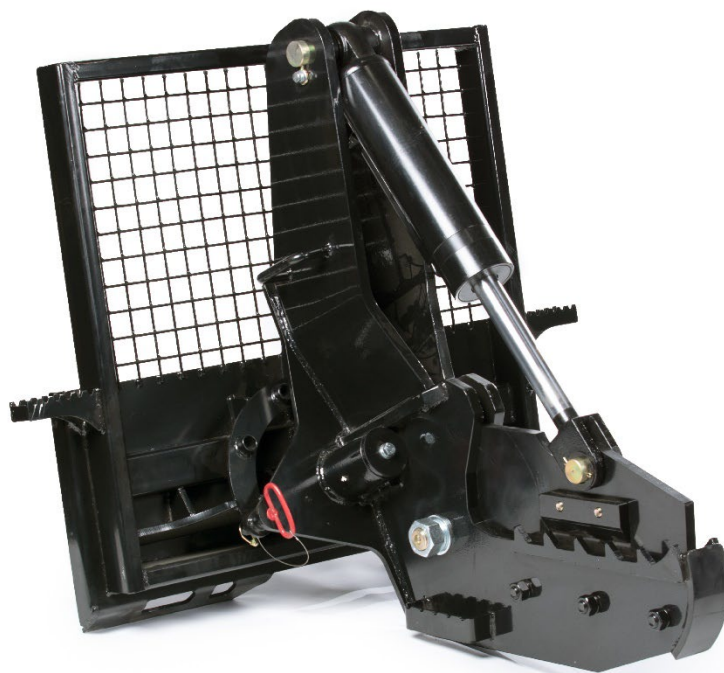


TREE SHEAR V2

TS005V2

198106



Operator's Manual



Read the Operator's Manual entirely. When you see this symbol, the subsequent instructions and warnings are serious follow without exception. Your life and the lives of others depend on it!

INTRODUCTION

- This manual is made at the time of manufacturing of the Tree Shear that does not include any
- subsequent modifications made afterward.
- This manual is intended to provide information to operators and owners to operate the
- Tree Shear safely and effectively, as well as to perform suitable maintenance for the
- equipment.
- Before operating the equipment, it is critical to read, understand and be acquainted with the
- operating, safety and maintenance recommendations of the Tree Shear using your skid
- steer.
- Failure in operating and maintaining the Tree Shear according to the instructions and
- recommendations could lead to fatal accident causing serious personal injury or death,
- as well as damages to your equipment.

SAFETY PRECAUTIONS



THIS SYMBOL BY ITSELF OR WITH A WARNING WORD THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY OR THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.



DANGER



WARNING



CAUTION



NOTION

GENERAL SAFETY PRECAUTIONS

READ MANUAL PRIOR TO INSTALLATION

Improper installation, operation, or maintenance of this equipment could result in serious injury or death. Operators and maintenance personnel should read this manual, as well as manuals related to this equipment and the prime mover thoroughly before beginning the installation, operation, or maintenance.

FOLLOW ALL SAFETY INSTRUCTIONS IN THIS MANUAL.

KNOW YOUR EQUIPMENT

Know your equipment's capabilities, dimensions, and operations before operating. Visually inspect your equipment before your start, and never operate equipment that is not in proper working order with all safety devices intact. Check all hardware to ensure it is tight. Make certain that all locking pins, latches, and connection devices are properly installed and secured. Remove and replace any damaged, fatigued, or excessively worn parts. Know and follow good work practices when assembling, maintaining, repairing, mounting, removing, or operating this equipment.

PROTECT AGAINST FLYING DEBRIS

Always wear proper safety glasses, goggles, or a face shield when driving pins in or out, or when any operation causes dust, flying debris, or any other hazardous material.

LOWER OR SUPPORT RAISED EQUIPMENT

Do not work under raise booms without them. Do not use support material made of concrete blocks, logs, buckets, barrels, or any other material that could suddenly collapse or shift positions. Make sure support material is solid, not decayed, warped, twisted, or tapered. Lower booms to ground level or on blocks. Lower booms and attachments to the ground before leaving the cab or operator's station.

USE CARE WITH HYDRAULIC FLUID PRESSURE

Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death. Hydraulic leaks under pressure may not be visible.

- Keep unprotected body parts, such as face, eyes, and arms as far away as possible from a suspected leak. Flesh injected with hydraulic fluid may develop gangrene or other permanent disabilities.
- If injured by injected fluid, see a doctor immediately. If your doctor is not familiar with this type of injury, ask him to research it immediately to determine proper treatment.
- Wear safety glasses, protective clothing, and use a piece of cardboard or wood when searching for hydraulic leaks. **DO NOT USE YOUR HANDS!**

DO NOT MODIFY MACHINE OR ATTACHMENTS

Modifications may weaken the integrity of the attachment and may impair the function, safety, life, and performance of the attachment. When making repairs, use only the manufacturers' genuine parts, following authorized instructions. Other parts may be substandard in fit and quality.

SAFELY MAINTAIN AND REPAIR EQUIPMENT

- Do not wear loose clothing or any accessories that can catch in moving parts. If you have long hair, cover, or secure it so that it does not become entangled in the equipment.
- Work on a level surface in a well-lit area
- Use properly grounded electrical outlets and tools
- Use the correct tools for the job at hand. Make sure they are in good condition for the task required.
- Wear the protective equipment specified by the tool manufacturer.

SAFELY OPERATE EQUIPMENT

Do not operate equipment until you are completely trained by a qualified operator in how to use the controls, know its capabilities, dimensions, and all safety requirements. See your machine's manual for these instructions.

- Keep all step plates, grab bars, pedals, and controls free of dirt, grease, and debris, and oil.
- Never allow anyone to be around the equipment when it is operating.
- Do not allow riders on the attachment or the prime mover.
- Do not operate the equipment from anywhere other than the correct operator's position.
- Never leave equipment unattended with the engine running or with this attachment in a raised position.
- Do not alter or remove any safety feature from the prime mover or this attachment.
- Know your work site safety rules as well as traffic rules and flow. When in doubt on any safety issue, contact your supervisor or safety coordinator for an explanation.

QUALIFIED OPERATOR

- Operators must acquire an appropriate qualification or license to operate skid steer and attachments.
- Operators must be mentally sound and not being affected by drugs or alcoholic drinks while operating the equipment. Alcohol and drugs could reduce alertness and coordination, causing catastrophic accidents with serious personal injury or death. An operator taking prescription or over the counter drugs should seek medical advice as to whether he or she can safely operate the equipment.
- According to OSHA and applicable local regulations, operators must comply with industrial work safety requirements with all necessary protective apparel and equipment such as seat belts, helmets, safety glass, dust masks, heavy-duty gloves, etc.

ENVIRONMENTAL FACTORS

- Avoid working in bad weather, including but not limited to heavy rain, snowing, stormy and windy weather.
- Avoid working on the downhill side of a slope, hill, uneven and slippery ground.
- Beware of above-ground utilities, including power and communication lines, gas, sewer and water pipelines.
- Check the work field thoroughly to avoid or remove obstacles or objects that may cause an imbalance or damages of equipment that could lead to catastrophic accidents

causing serious personal injury or death.

- Do not operate in an environment that is not well-lit.

REMOVING THE TREE SHEAR FROM STEEL CRATE

- Engage the skid steer Quick Tach wedges to the Tree Shear or prime mover and tilt it backward until the Tree Shear mount plate is flush against the Quick Attach loader.
- Lock the levers latch pins in full length through the lower slots of the Tree Shear mount plate.
- Cut off all wires that tie the Tree Shear on the steel crate, unbolt the top frame of the steel crate, and then remove the top frame.
- Lift the Tree Shear out of the steel crate.
- Cut off the nylon straps that tie oil hoses on the Tree Shear and free the hoses.
- Check dust and dirt on the male and female flat face couplers, and wipe off dust and dirt before connecting to the skid steer or prime mover.
- Turn down the skid steer or prime mover engine to deactivate the hydraulic pressure of the auxiliary oil circuit.
- Connect the Tree Shear oil hoses to the skid steer.

BEFORE CUTTING

Read this manual and the manual of the skid steer or prime mover for safely operating the unit, mainly to stop the unit quickly in the event of an emergency.

- Check and replace parts that show signs of wearing.
- Check for loosening bolts, nuts, and pins and tighten.
- Check hydraulic connection for leakage and reconnect or replace if necessary.
- Check if all moving parts are sufficiently greased and apply grease if necessary.
- Check if the Tree Shear is engaged securely onto the skid steer Quick Tach with pins fully engaged.
- Assess if counterweight to improve stability is necessary.

For first time use, make sure that the hydraulic oil is sufficient. Open and close the Tree Shear slowly several times and recheck oil level. Add oil to machine if necessary.

PRECAUTIONS BEFORE CUTTING TREES

Operators should only cut trees inside skid steer cabin or operator's station with seat belts securely fastened. Put on personal protective equipment such as helmet, safety glass, dust mask, etc., As stated in the **QUALIFIED OPERATOR** section.

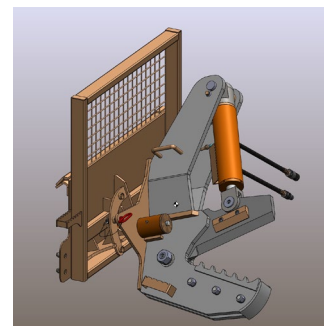
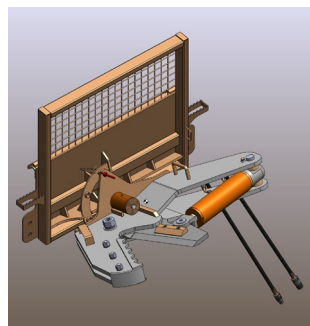
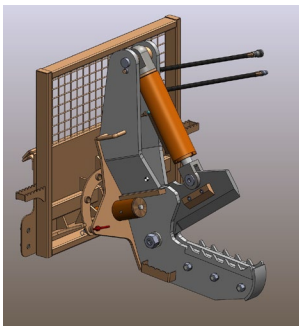
- Do not cut trees with bystanders and livestock within proximity of 120 feet. Stop cutting when bystanders or livestock enter the work area. Flying debris and branches could cause severe injury or death.
- Avoid cutting in the proximity of above-ground utilities. Flying debris and branch could break power, gas, water, sewer lines, etc., leading to electrical shock or fire hazards.
- Do not cut trees where overhead power or communication line is less than 12 feet above. Flying debris and branches could damage these lines causing hazards, severe injury, or death.
- Check the environment carefully, as stated in the **ENVIRONMENTAL FACTORS** section,

to avoid uneven ground, slope, obstacles, bad weather, lighting conditions, etc. to avoid accidents.

- Use counterweight recommended by your skid steer or prime mover dealers to improve stability and balance during operations.

CUTTING TREES

- Begin to cut trees only after taking all the precautions stated in the previous sections.
- Turn the engine to idle speed before engaging auxiliary hydraulic to the Tree Shear.
- Warm up engine for at least 2 minutes before engaging auxiliary hydraulic to the Tree Shear with gradual incremental speed.
- Open and close the Tree Shear a few times to make sure that it functions properly before cutting.
- For maximum shearing power, use full RPM. Using low RPM could lead to blade jamming.
- If the blade jams, do not attempt to remove the jammed debris or branches by hand.
- Use a reasonably long rod to remove the debris. Before unjamming the blade, make sure that the engine is off, and all moving parts come to a complete halt.
- Titan TS005 is adjustable in 3 angles – horizontal, 45°, and vertical. Never attempt to adjust the shear angles when the engine is still running.



Never adjust the shear angle without closing the blade thoroughly.

- To adjust the shear angle, raise the Tree Shear slightly above ground to a comfortable maneuvering height of about 18". Remove the lock pin and Shear Bracket Lock Pin from the pin sleeve. Turn the blade to the desired angle, insert the Shear Bracket Lock Pin to the pin sleeve, and secure the safety pin with the cotter pin.
- Do not attempt to shear trees with a diameter of more than the 12" stated capacity of Titan TS005.
- Titan TS005 is capable of cutting trees up to 12" in diameter. However, a second shear action may require some hardwoods like oak or wood that is wet.
- The Tree Shear is not intended to be used as a puller or bulldozer. Never attempt to pull trees to break away or to push objects on the way. This activity could not only cause damage to the equipment but could cause the skid steer or prime mover to roll over, resulting in severe injury or death.
- Do not fell a tree that is leaning across the line of skid steer or prime mover travel.

DIRECTING THE PROPER FELLING PATH

To determine the desired direction that a tree is to fall is a vital step. There are many factors to consider. Think about the path of the fall and pinpoint potential hazards. When a tree is leaning, it is typically easier to fall the tree in the direction it is already leaning. When working on a slope, there is always a chance that the tree will slide or roll. Always fell the tree so that the base faces the direction of removal.

EVALUATE WORK AREA:

The work area shall be at least two tree lengths of the tree fall. A distance greater than two tree lengths shall maintain on any slope where tree rolling or sliding, or logs is reasonably foreseen. No one should enter the work area until the machine operator has acknowledged that it is safe to do so.

- **WARNING!** Block off the work area from bystanders and livestock, etc. Do not operate the tree shear if people are in the felling area. Stop operation immediately if people or livestock enter the work area.
- **WARNING!** Before exiting the prime mover, lower the attachment to the ground, apply the parking brakes, turn off the engine and remove the key.
- **WARNING!** When shearing a tree on a slope, always approach the tree from an uphill direction. Never attempt to fell a tree from the side or a downhill direction.
- The Titan TSO05 attaches to the quick attach appliance of the skid steer. Thus, thorough knowledge of the skid steer is required for machine operation. Read and understand the skid steer's operator's manual before attempting to use the tree shear.

POTENTIAL HAZARDS: Determine the hazards that exist for the area and types of trees you are working with and eliminate or minimize your exposure to these hazards.

- Turn off auxiliary hydraulic entirely after use.
- Before exiting the skid steer or prime mover, lower the unit to the ground, turn off the engine, remove the key and apply the brakes.
- After cutting, close the blade altogether to avoid potential personal injury when access to the Tree Shear.
- Perform after use inspection and maintenance as described in the **AFTER USE AND MAINTENANCE** in the next section below.

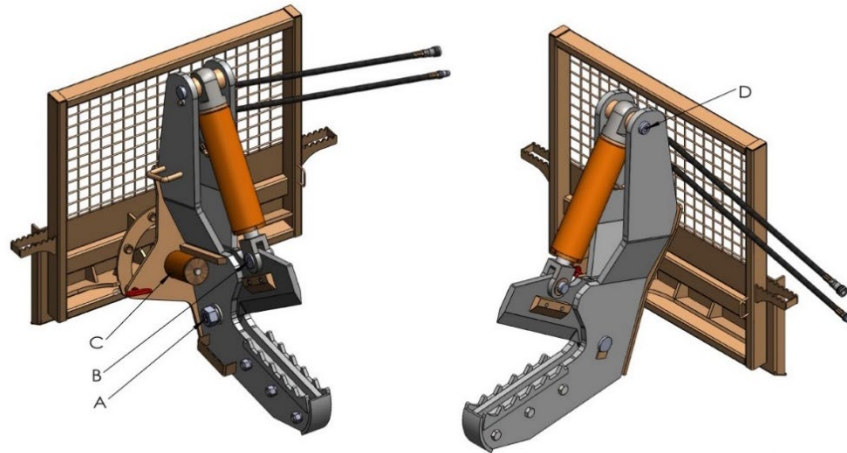
AFTER USE AND MAINTENANCE

- Inspection and maintenance can only be conducted with the engine turned off and auxiliary Pressure completely disengaged.
- Lower the Tree Shear to flat ground, apply brakes, turn off the engine and remove the key.
- Put on personal protective equipment apparel as described in previous sections.
- Each time after use, clean the Tree Shear thoroughly and remove all debris, jams, and clogs in the shear bracket.
- Visually inspect if there are any parts damaged, repair, and replace if necessary.
- Check if there is any loosen or damaged hardware, tighten or replace hardware if necessary.

The minimum torque for tightening hardware is shown below:

- M12: 67 lb. Ft (90 N.m)
- M16: 163 lb. Ft (220 N.m)
- M24: 518 lb. Ft (518 N.m)
- M42: 2960 lb. Ft (4000 N.m)

Lubricate all moving parts. The 4 grease points (A/B/C/D) are shown below:



When the Tree Shear is dry, check places where paint is scratched or worn and repaint.

- Apply antirust oil to surface where necessary.
- Store the Tree Shear in shed and dry place.
- If not functioning properly, always tag "DO NOT OPERATE" until all problems are corrected.
- Never make hydraulic repairs while the system is under pressure. Serious personal injury or death could result.
- Regular and proper lubrication all of moving parts with a quality lubricant is needed for efficient operation of your machine. Neglect leads to reduced efficiency, heavy draft, wear, breakdown, and needless replacement parts.
- All parts provided with grease fittings should be lubricated as indicated. If any grease fittings are missing, replace them immediately. Clean all fittings thoroughly before using the grease gun.

IMPORTANT: Avoid excessive greasing. Dirt collects on exposed grease and greatly increases wear. After greasing wipe off excessive grease from fittings. When the Tree Shear is dry, check places where paint is scratched or worn and repaint.

EVERY 8 HOURS OF OPERATION

- Grease all swivel points thoroughly. Excessive wear and even mechanical damage to pins and cylinders can result from inadequate lubrication. Lubricate all grease fittings with SAE Multi-Purpose grease.
- Check all nuts and bolts; tighten if loose.
- Visually inspect the machine for worn parts or cracked welds. Repair or replace as necessary.

TS005 SPECIFICATIONS

- Overall Dimensions (W x D x H): 55" x 44" x 49"
- Product Weight: 868 lbs.
- Maximum Cutting Diameter: 12"
- Shear Force (at 2320 PSI): 26,400 lbs.
- NM400 hardened Steel Blade
- 3 Shear Angle: Horizontal, 45°, Vertical

SKID STEER OR PRIME MOVER REQUIREMENTS

- Horsepower \geq 25 HP
- Hydraulic Pressure: 2320 – 3625 PSI
- Flow Rate: 12.5 – 31.5 GPM
- Minimum Lifting Capacity: 2000 lbs.
- Minimum Weight: 6500 lbs. (add counterweight when necessary)
- Should be equipped with high impact resistance protective windshield and side shields.

POTENTIAL HAZARD

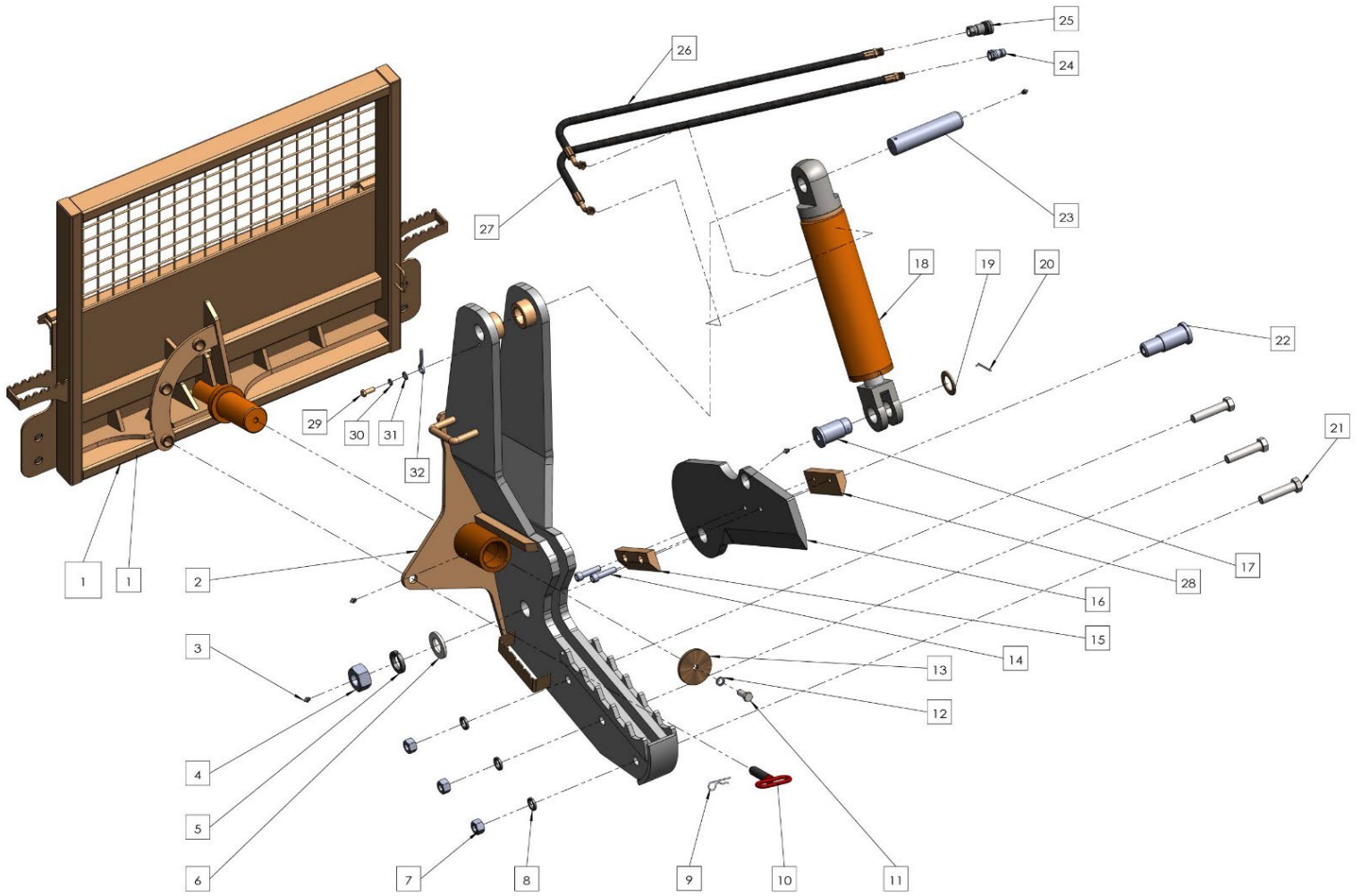
POTENTIAL HAZARDS: Determine the hazards that exist for the area and types of trees that you are working with and eliminate or minimize your exposure to these hazards.

POTENTIAL HAZARD	WAYS TO ELIMINATE, MINIMIZE OR AVOID HAZARD
THROWBACK: As the tree falls through other trees or lands on objects, those objects or branches may get thrown back towards the operator.	If possible, avoid felling into other trees or onto objects.
TERRAIN: If the tree falls onto stumps, rocks, or uneven ground, a hazard may be created.	If possible, move the obstacle, or change the felling direction.
LODGED TREE: A tree that has not fallen completely to the ground because it is lodged or leaning against another tree.	Do not work in the presence of a lodged tree. Have these pushed or pulled down.
WIDOWMAKER: Broken off limbs that are hanging freely in the trees to be felled or in the trees close by.	Knock them down or pull them down. Avoid working underneath them.
SNAG: Standing dead tree, standing broken tree, or a standing rotten tree.	Remove these with a "machine" such as the tree shear, or avoid them by at least two tree lengths.
SPRING POLE: A tree, segment of a tree, limb, or sapling which is under stress or tension due to the pressure or weight of another tree or object.	Use a "machine" or possibly a chain saw to release the tension.
EXTREME WEATHER: Strong wind.	Do not fell trees during high winds.
ENTANGLEMENT: Vines or limbs of other trees intertwined with the limbs of the tree to be felled.	Undo the entanglement if possible, or use a "machine" such as the tree shear to fell the tree.
RESOURCES: Other workers or machines in the immediate area.	Request the workers or machines be moved and block off the work area.
NOTE: Potential hazards and descriptions have been taken from OSHA standard 1910.266 (h)	

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
Blade gets dull too quick.	Blade has contacted solid objects (rocks, steel pipes, etc.)	Clear cutting area of solid objects before hitting them, or raise the shear height to clear exposed rock surfaces.
Blade breaking or bending.	Excessive bending loads.	Do not use this attachment as a tree puller or a skidder. It is designed to shear the trees only.
Skid steer hydraulic oil level goes down during operation.	Leak between skid steer and attachment cylinder.	Investigate and repair.
	Leaks in skid steer hydraulic system.	Investigate and repair.
Hydraulic cylinder not operating.	Insufficient hydraulic flow from the skid steer.	Refer to the skid steer owner's manual and verify hydraulic flow using an inline flow meter or other attachment.
	Cylinder rod bent.	Replace cylinder.
	Cylinder seals damaged.	Replace cylinder seals.
	Obstruction in hydraulic lines.	Remove obstruction and replace if necessary.

PARTS DIAGRAM/EXPLODED VIEW



KEY	DESCRIPTION	QTY
(1)	MAIN FRAME	1
(2)	SHEAR BLADE BRACKET	1
(3)	GREASE ZERK	4
(4)	HEXA NUT M42x3	1
(5)	SPRING WASHER 42	1
(6)	FLAT WASHER M42	1
(7)	HEXA NUT M24	3
(8)	SPRING WASHER M24	3
(9)	COTTER PIN 3x60	1
(10)	SHEAR BRACKET LOCK PIN	1
(11)	HEXA BOLT M16x40	1
(12)	SPRING WASHER M16	1
(13)	BIG WASHER	1
(14)	COUNTERSUNK COLUMN HEAD HEX BOLT M16x60	2
(15)	BLADE GUSSET - LEFT	1
(16)	SHEAR BLADE	1
(17)	PIN SHAFT-2 (TS313)	1
(18)	CYLINDER	1
(19)	FLAT WASHER M45	1
(20)	COTTER PIN 4x63	1
(21)	HEXA BOLT M24x110	3
(22)	PIN SHAFT-1 (TS01-04)	1
(23)	PIN SHAFT-3 (TS314)	1
(24)	PIONEER COUPLER - MALE	1
(25)	PIONEER COUPLER - FEMALE	1
(26)	MAIN HOSE - 2	1
(27)	MAIN HOSE - 1	1
(28)	BLADE GUSSET - RIGHT	1
(29)	HEX BOLT M12x30	1
(30)	SPRING WASHER M12	1
(31)	FLAT WASHER M12	1
(32)	EYE PIN	1

ACKNOWLEDGEMENT OF RISK AND RELEASE OF LIABILITY

The use of any equipment, including this one, involves the potential risk of injury. Apart from any warranty claim that might be presented for a claimed defect in material or workmanship of the product, you accept and assume full responsibility for any and all injuries, damages (both economic and non-economic), and losses of any type, which may occur, and you fully and forever release and discharge Titan, its insurers, employees, officers, directors, associates, and agents from any and all claims, demands, damages, rights of action, or causes of action, present or future, whether the same be known or unknown, anticipated, or unanticipated, resulting from or arising out of the use of said equipment.

This equipment must be used with care by capable and competent individuals under supervision, if necessary.

WARNING



Do not overfill! Mower should be level when checking oil in gear box.



some activities might be able to cause electric shock



Sharp objects may be involved.
Use protective cover during maintenance.

TITAN LIMITED WARRANTY: TERMS, EXCLUSIONS AND LIMITATIONS OF REMEDIES

This product comes with a one (1) year limited warranty that can be found at www.palletforks.com/warranty.html. Please review the same for all details regarding the Titan Limited Warranty.

THE TITAN LIMITED WARRANTY FOUND AT WWW.PALLETFORKS.COM/WARRANTY.HTML IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE, EACH OF WHICH IS HEREBY DISCLAIMED.



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1-800-605-7595

info@palletworks.com
www.palletforks.com

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