



# BUSH HOG®

# RR1114H Rotary Rake

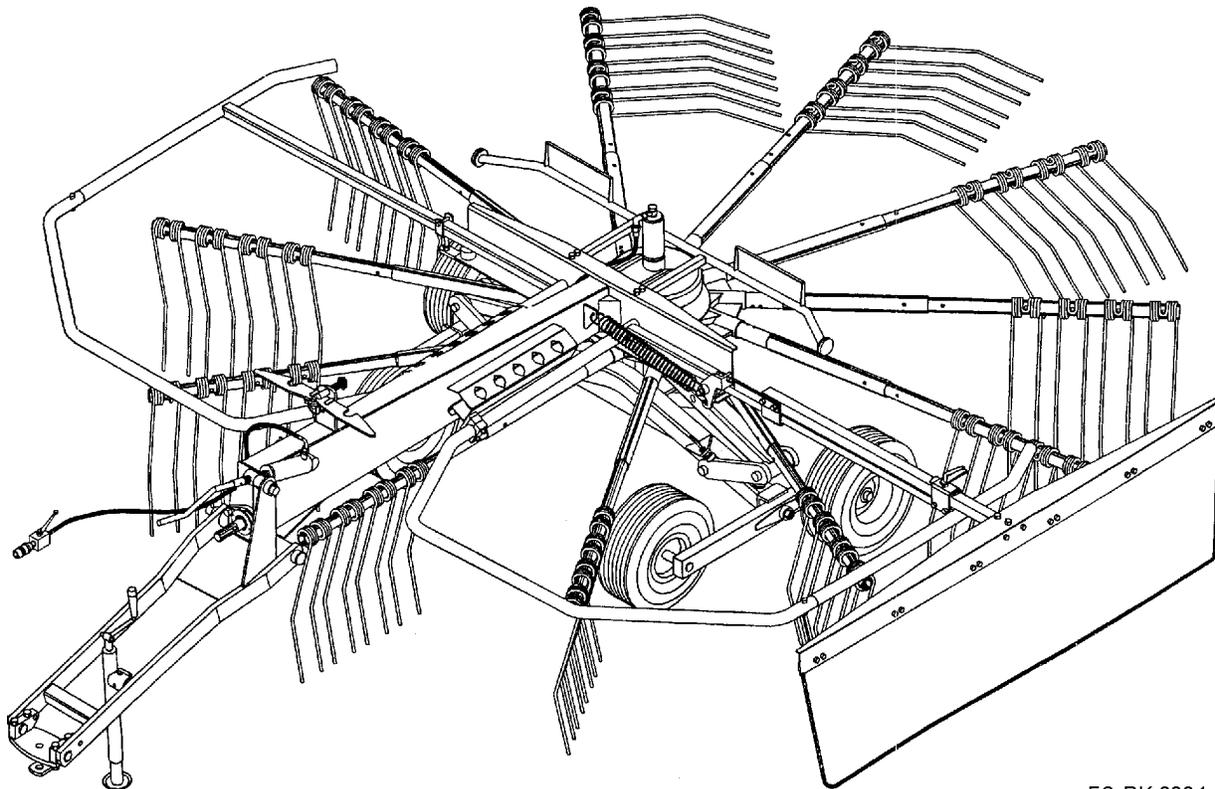
Published 04/19

Part No. 50080518

## OPERATOR'S MANUAL



This Operator's Manual is an integral part of the safe operation of this machine and must be maintained with the unit at all times. READ, UNDERSTAND, and FOLLOW the Safety and Operation Instructions contained in this manual before operating the equipment. C01-Cover



FC-RK-0004

### BUSH HOG®

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Selma, AL 36703  
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www.bushhog.com

Bush Hog Web Page



www.alqr.com/bwe

**¡ATENCIÓN!**  
LEA EL INSTRUCTIVO

Si No Lee Ingles, Pida  
Ayuda a Alguien  
Que Se Lo Lea Para Que le  
Traduzca Las  
Medidas de Seguridad



\$0.00

## To the Owner/Operator/Dealer

All implements with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognizes the potential hazards and follows reasonable safety practices. The manufacturer has designed this implement to be used with all its safety equipment properly attached to minimize the chance of accidents.

**BEFORE YOU START!** Read the safety messages on the implement and shown in your manual. Observe the rules of safety and common sense!

For future reference, record your Bush Hog product model number and serial number.

Dealer		Telephone		Model Number	
Owner		Purchase Date:		Serial Number	

# **WARNING**

### TO AVOID SERIOUS INJURY OR DEATH:

1. READ AND UNDERSTAND OPERATOR'S MANUAL.
2. TRACTOR MUST BE EQUIPPED WITH ROLL-OVER PROTECTION (ROPS) AND SWAY CHAINS.
3. ALWAYS WEAR SAFETY GLASSES, SAFETY SHOES AND SEAT BELT FASTENED TIGHTLY.
4. STOP TRACTOR, LOCK BRAKES, AND BLOCK UP OR SUPPORT IMPLEMENT SECURELY BEFORE WORKING UNDER RAISED COMPONENTS.
5. ALLOW NO RIDERS AT ANY TIME ON TRACTOR OR IMPLEMENT. FALLING OFF CAN KILL.
6. KEEP BYSTANDERS CLEAR OF MOVING PARTS AND WORKING AREA. KEEP CHILDREN AWAY!
7. DO NOT LIFT, LOWER, OR OPERATE UNLESS EVERYONE IS CLEAR OF IMPLEMENT.
8. USE INCREASED CAUTION ON SLOPES & NEAR BANKS AND DITCHES TO PREVENT OVERTURN.
9. LOCK LIFT LEVER UP FOR TRANSPORT. HAVE SMV SIGN VISIBLE. FOLLOW LOCAL LAWS.
10. USE PARKING STAND OR BLOCK UP WHEN UNHITCHING FROM TRACTOR.

999200

### WARRANTY INFORMATION:

Read and understand the complete Warranty Statement found in this Manual. Fill out the Warranty Registration Form in full and return it to within 30 Days. Make certain the Serial Number of the Machine is recorded on the Warranty Card and on the Warranty Form that you retain

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# **SAFETY SECTION**

# SAFETY

## General Safety Instructions and Practices

A careful operator is the best operator. Safety is of primary importance to the manufacturer and should be to the owner/operator. Most accidents can be avoided by being aware of your equipment, your surroundings, and observing certain precautions. The first section of this manual includes a list of Safety Messages that, if followed, will help protect the operator and bystanders from injury or death. Read and understand these Safety Messages before assembling, operating or servicing this Implement. This equipment should only be operated by those persons who have read the manual, who are responsible and trained, and who know how to do so responsibly.



The Safety Alert Symbol combined with a Signal Word, as seen below, is used throughout this manual and on decals which are attached to the equipment. The Safety Alert Symbol means: "ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!" The Symbol and Signal Word are intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this equipment.

Practice all usual and customary safe working precautions and above all---remember safety is up to YOU. Only YOU can prevent serious injury or death from unsafe practices.



Indicates an imminently hazardous situation that, if not avoided, WILL result in DEATH OR VERY SERIOUS INJURY.



Indicates an imminently hazardous situation that, if not avoided, COULD result in DEATH OR SERIOUS INJURY.



Indicates an imminently hazardous situation that, if not avoided, MAY result in MINOR INJURY.



Identifies special instructions or procedures that, if not strictly observed, could result in damage to, or destruction of the machine, attachments or the environment.

**NOTE:** *Identifies points of particular interest for more efficient and convenient operation or repair.* (SG-1)

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death may occur unless care is taken to follow the warnings and instructions stated in the Safety Messages. Always use good common sense to avoid hazards. (SG-2)



Si no lee ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad. (SG-3)



# SAFETY

## Operator Safety Instructions and Practices

### **DANGER**

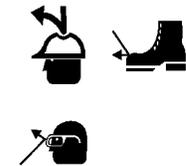
Never operate the Tractor or Implement until you have read and completely understand this Manual, the Tractor Operator's Manual, and each of the Safety Messages found in the Manual or on the Tractor and Implement. Learn how to stop the tractor engine suddenly in an emergency. Never allow inexperienced or untrained personnel to operate the Tractor or Implement without supervision. Make sure the operator has fully read and understood the manuals prior to operation.

(SG-4)



### **WARNING**

The operator and all support personnel should wear hard hats, safety shoes, safety glasses, and proper hearing protection at all times for protection from injury including injury from items that may be thrown by the equipment. (SG-16)



### **CAUTION**

PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS! Tractors with or without an Implement attached can often be noisy enough to cause permanent hearing loss. We recommend that you always wear hearing protection if the noise in the Operator's position exceeds 80db. Noise over 85db over an extended period of time will cause severe hearing loss. Noise over 90db adjacent to the Operator over an extended period of time will cause permanent or total hearing loss. **NOTE:** *Hearing loss from loud noise [from tractors, chain saws, radios, and other such sources close to the ear] is cumulative over a lifetime without hope of natural recovery.* (SG-17)



### **WARNING**

Always read carefully and comply fully with the manufacturer's instructions when handling oil, solvents, cleansers, and any other chemical agent. (SG-22)



### **DANGER**

Never allow children to play on or around Tractor or Implement. Children can slip or fall off the Equipment and be injured or killed. Inadvertent contact with controls can cause the Implement to shift or fall crushing themselves or others. (SG-25)

SAFETY

# SAFETY

**⚠ DANGER**

DO NOT use drugs or alcohol immediately before or while operating the Tractor and Implement. Drugs and alcohol will affect an operator's alertness and coordination and therefore affect the operator's ability to operate the equipment safely. Before operating the Tractor or Implement, an operator on prescription or over-the-counter medication must consult a medical professional regarding any side effects of the medication that would hinder their ability to operate the Equipment safely. NEVER knowingly allow anyone to operate this equipment when their alertness or coordination is impaired. Serious injury or death to the operator or others could result if the operator is under the influence of drugs or alcohol. (SG-27)



**⚠ WARNING**

Prolonged operation may cause operator boredom and fatigue affecting safe operation. Take scheduled work breaks to help prevent these potentially impaired operating conditions. Never operate the Implement and Tractor in a fatigued or bored mental state which impairs proper and safe operation. (SG-32)

**⚠ WARNING**

Use extreme caution when getting onto the Implement to perform repairs, maintenance and when removing accumulated material. Only stand on solid flat surfaces to ensure good footing. Use a ladder or raised stand to access high spots which cannot be reached from ground level. Slipping and falling can cause serious injury or death. (SG-33)

**⚠ WARNING**

Avoid contact with hot surfaces including hydraulic oil tanks, pumps, motors, valves and hose connections. Relieve hydraulic pressure before performing maintenance or repairs. Use gloves and eye protection when servicing hot components. Contact with a hot surface or fluid can cause serious injury from burns or scalding. (SG-34)

**⚠ DANGER**

DO NOT operate this Implement on a Tractor that is not properly maintained. Should a mechanical or Tractor control failure occur while operating, immediately shut down the Tractor and perform repairs before resuming operation. Serious injury and possible death could occur from not maintaining this Implement and Tractor in good operating condition. (SG-36)

**⚠ WARNING**

Extreme caution should be used by the Tractor operator when operating near passersby. Stop raking if anyone comes within 25 feet of the Implement to prevent possible passerby injury or death from being struck from a thrown object, entanglement with the rakes, or run over. (SRK-01)

## Equipment Operation Safety Instructions and Practices

**⚠ CAUTION**

Do not back up with this implement. Backing could damage the machine or its components. (S3PT-4)

# SAFETY



**WARNING**

Use extreme care when lowering or unfolding the implement's wings. Make sure no bystanders are close by or underneath the wings. Allow ample clearance around the implement when folding or unfolding the wings. Use extreme caution around buildings or overhead power lines. (S3PT-05)



**DANGER**

There are obvious and hidden potential hazards in the operation of this Implement as in all power-driven or pulled equipment. REMEMBER! This machine is often operated in rough terrain conditions that include tall grass, weeds, gullies, holes, slopes, hidden obstructions and the like. Serious injury or even death may occur unless care is taken to assure the safety of the operator and bystanders in the area. Do not operate this machine with anyone in the immediate area. (S3PT-07)



**DANGER**

This Implement may be wider than the Tractor. Be careful when operating or transporting this equipment to prevent the Implement from running into or striking sign posts, guard rails, concrete abutments or other solid objects. Such an impact could cause the Implement and Tractor to pivot violently resulting in loss of steering control, serious injury, or even death. Never allow the Implement to contact obstacles. (S3PT-12)



**WARNING**

Operate this Implement only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never operate in darkness or foggy conditions where you cannot clearly see at least 100 yards in front and to the sides of the tractor and implement. 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 types of items discontinue operating this equipment. (S3PT-21)



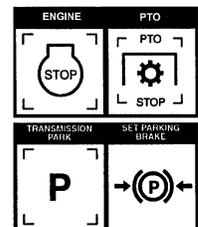
**WARNING**

Operate this Equipment only with a Tractor equipped with an approved roll-over-protective system (ROPS). Always wear seat belts. Serious injury or even death could result from falling off the tractor, particularly during a turnover when the operator could be pinned under the ROPS. (SG-7)



**DANGER**

BEFORE leaving the tractor seat lower the implement, set the parking brake and/or set the tractor transmission in parking gear, disengage the PTO, stop the engine, remove the key, and wait for all moving parts to stop. Place the tractor shift lever into a low range or parking gear to prevent the tractor from rolling. Never dismount a Tractor that is moving or while the engine is running. Operate the Tractor controls from the tractor seat only. (SG-9)



**DANGER**

Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death. (SG-10)



# SAFETY

**DANGER**

Never allow children to operate, ride on, or come close to the Tractor or Implement. Usually, 16-17 year-old children who are mature and responsible can operate the implement with adult supervision, if they have read and understand the Operator's Manuals, been trained in proper operation of the tractor and Implement, and are physically large enough to reach and operate the controls easily. (SG-11)



**WARNING**

Do not mount or dismount the Tractor while the tractor is moving. Mount the Tractor only when the Tractor and all moving parts are completely stopped. (SG-12)



**DANGER**

Start tractor only when properly seated in the Tractor seat. Starting a tractor in gear can result in injury or death. Read the Tractor operators manual for proper starting instructions. (SG-13)



**WARNING**

Do not operate this Equipment with hydraulic oil or fuel leaking. Oil and fuel are explosive and their presence could present a hazard. Do not check for leaks with your hand! High-pressure oil streams from breaks in the line could penetrate the skin and cause tissue damage including gangrene. To check for a hose leak, SHUT the unit ENGINE OFF and remove all hydraulic pressure. Wear oil impenetrable gloves, safety glasses and use cardboard to check for evidence of oil leaks. If you suspect a leak, REMOVE the HOSE and have it tested at a Dealer. If oil does penetrate the skin, have the injury treated immediately by a physician knowledgeable and skilled in this procedure. (SG-15)



**DANGER**

Never run the Tractor engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health. (SG-23)

**WARNING**

In case of mechanical difficulty during operation, place the transmission in the park position, set the parking brake, shut down all power, including the PTO and the engine and remove the key. Wait until all rotating motion has stopped before dismounting. (SG-39)

# SAFETY

## **WARNING**

Do Not operate this equipment in areas where insects such as bees, may attack you and/or cause you to lose control of the equipment. If you must enter in such areas, use a tractor with an enclosed Cab and close the windows to prevent insects from entering. If a tractor cab is not available, wear suitable clothing including head, face, and hand protection to shield you from the insects. Attacking insects can cause you to lose control of the tractor, which can result in serious injury or death to you or bystanders. Never dismount a moving tractor. (SG-40)

## **WARNING**

Objects such as wire, cable, rope, and chain can become entangled in the rotating parts of the raking components causing mechanical damage. Entangled items caught in the rakes can sling outward possibly injuring or entangling the operator or passersby. Any objects that might become entangled in a raking component should be removed from the area before operating the rake. (SRK-02)



## **DANGER**

**DO NOT** allow any person under a folded wing unless wing is securely locked up or supported. **DO NOT** approach the Implement unless the Tractor is turned off and all motion has ceased. Never work under the frame work, or any lifted component unless the implement is securely supported or blocked up. A sudden or inadvertent fall by any of these components could cause serious injury or even death. (STI-03)



SAFETY

## **Connection or Disconnecting Implement Safety Instructions and Practices**

## **DANGER**

Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15)

## **WARNING**

Never unhitch without using the Tongue Jack. The Tongue is very heavy. Attempting to lift the Tongue without using the Tongue Jack could cause strains or other injury. Allowing the tongue to fall suddenly and unexpectedly could result in crushing injury. Use the Tongue Jack for lifting the Implement only. Overloading the Tongue Jack can cause failure with possible serious bodily injury or even death. (STI-04)

## **CAUTION**

On a fully-assembled unit, do not remove the Wing Retaining Strap until hoses are attached to the tractor and the Wing Cylinders are filled with oil. Lower the Wings slowly and carefully. Keep bystanders away during operations. (STI-05)

# SAFETY

## Transporting Safety Instructions and Practices

### **⚠️ WARNING**

Be particularly careful when transporting the Implement with the Tractor. Turn curves or go up hills only at a low speed and using a gradual steering angle. Rear mounted implements move the center of gravity to the rear and remove weight from the front wheels. Make certain, by adding front ballast, that at least 20% of the tractor's weight is on the front wheels to prevent rearing up, loss of steering control or Tractor tip-over. Slow down on rough or uneven surfaces to prevent loss of steering control which could result in property damage or possible injury. Do not transport unless 3-Point lift lever is fully raised and in the latched transport position. Dropping implement in transport can cause serious damage to the tractor and/or Implement and possibly cause the operator or others to be injured or killed.

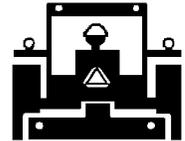
(S3PT-02)

### **⚠️ WARNING**

Allow sufficient clearance for the Implement to swing outward while turning. Implements carried behind the Tractor will swing outside the tire path when making turns. Contacting a solid object while turning will cause equipment damage and possible injury. (S3PT-20)

### **⚠️ WARNING**

Make certain that the "Slow Moving Vehicle" (SMV) sign is installed in such a way as to be clearly visible and legible. When transporting the Equipment use the Tractor flashing warning lights and follow all local traffic regulations. (SG-6)



# SAFETY

## **WARNING**

Transport only at speeds where you can maintain control of the equipment. Serious accidents and injuries can result from operating this equipment at high speeds. Understand the Tractor and Implement and how it handles before transporting on streets and highways. Make sure the Tractor steering and brakes are in good condition and operate properly.



Before transporting the Tractor and Implement, determine the proper transport speeds for you and the equipment. Make sure you abide by the following rules:

Test the tractor at a slow speed and increase the speed slowly. Apply the Brakes smoothly to determine the stopping characteristics of the Tractor and Implement. As you increase the speed of the Tractor the stopping distance increases. Determine the maximum transport speed not to exceed 20 mph (30 kph) for transporting this equipment.

Test the equipment at a slow speed in turns. Increase the speed through the turn only after you determine that the equipment can be operated at a higher speed. Use extreme care and reduce your speed when turning sharply to prevent the tractor and implement from turning over. Determine the maximum turning speed for you and this equipment before operating on roads or uneven ground.

Only transport the Tractor and Implement at the speeds which allow you to properly control the equipment.

Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes or worn tires. When operating down a hill or on wet or rain slick roads, the braking distance increases: use extreme care and reduce your speed. When operating in traffic always use the Tractor's flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy. (SG-19)



## **DANGER**

Be particularly careful when transporting the Implement using the tractor. Turn curves or go up or down hills only at a low speed and at a gradual steering angle. Make certain that at least 20% of the tractor's weight is on the front wheels to maintain safe steering. Slow down on rough or uneven surfaces. (STI-01)

## **DANGER**

When the Wings are folded for transport, the center of gravity is raised and the possibility of overturn is increased. Drive slowly and use extreme caution when turning on hillsides. Overturning the Implement could cause the Implement to overturn the Tractor and vice versa resulting in serious injury or even death. Never fold wings on a hillside...the Implement or unit may overturn. (STI-02)

## **WARNING**

Only tow the Implement behind a properly sized and equipped Tractor which exceeds the weight of the Implement by at least 20%. DO NOT tow the Implement behind a truck or other type of vehicle. Never tow the Implement and another Implement connected in tandem. Never tow the Implement at speeds over 20 MPH. (STI-06)



SAFETY

# SAFETY



Secure the Implement for transport before traveling on public roads. For pull-type Implements, secure the center axle using cylinder stops or transport pin and properly attach a safety chain between the Implement and Tractor. Secure wings in upright position on folding Implements using wing transport locks. (STI-7)



Always keep a careful lookout and use extreme care when working around overhead obstructions and electrical power lines. The Implement wing can be over 10 feet high. Never allow the Implement wing to come within 10 feet of any power line. (STI-8)



Your driving vision may be reduced or impaired by the tractor, cab, or implement. Before driving on public roadways identify any limited vision areas, and make adjustments to your operating position, mirrors, and the implement transport position so that you can clearly see the area where you will be traveling, and any traffic that may approach you. Failure to maintain adequate vision of the public roadway and traffic can result in serious injury or even death. (STI-10)

SAFETY

## Maintenance and Service Safety Instructions and Practices



Relieve hydraulic pressure prior to doing any maintenance or repair work on the Implement. Place the Implement on the ground or securely blocked up, disengage the PTO, and turn off the tractor engine. Push and pull the Remote Cylinder lever in and out several times prior to starting any maintenance or repair work. (S3PT-09)



Keep fingers clear of adjusting holes. A sudden movement could cause injury or even amputate fingers. KEEP CHILDREN AWAY WHEN MAKING ADJUSTMENTS. (SBL-3)



Always maintain the safety signs in good readable condition. If the safety signs are missing, damaged, or unreadable, obtain and install replacement safety signs immediately. (SG-5)



Do not modify or alter this Implement. Do not permit anyone to modify or alter this Implement, any of its components or any Implement function. (SG-8)



Never work under the Implement, the framework, or any lifted component unless the Implement is securely supported or blocked up to prevent sudden or inadvertent falling which could cause serious injury or even death. (SG-14)



# SAFETY

## **▲WARNING**

Never attempt to lubricate, adjust, or remove material from the Implement while it is in motion or while tractor engine is running. (SG-20)

## **▲WARNING**

Periodically inspect all moving parts for wear and replace when necessary with authorized service parts. Look for loose fasteners, worn or broken parts, and leaky or loose fittings. Make sure all pins have cotter pins and washers. Serious injury may occur from not maintaining this machine in good working order. (SG-21)



## **▲WARNING**

Perform service, repairs and lubrication according to the maintenance section. Ensure the unit is properly lubricated as specified in the lubrication schedule and all bolts and nuts are properly torqued. Failure to properly service, repair and maintain this Implement in good operating condition could cause component failure and possible serious injury or even death. (SG-35)

## **▲WARNING**

Use caution and wear protective gloves when handling sharp objects such as blades, knives, and other cutting edges. Be alert to worn component surfaces which have sharp edges. Sharp surfaces can inflict severe laceration injuries if proper hand protection is not worn. (SG-37)

## **▲WARNING**

Operating, servicing and maintaining this equipment can expose you to chemicals including gasoline, diesel fuel, lubricants, petroleum products, engine exhaust, carbon monoxide, and phthalates, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle the engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle. Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer, birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov). This website, operated by California's Office of Environmental Health Hazard Assessment, provides information about these chemicals and how individuals may be exposed to them. (SG-48)

**SAFETY**

# SAFETY

## Storage and Parking Safety Instructions and Practices



A rear Implement can fall if not properly supported. Always use the stand on the front hitch (if equipped) or block up securely to prevent falling and possible crushing injury and/or other injury from holding or lifting heavy components. Use the stand to stabilize the implement during storage. (S3PT-3)

## PARTS INFORMATION

### PARTS INFORMATION

Bush Hog products are designed utilizing specifically matched system components to ensure optimum equipment performance. These parts are made and tested to Bush Hog specifications. Non-genuine "will fit" parts do not consistently meet these specifications. The use of "will fit" parts may reduce equipment performance, void warranties, and present a safety hazard. Use genuine Bush Hog parts for economy and safety. (SPBH-2)

**SEE YOUR BUSH HOG DEALER**

Operator's & Parts Manuals



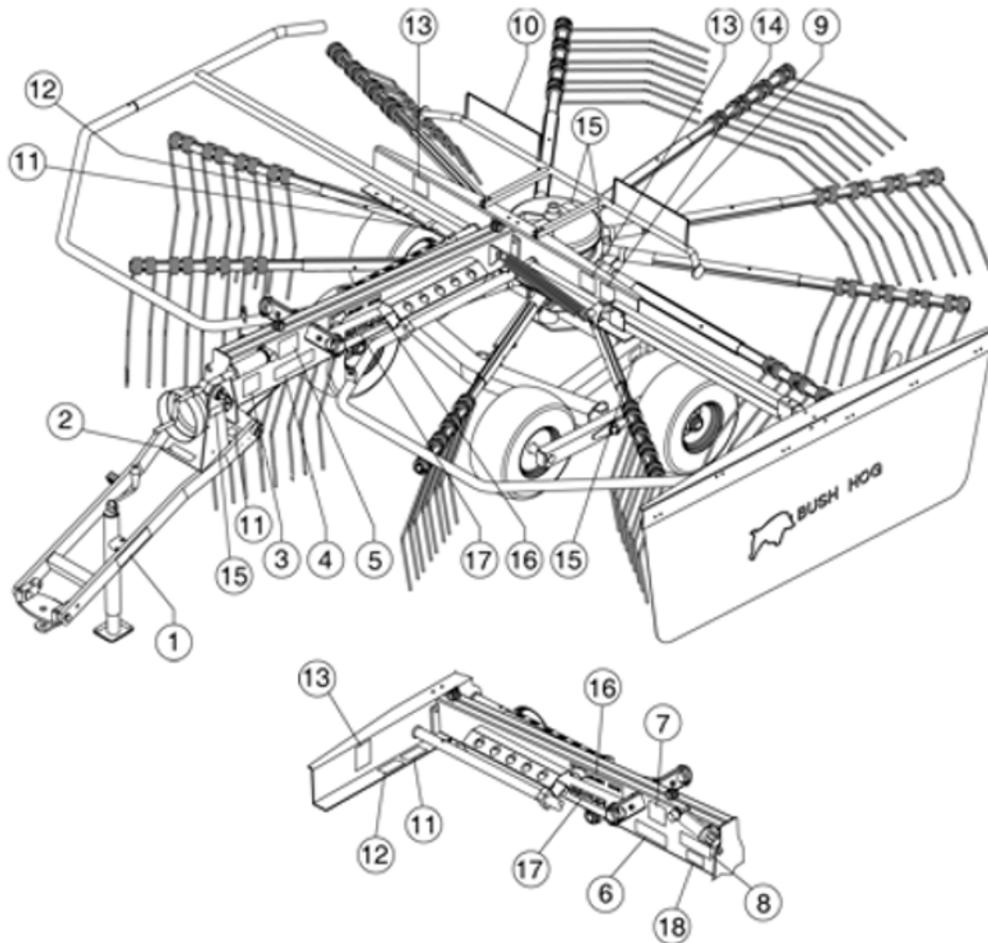
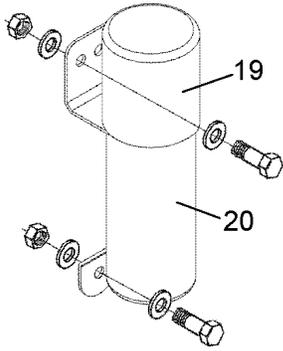
[www.algqr.com/bpm](http://www.algqr.com/bpm)

In addition to the design and configuration of this Implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the Tractor and Equipment Manuals. Pay close attention to the Safety Signs affixed to the Tractor and Equipment. (SG-18)

# SAFETY

## Decal Location

**NOTE:** Bush Hog supplies safety decals on this product to promote safe operation. Damage to the decals may occur while in shipping, use, or reconditioning. Bush Hog cares about the safety of its customers, operators, and bystanders, and will replace the safety decals on this product in the field, free of charge (Some shipping and handling charges may apply). Contact your Bush Hog dealer to order replacement decals.



R.H. SIDE

DL-RK-0010

SAFETY

# SAFETY

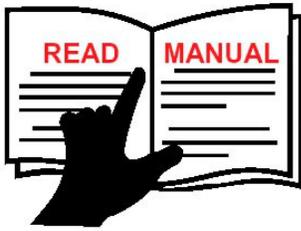
**SAFETY**

ITEM	PART NO.	QTY	LEVEL	DESCRIPTION
1.	00725746	1	PELIGRO	Spanish - Get Translation
2.	D635	1	WARNING	540 RPM
3.	D547	1	DANGER	Driveline Hazard
4.	999200	1	WARNING	Multi Hazard
5.	999001	1	WARNING	Proper Weight, Speed and Acceleration
6.	50073507	1	WARNING	Trailed Machine
7.	D617	1	WARNING	Hydraulic Oil Hazard
8.	00763977	1	INSTRUCT	Notice to Owner
9.	001.120	1	REFLECT	RH Retro Reflector
10.	001.121	1	REFLECT	LH Retro Reflector
11.	D623	3	WARNING	Pinch Point
12.	50073511	2	IMPORTANT	Transport Latch
13.	D628	2	DANGER	Crushing Hazard
14.	D859	1	WARNING	Use Genuine Bush Hog Parts
15.	001.075	7	INSTRUCT	Grease Label
16.	50065309	2	LOGO	Bush Hog 3.25" x 14.85"
17.	50080517	2	LOGO	Model Decal - RR1114H
18.	nfs	1	SER PLT	Serial Plate
19.	50035829	1	-----	Canister, Operator's Manual
20.	50080518	1	-----	Operator's Manual - RR1114H
21.	94359	1	REFLECT	SMV Symbol

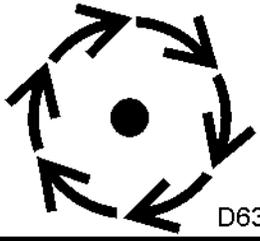
# SAFETY

## Decal Description

SAFETY

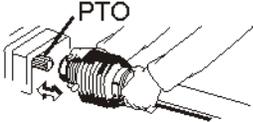
 <b>PELIGRO</b>	<b>LEA EL INSTRUCTIVO</b>
Si No Lee Ingles, Pida Ayuda a Alguien Que Si Lo Lea Para Que le Traduzca las Medidas de Seguridad.	
	00725746

 <b>WARNING</b>
<ul style="list-style-type: none"><li>• This trailed machine was designed and intended for on farm use only. Tow at speeds not to exceed 20 MPH. Slow down for hills, curves, rough areas and in advance of braking to prevent loss of control and possible injury or death.</li><li>• Attach Safety Chains that comply with ASAE S338.2 to both tractor and trailed machine.</li><li>• DO NOT OPERATE on public roads at night without lighting installed and operating properly which complies with ASAE S279.9 on tractor and towed machine or as required by local regulations.</li><li>• Install Slow Moving Vehicle emblem to rear of towed machine if the SMV on the tractor is not visible.</li><li>• Keep SMV emblem clean.</li><li>• Failure to follow these safety instructions and other good operating practices may cause machine damage and /or serious injury or death.</li></ul>
50073507

 <b>WARNING</b>	
OPERATE THIS MACHINE AT <b>540 RPM</b> TRACTOR PTO SPEED ONLY. Overspeeding PTO may cause component failure resulting in bodily injury. TRACTOR PTO ROTATION: CLOCKWISE	
	D635

# SAFETY

SAFETY

<b>⚠ DANGER</b>		
		
<p><b>TO AVOID SERIOUS INJURY OR DEATH FROM DRIVELINE CONTACT, DRIVELINE SEPARATION OR PTO STUB SHAFT FAILURE:</b></p> <ul style="list-style-type: none"><li>● STOP, LOOK and LISTEN for rotating motion before approaching implement.</li><li>● STAY AWAY and KEEP hands, feet and body AWAY from rotating parts until all moving elements have stopped.</li><li>● ALWAYS shut off PTO before dismounting.</li><li>● DO NOT operate if PTO shields are damaged or missing.</li><li>● PUSH AND PULL on yoke until collar clicks and locks yoke in place.</li><li>● CHECK driveline guards for free rotation and sufficient overlap to avoid unshielded areas.</li><li>● DO NOT USE PTO ADAPTER</li></ul>		
		
<b>⚠ WARNING</b>		
<p>OPERATE THIS MACHINE AT <b>540 RPM</b> TRACTOR PTO SPEED ONLY. Overspeeding PTO may cause component failure resulting in bodily injury. TRACTOR PTO ROTATION: CLOCKWISE</p>	 <p>D547</p>	

D547 B

# SAFETY

## **WARNING**

### TO AVOID SERIOUS INJURY OR DEATH:

1. READ AND UNDERSTAND OPERATOR'S MANUAL.
2. TRACTOR MUST BE EQUIPPED WITH ROLL-OVER PROTECTION (ROPS) AND SWAY CHAINS.
3. ALWAYS WEAR SAFETY GLASSES, SAFETY SHOES AND SEAT BELT FASTENED TIGHTLY.
4. STOP TRACTOR, LOCK BRAKES, AND BLOCK UP OR SUPPORT IMPLEMENT SECURELY BEFORE WORKING UNDER RAISED COMPONENTS.
5. ALLOW NO RIDERS AT ANY TIME ON TRACTOR OR IMPLEMENT. FALLING OFF CAN KILL.
6. KEEP BYSTANDERS CLEAR OF MOVING PARTS AND WORKING AREA. KEEP CHILDREN AWAY!
7. DO NOT LIFT, LOWER, OR OPERATE UNLESS EVERYONE IS CLEAR OF IMPLEMENT.
8. USE INCREASED CAUTION ON SLOPES & NEAR BANKS AND DITCHES TO PREVENT OVERTURN.
9. LOCK LIFT LEVER UP FOR TRANSPORT. HAVE SMV SIGN VISIBLE. FOLLOW LOCAL LAWS.
10. USE PARKING STAND OR BLOCK UP WHEN UNHITCHING FROM TRACTOR.

999200

## **WARNING**

### To avoid serious injury or machine damage:

- ALWAYS MAINTAIN 20% of tractor weight on front wheels. Add weight to front if needed.
- REDUCE SPEED on inclines, in turns and in poor weather conditions.
- DO NOT lift implement while on steep slopes.
- DO NOT start or accelerate suddenly.



999001

## **WARNING**

### PINCH POINTS

D623



SAFETY

# SAFETY

**IMPORTANT**

**TRANSPORT LATCH**  
Securely lock Transport Latch before transporting mower on roadway or working under implement.

50073511

SAFETY

**! WARNING**



**TO AVOID SERIOUS INJURY OR DEATH FROM HIGH PRESSURE HYDRAULIC OIL LEAKS PENETRATING SKIN:**

- DO NOT OPERATE equipment with oil or fuel leaks.
- KEEP all hydraulic hoses, lines and connections in good condition and tight before applying system pressure.
- Relieve hydraulic pressure before disconnecting lines or working on the system.
- REMOVE and replace hose if you suspect it leaks. Have dealer test it for leaks.

**HIGH PRESSURE FLUID LEAKS CAN BE INVISIBLE. WHEN CHECKING FOR HYDRAULIC LEAKS AND WORKING AROUND HYDRAULIC SYSTEMS:**

- DO NOT use hands to check for leaks.
- ALWAYS WEAR safety glasses and impenetrable gloves.
- USE paper or cardboard to search for leaks.
- KEEP hands and body AWAY from pin holes and nozzles ejecting hydraulic fluid.
- Hydraulic fluid may cause gangrene if not surgically removed immediately by a doctor familiar with this form of injury.

D617

# SAFETY

SAFETY

**⚠ DANGER**

**CRUSHING HAZARD AND PINCH POINTS**



**TO AVOID SERIOUS INJURY OR DEATH:**

- KEEP AWAY from moving machinery parts that can pinch, crush or fall.

D628

**⚠ WARNING**

**Non-genuine parts can fail catastrophically.**  
**TO AVOID SERIOUS INJURY OR DEATH:**

- ONLY use genuine Bush Hog replacement parts.
- Non-genuine parts can fail creating hazardous conditions for operator and bystanders.

Contact local dealer or Bush Hog about repair parts at:

2501 Griffin Ave., Selma, AL 36701  
Customer Service: 800-363-6096.  
Email: [contactus@bushhog.com](mailto:contactus@bushhog.com) [www.algqr.com/bpm](http://www.algqr.com/bpm)



**⚠ WARNING**

**Cancer and Reproductive Harm**  
[www.P65 Warnings.ca.gov](http://www.P65Warnings.ca.gov) D859

# SAFETY

## FEDERAL LAWS AND REGULATIONS

This section is intended to explain in broad terms the concept and effect of federal laws and regulations concerning employer and employee equipment operators. This section is not intended as a legal interpretation of the law and should not be considered as such.

### Employer-Employee Operator Regulations

U.S. Public Law 91-596 (The Williams-Steiger Occupational 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 his 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 his 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 own actions and conduct.

### OSHA Training Requirements

**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.

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 the equipment.

Make sure everyone is clear of machinery before starting the engine, engaging power, or operating the machine.

### Employer Responsibilities:

To ensure employee safety during Tractor and Implement operation, it is the employer's responsibility to:

1. Train the employee in the proper and safe operation of the Tractor and Implement.
2. Require that the employee read and fully understand the Tractor and Implement Operator's manual.
3. Permit only qualified and properly trained employees to operate the Tractor and Implement.
4. Maintain the Tractor and Implement in a safe operational condition and maintain all shields and guards on the equipment.
5. Ensure the Tractor is equipped with a functional ROPS and seat belt and require that the employee operator securely fasten the safety belt and operate with the ROPS in the raised position at all times.
6. Forbid the employee operator to carry additional riders on the Tractor or Implement.
7. Provide the required tools to maintain the Tractor and Implement in a good safe working condition and provide the necessary support devices to secure the equipment safely while performing repairs and service.
8. Require that the employee operator stop operation if bystanders or passersby come within 300 feet.

### Child Labor Under 16 Years of Age

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.)

# **INTRODUCTION SECTION**

# INTRODUCTION

## INTRODUCTION

This Rake was designed with care and built with quality materials by skilled workers. Proper assembly, maintenance, and operating practices, as described in this manual, will help the owner/operator get years of satisfactory service from the machine. The purpose of this manual is to familiarize, instruct, and train. The Safety Section is a MUST READ section prior to any use of the rake. The Assembly Section instructs the owner/operator in the correct assembly of the Rake using standard and optional equipment. Careful use and timely service saves extensive repairs and costly downtime losses. The Operation Section informs the owner/operator how to work the rake and explains proper procedures and safe practices prior to and during the operation of the rake. The Trouble-Shooting Guide helps diagnose difficulties with the rake and offers solutions to the problems. The Maintenance Section instructs the owner/operator of all the necessary inspection, lubrication, general maintenance needed to insure long life and trouble free operation of your rake. Safety is of primary importance to the owner/operator and to the manufacturer. The first section of this manual includes a list of Safety Messages, that, if followed, will help protect the operator and bystanders from injury or death. Many of the Safety Messages will be repeated throughout the manual. The owner/operator/dealer should know these Safety Messages before assembly and be aware of the hazards of operating this rake during assembly, use, and maintenance. The Safety Alert Symbol combined with a Signal Word, as seen below, is intended to warn the owner/operator of impending hazards and the degree of possible injury faced when operating this machine.



Indicates an imminently hazardous situation that, if not avoided, WILL result in DEATH OR VERY SERIOUS INJURY.



Indicates an imminently hazardous situation that, if not avoided, COULD result in DEATH OR SERIOUS INJURY.

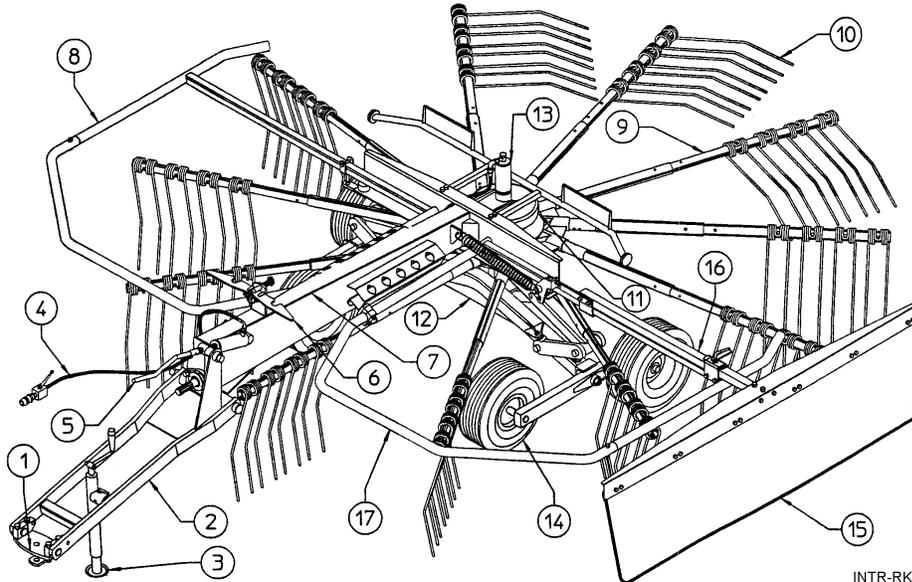


Indicates an imminently hazardous situation that, if not avoided, MAY result in MINOR INJURY.

**Important**

Identifies special instructions or procedures that, if not strictly observed, co

# INTRODUCTION



INTR-RK-0002

1. Bracket
2. Drawbar
3. Parking Stand
4. Hydraulic Kit
5. Crank
6. Ratchet
7. Frame
8. R.H. Guard
9. Tine Arm
10. Tine
11. Gearbox
12. Axle
13. Cylinder
14. Tire Assembly
15. Swathing Deflector
16. Telescoping Tube
17. L.H. Guard

INTRODUCTION

For the most gentle handling of your hay crops and faster drying times in wet or dry hay, choose Bush Hog's RR Series Rotary Rake. Our RR1114H rotary rake is designed for low horsepower tractors making it ideal for small and mid-range hay operators. The versatility offered by this side delivery rotary rake is perfect for operators who want a light, fluffy windrow with low ash content and minimal crop roping. Tandem wheels permit the user to easily navigate uneven terrain.

Literature Page



[www.algqr.com/rle](http://www.algqr.com/rle)

Front and rear, and left and right are determined by the normal direction of travel (the same as on your automobile).

# INTRODUCTION

INTRODUCTION

## Attention Owner/Operator

BEFORE OPERATING THIS MACHINE:

1. Carefully read the Operator's Manual, completely understand the Safety Messages and instructions, and know how to operate correctly both the tractor and implement.
2. Fill out the Warranty Card in full. Be sure to answer all questions, including the Serial Number of the implement. Mail within 30 days of delivery date of this implement.

**NOTE:** Warranties are honored only if completed "Owner Registration and Warranty" forms are received by Alamo Group within thirty days of delivery of the implement.

3. Record the Rake Model and Serial Numbers on the Warranty page at the front of the Operator's Manual. Keep this as part of the permanent maintenance file for the implement.

### **WARNING**

**Non-genuine parts can fail catastrophically.  
TO AVOID SERIOUS INJURY OR DEATH:**

- ONLY use genuine Bush Hog replacement parts.
- Non-genuine parts can fail creating hazardous conditions for operator and bystanders.

Contact local dealer or Bush Hog about repair parts at:

2501 Griffin Ave., Selma, AL 36701  
Customer Service: 800-363-6096.

Email: [contactus@bushhog.com](mailto:contactus@bushhog.com) [www.algqr.com/bpm](http://www.algqr.com/bpm)



### **WARNING**

**Cancer and Reproductive Harm**

[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

D859

# INTRODUCTION

## LIMITED WARRANTY



Bush Hog warrants to the original purchaser of any new Bush Hog equipment, purchased from an authorized Bush Hog dealer, that the equipment be free from defects in material and workmanship for a period of one (1) year for non-commercial, state and municipalities' use and ninety (90) days for commercial use from date of retail sale. The obligation of Bush Hog to the purchaser under this warranty is limited to the repair or replacement of defective parts.

Replacement or repair parts installed in the equipment covered by this limited warranty are warranted for ninety (90) days from the date of purchase of such part or to the expiration of the applicable new equipment warranty period, whichever occurs later. Warranted parts shall be provided at no cost to the user at an authorized Bush Hog dealer during regular working hours. Bush Hog reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

### DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES

Bush Hog's obligation under this limited warranty, to the extent allowed by law, is in lieu of all warranties, implied or expressed, **INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE** and any liability for incidental and consequential damages with respect to the sale or use of the items warranted. Such incidental and consequential damages shall include but not be limited to: transportation charges other than normal freight charges; cost of installation other than cost approved by Bush Hog; duty; taxes; charges for normal service or adjustment; loss of crops or any other loss of income; rental of substitute equipment, expenses due to loss, damage, detention or delay in the delivery of equipment or parts resulting from acts beyond the control of Bush Hog.

### THIS LIMITED WARRANTY SHALL NOT APPLY:

1. To vendor items which carry their own warranties, such as engines, tires, and tubes.
2. If the unit has been subjected to misapplication, abuse, misuse, negligence, fire or other accident.
3. If parts not made or supplied by Bush Hog have been used in connection with the unit, if, in the sole judgment of Bush Hog such use affects its performance, stability or reliability.
4. If the unit has been altered or repaired outside of an authorized Bush Hog dealership in a manner which, in the sole judgment of Bush Hog, affects its performance, stability or reliability.
5. To normal maintenance service and normal replacement items such as gearbox lubricant, hydraulic fluid, worn blades, or to normal deterioration of such things as belts and exterior finish due to use or exposure.
6. To expendable or wear items such as teeth, chains, sprockets, belts, springs and any other items that in the company's sole judgment is a wear item.

NO EMPLOYEE OR REPRESENTATIVE OF BUSH HOG IS AUTHORIZED TO CHANGE THIS LIMITED WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY UNLESS SUCH CHANGE IS MADE IN WRITING AND SIGNED BY BUSH HOG'S SERVICE MANAGER, 2501 GRIFFIN AVE., SELMA, ALABAMA 36703.



Record the model number, serial number and date purchased. This information will be helpful to your dealer if parts or service are required.

MODEL NUMBER \_\_\_\_\_

SERIAL NUMBER \_\_\_\_\_

MAKE CERTAIN THE WARRANTY HAS BEEN FILED WITH BUSH HOG SELMA, ALABAMA

DATE OF RETAIL SALE \_\_\_\_\_



# **ASSEMBLY SECTION**

# ASSEMBLY

## GENERAL INSTRUCTIONS

Assembly must be done carefully and accurately, for the safety of the person(s) doing the assembling and to ensure proper machine operation.

Assembly should be done on a flat, solid surface, using the proper tools and wearing suitable clothing, making sure that all people not involved in the assembly be kept at a safe distance.

Assemblers must provide suitable lifting mechanisms and supports for stabilizing the partially assembled units, so as to prevent them from falling and causing damage or injury.

The steps for assembly are illustrated on following pages. Depending on the experience of the assemblers and the tools available, it is not necessary that the instructions be followed in the exact order given here, but the safety precautions described above must always be followed carefully and scrupulously.

### Important

Before beginning operations, read the instruction manual carefully.

### WARNING

Before doing any maintenance or repair work, stop the machine at a suitable spot. Turn off the tractor engine, apply the brake, remove the key from the ignition and consult this manual.

### WARNING

This is a warning to use proper accident protection when carrying out maintenance and repairs.

### DANGER

Indicates an imminently hazardous situation that, if not avoided, WILL result in DEATH OR VERY SERIOUS INJURY.

### WARNING

Indicated an imminently hazardous situation that, if not avoided, COULD result in DEATH or serious injury.

### CAUTION

Indicates an imminently hazardous situation that, if not avoided, MAY result in MINOR INJURY.

### Important

Identifies special instructions or procedures that, if not strictly observed, could result in damage to, or destruction of the machine, attachments or the environment.

## WARNING

### TO AVOID SERIOUS INJURY OR DEATH:

1. READ AND UNDERSTAND OPERATOR'S MANUAL.
2. TRACTOR MUST BE EQUIPPED WITH ROLL-OVER PROTECTION (ROPS) AND SWAY CHAINS.
3. ALWAYS WEAR SAFETY GLASSES, SAFETY SHOES AND SEAT BELT FASTENED TIGHTLY.
4. STOP TRACTOR, LOCK BRAKES, AND BLOCK UP OR SUPPORT IMPLEMENT SECURELY BEFORE WORKING UNDER RAISED COMPONENTS.
5. ALLOW NO RIDERS AT ANY TIME ON TRACTOR OR IMPLEMENT. FALLING OFF CAN KILL.
6. KEEP BYSTANDERS CLEAR OF MOVING PARTS AND WORKING AREA. KEEP CHILDREN AWAY!
7. DO NOT LIFT, LOWER, OR OPERATE UNLESS EVERYONE IS CLEAR OF IMPLEMENT.
8. USE INCREASED CAUTION ON SLOPES & NEAR BANKS AND DITCHES TO PREVENT OVERTURN.
9. LOCK LIFT LEVER UP FOR TRANSPORT. HAVE SMV SIGN VISIBLE. FOLLOW LOCAL LAWS.
10. USE PARKING STAND OR BLOCK UP WHEN UNHITCHING FROM TRACTOR.

999200

# ASSEMBLY

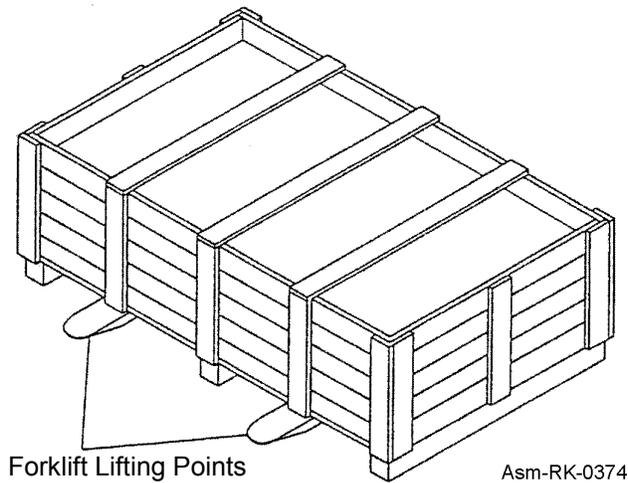
## DELIVERY AND ASSEMBLY

Lift the machine using a forklift, crane or other suitable equipment of sufficient capacity after first checking the weight of the configurations below (See Note). Check the stability and positioning of the load on the forklift truck forks or crane hook. Keep the load as low as possible during movement or maximum visibility. If a forklift truck is used, ensure that the forks are positioned a wide apart as possible.

**NOTE:** Packing Weight 1700 Lbs.

**NOTE:**

1. The packing consists mainly of wood which should be disposed in accordance with state and local law.
2. When storing, it is permissible to stack 2-3 crates on top of each other. Make sure that they are perfectly aligned.
3. In the event of further transport, ensure that the machine is secured on the transporting vehicle.



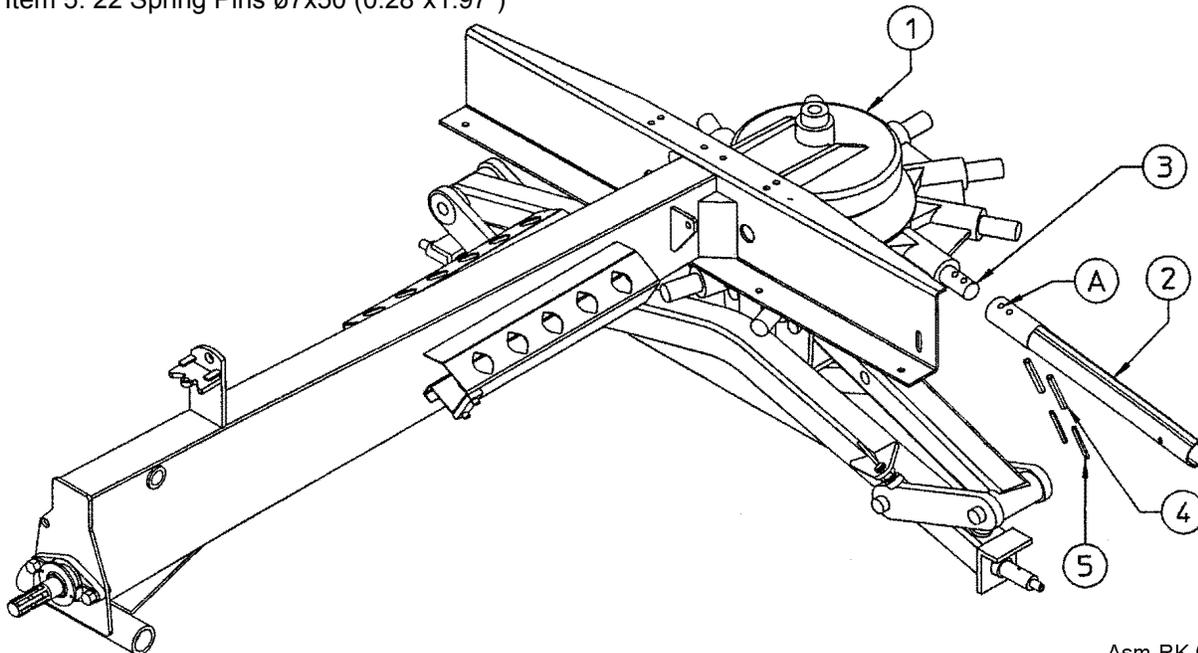
Asm-RK-0374

## RAKE ASSEMBLY

1. Attach the arms (2) to the gear housing (1), placing them over shafts (3). Fasten the arms by inserting roll pins (4) into holes (A), and then insert the double roll pins (5).

Item 4: 22 Spring Pins  $\varnothing 12 \times 50$  (0.47"x1.97")

Item 5: 22 Spring Pins  $\varnothing 7 \times 50$  (0.28"x1.97")



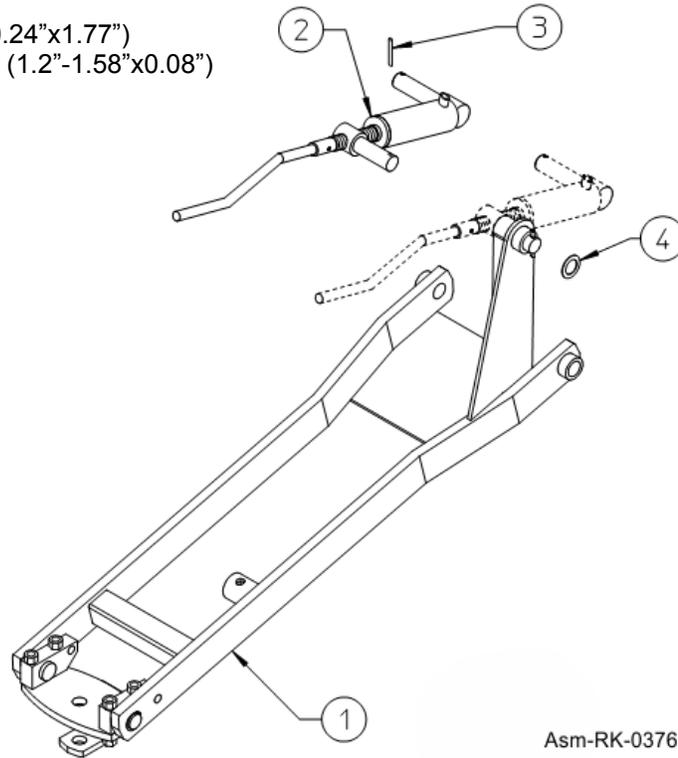
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# ASSEMBLY

ASSEMBLY

2. Attach the cylinder-adjustment assembly (2) to drawbar (1), fastening with spring pin (3) and washer (4).

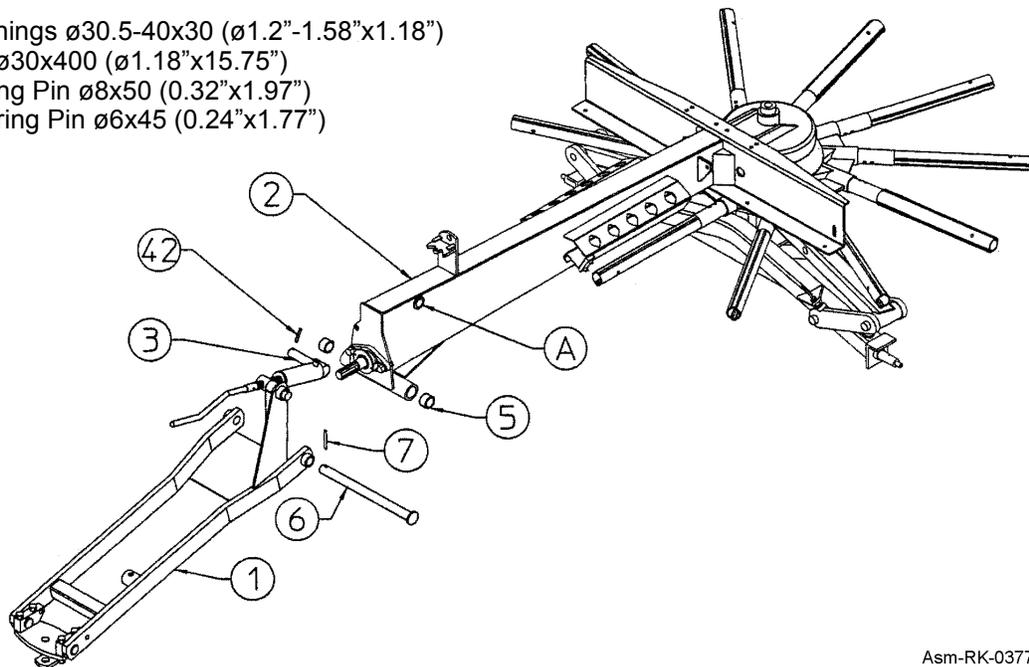
Item 3: 1 Spring Pin  $\varnothing 6 \times 45$  (0.24"x1.77")  
 Item 4: 1 Washer  $\varnothing 30.5-40 \times 2$  (1.2"-1.58"x0.08")



Asm-RK-0376

3. Rest the mainframe (2) on stands and then insert wear bushings (5). Insert pin (3) into hole (A) and fasten with spring pin (42). Position the drawbar (1) so that pin (6) can be inserted, and fasten pin (6) with spring pin.

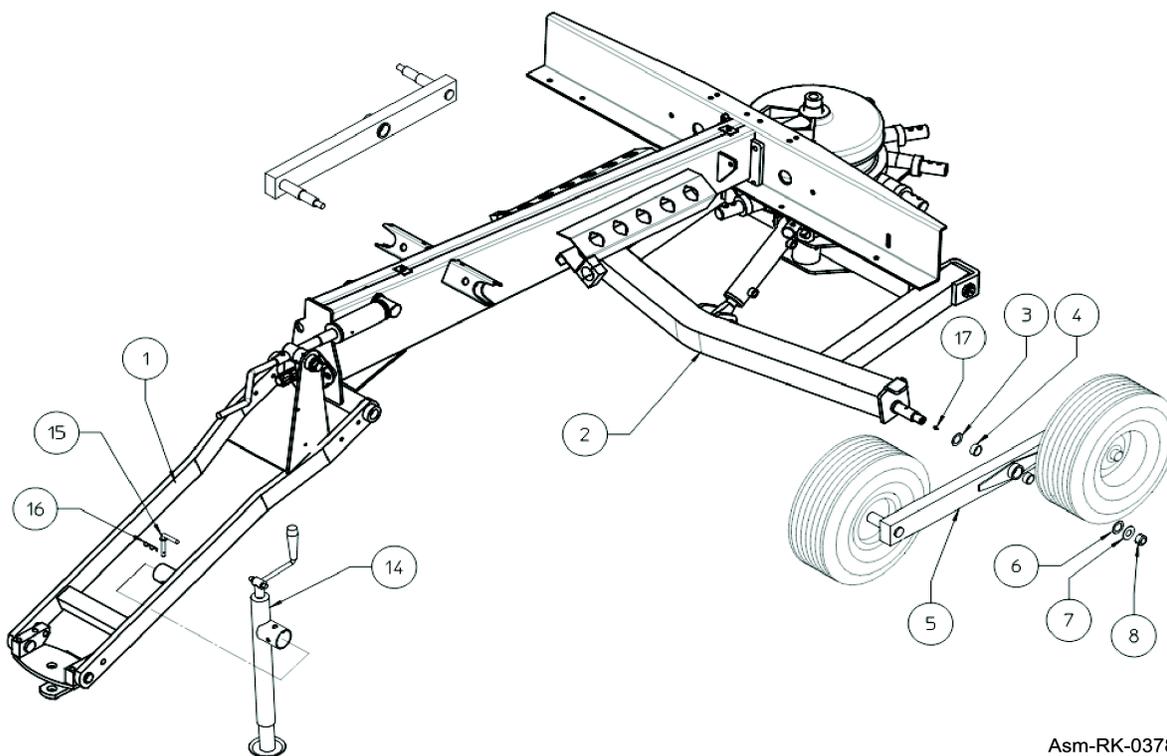
Item 5: 2 Bushings  $\varnothing 30.5-40 \times 30$  ( $\varnothing 1.2"-1.58" \times 1.18"$ )  
 Item 6: 1 Pin  $\varnothing 30 \times 400$  ( $\varnothing 1.18" \times 15.75"$ )  
 Item 7: 1 Spring Pin  $\varnothing 8 \times 50$  (0.32"x1.97")  
 Item 43: 1 Spring Pin  $\varnothing 6 \times 45$  (0.24"x1.77")



Asm-RK-0377

# ASSEMBLY

4. Attach grease fittings (17) to axle (2). Next check to see that the wear bushings are in place on the wheel tandems (5), and mount the tandems on the axles, inserting spacers (3) and (6), in order to limit play (the longer part of the wheel tandem should face the tractor). Fasten with washer (7) and nut (8). Mount the parking stand (14) to the mount on the drawbar (1), and fasten with pin (15) and clip (16). The machine can now be placed on the ground.



Asm-RK-0378

In this Step, you will use:

- Item 3: 2 Washers  $\varnothing 30.3-40 \times 0.5$  ( $\varnothing 1.2''-1.58'' \times 0.02''$ )
- Item 4: 4 Bushings  $\varnothing 30-34 \times 20$  ( $\varnothing 1.18''-1.34'' \times 0.78''$ )
- Item 6: 2 Washers  $\varnothing 30.3-40 \times 1$  ( $\varnothing 1.2''-1.58'' \times 0.04''$ )
- Item 7: 2 Washers  $\varnothing 23-50 \times 5$  ( $\varnothing 0.91''-1.97'' \times 0.2''$ )
- Item 8: 2 Nuts M22 (0.87'')
- Item 15: 1 Pin  $\varnothing 15 \times 78$  ( $\varnothing 0.59 \times 3.07''$ )
- Item 16: 1 Clip  $\varnothing 3$  ( $\varnothing 0.012''$ )
- Item 17: 2 Grease Nipples M6 (0.24'')

# ASSEMBLY

ASSEMBLY

## Hydraulic System Assembly

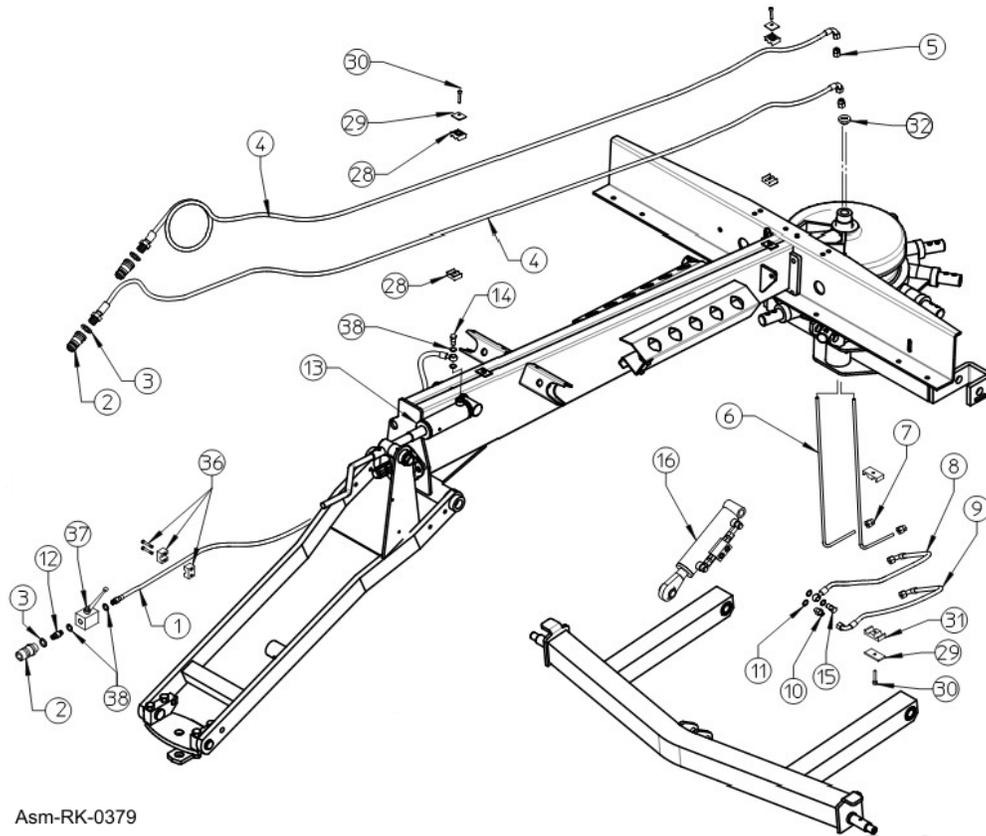
Assemble the oleo-dynamic system as shown. When using for the first time, make sure there are no oil leaks. If there should be any, tighten the pipe fittings.

### Axle Cylinder

- Insert tubes (6) to gearbox and attach the hose collar (31), (29) and (30) to the lugs on axle. Mounting bushing (32) to tube
- Attach the reducer nipple (10) at cylinder (16).
- Connect pipe fitting (9) to nipple (10).
- Connect pipe fitting (9) with fitting (7) on tube (6).
- Connect pipe fitting (8) with fitting screw on cylinders (16) and with fitting (7) to tube (6).
- Connect eye-ring end of pipes (8) to the other side of cylinder (16)
- Connect fitting (5) to tube (6).
- Connect the rotating female ends of pipes (4) to fitting (5).
- Place washer (3) and connect the quick-release coupling (2) to the straight male ends of pipes (4).
- Check to make sure that all connections are correctly fastened.
- Attach the hose collar (28), (29), and (30) to the lugs on drawbar, fastening in correct position as shown.

### Drawbar Cylinder

- Connect fitting pipe (1) at cylinder (13) with fitting (14).
- Place washers (3) and connect the quick-release coupling (2) to the straight male ends of pipes (1).
- Check to make sure that all connections are correctly fastened.
- Attach the hose collar (36) to the lugs on drawbar, fastening in correct position



Asm-RK-0379

# ASSEMBLY

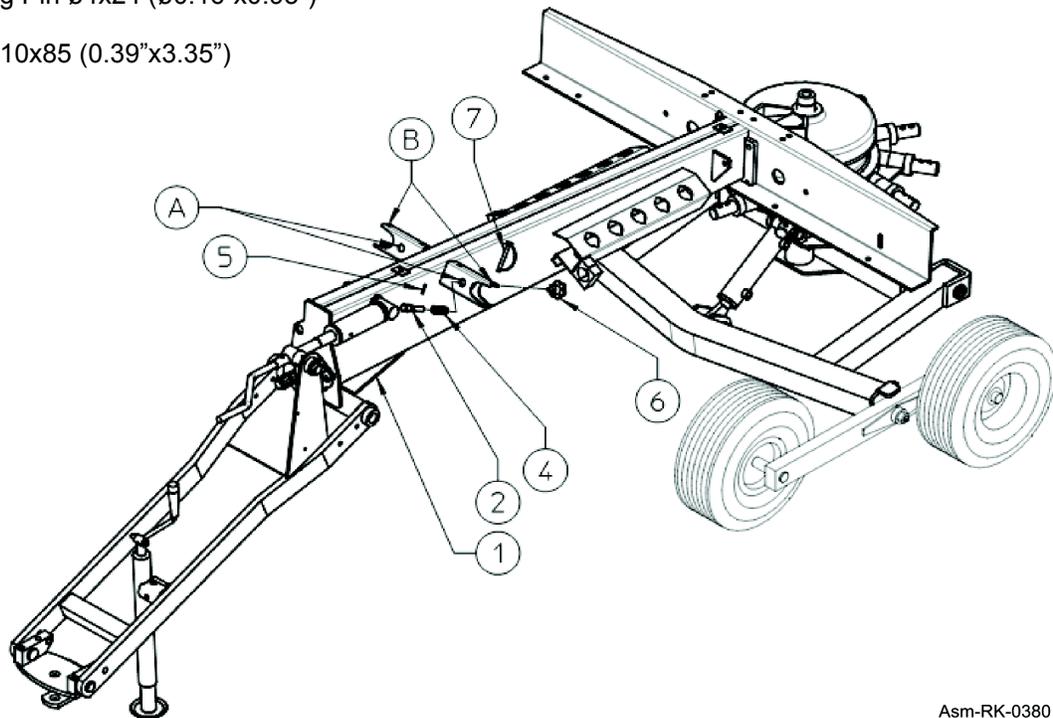
In this step, you will use:

- Item 1: Hose, 1/4", Length 3000mm (118.1")
- Item 2: 3 Male quick-Release Couplings 1/2"
- Item 3: 3 Washers 1/2"
- Item 4: 2 Hose, 1/4", Length 4300mm (169.3")
- Item 5: 2 Complete Nipples 1/4"  $\varnothing$ 8 (1/4"-0.31")
- Item 6: 2 Tubes  $\varnothing$ 8 (0.31")
- Item 7: 2 Complete Nipples 1/4"  $\varnothing$ 8 (1/4"-0.31")
- Item 8: Hose, 1/4". Length 550mm (21.7")
- Item 9: Hose, 1/4" Length 570mm (22.44")
- Item 10: Nipple 1/4"-1/4", Hole 0.6mm (0.24")
- Item 11: 3 Washers 1/4"
- Item 12: Nipple 3/8"-1/4"

- Item 13: Cylinder
- Item 14: Screw-Type Coupling 3/8"
- Item 15: Screw-Type Coupling 1/4"
- Item 16: Complete Cylinder
- Item 28: Collars  $\varnothing$ 12 (0.47")
- Item 29: 5 Plates
- Item 30: 4 Screws M6x35 (0.24"x1.38")
- Item 31: Collars  $\varnothing$ 8 (0.31")
- Item 32: Plastic Bushing  $\varnothing$ 35x25 ( $\varnothing$ 1.38"x1")
- Item 36: Complete Collar  $\varnothing$ 12 (0.47")
- Item 37: Valve
- Item 38: 4 Washers 3/8"

5. Mount the safety latch bar (2) by inserting it into mounting hole (A), then place spring (4), washer (5) over the pin, fastening in place with knob (6). Insert safety pin (7) in hole (B).

- Item 4: 1 Spring  $\varnothing$ 1.5/ $\varnothing$ 20x85 ( $\varnothing$ .06/ $\varnothing$ 0.79"x3.35")
- Item 5: 1 Spring Pin  $\varnothing$ 4x24 ( $\varnothing$ 0.16"x0.95")
- Item 6: 1 Knob
- Item 7: 1 Pin  $\varnothing$ 10x85 (0.39"x3.35")

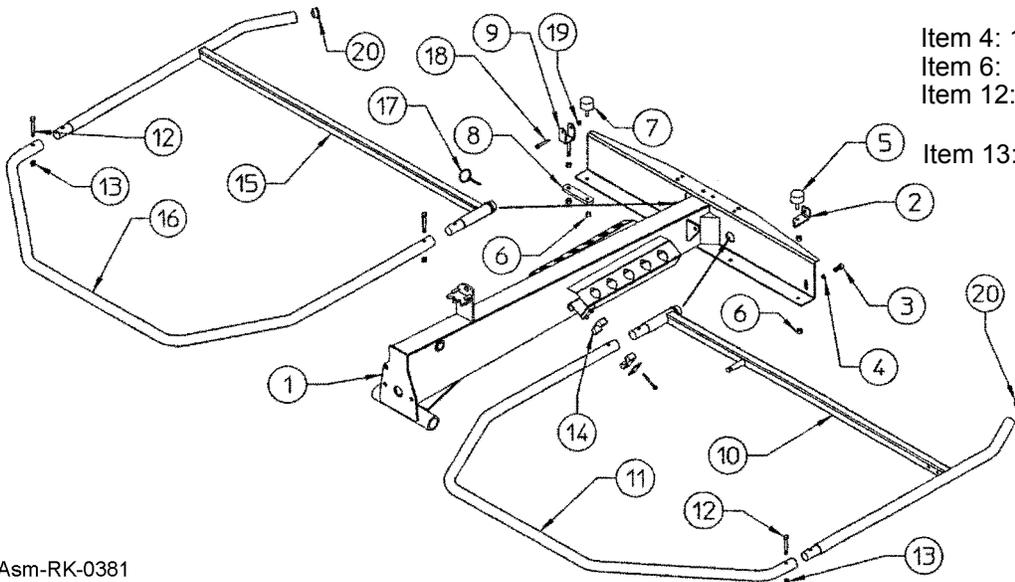


Asm-RK-0380

# ASSEMBLY

ASSEMBLY

- Mount tall rubber pad (7) to the right outside hole with nuts (6), and plate (8). Mount in the other holes the short rubber pads (5), in the left outside hole and fasten with clamp (2) with screw (3) and washer (4). Mount protection frame (11) to the left support (10) using screws (12) and nuts (13). Insert the assembly in the hole as shown, fastening the protection frame with pin (17) and clamp (14). Attach cap (20) to the end of the protection frame. Mount bracket (9) to the plate (8) and then mount protection frame (16) to the right support (15) and insert the assembly into the hole. Follow the same procedure used for the left side of the machine.



Item 3: 1 Screw M12x20  
(0.47"x0.78")

Item 4: 1 Washer  $\phi 13(\phi 0.50")$

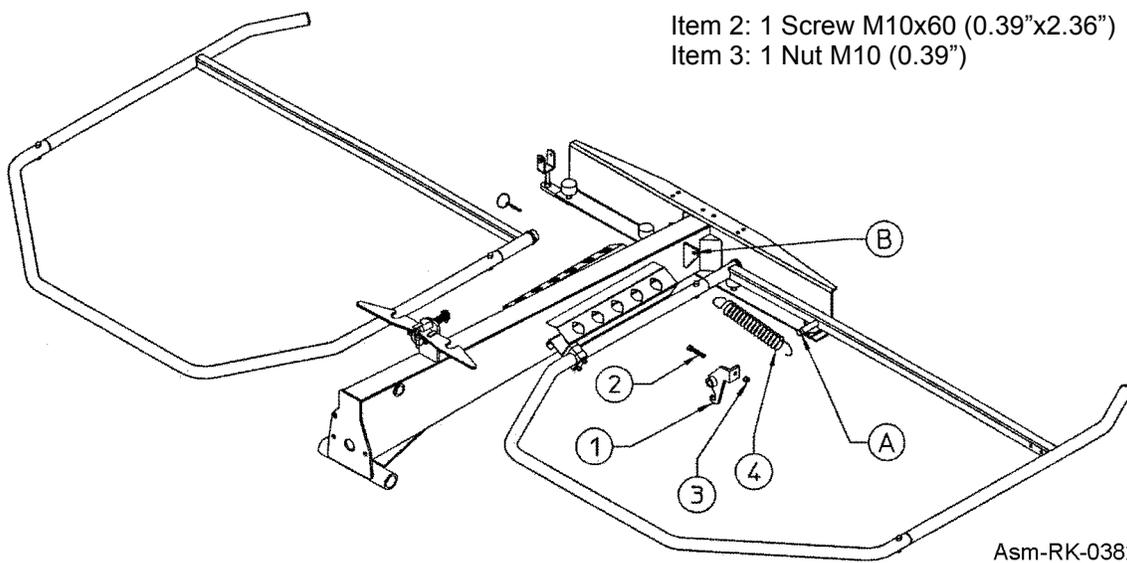
Item 6: 2 Nuts M12 (0.47")

Item 12: 4 Screws M10x55  
(0.39"x2.17")

Item 13: 4 Nuts M10 (0.39")

Asm-RK-0381

- Mount safety hook (1) on Pin (A) welded to the frame, mount safety hook with screw (2) and nut (3). Mount spring (4) to help suspension between the pin and the plate welded on the drawbar. Adjust screws (M10 x 60 fully threaded) so that the safety hook turns partially and is positioned vertically when the protection frame is horizontal.



Item 2: 1 Screw M10x60 (0.39"x2.36")

Item 3: 1 Nut M10 (0.39")

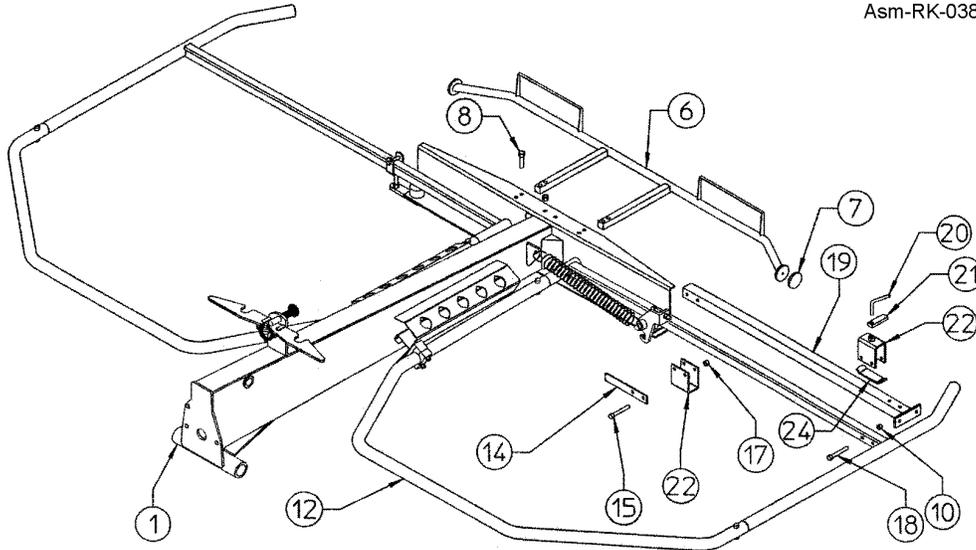
Asm-RK-0382

# ASSEMBLY

ASSEMBLY

8. Use bracket (22), screws (18) and (15) and nut (10) to mount plate carrier extension (19) on the left-hand protection frame. Also mount plate (14) on the outside of the internal bracket, and plate (24) must be mounted on the inside of the external bracket. In order to fasten the extension tighten screw (20) and lock (21). Use screws (8) to mount reflector frame (6) to the frame (1).

Asm-RK-0383



In this step, you will use:

Item 8: 4 Screws M12x45 (0.47"x1.77")

Item 17: 2 Nuts M10 (0.39")

Item 10: 2 Nuts M10 (0.39")

Item 18: 2 Screws M10x60 (0.39"x2.36")

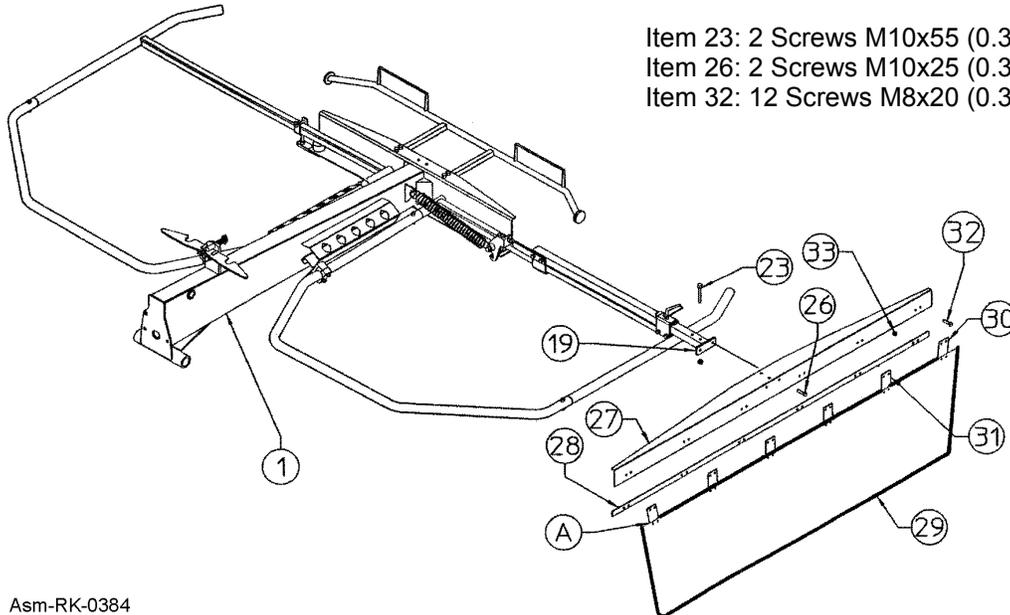
Item 15: 2 Screws M10x70 (0.39"x2.76")

9. In order to mount swath deflector (29), insert the slanting metal tabs (30) into the external slots and the straight tabs into the central slots. Reset the swathing deflector on the inside of side frame (27) and place plate (28) on the outside. Use screws (32) and nuts (33) to fasten everything into place. Use screws (23) and (26) to mount this group on plate carrier extension (19).

Item 23: 2 Screws M10x55 (0.39"x2.17")

Item 26: 2 Screws M10x25 (0.39"x1")

Item 32: 12 Screws M8x20 (0.31"x0.79")



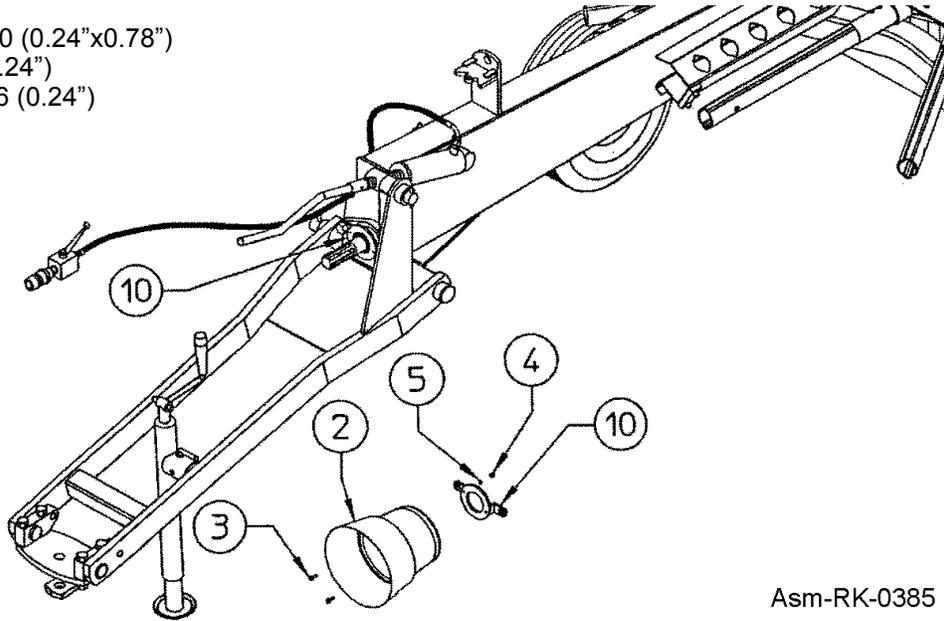
Asm-RK-0384

# ASSEMBLY

ASSEMBLY

10. Attach the universal joint casing (2) to mount (10) using screws (3), nuts (4) and washers (5).

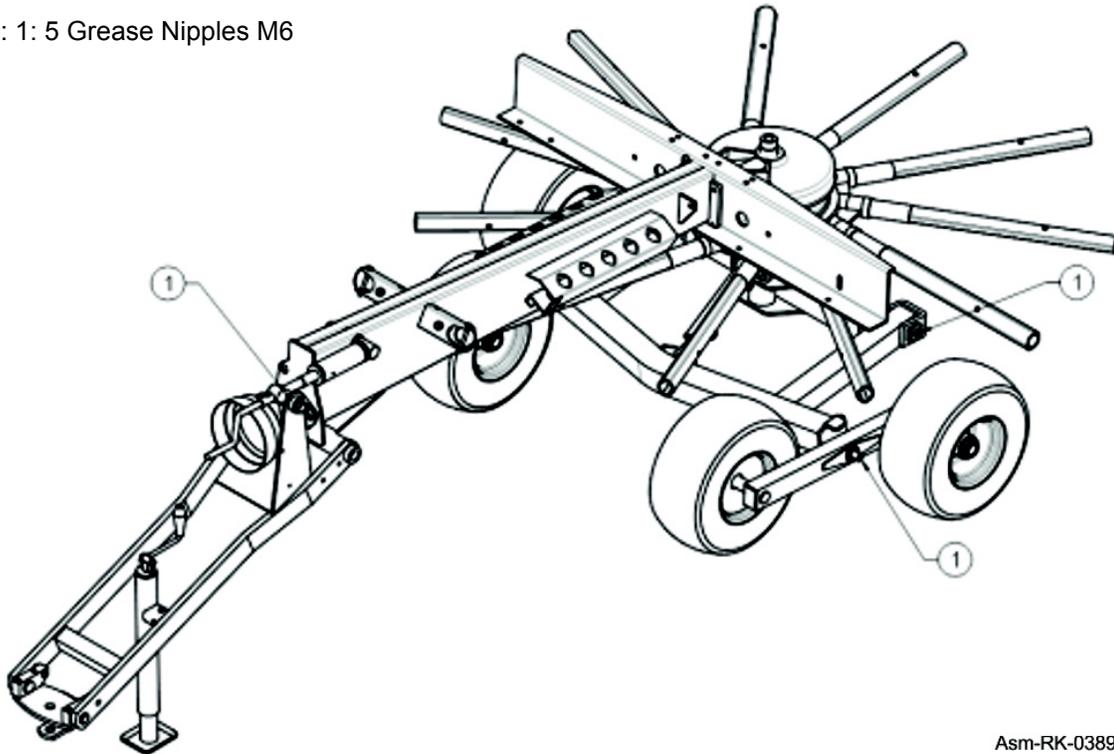
- Item 3: 2 Bolts M6x20 (0.24"x0.78")
- Item 4: 2 Nuts M6 (0.24")
- Item 5: 2 Washers ø6 (0.24")



Asm-RK-0385

11. Mount the grease nipple (1) on all pins.

- Item 1: 5 Grease Nipples M6



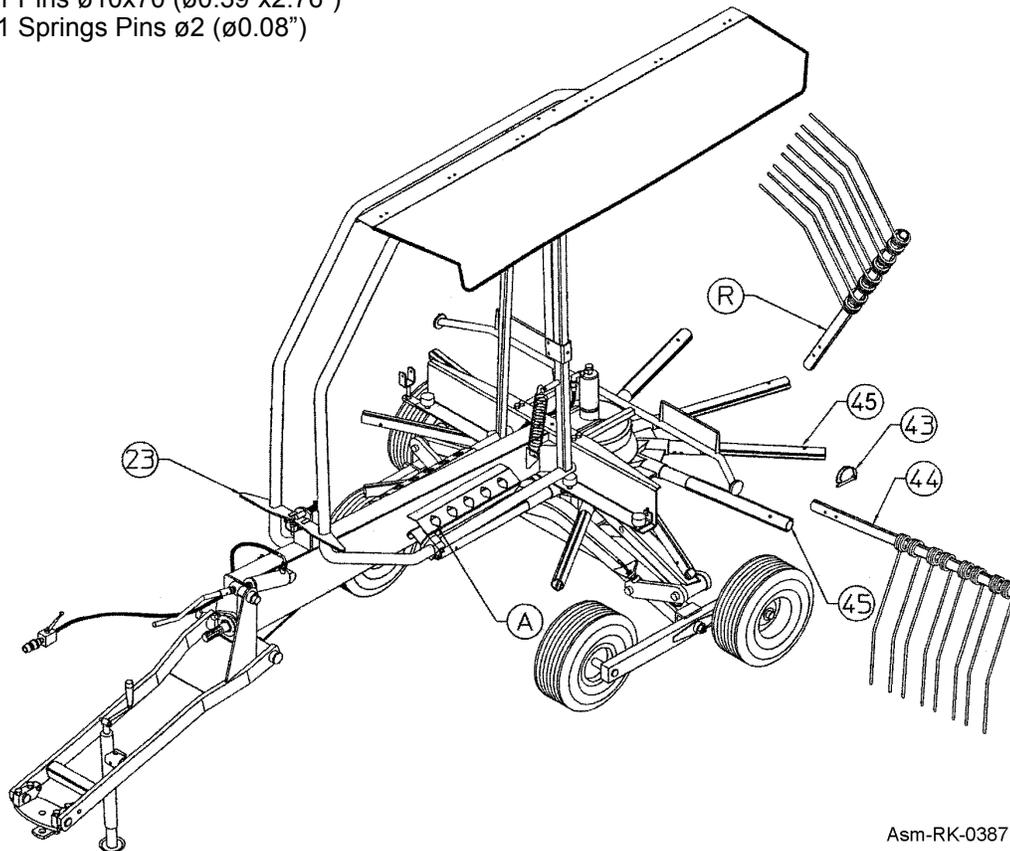
Asm-RK-0389

# ASSEMBLY

- Before assembling the rake arms, raise the protection frames and use hook (23) to hold them in place. If the machine has to be set up for work, mount detachable arms (44) on the fixed arms (45) and fasten them with pin (43). The two holes on the detachable arms are to adjust swath width. The maximum working width is obtained by assembling the arm on the innermost hole. If the machine has to be prepared for transport or for storage, mount the detachable arms in position (R) in holes (A) on the frame.

Item 43: 11 Pins  $\varnothing 10 \times 70$  ( $\varnothing 0.39 \times 2.76$ " )

Item 42: 11 Springs Pins  $\varnothing 2$  ( $\varnothing 0.08$ " )



Asm-RK-0387

ASSEMBLY



# **OPERATION SECTION**

# OPERATION

## BUSH HOG RR114H RAKE OPERATION INSTRUCTIONS

Bush Hog Rakes are manufactured with quality material by skilled workers. It is the operator's responsibility to be knowledgeable of all potential operating hazards and to take every reasonable precaution to ensure oneself, others, animals, and property are not injured or damaged by the rake, tractor or a thrown object. Do not operate the rake if passerby, pets, livestock, or property are directly in front or to the rear of the unit.

This section of the Operator's Manual is designed to familiarize, instruct, and educate safe and proper rake use to the operator. Pictures contained in this section are intended to be used as a visual aid to assist in explaining the operation of a rake and are not necessarily of the Landscape Rakes. Some pictures may show shields removed for purposes of clarity. NEVER OPERATE this implement without all shields in place and in good operational condition. The operator must be familiar with the rake and tractor operation and all associated safety practices before operating the rake and tractor. Proper operation of the rake, as detailed in this manual, will help ensure years of safe and satisfactory use of the rake.

**IMPORTANT:** To avoid rake damage, re-torque all bolts after the first 10 hours of operation.

**READ AND UNDERSTAND THE ENTIRE OPERATING INSTRUCTIONS AND SAFETY SECTION OF THIS MANUAL AND THE TRACTOR MANUAL BEFORE ATTEMPTING TO USE THE TRACTOR AND IMPLEMENT.** If you do not understand any of the instructions, contact your nearest authorized dealer for a full explanation. Pay close attention to all safety signs and safety messages contained in this manual and those affixed to the implement and tractor. *OPS-U- 0001*

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death may occur unless care is taken to follow the warnings and instructions stated in the Safety Messages. Always use good common sense to avoid hazards. (SG-2)



Si no lee ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad. (SG-3)

¡ LEA EL INSTRUCTIVO!



# OPERATION

## 1. Standard Equipment and Specifications

	<u>Model RR1114H</u>
Number of Arms	11
Number of Double Tines per Arm	4
Working Width	13' 9"
Rotor Diameter (Raking Width)	11' 2"
Transport Width (with Arms Disassembled)	6' 7"
Transport Width (with Arms Assembled)	11' 5"
Maximum Height of Tine from Ground	1' 1"
Power Required	40 HP
PTO Driveline with Overload Clutch	540 RPM - Overload Clutch - Protects Gearbox
Hydraulic Requirement	1,000 PSI
Weight	1550 LBS.
Tires (Tandem Axle)	18 x 8.50 - 8 Ply

# OPERATION

## 2. OPERATOR REQUIREMENTS

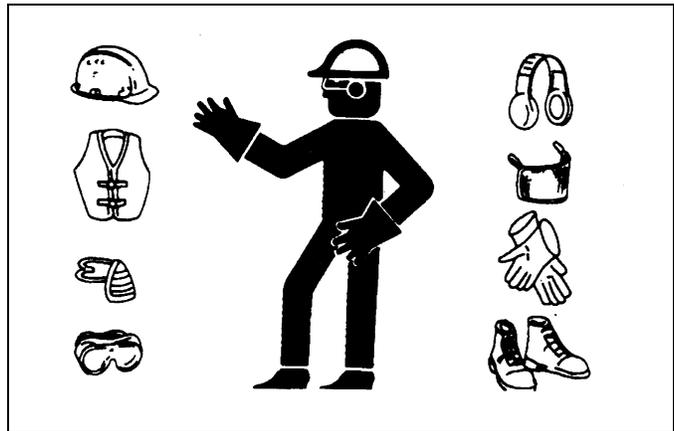
Safe operation of the unit is the responsibility of a qualified operator. A qualified operator has read and understands the implement and tractor Operator's Manuals and is experienced in implement and tractor operation and all associated safety practices. In addition to the safety messages contained in this manual, safety signs are affixed to the implement and tractor. If any part of the operation and safe use of this equipment is not completely understood, consult an authorized dealer for a complete explanation.

If the operator cannot read the manuals for themselves or does not completely understand the operation of the equipment, it is the responsibility of the supervisor to read and explain the manuals, safety practices, and operating instructions to the operator.

Safe operation of equipment requires that the operator wear approved Personal Protective Equipment (PPE) for the job conditions when attaching, operating, servicing, and repairing the equipment. PPE is designed to provide operator protection and includes the following safety wear:

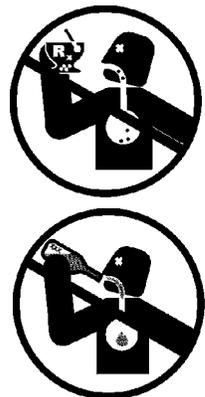
### PERSONAL PROTECTIVE EQUIPMENT (PPE)

- Always Wear Safety Glasses
- Hard Hat
- Steel Toe Safety Footwear
- Gloves
- Hearing Protection
- Close Fitting Clothing
- Respirator or Filter Mask (depends on operating conditions) OPS-U- 0002



### **⚠ DANGER**

DO NOT use drugs or alcohol immediately before or while operating the Tractor and Implement. Drugs and alcohol will affect an operator's alertness and coordination and therefore affect the operator's ability to operate the equipment safely. Before operating the Tractor or Implement, an operator on prescription or over-the-counter medication must consult a medical professional regarding any side effects of the medication that would hinder their ability to operate the Equipment safely. NEVER knowingly allow anyone to operate this equipment when their alertness or coordination is impaired. Serious injury or death to the operator or others could result if the operator is under the influence of drugs or alcohol. (SG-27)



# OPERATION

## **3. TRACTOR REQUIREMENTS**

The tractor used to operate the implement must have the power capacity to lift, pull, and operate the Power Take Off (PTO) at the implement's rated speed while traveling at a ground speed between 2 and 5 MPH. Operating the implement with a tractor that does not meet the following requirements may cause tractor or implement damage and be a potential danger to the operator and passersby.

### **Tractor Requirements and Capabilities**

- ASABE approved Roll-Over Protective Structure (ROPS) or ROPS cab and seat belt
- Tractor Safety Devices ..... Slow Moving Vehicle (SMV) emblem, lighting, PTO Master Shield
- Tractor Horsepower - Minimum.....40HP

### **3.1 ROPS and Seat Belt**

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. *OPS-U- 0003*



Operate this Equipment only with a Tractor equipped with an approved roll-over-protective system (ROPS). Always wear seat belts. Serious injury or even death could result from falling off the tractor, particularly during a turnover when the operator could be pinned under the ROPS. (SG-7)



### **3.2 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. *OPS-U- 0004*

### **3.3 Tractor Horsepower**

The power required to operate these implements is determined by the tractor PTO horsepower. The RR114H requires a tractor with a minimum of 40 hp. Operating these implements with a tractor that does not have adequate power may damage the tractor engine.

# OPERATION

## 4. GETTING ON AND OFF THE TRACTOR

Before getting onto the tractor, the operator must read and completely understand the implement and tractor operator manuals. If any part of either manual is not completely understood, consult an authorized dealer for a complete explanation. *OPS-U- 0007*



Do not mount or dismount the Tractor while the tractor is moving. Mount the Tractor only when the Tractor and all moving parts are completely stopped. (SG-12)



### 4.1 Boarding the Tractor

Use both hands and equipped handrails and steps for support when boarding the tractor. Never use control levers for support when mounting the tractor. Seat yourself in the operator's seat and secure the seat belt around you.

Never allow passengers to ride on the tractor or attached equipment. Riders can easily fall off and be seriously injured or killed from falling off and being ran over. It is the operator's responsibility to forbid all extra riders at all times. *OPS-U- 0008*



Never allow children to operate, ride on, or come close to the Tractor or Implement. Usually, 16-17 year-old children who are mature and responsible can operate the implement with adult supervision, if they have read and understand the Operator's Manuals, been trained in proper operation of the tractor and Implement, and are physically large enough to reach and operate the controls easily. (SG-11)



Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death. (SG-10)



### 4.2 Dismounting the Tractor

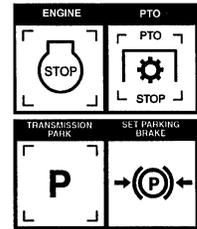
Before dismounting, park the tractor and implement on a reasonably level surface, apply the parking brake, idle the engine down, disengage the PTO, and lower the implement to the ground. Shut down the tractor engine according to the operator's manual, remove the key, and wait for all motion to completely stop. Never leave the seat until the tractor, its engine and all moving parts have come to a complete stop.

Use hand rails and steps when exiting the tractor. Be careful of your step and use extra caution when mud, ice, snow or other matter has accumulated on the steps or hand rails. Use all handrails and steps for support and never rush or jump off the tractor. *OPS-U- 0009*

# OPERATION



BEFORE leaving the tractor seat lower the implement, set the parking brake and/or set the tractor transmission in parking gear, disengage the PTO, stop the engine, remove the key, and wait for all moving parts to stop. Place the tractor shift lever into a low range or parking gear to prevent the tractor from rolling. Never dismount a Tractor that is moving or while the engine is running. Operate the Tractor controls from the tractor seat only. (SG-9)



OPERATION

## 5. STARTING THE TRACTOR

The operator must have a complete understanding of the placement, function, and operational use of all tractor controls before starting the tractor. Review the tractor operator's manual and consult an authorized dealer for tractor operation instructions if needed.

Essential Tractor Controls:

- Locate the light control switch.
- Locate the engine shut off control.
- Locate the brake pedals and the clutch.
- Locate the PTO control.
- Locate the 3-point hitch control lever.
- Locate the hydraulic remote control levers.

Before starting the tractor ensure the following:

- Conduct all pre-start operation inspection and service according to the tractor operator's manual.
- Make sure all guards, shields, and other safety devices are securely in place.
- The parking brake is on.
- The PTO control lever is disengaged.
- The 3-point hitch control lever is in the lowered position.
- The hydraulic remote control levers are in the neutral position.
- The tractor transmission levers are in park or neutral.

Refer to the tractor owner's manual for tractor starting procedures. Only start the tractor while seated and belted in the tractor operator's seat. Never bypass the ignition switch by short circuiting the starter solenoid.

After the tractor engine is running, avoid accidental contact with the tractor transmission to prevent sudden and unexpected tractor movement. OPS-U-0028



Never run the Tractor engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health. (SG-23)



Start tractor only when properly seated in the Tractor seat. Starting a tractor in gear can result in injury or death. Read the Tractor operators manual for proper starting instructions. (SG-13)



# OPERATION

## 6. CONNECTING THE IMPLEMENT TO THE TRACTOR

Use extreme caution when connecting the implements to the tractor. The implement should be securely resting at ground level or setting on blocks. Keep hands and feet from under the units and clear of pinch points between the tractor hitch arms and implement pins. OPS-0011\_B



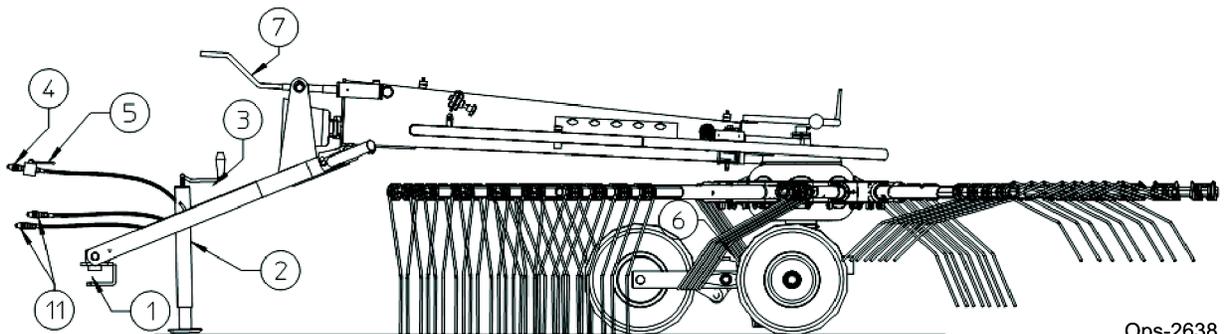
Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15)

OPERATION

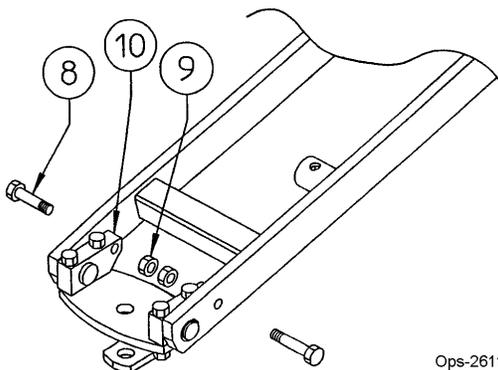
Connect the machine to the tractor, hitching it to the drawbar at point (1).

**NOTE:** Do Not use screws (8) when the machine is hitched to the drawbar.

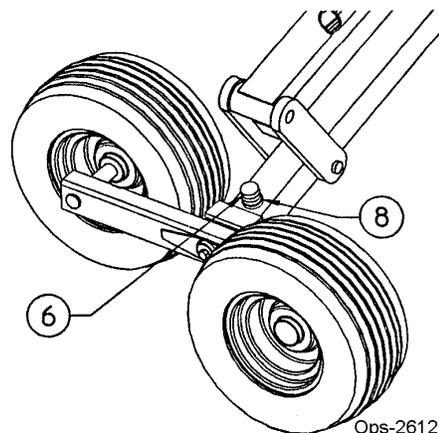
After the machine is hitched, loosen the parking stand (2) and remove pin (3), then rotate the stand upward towards the back of the machine and insert pin (3) to hold it in the resting position. Once this procedure is completed, insert the quick-release coupling (4) into the tractor socket and open the tap (the lever must be parallel with the line as shown in the illustration). At this point work carefully with the hydraulic distributor to make sure that the frame is completely lowered, then adjust the height of the tines above the ground. The adjustment of tooth distance from the ground on the rake is controlled hydraulically by cylinder (6). By rotating the crank (7), the tilt of the machine relative to the ground is adjusted.



Ops-2638



Ops-2611



Ops-2612



Do Not Lock Hitch Swivel when connected to tractor drawbar. Bolt (8) should be removed allowing the hitch to pivot. Ops-2611

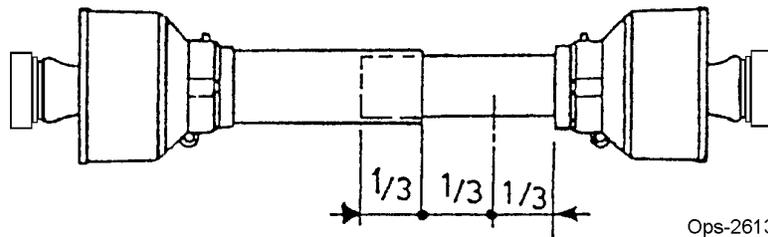
# OPERATION

## 7. CONNECTING THE DRIVESHAFT

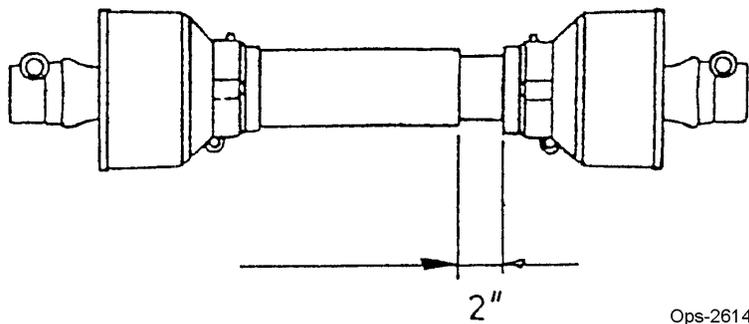


More detailed information may be found in the driveshaft manual which, together with this manual, is an essential part of the accident prevention documentation. It is your responsibility to read and comply with this documentation. Always follow the instructions given by the driveshaft manufacturer.

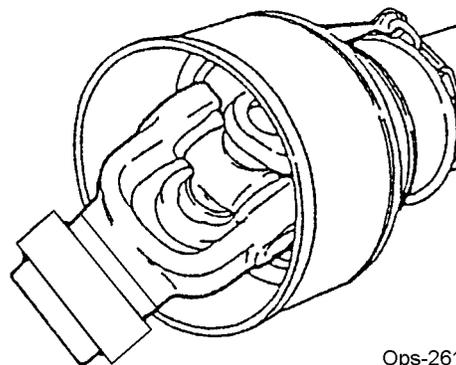
Fit the driveshaft and check that the shaft is connected correctly both at the tractor end and at the machine end. If a safety system is provided, this should be fitted to the machine end, not to the tractor end. During both transport and use, avoid conditions where the transmission shaft is extended to the maximum. In all working conditions, the telescopic tubes must overlap by a least 1/3 of the length. **Ops-2613**



Conversely, when the driveshaft is contracted to the maximum, there should still be a gap of approximately 2". **Ops-2614**



Take particular care to make sure the locking collars on driveline yokes are secured and locked. **Ops-2615**



A loose shaft could come apart and cause considerable mechanical damage and serious injury to operator or bystanders.

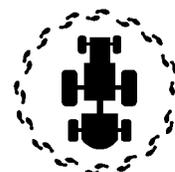
# OPERATION

## 8. PRE-OPERATION INSPECTION AND SERVICE

Before each use, a pre-operation inspection and service of the implement and tractor must be performed. This includes routine maintenance and scheduled lubrication, inspecting that all safety devices are equipped and functional, and performing needed repairs. DO NOT operate the unit if the pre-operation inspection reveals any condition affecting safe operation. Perform repairs and replacement of damaged and missing parts as soon as noticed. By performing a thorough pre-operation inspection and service, valuable down time and repair cost can be avoided. OPS-U-0029



Periodically inspect all moving parts for wear and replace when necessary with authorized service parts. Look for loose fasteners, worn or broken parts, and leaky or loose fittings. Make sure all pins have cotter pins and washers. Serious injury may occur from not maintaining this machine in good working order. (SG-21)



### 8.1 Tractor Pre-Operation Inspection/Service

Refer to the tractor operator's manual to ensure a complete pre-operation inspection and scheduled service is performed according to the manufacturers recommendations. The following are some of the items that require daily service and inspection:

- Tire condition/air pressure
- Wheel lug bolts
- Steering linkage
- PTO shield
- SMV sign is clean and visible
- Tractor's lights are clean and functional
- Tractor Seat belt is in good condition
- Tractor ROPS is in good condition
- ROPS is in the raised position
- No tractor oil leaks
- Radiator free of debris
- Engine oil level and condition
- Engine coolant level and condition
- Power brake fluid level
- Power steering fluid level
- Fuel condition and level
- Sufficient lubrication at all lube points
- Air filter condition OPS-U-0030



Checking Ballast, Wheel Spacing, and Tire Inflation

# OPERATION

Provide sufficient weight to stabilize tractor when operating on hilly land or other adverse conditions. To insure proper stability, adjust ballast, wheel spacing and tire inflation according to tractor operator's manual.

## **8.2 Rake Pre-Operation Inspection/Service**

Before each rake use, a complete inspection and service is required to ensure the rake is in a good and safe working condition. Damaged and/or broken parts should be repaired and/or replaced immediately. To ensure the rake is ready for operation, conduct the following. *OPS-RK-0001*

The operator's manual and safety signs affixed on the unit contain important instructions on the safe and proper use of the equipment. Maintain these important safety features on the implement in good condition to ensure the information is available to the operator at all times.

- Ensure the manual canister is secured to the equipment with the operator's manual inside.
- Ensure all safety signs are in place and legible. Replace missing, damaged, and illegible decals. *OPS-U-0011*



OPERATION

# OPERATION

## Tractor PRE-OPERATION Inspection



Tractor ID#: \_\_\_\_\_ Make: \_\_\_\_\_

Date: \_\_\_\_\_ Shift: \_\_\_\_\_



**Before conducting the inspection, make sure the tractor engine is off, all rotation has stopped and the tractor is in park with the parking brake engaged. Make sure the implement is resting on the ground or securely blocked up and all hydraulic pressure has been relieved.**

**OPERATION**

Item	Condition at Start of Shift	Specific Comments if not O.K.
The flashing lights function properly		
The SMV Sign is clean and visible		
The tires are in good condition with proper pressure		
The wheel lug bolts are tight		
The tractor brakes are in good condition		
The steering linkage is in good condition		
There are no visible oil leaks		
The hydraulic controls function properly		
The ROPS or ROPS Cab is in good condition		
The seatbelt is in place and in good condition		
The 3-point hitch is in good condition		
The drawbar pins are securely in place		
The PTO master shield is in place		
The engine oil level is full		
The brake fluid level is full		
The power steering fluid level is full		
The fuel level is adequate		
The engine coolant fluid level is full		
The radiator is free of debris		
The air filter is in good condition		

Operator's Signature: \_\_\_\_\_

**DO NOT OPERATE an UNSAFE TRACTOR or IMPLEMENT**

# OPERATION

## HAY RAKE PRE-OPERATION Inspection



Rake ID# \_\_\_\_\_ Make \_\_\_\_\_

Date \_\_\_\_\_ Shift \_\_\_\_\_



**Before conducting the inspection, make sure the Tractor engine is off, all rotation has stopped and the tractor is in park position with the parking brake engaged. Make sure the Rake arms is resting on the ground or securely blocked up and all hydraulic pressure has been relieved.**

**OPERATION**

Item	Condition at Start of Shift	Specific Comments if not O.K.
The Operator's Manual is in the Canister on the Hay Rake		
All Safety Decals are in place and legible		
The Tongue/Hitch connection bolts & pins are tight		
There are no cracks in Tongue or Hitch		
The Tow chain is secured to the Tractor & Hay Rake		
The Rake Wheel Arm connection bolts & pins are tight		
Transport locks and retaining chains are in good condition		
Rake spokes are in good condition and securely attached to wheels		
Rake wheels are securely attached to the frame members		
The Hydraulic Cylinders are in good condition		
The Hydraulic Cylinder pins are in place & retained		
There are no leaking or damaged hoses		
There is no evidence of Hydraulic leaks		
The tires and wheel(s) are in good condition		
Wheel lug nuts are tight		

Operator's Signature: \_\_\_\_\_

**DO NOT OPERATE an UNSAFE TRACTOR or IMPLEMENT**

# OPERATION

## 9. DRIVING THE TRACTOR AND IMPLEMENT

Safe tractor transport requires the operator possess a thorough knowledge of the model being operated and precautions to take while driving with an attached implement. Ensure the tractor has the capacity to handle the weight of the implement and the tractor operating controls are set for safe transport. To ensure safety while driving the tractor with an attached implement, review the following. *OPS-U- 0012*

### **⚠ DANGER**

This Implement may be wider than the Tractor. Be careful when operating or transporting this equipment to prevent the Implement from running into or striking sign posts, guard rails, concrete abutments or other solid objects. Such an impact could cause the Implement and Tractor to pivot violently resulting in loss of steering control, serious injury, or even death. Never allow the Implement to contact obstacles. (S3PT-12)

### **⚠ WARNING**

Transport only at speeds where you can maintain control of the equipment. Serious accidents and injuries can result from operating this equipment at high speeds. Understand the Tractor and Implement and how it handles before transporting on streets and highways. Make sure the Tractor steering and brakes are in good condition and operate properly.



Before transporting the Tractor and Implement, determine the proper transport speeds for you and the equipment. Make sure you abide by the following rules:

Test the tractor at a slow speed and increase the speed slowly. Apply the Brakes smoothly to determine the stopping characteristics of the Tractor and Implement. As you increase the speed of the Tractor the stopping distance increases. Determine the maximum transport speed not to exceed 20 mph (30 kph) for transporting this equipment.

Test the equipment at a slow speed in turns. Increase the speed through the turn only after you determine that the equipment can be operated at a higher speed. Use extreme care and reduce your speed when turning sharply to prevent the tractor and implement from turning over. Determine the maximum turning speed for you and this equipment before operating on roads or uneven ground.

Only transport the Tractor and Implement at the speeds which allow you to properly control the equipment.

Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes or worn tires. When operating down a hill or on wet or rain slick roads, the braking distance increases: use extreme care and reduce your speed. When operating in traffic always use the Tractor's flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy. (SG-19)



# OPERATION

## **9.1 Starting the Tractor**

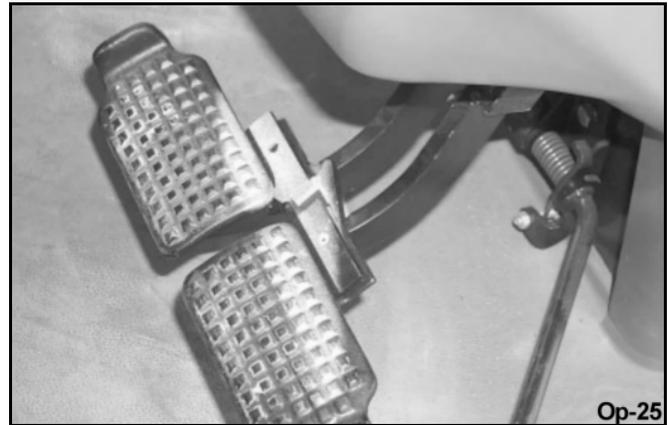
The procedure to start the tractor is model specific. Refer to the tractor operator's manual for starting procedures for your particular tractor. Consult an authorized dealer if the starting procedure is unclear. Ensure the 3-point control lever is in the lowered position and the PTO is disengaged before starting the tractor. OPS-U-0033



## **9.2 Brake and Differential Lock Setting**

Make sure the tractor brakes are in good operating condition. Tractor brakes can be set to operate independently allowing single rear wheel braking action or locked together to provide simultaneous rear wheel braking. FOR MOST DRIVING AND OPERATING CONDITIONS, THE BRAKE PEDALS SHOULD BE LOCKED TOGETHER TO PROVIDE THE MOST EFFECTIVE BRAKING ACTION.

Always disengage the tractor differential lock when turning. When engaged the differential lock will prevent or limit the tractor from turning. During normal cutting conditions, locking the differential provides no benefit and should not be used. OPS-U-0013



**WARNING** Be aware of the operating conditions. Do not operate the Tractor with weak or faulty brakes. When operating down a hill or on wet or rain slick roads, the braking distance increases; use extreme care and reduce your speed in these conditions. When operating in traffic, always use the Tractor's flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy.

## **9.3 Driving the Tractor and Rake**

Start off driving at a slow speed and gradually increase your speed while maintaining complete control of the tractor and rake. Moving slowly at first will also prevent the tractor from rearing up and loss of steering control. The tractor should never be operated at speeds that cannot be safely handled or which will prevent the operator from stopping quickly during an emergency. If the power steering or engine ceases operating, stop the tractor immediately as the tractor will be difficult to control.

# OPERATION

Perform turns with the tractor and rake at slow speeds to determine how the tractor with an attached implement handles a turn. Determine the safe speed to maintain proper control of the tractor when making turns. When turning with an implement, the overall working length of the unit is increased. Allow additional clearance for the rake when turning.

To avoid overturns, drive the tractor with care and at safe speeds, especially when operating over rough ground, crossing ditches or slopes, and turning corners. Tractor wheel tread spacing should be increased when working on inclines or rough ground to reduce the possibility of tipping.

Use extreme caution when operating on steep slopes. Keep the tractor in a low gear when going downhill. DO NOT coast or free-wheel downhill



Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death. (SG-10)

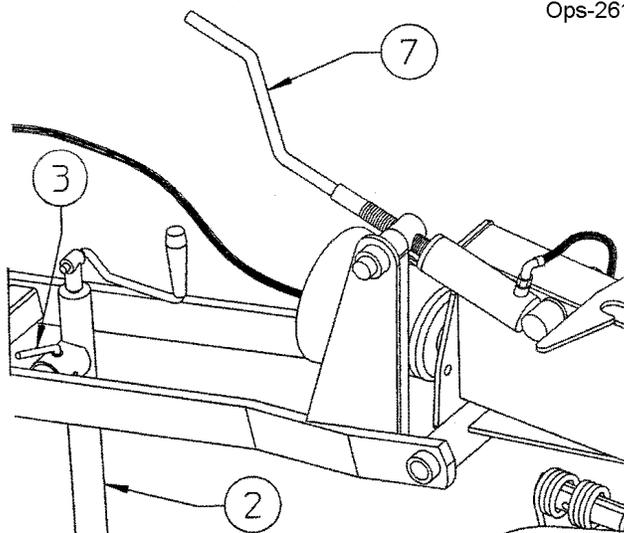


OPERATION

## 10. Field Adjustments

The machine has to be adjusted when it is attached to the tractor. Adjustment of work depth is achieved by rotating crank (7) **Ops-2616**. Recommended Setting: Adjust the front tine so that it is 1-3/8" from the ground, and to tilt the machine slightly forward. The rear tine should be about 3/16" farther away from the ground. If the adjustment is too high, the forage will not be completely picked up and if it is too low, the forage risks becoming dirty, the grass will be damaged and premature tine wear will result.

Ops-2616

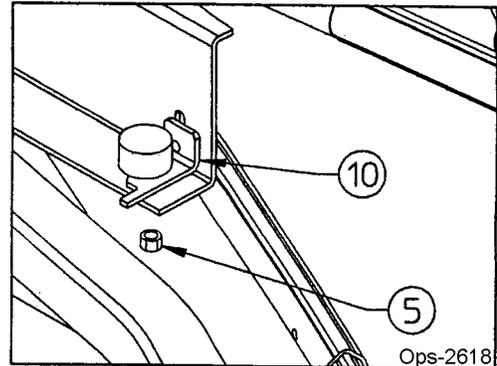
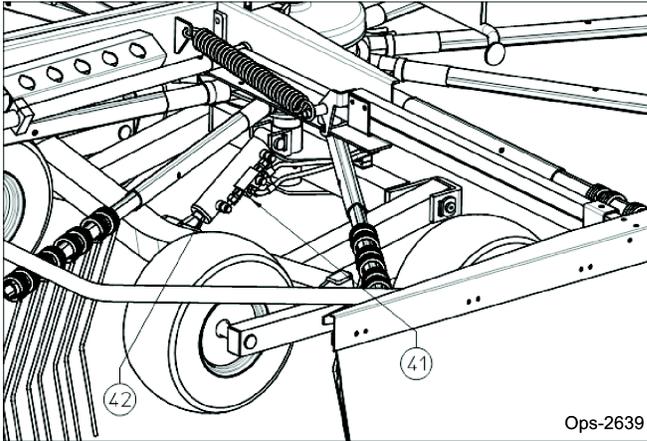


### Adjustment Of Work Depth

Using the hydraulic system to adjust tooth distance from the ground, then block it in the desired position using the block valve (41) of the cylinder. If adjustment is too high the forage will not be completely picked up and if it is too low the forage risk becoming dirty, the grass will be damaged and the double elastic tines will be worn down. **Ops-2639**

After having adjusted the work height of the tine, use nuts (5) under clamp (10) to set the distance of the plate from the ground. **Ops-2618**

# OPERATION



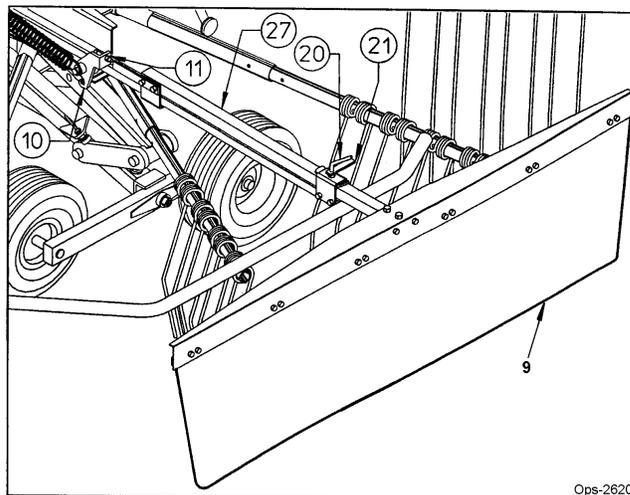
OPERATION

The distance between the swath-shaper plate (9) and the rotor determines the size of the swath. Amount of forage and adjustment is continuous; for heavy crops adjust swath shapes to a wider setting to properly form the windrow. In order to carry out adjustment, loosen lock (21) and screw (20) and then move plate carrier (27) to the required position and tighten first screw (20) and then lock (21). In the work position check that the safety hook (13) fits into lock (10) in order to fasten the swath-shaper plate into position. **Ops-2620**

Adjust PTO and rotor to match:

1. The amount of forage
2. The type of ground
3. The crop moisture content

The forage rake was designed for a maximum speed of 540 RPM. The forage rake must NEVER be used with a 1000 RPM PTO. Rotor speed should be limited so the rake works cleanly and the swath is well formed.



# OPERATION

## **11. OPERATING THE TRACTOR AND IMPLEMENT**

**THE OPERATOR MUST COMPLETELY UNDERSTAND HOW TO OPERATE THE TRACTOR AND IMPLEMENT AND ALL CONTROLS BEFORE ATTEMPTING TO OPERATE.** The operator must read and understand the Safety and Operation Sections of the implement and tractor operator's manuals. These manuals must be read and explained to any operator who cannot read. Never allow someone to operate the implement and tractor without complete operating instructions.

Before starting any operation, the operator must become familiar with the area to be worked in and any obstacles and hazards contained within to ensure safety to the operator, bystanders, and equipment. Special attention should be paid to foreign debris, rough terrain, steep slopes, and passersby and animals in the area. *OPS-U- 0015*

### **11.1 Foreign Debris Hazards**

Before raking, inspect the area to make sure there are no foreign objects that the rake teeth could hit or become entangled with. Remove all foreign objects and debris. If objects are too big to remove, mark them clearly and be sure to prevent the mower blades from contacting them.

If you hit a solid object or foreign debris, stop the implement and tractor at once. Immediately idle the engine speed. Wait for all rotating motion to stop, then raise the implement and move the tractor and implement off the object. Inspect the area and remove, or mark the location of the debris. Inspect the condition of the implement and make any needed repairs immediately. Make sure the teeth are not damaged and the tines are uniform before resuming operation.

Always wear your seat belt securely fastened and only operate the tractor and mower with the ROPS in the raised position. If the tractor or implement hits a tree stump, rock, or bump, a sudden movement could throw you off the seat and under the tractor and/or implement. The seat belt is your best protection from falling off the tractor and the ROPS provides protection from being crushed during a tractor roll-over. *OPS-RK-0007\_A*

### **11.2 Bystanders/Passersby Precautions**

If a bystander comes within 300 feet of the tractor while the rake is being operated, stop the tractor at once, and idle the engine. *OPS-RK-0016*

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. *OPS-R-0028\_A*



# OPERATION

## **11.3 Shutting Down the Implement**

Park the tractor on a level surface, place the transmission in park or neutral and apply the parking brake, lower the attached implement to the ground, shut down the engine, remove the key, and wait for all motion to come to a complete stop before exiting the tractor. OPS-BL- 0002



## **12. DISCONNECTING THE IMPLEMENT FROM THE TRACTOR**

In order to park the rake, make sure that the ground beneath is flat and able to bear the weight of the machine. When the rake is raised and lowered, no one should be standing between the tractor and implement or near the machine. Before disconnecting the implement from the tractor use the hydraulic system to lower the machine completely, then apply the brake and shut off the tractor. Dismount from the tractor and place the parking stand in the vertical position. Turn the parking jack crank to raise the machine from the drawbar so that the hitch pin may be removed from the tractor. Disconnect the quick-release coupling. Disconnect the driveshaft and lay it on the parking stand crank. The tractor may now be moved away.

**NOTE:** *The machine should be in the raised position only when being transported.*



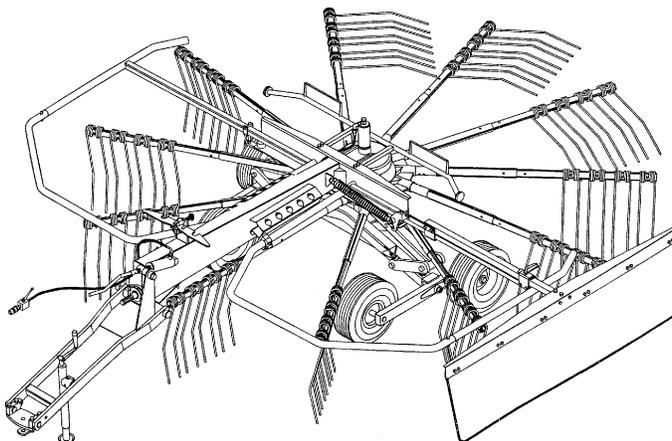
Always shut the Tractor completely down, place the transmission in park, and set the parking brake before you or anyone else attempts to connect or disconnect the Implement and Tractor hitches. (S3PT-15)

# OPERATION

## 13. RAKE STORAGE

Properly preparing and storing the implement at the end of the season is critical to maintaining its appearance and to help ensure years of dependable service. The following are suggested storage procedures:

- Thoroughly clean all debris off the implement to prevent damage from rotting hay and standing water.
- Lubricate all implement grease points as detailed in the maintenance section.
- Tighten all bolts and pins to the recommended torque.
- Check the implement for worn and damaged parts. Perform repairs and make replacements immediately so that the implement will be ready for use at the start of the next season.
- Store the implement in a clean, dry place with the implement housing resting securely on blocks or at ground level.
- Keep the implement from sitting in water, dirt and other contaminants.
- Use spray touch-up enamel where necessary to prevent rust and maintain the appearance of the rake. OPS-RK-0010\_C



FC-RK-0004



Never allow children to play on or around Tractor or Implement. Children can slip or fall off the Equipment and be injured or killed. Inadvertent contact with controls can cause the Implement to shift or fall crushing themselves or others. (SG-25)

## 14. TRANSPORTING THE TRACTOR AND IMPLEMENT

Inherent hazards of operating the tractor and implement and the possibility of accidents are not left behind when you finish working in an area. Therefore, the operator must employ good judgement and safe operation practices when transporting the tractor and implement between locations. By using good judgement and following safe transport procedures, the possibility of accidents while moving between locations can be substantially minimized. OPS-U- 0017



Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death. (SG-10)



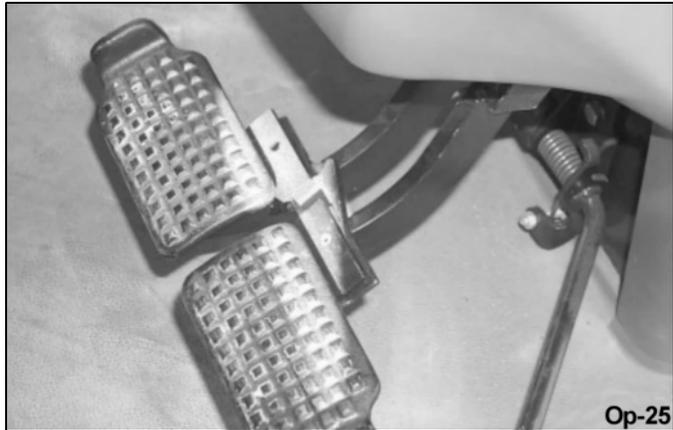
## OPERATION

When transporting, only raise the rake enough to clear ground obstacles to prevent tipping, especially when traveling through rough terrain. *OPS-RK-0017*



Before transporting the tractor on a public roadway or boarding a trailer for transport, the tractor brake pedals should be locked together. Locking the pedals ensures that both wheels brake simultaneously while stopping, especially when making an emergency stop.

Use extreme caution and avoid hard applications of the tractor brakes when towing heavy loads at road speeds. Never tow the implement at speeds greater than 20 MPH (32 kph). *OPS-U-0018*



OPERATION

# OPERATION

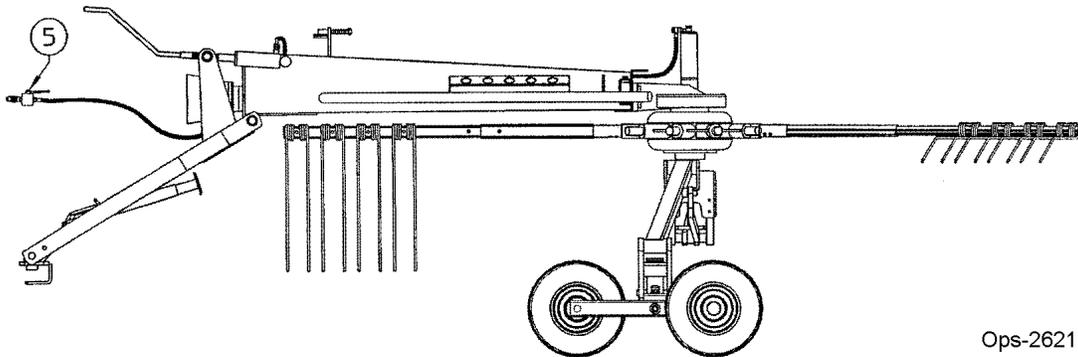
## 14.1 Preparing Rake for Transport

The rake may be transported for short distances after having raised it with the hydraulic system. When transporting for longer distances, close the valve (5) **Ops-2621**. This operation must be done regardless of distance when transporting on public roads. When lifting the implement make sure that the outside links (1) move all the way until they touch the stops (2) **Ops 2622**. When transporting on a public highway always fold the implement and store arms in the storage slots on the frame. Carefully follow the procedures to fold.

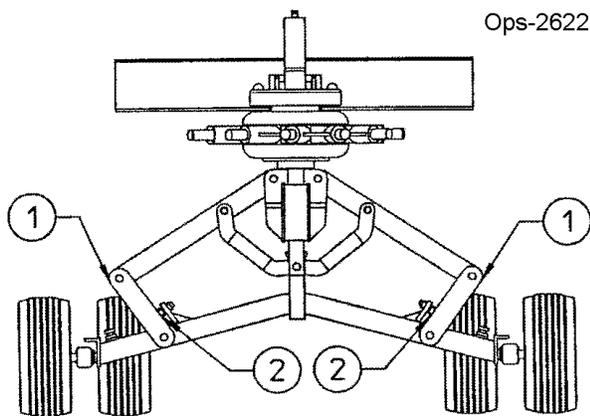
### Folding Procedure:

1. Loosen the swath-shaper plate carrier and reinsert it until the safety hook is released, then tighten the lock screw once again.
2. Turn the protection frames facing upwards one at a time and use hook (23) to fasten them, insert safety clamp (24) into the special slot. **Ops-2623**
3. Remove the tine carrier arms (44) from their slots and remove lock pins (43). Insert the arms into the special slots on side frame (1). The arms should be inserted with the tines facing into the machine. Pins (43) should be placed into the holes on the rotor arms. By detaching the arms and lifting up the protection frames it is possible to have a narrower width if necessary for transport. The machine itself does not require these operations. **Ops-2623**

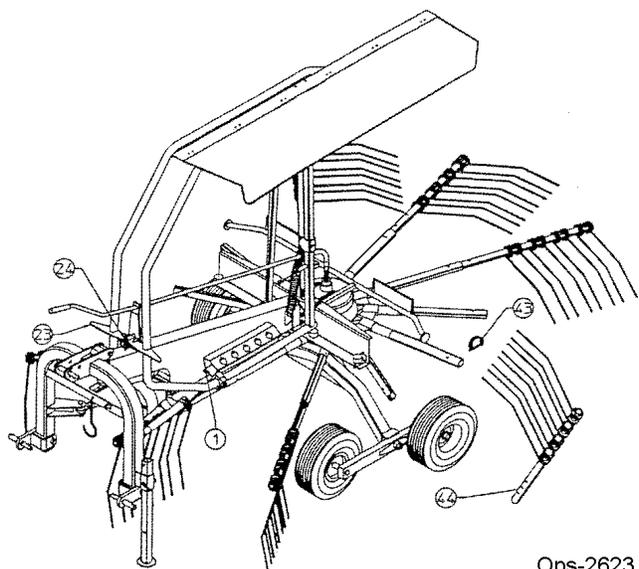
**NOTE:** Remember to open the valve and lower the machine after transport operations are completed.



Ops-2621



Ops-2622



Ops-2623

# OPERATION

## 14.2 Transporting on Public Roadways

Extreme caution should be used when transporting the tractor and implement on public roadways. The tractor must be equipped with all required safety warning features including a SMV emblem and flashing warning lights to alert drivers of the tractor's presence. Remember that roadways are primarily designed for automotive drivers and most drivers will not be looking out for you, therefore, you must look out for them. Check your side view mirrors frequently and remember that vehicles will approach quickly because of the tractor's slower speed. Be extremely cautious when the piece of equipment that you are towing is wider than the tractor tire width and/or extends beyond your lane of the road. *OPS-BL-0003*



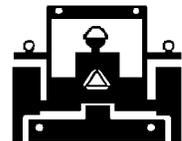
Only tow the Implement behind a properly sized and equipped Tractor which exceeds the weight of the Implement by at least 20%. **DO NOT** tow the Implement behind a truck or other type of vehicle. Never tow the Implement and another Implement connected in tandem. Never tow the Implement at speeds over 20 MPH. (STI-06)



Never allow children or other persons to ride on the Tractor or Implement. Falling off can result in serious injury or death. (SG-10)



Make certain that the "Slow Moving Vehicle" (SMV) sign is installed in such a way as to be clearly visible and legible. When transporting the Equipment use the Tractor flashing warning lights and follow all local traffic regulations. (SG-6)



The SMV (Slow-Moving Vehicle) emblem is universal symbol used to alert drivers of the presence of equipment traveling on roadways at a slow speed. SMV signs are a triangular bright orange with reflective red trim for both easy day and night visibility. Make sure the SMV sign is clean and visible from the rear of the unit before transporting the tractor and implement on a public roadway. Replace the SMV emblem if faded, damaged, or no longer reflective. *OPS-U-0020*



Op-43

# OPERATION

## OPERATION

Make sure that all tractor flashing warning lights, headlights, and brake/tail lights are functioning properly before proceeding onto public roads. While newer model tractors have plenty of lighting to provide warning signals and operating lighting, most older models are only equipped with operating lights. Consult an authorized tractor dealer for lighting kits and modifications available to upgrade the lighting on older tractor models. *OPS-U-0021*



When operating on public roads, have consideration for other road users. Pull to the side of the road occasionally to allow all following traffic to pass. Do not exceed the legal speed limit set in your country for agricultural tractors. Always stay alert when transporting the tractor and implement on public roads. Use caution and reduce speed if other vehicles or pedestrians are in the area. *OPS-B-0022*



Reduce speed before turning or applying the brakes. Ensure that both brake pedals are locked together when operating on public roads. *OPS-U-0023*



# OPERATION

## **14.3 Hauling the Tractor and Implement**

Before transporting a loaded tractor and implement, measure the height and width dimensions and gross weight of the complete loaded unit. Ensure that the load will be in compliance with the legal limits set for the areas that will be traveled through. *OPS-U- 0024*



Use adequately sized and rated trailers and equipment to transport the tractor and implement. Consult an authorized dealer to determine the proper equipment required. Using adequately sized chains, heavy duty straps, cables and/or binders, securely tie down both the front and rear of the tractor utilizing the proper tie down locations as specified by the tractor manufacturer. *OPS-U- 0025*



OPERATION



# **MAINTENANCE SECTION**

Maintenance Section 5-1

# MAINTENANCE

## MAINTENANCE



Any repair work must be carried out with the machine at rest and disconnected from the tractor.



Do not carry out welding without authorization and instruction from the manufacturer.



Disconnect the machine from the tractor before any welding work. damage to battery could result.



Always use a protective mask, goggles and gloves when welding, sanding or grinding or when using a hammer or drill.



Always work on the machine out of doors. if you have to operate the machine when connected to the tractor in an enclosed area (when testing after repair or maintenance), ensure that there is sufficient ventilation so as to prevent noxious exhaust gases from accumulating.



Do not use gasoline, solvents or other flammable liquids as detergents.



Use commercial non-flammable and non-toxic solvents.



Do not use compressed air or water at high pressure to clean the machine. if this is unavoidable, then wear goggles with side protection and limit the pressure as much as possible. when the work is finished, and with the machine disconnected from the tractor, inspect and check the machine completely.

### **The following should be noted if the machine is scrapped:**

The machine consists mainly of ferrous material which must be disposed of according to the regulations in force in the country concerned.

There is also a small amount of plastic which must be disposed of according to the regulations in force in the country concerned.

# MAINTENANCE

**MAINTENANCE**

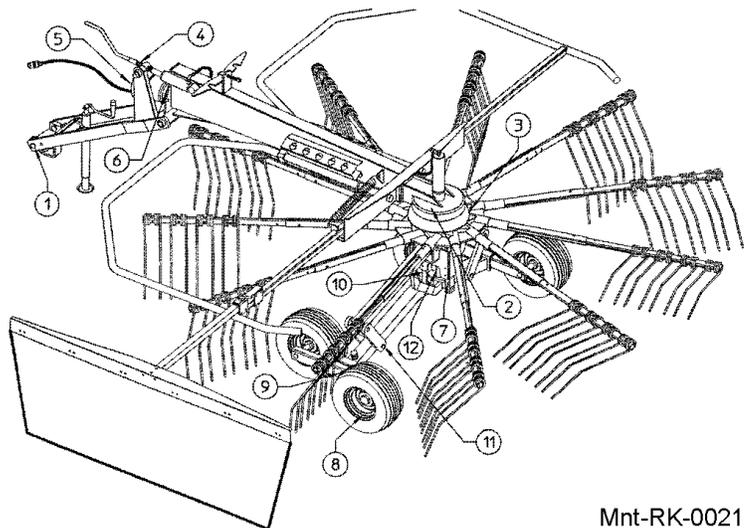
## LUBRICATION CHART

ITEM	QTY	OPERATION	EVERY X HOURS	NOTES	DESCRIPTION
1	2	Lubricate	16		Equalizer
2	1	Lubricate	8		Gearbox
3	1	Oil Level	50		Gearbox
4	1	Lubricate	20		Screw
5	1	Lubricate	8 - 10		Power Take-Off Shaft
	1	Cleaning	A		Power Take-Off Shaft
6	1	Lubricate	10-20		Bearing
7	4	Lubricate	B		Sliding
	4	Cleaning	B		Sliding
8	4	Check	B		Tires
9	2	Lubricate	10-20		Axle Tandem
10	1	Lubricate	B		Sliding
	1	Lubricate	B		Sliding
11	6	Lubricate	8		Pin
12	1	Lubricate	8		Rod
	3	Lubricate	8		Driveshaft

A = Each time the driveshaft is disconnected & whenever the machine is stopped, it is recommended that you clean the power take-off and replace the protective cover.

B = Each time the machine is connected to the tractor.

Generally checking of bolts. Security pins and split pins to be carried out initially after the first 8 hours of use. Subsequently every 50 hours and whenever the machine is laid up for extended periods.



Mnt-RK-0021

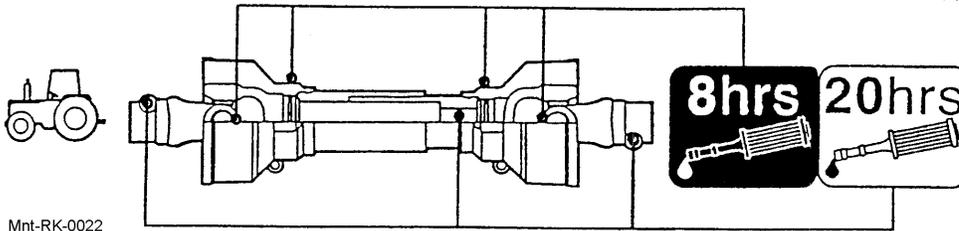
# MAINTENANCE

## GENERAL MAINTENANCE

1. Check the hitch pins and insure that the hex nuts are tight.
2. Periodically inspect rake and make necessary repairs in order to have your implement ready for use when needed.
3. Check frame for fatigue or cracking. Replace or repair worn or damaged parts.
4. Check decals; replace is missing or damaged.
5. Check bolts and fasteners; tighten or replace as necessary.
6. Store rake out of weather when it is not in use. This prevents rusting of the implement.

## DRIVESHAFT MAINTENANCE

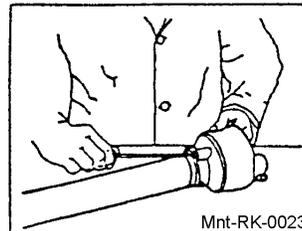
More detailed information may be found in the driveshaft manual which, together with this manual, forms an essential part of the accident-prevention documentation. Please read, comply and always follow the instructions given by the driveshaft manufacturer.



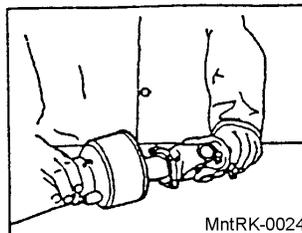
### Maintenance of Sliding Parts

#### Disassembly of Driveshaft

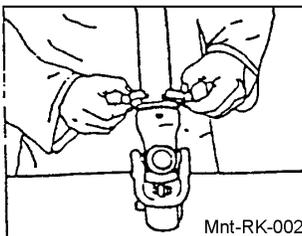
1. Turn the two eccentric pins in the ferrule until the protective cone comes free.



2. Withdraw the shaft protective guard.



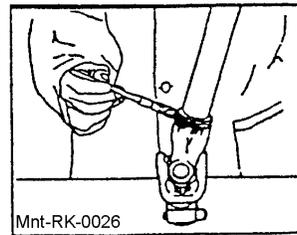
3. Check the condition of the ferrule and all protective parts.



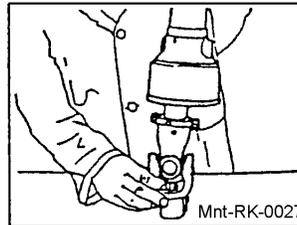
# MAINTENANCE

## Disassembly of Driveshaft

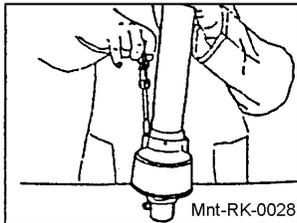
1. Turn the two eccentric pins on the ferrule until the protective cone comes free.



2. Withdraw the shaft protective guard.



3. Check the condition of the ferrule and all protective parts.



## **SCRAPPING THE RAKE**

The rake consists mainly of ferrous material, a small amount of plastic and a very small amount of residual grease which must be disposed of according to the regulations in force for the area concerned.

# MAINTENANCE

## STORAGE

### End of Season

To prepare your Rake for storage:

1. Clean the rake following instructions and allow it to dry. Trash and dirt will draw moisture and cause rust.
2. Thoroughly tighten all screws, bolts, and nuts.
3. Store the rake on a clean, dry surface in the down (working) position.
4. Grease the machine thoroughly and then cover it completely. Repair or replace worn or broken parts
5. Paint all parts where necessary.
6. Replace damaged or missing decals.
7. List replacement parts needed and order them early.

**NOTE:** Now would be a good time to replace all damaged or worn parts, and have a machine in perfect condition ready for use the next season.

### Beginning of Season

1. Review operator's manual and check adjustments.
2. Lubricate complete machine.
3. Check all hardware for tightness.
4. Check all hardware for tightness. Attach rake to tractor (Refer to Attaching and Detaching Section in Operator's Manual)
  1. Make sure rake has enough clearance to raise and lower
  2. Raise and lower rake.
  3. Shut off tractor. Check hydraulic system for leaks. Oil coming out of lift cylinder vent for the first few cycles is normal.
  4. Lubricate entire machine. (See Lubrication and Maintenance Section in Operator's Manual)

## BOLT TORQUE VALUES

Because of the severe operating conditions, correct bolt torque is very important. An improperly torqued bolt can be easily shaken loose or broken by the vibrations. When replacing bolts, always use the same grade of bolt as used originally. Use the chart as a guide to tightening all bolts. Torque values listed are for general use only.

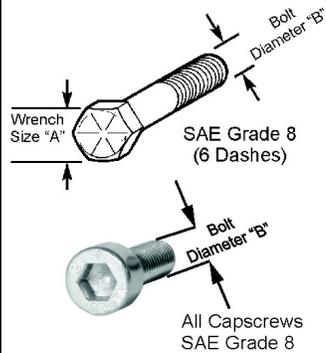
# MAINTENANCE

MAINTENANCE

## TORQUE SPECIFICATIONS - DRY TORQUE

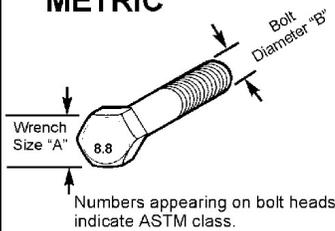
Proper torque for American fasteners.  
Recommended Torque in Foot Pounds (Newton Meters).\*

### AMERICAN Bolt Head Markings



WRENCH SIZE (IN.) "A"	BOLT DIAMETER (IN.) "B" AND THREAD SIZE	SAE GRADE 2	SAE GRADE 5	SAE GRADE 8
7/16	1/4 - 20 UNC	6 (7)	8 (11)	12 (16)
7/16	1/4 - 28 UNF	6 (8)	10 (13)	14 (18)
1/2	5/16 - 18 UNC	11 (15)	17 (23)	25 (33)
1/2	5/16 - 24 UNF	13 (17)	19 (26)	27 (37)
9/16	3/8 - 16 UNC	20 (27)	31 (42)	44 (60)
9/16	3/8 - 24 UNF	23 (31)	35 (47)	49 (66)
5/8	7/16 - 14 UNC	32 (43)	49 (66)	70 (95)
5/8	7/16 - 20 UNF	36 (49)	55 (75)	78 (106)
3/4	1/2 - 13 UNC	49 (66)	76 (103)	106 (144)
3/4	1/2 - 20 UNF	55 (75)	85 (115)	120 (163)
7/8	9/16 - 12 UNC	70 (95)	109 (148)	153 (207)
7/8	9/16 - 18 UNF	79 (107)	122 (165)	172 (233)
15/16	5/8 - 11 UNC	97 (131)	150 (203)	212 (287)
15/16	5/8 - 18 UNF	110 (149)	170 (230)	240 (325)
1-1/8	3/4 - 10 UNC	144 (195)	266 (360)	376 (509)
1-1/8	3/4 - 16 UNF	192 (260)	297 (402)	420 (569)
1-5/16	7/8 - 9 UNC	166 (225)	430 (583)	606 (821)
1-5/16	7/8 - 14 UNF	184 (249)	474 (642)	668 (905)
1-1/2	1 - 8 UNC	250 (339)	644 (873)	909 (1232)
1-1/2	1 - 12 UNF	274 (371)	705 (955)	995 (1348)
1-1/2	1 - 14 UNF	280 (379)	721 (977)	1019 (1381)
1-11/16	1-1/8 - 7 UNC	354 (480)	795 (1077)	1288(1745)
1-11/16	1-1/8 - 12 UNF	397 (538)	890 (1206)	1444 (1957)
1-7/8	1-1/4 - 7 UNC	500 (678)	1120 (1518)	1817 (2462)
1-7/8	1-1/4 - 12 UNF	553 (749)	1241 (1682)	2013 (2728)
2-1/16	1-3/8 - 6 UNC	655 (887)	1470 (1992)	2382 (3228)
2-1/16	1-3/8 - 12 UNF	746 (1011)	1672 (2266)	2712 (3675)
2-1/4	1-1/2 - 6 UNC	870 (1179)	1950 (2642)	3161 (4283)
2-1/4	1-1/2 - 12 UNF	979 (1327)	2194 (2973)	3557 (4820)

### METRIC



Proper torque for Metric fasteners.  
Recommended torque in Foot Pounds (Newton Meters).\*

WRENCH SIZE (mm) "A"	BOLT DIA. (mm) "B"	ASTM 4.6	ASTM 8.8	ASTM 9.8	ASTM 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
13	8	7.3 (10)		21.1 (29)	27 (37)
16	10	14.5 (20)		42 (57)	53 (72)
18	12	25 (34)	74 (100)	73 (99)	93 (126)
21	14	40 (54)	118 (160)	116 (157)	148 (201)
24	16	62 (84)	167 (226)	181 (245)	230 (312)
30	20	122 (165)	325 (440)		449 (608)
33	22		443 (600)		611 (828)
36	24	211 (286)	563 (763)		778 (1054)
41	27		821 (1112)		1138 (1542)
46	30	418 (566)	1119 (1516)		1547 (2096)

\*Use 75% of the specified torque value for plated fasteners. Use 85% of the specified torque values for lubricated fasteners.

Mnt-B-0005





## TO THE OWNER/OPERATOR/DEALER

To keep your implement running efficiently and safely, read your manual thoroughly and follow these directions and the Safety Messages in this Manual. The Table of Contents clearly identifies each section where you can easily find the information you need.

The OCCUPATIONAL SAFETY AND HEALTH ACT (1928.51 Subpart C) makes these minimum safety requirements of tractor operators:

### REQUIRED OF THE OWNER:

1. Provide a Roll-Over-Protective Structure that meets the requirements of this Standard; and
2. Provide Seat belts that meet the requirements of this paragraph of this Standard and SAE J4C; and
3. Ensure that each employee uses such Seat belt while the tractor is moving; and
4. Ensure that each employee tightens the Seat belt sufficiently to confine the employee to the protected area provided by the ROPS

### REQUIRED OF THE OPERATOR:

1. Securely fasten 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 the tractor manufacturer.
9. When the tractor is stopped, set brakes securely and use park lock, if available.

- 
- x Keep children away from danger all day, every day...
  - x Equip tractors with rollover protection (ROPS) and keep all machinery guards in place...
  - x Please work, drive, play and live each day with care and concern for your safety and that of your family and fellow citizens.



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