

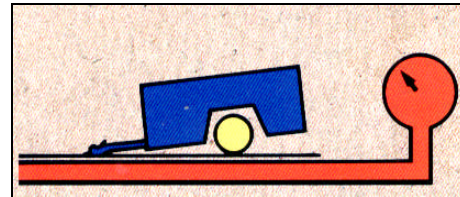
Towing Guidelines

Gross Trailer Weight and Tongue Weight

Most trailer equipment is rated by its capacity to handle gross trailer weight, trailer tongue weight, or both.

Gross Trailer Weight is the weight of the trailer plus all cargo in it. Measure Gross Trailer Weight by putting the fully loaded trailer on a vehicle scale.

Tongue Weight is the downward force exerted on the hitch ball by the trailer coupler with weight-distributing devices, if any, deactivated. Measure Tongue Weight with the trailer fully loaded and on a level surface, with the coupler at its normal height. Measure directly with a commercial scale or a bathroom scale.



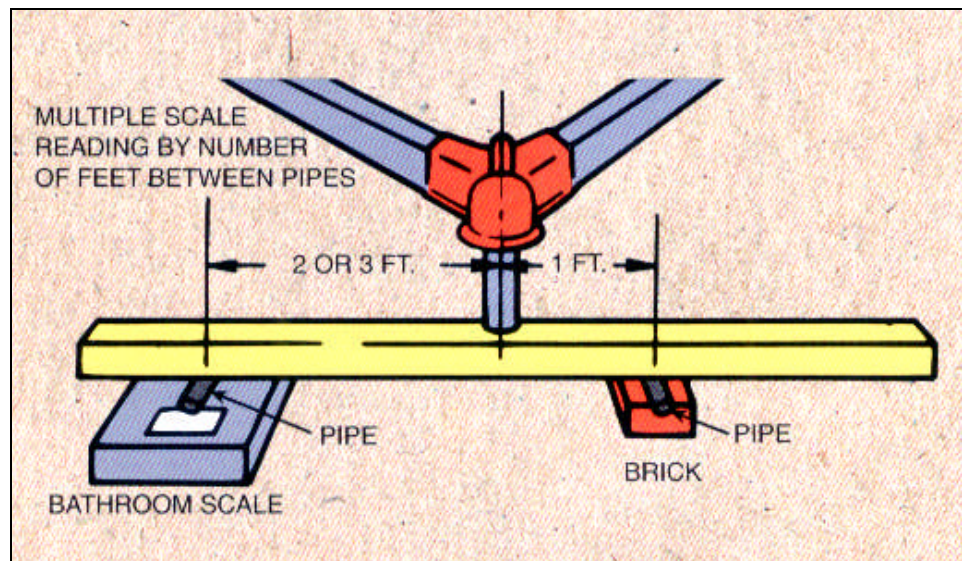
Tongue Weight

Note: Refer to Figure 2 for weights over 300 lbs.

Distribute personal cargo in your trailer so you don't exceed the Gross Axle Weight Rating.

To determine if you exceed the Gross Axle Weight Rating (GAWR):

1. Load your personal cargo and variable weights.
2. Hitch the trailer to the tow vehicle with load equalizing hitch properly adjusted as shown on the following pages...
3. Place the trailer



Caution: Avoid Overloading

Note: Never exceed the rating of the lowest-rated component of your towing system.

The towing system acts as a chain, which is only as strong as its weakest link. Your system is made up of many components each could be used in a variety of application.

Trailer Loading

Proper trailer loading is your first line defense against dangerous instability and sway. Heavy items should be placed on the floor in front of the axle. The load should be placed side-to-side and secured to prevent shifting. Tongue weight should be about 10-15 percent of gross trailer weight for most trailers. Too low a percentage of tongue weight can cause sway. Load the trailer heavier in the front.

Passengers in the Trailer

Trailers should not be occupied while being towed under any circumstances.

Safety Chains

Cross safety chains under the trailer tongue and attach to the hitch or towing vehicle with just enough slack to permit full turning. Don't let them drag on the road. Secure the connections so they can't bounce loose. Connect them every time you tow.

Tire Inflation

Check the recommendations of your towing vehicle and trailer manufacturer for proper inflation when towing.

Trailer Lights, turn signals, and breakaway switch connections make these safety-critical connections every time you tow, no matter how short the trip.

Driving

Good habits for normal driving need extra emphasis when towing. The additional weight affects acceleration and braking and extra time should be allowed for passing, stopping, and changing lanes. Severe bumps and rough roads can damage your towing vehicle, hitch, or trailer, and should be negotiated at a slow, steady speed.

If any part of your towing system "bottoms out" or if you suspect damage may have occurred in any other way, pull over and make a thorough inspection. Correct any problems before resuming travel.

Trailer Hitches

There are two basic types of trailer hitches: weight-carrying and weight-distributing (sometimes called equalizing).

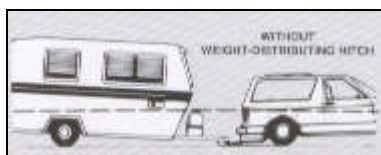
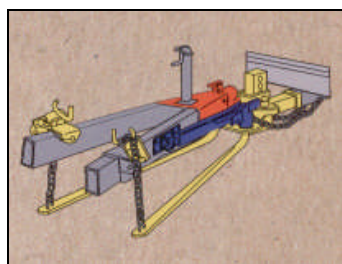


Figure 1

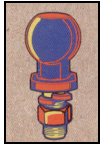


Figure 2



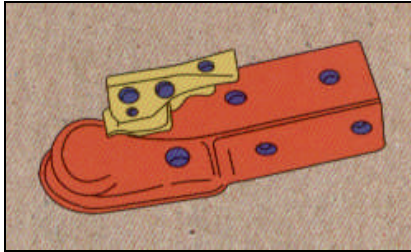
Weight carrying hitches support trailer tongue weight just as though it were luggage located at the ball or other connecting point. They are the most popular type of hitches and are commonly used to tow small and medium sized trailers. They are usually custom-built for specific models of towing vehicles, and are rated by gross trailer weight and tongue weight capacities.

Weight-Distributing (Equalizing) Hitches apply leverage between the towing vehicle and trailer, and thus distribute tongue weight to all the towing vehicle and trailer wheels. This allows greater tongue weight to be carried while the towing vehicle and trailer tend to remain more level. Weight-distributing hitches have commonly been used to tow medium to large travel trailers, and recently have found use in towing smaller trailers with downsized cars and trucks.



Hitch Balls

Hitch balls are selected by gross trailer weight rating and must match the socket size of the trailer coupler. The ball attachment must be compatible with the hole size and thickness of the mounting area on the hitch, and a lock washer or equivalent locking device must always be used. (passive voice)

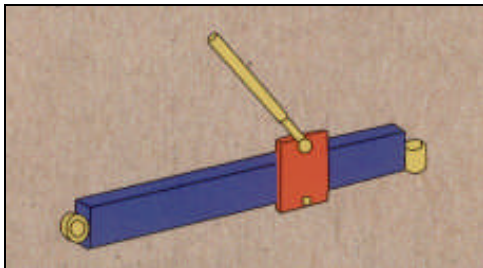


Couplers

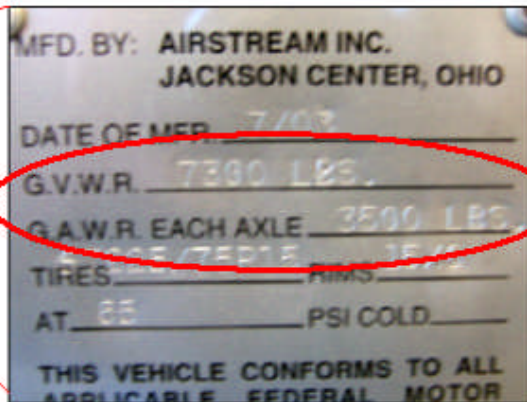
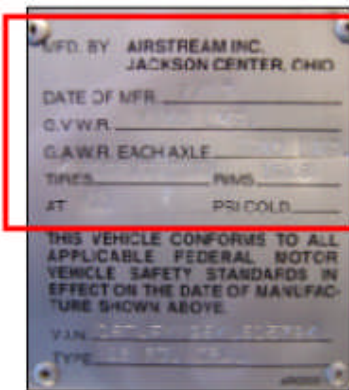
The coupler is the part of the trailer that attaches to the hitch ball. Its socket must match the ball size and should be smooth, clean, and lightly lubricated. Couplers are rated by gross trailer-weight and tongue weight capacity. Couplers with screw-type retaining mechanisms should be tightened just enough to eliminate play and not over-tightened.

Safety Chains

Trailers usually come equipped with safety chains. The braking strength of each chain and its attachments must equal or exceed the gross trailer weight.



Sway Controls can help minimize effects of sudden maneuvers, wind gusts, and buffeting caused by other vehicles. Most sway controls do this by creating a resistance as the towing vehicle and trailer turn with respect to each other. Some types allow the resistance to be adjusted for varying conditions. Sway controls are recommended for trailers with large surface areas, such as travel trailers, and also for trailers with low tongue weight percentage.



Note: Some surge brakes do not work well with weight-distributing hitches because the spring bars restrict movement in the surge brake unit. If you are considering use of a weight-distributing hitch with a surge brake trailer, check with the brake or trailer manufacturer to determine if and how this can be done.

Also, some sway control devices must be specially adapted to avoid interference with surge brake operation. Both electric and surge brakes are usually equipped with a "brake-away" device that applies the brakes if the trailer becomes disconnected from the towing vehicle.

Other useful equipment:

- Air springs, air shocks, or overload springs for your towing vehicle's rear suspension are especially useful for heavier weight-carrying hitch applications, since the load on the rear axle is about 50 percent greater than the tongue weight.
- Transmission oil cooler may be necessary for heavy towing.
- Law usually requires towing mirrors on both sides.