

Setting the Ball Mount

The most important piece of a conventional weight distribution system is the “hitch head” assembly, it is made up of three parts, the ball, shank and ball mount.



The Shank

The shank portion can be a simple section of 2x2 solid steel for welded hitch heads.

Bolt together heads require this “L” shaped assembly with a series of holes for adjustment. This bolt together shank is made up of three pieces welded together, the shank, the vertical bar with the adjustment holes in it and the triangular gusset.

Before we get into that however we want to get the ball as close to the bumper as possible to minimize rear overhang. One of the simplest ways to improve both accident avoidance and straight line handling is to minimize the rear overhang. You cannot make your tow vehicle shorter but you can often move the ball closer to the back of the tow vehicle. As overhang increases handling degrades exponentially so even a couple of inches can make a substantial difference on most combinations. Considering how easy it is to do it is worthwhile. Other benefits of moving the ball in closer are reduced pressure on the torsion bars to obtain the same weight transfer a smoother ride and less flexing of the hitch receiver. One disadvantage is that you give up a tiny bit of turning radius.

In order to move the ball in closer you will likely need to drill a new hole in the shank. Drilling a 5/8” hole is beyond the capability of many RV stores but it is easy for any machine shop to do. Occasionally the end of the shank needs to be cut off to allow it to go in all the way, again a machine shop can easily handle that.



Unfortunately most new hitches are coming with a cheaper cast iron shank which adds too much rear overhang and fits too loose in the receiver. They cannot be re-drilled to move in closer.

This is not a big issue when the hitch receiver is 2 or more inches lower than the ball height as we can use a welded ball mount.



On applications where the receiver is higher than the ball height we have our own extended drops made to a very high standard out of North American Steel. This keeps the ball in nice and close and reduces play in the receiver.

The Ball Mount

Attached to the shank is the “Ball Mount” This can be welded (the one on the right) or bolted to the shank depending on the design. This is where most hitch installations go wrong the height and angle of the ball mount are critical to maximize handling stability.



Now that Shank is ready it is time to weld or bolt it together. To do so you need both the trailer and tow vehicle sitting on a level cement pad if possible. Often you can find one at a large gas station. If you cannot find a cement pad then a section of newer flat asphalt will do.

To determine the ball height of the Trailer you level it by measuring from the frame to the ground on the 4 corners. Do not be alarmed if there is some differences side to side; simply average the measurements until it is as level as possible. Then measure the distance from the ground to the top of the coupler where the top of the ball would be. When you bolt the ball mount together the top of the ball should be equal to or very slightly higher than the ball height of the trailer.

The ball mount should be tipped backwards (top away from the tow vehicle) as much as possible while still allowing the ends of the torsion bars some ground clearance. Adjust the rearward angle so the ends of the torsion bars are 3-4" off the road at rest with the play lifted out of them. This will look very low but remember the ends of the bars will be higher once tension is applied to them.



A welded ball mount with a 1000 pound Eaz-Lift with friction sway controls. Connecting a 30' Airstream and a Porsche Cayenne. Not how close the ball is to the bumper and how compact the ball mount is when you disconnect. Note the reward angle of the Ball Mount

This works better than the bolt together but changing vehicles means cutting and re-welding

This is how 700 pounds of hitch weight is distributed on this combination.





This a bolt together ball mount with the shank re-drilled to keep it close to the vehicle.
Again note the Reward angle of the ball mount.



Can-Am extended drop shank Joining a Ford Explorer and 25' Airstream

. The setting of the ball mount is the most important part of your hitch set up yet very few are done properly. Next see the sheet on setting the torsion bars to get them set properly and sadly few people know how well their trailer could tow with a few adjustments.

Andy