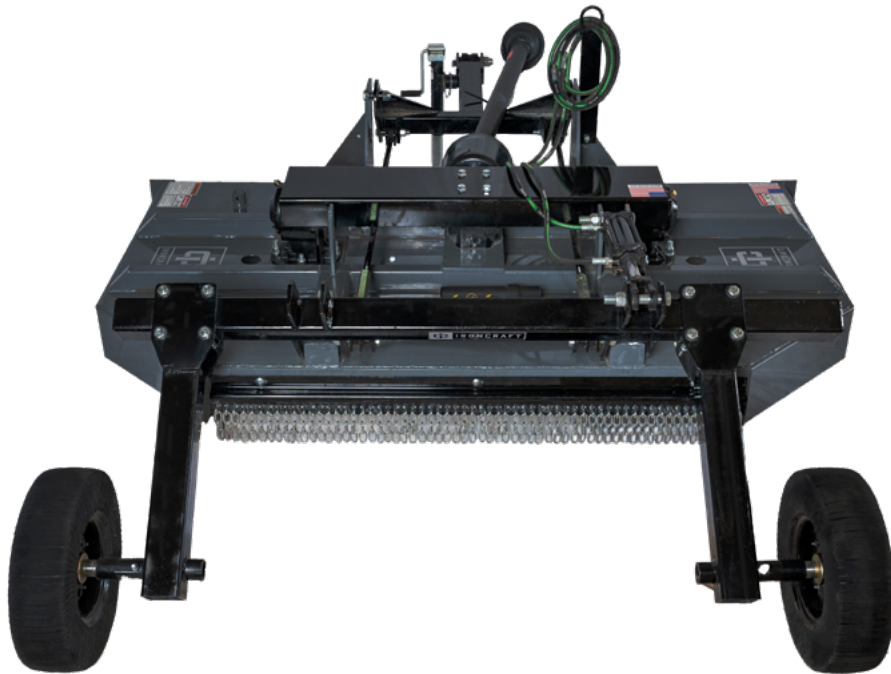




# 1800 SERIES

## ROTARY CUTTERS



### USE AND MAINTENANCE GUIDE

LIFT-TYPE	PULL-TYPE
1808	1808P
1810	1810P



Scan QR code for a digital version of this manual  
Read and understand the manual. This manual provides information and procedures  
to safely operate and maintain the Rotary Cutter.



November 2023

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# REGISTER THIS PRODUCT

[WWW.IRONCRAFTUSA.COM/WARRANTY/REGISTER-WARRANTY/](http://WWW.IRONCRAFTUSA.COM/WARRANTY/REGISTER-WARRANTY/)

PURCHASE DATE

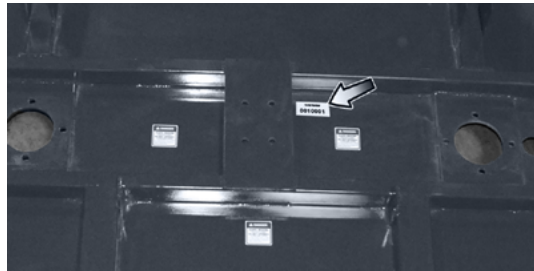
DEALER NAME

ADDRESS

PHONE NUMBER

MODEL

SERIAL



The model number and serial number decals are located to the left of the gearbox.



## “WHY WOULD I WANT TO REGISTER MY MACHINE?”

**HERE'S THE LOWDOWN. YOU NEED TO REGISTER YOUR NEW PRODUCT WITHIN 30 DAYS OF DELIVERY. WITHOUT REGISTRATION, YOUR WARRANTY CLAIMS WILL NOT BE HONORED.**

Registering your machine means you get the full benefits of the warranty terms we offer.

Scan this QR code to our warranty page and select the “REGISTER” tab for an easy-peasy process.

**You'll be glad you did.**



# THANK YOU

Dear Owner:

Congratulations on your choice of an Ironcraft rotary cutter. This equipment has been designed and manufactured to meet the needs of discerning users. The Ironcraft rotary cutter is designed to cut grass, weeds, and brush.

Many features incorporated into this rotary cutter are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the rotary cutter safely and how to set it to provide maximum cutting efficiency.

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

Sincerely,



The Ironcraft Team

# INTRODUCTION

## 2.1 SAFE OPERATION

Safe, efficient, and trouble-free operation of your rotary cutter 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 rotary cutter, 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 rotary cutter until the user has read this manual and has developed a thorough understanding of the safety precautions and functions of the unit.

This rotary cutter is designed for the specific purpose of cutting grass, weeds, and brush. DO NOT modify or use this rotary cutter for any application other than that for which it was designed.

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



### WARNING

#### SAFETY SHIELDS

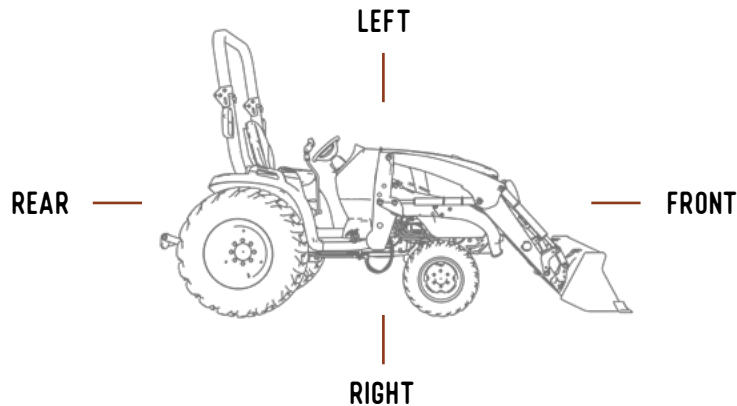
Some of the illustrations in this manual may show the equipment with safety shields removed for clarity. Never operate the rotary cutter unless all safety shields are in place.

## 2.2 INTENDED USAGE

Do not use this rotary cutter for any other purpose than its intended use; cutting grass, weeds, and brush.

## 2.3 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.



## 2.4 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.

## 2.5 DISPOSAL OF EQUIPMENT AT END OF USEFUL LIFE

The Ironcraft rotary cutter has been designed for the specific purpose of cutting grass, weeds, and brush. 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.

## 2.6 UNANSWERED QUESTIONS

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

Ironcraft  
7 rocky MT Rd, Athens, Tennessee 37303  
[www.ironcraftusa.com](http://www.ironcraftusa.com)  
Phone: (423) 405-5150

# SAFETY INFORMATION

## 3.1 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 rotary cutter (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.



### WARNING

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



### NOTICE

Safety precautions and warnings are provided in this manual and on the unit. 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 and on the unit 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.



## 3.2 SAFETY SYMBOLS

This manual and decals on this machine use safety symbols, pictograms and color coded signal words to alert you to potential hazards that may cause death or severe injury if a safety instruction is ignored. Become familiar with the following symbols.



### SAFETY ALERT SYMBOL

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

### HAZARD CLASSIFICATIONS

Hazards are identified by the “Safety Alert Symbol” and followed by the signal word “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 a situation which may cause damage to equipment or property. Messages are not related to personal injury.






















### SAFETY INSTRUCTIONS







Indicates specific safety-related instructions or procedures.

## 3.3 SAFETY ICON NOMENCLATURE

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

### PERSONAL PROTECTION / IMPORTANT INFORMATION





-  Read the manual
-  Maintenance procedure
-  Damaged hazard label
-  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
-  Think safety
-  Transmission in park
-  Stop engine
-  Use proper support
-  Use proper tools

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

### PROHIBITED ACTIONS

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

### HAZARD AVOIDANCE

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

-  Entanglement hazard
-  Explosive force hazard
-  Explosive separation hazard
-  Fall hazard
-  Fire Hazard
-  Cutter blade contact hazard (hand)
-  Cutter blade contact hazard (foot)
-  Lifting hazard
-  Cutting hazard
-  Pinch point hazard
-  Projectile hazard
-  Rollover protection
-  Safety alert symbol
-  Safety shields
-  Sharp object hazard
-  Slipping Injury
-  Tire pressure
-  Tripping injury

## 3.4 GENERAL SAFETY INSTRUCTION

The owner/operator is responsible for the SAFE use and maintenance of the rotary cutter. Make sure anyone who is operating, maintaining, or working around the rotary cutter 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 rotary cutter.

In addition to the design features of the rotary cutter, 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 rotary cutter.

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

These general safety instructions apply to the overall use and maintenance of the rotary cutter.

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



### 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 Ironcraft rotary cutter, 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 rotary cutter until the user has read this manual and has developed a thorough understanding of the safety precautions and functions of the unit.

This rotary cutter is designed for the specific purpose of cutting grass, weeds, and light brush. DO NOT modify or use this rotary cutter for any application other than that for which it was designed.

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



## WARNING



### PROVIDE USER WITH LITERATURE

Ironcraft rotary cutter owners must provide operator instructions to anyone using the rotary cutter before use, and at least annually thereafter. Refer to “OSHA Training Requirements”.



### STAY CLEAR

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



### IMPAIRED USER HAZARD

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



### CRUSH HAZARD

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



### FALLING HAZARD

Do not allow riders on the hitch, tractor, or rotary cutter at any time. Falling can result in severe injuries or death.



### NO UNAUTHORIZED MODIFICATIONS

Do not modify the rotary cutter or safety devices. Do not weld on the unit. Unauthorized modifications may impair its function and safety. Personal injury or death can result from unauthorized modifications.



If the rotary cutter has been altered in any way from the original design, Ironcraft does not accept any liability for injury or warranty.



### DAMAGED PARTS HAZARD

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



### THROWN OBJECTS HAZARD

The rotary cutter can throw objects up to 300 feet. To avoid serious injury or death: Keep all thrown object shielding in place.

Inspect area for potential thrown objects before cutting.

Do not operate the rotary cutter with the deck raised.

### SAFETY SHIELDS

Some illustrations in this manual show the equipment with safety shields removed to provide a better view. This equipment should never be operated with any necessary safety shielding removed.



## CAUTION

The following safety instructions are provided to help prevent potential injury. Not following these instructions may lead to injury.



### PERSONAL PROTECTION EQUIPMENT



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



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



### 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.



### EAR PROTECTION

Wear suitable ear protection during prolonged exposure to excessive noise.



### 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.



## SAFETY INSTRUCTIONS

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



### SAFETY SIGNS

Replace any missing or hard-to-read safety signs or instructional labels. Use care when washing or cleaning the rotary cutter.

Replacement safety sign locations and part numbers are provided in this manual and are available from an authorized dealer parts department or the factory.



### 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!

## 3.5 TRAINING

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

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 rotary cutter until all information has been reviewed. Annually review this manual before the season start-up.

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

## 3.6 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.

## 3.7 FEDERAL LAWS AND REGULATIONS

### IMPORTANT FEDERAL LAWS AND REGULATIONS

#### CONCERNING EMPLOYERS, EMPLOYEES AND OPERATORS

This sections 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).

## 3.8 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 hydraulic reservoir system 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 rotary cutter until all information has been reviewed. Annually review this manual before the season start-up.

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

This sign-off sheet at the end of this manual is provided for your record keeping to show that all personnel who will be working with the equipment have read and understand the information in this Operator's Manual and Parts Book and have been instructed in the operation of the equipment.

## 3.9 OPERATION

Refer to the Operation Section for safety recommendations related to operating the rotary cutter. All applicable safety recommendations in other sections should also be followed.

## 3.10 TRANSPORTING

Refer to the Transporting Section for safety recommendations related to transporting the rotary cutter. All applicable safety recommendations in other sections should also be followed.

## 3.11 STORAGE

Refer to the Storage Section for safety recommendations related to storing the rotary cutter. All applicable safety recommendations in other sections should also be followed.

## 3.12 MAINTENANCE

Refer to the Service and Maintenance Section for safety recommendations related to maintaining the rotary cutter. All applicable safety recommendations in other sections should also be followed.



# SAFETY SIGNS AND INSTRUCTIONAL LABELS

## 4.1 GENERAL INFORMATION

The types of safety signs (hazard labels) and instructional labels, along with their locations on the equipment, are shown in the following illustrations. Good safety practices require that you familiarize yourself with the various safety signs, the type of warning, and the area or particular operation related to that area that requires your SAFETY AWARENESS.

### THINK SAFETY! WORK SAFELY!

Pay close attention to the safety signs and instructional labels attached to the tractor and the rotary cutter. Duplicate safety signs, which are attached to the rotary cutter, can also be found in this section. If the rotary cutter is missing a label or one is unreadable, replace the label before using the rotary cutter.

### SAFETY SIGNS AND INSTRUCTIONAL LABELS

Replace any missing or hard-to-read safety signs or instructional labels. Use care when washing or cleaning the reservoir system.



#### SAFETY SIGNS

- Keep safety signs or instructional labels clean and legible at all times. Use a clean, damp cloth to clean safety decals.
- Replace any missing or hard-to-read safety signs or instructional labels.
- Use care when washing or cleaning the equipment not to remove or damage the labels. When using a pressure washer to clean the unit, avoid spraying too close to decals; high-pressure water can enter through very small scratches or under edges of decals causing them to peel or come off.
- Locations for the labels and replacement part numbers are shown in this section.
- Replacement parts must have replacement labels attached during installation and/or before the reservoir system is used.
- Labels are available from your authorized dealer at no charge.

## 4.2 HOW TO INSTALL REPLACEMENT SAFETY SIGNS



### NOTICE

Do not install the signs if the temperature is below 50°F (10°C).

1. Clean and dry the installation area.
2. Determine the exact position before you remove the backing paper.
3. Remove the backing paper.
4. Align the sign over the specified area and carefully press the sign to the part/frame.



### NOTICE

Small air pockets can be pierced with a pin and smoothed out using the piece of backing paper.

# 4.3 SAFETY SIGNS

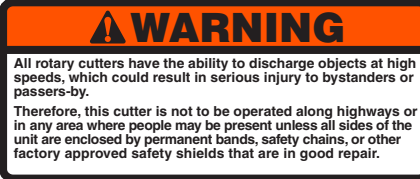
The safety decals affixed to this machine are to keep you safe. DO NOT ignore these decals. Read and understand each decal's safety message. Follow these Safety Decal Instructions:

1. 

4. 


7. 

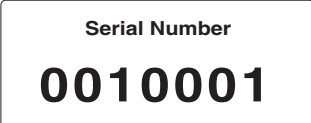
2. 

5. 

6. 

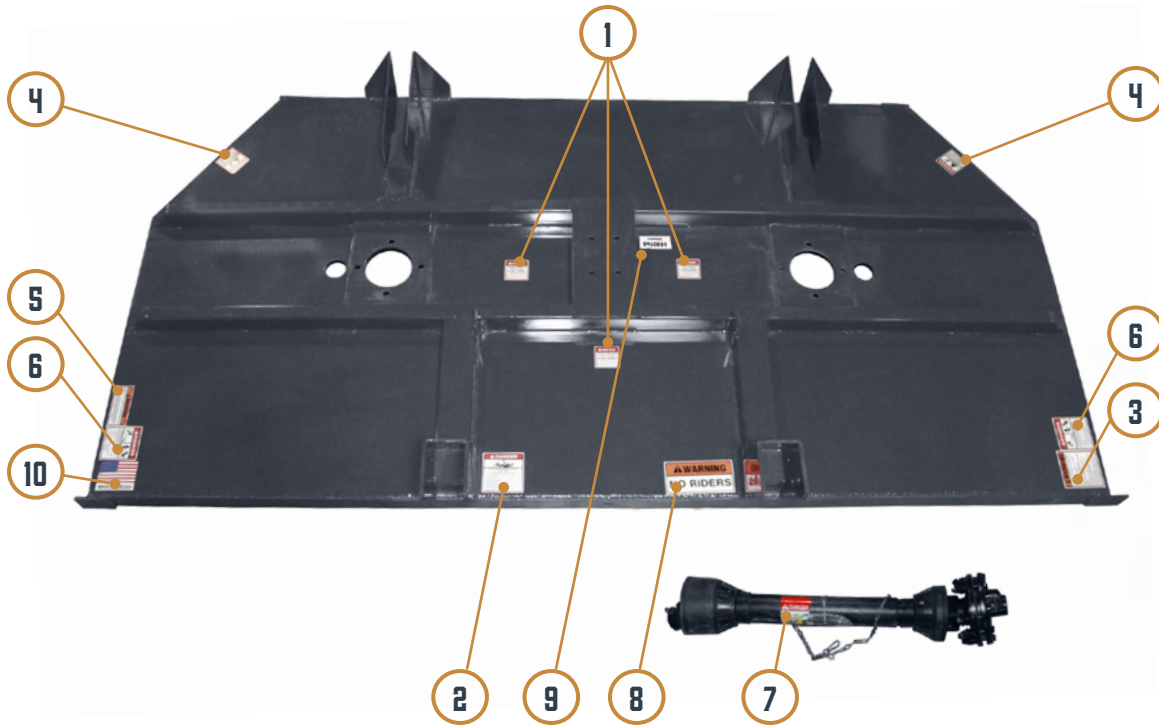
8. 

3. 

9. 

10. 

## SAFETY DECAL LOCATIONS



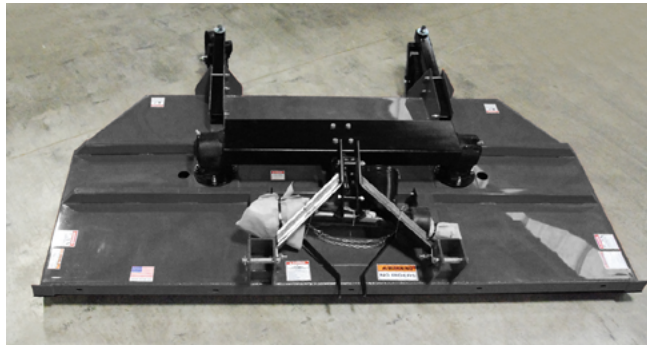
REF	TYPE	DESCRIPTION	QTY.
1	DANGER	Guard Missing, Do Not Operate	3
2	DANGER	Driveline Hazard	1
3	WARNING	Multi-Hazard	1
4	DANGER	Thrown Object Hazard	2
5	WARNING	Safety Shields	1
6	DANGER	Rotating Blades Hazard	2
7	DANGER	Rotating Driveline, Keep Away, Outer Shield Tube	1
8	WARNING	No Riders	1
9	SERIAL	Serial No.	1
10	INSTRUCTIONAL	Made In the USA	1

# NOMENCLATURE

## LIFT TYPE

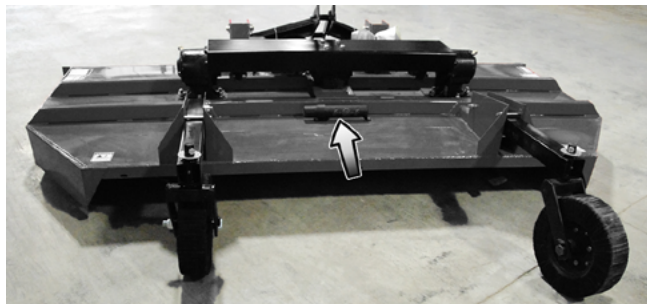
### 5.1 DESCRIPTION AND INTENDED USE

The rotary cutter is designed for heavy duty applications such as weeds, grass, and brush up to 3" diameter. The cutter uses dual spindles with two free-swinging blades each, which reduce the shock of impact when a stationary object is contacted. A slip clutch and dual shock couplers protect the gearboxes and driveline from damage. Standard equipment includes driveline shields and clutch shields. Front and rear chain discharge shields are optional.



### OWNER/OPERATOR MANUAL STORAGE

Always store the Owner/Operator manual and other operating materials in the document storage tube.

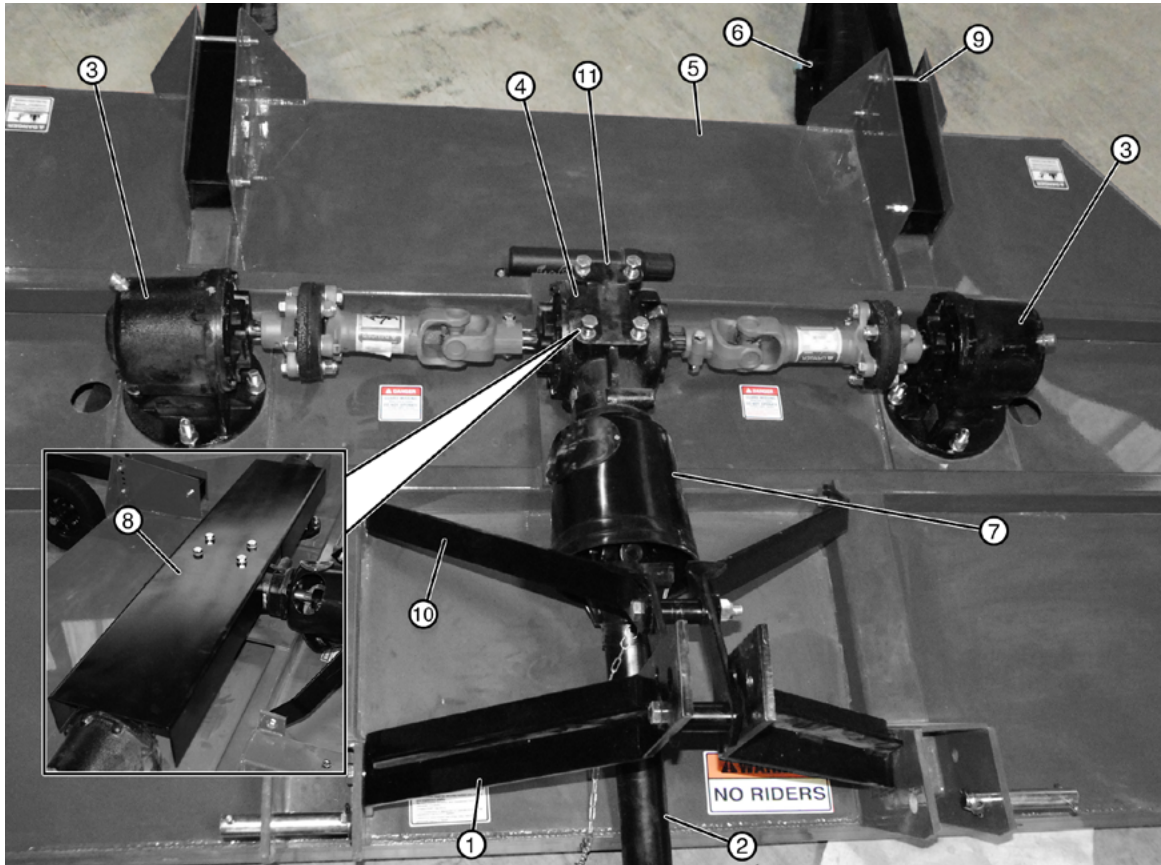


**STORE THIS MANUAL IN THE DOCUMENT CANISTER ATTACHED TO THIS MACHINE.**



## 5.2 NOMENCLATURE

### LIFT TYPE



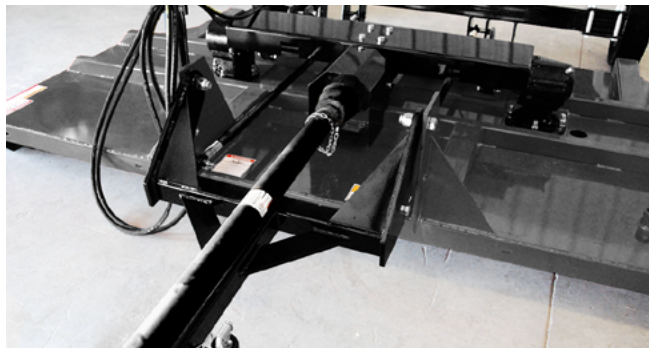
REF	DESCRIPTION	QTY.
1	A-Frame	1
2	Driveline	1
3	Gearbox	2
4	Center Tee Gearbox	1
5	Cutter Deck	1
6	Tailwheel	1
7	Driveline Shield	1
8	Center Gearbox Shield	1
9	Adjusting Bolts	1
10	Back Braces	1
11	Document Storage Tube	1

# NOMENCLATURE

## PULL TYPE

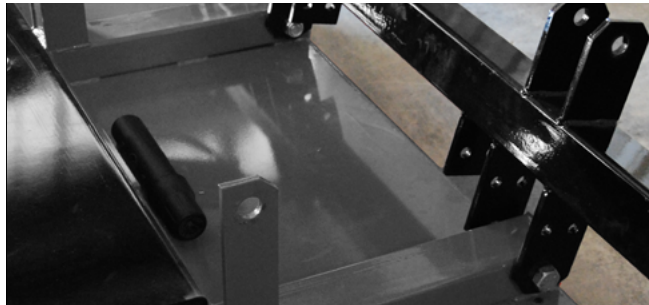
### 5.1 DESCRIPTION AND INTENDED USE

The rotary cutter is designed for heavy duty applications such as weeds, grass, and brush up to 3" diameter. The cutter uses dual spindles with two free-swinging blades each, which reduce the shock of impact when a stationary object is contacted. A slip clutch and dual shock couplers protect the gearboxes and driveline from damage. Standard equipment includes driveline shields and clutch shields. Front and rear chain discharge shields are optional.



#### OWNER/OPERATOR MANUAL STORAGE

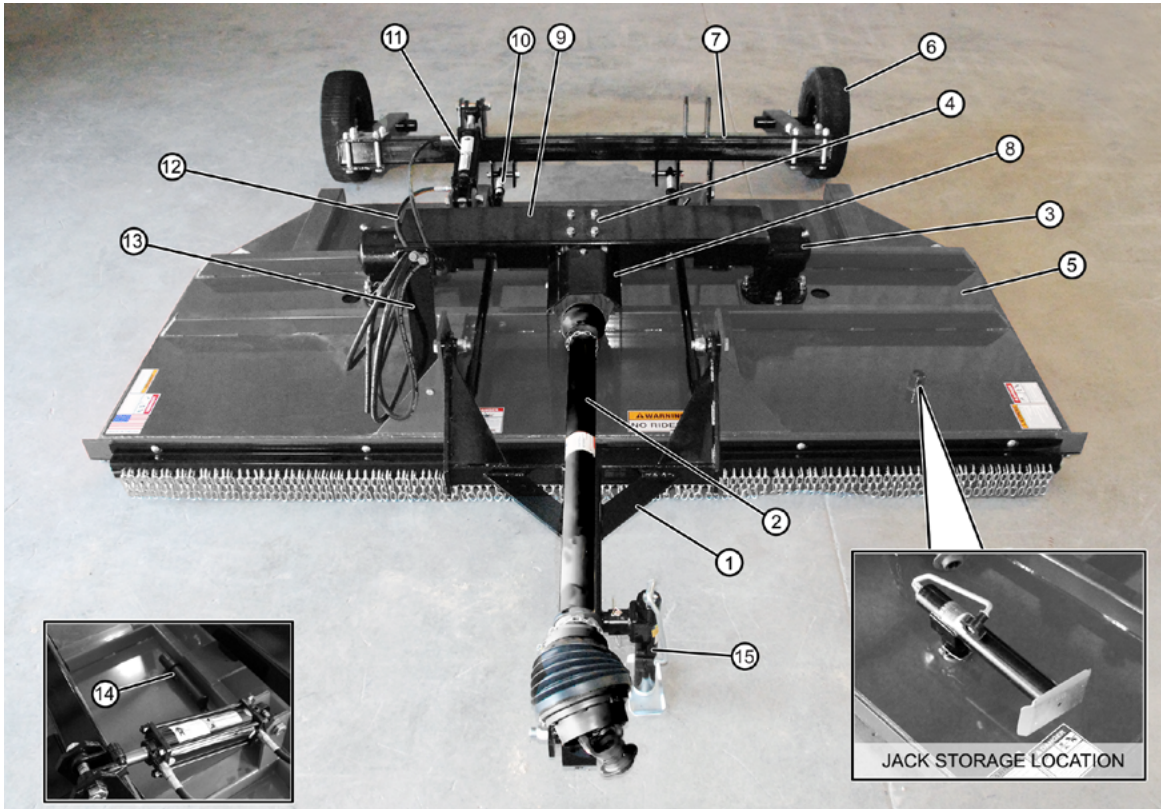
Always store the Owner/Operator manual and other operating materials in the document storage tube.



**STORE THIS MANUAL IN THE DOCUMENT CANISTER  
ATTACHED TO THIS MACHINE.**



PULL TYPE



REF	DESCRIPTION	QTY.
1	Hitch	1
2	Driveline	1
3	Gearbox	2
4	Center Tee Gearbox	1
5	Cutter Deck	1
6	Tailwheel	2
7	Tailwheel Frame	1
8	Driveline Shield	1
9	Center Gearbox Shield	1
10	Leveling Rods	1 or 2
11	Raise/Lower Hydraulic Cylinder	1
12	Hydraulic Hoses	2
13	Hydraulic Hose Rack	1
14	Document Storage Tube	1
15	Jack	1



# ASSEMBLY

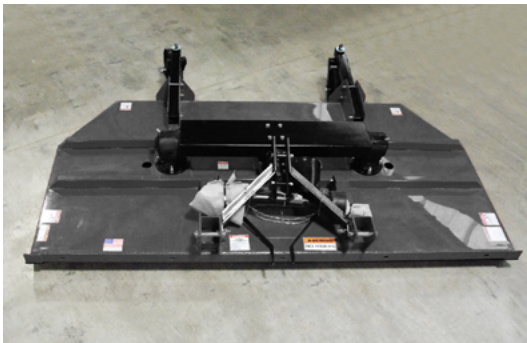
## LIFT TYPE

### 6.1 TOOLS REQUIRED

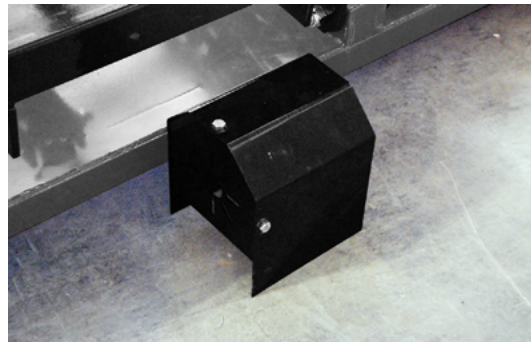
TOOLS REQUIRED
Wrenches, 1/2", 5/8", 3/4", 1-1/8", 1-3/8"
Ratchet with extension and 3/4" socket

### 6.2 ASSEMBLY PROCEDURE

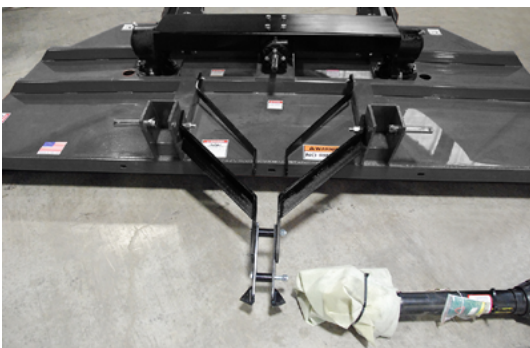
1. Verify that all parts shown are included.  
If any parts are missing, contact your Ironcraft dealer.



3. Remove the driveline shield from its shipping location on the rear of the deck.



2. Cut the wires holding the driveline parts to the A-frame. Set the driveline aside for now.



4. Stand the A-frame up and remove the 5/8-11 x 5" bolt, locknut, and spacer on the break link.



5. Position the back braces on the outside of the break link and reinstall the bolt and spacer. Be sure the spacer is in place.



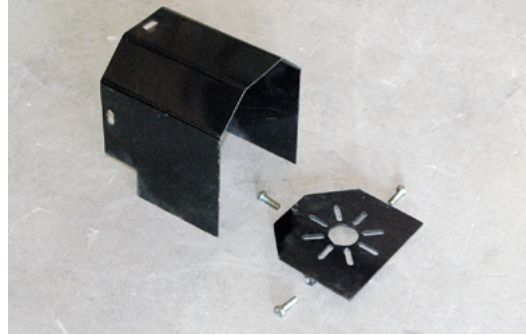
6. Tighten the bolt sufficiently to eliminate side play, but still allow the break link to function.



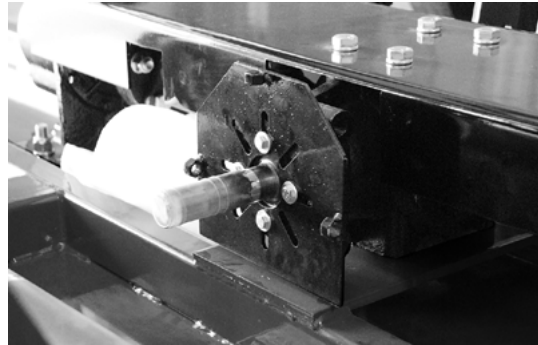
7. Remove the four 5/16-18 x 1/2" bolts and washers from the front of the gearbox.



8. Remove the three bolts holding the driveline shield backplate to the shield.



9. Position the driveline shield backplate on the front of the gearbox and re-install the four 5/16-18 x 1/2" bolts and washers. Make sure the nuts welded to the backplate are positioned toward the front of the unit.



10. Separate the two halves of the driveline.





## WARNING

### CRUSH HAZARD

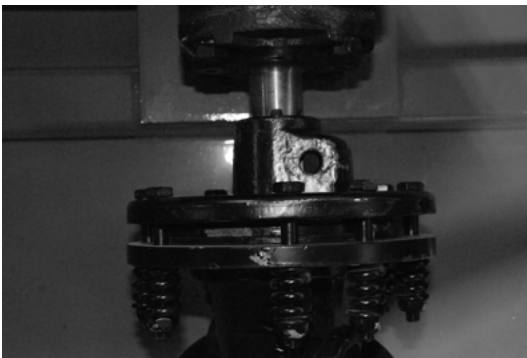


If the retaining bolt is not present, the driveline may separate from the gearbox, causing serious injury or death. Do not omit the retaining bolt. Tighten the locknut securely.

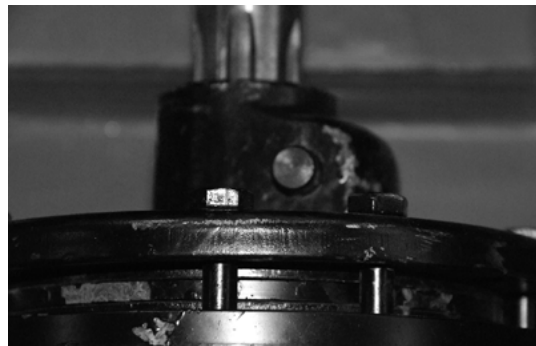
11. Remove the retaining bolt from the slip clutch.



12. Line up the spline grooves and slide the slip clutch onto the gearbox input shaft until the retaining bolt hole aligns with the groove in the shaft.



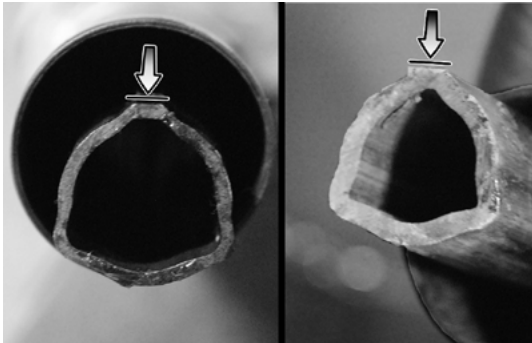
13. Install the retaining bolt and tighten the locknut.



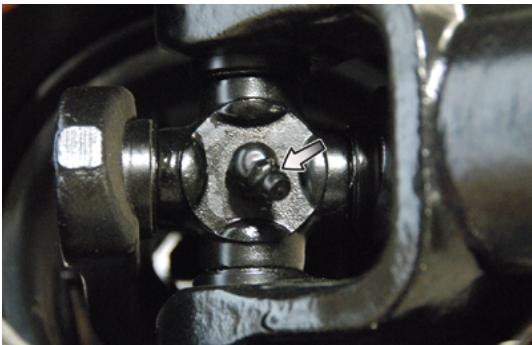
14. Apply a bead of grease around the end of the inner drive shaft.



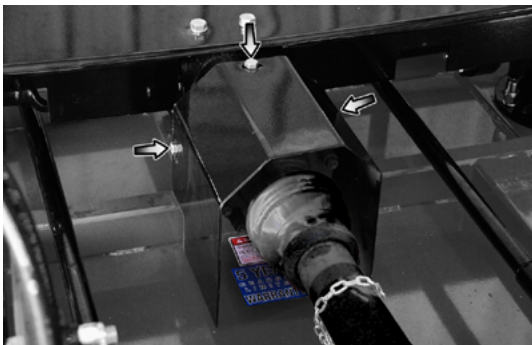
15. Slide the front driveline half over the rear half. Align the square rib on the mating halves to engage.



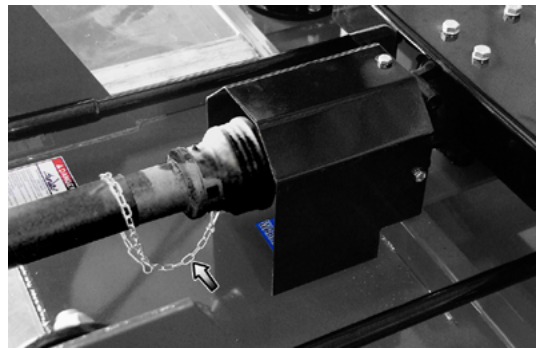
16. Apply grease to the zerk on the U-joint cross.



17. Position the gearbox shield to the backplate and install the three 1/2-13 x 1-1/2" bolts.



18. Attach the chain on the outer driveline shield to the rotary cutter.



19. Apply grease to the zerk on the tailwheel forks.



20. Apply grease to the zerk on the tailwheel hubs.



## 6.3 INSTALLATION AND REMOVAL OF DRIVELINE TO TRACTOR PTO



### WARNING

#### ENTANGLEMENT HAZARD

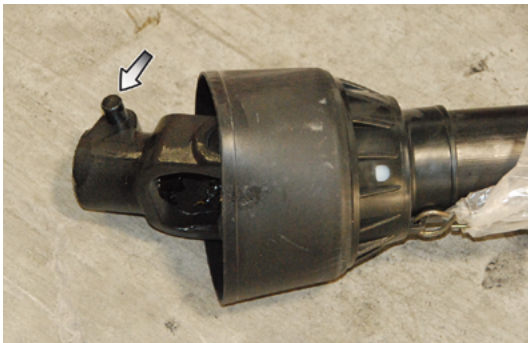
To avoid serious injury or death from driveline contact:

Shut off tractor PTO and disengage before dismounting.

Do not operate PTO if shields are missing or damaged. Keep hands, feet, and body away from rotating parts.

### TO INSTALL THE DRIVELINE:

1. Turn the tractor off, set the parking brake, and remove the key.
2. Depress the locking pin on the tractor end of the driveline.



3. Push the driveline onto the tractor PTO shaft until the locking pin engages.



### TO REMOVE THE DRIVELINE:

Before operating the rotary cutter, make sure the driveline will not bottom out or become disengaged. Bottoming out occurs when the inner shaft penetrates the outer housing until the assembly can shorten no more. Bottoming out can cause serious damage to the tractor PTO by pushing the PTO into the tractor and through the support bearings or downward onto the PTO shaft, breaking it off. A broken driveline can cause personal injury.

1. Attach the rotary cutter to the tractor 3-point hitch. Do not attach the driveline. Keep the driveline out of the way of moving parts.
2. Raise and lower the rotary cutter to determine the maximum and minimum distance between the tractor PTO shaft and the gearbox input shaft. If the distance is too large, the driveline will be too short for proper engagement. If the distance is too small, the driveline may bottom out in operation and damage the rotary cutter or tractor.

There must be at least six inches of engagement at the rotary cutter's lowest possible point of operation, and the driveline must not bottom out when raised to the maximum height possible. If the driveline is too short, please call your Ironcraft dealer for a longer driveline. If the driveline is too long, follow the instructions for shortening the driveline.

## 6.4 SHORTENING THE DRIVELINE

1. Move rotary cutter up and down to get the shortest possible distance between tractor PTO shaft and gearbox input shaft. Shut down tractor PTO shaft and gearbox input shaft. Shut down tractor leaving rotary cutter in position of shortest distance. Securely block rotary cutter in position.
2. Separate driveline into two halves and connect them to the tractor PTO and gearbox.
3. Place driveline halves parallel to one another to determine how much to shorten the driveline.
4. Each section should end approximately 3" short of reaching the universal joint shield on the opposite section. If too long, measure 3" back from the universal joint shield and mark on the opposite section.
5. Repeat Step 4 for the other half of the drive.
6. Raise and lower rotary cutter to determine position with greatest distance between PTO shaft and gearbox input shaft. Shut down tractor leaving rotary cutter in position of greatest distance. Securely block rotary cutter in position.
7. Hold driveline sections parallel to each other and check for minimum 6" overlap. If driveline has been marked for cutting, overlap will be the distance between two marks. If driveline has less than minimum overlap, do not use. Contact your Ironcraft dealer.



### NOTICE

If driveline is the correct length, omit the following Steps 8 - 9 and proceed to Step 10.

8. Clamp a driveline section in a well padded vice to prevent damage to the shield. Cut off the shield where marked. Using the cut off section of the shield as a guide, cut the shaft the same amount. Repeat for the other driveline section.
9. File and clean the cut ends of both drive halves. Remove all chips and filings.
10. Apply multi-purpose grease around the inner driveline section. Slide drive halves over each other several times to distribute the grease. Install driveline on tractor and rotary cutter. Make certain driveline shielding is in place and in good condition.



### NOTICE

Do not use the rotary cutter if proper driveline engagement cannot be obtained through these methods. Contact your Ironcraft dealer.

11. Set the tractor lift control stop to a position that will prevent the driveline from contacting the front edge of the rotary cutter deck when the rotary cutter is raised fully.

# ASSEMBLY

## PULL TYPE

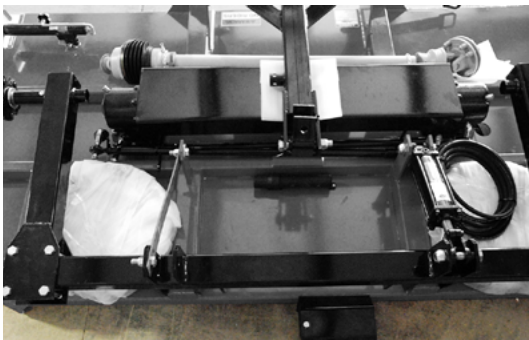
### 6.5 TOOLS REQUIRED

TOOLS REQUIRED
Wrenches, 1/2", 5/8", 3/4", 1-1/8", 1-3/8", 1-1/2"
Ratchet with extension and sockets as above
3/8" Allen wrench

PULL TYPE

### 6.6 ASSEMBLY PROCEDURE

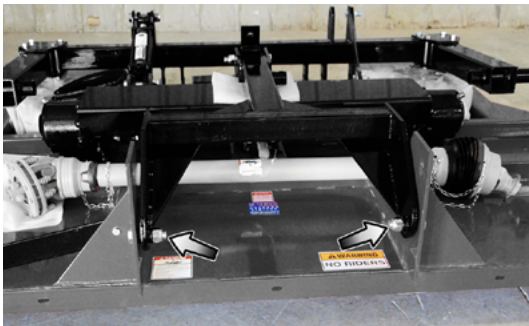
1. Verify that all parts shown are included. If any parts are missing, contact your Ironcraft dealer.



2. Cut the wires holding the driveline, hitch, and hydraulic hoses to the deck. Set the driveline and hoses aside for now.



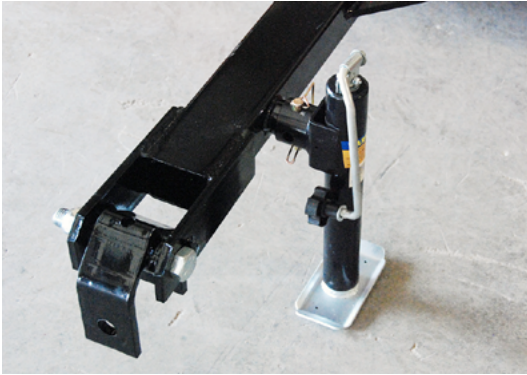
3. Remove the hitch bolts from the lower set of holes in the deck, and reinstall them in the upper holes.



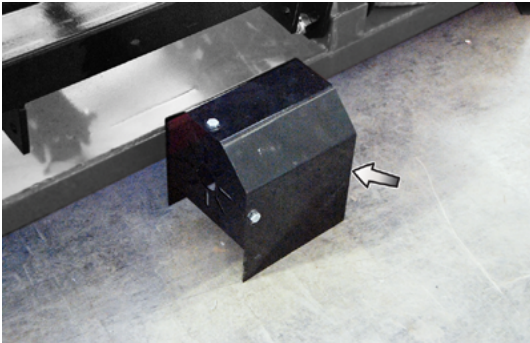
#### NOTICE

The hitch bolts are fully tightened for shipping purposes. They should be slightly loosened to allow the hitch to pivot.

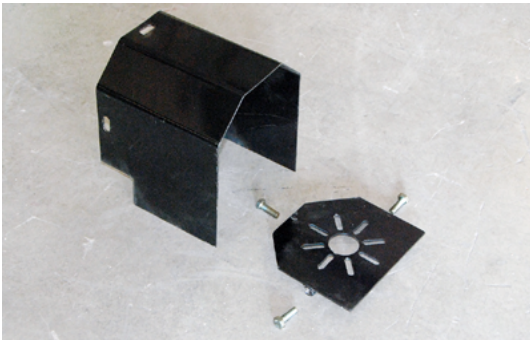
- Remove the jack from its storage location on the deck, rotate the hitch forward, and install the jack on the hitch.



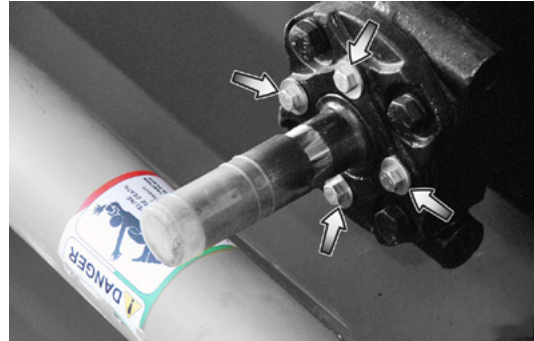
- Remove the driveline shield from its shipping location on the rear of the deck.



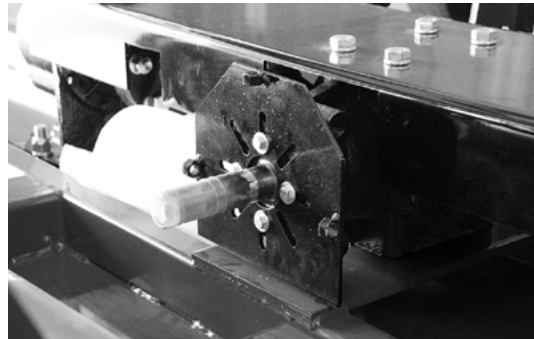
- Disassemble the driveline shield by removing the three 1/2-13 x 1-1/2" bolts.



- Remove the four 5/16-18 x 1/2" bolts and washers from the front of the gearbox.



- Position the driveline shield backplate on the front of the gearbox and re-install the four 5/16-18 x 1/2" bolts and washers. Make sure the nuts welded to the backplate are positioned toward the front of the unit.



- Separate the two halves of the driveline.





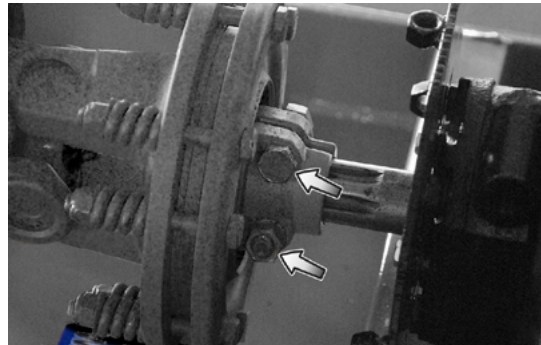
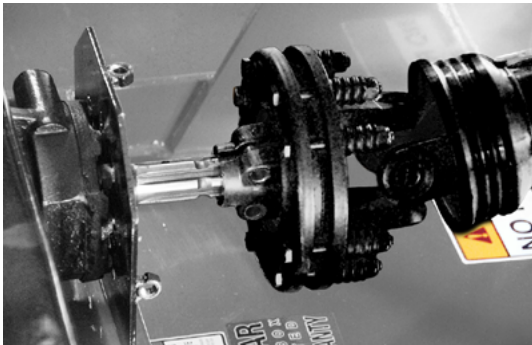
9. Remove the two retaining bolts from the slip clutch.



## NOTICE

The slip clutch bolts are offset as shown to allow socket clearance to the retaining bolts.

10. Line up the spline grooves and slide the slip clutch onto the gearbox input shaft until the retaining bolt holes align with the groove in the shaft. Install the bolts, and tighten the nuts securely.



## WARNING

### CRUSH HAZARD

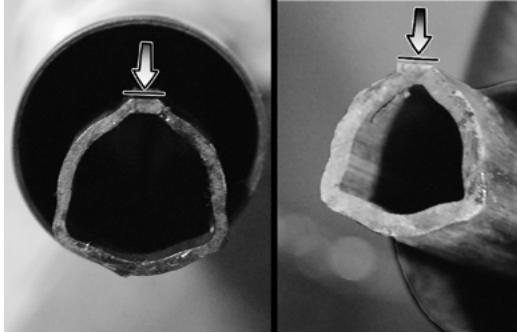
If the retaining bolts are not present, the driveline may separate from the gearbox, causing serious injury or death. Do not omit the retaining bolts. Tighten the locknuts securely.



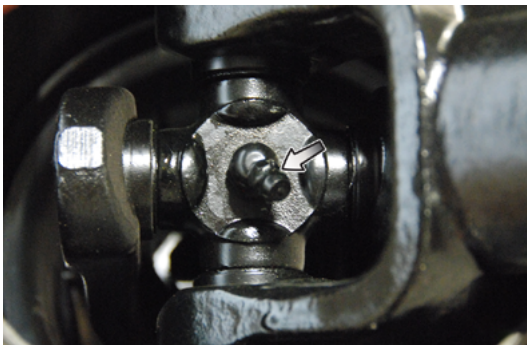
11. Apply a bead of grease around the end of the inner drive shaft.



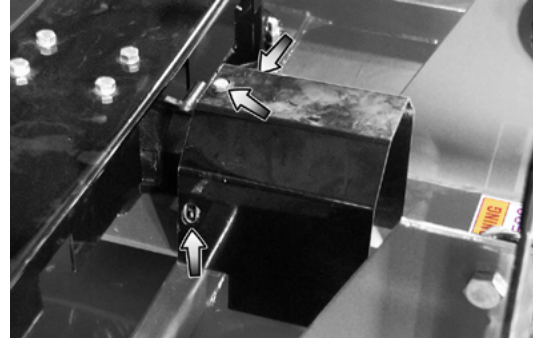
12. Slide the front driveline half over the rear half. Align the square rib on the mating halves to engage.



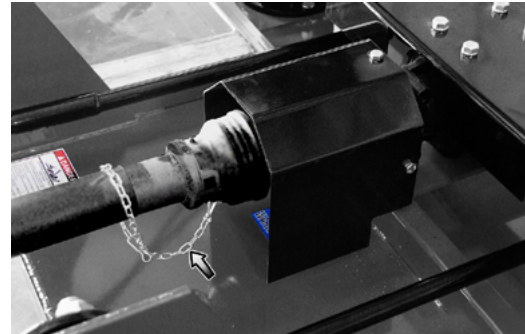
13. Apply grease to the zerks on all three of the U-joint crosses.



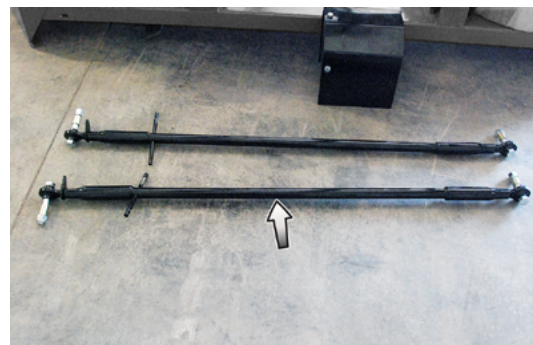
14. Position the gearbox shield over the backplate and install the three 1/2-13 x 1-1/2" bolts.



15. Attach the chain on the outer driveline shield to the rotary cutter.



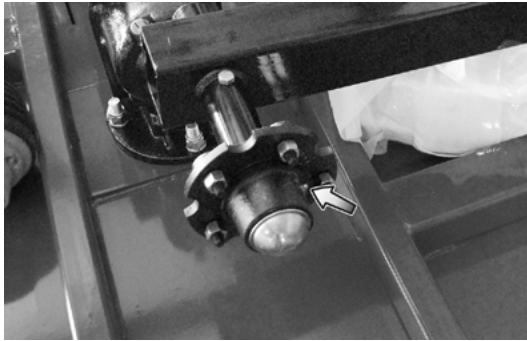
16. Remove the leveling rods from the deck and set them aside for now.



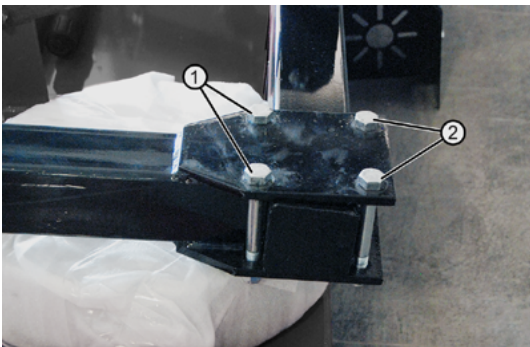
17. Using a 3/8" Allen wrench, remove the plugs from the ports on the hydraulic cylinder.



18. Apply grease to the zerks on the tailwheel hubs.



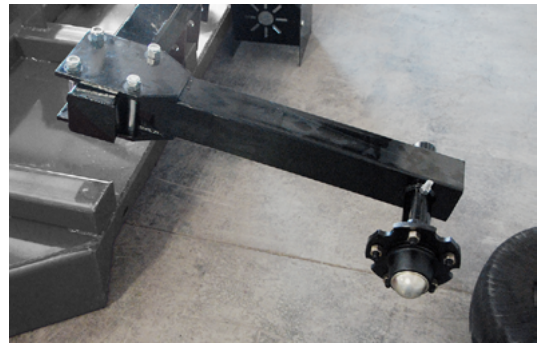
19. Loosen two bolts (1) on the rear of the tailwheel support. Remove two bolts (2).



20. Slide the tailwheel support off the tailwheel frame and remove the tailwheel from its shipping location.



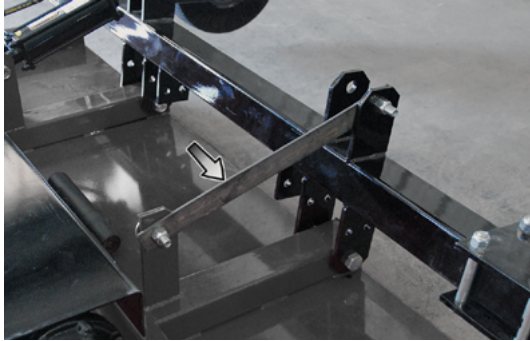
21. Reinstall the tailwheel support oriented to the rear and with the axle outboard. It is recommended to install the bolts with the nuts on top to make it easier to monitor the security of the bolts.



22. Remove the lug nuts from the hub and attach the tailwheel. Orient the lug nuts with the taper towards the wheel and tighten in a crisscross pattern.



23. Remove the shipping bar from the tailwheel frame. The wheels will drop to the ground. To avoid injury, stand clear of the wheels.

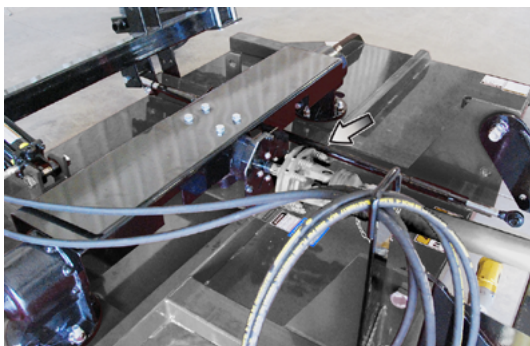


24. Attach the leveling rods.

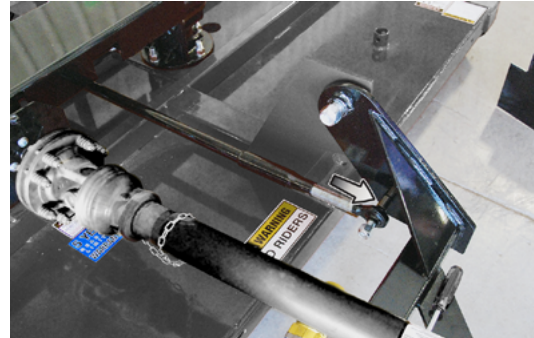
a. Remove the bolt, nut, and spacer, if applicable, from both ends of the rods.



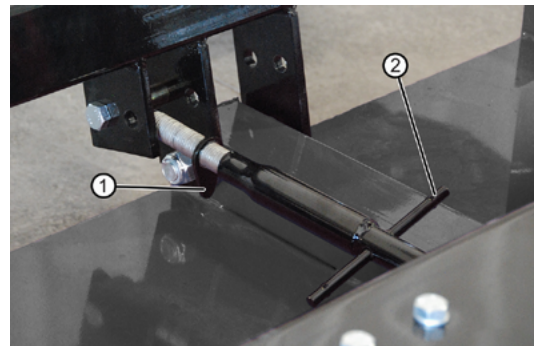
b. Slide the rods into position under the drive shafts with the 'T' handle to the rear.



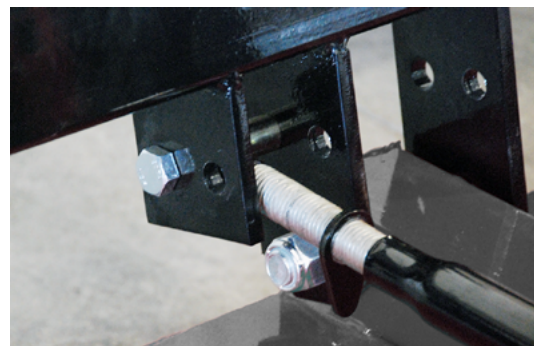
c. Attach the front of the rods to the mounting hole in the hitch. Install the spacer between the rod end and the hitch.



d. Loosen jam nut (1) on the rear of the rods and turn 'T' handle (2) until the rod end aligns with the rearmost hole in the mounting bracket.



e. Install the mounting bolt. Use the rearmost hole in the mounting bracket, and install the spacer on the inboard side of the rods. Tighten the jam nut securely.





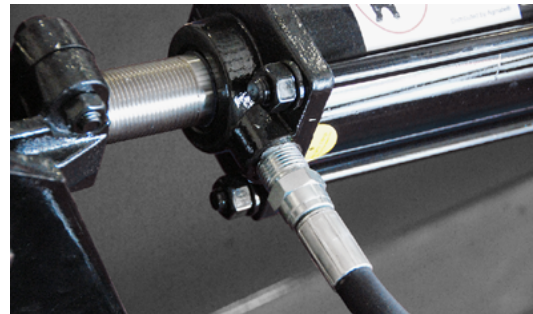
## NOTICE

If the leveling rods contact the drive shaft, damage to the rod(s) will result. Verify that the leveling rods are clear of the drive shafts before operating the cutter.

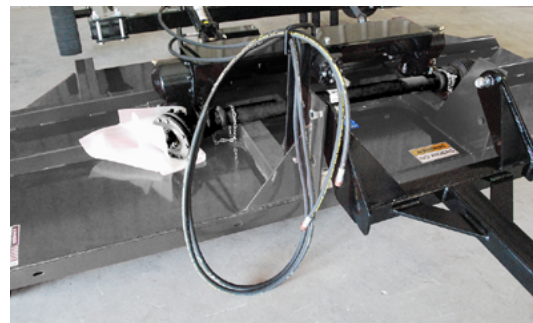
27. Verify that there is clearance between the leveling rods and the drive shafts. Move the spacers if necessary to obtain clearance.



28. Attach both hydraulic hoses to the cylinder. There is a swivel fitting on the cylinder end of each hose.



29. Remove the hydraulic hose rack from its shipping location and reinstall it in a vertical position. Route the hoses through the rack.



## 6.7 INSTALLATION AND REMOVAL OF DRIVELINE TO TRACTOR PTO



### WARNING

#### ENTANGLEMENT HAZARD

To avoid serious injury or death from driveline contact:

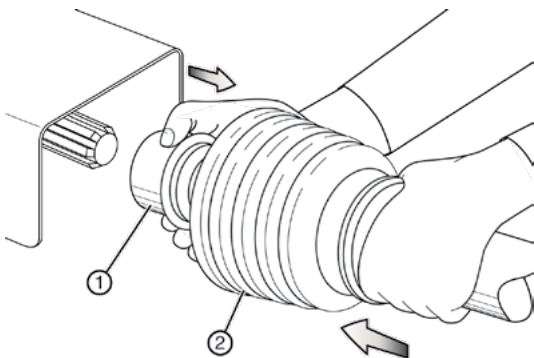
Shut off tractor PTO and disengage before dismounting.



Do not operate PTO if shields are missing or damaged. Keep hands, feet, and body away from rotating parts.

### TO INSTALL THE DRIVELINE:

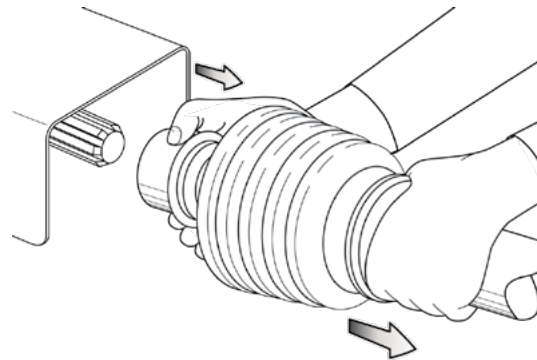
1. Turn the tractor off, set the parking brake, and remove the key.
2. Pull back on collar (1) on the tractor end of the driveline.
3. Push the driveline onto the tractor PTO shaft until the collar snaps forward.



4. Pull back on driveline guard (2) to check that the driveline is latched. Do not pull back on the collar, as this will release the driveline.
5. Attach the safety chain on the driveline guard to the tractor.

### TO REMOVE THE DRIVELINE:

1. Detach the safety chain from the tractor.
2. Pull back on the collar on the tractor end of the driveline.



3. Slide the driveline off the tractor PTO shaft.

## 6.8 CHECKING THE DRIVELINE LENGTH

Before operating the rotary cutter, make sure the driveline will not bottom out or become disengaged. Bottoming out occurs when the inner shaft penetrates the outer housing until the assembly can shorten no more. Bottoming out can cause serious damage to the tractor PTO by pushing the PTO into the tractor and through the support bearings or downward onto the PTO shaft, breaking it off. A broken driveline can cause personal injury.

1. Attach the rotary cutter to the tractor. Do not attach the driveline. Keep the driveline out of the way of moving parts.
2. Raise and lower the rotary cutter to determine the maximum and minimum distance between the tractor PTO shaft and the gearbox input shaft. If the distance is too large, the driveline will be too short for proper engagement. If the distance is too small, the driveline may bottom out in operation and damage the rotary cutter or tractor.

There must be at least six inches of engagement at the rotary cutter's lowest possible point of operation, and the driveline must not bottom out when raised to the maximum height possible. If the driveline is too short, please call your Ironcraft dealer for a longer driveline. If the driveline is too long, follow the instructions for shortening the driveline.

## 6.9 SHORTENING THE DRIVELINE

1. Move rotary cutter up and down to get the shortest possible distance between tractor PTO shaft and gearbox input shaft. Shut down tractor PTO shaft and gearbox input shaft. Shut down tractor leaving rotary cutter in position of shortest distance. Securely block rotary cutter in position.
2. Separate driveline into two halves and connect them to the tractor PTO and gearbox.
3. Place driveline halves parallel to one another to determine how much to shorten the driveline.
4. Each section should end approximately 3" short of reaching the universal joint shield on the opposite section. If too long, measure 3" back from the universal joint shield and mark on the opposite section.
5. Repeat Step 4 for the other half of the drive.
6. Raise and lower rotary cutter to determine position with greatest distance between PTO shaft and gearbox input shaft. Shut down tractor leaving rotary cutter in position of greatest distance. Securely block rotary cutter in position.
7. Hold driveline sections parallel to each other and check for minimum 6" overlap. If driveline has been marked for cutting, overlap will be the distance between two marks. If driveline has less than minimum overlap, do not use. Contact your Ironcraft dealer.

**NOTICE**

If driveline is the correct length, omit the following Steps 8 – 9 and proceed to Step 10.

8. Clamp a driveline section in a well padded vice to prevent damage to the shield. Cut off the shield where marked. Using the cut off section of the shield as a guide, cut the shaft the same amount. Repeat for the other driveline section.
9. File and clean the cut ends of both drive halves. Remove all chips and filings.
10. Apply multi-purpose grease around the inner driveline section. Slide drive halves over each other several times to distribute the grease. Install driveline on tractor and rotary cutter. Make certain driveline shielding is in place and in good condition.

**NOTICE**

Do not use the rotary cutter if proper driveline engagement cannot be obtained through these methods. Contact your Ironcraft dealer.

Set the tractor lift control stop to a position that will prevent the driveline from contacting the front edge of the rotary cutter deck when the rotary cutter is raised fully.




# OPERATION

## LIFT TYPE



### 7.1 USER SAFETY TRAINING

Refer to “3.4 General Safety Instruction” for user 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 rotary cutter if it rolls onto a person, can cause serious crushing injury or death.






## SAFETY INSTRUCTIONS

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




### TRAIN UNFAMILIAR USERS

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




### USERS

who have not read and understood all operating and safety instructions are not qualified to use the rotary cutter.




### TRAIN ALL NEW USERS

and review instructions annually with existing users.




### UNTRAINED USERS

expose themselves and bystanders to possible serious injury or death.




### PHYSICALLY-ABLE

Be certain only physically-able persons will use the rotary cutter.



### ELDERLY

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



### NO CHILDREN

Never allow children to operate equipment.

## 7.2 TRACTOR REQUIREMENTS



### WARNING

#### TRACTOR OWNER/OPERATOR MANUAL

Always refer to the tractor owner's manual to ensure compatibility and maximum safety.

The tractor used to operate the cutter must have the power to lift, pull, and operate the Power Take Off (PTO) at the cutter's rated speed while traveling at a ground speed between 2 and 5 MPH.

The tractor must be matched to the weight of the rotary cutter. 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 cutter with a tractor that does not meet the following requirements may cause tractor or cutter 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.

### TRACTOR REQUIREMENTS AND CAPABILITIES

REQUIREMENTS
Approved Roll-Over Protective Structure (ROPS) or ROPS cab and seat belt.
Tractor Safety Devices; Slow Moving Vehicle (SMV) emblem, lighting, PTO master shield
3-Point Hitch, CAT II/QH (Lift type)
Front End Weight as needed to maintain 20% weight on front axle.
To reduce the risk of grass fires, do not operate the cutter on a tractor with an underframe exhaust.

### 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 equipped directly on implements if the visibility of the tractor warning signals are obscured.

Maintain all manufacturer equipped safety shields and guards. Always replace shields and guards that were removed for access to connect, service, or repair the tractor or implement. Never operate the tractor PTO with the PTO master shield missing or in the raised position.

## 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 rotary cutter.

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.

Tractor models not equipped with a ROPS and seat belt should have these life saving features installed by an authorized dealer.

## 3-POINT HITCH

These rotary cutters are designed to be mounted on a tractor CAT II 3-Point or Quick Hitch.

Refer to the tractor operator's manual for the category of the tractor being used. If the hitch does not conform to ASABE CAT II dimensions, the rotary cutter 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 rotary cutter to the tractor. CAT II hitches require 1-1/8" lower and 1" upper diameter hitch pins.

## TRACTOR HORSEPOWER

The power required to operate the cutter is determined by the tractor PTO horsepower. Operating the cutter with a tractor that does not have adequate power may damage the tractor engine. Exceeding recommended HP may cause rotary cutter damage by overpowering the unit in heavy cutting conditions.

MODEL	DESCRIPTION	RECOMMENDED MIN HP	LIFTING CAPACITY [MIN.]
1808	Lift Type	42	1250
1810	Lift Type	52	1480

## POWER TAKE-OFF (PTO)

This rotary cutter is designed to operate at a PTO speed of 540 RPM. Most tractors operate at either 540 or a combination of 540 and 1000 RPM PTO speeds. The operating speed of the rotary cutter and tractor can be determined by the number of splines on the driveline yoke and PTO output shaft. Those operating at 540 RPM will have a 6-spline shaft, and those operating at 1000 RPM will have a 21-spline shaft.



### NOTICE

The rotary cutter will not operate on tractors equipped with a 1000 RPM 21-spline or 1000 RPM 20-spline, 1-3/4" shaft.

Refer to the tractor owner's manual for instructions to change PTO speeds on models that operate at more than one speed.

If operating an older model tractor where the tractor's transmission and PTO utilize one master clutch, an over-running clutch must be used between the PTO output shaft and the driveline of the rotary cutter. An authorized tractor dealer can provide the over-running clutch and its installation, if needed.

DO NOT use a PTO adapter to attach a non-matching implement driveline to a tractor PTO. Use of an adapter can double the operating speed of the implement, resulting in excessive vibration, thrown objects, and blade and implement failure. Adapter use will also change the working length of the driveline exposing unshielded driveline areas. Serious bodily injury and/or equipment failure can result from using a PTO adapter. Consult an authorized dealer for assistance if the implement driveline does not match the Tractor PTO.

## 7.3 ATTACHING TO TRACTOR

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



### WARNING



#### CRUSH HAZARD

Crush hazard between hitch and implement. 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 rotary cutter.
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 rotary cutter hitch pins.



### NOTICE

Set the 3-point lift control to “Position Control” so that the lift arms maintain a constant height when attaching the rotary cutter. 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. See diagram for correct hitch clevis orientation
6. Walk around to the opposite side and repeat the procedure for the remaining lift arm and hitch pin.
7. Extend or retract 3-point top link to align its end hole with the holes of the rotary cutter’s top link. Insert the top link hitch pin and insert the retaining pin into the hitch pin.
8. Adjust any lower link check chains, guide blocks, or sway blocks to prevent the rotary cutter from swaying side-to-side and possible contact with the tractor rear tires.
9. Depress the locking pin on the tractor end of the driveline.
10. Push the driveline onto the tractor PTO shaft until the locking pin engages.



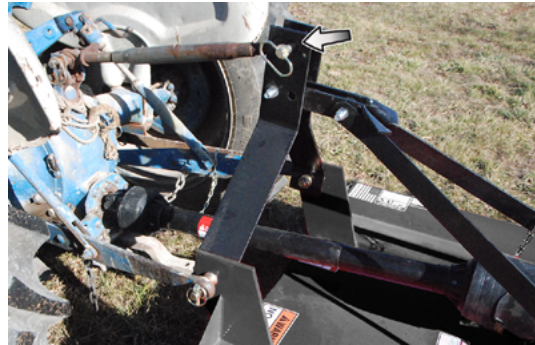
**CLEVIS HINGE  
IS UP**

**DUCK BILL  
IS DOWN**

## 7.4 DETACHING FROM TRACTOR

1. Move the rotary cutter to a level storage location and lower it to the ground or onto blocks. Park the tractor, place the transmission in park or neutral, and apply the parking brake. Shut down the engine, remove the key, and wait for all motion to come to a complete stop before exiting the tractor. Before disconnecting the rotary cutter, the PTO must be disengaged and blade rotation at a complete stop.
2. Make sure the rotary cutter is resting securely on the ground or blocks before attempting to disconnect it from the tractor. Use extreme care to keep feet and hands from under the rotary cutter and clear of any pinch points caused by the tractor hitch arms and rotary cutter hitch pins.

3. Extend 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 rotary cutter.



4. Disconnect the lift arms and remove the rotary cutter driveline from the tractor PTO shaft. Lay the driveline down carefully to avoid damaging the driveline or its shield. Do not let the driveline fall into mud or dirt, which can contaminate the bearing and shorten the life of the driveline.



## 7.5 SETTING THE ROTARY CUTTER

Properly setting the cutting height is essential for efficient and safe operation. A properly set rotary cutter will make a more uniform cut, distribute clippings more evenly, require minimal tractor work, and follow the contour of uneven terrain.



### NOTICE

Avoid very low cutting heights. Striking the ground with the blades causes damaging shock loads and will cause damage to the rotary cutter and drive. Blades contacting the ground may cause objects to be thrown out from under the cutter deck. Always avoid operating the rotary cutter at a height which causes the blades to contact the ground.

## SETTING THE CUTTING HEIGHT

The rotary cutter should be operated at the highest position which will give desired cutting results. This will help prevent the blades from striking the ground, increasing blade life, and reducing stress on the rotary cutter and tractor.

1. Park the tractor and rotary cutter on level ground.
2. Using the 3-point hitch control lever, position the front of the rotary cutter with the side skids 1" lower than the desired cut height. For example, for a 3" cut, position the skids 2" from the ground. Set the 3-point control lever stop at this position to maintain this height when raising and lowering the cutter.
3. Shut off the tractor and remove the key.
4. Adjust the rotary cutter deck pitch by extending or retracting the 3-point top link.
  - To increase fuel efficiency and lower horsepower requirements for rotary cutter operation, the rotary cutter should be operated with the deck approximately 3/4" lower in the front than the rear. Operating the rotary cutter at this pitch will allow the rotary cutter to cut the grass only once and requires less work from the tractor.
  - To increase mulching of the grass or crop material during rotary cutter operation, the rotary cutter should be operated with the deck approximately 3/4" higher in the front than the rear. Operating the rotary cutter at this pitch

will allow the rotary cutter to cut the grass twice and can result in a more even cut and improved distribution of the cut material.

5. Level the rotary cutter side-to-side by manipulating one lower lift arm length. On most tractors, at least one of the lift arms is designed to allow for manipulation of its length. Shortening or extending the lift arm will allow for deck leveling from side-to-side.
6. Securely block up the rotary cutter at this height.
7. Remove the tailwheel adjustment bolts and allow both tailwheels to rest at ground level. Align the nearest set of holes in the tailwheel adjustment and reinstall the support bolts.
8. Extend the tractor's top 3-point link so that when lifting the rotary cutter, the front of the deck will raise 2 to 2½" before the tailwheels leave the ground. This will allow the rotary cutter to follow the contour of uneven terrain.

## 7.6 TIRE AND WHEEL

Laminated sectional tires are designed for conditions where puncture proof performance is required and the rotary cutter will not be transported for long distances on roadways. Transport speed for laminated tires should not exceed 15 MPH. Excessive speed can cause damage to the machine and tire sections.

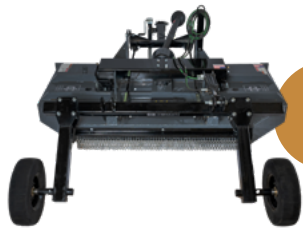
## 7.7 INITIAL SETUP CHECKLIST

(PRIOR TO USING FOR THE FIRST TIME)

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

This Initial Setup Checklist is provided for the user/owner. It is important for both personal safety and to maintain the mechanical condition of the rotary cutter that this checklist is followed.

**START HERE**



**01**

### SAFETY SIGNS

Verify all safety signs are in place and legible. Refer to “4.3 Safety Sign Locations” on page 17.

### ROTARY CUTTER IS PROPERLY MOUNTED

Make sure the rotary cutter is properly mounted to the 3-point hitch. Refer to “6.3 Attaching to Tractor” on page <OT>.

**02**



**03**

### DRIVELINE

Make sure the driveline is attached to the tractor PTO. Refer to “7.3 Attaching to Tractor” on page 43.

### HARDWARE

Make sure all hardware is properly installed and tightened. Refer to “11.1 Bolt Torque” on page 92.

**04**



**05**

### BLADES

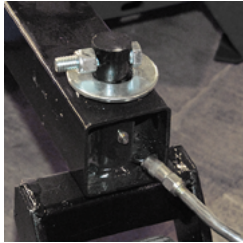
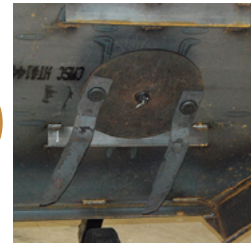
Check that the blades are sharp. Refer to “9.8 Blade Servicing” on page 81.



### BLADE CARRIER

Make sure the blade carrier nuts are tight and the cotter pins installed. Refer to “9.9 Blade Carrier Removal” on page 82.

06



07

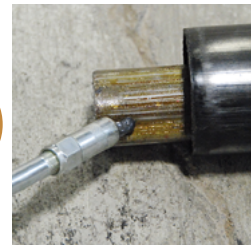
### ZERKS

Lubricate all grease zerks and driveline slip joint. Refer to “9.2 Greasing” on page 76.

### DRIVELINE SLIP JOINT

Lubricate all grease zerks and driveline slip joint. Refer to “9.2 Greasing” on page 76.

08



09

### SAFETY SHIELDS

Make sure all safety shields and guards are properly installed. Refer to “6.2 Assembly Procedure” on page 23.

### GEARBOX GREASE LEVEL

Check the gearbox grease level. Refer to “9.7 Gearbox Lubrication” on page 81.

10



11

### TAILWHEELS

Check the tailwheels for damage. Make sure the tailwheel support bolts are tight.

### CUTTER HEIGHT

Check the cutting height. Adjust if needed. Refer to “7.5 Setting the Cutting Height” on page 44.

12



## 7.8 MACHINE BREAK-IN

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

MAINTENANCE TASK	CHECK AFTER OPERATING FOR	
	30 MIN	10 HOUR
Tighten all fasteners if necessary.	✓	
Lubricate all grease fittings.	✓	
Go to the normal servicing and maintenance schedule, as defined in the Maintenance Section.		✓

## 7.9 PRE-OPERATION CHECKLIST

Before each use of the rotary cutter, the following areas should be checked.

CHECKLIST BEFORE EACH USE	✓
Make sure the rotary cutter is positively attached to the tractor 3-point hitch.	
Use only an appropriately sized tractor to pull the rotary cutter. Refer to “7.2 Tractor Requirements” on page 40.	
Make sure the driveline is attached to the tractor PTO.	
Make sure all safety shields and guards are properly installed.	
Check the blade bolts and blade pan nut.	
Check the condition of the blades.	
Check the cutting height. Adjust if needed.	
Inspect the overall rotary cutter for potential problems or damage. Do not use the rotary cutter if it needs repairs of any type.	
Make sure the driveline U-joints, and slip joints are greased. Refer to “9.3 Driveline Lubrication” on page 76.	

## 7.10 OPERATION CHECKLIST

Although the rotary cutter is easy to use, each operator should review this section to familiarize themselves with the detailed safety and operating procedures. When using this machine, follow this procedure:

**START HERE**

**01**

### **CLEAR THE AREA**

of bystanders, especially small children.

### **CLEAR THE AREA TO BE CUT**

of stones, branches, debris, and any hard objects that may be thrown.

**02**

**03**

### **MARK THE LOCATION**

of objects that cannot be removed.

### **PRE-OPERATION CHECKLIST**

Review and follow the Pre-Operation Checklist.

**04**

**05**

### **ENGAGE THE PTO**

at low engine RPM, then raise PTO speed to 540 RPM.

### **BEGIN TO CUT AT A SLOW SPEED,**

then increase to a speed that gives a clean cut without lugging the engine. Do not operate above 5 MPH.

**06**

**07**

### **NEVER**

allow blades to contact solid objects like rocks, posts, wire, curbs, guardrails, or the ground while mowing.

### **AVOID OPERATING THE ROTARY CUTTER IN REVERSE DIRECTION**

when possible. Check to make sure there are no persons behind the rotary cutter, and use extreme care when maneuvering in reverse.

**08**

## 7.11 OPERATING SAFETY



### WARNING



#### 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.



#### THROWN OBJECT HAZARD

Cutters can throw objects up to 300 feet. To avoid serious injury or death:

1. Keep all thrown object shielding in place.
2. Inspect area for potential thrown objects before cutting.
3. Do not operate rotary cutter with the deck raised.



#### THROWN OBJECT HAZARD

For non-agricultural use, OSHA, ASAE, SAE, and ANSI standards require the use of chain guards or other protective guards at all times.



#### STAY CLEAR

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



#### CUTTER BLADE CONTACT HAZARD (hand)

To avoid serious injury or death, keep away from rotating blades. Do not put hands under cutter deck.



#### CUTTER BLADE CONTACT HAZARD (foot)

To avoid serious injury or death, keep away from rotating blades. Do not put feet under rotary cutter deck.



### SAFETY INSTRUCTIONS



#### FIRE HAZARD

Clippings are flammable. To reduce the risk of fire:

1. Do not operate near fires.
2. Keep rotary cutter deck clear of clippings and debris.



#### FIRE EXTINGUISHER

Carry a fire extinguisher on the tractor at all times.

**NEVER OPERATE**

the rotary cutter in an area that you have not inspected and removed debris or foreign material.

**OPERATE**

the rotary cutter only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never operate the rotary cutter in darkness or foggy conditions where you cannot clearly see at least 300 feet in front and to the sides of the tractor and rotary cutter. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris, and foreign objects. If you are unable to clearly see these type of items, discontinue operating the cutter.

**DO NOT OPERATE**

the rotary cutter, or drive the tractor into material that is burning, or areas that recently burnt and may contain hot spots. Burning material, sparks, and coals could be thrown from the rotary cutter to areas of vegetation that might ignite. Tire damage can occur when driving over hot material. Oil and grease on the tractor and rotary cutter could ignite, resulting in equipment destruction. Carry a fire extinguisher on the tractor at all times to extinguish possible fires encountered. Do not operate the rotary cutter on a tractor with an underframe exhaust.

**WHEN YOU GET TO THE END**

of a pass, slightly raise the rotary cutter (2-4") before turning. Never raise the rotary cutter entirely while the blades are turning. If the rotary cutter must be raised higher than 12" from ground level, disengage the tractor PTO and wait for all blade rotation to come to a complete stop before proceeding to raise the rotary cutter.

**LARGE, DENSE, OR WET VEGETATION**

may need to be cut in two or more passes to achieve a uniform cut. In such conditions, raise the cutting height to 12" or more on the first pass. Then lower the rotary cutter to the desired height and mow the vegetation a second time. If possible, select a cutting direction that is at a 90 degree angle to the first pass to reduce streaking for a more uniform cut.

**STAY ALERT**

and watch for trees, low hanging limbs, power lines, and other overhead obstacles and solid ground objects while you are operating. Use care to avoid hitting these items.

Avoid cutting in reverse. Instead, disengage the PTO, wait for the blades to stop, and raise the deck. Back up into the area to be cut. Lower the deck, engage the PTO, and cut forward.

## 7.12 CHAIN SHIELDING

Ironcraft strongly recommends installing full chain shielding on all rotary cutters.

Full chain shielding must be installed when operating in populated areas or other areas where thrown objects could injure people or damage property.

If the rotary cutter is not equipped with full chain shielding, operation must be stopped when anyone comes within 300 feet.

The shielding is designed to reduce the risk of thrown objects. The rotary cutter deck and protective devices cannot prevent all objects from escaping the blade enclosure in every mowing condition. It is possible for objects to ricochet and escape, traveling as much as 300 feet.

Inspect chain shielding each day of operation and replace any broken or missing chains, as required.

## 7.13 RIGHT OF WAY (ROADWAY) MOWING

Use double chain guards for highway, right-of-way, parks, greenbelt mowing, or all other mowing where human dwellings, vehicles, or livestock could be within 300 feet of the cutter.

### **NO SHIELDING IS 100% EFFECTIVE IN PREVENTING THROWN OBJECTS. TO REDUCE THE POSSIBILITY OF INJURY:**

1. Maintain rotary cutter shielding in good operational condition.
2. Inspect the condition of the thrown object guards, cutter side skirts, and skid shoes daily: Replace or repair worn or damaged guards.
3. Inspect the condition of the blades and blade bolts daily. Replace any cracked, worn, bent or damaged blades. Always replace blade bolts and lockwashers when replacing blades. Make sure the blade bolts are properly tightened.
4. Raise cutting height to 6" minimum.
5. Never allow blades to contact solid objects like rocks, posts, wire, curbs, guardrails, or the ground while mowing.

### **ROTARY CUTTERS CAN THROW OBJECTS 300 FEET OR MORE UNDER ADVERSE CONDITIONS.**

To avoid serious injury or death from thrown objects, inspect the area thoroughly for potential thrown objects and remove them before cutting.

Remove debris, rocks, wire, cable, metal objects, and other foreign material from area.

Wire, cable, rope, chains, and metal objects can be thrown or swung outside the deck with great velocity.

Mark the location of objects that cannot be removed.

### **STOP MOWING IF PASSERSBY ARE WITHIN 300 FEET UNLESS:**


1. All thrown object shielding including front and rear deflectors, chain guards, steel guards, bands, side skirts, and skid shoes are in place and in good condition when mowing.
2. Mower sections or wings are adjusted to be close and parallel to ground without exposing blades.
3. Mowing area has been inspected and foreign materials and debris have been removed.
4. Passersby are inside an enclosed vehicle.



# OPERATION



## PULL TYPE


### 7.14 USER SAFETY TRAINING


Refer to “3.4 General Safety Instruction” for user 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 rotary cutter if it rolls onto a person, can cause serious crushing injury or death.



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

	<b>TRAIN UNFAMILIAR USERS</b> It is the rotary cutter owner’s responsibility to make sure any person using the rotary cutter, especially if it is loaned or rented, has been thoroughly trained on its proper and safe use.		<b>USERS</b> who have not read and understood all operating and safety instructions are not qualified to use the rotary cutter.
	<b>TRAIN ALL NEW USERS</b> and review instructions annually with existing users.		<b>UNTRAINED USERS</b> expose themselves and bystanders to possible serious injury or death.
	<b>PHYSICALLY-ABLE</b> Be certain only physically-able persons will use the rotary cutter.		<b>ELDERLY</b> If the elderly are assisting with the work, their physical limitations need to be recognized and accommodated.
	<b>NO CHILDREN</b> Never allow children to operate equipment.		



## 7.15 TRACTOR REQUIREMENTS



### WARNING

#### TRACTOR OWNER/OPERATOR MANUAL

Always refer to the tractor owner's manual to ensure compatibility and maximum safety.

The tractor used to operate the cutter must have the power to lift, pull, and operate the Power Take Off (PTO) at the cutter's rated speed while traveling at a ground speed between 2 and 5 MPH.

The tractor must be matched to the weight of the rotary cutter. 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 cutter with a tractor that does not meet the following requirements may cause tractor or cutter 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.

### TRACTOR REQUIREMENTS AND CAPABILITIES

REQUIREMENTS
Approved Roll-Over Protective Structure (ROPS) or ROPS cab and seat belt.
Tractor Safety Devices; Slow Moving Vehicle (SMV) emblem, lighting, PTO master shield
3-Point Hitch, CAT II/QH (Lift type)
Front End Weight as needed to maintain 20% weight on front axle.
To reduce the risk of grass fires, do not operate the cutter on a tractor with an underframe exhaust.

### 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 equipped directly on implements if the visibility of the tractor warning signals are obscured.

Maintain all manufacturer equipped safety shields and guards. Always replace shields and guards that were removed for access to connect, service, or repair the tractor or implement. Never operate the tractor PTO with the PTO master shield missing or in the raised position.

## ROPS AND SEAT BELT



### WARNING



#### ROLLOVER HAZARD

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

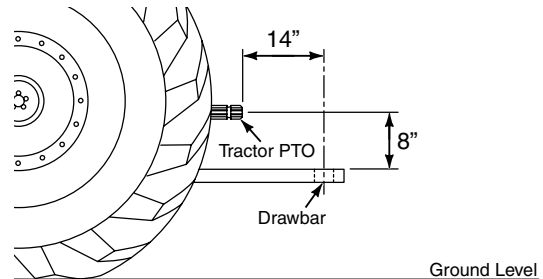
1. Use ROPS equipped tractor.
2. Keep ROPS locked in the UP position.
3. Only operate the equipment when seated in the tractor seat.
4. Always fasten seat belt when operating the tractor and rotary cutter.

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.

Tractor models not equipped with a ROPS and seat belt should have these life saving features installed by an authorized dealer.

### DRAWBAR (PULL TYPE)

The distance between the drawbar hitch pin hole and the end of tractor PTO shaft must be 14". The distance from the top of the drawbar to the PTO shaft must be 8". PTO damage may occur if these dimensions vary more than 1".



## TRACTOR HORSEPOWER

The power required to operate the cutter is determined by the tractor PTO horsepower. Operating the cutter with a tractor that does not have adequate power may damage the tractor engine. Exceeding recommended HP may cause rotary cutter damage by overpowering the unit in heavy cutting conditions.

MODEL	DESCRIPTION	RECOMMENDED MIN HP
1808P	Pull Type	42
1810P	Pull Type	52

PULL TYPE

## POWER TAKE-OFF (PTO)

This rotary cutter is designed to operate at a PTO speed of 540 RPM. Most tractors operate at either 540 or a combination of 540 and 1000 RPM PTO speeds. The operating speed of the rotary cutter and tractor can be determined by the number of splines on the driveline yoke and PTO output shaft. Those operating at 540 RPM will have a 6-spline shaft, and those operating at 1000 RPM will have a 21-spline shaft.



### NOTICE

The rotary cutter will not operate on tractors equipped with a 1000 RPM 21-spline or 1000 RPM 20-spline, 1-3/4" shaft.

Refer to the tractor owner's manual for instructions to change PTO speeds on models that operate at more than one speed.

If operating an older model tractor where the tractor's transmission and PTO utilize one master clutch, an over-running clutch must be used between the PTO output shaft and the driveline of the rotary cutter. An authorized tractor dealer can provide the over-running clutch and its installation, if needed.

DO NOT use a PTO adapter to attach a non-matching implement driveline to a tractor PTO. Use of an adapter can double the operating speed of the implement, resulting in excessive vibration, thrown objects, and blade and implement failure. Adapter use will also change the working length of the driveline exposing unshielded driveline areas. Serious bodily injury and/or equipment failure can result from using a PTO adapter. Consult an authorized dealer for assistance if the implement driveline does not match the Tractor PTO.

## 7.16 ATTACHING TO TRACTOR

Use caution when connecting the rotary cutter to the tractor. The rotary cutter should be securely resting at ground level or setting on blocks. Keep hands and feet from under the deck and clear of pinch points between the tractor drawbar and rotary cutter hitch.



### WARNING

#### CRUSH HAZARD

Crush hazard between hitch and implement. Do not allow anyone to stand between the hitch and implement during hook-up operations.

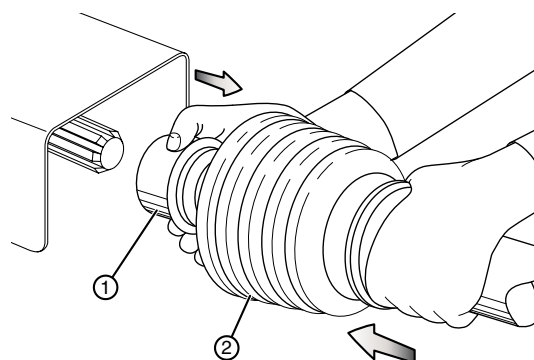
1. Use the jack to adjust the hitch to the height of the tractor drawbar.
2. Board the tractor and start the engine. Back the tractor up to the cutter hitch until the holes in the drawbar and clevis are aligned.
3. Turn off the tractor engine and dismount.
4. Insert a 3/4" or larger high strength drawbar pin through the clevis and drawbar holes and install retaining pin. Do not use a home made or shop made pin.
5. See diagram for correct hitch clevis orientation



**CLEVIS HINGE IS UP**

**DUCK BILL IS DOWN**

6. Retract the jack, remove the locking pin, move the jack to its storage location on the cutter deck, and secure it with the locking pin.



7. Pull back on collar (1) on the tractor end of the driveline.
8. Push the driveline onto the tractor PTO shaft until the collar snaps forward.
9. Pull back on driveline guard (2) to check that the driveline is latched. Do not pull back on the collar, as this will release the driveline.
10. Attach the safety chain on the driveline guard to the tractor.
11. Inspect the hydraulic hoses to ensure they are in good condition and clean the fittings. Route the hydraulic hoses through

the hose rack and attach to the tractor's hydraulic ports. Make sure the hoses are adequately supported so they cannot come in contact with other parts or the ground.

12. Make sure the driveline has adequate clearance through the full range of cutter height adjustment. Adjust

tractor drawbar height and/or length if there is interference. See "7.15 Tractor Requirements, Drawbar section" on page 56 for correct drawbar dimensions.

13. Raise and lower the deck several times to purge any trapped air from the hydraulic cylinder.

## 7.17 DETACHING FROM TRACTOR

1. Move the rotary cutter to a level storage location and lower it to the ground or onto blocks. Park the tractor, place the transmission in park or neutral, and apply the parking brake. Shut down the engine, remove the key, and wait for all motion to come to a complete stop before exiting the tractor. Before disconnecting the rotary cutter, the PTO must be disengaged and blade rotation at a complete stop.
2. Make sure the rotary cutter is resting securely on the ground or blocks, and the wheels are chocked before attempting to

disconnect it from the tractor. Use extreme care to keep feet and hands from under the rotary cutter and clear of any pinch points caused by the tractor drawbar and rotary cutter hitch.

3. Remove the jack from cutter deck and secure it to the hitch by fully inserting the locking pin through the jack and the hitch bracket.
4. Disconnect the hydraulic hoses from the tractor. Store the hoses on the cutter deck.



### CAUTION

#### EXPLOSIVE SEPARATION HAZARD

Be sure all hydraulic pressure is relieved before disconnecting hydraulic line or fittings between the Rotary Cutter and the tractor hydraulic system.

5. Disconnect the driveline safety chain and hitch safety chains.
6. Pull back on the collar on the tractor end of the driveline and disconnect the driveline from the tractor PTO shaft.

7. Use the jack to raise the cutter hitch to the height needed to disconnect the clevis from the drawbar.
8. Remove the hitch pin.

## 7.18 SETTING THE ROTARY CUTTER

Properly setting the rotary cutter is essential for efficient and safe operation. A properly set rotary cutter will make a more uniform cut, distribute clippings more evenly, require minimal tractor work, and follow the contour of uneven terrain. The two adjustments to make before cutting are:

- Leveling front to back
- Cutting height



### NOTICE

Avoid very low cutting heights. Striking the ground with the blades causes damaging shock loads and will cause damage to the rotary cutter and drive. Blades contacting the ground may cause objects to be thrown out from under the cutter deck. Always avoid operating the rotary cutter at a height which causes the blades to contact the ground.

### LEVELING FRONT TO BACK

1. Locate the tractor and cutter on a flat, level surface and use the hydraulics to adjust the cutter height until the front of the skid shoes are 2 to 3 inches off the ground.
2. Loosen the jam nuts on both leveling rods and rotate the "T" handles equally until the back of the cutter deck is approximately 3/4" higher than the front. Lengthening the leveling rods raises the back of the cutter.
  - a. Operating the rotary cutter at this pitch will allow the rotary cutter to cut the grass only once and requires less work from the tractor.
  - b. To increase mulching of the grass or crop material during rotary cutter operation, the rotary cutter should be operated with the deck approximately 3/4" higher in the front than the rear. Operating the rotary cutter at this pitch will allow the rotary cutter to cut the grass twice and can result in a more even cut and improved distribution of the cut material.

3. Make sure that the right and left leveling rods are equally tight and then tighten the jam nuts.

### SETTING THE CUTTING HEIGHT

1. The rotary cutter should be operated at the highest position which will give desired cutting results. This will help prevent the blades from striking the ground, increasing blade life, and reducing stress on the rotary cutter and tractor.
2. Park the tractor and rotary cutter on level ground.
3. Using the tractor hydraulic cylinder control lever, position the front of the rotary cutter with the side skids 1" lower than the desired cut height. For example, for a 3" cut, position the skids 2" from the ground. Set the control lever stop at this position to maintain this height when raising and lowering the cutter.

## 7.19 TIRE AND WHEEL

Laminated sectional tires are designed for conditions where puncture proof performance is required and the rotary cutter will not be transported for long distances on roadways. Transport speed for laminated tires should not exceed 15 MPH. Excessive speed can cause damage to the machine and tire sections.

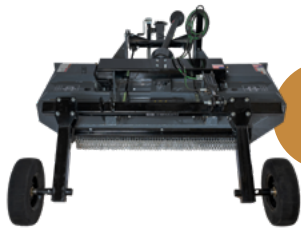
# 7.20 INITIAL SETUP CHECKLIST

(PRIOR TO USING FOR THE FIRST TIME)

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

This Initial Setup Checklist is provided for the user/owner. It is important for both personal safety and to maintain the mechanical condition of the rotary cutter that this checklist is followed.

**START HERE**



**01**

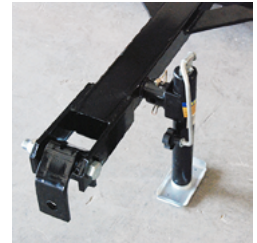
## SAFETY SIGNS

Verify all safety signs are in place and legible. Refer to “4.3 Safety Sign Locations” on page 17.

## ROTARY CUTTER IS PROPERLY ATTACHED

Make sure the rotary cutter is properly attached to the drawbar. Refer to “7.16 Attaching to Tractor” on page 58.

**02**



**03**

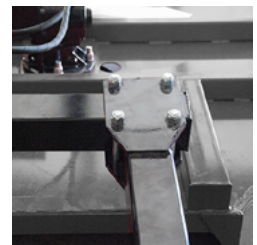
## DRIVELINE

Make sure the driveline is attached to the tractor PTO, and safety chains are installed. Refer to “6.7 Installation and Removal of Driveline to Tractor PTO” on page 36.

## HARDWARE

Make sure all hardware is properly installed and tightened. Refer to “11.1 Bolt Torque” on page 92.

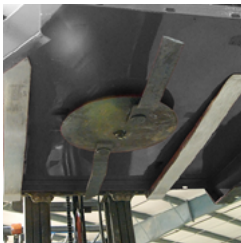
**04**



**05**

## BLADES

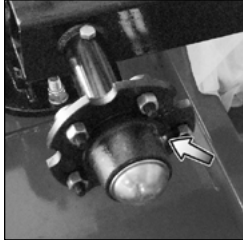
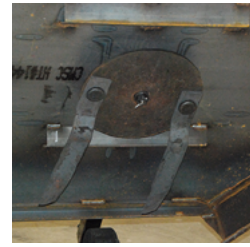
Check that the blades are sharp. Refer to “9.8 Blade Servicing” on page 81.



### BLADE CARRIER

Make sure the blade carrier nuts are tight and the cotter pins installed. Refer to “9.9 Blade Carrier Removal” on page 82.

06



07

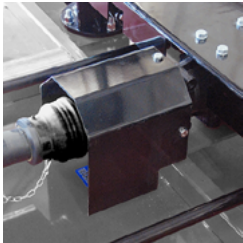
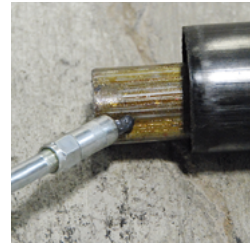
### ZERKS

Lubricate all grease zerks and driveline slip joint. Refer to “9.5 Greasing” on page 80.

### DRIVELINE SLIP JOINT

Lubricate all grease zerks and driveline slip joint. Refer to “9.5 Greasing” on page 80.

08



09

### SAFETY SHIELDS

Make sure all safety shields and guards are properly installed. Refer to “6.6 Assembly Procedure” on page 29.

### GEARBOX GREASE LEVEL

Check the gearbox grease level. Refer to “9.7 Gearbox Lubrication” on page 81.

10



11

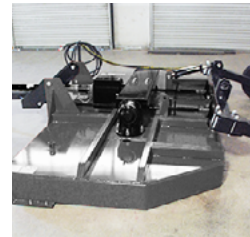
### TAILWHEELS

Check the tailwheels for damage. Make sure the tailwheel support bolts are tight.

### CUTTER HEIGHT

Check the cutting height. Adjust if needed. Refer to “7.18 Setting the Cutting Height” on page 60.

12





## 7.21 MACHINE BREAK-IN

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

MAINTENANCE TASK	CHECK AFTER OPERATING FOR	
	30 MIN	10 HOUR
Tighten all fasteners if necessary.	✓	
Lubricate all grease fittings.	✓	
Go to the normal servicing and maintenance schedule, as defined in the Maintenance Section.		✓

PULL TYPE

## 7.22 PRE-OPERATION CHECKLIST

Before each use of the rotary cutter, the following areas should be checked.

CHECKLIST BEFORE EACH USE	✓
Make sure the rotary cutter is positively attached to the tractor drawbar. Refer to “7.16 Attaching to Tractor” on page 58.	
Make sure the hydraulic hoses are undamaged, are secured on the hose rack, and cannot contact the tractor when turning, or drag on the ground.	
Use only an appropriately sized tractor to pull the rotary cutter. Refer to “7.15 Tractor Requirements” on page 55.	
Make sure the driveline is attached to the tractor PTO. Refer to “6.7 Installation and Removal of Driveline to Tractor PTO” on page 36.	
Make sure all safety shields and guards are properly installed.	
Check the blade bolts and blade pan nut. Refer to “9.8 Blade Servicing” on page 81.	
Check the condition of the blades.	
Check the cutting height. Adjust if needed. Refer to “7.18 Setting the Cutting Height” on page 60.	
Inspect the overall rotary cutter for potential problems or damage. Do not use the rotary cutter if it needs repairs of any type.	
Make sure the driveline U-joints, and slip joints are greased. Refer to “9.6 Driveline Lubrication” on page 80.	

## 7.23 OPERATION CHECKLIST

Although the rotary cutter is easy to use, each operator should review this section to familiarize themselves with the detailed safety and operating procedures. When using this machine, follow this procedure:

**START HERE**

PULL TYPE

**01**

### **CLEAR THE AREA**

of bystanders, especially small children.

### **CLEAR THE AREA TO BE CUT**

of stones, branches, debris, and any hard objects that may be thrown.

**02**

**03**

### **MARK THE LOCATION**

of objects that cannot be removed.

### **PRE-OPERATION CHECKLIST**

Review and follow the Pre-Operation Checklist.

**04**

**05**

### **ENGAGE THE PTO**

at low engine RPM, then raise PTO speed to 540 RPM.

### **BEGIN TO CUT AT A SLOW SPEED,**

then increase to a speed that gives a clean cut without lugging the engine. Do not operate above 5 MPH.

**06**

**07**

### **NEVER**

allow blades to contact solid objects like rocks, posts, wire, curbs, guardrails, or the ground while mowing.

### **AVOID OPERATING THE ROTARY CUTTER IN REVERSE DIRECTION**

when possible. Check to make sure there are no persons behind the rotary cutter, and use extreme care when maneuvering in reverse.

**08**

## 7.24 OPERATING SAFETY



### WARNING



#### 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.



#### THROWN OBJECT HAZARD

Cutters can throw objects up to 300 feet. To avoid serious injury or death:

1. Keep all thrown object shielding in place.
2. Inspect area for potential thrown objects before cutting.
3. Do not operate rotary cutter with the deck raised.



#### THROWN OBJECT HAZARD

For non-agricultural use, OSHA, ASAE, SAE, and ANSI standards require the use of chain guards or other protective guards at all times.



#### STAY CLEAR

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



#### CUTTER BLADE CONTACT HAZARD (hand)

To avoid serious injury or death, keep away from rotating blades. Do not put hands under cutter deck.



#### CUTTER BLADE CONTACT HAZARD (foot)

To avoid serious injury or death, keep away from rotating blades. Do not put feet under rotary cutter deck.



### SAFETY INSTRUCTIONS



#### FIRE HAZARD

Clippings are flammable. To reduce the risk of fire:

1. Do not operate near fires.
2. Keep rotary cutter deck clear of clippings and debris.



#### FIRE EXTINGUISHER

Carry a fire extinguisher on the tractor at all times.

**OPERATE**

the rotary cutter only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never operate the rotary cutter in darkness or foggy conditions where you cannot clearly see at least 300 feet in front and to the sides of the tractor and rotary cutter. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris, and foreign objects. If you are unable to clearly see these type of items, discontinue operating the cutter.

**NEVER**

operate the rotary cutter in an area that you have not inspected and removed debris or foreign material.

**DO NOT**

operate the rotary cutter, or drive the tractor into material that is burning, or areas that recently burnt and may contain hot spots. Burning material, sparks, and coals could be thrown from the rotary cutter to areas of vegetation that might ignite. Tire damage can occur when driving over hot material. Oil and grease on the tractor and rotary cutter could ignite, resulting in equipment destruction. Carry a fire extinguisher on the tractor at all times to extinguish possible fires encountered. Do not operate the rotary cutter on a tractor with an underframe exhaust.

**WHEN**

you get to the end of a pass, slightly raise the rotary cutter (2-4") before turning. Never raise the rotary cutter entirely while the blades are turning. If the rotary cutter must be raised higher than 12" from ground level, disengage the tractor PTO and wait for all blade rotation to come to a complete stop before proceeding to raise the rotary cutter.

**WHEN TURNING,**

the angle between the tractor and rotary cutter must not exceed 80°. This extreme angle is intended for intermittent use only. Plan your cutting to minimize extreme turning angles. Sharp turns can cause premature failure of the joints and put pressure on the tractor PTO shaft, and could cause extensive mechanical damage to the rotary cutter and tractor.

**LARGE, DENSE, OR WET**

vegetation may need to be cut in two or more passes to achieve a uniform cut. In such conditions, raise the cutting height to 12" or more on the first pass. Then lower the rotary cutter to the desired height and mow the vegetation a second time. If possible, select a cutting direction that is at a 90 degree angle to the first pass to reduce streaking for a more uniform cut.



### STAY ALERT

and watch for trees, low hanging limbs, power lines, and other overhead obstacles and solid ground objects while you are operating. Use care to avoid hitting these items.



### AVOID

cutting in reverse. Instead, disengage the PTO, wait for the blades to stop, and raise the deck. Back up into the area to be cut. Lower the deck, engage the PTO, and cut forward. Do not back the rotary cutter into solid objects. The joint where the hitch attaches to the deck will pivot upward, allowing the front edge of the deck to contact the driveline.



### ALWAYS

cross steep ditches and banks at a diagonal. Never cross straight across and never back into a steep ditch or bank. Cutting over ditches and backing up hills can “Bottom Out” the driveline. Bottoming out is when the driveline shaft has shortened to the point it is pressing against the gearbox and tractor PTO shafts. Once a driveline has bottomed out, it can not be shortened anymore without causing serious damage to the tractor PTO components, cutter gearbox and driveline.



### DO NOT OPERATE

a pull-type cutter at an angle exceeding 25 degrees up or down or at any angle that will force the driveline to bind and/or hit the tractor drawbar.

## 7.25 CHAIN SHIELDING

Ironcraft strongly recommends installing full chain shielding on all rotary cutters. Refer to “12.17 Chain Shielding” on page 115.

The shielding is designed to reduce the risk of thrown objects. The rotary cutter deck and protective devices cannot prevent all objects from escaping the blade enclosure in every mowing condition. It is possible for objects to ricochet and escape, traveling as much as 300 feet.

1. Full chain shielding must be installed when operating in populated areas or other areas where thrown objects could injure people or damage property.
2. If the rotary cutter is not equipped with full chain shielding, operation must be stopped when anyone comes within 300 feet.
3. Inspect chain shielding each day of operation and replace any broken or missing chains, as required.

## 7.26 RIGHT OF WAY (ROADWAY) MOWING

Use double chain guards for highway, right-of-way, parks, greenbelt mowing, or all other mowing where human dwellings, vehicles, or livestock could be within 300 feet of the cutter.

### **NO SHIELDING IS 100% EFFECTIVE IN PREVENTING THROWN OBJECTS. TO REDUCE THE POSSIBILITY OF INJURY:**

1. Maintain rotary cutter shielding in good operational condition.
2. Inspect the condition of the thrown object guards, cutter side skirts, and skid shoes daily: Replace or repair worn or damaged guards.
3. Inspect the condition of the blades and blade bolts daily. Replace any cracked, worn, bent or damaged blades. Always replace blade bolts and lock washers when replacing blades. Make sure the blade bolts are properly tightened.
4. Raise cutting height to 6" minimum.
5. Never allow blades to contact solid objects like rocks, posts, wire, curbs, guardrails, or the ground while mowing.

### **ROTARY CUTTERS CAN THROW OBJECTS 300 FEET OR MORE UNDER ADVERSE CONDITIONS.**

1. To avoid serious injury or death from thrown objects, inspect the area thoroughly for potential thrown objects and remove them before cutting.
2. Remove debris, rocks, wire, cable, metal objects, and other foreign material from area.
3. Wire, cable, rope, chains, and metal objects can be thrown or swung outside the deck with great velocity.
4. Mark the location of objects that cannot be removed.

### **STOP MOWING IF PASSERSBY ARE WITHIN 300 FEET UNLESS:**

1. All thrown object shielding including front and rear deflectors, chain guards, steel guards, bands, side skirts, and skid shoes are in place and in good condition when mowing.
2. Mower sections or wings are adjusted to be close and parallel to ground without exposing blades.
3. Mowing area has been inspected and foreign materials and debris have been removed.
4. Passersby are inside an enclosed vehicle.

# TRANSPORTING

## 7.1 TRANSPORTING SAFETY (ROAD)



### WARNING

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



### TRACTOR OWNER/ OPERATOR MANUAL

Always refer to the tractor owner's manual to determine its compatibility and maximum safety.



### OPERATING THE TRACTOR

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



### FALL AND CRUSH HAZARD

Do not allow riders on the rotary cutter or tractor.



### MAXIMUM TRANSPORTING SPEED –LIFT

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



### MAXIMUM TRANSPORTING SPEED –PULL

Do not exceed 15 MPH when transporting the rotary cutter. Slow down for corners and rough terrain.



### VISIBILITY

Clean reflectors, SMV or SIS sign, and lights before towing. 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 rotary cutter on public roads. Obey all applicable laws and regulations.



### ROLLOVER PROTECTION

The tractor should be equipped with a Roll Over Protective Structure (ROPS) and a seat belt.





## 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 rotary cutter.



### HITCH ATTACHMENT

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



### WORKING TAILLIGHTS

Make sure lights on the tractor are working properly.



### ADDITIONAL LIGHTING

For rotary cutters 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. Rotary cutters 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.

1. Before transporting, make sure the PTO is disengaged and all blade movement has stopped.
2. Do not travel faster than 20 mph when transporting. Only transport using a tractor. Always slow down for rough terrain and when cornering.



# STORAGE

## 8.1 STORAGE SAFETY

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



### CAUTION



#### PERSONAL INJURY HAZARD

Store the rotary cutter 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 rotary cutter.



#### CRUSH HAZARD

Always set the rotary cutter on safety stands or on blocks for storage.



### NOTICE

To prevent damage to the rotary cutter, store it in a dry, level area.

## 8.2 PLACING IN STORAGE

1. Remove all entangled vegetation.
2. Thoroughly wash the rotary cutter with a pressure washer or water hose to remove all clippings, dirt, mud, or debris.
3. Select an area that is dry, level, and free of debris (inside a building is ideal). Move the rotary cutter to its storage area.
4. Raise the rotary cutter with the 3-point hitch and place blocks under the side skirts. Lower the rotary cutter onto the blocks.
5. Disconnect the cutter drive line and secure it up off the ground.
6. Disconnect the rotary cutter from the 3-point hitch and drive the tractor away from the rotary cutter. Do not leave the tractor attached to the rotary cutter.
7. Lubricate all grease points. Make sure all grease cavities have been filled with grease to remove any water residue from washing.
8. Touch up all paint nicks and scratches to prevent rusting.

## 8.3 REMOVING FROM STORAGE

When removing the rotary cutter from storage, follow this procedure:

1. Attach the rotary cutter to the tractor 3-point hitch.
2. Raise the rotary cutter up off the blocks.
3. Before placing the rotary cutter back into service, replace any worn or defective parts and perform the Pre-Operation Checklist.

## 8.4 PLACING IN STORAGE

1. Remove all entangled vegetation.
2. Thoroughly wash the rotary cutter with a pressure washer or water hose to remove all clippings, dirt, mud, or debris.
3. Select an area that is dry, level, and free of debris (inside a building is ideal). Move the rotary cutter to its storage area.
4. Raise the rotary cutter with the tractor hydraulics and place blocks under the side skirts. Lower the rotary cutter onto the blocks.
5. Remove the jack from the cutter deck and secure it to the hitch by fully inserting the locking pin through the jack and the hitch bracket.
6. Disconnect the hydraulic hoses from the tractor. Store the hoses on the cutter deck.
7. Disconnect the driveline safety chain and hitch safety chains.
8. Disconnect the cutter drive line and secure it up off the ground.
9. Use the jack to raise the cutter hitch to the height needed to disconnect the clevis from the drawbar.
10. Remove the hitch pin and drive the tractor away from the rotary cutter. Do not leave the tractor attached to the rotary cutter.
11. Lubricate all grease points. Make sure all grease cavities have been filled with grease to remove any water residue from washing.
12. Touch up all paint nicks and scratches to prevent rusting.

## 8.5 REMOVING FROM STORAGE

When removing the rotary cutter from storage, follow this procedure:

1. Attach the rotary cutter to the tractor drawbar.
2. Retract the jack, remove the locking pin, move the jack to its storage location on the cutter deck, and secure it with the locking pin.
3. Attach the hydraulic hoses to the tractor's hydraulic system. Make sure the hoses are adequately supported so they cannot come in contact with other parts or the ground.
4. Raise the rotary cutter up off the blocks.
5. Before placing the rotary cutter back into service, replace any worn or defective parts and perform the Pre-Operation Checklist.

# SERVICE AND MAINTENANCE

## LIFT TYPE

### 9.1 MAINTENANCE SAFETY



#### WARNING

Failure to comply with the following safety instructions can and will result in serious injury and possibly even death.



#### PERSONAL PROTECTION EQUIPMENT

Wear close fitting and belted clothing to avoid getting caught in moving parts. Wear personal protection equipment (PPE), which may include hard hat, safety glasses, safety shoes, gloves, etc. , appropriate for the work site and working conditions.



#### DISCONNECT DRIVELINE

To prevent injury due to possible unexpected movement, disconnect the driveline from the tractor PTO before performing any maintenance procedure.



#### DAMAGED PARTS HAZARD

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



#### SAFETY SHIELDS AND DEVICES

When completing a maintenance or service function, make sure all safety shields and devices are installed before placing the rotary cutter in service.



#### NO UNAUTHORIZED MODIFICATIONS

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



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



#### CRUSH HAZARD

Always set the rotary cutter on safety stands or on the ground when performing maintenance.



#### 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. The manufacturer 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.



### SAFETY EQUIPMENT

A fire extinguisher and first aid kit should be readily accessible while performing maintenance on this equipment.



### 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 working beneath the rotary cutter, or performing repairs, service, or maintenance.



Before working underneath the rotary cutter, place it on a minimum of four jack stands, with a load rating of at least 1000 lbs. each.

Do not position the jack stands under wheels, axles, or wheel supports, as they may rotate and cause the rotary cutter to fall.

Make sure the jack stands are stable and the rotary cutter deck is approximately level. Test the stability of the rotary cutter before working underneath.

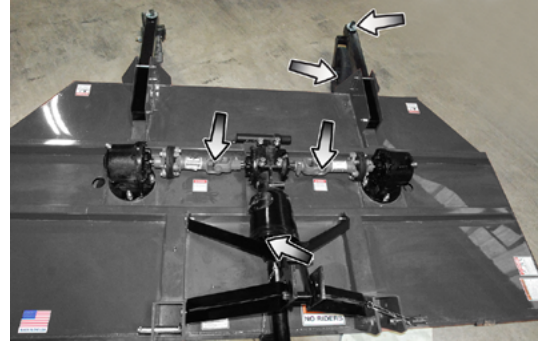
If the rotary cutter is attached to the tractor, set the brakes, remove the key, chock the tractor wheels, and block the rotary cutter before working underneath.

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

## 9.2 GREASING

See the diagram for the location of all grease zerks.

Grease all zerks according to the schedule in “9.15 Service Record” on page 85. Use an SAE multipurpose high-temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium base grease.



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

## 9.3 DRIVELINE LUBRICATION

Lubricate the driveline U-joints and slip joint every eight operating hours.

1. Lower the rotary cutter to the ground, disconnect the driveline from the tractor PTO shaft, and slide the halves apart but do not disconnect from each other.
2. Apply a bead of grease completely around male half where it meets female half. Slide drive halves over each other several times to distribute grease.
3. Rotate the driveline safety shield until the holes in the shield match up with the grease zerks in the U-joints.
4. Apply grease to the U-joint grease zerk.
5. Repeat for the U-joint at the rear of the driveline.
6. Apply grease to the U-joint on both of the shock couplers.

# SERVICE AND MAINTENANCE

## PULL TYPE

### 9.1 MAINTENANCE SAFETY



#### WARNING

Failure to comply with the following safety instructions can and will result in serious injury and possibly even death.



#### PERSONAL PROTECTION EQUIPMENT



Wear close fitting and belted clothing to avoid getting caught in moving parts. Wear personal protection equipment (PPE), which may include hard hat, safety glasses, safety shoes, gloves, etc. , appropriate for the work site and working conditions.



#### DISCONNECT DRIVELINE

To prevent injury due to possible unexpected movement, disconnect the driveline from the tractor PTO before performing any maintenance procedure.



#### DAMAGED PARTS HAZARD

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



#### SAFETY SHIELDS AND DEVICES

When completing a maintenance or service function, make sure all safety shields and devices are installed before placing the rotary cutter in service.



#### NO UNAUTHORIZED MODIFICATIONS



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

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



#### CRUSH HAZARD



Always set the rotary cutter on safety stands or on the ground when performing maintenance.



#### 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. The manufacturer will not accept responsibility for damages as a result of the use of unapproved parts.



## WARNING



### SAFETY SHIELDS AND DEVICES

When completing a maintenance or service function, make sure all safety shields and devices are installed before placing the rotary cutter in service.



### TRAPPED AIR HAZARD

When installing, replacing, or repairing hydraulic system cylinders or parts, make sure that the entire system is charged and free of air before resuming operations. Failure to bleed the system of all air can result in improper machine operation, causing severe injury.



### ZERO PRESSURE

Relieve pressure from the hydraulic system before servicing or disconnecting from the tractor.



### HIGH-PRESSURE FLUID HAZARD

Keep all hydraulic lines, fittings, and couplers tightly secured and free of leaks.



### EXPLOSIVE SEPARATION

Replace any worn, cut, abraded, flattened, or crimped hoses. Hazard



### HIGH-PRESSURE HAZARD

Do not make any temporary repairs to the hydraulic lines, fittings, or hoses using tape, clamps, or cement. The hydraulic system operates under extremely high pressure and temporary repairs may fail suddenly and create a hazardous/dangerous situation.



### HIGH PRESSURE FLUID HAZARD

DO NOT use your bare hand to check for potential leaks. Always use a board or cardboard when checking for a leak.

Escaping hydraulic fluid under pressure, even a pinhole size leak, can penetrate body tissue, causing serious injury and possible death. If fluid is injected into your skin, it must be treated immediately by a doctor familiar with this type of injury.





## SAFETY INSTRUCTIONS

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



### SAFETY EQUIPMENT

A fire extinguisher and first aid kit should be readily accessible while performing maintenance on this equipment.



### 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 working beneath the rotary cutter, or performing repairs, service, or maintenance.



Before working underneath the rotary cutter, place it on a minimum of four jack stands, with a load rating of at least 1000 lbs. each.

Do not position the jack stands under wheels, axles, or wheel supports, as they may rotate and cause the rotary cutter to fall.

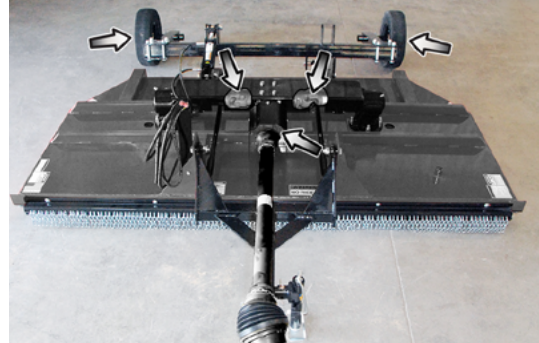
Make sure the jack stands are stable and the rotary cutter deck is approximately level. Test the stability of the rotary cutter before working underneath.

If the rotary cutter is attached to the tractor, set the brakes, remove the key, chock the tractor wheels, and block the rotary cutter before working underneath.

## 9.5 GREASING

See the diagram for the location of all grease zerks.

Grease all zerks according to the schedule in “9.15 Service Record” on page 87. Use an SAE multipurpose high-temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multipurpose lithium base grease.



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

## 9.6 DRIVELINE LUBRICATION

Lubricate the driveline U-joints and slip joint every eight operating hours.

1. Lower the rotary cutter to the ground, disconnect the driveline from the tractor PTO shaft, and slide the halves apart but do not disconnect from each other.
2. Apply a bead of grease completely around male half where it meets female half. Slide drive halves over each other several times to distribute grease.
3. Rotate the driveline safety shield until the holes in the shield match up with the grease zerks in the U-joints.
4. Apply grease to the U-joint grease zerk.
5. Repeat for the U-joint at the rear of the driveline.
6. Apply grease to the U-joint on both of the shock couplers.

## 9.7 GEARBOX LUBRICATION

The gearboxes are filled at the factory and should require no maintenance. If there is evidence of leakage, the grease level should be checked. If required, grease should be added until it comes to the proper level. Recommended lubricant is EP-0 Grease.



### NOTICE

Make sure the rotary cutter is level when checking the oil in the gearbox.



### NOTICE

Overfilling the gearbox will cause pressure to build up and cause the seals to leak.

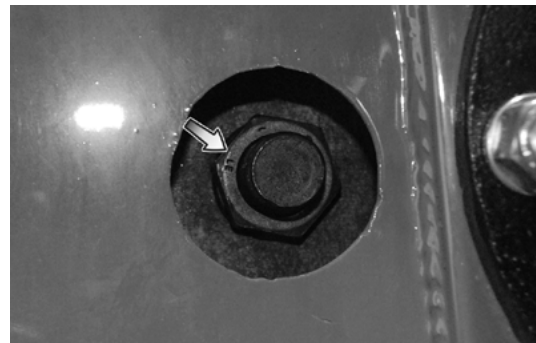
## 9.8 BLADE SERVICING

Inspect blades before each use to determine that they are properly installed and in good condition. If any blade is bent, excessively nicked, worn, or has any other damage, replace both blades. Small nicks can be ground out when sharpening.

Manually wiggle the blade carrier to check for any looseness. Recheck torque every fifty hours. Retighten any loose parts.

### BLADE REMOVAL

To remove the blades for sharpening or replacement, remove the nut and lockwasher from the blade bolt through the inspection hole in the deck of the mower near the gearbox.



### BLADE INSTALLATION

When installing blades, be sure to check the blade bolt pivot diameter for wear. Replace the bolt if worn more than 1/4 inch at any point. Tighten nut to 600 ft. lbs.

Always use a new lockwasher and nut when replacing the blade bolt.

Make sure blades are installed with the cutting edge in the direction of rotation. The left spindle rotates counterclockwise as viewed from above the deck. The right spindle rotates clockwise as viewed from above the deck.

## BLADE SHARPENING

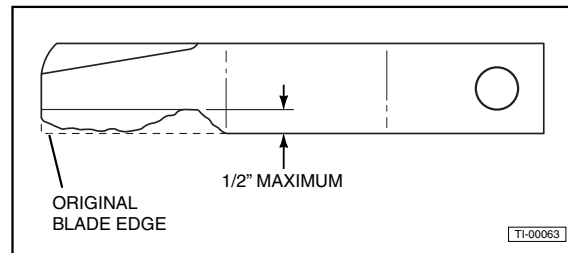
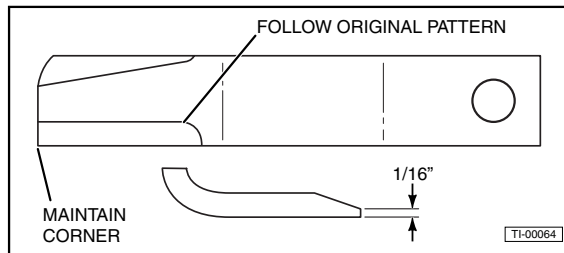


### CAUTION SHARP OBJECT HAZARD



The grinder may catch on the blade during sharpening, propelling it forcefully. To prevent the possibility of serious injury, make sure blades are secured against movement while sharpening.

When sharpening blades, always sharpen both blades at the same time and grind the same amount on each blade to maintain balance. Unbalanced blades will cause excessive vibration, which can damage gearbox bearings. Vibration may also cause structural cracks to the rotary cutter. Follow the original sharpening pattern. Do not sharpen blades to a razor edge, leave a 1/16" blunt edge. Do not sharpen the back side of the blade. Do not heat and pound out the edge.



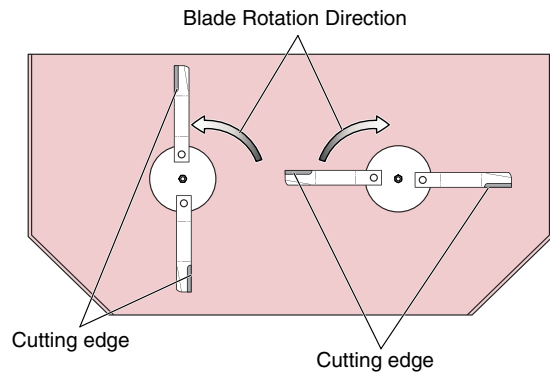
Replace the blades when worn more than 1/2" from the original edge. Always replace blades in pairs.

## 9.9 BLADE CARRIER REMOVAL

1. Remove the cotter pin and loosen the castle nut on the gearbox shaft. Do not remove the nut until the blade carrier is loosened.
2. Use a suitable two jaw gear puller to pull the carrier off the tapered gearbox shaft.
3. If a gear puller is not available, insert a bar through the blade bolt access the hole with the end against the blade carrier. Strike the opposite end of the bar sharply. Rotate the blade carrier 180 degrees and repeat until the carrier breaks loose.
4. Remove the castle nut and the blade carrier.

## 9.10 BLADE CARRIER INSTALLATION

1. Clean the splines on both the blade carrier and the output shaft.
2. Position the carrier on the gearbox output shaft with the blade bolts located at 90° to the other blade carrier and install the castle nut. Tighten the nut to a minimum 450 ft. lbs.



### NOTICE

The blade carriers on dual spindle rotary cutters must be “timed” to prevent blade interference. Make sure to install the blade carrier with the blade bolts located at 90° to the other blade carrier.



### WARNING

#### PROJECTILE HAZARD

Blade interference can cause blade failure and possible serious injury or death from thrown blades. Make sure to install each blade carrier with the blade bolts located at 90° to the other blade carrier.

3. Strike the carrier near the hub several times with a heavy hammer to seat the hub. Use care not to strike the nut or the end of the shaft.
4. Retighten the nut to 700 ft. lbs.
5. Install the cotter pin and spread the tangs.

## 9.11 SLIP CLUTCH OPERATIONAL CHECK

The slip clutch serves as overall protection for the tractor, driveline, and gearboxes. Even though new clutch assemblies are “run-in” and checked for torque prior to shipment, re-adjustment may be advisable if the clutch has been exposed to weather for an extended period of time. The clutch facing and plates should be inspected for rust and/or corrosion. After the rotary cutter has been stored for thirty days or more, perform the following check:

1. Make a trial run in the heaviest operating conditions expected. If the clutch slips noticeably, tighten the eight adjusting bolts no more than 1/2 turn between trial runs until the clutch slippage is reduced.
2. Scribe a mark across the clutch facing. When subjected to shock loads, a separation of the marks will assure that the clutch setting is correct.



### NOTICE

Check the clutch periodically during the first hour of operation for excessive heat build-up due to unexpected slippage.

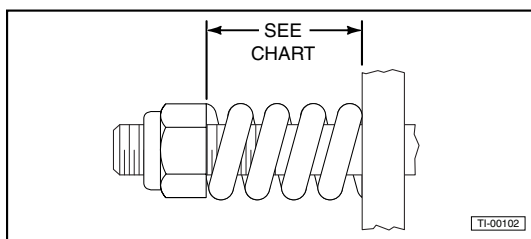
If the clutch is being rebuilt (new facing and/or plates), it is necessary to “run-in” these parts prior to final adjustment. The plates should be thoroughly cleaned and free of foreign material, as well as being checked for warping with a straight edge. Warped plates cannot be adjusted properly and will not hold. To accomplish the “run-in” after assembly, follow this procedure:

1. Tighten all the adjusting bolts evenly until the clutch cannot be slipped by hand.
2. With the blade carrier locked in a stationary position, operate with the PTO at idling speed (approx. 100 RPM), until evidence of heating is noted. **Do not allow the clutch to overheat.**
3. Discontinue operation and **allow the clutch to cool completely.**
4. After the clutch has cooled, tighten all the adjusting bolts evenly and proceed with the regular clutch adjusting procedures as described above.

## 9.12 SLIP CLUTCH ADJUSTMENT

The slip clutch is factory preset to the correct torque for protecting the implement and tractor: Periodic adjustment is recommended. Should adjustment be needed, follow this procedure:

1. Check to be sure all spring lengths are the same. Initial spring length is shown in the chart.



CLUTCH SPRING LENGTH CHART	
EG/COMER	BONDIOLI & PAVESI
1.27" (32.2mm)	1.15" (29.3mm)
1.28" (32.4mm)	1.12" (28.5mm)

2. If necessary, adjust the nut on any spring that is unequal. Adjust all eight spring retaining nuts 1/3 of a turn (two flats on a nut) and check clutch slippage.
3. If further adjustment is necessary, adjust in 1/3 turn increments. Adjust only to provide sufficient torque to prevent slippage under normal conditions. Occasional slippage is normal for drive train protection. If satisfactory results cannot be obtained, consult your authorized dealer.



### NOTICE

Do not overtighten and cause the spring to become solid, as this will cause shaft failure.

## 9.13 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. For proper bolt torque values, refer to "11.1 Bolt Torque" on page 92.

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

## 9.14 WELDING REPAIRS



### NOTICE

Before performing any type of welding repair to the rotary cutter, 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

#### PROJECTILE HAZARD

Do not attempt to weld on the blades. They are hardened and will crack or otherwise be damaged, causing failure and possible serious injury or death from thrown blades.



### WARNING

#### PERSONAL INJURY HAZARD

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



### NOTICE

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



# 9.15 SERVICE RECORD

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

Copy this page to continue record.

MAINTENANCE TASK	HOURS AND SERVICED BY									
<b>EVERY 8 HOURS</b>										
Make sure blade bolts are tightened to proper torque.										
Make sure all retainer clips and cotter pins are in place.										
Inspect the cutting blades for wear and damage.										
Grease the driveline U-joints, and slip joints. Refer to "9.3 Driveline Lubrication" on page 76 (Lift type). "9.6 Driveline Lubrication" on page 80 (Pull type)										
<b>EVERY 50 HOURS</b>										
Check blade carrier nut torque.										
Grease all lubrication points.										
<b>ANNUALLY</b>										
Grease all lubrication points.										
Make sure all fasteners are properly tightened.										
Check cutter deck, gearboxes, and driveline for damage.										
Inspect the cutting blades 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.										
Make sure the slip clutch is functioning properly.										
Inspect the hitch A-frame and braces for wear and damage.										
Wash the rotary cutter.										

LIFT TYPE

PULL TYPE

# TROUBLESHOOTING

## 10.1 TROUBLESHOOTING CHART

PROBLEM	CAUSE	RESOLUTION
Uneven cut.	Excessive ground speed.	Reduce ground speed.
	Blades worn, dull, or bent.	Replace blades.
	Mower not level side-to-side.	Adjust. Refer to "7.3 Attaching to Tractor" (Lift type) on page 43. "7.16 Attaching to Tractor (Pull type) on page 58.
	Improper height adjustment.	Adjust rotary cutter height. Refer to "7.5 Setting the Rotary Cutter" (Lift type) on page 44. "7.18 Setting the Rotary Cutter" (Pull type) on page 60.
	Low tractor tire pressure on one side.	Adjust tire pressure. (Refer to OEM manual).
	Turning too fast.	Reduce ground speed when turning.
	Tractor tires push grass down.	Adjust your tractor wheel spacing. (Refer to OEM manual).
	Damaged cutter pan.	Repair or replace as necessary.
Uncut material.	Excessive ground speed.	Reduce ground speed.
	RPM too low.	Maintain 540 RPM PTO speed.
Windrowing.	Material heavy and lush.	Raise the front of rotary cutter relative to the rear. Refer to "7.5 Setting the Rotary Cutter" (Lift type) on page 44. "7.18 Setting the Rotary Cutter" (Pull type) on page 60.
	Excessive ground speed.	Reduce ground speed.
	Conditions too wet.	Wait for conditions to dry. Reduce ground speed.
Grass cut lower in center of swath than at edge.	Height of rotary cutter lower at rear or front.	Adjust rotary cutter height and attitude so that rear and front are within 1/2" of same height.
Streaking conditions in swath.	Blades dull.	Sharpen or replace blades.
	Blades unable to cut that part of grass pressed by path of tractor tires.	Slow ground speed of tractor but maintain 540 RPM PTO speed. Cutting lower will help.

PROBLEM	CAUSE	RESOLUTION
Material discharges from cutter	Material too high and too much material.	Reduce ground speed but maintain 540 RPM at tractor PTO or make two passes over material.
		unevenly; bunches of material along swath. (lift type)
		Raise rotary cutter for the first pass and lower to desired height for the second and cut at 90° to first pass. (pull type)
		Raise rear of rotary cutter high enough to permit material to discharge but not so high as to cause conditions listed above.
	Grass wet.	Allow grass to dry before mowing. Slow ground speed of tractor but keep engine running at full PTO RPM. Cutting lower will help.
Rotary cutter will not cut all the time. (Slip clutch drive only)	Rear of rotary cutter too low, trapping material under cutter.	Adjust rotary cutter height and attitude.
	Slip clutch slipping.	Adjust slip clutch. Refer to “9.12 Slip Clutch Adjustment” on page 85.
Blade bolts working loose.	Burnt or damaged clutch facing.	Rework clutch or replace according to OEM manual.
	Bolts not tightened.	Tighten bolts. Refer to “9.8 Blade Servicing” on page 81.
	Bolt hole elongated or oversized.	Replace blade carrier Refer to “9.9 Blade Carrier Removal” on page 82.
Gearbox noisy.	Lockwasher broken.	Replace lockwasher. Refer to “9.8 Blade Servicing” on page 82.
	Low lubricant level.	Add grease. Refer to “9.7 Gearbox Lubrication” on page 81.
	Rough gears. (lift type)	Run in or replace gearbox.
Gearbox leaking.	Worn bearing.	Replace gearbox.
	Damaged oil seal.	Replace seal.
	Bent shaft.	Replace gearbox.
	Oil seal not sealing in the housing.	Replace seal or use a sealant on O.D. of seal.
	Oil level too high.	Drain to proper level.
	Gasket damaged.	Replace gasket.
Bolts loose.	Tighten bolts.	

PROBLEM	CAUSE	RESOLUTION
Gearbox overheating.	Low on lubricant.	Fill to level plug.
	Improper type of lubricant.	Replace with proper lubricant. Refer to "9.7 Gearbox Lubrication" on page 81.
	Excessive trash build-up around gearbox.	Remove trash.
Excessive vibration.	Blades are not free to swing.	Check bushing and blade movement.
	Blades are out of balance.	Check blades for damage or replace blades. Refer to "9.8 Blade Servicing" on page 81.
Unusual noise.	Loose blade bolts or worn bushings.	Tighten bolts, check bushings for wear and change as needed. Refer to "9.8 Blade Servicing" on page 81.
	Bent blade carrier, blades.	Replace blade carrier. Refer to "9.9 Blade Carrier Removal" on page 82.
	Deck bent, causing blades to contact deck.	Straighten deck.
Driveline will not telescope.	Improper lubrication.	Grease driveline. Refer to "9.3 Driveline Lubrication" (Lift Type) on page 76. "9.6 Driveline Lubrication" (Pull Type) on page 80.
	Driveline twisted.	Replace driveline. Caution operator not to strike ground with blades.
	Driveline bent.	Driveline too long. Replace and shorten to proper length. Refer to "6.4 Shortening the Driveline"(Lift Type) on page 28. "6.9 Shortening the Driveline"(Pull Type) on page 37.
	Shields damaged.	Replace shields.
Driveline twisted.	Overtorqued.	Do not allow blades to contact ground.
		Replace driveline. (pull type)
	Not maintaining correct PTO speed.	Maintain 540 RPM PTO speed.
		Replace driveline. (pull type)

# SPECIFICATIONS

LIFT TYPE

PULL TYPE

MODEL	1808	1808P	1810	1810P
DESCRIPTION	Lift type	Pull Type	Lift type	Pull type
HORSEPOWER REQUIRED (MIN.)	42		52	
HITCH	CAT I or II	Pull Type with Dual Leveling Rods	CAT I or II	Pull Type with Dual Leveling Rods
CUTTING WIDTH	96"		120"	
CUTTING HEIGHT	2" to 10"			
TRANSPORT WIDTH	98"		122"	
WEIGHT	1250	1575	1480	1705
CUTTING CAPACITY	3"			
DECK THICKNESS	10 Gauge		7 Gauge	
SIDE BANDS	8" Channel			
SKID SHOES	Replaceable			
PTO DRIVESHAFT	Series 5 with Slip Clutch			
CENTER DRIVESHAFT	Shock Coupler Protected			
STUMP JUMPER	5/8" Plate			
GEARBOX	125 HP			
OUTBOARD GEARBOXES	100 HP			
WHEELS	Laminated			
HUB	Bearing			
QUICK HITCH COMPATIBLE	Yes, CAT II		Yes, CAT II	
GEARBOX WARRANTY	5 Year Limited			

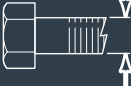
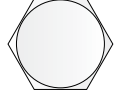


Specifications subject to change without notice.

## 11.1 BOLT TORQUE

Torque figures indicated in the charts 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 tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in the charts unless otherwise noted. Check tightness of bolts periodically, using the bolt torque chart as a guide. Always replace hardware with the same Grade bolt.

### STANDARD TORQUE VALUES

 BOLT DIAMETER	ENGLISH BOLT TORQUE SPECIFICATIONS*					
	GRADE 2		GRADE 5		GRADE 8	
		NO MARKING		3 RADIAL LINES		6 RADIAL LINES
						
	FT LBS.	N·m	FT LBS.	N·m	FT LBS.	N·m
1/4"	6	8	9	12	12	17
5/16"	10	13	19	25	27	36
3/8"	20	27	33	45	45	63
7/16"	30	41	53	72	75	100
1/2"	45	61	80	110	115	155
9/16"	60	95	115	155	165	220
5/8"	95	128	158	215	220	305
3/4"	165	225	290	390	398	540
7/8"	170	230	420	570	650	880
1"	225	345	630	850	970	1320



### WARNING

#### EQUIPMENT FAILURE



The torque value for bolts and capscrews 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.

# PARTS

Replacement parts are available from your authorized Dealer Parts Department or from Ironcraft.

The following pages contain a list of serviceable parts for the Ironcraft Dual Spindle Lift Type Rotary Cutters.

For hassle free service and to ensure you receive the correct parts for your implement, please provide your dealer with the following information:

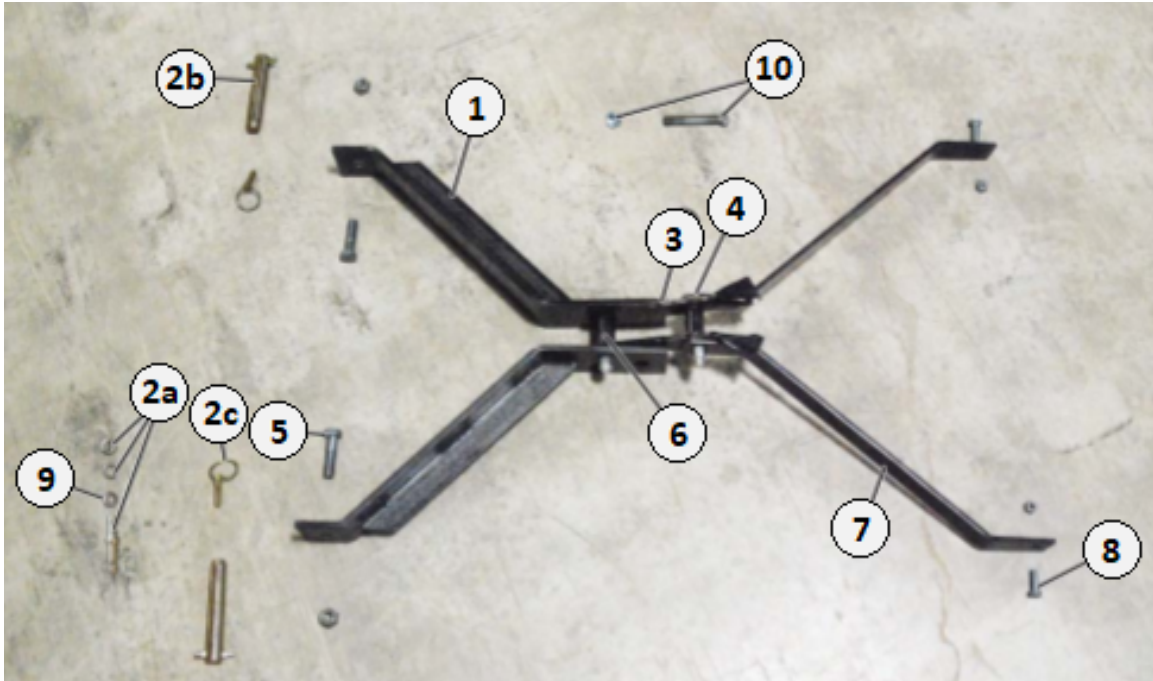
<b>MODEL</b>	
<b>SERIAL NUMBER</b>	
<b>GPM REQUIREMENTS</b>	
<b>DATE OF OWNERS MANUAL</b> (Bottom left corner of cover Page)	
<b>PARTS DIAGRAM PAGE NUMBER</b>	
<b>PART DESCRIPTION</b>	
<b>REFERENCE NUMBER</b>	
<b>QUANTITY DESIRED</b>	
<b>SHIP TO INFORMATION</b>	
<b>BILL TO/PAYMENT INFORMATION</b>	

LIFT TYPE

PULL TYPE

# 12.1 HITCH ASSEMBLY

## LIFT TYPE



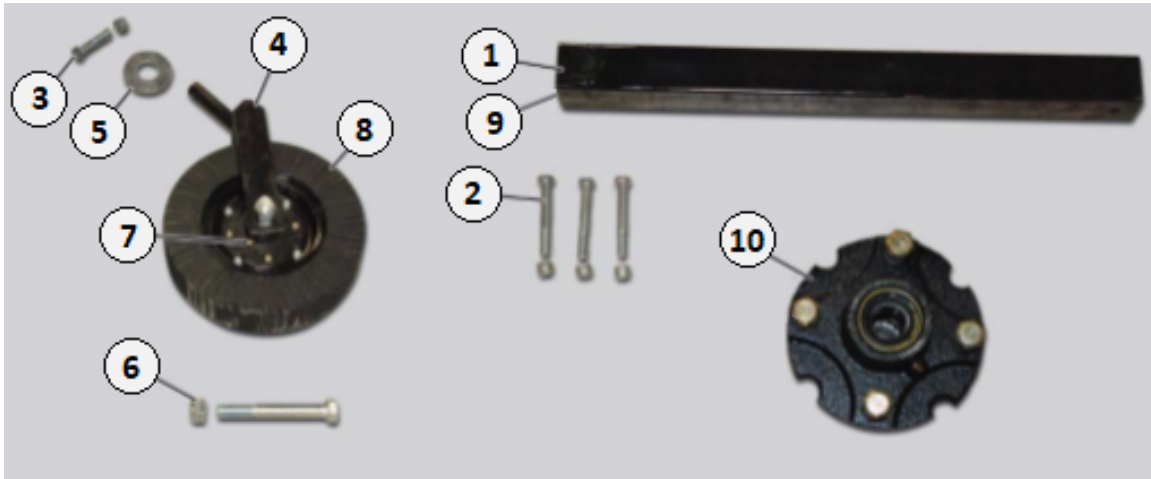
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	120004-BK	A-FRAME – LH or RH SIDE (1708)	2
	184048-BK	H.D. A-FRAME – LH or RH SIDE (1808-1810)	2
2a	110032	LIFT PIN CAT-I (1708)	2
2b	150033	LIFT PIN CAT-II 1-7/8" x 7" (1808-1810)	2
2c	150550	LYNCH PIN 7/16"	2
3	120006-BK	LH KNUCKLE – WING STYLE	1
	120007-BK	RN KNUCKLE – WING STYLE	1
4	140004	BOLT KIT 5/8" x 5" (for A-Frame Knuckle)	2
5	150034	BOTTOM BOLT KIT 3/4" x 2-1/2" BOLT W/LOCKNUT	2
6	110030-BK	A-FRAME SPACER 2"L x .75"I.D. x .9375"O.D.	2
7	1810030-BK	BACK BRACE 3/8" x 2" x 29-1/2" (1808-1810)	2
	170000	BACK BRACE 3/8" x 2" x 26-1/2" (1708)	NLA
8	110004	BOLT KIT 5/8" x 2" BOLT W/NUT (4-Pack)	1
9	120005	LIFT PIN BUSHING 1/2" x 7/8"I.D. x 1-1/4"O.D. (1708)	2
10	140018	BOLT KIT 3/4" x 5" BOLT W/NUT (for A-Frame Knuckle)	1

NLA = No Longer Available



# 12.2 TAILWHEEL ASSEMBLY

## LIFT TYPE



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	150050-BK	TAILWHEEL TUBE – H.D. 36”	2
2	120003	BOLT & LOCKNUT KIT 5/8” x 2”	6
3	110017	TAILWHEEL TOP BOLT KIT 1/2” x 1-1/2”	2
4	110018-BK	TAILWHEEL FORK	2
5	81010011	FLATWASHER 1-1/4”	2
6	110020	AXLE BOLT KIT 1” x 8” BOLT W/NUT	2
7	110021	ZERK FITTING 14/28	2
8	110022	LAMINATED TAILWHEEL 4” x 8” – 15”	2
9	110075	DRIVE IN GREASE ZERK 5/16”	2
10	150031	WHEEL HUB – H.D. W/SPACERS	2
150052		COMPLETE TAILWHEEL FORK/WHEEL ASSEMBLY	

# 12.3 DECK ASSEMBLY (540-RPM)

LIFT TYPE



DECK ASSEMBLY 8' LIFT TYPE MODEL 1708 [540-RPM]			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	170001	8-ft DECK ONLY W/DECALS (1708) – RED 540-RPM	NLA
	170002	8-ft DECK ONLY W/DECALS (1708) – GREEN 540-RPM	NLA
	170003	8-ft DECK ONLY W/DECALS (1708) – ORANGE 540-RPM	NLA
	170004	8-ft DECK ONLY W/DECALS (1708) – YELLOW 540-RPM	NLA
	170005	8-ft DECK ONLY W/DECALS (1708) – BLUE 540-RPM	NLA
	170006	8-ft DECK ONLY W/DECALS (1708) – GREY 540-RPM	NLA
2	120010-KIT	SKID SHOE KIT W/BOLTS (Sold as pair)	1
3	120011	CARRIAGE BOLT KIT 1/2" x 1-1/2" (6-Pack)	1
4	110034	DOCUMENT HOLDER W/SCREWS	1

DECK ASSEMBLY 8' LIFT TYPE MODEL 1808 [540-RPM]			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	184005-R	8-ft DECK ONLY W/DECALS (1808) – RED 540-RPM	1
	184005-G	8-ft DECK ONLY W/DECALS (1808) – GREEN 540-RPM	1
	184005-O	8-ft DECK ONLY W/DECALS (1808) – ORANGE 540-RPM	1
	184005-Y	8-ft DECK ONLY W/DECALS (1808) – YELLOW 540-RPM	NLA
	184005-B	8-ft DECK ONLY W/DECALS (1808) – BLUE 540-RPM	1
	184005-GR	8-ft DECK ONLY W/DECALS (1808) – GREY 540-RPM	1
2	120010-KIT	SKID SHOE KIT W/BOLTS (Sold as pair)	1
3	120011	CARRIAGE BOLT KIT 1/2" x 1-1/2" (6-Pack)	1
4	110034	DOCUMENT HOLDER W/SCREWS	1

DECK ASSEMBLY 10' LIFT TYPE MODEL 1810 [540-RPM]			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	184003-R	10-ft DECK ONLY W/DECALS (1808) – RED 540-RPM	1
	184003-G	10-ft DECK ONLY W/DECALS (1808) – GREEN 540-RPM	1
	184003-O	10-ft DECK ONLY W/DECALS (1808) – ORANGE 540-RPM	1
	184003-Y	10-ft DECK ONLY W/DECALS (1808) – YELLOW 540-RPM	NLA
	184003-B	10-ft DECK ONLY W/DECALS (1808) – BLUE 540-RPM	1
	184003-GR	10-ft DECK ONLY W/DECALS (1808) – GREY 540-RPM	1
2	120010-KIT	SKID SHOE KIT W/BOLTS (Sold as pair)	1
3	120011	CARRIAGE BOLT KIT 1/2" x 1-1/2" (6-Pack)	1
4	110034	DOCUMENT HOLDER W/SCREWS	1

NLA = No Longer Available

# 12.4 DECK ASSEMBLY (1000-RPM)

LIFT TYPE



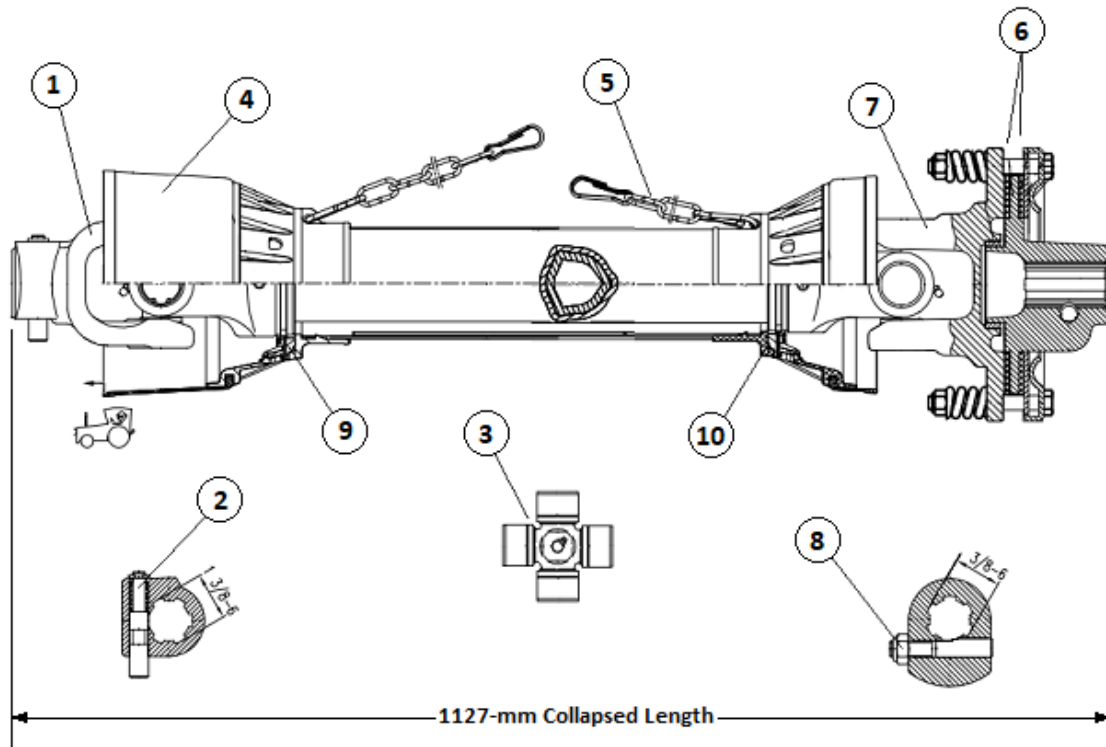
DECK ASSEMBLY 8' LIFT TYPE MODEL 1808 [1000-RPM]			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	185005-R	8-ft DECK ONLY W/DECALS – RED 1000-RPM	1
	185005-G	8-ft DECK ONLY W/DECALS – GREEN 1000-RPM	1
	185005-O	8-ft DECK ONLY W/DECALS – ORANGE 1000-RPM	1
	185005-Y	8-ft DECK ONLY W/DECALS – YELLOW 1000-RPM	NLA
	185005-B	8-ft DECK ONLY W/DECALS – BLUE 1000-RPM	1
	185005-GR	8-ft DECK ONLY W/DECALS – GREY 1000-RPM	1
2	120010-KIT	SKID SHOE KIT W/BOLTS (Sold as pair)	1
3	120011	CARRIAGE BOLT KIT 1/2" x 1-1/2" (6-Pack)	1
4	110034	DOCUMENT HOLDER W/SCREWS	1

DECK ASSEMBLY 10' LIFT TYPE MODEL 1810 [1000-RPM]			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	185003-R	10-ft DECK ONLY W/DECALS – RED 1000-RPM	1
	185003-G	10-ft DECK ONLY W/DECALS – GREEN 1000-RPM	1
	185003-O	10-ft DECK ONLY W/DECALS – ORANGE 1000-RPM	1
	185003-Y	10-ft DECK ONLY W/DECALS – YELLOW 1000-RPM	NLA
	185003-B	10-ft DECK ONLY W/DECALS – BLUE 1000-RPM	1
	185003-GR	10-ft DECK ONLY W/DECALS – GREY 1000-RPM	1
2	120010-KIT	SKID SHOE KIT W/BOLTS (Sold as pair)	1
3	120011	CARRIAGE BOLT KIT 1/2" x 1-1/2" (6-Pack)	1
4	110034	DOCUMENT HOLDER W/SCREWS	1

NLA = No Longer Available

# 12.5 RW111-725 (SERIES-5) DRIVELINE COMPONENTS

## LIFT TYPE

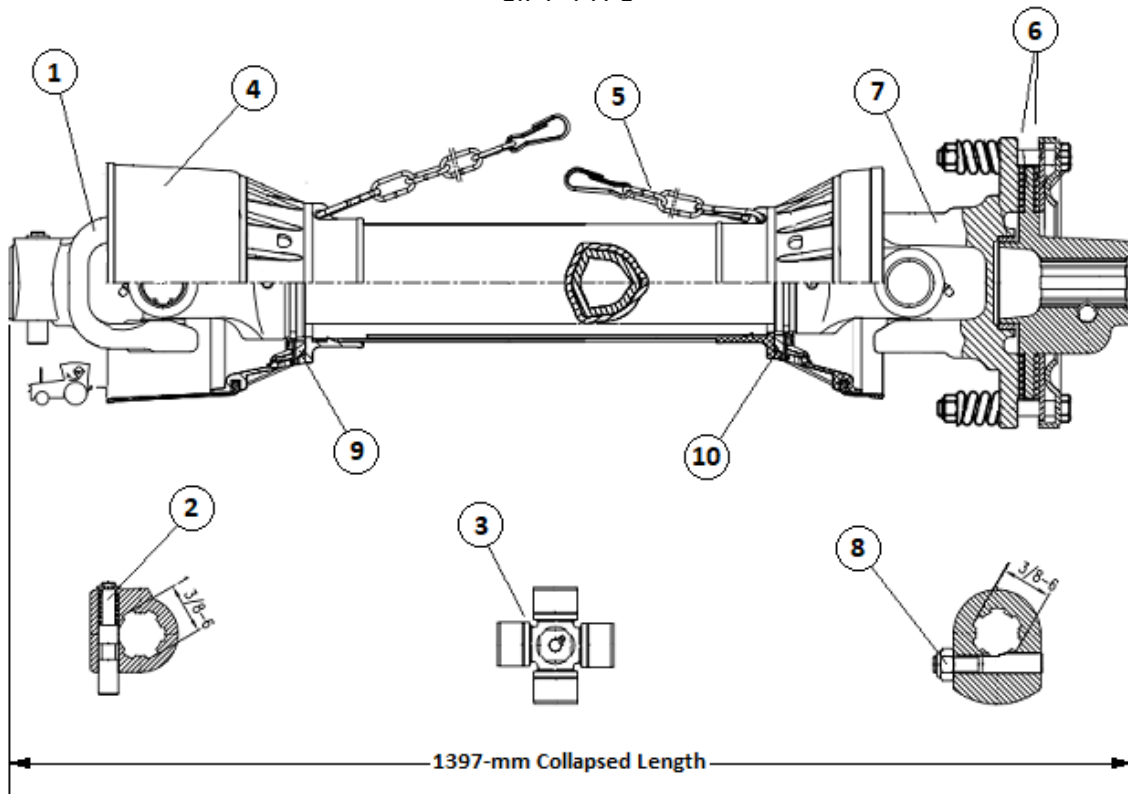


ITEM	PART NUMBER	DESCRIPTION	QTY.
1	552040	TRACTOR YOKE W/PUSH PIN 1-3/8" 6-SPLINE (540-RPM)	1
	552170	TRACTOR YOKE W/PUSH PIN 1-3/8" 21-SPLINE (1000-RPM)	A/R
	---	TRACTOR YOKE W/PUSH PIN 1-3/4" 20-SPLINE (1000-RPM)	A/R
2	552041	PUSH PIN KIT	1
3	552048	CROSS KIT 30.25 x 80	2
4	552042	COMPLETE SAFETY SHIELD	1
5	552005	SAFETY CHAIN	2
6	552025	CLUTCH LINING (2-Pack)	1
7	552044	COMPLETE SLIPCLUTCH	1
8	552033	ECCENTRIC PIN W/NUT	1
9	552028	OUTER PLASTIC SHIELD BEARING	1
10	552029	INNER PLASTIC SHIELD BEARING	1
	160010	DRIVELINE WITH 1-3/8" 6-SPLINE TRACTOR YOKE	
	160010-21	DRIVELINE WITH 1-3/8" 21-SPLINE TRACTOR YOKE	
	160010-20	DRIVELINE WITH 1-3/4" 20-SPLINE TRACTOR YOKE	

# 12.6 RW111-84H (SERIES-6) DRIVELINE COMPONENTS

## LIFT TYPE

LIFT TYPE

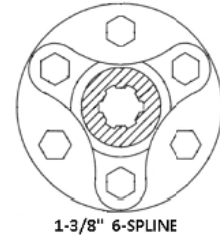
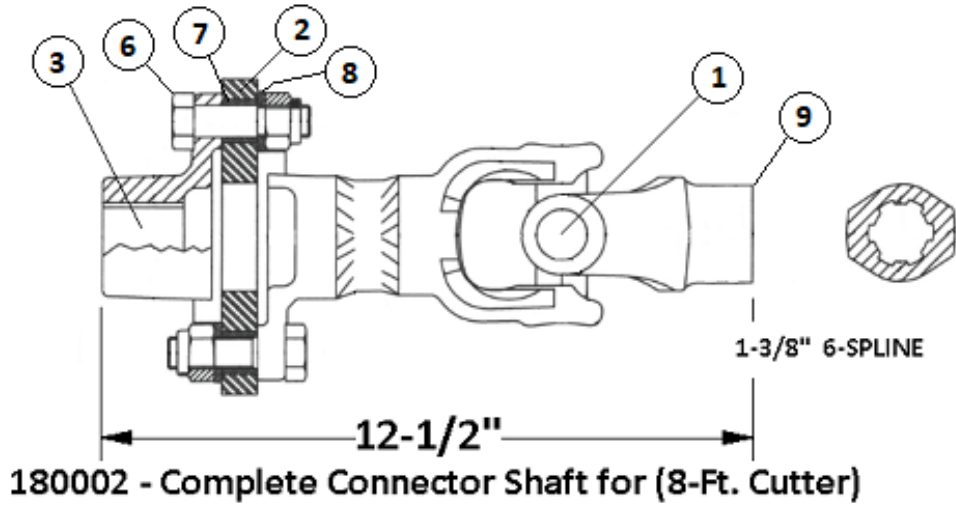


ITEM	PART NUMBER	DESCRIPTION	QTY.
1	552020	TRACTOR YOKE W/PUSH PIN 1-3/8" 6-SPLINE (540-RPM)	1
	552171	TRACTOR YOKE W/PUSH PIN 1-3/8" 21-SPLINE (1000-RPM)	1
	552172	TRACTOR YOKE W/PUSH PIN 1-3/4" 20-SPLINE (1000-RPM)	1
2	552001	PUSH PIN KIT	1
3	552056	CROSS KIT 30.2 x 92	2
4	552024	COMPLETE SHIELD	1
5	552005	SAFETY CHAIN	2
6	552025	CLUTCH LINING (2-Pack)	1
7	552026	COMPLETE SLIPCLUTCH	1
8	552033	EVVENTRIC PIN W/NUT	1
9	552028	OUTER PLASTIC SHIELD BEARING	1
10	552029	INNER PLASTIC SHIELD BEARING	1
	150037	DRIVELINE WITH 1-3/8" 6-SPLINE TRACTOR YOKE (540-RPM)	
	150037-21	DRIVELINE WITH 1-3/8" 21-SPLINE TRACTOR YOKE (1000-RPM)	
	150037-20	DRIVELINE WITH 1-3/4" 20-SPLINE TRACTOR YOKE (1000-RPM)	

# 12.7 8 FT CONNECTOR SHAFT COMPONENTS

LIFT TYPE

LIFT TYPE

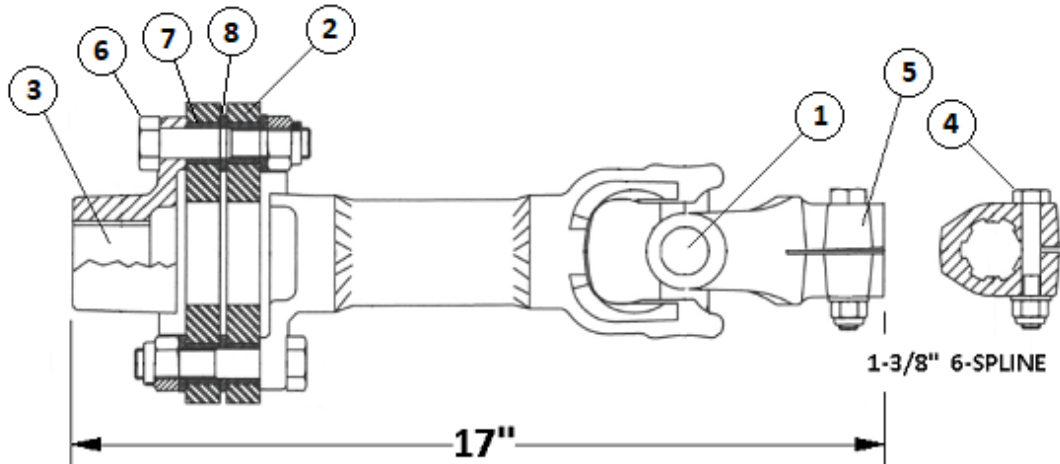


ITEM	PART NUMBER	DESCRIPTION	QTY.
1	552130	CROSS KIT 30.2 x 80	1
2	552131	RUBBER SHOCK PAD	1
3	552133	SPIDER 1-3/8" 6-SPLINE	1
6	552136	BOLT M16 x 60	6
7	552137	SPACER	6
8	552138	SHIM WASHER M16	6
9	552139	YOKE 1-3/8" 6-SPLINE	1
180002		COMPLETE CONNECTOR SHAFT 12-1/2" (1808)	

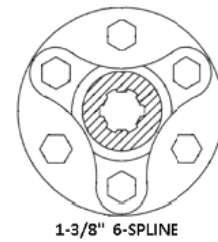


# 12.8 10 FT CONNECTOR SHAFT COMPONENTS

## LIFT TYPE



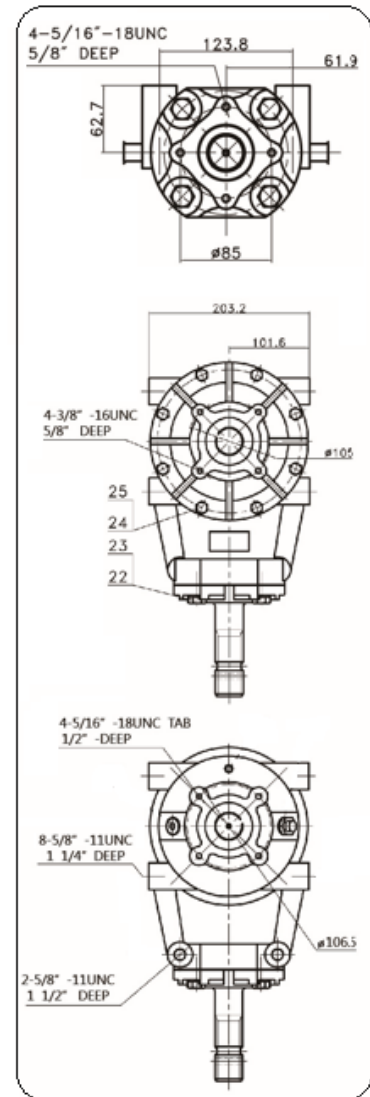
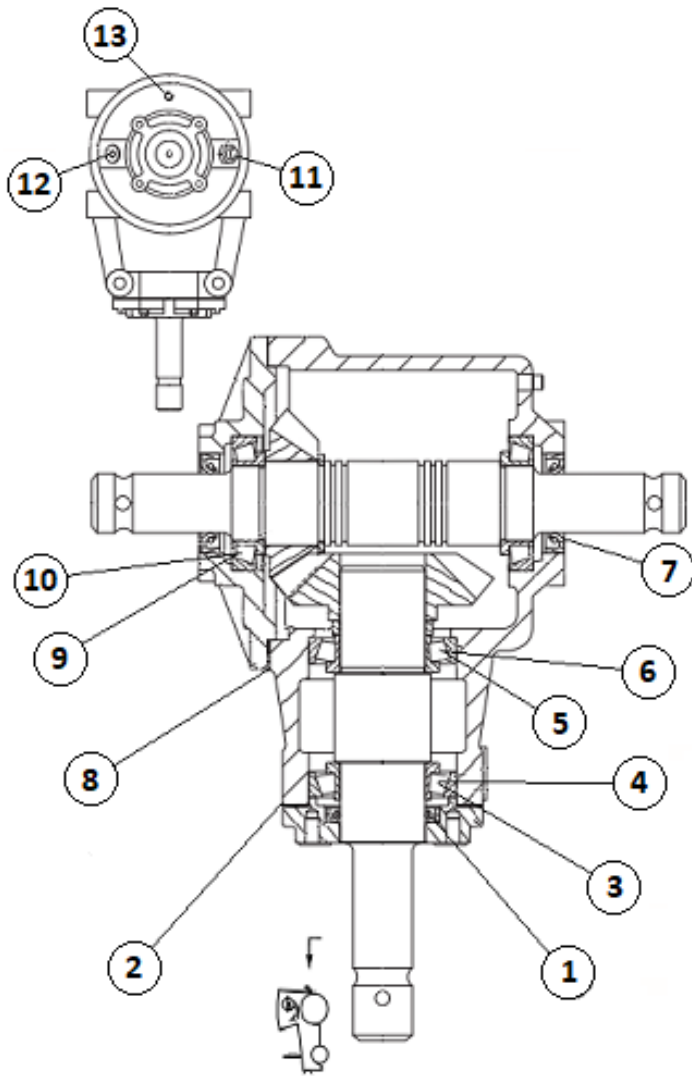
**180003 - Complete Connector Shaft for (10-Ft. Cutter)**



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	552130	CROSS KIT 30.2 x 80	1
2	552131	RUBBER SHOCK PAD	2
3	552133	SPIDER 1-3/8" 6-SPLINE	1
4	552134	LOCK BOLT M12 x 1.75 x 70	1
5	552132	CLAMP STYLE YOKE 1-3/8" 6-SPLINE	1
6	552140	BOLT M16 x 80	6
7	552137	SPACER	6
8	552138	SHIM WASHER M16	6
180003		COMPLETE CONNECTOR SHAFT 17" (1810)	

# 12.9 RW61T – T GEARBOX COMPONENTS

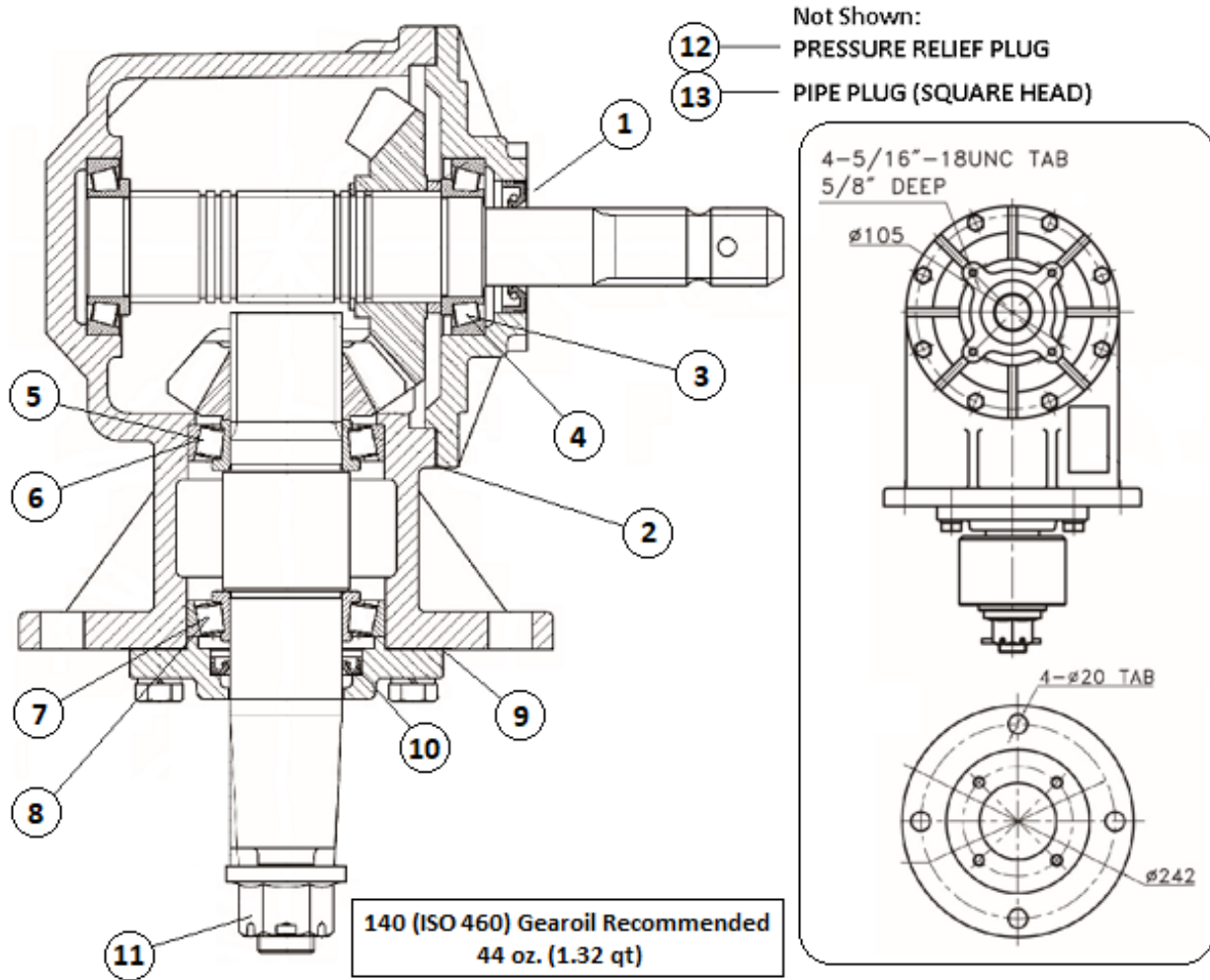
## LIFT TYPE



RW61T – T GEARBOX COMPONENTS			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	551029	INPUT OIL SEAL 50 x 68 x 10	1
2	551028	INPUT GASKET KIT	1
3	551026	FRONT - INPUT CONE BEARING 368	1
4	551027	FRONT - INPUT BEARING CUP 362	1
5	551024	REAR - INPUT CONE BEARING 368A	1
6	551025	REAR - INPUT BEARING CUP 362A	1
7	551020	OUTPUT OIL SEAL 35 x 60 x 12	2
8	551021	OUTPUT GASKET KIT	1
9	551022	OUTPUT CONE BEARING LM603049	2
10	551023	OUTPUT BEARING CUP LM603014	2
11	110008	PRESSURE RELIEF PLUG	1
12	551053	DRAIN PLUG (Allen Head)	1
13	110009	PIPE PLUG (Square Head) OIL LEVEL CHECK	1
180000		COMPLETE CENTER T-GEARBOX (1:1 / 1:1.21 / 1:1.46 Ratio)	

# 12.10 RW610 – 100HP 540-RPM GEARBOX COMPONENTS

## LIFT TYPE

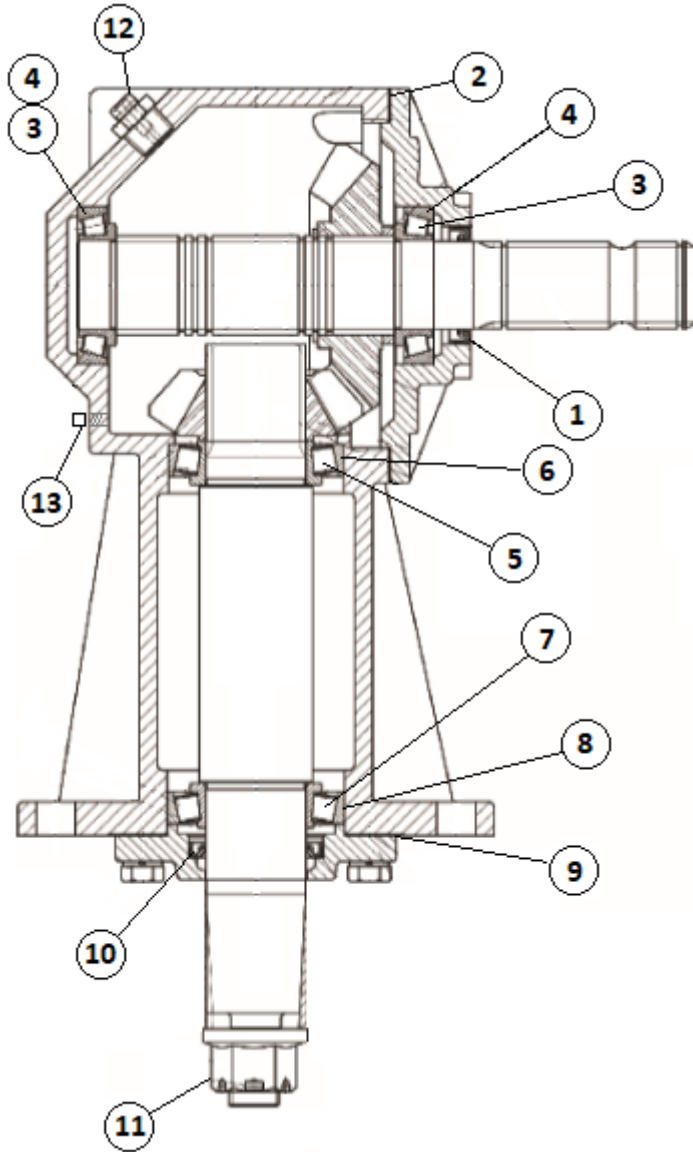


RW610 – 100HP 540-RPM GEARBOX COMPONENTS			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	551020	INPUT OIL SEAL 35 x 60 x 12	1
2	551021	INPUT GASKET KIT	1
3	551022	INPUT CONE BEARING LM603049	2
4	551023	INPUT BEARING CUP LM603014	2
5	551024	TOP - OUTPUT CONE BEARING 368A	1
6	551025	TOP - OUTPUT BEARING CUP 362A	1
7	551026	BOTTOM - OUTPUT CONE BEARING 368	1
8	551027	BOTTOM - OUTPUT BEARING CUP 362	1
9	551028	OUTPUT GASKET KIT	1
10	551029	OUTPUT OIL SEAL 50 x 68 x 10	1
11	110013	CASTLE NUT 1"UNF W/COTTER PIN	1
12	110008	PRESSURE RELIEF PLUG	1
13	110009	PIPE PLUG (Square Head) OIL LEVEL CHECK	1
	130000	RW610 COMPLETE GEAR BOX (1:1.46 Ratio)	
	150027	RW610 COMPLETE GEARBOX (1:1.93 Ratio)	

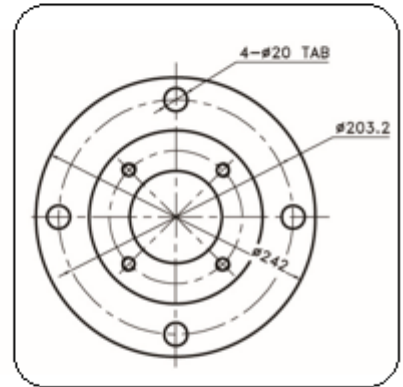
Note: See I.D. Tag on Gearbox to identify existing Ratio

# 12.11 RW81 – 150HP 1000-RPM GEARBOX COMPONENTS

LIFT TYPE



1-3/8" 6-Spline

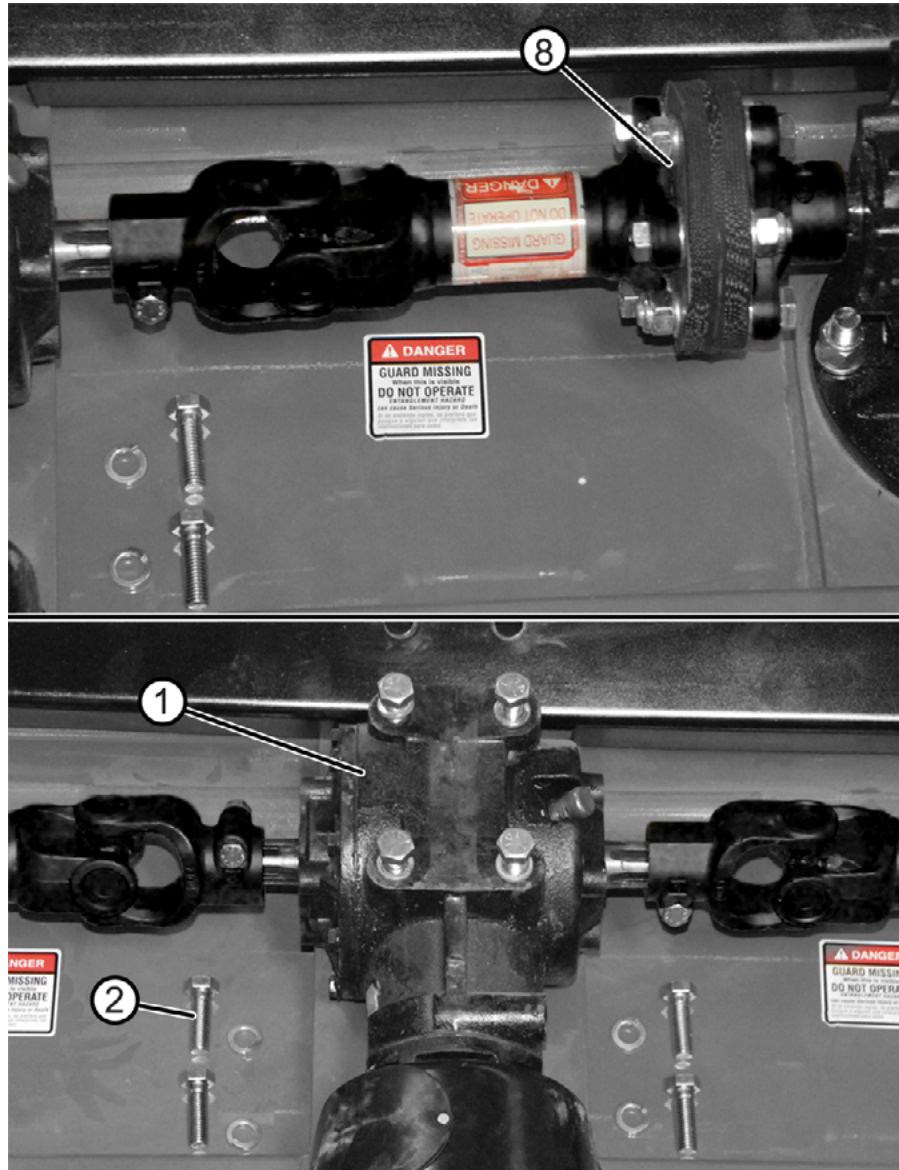


140 (ISO 460) Gearoil Recommended  
Fill level 44-oz. (1.32-Qt)

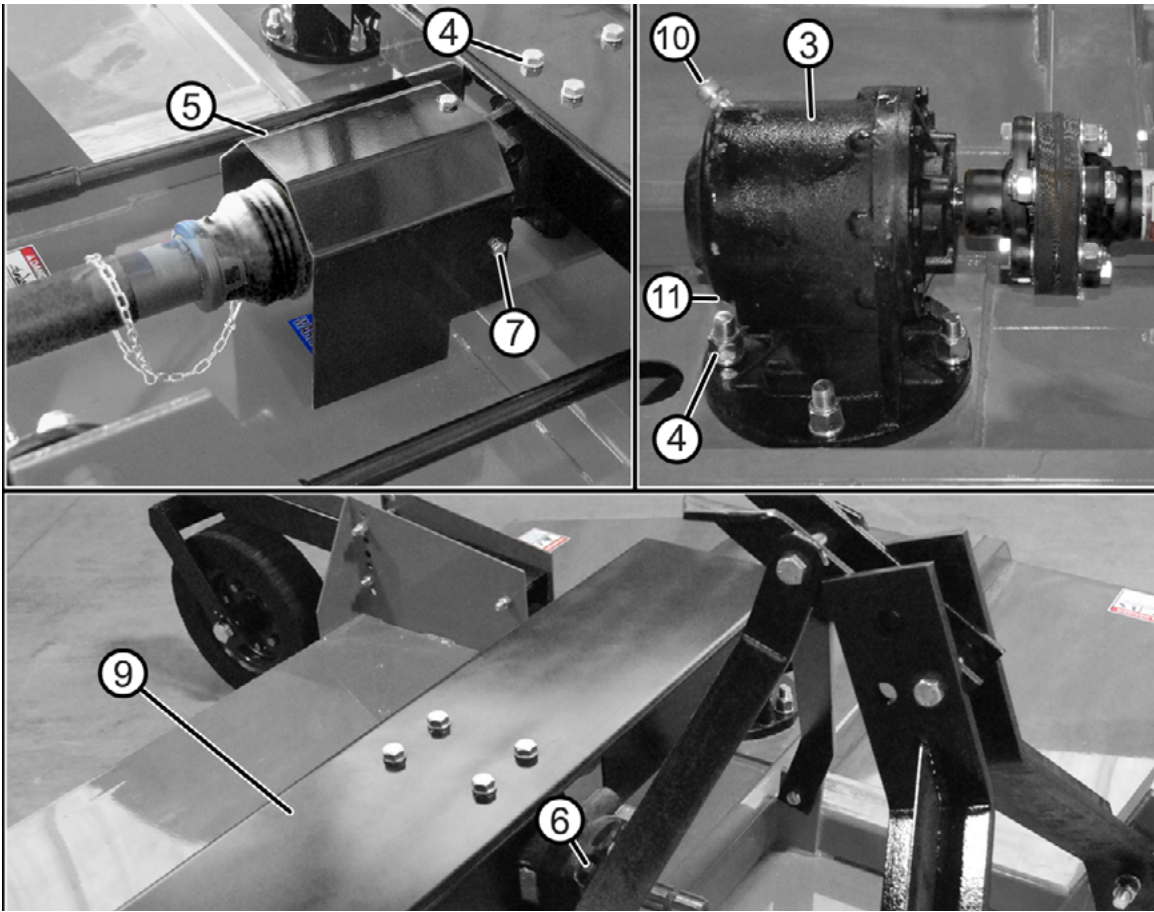
RW81 – 150HP 1000-RPM GEARBOX COMPONENTS			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	551040	INPUT OIL SEAL 45 x 60 x 9.5	1
2	551021	INPUT GASKET KIT	1
3	551022	INPUT CONE BEARING LM603049	2
4	551023	INPUT BEARING CUP LM603014	2
5	551024	TOP - OUTPUT CONE BEARING 368A	1
6	551025	TOP - OUTPUT BEARING CUP 362A	1
7	551026	BOTTOM - OUTPUT CONE BEARING 368	1
8	551027	BOTTOM - OUTPUT BEARING CUP 362	1
9	551028	OUTPUT GASKET KIT	1
10	551029	OUTPUT OIL SEAL 50 x 68 x 10	1
11	110013	CASTLE NUT 1"UNF W/COTTER PIN	1
12	110008	PRESSURE RELIEF PLUG	1
13	110009	PIPE PLUG (Square Head) OIL LEVEL CHECK	1
	150035	RW81 COMPLETE GEAR BOX (1.21:1 Ratio)	

# 12.12 GEARBOX ASSEMBLY

## LIFT TYPE





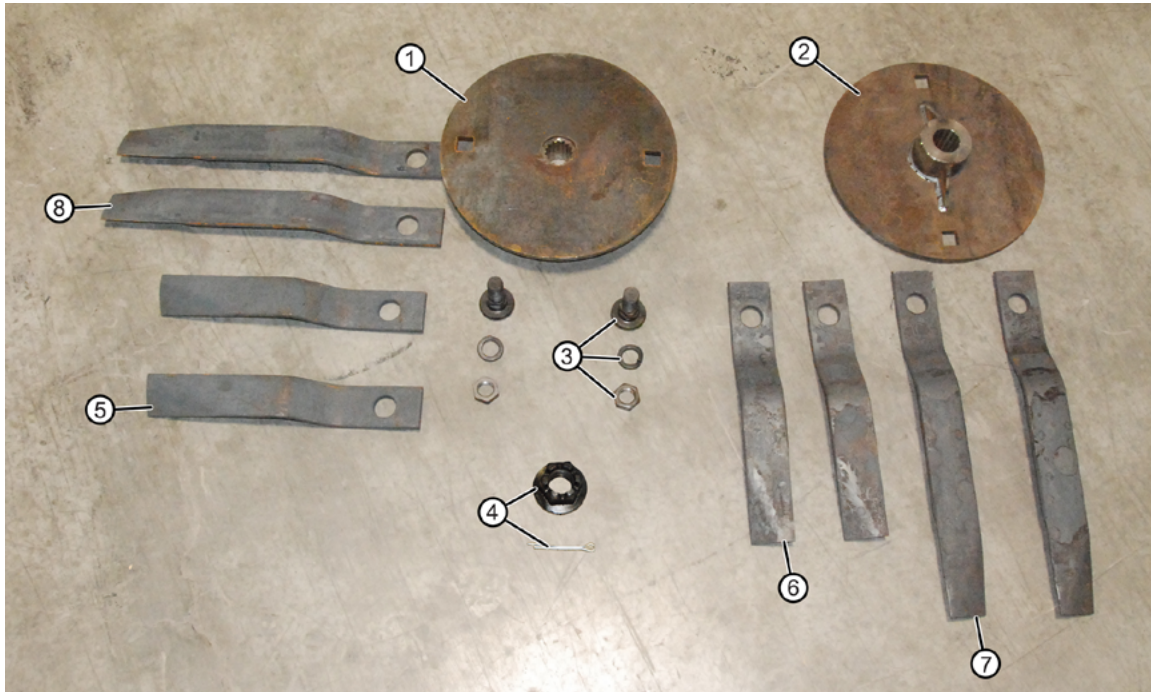


GEARBOX ASSEMBLY			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	180000	CENTER T-GEARBOX	1
2	180001	TOP GEARBOX BOLT KIT 5/8" x 1-1/4" BOLT W/LOCKWASHER	4
	170021	BOTTOM GEARBOX BOLT KIT 5/8" x 1-1/2" BOLT W/LW	4
3	130000	GEARBOX RW610-100Hp 1:1.46 Ratio	A/R
	150027	GEARBOX RW610-100Hp 1:1.93 Ratio	A/R
4	110068	BOLT KIT FOR OUTBOARD GEARBOX 3/4" x 3" BOLT W/LN & LW	8
5	150076	GEARBOX SHIELD (Plastic)	1
6	110006	BOLT KIT 5/16" x 1/2" BOLT W/LOCKWASHER (4-Pack)	1
7	110017	BOLT KIT 1/2" x 1-1/2" (for Older Models W/Metal Shield)	3
8	180002	SHOCK COUPLER FOR 8-ft Models	2
	180003	SHOCK COUPLER FOR 10-ft Models	2
9	1810004-BK	CENTER SHIELD FOR T-GEARBOX (Metal)	1
10	110008	PRESSURE RELIEF PLUG	2
11	110009	PIPE PLUG (Square Head) OIL LEVEL CHECK	1

A/R = As Required

## 12.13 BLADE ASSEMBLY

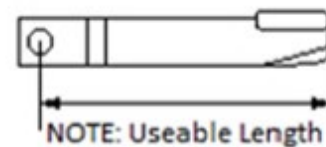
### LIFT TYPE



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	180007	8-FT BLADE CARRIER 5/8" x 19-1/2" (Flat Type) Bolt Holes Ctr 15.50" for 1:1.46 Gearbox 130000	A/R
	180090	8-FT BLADE CARRIER 5/8" x 19-1/2" (Flat Type) Bolt Holes Ctr 15.50" for 1:1.93 Gearbox 150027	A/R
2	130014	10-FT BLADE CARRIER 5/8" x 17" (Flat Type) Bolt Holes Ctr 13.50"	2
3	110012	BLADE BOLT KIT (Sold as pair) BOLT W/NUT & LOCKWASHER	2
4	110013	CASTLE NUT 1"UNF W/COTTER PIN	2
5	T-48	8-FT CUTTER BLADES (Sold as pair) CCW (Useable Length 16")	1
6	T-48R	8-FT CUTTER BLADES (Sold as pair) CW (Useable Length 16")	1
7	T-60	10-FT CUTTER BLADES (Sold as pair) CCW (Useable Length 22")	1
8	T-60R	10-FT CUTTER BLADES (Sold as pair) CW (Useable Length 22")	1

A/R = As Required

Note: Blade Bolt Nut uses 1-11/16" socket size



# 12.14 CHAIN GUARDS

LIFT TYPE

LIFT TYPE

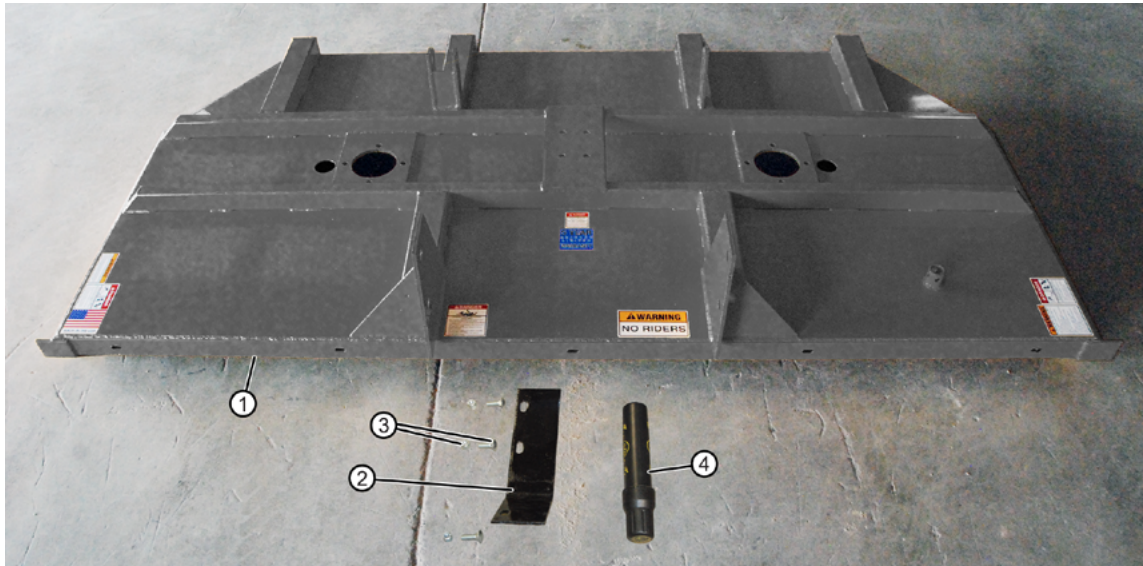


ITEM	PART NUMBER	DESCRIPTION	QTY.
1	CG-1708	8-FT FRONT & REAR CHAIN SHIELD KIT	1
	CG-1810	10-FT FRONT & REAR CHAIN SHIELD KIT	1

# 12.15 DECK ASSEMBLY (540-RPM)

## PULL TYPE

PULL TYPE



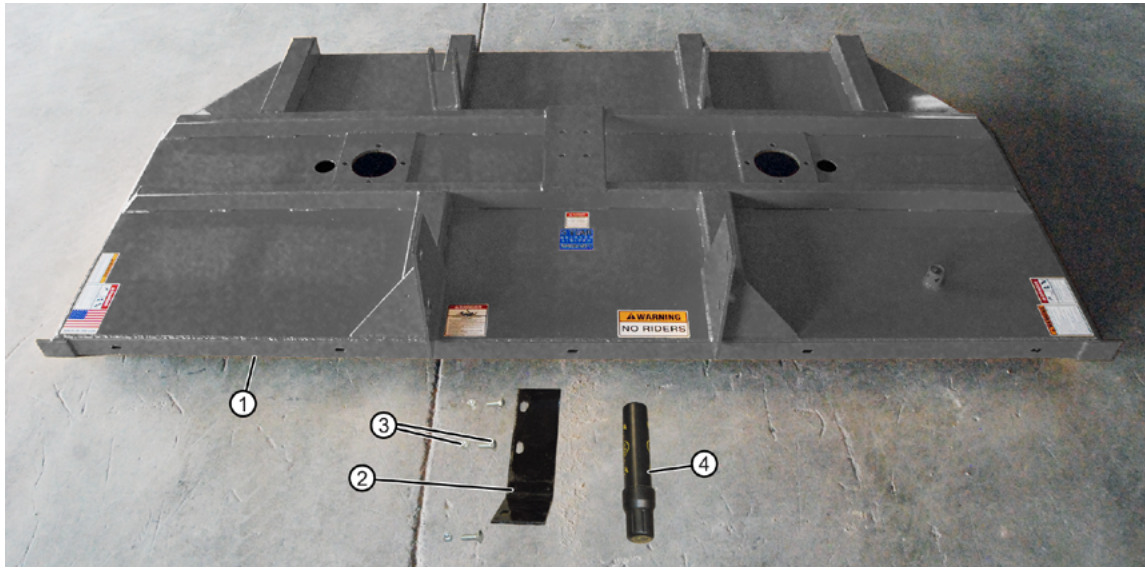
ITEM	PART NUMBER	DESCRIPTION [1808P] 540-RPM	QTY.
1	184007-R	8' Pull Type Deck Only with Decals – Red	1
	184007-G	8' Pull Type Deck Only with Decals – Green	1
	184007-O	8' Pull Type Deck Only with Decals – Orange	1
	184007-Y	8' Pull Type Deck Only with Decals – Yellow	NLA
	184007-B	8' Pull Type Deck Only with Decals – Blue	1
	184007-GR	8' Pull Type Deck Only with Decals – Grey	1
2	120010-KIT	Skid Shoes Kit LH & RH w/Bolts	1
3	120011	Carriage Bolt Kit 1/2" x 1-1/2" (6-Pack)	1
4	110034	Document Holder with Screws	1

ITEM	PART NUMBER	DESCRIPTION [1810P] 540-RPM	QTY.
1	184001-R	10' Pull Type Deck Only with Decals – Red	1
	184001-G	10' Pull Type Deck Only with Decals – Green	1
	184001-O	10' Pull Type Deck Only with Decals – Orange	1
	184001-Y	10' Pull Type Deck Only with Decals – Yellow	NLA
	184001-B	10' Pull Type Deck Only with Decals – Blue	1
	184001-GR	10' Pull Type Deck Only with Decals – Grey	1
2	120010-KIT	Skid Shoes Kit LH & RH w/Bolts	1
3	120011	Carriage Bolt Kit 1/2" x 1-1/2" (6-Pack)	1
4	110034	Document Holder with Screws	1

NLA = No Longer Available

# 12.16 DECK ASSEMBLY (1000-RPM)

## PULL TYPE



PULL TYPE

ITEM	PART NUMBER	DESCRIPTION [1808P] 1000-RPM	QTY.
1	185007-R	8' Pull Type Deck Only with Decals – Red	1
	185007-G	8' Pull Type Deck Only with Decals – Green	1
	185007-O	8' Pull Type Deck Only with Decals – Orange	1
	185007-Y	8' Pull Type Deck Only with Decals – Yellow	NLA
	185007-B	8' Pull Type Deck Only with Decals – Blue	1
	185007-GR	8' Pull Type Deck Only with Decals – Grey	1
2	120010-KIT	Skid Shoes Kit LH & RH w/Bolts	1
3	120011	Carriage Bolt Kit 1/2" x 1-1/2" (6-Pack)	1
4	110034	Document Holder with Screws	1

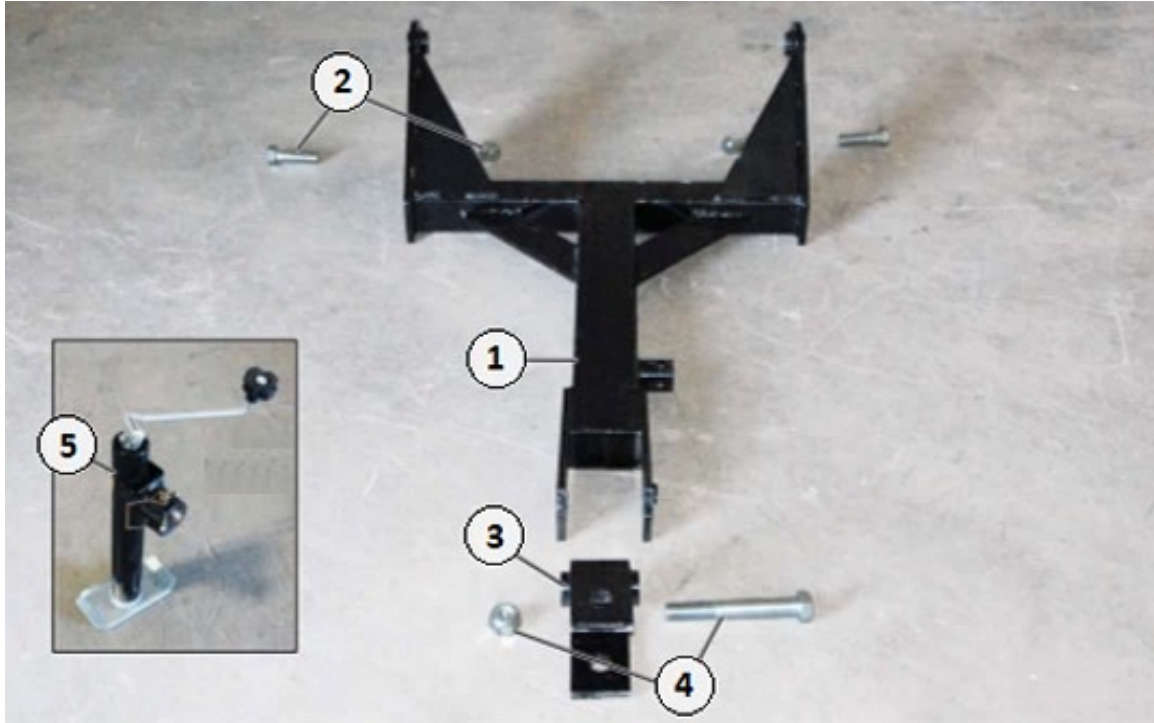
ITEM	PART NUMBER	DESCRIPTION [1808P] 1000-RPM	QTY.
1	185001-R	10' Pull Type Deck Only with Decals – Red	1
	185001-G	10' Pull Type Deck Only with Decals – Green	1
	185001-O	10' Pull Type Deck Only with Decals – Orange	1
	185001-Y	10' Pull Type Deck Only with Decals – Yellow	NLA
	185001-B	10' Pull Type Deck Only with Decals – Blue	1
	184001-GR	10' Pull Type Deck Only with Decals – Grey	1
2	120010-KIT	Skid Shoes Kit LH & RH w/Bolts	1
3	120011	Carriage Bolt Kit 1/2" x 1-1/2" (6-Pack)	1
4	110034	Document Holder with Screws	1

NLA = No Longer Available

# 12.17 HITCH ASSEMBLY

## PULL TYPE

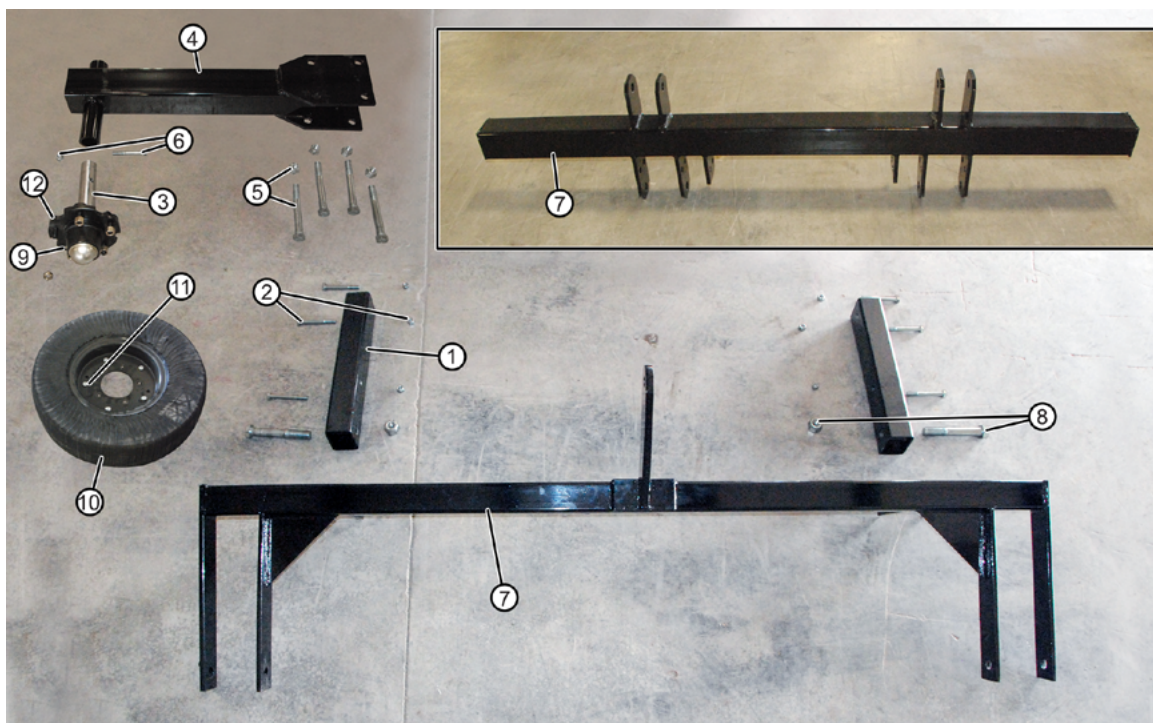
PULL TYPE



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	170007	Hitch Weldment (1708P)	NLA
	180047-BK	Hitch Weldment (1808-1810P)	1
2	180022	Bolt Kit, 1"-8 x 3" Bolt w/Locknut	2
3	184049-BK	Clevis	1
4	170022	Bolt Kit, 1-1/4" x 7" Bolt w/Locknut	1
5	180024	Jack 2000-lb.	1

# 12.18 TAILWHEEL ASSEMBLY

## PULL TYPE



PULL TYPE

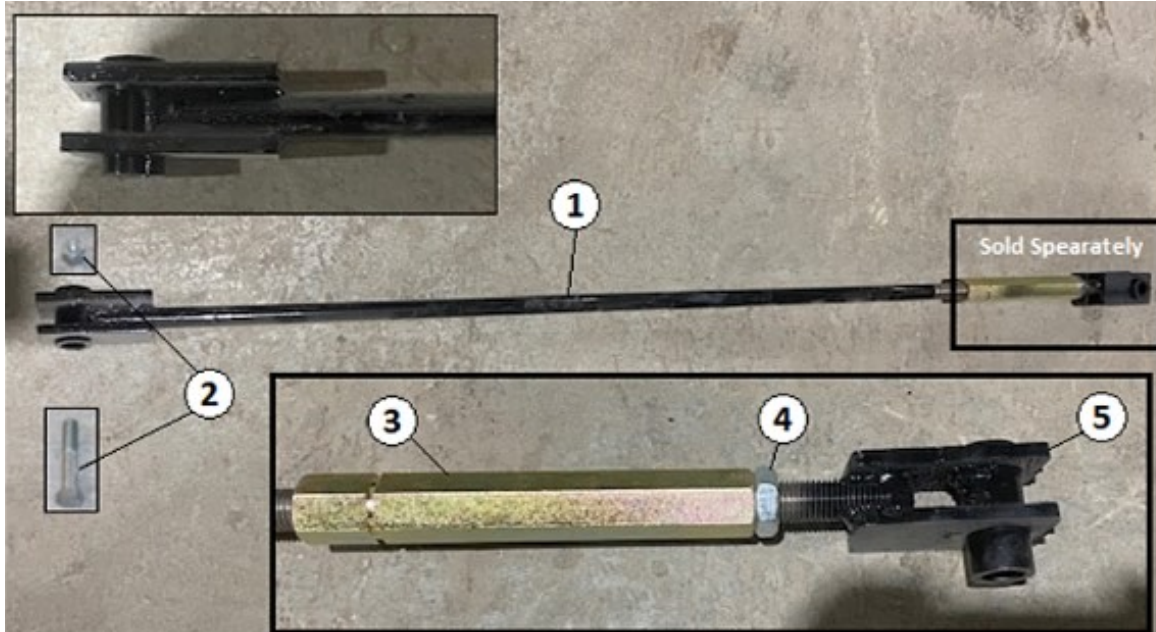
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	170010	Tailwheel Tube (1708P)	NLA
2	120003	Bolt Kit 1/2' x 4-1/2" (for Tailwheel Tube 1708P)	6
3	351522	Hub & Spindle Tube (1808P-1810P)	2
4	184045-BK	Spindle Tube (1808P-1810P)	2
5	150047	Bolt Kit 3/4' x 6" (for Spindle Tube 1808P -1810P))	8
6	180039	Bolt Kit 1/2' x 3-1/2" (for Spindle Tube 1808P -1810P))	2
7	17009	Tailwheel Tube (1708P)	NLA
	184046-BK	Tailwheel Tube Weldment (1808-1810P)	1
8	110020	Bolt Kit 1" x 8" Bolt w/Locknut	2
9	110021	Zerk Fitting 14/28	2
10	110022	Laminated Wheel 4"x8" - 15" (1708P)	2
	180040	Laminated Wheel 6"x9" - 20" (1808P-1810P)	2
11	110023	Bolt Kit, 5/16-18 x 3/4"	10

NLA = No Longer Available

# 12.19 LEVELING RODS

## PULL TYPE

PULL TYPE

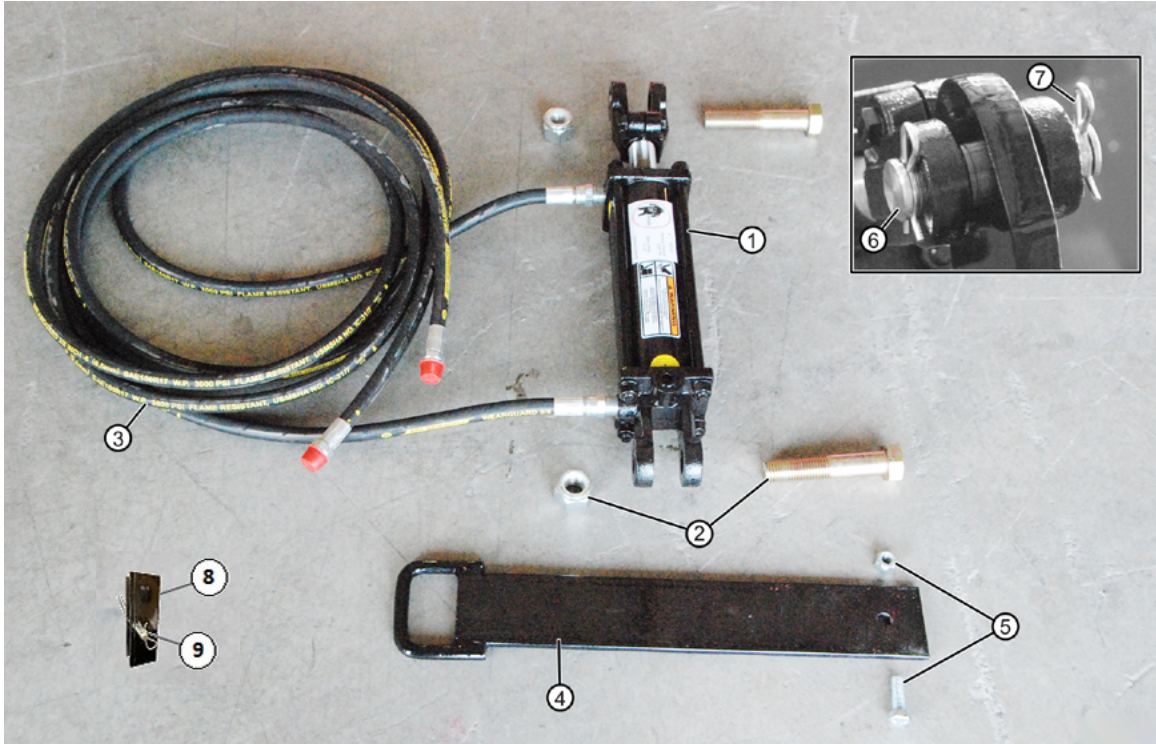


ITEM	PART NUMBER	DESCRIPTION	QTY.
1	1840044-BK	Leveling Rod 50.25"	2
2	140004	Bolt Kit 5/8" x 5" Bolt W/Locknut (1808P-1810P)	4
	170008	Bolt Kit 5/8" x 4" Bolt W/Locknut (1708P)	4
3	191229	Leveling Rod Adjuster	2
4	351508	Jam Nut 7/8"	2
5	184041-BK	Short Leveling Rod 6.125" (1708-1808P)	2
	184043-BK	Short Leveling Rod 10.625" (1810P)	2



# 12.20 HYDRAULIC SYSTEM

## PULL TYPE

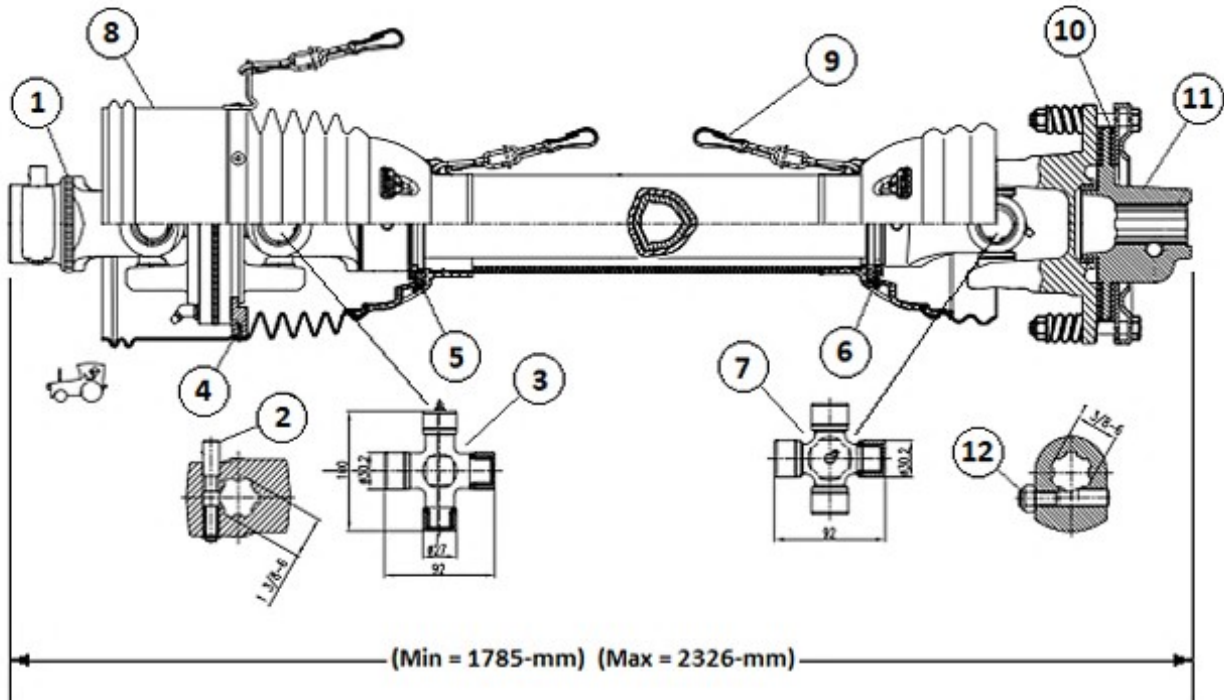


PULL TYPE

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	180030	Hydraulic Cylinder, 3 x 8"	1
2	180031	Bolt Kit, 1" x 5" Bolt w/Locknut (1808P-1810P)	2
3	180032	Hydraulic Hose 168"	2
4	184042-BK	Hydraulic Hose Support Bracket	1
5	180034	Bolt Kit 3/8" x 1-1/2" (for Hose Support Bracket)	1
6	191529	Cylinder Pin w/ R-Clip (1708P)	2
7	191530	R-Clip (for Cylinder Pin) (1708P)	2
8	191531	Cylinder Transport Lock	1
9	310034	Pin with R-Clip	1

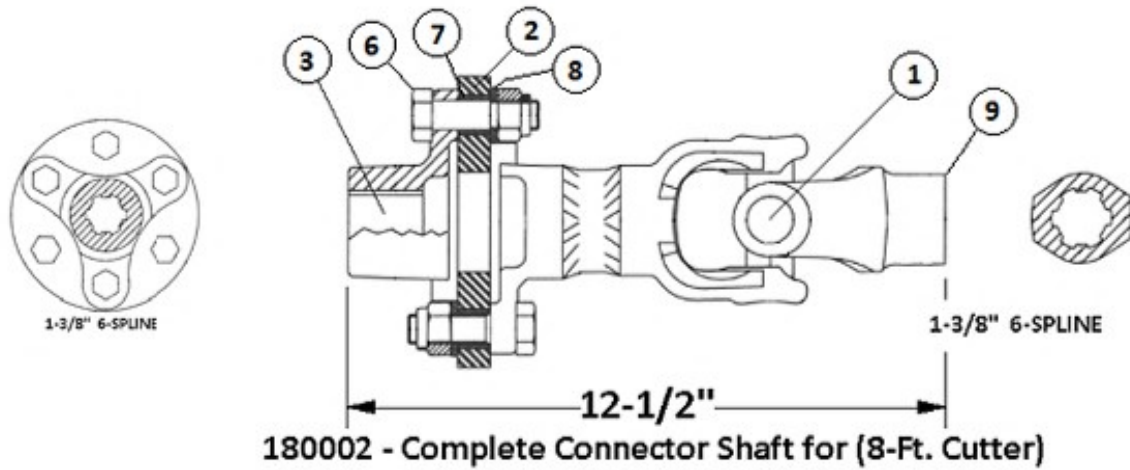
# 12.21 DRIVELINE COMPONENTS

## PULL TYPE



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	552050	Tractor Yoke w/Push Pin 1-3/8" 6-Spline	1
2	552051	Push Pin Kit	1
3	552052	Cross Kit 30.2/92 x 27/100	2
4	552053	Fixed Ring for C.V. Shield	1
5	552028	Outer Plastic Shield Bearing	1
6	552029	Inner Plastic Shield Bearing	1
7	552056	Cross Kit 30.2 x 92	1
8	552057	Complete Safety Shield	1
9	5520005	Safety Chain	3
10	552025	Clutch Lining (2-Pack)	1
11	552059	Complete Slipclutch	1
12	552033	Eccentric Pin w/Nut	1
	180041	Complete C.V. Driveline w/Slipclutch (540-RPM)	

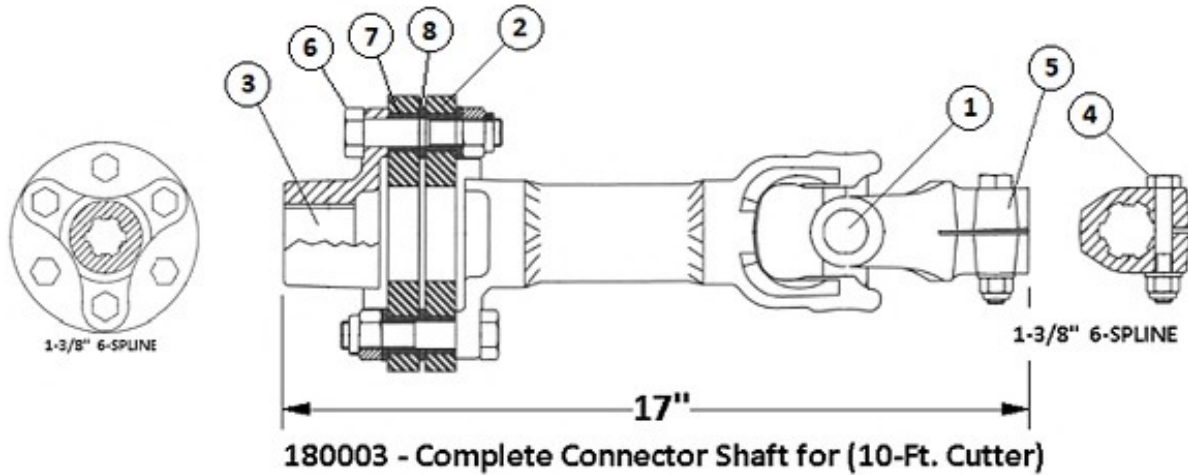
## 12.22 CONNECDTOR SHAFT COMPONENTS 8FT PULL TYPE



PULL TYPE

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	552130	Cross Kit 30.2 x 80	1
2	552131	Rubber Shock Pad	1
3	552133	Spider 1-3/8" 6-Spline	1
6	552136	Bolt M16 x 60	6
7	552137	Spacer	6
8	552138	Shim Washer M16	6
9	552139	Yoke 1-3/8" 6 Spline	1
180002		Complete Connector Shaft 12-1/2" (1808)	

## 12.23 CONNECCTOR SHAFT COMPONENTS 10 FT PULL TYPE



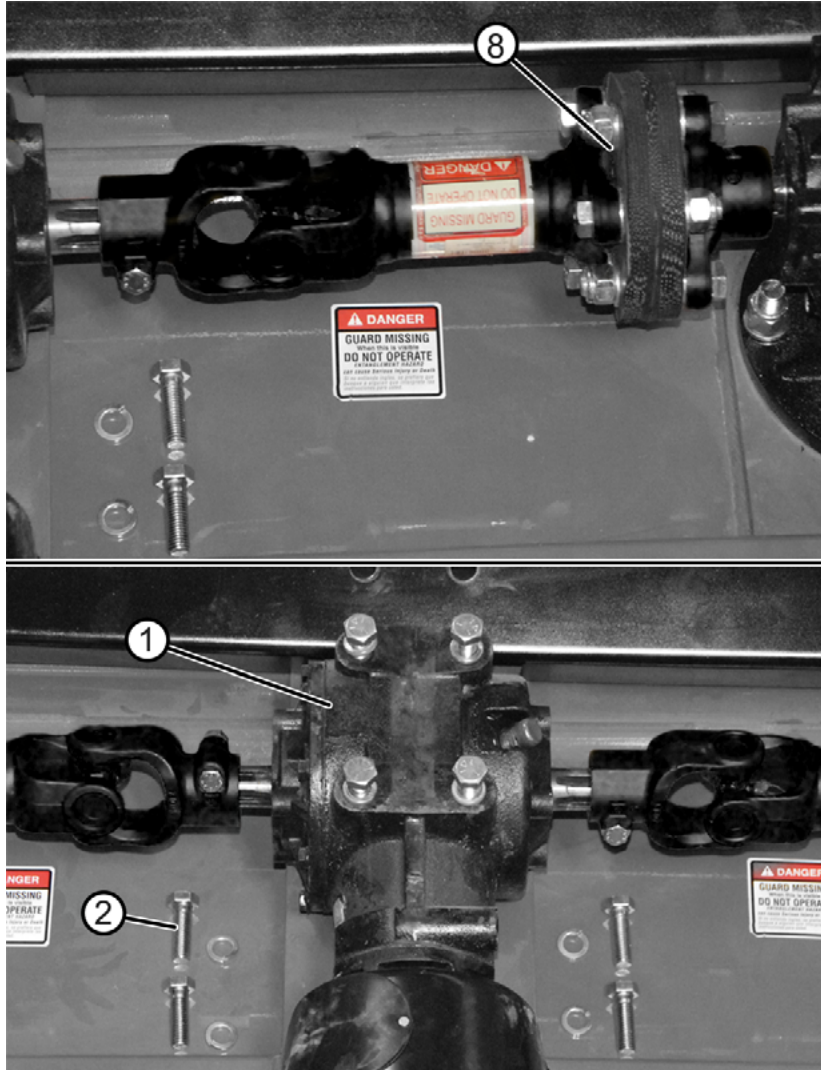
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	552130	Cross Kit 30.2 x 80	1
2	552131	Rubber Shock Pad	2
3	552133	Spider 1-3/8" 6-Spline	1
4	552134	Lock Bolt M12 x 1.75 x 70	1
5	552132	Clamp Style Yoke 1-3/8" 6-Spline	1
6	552140	Bolt M16 x 80	6
7	552137	Spacer	6
8	552138	Shim Washer M16	6
180003		Complete Connector Shaft 17" (1810)	

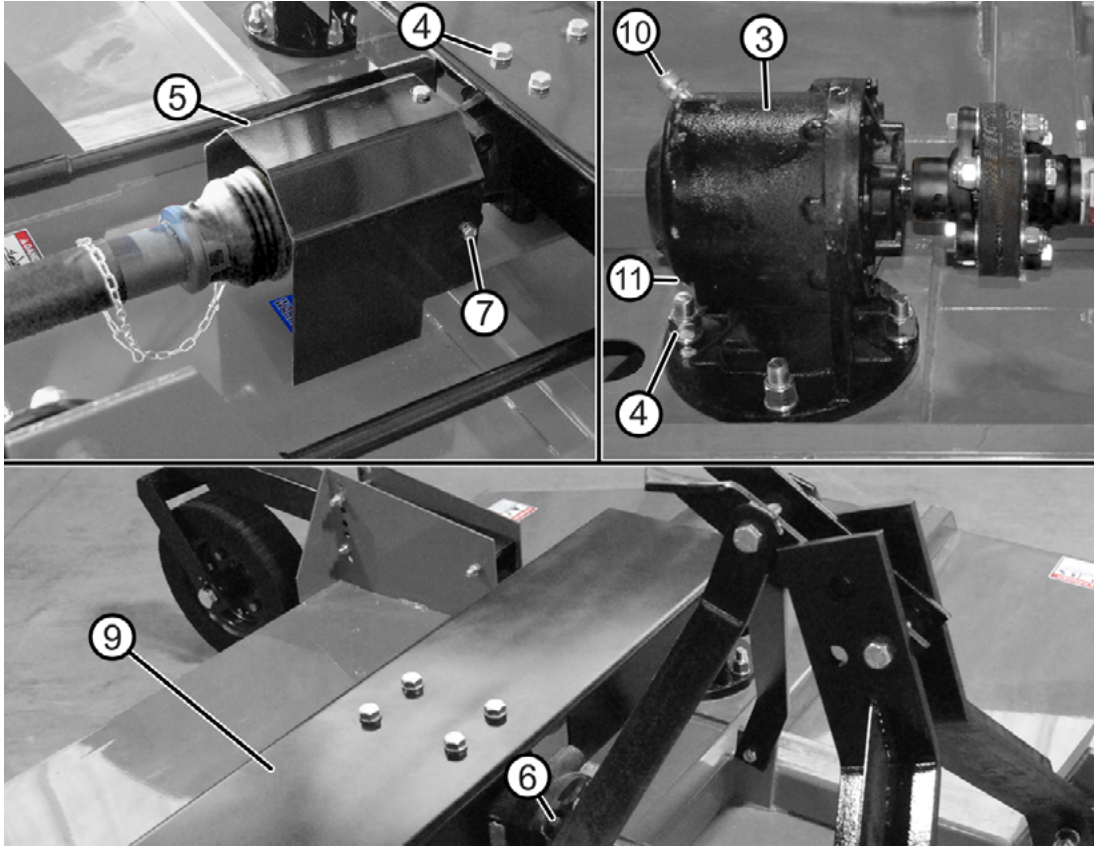
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# 12.24 GEARBOX ASSEMBLY

## PULL TYPE

PULL TYPE





**12.20 GEARBOX ASSEMBLY**

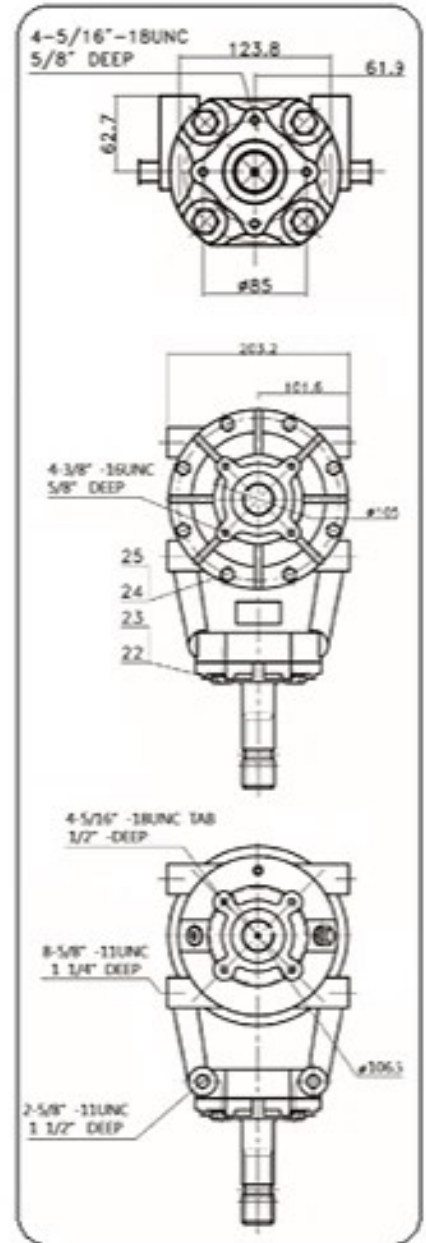
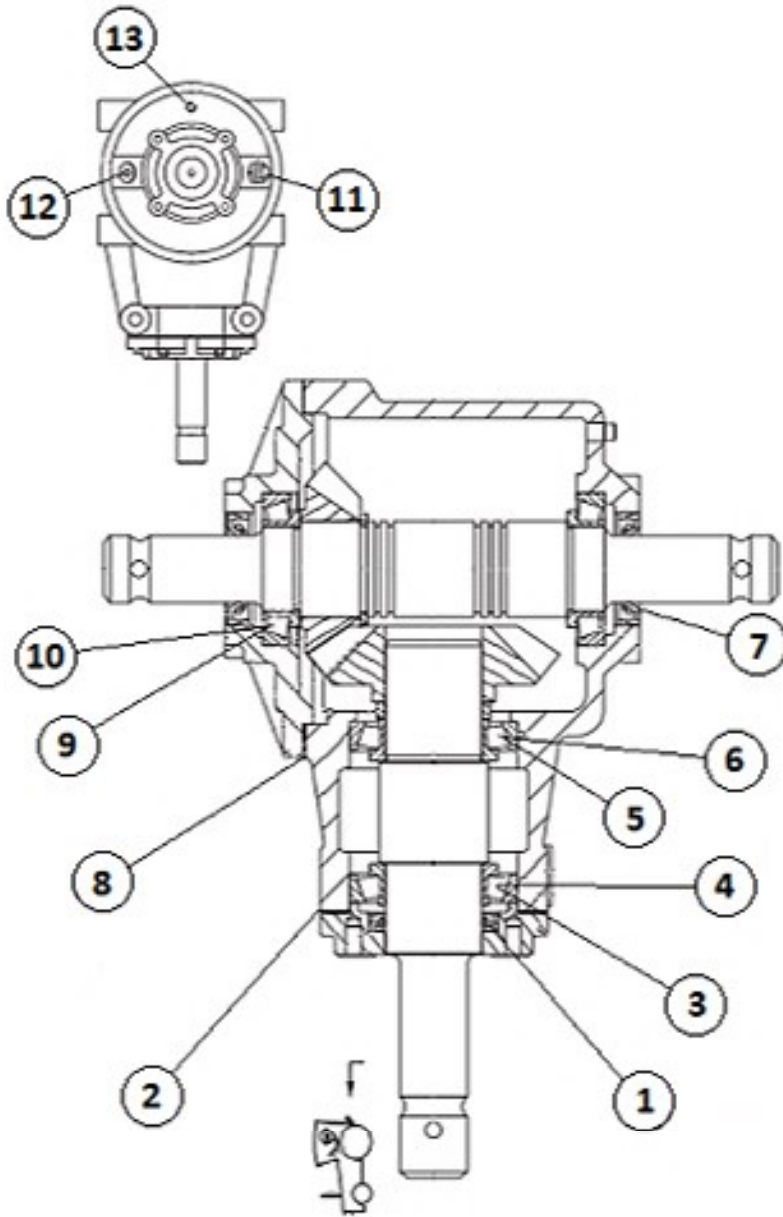
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	180000	Center T-Gearbox	1
2	180001	Top Gearbox Bolt Kit, 5/8" x 1-1/4" Bolt W/Lockwasher	4
	170021	Bottom Gearbox Bolt Kit 5/8" x 1-1/2" Bolt w/Lockwasher	4
3	130000	Gearbox RW610-100Hp 1:1.46 Ratio	A/R
	150027	Gearbox RW610-100Hp 1:1.93 Ratio	A/R
4	110068	Bolt Kit for Outboard Gearbox 3/4-10 x 3" Bolt w/LN & LW	8
5	150076	Gearbox Shield (Plastic)	1
6	110006	Bolt Kit, 5/16" x 1/2" Bolt w/ Lockwasher (4 each)	1
7	110017	Bolt Kit 1/2" x 1-1/2" (for Older Models w/Metal Shield)	3
8	180002	Shock Coupler for 8-ft Models	2
	180003	Shock Coupler, 10-ft Models	2
9	1810004-BK	Center Shield for T-Gearbox (Metal)	1
10	110008	Pressure Relief Plug	2
11	110009	Pipe Plug (Square Head) Oil Level Check	1

A/R = As Required

# 12.25 RW61T-T GEARBOX COMPONENTS

## PULL TYPE

PULL TYPE



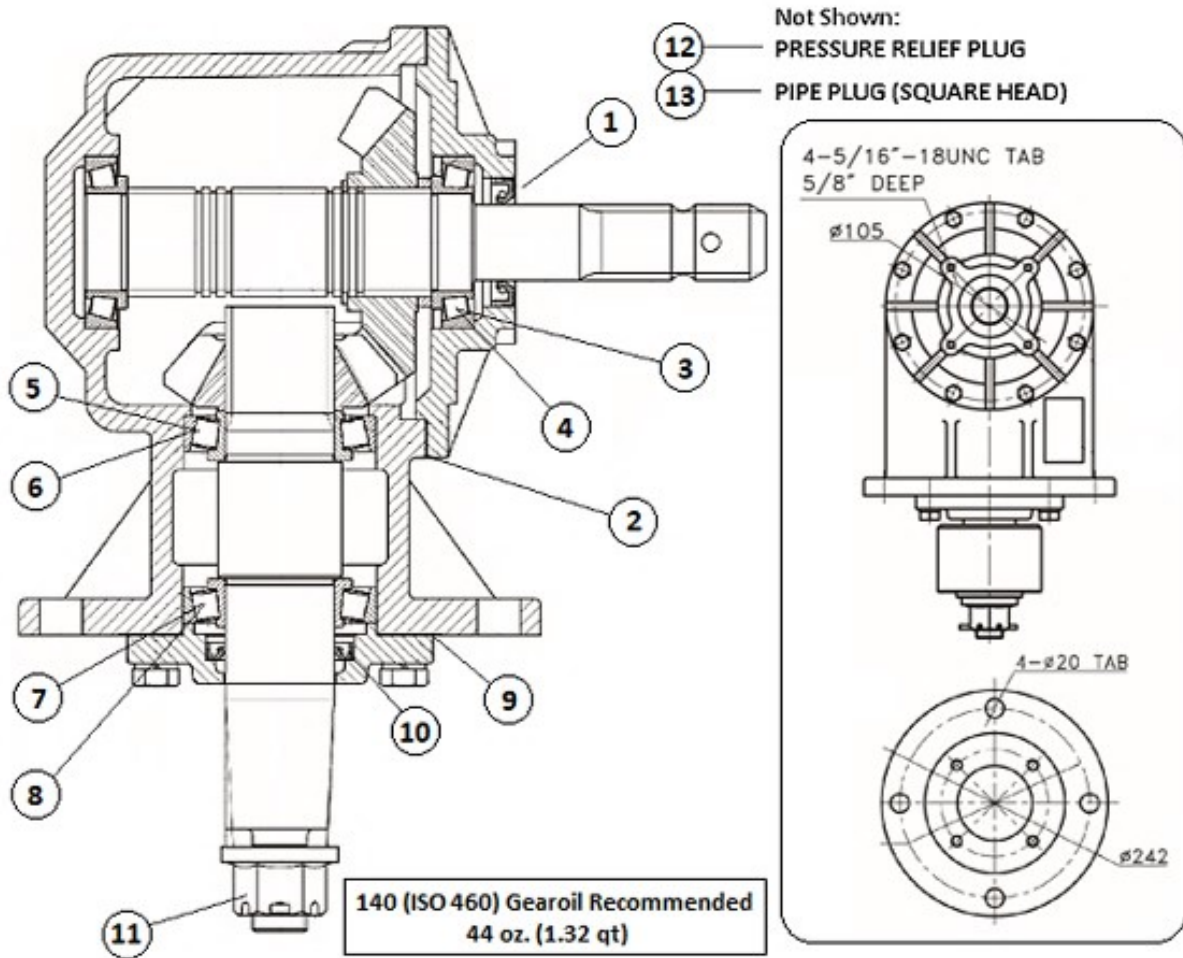


12.21 RW6IT-T GEARBOX COMPONENTS			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	551029	Input Oil Seal 50 x 68 x 10	1
2	551028	Input Gasket Kit	1
3	551026	Front – Input Cone Bearing 368	1
4	551027	Front – Input Bearing Cup 362	1
5	551024	Rear – Input Cone Bearing 368A	1
6	551025	Rear – Input Bearing Cup 362A	1
7	551020	Output Oil Seal 35 x 60 x 12	2
8	551021	Output Gasket Kit	1
9	551022	Output Cone Bearing LM603049	2
10	551023	Output Bearing Cup LM603014	2
11	110008	Pressure Relief Plug	1
12	551053	Drain Plug (Allen Head)	1
13	110009	Pipe Plug (Square Head) Oil Level Check	1
	180000	Complete Center T-Gearbox (1:1 / 1:1.21 / 1:1.46 Ratio)	

# 12.26 RW610-100HP 540-RPM GEARBOX COMPONENTS

## PULL TYPE

PULL TYPE



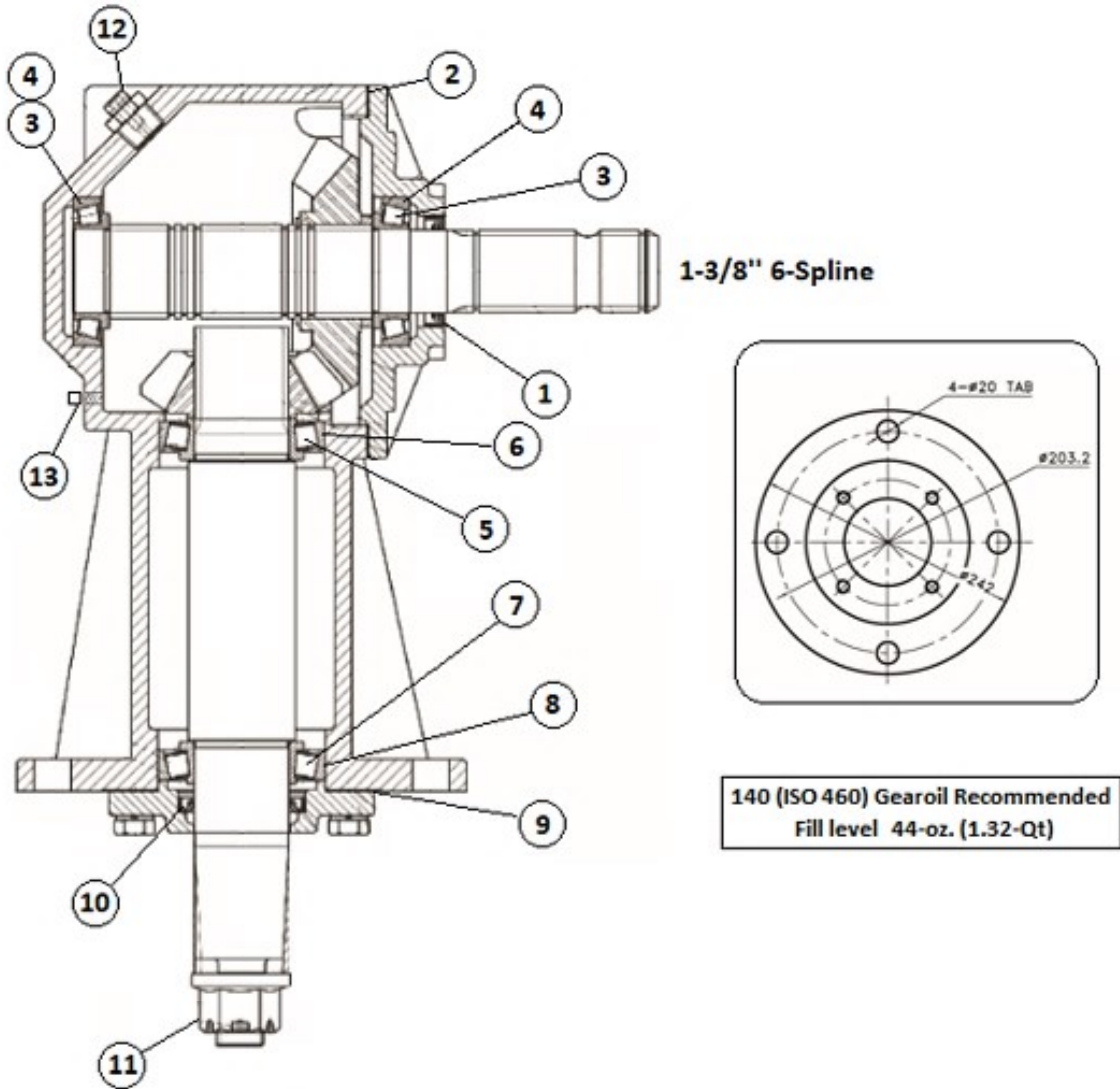
12.22 RW610-100HP 540-RPM GEARBOX COMPONENTS			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	551020	Input Oil Seal 35 x 60 x 12	1
2	551021	Input Gasket Kit	1
3	551022	Input Cone Bearing LM603049	2
4	551023	Input Bearing Cup LM603014	2
5	551024	Top – Output Cone Bearing 368A	1
6	551025	Top – Output Bearing Cup 362A	1
7	551026	Bottom – Output Cone Bearing 368	1
8	551027	Bottom – Output Bearing Cup 362	1
9	551028	Output Gasket Kit	1
10	551029	Output Oil Seal 50 x 69 x 10	1
11	110013	Castle Nut 1" UNF w/Cotter Pin	1
12	110008	Pressure Relief Plug	1
13	110009	Pipe Plug (Square Head) Oil Level Check	1
	130000	RW610 Complete Gearbox (1:1.46 Ratio)	
	150027	Rw610 Complete Gearbox (1:1.93 Ratio)	

Note: See I.D. Tag on Gearbox to identify existing Ratio

# 12.27 RW81-150HP 1000-RPM GEARBOX COMPONENTS

## PULL TYPE

PULL TYPE

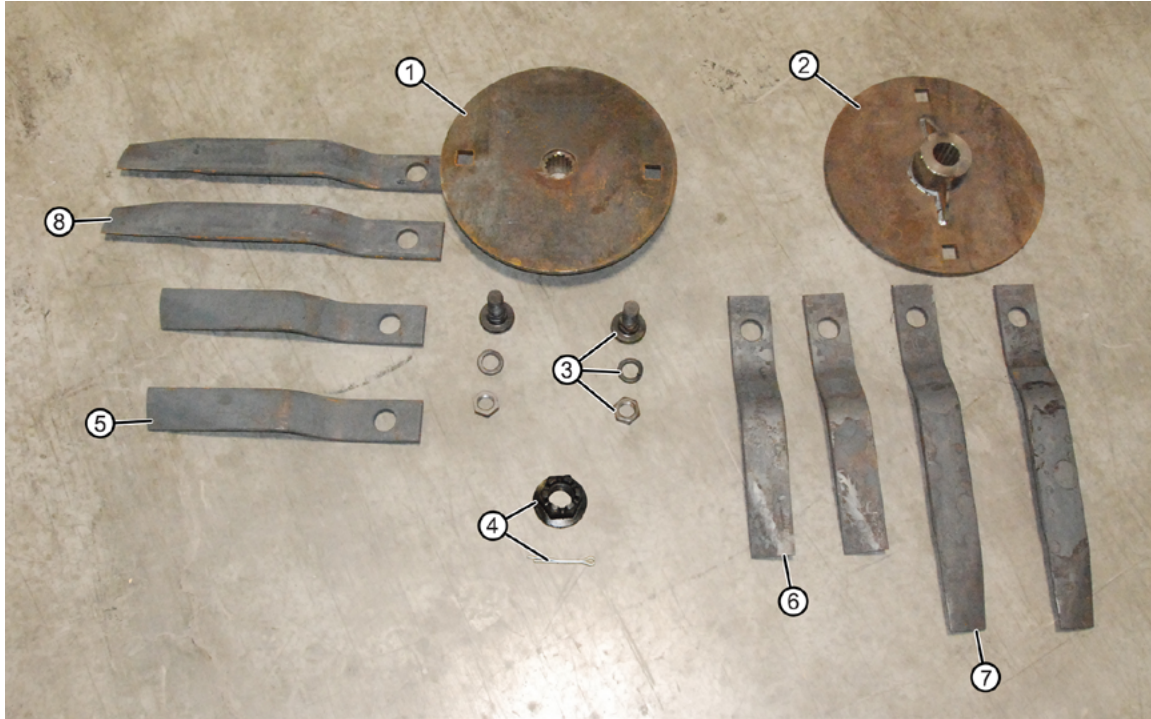


12.23 RW81-150HP 1000-RPM GEARBOX COMPONENTS			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	551040	Input Oil Seal 45 x 60 x 9.5	1
2	551021	Input Gasket Kit	1
3	551022	Input Cone Bearing LM603049	2
4	551023	Input Bearing Cup LM603014	2
5	551024	Top – Output Cone Bearing 368A	1
6	551025	Top – Output Bearing Cup 362A	1
7	551026	Bottom – Output Cone Bearing 368	1
8	551027	Bottom – Output Bearing Cup 362	1
9	551028	Output Gasket Kit	1
10	551029	Output Oil Seal 50 x 68 x 10	1
11	110013	Castle Nut 1" Unf w/Cotter Pin	1
12	110008	Pressure Relief Plug	1
13	110009	Pipe Plug (Square Head) Oil Level Check	1
150035		RW81 Complete Gearbox (1.21:1 Ratio)	

PULL TYPE

# 12.28 BLADE ASSEMBLY

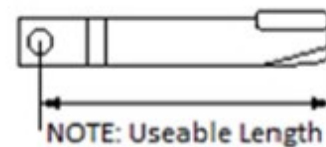
## PULL TYPE



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	180007	8-ft Blade Carrier, 5/8" x 19-1/2" Flat Type Bolt Holes Ctr 15.50" for 1:1.46 Gearbox 180000	A/R
	180090	8-ft Blade Carrier, 5/8" x 19-1/2" Flat Type Bolt Holes Ctr 15.50" for 1:1.93 Gearbox 150027	A/R
2	130014	10-ft Blade Carrier, 5/8 x 17" Flat Type Bolt Holes Ctr 13.50"	2
3	110012	Blade Bolt kit (Sold as a pair), Bolt w/Nut & Lockwasher	2
4	110013	Castle Nut 1" UNF w/Cotter pin	2
5	T-48	8-ft Cutter Blades (Sold as pair) CCW (Useable Lenght 16")	1
6	T-48R	8-ft Cutter Blades (Sold as pair) CW (Useable Lenght 16")	1
7	T-60	10-ft Cutter Blades (Sold as pair) CCW (Useable Lenght 22")	1
8	T-60R	10-ft Cutter Blades (Sold as pair) CW (Useable Lenght 22")	1

A/R = As Required

Note: Blade Bolt Nut uses 1-11/16" socket size



# 12.29 CHAIN GUARDS

## PULL TYPE



PULL TYPE

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	CG-1708	Front & Rear Chain Shield Kit, 8'	1
	CG-1810	Front & Rear Chain Shield Kit, 10'	

# WARRANTY INFORMATION

## 13.1 WARRANTY INFORMATION

### LIMITED WARRANTY

Ironcraft products are warranted to be free from defects in workmanship or materials for a period of 12 months from the initial sale, lease or rental date.

### WARRANTY EXCLUSIONS

This warranty does not cover normal wear items, including but not limited to: bearings, hoses, ground engaging parts such as teeth, blades, cutting edges, pilot bits, auger teeth and broom bristles. This warranty does not cover maintenance, service or adjustments. This warranty does not cover damage due to misuse, negligence, accidents, improper maintenance or modifications of this product. This warranty is void if any components have been disassembled, i.e., pumps, gear boxes or motors. Specially modified attachments built by Ironcraft X-treme Attachments to meet your customers' needs shall not be warranted by Construction Implement Depot, Inc. This warranty does not cover replacement parts not supplied by Ironcraft, Inc.

### WARRANTY STATEMENT

Our obligation under this Limited Warranty shall be solely limited to repairing or replacing any part (see non-covered items above) free of charge that, according to our judgment, show evidence of a defect in quality of workmanship or materials for the stated 12 month warranty period. All defective parts must be routed directly to Ironcraft with freight or delivery charges to be prepaid. This limited warranty shall not be interpreted to render Ironcraft liable for any injury or damage to persons, businesses or property of any kind nor expenses or losses incurred for labor, supplies, substitute machinery rental or for any other reason. Repair or replacement parts are subject to the supply conditions at the time of repair or replacements, which may directly affect our ability to obtain material and/or replacement parts. Ironcraft reserves the right to make improvements in design or changes in specifications at any time without incurring any obligations to owners of previously purchased products. No one but Ironcraft is allowed to alter, modify or enlarge this warranty nor the exclusions, limitations and reservation at any time.



## 13.2 WARRANTY SERVICE

### WARRANTY SERVICE PROCEDURE

RGA (Returning Goods Authorization) Policy:

If repairs are required, Ironcraft must obtain an RGA number from the manufacturer of the defective part and proof of purchase. RGA and services are rendered by Ironcraft only. Any responsibility of shipping costs on any item returned for repair is at the discretion of Ironcraft.

All returned parts must have:

1. A legible RGA number written on the outside of the package.
2. A Service Request Form.
3. The defective part.

RGA numbers are only valid for 30 days from the date of issue. All shipped replacement parts will require a PO number from the original Ironcraft Customer. If the defective part is rendered non-warranty, the PO number will be invoiced for the replacement. Should you have any problems with your attachment, please follow the following procedures to obtain service.

**Call the Warranty Department at (336) 859-2002 ext 215.** You will need to provide the model and serial number of the defective item(s), a description of the problem and have photographs available.

Upon a warranted issue, visit [www.ironcraftusa.com](http://www.ironcraftusa.com), click on the warranty tab, and fill in the warranty information. Ironcraft will retain an RGA number from the manufacturer of the defective part. If all the information above is fulfilled the manufacturer will issue an RGA number.

Obtain a PO number from the original Ironcraft customer. PO numbers will be invoiced in the event the defective part(s) is un-warranted

Ironcraft will ship a replacement part with a Service Request Form and RGA #. There will be a call tag with the Manufacturer's address and instructions for returning the defective part.

Once the defective part is warranted by the manufacturer, Ironcraft will be issued a credit and the PO number will be void.

In the event the manufacturer renders that the attachment be returned to Ironcraft for repair, Ironcraft will make arrangements for pickup and return. Repairs will be performed by Ironcraft qualified technicians. Non-warranted issues will be discussed and repairs will be performed upon agreement of the owner, and payment for parts and labor will be issued.

# SAFETY ACKNOWLEDGEMENT FORM

ATTN ALL OPERATORS: Print your name, sign and date in the boxes below to acknowledge that you have read and fully understand the safety instructions presented in this manual, and have been trained on how to safely operate this attachment.

OPERATOR NAME	SIGNATURE	DATE

# MAINTENANCE LOG

Use this log sheet to document all routine maintenance and repair services performed on this machine.

DESCRIPTION OF MAINTENANCE	SERVICED BY	DATE



7 ROCKY MT RD  
*Athens, Tennessee 37303*



(P) 423-405-5150

(F) 423-405-5904

[WWW.IRONCRAFTUSA.COM](http://WWW.IRONCRAFTUSA.COM)



Revised June 24, 2024 5:05 PM  
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