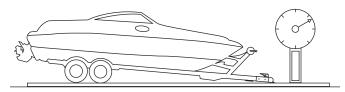


# UNDERSTANDING TOWING

It is very important to review an operator's manual before purchasing a towing system. Your vehicle manual has helpful information about your vehicle's capabilities and limitations.

## **Gross Trailer Weight**

(GTW) The gross trailer weight is the weight of the trailer & cargo. Measure this by putting the fully loaded trailer on a vehicle scale.

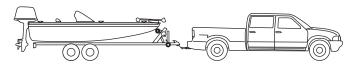


You also need to be aware of the different laws and restrictions which exist when you tow from state to state. The State Patrol is a good resource for information.

## **Weight Carrying**

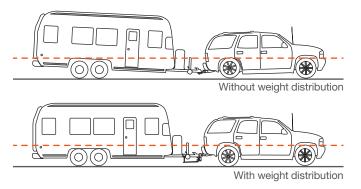
(WC) The total weight of both the trailer and the cargo inside. Never exceed the weight capacity of your trailer hitch. This applies to loads without a weight distribution hitch installed.

Boat + Trailer + Cooler + Fishing Gear = Weight Carrying



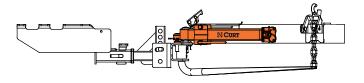
#### **Weight Distribution**

(WD) Used to balance the weight of the cargo between the front and rear wheels throughout the trailer, allowing for better steering, braking, and level riding. Not to be used on class I or II receivers, or with surge brakes. See page 168 for our weight distribution products.



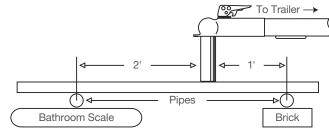
#### **Sway Control**

A device used to reduce the lateral movements of the trailer that are caused by the wind. This may be used in conjunction with a weight distribution hitch or alone. Do not use this on a class I or II hitch, or with surge brakes. See page 168 for our sway control products.



# **Tongue Weight**

(TW) The downward force that is exerted on the hitch ball by the coupler. The tongue weight will vary depending on where the load is positioned in relationship to the trailer axle(s). To measure the tongue weight, use either a commercial scale or a bathroom scale with the coupler at towing height. When using a bathroom scale, use the method shown and multiply the scale reading by three.



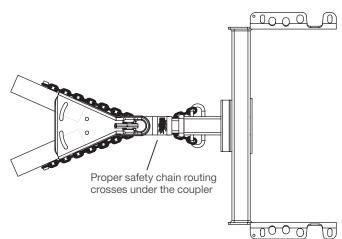
#### **Safety Chains**

Safety chains are required by law and should be crossed under the tongue of the trailer so that the tongue will not drop to the road if it becomes separated from the hitch. Always leave enough slack so you can turn. Never allow the safety chains to drag on the ground and never attach the chains to the bumper.

Trailer classification: safety chain breaking force - minimum

Class I: 2,000 lbs. (8.9 kN) Class II: 3,500 lbs. (15.6 kN) Class III: 5,000 lbs. (22.2 kN)

Each safety chain or safety cable must equal or exceed the GTWR of the trailer. See page 179 for custom chain.



## **Trailer Balls**

Connection from the hitch to the trailer.

There are many factors that determine the correct hitch ball:

- Most important is the hitch ball's gross trailer weight rating.
- The mounting platform must be at least 3/8" thick.
- The hole diameter must not be more than 1/16" larger than the threaded shank.
- Every time you tow, check the nut and lock washer to make sure they are fastened securely.

See page 132 for our complete trailer balls line.



A: Ball Diameter B: Shank Length C: Shank Diameter D: Shank Rise

#### **Ball Mounts**

The ball mount is placed inside the opening of the receiver hitch which is mounted to the vehicle. Make sure a hitch pin and clip is properly securing the ball mount to the receiver hitch before you begin towing. See page 122 for our selection of ball mounts.



## **Bumper Hitches**

These hitch applications are used only for light weight towing, including bike racks and cargo carriers. Towing should not exceed vehicle bumper's gross towing weight. Hitch capacities are limited to bumper capacities. See page 30 for our bumper hitches. Do not use a weight distribution hitch with these products.





Hitch Box 5,000 lbs. GTW 500 lbs. TW

Step Bumper Hitch 5,000 lbs. GTW 500 lbs. TW



Bumper Hitch 4,000 lbs. GTW 400 lbs. TW

## **Receiver Hitches**

The primary device attached to the vehicle, which allows you to tow. It is very important to choose the correct class of receiver hitch. Gross trailer weight and tongue weight will determine



Class 1 Ball Mount, Pin & Clip Included Up to 2,000 lbs. GTW Up to 200 lbs. TW 1 1/4" Receiver Tube



Class 2 Ball Mount, Pin & Clip Included 2,500 - 3,500 lbs. GTW 250 - 350 lbs. TW 1 1/4" Receiver Tube



Class 3 (Round Tube) 3,500 - 8,000 lbs. GTW 350 - 800 lbs. TW Up to 12,000 lbs. WD Up to 1,200 lbs. WDTW 2' Receiver Tube



Heavy Duty []]) 10,000 - 12,000 lbs. GTW 1,000 - 1,200 lbs. TW 12,000 - 14,000 lbs. WD 1,200 - 1,400 lbs. WDTW 2" Receiver Tube



Xtra Duty XD Up to 15,000 lbs. GTW Up to 1,500 lbs. TW Up to 16,000 lbs. WD Up to 1,600 lbs. WDTW 2" Receiver Tube



Commercial Duty () Up to 18,000 lbs. GTW Up to 1,800 lbs. TW Up to 18,000 lbs. WD Up to 18,000 lbs. WD Up to 1,800 lbs. WDTW 2 1/2" Receiver Tube



Front Mount Up to 5,000 lbs. GTW Up to 500 lbs. TW 9,000 lbs. Straight Line Pull 2" Receiver Tube



**RV Receiver Hitches** 3,500 - 5,000 lbs. GTW 350 - 500 lbs. TW 3,500 - 6,000 lbs. WD 350 - 600 lbs. WDTW 2" Receiver Tube

# Couplers

The component that is placed over the trailer ball to connect the vehicle to the trailer. Coupler size must match the size of the hitch ball. Ensure the coupler handle is securely fastened. Trailer coupler size determines trailer ball size. Be sure your coupler is properly adjusted to the ball you are using. See our couplers on page 170.



## **Hitch Pins/Locks**

For securing all ball mounts to receiver style hitches. Hitch locks protect against ball mount theft. See page 137 for towing security products.

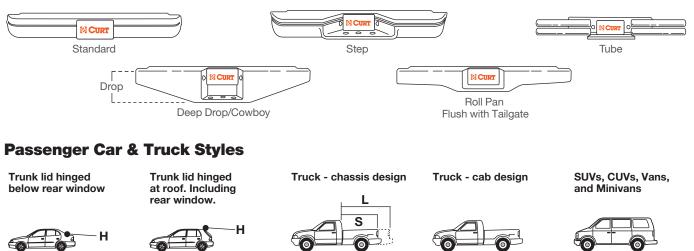


the hitch that is needed. Do not exceed the lowest rating of

any component of your towing system. See the CURT hitch

application guide on page 32 for specific hitch availability.

#### **Bumper Styles**



4-door sedan

2-door sedan

60



Н



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5-door wagon



Regular cab

Extended cab

Crew cab

Van

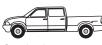
SUV/CUV



0 -Cab/Chassis



Dual rear wheels/Dualie



Quad cab

## **Hitch Selection Guide**

Use this table to select the correct class of hitch for your vehicle. Refer to not only vehicle type, but also the trailer(s) that you will be towing. See the CURT hitch application guide on page 32 for specific hitch availability.

Trailer Types				
Weight Ratings	<b>Class I</b> 2,000 lbs. GTW 200 lbs. TW	<b>Class II</b> 3,500 lbs. GTW 350 lbs. TW	Class III 3,500-6,000 lbs. GTW 350-600 lbs. TW	Class IV-V 6,000-18,000 lbs. GTW 600-1,800 lbs. TW
Subcompact/ Compact Cars	Class I Receiver			
Mid-size Cars/ Small Pickups	Class I Receiver	Class II Receiver	Class III Receiver with Weight Distribution Hitch	
Minivans/ SUVs	Class I Receiver	Class II Receiver	<b>Class III</b> Receiver with Weight Distribution Hitch	
Full-size Cars/Pickups/ Vans/Utility Vehicles	Class I Receiver	Class II Receiver	Class III Receiver with Weight Distribution Hitch	Class III Receiver with Weight Distribution Hitch or Class IV-V Receiver

## How Much Can You Safely Tow?

CURT Manufacturing recommends the use of hitches showing a weight distributing (WD) rating when carrying a personal mobility vehicle (power wheel chair, scooter, etc.). Use of a lower capacity hitch may void warranty and could result in damage to both the carried and carrying vehicles.

For more information, contact the CURT Technical Support line at 1-800-798-0813.

Gross Trailer Weight	1,000 lbs.	2.000 lbs.	3,000 lbs.	4,000 lbs.	5,000 lbs.	6,000 lbs.	7,000 lbs.	8,000 lbs.	10,000 lbs.	18,000 lbs.
Tongue Weight	100 lbs.	200 lbs.	300 lbs.	400 lbs.	500 lbs.	600 lbs.	700 lbs.	800 lbs.	1,000 lbs.	1,800 lbs.
Classes	Class I								,	,
	Class II									
	Class III									
	Class IV						-			
	Class V									
	11'	12'	13'	14'	15'	16'				
Camper	1,100 lbs.	1,200 lbs.	1,300 lbs.	1,400 lbs.	1,500 lbs.	1,600 lbs.				
	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'
	2,100 lbs.	2,400 lbs.	2,700 lbs.	3,000 lbs.	3,300 lbs.	3,600 lbs.	3,900 lbs.	4,200 lbs.	4,500 lbs.	4,800 lbs.
Vacation										
	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'
k <u>oo</u> ll li.	2,800 lbs.	3,200 lbs.	3,600 lbs.	4,000 lbs.	4,400 lbs.	4,800 lbs.	5,200 lbs.	5,600 lbs.	6,000 lbs.	6,400 lbs.
Vacation										
5th Wheel	Refer to ov	vner's man	ual for towir	ng capabiliti	es and limit	ations		·		

## **Estimated Trailer Only Weights**

Boat	<b>Aluminum</b> 12-15 feet - Trailer Weight = 200 lbs. 16-20 feet - Trailer Weight = 300 lbs.				
Boat	<b>Fiberglass</b> Up to 17 feet - Trailer Weight = 200 lbs. 18-20 feet - Trailer Weight = 300 lbs.	21-22 feet - Trailer Weight = 570 lbs. 22-24 feet - Trailer Weight = 670 lbs.			
Recreational Vehicle	Motorcycle, Snowmobile, ATV, Personal W Carries two vehicles - Trailer Weight = 250 lbs				
Recreational Vehicle	Motorcycle, Snowmobile, ATV, Personal Watercraft Carries four vehicles - Trailer Weight = 250 lbs.				
Open	<b>Cargo</b> 4 feet by 6 feet - Trailer Weight = 450 lbs. 5 feet by 8 feet - Trailer Weight = 450 lbs.				
	<b>One Horse Vehicle</b> Trailer Weight = 1,000 lbs.	<b>Two Horse Vehicle</b> Trailer Weight = 1,800 lbs.			
Horse					
Other	Car Transport Trailer Weight = 1,800 lbs. Garden or Equipment Trailer Weight = 1,800 lbs.	<b>Tow Dolly</b> Trailer Weight = 500 lbs.			

## Wiring Systems

CURT Manufacturing electrical products are designed to deliver unsurpassed levels of performance, reliability and durability. The use of surface mount technology (SMT) components is just one of the steps CURT has taken to achieve this. SMT components are the most up-to-date parts available for circuit designs. SMT components offer lower resistance, less heat generation and longer life cycles than more common, out-of-date, through-hole mounted components.

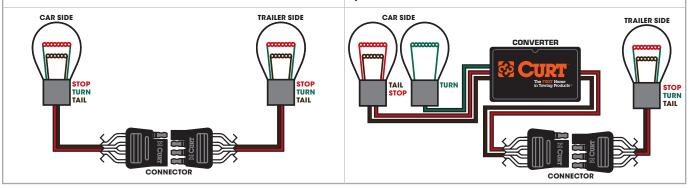
CURT applies SMT to a full line of taillight converters and to any T-connector with a built-in converter.

## 2 Wire Systems

Still common in the automotive industry and the simplest form of trailer wiring. This system sends the stop/turn signal along one wire, while the tail signal is separate.

#### **3 Wire Systems**

The most common in the automotive industry, while being simple enough to wire with a converter of choice. The stop, tail and turn signals are all sent on separate wires going into the converter, which then converts the signals to a two-wire system.



## **PWM Systems**

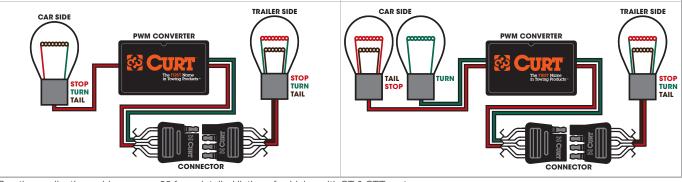
More and more vehicles on the market today use PWM (pulse width modulation) wiring systems, sometimes called "multiplex" systems. These are systems that vary the signal intensity over one wire to initiate more than one lighting function. In other words, one wire can control more than one light function. There are two known types, type STT (Stop/Turn/Tail) and type ST (Stop/Tail). PWM systems can be either incandescent or LED.

# STT Systems

They use a single wire to control the stop, tail and turn signals. For STT Systems use CURT tail light converter 56201.

## ST Systems

They use a single wire to control the stop and tail signals. Separate wires are used to control the left and right turn signals. For ST systems use CURT tail light converter 56200.



See the application guide on page 32 for a detailed listing of vehicles with ST & STT systems

## **Electrical**

Trailer lights, electric brakes, break-away systems - every time you tow, be sure to check that all components are working properly.

See page 180 for more detailed information.

