengage.	Debris or corrosion is not allowing spring to push lock assembly out.	Pull on the key to disengage the lock assembly after turning a 1/4 turn.