



## OWNERS OPERATION MANUAL



### PART #7500-07

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## **WARRANTY**

**Tebben Enterprises of Clara City, Minnesota 56222**, warrants that its products and their components will be free from defects in material and workmanship for a period of one (1) year from the date of original purchase when used as intended and under normal service and conditions. This warranty is limited to the replacement of any defective part by **Tebben Enterprises**, provided that any such defective part must be returned to **Tebben Enterprises**, TRANSPORTATION PREPAID, accompanied by a letter setting forth the nature of the defect. If the part is found to be defective by reason of materials or workmanship, **Tebben Enterprises**, shall replace the part, but shall not be responsible for its re-installation.

This warranty does not cover or apply to any products or component parts which have been tampered with, modified or altered in any way or which have been subject to misuse, negligence, involved in an accident, or damaged by an act of God.

## **EXCLUSION OF WARRANTIES**

**TEBBEN ENTERPRISES MAKES NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE IN RESPECT TO ITS PRODUCTS OR COMPONENT PARTS. TEBBEN ENTERPRISES SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES FROM ANY BREACH OF WARRANTY, INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, INCONVENIENCE, AND THE COST OF RENTAL OR REPLACEMENT EQUIPMENT. NO AGENT, EMPLOYEE OR REPRESENTATIVE OF TEBBEN ENTERPRISES HAS THE AUTHORITY TO BIND IT TO ANY AFFIRMATION, STATEMENT OR WARRANTY CONCERNING ITS PRODUCTS AND THEIR COMPONENT PARTS EXCEPT AS SPECIFICALLY SET FORTH HEREIN.**



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**! SAFETY!**

# SAFETY ALERT SYMBOL



This safety alert symbol means

**ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!**

The safety alert symbol identifies important safety messages on the Tebben Boat Trailers and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

## Why is SAFETY important to you?

**Accidents Disable and kill**

**Accidents Cost**

**Accidents can be avoided**

## **SIGNAL WORDS:**

Note the use of the signal words DANGER, WARNING and CAUTION with the 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 the proper precautions are not taken.

**WARNING-** A specific hazard or unsafe practice, which COULD result severe in personal injury or death if proper practices are not taken.

**CAUTION-** Unsafe practices which COULD result in personal injury if proper practices are not taken, or as a reminder of good safety practices.

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## **INTRODUCTION**

Congratulations on your choice of a Tebben Boat trailer to compliment your line of recreational equipment. This equipment has been designed and manufactured to meet the needs of a discriminating buyer for the efficient boat towing.

Safe, efficient and trouble free operation of your trailer requires that you and anyone

else who will be operating or maintaining the trailer, read and understands the Safety, Operation, and Maintenance information are contained within the Operator's Manual.



**Before installing certain options and accessories make sure no local or state laws and regulations will be violated (brakes, licensing, and other equipment)**

PLEASE NOTE: PRODUCT AND SPECIFICATIONS MAY CHANGE WITHOUT NOTICE

## Choosing the right trailer for your boat



### **Do not exceed your vehicle's GVWR**

Choosing the right trailer is more than just the right length and width. You need to know the total wet weight of your boat with all your gear, motor, gas, water, and all other stuff that you may have for your boating experiences. The total weight cannot exceed the GVWR (Gross Vehicle Weight Rating), which is the maximum weight that it can carry. Have your boat weighed with all your stuff in and on the trailer if you don't know the total weight.

### Trailer length



**Make sure when boat is on the trailer; there is enough space between front of your boat and the back of your tow vehicle.**

Measure your boat from the true transom to the bow pulpit. If there is an anchor chock or other hardware on the bow, which extends farther the trailer tongue must be long enough for it to clear the towing vehicle when turning, loading, or backing up. If the trailer tongue is too short it may hit the towing vehicle and cause excessive damage to the vehicle and/or boat. Many models have an available longer or shorter tongue.

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### Difference between bunk and roller

A bunk trailer has long support bunks made of wood or aluminum and has carpet or plastic like surface them. Bunks work better on steep ramps and you can submerge the trailer so that the boat is just about floating. Roller trailers will work on steep or shallow ramps because you can just roll the boat off the trailer.

### Supporting your boat's weight

Bunk trailer users should make sure that the bunks are straight and adjusted to be at

the same height. The transom should be even with the end of the bunk. Make sure that there isn't too much pressure in one spot or if the bunks don't support the transom, this may cause damage to the boat.

Roller trailer users should adjust their rollers so that they are even on both sides. The back rollers should support the transom when the boat is all the way up to the wench. Make sure that the back rollers are not too far apart if this happens when unloading the bow of the boat may hit the last cross member of the trailer causing damage.

Always keep tie down tightly fastened

Always use tie downs or similar securing devices to secure the boat to the trailer as well as the winch strap cable and safety chains supplied with your trailer.

## Attaching Your Trailer



**Always get someone to help guide you when backing up to attach the trailer. Never move the trailer to the towing vehicle.**

Using the tongue jack to raise the trailer. Back the vehicle so the ball is under the coupler, lift the lever to open the coupler. Slowly lower the jack so the ball slides into the coupler. Push the coupler lever down to lock the ball. Lock the coupler with a pin or 1/4" bolt. Raise the jack to check if the ball is locked if the ball slides out or is loose inspect for damage and size of the ball. Raise the hitch jack all the way up and put it into the traveling position. Cross the safety chains or cables under the tongue.

Connect the wiring harness to the lighting system of your tow vehicle and check to make sure that the lights work. Make sure jack is in the stored or traveling position before towing the trailer if it isn't in this position it can cause the trailer to separate from the tow vehicle.

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### Hitch Recommendations and Tips

Your trailers GVWR must not exceed the capacity of your hitch. Be sure you have the right size ball; shank and capacity to match your trailers model a coupler size. The correct ball and capacity is marked on the coupler.

Bumper hitches are not recommended for boat trailers.

There are two types of hitches weight distribution and weight carrying hitches. Weight carrying hitches support only the weight of the tongue. Weight distribution hitches transfer some weight to the tow vehicle using spring bars on each side of the trailer ball.

Read your manufactures recommendations for your towing vehicle, and contact, Tebben Enterprises for additional help. For proper weight distribution on tandem and triple torsion axel trailers the trailer should be parallel to the ground while towing.

### **Tongue Jack Use and Care**

Place jack in position crank until coupler is high enough so ball can fit under. Once ball is in position crank down into position latch tongue and return the jack to the stored position before towing. When using swing jack in the down position make sure that safety pin is in the hole firmly. Damage or injury may occur if pin is not in place when jacking. Jack needs to be greased and oiled regularly for long life.

### **Coupler and Hitch Ball Operation**

Do not use a different size ball, shank, or capacity than recommended and be sure both the hitch ball and hitch ratings is the same or mare than the Gross Vehicle Weight Rating. Loosen or tighten the nut on the bottom of your coupler so the latch loosens firmly with a tight fit on the ball. Keep the latch clean and lightly oiled. Do not use the trailer if the latch is bent or broken. Replace parts if bent or broken.

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### **Using Safety Chains**

Always attach the trailer and boat bow safety chains before towing. Crisscross your safety chains underneath the tongue of the trailer and attach to the towing vehicle. This may save your tongue from dragging on the road if it falls off the ball. Do not connect the safety chains or cables together. Note: some states require closed connections on trailer safety chains or cables. Check with state Regulations.

### **Trailer Lights**



**Always check your trailer lights to make sure they are in working order before any trip. If your trailer has electric brakes unplugging the trailer brakes from the tow vehicle will disable the trailer brakes.**

Twice a year you should trace your wires form the hook up to the lights. Look for bare wires, cracked insulation or corroded terminals. Always be sure white ground wire is properly grounded. You should also put waterproof grease; petroleum jelly or WD-40 should be put on plug contacts and bulb bases to prevent rust and corrosion. If your

vehicle has a three-light lighting system you need to buy a two-light adaptor. Even though the lights are submersible you should disconnect the lighting harness before backing into the water.

#### Wire Color Code

Yellow and Brown.....	left
Green and Brown.....	Right
Brown.....	tail lights, rear marker light, Front and rear side lights
Yellow.....	Left stop and turn
Green.....	Right stop and turn
White.....	Ground
6 Blue.....	Underwater lights

## Before You Tow

### Tying Down Your Boat

 **Always attach the boat bow safety chains. Make sure the boat is secure and held in place before towing.**

Tie down the boat at the stern in both a forward and downward direction with approved tie downs. Use the rear tie down points provided on your trailer. Attach the bow safety chain to the bow eye after winch firmly pulls the boat against the bow stop. Check winch line, strap or cable for fraying cuts or tears replace if damaged. If you can still rock the boat after all tie downs are tight and in place check settings of bunks or rollers and winch adjustments.

### Winch Adjustment and Use

 **Never disengage the winch ratchet lock while winching your boat into the trailer.**

Whether your winch is a hand-operated model or an electric model both can be adjusted for the best possible performance. When the boat is resting on the trailer the bow eye should be just under the vee block. Your boat will then be pulled in a straight line the angle the winch is pulling your boat shouldn't pull up or down when pulling the bow eye against the underside of the bow eye straight into the underside of the bow roller or vee block. Maintenance of the mechanical winch is simple. Keep clean, lubricate regularly and apply heavy grease to the gears frequently. Make sure the winch line doesn't rub against any thing that could cause it to break or fray.

**Do not Exceed Load Carrying Capacity or GVWR**



**Make sure the total weight of the trailer, boat, engine, fuel, batteries, and gear does not exceed the trailer's GVWR.**

The weight of your trailer is found using the Gross Vehicle Weight Rating of the trailer. The GVWR is printed on the Vehicle Identification Number. If you don't know the weight of your trailer with boat, motor, fuel, gear, ECT. Have it weighed. The trailer must not be connected to the vehicle to get the total weight. It is your responsibility to make sure that you do not exceed the GVWR.

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### Tongue Weight and Weight Distribution



**Poor weight distribution can cause trailer sway and put extra force on your boat, trailer, towing equipment, and tow vehicle.**

Proper load distribution on your trailer is also very important. Five to ten percent of your trailer's Gross Vehicle Weight should be supported by the hitch ball, with the tongue level. This is called "Tongue weight". For example if the GVWR of the boat, gear, and trailer is 1,500lbs. The weight on the coupler should not be more than 150lbs-or the maximum rating of the hitch or be less than 75lbs. If you are over or under the standard weighty distribution, try moving gear inside your boat first if further adjustment to the trailer is necessary, contact your dealer.



**Your trailer's GVWR must not exceed the capacity of your hitch.**  
**Check Tire Pressure**



**Keep your tires inflated to the recommended tire pressure on the VIN decal. Check the tire pressure before each trip.**

Tire Description	PSI	Capacity
20.5X8X10B	35	905lbs
20.5X8X10C	50	1105lbs
20.5X8X10D	70	1330lbs
20.5X8X10E	90	1535lbs
480X12B	60	780lbs
480X8B	60	590lbs
530X12B	55	840lbs
530X12C	80	1045lbs
ST175/80R13B	35	1100lbs
ST175/80(R or D)13C	50	1360lbs

ST185/80(R or D)13C	50	1480lbs
ST205/75R14B	35	1430lbs
ST205/75(R or D)14C	50	1760lbs
ST215/75(R or D)14C	50	1870lbs
ST225/75R15D	65	2540lbs
ST235/80R16D	65	3000lbs

## Check All Nuts and Bolts

Even though Tebben enterprises uses self locking vibration resistant nuts it's the owner's responsibility to make sure all of the fasteners are tight before using the trailer not just the first time you use it, but on a regular basis.

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### Lug Bolt or Nut Tightening Method



**Check your lug bolts or nuts for tightness before every trip. If a lug bolt is missing replace with a 60 degree cone angle zinc plated lug Bolts.**

Initially tighten to 12-20 ft/lb using the tightening sequence above. Finish torquing to 90-95ft.lbs. Re-torque after 50 miles of use and periodically after that. Do not grease or lube lug nuts.

### On the Road

Tebben recommends all people wear restraints at all time when towing the trailer.

Going too fast is a major cause of vehicle trailer accidents. Slow down for curves, bad weather, hazardous road conditions and expressway exits.

Do not feel secure if your trailer tows easily at higher speeds.

### Stopping/Following Distance

When you are towing a trailer you are much heavier and longer so it will take much longer to stop. Give your self at least 4 seconds between you and the person in front of you. If you are traveling in bad weather such as rain snow or fog give your self a minimum of 5 seconds traveling distance.

### Hills

When going up hills down shift this will improve gas mileage and reduce engine from overheating. Decrease speed before going down hills to prevent swaying or fishtailing. If your trailer has surge brakes do not down shift when going down hill. Do not ride the brakes push them until you are going 5 miles per hour under the speed limit then coast to allow time for your breaks to cool a little bit. **9**

### Passing

You will have to allow more time to pass another vehicle because you are longer and heavier than normal. Passing by another vehicle in the same or opposite direction can cause the trailer to sway. The sway is greater the faster you are going.

## **Sway/Fishtailing**

Cross winds, Passing Vehicles, Quick driver steering actions, improper loading, excessive speed, etc can cause sway. Applying the breaks during a sway may cause jackknife, loss of control and/or both.

If sway happens: Let off the gas pedal. Never speed up to try to control sway. Do not apply your breaks. Steer straight ahead enough to keep in your lane don't try to control sway by turning the steering wheel.

After swaying stops: Pull a safe distance of the roadway and stop. Get all the occupants out and away from the vehicle. Check cargo in your boat and make sure it has not shifted. Also make the trailer is loaded heavier in the front. Check that all the tires are properly inflated and all lug bolts or nuts are tight. Check the trunk or cargo bed of the tow vehicle to make sure it is not overloaded. Drive at a slower speed sway happens most often at higher speeds.

## **Road Shoulders**

Sometimes the trailer is wider than the tow vehicle. Drive in the center of the lane to allow for a wider trailer. If wheels of your vehicle or trailer go off the paved roadway: Hold the steering wheel firmly. Let off the gas pedal and slow down below 25mph. Do not apply the brakes. Do not turn the steering wheel sharply. After slowing down below 25mph, gradually turn the steering wheel just enough to get you back on the roadway. Proceed with caution when entering traffic.

## **Backing**

To back up put your hand at 6:00 o'clock so when you go right just move your hand right and left to go left. If the trailer starts to jackknife or is going the wrong way just stop and pull forward to straighten out and then start again.

## **Breakdown and Accidents**

### Get off The Road

If something goes wrong and you need to get off the road, immediately park your to

vehicle in the safest place possible away from the traffic. Turn on emergency flashers get all passengers out and away from the road and vehicle. If you have to proceed down the road slow down turn on flashers and proceed with caution. Do not hesitate to drive on a flat tire if it is necessary to reach a safe place. Drive slowly because the tire and wheel could start a fire.

## **Getting in and Out of the water**

Get your boat ready in the launch prep area. Remove your tie-downs, tilt up your engine or drive unit, put in your drain plugs, and any thing else you need to do before backing down the launch ramp. Don't disconnect the wiring harness winch cable or boat bow safety chain until you are just about to launch. Do not disconnect the electric trailer brakes or the trailer brakes will not work. Be very careful when launching if your trailer has plastic surface bunks. If there isn't a launch ramp available use an area where there is solid ground and a level slope, avoid wet or soft sand.

## **Launching and Loading Roller Trailers**

When your boat and trailer are backed into the water and ready to launch the boat. Hold the winch securely and remove the boat bow safety chain from the boat. Start cranking slowly and carefully if the boat doesn't start to roll or slide off the trailer crank out about 6 inches lock the winch and try pushing the boat back. Try again if it doesn't work but, never unhook and push the boat off the trailer.

When loading always prepare to load before reaching the ramp this will make it easier and faster for you to load. Make sure engine or drive unit is all the way up. If you can help it do not put the wheels or brakes in the water. Do not put the centering and self-adjusting rollers underwater too far or they will not work properly. Make sure that you never unwind the winch all the way keep about three turns around and lock your winch before starting cranking up the boat. Align the boat before cranking up. Crank the boat all the way up so the bow eye is under the vee block. Connect the bow eye safety chain and pull your boat to the loading prep area to connect the lights, tie downs, and anything else.

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**If the winch handle slips out of your hand just let it spin do not try and stop the spinning handle.**

## **Launching and Loading Bunk Trailers**

Back your trailer far enough in to the water so the boat is floating. Unhook the safety

chain. Start cranking slowly and carefully if the boat doesn't start to roll or slide off the trailer crank out about 6 inches lock the winch and try pushing the boat back. Try again if it doesn't work but never unhook and push the boat off the trailer. If this doesn't work try finding a steeper bank to back the trailer in. Be very careful when releasing the tension from the line the bunks are very slippery. If your boat still doesn't unload your bunks may need some adjusting.

When you load your boat you don't have to back in as far as you did to unload. Back it in so the ends of the bunks are just under water. Your boat should center itself about a third to half way on the trailer. Connect the winch strap and lock the winch. Start cranking until the bow eye is under the vee block and hook the safety chain. Connect the bow eye safety chain and pull your boat to the loading prep area to connect the lights, tie downs, and anything else.

### **Common Causes of Misalignment**

If your boat doesn't sit level in the water or your rollers or bunks are not aligned properly.

Ways to correct

- Measure to make sure that your rollers or bunks are the same distance from the left or right sides as the ones across from them.
- If your boat goes towards one way loosen the U bolts and or through bolts that clamp the roller assemblies and force them the other way. Hold them in that position and tighten.
- Your boat may not self align itself if you have the trailer too deep in the water when you are loading the boat.

If your boat still doesn't go on the trailer straight contact your Tebben boat trailer dealer.

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### **Trailer Maintenance and Storage**

After every use be sure to wash the trailer with soap and fresh water. You should also touch up any scratches or spots of rust as soon as they occur this will prevent from any rust from forming. You should also wax it about as often as you wax your car to keep it looking new look for years to come. Check tires pressure when tires are cold. Check the lug nuts every year or every 2000 miles. Check your hub bearings, light wires and

electric brake wiring if equipped for damage or if they are hanging down where they could catch on something. Grease the shafts of the rollers and assembly if equipped. Lubricate the winch latch assembly, gears, and check for frayed cables and replace them ASAP.

#### Off season storage

Park your boat and trailer in a protected area inside a building. Do not put bags over the lights can cause condensation and corrosion. Touch up any chips scratches or rust spots. For galvanized trailers use cold galvanizing spray paint, available at most paint stores. Following these steps should keep your trailer looking and working well for many years.



**Boat bottom cleaners containing muratic or other acids have a highly corrosive effect on both painted, galvanized or aluminum trailers and should not be allowed in to contact with the trailer.**

### Brake operation and Maintenance



**In many states, trailers with a GVWR of 1500lbs or more are required to have breaks on all wheels.**

Contact your motor vehicle department and your Tebben boat trailer dealer for the trailer brake requirements in your area. Your brakes will have a longer life if you avoid getting them wet. Inspect your brakes on a regular basis and adjust and replace any parts if necessary. Be sure to test before each use. If you have hydraulic brakes do not down shift while going down hills to slow down this causes the trailer brakes to be on continuously all the way down the hill and could cause the brakes not to work. Slow down before the hill and give the brakes time to cool between braking.

## Troubleshooting Hydraulic Disk Brakes

Tebben Boat trailers with a capacity of 1500 lbs and larger have Optional Brakes. (Hydraulic Surge Disk Brakes). When the tow vehicle brakes are applied, the trailer brakes will be applied automatically because the weight of the trailer is applying force to the Actuator on the hitch which activates the master cylinder which then applies hydraulic pressure to the trailer brakes.

PROBLEM	CAUSE	SOLUTION
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No Brakes	Brake line Broken or Kinked Actuation System Not Working	Repair or Replace Troubleshoot System
Weak Brakes	Worn Pads Incorrect Brake pads Frozen master Caliper Cylinder Glazed Brake Pads	Replace pads Install Correct Brake pads Recondition or replace Cylinder Reburnish or Replace
Excessive	Excessive Rotor Face Wear Trapped Air in Lines Overloaded Trailer Faulty Actuator	Replace or Recondition Bleed System Correct Troubleshoot system
Pulls to 1 Side	Incorrect Tire Pressure Different Tires on Same Axle Restricted Brake Line or Hoses Malfunctioning Caliper Defective Brake Pads	Inflate to Correct Pressure Match Tires on Axle Repair or Replace Check Caliper Piston Install New Brake Pads
Dragging Brakes	Punctured Check Valve Blocked Master Cylinder Improper Brake Fluid	Replace Actuator Replace or Recondition Fill with DOT3 Fluid



**Only a qualified mechanic trained in the repair and maintenance of braking systems should perform adjustments, repair or replace brake parts and the trailer is attached to the tow vehicle with blocks under the wheels.**

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### Brake Adjustment

Adjustment is non necessary on the disk brakes just make sure that the brake parts are rust free and clean of debris. Check the brakes periodically to make sure there is a proper amount of lining left. Check the brake fluid to see if it is full before each trip. Only a qualified mechanic trained in the repair and maintenance of breaking systems should attempt brake repair, and replacement.



**Make sure the trailer is not allowed to move. Have it hooked to a tow**

**vehicle and block the tires when servicing the brakes.**

## **Tire Changing**



**Make sure you are on a solid footing and level ground when changing tires.**

If your tires are damaged or worn before the warranty period contact the tire manufacture for additional adjustments. If you have to replace your trailer tires do it promptly and wear gloves to prevent accidental pinches. When the new tire is on torque the lug bolts or nuts in the order mentioned in the lug nut tightening section. Make sure the trailer is not allowed to move. Have it hooked to a tow vehicle and block the tire on the opposite side.

## **Jack Placement**

On a torsion axel trailer, place the jack under the axel tube closest to the tire but not the torsion arm. If it will not fit under the axle place it under the mainframe rail as close to the axle as possible.

## **Wheel, Tire, and Hub Care**



**Since boat trailers wheels are put in water it is important you check and grease your wheel bearings on a regular basis. Do not use a power-assisted grease gun to add bearing grease using power-assisted grease guns or over greasing the bearings protectors can cause the hub seals to fail. The bearings must be completely filled with grease in order for the bearing protectors to work properly.**

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## **Keep Bearings Lubricated**

To check bearings jack up the wheel and try to rock the wheel side to side. There should not be any noticeable rocking. When you spin the wheel there should be a smooth silent operation. Add grease before storing or launching by using a hand operated grease gun. Do not add grease when the hub is cold. Use certified waterproof lithium-based marine trailer bearing grease.

## **Changing or Adjusting Bearings**



**Made sure the trailer is not allowed to move. Attach it to the tow vehicle**

### **and block the tires.**

The bearings and seals should be inspected after the first 1000 miles and after that every 2000 miles or the beginning of each season. Do the jack placement procedure to jack the trailer up. Remove the bearing protector, cotter pin and spindle nut retainer and replace if needed. To tighten the spindle nut to 30ft/lbs while turning the hub back the spindle nut off do not spin the hub. Retighten the spindle nut to finger tightness do not over tighten. The hub should turn easily with no hub play. Put the nut retainer back on so the cotter pin can be put in the spindle hole with out loosening or tightening the nut. Put the cotter pin in the hole and bend the ends so it will not fall out. Ungreased bearings can cause serious damage, the bearings will make a lot of noise and could even separate from the hub which could cause an accident. Grease on the trailer brakes can cause the brakes to not work properly

### **Check Wheel Bearings Seals**

A little bit of grease around the seal area is normal but if there is an excessive amount of grease you should have your seals replaced.

