PATRIOT™

E-CLASS
COMBINE HEAD TRAILER

Owner's Manual & Parts Catalog

Models: CHTE27, CHTE32, CHTE37 & CHTE42

Manufactured by
Patriot Equipment
1302 K Road
Minden NE 68959
1-308-832-0220

Combine Head Trailer
Serial # _____ **Date of Purchase _____**

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INTRODUCTION

Models: CHTE-27, CHTE-32, CHTE-37 & CHTE-42

Thank you for choosing the Patriot Combine Head Trailer! This manual covers the operation and maintenance of the Patriot E-Class Combine Head Trailer. All information in this manual is based on the latest production information available at the time of printing. For the latest version of this catalog please call 1-308-832-0220 or visit www.patriotequip.com

Minden Machine Shop Inc. reserves the right to make changes at any time without notice and without incurring any obligation. Please become familiar with all safety, operating, maintenance and troubleshooting information. This will ensure your safety and long life for the system.

Purpose:
The Patriot E-Class Head Trailer is used to transport combine heads to and from the work area.

Features:

1. Frame – Rugged built simple design.
2. Easy to maintain.
3. Brackets to fit most heads.

SAFETY AND OPERATION RULES

GENERAL SAFETY STATEMENTS

Safety precautions are essential when the use of any mechanical equipment is involved. These precautions are necessary when using, storing, and servicing mechanical equipment. Using this equipment with the respect and caution demanded will considerably lessen the possibilities of personal injury. If safety precautions are overlooked or ignored, personal injury or property damage may occur. This unit was designed for specific applications. It should not be modified or/and used for any application other than which it was designed. If there are any questions regarding its application contact Patriot Equipment at 308-832-0220. Do not use this unit until you have been advised. For more information, call 1-308-832-0220.

Read this entire manual carefully - know your equipment. Consider the application, limitations, and the potential hazards specific to your unit. Occupational safety is of prime concern to us. This manual was written with the safety of the operator and others who come in contact with the equipment as our prime concern. The manual presents some of the day-to-day work problems encountered by the operator and other personnel. This manual was written to help you understand safe operating procedures for the Patriot E-Class Head Trailers. We want you as our partner in safety. A copy of this manual should be available to all persons who may operate this machine. It is your responsibility as an owner or operator or supervisor, to know what specific requirements, precautions and work hazards exist and to make these known to all other personnel working with the equipment or in the area, so that they too may take any necessary safety precautions that may be required. Avoid any alterations of the equipment. Such alterations may create a dangerous situation where serious injury or death may occur.

Why is SAFETY important to you?

3 BIG REASONS

1	Accidents disable and kill
2	Accidents cost money
3	Accidents can be avoided

Signal Words

Note the use of the signal words **DANGER, WARNING** and **CAUTION** with safety messages. The appropriate signal word for each message has been selected using the following guidelines:

DANGER – An immediate and specific hazard, which will result in severe personal injury or death if proper precautions are not taken.

WARNING – A specific hazard or unsafe practice, which could result in severe personal injury or death if proper precautions are not taken.

CAUTION – Unsafe practices which could result in personal injury if proper precautions are not taken, or a reminder of good safety practices.

SAFETY ALERT SYMBOL

BE ALERT! YOUR SAFETY IS INVOLVED

The Symbol Shown Above Is Used To Call Your Attention To Instructions Concerning Your Personal Safety. Watch This Symbol - It Points Out Important Safety Precautions. It Means ATTENTION! Become Alert! Your Personal Safety Is Involved! Read The Message That Follows And Be Alert To The Possibility Of Personal Injury Or Death.

Anyone who will operate or work around a Head Trailer shall first read this manual! This manual must be delivered with the equipment to its owner. Failure to read this manual and its safety instructions is a misuse of equipment.

SAFETY EQUIPMENT

Please, remember safety equipment provides important protection for persons around equipment in use. Be sure ALL safety shields and protective devices are installed and properly maintained. If you find any shields or guards damaged or missing, contact Minden Machine Shop Inc. for the correct items.

SERIAL NUMBER

To ensure efficient and prompt service, please furnish us with the model and serial number of your Patriot E-Class Head Trailer in all correspondence or other contact. The Serial Number is located on the back side of front axle assembly above the beam**.**

SAFETY PROCEDURES

1. Use only lifting equipment with the proper capacity when loading or lifting the E-Class Patriot Head Trailer. Forklifts with too little capacity may tip towards the front where the lifted weight is.
2. Do not use makeshift systems to handle equipment as you may create an unsafe condition.
3. Do not attempt to raise the E-Class Patriot Head Trailer unit by hoist or forklift when it is loaded.
4. Do not unhook your E-Class Patriot Head Trailer while it is loaded. Any incline could cause the trailer to roll.
5. Do not operate unit without safety shields or guards in place.
6. Do not allow any riders on the E-Class Patriot Head Trailer.
7. In case of any defect or awareness of potential danger, please contact the plant at 1-308-832-0220 immediately.

LIGHTING AND MARKING

It is the responsibility of the customer to know the lighting and marking requirements of their local highway authorities and to install and maintain the equipment to provide compliance with the regulations. Add extra lights when transporting at night or during periods of limited visibility.

OPERATOR QUALIFICATIONS

Operation of this E-Class Head Trailer shall be limited to competent and experienced persons. In addition, anyone who will operate or work around an E-Class Head Trailer must use good common sense. In order to be qualified, they must also know and meet all other requirements, such as:

- Some regulations specify that no one under the age of 18 may operate power machinery. This includes equipment attached to the E-Class Head Trailer. It is your responsibility to know what these regulations are in your own area or situation.
- Current OSHA regulations state in part: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee or user in the safe operation and servicing of all equipment with which the employee or user is, or will be involved."
- Unqualified persons are to stay out of the work area as shown in the work diagrams.
- A person who has not read and understood all operating and safety instruction is not qualified to operate the machine.

SAFETY OVERVIEW

- YOU are responsible for SAFE operation and maintenance of your Patriot E-Class Head Trailer.
- YOU must ensure that you and anyone who is going to operate, maintain, or work around the head trailer must be familiar with the operating, maintenance, and safety information contained in the manual. This manual will take you step by step through your working day and alerts you to all good safety practices while operating the head trailer.
- Remember YOU are the key to safety. GOOD PRACTICES protect not only you but also the people around you. Make these practices a working part of your safety program. Be certain EVERYONE operating this machine is familiar with the procedures recommended and follows safety precautions. Remember, most accidents can be prevented. Do not risk injury or death by ignoring any information addressed.
- Head Trailer owners must give operating instructions to operators before allowing them to operate the trailer. They must be reviewed at least annually thereafter per OSHA regulation 1928.57.
- The most important safety device on the equipment is a SAFE OPERATOR. It is the operator's responsibility to read and understand ALL instructions in the manual and to follow them. All accidents can be avoided!
- Any person who has not read and understood all operation and safety instructions is not qualified to operate the head trailer. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modifications may impair the functions and/or safety and could affect the life of the equipment.

SAFETY AFFIRMATION

- I have read and understand the operator's manual and all safety signs before operation, maintenance or adjusting the E-Class Head Trailer.
- I will allow only trained persons to operate the Patriot E-Class Head Trailer. *An untrained operator is not qualified to operate this equipment.
- I have access to a fire extinguisher.
- I have all guards in place and will not operate the Patriot E-Class Head Trailer without them.
- I will not allow riders on the Patriot E-Class Head Trailer.
- I am aware of the need to secure the Patriot E-Class Head Trailer to its base.
- I understand that any accidents that occur with the Patriot E-Class Head Trailer are my responsibilities.
- I understand that Minden Machine Shop will not be held responsible of any accidents that involve the Patriot E-Class Head Trailer.

SIGN OFF SHEET (this must be signed annually as part of your safety program)

As a requirement of OSHA it is necessary for the employer to train the employee in the safe operation and safety procedures with this E-Class Head Trailer. We include this sign off sheet for your convenience and personal record keeping.

DATE	EMPLOYER SIGNATURE	EMPLOYEE SIGNATURE

MACHINE INSPECTION

After delivery of your new Patriot E-Class Head Trailer and/or completion of assembly, before each use, inspection of the machine is mandatory. This inspection should include, but not be limited to:

1. All bolts are tight and retighten any loose bolts.
2. All tires have proper pressure.
3. All pins are in and all clips are in the pins.
4. All grease points are greased.
5. Make sure all guards and shields are in place
6. Check for worn parts and cracked welds and make any necessary repairs
7. Inspect tie-downs for cuts and replace if any exist.
8. Inspect tires for any cracks and worn spots and replace as necessary.
9. Check lights for proper operation (if equipped).
10. Inspect wheel lug nuts for proper torque and retighten as necessary.

POST SEASON CARE

Before the Patriot Head Trailer is stored after season, it is important to get it ready for storage. The following to do list will help maintain the equipment:

1. Grease all zerk locations
2. Inspect tires for punctures, holes or any other type of leak and repair as needed
3. Repack wheel bearings before storage
4. Inspect equipment for any cracked or broken welds, loose bolts, and worn parts and repair or replace as needed
5. Check that all pins have clips and are in place, replace as needed
6. Make sure all guards and shields are in place

SAFETY DECALS

- Keep safety decals clear and legible at all times.
- Replace decals and signs that are missing or have become unreadable.
- Safety signs are available from your Dealer or the Manufacture.

How to install Safety Decals

1. Be sure that the installation area is clean and dry.
2. Decide on the exact position before you remove the backing paper.
3. Align the decal over the specified area and carefully press the small portion with the exposed adhesive backing in place.
4. Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
5. Small air pockets can be pierced with a pin and smoothed out using a piece of decal backing
   Paper

DANGER! Be alert to overhead obstructions and electrical wires. Failure to do so may result in electrocution. Maintain at least ten (10) feet of clearance. See chart showing the height and width of your trailer.

LUBRICATION & MAINTENANCE

For economical and efficient operation of your Patriot E-Class Combine Head Trailer maintain regular and correct lubrication. Neglect leads to reduced efficiency, excessive wear and needless down time.

1. Grease Combine head trailer trolley at least once a week when using.
2. Check and grease wheel bearings annually.

DESIGNATED WORK AREA

WORK AREA DIAGRAM

Before using the Patriot E-Class Combine Head Trailer, a designated work area should be established. The work area should be a perimeter in which no persons should be allowed that are not directly involved in the operation of the Patriot E-Class Combine Head Trailer. Also all persons in the work area must have read and understand this manual.

RULES FOR SAFE WORK AREA

Under no circumstances should persons not involved in the operation be allowed to trespass into the work area. It shall be the duty of all operators to see that children and/or other persons stay out of the work area! Trespass into the work area by anyone not involved in the actual operation, or trespass into hazard area by anyone, shall result in immediate shut down by the operator.
It shall be the responsibility of all operators to see that the work area has secure footing, is clean and free of all debris, and tools, which might cause tripping and/or falling. It shall also be their responsibility to keep the work area clean and orderly during the operation.

OPERATING PROCEDURES

STARTUP AND BREAK-IN PROCEDURES

 It is essential to inspect your Patriot E-Class Combine Head Trailer before each day.

Make sure:
1. All bolts are tight
2. All tires have proper pressure.
3. All pins are in and all clips are in the pins.
4. All grease points are greased.

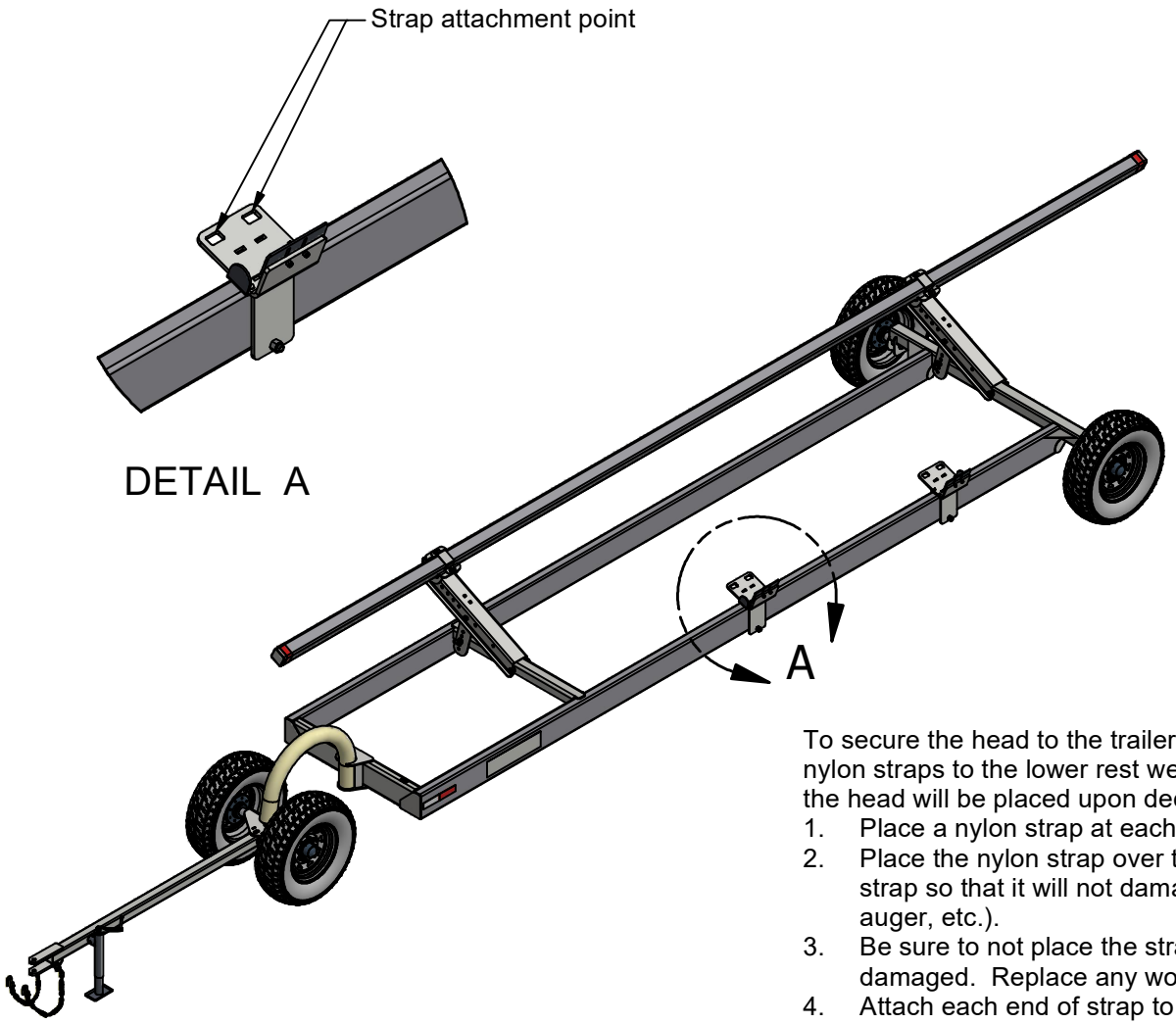
TRANSPORTING PATRIOT COMBINE HEAD TRAILER

DANGER! Do not transport Patriot E-Class Combine Head Trailer at speeds in excess of 35 MPH and comply with your state and local regulations governing marking, towing and maximum width. Observe safe driving and operation practices.

HIGHWAY AND TRANSPORT OPERATIONS

1. Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed to a minimum.
2. Reduce speed prior to turns to avoid the risk of overturning.
3. Avoid sudden uphill turns on steep slopes.
4. Always keep towing vehicle in gear to provide engine braking when going downhill. Do not coast.
5. Do not drink and drive.
6. Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
7. Use approved accessory lighting, flags, and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport.
8. The use of flashing amber light is acceptable in most localities. However, some localities prohibit there use. Local laws should be checked for all highway lighting and marking requirements.
9. When driving the equipment on the road or highway under 20 MPH at night or during the day. Use flashing amber warning lights and slow moving vehicle (SMV) identification emblem.
10. Plan your route to avoid heavy traffic.
11. Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
12. Be observant of bridge load ratings. Do not cross bridges rated lower than the gross weight at which you are operating.
13. Watch for obstructions overhead and to the side while transporting.
14. Always operate equipment in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping the unit, etc.

Securing the Head to the Header Trailer



To secure the head to the trailer, use two nylon ratchet straps. Attach the nylon straps to the lower rest weldment. The lower rest weldment is where the head will be placed upon decoupling from the combine.

1. Place a nylon strap at each lower rest weldment.
2. Place the nylon strap over the head that is on the trailer. Route the strap so that it will not damage anything on the head (reel, fingers, auger, etc.).
3. Be sure to not place the strap in any position that will cause it to get damaged. Replace any worn or damaged straps before using.
4. Attach each end of strap to the attaching points on the lower rest weldment.
5. Remove any slack in the strap.
6. Tighten the strap to secure the head to the trailer.

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Tire Safety Information

This portion of the User's Manual contains tire safety information as required by 49 CFR 575.6.

Section 2.1 contains "Steps for Determining Correct Load Limit - Trailer".

Section 2.2 contains "Steps for Determining Correct Load Limit – Tow Vehicle".

Section 2.3 contains a Glossary of Tire Terminology, including "cold inflation pressure", "maximum inflation pressure", "recommended inflation pressure", and other non-technical terms.

Section 2.4 contains information from the NHTSA brochure entitled "Tire Safety – Everything Rides On It".

This brochure, as well as the preceding subsections, describes the following items:

Tire labeling, including a description and explanation of each marking on the tires, and information about the DOT Tire Identification Number (TIN). Recommended tire inflation pressure, including a description and explanation of:

1. Cold inflation pressure.
2. Vehicle Placard and location on the vehicle.
3. Adverse safety consequences of under inflation (including tire failure).
4. Measuring and adjusting air pressure for proper inflation.
5. Tire Care, including maintenance and safety practices.
6. Vehicle load limits, including a description and explanation of the following items:
7. Locating and understanding the load limit information, total load capacity, and cargo capacity.
8. Calculating total and cargo capacities with varying seating configurations including quantitative examples showing / illustrating how the vehicles cargo and luggage capacity decreases as combined number and size of occupants' increases. This item is also discussed in Section 3.
9. Determining compatibility of tire and vehicle load capabilities.
10. Adverse safety consequences of overloading on handling and stopping on tires.

Steps for Determining Correct Load Limit – Trailer

Determining the load limits of a trailer includes more than understanding the load limits of the tires alone. On all trailers there is a Federal certification/VIN label that is located on the forward half of the left (road) side of the unit. This certification/VIN label will indicate the trailer's Gross Vehicle Weight Rating (GVWR). This is the most weight the fully loaded trailer can weigh. It will also provide the Gross Axle Weight Rating (GAWR). This is the most a particular axle can weigh. If there are multiple axles, the GAWR of each axle will be provided.

If your trailer has a GVWR of 10,000 pounds or less, there is a vehicle placard located in the same location as the certification label described above. This placard provides tire and loading information. In addition, this placard will show a statement regarding maximum cargo capacity. Cargo can be added to the trailer, up to the maximum weight specified on the placard. The combined weight of the cargo is provided as a single number. In any case, remember: the total weight of a fully loaded trailer cannot exceed the stated GVWR.

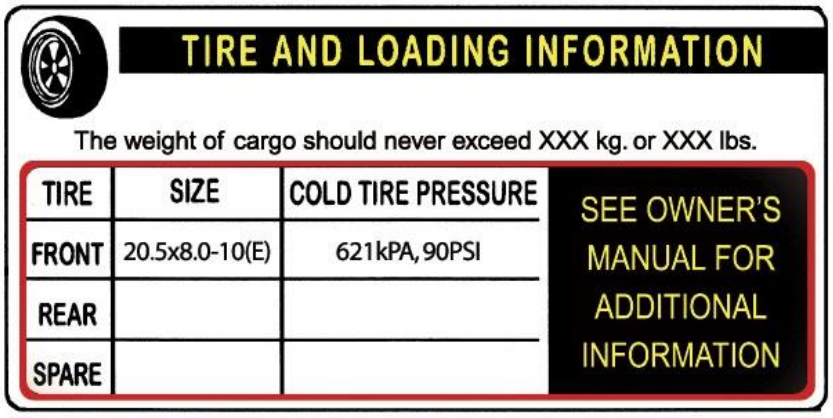
For trailers with living quarters installed, the weight of water and propane also need to be considered. The weight of fully filled propane containers is considered part of the weight of the trailer before it is loaded with cargo, and is not considered part of the disposable cargo load. Water however, is a disposable cargo weight and is treated as such. If there is a fresh water storage tank of 100 gallons, this tank when filled would weigh about 800 pounds. If more cargo is being transported, water can be off-loaded to keep the total amount of cargo added to the vehicle within the

limits of the GVWR so as not to overload the vehicle. Understanding this flexibility will allow you, the owner, to make choices that fit your travel needs.

When loading your cargo, be sure it is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire. The best way to know the actual weight of the vehicle is to weigh it at a public scale. Talk to your dealer to discuss the weighing methods needed to capture the various weights related to the trailer. This would include the weight empty or unloaded, weights per axle, wheel, hitch or king-pin, and total weight.

Excessive loads and/or under inflation cause tire overloading and, as a result, abnormal tire flexing occurs. This situation can generate an excessive amount of heat within the tire. Excessive heat may lead to tire failure. It is the air pressure that enables a tire to support the load, so proper inflation is critical. The proper air pressure may be found on the certification/VIN label and/or on the Tire Placard. This value should never exceed the maximum cold inflation pressure stamped on the tire.

Trailers 10,000 Pounds GVWR or Less



Tire and Loading Information Placard – Figure 1-1

1. Locate the statement, "The weight of cargo should never exceed XXX kg or XXX lbs.," on your vehicle's placard. See figure 1-1.
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.

Trailers over 10,000 Pounds GVWR (Note: These trailers are not required to have a tire information placard on the vehicle)

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.

Locate the GVWR (Gross Vehicle Weight Rating) of the trailer on your trailer's VIN (Certification) label.

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

1. Locate the statement, “The combined weight of occupants and cargo should never exceed XXX lbs.,” on your vehicle’s placard.
2. Determine the combined weight of the driver and passengers who will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kilograms or XXX pounds.
4. The resulting figure equals the available amount of cargo and luggage capacity. For example, if the “XXX” amount equals 1400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage capacity is 650 lbs. (1400-750 (5 x 150) = 650 lbs.).
5. 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.
6. 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.

Gross Axle Weight Rating
The maximum weight that any axle can support, as published on the Certification / VIN label on the front left side of the trailer. Actual weight determined by weighing each axle on a public scale, with the trailer attached to the towing vehicle.

Gross Vehicle Weight Rating
The maximum weight of the fully loaded trailer, as published on the Certification / VIN label. Actual weight determined by weighing trailer on a public scale, without being attached to the towing vehicle.

Hitch Weight
The downward force exerted on the hitch ball by the trailer coupler.

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

Inner liner separation
The parting of the inner liner 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.

Pin Weight
The downward force applied to the 5^{th} wheel or gooseneck ball, by the trailer kingpin or gooseneck coupler.

Non-pneumatic rim
A mechanical device which, when a non-pneumatic 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 lbs.) times the number of occupants specified in the second column of Table I of 49 CFR 571.110.

Occupant distribution
The distribution of occupants in a vehicle as specified in the third column of Table I of 49 CFR 571.110.

Open splice
Any parting at any junction of tread, sidewall, or inner liner 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 lbs.) 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 label 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.

Tread wear 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 kilograms (150 lbs.) 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 I of CRF 49 571.110) 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 non-pneumatic tire assembly not incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic tire and provides the connection between tire and 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, from the following web site:

http://www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/tires_index.html

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. Underinflated 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:

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

Both placards and certification labels are permanently 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.)

Manufacturers of passenger vehicles and light trucks determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure." (As you will read below, it is difficult to obtain the recommended tire pressure if your tires are not cold.)
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:

1. Most tires may naturally lose air over time.
2. Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.
3. With radial tires, it is usually not possible to determine under inflation 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

- Step 1: Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual.
- Step 2: Record the tire pressure of all tires.
- Step 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.
- Step 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.
- Step 5: At a service station, add the missing pounds of air pressure to each tire that is underinflated.
- Step 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, 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 tread wear 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 Balance and Wheel Alignment

To avoid vibration or shaking of the vehicle when a tire rotates, the tire must be properly balanced. This balance is achieved by positioning weights on the wheel to counterbalance heavy spots on the wheel-and-tire assembly. A wheel alignment adjusts the angles of the wheels so that they are positioned correctly relative to the vehicle's frame. This adjustment maximizes the life of your tires. These adjustments require special equipment and should be performed by a qualified technician.

Tire Repair

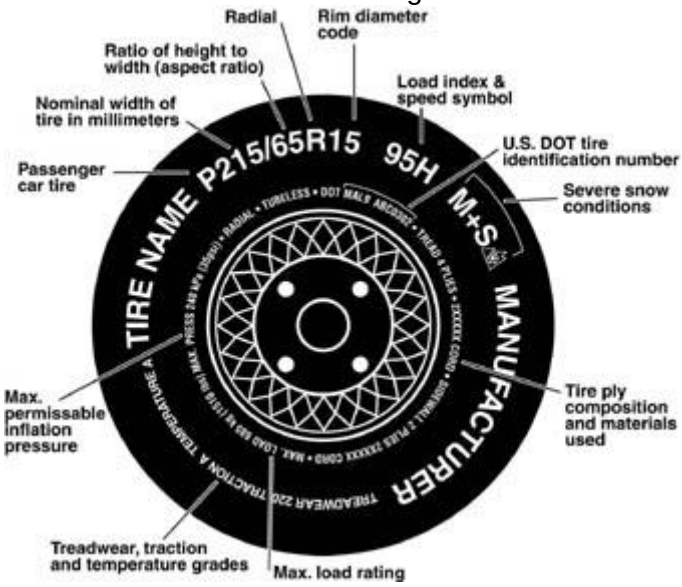
The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim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

Please refer to the diagram below.



P
The "P" indicates the tire is for passenger vehicles.

Next number
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.

Next number
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.

R
The "R" stands for radial. Radial ply construction of tires has been the industry standard for the past 20 years.

Next number
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.

Next number
This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. You may find this information in your owner's manual. If not, contact a local tire dealer. Note: You may not find this information on all tires because it is not required by law.

M+S
The "M+S" or "M/S" indicates that the tire has some mud and snow capability. Most radial tires have these markings; hence, they have some mud and snow capability.

Speed Rating

The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time. The ratings range from 99 miles per hour (mph) to 186 mph. These ratings are listed below. Note: You may not find this information on all tires because it is not required by law.

Letter Rating	Speed Rating
Q	99 mph
R	106 mph
S	112 mph
T	118 mph
U	124 mph
H	130 mph
V	149 mph
W	168* mph
Y	186* mph

* For tires with a maximum speed capability over 149 mph, tire manufacturers sometimes use the letters ZR. For those with a maximum speed capability over 186 mph, tire manufacturers always use the letters ZR.

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.

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.

Maximum Load Rating

This number indicates the maximum load in kilograms and pounds that can be carried by the tire.

Maximum Permissible Inflation Pressure

This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

UTQGS Information

Tread wear Number

This number indicates the tire's wear rate. The higher the tread wear number is, the longer it should take for the tread to wear down. For example, a tire graded 400 should last twice as long as a tire graded 200.

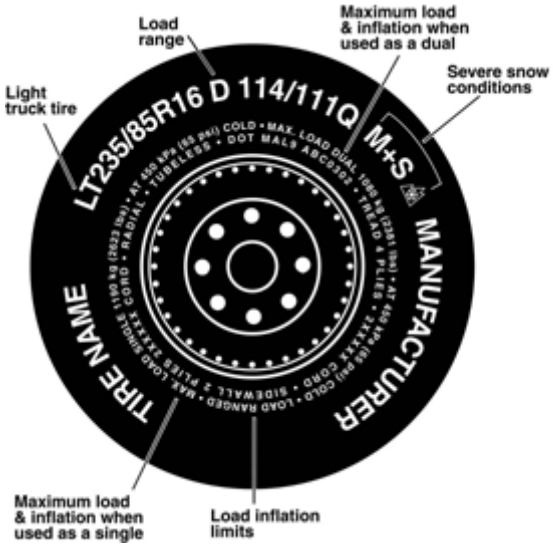
Traction Letter

This letter indicates a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as "AA","A", "B", and "C".

Temperature Letter
This letter indicates a tire's resistance to heat. The temperature grade is for a tire that is inflated properly and not overloaded. Excessive speed, under inflation or excessive loading, either separately or in combination, can cause heat build-up and possible tire failure. From highest to lowest, a tire's resistance to heat is graded as "A", "B", or "C".

Additional Information on Light Truck Tires

Please refer to the following diagram.



Tires for light trucks have other markings besides those found on the sidewalls of passenger tires.

LT
The "LT" indicates the tire is for light trucks or trailers.

ST
An "ST" is an indication the tire is for trailer use only.

Max. Load Dual kg (lbs.) 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).

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

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

Tire Safety Tips

Preventing Tire Damage

1. Slow down if you have to go over a pothole or other object in the road.
2. Do not run over curbs or other foreign objects in the roadway, and try not to strike the curb when parking.

Tire Safety Checklist

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

Wheel Attachment and Torque Requirements

Patriot Equipment would like to reiterate the extreme importance of properly matching your axles, wheels, and tires when specifying or replacing your trailer wheels. It is of equal importance that you apply and maintain proper wheel mounting torque on your trailer axle. Please follow the wheel selection, torque requirement, and torque sequence guidelines that follow.

Wheel Selection

Wheels are a very important and critical component of your running gear system. When specifying or replacing your trailer wheels it is important that the wheels, tires, and axle are properly matched. The following characteristics are extremely important and should be thoroughly checked when replacement wheels are considered.

1. **Bolt Circle:** Many bolt circle dimensions are available and some vary by so little that it might be possible to attach an improper wheel that does not match the axle hub. Be sure to match your wheel to the axle hub, bolts circle, hub pilot and wheel mount surface to hub face. Also, confirm that proper studs stick out.
2. **Capacity:** Make sure that the wheels have enough load carrying capacity and pressure rating to match the maximum load of the axle tire and trailer.
3. **Offset:** This refers to the relationship of the center line of the tire to the hub face of the axle. Care should be taken to match any replacement wheel with the same offset wheel as originally equipped. Failure to match offset can result in reducing the load carrying capacity of your axle.
4. **Rim Contour.**

CAUTION

Replacement tires must meet the same specifications as the originals. Mismatched tires and rims may come apart with explosive force and cause personal injury to yourself and others. Mismatched tires and rims can also blow out and cause you to lose control and have an accident which can result in serious injury or death.

CAUTION

Do not attempt to repair or modify a wheel. Even minor modifications can have a great effect. Do not install a tube to correct a leak through the rim. If the rim is cracked, the air pressure in the tube may cause the pieces of the rim to explode with great force and can cause serious injury or death.

Torque Requirements

You should always consult with the wheel manufacturer to determine the appropriate torque level for your wheels. It is extremely important to apply and maintain proper wheel mounting torque on your trailer axle. Torque is a measure of the amount of tightening applied to a fastener (nut or bolt) and is expressed as length times force. For example, a force of 90 pounds applied at the end of a wrench one foot long will yield 90 Ft Lbs. of torque. Torque wrenches are the proper method to ensure torque is applied correctly to a fastener.

CAUTION

Wheel nuts or bolts must be tightened and maintained at the proper torque levels to prevent loose wheels, broken studs, and possible dangerous separation of wheels from your axle, which can lead to an accident, personal injuries or death.

Be sure to use only the fasteners matched to the cone angle of your wheel (usually 60 degrees or 90 degrees). The proper procedure for attaching your wheels is as follows:

1. Start all nuts/bolts by hand to prevent cross threading.
2. The tightening should be done in stages;
    a. Initially snug (10 ft-lb) the nuts/bolts to align and seat the wheel to the hub, in the order described in the torque sequence diagram below.
    b. Tighten the nuts/bolts performing the wheel torque sequence below.
3. Wheel nuts/bolts should be torqued before first road use and after each wheel removal. Check and re-torque after the first 10 miles, 25 miles and again at 50 miles. Check periodically thereafter, THIS IS VERY IMPORTANT.
4. Wheel nuts are designed to have full thread engagement with the wheel stud. Wheel stud threads should be visible outside the wheel nut. There will be varying amounts of thread stick out depending on variables such as center disc thickness and nut thickness. In general, there should be approximately three threads visible past the end of the nut.

Wheel Attachment and Torque Requirements

Wheel Installation Torque Sequence (Ft. Lbs.)					
Wheel Size	Stud Size	1st Stage	2nd Stage	Final Torque	Cone Nut Degree
12" - 440 BC	1/2"-20	20-25	35-40	60-75	60 Degree Cone Nut
12" - 545 BC	1/2"-20	20-25	35-40	60-75	60 Degree Cone Nut
13" - 440 BC	1/2"-20	20-25	35-40	60-75	60 Degree Cone Nut
13" - 545 BC	1/2"-20	20-25	35-40	60-75	60 Degree Cone Nut
14" - 545 BC	1/2"-20	20-25	50-60	100-120	60 Degree Cone Nut
15" - 545 BC	1/2"-20	20-25	50-60	100-120	60 Degree Cone Nut
15" - 655 BC	1/2"-20	20-25	50-60	100-120	60 Degree Cone Nut
16" - 655 BC	1/2"-20	20-25	50-60	100-120	60 Degree Cone Nut
16" - 865 BC	9/16"-18	20-25	50-60	140-170	60 Degree Cone Nut
16.5" - 655 BC	1/2"-20	20-25	50-60	100-120	60 Degree Cone Nut
16.5" - 865 BC	9/16"-18	20-25	50-60	140-170	60 Degree Cone Nut
16.5" x 9.75" 865 BC	5/8"-18	50-60	120-125	175-225	Special Stud Piloted with 90 degree Cone Nuts
17.5" Hub Pilot 865 BC	5/8"-18	50-60	100-120	190-210	Hub piloted with clamp ring. 90 degree cone nuts and greased threads.
17.5" Hub Pilot 865 BC	5/8"-18	50-60	90-200	275-325	Hub piloted with flange nut
17.5" Hub Pilot 865 BC	5/8"-18	50-60	60-110	150-175	Hub piloted with swivel flange nut

Medium and Heavy Duty Torque Requirements (Ft. Lbs.)				
Description	Part Number	Application	Torque Min. Ft. Lbs.	Torque Max. Ft. Lbs
5/8-19 90 degree Cone	006-109-00	Clamp Ring 033-052-01	190	210 Grease Threads
3/4-10 Hex Nut	006-117-00	Demountable Rim Clamp	210	260
3/4-16 Sherical Nut	006-064-01, 02 006-069-01, 02	Single Wheel Inner Dual	450 450	500 500
1-1/8 - 16 Spherical Nut	006-070-01, 02	Outer Dual	450	500
5/8-18 Non-swiveling Flange Nut	006-058-00	Wheels	275	325
5/8-18 Swiveling Flange Nut	006-209-00	Wheels	150	175
M22-1.5	006-118-00	Swiveling Flange Nut	450	500

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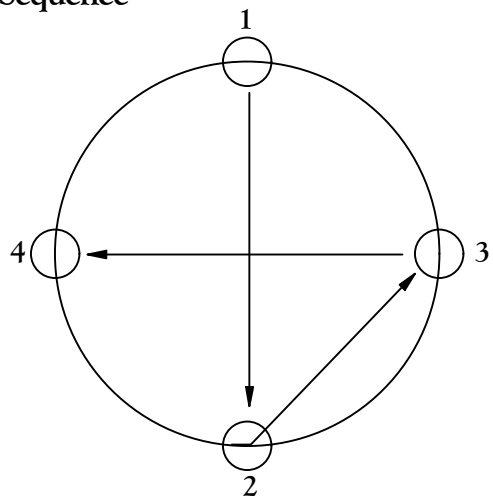
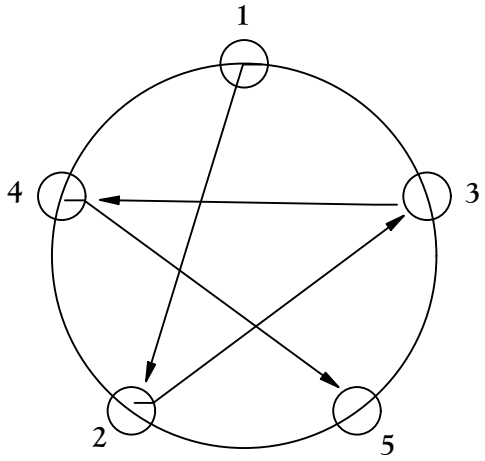
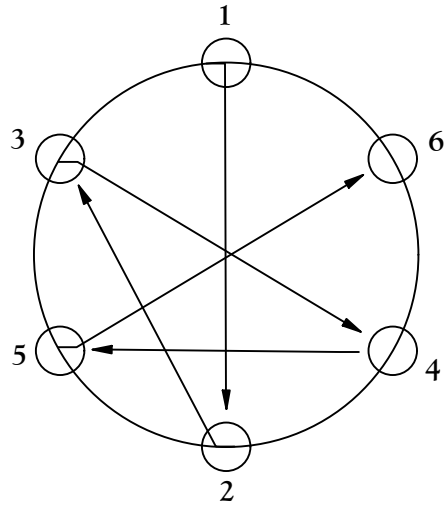
Torque Sequence



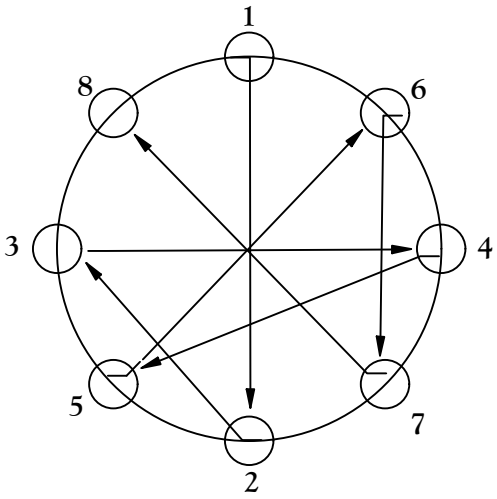
4 Bolt



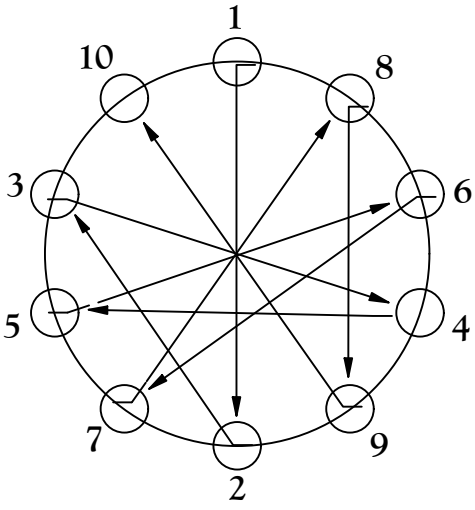
5 Bolt



6 Bolt



8 Bolt



10 Bolt

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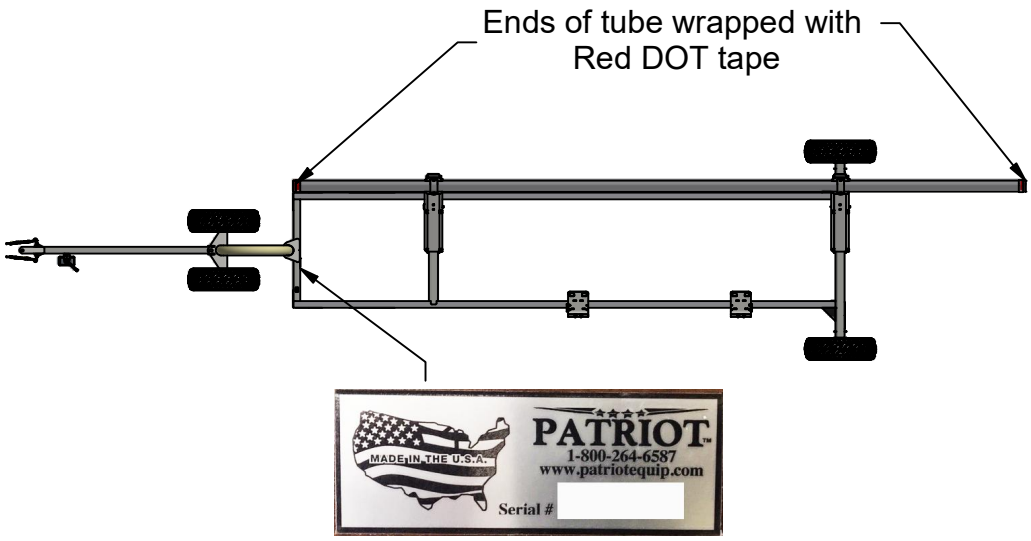
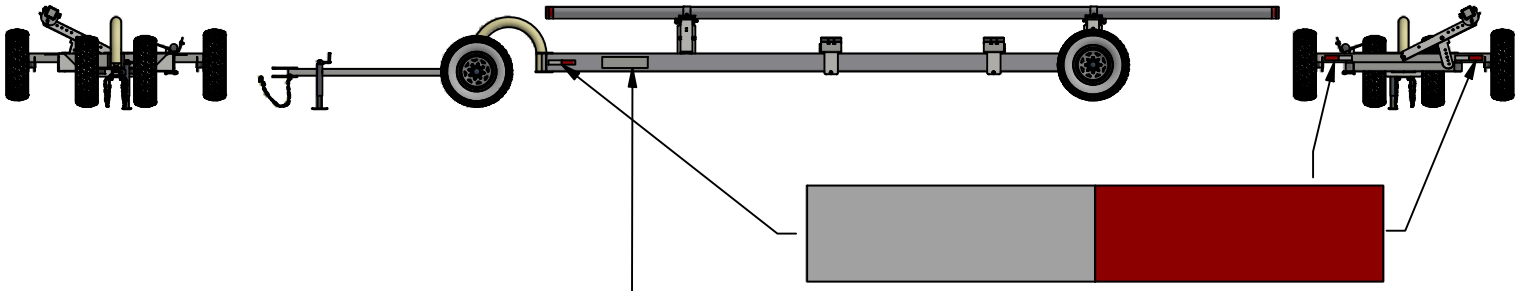
E-Class Combine Head Trailer Decal Placement



TS2003



DOT Tape Locations:

- Front Corners with white towards the front
- Rear of trailer with red towards the outside

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Manufactured By Minden Machine Shop Inc. Minden, NE 1-800-264-6587

TS2001

Placed on right and left side of trailer

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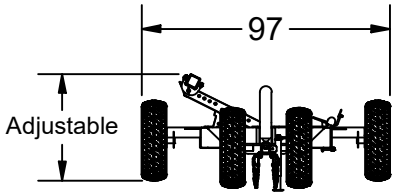
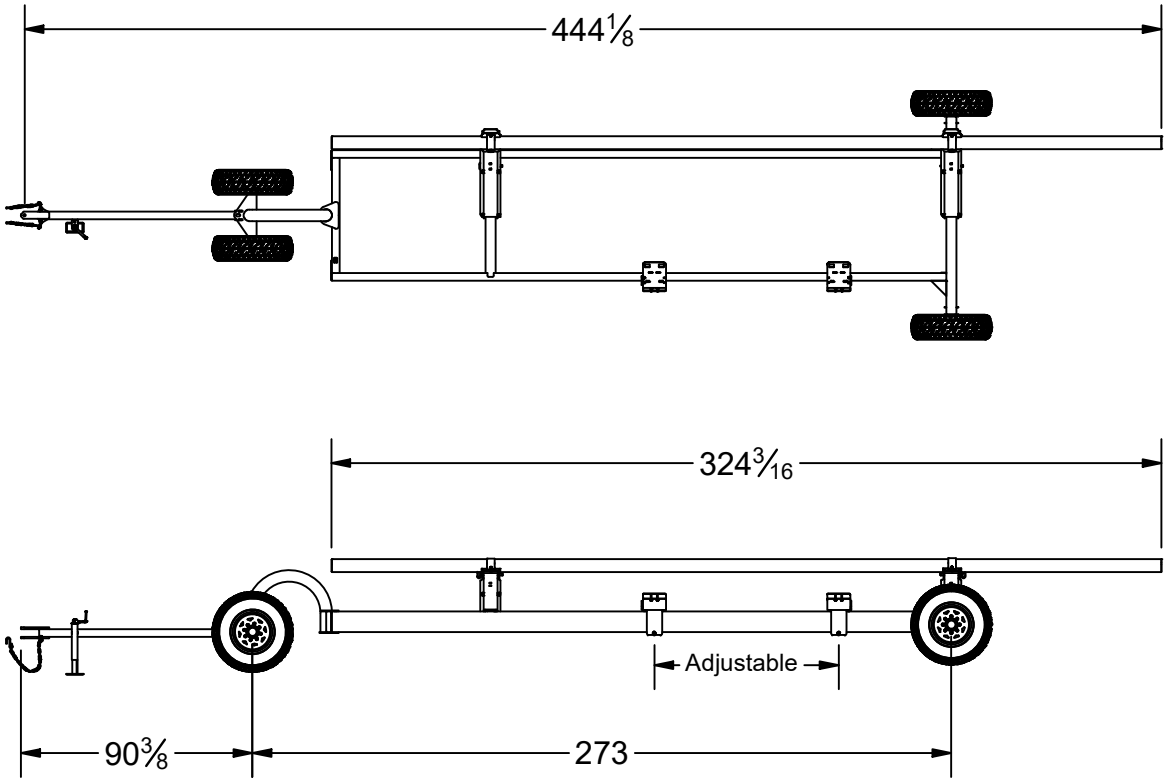
Machine Measurements

CHT-E27
Dimensions





Patriot E-Class Combine Head Trailer Gross Vehicle Weight Ratings	
Combine Head Trailer E-Class	Highway Tires GVWR
CHT-E27 1,960 LBS (891 kg) Empty Weight	10 Ply On All 14,000 lbs (6,363 kg) GVW

Gross Axle Weight Rating	
Axle	Highway GAWR
Front Axle	7,000 lbs or 3,181 kg
Rear Axle	7,000 lbs or 3,181 kg

Tire Chart				
Tire Size	Tire Capacity	Cold Inflation Pressure	Rim Size	Rim Capacity
ST235/80R16 10 ply LR E	3,520 lbs/1,600 kg	80 psi/550 kPa	16" x 6" (41 cm x 15 cm) 8 bolt on 6.5" (17 cm) B.C.	3,750 lbs (1,704 kg)

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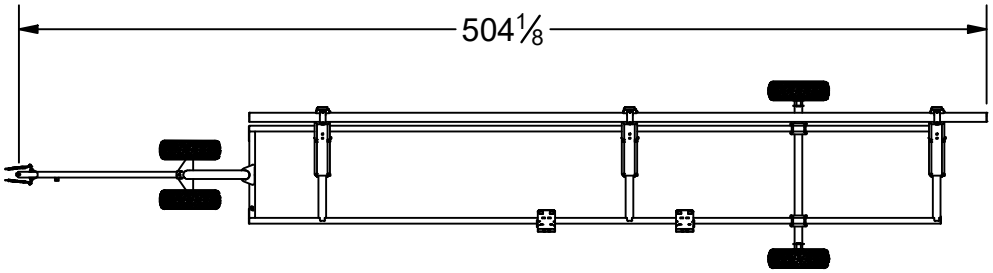
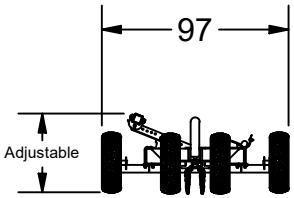
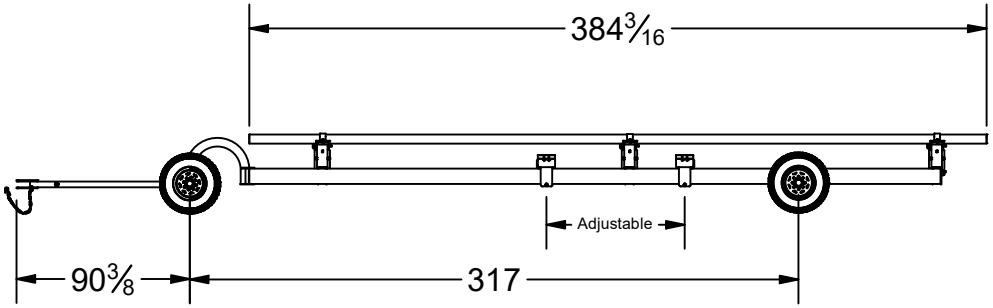
CHT-E32

Dimensions







Patriot E-Class Combine Head Trailer Gross Vehicle Weight Ratings	
Combine Head Trailer E-Class	Highway Tires GVWR
CHT-E32 2,550 lbs (1,160 kg) Empty Weight "Single" 2,850 lbs (1,296 kg) Empty Weight "Tandem" (optional)	10 Ply On All 14,000 lbs (6,363 kg) GVW 21,000 lbs (9,545 kg) GVW

Gross Axle Weight Rating	
Axle	Highway GAWR
Front Axle	7,000 lbs or 3,181 kg
Rear Axle 1	7,000 lbs or 3,181 kg
Rear Axle 2 (Optional)	7,000 lbs or 3,181 kg

Tire Chart				
Tire Size	Tire Capacity	Cold Inflation Pressure	Rim Size	Rim Capacity
ST235/80R16 10 ply LR E	3,520 lbs/1,600 kg	80 psi/550 kPa	16" x 6" (41 cm x 15 cm) 8 bolt on 6.5" (17 cm) B.C.	3,750 lbs (1,704 kg)

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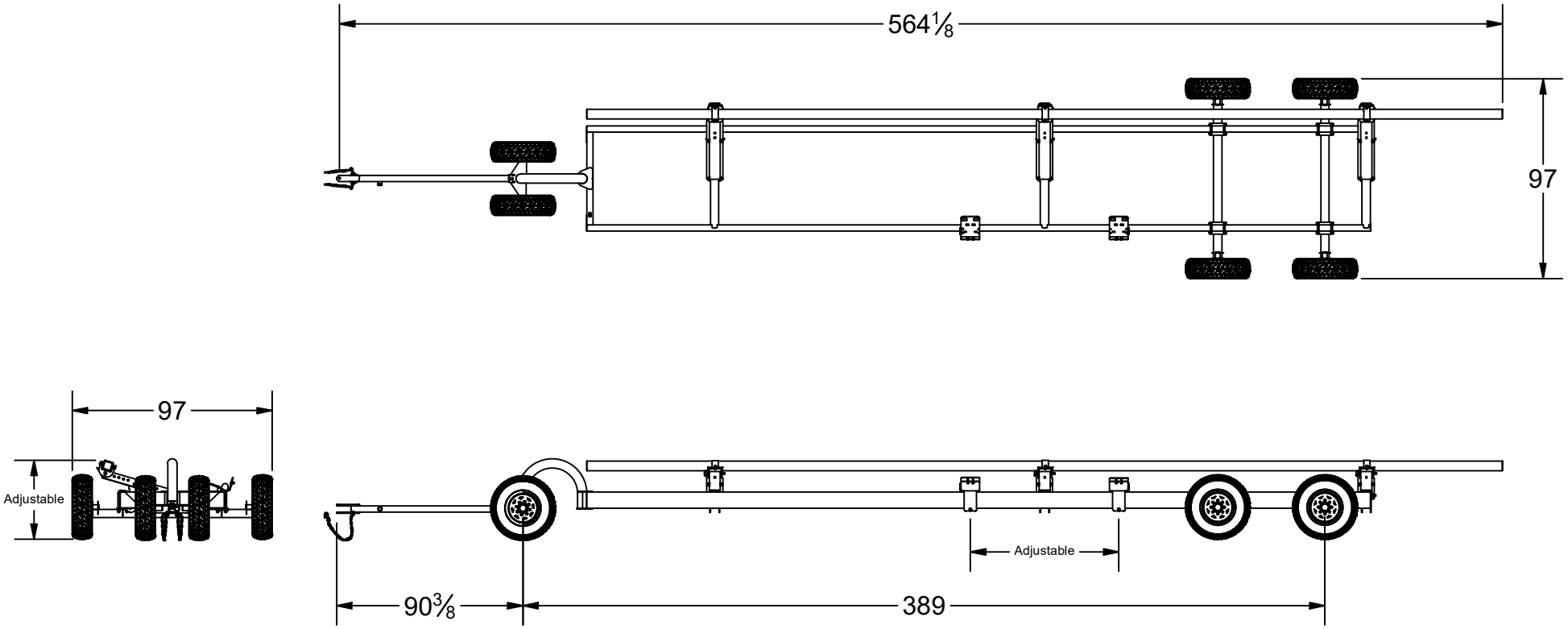
CHT-E37

Dimensions



Patriot E-Class Combine Head Trailer Gross Vehicle Weight Ratings	
Combine Head Trailer E-Class	Highway Tires GVWR
CHT-E37 3,430 lbs (1,560 kg) Empty Weight "Tandem"	10 Ply On All 21,000 lbs (9,545 kg) GVW

Gross Axle Weight Rating	
Axle	Highway GAWR
Front Axle	7,000 lbs or 3,181 kg
Rear Axle 1	7,000 lbs or 3,181 kg
Rear Axle 2	7,000 lbs or 3,181 kg

Tire Chart				
Tire Size	Tire Capacity	Cold Inflation Pressure	Rim Size	Rim Capacity
ST235/80R16 10 ply LR E	3,520 lbs/1,600 kg	80 psi/550 kPa	16" x 6" (41 cm x 15 cm) 8 bolt on 6.5" (17 cm) B.C.	3,750 lbs (1,704 kg)

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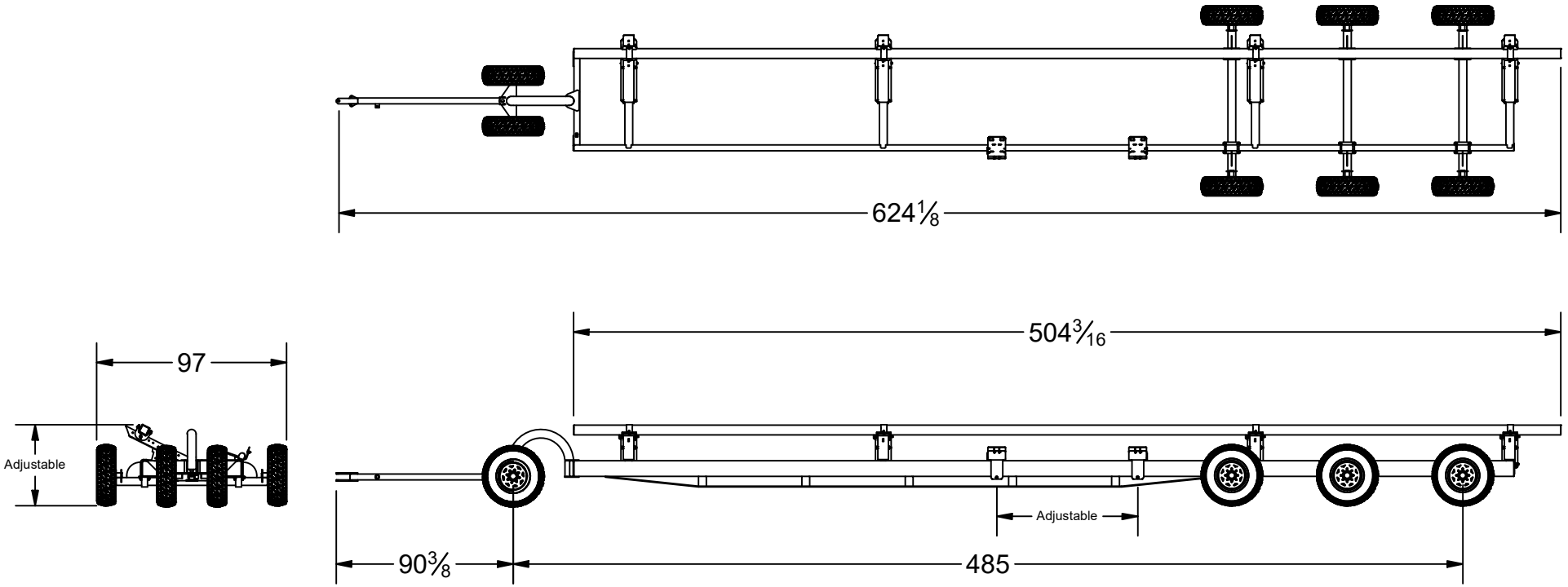
CHT-E42
Dimensions



Patriot E-Class Combine Head Trailer Gross Vehicle Weight Ratings	
Combine Head Trailer E-Class	Highway Tires GVWR
CHT-E42 4,860 lbs (2,209 kg) Empty Weight "Triple Axle"	10 Ply On All 28,000 lbs (12,727 kg) GVW

Gross Axle Weight Rating	
Axle	Highway GAWR
Front Axle	7,000 lbs or 3,181 kg
Rear Axle 1	7,000 lbs or 3,181 kg
Rear Axle 2	7,000 lbs or 3,181 kg
Rear Axle 3	7,000 lbs or 3,181 kg

Tire Chart				
Tire Size	Tire Capacity	Cold Inflation Pressure	Rim Size	Rim Capacity
ST235/80R16 10 ply LR E	3,520 lbs/1,600 kg	80 psi/550 kPa	16" x 6" (41 cm x 15 cm) 8 bolt on 6.5" (17 cm) B.C.	3,750 lbs (1,704 kg)

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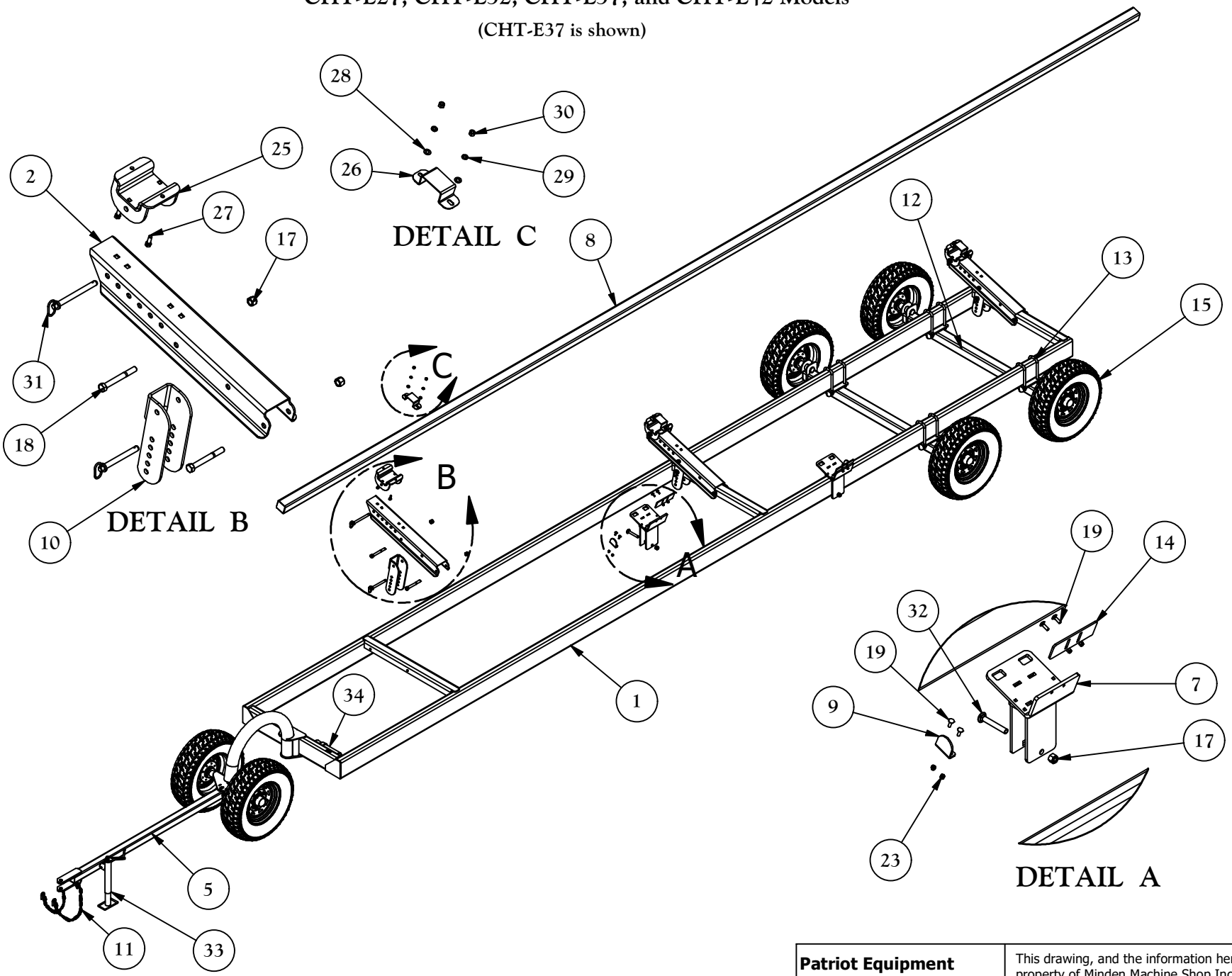
Parts Diagrams

Part List for E-Class Head Trailers

CHT-E27; CHT-E32, CHT-E37; and CHT-E42 Models

(CHT-E37 is shown)



Patriot Equipment 1302 K Road Minden, NE 308-832-0220	This drawing, and the information hereon, are the property of Minden Machine Shop Inc., and may be used only as authorized by us. Unpublished - All rights reserved under the copyright laws.

Part List for E-Class Head Trailers

CHT-E27; CHT-E32, CHT-E37; and CHT-E42 Models

E-Class Head Trailer Part List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	CHT-E27-A002	27' Head Trailer Base Frame
1	1	CHT-E32-A001	32' Head Trailer Base Frame
1	1	CHT-E37-A001	37' Head Trailer Base Frame
1	1	CHT-E42-A001	42' Head Trailer Base Frame
2	3	CHT-CP-P008	Formed Upper Arm
5	1	CHT-CP-A003	Head Trailer Trolley Weldment
7	2	CHT-CP-A002	Lower Rest Weldment
8	1	CHT-E27-P005	Upper Beam 27' E-Class Trailer
8	1	CHT-E32-P001	Upper Beam 32' E-Class Trailer
8	1	CHT-E37-P002	Upper Beam 37' E-Class Trailer
8	1	CHT-E42-P003	Upper Beam 42' E-Class Trailer
9	2	CHT-CP-P001	Rest Stop Plate Removable
10	3	CHT-CP-P014	Beam Rest Elevator
11	1	TR1595	Safety Chain
12	2	CHT-CP-A001	E Class Bolt On Axle
13	8	ECHT8001	Axle U-Bolt
14	2	CHT-CP-P002	Saddle Height Tab
15	6	TR1085	ST235/80R16 10 ply LR E Tire with 16x6; 8 on 6.5 Rim
16	2	CHT-CP-P018	Tube Cap 4x4
17	24	N3/4NYL	Nylock Nut
18	6	B3/4x6.5	Hex Bolt
19	8	B3/8x1.25C	Carriage Bolt

E-Class Head Trailer Part List			
ITEM	QTY	PART NUMBER	DESCRIPTION
20	2	B1/2x2.0	Hex Bolt
21	2	N1/2NYL	Nylock Nut
22	2	W1/2F	Flat Washer
23	8	N3/8NYL	Nylock Nut
24	48	N1/2NYL	Nylock Nut
25	3	CHT-CP-A021	Upper Beam Mount
26	3	CHT-CP-P098	Upper Beam Retainer
27	6	B1/2x1.5	Hex Bolt
28	6	W1/2F	Flat Washer
29	6	W1/2L	Lock Washer
30	6	N1/2N	Hex Nut
31	6	PC2015	3/4 x 9 x 7.5 Adjustment Pin
32	2	B3/4x5.0C	Carriage Bolt
33	1	TR1600	Tongue Jack
34	1	TR1590	Manual Holder

Part list is a general part list for all E-Class Combine Head Trailers.
Quantities will vary with model of trailer.

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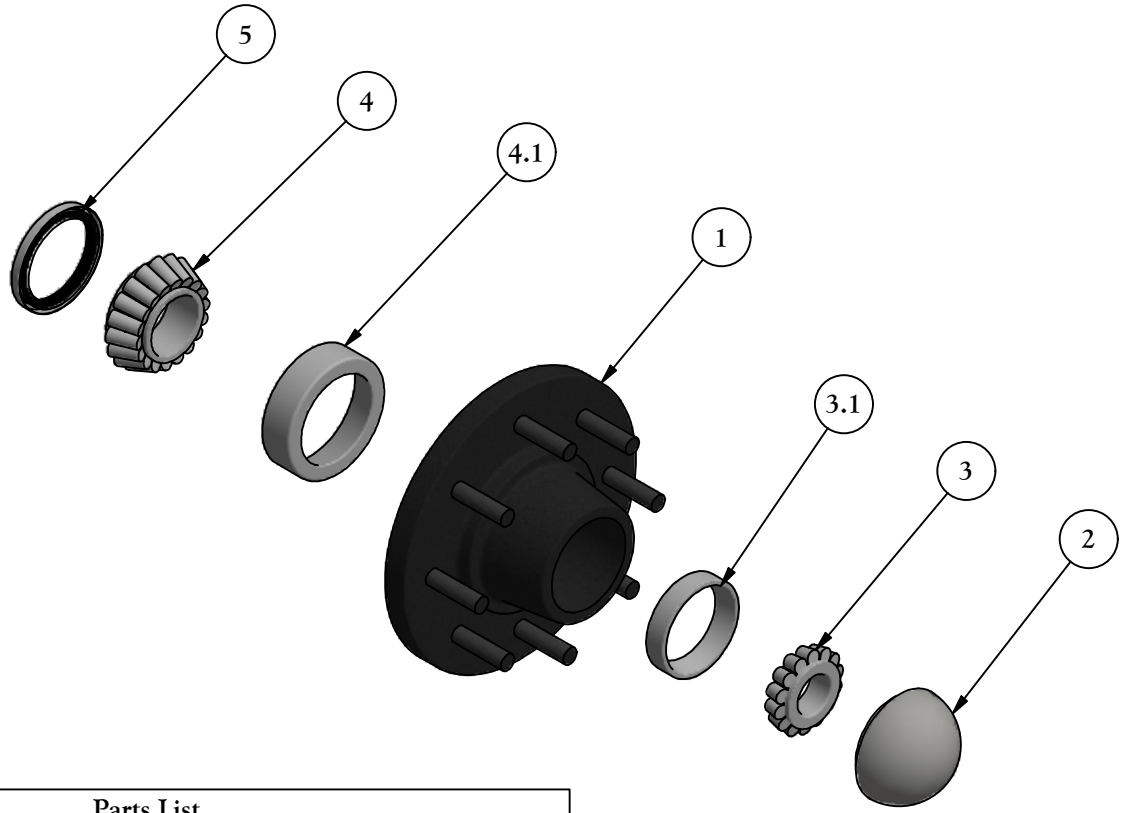
E-Class Combine Head Trailer Hub and Bearings



Parts List			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	82865A-1	8 on 6.5" Hub
2	1	1605	Hub Cap
3	1	14125A	Outer Bearing
3.1	1	14276	Outer Cup (Race)
4	1	25580	Inner Bearing
4.1	1	25520	Inner Race
5	1	22333TBN	Seal

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Torque Data for Standard Nuts, Bolts, and Capscrews

Tighten all bolts to torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt chart as guide. Replace hardware with some grade bolt.

Note: Unless otherwise specified, high-strength Grade 5 hex bolts are used throughout assembly of equipment.

Bolt Torque for Standard Bolts

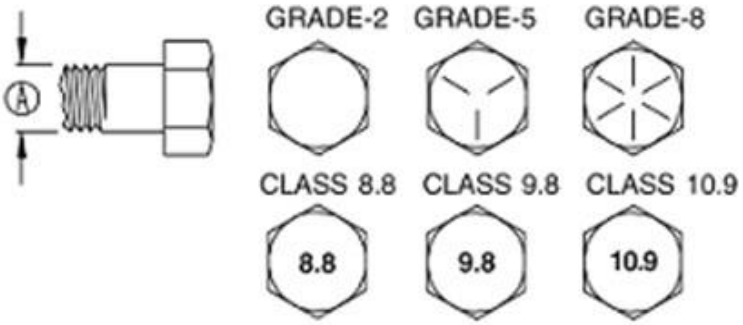
	Grade 2		Grade 5		Grade 8	
Bolt Size A	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
1/4"	6	8	9	12	12	16
5/16"	10	13	18	25	25	35
3/8"	20	27	30	40	45	60
7/16"	30	40	50	70	80	110
1/2"	45	60	75	100	115	155
9/16"	70	95	115	155	165	220
5/8"	95	130	150	200	225	300
3/4"	165	225	290	390	400	540
7/8"	170	230	420	570	650	880
1"	225	300	630	850	970	1310

Bolt Torque for Metric Bolts

	Class 8.8		Class 9.8		Class 10.9	
Bolt Size A	lb-ft	(N.m)	lb-ft	(N.m)	lb-ft	(N.m)
6	9	13	10	14	13	17
7	15	21	18	24	21	29
8	23	31	25	34	31	42
10	45	61	50	68	61	83
12	78	106	88	118	106	144
14	125	169	140	189	170	230
16	194	263	216	293	263	357
18	268	363	..	..	364	493
20	378	513	..	..	515	689
22	516	699	..	..	702	952
24	654	886	..	..	890	1206

Torque figures indicated are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

Grade or Class value for bolts and capscrews are identified by their head markings.



DEALER DELIVER LIST

Inspect the equipment thoroughly to be certain it is set up properly before delivering it to the customer. The following checklist is a reminder of points to inspect. Check off each item if it is found satisfactory or after proper adjustment is made.

****It is important for the dealer to visually check and make sure all parts are intact prior to delivery to the customer****

____ Check that all safety decals are installed and in good condition, replace if damaged.

____ Check that all cotter pins and safety pins are properly installed.

____ Check that all fasteners are tight.

____ Train the customer on the proper and safe procedures to be used when mounting, dismounting, and storing equipment.

____ Train the customer how to make adjustments

____ Review the safety decals with the customer and explain their meaning and the need to keep them in place and in good condition. Explain the increased safety hazards when instructions are not followed.

____ Explain to the customer the potential crushing hazards of going underneath raised equipment. Instruct the customer that service work does not require going underneath unit and never to do so.

____ Give customer the Owner's/Operator's Manual and request that the customer and all operators read it before operating the equipment. Point out the manual safety rules, explain their meanings and emphasize the increased safety hazards that exist when safety rules are not followed.

Minden Machine Shop Inc
LIMITED WARRANTY

Minden Machine Shop Inc warrants all products manufactured by it to be free of defect in material and workmanship for a period of one (1) year from the date of purchase.

This Minden Machine Shop Inc. warranty does not cover:

1. Parts and accessories supplied by Minden Machine Shop Inc. but manufactured by others. Minden Machine Shop Inc. will facilitate the other manufacturer warranty for the benefit of the purchaser but will not be bound thereby (example: augers, motors, trailers, tanks, etc.).
2. Products that have been altered by anyone other than a Minden Machine Shop Inc. employee or are used by the purchaser, for purposes other than what was intended at time of manufacture or used in excess of the "built specifications".
3. Products that are custom manufactured by Minden Machine Shop Inc. utilizing the purchaser's design which deviates from Minden Machine Shop Inc. normal production line manufactured or customized features of the products.
4. Malfunctions or damages to the product from misuse, negligence, customer alteration, accidents or product abuse due to incoming material or poor material flow ability or lack of required performance or required maintenance (e.g., poor material flow ability caused by incoming wet fertilizer or hot soybean meal, etc).
5. Loss of time, inconvenience, loss of material, down time or any other consequential damage.
6. Product use for a function that is different than designed intent (e.g., storing soybean meal in grain bin, unacceptable material in the bin such as hot bean meal when product originally designed for other application, etc).
7. Minden Machine Shop Inc is not responsible for any equipment that this product is attached to or mounted on.

To activate this warranty, the purchaser must make contact in writing with Minden Machine Shop Inc. with in one (1) year of date of purchase. After contact, Minden Machine Shop Inc. has the right to determine the cause and qualify the legitimacy of the claim. Minden Machine Shop Inc., upon acceptance of a warranty claim, shall have a reasonable time to plan any repair or replacement and may affect repair or replacement out of its factory or through contract with a local repair service. If a purchaser after warranty notice is made, chooses to make the repair itself, Minden Machine Shop Inc. must approve any expenses before they are incurred to be responsible for customer reimbursement. Minden Machine Shop Inc. shall be liable on a warranty claim for repair or replacement of any defective products and this is the purchaser's sole and exclusive remedy. Minden Machine Shop Inc. will not be liable for any other or further remedy including claims for personal injury, property damage or consequential damage. The law of the Sate of Nebraska shall govern and any such claim and any issues with regard to the same shall be resolved in the Nebraska District Court for the county of Kearney.

RETURN OF MERCHANDISE

Merchandise may not be returned without written approval from the factory. All returns must have a return authorization number. Obtain this number before the return and show it on all return items. A 15% restocking charge is made on merchandise returned. Returned merchandise must be shipped pre-paid.

RECEIVING MERCHANDISE AND FILING CLAIMS

When receiving merchandise it is important to check both the number of parts and their description with packing slip. The consignee must make all claims for freight damage or shortage within 10 days from the date of delivery.

When the material leaves the factory it becomes the property of the consignee. It is the responsibility of the consignee to file a claim on any possible damage or loss. Please list your preferred routing on purchase orders.

MODIFICATIONS

It is the policy of Minden Machine Shop Inc. to improve its products whenever possible and practical to do so. We reserve the right to make changes, improvements and modifications at any time without incurring the obligation to make such changes, improvements and modifications on any equipment sold previously.

WARRANTY REGISTRATION

To register equipment, or file a claim, copy and paste the words on this page into an email or word document, fill out the appropriate information completely, and email it to larry@mindenmachine.com with the subject as EQUIPMENT WARRANTY, or fill it out and fax it to 308-832-1340.

Dealer Information: Not Applicable, check here: [ ]
Dealer Name:
Address:
City:
State:
Zip Code:
Phone #:
Email:

End User Information:
Purchaser:
Address:
City:
State:
Zip Code:
Phone #:
Email:

Equipment:
Serial #:
Date Of Purchase: / /

Equipment:
Trailer Model Number:
Trailer VIN Number:
Date Of Purchase: / /
Dealer Name:

TIRE IDENTIFICATION NUMBERS

QTY	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												

Please return within 14 days of purchase

CLAIM FILE

Defect: