



Warranty and Service Manual

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WTM Trailer Limited Warranty

1 Year Limited Warranty

After Strictly following WTM Trailers maintenance instructions regarding grease, oil and lug tension, there is a one year limited warranty on wearable parts, to the original purchaser from the date of the sale. Grease seals and oil are not included.

2 Year Limited Warranty

WTM Trailers warrants to the original purchaser that its electric/hydraulic brake actuators shall be free from defects in parts and workmanship for a period of 2 years from the date of the axle sale.

5 year Limited Warranty

WTM Trailers warrants to the original purchaser that its axles, suspension systems and original replacement components shall be free from defects in parts and workmanship for a period of 5 years from the date of the axle sale.

WTM Trailers warrants structural welds for a period of 5 years from the date of the axle sale.

Warranty Action

WTM Trailers will, at its option, correct or replace the components of the axle; correct, swap out or send another axle; to care for the defect axle, or refund the lower amount of original price. This will be done in a reasonable period of time. All of this is based on response times of the end user. All warranties must be approved by WTM Trailers.



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How to Handle Warranties

- 1.) A warranty claim must be created. (Instructions to do so will be provided below.)
- 2.) Original trailer purchaser must be established by using the vin number and certificate of origin.
- 3.) Prompt notification of axle issue, axle serial number, samples or pictures of parts may be necessary to establish original parts are not tampered with.
- 4.) All axle components must have been maintained according to industry standards for greasing, oiling, checking lug nuts, backer plates and u-bolt tensions.

What is Excluded

Warranties do not cover defects caused by:

- Attachment of axle to the frame
- Brake wire connection to the axle
- Alterations to axle in any way
- Non WTM Trailers parts
- Axles switched or on different units
- Normal use wear and tear
- Poor installation
- Poor alignment
- Incorrect torque specs of all attached components
- Failure or damage as a result of trailer frame or component failure
- Damage due to improperly secured or unsecured load on trailer
- Failure to follow industry standard maintenance and torque specs
- Finish appearance or corrosion

Limitations Explained

- In every case/claim, WTM Trailers has the right to satisfy the responsibility within the Limited Warranty by refunding the lower amount of purchase price. This includes discontinued components.
- WTM Trailers can offer substitutions for discontinued components.
- All warranties are non transferable.
- All warranties are limited to defects in materials and workmanship.



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Summary

- Warranties are exclusive. No other warranties supersede this axle warranty.
- Warranty legal rights vary from state to state. The terms and conditions of WTM Trailers Warranty are governed by Michigan Law. Any disputes will be resolved in the Allegan County, Michigan courts.
- WTM Trailers excludes any incidental and consequential damages, including but not limited to; towing fees, utilities, phone or power, meals, lodging, loss of time, stress or aggravations or any breach of any expressed or implied warranty.
- All requirements of warranty need to be sent to:
WTM Trailers
1856 142nd Ave. P.O. Box 7
Dorr, MI 49323
OR:
axles@williamstooling.com

Filing a claim

There are times when issues may arise and you may have questions about warranty and service with your axles. Direct all questions to axles@williamstooling.com with the following information included:

- 1.) Your name. (Must be the owner of the trailer/axles.)
- 2.) Location you are contacting us from, address, city and state.
- 3.) Provide your preferred response method, ie by phone call or email, and the phone number or email address with which you would like to be contacted.
- 4.) Explain your questions, concerns or needs clearly with the best description possible.
- 5.) Provide the serial number of the axle(s).
- 6.) Provide the date of purchase of the axle if known. (This is to ensure we can find your exact order should replacement parts or axle(s) be needed.)
- 7.) Please review warranty information in detail before placing any inquiries about warranty claims.



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Service Manual

Operations and Maintenance

Introduction

This manual is provided to help you maintain and operate your axles to achieve the best possible performance, in both short and long term use, as you travel for work or recreational activities near or far with WTM Trailers' axles supporting your trailer.

All of WTM Trailers' components have been vigorously tested to stand up to the conditions that trailer axles encounter every day as they are used in hundreds of various applications.

We stand by our quality and performance with every axle built. In addition, our product performance is equal to and in many cases finishes far ahead of our competitors.

Visit our website at wtmtrailers.com

We'd love to hear from you!



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SAFETY NOTICE

When having your trailer axles serviced in any way, it is very important to take the time and select certified and professional technicians that understand the importance of following proper procedures and specifications of equipment, part components, grease, torque specifications, and service and repair processes of every aspect of servicing and maintaining your trailer axles. Serious injury or death can follow if the correct steps are not followed.

Lug Nut Torque

There are painted surfaces, mill oils and particles that can get on the surfaces during installation of the tires and wheels. This may cause things to vibrate loose during the first use of your trailer after new axles/tires are installed.

Lug nut torque must be inspected and adjusted within the first miles of use after installation. Lug nuts must be inspected at intervals of 10, 25 and 50 miles after the first mile traveled.

Having the correct lug nut torque is essential. Nuts tightened below torque specifications, can cause stud and wheel damage and/or allow the wheel to come off during travel resulting in serious injury or death.

Similarly, over tightening Lug Nuts, can also cause damage to the studs and wheel and/or allow the wheel to come off during travel resulting in serious injury or death.

All torque, for the purposes of this manual, is measured in foot pounds with a torque wrench.

Tire Pressure

It is important to note that tire pressure can change at any time. Inspect tires during travel, and at any stop along your route. Always fill the tires to manufacturer's specifications.



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Brake adjustment

Always inspect brakes visually and with your brake controller to ensure brakes are working prior to every trip.

Use brakes aggressively on a new trailer/axle within the first 5 miles. Apply the brake controller multiple times to burnish or heat up your brakes. This will dry all mill oils that may be in the brake drums from the manufacturing process. As you continue to apply the brakes within the first 5 miles, you will begin to feel the brakes grab harder and harder as the drums nest to the brake shoes. Never drive away with the new trailer and trust that the brakes are 100% effective. Test them, be careful, operate your vehicle as if your brakes may not be working until you know and feel them doing their job.

Brakes must be inspected in the first 200 miles and every 3000 miles after that. This will ensure that optimum performance is being met.

Set your brake controller according to the manufacturer's instructions.

Electric Brakes

Electric brakes use electricity to activate a brake magnet. The magnet grabs the brake drum's interior surface, causing the brake arm to advance the brake shoes to the surface of the brake drum. It is critical that the trailer's electrical system is in proper working condition for the electric brake to function correctly. Always test and inspect brake wiring and brakes before every trip.

There are two brake shoes within a brake drum. A primary brake shoe and a secondary brake shoe. The primary applies first and then the secondary. As the pressure increases, your brakes increase until you reach your stop.

Always test your brakes as you travel. This will ensure your stop distances will be achieved.

Manual Adjust Electric Brakes

Manual adjust electric brakes must be adjusted manually during the life of the brakes. As the brake shoes wear a gap is created. Adjusting your brakes closes the gap to ensure your brake shoes make contact with the drum properly.



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Auto Adjust Electric Brakes

Auto Adjust electric brakes automatically adjust every time you stop going forward or backward. As the brake shoes wear a gap is created. The gap is sensed by the adjustor and the adjustor closes the gap when the brakes are applied.

Electric Brakes With Parking Brake Option

If a parking brake option is installed on the trailer, the brakes are activated when the parking brake is applied to the trailer. However, always inspect and test parking brakes prior to use, and never trust parking brakes to hold a trailer when parked on a hill. Chock blocks are recommended to keep the trailer in place.

General Brake Maintenance

For all brake types, electric or hydraulic, when brakes are inspected every 3,000 miles, adjustments will have to be made for wear on the brake shoes. Shoes will eventually need to be replaced. A service technician will notify you accordingly. Do not wait until your brakes fail. Replace shoes well in advance.

Brake failure severely affects stopping distance and can result in serious equipment damage, injury, or even death.

Trailer Load

Load regulations vary by state. It is important to know and understand the laws regarding weight and loads on trailers in your state.

It is important to know the weight capacity of the trailer and axles you are towing. The weight of the trailer must be included when calculating the weight limit the trailer will allow you to haul. Exceeding the trailer axles weight limit can result in damage to the trailer, serious injury, or death.

Axle Installation with Suspension

The trailer manufacturer is responsible for proper alignment of the axle on the main rails of the trailer frame. The axle must be parallel to the drive axles of



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the tow vehicle. This allows for necessary control while being towed on the road surface.

Well aligned axles will also reduce tire wear and eliminate any dog tracking. This happens when the trailer is not in alignment with the tow vehicle.

Triangulation is when you measure both sides of the axle to the center of the trailer hitch ball area or king pin. Driver's side and passenger side of the axle should not be more than $1/16$ of an inch off center of the hitch ball coupler.

If you have tandem axles (two axles), once the front axle is in the correct position, the second axle can be measured to the front axle. The rear axle should not be more than $1/8$ of an inch off of the front axle on either side.

Axle spacing, attached hardware, hangers, equalizers, spring shackle links are all determined by the trailer manufacturer. Axle spacing is different by trailer type and size.

You may have spring axles or rubber torsion axles depending on the desired ride and load requirements.

Bearing Maintenance

Idler Hubs, Brake Drums and Bearings

Lubed spindles are used on all WTM Trailer axles. This allows for greasing of the hubs and drums without removing the cap and hub/drum assembly. A rubber cap on the center of the metal grease cap of the hub/drum assembly can be easily removed.

Once removed there is a grease zerk inside. With the trailer lifted, spin the tire while greasing the bearings. At the first sign of grease movement inside the cap, stop greasing. Make sure the grease zerk is free of dirt or debris. If grease does not flow through the grease zerk, it is time for it to be replaced. With lubed spindles, both inner and outer bearings are greased at the same time. Do not overfill. This will push out the inner grease seal and will eventually cause bearing failure.



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HUB/DRUM REMOVAL AND INSPECTION

NOTE: BEFORE REMOVING ANY PARTS, IT IS IMPORTANT TO NOTE THE ORDER IN WHICH THEY WERE REMOVED TO ENSURE PROPER REASSEMBLY.

- 1.) Properly and safely raise your trailer to where the tires can rotate freely. (Injury or death can occur without the proper equipment in place to lift and stabilize a trailer. Do NOT do so without proper equipment.)
- 2.) Remove tires from the axle(s).
- 3.) Carefully remove the grease cap by prying around the cap's rim. If the cap is damaged, you will need to replace it.
- 4.) Remove the cotter pin from the castle nut. To do so, bend the cotter pin so it is straight, then pull it out.
- 5.) Unscrew castle nut from spindle.
- 6.) Remove the hub/drum. Do not allow bearings to fall on the ground. This will help keep them free of damages, dirt, and debris. If bearings are dropped, they will have to be cleaned and repacked.
- 7.) Inspect all parts, and replace as necessary.
- 8.) Inspect the hub/drum carefully. Look for any wear, scuffing or scoring marks of any kind. If there is any wear on the brake or magnets armature surface that is abnormal, replace the drum. Surfaces should be smooth and without grooves or cracks.
- 9.) Inside diameters of hubs should also be inspected. Drums should not exceed .020 inches over their interior size. Replace the drum if they exceed the .020 inch wear.

Bearing and Cup Inspection

Inside the hub/drum, perform the same cleaning and inspection process on the bearing cup or races, outer and inner. Look for the same wear and replace as necessary. These cups or races are press fit. Replacing the drum with a new one may be necessary if you do not have the right equipment to remove and press the new cups or races.

Bearings must be lubricated every 12 months or 12,000 miles. If the trailer is used at its maximum capacity at all times, you will need to lubricate the bearings every 6 months or 6,000 miles. Lubrication is essential to the life of



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your axle(s). Repacking your bearings after inspection must be completed in the proper way. If a grease pressurized packing machine is unavailable, it will have to be done manually. To do so:

- 1.) Place a golf ball sized amount of grease in the palm of your hand.
- 2.) Force the grease into the outside edge of the bearing or the widest part of it. Continue to force the grease into the bearing until the grease is completely covering every bearing, inside and out.
- 3.) Place a light coating of grease on the bearing cup, or race, before installing the cone bearing back in place.

The grease used should have a dropping point of 215°C, 419°F, and a lithium complex, EP, with corrosion and oxidation inhibitors. The viscosity index must be 80 minimum.

Cone Shaped Bearing & Cup Inspection

Clean all grease off the cone bearing. Use the correct solvent for cleaning. After dried and cleaned, inspect the bearing cage and bearings for cracks and wear. (Do not use compressed air on bearings. This can cause damage to the bearing.) Look for any scoring marks, pitting, or corrosion of any kind. Replace if necessary.

Seal Inspection

- 1.) With the proper tool, remove the inner seal. Never drive out the bearings with the inner bearing. This will damage both the bearing and seal.
- 2.) Clean the seal and inspect the inner surface area. Look for any cracks, grooves or damage. Replace the seal as necessary.
- 3.) If the seal is in good condition, it is recommended to apply a silicone sealant to the outside edge of the seal and reinstall with a seal insertion tool or equivalent insertion process. This keeps the seal flat and inserts it at the correct flat angle and prevents seal damage.
- 4.) Seal sealant must be a high temperature silicone gasket material. (Permatex or equivalent.)



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Bearing Installation and Adjustment

- 1.) After inspections are completed and necessary parts replaced, reinstall the bearings and seals.
- 2.) Place the hub/drum back on the spindle after installing the bearings and seals.
- 3.) Before putting the castle nut back on the spindle, make sure it is free of dust and debris. Slowly rotate the hub/drum while tightening the spindle castle nut. With a torque wrench set at 50 foot pounds, tighten the castle nut.
- 4.) After tightening with the torque wrench, loosen the spindle castle nut to one castellation, or $\frac{1}{4}$ turn, in order to line up the castle nut with the cotter pin hole.
- 5.) Place the cotter pin in the hole and bend the ends of the pin to ensure it does not fall out. The castle nut will be able to move back and forth slightly against the pin.

Wheel Torque Requirements

- 1.) All Lug Nuts must be tightened in three stages.
 - a.) 1st up to 25 ft/lbs.
 - b.) 2nd up to 40 ft/lbs.
 - c.) 3rd up to 100-120 ft/lbs.
- 2.) When tightening the lug nuts, it is important to tighten in a “star” pattern, back and forth around the studs until the torque specifications are reached. Do not tighten Lug Nuts in a circle around the wheel. This will cause uneven torque values on the wheel.

IMPORTANT: Whenever wheels are removed or tires are changed, torque must be inspected, tightened to proper specifications, after the first 10 miles, 25 miles, and again after 50 miles.



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Brake Maintenance

NOTE: Two people are required to properly check brake operation using the method below.

- 1.) Properly and safely raise your trailer to where the tires can rotate freely. (Injury or death can occur without the proper equipment in place to lift and stabilize a trailer. Do not do so without proper equipment.)
- 2.) While spinning each tire, apply trailer brakes. Check each tire to make sure they stop abruptly.
- 3.) If the brakes are not stopping the wheel(s), the brakes will need to be adjusted by using the slotted hole on the back of the brake backer plate. (The slotted hole may have a cover to keep brakes free of dust and debris.) Using a screwdriver or brake adjustment tool, rotate the slotted wheel adjuster inside. (Drop spindles may require a modified tool.) Adjusting the brakes will increase or decrease the pressure of the shoes on the drum when moved up or down.
- 4.) The brake shoe should make a slight dragging sound as the tire or drums are rotated.
- 5.) Repeat each step until the desired dragging sound is achieved. The tire or drum should still move freely. Brakes dragging excessively will become too hot during operation before brakes are applied.
- 6.) Repeat these steps on all tires and drums.
- 7.) Be sure to replace slotted hole cover(s) when complete.

Brakes should be checked every 3,000 miles.

Clean brake dust, inspect all components, and keep everything in proper condition. Ensure brake magnets, linings and drums are clean of oil and grease. Qualified service technicians can provide guidance on when and what parts need to be replaced or serviced.

WARNING: Avoid breathing in brake dust. Do not grind or alter brake shoes. Brake shoe lining may contain harmful chemicals.



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Maintenance Schedule

	3 Months or 3,000 Miles	6 Months or 6,000 Miles	12 Months or 12,000 Miles
Tire Inflation	Check Before Every Use		
Wheels		X	
Tire Condition	Check Before Every Use		
Lug Nuts	X		
Hangers			X
Equalizer Bolts/Nuts	X		
Suspension and Links		X	
Bearings/Cups			X
Seals			X
Hubs/Drums			X
Breakaway	Check Battery Charge Level Every Use		
Brake Wiring			X
Brake Controller		X	
Brake Linings			X
Brake Magnets		X	
Brake Adjustment			X
Brake Operation	Check Before Every Use		
Spring Wear	X		