TRAILER

OWNER'S MANUAL

CROFT TRAILER SUPPLY - TRAILERS, PARTS, & SERVICE SINCE 1939
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⚠ WARNING

THIS USER'S MANUAL CONTAINS SAFETY INFORMATION AND INSTRUCTIONS FOR YOUR TRAILER. YOU MUST READ THIS MANUAL BEFORE LOADING OR TOWING YOUR TRAILER. YOU MUST FOLLOW ALL SAFETY PRECAUTIONS AND INSTRUCTIONS.

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THANK YOU FOR CHOOSING A TRAILER FROM *CROFT TRAILER SUPPLY*.

For additional resources pertaining to our trailers go to www.CroftTrailer.com/resources.

1 | GENERAL SAFETY INFORMATION

SAFETY ALERT SYMBOLS AND SIGNAL WORDS

An Owner's Manual that provides general trailer information cannot cover all of the specific details necessary for the proper combination of every trailer, tow vehicle and hitch. Therefore, you must read, understand and follow the instructions given by the tow vehicle and trailer hitch manufacturers, as well as the instructions in this manual. Our trailers are built with components produced by various manufacturers. Some of these items have separate instruction manuals. The safety information in this manual is denoted by the safety alert symbol: ⚠

The level of risk is indicated by the following signal words.

⚠ DANGER

DANGER – Immediate hazards which WILL result in severe personal injury or death if the warning is ignored.

⚠ WARNING

WARNING – Hazards or unsafe practices COULD result in severe personal injury or death if the warning is ignored.

⚠ CAUTION

CAUTION – Hazards or unsafe practices could result in minor or moderate injury if the warning is ignored.

⚠ NOTICE

NOTICE – Practices that could result in damage to the trailer or other property.

MAJOR HAZARDS

Loss of control of the trailer or trailer/tow vehicle combination can result in death or serious injury. The most common causes for loss of control of the trailer are:

- Improper sizing of the trailer for the tow vehicle, or vice versa
- Excessive speed: driving too fast for the conditions
- Failure to adjust driving behavior when towing a trailer
- Overloading and/or improper weight distribution
- Improper or mis-coupling of the trailer to the hitch
- Improper braking and steering under sway conditions
- Not maintaining proper tire pressure
- Not keeping lug nuts tight

IMPROPER SIZING OF THE TRAILER /TOW VEHICLE

Trailers that weigh too much for the towing vehicle can cause stability problems, which can lead to death or serious injury. Furthermore, the additional strain put on the engine and drive-train may lead to serious tow vehicle maintenance problems. For these reasons the maximum towing capacity of your towing vehicle should not be exceeded. The towing capacity of your tow vehicle, in terms of maximum Gross Trailer Weight (GTW) and maximum Gross Combined Weight Rating (GCWR) can be found in the tow vehicle's Owner's Manual.

⚠ DANGER

Use of a tow vehicle with a towing capacity less than the Gross Vehicle Weight Rating of the trailer can result in loss of control, and may lead to death or serious injury. Be sure your hitch and tow vehicle are rated for the Gross Vehicle Weight Rating of your trailer.

DRIVING TOO FAST

With ideal road conditions, the maximum recommended speed for safely towing a trailer is 60 mph. If you drive too fast, the trailer is more likely to sway, thus increasing the possibility for loss of control. Also your tires may overheat, thus increasing the possibility of a blowout.

⚠ WARNING

Driving too fast for conditions can result in loss of control and cause death or serious injury. Decrease your speed as road, weather and lighting conditions deteriorate.

FAILURE TO ADJUST DRIVING BEHAVIOR WHEN TOWING A TRAILER

When towing a trailer, you will have decreased acceleration, increased stopping distance, and increased turning radius (which means you must make wider turns to keep from hitting curbs, vehicles, and anything else that is on the inside corner). Furthermore the trailer will change the handling characteristics of your towing vehicle, making it more sensitive to steering inputs and more likely to be pushed around in windy conditions or when being passed by large vehicles. In addition, you will need a longer distance to pass, due to slower acceleration and increased length. With these caveats in mind: be alert for slippery conditions. You are more likely to be affected by slippery road surfaces when driving a tow vehicle with a trailer, than driving a tow vehicle without a trailer. Anticipate the trailer "swaying." Swaying can be caused by excessive steering, wind gusts, roadway edges, or by the trailer reaction to the pressure wave created by passing trucks and buses. When encountering trailer sway take your foot off the gas, and steer as little as possible in order to stay on the road. Use small "trim-like" steering adjustments. Do not attempt to steer out of the sway; you'll only make it worse. Also do not apply the tow vehicle brakes to correct trailer swaying. On the other hand, application of the trailer brakes alone will tend to straighten out the combination, especially when going downhill. Check rear-view mirrors frequently to observe the trailer and traffic. Use lower gear when driving down steep or long grades. Use the engine and transmission as a brake. Do not ride the brakes, as they can overheat and become ineffective. Be aware of your trailer height, especially when approaching bridges, roofed areas and around trees.

TRAILER NOT PROPERLY COUPLED TO THE HITCH

It is critical that the trailer be securely coupled to the hitch ball, and that the safety chains and emergency breakaway brake cable are correctly attached. Uncoupling may result in death or serious injury to you and to others.

⚠ WARNING

Proper selection and condition of the coupler and hitch are essential to safely towing your trailer. A loss of coupling may result in death or serious injury.

- Be sure the hitch load rating is equal to or greater than the load rating of the coupler.
- Be sure the hitch size matches the coupler size.
- Observe the hitch for wear, corrosion and cracks before coupling. Replace worn, corroded or cracked hitch components before coupling the trailer to the tow vehicle.
- Be sure the hitch components are tight before coupling the trailer to the tow vehicle.

⚠ CAUTION

An improperly coupled trailer can result in death or serious injury. Do not move the trailer until:

- The coupler is secured and locked to hitch;
- The safety chains are secured to the tow vehicle; and
- The trailer jack(s) are fully retracted.

Do not tow the trailer on the road until:

- Tires and wheels are checked;
- The trailer brakes are checked;
- The breakaway switch is connected to the tow vehicle;
- The load is secured to the trailer; and
- The trailer lights are connected and checked.

PROPER USE OF SAFETY CHAINS

If your trailer comes loose from the hitch for any reason, we have provided safety chains so that control of the trailer can still be maintained.

PROPER CONNECTION OF BREAKAWAY BRAKE

If equipped with brakes, your trailer will be equipped with a breakaway brake system that can apply the brakes on your trailer if your trailer comes loose from the hitch ball for any reason. You will have a separate set of instructions for the breakaway brake if your trailer is so equipped. The breakaway brake system, including battery, must be in good condition and properly rigged to be effective.

⚠ WARNING

An ineffective or inoperative breakaway brake system can result in a runaway trailer, leading to death or serious injury if the coupler or hitch fails. The breakaway cable must be connected to the tow vehicle, and NOT to any part of the hitch.

⚠ WARNING

Improper rigging of the safety chains can result in loss of control of the trailer and tow vehicle, leading to death or serious injury, if the trailer uncouples from the tow vehicle.

- Fasten chains to frame of tow vehicle. Do not fasten chains to any part of the hitch unless the hitch has holes or loops specifically for that purpose.
- Cross chains underneath hitch and coupler with enough slack to permit turning and to hold tongue up, if the trailer comes loose.

WORN TIRES, LOOSE WHEELS AND LUG NUTS

Just as with your tow vehicle, the trailer tires and wheels are important safety items. Therefore, it is essential to inspect the trailer tires before each tow.

If a tire has a bald spot, bulge, cut, cracks, or is showing any cords, replace the tire before towing. If a tire has uneven tread wear, take the trailer to a dealer service center for diagnosis. Uneven tread wear can be caused by tire imbalance, axle misalignment or incorrect inflation. Tires with too little tread will not provide adequate frictional forces on wet roadways and can result in loss of control, leading to death or serious injury.

Improper tire pressure causes increased tire wear and may reduce trailer stability, which can result in a tire blowout or possible loss of control. Therefore, before each tow you must also check the tire pressure. Remember, the proper tire pressure is listed on the Certification / VIN label, normally mounted on front left side of the trailer, and should be checked when tires are cold. Allow 3 hours cool-down after driving as much as 1 mile at 40 mph before checking tire pressure.

The tightness of the lug nuts is very important in keeping the wheels properly seated to the hub. Before each tow, check to make sure they are tight.

⚠ WARNING

Improper tire pressure can result in a blowout and loss of control, which can lead to death or serious injury. Be sure tires are inflated to pressure indicated on sidewall before towing a trailer.

⚠ WARNING

Metal creep between the wheel rim and lug nuts will cause rim to loosen and could result in a wheel coming off, leading to death or serious injury. Tighten lug nuts before each tow.

The proper tightness (torque) for lug nuts is listed in "Proper Torque Levels" on page 40. Use a torque wrench to tighten the lug nuts, use the crisscross star pattern on page 40.

Lug nuts are also prone to loosen after first being assembled. When driving a new trailer (or after wheels have been remounted), check to make sure they are tight after the first 10, 25 and 50 miles of driving and before each tow thereafter.

Failure to perform this check can result in a wheel separating from the trailer and a crash, leading to death or serious injury.

⚠ WARNING

Lug nuts are prone to loosen after initial installation, which can lead to death or serious injury. Check lug nuts for tightness on a new trailer or when wheel(s) have been remounted after the first 10, 25 and 50 miles of driving.

IMPROPER LOADING

The total weight of the load you put in or on the trailer, plus the empty weight of the trailer itself, must not exceed the trailer's Gross Vehicle Weight Rating (GVWR). If you do not know the empty weight of the trailer plus the cargo weight, you must weigh the loaded trailer at a commercial scale. In addition, you must distribute the load in the trailer such that the load on any axle does not exceed the Gross Axle Weight Rating (GAWR). If your trailer is equipped with a Tire & Loading Information Placard, mounted next to the Certification / VIN label, the cargo capacity weight stated on that placard is only a close estimate. The GVWR and GAWR's are listed on the Certification / VIN label.

⚠ WARNING

Improper lug nut torque can cause a wheel separating from the trailer, leading to death or serious injury. Be sure lug nuts are tight before each tow.

UNSAFE LOAD DISTRIBUTION

Improper front / rear load distribution can lead to poor trailer sway stability or poor tow vehicle handling. Poor trailer sway stability results from tongue weights that are too low, and poor tow vehicle stability results from tongue weights that are too high. Refer to previous chapter "Improper Loading" for more information. In the next table, the second column shows the rule of thumb percentage of total weight of the trailer plus its cargo (Gross Trailer Weight, or "GTW") that should appear on the tongue of the trailer. For example, a trailer with a gooseneck hitch, with a loaded weight of 12,000 pounds, should have 20-25% of 12,000 lb (2400-3000 lb) on the gooseneck. A dump trailer will have the proper weight distribution if the load is evenly distributed in the dump bed. For non-flowable (discrete) load, locate the load such as to provide the proper tongue weight.

⚠ WARNING

An overloaded trailer can result in loss of control of the trailer, leading to death or serious injury. Do not exceed the trailer Gross Vehicle Weight Rating (GVWR) or the Gross Axle Weight Rating (GAWR). Do not load a trailer so that the weight on any tire exceeds its rating.

After loading, be sure to check that none of the axles are overloaded.

Tongue Weight as a Percentage of Loaded Trailer Weight	
Type of Hitch	**Percentage**
Ball Hitch (or Bumper Hitch), Large Trailers Small Utility & Cargo Trailers Boat Trailers	10 -15% 6 -10% 5 -7%
Gooseneck Hitch	20 -25%
Fifth Wheel Hitch	20 -25%

The numbers quoted above are for example purposes only and should be tailored to the specific trailer. For questions regarding the actual percent of tongue weight for the trailer, check with the manufacturer for specifics.

Uneven left / right load distribution can cause tire, wheel, axle or structural failure. Be sure your trailer is evenly loaded left / right.

Towing stability also depends on keeping the center of gravity as low as possible.

⚠ WARNING

Improper tongue weight (load distribution) can result in loss of control of the trailer, leading to death or serious injury. Make certain that tongue weight is within the allowable range.

Be sure to:

- Distribute the load front-to-rear to provide proper tongue weight (see chart)
- Distribute the load evenly, right and left, to avoid tire overload
- Keep the center of gravity low

SHIFTING CARGO

Since the trailer "ride" can be bumpy and rough, you must secure your cargo so that it does not shift while the trailer is being towed.

⚠ WARNING

Shifting cargo can result in loss of control of the trailer, and can lead to death or serious injury. Tie down all loads with proper sized fasteners, ropes, straps, etc.

INAPPROPRIATE CARGO

Your trailer may be designed for specific cargo, for example, only for horses. If your trailer is designed for specific cargo, only carry that cargo in the trailer. A utility trailer must not be used to carry certain items, such as people, containers of hazardous substances or containers of flammable substances.

⚠ WARNING

Do not transport people inside the trailer, even if it has living quarters. The transport of people puts their lives at risk and may be illegal.

⚠ WARNING

Do not transport flammable, explosive, poisonous or other dangerous materials in your trailer.

Exceptions:

- Fuel in the tanks of vehicles that are being towed
- Fuel stored in proper containers used in trailer living quarters for cooking
- Fuel stored in the tank of an on-board generator

INOPERABLE BRAKES, LIGHTS OR MIRRORS

Be sure, if equipped, the electric brakes and all of the lights on your trailer are functioning properly before towing your trailer. Electric brakes and lights on a trailer are controlled via a connection to the tow vehicle, generally a multi-pin electrical connector. Check the trailer tail lights by turning on your tow vehicle headlights. Check the trailer brake lights by having someone step on the tow vehicle brake pedal while you look at trailer lights. Do the same thing to check the turn signal lights. If your trailer has electric brakes, your tow vehicle will have an electric brake controller that sends power to the trailer brakes. Before towing the trailer on the road, you must operate the brake controller while trying to pull the trailer in order to confirm that the electric brakes operate. While towing the trailer at less than 5 mph, manually operate the electric brake controller in the tow vehicle cab. You should feel the operation of the trailer brakes.

⚠ WARNING

Improper electrical connection between the tow vehicle and the trailer will result in inoperable lights and electric brakes, and can lead to collision.

Before each tow:

- Check that the taillights, brake lights and turn signals work
- Check that the electric brakes work by operating the brake controller inside the tow vehicle

If your trailer has hydraulic "surge" brakes, pull the emergency breakaway brake lanyard to check the operation of the surge mechanism. Standard mirrors usually do not provide adequate visibility for viewing traffic to the sides and rear a towed trailer. You must provide mirrors that allow you to safely observe approaching traffic.

HAZARDS FROM MODIFYING YOUR TRAILER

Essential safety items can be damaged by altering your trailer. Alteration of the trailer structure or modification of mechanical, electrical, plumbing, heating or other systems on your trailer must be performed only by qualified technicians who are familiar with the system as installed on your trailer.

TRAILER TOWING GUIDE

Driving a vehicle with a trailer in tow is vastly different from driving the same vehicle without a trailer in tow. Acceleration, maneuverability and braking are all diminished with a trailer in tow. It takes longer to get up to speed, you need more room to turn and pass, and more distance to stop when towing a trailer. You will need to spend time adjusting to the different feel and maneuverability of the tow vehicle with a loaded trailer. Because of the significant differences in all aspects of maneuverability when towing a trailer, the hazards and risks of injury are also much greater than when driving without a trailer. You are responsible for keeping your vehicle and trailer in control, and for all the damage that is caused if you lose control of your vehicle and trailer.

As you did when learning to drive an automobile, find an open area with little or no traffic for your first practice trailering. Of course, before you start towing the trailer, you must follow all of the instructions for inspection, testing, loading and coupling. Also, before you start towing, adjust the mirrors so you can see the trailer as well as the area to the rear of it.

Drive slowly at first, 5 mph or so, and turn the wheel to get the feel of how the tow vehicle and trailer combination responds. Next, make some right and left hand turns. Watch in your side mirrors to see how the trailer follows the tow vehicle. Turning with a trailer attached requires more room.

Stop the rig a few times from speeds no greater than 10 mph. If your trailer is equipped with brakes, try using different combinations of trailer/electric brake and tow vehicle brake. Note the effect that the trailer brakes have when they are the only brakes used. When properly adjusted, the trailer brakes will come on just before the tow vehicle brakes.

It will take practice to learn how to back up a tow vehicle with a trailer attached. Take it slow. Before backing up, get out of the tow vehicle and look behind the trailer to make sure that there are no obstacles. Some drivers place their hands at the bottom of the steering wheel, and while the tow vehicle is in reverse, "think" of the hands as being on the top of the wheel. When the hands move to the right (counter-clockwise, as you would do to turn the tow vehicle to the left when moving forward), the rear of the

trailer moves to the right. Conversely, rotating the steering wheel clockwise with your hands at the bottom of the wheel will move the rear of the trailer to the left, while backing up. If you are towing a bumper hitch rig, be careful not to allow the trailer to turn too much, because it will hit the rear of the tow vehicle. To straighten the rig, either pull forward, or turn the steering wheel in the opposite direction.

REPORTING SAFETY DEFECTS

If you believe that your vehicle has a defect that could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Croft Trailer Supply.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot be involved in individual problems between you, your dealer, or Croft Trailer Supply.

To contact NHTSA, you may either call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153), go to http://www.safecar.gov; or write to: Administrator, NHTSA, 1200 New Jersey Ave. SE., Washington, DC 20590.

You can also obtain other information about motor vehicle safety from http://www.safecar.gov.

SAFE TRAILER TOWING GUIDELINES

- Recheck the load tiedowns to make sure the load will not shift during towing.
- Before towing, check coupling, safety chain, safety brake, tires, heels and lights.
- Check the lug nuts or bolts for tightness.
- Check coupler tightness after towing 50 miles.
- Adjust the brake controller to engage the trailer brakes before the tow vehicle brakes. Follow the instructions given with the brake controller manufacturer's literature.
- Use your mirrors to verify that you have room to change lanes or pull into traffic.
- Use your turn signals well in advance.
- Allow plenty of stopping space for your trailer and tow vehicle.
- Do not drive so fast that the trailer begins to sway due to speed. Generally never drive faster than 60 m.p.h.
- Allow plenty of room for passing. A rule of thumb is that the passing distance with a trailer is 4 times the passing distance without a trailer.
- Shift your automatic transmission into a lower gear for city driving.
- Use lower gears for climbing and descending grades.

- Do not ride the brakes while descending grades, they may get so hot that they stop working. Then you will potentially have a runaway tow vehicle and trailer.
- To conserve fuel, don't use full throttle to climb a hill. Instead, build speed on the approach.
- Slow down for bumps in the road. Take your foot off the brake when crossing the bump.
- Do not brake while in a curve unless absolutely necessary. Instead, slow down before you enter the curve.
- Do not apply the tow vehicle brakes to correct extreme trailer swaying. Instead, lightly apply the trailer brakes with the hand controller.

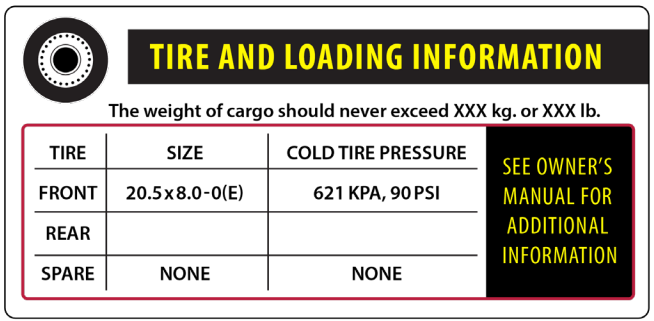
Make regular stops, about once each hour to confirm:

- The coupler is secure to the hitch and is locked
- Electrical connectors are secure
- There is appropriate slack in the safety chains
- There is appropriate slack in the breakaway switch pull pin cable
- The tires are not visibly low on pressure
- The cargo is secure and in good condition

2 | TIRE SAFETY INFORMATION

This portion of the User's Manual contains tire safety information as required by 49 CFR 575.6. as well as information from the NHTSA brochure entitled "Tire Safety – Everything Rides On It".

STEPS FOR DETERMINING CORRECT LOAD LIMIT – TRAILER



Tire Information Placard (shown above)

TRAILERS 10,000 POUNDS GVWR OR LESS

1. Locate the statement, "The weight of cargo should never exceed XXX kg or XXX lb," on your vehicle's placard. See illustration above.
2. This figure equals the available amount of cargo and luggage load capacity.
3. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity.

The trailer's placard refers to the Tire Information Placard attached adjacent to or near the trailer's VIN (Certification) label at the left front of the trailer.

Note: The following calculations in this section and the next are not required by the government. For the purpose of completeness, NATM has included these statements.

TRAILERS OVER 10,000 POUNDS GVWR

(NOTE: THESE TRAILERS ARE NOT REQUIRED TO HAVE A TIRE INFORMATION PLACARD ON THE VEHICLE)

1. Determine the empty weight of your trailer by weighing the trailer using a public scale or other means. This step does not have to be repeated.
2. Locate the GVWR (Gross Vehicle Weight Rating) of the trailer on your trailer's VIN (Certification) label.
3. Subtract the empty weight of your trailer from the GVWR stated on the VIN label. That weight is the maximum available cargo capacity of the trailer and may not be safely exceeded.

STEPS FOR DETERMINING CORRECT LOAD LIMIT - TOW VEHICLE

Locate the statement, "The combined weight of occupants and cargo should never exceed XXX lb," on your vehicle's placard.

1. Determine the combined weight of the driver and passengers who will be riding in your vehicle.
2. Subtract the combined weight of the driver and passengers from XXX kg or XXX lb.
3. The resulting figure equals the available amount of cargo and luggage capacity. For example, if the "XXX" amount equals 1400 lb and there will be five 150 lb passengers in your vehicle, the amount of available cargo and luggage capacity is 650 lb (1400-750 (5 x 150) = 650 lb).
4. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage capacity calculated in Step # 4.
5. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult the tow vehicle's manual to determine how this weight transfer reduces the available cargo and luggage capacity of your vehicle.

GLOSSARY OF TIRE TERMINOLOGY

Accessory weight
The combined weight (in excess of those standard items which may be replaced) of automatic transmission, power steering, power brakes, power windows, power seats, radio and heater, to the extent that these items are available as factory-installed equipment (whether installed or not).

Bead
The part of the tire that is made of steel wires, wrapped or reinforced by ply cords and that is shaped to fit the rim.

Bead separation
This is the breakdown of the bond between components in the bead.

Bias ply tire
A pneumatic tire in which the ply cords that extend to the beads are laid at alternate angles substantially less than 90 degrees to the centerline of the tread.

Carcass
The tire structure, except tread and sidewall rubber, which, when inflated, bears the load.

Chunking
The breaking away of pieces of the tread or sidewall.

Cold inflation pressure
The pressure in the tire before you drive.

Cord
The strands forming the plies in the tire.

Cord separation
The parting of cords from adjacent rubber compounds.

Cracking
Any parting within the tread, sidewall, or inner liner of the tire extending to cord material.

CT
A pneumatic tire with an inverted flange tire and rim system in which the rim is designed with rim flanges pointed radially inward and the tire is designed to fit on the underside of the rim in a manner that encloses the rim flanges inside the air cavity of the tire.

Curb weight
The weight of a motor vehicle with standard equipment including the maximum capacity of fuel, oil, and coolant, and, if so equipped, air conditioning and additional weight optional engine.

Extra load tire
A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Groove
The space between two adjacent tread ribs.

Innerliner
The layer(s) forming the inside surface of a tubeless tire that contains the inflating medium within the tire.

Innerliner separation
The parting of the innerliner from cord material in the carcass.

Intended outboard sidewall
The sidewall that contains a white-wall, bears white lettering or bears manufacturer, brand, and/or model name molding that is

higher or deeper than the same molding on the other sidewall of the tire or the outward facing sidewall of an asymmetrical tire that has a particular side that must always face outward when mounted on a vehicle.

Light truck (LT) tire
A tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipurpose passenger vehicles.

Load rating
The maximum load that a tire is rated to carry for a given inflation pressure.

Maximum load rating
The load rating for a tire at the maximum permissible inflation pressure for that tire.

Maximum permissible inflation pressure
The maximum cold inflation pressure to which a tire may be inflated.

Maximum loaded vehicle weight
The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

Measuring rim
The rim on which a tire is fitted for physical dimension requirements.

Non-pneumatic rim
A mechanical device which, when a nonpneumatic tire assembly incorporates a wheel, supports the tire, and attaches, either integrally or separably, to the wheel center member and upon which the tire is attached.

Non-pneumatic spare tire assembly
A non-pneumatic tire assembly intended for temporary use in place of one of the pneumatic tires and rims that are fitted to a passenger car in compliance with the requirements of this standard.

Non-pneumatic tire
A mechanical device which transmits, either directly or through a wheel or wheel center member, the vertical load and tractive forces from the roadway to the vehicle, generates the tractive forces that provide the directional control of the vehicle and does not rely on the containment of any gas or fluid for providing those functions.

Non-pneumatic tire assembly
A non-pneumatic tire, alone or in combination with a wheel or wheel center member, which can be mounted on a vehicle.

Normal occupant weight
This means 68 kilograms (150 lb) times the number of occupants specified in the second column of table 7 on page 45.

Occupant distribution
The distribution of occupants in a vehicle as specified in the third column of table 7 on page 45.

Open splice
Any parting at any junction of tread, sidewall, or innerliner that extends to cord material.

Outer diameter
The overall diameter of an inflated new tire.

Overall width
The linear distance between the exteriors of the sidewalls of an inflated tire, including elevations due to labeling, decorations, or protective bands or ribs.

Ply
A layer of rubber-coated parallel cords.

Ply separation
A parting of rubber compound between adjacent plies.

Pneumatic tire
A mechanical device made of rubber, chemicals, fabric and steel or other materials, that, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load.

Production options weight
The combined weight of those installed regular production options weighing over 2.3 kilograms (5 lb) in excess of those standard items which they replace, not previously considered in curb weight or accessory weight, including heavy duty brakes, ride levelers, roof rack, heavy duty battery, and special trim.

Radial ply tire
A pneumatic tire in which the ply cords that extend to the beads are laid at substantially 90 degrees to the centerline of the tread.

Recommended inflation pressure
This is the inflation pressure provided by the vehicle manufacturer on the Tire Information Placard and on the Certification / VIN tag.

Reinforced tire
A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

Rim
A metal support for a tire or a tire and tube assembly upon which the tire beads are seated.

Rim diameter
This means the nominal diameter of the bead seat.

Rim size designation
This means the rim diameter and width.

Rim type designation
This means the industry of manufacturer's designation for a rim by style or code.

Rim width
This means the nominal distance between rim flanges.

Section width
The linear distance between the exteriors of the sidewalls of an inflated tire, excluding elevations due to labeling, decoration, or protective bands.

Sidewall
That portion of a tire between the tread and bead.

Sidewall separation
The parting of the rubber compound from the cord material in the sidewall.

Special Trailer (ST) tire
The "ST" is an indication the tire is for trailer use only.

Test rim
The rim on which a tire is fitted for testing, and may be any rim listed as appropriate for use with that tire.

Tread
That portion of a tire that comes into contact with the road.

Tread rib
A tread section running circumferentially around a tire.

Tread separation
Pulling away of the tread from the tire carcass.

Treadwear indicators (TWI)
The projections within the principal grooves designed to give a visual indication of the degrees of wear of the tread.

Vehicle capacity weight
The rated cargo and luggage load plus 68 kg (150 lb) times the vehicle's designated seating capacity.

Vehicle maximum load on the tire
The load on an individual tire that is determined by distributing to each axle its share of the maximum loaded vehicle weight and dividing by two.

Vehicle normal load on the tire
The load on an individual tire that is determined by distributing to each axle its share of the curb weight, accessory weight, and normal occupant weight (distributed in accordance with table 7 on page 45) and dividing by 2.

Weather side
The surface area of the rim not covered by the inflated tire.

Wheel center member
In the case of a non-pneumatic tire assembly incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic rim and provides the connection between the non-pneumatic rim and the vehicle; or, in the case of a nonpneumatic tire assembly not incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the nonpneumatic tire & provides the connection between tire & the vehicle.

Wheel-holding fixture
The fixture used to hold the wheel and tire assembly securely during testing.

TIRE SAFETY— EVERYTHING RIDES ON IT

The National Traffic Safety Administration (NHTSA) has published a brochure (DOT HS 809 361) that discusses all aspects of Tire Safety, as required by CFR 575.6. This brochure is reproduced in part below. It can be obtained and downloaded from NHTSA, free of charge, or from the Croft web site:

https://www.crofttrailer.com/NHTSA-tire-safety

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires. These actions, along with other care and maintenance activities, can also:

- Improve vehicle handling
- Help protect you and others from avoidable breakdowns and accidents
- Improve fuel economy
- Increase the life of your tires

This booklet presents a comprehensive overview of tire safety, including information on the following topics:

- Basic tire maintenance
- Uniform Tire Quality Grading System
- Fundamental characteristics of tires
- Tire safety tips

Use this information to make tire safety a regular part of your vehicle maintenance routine. Recognize that the time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

SAFETY FIRST — BASIC TIRE MAINTENANCE

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Under-inflated tires and overloaded vehicles are a major cause of tire failure. Therefore, as mentioned above, to avoid flat tires and other types of tire failure, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards, and regularly inspect your tires.

FINDING YOUR VEHICLE'S RECOMMENDED TIRE PRESSURE AND LOAD LIMITS

Tire information placards and vehicle certification labels contain information on tires and load limits. These labels indicate the vehicle manufacturer's information including:

- Recommended tire size
- Recommended tire inflation pressure
- Vehicle capacity weight (VCW–the maximum occupant and cargo weight a vehicle is designed to carry)
- Front and rear gross axle weight ratings (GAWR– the maximum weight the axle systems are designed to carry)

Both placards and certification labels are attached to the trailer near the left front.

UNDERSTANDING TIRE PRESSURE AND LOAD LIMITS

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure– measured in pounds per square inch (psi)–a tire requires to be properly inflated. (You will also find this number on the vehicle information placard expressed in kilopascals (kPa), which is the metric measure used internationally.)

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

CHECKING TIRE PRESSURE

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

- Most tires may naturally lose air over time
- Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking
- With radial tires, it is usually not possible to determine underinflation by visual inspection

For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets. The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

STEPS FOR MAINTAINING PROPER TIRE PRESSURE

1. Locate the recommended tire pressure on the *Tire Information Placard*, certification label, or in the owner's manual.
2. Record the tire pressure of all tires.
3. If the tire pressure is too high in any of the tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure.
4. If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These "missing" pounds of pressure are what you will need to add.
5. At a service station, add the missing pounds of air pressure to each tire that is underinflated.
6. Check all the tires to make sure they have the same air pressure (except in cases in which the front and rear tires are supposed to have different amounts of pressure).

If you have been driving your vehicle and think that a tire is underinflated, fill it to the recommended cold inflation pressure indicated on your vehicle's tire information placard or certification label. While your tire may still be slightly underinflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer's recommended cold inflation pressure than to drive with a significantly underinflated tire. Since this is a temporary fix, don't forget to recheck and adjust the tire's pressure when you can obtain a cold reading.

TIRE SIZE

To maintain tire safety, purchase new tires that are the same size as the vehicle's original tires or another size recommended by the manufacturer. Look at the *Tire Information Placard* (page 14), the owner's manual, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

TIRE TREAD

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in treadwear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear "even" with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln's head upside down and facing you. If you can see the top of Lincoln's head, you are ready for new tires.

TIRE REPAIR

The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

TIRE FUNDAMENTALS

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall.

INFORMATION ON VEHICLE TIRES

Please refer to the diagram below (Illustration 2-2).

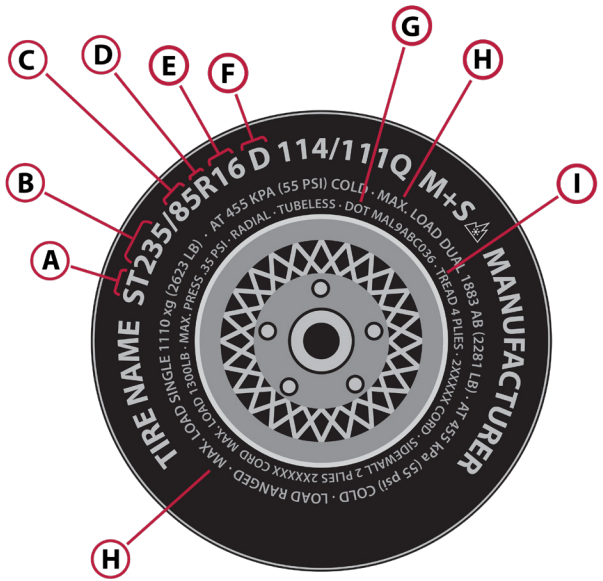


Illustration 2-2

Illustration 2-2

A	(ST) Trailer use only
B	Nominal width
C	Ratio of height to width (aspect ratio)
D	(R) Radial or (D) Bias
E	Rim diameter code
F	Load range
G	U.S. DOT tire identification number
H	Maximum load & inflation single & dual
I	Tire ply composition and material

(A) Tire Indication
The "ST" indicates the tire is for trailer use only.

(B) Nominal Width
This three-digit number gives the width in millimeters of the tire from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

(C)Aspect Ratio
This two-digit number, known as the aspect ratio, gives the tire's ratio of height to width. Numbers of 70 or lower indicate a short sidewall for improved steering response and better overall handling on dry pavement.

(D) Tire Type
The "R" stands for radial or "D" stands for bias. Radial ply construction is the industry standard.

(E) Rim Diameter
This two-digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

(F) Load Range
This information identifies the tire's load carrying capabilities and its inflation limits.

(G) U.S. DOT Tire Identification Number
This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3197 means the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.

(H) Max. Load Dual kg (lb) at kPa (psi) Cold
This information indicates the maximum load and tire pressure when the tire is used as a dual, that is, when four tires are put on each rear axle (a total of six or more tires on the vehicle).

(H) Max. Load Single kg (lb) at kPa (psi) Cold
This information indicates the maximum load and tire pressure when the tire is used as a single.

(I)Tire Ply Composition and Materials Used
The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.

TIRE SAFETY TIPS

To preventing tire damage:

- Slow down if you have to go over a pothole or other object in the road.
- Do not run over curbs or other foreign objects in the roadway, and try not to strike the curb when parking.
- If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place, well off the road, if possible. Turn on the hazard warning flashers.

TIRE SAFETY CHECKLIST

- Check tire pressure regularly (at least once a month), including the spare.
- Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.
- Remove bits of glass and foreign objects wedged in the tread.
- Make sure your tire valves have valve caps.
- Check tire pressure before going on a long trip.
- Do not overload your vehicle. Check the Tire Information and Loading Placard or User's Manual for the maximum recommended load for the vehicle.

3 | CHECKING THE TRAILER BEFORE AND DURING EACH TOW

PRE-TOW CHECKLIST

Before towing, double-check all of these items:

- Tires, wheels and lug nuts (see the "Major Hazards" section starting on page 5 of this manual)
- Tire Pressure: inflate tire on trailer and tow vehicle to the pressure stated on the VIN / Certification label
- Coupler secured and locked
- Safety chains properly rigged to tow vehicle, not to hitch
- Test of lights: tail, stop, and turn lights
- Test trailer brakes
- Safety breakaway switch cable fastened to tow vehicle, not to safety chains

- Cargo properly loaded, balanced and tied down
- Tongue weight and weight distribution setup
- Doors and gates latched and secured
- Fire extinguisher
- Flares and reflectors

MAKE REGULAR STOPS

After each 50 miles, or one hour of towing, stop and check the following items:

- Coupler secured
- Safety chains are fastened and not dragging
- Cargo secured
- Cargo door latched and secured

4 | BREAKING–IN A NEW TRAILER

RETIGHTEN LUG NUTS AT FIRST 10, 25 & 50 MILES

Wheel lugs can shift and settle quickly after being first assembled, and must be checked after the first 10, 25 and 50 miles of driving. Failure to perform this check may result in a wheel coming loose from the trailer, causing a crash leading to death or serious injury. See "Lug Nuts (Bolts)" section on page 39 for proper torquing technique.

⚠ WARNING

Lug nuts are prone to loosen after initial installation, which can lead to death or serious injury.

Check lug nuts for tightness on a new trailer or when wheel(s) have been remounted after the first 10, 25 and 50 miles of driving.

ADJUST BRAKE SHOES AT FIRST 200 MILES

Brake shoes and drums experience a rapid initial wear. The brakes must be adjusted after the first 200 miles of use, and each 3,000 miles thereafter. Some axles are fitted with a mechanism that will automatically adjust the brake shoes when the trailer is "hard braked" from a rearward direction. Read your axle and brake manual to see if your brakes adjust automatically.

A hard stop is used to:

- Confirm that the trailer brakes work and are properly synchronized with the tow vehicle brakes using the brake controller in the tow vehicle
- Adjust the brake shoes as necessary
- For surge brakes check the master cylinder reservoir for fluid

If your trailer is not fitted with automatically adjusting brakes, the brakes will need to be manually adjusted. See the, "Manually Adjusting Brake Shoes," section on page 33 for instructions.

SYNCHRONIZING THE BRAKE SYSTEMS

Trailer brakes are designed to work in synchronization with the brakes on the tow vehicle. When the tow vehicle and trailer braking systems are synchronized, both braking systems contribute to slowing, and the tongue of the trailer will neither dive nor rise sharply.

⚠ WARNING

If trailer and tow vehicle brakes do not work properly together, death or serious injury can occur.

Road test the brakes in a safe area at no more than 30 m.p.h. before each tow.

To insure safe brake performance and synchronization, please read and follow the axle/ brake and the brake controller manufacturers' instructions.

Tire Pressure
Check tire pressures on both the trailer and tow vehicle. Inflate to the maximum shown on the VIN / Certification Label.

5 | OPERATIONS & CARE

STABILIZER JACK

⚠ WARNING

The scissor jack is designed as a stabilizing component only. Do not use any scissor jack to level a trailer. Use of a scissor jack to lift a trailer for service can create a dangerous situation that can result in death, serious personal injury or severe product or property damage.

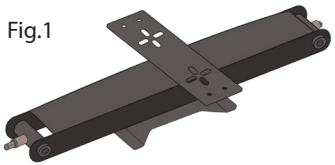
⚠ CAUTION

Moving parts can pinch, crush or cut. Keep clear & use caution.

JACK OPERATION :

1. With the scissor jack in the retracted position (Fig.1) apply the hex head coupler on the hand crank to the hex head of scissor jack (Fig.2).

Fig.1

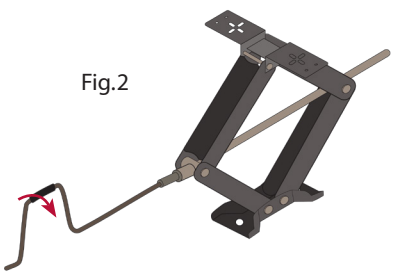


⚠ CAUTION

Do not use this scissor jack to lift excessive weight or lift tires off of the ground. Trailer frame and doorjamb damage may result.

2. Rotate crank handle clockwise to extend scissor jack. (Fig.2)
3. Continue to rotate crank handle until the scissor jack reaches desired height.

Fig.2



4. Remove crank handle when scissor jack reaches desired height (Fig.3).

Fig.3

5. Apply crank handle to scissor jack's hex head and turn counterclockwise to retract the scissor jack.

⚠ CAUTION

Do not use a power drill, cheater bar or impact wrench to operate the scissor jack. Use of power tools can damage the scissor jack.

TRAILER TONGUE OPERATION

ADJUSTABLE TONGUE (IF EQUIPPED)

The adjustable tongue is useful during storage and for additional space if aftermarket accessories are used on the trailer.

⚠ WARNING

Do not attempt to adjust the trailer tongue or coupler adjustable positions while the trailer is connected to a tow vehicle. Death or serious injury could result.

⚠ WARNING

Do not attempt to adjust the trailer tongue unless the trailer frame is on flat level ground and properly supported by appropriate jack stands. Death or serious injury could result.

TO ADJUST THE TRAILER TONGUE

- Be sure the trailer is on flat level ground and the main frame is supported by properly weighted jack stands.
- Chock each wheel front and back with a suitable wheel chock.
- Deploy the tongue jack to ground level, this will aid in adjusting the tongue forward and aft. Do not allow the tongue jack to create any upward pressure on the tongue or trailer (see pages 30-31).
- Remove the hardware securing the trailer tongue.
- Slide the tongue assembly forward or aft aligning the mounting holes in both the inner and outer tongue assembly to the desired position.
- Install the removed hardware and tighten securely.

⚠ CAUTION

All hardware must be engaged in both inner and outer tongue assemblies, do not extend tongue past rear most hole in either assembly.

COUPLER POSITIONING OPERATION

ADJUSTABLE COUPLER MOUNT (IF EQUIPPED)

The coupler channel has multiple mounting positions to aid in level towing.

NOTICE

It may be necessary to adjust the towing implement (ball mount) on the tow vehicle to achieve a level towing position.

WARNING

Do not attempt to adjust the trailer tongue or coupler adjustable positions while the trailer is connected to a tow vehicle. Death or serious injury could result.

TO ADJUST THE COUPLER POSITION

- Be sure the trailer is on flat level ground, block each wheel on each side with a suitable wheel chock.
- Deploy the tongue jack (see page 31).
- Remove the hardware securing the coupler.
- Adjust the coupler to the desired position aligning the mounting holes in both the coupler and channel.
- Install the removed hardware and tighten securely.

CAUTION

All hardware must be engaged in both the coupler and channel mount.

OPERATING THE TONGUE JACK (IF EQUIPPED)

The trailer is equipped with a tongue jack to support the front of the trailer and assist in leveling it front to rear.

WARNING

Chock all wheels front and back prior to operating the tongue jack, failure to do so could result in death or serious injury.

WARNING

Failure to secure the tongue jack in the proper operating position with all pins engaged could result in jack operational failure, resulting in death or serious injury. Always secure the tongue jack in the operating position with the jack locking pins.

TO DEPLOY THE TONGUE JACK

- "Drop Leg Jack" (if equipped) - Remove the lynch pin from the locking pin, remove the locking pin from the inner tube, adjust the drop leg down to the lowest available position and reinsert the locking pin and lynch pin.
- "Tube Mount Swivel Jack" (if equipped) - Remove the locking pin and rotate the tongue jack into the operating position, re-install the locking pin fully through the top and bottom holes in the jack and tongue.
- "Bracket Mount Swivel jack" (if equipped) - Pull the spring-loaded plunger and rotate the tongue jack into the operating position, make sure the plunger fully engages through the holes in the jack bracket on the tongue.
- Unfold the crank handle from the stowed position.
- Turn the handle clockwise to lower the jack and raise the front of the trailer.
- Turn the handle counter-clockwise to raise the jack and lower the front of the trailer.

TO RETRACT THE TONGUE JACK

⚠ WARNING

Retracting the tongue jack without supporting the trailer tongue could result in death or serious injury. Always be sure the trailer tongue is safely supported by appropriate means prior to retracting the tongue jack.

- Using the crank handle, fully retract the jack foot and fold the handle back to its stowed position.
- "Drop Leg Jack" (if equipped) - Remove the lynch pin from the locking pin, remove the locking pin from the inner tube, raise the drop leg and foot to the highest position and reinsert the locking pin and lynch pin.
- "Tube Mount Swivel Jack" (if equipped) - Remove the locking pin and rotate the tongue jack into the transport position, re-install the locking pin fully through the top and bottom holes in the jack and tongue.
- "Bracket Mount Swivel jack" (if equipped) - Pull the spring-loaded plunger and rotate the tongue jack into the transport position, make sure the plunger fully engages through the holes in the jack bracket on the tongue.

6 | INSPECTION, SERVICE & MAINTENANCE

⚠ WARNING

Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training.

INSPECTION, SERVICE & MAINTENANCE SUMMARY CHARTS

You must inspect, maintain and service your trailer regularly to insure safe and reliable operation. If you cannot or are unsure how to perform the items listed here, have your dealer do them. Note: In addition to this manual, also check the relevant component manufacturer's manual.

AXLE BOLTS, FRAME, SUSPENSION & STRUCTURE

⚠ WARNING

Worn or broken suspension parts can cause loss of control and injury may result. Have trailer professionally inspected annually and after any impact.

FASTENERS AND FRAME MEMBERS

Inspect all of the fasteners and structural frame members for bending and other damage, cracks, or failure. Repair or replace any damaged fastener and repair the frame member. If you have any questions about the condition or method of repair of fasteners or frame members, get the recommendation of, or have the repair done by, your dealer.

⚠ WARNING

Broken or damaged fasteners or welds can cause injury or damage to trailer and contents. Inspect for, and repair all damaged parts at least once a year.

WELDS

All welds can crack or fail when subjected to heavy loads or movement of cargo that was not properly tied to prevent movement. Any time that you know or suspect that the trailer has been subjected to heavy loads or movement of cargo, immediately inspect the welds and fasteners for damage. To prevent severe damage to your trailer, inspect all of the welds for cracks or failure at least once a year.

⚠ WARNING

Improper weld repair will lead to early failure of the trailer structure and can cause serious injury or death. Do not repair cracked or broken welds unless you have the skills and equipment to make a proper repair. If not, have the welds repaired by your dealer.

TRAILER BRAKE SHOES AND DRUMS

Properly functioning brake shoes and drums are essential to ensure safety. You must have your dealer inspect these components at least once per year, or each 12,000 miles. The brake shoes must be adjusted after the first 200 miles of use, and each 3,000 miles thereafter. Most axles are fitted with a brake mechanism that will automatically adjust the brake shoes when the trailer is "hard braked" from a rearward direction. Read your axle and brake manual to see how to adjust your brakes.

MANUALLY ADJUSTING BRAKE SHOES

Most braking systems are not automatically adjusted by hard stopping. These brakes require manual adjustment. The following steps apply to adjust most manually adjustable brakes. Read your axle and brake manual to see how to adjust your brakes.

- Jack up the trailer and secure it on adequate capacity jack stands.
- Be sure the wheel and brake drum rotate freely.
- Remove the adjusting-hole cover from the adjusting slot on the bottom of the brake backing plate. With a screwdriver or standard adjusting tool, rotate the starwheel of the adjuster assembly to expand the brake shoes. Adjust the brake shoes out until the pressure of the linings against the drum makes the wheel very difficult to turn. Note: Your trailer maybe equipped with drop spindle axles. See axle manual for your axle type. You will need a modified adjusting tool for adjusting the brakes in these axles. With drop spindle axles, a modified adjusting tool with about an 80 degree angle should be used.
- Rotate the starwheel in the opposite direction until the wheel turns freely with a slight drag.
- Replace the adjusting-hole cover.
- Repeat the above procedure on all brakes.
- Lower the trailer to the ground.

BRAKES, ELECTRIC

Two different types of electric brakes may be present on the trailer: an emergency electric breakaway system, which acts only if the trailer comes loose from the hitch and the breakaway pin is pulled. The other brake is an electric braking system that acts whenever the brakes of the tow vehicle are applied.

BREAKAWAY BATTERY

This battery supplies the power to operate the trailer brakes if the trailer uncouples from the tow vehicle. Be sure to check, maintain and replace the battery according to the battery manufacturer's instructions.

⚠ NOTICE

Extreme cold weather can degrade battery performance and cause brakes to not operate properly. Always check battery charge level before towing.

BREAKAWAY SWITCH

This switch causes the breakaway battery to operate the electric brakes if the trailer uncouples from the tow vehicle. The pull cable for the pull pin is connected to the tow vehicle, and the switch is connected to the trailer. To check for proper functioning of the switch, battery and brakes, you must pull the pin from the switch and confirm that the brakes apply to each wheel. You can do this by trying to pull the trailer with the tow vehicle, after pulling the pin. The trailer brakes may not lock, but you will notice that a greater force is needed to pull the trailer.

⚠ WARNING

If electric breakaway brakes do not operate when trailer is uncoupled from the tow vehicle, death or serious injury can occur. Check emergency breakaway brake system BEFORE each tow.

TOW VEHICLE OPERATED ELECTRIC BRAKES

The electric brakes that operate in conjunction with the tow vehicle brakes must be "synchronized" so that braking is properly distributed to the tow vehicle brakes and the trailer brakes. For proper operation and synchronization, read and follow the axle/brake and the brake controller manufacturers' instructions.

MAGNETS FOR ALL ELECTRIC BRAKES

To make certain an electrically-operated braking system will function properly, you must have your dealer inspect the magnets at least once a year, or every 12,000 miles. See the brake manual for wear and current inspection instructions.

BRAKES, HYDRAULIC
(VACUUM, AIR OR ELECTRIC OPERATED)

If your trailer has hydraulically-operated brakes, they function the same way the hydraulic brakes do on your tow vehicle. The hydraulic braking system must be inspected by a dealer, at least as

often as the brakes on the tow vehicle, but no less than once per year. This inspection includes an assessment of the condition and proper operation of the wheel cylinders, brake shoes, brake drums and hubs. You must check the fluid level in the master cylinder reservoir at least every three months. If you tow your trailer an average of 1,000 miles per month in a hot and dry environment, you must check the brake fluid level once a month. The brake fluid reservoir is located on the tongue of the trailer or near the gooseneck. Fill with DOT 4 brake fluid.

VACUUM-OPERATED HYDRAULIC

When towing a trailer, the vacuum gauge, which is located inside the cab of the tow vehicle, must indicate 18 In. Hg. (inches of mercury) or more at all times.

⚠ WARNING

If the vacuum gauge in tow vehicle is not at or above 18 In. Hg. (inches of mercury), damage to the brake system will result and the brakes may become inoperable.

RATED HYDRAULIC

Air/hydraulic braking systems are typically used when the tow vehicle has a diesel engine. The tow vehicle has an air compressor that routes the air to an air/hydraulic mechanism, which sends brake fluid to the wheel cylinders. The air pressure gauge in your tow vehicle indicates the current air pressure. See your tow vehicle manual for the proper air pressure.

ELECTRICAL-OPERATED HYDRAULIC

Electric/hydraulic braking systems, which are mounted on the trailer, use a small electrically-driven pump to generate hydraulic pressure, which operates the brake cylinders. Like electrical brakes, an electric/hydraulic braking system is operated by an electrical signal from the tow vehicle.

COUPLER AND BALL

The coupler on the trailer connects to the ball attached to the hitch on the tow vehicle. The coupler, ball and hitch transfer the towing forces between the tow vehicle and the trailer. Before each tow, coat the ball with a thin layer of automotive bearing grease to reduce wear and ensure proper operation; check the locking device that secures the coupler to the ball for proper operation. See the coupler manufacturer's manual for other inspection and maintenance activities. If you see or feel evidence of wear, such as flat spots, deformations, pitting or corrosion on the ball or coupler, immediately have your dealer inspect them to determine the proper action to prevent possible failure of the ball and coupler system. All bent or broken coupler parts must be replaced before towing the trailer. The coupler handle lever must be able to rotate freely and automatically snap into the latched position. Oil the pivot points, sliding surfaces, and spring ends with SAE 30W

motor oil. Keep the ball pocket and latch mechanism clean. Dirt or contamination can prevent proper operation of the latching mechanism. When replacing a ball, the load rating must match or exceed the GVWR of the trailer.

GOOSENECK

The gooseneck receiver on the trailer connects to a hitch-mounted ball on the towing vehicle. The receiver, ball and hitch transfer the towing forces between the tow vehicle and the trailer. Before each tow, coat the ball with a thin layer of automotive bearing grease to reduce wear and ensure proper operation; and check the locking device that secures the receiver to the ball for proper operation. See the gooseneck ball receiver manufacturer's manual for other inspection and maintenance activities. If you see or can feel evidence of wear, such as flat spots, pitting or corrosion, on the ball or receiver, immediately have your dealer inspect them to determine the proper action to prevent possible failure of the ball and receiver system. When replacing a ball, the load rating must match or exceed the GVWR of the trailer.

FIFTH WHEEL KINGPIN

Before each tow, inspect the fifth wheel and kingpin for wear, and coat the contact surface of the fifth wheel plate with water resistant Lithium-base grease. If you see evidence of wear on the fifth wheel or kingpin, immediately have your dealer inspect them to determine the proper action to prevent failure of the fifth wheel and kingpin system. See the manual prepared by the manufacturer of the fifth wheel and kingpin for other inspection and maintenance activities.

LANDING LEG OR JACK

If a grease fitting is present, you must use a grease gun to lubricate the jack mechanism. Grease the gears in the top of hand-cranked jacks once a year, by removing the top of the jack and pumping or hand packing grease into the gears.

LIGHTS AND SIGNALS

Before each tow, check the trailer taillights, stoplights, turn signals and any clearance lights for proper operation.

⚠ WARNING

Improper operating taillights, stoplights and turn signals can cause collisions. Check all lights before each tow.

TIRES

⚠ WARNING

Driving on a flat tire will cause permanent damage to the tire. Re-inflating a tire after it has been driven on while severely underinflated or flat may cause a blowout and a serious crash. Never attempt to re-inflate a tire that has been driven on while severely underinflated or flat. Have your dealer or an authorized tire service center repair or replace as soon as possible.

Trailer tires may be worn out even though they still have plenty of tread left. This is because trailer tires have to carry a lot of weight all the time, even when not in use. It is actually better for the tire to be rolling down the road than to be idle. During use, the tire releases lubricants that are beneficial to tire life. Using the trailer tires often also helps prevent flat spots from developing.

The main cause of tire failure is improper inflation. Check the cold tire inflation pressures at least once a week for proper inflation levels. "Cold" means that the tires are at the same temperature as the surrounding air, such as when the vehicle has been parked overnight. Wheel and tire manufacturers recommend adjusting the air pressure to the trailer manufacturer's recommended cold inflation pressure, in pounds per square inch (PSI) stated on the vehicle's Federal Certification Label or Tire Placard when the trailer is loaded to its gross vehicle weight rating (GVWR). If the tires are inflated to less than the recommended inflation level or the GVWR of the trailer is exceeded, the load carrying capacity of the tire could be dramatically affected. If the tires are inflated more than the recommended inflation level, handling characteristics of the tow vehicle/trailer combination could be affected. Refer to the owner's manual or talk to your dealer or vehicle manufacturer if you have any questions regarding proper inflation practices.

Tires can lose air over a period of time. In fact, tires can lose 1 to 3 PSI per month. This is because molecules of air, under pressure, weave their way from the inside of the tire, through the rubber, to the outside. A drop in tire pressure could cause the tire to become overloaded, leading to excessive heat build up. If a trailer tire is under-inflated, even for a short period of time, the tire could suffer internal damage.

High speed towing in hot conditions degrades trailer tires significantly. As heat builds up during driving, the tire's internal structure starts to breakdown, compromising the strength of the tire. It is recommended to drive at moderate speeds. Statistics indicate the average life of a trailer tire is about five years under normal use and maintenance conditions. After three years, replacing the trailer tires with new ones should be considered, even if the tires have adequate tread depth. Some experts claim that after five years, trailer tires are considered worn out and should be replaced, even if they have had minimal or no use. This is such a general statement that it may not apply in all cases. It is best to

have your tires inspected by a tire supplier to determine if your tires need to be replaced. If you are storing your trailer for an extended period, make sure the tires are fully inflated to the maximum rated pressure and that you store them in a cool, dry place, such as a garage. Use tire covers to protect the trailer tires from the harsh effects of the sun.

⚠ WARNING

Worn, damaged or under-inflated tires can cause loss of control, resulting in damage, serious injury and possibly death. Inspect tires before each tow.

WHEEL RIMS

If the trailer has been struck, or impacted, on or near the wheels, or if the trailer has struck a curb, inspect the rims for damage (i.e. being out of round); and replace any damaged wheel. Inspect the wheels for damage every year, even if no obvious impact has occurred.

WHEELS, BEARINGS AND LUG NUTS

A loose, worn or damaged wheel bearing is the most common cause of brakes that grab. To check your bearings, jack trailer and check wheels for side-to-side looseness. If the wheels are loose, or spin with a wobble, the bearings must be serviced or replaced.

Some trailer axles are built with sealed bearings that are not serviceable. Sealed bearings must be replaced as complete units.

UNSEALED BEARINGS (HUBS)

If your trailer has unsealed axle bearings, they must be inspected and lubricated once a year or 12,000 miles to insure safe operation of your trailer. If a trailer wheel bearing is immersed in water, it must be replaced. If your trailer has not been used for an extended amount of time, have the bearings inspected and packed more frequently, at least every six months and prior to use.
Follow the steps below to disassemble and service the UNSEALED wheel bearings.

- After removing the grease cap, cotter pin, spindle nut and spindle washer, remove the hub and drum to inspect the bearings for wear and damage.
- Replace bearings that have flat spots on rollers, broken roller cages, rust or pitting. Always replace bearings and cups in sets. The inner and outer bearings are to be replaced at the same time.
- Replace seals that have nicks, tears or wear.
- Lubricate the bearings with a high quality EP-2 automotive wheel bearing grease.

Every time the wheel hub is removed and the bearings are reassembled, follow the steps below to check the wheel bearings for free running and adjust.

- Turn the hub slowly, by hand, while tightening the spindle nut, until you can no longer turn the hub by hand.
- Loosen the spindle nut just until you are able to turn it (the spindle nut) by hand. Do not turn the hub while the spindle nut is loose.
- Put a new cotter pin through the spindle nut and axle.
- Check the adjustments. Both the hub and the spindle nut should be able to move freely (the spindle nut motion will be limited by the cotter pin).

LUG NUTS (BOLTS)

Being sure wheel mounting nuts (lug nuts) on trailer wheels are tight and properly torqued is an important responsibility that trailer owners and users need to be familiar with and practice. Inadequate and/or inappropriate wheel nut torque (tightness) is a major reason that lug nuts loosen in service. Loose lug nuts can rapidly lead to a wheel separation with potentially serious safety consequences.

Lug nuts are prone to loosen right after a wheel is mounted to a hub. When driving on a new or remounted wheel, check the lug nut tightness often during the first few hundred miles of the trailer's use, especially after the first 10, 25 and 50 miles of driving, before each tow, and at least twice per year thereafter.

⚠ WARNING

Lug nuts are prone to loosen after initial installation, which can lead to death or serious injury. Check lug nuts for tightness on a new trailer or when wheel(s) have been remounted after the first 10, 25 and 50 miles of driving.

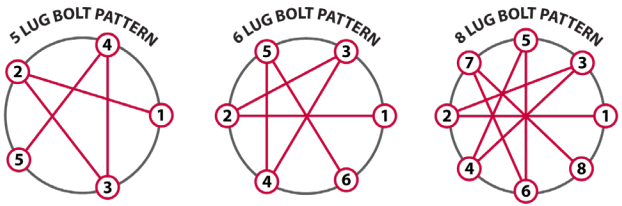
⚠ WARNING

Metal creep between the wheel rim and lug nuts will cause rim to loosen and could result in a wheel coming off, leading to death or serious injury. Tighten lug nuts before each tow.

Tighten the lug nuts to the proper torque for the axle size on your trailer to prevent wheels from coming loose. Use a torque wrench to tighten the fasteners. The only way to be certain you have checked the torque or torqued the lug nuts to the proper torque is with a torque wrench. Four-way wrenches, ratchets, and similar tools can be useful for short-term emergency repairs, but are not appropriate tools for adequately checking lug nut torque. You must use a torque wrench to adequately indicate the torque that you are applying to the lug nut. If you do not have a torque wrench, tighten the fasteners with a lug wrench as much as you can, then have a service garage or dealer tighten the lug nuts to the proper torque.

Over-tightening will result in breaking the studs or permanently deforming the mounting stud holes in the wheels.

Lug nut sequence of tightening



Proper Torque Levels

1/2-20	90-120 ft. lb
9/16-18	90-120 ft. lb
5/8-18 90 Cone Nut with Clamp Ring	90-210 ft. lb
5/8-18 Non-Swiveling Flange Nut	275-325 ft. lb
5/8-18 Swiveling Flange Nut	150-175 ft. lb

Keep a record of the date and approximate mileage when you check the lug nut torque. Note any lug nut that has lost torque.

Investigate the reason(s) if the lug nut torque is not maintained after more than one re-torque application, because this indicates there is something wrong with the lug nuts, nut studs, wheels and/or hubs, and should be corrected.

Contact your dealer or vehicle manufacturer immediately if you experience any persistent lug nut loosening or any other lug, wheel or axle problems.

In the event of a wheel separation incident, notify the vehicle manufacturer and dealer. Seek prompt professional assistance in assessing the trailer and its gear, and retain, but don't re-use involved lugs, wheels and studs. Don't repair or service the trailer yourself. Call a trained technician.

WHEEL BEARING LUBRICATION

- Most wheel bearings will require the application of grease through a zerk fitting. Greasing procedure for E-Z lube axle with grease zerks under the grease cap should be done every 12 months or 12,000 miles.
- Remove the rubber plug from the end of the grease cap.
- Place a standard manual grease gun onto the grease fitting located in the end of the spindle. Make sure the grease gun nozzle is fully engaged on the fitting.
- While rotating the hub, pump grease slowly into the fitting. The old displaced grease will begin to flow back out the cap around the grease gun nozzle.
- When the new clean grease is observed, remove the grease gun, wipe off any excess, and replace the rubber plug in the cap.

GENERAL LUBRICATION POINTS

Lube procedure for all other lubrication points on your trailer. Maintenance of lubrication points should be done every 6 months or 6,000 miles.

Common areas include: crank handles, D-Rings, and any other moving parts to which a light oil can be applied. 30 Weight oil works best, however any standard light duty household oil will work just fine.

DEXTER AXLES

Croft equips their trailers with Dexter axles. Dexter has a premium warranty for both sprung axles & Torflex® axles.

For more information go to www.CroftTrailer.com/resources.

7 | MAINTENANCE SUMMARY CHARTS

PURCHASE RECORD	
Owner	
Date of Purchase	
Vin Number	
Model	

MAINTENANCE RECORDS	
Date	Service Performed
Miles	

Date	Service Performed
Miles	

Date	Service Performed
Miles	

Date	Service Performed
Miles	

Date	Service Performed
Miles	

1 | SAFETY CHECKLIST	X
Lubricate and tighten hitch ball	
Check lug nuts	
Secure hitch in receiver	
Check tire pressure	
Latch coupler onto ball	
Pin or bolt through coupler latch	
Check load distribution and securement	
Block tires when loading and unloading	
Check for working trailer lights	
Level trailer when hooked-up	
Cross and attach safety chains*	
Wear your seatbelt	

*Twist to shorten if chains are too long

2 | LUG NUT TORQUE – STEEL WHEELS		
Axle Rating (lb)	**Stud Size**	**Dry Torque (ft lb)***
3,500 to 7,000	1/2 inch	
8,000	9/16 inch	
9,000	5/8 inch	
10,000	5/8 inch flanged	
12,000	3/4 inch flanged	

3 | LUG NUT TORQUE – ALUMINUM WHEELS		
Rim Size	**Stud Size**	**Dry Torque (ft lb)***
15 inch (5 or 6 hole)	1/2 inch	
16 inch (8 hole)	1/2 inch	

***Note:** Dry Torque Foot-pounds is determined by manufacturer.

4 | INSPECTION AND SERVICE BEFORE EACH USE

Item	Inspection / Service
Breakaway Brakes **> Electric**	• Check operation
> Hydraulic	• Check fluid level
Breakaway Battery	• Fully charged, connections clean
Brakes, all types	• Check operation
Shoes and Drums	• Adjust
Brakes, Hydraulic – Vacuum Actuated	• Check gauge for proper vacuum of 18 in. Hg (inches of mercury)
Coupler and Hitch Ball	• Check for cracks, pits, and flats • Replace with ball & coupler having trailer GVW Rating • Grease • Check locking device & replace

4 | INSPECTION AND SERVICE BEFORE EACH USE

Item	Inspection / Service
Gooseneck Ball	• Check for cracks, pits, and flats • Replace with ball & coupler having trailer GVW Rating • Grease • Check locking device and replace when worn
Fifth Wheel & Kingpin	• Check for cracks, grease • Check locking device & replace when worn
Safety Chain(s) & Hooks	• Check for wear and damage
Tires	• Check tire pressure when cold • Inflate as needed
Wheels - Lug Nuts (Bolts) & Hub	• Check for tightness • Tighten as needed • For new and remounted wheels, check torque after first 10, 25 & 50 miles of driving and after any impact

5 | INSPECTION AND SERVICE EACH 6 MONTHS OR 6,000 MILES

Item	Inspection / Service
Tires	• Rotate at 5,000 miles • Inspect tread and sidewalls thoroughly • Replace tire when treads are worn, when sidewall has a bulge, or sidewall is worn
Brakes, electric	
> Magnets	• Check wear and current draw
> Controller (in tow vehicle)	*See controller manufacturer's manual* • Check power output (amperage) and modulation

NOTES

6 | INSPECTION AND SERVICE EACH YEAR OR 12,000 MILES

Item	Inspection / Service
Brakes, all types **> Shoes & drums**	*See brake manufacturer's manual* • Check for scoring and wear • Replace per manufacturer's specifications
Jack, Drop-leg	*See jack manufacturer's manual* • Grease gears at top
Structure **> Frame members**	• Inspect all frame members, bolts & rivets • Repair or replace damaged, worn or broken parts
> Welds	• Inspect all welds • Repair as needed

6 | INSPECTION AND SERVICE EACH YEAR OR 12,000 MILES

Item	Inspection / Service
Wheels **> Sealed Bearings (Hubs)**	• Check and confirm free running • Replace if not (sealed bearings are not serviceable)
> UNSEALED Bearings (Hubs)	• Disassemble/inspect/assemble & repack • Replace promptly if immersed in water
> Rims	• Inspect for cracks & dents • Replace as needed
Structure **> Axle Attachment Bolts**	*See axle manufacturer's manual* • Check by dealer

7 | OCCUPANT LOADING AND DISTRIBUTION FOR VEHICLE NORMAL LOAD FOR VARIOUS DESIGNATED SEATING CAPACITIES*

Designated seating capacity, number of occupants	Vehicle normal load, number of occupants	Occupant distribution in a normally loaded vehicle
2 through 4	2	2 in front.
5 through 10	3	2 in front, 1 in second seat.
11 through 15	5	2 in front, 1 in second seat, 1 in third seat, 1 in fourth seat.
16 through 22	7	2 in front, 2 in second seat, 2 in third seat, 1 in fourth seat.

*Table I of 49 CFR 571.110 at https://www.govinfo.gov/content/pkg/CFR-2011-title49-vol6/pdf/CFR-2011-title49-vol6-sec571-110.pdf

TOW VEHICLE WIRING

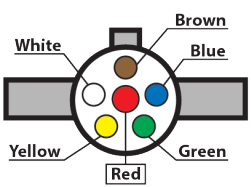
Tow vehicles must have the correct plug at the rear and be connected to the correct tow vehicle circuits using acceptable practices in wire routing and connections. An important thing to incorporate into tow vehicle wiring is the ground wire running from the plug back to the frame of the tow vehicle. Safety chains, hitches, couplers, and load leveling equalizer bars will NOT provide an adequate continuous ground and is the cause of many electrical failures.

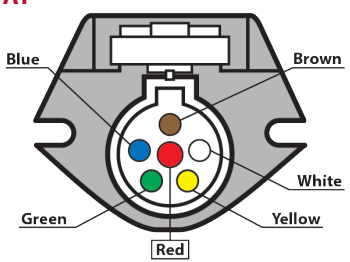
MOLDED TRAILER & CAR CONNECTOR WITH CABLE

TRAILER END/PLUG
As viewed from front face of connector with molded cable.

CAR END/SOCKET
As viewed from front face of connector with sealed cable.

6-WAY

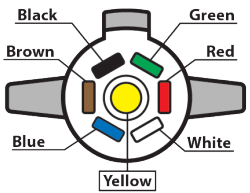


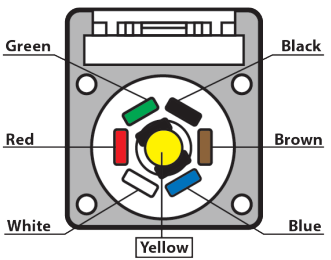


TRAILER END/PLUG
As viewed from front face of connector with molded cable.

CAR END/SOCKET
As viewed from front face of connector with sealed cable.

7-WAY





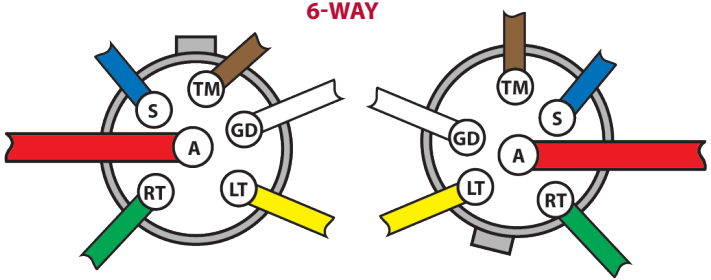
Wire Color	6-Way	7-Way
White	Common ground	Common ground
Blue	Electric brake	Electric brake
Green	Right stop & turn	Tail & license
Black	-	12V Battery charge
Red	Auxiliary	Left stop & turn
Brown	Tail & license	Right stop & turn
Yellow	Left stop & turn	Center auxiliary

TRAILER & CAR CONNECTOR

TRAILER END/PLUG
As viewed from core back side where wires are attached with screws.

CAR END/SOCKET
As viewed from core back side where wires are attached with screws.

6-WAY



TRAILER END/PLUG
As viewed from core back side where wires are attached with screws.

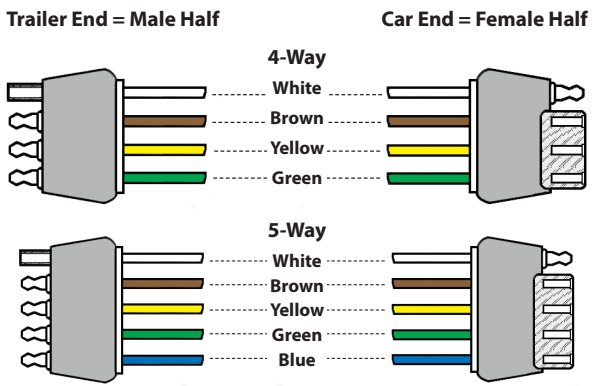
CAR END/SOCKET
As viewed from core back side where wires are attached with screws.

7-WAY

Wire Color	6-Way	7-Way
White	**GD** - Common ground	**1** - Common ground
Blue	**S** - Electric brake	**2** - Electric brake
Brown	**TM** - Tail & license	**3** - Tail & license
Black	-	**4** - 12V Battery charge
Yellow	**LT** - Left stop & turn	**5** - Left stop & turn
Green	**RT** - Right stop & turn	**6** - Right stop & turn
Red	**A** - Auxiliary	**7** - Center auxiliary

NOTES

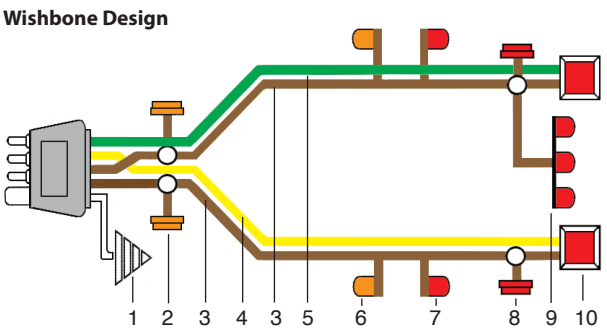
4 & 5-WAY FLAT CONNECTOR DIAGRAMS



Color coded for conformity to SAE, NMMA, and TMA standards,

Wire Color	Description
White	Ground
Brown	Tail lights, side marker lights, clearance lights
Yellow	Left turn and stop lights
Green	Right turn and stop lights
Blue	Auxiliary

TRAILER WIRING DIAGRAM



No.	Description
1	White wire - ground to trailer frame
2	Side marker lights - amber
3	Brown wire
4	Yellow wire
5	Green wire
6	Clearance lights - amber
7	Clearance lights - red
8	Side marker lights - red
9	I.D. Light bar - red
10	Tail, stop, and turn lights

Limited Warranty

Croft Trailer Supply, Inc. (the "Company") warrants the original owner/end user that the trailer will be free from defects in materials and workmanship, except as herein limited, for a period of three (3) years. This warranty is non-transferable from the original owner/end user and begins on the date of the first retail purchase, provided all stated conditions and exclusions are met and satisfied. The obligation of this warranty shall be limited to repairing or replacing any part or parts which, in the opinion of the Company, are determined to be defective during the warranty period.

In order for the warranty to be effective, the warranty registration certificate must be returned to the Company within 15 days of the first retail purchase. Failure to return the completed registration certificate to the Company may invalidate this warranty.

All warranty requests must be presented to the Company and proper arrangements must be made with and approved by the Company prior to the repairs being made. All warranty repairs must be made at the Company's factory unless prior written approval is obtained from the Company before repairs begin. The Company may elect at its option to have warranty work performed by a qualified repair shop.

The Company will not be obligated in any way to pay for actual repairs made unless specific written approval from the Company is received in advance of any repairs being made. Repairs must be made in a manner that is approved by the Company. Charges for labor and parts for any covered warranty work are limited to the cost that would have been incurred by the Company at its factory for such labor & parts.

Except as described in this warranty, the Company will not pay any other charges or expenses, including overtime labor, service calls, loss of use, inconvenience, rental of substitute equipment, towing charges, transportation costs, or other commercial loss. Such charges or expenses are the responsibility of the customer and will not be paid for by the Company.

This warranty covers all defects in workmanship by the Company. This warranty does not cover the following components ("excluded components"): tires, wheels, axles,

jacks, couplers, paint, electrical and any other component that carries its own manufacturer's warranty. The excluded components are covered by the warranties of the manufacturers of these components. Any potential warranty claim for an excluded component must be presented by the owner/end user to the manufacturer of that component for reimbursement.

This warranty does not cover any equipment or components that have been modified, repaired, or altered in any way. The Company will not be responsible for work performed or options installed by others.

This warranty does not cover corrosion to the frame, electrical, or other construction materials caused by the presence of any product causing a chemical reaction to the materials used to build the trailer (fertilizers, cement, caustic chemicals, road chemicals or salt, etc.).

This warranty is void if the defective part or parts were caused by misuse of the product. The Company, in its sole discretion, will determine if misuse has occurred. Examples of misuse include overloading (as determined by the gross vehicle weight rating and not payload capacity as shown on the vehicle identification label), improper loading, negligence, alteration, accident, and lack of reasonable and proper periodic maintenance.

This warranty does not cover damages caused by loose or improperly torqued lug nuts, incorrect or altered hitch balls, improper hitching, loose bolts and screws, or damages to any tow vehicle or tow vehicle wiring.

CROFT TRAILER SUPPLY, INC.

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