

Things to Know Before You Tow

Get the Facts Before You Buy . . .

Before You Buy

If you are selecting a vehicle that will be used for towing, you should determine the approximate weight of the trailer you intend to tow, including the weight of any additional cargo and fluids that you will be carrying in the trailer. Also be sure the vehicle has the proper optional equipment (see page 18).

Note: Performance can be severely compromised in hilly terrain when minimum acceptable powertrain combination is selected. It is wise to consider purchasing a vehicle with a more powerful engine for hilly terrain.

Brakes

Many states require a separate braking system on trailers with a loaded weight of more than 1,500 pounds. For your safety, Ford Motor Company recommends that a separate functional brake system be used on any towed vehicle, including those dolly-towed or towbar-towed. There are two basic types of brake systems designed to activate trailer brakes:

1. Electronically Controlled

Brakes usually provide automatic and manual control of trailer brakes. They require that the tow vehicle be equipped with a

controlling device and additional wiring for electrical power. These brakes typically have a control box installed within reach of the driver and can be applied manually or automatically.

2. Surge Brakes are independent hydraulic brakes activated by a master cylinder at the junction of the hitch and trailer tongue. They are not controlled by the hydraulic fluid in the tow vehicle's brake system, and the tow vehicle's hydraulic system should never be connected directly to the trailer's hydraulic system.

Be sure your trailer brakes conform to all applicable state regulations.

Trailer Lamps

Make sure the trailer is equipped with lights that conform to all applicable government regulations. Do not connect a trailer lighting system directly to the lighting system of the vehicle. See a local recreational vehicle dealer or rental trailer agency for correct wiring and relays for the trailer and heavy-duty flashers.

After You Buy

Before heading out on a trip (remember, do not tow a trailer until

your vehicle has been driven at least 500 miles), be sure to have your fully loaded vehicle (including passengers) and trailer weighed so as not to exceed critical weight limits (page 14). If any of these limits are exceeded, cargo should be removed from the vehicle and/or trailer until all weights are within the specified limits.

Safety Chains

- Always use safety chains when towing. Safety chains are used to retain connection between the towing and towed vehicle in the event of separation of the trailer coupling or ball.
- Cross chains under the trailer tongue and allow enough slack for turning corners.
- See your vehicle's Owner Guide for safety chain attachment information.
- When using a frame-mounted trailer hitch, attach the safety chains to the frame-mounted hitch using the recommendations supplied by the hitch manufacturer.
- For rental trailers, follow rental agency instructions for hookup of safety chains.

Trailer Wiring Harness

- Vehicles equipped with a factory-installed Trailer Towing Package include a trailer wiring harness and a wiring kit.
- This kit is packaged in a cardboard box and includes one or more jumper harnesses (to connect to your trailer wiring connector) and installation instructions.
- Ranger, all Explorer models, F-150, and E-Series Van and Wagon models include a standard 4-pin trailer wiring harness. Expedition, Excursion and F-Series Super Duty pickup models include a standard 7-pin trailer wiring harness. Refer to page 17 for wiring harness usage with optional trailer towing packages.



Metric Conversion – To obtain information in kilograms, multiply pounds by .45; to obtain information in kilometers, multiply miles by 1.6.

ABOUT HITCHES



7-wire trailer wiring harness and frame-mounted hitch receiver (shown with aftermarket hitch equipment).



Fifth-Wheel Hitch



When towing, it is vital that the proper hitch be used. Here is the hitch information you should know:

Weight-Carrying (Non-Weight-Distributing) Hitch is commonly used to tow small and medium-sized trailers. Choose a proper hitch and ball and make sure its location is compatible with that of the trailer. Use a good weight-carrying hitch that uniformly distributes the trailer tongue loads through the bumper and frame (through the body with Escape; bumper hitch not available with Escape or Explorer 4-Door). Ford rear step bumpers and hitch receivers provide weight-carrying capacities as shown in the chart below. (A label affixed to the hitch receiver provides both the weight-carrying and weight-distributing capacities for each receiver.) The vehicle owner is responsible for obtaining the proper hitch ball, ball mounting and other appropriate equipment to tow both the trailer and load that will be towed.

Weight-Distributing Hitch is used in conjunction with a hitch platform (receiver) to distribute tongue load to all towing vehicle and trailer wheels. Required for certain Class III and all Class IV applications (see the chart below).

- Weight-distributing hitch platforms are welded or bolted to vehicle frame. Bolt-on types are recommended because they can be removed.
- Properly installed bolt-on weight-distributing hitch platform will not weaken vehicle or underbody as heat of welding might.
- Equalizing arms are connected from hitch to trailer's A-frame, and are adjusted for best towing performance. Lengths of chain are pulled up and tightened to bend spring bars upward, which lifts some of the weight from the rear wheels and transfers weight to the other wheels of the vehicle and trailer.

Factory-Installed Trailer Hitch Receiver Options are available on the following Ford vehicles:

- **F-250/350 Super Duty Pickups:** Option Code 86R
- **Expedition:** Standard
- **F-150 Pickups:** Included with Trailer Tow Group – Option Code 535
- **E-Series Van/Wagon:** Included with Trailer Towing Package – Option Code 536
- **Excursion:** Standard
- **Explorer 4-Door:** Class II Standard; Class III/IV Included with Trailer Towing Prep Package – Option Code 53G
- **Escape:** With Class II Trailer Towing Package – Option Code 536
- **Ranger Pickup:** Included with Class III Trailer Towing – Option Code 53L

Note: See chart below left for the weight-carrying and weight-distributing capacities of these hitch receivers. (These capacities also are shown on a label affixed to each receiver.)

The vehicle owner is responsible for obtaining the proper hitch ball, ball mounting, weight-distributing equipment (i.e., equalizing arms and snap-up brackets, sway control system) and other appropriate equipment to tow both the trailer and load that will be towed.

FORD REAR STEP BUMPER/HITCH RECEIVER WEIGHT CAPACITY

The maximum weight capacities for the weight-distributing hitch receivers shown below may exceed the maximum loaded trailer weight for the vehicle specified. Refer to the Trailer Towing Selector charts on pages 19-23 for Maximum Loaded Trailer Weights for each vehicle.

Vehicle	Weight-Carrying Max. Trailer Capacity (Lbs.)(1)	Max. Tongue Load (Lbs.)	Weight-Distributing Max. Trailer Capacity (Lbs.)(2)	Max. Tongue Load (Lbs.)
Rear Step Bumper:				
Ranger	2,000	200	•	•
Explorer Sport/Sport Trac	3,500	350	•	•
E-Series Van/Wagon	5,000	500	•	•
Expedition	4,000	400	•	•
Excursion	5,000	500	•	•
F-Series	5,000	500	•	•
Hitch Receiver:				
Escape	3,500	300	•	•
Ranger	3,500	350	6,000	600
Explorer 4-Dr (Class II)	3,500	350	•	•
Explorer 4-Dr (Class III/IV)	5,000	500	7,700	770
E-Series Van/Wagon	5,000	500	10,000	1,000
Expedition	6,000	600	8,900	890
Excursion	5,000	500	12,500	1,250
F-150	5,000	500	8,800	880
F-250/350 Super Duty	5,000 (3)	500 (3)	12,500 (3)	1,250 (3)

(1) Ford rear step bumpers and hitch receivers do not include a hitch ball. The vehicle owner is responsible for obtaining the proper hitch ball, ball mounting and other appropriate equipment to tow both the trailer and its cargo load. (2) Ford hitch receivers do not include a hitch ball or ball mounting. The vehicle owner is responsible for obtaining the proper hitch ball, ball mounting, weight distributing equipment (i.e., equalizing arms and snap-up brackets, sway control system) and other appropriate equipment to tow both the trailer and its cargo load. (3) Maximum hitch receiver/tongue load capacities increase to 6,000/600 lbs. weight-carrying and 15,000/1,500 lbs. weight distributing (effective with Fall 2002 production).

Fifth-Wheel Hitch is mounted in the pickup bed to put more of the trailer weight directly over the towing vehicle. The receiver centerline of the hitch should be mounted at least two inches forward of the rear axle of the truck chassis. This mounting location will distribute the king pin weight of the trailer for optimum load-carrying and sway-control performance. Care must be taken to maintain nominal clearance from the back of the cab to the front of the trailer during tight cornering or backing maneuvers. Failure to follow this recommendation can adversely affect the towing vehicle's steering, braking, and handling characteristics.

More Things to Know Before You Tow

Get the Facts Before You Buy . . .

THINGS TO KNOW BEFORE YOU TOW

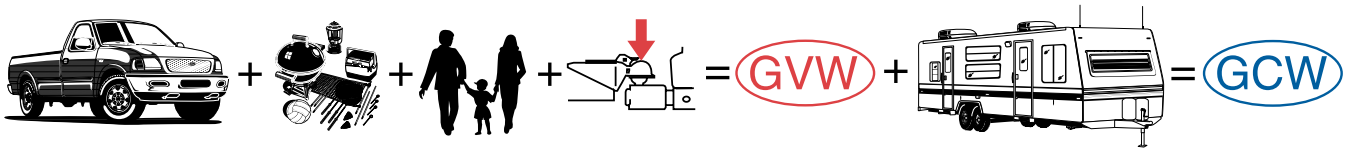
Weights to Check

Base Curb Weight + Cargo Weight + Passenger Weight + Tongue Load or King Pin Weight = Gross Vehicle Weight (GVW)

GVW must not exceed GVWR (obtain from Safety Compliance Certification Label on the left front door lock facing or the door latch post pillar).

GVW + Loaded Trailer Weight = Gross Combination Weight (GCW)

GCW must not exceed GCWR (obtain from charts on pages 19-23 or your vehicle's Owner Guide).



Base Curb Weight is the weight of the vehicle including a full tank of fuel and all standard equipment. It **does not include** passengers, cargo or any optional equipment. Your Ford dealership salesperson can give you this number for the vehicle(s) you are considering.

Cargo Weight includes all weight added to the Base Curb Weight, **including** cargo and optional equipment (consult salesperson). When towing, trailer tongue load or king pin weight also is part of the Cargo Weight.

Payload is the combined maximum allowable weight of cargo and passengers that the truck is designed to carry. It is Gross Vehicle Weight Rating minus the Base Curb Weight.

Gross Vehicle Weight (GVW) is the Base Curb Weight *plus* actual **Cargo Weight** *plus* passengers. It is important to remember that GVW is not a limit or specification . . . it is the actual weight that is obtained when the fully loaded vehicle is driven onto a scale.

Gross Vehicle Weight Rating (GVWR) is the *maximum allowable weight* of the fully loaded vehicle (including passengers and cargo). This number – along with other weight limits, as well as tire, rim size and inflation pressure data – are shown on the vehicle's Safety Compliance Certification Label, located on the left front door lock facing or the door latch post pillar. **The GVW must never exceed the GVWR.**

Gross Axle Weight (GAW) is the total weight placed on each axle (front and rear). To determine the Gross Axle Weights for your vehicle and trailer combination, take your loaded vehicle and trailer to a scale. With the trailer attached, place the front wheels of the vehicle on the scale to get the front GAW. For rear GAW, weigh the towing vehicle with the trailer attached, but with just the four wheels of the vehicle on the scale. You get the rear GAW by subtracting the front GAW from that amount.

Gross Axle Weight Rating (GAWR) is the maximum weight to be carried by a single axle (front or rear). These numbers also are shown on the Safety Compliance Certification Label. **The total load on each axle must never exceed its GAWR.**



Sample Truck Safety Compliance Certification Label
(Refer to actual label on your vehicle)

Front GAWR GVWR Rear GAWR

MFD. BY FORD MOTOR CO IN U.S.A.																																						
DATE: 06/95	GVWR: 6250 LB/2834 KG																																					
FRONT GAWR: 3450 LB	REAR GAWR: 3777 LB																																					
1564KG	1713KG	WITH				WITH																																
P265/75R15SL	P265/75R15SL	TIRES				TIRES																																
15x7.5J	15x7.5J	RIMS				RIMS																																
AT 30 PSI COLD	AT 30 PSI COLD																																					
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.																																						
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Gross Combination Weight (GCW) is the weight of the loaded vehicle (GVW) *plus* the weight of the fully loaded trailer. It is the actual weight obtained when the vehicle and trailer are weighed together on a scale.

Gross Combination Weight Rating (GCWR) is the *maximum allowable weight* of the towing vehicle and the loaded trailer – including all cargo and passengers – that the vehicle can handle without risking damage. **(Important: The towing vehicle’s brake system is rated for operation at the GVWR – NOT GCWR. Separate functional brake systems should be used for safe control of towed vehicles and for trailers weighing more than 1,500 lbs. when loaded.)** The measured GCW must never exceed the GCWR.

Maximum Loaded Trailer Weight (as shown in the Trailer Towing Selector charts pages 19-23) is the highest possible weight of a fully loaded trailer the vehicle can tow, based on a minimum towing vehicle GVW. It assumes a towing vehicle with any mandatory options, no cargo, tongue load of 10-15% (conventional trailer) or king pin weight of 15-25% (fifth-wheel trailer), and driver only (150 pounds). F-Series Super Duty chassis cab models also assume a second-unit body weight of 1,000 lbs. Weight of additional options, passengers, cargo and hitch must be deducted from this weight.

Tongue Load or Fifth-Wheel King Pin Weight is another critical measurement that must be made before towing. It refers to the amount of the trailer’s weight that presses down on the trailer hitch. Too much tongue load or king pin weight can cause suspension/drivetrain damage, and can press the vehicle down in back causing the front wheels to lift to the point where traction, steering response and braking can be severely decreased. Too little tongue load or king pin weight can reduce rear-wheel traction and cause instability, which may result in tail wagging or jackknifing.

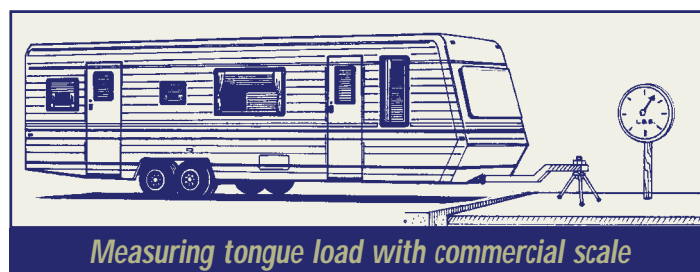
Tongue load or king pin weights must meet the following requirements*:

- For trailers up to 2,000 lbs., tongue load not to exceed 200 lbs.
- For conventional trailers over 2,000 lbs., tongue load 10 -15% of loaded trailer weight.
- For fifth-wheel trailers, king pin weight 15-25% of loaded trailer weight.

Examples: For a 5,000-lb. conventional trailer, multiply 5,000 by .10 and .15 to obtain a proper tongue load range of 500 to 750 lbs. For an 11,500-lb. fifth-wheel trailer, multiplying 11,500 by .15 and .25 yields a king pin weight range of 1,725 to 2,875 lbs.

Note: Be sure the addition of tongue load or king pin weight does not cause the key towing vehicle weight limits (GVWR and Rear GAWR) to be exceeded. *Remember, GVWR and GAWR are found on the vehicle’s Safety Compliance Certification Label.* If either of these limits is exceeded, you should go with a larger vehicle or a smaller trailer.

To measure actual tongue load or king pin weight, disconnect the trailer and place only the tongue (king pin) on a scale (at hitch ball or fifth-wheel king pin receiver height). If the tongue load/king pin weight exceeds the upper weight limit, move more of the trailer contents rearward to achieve the recommended tongue load/king pin weight. If the tongue load or king pin weight is less than the lower limit, shift the load forward.



*Refer to the chart on page 13 for tongue load recommendations with Ford factory-installed step bumper trailer hitch receivers.