



# BUSH HOG®

# BALE SPEAR

## MODEL 3PBS1, 3PBS2

Published 10/20

Part No. 50073292

## 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-HE-0002

### BUSH HOG®

2501 Griffin Ave.  
Selma, AL 36703  
334-874-2700  
www.bushhog.com

Bush Hog Web Page



www.algqr.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



## 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!



# 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.

**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.

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



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!**



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)



# SAFETY



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)



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)



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)



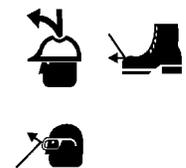
## Operator Safety Instructions and Practices



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)



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)



# SAFETY



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)



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



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



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)



Use extreme care when loading, carrying or handling any agricultural fertilizers, chemicals or biological residue. Follow the manufacturer's handling instructions and wear appropriate Personal Protective Equipment including gloves, safety glasses and respirator when required. If you are using a tractor equipped with a cab, make sure the cab is rated for appropriate environmental exposure. Be safe and always wear proper protection. Short or long term exposure to certain chemicals and materials can result in serious injury or death. (SL-19)



## Equipment Operation Safety Instructions and Practices

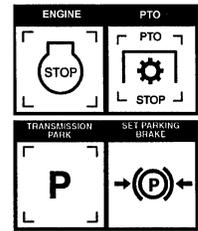


Never grasp control levers when mounting the machine. (SBH-4)

# SAFETY

## 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)



## 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)



## DANGER

Operate the Tractor and/or Implement controls only while properly seated in the Tractor seat with the seat belt securely fastened around you. Inadvertent movement of the Tractor or Implement may cause serious injury or death. (SG-29)

## 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

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)

# SAFETY



Operate the tractor and loader 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 feet in front and to the sides of the tractor. Make sure you can clearly see bystanders, ditches, steep slopes, drop-offs, overhead obstructions, power lines, and debris or obstruction in the travel path. If you are unable to clearly see these types of items discontinue operating. Contact with unseen vehicles, bystanders, obstructions, or drop-offs can cause serious injury. (SL-35)



Be particularly careful in transport. The Implement has raised and moved the center of gravity to the front of the Power Unit increasing the possibility of overturn and tipping forward. Turn curves or go up slopes only at low speed and using a gradual turning angle. Go up slopes with the Implement located uphill. Slow down on rough or uneven surfaces. (SPU-2)



Never leave the Implement and Power Unit unattended while the Implement is in the raised position. Accidental operation of a lifting lever or a hydraulic failure may cause the implement to suddenly fall causing serious injury or possible death to anyone who might inadvertently be under the Implement. Lower the implement carefully to the ground. Do not put hands or feet under lifted components. (SPU-3)



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)

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



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)

## **Maintenance and Service Safety Instructions and Practices**

READ, UNDERSTAND, and FOLLOW the following Safety Messages. Death or serious injury 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)



# SAFETY



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)



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



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)



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)



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**

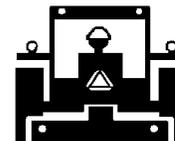
Cancer and Reproductive Harm [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

# SAFETY

## Transporting Safety Instructions and Practices



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)



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)



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)



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

## 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**

## **Storage and Parking Safety Instructions and Practices**



Never crawl under or allow children to play around or on a bale spear that is disconnected from the tractor.



Only disconnect and store the bale spear on firm flat ground.

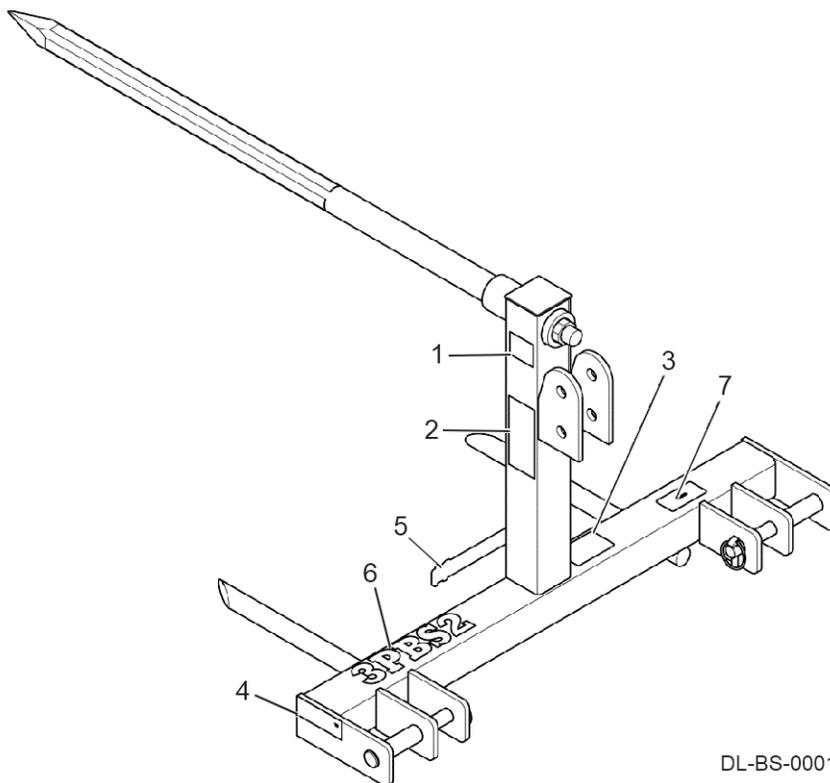
## **Concluding Safety Instructions and Practices**

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

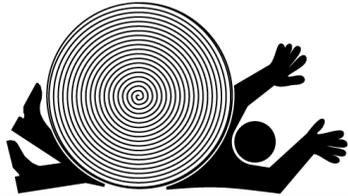
**NOTE:** Bush Hog supplies safety decals on this product to promote safe operation. Damage to the decals may occur while in shipping, use, or reconditioning. Bush Hog cares about the safety of its customers, operators, and bystanders, and will replace the safety decals on this product in the field,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



ITEM	PART NO.	QTY	LEVEL	DESCRIPTION
1.	50100237	1	DANGER	Loading and Unloading Bales
2.	50100235	1	CAUTION	Multi Hazard
3.	00725746	1	PELIGRO	Translate Safety Material
4.	50100242	1	IMPORTANT	Do Not Weld or Heat Treat
5.	50062087	1	LOGO	Bush Hog Decal
6.	50073284	1	LOGO	Model Name 3PBS1
	50073286	1	LOGO	Model Name 3PBS2
7.	-----	1	SERIAL PLATE	Serial No. Plate
8.	D960	1	WARNING	Proposition 65 (Not Shown)

# SAFETY

## DANGER



### To avoid serious injury or death:

- Unload only on a level surface.
- Keep bystanders clear of work area when loading and unloading bales.

50100237

## IMPORTANT!

THIS SPEAR IS A HIGH STRENGTH ALLOY-DROP FORGED STEEL AND SHOULD NOT BE WELDED OR HEAT TREATED.

50100242



## WARNING

Cancer and Reproductive Harm

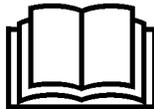
[www.P65 Warnings.ca.gov](http://www.P65Warnings.ca.gov)

D960

## PELIGRO

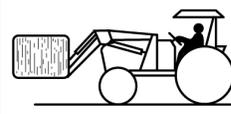
LEA EL INSTRUCTIVO

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



00725746

## CAUTION



### To avoid serious injury or death:

- Read operators manual and decals before operating. Follow all safety, operating, and service instructions. Contact dealer for replacement.
- Be careful during loading, transporting, and stacking to minimize rolling bales and tractor tip over.
- ROPS (Roll-Over Protective Structures) and seat belt equipped tractors are recommended for operator use in all bale probe operations.
- Do not allow riders on tractor, loader, or bale probe.
- Avoid loading / unloading bales on sloping or uneven surfaces.
- Avoid transporting with bales raised high. Keep bales tilted back and low to the surface while moving.
- Approach, penetrate, and transport bales at low speeds. Reduce speeds on curves, hills, rough ground or when turning.
- Do not lift anything with bale probe except round bales.
- Avoid raising round bale to full height with bale probe rolled back.
- Park and store bale probe points pointed against bale, building, or other stable object.

50100235



# **INTRODUCTION SECTION**

# INTRODUCTION

These bale spears are 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 and instruct.

Careful use and timely service saves extensive repairs and costly downtime losses. The Operation and Maintenance Sections of the manual train the owner/operator how to work the Bale Spear correctly and attend to appropriate maintenance. The Troubleshooting Guide helps diagnose difficulties and offers solution to the problems.

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 bucket 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, could result in damage to, or destruction of the machine, attachments or the environment.

# INTRODUCTION



FC-HE-0002

The Bush Hog 3PBS1 and 3PBS2 have uses and applications in farming and ranching. They have the capability of quickly and conveniently turning your Tractor equipped with a Bale Spear for lifting, transporting, and placing bales.

The 3PBS1 is designed to fit three point lift category one tractors while the 3PBS2 work with category one and two three point lift tractors. Each spear is rated at 2,000 lbs. Whichever model you select, you will find that these Bush Hog attachments will save you time and money and make getting that bale handling job done a whole lot easier. For additional information and performance enhancing options, visit us at [www.bushhog.com](http://www.bushhog.com)

Literature Page



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

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

Carefully read the Operator's Manual completely, understand the Safety Messages and instructions, and know how to operate correctly both the tractor and bale spear.

# 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 plow.
2. Fill out the Warranty card in full. Be sure to answer all questions, including the Serial Number on 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 Bush Hog within thirty days of delivery of the implement.

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



# **ASSEMBLY SECTION**

# ASSEMBLY

## ASSEMBLY

Your Bush Hog bale spear is fully assembled at the factory. If applicable, make sure all nuts and or bolts are properly torqued before use of attachment. Refer to "Torque Chart" in the Maintenance Section of this manual.



**WARNING** Light weight tractors and some skid steer loaders will require rear ballast for heavy loads to maintain steering control. Be sure to consult your Skid Steer or Tractor Operator's Manual to determine whether or not to add ballast.

# **OPERATION SECTION**

# OPERATION

## BUSH HOG BALE SPEAR OPERATION INSTRUCTIONS

Your Bush Hog Bale Spears should now be assembled and inspected for any evidence of defective or damaged parts before use. Any evidence of damage should be reported to your dealer immediately.

This section of the Operator's Manual is designed to familiarize, instruct, and educate safe and proper bale spear 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 bale spear. 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 bale spear and tractor operation and all associated safety practices before operating. Proper operation of the bale spear, as detailed in this manual, will help ensure years of safe and satisfactory use of the bale spear.

**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. Death or serious injury 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>Bale Spear Model</u>	<u>3PBS1</u>	<u>3PBS2</u>
Overall Depth	51"	51"
Overall Height	25-3/8"	25-3/8"
Overall Width	31-7/8"	39"
Spear Size (Diameter)	1.78"	1.78"
Usable Spear Length	42-1/2"	42-1/2"
Weight	80 Lbs.	97 Lbs.
Max Spear Capacity	2000 Lb	2000 Lb
Hitch	Cat 1-3 Pt. Lift	Cat 1 & 2 - 3 Pt. Lift

## 2. OPERATOR REQUIREMENTS

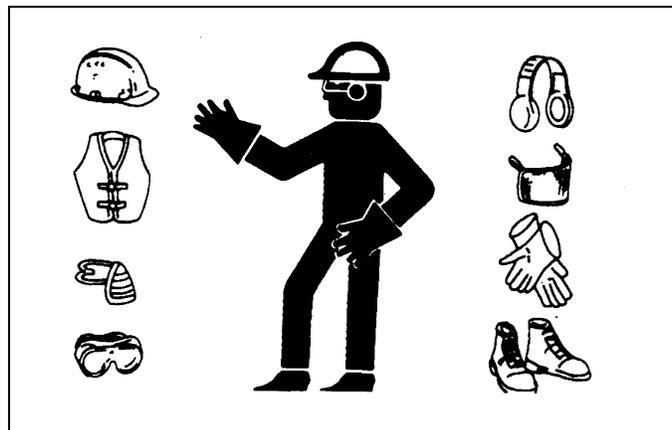
Safe operation of the unit is the responsibility of a qualified operator. A qualified operator has read and understands the implement and tractor Operator's Manuals and is experienced in implement and tractor operation and all associated safety practices. In addition to the safety messages contained 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)**

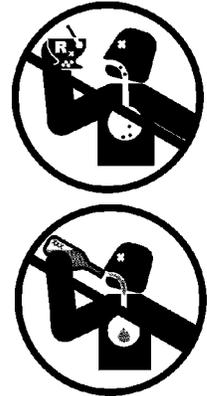
- Always Wear Safety Glasses with Side Shields (marked with ANSI Z87)
- Hard Hat
- Steel Toe Safety Footwear
- Gloves
- Hearing Protection
- Close Fitting Clothing
- Respirator or Filter Mask (depends on operating conditions) *OPS-U- 0002*



# OPERATION

**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)



## 3. TRACTOR REQUIREMENTS

The tractor used to operate the Bale Spear must have the power capacity to lift, pull, and operate. The rated speed while traveling at a ground speed is between 2 and 5 MPH. Operating the Bale Spear with a tractor that does not meet the following requirements may cause tractor or Bale Spear 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 ..... 25 HP
- Hitch 3PBS1 ..... Cat 1-3 Point Lift
- Hitch 3PBS2 ..... Cat 1 & 2 - 3 Point Lift

### 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

**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)



# OPERATION

## **3.2 Tractor Horsepower**

The power required to operate an implement is determined by the tractor PTO horsepower. For most operating conditions, the Bale Spear requires a tractor with at least 25hp. Operating the implement with a tractor that does not have adequate power may damage the tractor engine. Exceeding the recommended horsepower may cause damage by overpowering the unit in heavy operating conditions.

## **3.3 Front End Weight**

A minimum of 20% total tractor weight must be maintained on the tractor front end at all times. Front end weight is critical to maintain steering control and to prevent the tractor from rearing up while driving. If the front end is too light, add weight until a minimum of 20% total weight is reached on the front tires. Front weights and weight carriers can be purchased through an authorized tractor dealership. *OPS-U-0005*

## **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*

**⚠ 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)



### **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 run over. It is the operator's responsibility to forbid all extra riders at all times. *OPS-U-0008*

**⚠ 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)



**⚠ 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)



# OPERATION

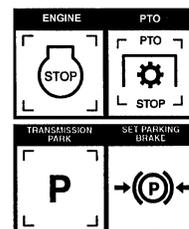
## 4.2 Dismounting the Tractor

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*



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)



## 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)

# OPERATION



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)



## 6. CONNECTING THE HAY TEDDER TO THE TRACTOR

Use extreme caution when connecting the Bale Spear to the tractor. The Bale Spear should be securely resting at ground level or setting on blocks. Keep hands and feet from under the Bale Spear and clear of pinch points between the tractor hitch arms and lift side rotors.



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)

### 6.1 Connecting the Bale Spear.

1. Shorten or remove the tractor drawbar to avoid interference when raising and lowering the equipment.
2. Board the Tractor and start the engine. Position the Tractor to the equipment with the 23-point lift arms positioned between the respective set of equipments A-frame lift lugs.

**NOTE:** Set the 3-point lift control to "Position Control" so that the lift arms maintain a constant height when attaching the equipment. See the Tractor Operator's Manual for correct settings when attaching 3-point equipment.



3. Turn off the tractor engine, set the parking brake, place the Tractor in park and dismount.
4. One lift arm at a time, align arm end hole between the set of holes of A-frame lift lugs. Insert hitch pin through the lug and arm holes and insert retaining pin into hitch pin. Walk around to opposite side and repeat procedure for remaining lift arm and hitch pin.
5. Extend or retract the 3-point top link to align its end hole with the holes of the Bale Spear top link. Insert the top link pin and retain with cotter pin.

Adjust any lower link check chains, guide blocks, or sway blocks to prevent the equipment from swaying side to side and possible contact with Tractor rear tires.

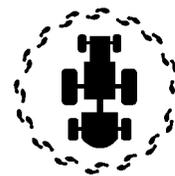
# OPERATION

## 7. PRE-OPERATION INSPECTION AND SERVICE

Before each use, a pre-operation inspection and service of the implement and power unit 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 implement and power 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-UPI-0008*



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)



### 7.1 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*



# OPERATION

## **7.2 Implement Pre-Operation Inspection/Service**

Before each implement use, a complete inspection and service is required to ensure the implement is in a good and safe working condition. Damaged and/or broken parts should be repaired and/or replaced immediately. To ensure the implement is ready for operation, conduct the following. *OPS-T-0002*

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.

Table 1:

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 pres-		
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**

# OPERATION

## BALE SPEAR PRE-OPERATION Inspection



Sub Soiler 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 Sub Soiler is resting on the ground or securely blocked up and all hydraulic pressure has been relieved.

Table 2:

Item	Condition at Start of Shift	Specific Comments if not O.K.
The Operator's Manual has been read and under-		
All Safety Decals are in place and legible.		
The Hitch connection pins are properly retained.		
There are no cracks in Hitch.		
All bolts are in place and properly tightened.		
All grease fittings and lubrication points have		
Check for chips, cracked or worn parts past		

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

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

OPERATION

# OPERATION

## 8. 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*



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)



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

## **8.1 Starting the Tractor**

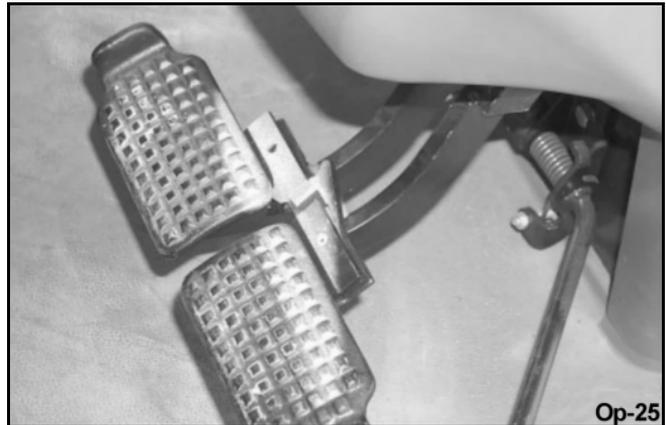
The procedure to start the tractor is model specific. Refer to the tractor operator's manual for starting procedures for your particular tractor. Consult an authorized dealer if the starting procedure is unclear. Ensure the 3-point control lever is in the lowered position and the PTO is disengaged before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



## **8.2 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 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.

# OPERATION

## 9. 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*

## 10. BALE SPEAR OPERATION

By now you should have familiarized yourself with the Operator's Manual for your Bale Spear. Proceed by getting onto the seat of your Tractor and starting it up. We recommend that you take a little time to practice securely attaching and detaching your Bale Spear to and from your tractor. It is also important to practice lifting, lowering, maneuvering, and placing a bale on a level site until you gain the confidence and skill needed to have a good feel in what you are doing. We cannot over-stress the importance of following the safety operating procedures that are spelled out in this Operator's Manual. Do not exceed the lift capacity of your Bale Spear or tractor. Don't lift your bale too high creating an unstable bale and unsafe situation. Don't tilt your bale too far forward, setting up a situation that could cause you bale to fall off the spear(s). Don't drive too fast for your ground conditions. Don't work on or around slippery or sloped areas that could cause you to lose control of the Tractor. Don't allow pedestrians, pets, or livestock to approach the danger zone of your working area. Don't leave your Tractor with the Bale Spear raised off the ground. If you follow these few safety reminders, you will find that you will quickly become very adept, handy, and skillful at using your Bush Hog Bale Spear.

### 10.1 Picking up a Bale

1. Make sure the bale does not exceed the smaller of the lift capacities below:
  - Rated lift capacity of the spears (3500 Lbs @ 23-1/2")
  - 83% of the Tractor rated lift capacity for an attached front loader.

**Important**

Using 83% of the Tractor rated lift capacity for an attached front loader accounts for increased loader stresses caused by the added extension of the Bale Spear and ensures that the front tires on your Tractor are rated properly for the job.

**Important**

The spear should be fully inserted into the bale before lifting the bale. Picking up heavy bales without the spear(s) fully inserted can damage the unit and void its warranty

2. Stop completely before raising or lowering the spear(s) to the correct height. Insert spear(s) into the bale as follows:

#### **BS2SS, BS2E, BS2JD**

1. While driving up to the bale, center the Bale Spear horizontally on the bale and spear points about 1/3 of the way below center of bale.
2. With spear level, drive spears into bale until spears are fully inserted and bale is against the hitch frame.

# OPERATION

3. Lift bale up a short distance and tilt spear points up 5 - 10 degrees from horizontal. Check to make sure bale is properly secured before traveling.

## **10.2 Traveling with a Load**

1. Always use Tractors that are properly ballasted for the load being transferred. Not doing so can result in loss of steering control.
2. Only use Tractors with wide front axles and move all wheels out to their widest position for maximum stability.
3. When traveling empty, transport with spear points at a safe height and angle that will not impale a person or livestock.
4. When transporting with a bale, transport with bale fully against the spear frame and with spear points(s) up 5-10 degrees from horizontal. Never transport with bale halfway or more out on the spear(s).
5. When stopped, always lower spear point to the ground so that no person or livestock could walk/run into the spear and become impaled. If spear will not rest on the ground, point spear down to protect people and livestock.
6. Always keep bale centered horizontally on the spear(s). This will optimize stability while transporting.
7. Always transport with bale raised to a height that does not hinder the line of sight going forward. When possible, keep the bale low to the ground to help maintain stability of the Tractor.
8. Reduce ground speed when turning and leave enough clearance to avoid making contact with obstacles such as building, trees, and fences.
9. Transporting bales over ramps, grades, bumpy ground, soft surfaces, or slippery surfaces reduces machine stability and lift capacity. Transporting and lifting bales under these conditions is extremely dangerous.
10. Always travel straight up and down inclines. Never make turns while on an incline and always keep spear point(s) tilted up 5-10 degrees from horizontal regardless of angle of incline.
11. Always Transport over ramps and inclines in excess of 10 percent with bale on the "Uphill" side of the machine. This will require one to drive-up and back down steep inclines.
12. Keep equipment away from electrical power lines. Place an orange warning sign under overhead electrical power lines indication type of danger above.
13. When traveling on public roads at night or during the night or during the day, use accessory lights and devices for adequate warning to operators of other vehicles. Comply with all federal, state, and local laws.
14. When traveling on roadways, transport in such a way that faster moving vehicles may pass you safely.

# OPERATION

## **10.3 Unhooking the Bale Spear**

1. Park Tractor with unit on a flat level solid surface and lower ale Spear on the surface.
2. Place transmission in park, set park brake, shut power equipment off, and remove switch key.

## **11. IMPLEMENT STORAGE**

Clean, inspect, service, and make necessary repairs to the Bale Spear when parking it for long periods and when parking it at the end of a working season. This will help ensure that the unit is ready for use next time you hook up to it.

1. Clean off any dirt and grease that may have accumulated on the bale spear. Scrape off compacted dirt and then wash it surface thoroughly with a garden hose.
2. Inspect bale spear for loose, damaged, or worn parts and adjust or replace when needed.
3. Repaint parts where paint is worn or scratched too prevent rust. Paint is available from your local Bush Hog dealer.
4. Replace all damaged or missing guards and decals.
5. Store bale spear on a level surface in a clean, dry place. Inside storage will reduce maintenance and make for a longer bale spear life.
6. Do not allow children to play on or around the stored bale spear.

## **12. 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*



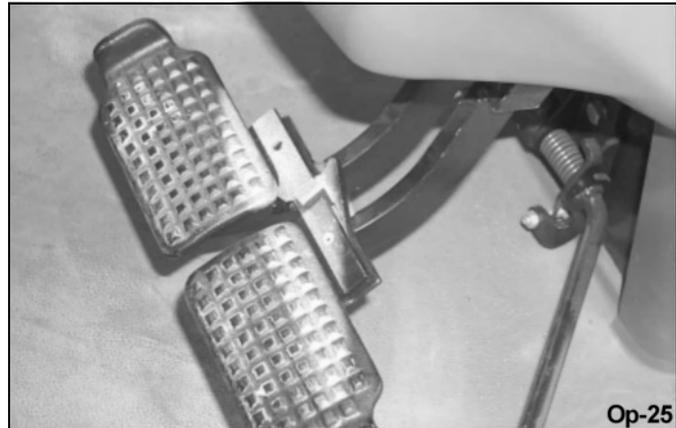
Never allow children or other persons to ride on the Tractor or Implement.  
Falling off can result in serious injury or death. (SG-10)



# OPERATION

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*



## **12.1 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.

Make sure that a proper size safety tow chain is secured between the tractor and implement before entering a public road. *OPS-U- 0019*

### **⚠️ 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)



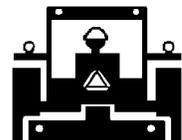
### **⚠️ DANGER**

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



### **⚠️ 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)



# OPERATION

## OPERATION

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*



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-U-0022*



# OPERATION

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



## **12.2 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





# **MAINTENANCE SECTION**

# MAINTENANCE

MAINTENANCE

## Proper Torque For Fasteners

The chart lists the correct tightening torque for fasteners. When bolts are to be tightened or replaced, refer to this chart to determine the grade of bolts and the proper torque except when specific torque values are assigned in manual text.

Recommended Torque in Foot Pounds Unless Otherwise Stated in the Manual\*

**NOTE:** These values apply to fasteners as received from supplier, dry or when lubricated with normal engine oil. They do not apply if special graphited or molydisulphide greases or other extreme pressure lubricants are used. This applies to both UNF fine and UNC coarse threads.

TORQUE SPECIFICATIONS - DRY TORQUE					
Proper torque for American fasteners. Recommended Torque in Foot Pounds (Newton Meters).*					
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 (1208)	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)	

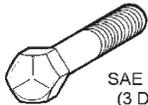
  

Proper torque for Metric fasteners. Recommended torque in Foot Pounds (Newton Meters).*					
WRENCH SIZE (mm) "A"	BOLT DIA. (mm) "B"	ASTM 4.6	ASTM 8.8	ASTM 9.8	ASTM 10.9
8	5	1.8 (2.4)		5.1 (6.9)	6.5 (8.8)
10	6	3 (4)		8.7 (12)	11.1 (15)
13	8	7.3 (10)		21.1 (29)	27 (37)
16	10	14.5 (20)		42 (57)	53 (72)
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)

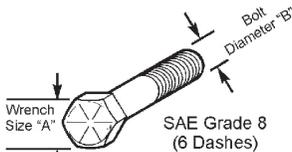
### AMERICAN Bolt Head Markings



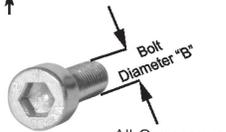
SAE Grade 2  
(No Dashes)



SAE Grade 5  
(3 Dashes)

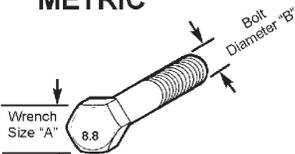


SAE Grade 8  
(6 Dashes)



All Capscrews  
SAE Grade 8

### METRIC



Numbers appearing on bolt heads indicate ASTM class.

\*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.

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Keep children away from danger all day, every day...

Equip tractors with rollover protection (ROPS) and keep all machinery guards in place...

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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