



## **Axle Maintenance Manual**

**2,000 – 8,000 lbs. Axles**



# INTRODUCTION

We would like to thank you for purchasing Sure Trac Axle components, or a trailer with our products already installed. As we work to provide consistent quality, production and service, we promise not to allow corporate growth to overshadow the importance of the relationships that we have with our customers, employees and the owners.

This manual was published to provide general guidelines to help you properly operate, maintain, and service your trailer running gear. Sure Trac running gear consist of spindles, hubs, beams, springs, drums, and brakes which are combined to provide towing and braking ability that equals or surpasses industry standards

\*\*\*\*Please read this manual carefully to ensure years of trouble free service  
from your SureTrac components.\*\*\*\*

# TABLE OF CONTENTS

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<b>For Your Safety</b>	<b>4</b>
<b>Instructions For First Use</b>	<b>5</b>
<b>Brake Testing &amp; Maintenance</b>	<b>6</b>
<b>Brake Adjustment</b>	<b>7</b>
<b>Brake Troubleshooting</b>	<b>8-11</b>
<b>Hub, Bearing Maintenance</b>	<b>12-13</b>
<b>Wheel &amp; Tire Maintenance</b>	<b>14-15</b>
<b>Maintenance Schedule</b>	<b>16</b>
<b>Warranty</b>	

## **For your safety...**

It is very important that you properly maintain, inspect and service your running gear. Proper maintenance and repairs should be made periodically to ensure the safe and dependable use of your running gear. This manual provides general information as to the inspection, testing and maintenance of our products.

As with most new equipment, your running gear should be checked initially and at specified intervals. The following should be checked at the intervals noted:

1. Wheel nuts should be torqued at 10, 25 and 50 miles.
2. Tire pressure should be checked accordingly to the requirements of the manufacturer.
3. Brake controller should be installed and set according to the guidelines of manufacturer.
4. Brakes should be properly adjusted at 200 miles and every 3000 miles

**Caution: Do not allow loads to exceed weight capacity of axles. This is very dangerous and could cause the axles to fail. Warranties do not cover damage caused by loads exceeding weight capacity.**

## **Instructions For First Use**

If your Sure Trac axles have brakes, please keep in mind that they are manufactured to work with your tow vehicles brakes and are not designed to stop a combined load by themselves.

The tow vehicle must be equipped with an electric brake controller. Electric brake controllers supply a source of power to the brake magnets to actuate the trailer brakes. You must make sure that the brake controller provides at least 2 volts when first actuated. The voltage should gradually increase to 12 volts as more pressure is applied.

In order for your brakes to work properly, they must be properly synchronized with the vehicle that is towing your trailer. Please refer to controller manufacturer's recommendations for the initial synchronization. You most likely will be required to test the brakes and make adjustments to ensure correct synchronization.

The brakes should be broken-in before any adjustments are made. This is done by applying the brakes 15 to 25 times and slowing the vehicle down by 20 m.p.h.. For example, slowing the vehicle from 45 m.p.h. to 25 m.p.h. 15 to 25 times. You should allow the brakes to cool down between each application. This breaking-in of the brakes will make the magnets and brake shoes seat to the drum and surfaces. This should be done while the trailer is empty.

The brakes must also be wired using the appropriate size wire in order for them to work properly. The following chart will serve as a guideline.

Less than 30' (axle to hitch)	2 to 4 axles	12 AWG
30' to 50' (axle to hitch)	4 axles	10 AWG
Less than 30' (axle to hitch)	6 axles	10 AWG
30' to 50' (axle to hitch)	6 axles	8 AWG

## Brake Testing

After you have “broken-in” your new axles, you should test the brakes to ensure that they are working properly. It is very important that they are working properly. It is very important that the tow vehicle brakes and the axle brakes are properly synchronized.

**You should refer to the brake controller manufactures recommendations and owner’s manual before attempting to synchronize the brakes.**

When testing the brakes, make sure that you have an area that is sufficient for testing and is clear of other vehicles and pedestrians. The testing area should be clean, dry and a paved surface. Test the actual performance of the brakes by attempting to make several sudden stops from 20 m.p.h. to 25 m.p.h. speed. The brake controller should be set so that the brake axles are just before locking up and sliding the wheels. The gain setting on your controller should be decreased if the wheels lock up and increased if they do not attempt to lock or slide. The trailer brakes should come on slightly ahead of the tow vehicle brakes when properly synchronized. This should be done while the trailer is empty.

## Brake Maintenance

You should periodically inspect and service your trailer brakes. This should be done at least annually and more frequently as brakes age and if usage increases. The backing plate, brake shoes, magnets and magnet arm should all be cleaned. The brake drum should be inspected for any wear. Any damaged or worn parts should be replaced.

## Brake Adjustment

It is very important that your brakes be properly adjusted after the first 200 miles of usage and every 3,000 miles thereafter. The brakes may also need to be adjusted at other times if a loss of performance is noticed. The procedure for adjusting brakes is as follows:

1. The trailer should be jacked up and secured. The wheel should be spinning freely. Do not locate jack at the center of axle.
2. The adjusting hole cover should be removed from backing plate. You should then use a brake spoon or screwdriver to turn the adjuster mechanism, forcing the brake shoes to expand. This should be done until the wheel is very hard to spin.
3. You should then turn the adjuster mechanism in the opposite direction, loosening the brake shoes until the wheel turn easily with the linings offering only slight resistance.
4. The adjusting hole cover should be re-installed. This procedure should be repeated for all brakes on the trailer

## Brake Troubleshooting Guide

Most of the brake problems or failures occur because of improperly adjusted brakes, improper synchronization or because of electrical systems problems. Other problems are a result of damaged, loose, or worn parts. Electrical system problems can usually be found with the proper use of voltmeters and ammeters. The following guide will provide help with most common problems, but if you are unable to fix a problem, contact a professional repair facility.

Problem	Possible Causes	Solution
No Brakes	Short Circuits	Find & Correct
	Out of Adjustment	Adjust
	Open Circuits	Find & Correct
	Bad Controller	Correct or Replace
Locking Brakes	Drums out of Round	Replace
	Bad Controller	Correct or Replace
	Out of Adjustment	Adjust
	Bad Synchronization	Correct
	Broken Brake Parts	Replace Parts
	Bad Wheel Load	Adjust Resistor/Synchronize
Intermittent Brakes	Loose Connection	Find & Repair
	Broken Wire	Replace or Repair
	Bad Controller	Correct or Replace
	Bad Ground	Find & Repair



## Brake Troubleshooting Guide (cont.)

Problem	Possible Causes	Solution
Weak Brakes	Out of Adjustment	Adjust
	Connections Corroded	Clean/Correct Source of Corrosion
	Dirt, Oil, Grease on Magnets or Linings	Clean or Replace
	Bad Synchronization	Correct
	Glazed Linings	Replace or Repair
	Trailer Overload	Reduce Load
	Scored Drums	Replace or Repair
	Faulty linings/Magnets	Replace or Repair
Brakes Drag	Drums out of Round	Replace
	Broken Brake Parts	Replace
	Spindles Bent	Replace Entire Axle
	Out of Adjustment	Adjust
	Wrong Brake Parts	Replace with Correct Parts
	Bad Breakaway Switch	Correct or Replace
	Loose Wheel Bearing	Correct or Replace
Brakes Pull Left/Right	Out of Adjustment	Adjust
	Dirt, Oil, Grease on Magnets or Linings	Clean or Replace
	Connections Bad	Repair
	Wires Damaged	Repair
	Magnet Lead Wire Wrong	Correct or Replace

## Brake Troubleshooting Guide (cont.)

Problem	Possible Causes	Solution
Brakes Harsh	Bad Synchronization	Correct
	Out of Adjustment	Adjust
	Improper or Faulty Controller	Correct
Brakes Surge	Drums Out of Round or Broken	Replace
	Bad Controller	Correct or Replace
	Dirt, Oil, Grease on Magnets or Linings	Clean or Replace
Noisy Brakes	Broken or Incorrect Brake Parts	Replace Parts
0	Out of Adjustment	Adjust
	Not Enough Lubrication	Lubricate

## Finding Electrical Problems

Electrical problems are a very common cause of poor brake performance. Common electrical problems are a bad electrical connection, damaged or broken wires, improper wire size, circuits that are open, blown fuses (if applicable), controller problems, and shorted circuits. As stated earlier, you can use a voltmeter and ammeter to check for proper voltage and amperage. We have provide an overview on how to use the equipment to test your electrical system.

## Finding Electrical Problems (cont.)

A voltmeter should be used to test the systems voltage. You can do this by checking the voltage at the magnet lead wires. Make sure that the tow vehicle's engine is running. The systems voltage should begin at 0 and increase to 12 as the controller is actuated.

An ammeter should be used to check the systems amperage. You can do this by disconnecting the blue wire at the controller and connecting the ammeter in series into the line. Make sure that the tow vehicle's engine is running. System amperage should be as follows:

Magnet Ohms	Amps/Magnet	Two Brakes	Four Brakes	Six brakes
3.2	3.0	6.0	12.0	18.0

You can check individual magnet amperage by connecting the ammeter in series into the line at the magnet in question. In order to do this, you should disconnect one of the magnet lead wire connectors and connect the ammeter to the two disconnected wires. If you brake system has resistors, they must be by-passed or set to zero in order for you to obtain proper readings.

## Hub, Bearing Maintenance

In order to inspect or make repairs to the bearing, hub or brake components, you will be required to remove the hub. The following is a guide to help with the removal of the hub and internal components.

1. The trailer should be jacked up and secured.
2. Remove the wheel and grease cap
3. Remove the cotter pin if your axle is equipped with the standard E-Z lubed spindle and then the spindle nut can be removed
4. After removing the spindle nut, you can then slide the hub off of the spindle.

Once the hub is removed, the outer bearing will easily slide out. To remove the inner bearing you will need to remove the seal with a screwdriver. The seal will need to be replaced when it is removed and the hub should be cleaned of old grease.

## Inspecting, Lubricating Bearings

After removing bearings, they should be thoroughly cleaned with solvent. They should then be dried with a clean, lint-free cloth and inspected for any obvious defects, scarring or corrosion. If any defects are detected, then the item should be replaced. You should also inspect the bearing cup or race and replace if necessary.

Bearings should be lubricated every 6 months or 12,000 miles. The correct method of lubricating bearings is as follows:

1. Remove rubber plug from end of the grease cap gives you access to the grease fitting.
2. Use a standard grease gun to pump grease into spindle until you notice new, clean grease coming out from around front bearing. Turn the hub while doing this
3. When this process is complete, clean any excess grease and place the rubber plug back into the grease cap.

You should note that, even if your axle has the convenient grease fittings, you should still periodically remove the hub and inspect bearings, seals and brake components for damage

When lubricating bearings you should use a grease with the following specifications.

Dropping point	215°C/419° Minimum
Thickener Type	Lithium Complex
Additives	EP, Corrosion & Oxidation Inhibitors
Consistency	NLGI No. 2
Viscosity Index	80 Minimum

## **Wheel and Tire Maintenance**

Your wheels and tires also require proper maintenance and inspected. It is important that your axle, wheels and tires are properly maintained and that they are properly matched. Carefully consider the following information about replacements, maintenance and inspection of your wheels and tires.

### **Tires**

Make sure that your tires are properly inflated and that you maintain proper inflation according to the manufacturers recommendation. When replacing tires, make sure that the rim contour and size are correct for the replacement tire. You should also make sure that the carrying capacity of your tire is sufficient for your load.

### **Wheels**

When replacing wheels you should be careful to consider the correct bolt pattern, load capacity, pressure rating, wheel offset, and rim contour of the replacement wheel. Failure to use correct wheels can result in wheel, axle or tire failure.

It is also important that you maintain proper wheel nut torque. Wheel nut torque refers to how much you should tighten the wheel nuts that hold you wheels to the axle . to properly torque the wheel nuts, you must tighten the nuts in a specific order and in stages. To properly torque wheel nuts you should use a torque wrench. The following chart and diagram on the next page will help you accomplish this.

You should also inspect the wheel nuts and wheel studs for any damage or stripping. In order for proper wheel torque, wheel nuts and studs should be free of grease

## Wheel and Tire Maintenance (cont.)

### Correct Wheel Torque

Wheel size	Stage1(lbs-ft)	Stage 2(lbs-ft)	Stage3 (lbs-ft)
12"	20-20	35-40	50-75
13"	20-25	35-40	50-75
14"	20-25	50-60	90-120
15"	20-25	50-60	90-120
16"	20-25	50-60	90-120

### Correct Sequence



# Maintenance Schedule

## Things to do @ **Each Use**

1. Check Brakes
2. Check Break-away System

## Things to do **WEEKLY**

1. Check Tire Pressure

## Things to do @ **3 months or 3000 Miles**

1. Check and Adjust Brakes
2. Check and Torque Wheel Nuts
3. Check Tire Condition

## Things to do @ **6 Months or 6000 miles**

1. Check Brakes for Wear or Damage
2. Check Brake Controller Operation
3. Check Springs and Suspension Parts for Damage or Wear
4. Check Wheels for Damage

## Things to do @ **12 Months or 12000 Miles**

1. Check Brake Lining for Wear or Damage
2. Check Brake Wiring for Damage
3. Check Hubs for Wear or Damage
4. Check Bearings for Wear or Damage; Clean and repack



## **SURE TRAC LIMITED WARRANTY**

### **Limited 1 Year Warranty**

Grease & oil seals, couplers and Jack stands have a one (1) year limited warranty to the original purchaser from the original retail purchase of trailer or axle.

### **Limited 6 Year Warranty**

Sure Trac Inc. warrants that it's axles and suspension systems will be free from defects in material and workmanship for a period of six (6) years from the date of first sale of the trailer in which our components are installed. This warranty applies to the original purchaser only and is in no way transferable.

### **Exclusive remedies**

If the original purchaser has a defective components, Sure Trac Inc. will, at its option, retain the right to the following:

1. Replace or repair the defective part
2. Replace or repair the entire axle
3. Refund the then-current price of the axle

Reasonable time must be given for warranty repairs and any allowance for installation must be pre-approved by Sure trac Inc.

### **Warranty Claims**

In order to make a claim under these warranties:

1. You must be the original purchaser of the trailer and/or axle
2. You must promptly notify Sure Trac Inc. after detection of any defect, within 30 days of detection.
3. You must provide us any necessary information that we may request to show proof of ownership.
4. Axles, suspension systems and components must have been installed in accordance with good industry practice and specified recommendations included in Sure Trac Inc's current Axle Maintenance Manual.





## **SURE TRAC LIMITED WARRANTY**

### **EXCLUSIONS**

The Sure Trac Inc. warranty does not cover damages caused by or does not extend to any of the following:

- Corrosion
- Normal wear and tear
- Cosmetic finish
- Improper installation
- Improper alignment
- Trailer and tow vehicle brake wiring connections
- Running gear frame attachment
- Unreasonable use or failure to properly maintain
- Imbalance of hubs
- Any parts not provided by Sure Trac Inc.
- Any damage related to or caused by alteration of axle
- Improper wheel nut torque
- Use of an axle on any equipment other than the equipment on which it was originally installed
- Weights exceeding capacity

The forgoing warranty is limited to repair, replacement, or refund of verified defective products and excludes any and all implied warranty of merchantability. This warranty also excludes any incidental and consequential damages. There are no warranties which extend beyond those specified

# Maintenance Record

[illegible]



## SURE TRAC FLAT RATE CHART

Part Replaced	Time Allotted (Hours)	Part Return	Contact Sure Trac	Picture Required
Complete Axle Assembly, Reconnecting and Testing	1	No	Yes	Yes
Hubs, Brakes and Testing	1.5	No	Yes	Yes
Brake Assembly Each (Includes: Remove and Replace Grease Seal)	0.5	No	Yes	Yes
Rewire an Axle (Simple Wire Job)	0.2	No	Yes	Yes
Hub and Drum or Idler Hub Complete Each	0.5	No	Yes	Yes
Grease/ Seal Each (Includes Repacking Bearing)	0.5	No	Yes	Yes
Bearings, Inner and Outer per Wheel (Includes Cup and Cone)	0.5	No	Yes	Yes
Wheel Studs per Hub (Includes Remove and Replace Grease Seal)	0.4	No	Yes	Yes
Leaf Spring Each	0.3	No	Yes	Yes