



# 4000 SERIES GRADER BLADES

## OPERATION MANUAL





## Pre-Delivery Checklist

The Dealer should inform the Purchaser of this product of the Warranty terms, provisions, and procedures that are applicable. The Dealer and Purchaser should review the contents of the Operation and Parts Manual including safety equipment, safe operation and maintenance, review the Safety Signs on the implement (and tractor if necessary), and the Purchaser's responsibility to train their operators in correct operating procedures.

- MOUNTED IMPLEMENTS: I have explained that Deflectors, Guards, or Shields must be installed and maintained in good repair, and that the operator is responsible for watching out for persons in the work area.

### PRE-DELIVERY SERVICE CHECK AND ADJUST OR LUBRICATE AS REQUIRED

See Operation and Parts Manual for Details

**Inspection Performed - Warranty and Safety Procedures Explained - Installation Complete**

#### LUBRICATION

- ☐ Grease All Zerk

#### IMPLEMENT

- ☐ Review Procedure to Adjust Grader Blade
- ☐ Make Sure All Hardware is Properly Tightened

#### ATTACHMENTS & INSTALLATION

- ☐ Make Sure All Bolts, Pins, and Nuts are Properly Installed and Tightened

#### IMPLEMENT TO TRACTOR CONNECTIONS

- ☐ Make Sure A-Frame Pivot and Links are Properly Installed
- ☐ Make Sure Lift Arms are Adjusted Equally
- ☐ Complete All Pre-Operation Checks

#### SAFETY ITEMS

- ☐ Make Sure Protective Shields are Properly Installed
- ☐ Review Operation and Parts Manual (Supplied)
- ☐ Make Sure Tractor PTO Shield is Installed
- ☐ Make Sure S.M.V. Sign is Installed, if Needed (Customer Supplied)

I have thoroughly instructed the purchaser on the above-described equipment. This review included the Operation and Parts Manual contents, equipment care, adjustments, safe operation, and applicable warranty policy.

Date\_\_\_\_\_

Dealer Rep. Signature\_\_\_\_\_

The above equipment and Operation and Parts Manual have been received by me, and I have been thoroughly instructed as to equipment care, adjustments, safe operation, and applicable warranty policy.

Date\_\_\_\_\_

Purchaser's Signature\_\_\_\_\_





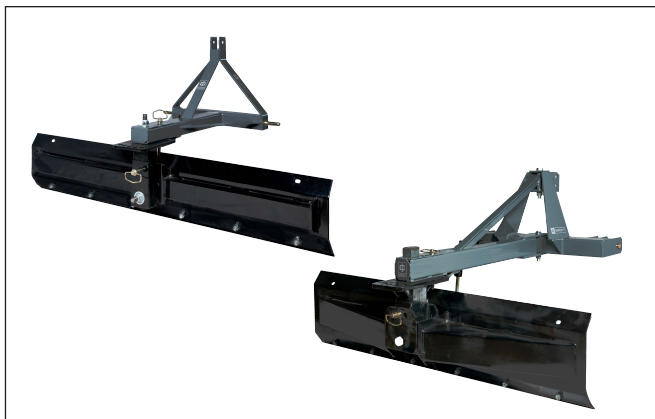
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# 1. INTRODUCTION

## 1.1 Welcome



4300 and 4500 Series Grader Blades

Congratulations on your choice of a IronCraft grader blade. This equipment has been designed and manufactured to meet the needs of discerning users. The IronCraft grader blade is designed to move material for grading, leveling, or backfilling.

Many features incorporated into this grader blade are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the grader blade safely and how to adjust it to provide maximum operating efficiency.

By following the operating instructions in conjunction with a good maintenance program, your IronCraft grader blade will provide many years of trouble-free service.

### This manual covers IronCraft grader blade models:

Model	Description
4104, 4105, 4106, 4107	Economy Series
4204, 4205, 4206, 4207	Slider Blade Series
4304, 4305, 4306, 4307	Standard-Duty Series
4405, 4406, 4407	Offset Blade Series
4506, 4507, 4508	Heavy-Duty Series

## 1.2 Safe Operation

Safe, efficient, and trouble-free operation of your grader blade requires that you, and anyone else who will be using or maintaining the unit, read and understand the information contained within the Owner's Manual.

Use this manual for frequent reference and to pass on to new operators or owners.

### **! WARNING**



#### **Read And Understand Manual**

To prevent personal injury or even death, be sure you read and understand all of the instructions in this manual and other related OEM equipment manuals! The grader blade, if not used and maintained properly, can be dangerous to users unfamiliar with its operation. Do not allow operating, maintaining, adjusting, or cleaning of this grader blade until the user has read this manual and has developed a thorough understanding of the safety precautions and functions of the unit.

This grader blade is designed for the specific purpose of moving material for grading, leveling, or backfilling. **DO NOT** modify or use this grader blade for any application other than that for which it was designed.

Grader blades maintained or operated improperly, or by untrained personnel, can be dangerous; exposing the user and/or bystanders to possible serious injury or death.

## 1.3 Specifications

### Economy Series

Model	4104	4105	4106	4107
Horsepower Required	15 - 25	15 - 30	15 - 35	15 - 35
Working Width	48"	60"	72"	84"
Moldboard Height	13"		14"	
Weight (Lbs.)	158	179	202	223
Angle Adjustment	5 Position, Fwd & Rev			
A-Frame Material	3/8"			
Cutting Edges	6"			
Quick Hitch	YES			
Hitch	CAT I			

### Slider Blade Series

Model	4204	4205	4206	4207
Horsepower Required	15 - 25	15 - 30	15 - 35	15 - 35
Working Width	48"	60"	72"	84"
Moldboard Height	13"	13"	14"	14"
Weight (Lbs.)	162	183	236	257
Angle Adjustment	5 Position, Fwd & Rev			
Offset Adjustment	17" Slide Adj. Left or Right			
A-Frame Material	3/8"			
Cutting Edges	6"			
Quick Hitch	YES			
Hitch	CAT I			

### Standard-Duty Series

Model	4304	4305	4306	4307
Horsepower Required	15 - 30	15 - 35	15 - 40	15 - 40
Working Width	48"	60"	72"	84"
Moldboard Height	13"		14"	
Weight (Lbs.)	178	199	252	276
Angle Adjustment	5 Position, Fwd & Rev			
Tilt Adjustment	3 Position			
A-Frame Material	3/8"			
Cutting Edges	6"			
Quick Hitch	YES			
Hitch	CAT I			

### Offset Blade Series

Model	4405	4406	4407
Horsepower Required	35 - 60	35 - 60	35 - 60
Working Width	60"	72"	84"
Moldboard Height	15.5"		
Weight	323 LBS	340 LBS	358 LBS
Angle Adjustment	5 Position, Fwd & Rev		
Tilt Adjustment	3 Position		
Offset Adjustment	5 Position		
A-Frame Material	3/8"		
Cutting Edges	6"		
Quick Hitch	YES		
Hitch	CAT I		

### Heavy-Duty Series

Model	4506	4507	4508
Horsepower Required	45 - 75	50 - 75	55 - 75
Working Width	72"	84"	96"
Moldboard Height	17"		
Weight	439 LBS	469 LBS	503 LBS
Angle Adjustment	5 Position, Fwd & Rev		
Tilt Adjustment	3 Position		
Offset Adjustment	Ratchet Jack		
A-Frame Material	3/8"		
Cutting Edges	6"		
Quick Hitch	YES		
Hitch	CAT I & II		

Specifications subject to change without notice.

## 1.4 Intended Usage

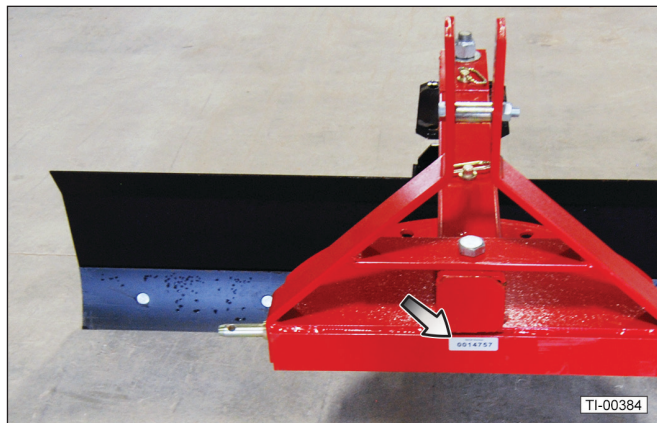
Do not use this grader blade for any other purpose than its intended use of moving material for grading, leveling, or backfilling.

## 1.5 Operator Orientation

The directions left, right, front, and rear, as mentioned throughout this manual, are as seen from the tractor operator's seat and facing in the direction of travel.

## 1.6 Serial Number Location

The serial number decal is located on the front of the frame.



Model Number \_\_\_\_\_

Serial Number \_\_\_\_\_

## 1.7 Product Improvements

Because IronCraft maintains an ongoing program of product improvement, we reserve the right to make improvements in design or changes in specifications without incurring any obligation to install them on units previously sold.

## 1.8 Disposal of Equipment at End of Useful Life

The IronCraft grader blade has been designed for the specific purpose of moving material for grading, leveling, or backfilling. When this unit is no longer capable of doing its designed purpose, it should be dismantled and scrapped. Do not use any materials or components from this unit for any other purpose.

## 1.9 Unanswered Questions

If you have any questions not answered in this manual, require additional copies, or the manual is damaged, please contact your dealer or:

IronCraft  
P.O. Box 649  
232 Industrial Lane  
Decatur, TN 37322

Phone: (423) 405-5150  
Fax: (423) 334-0023

The manual is also available for download at:  
[www.IronCraftco.com](http://www.IronCraftco.com)

1. Select "Products".
2. Select "Grader Blades".
3. Click the "Specs., Manuals, Warranty" tab.
4. Click "Download Manual".

## 2. Safety

### 2.1 General

Safety of the operator and bystanders is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling the equipment.

Most work-related accidents are caused by failure to observe basic safety rules or precautions. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs. As you assemble, operate, or maintain the grader blade (unit), you must be alert to potential hazards. You should also have the necessary training, skills, and tools to perform any assembly or maintenance procedures.

Improper operation and maintenance of this unit could result in a dangerous situation that could cause injury or death.

If you have any questions not answered in this manual, require additional copies, or the manual is damaged, please contact your dealer or:

IronCraft  
P.O. Box 649  
232 Industrial Lane  
Decatur, TN 37322  
Phone: (423) 405-5150  
Fax: (423) 334-0023

### WARNING



**Do not assemble, operate, or maintain the unit until you read and understand the information contained in this manual.**



**Safety precautions and warnings are provided in this manual. If these hazard warnings are not heeded, bodily injury or death could occur to you or to other persons.**

IronCraft cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual are, therefore, not all-inclusive. If a method of assembly, operation, or maintenance not specifically recommended by us is used, you must satisfy yourself that it is safe for you and for others. You should also ensure that the unit will not be damaged or be made unsafe by the methods that you choose.

The information, specifications, and illustrations in this manual are based on the information that was available at the time this material was written and can change at any time without notice.

### 2.2 Safety Alert Symbols



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

This manual contains DANGERS, SAFETY INSTRUCTIONS, CAUTIONS, IMPORTANT NOTICES, and NOTES which must be followed to prevent the possibility of improper service, damage to the equipment, personal injury, or death. The following key words call the readers' attention to potential hazards.

Hazards are identified by the "Safety Alert Symbol" and followed by a signal word such as "DANGER", "WARNING", or "CAUTION".

### DANGER

**Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.**

### WARNING

**Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.**

### CAUTION

**Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.**

### NOTICE

*Indicates that equipment or property damage can result if instructions are not followed.*

### SAFETY INSTRUCTIONS



















**Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.**

**Note:** Contains additional information important to a procedure.

## 2.3 Safety Icon Nomenclature

Pictorial icons signal a type of hazard and warn of personal protection issues, prohibited actions, and hazard avoidance.

### 2.3.1 Personal Protection/ Important Information







-  Read the manual
-  Maintenance procedure
-  Eye protection
-  Fire extinguisher
-  First aid kit
-  Hand protection
-  Head protection
-  Hearing protection
-  Inspect equipment
-  OEM parts only
-  Protective shoes
-  Remove key
-  Set parking brake
-  Stop engine
-  Think safety
-  Transmission in park
-  Use proper support
-  Use proper tools







-  Use two people when lifting heavy objects
-  Visibility
-  Rollover protection
-  Wear seat belt
-  Weight rating

### 2.3.2 Prohibited Actions

-  Do not alter or modify
-  Use proper tools
-  Do not weld
-  No alcohol
-  No drugs
-  No smoking
-  No young children
-  No riders

### 2.3.3 Hazard Avoidance

-    Crush hazard
-  Crush hazard (chock wheels)
-  Crush hazard (foot)
-  Defective or broken part

-  Fall hazard
-  Fire hazard
-  Cutting edge contact hazard (hand)
-  Cutting edge contact hazard (foot)
-  Lifting hazard
-  Pinch point hazard
-  Rollover protection
-  Safety alert symbol
-  Sharp object hazard
-  Slipping injury
-  Tripping injury



## 2.4 General Safety Instructions

The owner/operator is responsible for the SAFE use and maintenance of the grader blade. Make sure anyone who is operating, maintaining, or working around the grader blade is familiar with the operating and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be used while using the grader blade.

In addition to the design features of the grader blade, including safety signs, accident prevention is dependent upon the awareness, concern, prudence, and proper training of the people involved in the operation, maintenance, and storage of the grader blade.

In addition to this safety section, refer also to safety messages and instructions in each of the appropriate sections of the grader blade manual.

These general safety instructions apply to the overall use and maintenance of the grader blade.

More specific instructions on safety are found in the operation, maintenance, and storage sections of this manual. Refer to these sections before performing any of these tasks.

### **WARNING**

Failure to comply with the following safety instructions could result in serious injury and possibly even death if they are not understood and followed.



#### **Provide User with Literature**

IronCraft grader blade owners must provide operator instructions to anyone using the grader blade before use, and at least annually thereafter. Refer to “2.6 OSHA Training Requirements” on page 12.



#### **Stay Clear**

Clear the area of people, especially small children, before using the grader blade. Under no circumstances should young children be allowed to work with or around the grader blade.



#### **Impaired User Hazard**

Do not attempt to assemble, operate, or maintain this grader blade under the influence of drugs or alcohol. Consult your doctor before using this grader blade while taking prescription medications.

### **WARNING**



#### **Crush Hazard**

Do not allow anyone to ride on the tractor or the grader blade. Falling or crushing hazards can result in severe injuries or death.



#### **Damaged Parts Hazard**

Do not use the grader blade if any parts are damaged. If the grader blade has a defect, immediately stop using it and remedy the problem before continuing.

## **CAUTION**

The following safety instructions are provided to help prevent potential injury. Not following these instructions may result in minor to moderate injury.

### **Personal Protection Equipment**

When using this grader blade, wear appropriate personal protective equipment. This list may include, but is not limited to:



- Protective shoes with slip resistant soles
- Protective goggles, glasses, or face shield
- Protective clothing and gloves
- Safety vest (when operating near roads)
- Hearing protection



### **Hearing Loss**

**Prolonged Exposure To Loud Noise May Cause Permanent Hearing Loss!**

Working environments with noise-producing equipment can cause partial to permanent hearing loss. We recommend using hearing protection any time noise levels exceed 80 decibels (dB). Noise levels over 85 dB, on a long-term basis, can cause severe hearing loss. Noise levels over 90 dB over a period of time can cause permanent and even total hearing loss.

Hearing loss from loud noise is cumulative over a lifetime without hope of natural recovery.



### **Crush Hazard**

**The tractor should be equipped with a Roll Over Protective Structure (ROPS)**

**and a seat belt. A crushing hazard can occur if the driver is ejected from the seat while the tractor is in motion. Fasten the seat belt whenever the tractor is moving.**

## **SAFETY INSTRUCTIONS**

The following safety instructions are provided to help prevent injury or limit equipment damage.



### **First Aid Kit**

Have a first aid kit available for use should the need arise and know how to use it.



### **Fire Extinguisher**

Have a fire extinguisher available for use should the need arise and know how to use it.



### **Think SAFETY!**

**Work SAFELY!**

## **2.5 Training**

Anyone who will be using and/or maintaining the grader blade must read, clearly understand, and follow ALL safety, operation, and maintenance information presented in this manual and other related OEM manuals.

If you do not understand any information in this manual, see your dealer or contact IronCraft before proceeding.

Do not use or allow anyone else to use this grader blade until all information has been reviewed. Annually review this manual before the season start-up.

Make periodic reviews of SAFETY and OPERATION of the grader blade a standard practice. An untrained operator is not qualified to use this grader blade.

## **2.6 OSHA Training Requirements**

The following training requirements have been taken from Title 29, Code of Federal Regulations Part 1928.57 (a) (6). [www.osha.gov](http://www.osha.gov).

Operator instructions. At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee who operates an agricultural tractor and implements in the safe operating practices and servicing of equipment with which they are or will be involved, and of any other practices dictated by the work environment.



## 2.7 Federal Laws and Regulations

### **IMPORTANT FEDERAL LAWS AND REGULATIONS CONCERNING EMPLOYERS, EMPLOYEES AND OPERATORS**

This section is intended to explain in broad terms the concept and effect of the following federal laws and regulations. It is not intended as a legal interpretation of the laws and should not be considered as such.

#### **U.S. PUBLIC LAW 91-596 (The Williams-Steiger Occupational Safety and Health Act of 1970) OSHA**

##### **This Act Seeks:**

“ ... to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources ... ”

#### **DUTIES**

##### **Sec. 5(a) Each Employer -**

- (1) shall furnish to each of its employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to its employees.
- (2) shall comply with occupational safety and health standards promulgated under this Act.
  - (b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his or her own actions and conduct.

##### **OSHA Regulations**

Current OSHA regulations state in part: “At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved.” These will include (but are not limited to) instructions to:

Keep all guards in place when the machine is in operation;

Permit no riders on equipment;

Stop engine, disconnect the power source, and wait for all machine movement to stop before servicing, adjusting, cleaning, or unclogging the equipment, except where the machine must be running to be properly serviced or maintained, in which case the employer shall instruct employees as to all steps and procedures which are necessary to safely service or maintain equipment.

Make sure no one is within 300 feet of machinery before starting the engine, engaging power, or operating the machine.

#### **EMPLOYEE TRACTOR OPERATING INSTRUCTIONS:**

1. Securely fasten your seat belt if the tractor has a ROPS.
2. Where possible, avoid operating the tractor near ditches, embankments, and holes.
3. Reduce speed when turning, crossing slopes, and on rough, slick, or muddy surfaces.
4. Stay off slopes too steep for safe operation.
5. Watch where you are going, especially at row ends, on roads, and around trees.
6. Do not permit others to ride.
7. Operate the tractor smoothly - no jerky turns, starts, or stops.
8. Hitch only to the drawbar and hitch points recommended by tractor manufacturers.
9. When tractor is stopped, set brakes securely and use park lock if available.

##### **Child Labor Under 16 Years Old**

Some regulations specify that no one under the age of 16 may operate power machinery. It is your responsibility to know what these regulations are in your own area or situation. (Refer to U.S. Dept. of Labor, Employment Standard Administration, Wage & Home Division, Child Labor Bulletin #102).

## 2.8 Sign-Off Form

IronCraft follows the general Safety Standards specified by the Farm Equipment Manufacturers Association (FEMA), and the American National Standards Institute (ANSI). Anyone who will be using and/or maintaining the grader blade must read and clearly understand ALL safety, operation, and maintenance information presented in this manual.

Do not use or allow anyone else to use this grader blade until all information has been reviewed. Annually review this manual before the season start-up. Make periodic reviews of SAFETY and OPERATION of the grader blade a standard practice. An untrained operator is not qualified to use this grader blade.

This sign-off sheet is provided for your recordkeeping to show that all personnel who will be working with the equipment have read and understand the information in this Operation and Parts Manual and have been instructed in the operation of the equipment.

[illegible]

## **2.9 Operation Safety**

Refer to “4.1 User Safety Training” on page 17 for safety recommendations related to using the grader blade. All applicable safety recommendations in other sections should also be followed.

## **2.10 Transporting Safety**

Refer to “5.1 Transporting Safety (Road)” on page 24 for safety recommendations related to transporting the grader blade. All applicable safety recommendations in other sections should also be followed.

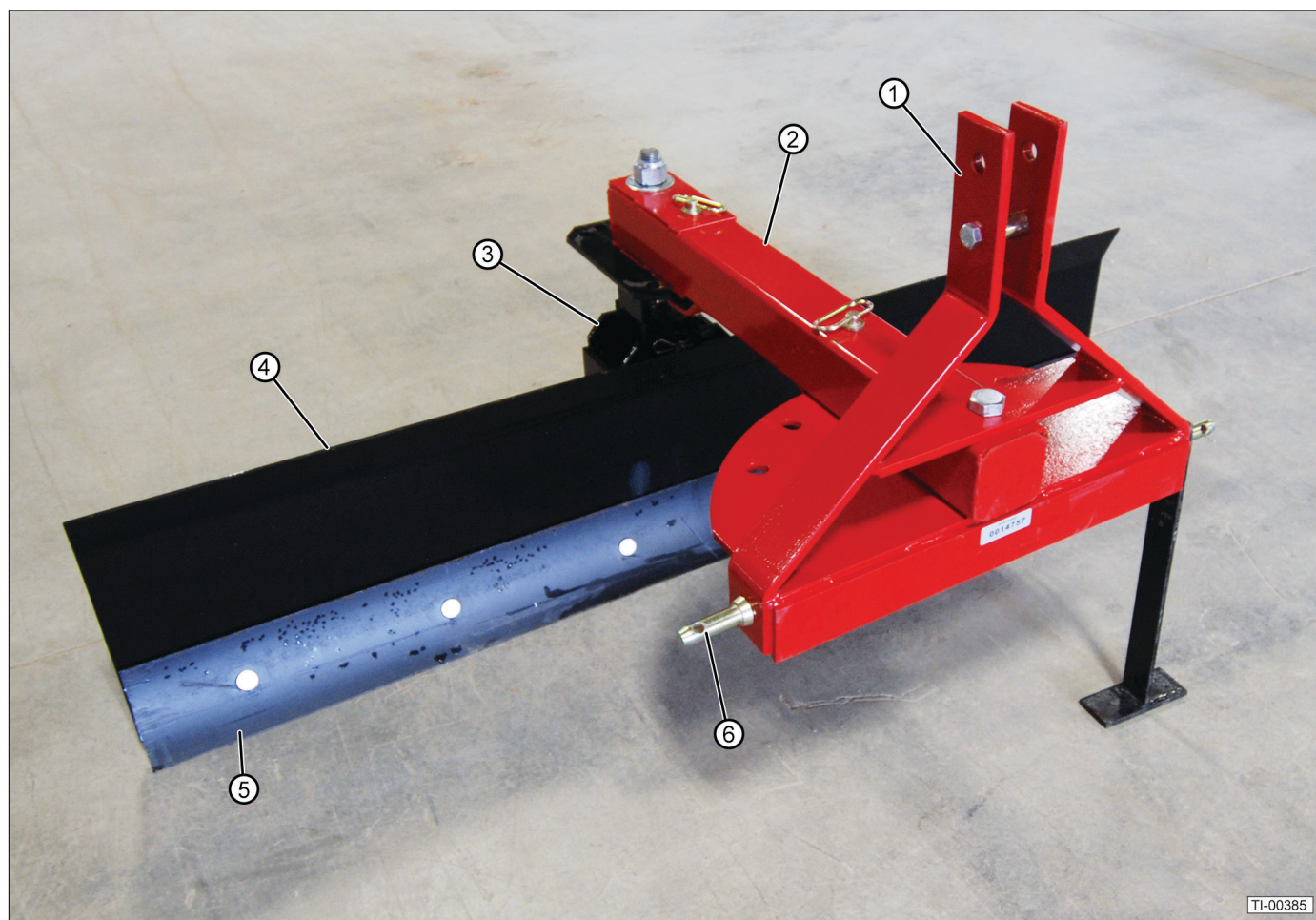
## **2.11 Storage Safety**

Refer to “6.1 Storage Safety” on page 25 for safety recommendations related to storing the grader blade. All applicable safety recommendations in other sections should also be followed.

## **2.12 Maintenance Safety**

Refer to “7.1 Maintenance Safety” on page 26 for safety recommendations related to maintaining the grader blade. All applicable safety recommendations in other sections should also be followed.

### 3. Nomenclature



Item	Description
1	A-Frame
2	A-Frame Tube
3	Stump
4	Moldboard
5	Cutting Edge
6	CAT I 3-Point Hitch Pin

## 4. Operation

### 4.1 User Safety Training

Refer to “2.4 General Safety Instructions” on page 11 for general safety training requirements.

#### **WARNING**



#### **Roll Away Hazard**

Before leaving the tractor seat, make sure the engine is stopped, the transmission is placed in park, the key is removed, and the parking brake is set.



The weight of the tractor, plus the implement if it rolls onto a person, can cause serious crushing injury or death.



#### **Crush Hazard**

The tractor should be equipped with a Roll Over Protective Structure (ROPS) and a seat belt. A crushing hazard can occur if the driver is ejected from the seat while the tractor is in motion. Fasten the seat belt whenever the tractor is moving.



#### **Call 811**

To avoid serious injury or death from contacting underground utilities, call local utilities to mark the location of all underground cables, pipelines, and other hazards in the area.



#### **Stay Clear**

Clear the work area of all unnecessary people and obstructions to prevent personal injury.



#### **Grader Blade Contact Hazard (hand)**

To avoid serious injury or death, keep away from ground-engaging components. Do not put hands under grader blade.



#### **Grader Blade Contact Hazard (foot)**

To avoid serious injury or death, keep away from ground-engaging components. Do not put feet under grader blade.



#### **Operating the Tractor**

Before attaching the grader blade to the tractor, be familiar with its controls and how to stop quickly in the event of an emergency. Read and understand this manual and the one provided with your tractor before operating the grader blade.

#### **SAFETY INSTRUCTIONS**

The following safety instructions are provided to help prevent injury or limit equipment damage.



#### **Train Unfamiliar Users**

It is the grader blade owner's responsibility to make sure any person using the grader blade, especially if it is loaned or rented, has been thoroughly trained on its proper and safe use.

Be certain only physically-able persons will use the grader blade.

Untrained users expose themselves and bystanders to possible serious injury or death.

If the elderly are assisting with the work, their physical limitations need to be recognized and accommodated.

Never allow children to operate equipment.

Do not operate the grader blade, or drive the tractor into material that is burning, or areas that recently burnt and may contain hot spots. Tire damage can occur when driving over hot material. Oil and grease on the tractor and grader blade could ignite, resulting in equipment destruction.



## 4.2 Tractor Requirements



### **WARNING**



#### **Tractor Owner/Operator Manual**

**Always refer to the tractor Operator's Manual to ensure compatibility and maximum safety.**

The tractor used to operate the grader blade must have the power capacity to lift and pull the grader blade at a ground speed between 2 and 5 MPH.

Use the chart to select the tractor horsepower appropriate for your grader blade. Do not use a tractor of more than the recommended HP to prevent damaging grader blade components.

Model	Recommended HP
4100, 4200, 4300 Models	15-45
4400 Models	35-65
4500 Models	50-75

The tractor must be matched to the weight of the grader blade. A minimum of 20% of the combined tractor and equipment weight should be on the front wheels. This will ensure adequate stability during transport and operation.

Operating the grader blade with a tractor that does not meet the following requirements may cause tractor or grader blade damage and be a potential danger to the operator and passersby.

Always review the "controls" section of the tractor Operator's Manual to be familiar with the location, settings, and function of the tractor controls. Be familiar with all controls before using this equipment.

### 4.2.1 Tractor Safety Devices

If transporting or operating the tractor and implement near a public roadway, the tractor must be equipped with proper warning lighting and a Slow Moving Vehicle (SMV) emblem, which are clearly visible from the rear of the unit. Lights and a SMV emblem must be attached directly to the implement if the visibility of the tractor warning signals are obscured.

Never operate the tractor PTO with the PTO master shield missing or in the raised position.

### 4.2.2 ROPS and Seat Belt

#### **WARNING**



#### **Rollover Hazard**

To avoid serious injury or death from falling off tractor, equipment runover, rollover, or crushing:

- 1) Use ROPS equipped tractor.
- 2) Keep ROPS locked in the UP position.
- 3) Only operate the equipment when seated in the tractor seat.
- 4) Always fasten seat belt when operating the tractor and grader blade.

The tractor must be equipped with a Roll Over Protective Structure (ROPS) (tractor cab or roll-bar) and seat belt to protect the operator from falling off the tractor, especially during a roll-over where the driver could be crushed and killed. Only operate the tractor with the ROPS in the raised position and seat belt fastened.

### 4.2.3 3-Point Hitch

These grader blades are designed to be mounted on a tractor CAT I 3-Point or Quick Hitch. The 4500 models are equipped with stepped pins to accommodate CAT I or CAT II hitches.

Refer to the tractor operator's manual for the category of the tractor being used. If the hitch does not conform to ASABE CAT I dimensions, the blade may not fit or raise properly. Consult an authorized dealer for possible modification procedures to mount non-conforming hitches. Depending on the hitch category, certain size pins are used to attach the implement to the tractor. CAT I hitches require 7/8" lower and 3/4" upper diameter hitch pins.

Install the lift arm stabilizer or shorten the stop chains to place the arms into the non-sway configuration. Refer to the tractor manual for details.

### 4.3 Attaching to Tractor

Use caution when connecting the grader blade to the tractor. The grader blade should be securely resting on the ground or setting on blocks. Keep hands and feet from under the blade and clear of pinch points between the tractor hitch arms and grader blade hitch pins.

#### **WARNING**



##### **Crush Hazard**

**Do not allow anyone to stand between the hitch and implement during hook-up operations. Never operate the hydraulic 3-point lift controls while someone is directly behind the tractor.**

1. Shorten or remove the tractor drawbar to avoid interference when raising and lowering the grader blade.
2. Board the tractor and start the engine. Position the tractor with the 3-point lift arms positioned at the same height and to the outside of the grader blade hitch pins.

**Note:** Set the 3-point lift control to “Position Control” so that the lift arms maintain a constant height when attaching the grader blade. See the tractor Operator’s Manual for correct settings when attaching 3-point equipment.

3. Turn off the tractor engine and dismount.
4. One lift arm at a time, insert hitch pin through the lift arm holes and install retaining pin.
5. Walk around to the opposite side and repeat the procedure for the remaining lift arm and hitch pin.
6. Extend or retract the 3-point top link to align its end hole with the hole of the grader blade’s top link. Insert the top link hitch pin and insert the retaining pin into the hitch pin.
7. Adjust any lower link check chains, guide blocks, or sway blocks to prevent the grader blade from swaying side-to-side and possible contact with the tractor rear tires.

### 4.4 Setting the Grader Blade

Properly setting the grader blade is essential for efficient and safe operation. A properly set grader blade will consistently achieve the desired results.

**Note:** The grader blade must be attached to the tractor and raised off the ground to make the following adjustments.

#### **WARNING**



##### **Unexpected Movement Hazard**

**When the adjustment pins are removed, the blade may swing downhill, resulting in severe injury or death from crushing or pinching. Park the tractor on level ground before making any adjustments. Stay clear of moving parts. Keep fingers away from adjustment holes.**

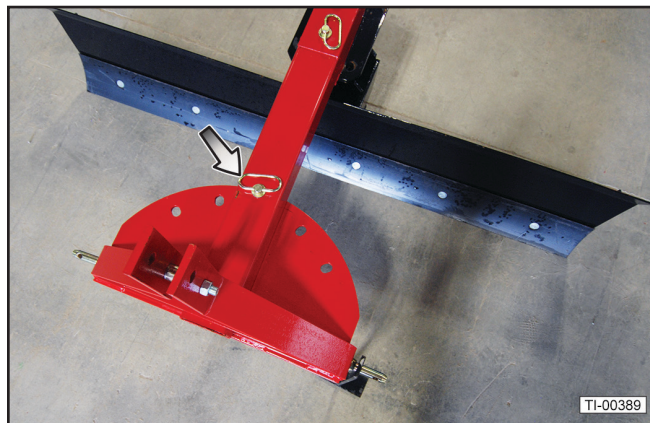
#### 4.4.1 Leveling the Blade

1. Use the adjustment on the tractor 3-point hitch lift arm to level the grader blade from side-to-side.
2. Adjust the top link to level the grader blade from front-to-back.

#### 4.4.2 Setting Blade Offset

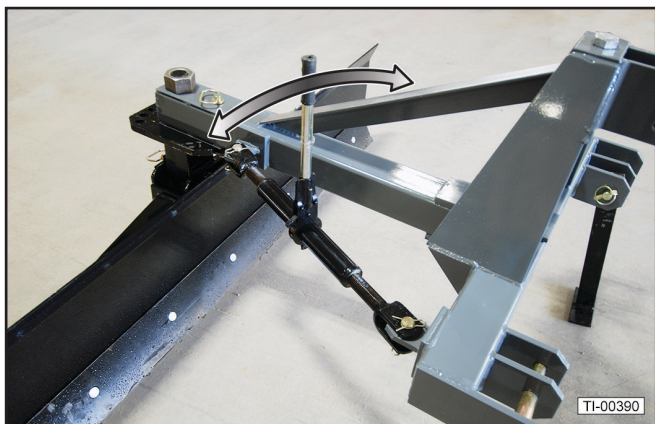
The blade may be offset right or left on the 4400 and 4500 Series.

1. On the 4400 Series blade, remove the hairpin and clevis pin, swing the tube left or right to the desired position, and re-install the pin and hairpin.



4400 Series Grader Blade.

2. On the 4500 series blade, use the ratchet jack to offset the blade as desired.



4500 Series Grader Blade.

#### 4.4.3 Setting Blade Angle

1. On all models, holes are provided for angling the blade on each side of center in 15° increments up to 30°.
2. Remove the hairpin and clevis pin, swing the blade left or right to the desired position, and re-install the pin and hairpin.



#### 4.4.4 Setting Blade Tilt

1. The 4300, 4400, and 4500 Series blades may be tilted 15° either direction. Remove the hairpin and clevis pin, rotate the blade left or right, and re-install the pin and hairpin. The blade may be tilted more by adjusting the tractor's 3-point hitch lower link.



#### 4.4.5 Setting Blade Pitch

Blade pitch can be adjusted by lengthening or shortening the tractor's top center 3-point link. Increasing blade pitch will increase the blade's ability to dig.

Lengthen center 3-point link to increase blade pitch when grading while traveling forward. Shorten center 3-point link to decrease the blade pitch.

If backfilling, shorten the center 3-point link to increase blade pitch and lengthen the center 3-point link to decrease blade pitch.

To help protect the grader blade from damage while backfilling, lengthen the tractor's center 3-point link until the blade moves across the top of the ground without forcing itself into the soil.

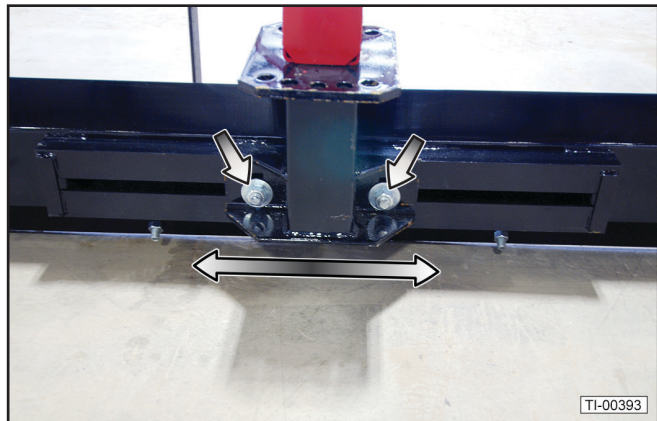
#### 4.4.6 Blade Reversing

1. On all models, holes are provided for angling the blade in the reverse position on each side of center in 15° increments up to 30°.
2. Remove the hairpin and clevis pin, swing the blade left or right to the desired reverse position, and re-install the pin and hairpin.



#### 4.4.7 Blade Slide Adjustment

1. The 4200 Series blade will slide 17" left or right. Loosen the two adjustment bolts, slide the blade to the desired position, and tighten the bolts.






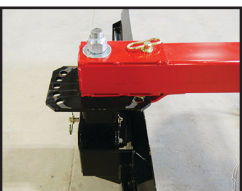
#### 4.4.8 Checking Clearance to Tractor

1. If required, offset the blade to the desired setting. Refer to "4.4.2 Setting Blade Offset" on page 19 for instructions.
2. If required, tilt the end of the blade to the desired setting. Refer to "4.4.4 Setting Blade Tilt" on page 20 for instructions.
3. Raise the blade off the ground and angle it as far as possible towards the right rear tractor tire. Refer to "4.4.3 Setting Blade Angle" on page 20.
4. Return to the tractor and slowly raise the 3-point lift arms fully up and down to make sure the blade does not make contact with the tractor tire, drawbar, or any other equipment on the tractor.
  - a. Move or remove the drawbar if it interferes with the blade.
  - b. Set tractor control lever stop to restrict lifting height if the blade interferes with the tractor tire.

#### 4.5 Initial Setup Checklist

Efficient and safe operation of the grader blade requires that every user read and understand the operational instructions and all related safety instructions outlined in this manual.

This checklist is provided for the user/owner. It is important for both personal safety and to maintain the mechanical condition of the grader blade that this checklist is followed.

Initial Setup Checklist (prior to using for the first time)		
	Location	Task
		Make sure the grader blade is properly mounted to the 3-point hitch. Refer to "4.3 Attaching to Tractor" on page 19.
		Make sure all hardware is properly installed and tightened. Refer to "7.5 Bolt Torque Requirements" on page 28.
		Check the condition of the cutting edge. Refer to "7.3 Cutting Edge Replacement" on page 27.
		Check the Grader Blade setup. Adjust if needed. Refer to "4.4 Setting the Grader Blade" on page 19.

## 4.6 Implement Break-In

Although there are no operational restrictions on the grader blade when used for the first time, it is recommended that the following mechanical items be checked:

1. After 1/2 hour of operation:
  - a. Check all fasteners and tighten if necessary.
  - b. Make sure that the cutting edge is in good condition.
2. After 10 hours of operation:
  - a. Go to the normal servicing and maintenance schedule, as defined in the Maintenance Section.

## 4.7 General Operating Instructions

Familiarize yourself with the Operation and Parts Manual, and make sure the grader blade is properly attached to the tractor before beginning work. Inspect the condition of the cutting edge and the overall grader blade for potential problems or damage. Do not use the grader blade if it needs repairs of any type.

Use only an appropriately-sized tractor to pull the grader blade. Operate the grader blade only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never operate the grader blade in darkness or foggy conditions where you cannot clearly see at least 300 feet. Never operate in an area that you have not inspected and removed debris or foreign material.

Clear the area of bystanders, especially small children. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, power lines, debris, and foreign objects. If you are unable to clearly see these types of items, discontinue operating the grader blade. Thoroughly inspect the work area for stones, branches, debris, buried utility cables, pipelines, sprinkler heads, and any other hard objects that may be struck. Mark the location of objects that cannot be removed. Place grade stakes if you intend to develop a specific grade, soil level, or crown. Watch for trees, low hanging limbs, power lines, and other overhead obstacles while you are operating. Use care to avoid hitting these items.

Contact local utilities before digging. Know the location of all underground cables, pipelines, and other hazards in the area. Visually survey the work site to make sure it is safe and free of foreign obstacles. Also make certain that all irrigation heads, utility outlets, and other obstacles are properly marked. Do not operate the grader blade, or drive the tractor into material that is burning, or areas that recently burnt and may contain hot spots. Tire damage can occur when driving over hot material. Oil and grease on the tractor and grader blade could ignite, resulting in equipment destruction.

A grader blade's primary purpose is grading and leveling. This function is best done at an approximate 2 to 4 MPH ground speed. Simply lower the grader blade to the ground and proceed forward. The grader blade should immediately begin shaving the soil surface.

Uniform distribution and leveling of material can be achieved by setting the grader blade to shave off high spots, allowing accumulated material to flow out under the blade in the low spots.

Always operate safely and remember to follow all the instructions in this manual.

### 4.7.1 Grading

Position the moldboard to the desired angle, tilt, and offset, lower the blade to the ground, and set the tractor's draft-link height control to the desired position.

### **WARNING**



**Unexpected Movement Hazard**  
When the adjustment pins are removed, the blade may swing downhill, resulting in severe injury or death from crushing or pinching. Park tractor on level ground before making any adjustments. Stay clear of moving parts. Keep fingers away from adjustment holes.

Proceed forward at a speed of no more than 2 to 4 MPH. The blade should immediately begin cutting the surface. A blade full of material can be raised slightly so that the material can flow out evenly under the blade to effectively remove high spots and fill in depressions. The greater the blade angle the more quickly the material will be moved to the side. Loose soil can be smoothed out by pushing the soil with the back of the moldboard while backing up.

#### 4.7.2 Edge Work

If the blade is wide enough, material close to fences, buildings, and other obstructions can be graded by offsetting the moldboard to the right or left beyond the tractor tire. Make sure the end of the blade is visible from the operator's position. Always keep a safe distance from obstructions, and stay clear of them when turning. Always be aware that the blade will swing wide in a turn and be ready to stop immediately. Never hit an obstruction as this can damage the blade and/or obstruction.

#### 4.7.3 Ditch Work

Fill ditches by offsetting the blade beyond the tractor wheel to keep the tractor out of the ditch. Angle the blade to move the dirt toward and into the ditch while traveling forward.

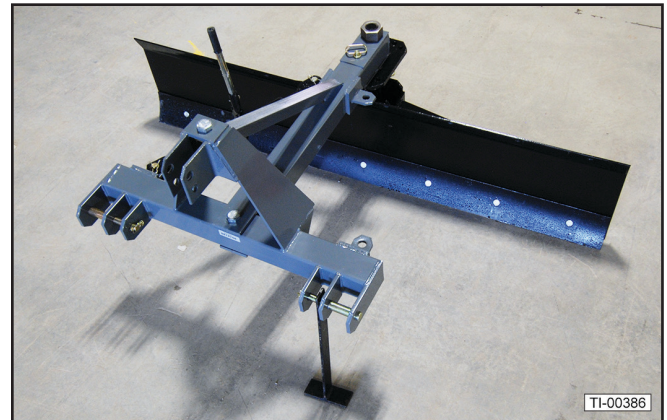
#### 4.7.4 Backfilling

Backfilling is turning the blade around 180° and pushing material while backing up. Be careful not to overstress the grader blade when backfilling as the load on the blade and frame increases when backing up. To help protect the grader blade from damage, lengthen the tractor's center top link until the blade moves across the top of the ground without digging in, do not offset the blade, and set the blade angle at 90° (perpendicular to the frame). Keep the load in the center of the blade, not on the end. Don't ram a load with the blade, and always operate at a low speed when backfilling.

Be cautious when removing snow while backing up, as snow can hide obstructions and there is a temptation to drive too fast in order to get the snow removal job done. High speeds multiply the forces exerted on the blade.

#### 4.8 Detaching From Tractor

1. Move the grader blade to a level storage location. Park the tractor, place the transmission in park or neutral, and apply the parking brake. Lower the grader blade, shut down the engine, and remove the key before exiting the tractor.
2. Make sure the grader blade is resting securely on the ground and the hitch frame is on blocks before attempting to disconnect it from the tractor. Use extreme care to keep feet and hands from under the grader blade and clear of any pinch points caused by the tractor hitch arms and grader blade hitch pins.
3. Extend or retract the tractor 3-point hitch top link to remove tension on the top link hitch pin. When the pin is loose and easy to rotate, remove the pin from the grader blade. Disconnect the lift arms.



**Note:** Support stand not included.



## 5. Transporting

### 5.1 Transporting Safety (Road)

Refer to “2.4 General Safety Instructions” on page 11 for general transporting safety requirements.

#### **WARNING**

The following safety instructions can and will result in serious injury and possibly even death if they are not understood and followed.



#### **Operating the Tractor**

Before attaching the grader blade to the tractor, be familiar with its controls and how to stop quickly in the event of an emergency. Read and understand this manual and the one provided with your tractor before transporting the grader blade.



Transport with the blade centered behind the tractor. An offset blade extends past the tractor farther and risks hitting traffic and other obstructions that can cause serious injury or death.

#### **SAFETY INSTRUCTIONS**

The following safety instructions are provided to help prevent injury or limit equipment damage.



#### **Drive Safely**

Be a safe and courteous driver. Anticipate what other drivers will do and drive accordingly.



#### **Allow Extra Distance**

Apply brakes early. Leave extra distance between your vehicle and the one(s) ahead to provide adequate stopping space. Extra distance will be required to stop the vehicle.



#### **Clear Vision**

Remove all objects from the area that would prevent clear vision of the complete work area or would present an obstacle when moving the grader blade.



#### **Hitch Attachment**

Be sure the grader blade is securely attached to the tractor and in good operating condition before using.



#### **Working Taillights**

Make sure lights on the tractor are working properly.

#### **SAFETY INSTRUCTIONS**



#### **Additional Lighting**

For grader blades without lights, install additional lights on the rear of the tractor to safeguard against rear-end collisions. Daybreak and dusk are particularly dangerous and rear pilot vehicles are recommended. Grader blades without lights should be transported on public roads only during daylight hours.



#### **Hazard Flashers**

Use hazard flashers on the tractor when transporting unless prohibited by law.



#### **Right-of-Way**

When travelling below the posted speed limit, keep to the right and yield the right-of-way to allow faster traffic to pass.



#### **Tractor Owner/Operator Manual**

Always refer to the tractor Operator's Manual to determine its compatibility and maximum safety.



#### **Maximum Transporting Speed**

Do not exceed 20 MPH when transporting the grader blade. Slow down for corners and rough terrain.



#### **Visibility**

Clean reflectors, SMV or SIS sign, and lights before transporting. Make sure all the lights and reflectors required by highway and transport authorities are in place and can be seen clearly by all overtaking and oncoming traffic.



#### **Regulations**

Make sure all local, state, and federal regulations, regarding the transport of equipment on public roads and highways, are met. Check with the local authorities regarding transporting the grader blade on public roads. Obey all applicable laws and regulations.

## 6. Storage

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### 6.1 Storage Safety

At the end of the season, the grader blade should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary downtime at the beginning of the next season.

#### **CAUTION**



##### **Personal Injury Hazard**

Store the grader blade in an area away from human activity. To prevent the possibility of serious injury, do not permit children to play on or around the stored grader blade.



##### **Crush Hazard**

Always set the grader blade on safety stands or on blocks for storage.

#### **NOTICE**

*To prevent damage to the grader blade, store it in a dry, level area.*

### 6.2 Placing In Storage

1. Thoroughly wash the grader blade with a pressure washer or water hose to remove all dirt, mud, or debris.
2. Select an area that is dry, level, and free of debris (inside a building is ideal). Move the grader blade to its storage area.
3. Lower the grader blade onto blocks.
4. Disconnect the grader blade from the 3-point hitch and drive the tractor away from the grader blade. Do not leave the tractor attached to the grader blade. Refer to “4.8 Detaching From Tractor” on page 23.
5. Lubricate all grease points. Make sure all grease cavities have been filled with grease to remove any water residue from washing.
6. Touch up all paint nicks and scratches to prevent rusting.

### 6.3 Removing From Storage

When removing the grader blade from storage, follow this procedure:

1. Before placing the grader blade back into service, replace any worn or defective parts and perform the Pre-Operation Checklist.
2. Attach the grader blade to the tractor 3-point hitch. Refer to “4.3 Attaching to Tractor” on page 19.
3. Raise the grader blade up off the blocks.

## 7. Service and Maintenance

### 7.1 Maintenance Safety

Refer to “2.4 General Safety Instructions” on page 11 for general service and maintenance safety requirements.

#### **WARNING**

The following safety instructions are provided to help prevent serious injury and possibly even death.



#### **Damaged Parts Hazard**

Do not use the grader blade if any parts are damaged. If the grader blade is believed to have a defect which could cause it to work improperly, immediately stop using it and remedy the problem before continuing.



#### **No Unauthorized Modifications**

Do not modify the grader blade or safety devices. Do not weld on the unit. Unauthorized modifications may impair its function and safety and will void the warranty.

If the grader blade has been altered in any way from the original design, the manufacturer does not accept any liability for injury or warranty.



#### **Crush Hazard**

Grader blade components are very heavy and can injure a person should they suddenly fall from a lifting device or improvised supports. Always make certain components are properly secured before lifting and properly supported on the ground before removing lifting device. Always keep feet and other extremities clear of areas where components can fall.



#### **Good Working Condition**

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts.



#### **Replacement Parts**

If replacement parts are necessary, genuine factory replacement parts must be used to restore the unit to its original specifications. IronCraft will not accept responsibility for damages as a result of the use of unapproved parts.

#### **SAFETY INSTRUCTIONS**

The following safety instructions are provided to help prevent injury or limit equipment damage.



#### **Clean Work Area**

Do not leave tools lying around the work area. Follow good shop practices. Keep service area clean and dry. Be sure electrical outlets and tools are properly grounded. Use adequate light.



#### **Use the Right Tools**

Use the correct tools, jacks, hoists, or other tools that have the capacity for the job.



#### **Proper Support**

Use certified safety stands rated to support the load when performing repairs, service, or maintenance.

If the grader blade is not attached to the tractor, place it on blocks or jack stands before performing repairs, service, or maintenance.

If the grader blade is attached to the tractor, set the brakes, remove the key, chock the tractor wheels, and block the grader blade before performing repairs, service, or maintenance.

Tighten the lower 3-point arm anti-sway mechanism to prevent side-to-side movement.

## 7.2 Greasing

The 4500 series grader blades use a ratchet jack for the offset adjustment. Grease the zerks on the ratchet jack every 50 hours. Always use a handheld grease gun for all greasing.



1. Wipe grease zerks with a clean cloth before greasing to avoid injecting dirt and grit.
2. Apply grease until new grease can be seen coming out of the joint.
3. Do not let excess grease collect on or around parts, particularly when operating in sandy areas.
4. Replace any broken grease zerk immediately.
5. If any grease zerk will not take grease, remove and clean it thoroughly. Also clean the lubricant passageway. Replace the zerk if necessary.

## 7.3 Cutting Edge Replacement

The cutting edge is subject to abrasion and wear. It can be removed, turned over, and reattached to present a fresh edge. Replace the cutting edge when both sides are worn out. Always use new plow bolts when replacing the cutting edge.

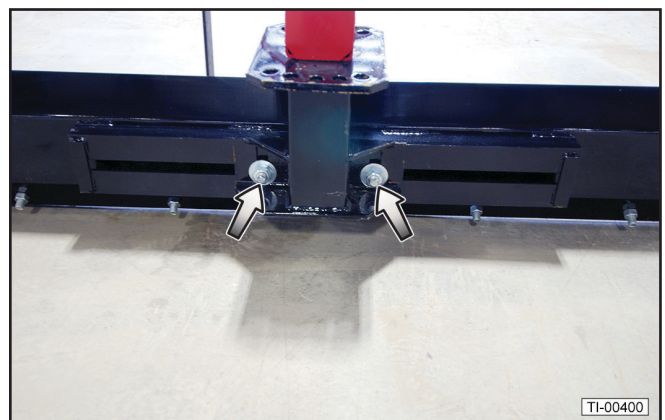
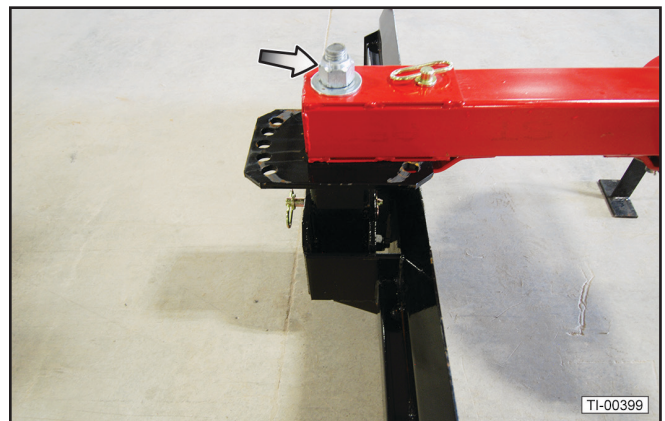
1. Remove the 5/8 x 1-1/2" plow bolts.



2. Install the replacement cutting edge using new plow bolts.

## 7.4 Blade Security

Check the security of the blade pivot nut and the blade offset nuts before using or working around the blade. The moldboard can fall off if the blade pivot nut or blade offset nuts are missing.





## 7.5 Bolt Torque Requirements

It is extremely important to apply and maintain proper torque on all bolts. Use a torque wrench to assure the proper amount of torque is being applied to the fastener.

Start all bolts or nuts by hand to prevent cross threading.

Torque figures indicated in the chart are used for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

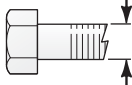
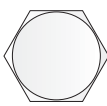


The chart below gives correct torque values for various bolts and cap screws. Tighten all bolts to the torque specified in the chart unless otherwise noted. Check tightness of bolts periodically, using the bolt torque chart as a guide. Always replace hardware with the same Grade bolt.

## WARNING



### EQUIPMENT FAILURE

The torque value for bolts and cap screws are identified by their head markings. Replacing higher "Grade" bolts (Grade 5) with lower Grade bolts will lead to equipment failure and can result in injury or death. Always use replacement bolts with the same Grade markings as the removed bolt.

 Bolt Diameter	English Bolt Torque Specifications					
	Grade 2		Grade 5		Grade 8	
	 No Marking		 3 Radial Lines		 6 Radial Lines	
	N·m	ft.lbs.	N·m	ft.lbs.	N·m	ft.lbs.
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	158	305	220
3/4"	225	165	390	290	540	398
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970



## 7.6 Welding Repairs



Before performing any type of welding repair to the grader blade, contact IronCraft for approval. Repair welding must be done with care and with procedures that may be beyond the capabilities of the ordinary welder.

### **WARNING**



#### **Personal Injury Hazard**

Repairs or modifications to the grader blade can result in serious injury or death should these repairs fail.

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### **NOTICE**

*Anyone performing a welding repair should be certified in accordance to the American Welding Society (AWS) standards.*

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## 7.7 Service Record

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent service.

Copy this page to continue record.

<b>Hours and Serviced By</b>														
<b>Maintenance</b>														
<b>Before Each Use</b>														
Make sure all retainer clips and cotter pins are in place.														
Inspect the cutting edge for wear and damage.														
Make sure the tube/stump nut is secure.														
<b>Annually</b>														
Make sure all fasteners are properly tightened.														
Inspect the cutting edge for wear and damage.														
Make sure the 3-point hitch pins and retainer clips are in good condition. Do not use homemade or shop-made pins.														
Inspect the hitch A-frame and braces for wear and damage.														
Wash the grader blade.														

## 8. Troubleshooting

PROBLEM	CAUSE	SOLUTION
Bent frame while backfilling.	Hitting solid objects.	Check for obstructions before backfilling.
	Moldboard is offset too far.	Align moldboard.
	Load not centered on moldboard..	Keep load in center of moldboard.
	Blade is going too deep.	Lengthen top link of 3-point hitch.
Bent frame or moldboard while making a turn.	Blade is swinging into a solid object while turning.	Stay clear of obstructions while turning. The blade will swing wide when turning.
Bent moldboard.	Hitting solid objects.	Check for obstructions before operating.
	Hitting solid objects with end of moldboard.	Keep moldboard ends well away from solid objects.
Blade does not penetrate soil.	Ground is too hard.	Apply water to surface or wait for rain.
	Cutting edge is dull.	Replace blade.
	Blade pitch is insufficient.	Lengthen top link of 3-point hitch when travelling forward.
Blade penetrates soil too deep.	Blade pitch is excessive.	Shorten top link of 3-point hitch when travelling forward.
Grading is not level.	Tractor's 3-point hitch control is set to "Float".	Set tractor's 3-point hitch control to "Position Control".

## 9. Warranty

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### IronCraft

#### LIMITED WARRANTY

IronCraft (the “Manufacturer”) warrants, only to the original Purchaser, this equipment will be free from defects in material and workmanship, under normal use and service, for one (1) year from the date of purchase providing this equipment is purchased for individual use only. **Commercial use of this equipment is not covered under any warranty.** This warranty does not apply to any equipment which has been damaged or which has been subjected to change, misuse, negligence, abnormal wear and tear, alterations, tampering, or failure to follow operating instructions. This warranty does not cover any product or parts not manufactured by IronCraft.

Under this warranty, the Manufacturer will repair or replace any part which the Manufacturer determines has failed during the period of the warranty due to defects in material or workmanship. After written approval by the manufacturer, the equipment or defective part must be returned to IronCraft.

Warranty coverage and performance is expressly conditioned upon the return of the completed registration form to IronCraft, PO Box 649, Decatur, Tennessee 37322.

IronCraft reserves the right to make improvements and changes in specifications without notice or obligation to modify previously sold units. The Owner’s Manual describes the proper assembly procedures for your implement and furnishes operating and maintenance recommendations to help you obtain long and satisfactory service.

**PURCHASER’S EXCLUSIVE REMEDY FOR BREACH OF WARRANTY, OTHER DEFECT, OR CONDUCT GIVING RISE TO LIABILITY SHALL BE THE REPAIR OR REPLACEMENT OF THE PRODUCT SOLD, AND THE MANUFACTURER UNDER NO CIRCUMSTANCES SHALL BE LIABLE FOR ECONOMIC LOSS OR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THE MANUFACTURER DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR PURPOSE.**

Purchaser and IronCraft hereby (a) submit to the non-exclusive jurisdiction of the courts of competent jurisdiction in Meigs County, Tennessee, and the United State District Court for the Eastern District of Tennessee for resolution of any dispute concerning this Limited Warranty or the rights or obligations of Purchaser and/or IronCraft; (b) agree that any litigation commenced in Tennessee in connection with this Limited Warranty shall be venued in either the Meigs County, Tennessee District Court, or the United States District Court, Eastern District of Tennessee, Southern Division, and (c) waive any objection it may have as to any such action or proceeding brought in such court that such court is an inconvenient forum. Nothing herein shall limit the right of Purchaser or IronCraft (or the right of any permitted successor or assign of either) to bring proceedings against the other in the courts of any other jurisdiction wherein any assets of such other party may be located.



## WARRANTY REGISTRATION FORM

### Grader Blade

THIS REGISTRATION FORM MUST BE ON FILE WITH IronCraft.  
WITHIN **30 DAYS** OF DELIVERY TO PURCHASER, OR WARRANTY CLAIM WILL NOT BE HONORED.

PLEASE COMPLETE REGISTRATION ONLINE

OR RETURN COMPLETED FORM BY E-MAIL, FAX, OR MAIL:

E-MAIL: [warranty@ironcraftco.com](mailto:warranty@ironcraftco.com)

FAX: (423) 334-0023

MAIL: PO BOX 649, DECATUR, TN 37322

MODEL: \_\_\_\_\_ SERIAL #: \_\_\_\_\_ DELIVERY DATE: \_\_\_\_\_

TRACTOR MAKE & MODEL BEING USED WITH ABOVE UNIT: \_\_\_\_\_

PURCHASER'S NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

SELLING DEALER'S NAME: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

**I have read all warranties and agree with these conditions. I agree to read and follow all safety instructions outlined in this manual before operating this grader blade.**

Purchaser's signature: \_\_\_\_\_



## 10. Parts

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Replacement parts are available from your authorized Dealer Parts Department.

Visit our website at

<https://www.ironcraftco.com/parts>

to download the latest Parts Lists from IronCraft

Contact your dealer for more information, or to order your parts.

[illegible]



[illegible]

[illegible]





**P.O. BOX 649  
232 INDUSTRIAL LN.  
DECATUR, TENNESSEE 37322  
PHONE: (423) 405-5150 • FAX: (423) 334-0023  
WEB: WWW.IRONCRAFTCO.COM**

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