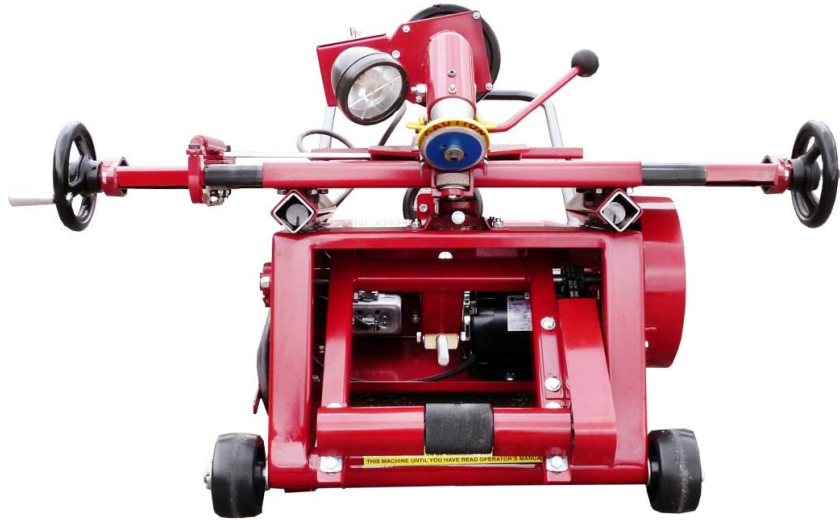




TIRE SERVICE INTERNATIONAL

# 405W PORTABLE TRUER

buyTSI.com - 800.223.4540



*READ INSTRUCTIONS THOROUGHLY BEFORE OPERATING*

**Read this manual before operating**

**Tire Service International, LLC**

3451 S. 40TH ST.  
Phoenix, AZ 85040

Office: 602.437.5020  
Email: sales@buytsi.com  
Fax: 602.437.5025

**Contact us for any assistance**

**800.223.4540**

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# General Description

Portable Truers are designed to service elevated tires. Mounted on a vehicle, use the unit freestanding by itself on the ground. When used in conjunction with a wheel balancer, attach the optional Truer Stand (sold separately) to raise the unit. A key factor to successful tire truing is trimming off as little tread as possible. Removing too much can gouge a tire during truing and will decrease the tire life.

# Safety Requirements

1. READ THIS MANUAL BEFORE OPERATING
2. WARNING - Wear safety glasses
3. WARNING - Machine is equipped with a VERY sharp rotating blade.
4. DO NOT wear loose clothing
5. Training is advised prior to operating. Damage to tires can occur quickly and proper instruction is highly encouraged to avoid injury or damage.
6. Clean tires completely. If truing used tires remove sand, rocks and other foreign debris from tire tread. Likewise remove debris from rims and hubs.
7. Do not leave machine ON when unattended.

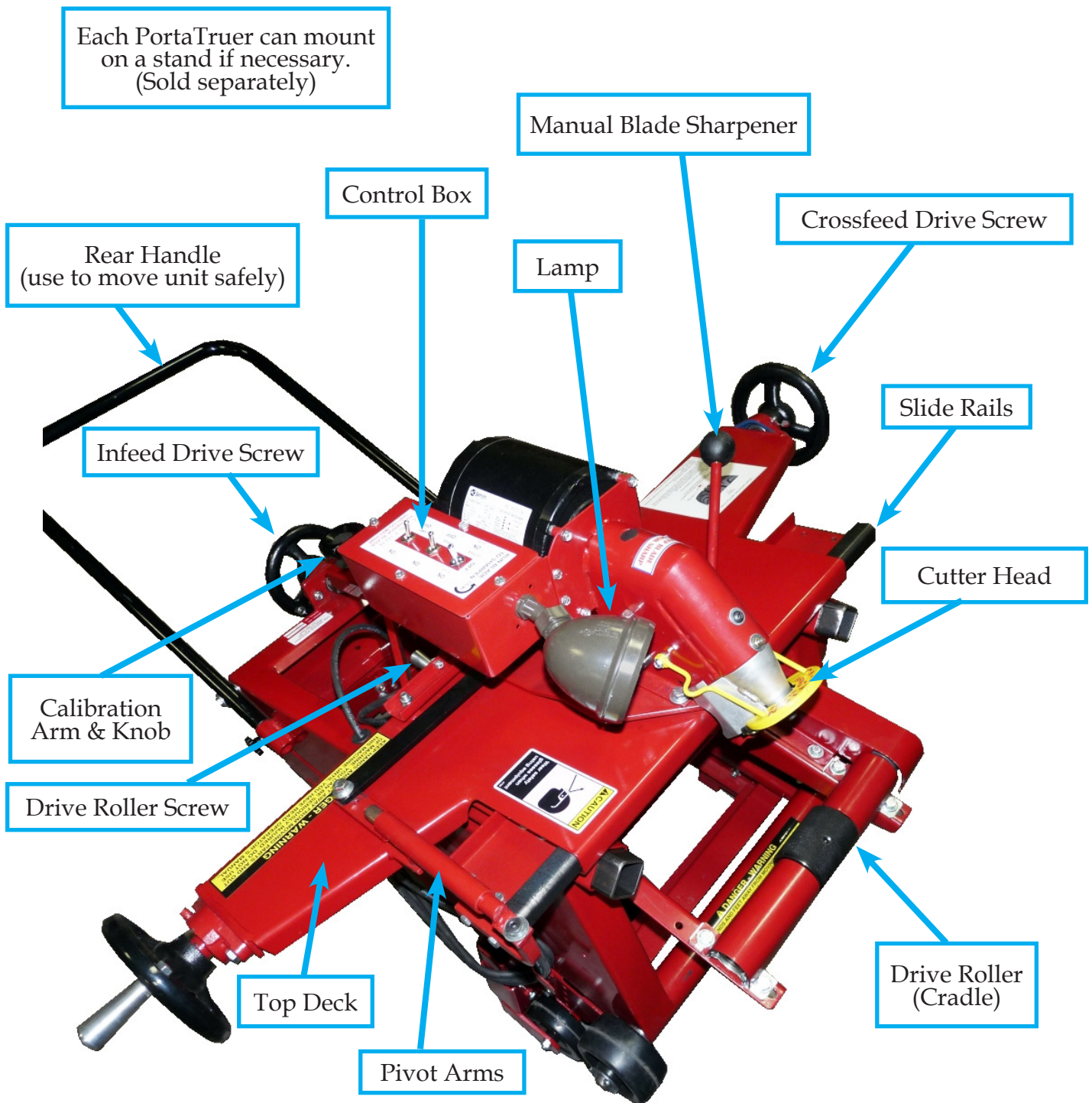
# Installation Requirements

Electric Supply: 1/3 HP, 115/230 Volt, 60 Hz, 20 Amp, single phase  
1/3 HP, 220 Volt, 50 Hz, 20 Amp, single phase

# Initial Set-Up Instruction

1. Remove packaging materials from machine.
2. CAUTION - the unit has pinch points and the cutting blade is VERY sharp.
3. Use unit on a clean, level surface with adequate room to maneuver and make necessary adjustments to the machine as it is being used.
4. Move unit around using the rear handle or frame parts. Do not move or reposition unit using the drive screw handles, the top deck, tail section, drive roller arm or cutter head assembly
5. Keep the machine free from damage and abuse.

# Primary Features



# Introduction

## Why “True” a tire?

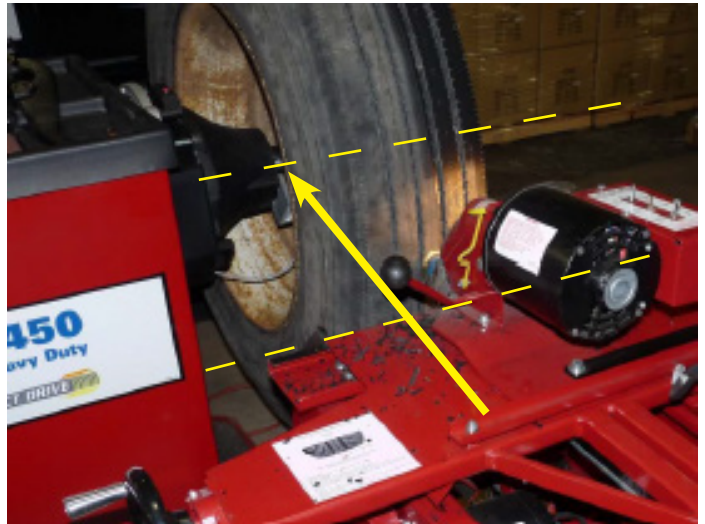
Tire truing is performed to eliminate poorly balanced tires, wheel skip, reduces balancing weights, cupping and extends tire life and performance. Tire truing reduces wear and tear on drive trains and suspension systems. It’s particularly useful for tires on all-wheel-drive vehicles and low-profile tires.

The goal for Truing tires is to make tires more symmetrically round to increase their performance and maintain a smoother ride in a vehicle. In general not all tires are round. Once you line up the cutter blade on the Truer to the tire and spin the tire you will see how far out of round the tire is. For TSI, our goal is to create confident and knowledgeable Tire Truer operators. This instruction guide is a first step toward achieving that goal while attaining your objectives to satisfy customers.

## Operating Instruction

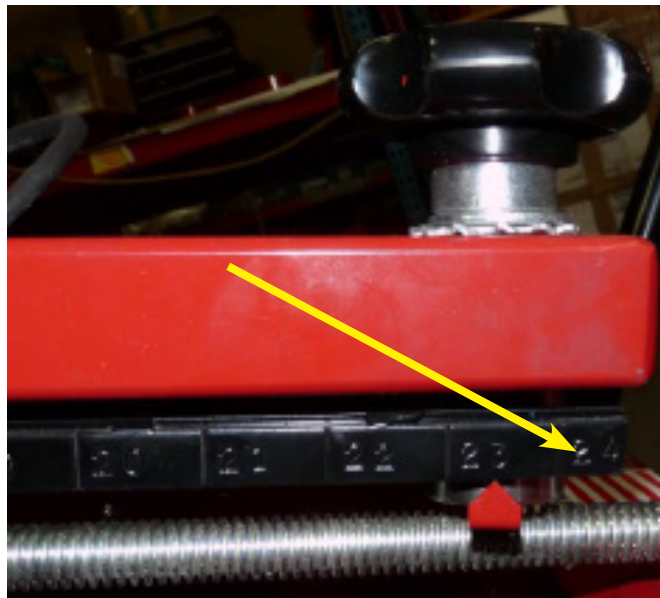
### 1. Prepare tire and position machine before cutting

- Parked vehicles can develop a flat spot on the tires. DO NOT true a tire without warming the tires or driving the vehicle to remove the flat spot. TSI recommends using our model 975 Tire Warmer for this purpose or driving the vehicle at least 4 miles before truing the tires.
- Clean the tire and check tire air pressure, filling to manufacturers recommendations.
- Lift the vehicle wheels off the ground and support axles using jack stands or a car hoist as necessary. Lift high enough so when the Truer is brought up to the wheel the top deck surface projects an imaginary line to the center of the tire. Being within an inch above or below tire center is acceptable.
- Make sure the machine lines-up ‘on center’ to tire tread. The front edge of the Top Deck must be parallel to the tire tread or tire spindle. *This is the most important step to ensure the Truing process goes smoothly.*
- Shown is a tire mounted on a balancer. Whether tire is on a vehicle or mounted on an arbor like this, keeping the blade near this parallel plane is preferred.
- Once lifted and stabilized on jack stands, the tire treads across the face of the tires must be parallel to the ground.
- Front wheels of a vehicle can be difficult to access. Turning the steering wheel to the left or right to gain sufficient access is advised. Consider camber of the wheel as tread face needs to remain parallel to the ground. Secure the steering wheel to prevent wheels from moving.
- Most front wheels on a vehicle are Trued from the front of the vehicle, but in some cases they may need to be trued from the backside. Choose whichever allows maximum access.

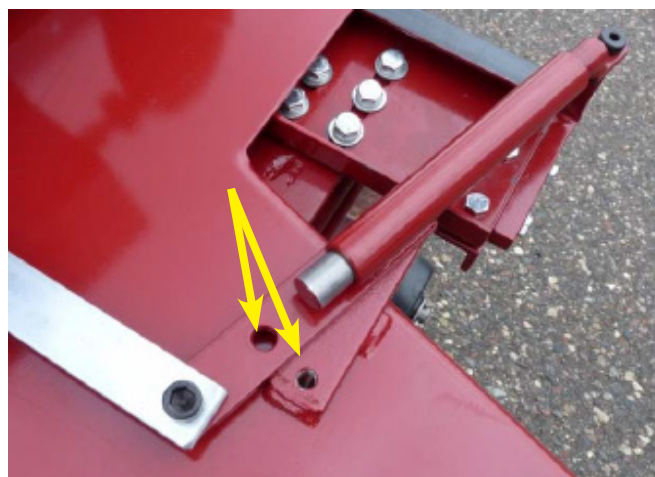


# Operating Instructions

- Set the calibration arm initially to 24. As you become more experienced you may wish to change the setting.
- Physically move the Truer into position using the handle so the top deck is perpendicular to vehicle tire with cutter blade about 1/4" away from tire, but not touching it.



- The photo shows the Pivot Arm assembled as shipped in Position 2.
- As Cutter Head pivots, access to some tires may be restricted. If so, remove shoulder bolt from position 2 and insert into position 1. Line-up the holes and tighten firmly.
- Purpose: It limits 'swing movement' of Cutter Head
- Consider this option when Truing drive wheels and tires on dual rims where access may be limited.



## **2. Adjust infeed so cutter blade almost touches tire.**

- When PortaTruer is in position use Infeed Drive Screw to advance cutter blade within 1/4" of tire (at tread center.) Then use Crossfeed Drive Screw to pass cutter head/blade back and forth across the face of the tire.

# Operating Instructions

**CAUTION! PHYSICAL HARM CAN OCCUR**  
**DO NOT allow hands, fingers or clothing to get near rotating parts or cutter blade!**

## 3. Turn on drive roller

- Turn Drive motor ON and raise it to engage with the tire by turning drive roller screw located at rear of machine. It's spring loaded so no need to force it.



## 4. Turn on cutter blade motor

- Turn on Lamp and adjust to illuminate cutting area.
- Make sure Cutter Blade is razor sharp before each pass (see sharpening section)
- Lift blade safety guard and turn Cutter blade switch ON in the clockwise direction (up) for starting on the right side.
- Observe how much the tread is out-of-round to determine the depth of the first cut.
- The marks on the gauge shows .005" depth. For example, from 0 to 20 on the cutting gauge will take .020" cut into the tire. This is the maximum starting cut depth. Remember, the goal is to remove the minimum amount of material from the tire.
- Slowly turn infeed drive screw with the cutting gauge in back of unit to advance the blade until it just barely touches the tire.
- Turn the cutter gauge to zero to indicate the starting depth of the cut. Loosen or tighten the set-screw so the gauge has a slight resistance, but maintains setting.



## 5. Start cutting

- Slowly advance the Infeed Drive Screw and note the cutting gauge setting.
- Using the Crossfeed Drive Screw on the top deck slowly traverse the top deck and cutting blade across the right half of the tread. Turn the infeed screw to match the profile of the tire.
- Observe the rate of speed moving the top deck and how consistent the cut is being made. Go faster or slower to suit the desired end-result. Continue until blade clears outer edge of tire.

# Operating Instructions

## 6. Sharpen blade for next pass

- Upon completing the end of your first pass of the tread, make sure the cutter blade passes by the outer edge of the tire. Back the top deck and cutting blade away from tire (be careful not to lose the 'zero' setting) using the infeed drive screw.
- Turn Cutter motor OFF.

## 7. Repeat on left side

- Reposition cutter blade location at the center of the tire, but do not touch the tire.
- Reverse the motor direction by toggling the switch toward the counter-clockwise direction of truing. Turn the cutter blade motor ON.
- Proceed to use the manual sharpener to sharpen the blade razor sharp in a counter-clockwise direction.
- Set your cut depth to match right side and proceed to do the left side of the tire.
- TSI highly recommends Truing both sides, halves of the tire in stages for each change of depth in the tire before making the final cut. Slowing the crossfeed drive screw traversing the top deck and cutter blade results in a smoother end result.
- It is suggested a novice should repeat the operation several times by taking lighter cuts on one side and then the other until all the high spots in the tread have been removed.
- When complete back cutter blade away from tire.
- Proceed to use the manual sharpener to sharpen the blade razor sharp in a counter-clockwise direction in preparation of the next tire.
- Turn motor OFF.
- Lower safety cover over blade.
- If done, turn lamp OFF.
- Slide PortaTruer away from tire a few inches. Clean off the unit.
- Re-position cutter head and top deck to start position.
- If tire was Trued using a wheel balancer simply pull the unit temporarily out of the way.
- *Please Note:* While the PortaTruer will true tires on their own wheel bearings and maintain extreme accuracy, an absolutely true tire can still be out of balance due to other factors such as rim, hub, or drum defects and should be checked for correct balance.

# Maintenance Schedule

*Maintenance is based on Truing approximately 100 tires a week.*

## Daily

1. Keep the machine clean. Remove rubber chips and debris with a brush or air nozzle. Debris will complicate operations and create a hazardous working condition. We recommend cleaning contact areas after each tire is trued.
2. Check Blade and Sharpening Stone for damage.
3. Verify Blade Safety Cover is operational.
4. Verify no parts are loose.

## Weekly

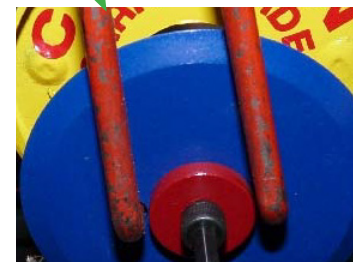
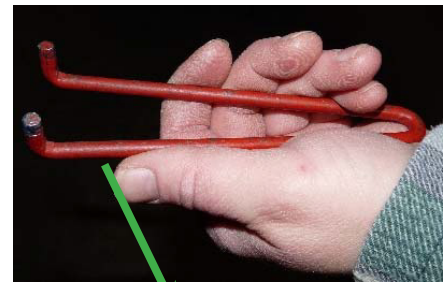
1. Lightly oil and lubricate all working surfaces such as slide rails, drive screws, pivot points and contacting movable parts with a silicone solution. Depending on use it may be necessary to lubricate more often than weekly.
2. Clean and visually check for wear and tear.

## Monthly

1. Add standard chassis grease to zerks on Cutter Head and Crank Bearings.
2. Check belt wear. Total belt deflection when tight is 1/4" to 3/8" midway between pulleys.
3. Inspect and change cutter blade as needed.

## Changing the Cutter Blade

1. To change Cutter Blade, use the Spanner Wrench (shown above) and an Allen Wrench.
2. Loosen the screw while inserting the Spanner Wrench into the Blade to keep it from turning.
3. When replacing the Cutter Blade make sure the spring loaded Carbide Blades are firmly against the back-side of the Cutter Blade.
4. Use the Spanner Wrench to tighten Cutter Blade.
5. Tighten replacement blade to 30-40 ft-lbs





# Maintenance

## Changing the Sharpening Stone

1. Lift the Manual Blade Sharpening lever to lower stone cradle. As supplied with each unit, work the Allen Wrench into the Stone Bolt Hex.
2. While holding the Allen Head Wrench in place, let go of the manual sharpening lever.
3. Insert the Special Socket into the bottom of the Stone Cradle to make contact with the Jam Nut. Loosen and remove the old Stone and Paper Washers.
4. In reverse order replace the Stone and Paper Washers. Tighten securely so there's no play between the Stone in the Cradle and the Bearing housed in the Stone Cradle.
5. Securely tighten stone nut onto stone bolt. There should be no "wobble" of the stone if the stone nut is securely tightened to 15-20 ft-lbs.
6. TSI suggests installing a new stone with each new blade. This will provide proper seating of the stone to the blade, will extend the life of the blade and give better sharpening.
7. Once Cutting Blade and Stone have been replaced recheck your work.
8. Upon everything being properly replaced run the unit for a few minutes to sharpen the Cutting Blade and to seat the Stone with the new Cutting Blade.



## Dimensions

1. The 405-W upper unit measures 41" long (not including handle) x 48" wide x 24" high.
2. The optional PortaTruer stand (Part #6418) measures 37" high.

## Optional Stand - Part 6418



405W shown with optional 6418 porta truer stand

# Repair Parts List

Item	Description
15005	Truer Blade
15098	V-Belt, 4L 1/2 x 31
15143	Pillow Block Bearing 5/8"
15201	Bushing, Drive Screw
15226	Stone with 2 paper washers
15267	Bearing, 1.375 OD x .591 ID
15292	Spanner Wrench
15318	Spring, Compression Drive Screw
15434	Allen Wrench
15492	Bearing, Flange .50"
15644	V-Belt, 4L 1/2 x 28
6240-B	Cutter Head (Complete)
15067-60 Upper	Electric Motor 1/3HP 60Hz (rewired for Rev)
15067-60 Lower	Electric Motor 1/3HP 60Hz
15138	Bearing, Stone
15211	Dust Cup, Stone
15229	Bolt, Stone
15230	Plug, Hole
15232	Spring, Carbide
15297	Lamp Assembly
15074	Switch, Cutter 3-pos
15075	Switch, Drive Motor
15076	Switch, Lamp

# Notes

# California Proposition 65

California's Proposition 65 entitles California consumers to special warnings for products that contain chemicals known to the state of California to cause cancer and birth defects or other reproductive harm if those products expose consumers to such chemicals above certain threshold levels.

**WARNING:** Some of Tire Service International's products can expose you to chemicals including chromium compounds, which are known to the State of California to cause cancer, birth defects or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Your risk from exposure to these chemicals varies, depending on exposure time. To reduce your exposure, work in a well-ventilated area and with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles. Wash your hands after touching TSI's products.

## Warranty and Return Policy

Warranty & Workmanship you can depend on.

With over 30 years of manufacturing experience we maintain the ability to provide competitive prices while employing and manufacturing the majority of our products in the USA. Pride in our workmanship and standing behind each and every product is not just our claim but our uncompromising responsibility.

Tire Service International equipment is warranted to be free from defects in materials and workmanship for a period of one year from the date of original purchase to the original owner. Repair labor is warranted for 90 days from the date of original purchase. Bushings, blades, bearings and normal wear and tear are not covered under warranty. Careless handling, negligence, misuse, abuse, mutilation, improper operation, making unauthorized repairs, additions, and or alterations automatically cancel this warranty and relieves TSI of any obligation. Cheetah tanks claimed to be defective while under warranty will be evaluated at our manufacturing plant and either repaired if possible or exchanged and returned or credit issued to the customer account at our discretion. Damage resulting from dropping the tanks will not receive warranty consideration. Warranty parts need to be returned prepaid to the plant for credit. Any replacement parts shipped from the plant will be shipped at the customer's expense. Machines requiring warranty work must be brought to the manufacturing plant in 201 Chelsea Rd, Monticello, MN or to a repair facility authorized by TSI.

**!!WARNING!!** Goods returned without an RGA will be refused. A Returned Goods Authorization form must be obtained before returning any material or goods. All non-warranty returns will be subject to a 15% restocking fee plus any additional charges for reconditioning/repacking.

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