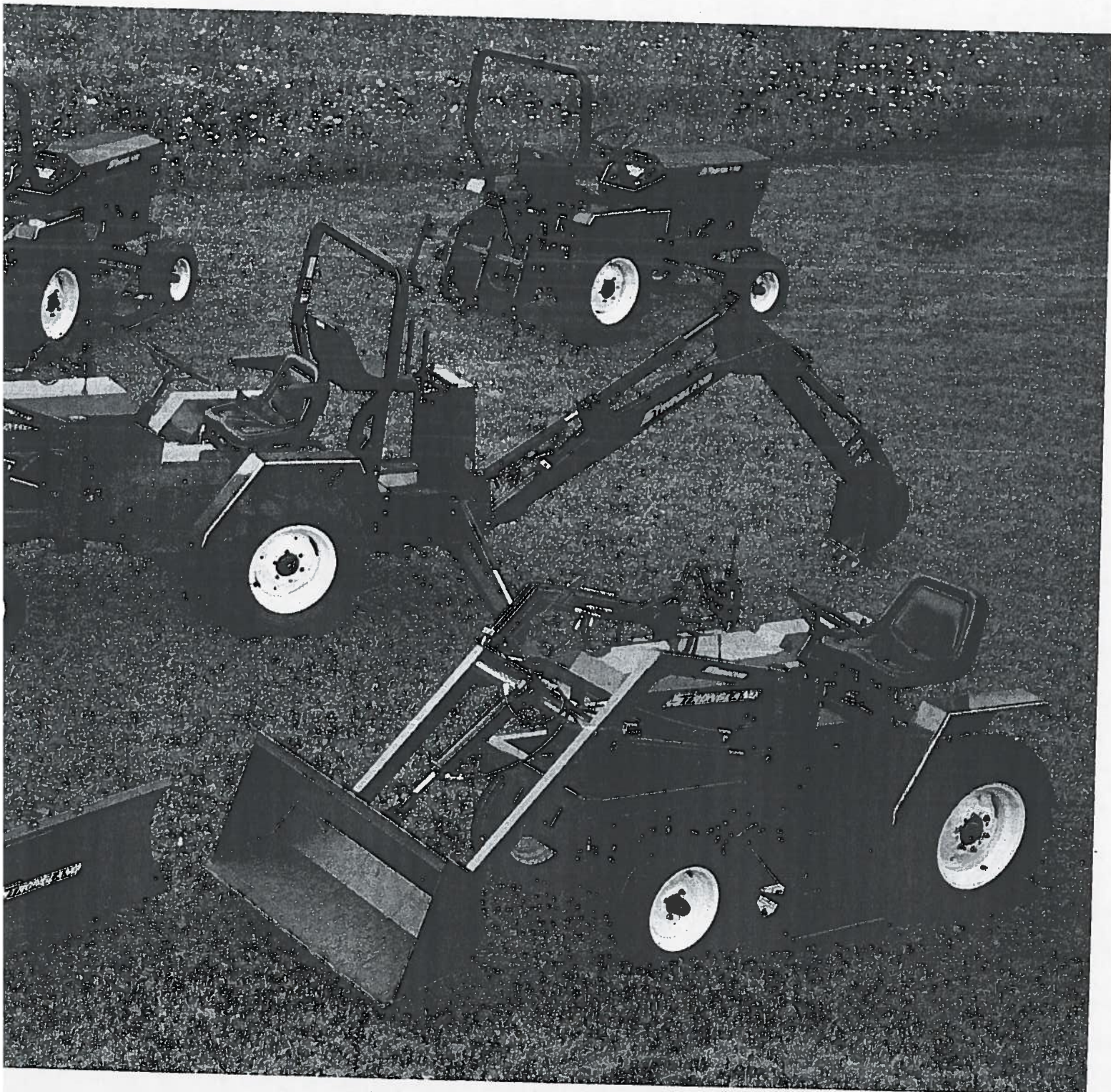


# ***STRONGLAND***™

## **48" and 66" MOWER DECK OWNERS MANUAL**



# **OWNER'S MANUAL**

***STRONGLAND***  
**48" and 66" Mower Decks**



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## Limited Warranty

The Armstrong Tractor Company warrants to the original retail purchaser of the *STRONGLAND* mower that it will either repair or replace any part which proves upon inspection by Armstrong Tractor to have been defective within one year in residential service or 90 days in commercial service of the date of purchase. To verify the warranty period, purchaser should keep the sales receipt or other proof of purchase date. The purchaser shall be required to present the defective parts or equipment for examination at our factory or at the place of business of the *STRONGLAND* dealer from whom the mower was purchased. ***THIS WARRANTY IS EXPRESSLY MADE IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING SPECIFICALLY WITHOUT LIMITING THE GENERALITY THEREOF ANY IMPLIED WARRANTY OF MERCHANTABILITY, AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON OUR PART.***

This warranty shall not cover damage caused by accident, misuse or tampering with the product, and a charge will be made for such repairs. Warranty shall not apply to any part of the mower if it has been improperly installed, altered, repaired or misused in any way that in the opinion of Armstrong Tractor affects the reliability of or detracts from the performance of the mower. Neither does this warranty apply to any part of the mower if its serial number has been altered, defaced or removed; nor does it cover replacements or repairs necessitated by normal wear, loss or damage resulting from any cause beyond the control of Armstrong Tractor including, but not limited to, acts of God, acts of government, floods, fire, shortages of materials and labor difficulties.

Armstrong Tractor will not assume liability for any costs involving labor, altering of design or welding unless prior authorization is granted by Armstrong Tractor. No warranty shall be allowed as to the attachment of the mower to any equipment other than a *STRONGLAND* tractor.

Defects in components purchased by Armstrong Tractor as complete units for installation in or with the *STRONGLAND* mower will only be made good by Armstrong Tractor to the extent that the original manufacturer warrants them to Armstrong Tractor. Standard warranty on all purchased items is replacement only of defective parts upon inspection by the original manufacturer. Armstrong Tractor will not be liable for any operational delays or consequential damages under this warranty.

Armstrong Tractor neither assumes nor authorizes any person to assume for Armstrong Tractor any other obligation or liability in connection with the sale of this mower.

## WARRANTY SERVICE

For warranty service, return your *STRONGLAND* Mower, together with proof of purchase date and serial number, to the *STRONGLAND* dealer from whom the mower was purchased or:

Armstrong Tractor Company,  
Attn. Customer Service Dept.  
One Parks Bend, Box 12  
Vandergrift, PA 15690.

**TRANSPORTATION OF YOUR *STRONGLAND* MOWER TO AND FROM THE LOCATION OF WARRANTY SERVICE SHALL BE AT YOUR SOLE EXPENSE AND RISK.**

# SAFETY INSTRUCTIONS



**A Study this Owner's Manual**



**A Study the Tractor Owner's Manual**



**A Study the Engine Manufacturer's Manual**



**Be Careful and Observe All Safety Precautions**



**Maintain in Good Operating Condition with all Safety Devices Securely in Place**

- Before starting and operating this equipment, carefully study the owner's manuals accompanying the tractor, the mower deck, and any other implement(s) attached to the tractor. Observe all safety precautions. Store this and other manuals in a safe place for future reference.
- Familiarize yourself with the operation of all the controls.
- Know how to stop the tractor, PTO, and engine quickly.
- Never allow anyone to operate the tractor without proper instructions.
- Never allow children to operate the tractor.
- Be alert and exercise extreme caution at all times.
- Always look behind to ensure the area is clear before placing the tractor in reverse, then continue looking behind while backing up.
- To prevent injury, never carry passengers.
- Keep all people and pets a safe distance away.
- When using any attachments, be sure the discharge is directed safely.
- Maintain in good operating condition with all safety devices securely in place.
- Keep away from moving parts.
- Wear sturdy, heavy-soled shoes, and close-fitting clothes that won't get caught in moving parts. Never operate the tractor while wearing athletic shoes or while barefooted. Wear safety glasses during operation, maintenance, or repair of the equipment to protect eyes from foreign objects.
- Keep the engine and hydraulic fluid cooler free of excessive oil and grease, grass, dirt, leaves, and any other debris to reduce the risk of fire hazard and to ensure sufficient cooling.
- Keep all bolts, nuts, screws, and other hardware fasteners tightened.
- Do not change the engine governor setting or over-speed the engine.
- Disengage the electric PTO clutch and fully depress the clutch / brake foot pedal before starting the engine.
- When leaving the tractor, be sure to disengage the electric PTO clutch, lower the attached implements, engage the park brake, stop the engine, and remove the ignition key.
- Use care when pulling loads or using heavy equipment. Limit loads to those that can be safely controlled. Avoid excessive speeds and sharp turns. The maximum capacity of the hydraulic hitch is 700 lbs. at the end of the hitch, and 400 lbs. twelve inches beyond the hitch. Never exceed these limits. The tractor could become unstable and overturn backward.

- Stop and inspect for damage after striking a foreign object. Repair, if necessary, before re-starting and operating the tractor.
- Before performing any equipment adjustment, maintenance, or repair, disengage the electric PTO clutch, engage the park brake, stop the engine, remove the ignition key, and wait for all movement to stop. Disconnect both spark plug wires to prevent accidental starting of the engine. Never perform any equipment adjustment, maintenance, or repair when the engine is hot. Wear safety glasses to protect eyes from foreign objects.
- Check the operation of the brakes frequently, and repair as required.
- When crossing gravel walks, drives, or roadways, or when crossing uneven, rough terrain, disengage the electric PTO clutch and raise the attachments.
- Remain alert and be watchful for holes, ruts, stumps, rocks, or other hidden hazards or irregularities of the terrain that may cause the tractor to overturn.
- Operate the tractor smoothly in order to maintain control. Avoid erratic operation, sharp turns, excessive speed, and sudden starting or stopping.
- If it is necessary to operate the tractor on a slope, exercise extreme care, and observe the following additional precautions for safe operation on slopes:
  - Never operate the tractor on slopes exceeding 15 degrees of incline (approximately 2½ feet of rise every 10 feet). The tractor could become unstable and overturn, possibly resulting in serious injury or death.
  - When operating the tractor on a slope, always travel up and down, never across, the slope. Traveling across a slope could cause the tractor to become unstable and overturn, possibly resulting in serious injury or death.
  - Before operating the tractor on a slope, survey the slope to locate potential hazards. Gullies, ruts, mounds, stumps, rocks, or other irregularities of the terrain may cause the tractor to overturn.
  - Reduce the speed of the tractor when on a slope. Slower speeds allow the operator to safely react to potential hazards. Avoid sharp turns, and exercise caution when changing directions on a slope.
  - Avoid turning when operating the tractor on a slope. If safe operation requires turning, always turn down the slope. Turning up a slope greatly increases the risk of overturning the tractor.
  - Avoid stopping when climbing a slope. If safe operation requires stopping when climbing a slope, start up the slope slowly and smoothly to reduce the risk of the tractor overturning backward. If the tractor fails to climb the slope, disengage the electric PTO clutch, raise the attachments, and slowly back down the slope. Do not attempt to turn around the tractor.
- When mowing, observe the following precautions:
  - Clear the work area of objects likely to be thrown when mowing.
  - Never allow people or pets near the mower discharge chute.
  - Disengage electric PTO clutch and stop engine when a pet or bystander enters the vicinity. A small object could be thrown in any direction by the mower, causing serious injury.
  - Mow only in daylight or if the headlights allow sufficient visibility for safe operation.
  - Never mow at less than half engine speed.
  - Make sure discharge direction is clear before lowering mower deck.
  - Never permanently remove the mower deck discharge chute.
  - Frequently check mower deck blade mounting bolts for tightness.



- Keep blades sharp for efficient operation.
- Before attempting to unclog the mower deck or discharge chute, disengage the electric PTO clutch, engage the park brake, stop the engine, and remove the ignition key. Disconnect both spark plug wires to prevent accidental engine starting. Wait a moment to allow rotation of the mower blades to completely stop.
- Handle gasoline *with care* and *do not smoke* when handling fuel.
  - Use only an approved safety container for fuel.
  - Never remove the fuel tank cap or add fuel to a running or hot engine or fill the tank indoors. Wipe up all spilled fuel. Always use original vented fuel tank cap. Do not run engine indoors; exhaust fumes are dangerous.
- Observe proper, environmentally safe, disposal regulations and laws.
  - Never drain or pour oil or other fluids into the ground, any body of water, or down a drain.
  - Consult your local Environmental Protection Agency, or other ecological authority, to determine the proper disposal method for fluids and other waste material. As a public service, recycling centers, and many automotive repair shops, accept waste material in order to promote the proper disposal, in an environmentally safe fashion. Use only proper containers when draining fluids. Never drain fluids into empty food or beverage containers, as an unsuspecting individual may be tempted to drink the toxic contents. Immediately following the draining of fluids, seal the container, then properly dispose of the container.

## TO THE OWNER

Thank you for purchasing an American-built *STRONGLAND* Tractor and attachment, designed and constructed with the highest quality components and workmanship available. To ensure reliable and economical performance, the recommended operation and maintenance procedures, provided in this manual and the tractor owner's manual, must be followed. Proper maintenance, in accordance with the maintenance section of this manual and the tractor owner's manual, is the responsibility of the owner. With proper care, your tractor and attachment will provide many years of trouble-free service.

Your dealer is concerned with the safety, reliability, and performance of your *STRONGLAND* Tractor and attachment. Qualified, experienced service technicians, trained in the latest methods of tractor and attachment diagnostics and service, are prepared to provide knowledgeable and proper maintenance, adjustment, and repair of your tractor and attachment. Original equipment maintenance and service parts and supplies, available from your dealer, will assure the integrity and reliability of your *STRONGLAND* Tractor and attachment.

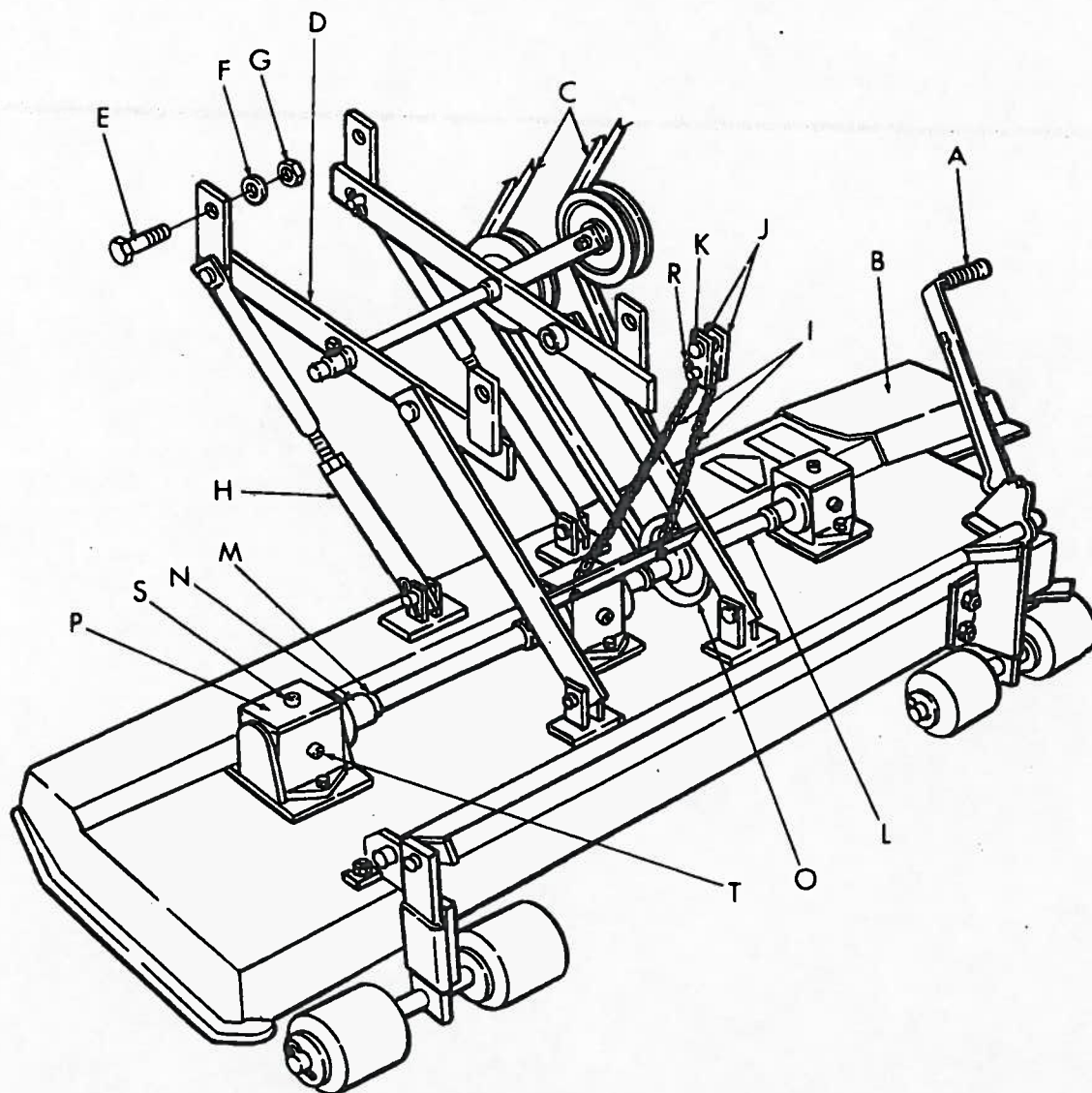
This owner's manual provides the information required for the proper care and maintenance, as well as the instructions required for the safe and efficient operation, of your attachment. Before starting and operating the tractor, study this and the tractor owner's manuals carefully and observe all safety precautions.

### NOTE

The instructions in this manual cover both the 48" and 66" mower decks. The 48" mower deck has three 16" blades and the 66" mower deck has three 22" blades. The lift chains are attached to a metal 'H' bar which is attached to the mower deck and the tractor frame. To provide additional support the 66" mower deck also has a pillow block on the right cross shaft near the mower deck pulley, and an additional deck roller on the front and rear of the deck. Additionally, the 66" mower deck has step plates mounted on each end of the tractor deck to facilitate getting on and off of the tractor.



# MOWER DECK AND INSTALLATION HARDWARE PARTS IDENTIFICATION



- A. Height Adjustment Lever
- B. Discharge Chute
- C. PTO Mower Belt
- D. Mower Hanger Bracket
- E. 3/8 "x 16 x 1 3/4 Bolts
- F. 3/8" Lock Washers
- G. 3/8 x 16 Nuts
- H. Adjustable Mower Links
- I. Mower Lift Chains
- J. Lift Arm Brackets

- K. 3/8 Clevis Pins
- L. Cross Shafts
- M. E-Rings
- N. Couplers
- O. Mower Drive Pulley
- P. Gear Boxes
- Q. Blades (not shown)
- R. Hairpin Cotters
- S. Fill Plug
- T. Side Plug (Fluid Level)

**Figure 1: Mower Deck (48" deck shown)**

# INSTALLATION

## **WARNING**

Before installing the mower deck on the tractor, disengage the tractor electric PTO clutch, engage the park brake, stop the engine, and remove the ignition key. Disconnect both spark plug wires to prevent accidental starting of the engine. Never install the mower deck on the tractor when the engine is hot. Wear safety glasses to protect eyes from foreign objects.


## **WARNING**

The tractor must be parked on a hard, level surface during mower deck installation.

## **WARNING**

When handling the mower deck, use caution to avoid cutting yourself on the sharp blades.

 **A Study the Owner's Manual**

 **A Be Careful and Observe All Safety Precautions**

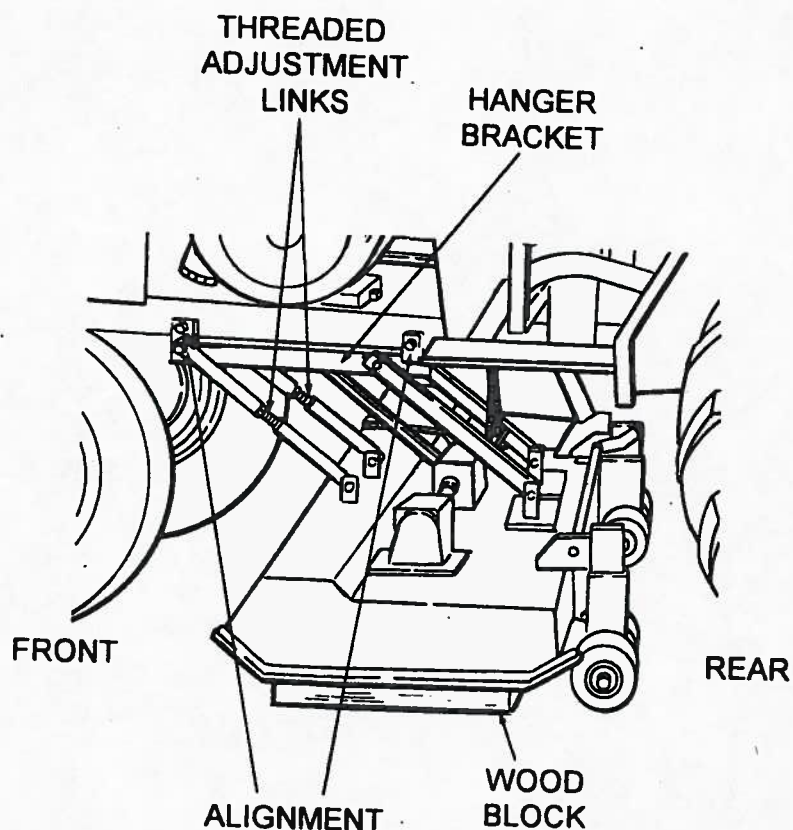
## **NOTE**

Reference to **LEFT** and **RIGHT** are relative to the sides of the tractor when facing forward in the operator's seat.

1. Position the tractor and mower deck on a hard, level surface.
2. Start the tractor engine then lower the mower deck lift arm.
3. Disengage the tractor electric PTO clutch, engage the park brake, stop the engine, and remove the ignition key. Open the tractor hood and disconnect both spark plug wires to prevent accidental starting of the engine. Never install the mower deck on the tractor when the engine is hot. Wear safety glasses to protect eyes from foreign objects.

# MOWER DECK INSTALLATION

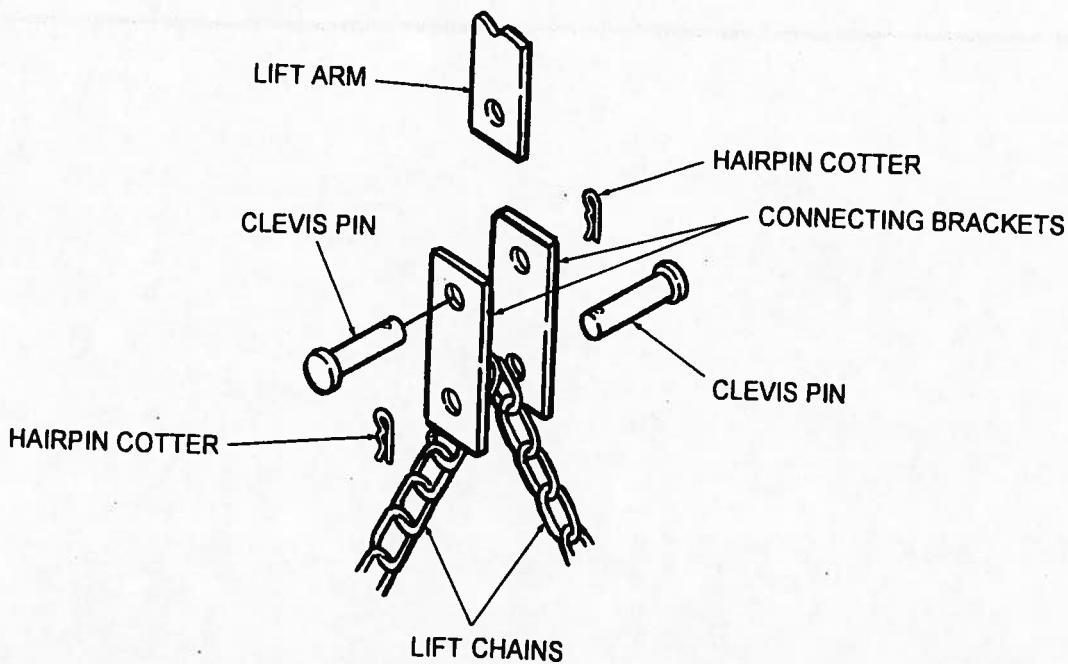
1. Position the mower height adjustment lever at the lowest setting. (See Figure 1)
2. Position the mower deck on the right side of the tractor, midway between the front and rear tires, with the front of the deck facing toward the front of the tractor. When properly positioned, the mower deck rollers face toward the rear of the tractor, and the mower deck discharge chute is on the right side of the tractor. (See Figure 2)
3. Slide the mower deck under the tractor until the mower hanger bracket of the mower deck aligns with the frame of the tractor. (See Figure 2)
4. Raise and level the mower deck by sliding a 2" x 4" block of wood under each side (left and right) of the mower deck. (See Figure 2)
5. Secure the mower hanger bracket to the tractor frame using four 3/8 x 16 x 1 3/4" bolts, lock washers, and nuts. (See Figure 2)
6. The threaded adjustable mower links are used to raise or lower the corresponding left or right front of the mower deck. Adjust the mower deck height, if necessary, to ensure that the height of the left and right front of the mower deck is equal, and is 1/2" higher than the rear of the mower deck. The adjustable mower link must be disconnected at one end to permit clockwise rotation to shorten or counterclockwise rotation to lengthen. (See Figure 2)



*Figure 2*



7. Ensure that the left and right mower lift chains are secured to the mower deck. Ensure that the remaining end of each chain is secured (together) between both lift arm connecting brackets with a 3/8" clevis pin. Secure both lift arm connecting brackets (with the mower lift chains attached) to the tractor lift arm, using a 3/8" clevis pin. When properly attached, a 3/8" clevis pin secures the lift arm between the upper holes of both brackets, and a 3/8" clevis pin secures the left and right mower lift chains between the lower holes of both brackets. (See Figure 3)



**Figure 3**

8. Remove the 2" x 4" blocks of wood from under each side of the mower deck.
9. Adjust the lengths of the mower lift chains, if necessary, to ensure that there is minimal slack in the chains when the mower deck is resting on the ground. The chains should not be so taught, however, as to prevent the mower deck from resting on the ground when the tractor lift arm is lowered fully downward.
10. Open the tractor hood and connect both spark plug wires. Start the tractor engine, then lower the hydraulic hitch, which raises the mower deck lift arm. If the mower deck fails to lift, lower the mower deck lift arm, stop the tractor engine, then remove the ignition key. Shorten the lengths of the mower lift chains as required to provide adequate lift.

#### **NOTE**

On the 74 Series Tractor, the mower brackets are eliminated. The 'H' bar and adjustable front links are attached directly to the pre-drilled holes in the tractors frame.

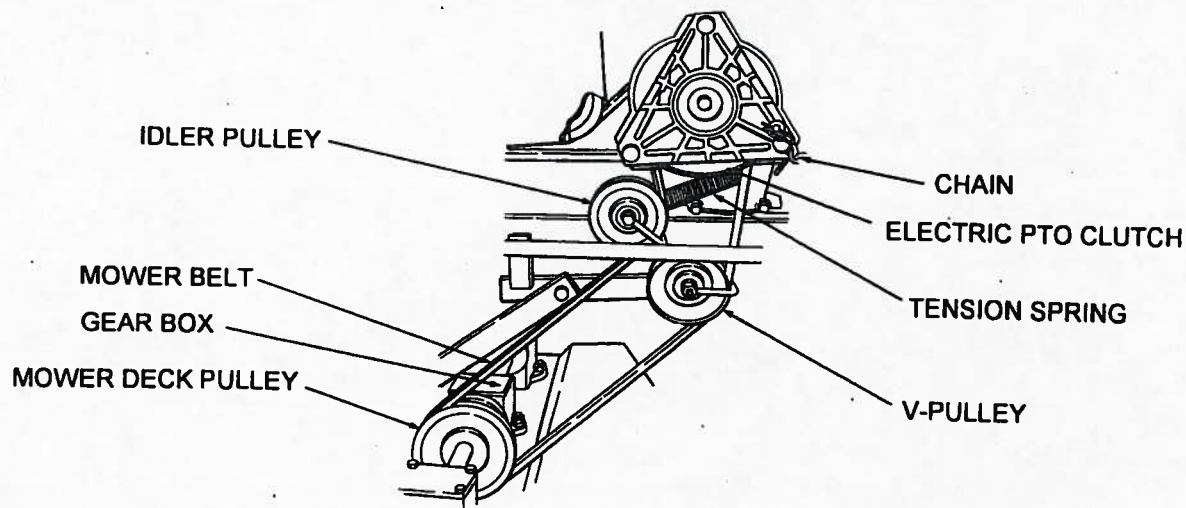
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# PTO MOWER BELT INSTALLATION

## **⚠ WARNING ⚠**

When removed from the mower deck center gear box, the right cross-shaft must never be rotated. Rotation, prior to re-installation, results in mower blade timing disorientation. When properly oriented, both outside blades *must* be parallel, and the center blade *must* be positioned in 90° opposition to both outside blades. This orientation is critical to the safe and proper timing of the blades. Blade timing disorientation may result in blade and/or mower deck damage, and personal injury.

1. From the mower deck right cross-shaft, containing the drive pulley, remove both E-Rings, then slide both couplers back. (See Figure 1)
2. Using extreme care to ensure that the cross-shaft is not rotated, remove the right cross-shaft from the mower deck center gear box (and pillow block, if so equipped, by removing 2 bolts attaching pillow block to deck.). (See Figure 1)
3. Install the PTO mower belt on the mower deck pulley. (See Figure 1)
4. Re-install the right cross-shaft into the mower deck center gear box (and reattach pillow block, if so equipped, using 2 bolts previously removed). Slide both couplers into place and replace both E-Rings. (See Figure 1)
5. Remove the chain from the tractor engine electric PTO clutch, then install the PTO mower belt on the clutch pulley. Replace the chain onto the engine electric PTO clutch. (See Figure 4)



**Figure 4**

6. Install the belt over the V-pulley and flat idler pulley, on the mower hitch hanger. Ensure that the belt is installed between each pulley and its belt retainer. Stretch the tension spring, mounted on the idler pulley bolt, in order to mount the other end of the spring on the engine block bolt. Ensure that the tension spring is mounted on both the engine block bolt and the idler pulley bolt. (See Figure 4)
7. Check pulley alignment. If adjustment is required, refer to your dealer.

# REMOVAL

## **WARNING**

Before removing the mower deck from the tractor, disengage the tractor electric PTO clutch, engage the park brake, stop the engine, and remove the ignition key. Disconnect both spark plug wires to prevent accidental starting of the engine. Never remove the mower deck from the tractor when the engine is hot. Wear safety glasses to protect eyes from foreign objects.


## **WARNING**

The tractor must be parked on a hard, level surface during mower deck removal.

## **WARNING**

When handling the mower deck, use caution to avoid cutting yourself on the sharp blades.

 **A Study the Owner's Manual**

 **A Be Careful and Observe All Safety Precautions**

## **NOTE**

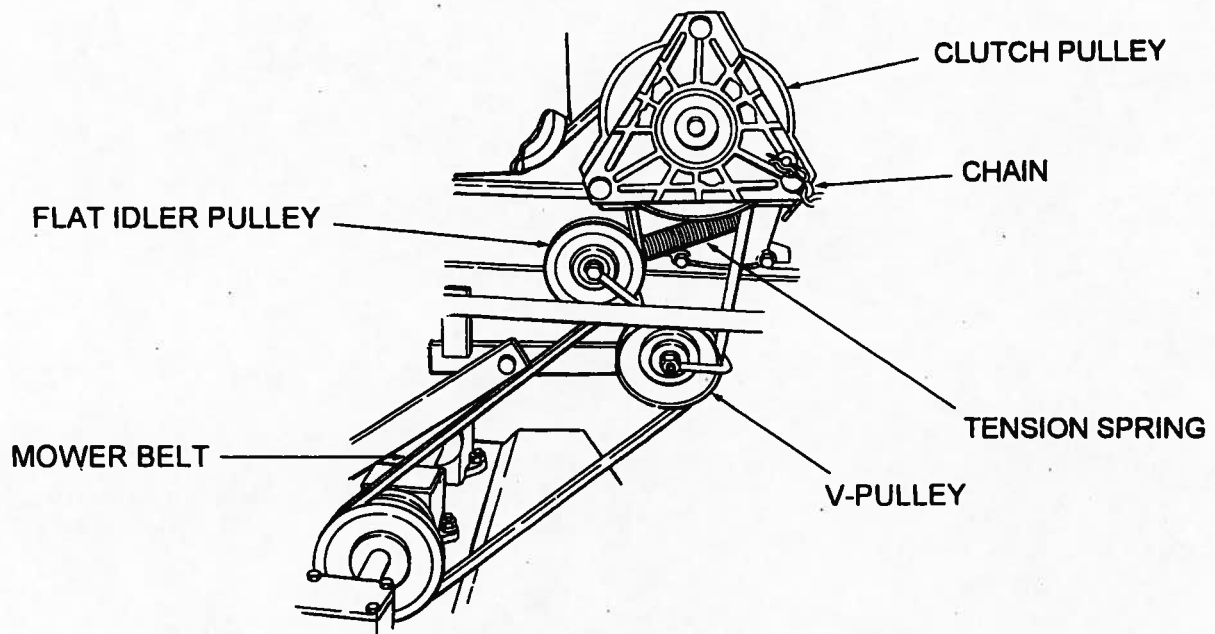
Reference to **LEFT** and **RIGHT** are relative to the sides of the tractor when facing forward in the operator's seat.

1. Position the tractor on a hard, level surface.
2. Start the tractor engine and then lower the mower deck.
3. Disengage the tractor electric PTO clutch, engage the park brake, stop the engine, and remove the ignition key. Open the tractor hood and disconnect both spark plug wires to prevent accidental starting of the engine. Never remove the mower deck from the tractor when the engine is hot. Wear safety glasses to protect eyes from foreign objects.



## PTO MOWER BELT REMOVAL

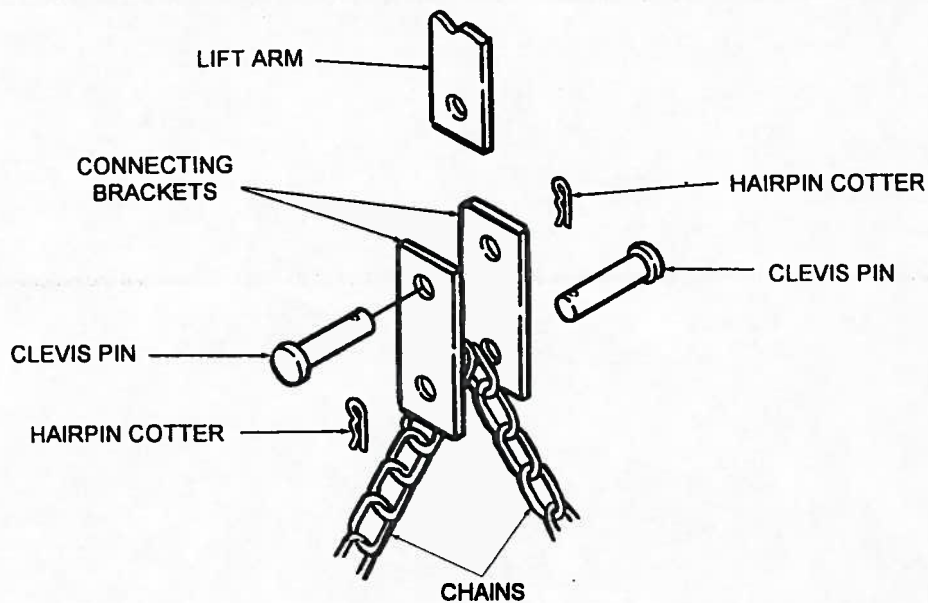
1. Remove the PTO idler pulley tension spring from the engine block bolt. Ensure that the other end of the spring remains secured to the idler pulley bolt, on the mower hitch hanger, or store it in a safe place, for future use. Remove the PTO mower belt from the V-pulley and flat idler pulley, on the mower hitch hanger. (See Figure 5)
2. Remove the chain from the tractor engine electric PTO clutch, then remove the PTO mower belt from the clutch pulley. Replace the chain onto the engine electric PTO clutch. (See Figure 5)



*Figure 5*

## MOWER DECK REMOVAL

1. Position the mower height adjustment lever at the lowest setting.
2. Raise the mower deck by sliding a 2" x 4" block of wood under each side of the mower deck.
3. Remove the upper 3/8" clevis pin securing the lift arm connecting brackets (with the mower lift chains attached) to the lift arm of the tractor. Remove the brackets (with chain) from the lift arm. Replace the 3/8" clevis pin into the upper holes of both lift arm connecting brackets. Keep the chain (with brackets) secured to the mower deck, or store in a safe place, for future use. (See Figure 6)



**Figure 6**

4. Remove the four 3/8" x 16 x 1 3/4" bolts, lock washers, and nuts securing the mower hanger bracket to the tractor frame. Lower the mower hanger bracket away from the tractor frame. Replace the four 3/8" x 16 x 1 3/4" bolts, lock washers, and nuts into the four holes of the mower hanger bracket, or store in a safe place, for future use.
5. Remove the 2" x 4" blocks of wood under each side of the mower deck.
6. Slide the mower deck to the right, clear of the tractor.
7. Open the tractor hood and connect both spark plug wires.
8. Prepare the mower deck for storage as follows:
  - Thoroughly flush the underside of the mower deck using a garden hose.
  - Thoroughly clean the entire mower deck.
  - Completely lubricate all points of lubrication.
  - To reduce the risk of rust and corrosion, touch up paint as required.
 Contact your dealer for assistance.

# OPERATION

## **WARNING**

Read the tractor and this owner's manual before operating the tractor and mower deck. Learn all the rules for safe operation. Improper or careless operation may result in serious injury or death.

- Before starting the tractor and operating the attachment, study the tractor and this owner's manual carefully and observe all safety precautions. Familiarize yourself with the operation of all the controls. Never allow children to operate the tractor. Never allow anyone to operate the tractor without proper instructions. Only adults, well acquainted with the instructions for safe operation, should operate the tractor.
- Be alert and exercise extreme caution at all times. Know how to stop the tractor, PTO, and engine quickly. Always look behind to ensure the area is clear before placing the tractor in reverse, then continue looking behind while backing up.
- To prevent injury, never carry passengers. Keep all people and pets a safe distance away. When mowing, disengage the PTO and stop the engine when a pet or bystander enters the vicinity. A small object could be thrown in any direction by the mower, causing serious injury. Never allow people or pets near the mower discharge chute. Always be sure the mower discharge is directed safely.
- Maintain in good operating condition with all safety devices securely in place. Keep away from moving parts. Before attempting to unclog the mower deck or discharge chute, disengage the PTO, engage the park brake, and stop the engine. Disconnect both spark plug wires to prevent accidental engine starting. Wait a moment to allow rotation of the mower blades to completely stop.
- Operate the tractor smoothly in order to maintain control. Avoid erratic operation, sharp turns, excessive speed, and sudden starting or stopping. Avoid slopes. If it is necessary to operate the tractor on a slope, exercise extreme care, and observe the following additional precautions for safe operation on slopes.



# SLOPE OPERATION PRECAUTIONS

## WARNING

Never operate the tractor on slopes exceeding 15 degrees of incline (approximately 2½ feet of rise every 10 feet). The tractor could become unstable and overturn, possibly resulting in serious injury or death.

## WARNING

When operating the tractor on a slope, always travel up and down, never across, the slope. Traveling across a slope could cause the tractor to become unstable and overturn, possibly resulting in serious injury or death.

- Before operating the tractor on a slope, survey the slope to locate potential hazards. Gullies, ruts, mounds, stumps, rocks, or other irregularities of the terrain may cause the tractor to overturn.
- Reduce the speed of the tractor when on a slope. Slower speeds allow the operator to safely react to potential hazards. Avoid sharp turns, and exercise caution when changing directions on a slope.
- Avoid turning when operating the tractor on a slope. If safe operation requires turning, always turn down the slope. Turning up a slope greatly increases the risk of overturning the tractor.
- Avoid stopping when climbing a slope. If safe operation requires stopping when climbing a slope, start up the slope slowly and smoothly to reduce the risk of the tractor overturning backward. If the tractor fails to climb the slope, disengage the electric PTO clutch, raise the attachments, and slowly back down the slope. Do not attempt to turn around the tractor.

# MOWER DECK OPERATION

## **WARNING**

To reduce the risk of operator injury, and to ensure safe operation, the mower deck is equipped with a safety discharge chute. Never permanently remove the mower deck discharge chute. Never operate the mower deck if the discharge chute is missing.

## **NOTE**

When mowing or using other power take-off (PTO) operated equipment, best performance is achieved with the throttle control lever set at the "FAST" position.

1. With the tractor engine running, set the tractor throttle control lever to the position required to allow the engine to power the anticipated load. When mowing, best performance is achieved with the throttle lever set at the "FAST" position.
2. Lower the mower deck to the ground.
3. Adjust the mower deck to the desired cutting height by disengaging and raising or lowering the height adjustment lever, then engaging the lever into the appropriate slot.
4. Engage the tractor electric power take-off (PTO) clutch, in order to supply belt-driven power to the mower deck.
5. When crossing gravel walks, drives, roadways, or when crossing uneven, rough terrain, disengage the tractor electric PTO clutch, and raise the mower deck.
6. When mowing is completed, disengage the tractor electric PTO clutch and raise the mower deck.
7. Drive the tractor to its storage location, then completely lower the mower deck to allow the deck to rest safely on the surface below. This relieves pressure from the hydraulic system, and prevents possible injury caused by an unexpected drop of mower deck.
8. Before leaving the tractor, disengage the tractor electric PTO clutch, engage the park brake, stop the engine, and remove the ignition key.

# MAINTENANCE

## WARNING

Before performing any equipment maintenance, disengage the tractor electric PTO clutch, engage the park brake, stop the engine, and remove the ignition key. Disconnect both spark plug wires to prevent accidental starting of the engine. Never perform any maintenance when the engine is hot. Wear safety glasses to protect eyes from foreign objects.

## WARNING

To reduce the risk of operator injury, and to ensure safe operation, the mower deck is equipped with a safety discharge chute. Never permanently remove the mower deck discharge chute. Never operate the mower deck if the discharge chute is missing.

## WARNING

When handling the mower deck, use caution to avoid cutting yourself on the sharp blades.

Your dealer is concerned with the safety, reliability, and performance of your STRONGLAND Tractor and attachments. Qualified, experienced service technicians, trained in the latest methods of tractor and attachment diagnostics and service, are prepared to provide knowledgeable and proper maintenance, adjustment, and repair of your tractor and attachments. Original equipment maintenance and service parts and supplies, available from your dealer, will assure the integrity and reliability of your STRONGLAND Tractor and attachments.

1. Disengage the tractor electric PTO clutch, engage the park brake, stop the engine, and remove the ignition key. Open the tractor hood and disconnect both spark plug wires to prevent accidental starting of the engine. Never perform any maintenance when the engine is hot. Wear safety glasses to protect eyes from foreign objects.
2. Frequently check the mower deck blade mounting bolts for tightness. Tighten as required.
3. After each use, thoroughly flush the top and underside of the mower deck using a garden hose.
4. Visually check the mower deck gear boxes daily for obvious leaks. Periodically remove the side pipe plugs from the gear boxes to check the lube levels. Fill the gear boxes with 5 EP gear lube to level of side plug. Replace and tighten the pipe plugs. Refer to dealer for additional maintenance. (See Figure 1)
5. Keep the mower deck blades sharp for efficient operation. Do not attempt to sharpen the mower deck blades yourself. Contact your dealer to arrange for sharpening and balancing, or replacement, of worn mower deck blades.
6. Visually check the PTO mower belt periodically for signs of wear. Replace a worn, brittle, damaged, or broken belt.
7. Upon completion of required maintenance procedures, open the tractor hood and connect both spark plug wires.



# MOWER DECK BLADE REPLACEMENT

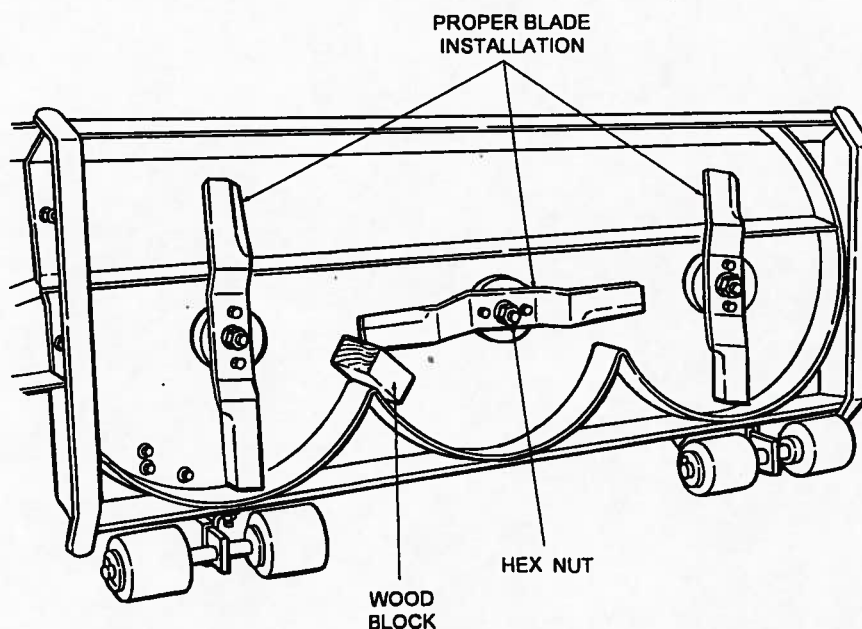
## ⚠ WARNING ⚠

When handling the mower deck, use caution to avoid cutting yourself on the sharp blades.

## ⚠ WARNING ⚠

To avoid personal injury, use care to ensure the stability of the mower deck before attempting to replace the blades.

1. Disengage the tractor electric PTO clutch, engage the park brake, stop the engine, and remove the ignition key. Open the tractor hood and disconnect both spark plug wires to prevent accidental starting of the engine. Never perform any maintenance when the engine is hot. Wear safety glasses to protect eyes from foreign objects.
2. Remove the mower deck from the tractor.
3. Support the mower deck in a stable, safe manner, in order to allow full access to the underside of the deck.
4. Place a block of wood between the mower deck housing and the blade. (See Figure 7)
5. To remove the blade, rotate the hex bolt counterclockwise using a box-end wrench and remove the hex bolt. Remove all three blades.
6. Do not attempt to sharpen the mower deck blades yourself. Contact your dealer to arrange for sharpening and balancing, or replacement, of worn mower deck blades.



*Figure 7*

7. Install the new or sharpened blade onto the spindle hub, ensuring that the cutting edge is in the direction of rotation (Blades are marked grass side). Ensure that both alignment holes of the blade engage both alignment pins of the spindle hub.
8. Place a block of wood between the mower deck housing and the blade.
9. To secure the blade, rotate the hex bolt clockwise using a box-end wrench. Secure all three blades by tightening all three hex bolts to 90 to 110 ft-lbs. Apply pressure to end of blade. There should be no movement between spindle and hex bolt.
10. Apply grease to the hex bolts and exposed spindle threads to reduce rust.

### **WARNING**

When properly installed, both outside blades *must* be parallel, and the center blade *must* be positioned in 90° opposition to both outside blades. This orientation is critical to the safe and proper timing of the blades. Blade timing disorientation may result in blade and/or mower deck damage, and personal injury.

12. To avoid personal injury, ensure that all three blades are secure and in proper orientation, as shown in Figure 7. When properly installed, both outside blades *must* be parallel, and the center blade *must* be positioned in 90° opposition to both outside blades. This orientation is critical to the safe and proper timing of the blades. Blade timing disorientation may result in blade and/or mower deck damage, and personal injury.
13. Upon completion of mower blade replacement, open the tractor hood and connect both spark plug wires.

*All other maintenance should be referred to your dealer.*

# ADJUSTMENTS

*All adjustments should be referred to your dealer.*

Your dealer is concerned with the safety, reliability, and performance of your *STRONGLAND* Tractor and attachments. Qualified, experienced service technicians, trained in the latest methods of tractor and attachment diagnostics and service, are prepared to provide knowledgeable and proper maintenance, adjustment, and repair of your tractor and attachments. Original equipment maintenance and service parts and supplies, available from your dealer, will assure the integrity and reliability of your *STRONGLAND* Tractor and attachments.



# TROUBLE SHOOTING

## **▲ WARNING ▲**

Observe all safety precautions when performing trouble shooting procedures.

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
EXCESSIVE BELT WEAR	<ol style="list-style-type: none"> <li>1. Improper belt alignment</li> <li>2. Improper belt pulley retainer alignment</li> <li>3. Improper belt tension</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to dealer</li> <li>2. Refer to dealer</li> <li>3. Refer to dealer</li> </ol>
LOUD CLANGING NOISE UNDER MOWER DECK	<ol style="list-style-type: none"> <li>1. Blades hitting foreign object</li> <li>2. Blades not properly timed (misaligned)</li> <li>3. Blade alignment pins sheared off</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn off PTO and engine, wait for blade rotation to stop! Clear the object.</li> <li>2. Turn off PTO and engine, wait for blade rotation to stop! Visually check timing of blades, correct as required</li> <li>3. Refer to dealer</li> </ol>
EXCESSIVE VIBRATION	<ol style="list-style-type: none"> <li>1. Blades not properly balanced</li> <li>2. Blades not properly timed (misaligned)</li> </ol>	<ol style="list-style-type: none"> <li>1. Refer to dealer</li> <li>2. Turn off PTO and engine, wait for blade rotation to stop! Visually check timing of blades, correct as required</li> </ol>
STREAKING DOWN CENTER OF CUT LAWN	<ol style="list-style-type: none"> <li>1. Mower deck not level</li> <li>2. Blades are excessively worn</li> <li>3. Gear box improperly installed</li> </ol>	<ol style="list-style-type: none"> <li>1. Level deck</li> <li>2. Refer to dealer</li> <li>3. Refer to dealer</li> </ol>

**NOTE:** Whenever performing maintenance on your equipment, please follow all recommended safety procedures. Wear protective eyewear (safety glasses). Wear long sleeved shirts, long pants and sturdy shoes. When dealing with lubricating or hydraulic fluids follow manufacturers instructions printed on the label.

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