

Coupler

Trailer Hitch

Ball Mount

Trailer Ball

Safety Chains

T-connector

UNDERSTANDING TOWING



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

It is also important to be aware of the different laws and restrictions which exist when towing from state to state. The State Patrol is a good resource for this information.

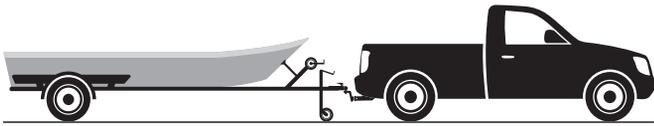
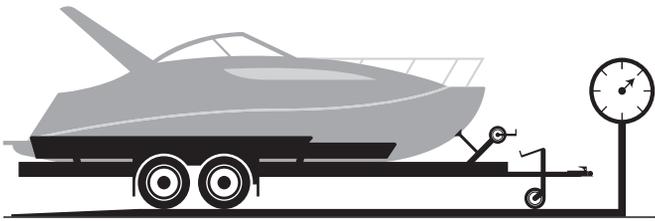
Gross Trailer Weight (GTW)

The gross trailer weight is the weight of the trailer and cargo. Measure this by putting the fully loaded trailer on a vehicle scale.

$$\text{Boat} + \text{Trailer} + \text{Cooler} + \text{Fishing Gear} = \text{Weight Carrying}$$

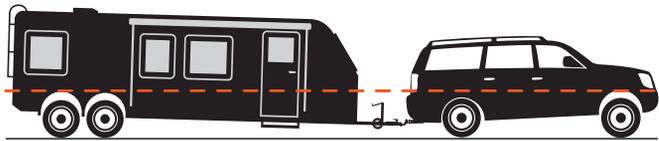
Weight Carrying Capacity (WC)

The measure of the total weight a trailer hitch can safely pull without adding a weight distribution system. Never exceed the weight capacity ratings of the tow vehicle or the trailer hitch, whichever is lower.

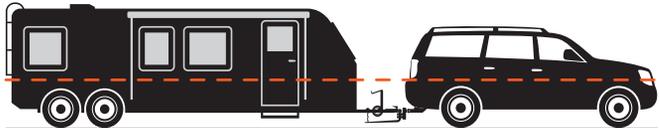


Weight Distributing Capacity (WD)

The measure of the total weight a trailer hitch can safely pull with a weight distribution system installed. The use of a weight distribution system balances the weight of the cargo throughout the trailer, allowing for better steering, braking and level towing. See page 193 for our weight distribution products.



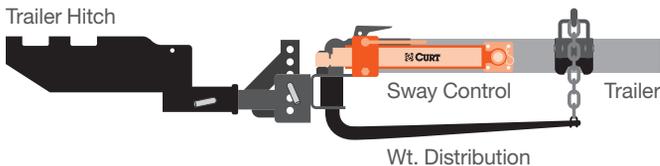
Without weight distribution



With weight distribution

Sway Control

A device used to reduce the lateral movements of trailers which are caused by the wind. These may be used with or without a weight distribution system. Do not use this on a trailer hitch with an 1 1/4" x 1 1/4" receiver tube opening or on trailers with surge brakes. See page 196 for our sway control products.



Trailer Balls

The object that connects the trailer hitch and the trailer.

There are many factors that determine the correct trailer ball:

- Most important is the trailer ball's gross trailer weight rating
- 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.

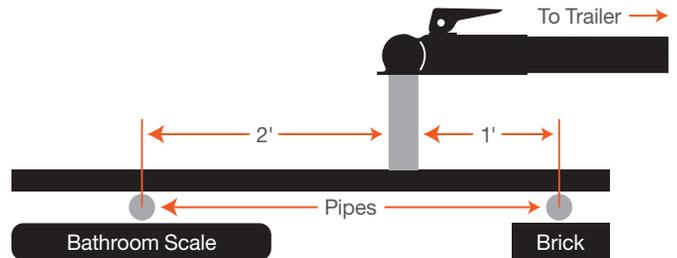
Note: The mounting platform must be at least 3/8" thick.

See page 212 for our complete trailer ball line.



Tongue Weight (TW)

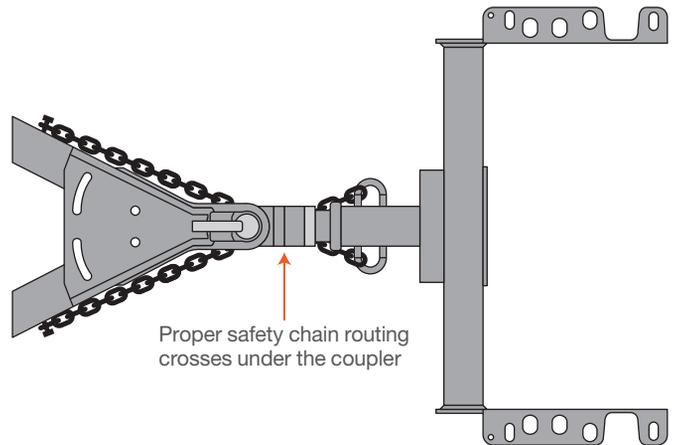
The downward force that is exerted on the trailer ball by the coupler. The tongue weight will vary depending on where the load is positioned in relationship to the trailer axle(s). To measure the tongue weight, use either a commercial scale or a bathroom scale with the coupler at towing height. When using a bathroom scale, use the method shown and multiply the bathroom 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 the vehicle can safely turn. Never allow the safety chains to drag on the ground and never attach the chains to the bumper. CURT offers chains in a variety of capacities to meet your towing needs.

Each safety chain or safety cable must equal or exceed the gross trailer weight rating of the trailer. See page 211 for custom chain, or page 210 for standard packaged safety chain.



Ball Mounts

The ball mount is placed inside the receiver tube opening of the trailer hitch, which is mounted to the vehicle. Make sure a lock or a pin & clip is properly securing the ball mount to the trailer hitch before towing. See page 158 for our selection of ball mounts.



Couplers

The component that is placed over the trailer ball to connect the vehicle to the trailer. The trailer's coupler size determines which trailer ball to use - the two sizes must be identical. Always make certain the coupler handle is securely fastened. Be sure the coupler is properly adjusted to the trailer ball. See our couplers on page 202.



Pintle Hooks and Mounts

Pintles and pintle mounts are most commonly used in the agricultural and construction industries to tow large equipment. CURT carries a variety of pintle and combination ball and pintle hooks to help tow the heaviest of loads. See page 198 for our selection of pintles and mounts.



Gooseneck Hitches

Commonly used to haul livestock, horse trailers or heavy work trailers; the CURT gooseneck hitch line offers several styles to fit the towing application. The under-bed hitches and installation kits allow full use of the truck bed. See our gooseneck hitches on page 182.



Accessories

CURT's accessory line provides a wide variety of protection for the vehicle's towing system while a trailer is not being towed. See page 222 for our selection of towing accessories.



Hitch Pins and Locks

For securing all ball mounts and other hitch mounted accessories to trailer hitches. Hitch locks have the added benefit of theft deterrence. See page 218 for towing security products.



Bumper Hitches

These hitch applications are only used for light weight towing, including bike racks and cargo carriers. Towing weights should not exceed the vehicle's bumper gross towing weight rating; hitch capacities are limited to bumper capacities. Do not use a weight distribution hitch with these products. See page 32 for our bumper hitches.

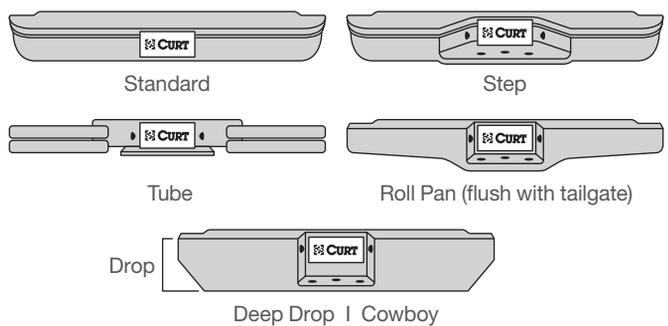


Hitch Box
5,000 lbs. GTW
500 lbs. TW

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

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

Bumper Styles



Trailer Hitches

Attached to the vehicle, the trailer hitch is the primary device that allows a vehicle to tow. Choosing the correct type of trailer hitch requires knowing the gross trailer weight and the tongue

weight of the trailer being pulled. Do not exceed the lowest rating of any component of your towing system. See the CURT hitch application guide on page 36 for specific hitch availability.

Trailer Hitches (Class I & II) 1 1/4" x 1 1/4" Receiver Tube Opening	Trailer Hitches (Class III, IV & V) 2" x 2" Receiver Tube Opening
<p>Up to 3,500 lbs. GTW Up to 350 lbs. TW</p> 	<p>3,500 to 12,000 lbs. GTW 350 to 1,200 lbs. TW Up to 14,000 lbs. WD Up to 1,400 lbs. WDTW</p> 
Xtra Duty & Xtra Duty+ Trailer Hitches 2" x 2" Receiver Tube Opening	Commercial Duty & Commercial Duty+ Trailer Hitches 2 1/2" x 2 1/2" Receiver Tube Opening
<p>16,000 to 17,000 lbs. GTW 2,400 to 2,550 lbs. TW Up to 17,000 lbs. WD Up to 2,550 lbs. WDTW</p> <p>XD XD+</p> 	<p>18,000 to 20,000 lbs. GTW Up to 2,700 lbs. TW 18,000 to 20,000 lbs. WD Up to 2,700 lbs. WDTW</p> <p>CD CD+</p> 
Front Mount Hitches 2" x 2" Receiver Tube Opening	RV Trailer Hitches 2" x 2" Receiver Tube Opening
<p>Up to 5,000 lbs. GTW Up to 500 lbs. TW 9,000 lbs. straight line pull</p> 	<p>3,500 to 5,000 lbs. GTW 350 to 500 lbs. TW 3,500 to 6,000 lbs. WD 350 to 600 lbs. WDTW</p> 

Passenger Car and Truck Styles

Trunk hinges below window



2-door coupe



4-door sedan

Trunk hinges at roof (including window)



3-door hatchback

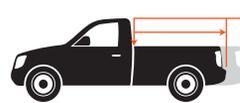


5-door hatchback



5-door wagon

Truck: Chassis design



Short bed/Long bed



Cab/Chassis



Dual rear wheels

Truck: Cab design



Regular cab



Extended cab



Crew cab



Quad cab

Vans, Minivans SUVs and CUVs



Van



SUV/CUV



Minivan



Extended SUV

Hitch Selection Guide

Use this table to select the correct trailer hitch receiver tube opening size and weight rating for the tow vehicle. Refer not only to vehicle type, but also the trailer being towed. See the CURT hitch application guide on page 36 for specific trailer hitch availability.

	1 1/4" Receiver Tube Opening	2" Receiver Tube Opening	2 1/2" Receiver Tube Opening
			
 Subcompact/ Compact cars	Up to 3,500 lbs. GTW Up to 350 lbs. TW	--	--
 Sedans/ Minivans	Up to 3,500 lbs. GTW Up to 350 lbs. TW	Up to 17,000 lbs. GTW Up to 2,550 lbs. TW	--
 Light trucks/ SUVs	Up to 3,500 lbs. GTW Up to 350 lbs. TW	Up to 17,000 lbs. GTW Up to 2,550 lbs. TW	--
 Full size pickups/ Utility vehicles	Up to 3,500 lbs. GTW Up to 350 lbs. TW	Up to 17,000 lbs. GTW Up to 2,550 lbs. TW	Up to 20,000 lbs. GTW Up to 2,700 lbs. TW

Note: Refer to owner's manual for vehicle's maximum towing capacity

How much can you safely tow?

CURT Manufacturing recommends the use of trailer hitches showing a weight distributing (WD) rating when carrying a personal mobility vehicle (power wheel chair, scooter, etc.). By using a trailer hitch with a capacity lower than the gross trailer weight, the warranty may be voided and could result in damage to both the tow vehicle and the load.

Receiver tube opening size	1 1/4": Up to 3,500 lbs. GTW
	2": Up to 17,000 lbs. GTW
	2 1/2": Up to 20,000 lbs. GTW

Estimated Trailer Only Weights

 Boat	Aluminum trailer 12-15' - Trailer weight: 200 lbs. 16-20' - Trailer weight: 300 lbs.	Fiberglass trailer Up to 17' - Trailer weight: 200 lbs. 18-20' - Trailer weight: 300 lbs. 21-22' - Trailer weight: 570 lbs.
 Utility	Single axle 8' - Trailer weight: 320 lbs. 10' - Trailer weight: 360 lbs.	Tandem axle 12' - Trailer weight: 1,200 lbs. 16' - Trailer weight: 1,300 lbs. 20' - Trailer weight: 1,500 lbs.
 Recreational vehicle	Motorcycles, ATVs, Personal watercraft, Snowmobiles Carries two (8') - Trailer weight: 350 lbs. Carries four (14') - Trailer weight: 980 lbs.	Toy Haulers 20' - Trailer weight: 4,100 lbs. 28' - Trailer weight: 6,600 lbs. 37' - Trailer weight: 12,000 lbs.
 Livestock/Horse	Livestock trailers (gooseneck pull) 16' - Trailer weight: 3,500 lbs. 20' - Trailer weight: 4,000 lbs. 28' - Trailer weight: 5,000 lbs.	Horse trailers (bumper pull) One horse - Trailer weight: 1,800 lbs. Two horses - Trailer weight: 3,100 lbs. Four horses - Trailer weight: 4,500 lbs.
 Camper/5th Wheel	Campers 17' - Trailer weight: 2,300 lbs. 23' - Trailer weight: 4,200 lbs. 30' - Trailer weight: 4,800 lbs.	5th wheels 26' - Trailer weight: 5,900 lbs. 31' - Trailer weight: 7,800 lbs. 35' - Trailer weight: 10,200 lbs.

For more information, contact the CURT Technical Support line at 800.798.0813.

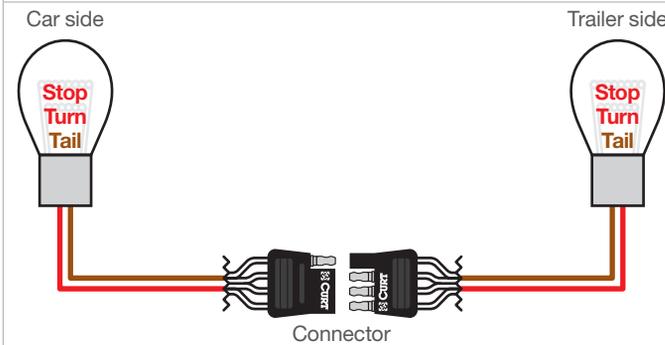
Wiring Systems

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, reduced heat generation and longer life cycles than more common, out-of-date, through-hole mounted components.

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

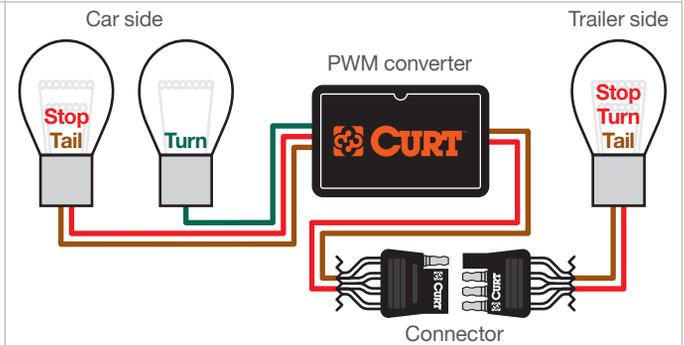
Two-Wire Systems

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.



Three-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.

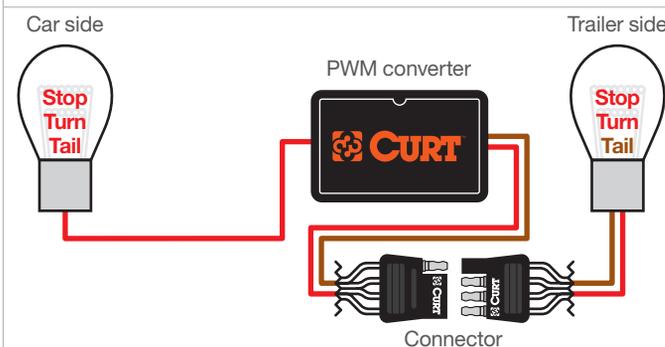


PWM Systems

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 types: type STT (Stop/Turn/Tail) and type ST (Stop/Tail). PWM systems can be either incandescent or LED.

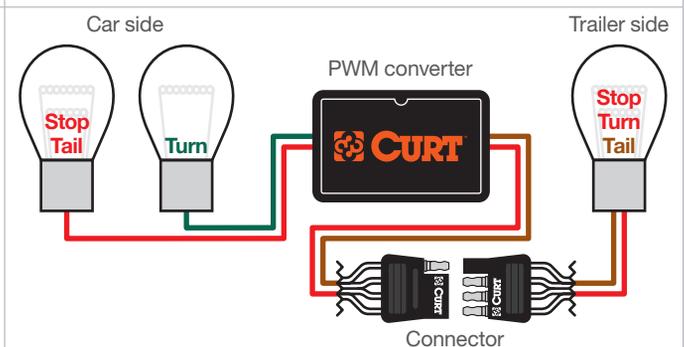
STT Systems

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



ST Systems

These systems 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 36 for a detailed listing of vehicles with ST and STT systems

Electrical

Be sure to check that the trailer lights, electric brakes, break-away systems are working properly before embarking on the next towing adventure.

See page 134 for more detailed information.



TOWING GLOSSARY

A

Application Guide

A complete listing of current part numbers and the associated vehicle applications

All-Purpose Vehicle (APV)

Typically a minivan. Offers more seating and higher load capacities than passenger cars

All-Terrain Vehicle (ATV)

Also known as a quad or four-wheeler

All-Wheel Drive (AWD)

AWD is a system that powers all four wheels all of the time, much like 4WD. Some automatic all-wheel drive vehicles are essentially smart 2WD systems. These systems give you more traction when you need it, but they generally will not activate until your vehicle needs the added traction

Axle

Central shaft for a rotating wheel or gear. The axle may be permanently fixed to the wheels, rotating with them, or fixed to its surroundings, with the wheels rotating around the axle

B

Ball

Also referred to as trailer ball or hitch ball. The ball-shaped attachment to a hitch onto which a trailer coupler is attached. The coupler mounts and locks on top of the trailer ball and articulates around the trailer ball. Recreational and light commercial trailer balls come in a variety of sizes including 1 7/8", 2", 2 5/16" and occasionally, 3". In general, lighter trailers use smaller trailer balls. While the diameter of trailer balls is fairly standard, shank diameters and the trailer ball weight capacity may differ. The rating of the trailer ball is just as important as the rating of the trailer hitch

Ball Height (Euro Mount® only)

Measurement from the ground to the top of the Euro Mount® ball when parked on a flat surface and parallel to the ground. Used to determine which Euro Mount® is required to make sure the trailer rides parallel to the ground while being towed

Ball Mount

Also known as drawbar or hitch bar. A removable trailer ball platform that slides into the receiver tube opening of a trailer hitch and fastens with a pin & clip. Different ball mounts can be used to raise or lower the height of the ball to allow for level trailer towing

Bolt-on Hitch (Fixed-Tongue)

A device which attaches directly to the tow vehicle providing the connection between the tow vehicle and the trailer. A fixed-tongue hitch permanently includes the ball platform, in contrast to a 1 1/4", 2" or 2/12" trailer hitch, which has an opening for inserting ball mounts or other accessories

Brake Control

Interface between tow vehicle and electric trailer brakes. Can be motion-activated or based on time delay from activation of the vehicle brakes. Typically located in the tow vehicle's driving compartment with electrical line running to the trailer wiring connector. Most require the user to adjust brake gain to compensate for varying trailer load. Necessary for the use of electric trailer brakes

Breakaway Switch

A component within a breakaway system that is attached to both the tow vehicle and the trailer

Breakaway System

A safety system that activates the trailer brakes in the event the trailer becomes accidentally disconnected from the vehicle while traveling

Bumper

The parts on a vehicle that protect the front and rear ends in the event of an accident. Some trucks and SUVs have a tow bumper (or step bumper) for attaching a trailer ball for towing. See quick reference chart of bumper styles

Bumper Hitch

Hitch that attaches to a vehicle's bumper

Bumper Pull Trailer

A trailer that is pulled behind a vehicle with a chassis mounted trailer hitch as opposed to a 5th wheel or gooseneck hitch. Also called a tag-along trailer

Bungee Cords

Cords composed of rubber or several elastic strands covered with nylon or cloth and have metal or plastic hooks on each end. These are available in nearly any length to secure light cargo



Cargo Carrier

The cargo carrier is a hitch-mounted platform that typically has up to a 500 lbs. capacity. Common uses include hauling coolers, boxes, tools, firewood and other items unable to fit in the vehicle. They are usually offered with a short 2" wall or a higher 6" wall and may include a tilt feature allowing the carrier to fold up when not in use

Chassis

The main framework of a vehicle. It consists of the frame, and only the essential parts needed for operation. Vehicle body and other non-essential parts are not considered part of the chassis

Class I Trailer Hitch

Trailer hitch with a capacity of up to 2,000 lbs. gross trailer weight and up to 200 lbs. tongue weight. Has an 1 1/4" x 1 1/4" receiver tube opening

Class II Trailer Hitch

Trailer hitch with a capacity of 2,500 to 3,500 lbs. gross trailer weight and 250 to 350 lbs. tongue weight. Has an 1 1/4" x 1 1/4" receiver tube opening

Class III Trailer Hitch

Trailer hitch with a carrying capacity of 3,500 to 8,000 lbs. gross trailer weight and 350 to 800 lbs. tongue weight. When used in conjunction with a weight distribution system, the weight ratings increase up to 12,000 lbs. gross trailer weight and up to 1,200 lbs. tongue weight. Has a 2" x 2" receiver tube opening

Class IV Trailer Hitch

Trailer hitch with a carrying capacity of up to 10,000 lbs. gross trailer weight and up to 1,000 lbs. tongue weight. When used in conjunction with a weight distribution system, the weight ratings increase up to 12,000 lbs. gross trailer weight and up to 1,200 lbs. tongue weight. Has a 2" x 2" receiver tube opening

Class V Trailer Hitch

Traditionally, a trailer hitch with a carrying capacity of up to 12,000 lbs. gross trailer weight and up to 1,200 lbs. tongue weight. When used in conjunction with a weight distribution system, the weight ratings increase up to 14,000 lbs. gross trailer weight and up to 1,400 lbs. tongue weight. Has a 2" x 2" receiver tube opening. CURT Xtra Duty and Commercial Duty trailer hitches are larger yet, to accommodate the heaviest towing demands. Find them in this glossary

Clip

Used to retain the pin in a trailer hitch

Commercial Duty (CD) Hitch

Trailer hitch with a carrying capacity of 18,000 lbs. gross trailer weight and 2,700 lbs. tongue weight. When used in conjunction with a weight distribution system, the weight ratings remain equal to the carrying capacity. Has a 2 1/2" receiver tube opening

Commercial Duty + (CD+) Hitch

Trailer hitch with a carrying capacity of 20,000 lbs. gross trailer weight and 2,700 lbs. tongue weight. When used in conjunction with a weight distribution system, the weight ratings remain equal to the carrying capacity. Has a 2 1/2" receiver tube opening

Computer Numerical Control (CNC)

The automated control of workpiece or tool motions with input parameters such as feed, speed and depth of cut. Commonly used in manufacturing

Connector

Electrical term used to define components for joining wires

Converter (Tail Lights)

Converts three-wire tow vehicle electrical systems to two-wire systems, integrating the stop and turn signal circuits as is common in trailer wiring

Coupler

The forward most part of a trailer tongue that envelopes and secures to the tow vehicle trailer ball

Coupler Height

The distance from the ground to the bottom of the trailer coupler with the trailer tongue leveled. The coupler height and hitch height are used to determine the drop or rise needed when selecting a ball mount

Coupler Lock

A pin style lock designed to fit through the coupler's latching mechanism, disabling it from latching to or being removed from the trailer ball, preventing unwanted use or removal of the trailer

Crossover

Also called crossover utility vehicle or CUV. A vehicle built on a car platform, but uses styling and features common on sport utility vehicles or SUVs

Curb Weight

The total weight of a vehicle with factory equipment, all necessary fluids, (coolant, oil, etc) a full tank of gas and minus any passengers or cargo

Custom Color Hitch

Custom hitch colored to match vehicle

Custom Hitch

A trailer hitch that is designed for a particular year, make and model of vehicle. These hitches are made for a specific vehicle so the best possible fit and appearance can be achieved

Crossover Utility Vehicle (CUV)

A vehicle built on a car platform, but uses styling and features common on sport utility vehicles or SUVs

D

Dinghy

A vehicle towed behind a motorhome. Sometimes towed with two wheels on a special trailer called a tow dolly, but often with all four wheels on the ground

Drawbar

Also known as ball mount or hitch bar. A removable trailer ball platform that slides into a hitch's receiver tube opening and fastens with a pin & clip, or the tongue portion of a fixed-tongue hitch. The term drawbar is sometimes used to distinguish a ball mount or a coupling configuration different than a trailer ball (such as a pintle hook)

Dry Rot

When tires are left exposed to prolonged sunlight, decaying the rubber. Regular usage and/or covers will prevent this

Dry Weight

A technical term that refers to the weight of an automobile or trailer without any fluids, passengers or cargo

Dually

A pickup truck with four wheels on the rear axle (two wheels on each side). Dually's are better for towing and can take a heavier load compared to regular rear ends

E

Equalizer

This term is sometimes used for a weight distribution system; a hitch system built around a trailer hitch that includes supplemental equipment such as spring bars, which can be placed under tension to distribute trailer tongue loads to the trailer axle(s) and the tow vehicle front axle. Use of a weight distribution system enhances handling and braking while increasing trailer towing capacity. Weight distributing hitches currently come in two configurations: one with square bars that hook to the center of the ball mount, called trunnion bars; and one with round bars that slide into the bottom of the ball mount, called round bars

F

Fifth Wheel Hitch (5th Wheel)

A heavy duty hitch that uses a plate and locking jaws and is located in the bed of the truck (similar to a semi-tractor.) The kingpin is located on the trailer

Fifth Wheel Trailer (5th Wheel)

5th wheel trailers are trailers designed to be coupled to a special hitch that is mounted over the rear axle in the bed of a pickup truck. These trailers can have one, two or three axles, and are the largest type of trailer built. Because of their special hitch requirements, 5th wheel trailers can only be towed by trucks or specialized vehicles prepared for 5th wheel trailer compatibility

Fishwire

Used during hitch installation; a small wire device that allows you to "fish" or pull hardware through an enclosed frame or bumper tube

Fixed-Tongue Hitch

A device that attaches directly to the tow vehicle providing the connection between the tow vehicle and the trailer. A fixed-tongue hitch permanently includes the ball platform, in contrast to a 1 1/4", 2" or 2/12" trailer hitch, which has an opening for inserting ball mounts or other accessories

Forged

A manufacturing process involving the shaping of metal using localized compressive forces. Forging can produce a piece that is stronger than an equivalent cast or machined part

Four-Wheel Drive (4WD)

A drivetrain that allows all four wheels to receive power from the engine simultaneously

Frame

The part of a vehicle in which all other parts attach to

Frame Mount Hitch

Trailer hitch that is designed to be bolted to the vehicle frame or cross members. This type of hitch may have a permanent ball mount or may have a receiver tube opening into which a removable ball mount or shank is installed. Has a 2" x 2" receiver tube opening

Front Mount Hitch

A trailer hitch that mounts to the frame at the front of a vehicle. They are available for several trucks, full-sized vans and SUVs. This provides a convenient mount for hitch accessories. Front mount hitches can also be used for easy maneuvering at the boat landing or campground. Has a 2" x 2" receiver tube opening

Front-Wheel Drive (FWD)

Engine/transmission layout where the engine drives the front wheels only

G

Gross Axle Weight (GAW)

The total weight supported by each vehicle's axle (front or rear)

Gross Axle Weight Rating (GAWR)

The manufacturer's rating for the maximum allowable weight that an axle is designed to carry. GAWR applies to tow vehicles, trailers, 5th wheels and motor home axles

Gross Combined (Vehicle) Weight (GCW or GCVW)

The actual total combined weight of a vehicle and trailer, including all passengers and cargo

Gross Combination Weight Rating (GCWR)

The maximum allowable weight of the combination of tow vehicle and trailer, 5th wheel or motor home and dinghy. It includes the weight of the vehicle, trailer, 5th wheel or dinghy, cargo, passengers and all fluids

Gooseneck Hitch

A towing system that mounts a trailer ball in the bed of a pickup truck (either 2 5/16" or 3" in diameter) to engage a coupler on a trailer

Gooseneck Trailer

Derives its name from its shape. A gooseneck trailer typically uses a ball and socket coupling, kingpin or other similar trailer connection method located above and forward of the rear most axle of the towing vehicle

Gross Trailer Weight (GTW)

The total weight of the trailer fully loaded in its actual towing condition

Gross Vehicle Weight (GVW)

Total weight of vehicle when fully loaded, including all passengers and cargo

Gross Vehicle Weight Rating (GVWR)

The maximum operating weight of a vehicle as specified by the manufacturer. It includes the vehicle's chassis, body, engine, engine fluids, fuel, accessories, driver, passengers and cargo

H

Handle Nut

An in-frame mounting point which can be inserted from an access hole or other hard to reach places

Hand Wheel

The threaded, turnable wheel on top of a trailer coupler that tightens or loosens the coupler assembly around the trailer ball

Hitch

A device which attaches directly to the tow vehicle providing the connection between the tow vehicle and the trailer. A fixed-tongue hitch permanently includes the ball platform, in contrast to a 1 1/4", 2" or 2/12" trailer hitch, which has an opening for inserting ball mounts or other accessories

Hitch Adapter

An item that fits into the receiver tube opening of a hitch and increases or decreases the receiver's size to allow fit with other shank sizes. Using a hitch adapter may reduce the overall capacity to the rating of the adapter being used

Hitch Ball

Also referred to as ball or trailer ball. The ball-shaped attachment to a hitch onto which a trailer coupler is attached. The coupler mounts and locks on top of the trailer ball and articulates around the trailer ball. Recreational and light commercial trailer balls come in a variety of sizes including 1 7/8", 2", 2 5/16" and occasionally, 3". In general, lighter trailers use smaller trailer balls. While the diameter of trailer balls is fairly standard, shank diameters and the trailer ball weight capacity may differ. The rating of the trailer ball is just as important as the rating of the trailer hitch

Hitch Bar

Also know as ball mount or drawbar. A removable trailer ball platform that slides into the receiver tube opening of a hitch and fastens with a pin & clip. Different ball mounts can be used to raise or lower the height of the ball to allow for level trailer towing

Hitch Class

Defines receiver tube opening size and weight rating capacity for trailer hitches

Hitch Tube Cover

A temporary end-cap placed into a hitch's receiver tube opening. Designed to protect the receiver tube from the elements. Also used to mask or enhance the look of the hitch when not in use

Hitch Extender

An item that fits into the receiver tube opening of a hitch and can extend the receiver tube several inches. Using a hitch extension may reduce the overall capacity to the rating of the extender being used

Hitch Height

The distance from the ground to the top of the hitch's receiver tube opening, with the vehicle parked on level ground. The hitch height and the coupler height are used to determine the drop or rise needed when selecting a ball mount

Hitch Lock

A locking pin designed to secure a ball mount or other hitch-mounted accessory to the hitch, preventing theft

Hitch Pin

Also called a pin or receiver pin. Holds the ball mount in the hitch. Typically bent like a hockey stick and drilled at one end to accept a hairpin-shaped retaining clip

Hitch Ratings

Hitches are rated according to the maximum amount of weight they are engineered to handle. See class I through V trailer hitches

Hitch Weight

Also known as tongue weight. The downward weight applied by the towable equipment on the trailer ball. Generally, hitch weight should not exceed 10% of the gross trailer weight

I

Insert

Any item that slides into the receiver tube opening of a trailer hitch

J

Jackknife

When an extreme angle occurs between the vehicle and trailer. Jackknife accidents occur when improper braking or poor road conditions cause the trailer to skid

K

Kingpin

The point at the center of a 5th wheel trailer's nose which is captured by the locking bar or jaws of a 5th wheel hitch. The circular shape of the kingpin allows the trailer to rotate freely within the 5th wheel hitch to allow for proper turning and maneuvering

L

Landing Gear

Commonly used on gooseneck and 5th wheel trailers to stabilize the trailer when not being towed. Also used to raise and lower the trailer height when coupling and uncoupling. Always be sure to completely raise the landing gear before towing

LED (Light-Emitting Diode)

Becoming more common in vehicle and trailer lighting. Requires less amperage than traditional bulbs to illuminate

Locking Pin

Hitch pin that locks with a key to prevent theft of a ball mount or other insert

Long Bed (LB)

Usually a foot or two longer than short beds. Compact long beds are generally 7' long and full-size are generally 8' long

Lunette Eye

A round metal ring used in place of a ball coupler on a trailer. It attaches to a pintle hook on the towing vehicle

M

Multi-Fit Hitch

Also known as a universal hitch. Fits a number of different vehicles

Multi-Plex

Also called PWM. Commonly used technique for controlling power to inertial electrical devices

O

Original Equipment Manufacturer (OEM)

OEM designates a replacement part made by the manufacturer of the original part

P

Payload

The transported load. Freight excluding the weight of the trailer or tow vehicle

Pin

Also called a hitch pin or receiver pin. Holds the ball mount in the hitch. It is also a convenient attachment point for breakaway cables. Typically bent like a hockey stick and drilled at one end to accept a hairpin-shaped retaining clip

Pintle Hitch

A common heavy duty coupling type which utilizes a pintle hook attached to a tow vehicle to pull a trailer having a lunette eye. Pintle hitches are commonly used on military, construction, industrial and agricultural equipment

Pintle Hook

The jaw portion of a pintle hitch which attaches to the tow vehicle

Pintle Mount

An insert for a trailer hitch's receiver tube opening, which has a shank with a flat plate. These mounts are typically adjustable for vertical height

Plug

The connector used to connect trailer wiring to a tow vehicle. Plug refers to the trailer end of the connection.

Powered Converter (Tail Lights)

Converts the tow vehicle's three-wire electrical system to a two-wire system, integrating the stop and turn signal circuits, which is common in trailer wiring. This converter will be powered by the vehicle's battery, allowing the trailer lights to be illuminated with virtually no draw on the vehicle tail light circuit. Powered converters are recommended on most vehicles with LED tail lights

Personal watercraft (PWC)

A recreational watercraft that the rider sits or stands on, rather than inside of, as in a boat. They are often referred to as the trademarked brand names Jet Ski, Wave Runner or Sea-Doo

Pulse Width Modulation (PWM)

Also called multi-plex. Commonly used technique for controlling power to inertial electrical devices

R

Ratchet Strap

A nylon strap attached to a ratcheting assembly designed to secure cargo. The ratcheting assembly allows the strap to be tightened, eliminating the unwanted movement of a load. Typically straps have metal hooks on each end

Receiver Pin

Also called a hitch pin or pin. Holds the ball mount in the hitch. It is also a convenient attachment point for breakaway cables. Typically bent like a hockey stick and drilled at one end to accept a hairpin-shaped retaining clip

Receiver Tube

The receptacle part of a trailer hitch which accommodates inserts such as ball mounts, draw bars or cargo carriers

Roll Pan

A fascia panel used in place of a rear bumper (common on lowered trucks). Installation of a roll pan may interfere with placement of a bolt-on hitch

Round Bar

A type of weight distributing hitch that has round bars that slide into the bottom of the WD hitch head. This differs from the trunnion style, which has square bars that attach to the center of the hitch head

Round Tube Hitch

A new generation of custom hitches designed to produce a more pleasing visual appearance. The use of round tubing lowers the weight of the hitch itself, while maintaining its capacity. These hitches are designed to complement the look of the vehicles for which they are made

Recreational Vehicle (RV)

The usual term for a motor vehicle or trailer equipped with living space and amenities found in a home

Rear-Wheel Drive (RWD)

Engine/transmission layout where the engine drives the rear wheels only

S

Safety Chains

The chains that are attached to the trailer tongue with hooks on their free ends. In emergency situations these chains will keep the trailer connected to the tow vehicle in case the coupler or trailer ball detach from the tow vehicle. Federal law requires safety chains to be secured while towing

Short Bed (SB)

Usually a foot or two shorter than a logn bed. Typically 5' to 6' long

Shank

The part of the ball mount or insert that slides into the trailer hitch's receiver tube opening

Socket

Wiring connector used on the car end of a trailer wiring connection. Socket refers to the vehicle end

Spring Bar

Key component of a weight distributing hitch system. Spring bars work to distribute trailer tongue loads to the forward axle of the tow vehicle

Stabilizing Strap

Auxiliary strap used for added support to unsupported loads such as a bike rack or cargo carrier

Sub-Frame

The part of the vehicle which supports the engine and front suspension on a uni-body vehicle

Surge Brake System

A surge brake system is entirely self-contained on the trailer and is activated when the tow vehicle decelerates. The entire activation process is completed in less than one second. Hydraulic surge brake systems can be used by a variety of tow vehicles and can accommodate a variety of trailer loading conditions without requiring any type of adjustment

Sport Utility Vehicle (SUV)

Term for a vehicle similar to a station wagon, but built on a light-truck chassis. It is usually equipped with four-wheel drive for on or off-road ability

Sway

Also known as 'yaw'. Refers to the fish-tailing action of a trailer caused by external forces that set the trailer's mass into a lateral motion. The trailer's wheels serve as the axis or pivot point

Sway Bar

A specialized spring which is part of the suspension on a vehicle, not part of a trailer hitch. Sometimes confused with a weight distributing hitch

Sway Control Device

A device which goes between a weight distributing ball mount and a trailer to reduce the likelihood of sway caused by passing vehicles and wind. This device should not be used to correct sway caused by improper tongue weight (too little or too much)

T

Tandem Axle

Two fixed axles (four wheels)

T-Connector

Application specific wiring harness to make trailer wiring ready to plug into towing vehicle

Tongue Weight (TW)

Also known as hitch weight. The downward weight applied by the towable equipment on the hitch ball. Generally, tongue weight should not exceed 15% of the gross trailer weight. 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 on page 7 and multiply the scale reading by three

Torque

A measure of the turning force on an object such as a bolt or a flywheel. For example, pushing or pulling the handle of a wrench connected to a nut or bolt produces torque (turning force) that loosens or tightens the nut or bolt

Tow Bar

A device attached to the front of a vehicle which allows it to be towed by another vehicle while riding on its own wheels

Tow Dolly

Small trailer that is little more than two wheels, an axle and a coupler, used to tow a front-wheel drive vehicle behind a recreational vehicle or other larger vehicle

Tow Rating

The vehicle manufacturer's rating of the maximum weight that can safely be towed by a particular vehicle. Tow ratings are related to overall trailer weight, not trailer size, in most cases. However, some tow ratings impose limits as to frontal area of the trailer and overall length. Tow ratings are determined by the vehicle manufacturer according to several criteria, including engine size, transmission, axle ratio, brakes, chassis, cooling systems and other special equipment

Tow Vehicle

Vehicle that pulls a trailer or towed vehicle

Trailer Ball

Also referred to as ball or hitch ball. The ball-shaped attachment to a hitch onto which a trailer coupler is attached. The coupler mounts and locks on top of the trailer ball and articulates around the trailer ball. Recreational and light commercial trailer balls come in a variety of sizes including 1 7/8", 2", 2 5/16" and occasionally, 3". In general, lighter trailers use smaller trailer balls. While the diameter of trailer balls is fairly standard, shank diameters and the trailer ball weight capacity may differ. The rating of the trailer ball is just as important as the rating of the trailer hitch

Trailer Brakes

Brakes that are built into the trailer axle systems and are activated either by electric impulse or by a surge mechanism. The majority of RVs utilize electric trailer brakes that are actuated when the tow vehicle's brakes are operated or when a brake controller is manually activated. Surge brakes utilize a mechanism positioned at the coupler that detects when the tow vehicle is slowing or stopping and activates the trailer brakes via a hydraulic system

Trailer Electrical Adapter

Converts the car-side trailer connector to a compatible mate for the trailer connector (i.e. 4-way flat to 7-way RV)

Trailer Hitch

A device which attaches directly to the tow vehicle providing the connection between the tow vehicle and the trailer. See hitch

Trailer Jack

A device used for supporting, raising and lowering the trailer tongue

Trailer Lock

A lockable, simulated ball assembly used to prevent unwanted trailer use or theft

Trailer Tongue

The part of the trailer which extends forward from the trailer box and includes the coupler

Transmission Cooler

An auxiliary cooler that is available to provide extra cooling for automatic transmission fluid. Lower temperatures lead to longer transmission life

Travel Trailer

Also known as conventional trailers. These types of trailers are bumper pull trailers with an A-frame and a coupler. Travel trailers are available with one, two or three axles

Tri-Axle

Three fixed axles, six wheels

Trunnion

A type of weight distributing hitch that has square bars that attach to the center of the WD hitch head. This differs from the trunnion style, which has round bars that slide into the bottom of the hitch head

Two-Wheel Drive (2WD)

A drivetrain that allows two wheels to receive power from the engine simultaneously

U

Uni-Body

A vehicle that has an integrated frame and body. Usually has a sub-frame for the front end which mounts the engine and suspension

Universal Hitch

Also known as a multi-fit hitch. Fits a number of different vehicles

USCAR (United States Council for Automotive Research)

A group that attempts to communize components on vehicles. A type of electrical connection that has been used commonly on GM, Ford and Toyota trucks since 1999. Dodge has their own, distinct version

V

V-5

A minimum testing/rating system of trailer hitches established by the Trailer Hitch Manufacturers Association

Vehicle Identification Number (VIN)

A unique serial number used by the automotive industry to identify individual motor vehicles

W

Wheelbase (WB)

The horizontal distance between the center of the front wheel and the center of the rear wheel

Weight Carrying Hitch (WC)

Any hitch used without a weight distributing system. Some hitches are designed and clearly marked weight carrying only. Some hitches are weight carrying with weight distributing ability and will have a dual rating. For example, weight carrying (WC) 5,000 lbs. and weight distributing (WD) 10,000 lbs. To use a hitch at the higher rating (WD), a weight distribution system must be added

Weight Distributing (WD)

A towing situation where some or all of the tongue weight is redistributed to the trailer axle(s) and throughout the vehicle chassis instead of only the vehicle's rear axle. This is accomplished by the use of a weight distribution hitch

Weight Distribution Hitch

A hitch system built around a trailer hitch which includes supplemental equipment such as spring bars that can be placed under tension to distribute trailer tongue weight to the trailer axle(s) and the front axle of the tow vehicle. Use of a weight distribution system enhances handling and braking and may increase trailer towing capacity. Weight distributing hitches currently come in two configurations: one with square bars that attach to the center of the WD hitch head, called trunnion bars; and one with round bars that slide into the bottom of the hitch head, called round bars

Weldnuts

Nuts welded to the vehicle frame or their installation plates

Wiring Harness

Electrical wiring setup for a vehicle

Wiring System

Type of wiring configuration, two-wire or three-wire, based on the vehicle

X

Xtra Duty (XD) Hitch

Trailer hitch with a carrying capacity of 16,000 lbs. gross trailer weight and 2,400 lbs. tongue weight. When used in conjunction with a weight distribution system, the weight ratings are 17,000 lbs. gross trailer weight and up to 2,400 lbs. tongue weight. Has a 2" x 2" receiver tube opening

Xtra Duty + (XD+) Hitch

Trailer hitch with a carrying capacity of 17,000 lbs. gross trailer weight and 2,550 lbs. tongue weight. When used in conjunction with a weight distribution system, the weight ratings are 17,000 lbs. gross trailer weight and 2,550 lbs. tongue weight. Has a 2" x 2" receiver tube opening
