

OVERVIEW OF HITCHES TOWING ELECTRICAL HELP BASIC HOW-TO GUIDES EASY-TO-READ DIAGRAMS INFORMATIVE CHARTS TERMS & DEFINITIONS



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UNDERSTANDING TOWING

It is CURT Manufacturing's goal, first and foremost, to provide you with a complete line of quality products, on time, for your customers. In addition to this goal, however, we also want to give you the resources to educate your customers, so they can Bring It® safely and confidently no matter what they are towing.

Understanding Towing offers information on towing components, weight capacities, vehicle-trailer wiring, safe towing practices and more. It also includes an extensive Towing Glossary of terms and definitions pertaining to the industry.

All of the information in Understanding Towing can be found in a more extensive online version at curtmfg.com.

When helping your customers make purchasing decisions, make sure they consult their vehicle owner's manual. The owner's manual will provide vital information about the vehicle's capacities and limitations and should be regarded as the chief authority for safe driving practices. It is also important to be aware of the different laws and restrictions held from state to state. The State Patrol is a good resource for this information.



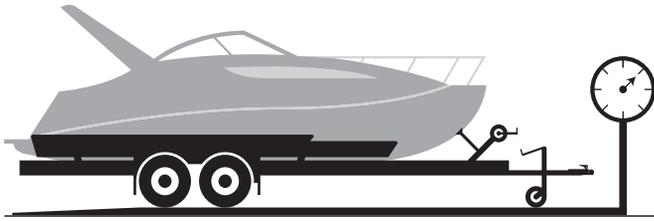
CURT
7500 lbs. GROSS TRAILER WT. PER GVW LIMIT
750 lbs. MAX. TONGUE WT. PER GVW LIMIT
4" DROP 2" RISE 1" HOLE
DO NOT OVERLOAD ANY PART OF YOUR TRAILING SYSTEM
NE SUSPENDOLOS CARGAS POR ENCIMA DEL LÍMITE DE CAPACIDAD
NUNCA EXCEDE LAS CARGAS POR ENCIMA DEL LÍMITE DE CAPACIDAD
MADE IN USA
FABRICA EN EST. U.S.
www.curt.com
V-5
J10

MADE IN USA
GRADE 43
3600 LBS.
WALTE BROWN

Bring It[®]

Gross Trailer Weight (GTW)

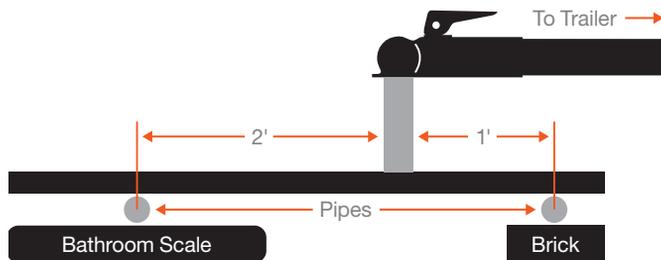
The gross trailer weight is the total weight of a trailer and its cargo. For example, GTW = boat + trailer + cooler + fishing gear. It is vitally important to know the GTW to ensure safe towing. It can be measured by putting the fully loaded trailer on a vehicle scale.



Tongue Weight (TW)

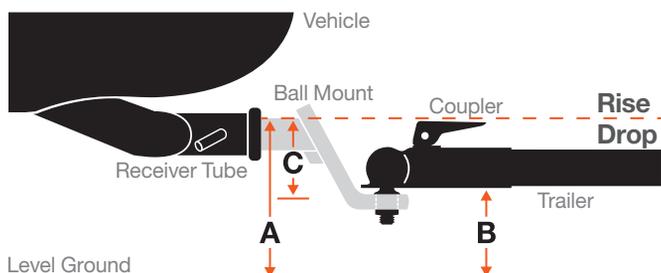
Tongue weight is the downward force exerted on the back of a tow vehicle by a trailer or towable load. The tongue weight is greatly affected by where cargo is positioned and is important for maintaining good control of the vehicle. Proper tongue weight should be about 10 to 15% of the GTW.

To measure the tongue weight, use a commercial scale or a bathroom scale with the coupler at a level towing height. When using a bathroom scale, use the method shown below and multiply the bathroom scale reading by three.



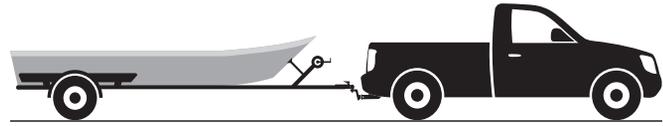
How to Determine Ball Mount Drop / Rise

When selecting a ball mount, it is important to determine the amount of drop or rise needed for leveling the trailer. The drop or rise refers to the difference between the trailer coupler height and hitch height. To find this difference, take the distance from the ground to the top of the inside of the receiver tube opening (A). Subtract it from the distance from the ground to the bottom of the coupler (B). The coupler height (B) minus the hitch height (A) equals the drop or rise (C). If C is a negative number, this indicates the amount of drop needed in a ball mount. If it is positive, it indicates the amount of rise.



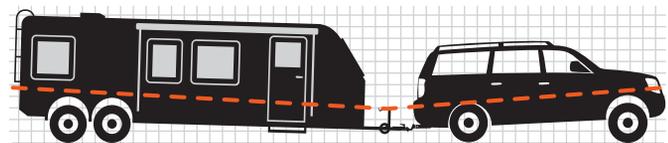
Weight Carrying Capacity (WC)

The weight carrying capacity is the total weight a trailer hitch is safely rated to tow without the assistance of a weight distribution system. Whatever this rating, the weight of the trailer should never exceed the weight rating of any towing component, including the trailer hitch, ball mount, tow vehicle, etc. Always use the lowest weight capacity rating of your towing system.

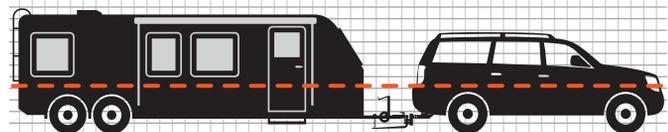


Weight Distribution Capacity (WD)

The weight distribution capacity is the maximum amount of weight a trailer hitch can safely tow with a weight distribution hitch installed. A weight distribution hitch is a device used with a receiver hitch to distribute a portion of the trailer's tongue weight across the vehicle and trailer axles. See page 296 for weight distribution products.



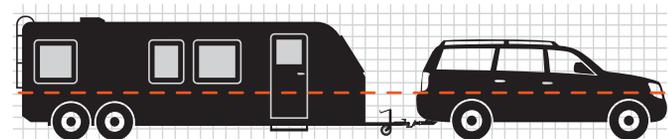
Without weight distribution



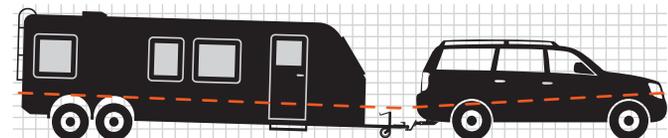
With weight distribution

Level Towing

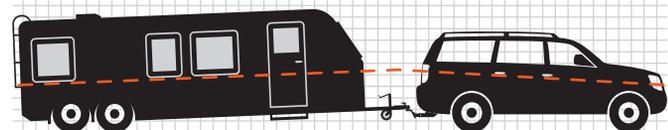
Using a ball mount with the proper amount of drop or rise will allow for level towing across both trailer and vehicle.



Level towing



Towing with too much drop



Towing with too much rise



TRAILER HITCHES

The majority of CURT hitches are designed vehicle-specific, making it easy to select the correct hitch for any given make or model. See the hitch application guide on page 46 for specific hitch availability or go to curtmfg.com for the most up-to-date vehicle applications. Before towing, it is the responsibility of the driver to decide whether or not a trailer is safe to tow, based on its gross trailer weight / tongue weight. Never exceed the lowest rating of any component of a towing system.

1 1/4 INCH Class 1 & 2 1 1/4" x 1 1/4" Receiver Tube Opening

- GTW Up to 3,500 lbs.
- TW Up to 350 lbs.
- WD Not applicable
- WD TW Not applicable



2 INCH Class 3 & 4 2" x 2" Receiver Tube Opening

- GTW 3,500 lbs. to 10,000 lbs.
- TW 350 lbs. to 1,000 lbs.
- WD Up to 12,000 lbs.
- WD TW Up to 1,200 lbs.



2 INCH Class 5 Xtra Duty 2" x 2" Receiver Tube Opening

- GTW 16,000 to 17,000 lbs.
- TW 2,400 to 2,550 lbs.
- WD Up to 17,000 lbs.
- WD TW Up to 2,550 lbs.



2 1/2 INCH Class 5 Commercial Duty 2 1/2" x 2 1/2" Receiver Tube Opening

- GTW 18,000 to 20,000 lbs.
- TW Up to 2,700 lbs.
- WD 18,000 to 20,000 lbs.
- WD TW Up to 2,700 lbs.



2 INCH Front Mount 2" x 2" Receiver Tube Opening

- GTW Up to 5,000 lbs.
- TW Up to 500 lbs.
- SLP 9,000 lbs. straight line pull



2 INCH Recreational Vehicle 2" x 2" Receiver Tube Opening

- GTW 3,500 lbs. to 5,000 lbs.
- TW 350 lbs. to 500 lbs.
- WD 3,500 to 6,000 lbs.
- WD TW 350 to 600 lbs.



Rear Mount Trailer Hitches

Rear mount trailer hitches are generally divided into five classes, based on weight capacity and receiver tube size. Most rear mount hitches are made to fit specific vehicles, though weld-on and multi-fit designs are also available.

Bumper Mount Trailer Hitches

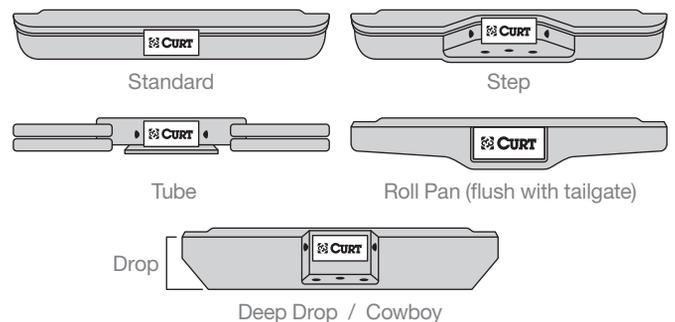
A bumper hitch is a light-duty receiver hitch that bolts onto a vehicle's bumper and provides a standard 2" receiver tube opening. Unlike a receiver hitch that falls into one of the five classes, a bumper hitch is limited to the weight carrying capacity of the vehicle's bumper.



Front Mount Hitches

A front mount hitch allows for convenient mounting of a snow plow, cargo carrier or other hitch-mounted accessory, and it can also be used to maintain close control over a trailer when maneuvering in a tight spot.

Bumper Styles



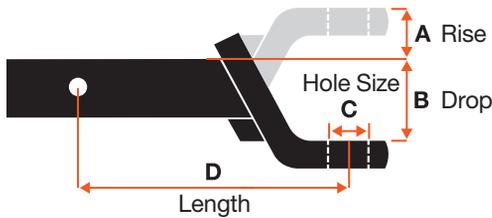


BALL MOUNTS

The ball mount is the part of the hitch system that is inserted into the receiver tube opening of a trailer hitch and is secured with a hitch pin & clip or a lock. Its primary function is to provide a mounting platform for a trailer ball. A ball mount may also be used to help level a trailer by providing a certain amount of drop or rise. Ball mounts come in various styles and weight capacities. See the entire CURT ball mount line, starting on page 162.

For a complete listing of our patented Euro Mount® ball mounts and a guide to selecting the right size, see page 164.

Measuring a ball mount



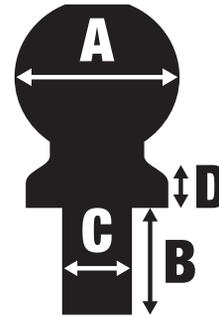
TRAILER BALLS

The trailer ball is the immediate connection point between the tow vehicle and trailer. Using a threaded shank and nut, the trailer ball bolts onto the ball mount platform and provides a place on which the trailer coupler rests and latches. The most important factor in selecting the right trailer ball is the trailer ball's gross trailer weight rating. The total weight of the trailer and its cargo must not exceed this amount. Also, the ball diameter must match the size of the coupler, and the trailer ball shank must not be more than 1/16" smaller than the diameter of the mounting hole.

Before towing, a trailer ball should be checked for proper torque. See page 184 for our complete trailer ball line.

Measuring a trailer ball

- A: Ball diameter
- B: Shank length
- C: Shank diameter
- D: Rise



Torque specifications

- 3/4" shank: 160 ft. lbs.
- 1" shank: 250 ft. lbs.
- 1 1/4" shank: 450 ft. lbs.
- 2" shank: 4,550 ft. lbs.

Weight Capacity Guide

Use this table as a guide to help determine the weight of a trailer, based on its type and length. Knowing the weight of the trailer is essential for safe towing. The trailer weights provided in this table do not include any added cargo and are only meant to be representative. They do not reflect the weights of any actual trailers.

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.		
Note: CURT Manufacturing recommends the use of a trailer hitch with 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.		



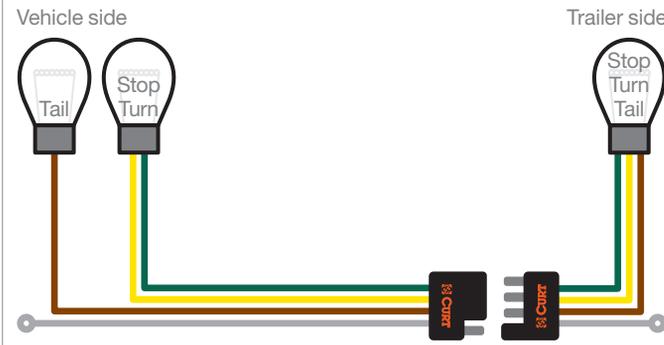
Equipping the tow vehicle and trailer with the proper wiring is just as important as using a trailer hitch with the correct weight capacity and receiver tube size. Before your customers can legally tow, they need to have working trailer lights. This means having the appropriate wiring harness and / or electrical converter, a functioning vehicle-to-trailer connector, a proper lighting kit installed and the correct wiring and accessories to support these components. See the full line of CURT electrical products, starting on page 212.

Wiring Systems

Vehicles today use different wiring systems to carry out electrical functions, specifically for taillights, stop or brake lights and turn signals. As vehicles have advanced, these wiring systems have changed. To provide a proper wiring connection for towing a trailer, often times an electrical converter is needed. Below are the common wiring systems used in vehicles today, as well as the types of converters used.

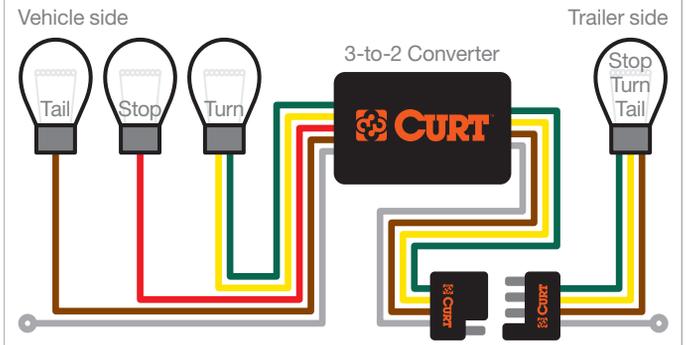
Two-Wire System

The two-wire system is the simplest form of vehicle and trailer wiring and is still used by some vehicles today. This system sends the stop and turn signals along one wire, and the taillight signal along a second wire.



Three-Wire System

The three-wire system is the most common in the automotive industry. It sends the stop, taillight and turn signals along three separate wires. Vehicles with a three-wire system usually require a converter to be able to connect to a trailer.

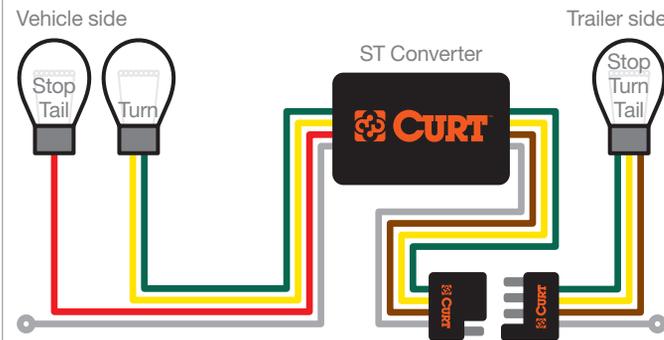


PWM System

More and more vehicles today use a PWM (pulse width modulation) wiring system. Sometimes called a 'multiplex' system, this type of wiring is able to control multiple lighting functions through a single wire by varying the signal intensity. PWM systems can use incandescent or LED lights, and there are generally two types: ST systems and STT systems.

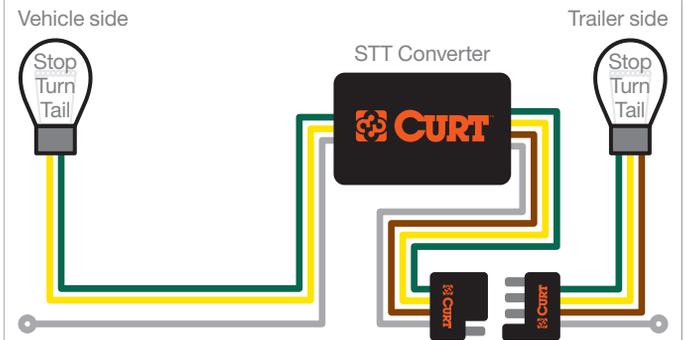
ST System

The ST system (stop / tail) uses a single wire to control the stop and taillight signals. Separate wires are used to control the left and right turn signals.



STT System

The STT system (stop / turn / tail) uses a single wire to control all three lighting functions: the stop or brake lights, turn signals and taillights.



See the application guide on page 46 for a detailed listing of vehicles with ST and STT systems

Towing Electrical Subcategory Color Guide

CURT has identified six subcategories within the **TOWING ELECTRICAL** category to make it easier for retail customers to find the correct products. Each sub-category is given a unique color that we apply in our literature and retail packaging for easy visibility.



Custom Wiring

If your customer's vehicle is not equipped with a factory-installed connector, custom wiring is the ideal solution. A custom wiring harness or 'T-connector' is a vehicle-specific harness that connects into the vehicle's electrical system, using the taillights or a special OEM socket. It provides a vehicle-to-trailer wiring connection point, usually in the form of a 4-way flat. Some custom wiring harnesses use an integrated converter while others do not require one. Custom wiring is not available for all vehicles. See the CURT custom wiring application guide, starting on page 46 for vehicle compatibility.



Electrical Converters

If a custom wiring harness is not available for a particular vehicle, an electrical converter may be required to equip the vehicle with the proper vehicle-to-trailer wiring connection. While most trailers use a two-wire electrical system, many vehicles today use a three-wire or PWM electrical system. A converter is designed to splice into a vehicle's wiring and convert the signals to be compatible with the trailer. For more information on wiring systems, see page 11. For CURT's full line of electrical converters, see page 222.



Plugs & Sockets

A plug and socket are the basic components that allow a vehicle wiring system to connect to a trailer wiring system. Plugs and sockets can use anywhere from two to seven wires. A socket is typically located at the rear of the vehicle and mounted on or near the trailer hitch. When preparing to tow, the plug is inserted into the socket and allows power to be supplied to the trailer lights and other electrical systems. See page 240 for our plugs & sockets.



Electrical Adapters

An adapter is an electrical device that allows a connection to be made between a mismatched trailer plug and tow vehicle socket. For example, a vehicle may be equipped with a 6-way round socket, while the trailer may only have a 4-way flat plug. An adapter can easily be installed to bridge the connection between these two opposing connector types. For our full selection of adapters, see page 232.



Brake Controls and Harnesses

Many heavy-duty trailers are equipped with electric trailer brakes, and to properly use them, a brake control is needed. A brake control is a small electronic device that regulates the trailer brakes from the dash of the vehicle and serves as an interface for the driver. There are two basic types of brake controls: inertia-based and time-based. For more information and the complete listing of CURT brake controls, see page 215.



Electrical Testers

An electrical tester is a small device that allows a vehicle-trailer wiring connection to be tested for proper function. Testers are especially useful after installing new wiring or when experiencing trailer electrical problems. They are available in various formats and plug directly into the vehicle socket. LEDs on the electrical tester light up with each wiring function (e.g. brake lights, turn signals, etc.) and indicate whether or not each wire is carrying a signal. See page 237 for our electrical testers.

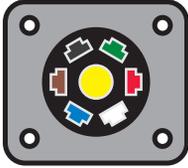


Electrical Connector Wiring Guide

There are several different formats used for connecting trailer wiring, and each offers slightly different electrical functions. 'Socket' is used to refer to the vehicle side of the connection, and 'plug' is used to refer to the trailer side. While most plugs and sockets come with standard color-coded wires, the colors illustrated below may not reflect those found on all vehicles and trailers.

7-Way RV Blade Traditional Configuration

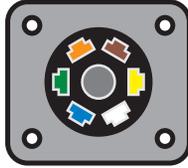
Vehicle side Trailer side



Function	Color
+12 volt	Black
Electric brakes	Blue
Reverse lights	Yellow
Left turn / brakes	Red
Right turn / brakes	Brown
Taillights	Green
Ground	White

7-Way RV Blade SAE J2863 Configuration

Vehicle side Trailer side



Function	Color
+12 volt	Orange
Electric brakes	Blue
Reverse lights	Grey
Left turn / brakes	Yellow
Right turn / brakes	Green
Taillights	Brown
Ground	White

The Difference in Configurations

Traditional configuration

The traditional 7-way RV blade format is typically used on 5th wheel trailers, travel trailers and campers.

SAE J2863 configuration

The SAE J2863 7-way RV blade format is typically used on gooseneck trailers, utility trailers, cargo trailers and equipment trailers.

7-Way Round

Vehicle side Trailer side



Function	Color
Auxiliary power	Red
Electric brakes	Blue
Reverse lights	Black
Left turn / brakes	Yellow
Right turn / brakes	Green
Taillights	Brown
Ground	White

6-Way Round

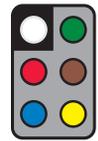
Vehicle side Trailer side



Function	Color
+12 volt	Black
Electric brakes	Blue
Left turn / brakes	Yellow
Right turn / brakes	Green
Taillights	Brown
Ground	White

6-Way Square

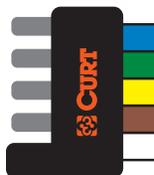
Vehicle side Trailer side



Function	Color
+12 volt	Red
Electric brakes	Blue
Left turn / brakes	Yellow
Right turn / brakes	Green
Taillights	Brown
Ground	White

5-Way Flat

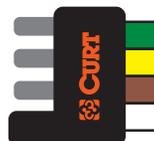
Vehicle side Trailer side



Function	Color
Reverse lights	Blue
Left turn / brakes	Yellow
Right turn / brakes	Green
Taillights	Brown
Ground	White

4-Way Flat

Vehicle side Trailer side



Function	Color
Left turn / brakes	Yellow
Right turn / brakes	Green
Taillights	Brown
Ground	White

4-Way Round

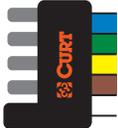
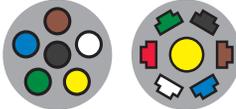
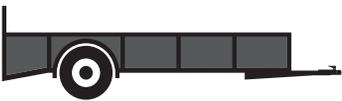
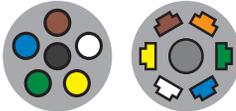
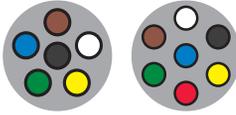
Vehicle side Trailer side



Function	Color
Left turn / brakes	Yellow
Right turn / brakes	Green
Taillights	Brown
Ground	White

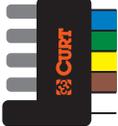
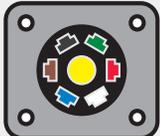
Common Plug Ends By Trailer Type

Trailers are equipped with different plug types based on their electrical components. The chart below provides examples of common trailers and the types of plugs they typically use.

Common Trailer Types	Most Commonly Used Plug Ends	Occasionally Used Plug Ends
 <p>Boat Trailer without Surge Brakes</p>	 <p>4-Way Flat</p>	 <p>7-Way RV Blade (rarely used)</p>
 <p>Boat Trailer with Surge Brakes</p>	 <p>5-Way Flat</p>	 <p>6-Way Round or 7-Way RV Blade</p>
 <p>Utility Trailer</p>	 <p>4-Way Flat</p>	 <p>6-Way Round or 7-Way RV Blade</p>
 <p>Camper Trailer</p>	 <p>7-Way RV Blade</p>	 <p>6-Way Round or 7-Way Round</p>
 <p>5th Wheel Trailer</p>	 <p>7-Way RV Blade</p>	 <p>6-Way Round</p>
 <p>Gooseneck Trailer</p>	 <p>6-Way Round</p>	 <p>7-Way RV Blade</p>

Electrical Adapter Selection Chart

Often times, an electrical adapter is needed to connect a mismatched trailer plug and vehicle socket. Use this chart to identify which CURT adapter is needed, based on the plug and socket type.

		Trailer Side Connectors			
		 4-Way Flat	 5-Way Flat	 6-Way Round	 7-Way RV Blade
Vehicle Side Connectors	 4-Way Flat	Nothing needed Suggested Part#: N/A	5-way flat splice-in harness Suggested Part#: 58531	4-way flat to 6-way round adapter Suggested Part#: 57626	4-way flat to 7-way RV blade adapter Suggested Part#: 57676
	 5-Way Flat	Nothing needed Suggested Part#: N/A	Nothing needed Suggested Part#: N/A	4-way flat to 6-way round adapter Suggested Part#: 57626	4-way flat to 7-way RV blade adapter Suggested Part#: 57676
	 4-Way Round	4-way round to 4-way flat adapter Suggested Part#: 57225	4-way round to 4-way flat adapter and splice-in 5-way flat harness Suggested Part#: 57225 & 58531	4-way round to 4-way flat adapter and 4-way flat to 6-way round adapter Suggested Part#: 57225 & 57626	Not applicable - Replace vehicle end wiring with 7-way RV blade Suggested Part#: N/A
	 6-Way Round	6-way round to 4-way flat adapter Suggested Part#: 57621	Not applicable - Replace vehicle end wiring with 7-way RV blade and use adapter Suggested Part#: 57676 & 57251	Nothing needed Suggested Part#: N/A	6-way round to 7-way RV blade adapter Suggested Part#: 57667
	 7-Way RV Blade	7-way RV blade to 4-way flat adapter Suggested Part#: 57241	7-way RV blade to 5-way flat adapter Suggested Part#: 57251	7-way RV blade to 6-way round adapter Suggested Part#: 57261	Nothing needed Suggested Part#: N/A



GOOSENECK HITCHES

Commonly used to tow livestock trailers and other heavy work trailers, a gooseneck hitch mounts in the bed of a pickup truck and places the trailer's tongue weight slightly forward of the truck's rear axle. Gooseneck hitches are designed for low intrusiveness in the truck bed and usually offer high towing capacities, typically up to 30,000 lbs. They bolt directly to the truck's frame, using installation brackets. Generally, all goosenecks require vehicle-specific installation brackets, but there are some, such as OEM-compatible and puck system kits, that do not require installation brackets.

There are two basic types of gooseneck hitches: under-bed and over-bed. Under-bed gooseneck hitches, such as the CURT Double Lock EZr™ and Ram OE hitch, are designed to be as unobtrusive in the truck bed as possible. This type of hitch is typically equipped with a retractable or 'flip-and-store' gooseneck ball. Over-bed gooseneck hitches use a mounting plate above the truck bed and typically have a fixed ball, though some folding ball options are available. See our entire gooseneck line, starting on page 250.

For a helpful guide in selecting a gooseneck hitch for your customer's vehicle, see page 252.



5TH WHEEL HITCHES

5th wheel hitches use a design very similar to commercial tractor-trailer rigs. They mount in the bed of a pickup truck and couple to the kingpin of a 5th wheel trailer. The most common 5th wheel application is RV towing.

Unlike a gooseneck hitch, a 5th wheel hitch takes up a large portion of the truck bed while installed and is designed to be almost entirely removed when not in use. 5th wheel hitches generally range in gross trailer weight capacity from 16,000 lbs. up to 25,000 lbs.

A 5th wheel hitch can be mounted in a truck bed in a number of ways. The most common method of installation is a bracket kit and set of base rails. The brackets are typically vehicle-specific and bolt directly onto the truck's frame. The 5th wheel base rails can then be bolted onto the brackets, providing mounting points for 5th wheel legs, a 5th wheel roller or even a 5th wheel rail gooseneck hitch.

For a helpful guide in selecting a 5th wheel hitch for your customer's vehicle, see page 276.



TOWING WITH A PUCK SYSTEM

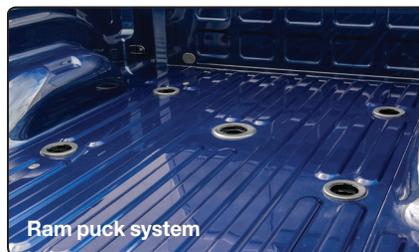
Many trucks today can be purchased with an OEM puck system to allow for ready towing of gooseneck and 5th wheel trailers. A puck system consists of two or four mounting points or 'pucks' and a gooseneck ball hole in the center.

When using the puck system for gooseneck towing, only an OEM puck system gooseneck ball and safety chain anchors are required. The ball fits into the center hole, and the safety chain anchors mount into the two rear pucks. CURT offers puck system ball and anchor kits for Ford, GM, Nissan and Ram pickup trucks. See page 254 to select an OEM puck system gooseneck kit for your customer.

To tow a 5th wheel trailer with the puck system, OEM puck system 5th wheel legs or a roller adapter are required. These products use the pucks to allow a 5th wheel hitch head to be easily installed. Like our OEM puck system gooseneck products, CURT offers OEM puck system 5th wheel products for Ford, GM, Nissan and Ram pickup trucks. See page 278 for leg options and page 280 for roller options.



Ford puck system



Ram puck system



Nissan Titan XD puck system



SPECIALIZED TOWING

Specialized towing encompasses a wide variety of towing equipment, including weight distribution hitches, sway control units and pintle hooks. These products are designed to promote smooth, safe towing of heavy-duty trailers. Specialized towing also includes trailer components such as safety chains, couplers and jacks.

Weight Distribution

A weight distribution hitch is designed to distribute the tongue weight of a trailer across all axles of a vehicle-trailer combination. This is done using long rods called 'spring bars' to apply leverage to the coupling point. Without a weight distribution hitch, heavy tongue weight can unload the tow vehicle's front tires, leading to reduced steering sensitivity. Weight distribution hitches are typically compatible with class 3, 4 and 5 receiver hitches. See page 296 for our WD hitches, including our 2 1/2" replacement shank options.

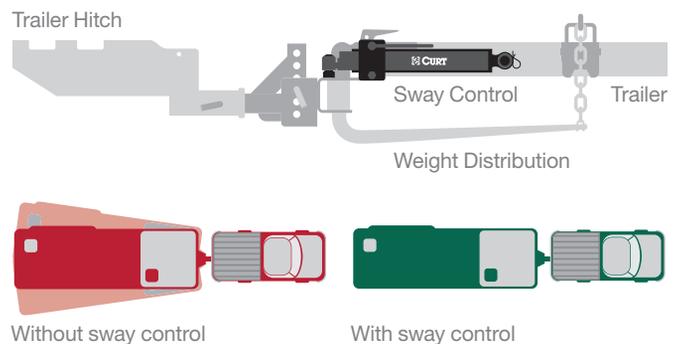


Without weight distribution

With weight distribution

Sway Control

A sway control unit is a device, typically used in combination with a WD hitch, to reduce the lateral movement of a trailer caused by wind and passing traffic. It attaches to both the trailer and trailer hitch and uses an abrasive pad to keep the trailer better in line with the vehicle. A sway control unit should not be used on trailer hitches with a 1 1/4" receiver tube opening or on trailers with surge brakes. A sway control unit should also never be used to correct sway caused by improper tongue weight. See page 305 for our sway control products.



Without sway control

With sway control

TruTrack™ with Integrated Sway Control

While many weight distribution hitches are made to be compatible with a sway control attachment, the CURT TruTrack™ is an advanced WD system that integrates the sway control function into the design of the hitch. The CURT TruTrack™ achieves integrated sway control in two ways: a spring & cam system and adjustable support brackets.

Spring & cam system

The spring & cam system actively stops trailer sway by building up pressure to keep the trailer in line with the tow vehicle and then relaxing to allow for smooth turns.

- Cast head and hardened cams provide a solid attachment point and resist wear
- Cam springs build up pressure for integrated sway control
- Hex castle nut allows for easy adjustment for different trailers



Adjustable support brackets

Instead of using a set of chains and hanger brackets, the TruTrack™ connects to the trailer frame using a pair of adjustable support brackets. These are set at fixed positions by the user and hold the spring bars in place, laterally and vertically, keeping the trailer aligned with the tow vehicle.

- Solid steel spring bars equalize the weight across both tow vehicle and trailer
- Fixed support brackets hold the spring bars in place laterally and vertically
- Friction from the brackets resists lateral movement in the trailer, taking the place of a sway control unit



Learn more about the CURT TruTrack™ weight distribution system on page 298.



#

5th Wheel Base Rail

a long, narrow metal plate that mounts into a truck bed in pairs, typically positioned widthwise, and provides mounting holes for a set of 5th wheel legs or a 5th wheel roller; typically requires a 5th wheel bracket kit for installation; may be universal in design, with multiple mounting holes, to accept different types of legs and rollers; may also be part of a gooseneck adapter or used to attach a 5th wheel rail gooseneck hitch

5th Wheel Bracket

a 5th wheel hitch installation component that mounts in pairs underneath the truck bed and provides an attachment point for a set of 5th wheel base rails; typically vehicle-specific in application

5th Wheel Hitch

a type of heavy-duty trailer hitch that mounts in the bed of a pickup truck and uses a pivoting head and a set of locking jaws to couple to the kingpin of a 5th wheel trailer; similar in concept to a semi-tractor; only compatible with pickup trucks; unique from receiver hitches and gooseneck hitches by not using a trailer ball but having the main coupling components on the vehicle-side of the connection

5th Wheel Pin Box

an adjustable 5th wheel coupling device that attaches to a 5th wheel trailer and provides a kingpin to couple to a 5th wheel hitch; may require a 5th wheel wedge for a proper connection to the 5th wheel head

5th Wheel Roller

also called a '5th wheel slider'; a type of 5th wheel mounting device, used particularly in short-bed pickup trucks, that allows a 5th wheel hitch to travel several inches along the longitudinal axis of the truck bed, providing added clearance for a large trailer overhang when making sharp turns; mounts into the truck bed similar to a set of 5th wheel legs, using the 5th wheel base rails or a puck system

5th Wheel Wedge

a small metal piece that bolts onto a 5th wheel pin box and eliminates the extra pivot point created when coupling a 5th wheel hitch to the pin box

A

Accelerometer

an electrical component that uses variable capacitors to measure changes in momentum and speed, to turn physical forces into electrical signals; used in CURT inertia-based brake controls to measure the tow vehicle's momentum and apply the appropriate amount of pressure to the trailer brakes; may use two axes or three

Active Sway Control

see 'Integrated Sway Control'

All-Wheel Drive (AWD)

a drivetrain system that powers all four wheels simultaneously, all of the time, providing more traction when needed; generally does not activate until the vehicle requires it; different from four-wheel drive which can be switched off by the driver

Aquence® Coating

see 'Bonderite® Coating'

Auxiliary Power

a secondary power source used to carry out an electrical function on a trailer other than exterior lighting and trailer brakes

Axle

the central shaft of a rotating wheel or gear; may be permanently fixed to the wheels, rotating with them, or fixed to the frame with the wheels rotating around the axle; one axle has two wheels

B

Ball Capacity

the amount of weight a trailer ball can safely tow, referring specifically to gross trailer weight, as opposed to tongue weight

Ball Height

the distance from the ground to the top of the inside of the receiver tube subtracted from the distance from the ground to the top of the coupler; used to determine which Euro Mount® is required to make sure the trailer rides parallel to the ground (does not apply to standard ball mounts)

Body

the external structure of a vehicle that gives it its recognizable shape; may be bolted to the chassis or combined with it as a single molded piece as a unibody; also see 'Old Body' and 'New Body'

Bonderite® Coating

formerly called 'Aquence Coating' or 'A-coat'; a liquid base primer that CURT applies to trailer hitches and other products to co-cure with the final powder coat and increase overall corrosion resistance

Brake Control

also known as a 'brake controller' or 'brake control unit'; an electrical device that serves as an interface between a tow vehicle and the electric trailer brakes; can be inertia-based or time-based; typically mounted near the tow vehicle's steering wheel with an electrical line running to the trailer wiring connector; usually requires the user to adjust brake gain to compensate for varying trailer loads; necessary for the operation of electric trailer brakes

Break Strength

also called 'break force' and 'breaking load'; the amount of force needed to break a rope, chain, cable or strap; also see 'Working Load Limit'

Breakaway

also called a 'disconnect'; an instance of a trailer becoming separated from its tow vehicle while moving; a breakaway system can be used to help control the trailer by activating the trailer brakes

Breakaway System

also called a 'breakaway kit'; a safety system, consisting of a breakaway switch, battery and other components, that activates the trailer brakes in the event that a trailer becomes disconnected from its tow vehicle while moving

Bumper Hitch

a light-duty receiver hitch that attaches to a vehicle's bumper, rather than to its frame; typically only compatible with larger vehicles

Bumper Pull Trailer

also called a 'tag-along trailer' or 'drag trailer'; a type of trailer that is towed behind a vehicle with a rear-mounted receiver hitch (not necessarily a bumper hitch) as opposed to a 5th wheel hitch or gooseneck hitch



Cam Buckle

a type of light-duty buckle that allows for more direct control over the tension on a cargo strap; operates by threading the open end of the strap in through the back side of the buckle and pulling to tighten; especially useful when securing lighter loads and fragile cargo

Carriage Bolt

a type of bolt with a rounded head and a square neck to fit into a square hole and allow for one-wrench tightening; used in most CURT trailer hitch installations to attach the hitch to the vehicle's frame

Chassis

the main framework of a vehicle, consisting only of the frame and essential parts needed for operation (excludes the body); can be a unibody design, with the chassis and body as a single piece, or with a C-frame construction

Chassis Cab

also called a 'cab and chassis'; a type of heavy-duty truck comprised only of the truck cab and the chassis, without a truck bed; typically used for heavy towing and commercial purposes

Circuit-Protected

a term applied to electrical circuits that are built with an intentional 'weak spot', known as a fuse or circuit breaker, that breaks the flow of electricity in the event of an overload or short circuit, preventing damage to the circuitry; applies to many CURT taillight converters

CNC Forming

a manufacturing process involving the mechanical shaping of metal using computer-automated machinery

Co-cured Finish

a type of coating that consists of two finishes that bond together through a heating process, producing a final coat that is more durable than a powder coat finish alone; used to protect CURT trailer hitches by combining a liquid Bonderite® coating and powder coat finish

Compliance Certification Label

similar to a VIN tag; a sticker or metal plate affixed to a vehicle, usually in the door sill of the driver's door, that provides a condensed version of vital safety information such as weight ratings, tire pressure and the make, model, year and VIN of the vehicle

Concealed Hitch

a type of receiver hitch that is mounted in such a way that the main body is largely hidden from view underneath the vehicle; denoted by an 'AA' in the footnotes of the CURT Application Guide; also see 'Exposed Hitch'

Connector

an electrical component used to join two or more wires together in a vehicle-trailer electrical connection; may refer to the plug (trailer side) or socket (vehicle side) or both

Conventional Trailer

any trailer that connects to a trailer hitch using a coupler and ball mount, as opposed to a 5th wheel or gooseneck connection; may also refer to a 'travel trailer'

Converter

see 'Taillight Converter'

Coupler Height

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

Coupler Latch

a mechanism, usually on the top of a trailer coupler, that secures the coupler to a trailer ball, using a metal catch or a set of jaws; also see 'Easy-Lock Latch', 'Posi-Lock Latch' and 'Sleeve-Lock Latch'

Coupler Span

the width of a coupler latch, specifically at the point where a safety pin or coupler lock pin is inserted

Cowboy Bumper

also called a 'deep drop bumper'; a bumper with a particularly low center section that typically provides a trailer ball mounting platform, maintaining a level trailer by compensating for a truck's especially large tires; common in farming applications

Crossover Utility Vehicle (CUV)

also known simply as a 'crossover'; a vehicle that is built on a car platform using features and styling common on a sport utility vehicle (SUV)

Curb Weight

the total weight of a vehicle with OEM equipment, a full tank of gas and all necessary fluids (water, coolant, oil, etc.), but without any passengers or cargo

Custom Hitch

a trailer hitch that is designed for a particular year, make, model and style of vehicle to achieve the best possible fit, function and appearance

Custom Original Equipment Vehicle-to-Trailer Connector

see 'Custom Wiring Connector'

Custom Vehicle-to-Trailer Wiring Harness

see 'Custom Wiring Harness'

Custom Wiring

a wiring harness that is designed to be used with a specific vehicle or set of vehicles, having components, such as a taillight converter, that are uniquely compatible with the vehicle's wiring system; also see 'Custom Wiring Connector' and 'Custom Wiring Harness'

Custom Wiring Connector

also called a 'T-connector'; a vehicle-specific electrical device that provides a standard trailer wiring socket on a vehicle by plugging into a special original equipment socket on the vehicle (not included on all vehicles); different from a taillight converter, which must be spliced into the vehicle's wiring; also different from a custom wiring harness, which plugs into the vehicle's taillight assembly using multiple plugs

Custom Wiring Harness

also called a 'T-connector'; a vehicle-specific electrical device that provides a standard trailer wiring socket on a vehicle by plugging into the vehicle's existing wiring at the taillight assembly; may not be compatible with all vehicles; different from a taillight converter, which must be spliced into the vehicle's wiring; also different from a custom wiring connector, which uses a single OEM plug to plug into a special socket provided by the vehicle manufacturer

D

Dinghy Towing

also called 'flat towing'; the act of towing a vehicle, typically a car or small SUV, behind a motorhome or larger vehicle; can be done with two of the vehicle's wheels on the ground and two on a tow dolly, or with all four wheels on the ground using a tow bar; the towed vehicle itself is referred to as the 'dinghy'

Drawbar

sometimes used to refer to a ball mount; a removable trailer ball platform that slides into a hitch receiver tube and fastens with a pin & clip; also refers to the tongue portion of a fixed-tongue hitch; sometimes used to distinguish a coupling configuration different from a standard ball mount and trailer ball, such as a lunette eye

Drop

the amount of distance the trailer ball platform of a ball mount is set below the shank, as measured from the top of the shank to the base of the ball; the opposite of rise; intended to compensate for a particularly low-riding trailer, relative to the tow vehicle; also see 'Coupler Height' and 'Hitch Height'

Dry Weight

the weight of a vehicle or trailer without any passengers, cargo or fluids (water, coolant, oil, gasoline, etc.)

Dual Output Adapter

also called a 'duplex adapter'; an electrical adapter that adapts a single socket into two socket types, usually retaining the original socket format and adding an extra output in a different format

Dually

a type of pickup truck with four tires on its rear axle, two on each side; usually able to carry heavier loads compared to a regular pickup truck, making it a preferred choice for gooseneck and 5th wheel towing

E

Easy-Lock Latch

a basic, lever-type coupler latch that secures the coupler to a trailer ball using a metal catch; designed for specific trailer ball sizes and unable to be adjusted like a posi-lock latch; also see 'Sleeve-Lock Latch'

Electric Trailer Brakes

a type of trailer brakes that uses electrical signals and electromagnets to accentuate a brake drums or discs and assist the tow vehicle in decelerating the trailer; a connection to the tow vehicle's wiring system and a brake control are required for operation

Electrical Adapter

also called a 'trailer electrical adapter' or 'adapter'; an electrical device that adapts the vehicle-side socket to a compatible mate for the trailer-side plug (e.g. 4-way flat connector to 6-way round connector); always classified by its connection from the vehicle to the trailer, never the trailer to the vehicle; typically designed to be plug-and-play, though some do require splicing; also see 'Dual Output Adapter'

Electrical Converter

see 'Taillight Converter'

Exposed Hitch

a type of receiver hitch that is mounted in such a way that the main body is visible underneath the vehicle because of certain design characteristics or obstructions on the vehicle; denoted by a 'BB' in the footnotes of the CURT Application Guide; also see 'Concealed Hitch'

F

Factory Hitch

also called a 'factory-equipped hitch', 'factory-installed hitch' or 'factory receiver'; a trailer hitch, usually a receiver hitch, that is provided and pre-installed by the vehicle manufacturer with the purchase of a new vehicle, usually as part of a towing prep package; may interfere with the installation of an aftermarket hitch

Fascia

a type of plastic trim paneling that covers the bottom edges of some vehicles, particularly in the front and rear, adding aesthetic value and deterring rust damage to the body; may require trimming on some vehicles in order to install a receiver hitch

Fish Wire

a specialized wire used in hitch installations to allow hardware to be pulled or 'fished' through an enclosed frame or bumper tube, particularly when the bolt mounting holes are otherwise difficult to access; features a coiled end to accept a threaded bolt

Fishtail

a scenario in which a vehicle's rear wheels slide to one side, out of control, while moving forward; can occur as a result of unchecked trailer sway or in slippery road conditions; also see 'Jackknife'

Fixed-Tongue Trailer Hitch

a trailer hitch, typically class 1, that has a permanently attached trailer ball platform as opposed to a receiver tube; unable to accept a ball mount or other hitch-mounted accessories that use a shank; denoted by an 'L' footnote in the CURT Application Guide

Forging

a manufacturing process involving the forming and shaping of metal in a heated furnace, using compressive forces; produces pieces that are stronger than equivalent cast or machined parts

Four-Wheel Drive (4WD)

a drivetrain system in which all four wheels of the vehicle are powered by the engine simultaneously; different from all-wheel drive in that 4WD can be disengaged by the driver so that the vehicle operates on a two-wheel drive system only

Frame

the part of a vehicle that serves as the base to which all other parts attach; typically used when mounting a trailer hitch on the vehicle

Front-Wheel Drive (FWD)

a drivetrain system in which the engine powers only the front wheels; common on most non-commercial vehicles that do not have four-wheel drive or all-wheel drive; also see 'Rear-Wheel Drive'

G

Galvanic Corrosion

a type of metal corrosion that occurs when two different types of metal come in contact, such as aluminum and steel; can be prevented with proper isolation of metal surfaces, using plastic spacers or a durable powder coat finish

Gooseneck Hitch

a type of heavy-duty trailer hitch that mounts in the bed of a pickup truck and comes equipped with a ball to engage the coupling mechanism of a gooseneck trailer; uses installation bracket to attach to the frame of the truck above and forward of the rearmost axle; typically able to tow extremely heavy loads up to 30,000 lbs.; may be under-bed or over-bed in design

Gooseneck Installation Brackets

also called a 'gooseneck installation kit'; a set of mounting brackets and hardware, usually vehicle-specific in application, that attaches to the frame of a pickup truck, underneath the bed, and provides a mounting platform for a gooseneck hitch; may be designed for under-bed gooseneck hitches or over-bed gooseneck hitches

Gooseneck Trailer

a type of trailer with a gooseneck-shaped tongue that uses a special coupler to connect to a gooseneck hitch; usually takes the form of a livestock trailer or flatbed trailer and is able to carry extremely heavy loads; sometimes confused with a 5th wheel trailer

Gross Axle Weight (GAW)

the total amount of weight supported by both of a vehicle's axles (front and rear), including the vehicle's systems and all cargo and passengers

Gross Axle Weight Rating (GAWR)

a manufacturer's rating for the maximum allowable weight that a vehicle's axles are designed to carry; can apply to tow vehicles or trailers; sometimes divided into front gross axle weight rating (FGAWR) and rear gross axle weight rating (RGAWR)

Gross Combination Weight (GCW)

also called 'gross combination vehicle weight'; the actual total combined weight of a tow vehicle and trailer, including all passengers and cargo

Gross Combination Weight Rating (GCWR)

a manufacturer's rating for the maximum allowable weight of a combined tow vehicle and trailer; includes the weight of the vehicle, trailer, cargo, passengers and all fluids

Gross Trailer Weight (GTW)

the total weight of a trailer when fully loaded in its actual towing condition; typically used together with tongue weight to help determine whether or not the trailer can safely be towed by a particular vehicle; also see 'Ball Capacity'

Gross Vehicle Weight (GVW)

the total weight of a vehicle when fully loaded, including all cargo and passengers

Gross Vehicle Weight Rating (GVWR)

a manufacturer's rating for the maximum allowable weight of a vehicle when fully loaded, including passengers, cargo and fluids

Ground Effects

a feature found on some vehicles that uses aerodynamic body components to keep the vehicle more affixed to the road; may interfere with the installation of certain rear-mount receiver hitches

H

Hand Wheel

a threaded wheel on top of a trailer coupler that tightens or loosens the coupler assembly around a trailer ball; less common than a coupler latch

Hand Winch

also called a 'manual winch' or 'boat winch' due to its common use on boat trailers; a type of winch that is manually operated using a crank handle; typically used with rope or a winch strap

Handle Nut

a special type of nut with a bendable handle that allows the user to hold the nut in place at the desired angle to attach a fastener in a hard-to-reach mounting place

Hitch Adapter

see 'Receiver Tube Adapter'

Hitch Class

a ranking applied to a rear mount trailer hitch, based on its receiver tube size and weight rating; usually identified by numbers or Roman numerals on a five-point scale

Hitch Clip

also called a 'clip'; a small, hairpin-shaped metal piece used to retain a hitch pin in a receiver tube

Hitch Extender

see 'Receiver Tube Extender'

Hitch Height

the distance from the ground to the top of a hitch receiver tube with the vehicle parked on level ground; used together with coupler height to determine the drop or rise needed when selecting a ball mount

Hitch Rating

the maximum amount of weight a trailer hitch can safely tow, relating particularly to the gross trailer weight rating and tongue weight rating, as determined by the manufacturer; also see 'Hitch Class'

Hitch Weight

see 'Tongue Weight'

Inertia-Based Brake Control

also called a 'proportional brake control', 'inertia-activated brake control' or 'inertia-actuated brake control'; a type of brake control that measures the inertia of the tow vehicle using an accelerometer and applies power to the electric trailer brakes in proportion to that inertia when stopping; consistently more accurate than time-based brake controls

Insert

any hitch-mounted item that installs into a trailer hitch receiver tube opening using a shank (e.g. ball mount, cargo carrier, winch mount)

Inside Diameter (I.D.)

the distance measured from the innermost points of a circular opening as opposed to the outermost points along the rim or outside diameter; applies particularly to circular objects with a hole or circular opening in the center, such as a wheel bearing or lunette eye

Integrated Sway Control

also known as 'active sway control'; a feature of certain weight distribution hitches (namely the CURT TruTrack™ weight distribution system) that works to reduce trailer sway in addition to leveling out the trailer and tow vehicle, eliminating the need for a sway control unit; the TruTrack™ uses a spring & cam system and support bracket to resist lateral trailer movement

J

J684 Protocol (V-5)

a testing protocol developed by the Vehicle Equipment Safety Commission (VESC) to increase highway safety by reducing towing and hitch-related accidents; not intended to cover 5th wheel and pintle hook devices or towing methods; also see 'V-5'

J2638 Protocol

a testing protocol designed to establish minimum performance criteria for a tow vehicle and 5th wheel or gooseneck trailer at or below 30,000 lbs. gross trailer weight; establishes criteria for the trailer hitch, tow vehicle attachment structure, trailer attachment structure and coupling

Jackknife

an extreme angle formed between a tow vehicle and trailer that typically occurs from improper braking, backing up or a loss of control on poor road conditions; also see 'Fishtail' and 'Trailer Sway'

K

Kingpin

also called a '5th wheel kingpin'; a coupling device at the center of a 5th wheel trailer's tongue that is grasped by the jaws of a 5th wheel hitch, i.e. the male end of a 5th wheel connection; features a cylindrical shape that allows the trailer to rotate freely within the 5th wheel head to allow for proper turning and maneuvering

L

Landing Gear

a type of trailer jack system, commonly used on gooseneck and 5th wheel trailers, to raise and lower the coupler height when coupling and uncoupling; also used to stabilize the trailer when not in tow; should always be completely raised before towing

LED (Light-Emitting Diode)

a semiconducting light source that requires less amperage for illumination than a traditional light bulb

Liftgate

a hydraulic or electrically powered platform, mounted on the back end of a truck or large commercial vehicle, that can be raised or lowered to assist in the loading of heavy items; sometimes referred to by the brand name 'Tommy Gate Lift'; may interfere with the installation of certain rear-mount receiver hitches

Load Level Air Compressor

a pump used in self-levelling and air suspension systems that distributes pressurized air as needed to help keep the vehicle level; may interfere with the installation of certain trailer hitches

Long Bed (LB)

also called a 'long box'; a truck bed that is typically one or two feet longer than a short-bed (compact long beds are generally 7' long and full size are 8' long); generally preferred over short bed trucks for 5th wheel and gooseneck towing; may vary depending on the truck manufacturer

Low-Side Switching

an electrical switch configuration that uses a direct ground connection to activate a signal; applies 12 volts to the bulb at all times and activates the signal by switching to the ground connection; may require a taillight converter for a proper trailer wiring connection

Lunette Eye

also called a 'lunette ring'; a thick metal ring that serves as the trailer side of a coupling mechanism to attach to a pintle hook, ball & pintle combination or clevis pin on a tow vehicle

M

Multi-Fit Trailer Hitch

also known as a 'universal hitch'; a type of receiver hitch that features an adjustable frame to fit a number of different vehicles; typically does not provide the ideal fit, function and appearance that a custom hitch offers

Multi-Plex

see 'Pulse Width Modulation'

N

New Body

a term used to refer to the latest body style of a vehicle or a newer body style compared to a previously manufactured body style or old body; especially applies when two different body styles are manufactured in the same year (the newer style is referred to as the 'new body')

Non-Powered Taillight Converter

also called a 'non-powered electrical converter' or 'non-powered converter'; a type of taillight converter that operates by drawing power through a tow vehicle's taillight circuitry, rather than directly from the battery as in a powered taillight converter; can cause dimming in vehicle's taillights

O

OEM Puck System

see 'Puck System'

Old Body

also called 'classic body'; a term used to refer to the previously manufactured body style of a vehicle, compared to a new body style or the latest body style; especially applies when two different body styles are manufactured in the same year (the previously style is referred to as the 'old body' or 'classic body')

Original Equipment Manufacturer (OEM)

a term used to refer to parts that are made by the actual manufacturer of the vehicle as opposed to an aftermarket manufacturer

Outside Diameter (O.D.)

the distance measured from the outermost points of a circular object as opposed to the innermost points or inside diameter; may refer to a circular object with a hole or circular opening in the center, such as a wheel bearing or lunette eye

Owner's Manual

a booklet provided by a vehicle manufacturer that contains key information about the specific vehicle, including capacities, maintenance recommendations and safe practices; also usually available for download on the manufacturer's website

P

Payload

the cargo or freight transported by a vehicle or trailer; excludes the weight of the tow vehicle and trailer; also see 'Gross Trailer Weight' and 'Gross Vehicle Weight'

Pin & Clip

a retaining device, comprised of a hitch pin and hitch clip, used to install a ball mount or other receiver tube insert; may also be used on a 5th wheel hitch to hold the 5th wheel legs into the base rails

Pin Box

see '5th Wheel Pin Box'

Pintle Hitch

a heavy-duty coupling mechanism comprised of a pintle hook on the vehicle side and a lunette eye on the trailer side; commonly used for heavy-duty towing in military, construction, industrial and agricultural applications

Pintle Hook

the 'jaw' portion of a pintle hitch that mounts onto a tow vehicle, using the receiver tube opening or a pintle mount, and couples to a lunette eye mounted on a trailer

Pintle Mount

a receiver hitch insert with a flat plate that provides a mounting platform for a pintle hook or ball & pintle combination; typically has a series of holes to allow the pintle hook to be adjusted vertically

Plug

the male end of a connector used to hook up trailer wiring to a tow vehicle; comes in different formats, including round, flat and square; also see 'Socket'

Posi-Lock Latch

a type of coupler latch that has an adjustable nut that raises or lowers the metal catch to allow the amount of tension placed on the trailer ball to be adjusted; may be used on a straight-tongue coupler or A-frame coupler

Powder Coat Finish

a type of coating used on metal surfaces to protect against rust and other damage and that is characteristically more durable than most paint finishes; created by applying a layer of powder to the surface of the object and then heating the object to a certain temperature for a certain amount of time, curing the powder into a solid coating; also see 'Bonderite® Coating'

Powered Taillight Converter

a type of taillight converter that draws power directly from the tow vehicle's battery, bypassing the vehicle's electrical systems and allowing the trailer lights to be illuminated with virtually no draw on the vehicle's taillight circuitry or other electrical components; recommended on most vehicles with LED taillights; requires a direct connection to the vehicle's battery using a powered converter wiring kit; also see 'Non-Powered Taillight Converter'

Puck System

a towing component, found in some truck beds, that is designed to allow for more streamlined gooseneck or 5th wheel towing; made up of a center hole and two or four mounting points or 'pucks' laid out in a rectangular pattern that are able to accept certain compatible 5th wheel and gooseneck products; can be purchased as part of the towing prep package on certain Ford, GM, Nissan and Ram trucks

Pulse Width Modulation (PWM)

also called 'multiplex'; a type of vehicle wiring system that uses varying signal intensities across a single wire to control more than one trailer electrical function; made up of two subcategories: ST systems and STT systems; commonly found on high-end imported vehicles such as BMW, Mercedes and Volkswagen

R

Ratchet Strap

a type of heavy-duty cargo strap that uses a ratcheting assembly to allow higher tension to be placed on a load, compared to a cambuckle strap; ideal for larger, heavier cargo

Rear-Wheel Drive (RWD)

a drivetrain system in which the engine powers only the rear set of wheels, as opposed to the front set of wheels or all four wheels; less common on non-commercial vehicles than front-wheel drive

Receiver Hitch

a type of trailer hitch with a receptacle or tube opening to accept the shank of an insert such as a ball mount, bike rack or cargo carrier; may be rear-mounted or different from fixed-tongue hitches, 5th wheel hitches and gooseneck hitches

Receiver Tube

the female end of a receiver hitch (usually positioned horizontally, though sometimes vertically as in a vertical receiver hitch) that accepts the shank of an insert such as a ball mount or cargo carrier; commonly 1 1/4" x 1 1/4" or 2" x 2" in inside dimensions; can also be 2 1/2" x 2 1/2"

Receiver Tube Adapter

also called an 'adapter' or 'hitch adapter'; a device that adapts the receiver tube of a trailer hitch from one size to another to accommodate a different shank size, whether larger or smaller; may reduce the overall weight capacity of the trailer hitch

Receiver Tube Extender

also called an 'extender', 'receiver extension', 'hitch extension' or 'hitch extender'; a device that fits into the receiver tube of a trailer hitch and extends the receiver tube by a certain length; usually used to give a hitch-mounted accessory, such as a cargo carrier or bike rack, more clearance of the vehicle's bumper or spare tire; may reduce the overall weight capacity of the trailer hitch

Recreational Vehicle (RV)

a type of automotive vehicle that has a living space and is made specifically for recreational use, namely camping; typically refers to a motorhome but can also refer to a travel trailer, popup camper, truck camper, teardrop trailer or toy hauler; may also refer to smaller vehicles designed mainly for recreational use, such as ATVs, personal watercraft and snowmobiles

Recovery Towing

a type of towing in which a tow hook, tow strap and a second vehicle are used to rescue or recover a vehicle that has become stuck and unable to drive (e.g. a car stuck in the ditch); typically used in situations where the vehicle to be recovered is off the road

Rise

the amount of distance the trailer ball platform of a ball mount is set above the shank, as measured from the top of the shank to the base of the ball; the opposite of drop; intended to compensate for a particularly high-riding trailer, compared to the tow vehicle; also see 'Coupler Height' and 'Hitch Height'

Robotic Welding

a type of welding that uses automated machinery and processes to streamline the welding process, speeding up production and improving the consistency of the weld lines; used in the manufacturing process of many CURT trailer hitches

Roll Pan Bumper

a type of bumper that is flush with the surrounding components; common on lowered trucks; may interfere with installation of a receiver hitch, depending on the design

S

Safety Chains

a pair of chains that attach from a trailer tongue to a hitch, using hooks, to keep the trailer connected to the tow vehicle in the event that the coupler becomes detached while moving; required by law for towing; should be crossed once underneath the coupler for proper hookup

Short Bed (SB)

also called a 'short box'; a pickup truck bed that is typically 5.5' to 6.5' long, about a foot or two shorter than a long bed; may vary depending on the manufacturer; usually requires a roller for proper 5th wheel towing, if applicable

Sleeve-Lock Latch

a type of coupler latch, particularly on A-frame couplers, that uses a spring-loaded, sliding metal sleeve to secure or release a jaw-like mechanism over a trailer ball; sometimes equipped with a lever to assist operation of the sleeve; designed for specific trailer ball sizes; unable to be adjusted like a posi-lock latch; also see 'Easy-Lock Latch'

Socket

the female end of a connector used to hook up trailer wiring to a tow vehicle; comes in different formats, including round, flat and square; also see 'Plug'

Sport Utility Vehicle (SUV)

a type of automotive vehicle with a station-wagon-like body built on a light truck chassis; usually equipped with four-wheel drive for on- or off-road capability

Spring Bar

a semi-rigid metal bar used in pairs on a weight distribution hitch to redistribute the tongue weight of a trailer across the tow vehicle and trailer by applying upward tension on the receiver hitch; may be in the form of a round bar or trunnion bar

ST Wiring System (Stop / Tail)

a type of pulse width modulation wiring system that uses one wire to control the stop (brake) lights and taillights and separate wires to control the left and right turn signals; different than an STT system, which uses a single wire for all three functions

Stabilizing Strap

see 'Support Strap'

Stake Pocket

a rectangular recessed socket, accessible from the top surface of a truck's bed rail, designed to accept the mounting stakes of accessories such as tie-down anchors, ladder racks or headache racks

STT Wiring System (Stop / Tail / Turn)

a type of pulse width modulation wiring system that uses a single wire to control the stop (brake) lights, taillights and turn signals; different than an ST system, which uses two wires to accomplish this same function

Sub-Frame

the portion of a vehicle's unibody frame that supports the engine and front suspension

Support Strap

also called a 'stabilizing strap'; a supplementary strap used for adding support to an unsupported load such as a bike rack or cargo carrier

Surface Mount Technology (SMT)

a type of electronic circuitry in which components are mounted directly to the surface of the circuit board instead of through holes made in the board using wire leads; allows for smaller components, more components per area, lower resistance, reduced heat generation and longer life cycles; used in many CURT taillight converters, custom wiring harnesses and custom wiring connectors with a converter

Surge Brakes

a type of trailer brake system that is entirely self-contained and uses the momentum of the trailer behind the tow vehicle to accentuate the trailer brakes, using a hydraulic cylinder and brake fluid; common on large boat trailers; not compatible with a brake control, unlike electric trailer brakes

Sway

see 'Trailer Sway'

Sway Bar

sometimes confused with a sway control unit or a weight distribution hitch; a specialized spring on a vehicle's suspension system that helps reduce body roll; not associated with a trailer hitch

Sway Control Unit

also called a 'sway control'; a device that connects to both a trailer hitch and trailer and uses an abrasive pad, similar to a brake pad, to reduce the trailer's tendency to sway by resisting lateral movement; should not be used to correct sway caused by improper tongue weight; may be used in combination with a weight distribution hitch or with a sway tab ball mount; generally used in pairs to maximize effectiveness

T

T-Connector

an application-specific wiring harness that 'Ts' into existing tow vehicle wiring to provide a standard electrical connector; may use multiple plugs to 'T' into the taillight assembly as in a custom wiring harness or a single OEM-compatible plug to plug into a special socket provided by the vehicle manufacturer as in a custom wiring connector

Taillight Converter

also called an 'electrical converter'; an electrical device that converts a tow vehicle's wiring system to be compatible with a trailer's wiring system (e.g. 3-wire system to 2-wire system) by splicing into the vehicle's wiring, usually at the taillight assembly; may also be integrated into a T-connector; also see 'Powered Taillight Converter' and 'Non-Powered Taillight Converter'

Taillights

also called 'taillamps'; a set of red lights mounted on the back of a vehicle that illuminate when the vehicle's headlights are turned on to increase visibility of the vehicle; may be combined with the vehicle's brake lights and reverse lights or may be independently mounted; may be used to splice in a taillight converter or plug in a custom wiring harness

Tandem Axle Trailer

also called a 'double axle trailer'; a trailer with two fixed axles and four wheels; typically has a higher capacity than single-axle trailers and lower capacity than tri-axle trailers

Three-Wire System

a type of vehicle wiring system that uses three separate wires to operate the brake lights, taillights and turn signals; one of the most common types of wiring systems used on automotive vehicles; also see 'Two-Wire System' and 'Pulse Width Modulation'

Tie-Down Anchor

a ring or hook, mounted on a vehicle or trailer, that serves as a point to which a rope, strap or chain can be attached to help secure cargo; commonly found in utility trailers, but can also be found in the back of a pickup truck, van or utility vehicle

Time-Based Brake Control

also called a 'time-activated brake control', 'time-actuated brake control' or 'time-delayed brake control'; a brake control that increases the amount of pressure to the trailer brakes over time, based on the preset gain setting; typically requires little or no calibration; less precise than an inertia-based brake control

Tongue Weight (TW)

also called 'hitch weight'; the weight exerted at the vehicle-trailer coupling point when the trailer is fully loaded and hooked up for towing; should generally be 10-15% of the gross trailer weight; also see 'Vertical Load Limit'

Torque

a measurement of the turning force on an object such as a bolt or a flywheel (e.g. pushing or pulling the handle of a wrench when tightening a bolt); all trailer hitch installations require a certain amount of torque (i.e. torque specifications) to be applied to the fasteners; also see 'Torque Wrench'

Torque Wrench

a type of wrench that indicates how much torque is being applied to the fastener being turned, whether tightening or loosening; used when specific torque specifications must be applied to hardware

Tow Bar

a towable device that bolts onto the front of a vehicle and features a coupler to allow the vehicle to be towed by another larger vehicle, such as a motorhome; typically adjustable in design to allow for different vehicle sizes; also see 'Dinghy Towing'

Tow Dolly

a two-wheeled towable device designed to cradle the front wheels of a vehicle to allow it to be towed by another larger vehicle, such as a motorhome; also see 'Dinghy Towing'

Tow Hook

a large metal hook or ring mounted on the front or rear of a vehicle, usually on the bumper or integrated with the bumper, for recovery towing situations; may also be hitch-mounted; typically used in combination with a tow strap

Tow Rating

a manufacturer's rating for the maximum amount of weight that can safely be towed by a particular vehicle, taking into account its engine size, transmission, axle ratio, brakes, chassis, cooling systems, etc.; usually based on gross trailer weight rather than trailer size, though limits may be imposed for maximum frontal area of a trailer and overall length; also see 'Gross Combination Weight Rating'

Tow Strap

a length of heavy-duty woven fibers or other material designed to be used with a tow hook to pull free a disabled vehicle in a recovery towing situation

Tow Vehicle

an automotive vehicle that is used to pull a trailer or some other towable load, such as a cargo carrier or dinghy; may be a car, van, truck, SUV, RV, etc.; typically requires towing equipment such as a trailer hitch and a wiring connector

Towing Prep Package

also called a 'trailer package', 'towing package', 'factory tow package' or 'hitch prep package'; a vehicle option offered by automotive manufacturers that includes certain modifications and equipment (such as a receiver hitch and/or truck bed puck system) to optimize the vehicle for towing a trailer

Trailer Brakes

a braking system built into a trailer's axle(s) that activates either by electric impulse, as in electric trailer brakes, or a hydraulic mechanism, as in surge brakes; usually in the form of drum brakes

Trailer Sway

also known as 'yaw', 'whipping' or 'sway'; refers to the fishtailing action of a trailer caused by external forces that set the trailer's mass into a lateral motion, with the trailer's wheels serving as the axis or pivot point; can be countered using a sway control unit or integrated sway control; may also be caused by the improper use of equipment or by excessive tongue weight

Trailer Tongue

also called the 'tongue'; the part of a trailer that extends forward from the trailer's main body and includes the trailer coupler

Travel Trailer

also called a 'camper', 'caravan trailer', 'house trailer', 'conventional trailer', 'recreational vehicle trailer' or 'RV trailer'; a type of large camper equipped with a living space and typically designed for long-term, long-distance travel; may be designed as a 5th wheel trailer or bumper pull trailer; also see 'Recreational Vehicle'

Truck Bed

also called a 'truck box'; the rear portion of a truck, designed for holding cargo; usually equipped with sides and a tailgate; also see 'Short Bed' and 'Long Bed'

Two-Wheel Drive (2WD)

a drivetrain system in which the engine powers only two of the vehicle's wheels; common on most non-commercial vehicles without four-wheel drive; may be front-wheel drive or rear-wheel drive

Two-Wire System

also called a '2-wire system'; a type of vehicle wiring system that uses one wire to operate the stop (brake) lights and turn signals and another wire to operate the taillights; the simplest wiring system and the most common in basic trailers; also see 'Three-Wire System' and 'Pulse Width Modulation'

U

Unibody Frame

a type of vehicle frame in which the bodywork and chassis are made up of a single molded piece; usually has a sub-frame on the front end to hold the engine and suspension

Universal Hitch

see 'Multi-Fit Trailer Hitch'

Unsupported Load

any load attached to a trailer hitch that is not supported by trailer wheels, such as a cargo carrier or bike rack; may require a support strap

USCAR (United States Council for Automotive Research)

a group that attempts to create uniformity within vehicle components; also refers to a type of electrical connection that has been commonly used on Ford, GM and Toyota trucks since 1999 (Dodge has a distinct version)

V

V-5

a testing protocol developed by the Vehicle Equipment Safety Commission to increase highway safety by reducing towing and hitch-related accidents; not intended to cover 5th wheel and pintle hook connecting devices or towing methods; also see 'V-19'

V-19

a testing protocol developed by the Vehicle Equipment Safety Commission to increase highway safety by reducing towing-related accidents, particularly for towing methods associated with 5th wheel and gooseneck trailer tongues connecting to kingpin or ball-and-socket couplers located above and forward of the rear-most axle of the towing vehicle; also see 'V-5'

Vehicle Identification Number (VIN)

a unique serial number used by the automotive industry to identify individual motor vehicles; can be used to determine the year, make and model of the vehicle for selecting a trailer hitch

Vertical Load Limit

also called 'vertical load capacity'; the maximum amount of weight that a gooseneck or 5th wheel hitch can safely bear at the vehicle-trailer coupling point, as prescribed by the manufacturer; applies specifically to gooseneck and 5th wheel towing, unlike tongue weight, which applies to rear mount hitches

Vertical Receiver Trailer Hitch

a less common type of receiver hitch that has a vertical receiver tube as opposed to a horizontal one; typically requires a vertical receiver tube adapter or vertical receiver tube ball mount for towing

VEESC (Vehicle Equipment Safety Commission)

a government organization devoted to promoting safety by creating rules, regulations and codes associated with the performance of motor vehicle equipment; also see 'V-5' and 'V-19'

W

Weight Carrying

a method of towing in which all of a trailer's tongue weight is placed directly on the trailer hitch and the rear of the tow vehicle; different from weight distribution, in which the tongue weight is distributed more evenly across the tow vehicle and trailer axles

Weight Carrying Capacity (WC)

the total weight that a trailer hitch can safely tow without a weight distribution hitch attached; also see 'Weight Distribution Capacity'

Weight Carrying Hitch

a receiver hitch used without a weight distribution system so that it bears all of the trailer's tongue weight; may be limited to weight carrying capabilities only or may have a dual rating to provide the option of being used with a weight distribution hitch

Weight Distribution Capacity (WD)

the total weight that a receiver hitch can safely tow with a weight distribution hitch attached; also see 'Weight Carrying Capacity'

Weight Distribution Hitch

also called a 'weight distributing hitch', 'load-leveling hitch' or 'load-equalizing hitch'; a receiver hitch attachment that uses metal bars, called spring bars, placed under tension to distribute a trailer's tongue weight across the axles of the tow vehicle and trailer; when used properly, can enhance handling and braking and maximize towing capacity; available in two configurations: round bar and trunnion bar; can be used in combination with a sway control unit to minimize trailer sway; also available in an integrated sway control design, in which the sway control components are built into the weight distribution hitch itself

Weld Nut

a type of nut that is welded to a metal surface on a vehicle and allows a bolt to be fastened directly to the surface without an additional nut; commonly used during trailer hitch installations to serve as a mounting place for bolts

Wheelbase (WB)

the distance between the center of the front wheel and the center of the rear wheel on a vehicle; vehicles with a shorter wheelbase may be more prone to trailer sway in towing applications

Winch

a mechanical device that uses a rotating drum and a length of cable or a strap to pull one object toward another; powered winches are usually mounted on the front end of pickup trucks or other large vehicles and are used for recovery towing or to pull the vehicle toward a fixed object; hand winches are commonly found on boat trailers to allow the boat to be pulled into the trailer at a boat landing

Wiring Harness

a set of wires used to carry power from a tow vehicle to a trailer; may be plug-and-play or spliced in; also see 'T-Connector'

Wiring System

a configuration of wiring used by a vehicle to supply power to its electrical systems; common vehicle forms include two-wire, three-wire and PWM systems

Working Load Limit

also called 'work load'; the maximum amount of weight, as prescribed by the manufacturer, that a rope, chain, cable or strap is safely rated to support; also see 'Break Strength'

Y

Yaw

the vertical axis of an object that allows it to pivot from side to side; measured by an accelerometer to provide precise trailer braking; may also refer to trailer sway
