



# **TURNOVERBALL®**

YOUR TOWING ADVENTURE BEGINS



# DON'T WORRY YOUR HITCH WAS MADE RIGHT HERE.

The only thing keeping your truck and your trailer connected are those relatively small pieces of engineered steel. The hitch you choose matters not only to your safety, but to the safety of our roads.

That's why we treat the manufacture of your trailer hitch with the respect it deserves. We insist on American-made steel, like the sheet steel made in Burns Harbor, Indiana or the round bar made at a mill in Norfolk, Nebraska that becomes the gooseneck ball. When the strength and flexibility of the steel can mean life or death, we trust the U.S. steel mills with their finely controlled processes and specifications we can trust.

Only in America could a small-town farmer start a business in a garage and watch it grow the way B&W has over the last 35 years. The 600 employees in Humboldt, Kansas are proof that American Manufacturing can compete in a global economy. We are grateful that you have put your trust in us.

- Joe Works, Owner



## TOWING AND STOWING

Your Turnoverball has a spring loaded handle attached to a 5/8" steel locking pin that goes through the ball. When you aren't using the hitch, pull the handle in the wheel-well directly toward you and then rotate it slightly to the left. This locks the pin out. Then you are able to remove the ball, turn it over and store it back in the receiver. A hitch when you need it. A level bed when you don't.

Re-engage the latch pin by rotating or pushing the handle to the right. The spring will 'pop' the handle back into place.



## IMPORTANT!

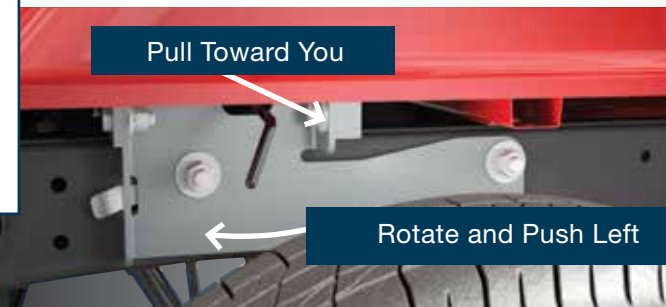
*Always ensure that the pin is engaged through the ball when towing.*

### TO ENGAGE PIN



Rotate and Push Right

### TO LOCK OUT PIN



Pull Toward You

Rotate and Push Left

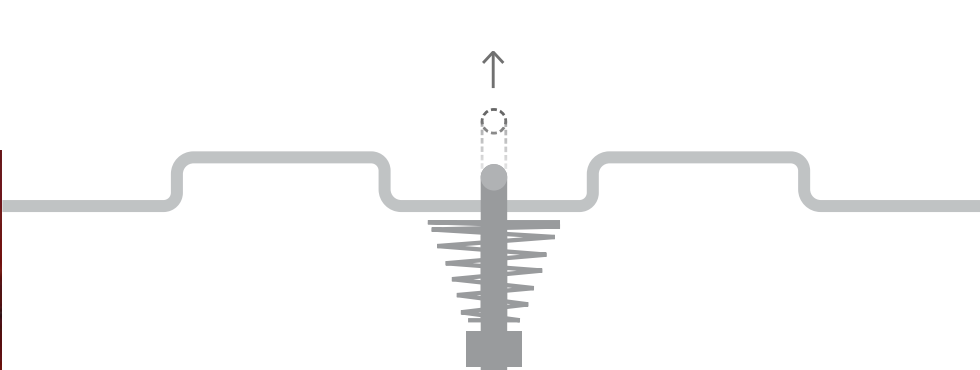
### B&W TIP:

Over time, dirt and grime may build up on the spring under the bed. If you 'pop' the handle a couple of times, this can help keep the spring clean and able to compress completely.



## SAFETY CHAINS ARE REQUIRED ON OUR HIGHWAYS

To hook up your safety chains, lift the top of the u-bolt and attach the chain. Leave only enough slack in the chains to allow full turning. Excess slack may prevent chains from maintaining control in the event hitch connection fails.



Our safety chain u-bolts are designed to sit down in the lower corrugation of the truck bed, whenever possible.

They are spring loaded making your truck bed level when you are not towing.

# KNOW BEFORE TOWING

Your Turnoverball Gooseneck Hitch is rated to tow what your truck is rated to tow. We rate our hitch this way to stress the importance of knowing and calculating the weight and towing limits of your particular truck, because it is very important. Detailed instructions related to weight ratings are found in this booklet.

Truck manufacturers give their trucks specific ratings after extensive testing. For tow ratings, the truck must be able to accelerate, and stop a loaded trailer.



Tow ratings are based on the capacity of a truck's engine, transmission and brakes to safely handle the weight of a loaded trailer. For Gross Weight Ratings, the truck's tires, frame, and suspension must be able to bear the load. We don't want to give you a false sense of security by rating our hitch higher than your truck's ratings.

All of our hitches are tested for both strength and durability according to SAE J-2638, the latest standard for fifth-wheel and gooseneck hitches.

Without proper knowledge, towing can be a dangerous activity. If you are new to towing, we recommend

**"The Trailer Handbook: A Guide to Understanding Trailer and Towing Safety"**

from the National Association of Trailer Manufacturers.

This booklet is available by going to NATM.com.



# FINDING MANUFACTURER WEIGHT LIMITS

Information for 2010 and newer truck models can be found on B&W's website, [HowMuchCanITow.com](http://HowMuchCanITow.com).

Locate your **Gross Vehicle Weight Rating (GVWR)**.

This is the maximum allowable weight of the fully loaded vehicle.

You can find this, most likely, on the sticker inside your driver's side door.

GVWR

You should also locate your **Gross Combined Weight Rating (GCWR)**

from your truck manufacturer. This is the maximum allowable weight of the tow vehicle and the loaded trailer including all cargo and passengers. Find this in your owner's manual or by calling your truck dealer.

GCWR

And finally, locate your **Max Tow Rating**.

It is sometimes located in the truck owner's manual or look for it at [trailerlife.com/trailer-towing-guides](http://trailerlife.com/trailer-towing-guides).

MAX TOW RATING

B&W recommends that your **Vertical Towing Weight Rating (VTWR)** for your hitch be no more than 25% of your truck's Max Tow Rating.

Make this calculation:  $\text{Max Tow Rating} \times .25 = \text{VTWR}$

VTWR

Once you have located your truck manufacturer's weight ratings, transfer them into the corresponding boxes on the next two pages.

# FINDING YOUR ACTUAL WEIGHTS

Take your loaded truck and loaded trailer to a scale at a truck stop, quarry or material supply center. For a small fee you can weigh your tow vehicle and trailer on their scale.



|               |                   |                 |
|---------------|-------------------|-----------------|
|               | MUST BE MORE THAN |                 |
| <b>GVWR *</b> |                   | <b>your GVW</b> |



|               |                   |                 |
|---------------|-------------------|-----------------|
|               | MUST BE MORE THAN |                 |
| <b>GCWR *</b> |                   | <b>your GCW</b> |

## 1. Find your GVW (Gross Vehicle Weight)

Weigh just your truck with a full tank of gas, all your passengers and items in the cab and truck bed with your trailer loaded and attached, but not on the scale.

Do Not Exceed Your Truck Manufacturer's **GVWR**

## 2. Find your GCW (Gross Combined Weight)

Weigh your fully loaded truck and trailer including all cargo, a full tank of gas and passengers.

Do Not Exceed Your Truck Manufacturer's **GCWR**

\* Transfer Manufacturer's Ratings from previous page.



|                 |   |                          |   |                           |
|-----------------|---|--------------------------|---|---------------------------|
|                 | − |                          | = |                           |
| <b>your GCW</b> |   | <b>your Truck Weight</b> |   | <b>your Towing Weight</b> |



|                       |                   |                           |
|-----------------------|-------------------|---------------------------|
|                       | MUST BE MORE THAN |                           |
| <b>MAX TOW RATING</b> |                   | <b>your Towing Weight</b> |

|                 |   |                          |   |                 |
|-----------------|---|--------------------------|---|-----------------|
|                 | − |                          | = |                 |
| <b>your GVW</b> |   | <b>your Truck Weight</b> |   | <b>your VTW</b> |



|               |                   |                 |
|---------------|-------------------|-----------------|
|               | MUST BE MORE THAN |                 |
| <b>VTWR *</b> |                   | <b>your VTW</b> |

## 3. Find your Towing Weight

Weigh your loaded truck without the trailer attached. This is your truck weight.

Subtract your Truck Weight from your GCW. This is your towing weight.

## 4. Find your VTW (Vertical Tow Weight) also known as Tongue Weight

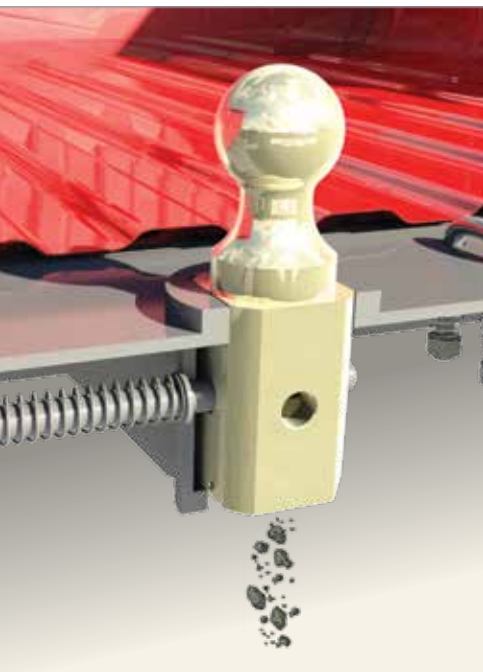
Subtract your Truck Weight from your GVW.

### IMPORTANT!

Even though you may be under your vehicle's Max Towing Rating, when your Gross Vehicle Weight (GVW) goes up, (more passengers, more cargo) your ability to tow the Max Towing Rating may not be possible, because:

THE GROSS COMBINED WEIGHT RATING (**GCWR**) MUST NOT BE EXCEEDED.

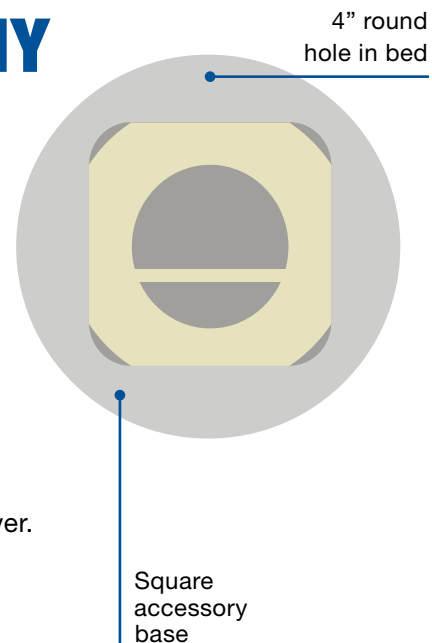
# A HITCH THAT WORKS AND WHY



While some gooseneck hitches on the market offer round bases on their gooseneck ball, we like our square post in a round receiver.

## HERE'S WHY:

1. For the same reason you don't see round receivers on bumper hitches, we like the security of a square receiver.
2. The holes for the latch pin line up in every direction.
3. The roomy round socket, open at the bottom, gives dirt a place to go rather than clogging up the receiver.



**BW**  
TRAILER HITCHES

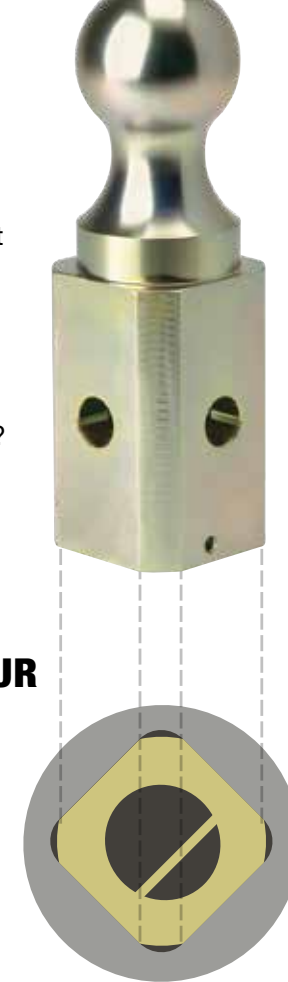
**MULTI-PURPOSE**  
WHITE LITHIUM GREASE

- Lubricates and Protects
- Water Resistant
- Single Use

LOVE YOUR HITCH  
**LONGER!**  
Net Wt. 7 g

4. A tight fit is what you need for a rattle-free towing experience and tight tolerances in our ball and socket have given users a smooth ride for over 25 years.
5. But tight tolerances might mean that the ball seizes up in the socket, right? Not when the socket is round! The four rounded corners of the ball are what contact the socket. Keep your corners lubricated for ease of use.

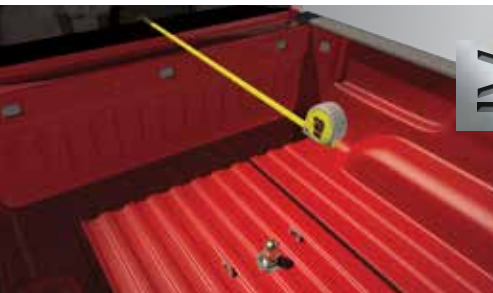
**APPLY GREASE TO ALL FOUR POINTS OF CONTACT**



# CHECK YOUR TRUCK AND TRAILER CLEARANCE

Because there are so many different types of trucks and trailers, manufactured with different dimensions, it is necessary to measure for adequate turning clearance between the front of your trailer and the truck cab. Use your best judgement.

*When making tight turns, your trailer could encounter your cab!*



IV

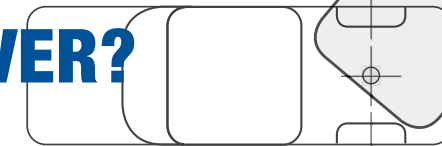
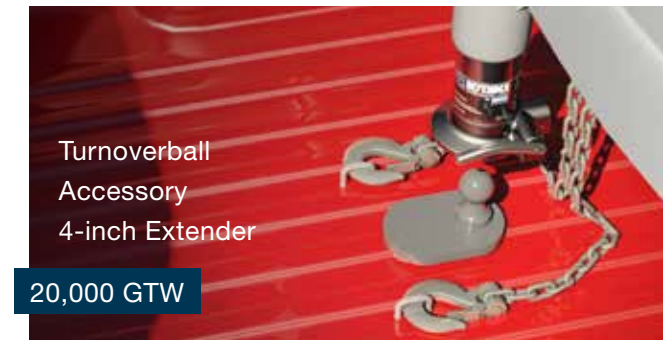
**1.** Measure from the hitch ball to your truck cab.

**2.** Measure from the coupler to the farthest trailer edge.

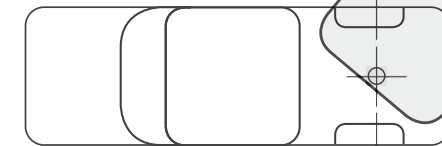
If the first measurement is greater than or equal to the second measurement, technically, you can make a 90 degree turn. Remember, you need to allow extra space for maneuvering.

## WANT MORE ROOM TO MANEUVER?

Consider these two Turnoverball Accessories.

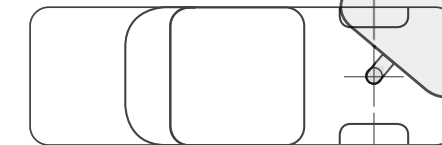


4-inch Extender moves the **Pivot Point** rearward **4"**



Weight shifts toward back of truck.

Extend-A-Goose Coupler moves the **Trailer** rearward **10"**



Weight remains over the axle.

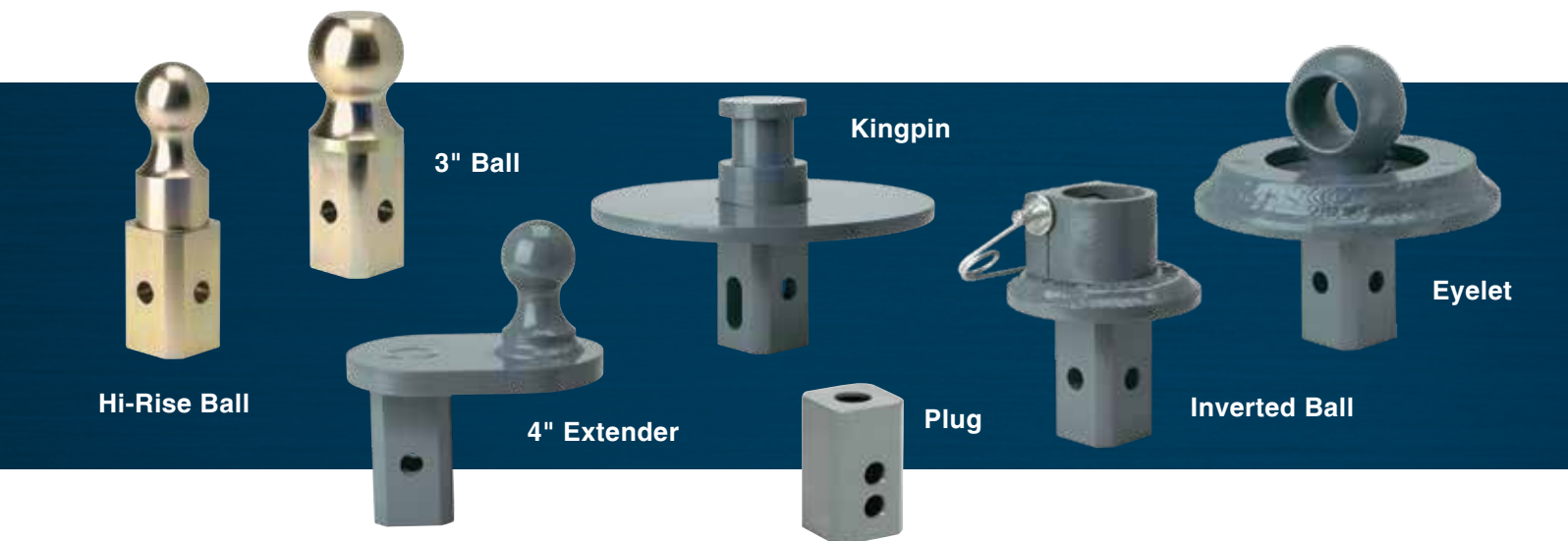
# TURNOVERBALL ACCESSORIES

**The Turnoverball is a versatile mounting system for other types of hitches, as well.**

These accessories to the Turnoverball allow you to pull other trailers with the same system.

Check them out on our website then visit your local dealer to order.

[www.bwtrailerhitches.com](http://www.bwtrailerhitches.com) or call us direct at 800-248-6564.



**If you tow a fifth wheel trailer, or you are considering towing a fifth wheel trailer,** the Turnoverball is able to accommodate both of our single-point attachment hitches. The Companion 5th wheel hitch and Companion Slider 5th wheel hitch have a post that fits directly into the Turnoverball socket. Place either one directly into the same receiver hole that the Turnoverball gooseneck ball uses.



**Companion 5th Wheel RV Hitch**

Plug into the Turnoverball socket for towing a fifth wheel RV.



**Companion Slider 5th Wheel RV Hitch**

Plug into the Turnoverball for extra turning clearance when towing a fifth wheel RV with a short bed truck.

“AN ACCIDENT RARELY HAPPENS WHEN A HITCH IS BRAND NEW. IT HAPPENS AFTER YEARS OF WEAR FROM THE ROAD.”

TAYLOR JONES,  
DIRECTOR OF ENGINEERING



Watch how  
we test.

## WHAT TESTING STANDARDS EXIST TODAY FOR GOOSENECK AND FIFTH WHEEL HITCHES?

SAE J2638 is the standard that establishes the minimum performance criteria for gooseneck and fifth-wheel hitches up to 30,000 lbs. Currently, the standard is a recommended practice and NOT a requirement to sell or use a trailer hitch.

However, I strongly believe that anyone towing a gooseneck or fifth-wheel should be using equipment, whether it's ours or another brand, that has been tested and passes the J2638 standards. I recommend customers ask before buying.

## WHAT DOES SAE J2638 REQUIRE?

The standard requires hitches to complete non-independent tests without loss of attachment. This means that if the damage occurred while driving, it would not allow the trailer to separate from the truck.

The nine tests include static tests of force against the hitch in six directions and three dynamic tests of 300,000 cycles each. And while the standard allows you to use a different specimen for each test, my personal requirement for B&W is that a single specimen pass the dynamic tests and then also pass the static tests. I think this reflects what happens in the real world. An accident rarely happens when a hitch is brand-new. It happens after years of wear from the road.

## HOW DOES B&W USE THE TESTING STANDARD?

Before we build a trailer hitch, we model it using CAD software. Then, in a digital environment, we subject it to the types of forces we know exist, using FEA (Finite Element Analysis). This modeling gives us a good idea of what we will see on the testing equipment and in real situations. From there, a prototype is built and we run it through the full gamut of J2638 tests at the max tow rating for the truck it is designed to fit.

After the J2638 testing is complete, we also subject our designs to real world testing by using them to tow heavy trailers with different types of loads. We've been collecting data on how hitches perform for a long time. When we see hitches that have been in accidents, it confirms the data that we have. It's reassuring to see our hitches perform on the road the way we predicted in the lab.

## TESTING TERMINOLOGY



### STATIC

Load is applied at an even rate to determine the structural integrity and absolute strength of the structure. Static tests simulate extreme load situations, such as hard braking.

### DYNAMIC

A load is applied, released, then applied again to determine the overall structural integrity and its resistance to fatigue failure. Dynamic tests simulate thousands of miles of extreme use.



## PLAIN TALK ABOUT OUR WARRANTY

We are confident that our products are made without design or quality defects. However, if you believe that one of our products doesn't live up to our standards, we would make it right with you, our customer.

If your product suffers damage because of an accident or misuse on your part, we will work to get you back on the road with as little cost and hassle to you as possible, because that is just being a good neighbor.

We can't keep your product in 'new' condition. Your product, and the finish will age through normal wear and tear. You should only use our products in the manner intended in their design. Most of our products require some maintenance to continue to work as they did when they were new.

We appreciate it when our customers register their products with us. However, we offer our warranty even if you don't.

To register your product or download a copy of our limited lifetime warranty, visit [www.bwtrailerhitches.com/warranty](http://www.bwtrailerhitches.com/warranty).



# OUR AMERICAN DREAM STORY

Like many, ours began in a garage in 1987, with two men and an idea. Roger Baker and Joe Works (the 'B' and the 'W') began building custom truck beds and quickly recognized a way to improve the inconvenience of a gooseneck ball permanently welded in the bed. They designed a gooseneck hitch with the mounting hardware underneath the bed and a ball that turned over and stowed where it was used. The Turnoverball® Gooseneck Hitch was born.

A few years later, they applied the same concepts to fifth-wheel hitches. Using the same under-bed mounting hardware and hole in the bed, they designed the Companion™ with a single-point attachment that was removable when not towing. They also designed the Companion to be quiet and smooth when towing.

While competitors take manufacturing to China and Mexico, Joe (Roger retired in 1999) remains committed to using American-made raw materials and American Labor.

“You don’t work for me, you work for the customer. We can compete in this global economy by designing better, using technology, and truly caring about our customers,” Joe affirmed.

Our product line now includes all types of towing products manufactured under the 650,000 sqft. facility. In 2007, Joe began transferring ownership of the company to us, the now more than 600 employee-owners.





**800.248.6564**

B&W Trailer Hitches | 1216 Hawaii Road | Humboldt, KS 66748

Live chat with us on our website [bwtrailerhitches.com](http://bwtrailerhitches.com)

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# This manual is provided courtesy of **RV Tech Cheat Sheet**



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Follow proper safety practices. If in doubt, consult a professional RV technician.