HDSS SUB SOILER

MODEL
HDSS1S, HDSS2S, HDSS1L, HDSS2L

Published 07/13

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. CO1-Cover

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

©2013 Alamo Group Inc.
To the Owner/Operator/Dealer

All implements with moving parts are potentially hazardous. There is no substitute for a cautious, safe-minded operator who recognized 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!

DANGER

TO AVOID SERIOUS INJURY OR DEATH:

- READ AND UNDERSTAND the provided Operator’s Manuals, safety signs and information decals for tractor and implement before operating equipment.

- CONTACT DEALER immediately if you do not have manuals.

- CONTACT DEALER to explain any instructions not fully understood.

- KNOW HOW to stop tractor and equipment quickly for an emergency.

- ALWAYS WEAR safety glasses.

- WEAR hard hat, safety shoes and gloves for protection when operating equipment.

WARRANTY INFORMATION:

Read and understand the complete Warranty Statement found in this Manual. At time of purchase your dealer should register your product with warranty information on line with Bush Hog. Dealer should supply the customer with a printed copy of the completed warranty registration.
# TABLE OF CONTENTS

## SAFETY SECTION
- General Safety Instructions and Practices ................................................................. 1-3
- Operator Safety Instruction and Practices ........................................................................ 1-4
- Equipment Operation Safety Instructions and Practices .................................................. 1-6
- Connecting or Disconnecting Implement Safety Instructions and Practices .................. 1-8
- Maintenance and Service Safety Instructions and Practices ............................................ 1-8
- Concluding Safety Instructions and Practices ................................................................. 1-11

## MAINTENANCE SECTION
- Hauling the Tractor and Implement .............................................................................. 1-10
- Transporting on Public Roadways ................................................................................ 1-10
- Implement Storage ....................................................................................................... 1-11
- Operating the Tractor and Implement ........................................................................... 1-12
- Driving the Tractor and Implement .............................................................................. 1-16

## INTRODUCTION SECTION
- Subsoiler Operation ................................................................................................. 3-1
- Model Specifications .................................................................................................. 3-1
- Connecting the Implement to the Tractor ................................................................. 3-2
- Maintenance ............................................................................................................. 3-3

## OPERATION AND ASSEMBLY SECTION
- Assembly .................................................................................................................. 3-1
- Attaching to Tractor .................................................................................................. 3-1
- Detaching from Tractor ............................................................................................ 3-1
- ROPS and Seat Belt ................................................................................................. 3-1
- Front End Weight ..................................................................................................... 4-3
- Getting On and Off the Tractor ................................................................................ 4-4
- Boarding the Tractor ................................................................................................. 4-4
- Dismounting the Tractor .......................................................................................... 4-5
- Starting the Tractor .................................................................................................. 4-5
- Pre-operation Inspection and Service ....................................................................... 4-7
- Tractor Pre-Operation Inspection/Service ............................................................... 4-8
- Driving the Tractor and Implement .......................................................................... 4-11
- Starting the Tractor .................................................................................................. 4-12
- Connecting the Implement to the Tractor ............................................................... 4-13
- Disconnecting the Implement from the Tractor .................................................... 4-14
- Implement Storage .................................................................................................. 4-14
- Transporting the Tractor and Implement ................................................................ 4-15
- Transporting on Public Roadways .......................................................................... 4-15
- Hauling the Tractor and Implement ......................................................................... 4-17

## MAINTENANCE SECTION
- GENERAL MAINTENANCE .................................................................................. 5-1
- PROPER TORQUE CHART FOR FASTENERS ....................................................... 5-2
- WARRANTY ............................................................................................................ 5-3
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 safety working precautions and above all—remember safety is up to YOU. Only YOU can prevent serious injury or death from unsafe practice.

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

**WARNING** Indicates 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.

**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)

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

**WARNING**

Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. (SG-30)

**WARNING**

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. (SG-31)

**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 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. Stop operating if anyone comes within 25 feet of the equipment. (STL-4)

**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)

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)

**WARNING**

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 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)
SAFETY

**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**
KEEP AWAY FROM ROTATING ELEMENTS to prevent entanglement and possible serious injury or death. (SG-24)

**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)

**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-26)
SAFETY

Avoid contact with hot surfaces of the engine or muffler. 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-38)

Repeated or substantial breathing of hazardous dusts, including crystalline silica, could cause fatal or serious respiratory disease including silicosis. Concrete, masonry, many types of rock, and various other materials contain silica sand. California lists respirable crystalline silica as a substance known to cause cancer. Operation of this equipment under certain conditions may generate airborne dust particles that could contain crystalline silica. In those conditions, personal protective equipment including an appropriate respirator must be used. If excessive dust is generated, a dust collection or suppression system should also be used during operation. (SG-41)

Be sure you have adequate knowledge of the property you will be working on. Take time to make yourself aware of any area underwater or underground lines or cables. Contact with buried lines or cable could result in serious injury or death. (STL-1)

In wet conditions where there is a likelihood of material collecting on the implement, make certain that this material is removed before traveling on public roadways. (STL-7)

Never crawl under a raised implement supported solely by the Tractor 3-Point hitch. Release of the control lever or mechanical failure will result in the Implement falling and possible injury or death. Always securely block up the Implement before crawling underneath to perform repairs and service. (S3PT-19)

Equipment Operation Safety Instructions and Practices

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 this type of items discontinue operating this equipment. (S3PT-21)

Operate this Equipment only with a Tractor equipped with an approved Roll-Over Protective Structure (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

**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 of death. (SG-10)

**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 Manual, been trained in proper operation of the Tractor and Implement, and are physically large enough to reach and operate the controls easily. (SG-13)

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 Operator's Manual for proper starting instructions. (SG-13)

**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)

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

**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 attach 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. Attaching 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. (SG40)

**WARNING**
Many varied objects, such as wire, cable, rope, or chains, can become entangled in the rotating parts of the Implement. These objects could then swing outside the housing at greater velocities than the blades. Such a situation is extremely hazardous and could result in serious injury or even death. Inspect the area for such objects before working in the area. Remove any such objects from the site. Never allow the Implement to contact such objects. (STL-6)

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

**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 a 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. (STL-04)

**Maintenance and Service Safety Instructions and Practices**

**WARNING**
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-8)

**WARNING**
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)

**DANGER**
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)

**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)
SAFETY

**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)

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

**WARNING** Ensure any remote starting system is inoperative before servicing or cleaning the machine. Inadvertent engine start up could result in entanglement or run over causing serious injuries or death. (SSB-17)

**WARNING** Use extreme care when climbing onto the Equipment to perform repairs, maintenance, and cleaning. Use proper stands and ladders to access areas that cannot be reached from ground level. Slipping and falling off the Equipment can cause serious injury or death. (SSB-25)

**WARNING** Exercise care when handling the discs. Disc blades are SHARP and HEAVY. Wear gloves at all time to protect your hands. (STL-10)

**WARNING** DO NOT use your hands or feet to clean the disc gangs. The discs are sharp and serious injuries could result from inadvertent contact with the discs. Never attempt to stand on the discs, tires, or frame members of the Implement. (STL-11)
SAFETY

Transporting Safety Instructions and Practices

**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)

**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 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 steerage. Slow down on rough or uneven surfaces. (STI-01)

**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

**WARNING** 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)

**WARNING** Lock the Subsoiler in the raised position before transporting the Implement. Serious Implement and/or road damage could result from unintentional dropping of the Subsoiler. Be sure to pin the Tractor drawbar rigid in the center position and properly attach the Implement safety tow chain. (STL-9)

**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 Operator’s Manuals. Pay close attention to the Safety Signs affixed to the Tractor and Implement. (SG-18)
SAFETY

Decals Included with Bush Hog’s Implements

Bush Hog supplies safety decals to warn and guide the user in safe operation of every unit. Study the decals below before use of any implement to familiarize yourself with all of the hazards that could present themselves during use. (Some of the decals below may not be included on depending on the implement.)
SAFETY

WARNING
Do not operate without confirmation that coupler pins are fully engaged. Loader attachment can fall off if not properly attached. To avoid serious injury or death:
• Only use loader manufacturer approved attachments.
• Read all operators manuals and decals before operating. Follow all safety, operating, and service instructions. Contact dealer for replacement parts.

CAUTION
TO AVOID SERIOUS INJURY OR DEATH:
• READ OPERATORS MANUAL BEFORE OPERATING AND FOLLOW ALL PRECAUTIONS (CONTACT DEALER FOR MANUAL).

• IT IS RECOMMENDED OPERATOR USE ROLL-OVER PROTECTIVE SYSTEM AND SEAT BELT EQUIPPED TRACTOR FOR ALL IMPLEMENT OPERATIONS.

• ADD TRACTOR FRONT END WEIGHTS REQUIRED FOR TRACTOR STABILITY.

• LOWER IMPLEMENT TO GROUND, STOP ENGINE, PLACE TRANSMISSION IN NEUTRAL OR PARK, SET PARKING BRAKE AND REMOVE KEY BEFORE DISMOUNTING TRACTOR OR ADJUSTING IMPLEMENT.

• ALLOW NO RIDERS.

• TRANSPORT BLADE IN FULL RAISED POSITION WITH TILT AND OFFSET ANGLES AT "ZERO" POSITION.

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

LEA EL INSTRUCTIVO
SAFETY

Sub Soiler Decals

<table>
<thead>
<tr>
<th>Reference No.</th>
<th>Part No.</th>
<th>Description</th>
<th>Quantity Req’d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>50071925</td>
<td>Model Decal HDSS1L</td>
<td>1</td>
</tr>
<tr>
<td>50071938</td>
<td></td>
<td>Model Decal HDSS1S</td>
<td>1</td>
</tr>
<tr>
<td>50071927</td>
<td></td>
<td>Model Decal HDSS2L</td>
<td>1</td>
</tr>
<tr>
<td>50071940</td>
<td></td>
<td>Model Decal HDSS2S</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>N/A</td>
<td>Serial No Decal</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>50057097</td>
<td>Caution Decal</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>90960BH</td>
<td>Warning Decal</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>00725746</td>
<td>Pelegro Decal</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>50062087</td>
<td>Bush Hog Decal</td>
<td>1</td>
</tr>
</tbody>
</table>
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


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 safety 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 that 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

Bush Hog implements 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, instruct, and train. The Assembly Section instructs the owner/operator in the correct assembly of the Implement using standard and optional equipment. The Parts Listing section is designed to familiarize the owner/operator with replaceable parts on the Implement. This section provides exploded assembly drawings of each implement component illustrating each piece and the corresponding part number.

Careful use and timely service save extensive repairs and costly downtime losses. The Operation and Maintenance Sections of the manual train the owner/operator how to work the Implement correctly and attend to appropriate maintenance. The Trouble Shooting Guide helps diagnose difficulties with Implement 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 Implement 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.

![DANGER](image)

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

![WARNING](image)

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

![CAUTION](image)

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

![IMPORTANT!](image)

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

Once you have familiarized yourself with the Operator's Manual, completed the operations checklist, and properly attached your Bush Hog Sub Soiler to your tractor, you are now almost ready to begin work. Make sure you have checked out your work site for any buried utility cables, pipelines, or other obstacles that you wouldn't want to damage or encounter.

Soils can become deeply compacted in areas tracked by heavy equipment during timber harvesting, firefighting, fuel reduction, cultivation, or other forest management operations. Layers of compacted soil restrict the movement of water, air, and roots, reducing the survival and growth of trees and other plants. Compacted layers typically develop 12 to 22 inches below the surface where conventional cultivators can't reach.

These layers require special equipment called Sub Soilers, sometimes known as rippers to fracture them. Subsoiling fractures compacted soil without adversely disturbing plant life, topsoil, and surface residue. Fracturing compacted soil promotes root penetration by reducing soil density and strength, improving moisture infiltration and retention, and increasing air spaces in the soil.

How effectively compacted layers are fractured depends on the soil's moisture, structure, texture, type, composition, porosity, density, and, clay content. Success depends on the type of equipment selected, its configuration, and the speed with which it is pulled through the ground. No one piece of equipment or configuration works best for all situations and soil conditions, making it difficult to define exact specifications for subsoiling equipment and operation. Adjustments will be required for some projects.

Three main factors contribute to effective sub soiling:

- Sub soiling works better during drier soil conditions.
- Winged tips on shanks improve soil fracturing.
- Heavy clay soils are very difficult to break up.

With a little practice you should become a very good operator and consistently achieve the desired results you expect with your Bush Hog Sub Soiler. Please visit www.bushhog.com for more information on this product and our complete line of landscape and skid steer product.
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 Bush Hog within 30 days of delivery of the Implement.
3. Record the Model and Serial Numbers on the Warranty page provided with your Operator’s and Part’s Manual package. Keep this as part of the permanent maintenance file for the Implement.

Note:
QR stamp will direct user to Bush Hog page with list of Operator’s manuals and parts manuals of all products.

Note:
QR stamp will direct user to page with AEM safety training video.
Assembly

**HDSS Model** – Your Bush Hog HDSS model Sub Soiler is shipped fully assembled from the factory. Refer to the parts drawing or contact a Bush Hog dealer for further assistance if needed.

**Warning:** The HDSS1 & HDSS2 come with a ¾” x 4” grade 2 shear bolt installed. The use of higher than grade 2 shear bolt could damage the implement or tractor and void the warranty.

Mounting

**Attaching to Tractor**

The implement should be placed on level ground.

Place the tractor rockshaft control in “position control” (non-floating) for attaching and detaching the rear mounted blade. “Draft Control” or “position control” can be used while operating.

Back the tractor until the ends of the lift arms can be attached to the lift points on the implement. Secure the lift arms to the A-frame with the hitch pins provided.

Attach the center link to the top of the A-frame and adjust so that the implement will be level in the operating position.

**Detaching From Tractor**

Lower the implement to the ground with rockshaft control in position control. Remove the top link from the A-frame and disconnect the hitch arms from the bottom pins and pull the tractor away from the blade.

Model Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>HDSS1S</th>
<th>HDSS1L</th>
<th>HDSS2S</th>
<th>HDSS2L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Sub Soiler Heavy Duty 1 shank short</td>
<td>Sub Soiler Heavy Duty 1 shank long</td>
<td>Sub Soiler Heavy Duty 2 shank short</td>
<td>Sub Soiler Heavy Duty 2 shank long</td>
</tr>
<tr>
<td>Hitch</td>
<td>Cat1/2 Quick Hitch</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over all width</td>
<td>41”</td>
<td>41”</td>
<td>49”</td>
<td>49”</td>
</tr>
<tr>
<td>Overall height</td>
<td>39 1/2”</td>
<td>43 1/2”</td>
<td>39 1/2”</td>
<td>43 1/2”</td>
</tr>
<tr>
<td>Horse power</td>
<td>Approximately 35 hp per shank up to 85 hp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>261</td>
<td>276</td>
<td>420</td>
<td>450</td>
</tr>
<tr>
<td>Shank size</td>
<td>1 1/4” x 9 7/16” x 26 1/8”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Shanks</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Cutting Point</td>
<td>1” x 2 1/2” x 9 3/8”</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**ASSEMBLY and OPERATION**

**Sub Soiler Operation**

For proper operation, level the sub soiler by adjusting the tractor linkage. This will assure that the shank will run straight.

The tractor 3pt. hydraulic lift system should be set to transfer most of the sub soiler’s weight and draft to the maximum traction. (There may not be a 3pt. draft control on some small tractors – Refer to tractor owner’s manual.)

Bush Hog sub soilers can penetrate up to 26” depending on shank size and model. Compacted soil or “hard pan” usually occurs in soil depths of 8 to 14 inches.

Breaking up the hard pan layer will allow better soil drainage and in dry periods, allow plant roots to go deeper to obtain moisture.

Do not attempt to rip or subsoil when the soil is wet. Wet soil will not shatter and may cause more compaction.

It is recommended that you dig a hole or use a soil probe to identify the hard pan layer. The objective is to operate the shank tip just below the hardpan layer.

The deeper you operate the sub soiler, the more tractor horsepower and traction will be required.

In very hard soil or in dry conditions (or with a small tractor), it may not be possible to operate the sub soiler at the desired depth. In these cases, it may be necessary to make several passes increasing depth with each pass until the desired depth is reached.

The best shattering action will be realized at forward speeds of 2 to 5 miles per hour. It is not recommended to exceed 5 MPH as it only increases fuel consumption, horse power required, and wear on the tractor and implement.

Most soil types will require subsoiling every 2 to 3 years. Some soils will require this every year. It is suggested, that if you subsoil a field one direction one year, that you operate the sub soiler diagonal to that direction the next time you subsoil. In some fields it might be best to subsoil at an angle and then again at a cross angle in the following operations.

Subsoiling passes should be from 30” to 48” apart. In garden spots it is suggested to subsoil directly under the row of a planned crop. This will allow the best drainage and root development.

Do not let the shank point wear back so far that wear occurs on the shank or shank foot. Reverse or replace the point to insure the shank or shank foot does not get worn down.

**CAUTION**

**Underground utilities –** Contact appropriate agencies to determine if hazardous items are buried under the field BEFORE OPERATING! Be certain underground utilities have been called to locate underground electric, gas, telephone and other lines. Check your telephone book for calling instructions. Be sure operator is properly informed. WHEN IN DOUBT, DO NOT SUB SOIL!
Maintenance

Keep all nuts and bolts tight. Refer to the Torque Chart for correct torque.

Store the implement out of the weather when it is not in use. This prevents rusting of the shank and other components.

Inspect your implement periodically and replace any worn or broken parts in order to have your implement ready for use when needed.

Shear bolt replacement  (HDSS1 & HDSS2 only) – If the shear bolt is sheared due to hitting an obstruction or operating in very hard ground, replace it with a ¾” x 4” grade 2 bolt. (No markings on the head)

⚠️ WARNING

Warning – the use of a shear bolt higher than grade 2 may result in damage to the implement and void the warranty.
OPERATION

GENERAL OPERATION INSTRUCTIONS

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 Implement, Tractor, or a thrown object. DO NOT operate the Implement if passersby, 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 Implement 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 tillage Implement. Some pictures may show shields removed for purposes of clarity. The operator must be familiar with the Implement and Tractor operation and all associated safety practices before operating the Implement and Tractor and all associated safety practices before operating the Implement and Tractor. Proper operation of Implement, as detailed in this manual, will help ensure years of safe and satisfactory use of the Implement.

IMPORTANT: To avoid Implement damage, re-torque all bolts after the first 10 hours of operation. Refer to the Torque Chart at the end of the Maintenance Section to ensure bolts are properly tightened.

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)
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 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-002

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 the 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

Tractor Requirements and Capabilities

Certified 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 …………… See Model Specification chart
Hitch ………………………………………… See Model Specification chart

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 or 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 Structure (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 or 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 directly on Implements if the visibilities 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. OPSU-0004

4. Tractor Horsepower

The power required to operate an Implement is determined by the Tractor PTO horsepower. For most operating conditions, This Implement requires a Tractor with at least 35HP Per Shank up to 85HP. Operating the Implement with a Tractor that does not have adequate power may damage the Tractor engine. Exceeding required HP may cause Implement damage by overpowering the unit in heavy subsoiling conditions.

4.1 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
5. Getting On and Off the Tractor

Before getting onto the Tractor, the operator must 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)*

5.1 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

5.2 Dismounting the Tractor

Before dismounting, park the Tractor and Implement on a reasonably level surface, apply the parking brake, idle the engine down, 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 handrails. Use all handrails and steps for support and never rush or jump off the Tractor.

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)

6. 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**

**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)
OPERATION

⚠️ **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 Operator’s Manual for proper starting instructions. (SG-13)

7. **Connecting the Implement to the Tractor**

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

⚠️ **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)

7.1 **Connecting the Implement**

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 3-point lift arms positioned between the respective set of equipments A-frame lift lugs. **Note:** Set the 3point 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.
OPERATION

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 road grader 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.

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*

**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)
OPERATION

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 manufacturer’s 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

8.2 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.

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.
- Perform scheduled lubrication as detailed in the maintenance section.
- Ensure all decals are in place and legible.
- Ensure that a properly rated safety tow chain is equipped securing the Implement to the Tractor.
- Before operation check disc blades and spools for breakage or cracking and replace if needed.
OPERATION

Tractor PRE-OPERATION Inspection

Tractor ID#: _________________________  Make: _________________________

Date: _______________________________  Shift: _________________________

**WARNING**: 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>
<thead>
<tr>
<th>ITEM</th>
<th>CONDITION AT START OF SHIFT</th>
<th>SPECIFIC COMMENTS IF NOT OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>The flashing lights function properly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The SMV Sign is clean and visible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The tires are in good condition with proper pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The wheel lug bolts are tight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Tractor brakes are in good condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The steering linkage is in good condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are no visible oil leaks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The hydraulic controls function properly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The ROPS or ROBS Cab is in good condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The seat belt is in place and in good condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The 3-point hitch is in good condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The drawbar pins are securely in place</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The PTO master shield is in place</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The engine oil level is full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The brake fluid level is full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The power steering fluid level is full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The fuel level is adequate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The engine coolant fluid level is full</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The radiator is free of debris</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The air filter is in good condition</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Operator’s Signature: _________________________________________________________________

**DO NOT OPERATOR AN UNSAFE TRACTOR OR IMPLEMENT**
## OPERATION

### Bush Hog Implement PRE-OPERATION Inspection

Blade ID#: _________________________  Make: _________________________

Date: _______________________________  Shift: _________________________

**WARNING** 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>
<thead>
<tr>
<th>ITEM</th>
<th>CONDITION AT START OF SHIFT</th>
<th>SPECIFIC COMMENTS IF NOT OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Operator’s Manual has been read and understood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Safety Decals are in place and legible</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Hitch connection pins are properly retained</td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are no cracks in hitch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All bolts are in place and properly tightened</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All grease fittings and lubrication points have been greased</td>
<td></td>
<td></td>
</tr>
<tr>
<td>All wear items are not chipped, cracked or worn past intended use</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Operator’s Signature: ____________________________

**DO NOT OPERATE AN UNSAFE TRACTOR OR IMPLEMENT**

4-10
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** 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** 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 the other guy. (SG-19)
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. \textit{OPS-U-0003}

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. \textit{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. \textit{OPS-U-0013}

\textbf{\textsc{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

9.3 Driving the Tractor and Implement

Start off driving at a slow speed and gradually increase your speed while maintaining complete control of the Tractor and unit. 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. If the Tractor becomes stuck or the tires are frozen to the ground, reverse the Tractor out to prevent overturning.

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

10. 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. UPS-U-0015

**WARNING** Many varied objects, such as wire, cable, rope, or chains, can become entangled in the rotating parts of the Implement. These objects could then swing outside the housing at greater velocities than the blades. Such a situation is extremely hazardous and could result in serious injury or even death. Inspect the area for such objects before working in the area. Remove any such objects from the site. Never allow the Implement to contact such objects. (STL-6)
OPERATION

11. Disconnecting the Implement from the Tractor
Before disconnecting the Implement move the Implement to a level storage location and lower it to the ground. If the Implement is not resting securely on the ground, block the Implement up securely before attempting to disconnect it from the Tractor.

⚠️ DANGER ⚠️ Use extreme care to keep feet and hands from under the Implement and clear of any pinch points caused by the Tractor hitch arms and Implement pins. Never stand or allow another person to stand between a running Tractor and the Implement when disconnecting the Implement from the Tractor. Always shut the Tractor off completely and set the parking brake before attempting to disconnect the Implement pins from the Tractor hitch.

⚠️ 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. (STL-04)

⚠️ 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)

11.1 Implement 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 grass 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
- Use spray touch-up enamel where necessary to prevent rust and maintain the appearance of the Implement

⚠️ 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 ⚠️ DO NOT use your hands or feet to clean the disc gangs. The discs are sharp and serious injuries could result from inadvertent contact with the discs. Never attempt to stand on the discs, tires, or frame members of the Implement. (STL-11)
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 judgment and following safe transport procedures, the possibility of accidents while moving between locations can be substantially minimized. *OPS-U-0017*

**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)*

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** 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 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*
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 area 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-T-0013*

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*

Arrange the chains so that when tightened, the chains are pulling downward and against themselves. Carefully tighten the securing chains or other fasteners using boomer or binders to apply maximum tension. Use extreme care when attaching and removing the securing devices as the extreme tension involved when released has the potential to inflict serious injury.

While hauling the Tractor and Implement, make occasional stops to check that the Tractor and Implement have not moved or shifted and that the securing chains have maintained tension. If during transport a hard braking, sharp turning, or swerving action was performed, stop at the next safe location to inspect the security of the load. *OPS-U-002*
MAINTENANCE

General Maintenance

1. Grease all grease fittings and lubrication points before each use.
2. Inspect the implement for any worn or damaged parts and replace with a genuine Bush Hog part.
3. Make sure all safety decals are intact and legible.
4. Inspect unit for cracks and chips and repair if necessary. Consult your Bush Hog dealer before any repair is made. Any unauthorized repairs will void the warranty.
5. Keep tires inflated to the proper specification found in this manual if implement is equipped with tires.
6. Check all bolt and nuts to insure they are properly torque. Consult the torque chart found in this manual for torque values.
7. Repack transport wheels, gauge wheels and coulter bearings yearly.

Proper Torque Chart 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 graphite or molydisulphide greases or other extreme pressure lubricants are used. This applies to both UNF fine and UNC coarse threads.
## MAINTENANCE

### TORQUE SPECIFICATIONS

#### Torque Values Chart For Common Bolt Size

<table>
<thead>
<tr>
<th>Bolt size (inches)</th>
<th>Grade 2</th>
<th>Grade 5</th>
<th>Grade 8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N·m</td>
<td>ft-lb</td>
<td>N·m</td>
</tr>
<tr>
<td>1/4&quot;-20</td>
<td>7.4</td>
<td>5.6</td>
<td>11</td>
</tr>
<tr>
<td>1/4&quot;-28</td>
<td>8.5</td>
<td>6.0</td>
<td>13</td>
</tr>
<tr>
<td>5/16&quot;-18</td>
<td>15</td>
<td>11.0</td>
<td>24</td>
</tr>
<tr>
<td>5/16&quot;-24</td>
<td>17</td>
<td>13.0</td>
<td>26</td>
</tr>
<tr>
<td>3/8&quot;-16</td>
<td>27</td>
<td>20.0</td>
<td>42</td>
</tr>
<tr>
<td>3/8&quot;-24</td>
<td>31</td>
<td>22.0</td>
<td>47</td>
</tr>
<tr>
<td>7/16&quot;-14</td>
<td>43</td>
<td>32.0</td>
<td>67</td>
</tr>
<tr>
<td>7/16&quot;-20</td>
<td>49</td>
<td>36.0</td>
<td>75</td>
</tr>
<tr>
<td>1/2&quot;-13</td>
<td>66</td>
<td>49.0</td>
<td>105</td>
</tr>
<tr>
<td>1/2&quot;-20</td>
<td>75</td>
<td>55.0</td>
<td>115</td>
</tr>
<tr>
<td>9/16&quot;-12</td>
<td>95</td>
<td>70.0</td>
<td>150</td>
</tr>
<tr>
<td>9/16&quot;-18</td>
<td>105</td>
<td>79.0</td>
<td>165</td>
</tr>
<tr>
<td>5/8&quot;-11</td>
<td>130</td>
<td>97.0</td>
<td>205</td>
</tr>
<tr>
<td>5/8&quot;-18</td>
<td>150</td>
<td>110.0</td>
<td>230</td>
</tr>
<tr>
<td>3/4&quot;-10</td>
<td>235</td>
<td>170.0</td>
<td>360</td>
</tr>
<tr>
<td>3/4&quot;-16</td>
<td>260</td>
<td>190.0</td>
<td>405</td>
</tr>
<tr>
<td>7/8&quot;-9</td>
<td>225</td>
<td>165.0</td>
<td>585</td>
</tr>
<tr>
<td>7/8&quot;-14</td>
<td>250</td>
<td>185.0</td>
<td>640</td>
</tr>
<tr>
<td>1&quot;-8</td>
<td>340</td>
<td>250.0</td>
<td>875</td>
</tr>
<tr>
<td>1&quot;-12</td>
<td>370</td>
<td>275.0</td>
<td>955</td>
</tr>
<tr>
<td>1 1/8&quot;-7</td>
<td>480</td>
<td>355.0</td>
<td>1080</td>
</tr>
<tr>
<td>1 1/8&quot;-12</td>
<td>540</td>
<td>395.0</td>
<td>1210</td>
</tr>
<tr>
<td>1 1/4&quot;-7</td>
<td>680</td>
<td>500.0</td>
<td>1520</td>
</tr>
<tr>
<td>1 1/4&quot;-12</td>
<td>750</td>
<td>555.0</td>
<td>1680</td>
</tr>
<tr>
<td>1 3/8&quot;-6</td>
<td>890</td>
<td>655.0</td>
<td>1990</td>
</tr>
<tr>
<td>1 3/8&quot;-12</td>
<td>1010</td>
<td>745.0</td>
<td>2270</td>
</tr>
<tr>
<td>1 1/2&quot;-6</td>
<td>1180</td>
<td>870.0</td>
<td>2640</td>
</tr>
<tr>
<td>1 1/2&quot;-12</td>
<td>1330</td>
<td>980.0</td>
<td>2970</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bolt size (Metric)</th>
<th>Class 5.8</th>
<th>Class 8.8</th>
<th>Class 10.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>mm x pitch</td>
<td>N·m</td>
<td>ft-lb</td>
<td>N·m</td>
</tr>
<tr>
<td>M 5 X .8</td>
<td>4</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>M 6 X 1</td>
<td>7</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>M 8 X 1.25</td>
<td>17</td>
<td>12</td>
<td>26</td>
</tr>
<tr>
<td>M 8 X 1</td>
<td>18</td>
<td>13</td>
<td>28</td>
</tr>
<tr>
<td>M10 X 1.5</td>
<td>33</td>
<td>24</td>
<td>52</td>
</tr>
<tr>
<td>M10 X .75</td>
<td>39</td>
<td>29</td>
<td>61</td>
</tr>
<tr>
<td>M12 X 1.75</td>
<td>58</td>
<td>42</td>
<td>91</td>
</tr>
<tr>
<td>M12 X 1.5</td>
<td>60</td>
<td>44</td>
<td>95</td>
</tr>
<tr>
<td>M12 X 1</td>
<td>90</td>
<td>66</td>
<td>105</td>
</tr>
<tr>
<td>M14 X 2</td>
<td>92</td>
<td>68</td>
<td>145</td>
</tr>
<tr>
<td>M14 X 1.5</td>
<td>99</td>
<td>73</td>
<td>155</td>
</tr>
<tr>
<td>M16 X 2</td>
<td>145</td>
<td>105</td>
<td>225</td>
</tr>
<tr>
<td>M16 X 1.5</td>
<td>155</td>
<td>115</td>
<td>240</td>
</tr>
<tr>
<td>M18 X 2.5</td>
<td>195</td>
<td>145</td>
<td>310</td>
</tr>
<tr>
<td>M18 X 1.5</td>
<td>220</td>
<td>165</td>
<td>350</td>
</tr>
<tr>
<td>M20 X 2.5</td>
<td>280</td>
<td>205</td>
<td>440</td>
</tr>
<tr>
<td>M20 X 1.5</td>
<td>310</td>
<td>230</td>
<td>650</td>
</tr>
<tr>
<td>M24 X 3</td>
<td>480</td>
<td>355</td>
<td>760</td>
</tr>
<tr>
<td>M24 X 2</td>
<td>525</td>
<td>390</td>
<td>830</td>
</tr>
<tr>
<td>M36 X 3.5</td>
<td>1730</td>
<td>1270</td>
<td>2650</td>
</tr>
<tr>
<td>M36 X 2</td>
<td>1880</td>
<td>1380</td>
<td>2960</td>
</tr>
</tbody>
</table>

- **in-tpi** = nominal thread diameter in inches-threads per inch
- **N·m** = newton-meters
- **ft-lb** = foot-pounds
- **mm x pitch** = nominal thread diameter in millimeters x thread pitch

Torque tolerance +0%, -15% of torque values. Unless otherwise specified use torque values listed above.
WARRANTY/SERVICE AGREEMENT

Bush Hog, Mfg. strives to deliver equipment free from defects in workmanship or material when set up, and operated in accordance with the recommendations set forth by Bush Hog, Mfg. If you find physical defects in the materials, or the workmanship Bush Hog will repair, or at our option, replace the product at no charge to you for a period of twelve (12) months for non-commercial, state and municipalities use and ninety (90) days for commercial use from the date of retail purchase. This warranty shall not apply to any machine or attachment which has been repaired, or altered outside the Bush Hog manufacturing facility, or authorized Bush Hog, Mfg. dealership, or in any way so as in Bush Hog’s judgment, to affect the stability or reliability, nor which has been subject to misuse, negligence or accident beyond the company recommended machine rated capacity.

To submit a warranty claim, a return authorization from Bush Hog must be obtained. The failed part may then be returned in an untampered status. This warranty does not include freight or delivery charges incurred when returning machinery for servicing. Dealer mileage, service calls and pickup/delivery charges are the customer’s responsibility.

Except as otherwise expressly stated herein, Bush Hog makes no representation or warranty of any kind, expressed or implied, and makes no warranty of merchantability in respect to its machinery and/or attachments are fit for any particular purpose. Bush Hog shall not be liable for incidental or consequential damages for any breach of warranty, including but not limited to inconvenience, rental or replacement equipment, loss of profits or other commercial loss. Upon purchase the buyer assumes all liability for all personal injury and property resulting from the handling, possession or use of the goods by the buyer.

No agent, employee, or representative of Bush Hog has any authority to bind Bush Hog to any affirmation, representation or warranty concerning its machinery and/or attachments except as specifically set forth herein.