

## Hitch Setup

There are many different brands of weight distribution (WD) hitches, but the basic setup process is similar. Outlined below are the steps you will need to follow to ensure that your WD hitch is set up correctly. Should you change tow vehicles or trailers in the future you will want to do this again to make sure it is set up for the new tow vehicle or trailer.

These instructions are somewhat generic. You should consult the manufacturer's instructions for additional information and exact assembly instructions.

Instructions for Reese/Draw-tite hitches can be found at:  
<http://65.196.229.70/pdf/N3201.pdf>

Instructions for the Dual-cam can be found at:  
<http://www.reeseprod.com/support/support/pdfs/26000IN.pdf>

Instructions for Eaz-lift hitches can be found at: <http://www.eaz-lift.com/EAZLIFT.pdf>

The purpose of a weight distribution hitch is to remove some of the weight added to the tow vehicle's rear axle and place some of it on the tow vehicle's front axle and some on the trailer axles. When properly set up, the trailer should be level and the tow vehicle has settled (or squatted) evenly front to rear or slightly lower in the rear.

For optimum performance of the weight distribution hitch, the tow vehicle should be loaded similarly as to when you would be towing. That means that you should load all the people and cargo into the tow vehicle as if you were going on a trip with your trailer. You may want to do this near your home so that your family doesn't have to sit in the tow vehicle while you take measurements and make adjustments. It may also help to have a friend take the measurements outlined below, or find a friend that weighs about the same as you to simulate you in the tow vehicle while you take the measurements.

If the tow vehicle has an automatic suspension leveling system, you will need to deactivate it before coupling the trailer to the tow vehicle, but after and passenger or cargo weight has been added.

### **Step 1 Level the trailer.**

Find a level piece of pavement to park on for awhile (this may take some time). With the trailer disconnected from the tow vehicle, use a tape measure and the tongue jack to level the trailer. Measure from the ground to some part on the trailer (like the frame) at the front and at the rear of the trailer. Use the tongue jack to raise or lower the front of the trailer until it is parallel to the ground. (The trailer may not be “level”, but it needs to be parallel to the ground.)

### **Step 2 Measurements.**

Now that you have the trailer level, it’s time to take some measurements on both the trailer and the tow vehicle. Use a piece of tape to mark each spot because you will need to take the measurements again later. Put a piece of tape at the spots you measured on the trailer to get it parallel to the ground. Put a piece of tape at the top of the front and rear wheel openings on one side

Write down your measurements here:

Tow vehicle front wheel opening height: \_\_\_\_\_

Tow vehicle rear wheel opening height: \_\_\_\_\_

Front of trailer height: \_\_\_\_\_

Rear of trailer height: \_\_\_\_\_

Measure from the ground to the top of the trailer coupler and write down the measurement here: \_\_\_\_\_

### **Step 3 The hitch assembly.**

There are usually three separate parts to the hitch assembly:

The shank. This part is what slides into the receiver on the tow vehicle and is usually in the shape of an “L” or a “T”.

The hitch head. This bolts onto the shank and is usually adjustable in height and angle.

The ball. This attaches to the hitch head.

I would suggest that you have an RV dealer or auto repair facility attach the ball to the hitch head because they will usually have the proper tools to do this. The nuts and bolts used to attach the hitch head to the shank are usually pretty large. If you don't already have the right tools, I suggest getting 2 adjustable wrenches to do the job. If the hitch assembly is already put together, you may need an RV dealer or auto repair facility to loosen the bolts that attach the hitch head to the shank.

With the tow vehicle near the trailer, slide the shank into the receiver, insert the retaining pin and safety clip. Position the hitch head so that the ball height is slightly higher than the measurement you took of the trailer coupler. Many brands suggest 1/16" per 100 pounds of tongue weight (1/8" per 100 pounds for light duty trucks or cars). If you don't know the exact tongue weight (from a scale), look for the tongue weight on the weight sticker on the inside of a cabinet inside the trailer. Close is usually good enough. When in doubt, set the ball higher than the coupler.

The angle of the hitch head is usually adjustable. Start with a setting somewhere near the middle of the available range. This is the part that may need to be adjusted again later depending on the final outcome. When you put the spring bars (sometimes called torsion bars) into the hitch head and pointed in the direction of the trailer, the ends of the bars should angle down towards the ground slightly. You can go ahead and try this now, but remove the bars before continuing to the next step.

Tighten all nuts and bolts before proceeding to the next step.

#### **Step 4 Hitch it up.**

Raise the trailer tongue so the ball can fit underneath when backing the tow vehicle so the ball can be positioned underneath the coupler. Lower the trailer tongue until the coupler comes to rest on the top of the ball without putting much weight on the hitch and the coupler latch can be locked in place.

Using the tongue jack, raise (or lower) the front of the trailer until it is level again. Insert the spring bars into the hitch head and swing the other ends towards the trailer. With the saddles in their upright position. Lift up on the chain so it is close to the saddle. Lift up firmly on the chain and mark the chain link that is below the saddle. You will use this link as a starting point for hooking into the saddles.

Use the tongue jack to raise the trailer tongue about 2". Remove the retaining clip and lower the saddles, insert the desired link into the saddle, raise the saddle back up to its vertical position using the removable handle/bar and insert the retaining clip. Use caution when raising the saddle back to vertical. Excessive pressure could cause the saddle to act as a sling-shot with the handle/bar. If you don't have the strength to lift the saddle back to vertical, raise the trailer tongue a bit more and try again.

The end goal is to have the spring bars reasonably close to parallel to the trailer tongue. This may require one or more chain links dangling loose from the end, and may require that you use the tongue jack to raise the tongue slightly to accomplish this. Make sure the coupler is locked in place to the ball before raising the trailer tongue.

With both spring bars attached, chains snapped up and retaining clips in place, lower the trailer tongue so that all its weight is on the hitch and the tongue jack is not resting on the ground.

### **Step 5 Measure again.**

Take the same measurements you did earlier and compare them to the originals.

The “ideal” result is that the trailer sits level front to rear, the tow vehicle squats (lowers) a bit in the front (but not much), and the tow vehicle squats 1”-2” in the rear (depending on total tongue weight).

If the ideal result has not been obtained, don’t worry, it rarely happens on the first try. Depending on where things are not ideal will determine where you need to make the adjustments.

### **Troubleshooting**

Let’s start with the tow vehicle.

**A.** Does the tow vehicle squat correctly (a little or none in the front and the same or a little more in the rear)?

If yes, move on to D.

If not, go on to B.

**B.** Is the front of the tow vehicle higher with the trailer attached than it was without the trailer attached.

If not, move on to C.

If yes, there is probably not enough tension on the spring bars. You will need to increase the angle of the hitch head according to the manufacturers methods. After making the

adjustment, re-measure and start again at A. If this does not correct the problem, it may also be necessary to raise the hitch head on the shank.

**C.** Does the rear of the tow vehicle drop more than 1"-2" with the trailer attached?

If not, move on to D.

If so, there is probably not enough tension on the spring bars. You will need to increase the angle of the hitch head according to the manufacturers methods. After making the adjustment, re-measure and start again at A.

**D.** Are the spring bars close to parallel to the trailer tongue/frame (or adjusted according to the manufacturer's specifications)?

If so, move on to E.

If not, you need to adjust the angle of the hitch head accordingly. Make the adjustment, re-measure and start again at A.

**E.** Is the trailer parallel to the ground or slightly lower in the front than the rear?

If so, this should do it, but check out G below (just in case).

If not, move on to E.

**F.** Is the trailer higher in the front than the rear?

If not, move on to G.

If so, you need to lower the ball by lowering the hitch head on the shank. If you have gotten this far, that means the tow vehicle is sitting reasonably well, but lowering the ball may change things. While making the height adjustment, also reduce the angle of the hitch head. Re-measure and start again at A.

**G.** Since you've gotten this far, the front of the trailer must be sitting lower than the rear, so here is the final question...

Is the height of the hitch head adjustable by less than the difference in height between the front and rear of the trailer?

Now that may sound confusing so let me give you an example. If the trailer is 2” lower in the front than the rear and the hitch head can be adjusted in 1-1/2” increments, then you need to make that adjustment, re-measure and start again at A.

But if the trailer is only 1” lower in the front than the rear and the hitch head can be adjusted in 1-1/2” increments, then that’s it!

With all of the different adjustments you can make, it may be difficult to find the right combination of hitch head height and angle. You may find yourself taking it apart and putting it back together a dozen times until you find the right combination. Make good notes as you make your adjustments so if you make a change and it makes things worse instead of better, you may need to make a different type of adjustment.

**Congratulations!!!** You have successfully set up your weight distribution hitch.

Now that you have everything hitched up and level, this would be a good time to see exactly how tall your trailer is. Measure from the ground to what you think is the highest point on the side of the trailer. Then climb up on the roof\* to see if there is anything taller than where you measured to, like a roof-top air conditioning unit or vent cover. Add the appropriate distance, and add a few more inches for a safety margin. Write this measurement down on a piece of tape and stick it on the front windshield pillar (driver’s side of course) or some other convenient place. This way, when you pull into a gas station or approach a low bridge or other structure, you’ll know if your trailer will clear it or not.

\* Check with your RV dealer or manufacturer before climbing up on the roof to make sure it can support your weight. If not, use a ladder up against the side of the trailer and do not get up on the roof.

*Hitch setup*