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
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!

DANGER

FAILING TO FOLLOW SAFETY MESSAGES AND OPERATING INSTRUCTIONS CAN CAUSE SERIOUS BODILY INJURY OR EVEN DEATH TO OPERATOR AND OTHERS IN THE AREA.

1. Study and understand Operator’s Manuals, Safety Signs, and Instructional Decals for tractor and implement to prevent misuse, abuse and accidents.
   - Learn how to stop engine suddenly in an emergency. Be alert for passersby and especially children.
2. No riders on or near implement or tractor. Allow no riders on tractor or implement. Falling off may cause serious injury or death from being run over by tractor or cutter or contact with rotating blades.
3. Operate only with tractor having Roll-Over Protective Structure (ROPS) and with seatbelt fastened securely and snugly to prevent injury and possible death from falling off or tractor overturn. Personal Protective Equipment such as Hard Hat, Safety Glasses, Safety shoes, and Ear Plugs are recommended.
4. Block up or support raised machine and all lifted components securely before putting hands or feet under or working underneath any lifted components to prevent crushing injury or death from sudden dropping or inadvertent operation of controls. Make certain area is clear before lowering or folding.
5. Before transporting, put Lift Lever in detent or full-lift position. Secure the implement for transport by installing Cylinder Stops or Transport Pin on pull-type implement center axle and Wing Transport Locks on folding implements.
   - Attach Safety Chain to cutter and towing unit securely. See Operator’s Manual.
6. Make certain that SMV sign, Warning Lights, and Reflectors are clearly visible. Follow local traffic codes.
7. Never operate with Cutting Head raised if passersby, bystanders, or traffic are in the area to reduce possibility of injury or death from objects thrown by Blades under Guards or cutter structure.
8. Before dismounting, secure implement in transport position or lower to ground.
   - Put tractor in park or set brake, disengage PTO, stop engine, and remove key, and wait until noise of rotation has ceased to prevent entanglement in rotating parts which can cause injury or death.
   - Never mount or dismount a moving vehicle. Crashing from runover may cause injury or death.

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

Safety Messages

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.

![Safety Alert Symbol]

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.

**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)

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

**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 and Implement without supervision. Make sure the operator has fully read and understood the manuals prior to operation.  
(SG-4)

**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-5)

**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** 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)

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

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

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

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)

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)

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

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

**CAUTION**

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

**WARNING**

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)

**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)
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)

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)

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

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

Do not exceed the rated PTO speed for the Implement. Excessive PTO speeds can cause Implement driveline or blade failures resulting in serious injury or death. (SG-26)
NEVER 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)

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)

Mow only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never mow in darkness or foggy conditions where you cannot clearly see at least 100 yards (90 m) in front and to the sides of the tractor and mower. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris and foreign objects. If you are unable to clearly see these type of items discontinue mowing. (SGM-1)

There are obvious and hidden potential hazards in the operation of this Mower. REMEMBER! This machine is often operated in heavy brush and in heavy weeds. The Blades of this Mower can throw objects if shields are not properly installed and maintained. Serious injury or even death may occur unless care is taken to insure the safety of the operator, bystanders, or passersby in the area. Do not operate this machine with anyone in the immediate area. Stop mowing if anyone is within 100 yards of mower. (SGM-2)

All Safety Shields, Guards and Safety devices including (but not limited to) - the Deflectors, Chain Guards, Steel Guards, Gearbox Shields, PTO integral shields, and Retractable Door Shields should be used and maintained in good working condition. All safety devices should be inspected carefully at least daily for missing or broken components. Missing, broken, or worn items must be replaced at once to reduce the possibility of injury or death from thrown objects, entanglement, or blade contact. (SGM-3)

The rotating parts of this machine have been designed and tested for rugged use. However, the blades could fail upon impact with heavy, solid objects such as metal guard rails and concrete structures. Such impact could cause the broken objects to be thrown outward at very high velocities. To reduce the possibility of property damage, serious injury, or even death, never allow the cutting blades to contact such obstacles. (SGM-4)
SAFETY

WARNING Extreme care should be taken when operating near loose objects such as gravel, rocks, wire, and other debris. Inspect the area before mowing. Foreign objects should be removed from the site to prevent machine damage and/or bodily injury or even death. Any objects that cannot be removed must be clearly marked and carefully avoided by the operator. Stop mowing immediately if blades strike a foreign object. Repair all damage and make certain rotor or blade carrier is balanced before resuming mowing. (SGM-5)

WARNING Many varied objects, such as wire, cable, rope, or chains, can become entangled in the operating parts of the mower head. These items 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 cutting area for such objects before mowing. Remove any like object from the site. Never allow the cutting blades to contact such items. (SGM-6)

WARNING Mow at the speed that you can safely operate and control the tractor and mower. The correct mowing speed depends on terrain condition and grass type, density, and height of cut. Normal ground speed range is from 2 to 5 mph (3-8 kph). Use slow mowing speeds when operating on or near steep slopes, ditches, drop-offs, overhead obstructions, power lines, or when debris and foreign objects are to be avoided. (SGM-7)

WARNING Avoid mowing in reverse direction when possible. Check to make sure there are no persons behind the mower and use extreme care when mowing in reverse. Mow only at a slow ground speed where you can safely operate and control the tractor and mower. Never mow an area that you have not inspected and removed debris or foreign material. (SGM-8)

WARNING Do not put hands or feet under mower decks. Blade Contact can result in serious injury or even death. Stay away until all motion has stopped and the decks are securely blocked up. (SGM-9)

WARNING Replace bent or broken blades with new blades. NEVER ATTEMPT TO STRAIGHTEN, WELD, OR WELD HARDFACING ON BLADES SINCE THIS WILL LIKELY CRACK OR OTHERWISE DAMAGE THE BLADE WITH SUBSEQUENT FAILURE AND POSSIBLE SERIOUS INJURY FROM THROWN BLADES. (SGM-10)
Rotary Mowers are capable under adverse conditions of throwing objects for great distances (300 feet or more) and causing serious injury or death. Follow safety messages carefully.

STOP MOWING IF PASSERSBY ARE WITHIN 100 YARDS UNLESS:

- Front and Rear Deflectors, Chain Guards, or Bands are installed and in good, workable condition;
- Mower sections or Wings are running close to and parallel to the ground without exposed Blades;
- Passersby are outside the existing thrown-object zone;
- All areas have been thoroughly inspected and all foreign material such as rocks, cans, glass, and general debris has been removed.

**NOTE:** Where there are grass and weeds high enough to hide debris that could be struck by the blades, the area should be: inspected and large debris removed, mowed at an intermediate height, inspected, closely with any remaining debris being removed, and mowed again at desired final height. (This will also reduce power required to mow, reduce wear and tear on the Mower drivetrain, spread cut material better, reduce streaking, and make the final cut more uniform). (SRM-1)

**WARNING** Do not let the Blades turn when the Mower Deck is raised for any reason, including clearance or for turning. Raising the Mower deck exposes the Cutting Blades which creates a potentially serious hazard and could cause serious injury or even death from objects thrown from the Blades. (SRM-7)

**WARNING** Never leave the Tractor and Implement unattended while the Implement is in the lifted position. Accidental operation of lifting lever or a hydraulic failure may cause sudden drop of unit with injury or death by crushing. To properly park the implement when disconnecting it from the tractor, lower the stand and put the retaining pin securely in place, or put a secure support under the A-Frame. Lower the implement carefully to the ground. Do not put hands or feet under lifted components. (S3PT-1)

**WARNING** Be particularly careful when transporting the Implement with the Tractor. Turn curves or go up hills only at a low speed and using a gradual steering angle. Rear mounted implements move the center of gravity to the rear and remove weight from the front wheels. Make certain, by adding front ballast, that at least 20% of the tractor’s weight is on the front wheels to prevent rearing up, loss of steering control or Tractor tip-over. Slow down on rough or uneven surfaces to prevent loss of steering control which could result in property damage or possible injury. Do not transport unless 3-Point lift lever is fully raised and in the latched transport position. Dropping implement in transport can cause serious damage to the tractor and/or Implement and possibly cause the operator or others to be injured or killed. (S3PT-2)
SAFETY

There are obvious and hidden potential hazards in the operation of this Implement as in all power-driven or pulled equipment. REMEMBER! This machine is often operated in rough terrain conditions that include tall grass, weeds, gullies, holes, slopes, hidden obstructions and the like. Serious injury or even death may occur unless care is taken to assure the safety of the operator and bystanders in the area. Do not operate this machine with anyone in the immediate area. (S3PT-7)

Make sure the PTO shield, integral driveline shields, and input shields are installed when using PTO-driven equipment. Always replace any shield if it is damaged or missing. (S3PT-8)

Relieve hydraulic pressure prior to doing any maintenance or repair work on the Implement. Place the Implement on the ground or securely blocked up, disengage the PTO, and turn off the tractor engine. Push and pull the Remote Cylinder lever in and out several times prior to starting any maintenance or repair work. (S3PT-9)

The rotating parts of this machine continue to rotate even after the PTO has been turned off. The operator should remain in his seat for 60 seconds after the brake has been set, the PTO disengaged, the tractor turned off, and all evidence of rotation has ceased. (S3PT-10)

"Wait a minute...Save a life!"

Always disconnect the main PTO Driveline from the Tractor before performing service on the Implement. Never work on the Implement with the tractor PTO driveline connected and running. Rotating Parts, Blades or Drivelines could turn without warning and cause immediate entanglement, injury or death. (S3PT-11)

This Implement is 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)

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)
PARTS INFORMATION
Alamo Industrial mowers use balanced and matched system components for blade carriers, blades, cuttershafts, knives, knife hangers, rollers, drivetrain components, and bearings. These parts are made and tested to Alamo Industrial specifications. Non-genuine "will fit" parts do not consistently meet these specifications. The use of “will fit” parts may reduce mower performance, void mower warranties, and present a safety hazard. Use genuine Alamo Industrial mower parts for economy and safety. (SPAM-1)

SEE YOUR ALAMO DEALER
ATTENTION!

This unit was shipped with an Operator’s Manual specifically designed to remain with the unit at all times. This manual is to be stored in the protective canister shipped with this unit. Because it is not feasible to attach the protective canister to the unit directly due to severe conditions in which it operates, the canister must be installed in a secure area such as the operator’s station. Choose a location that allows convenient access by the operator and easily allows removal of the Operator’s Manual. Use the adhesive and/or the included fasteners to securely attach the canister. Operator must read the Operator’s Manual prior to using the unit.
Decal Location
NOTE: Alamo Industrial supplies safety decals on this product to promote safe operation. Damage to the decals may occur while in shipping, use, or reconditioning. Alamo Industrial 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 Alamo Industrial dealer to order replacement decals.

GRIZZLY 36  03/08 Safety Section 1-13

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Decal Description

WARNING! Maintain shields and deflectors in good condition. Failure to do so may lead to injury or even death.

P/N 00769736

DANGER! Keep Away Thrown Objects. Inspect the area before mowing and remove foreign material that could become mower thrown objects.

P/N 00769737

IMPORTANT - Use only Genuine Alamo Industrial replacement parts.

P/N 02925100

DANGER! - Multi Hazard - Failure to follow Safety Messages and Operating Instructions can cause serious bodily injury or even death to Operator and Others in area.

P/N 02967827
DANGER! - Multi Hazard - Failure to follow Safety Messages and Operating Instructions can cause serious bodily injury or even death to Operator and Others in area.

WARNING! Failure to INSPECT and REPAIR or REPLACE Hoses may allow worn Hoses to rupture SUDDENLY and VIOLENTLY with resulting serious BODILY INJURY from SCALDING or FIRE with resulting BURN INJURY or DEATH.

Peligro Translation, If you do not know how to read English, please find someone who knows how to read English.
Slow Moving Vehicle Decal. Keep SMV reflector clean and visible. DO NOT transport or operate without the SMV.
Provided by Tractor Manufacturer. Replace if missing on tractor.

P/N 03200347

Read Operator’s Manual! The operator’s manual is located inside this canister. If the manual is missing order one from your dealer.

P/N 00776031
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 Regulations
OSHA regulations state in part: "At the time of initial assignment and at least annually thereafter, the employer shall instruct every employee in the safe operation and servicing of all equipment with which the employee is, or will be involved."

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

1. Train the employee in the proper and safe operation of the Tractor and Implement.
2. Require that the employee read and fully understand the Tractor and Implement Operator’s manual.
3. Permit only qualified and properly trained employees to operate the Tractor and Implement.
4. Maintain the Tractor and Implement in a safe operational condition and maintain all shields and guards on the equipment.
5. Ensure the Tractor is equipped with a functional ROPS and seat belt and require that the employee operator securely fasten the safety belt and operate with the ROPS in the raised position at all times.
6. Forbid the employee operator to carry additional riders on the Tractor or Implement.
7. Provide the required tools to maintain the Tractor and Implement in a good safe working condition and provide the necessary support devices to secure the equipment safely while performing repairs and service.
8. Require that the employee operator stop operation if bystanders or passerbys come within 25 feet.

Child Labor Under 16 Years of Age
Some regulations specify that no one under the age of 16 may operate power machinery. It is your responsibility to know what these regulations are in your own area or situation. (Refer to U.S. Dept. of Labor, Employment Standard Administration, Wage & Home Division, Child Labor Bulletin #102.)
INTRODUCTION SECTION
The Grizzly 36 is a dependable machine designed specifically for removal of brush, scrub, shrubbery, small trees and other undergrowth in rural areas. This machine is not recommended for use in populated and built-up areas.

The Grizzly 36 utilizes hydraulically driven rotating steel blades, rotating disc with cutter bits, or a rotating arbor with flail hammers. It is usually mounted on the hydraulic boom arm of a tractor, excavator or similar carrier, and employs the hydraulics system of the carrier for operation of the hydraulic drive motor.

A steel shroud encloses the cutting disc to contain the cuttings and direct them downwards. However, it is possible for occasional ricochets to escape from under the shroud, particularly if the Grizzly 36 is tipped away from the horizontal. (See “Safe Section”, Section 1). Special precautions must be taken when using the Grizzly 36 in busy traffic areas.

Under no circumstances will Alamo Industrial accept responsibility or liability for personal injury or property damage resulting from the operation of this machine. DO NOT use this machine in the vicinity of people, animals or structures. Such use is entirely at the risk and responsibility of the operator(s).

The cutter bits are mounted on the rim, upper face and lower face. The disc is mounted on a steel shaft driven directly by the hydraulic motor.

It is the intention of this manual to inform owners and their operators of some of the dangers inherent in the use of this equipment. The machine is an effective, durable and simple tool and when used correctly will provide satisfactory results with minimal danger. These warnings are intended to help ensure that operators and maintenance personnel treat the machine with the respect and care that a powered, edged tool demands and enjoy trouble-free and safe usage. Do not let accidents happen through ignorance, carelessness or improper use.

Shock loads are absorbed by the cross over relief valve on the driven motor.

The brush cutters have been designed to help alleviate the environmental problems associated with the increased use of chemical defoliants.

Suited for clearing roadway or off-highway rights-of-way, clearing of power line underbrush, pipeline rights-of-way, and forestry thinning in dense growth, the brush cutters are both efficient and environmentally acceptable. Brush cutters are so efficient that the operator can pass from dense brush cutting to grass cutting with the same machine.

**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.
The Grizzly 36 has been designed to help alleviate the environmental problems associated with the increased use of chemical defoliants.

Suited for clearing roadway or off-highway right-of-way, clearing of power line underbrush, pipeline right-of-way and forestry thinning in dense growth, the Grizzly 36 is both efficient and environmentally acceptable.

The Grizzly 36 is so efficient that the operator can pass from dense brush cutting to grass cutting with the same machine.

The Grizzly 36 can be adapted to various makes and models of equipment. It is simple and efficient to operate. It's cutting features range from grass to small trees. The maximum material thickness should not exceed 6” in diameter.

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For Non-Agricultural use, OSHA, ASAE, SAE, and ANSI standards require the use of Chain Guards or Solid Skirts at all times. The Cutter manufacturer strongly recommends the use of Chain Guards or Solid Skirts for Agricultural purposes as well, to reduce the risk of property damage, serious bodily injury, or even death from objects thrown out by or from contact with the Cutting Blades.

At least 20% or the tractor’s weight must be on the front tires with the implement lifted to provide adequate traction for safe steering under good conditions. Slow down on hills, rough terrain, and curves.

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

Attention Owner/Operator

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

NOTE: Warranties are honored only if completed “Owner Registration and Warranty” forms are received by Alamo Group within thirty days of delivery of the implement.
3. Record the Blade Model and Serial Numbers on the Warranty page at the front of the Operator’s Manual. Keep this as part of the permanent maintenance file for the implement.

For your safety and to guarantee optimum product reliability, always use Genuine ALAMO INDUSTRIAL replacement parts. The use of inferior "will-fit" parts will void Warranty of your ALAMO INDUSTRIAL implement and may cause premature or catastrophic failure which can result in serious injury or death. If you have any questions concerning the repair parts you are using, contact ALAMO INDUSTRIAL, 1502 E. Walnut Seguin, TX 78155 (830) 372-3551.
ASSEMBLY SECTION
PRE-INSTALLATION
Prior to installing the Grizzly on the carrier, check to make sure that the combination of carrier and Grizzly is correct and is as ordered.

INSTALLATION
The cutter requires a constant flow of hydraulic oil and must be provided with a supply that will not be reduced when another function of the machine is used simultaneously.

The control valve must be of the motor spool type that will allow the Grizzly to gradually slow to a stop rather than "lock up" when the control is moved to the "OFF" position. If a motor spool equipped control valve cannot be provided then a system of circulating check valves must be used in the vicinity of the drive motor.

The control valve may be electrically operated, (HED or STANLEY type), or pressure compensated manual, (Char Lynn etc.). Some operators prefer a dual direction Parker valve, (PARKER #VS 32ACA9).

The drive motor must be provided with a cross over relief valve to protect it from pressure spikes if the blades strike a rock, stump or other immovable object.

If dual rotation is preferred, a dual action cross over relief valve is required.

A drain line must be installed from the motor case to the tank. The case drain is provided to prevent oil from building up behind the output shaft seal. This is particularly important when dual rotation is used. If possible connect the drain line to the upper part of the tank.

The case drain line must be minimum 1/2" single braid to prevent the line from being crimped, thus shutting off the oil flow. There is, normally, very little pressure in this line, however it must remain open to allow any oil behind the seal to escape.

Hydraulic line sizes are important. Pressure lines should be minimum 1” double braid hydraulic lines. The return line must also be 1” but need only be single braid. Note that if dual rotation is used both lines become pressure lines so they both must be double braid.

PRECAUTIONS
The maximum oil pressure permitted with the low pressure gear type motor is 2000 p.s.i. The control valve should be equipped with a pressure relief valve set below 2000 p.s.i.

NOTE: On medium pressure machines a modified gear type motor may be used allowing pressures up to 2500 PSI. High pressure machines use a high pressure piston type motor. This motor is capable of operating at 3500 p.s.i. with a correspondingly lower flow rate.

A CAUTION
The Grizzly control valve must not be engaged at high engine RPM. When dual direction control is used, the direction of rotation must not be changed until the cutter head has slowed to a stop.

NOTE: RPM LIMITATION
The shaft speed of the Grizzly must not, under any circumstances, exceed 1800 RPM. Operation in excess of this maximum RPM may result in damage to component parts and is a safety hazard.

NOTE: This is a typical schematic only, refer to the drawing supplied with the machine you purchased for the appropriate detailed schematic.
HYDRAULIC SCHEMATIC

NOTE: Minimum 65 PSI back pressure must be maintained on return line when Sunstrand Motor equipped.

I. Reservoir
2. Machine Hydraulic Pump
3. Flow Control V-80
4. Solenoid Actuated Hydraulic Valves
5. Pressure Line
6. Motor
7. Cape Drain Seal Blood Line 3/4 SB
8. Hydraulic Cylinders
9. Battery
10. One Way Check Valve
11. Check Valve 65 lbs-C1600
12. Check Valve 5 lbs-C1600
13. Return from Cutter

Asm-R-0306
ALTERNATE HYDRAULIC SCHEMATIC

COMPONENT LIST

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>1</td>
<td>Reservoir</td>
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<tr>
<td>2</td>
<td>Section Screen</td>
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<tr>
<td>3</td>
<td>Pump</td>
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<tr>
<td>4</td>
<td>Control Valve</td>
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<tr>
<td>5</td>
<td>Pressure Hose</td>
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<tr>
<td>6</td>
<td>Motor</td>
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<tr>
<td>7</td>
<td>Case Drain Line</td>
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<tr>
<td></td>
<td>Bleed Line 3/4&quot; SB</td>
</tr>
<tr>
<td>8</td>
<td>Return Filter</td>
</tr>
<tr>
<td>9</td>
<td>Pressure Hose 1&quot; minimum</td>
</tr>
<tr>
<td>10</td>
<td>Cross Over Relief</td>
</tr>
<tr>
<td>11</td>
<td>Check Valve 65 lb.</td>
</tr>
<tr>
<td>12</td>
<td>Check Valve 5 lb.</td>
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<tr>
<td>13</td>
<td>PCM 1620-S</td>
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</tbody>
</table>

When a High Pressure "Sunstrand" Motor is used, the Case Drain Seal Bleed Line must be increased in size to 3/4" SB.
**ALTERNATE HYDRAULIC SCHEMATIC**

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<td>Case Drain Bleed Line 1/2&quot; SB</td>
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</tbody>
</table>

*Complete with Relief but NO Motor Spool - Use Check Valves, 11 & 12.

When a High Pressure *Sunstrand Motor* is used, the Case Drain Bleed Line must be increased to 3/4" SB.

Asm-R-0312

GRIZZLY 36  03/08 Assembly Section 3-6

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ALAMO INDUSTRIAL GRIZZLY 36
OPERATION INSTRUCTIONS

The Grizzly 36 is the one beast that’s tough enough to make any job seem easy. Unlike other brush cutters, it’s made with heavy-duty alloy steel that allows it to withstand harsh applications and debris up to 8” thick. When you have the power of the Grizzly 36 at your side, cutting a path in a forest or clearing land for construction is a breeze. With carbide tipped cutters, model 36MP is a rotary disc-type cutter. This rotary disc flywheel action takes advantage of stored cutting power through increased weight mass which provides excellent torque with limited available horsepower. This design feature excellent mulching ability. Model 36MP will work effectively in material up to 8” in diameter. The rotary blade type of cutter has a 36” cutting swath and is intended for use in material up to 6” in diameter. This model is available with low pressure gear-type or high pressure piston-type drive motors. Model 36 cutters would primarily be installed on mini excavators and smaller rubber-tired backhoes. Alamo Industrial Grizzly 36 Heavy-Duty Tree Cutters are manufactured with quality material by skilled workers. Grizzly 36 cutters are engineered to cut brush, scrub, shrubbery, small trees and other undergrowth in rural areas. The cutter is equipped with protective shroud which encloses the disc to contain the cutting and direct them downwards. The shroud must be maintained on the cutter in good operational condition. The Grizzly 36 may be mounted to excavators or backhoes manufactured by Caterpillar, John Deere, Case, Hyundai, Leibherr, Hitachi, Kobelco, Samsung, Komatsu, JCB, Linkbelt, and other major brands. Not all the models of the Grizzly 36 may be mounted to all models of excavators and backhoes manufactured by those listed above.

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 cutter, excavator, backhoe, or a thrown object. The cutter must be operated with precaution and in the lowered position if bystanders, livestock, pets, or property come within 100 yards of the unit and should not be operated if such items are positioned directly in front of or to the rear of the unit. This section of the Operator’s Manual is designed to familiarize, instruct, and educate safe and proper cutter 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 rotary cutter and are not of a Grizzly cutter. 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 cutter and carrier operation and all associated safety practices before operating the cutter and carrier. Proper operation of the Grizzly 36, as detailed in this manual, will help ensure years of safe and satisfactory use of the cutter.

IMPORTANT: To avoid cutter damage, retorque 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 EXCAVATOR OR BACKHOE MANUAL BEFORE ATTEMPTING TO USE THE EQUIPMENT AND TREE CUTTER. 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 cutter and tractor. OPS-TC-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)
1. Standard Equipment and Specifications

**Disc-Type Cutting Swath**
- Sealed Spherical Bearings
- High Alloy Main Shaft, 4" in diameter
- High Alloy Carbide Tipped Cutters
- Choice of Cutter Bits for Lower Face - Cup or Bullet
- Balanced Disc
- Easily Replaceable Cutter Bits
- Heavy-Duty High Alloy Disc
- Heavy-Duty Cast Steel Bearing Housing
- Heavy-Duty Formed Steel Shroud - 3/8" Plate
- Skirt Stiffener Ring Built into Shroud
- Crossover Relief Drive Motor
- Spare Set of Cutter Bits Shipped with every Cutter
- Hydraulic Motor Guard

**Blade-Type Cutting Swath**
- Sealed Spherical Bearings
- High Alloy Main Shaft, 4" in diameter
- Choice of Blade Material - T360 or Astralloy
- Reversible Cutter Blades
- Easily Replaceable Blade-Bolt Bushings
- Heavy-Duty Formed Steel Shroud
- Flexible Drive Coupling between Drive Motor and Brush cutter shaft
- Crossover Relief Drive Motor protections built into Drive Motor
- Spare set of Blades shipped with every Cutter
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)

- Protective Eye Glasses, Goggles, or Face Shield
- Hard Hat
- Steel Toe Safety Footwear
- Gloves
- Hearing Protection
- Close Fitting Clothing
- Respirator or Filter Mask (depends on operating conditions)  

NEVER 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.  

(DG-27)
3. POWER UNIT REQUIREMENTS

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

Power Unit Requirements and Capabilities

- ASAE approved Roll-Over Protective Structure (ROPS) or ROPS cab and seat belt.
- Power Unit Safety Devices............Slow Moving Vehicle (SMV) emblem, lighting, PTO master shield
- Approximate Weight.....................500 lbs.
- Power Take Off............................540 RPM

3.1 ROPS and Seat Belt

The power unit 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 power unit, especially during a roll over where the driver could be crushed and killed. Only operate the power unit with the ROPS in the raised position and seat belt fastened. Power unit model not equipped with a ROPS and seat belt should have these life saving features installed by an authorized dealer.

3.2 Power Unit Safety Devices

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

Maintain all manufacturer equipped safety shields and guards. Always replace shields and guards that were removed for access to connect, service, or repair the carrier or cutter.

WARNING

Operate this Equipment only with a Power Unit equipped with an approved operator Roll-Over Protective Structure (ROPS). Always wear seat belts. Serious injury or even death could result from falling off the Power Unit—particularly during a turnover when the operator could be pinned under the Operator Protective Structure. (SPU-14)

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3.3 Power Unit Horsepower
The power required to operate a cutter is determined by the power unit PTO horsepower. For most cutting conditions, the Grizzly 36 requires a power unit with 65 HP, respectively. Operating the cutter with a power unit that does not have adequate power may damage the power unit engine.

3.4 Front End Weight
A minimum of 20% total power unit weight must be maintained on the carrier front end at all times. Front end weight is critical to maintain steering control and to prevent the power unit 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-TC- 0004*

3.5 Power Take Off (PTO)
Depending on the unit, the cutter is designed to operate at a PTO speed of 540 or up to 1800 RPM. Most power units operate at either 540, or a combination of 540 and 1000 RPM PTO speeds. The operating speed of the cutter and power unit can be determined by the number of splines on the driveline yoke and PTO output shaft. Those operating at 540 RPM will have a 6-spline shaft and those operating at 1000 RPM will have a 21-spline shaft. **Note:** The cutter will not operate in carriers equipped with a 1000 RPM 20-spline, 1-3/4” shaft. Refer to the power unit owner’s manual for instructions to change PTO speeds on models that operate at more than one speed.

If operating an older model power unit where the power unit’s transmission and PTO utilize one master clutch, an over-running clutch must be used between the PTO output shaft and the driveline of the cutter. An authorized excavator or backhoe dealer can provide the over-running clutch and its installation if needed. *OPS-TC- 0005*

4. GETTING ON AND OFF THE POWER UNIT
Before getting onto the power unit, the operator must read and completely understand the implement and carrier operator manuals. If any part of either manual is not completely understood, consult an authorized dealer for a complete explanation. *OPS-TC- 0006*

**WARNING**
Do not mount the Power Unit while the Power Unit is moving. Mount the Power Unit only when the Power Unit and all moving parts are completely stopped. (SPU-18)

4.1 Boarding the Power Unit
Use both hands and equipped handrails and steps for support when boarding the power unit. Never use control levers for support when mounting the carrier. Seat yourself in the operator’s seat and secure the seat belt around you.

Never allow passengers to ride on the power unit or attached equipment. Riders can easily fall off and be seriously injured or killed from falling off and being ran over. It is the operator’s responsibility to forbid all extra riders at all times. *OPS-TC- 0007*
Never allow children or other persons to ride on the Power Unit or Implement. Falling off can result in serious injury or death. (SPU-16)

Never allow children to operate or ride on the Power Unit or Implement. (SPU-17)

4.2 Dismounting the Power Unit

Before dismounting, park the power unit 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 carrier engine according to the operator’s manual, remove the key, and wait for all motion to completely stop. Never leave the seat until the power unit, its engine and all moving parts have come to a complete stop. Use hand rails and steps when exiting the carrier. 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 power unit. OPS-TC-0008

BEFORE leaving the Power Unit seat, always engage the brake and set the Power Unit transmission in parking gear, disengage the auxiliary hydraulics, stop the engine, remove the key, and wait for all moving parts to stop. Place the Power Unit shift lever into a low range or parking gear to prevent the tractor from rolling. Never dismount a Power Unit that is moving or while the engine is running. Operate the Power Unit controls from the operator seat only. (SPU-15)
5. STARTING THE POWER UNIT

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

Essential Power Unit Controls:
- Locate the light control lever.
- Locate the engine shut off control.
- Locate the brake pedals and the clutch.
- Locate the PTO control.
- Locate the hydraulic remote control levers.

Before starting the power unit ensure the following:
- Conduct all pre-start operation inspection and service according to the carrier 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 hydraulic remote control levers are in the neutral position.
- The carrier transmission levers are in park or neutral.

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

After the power unit engine is running, avoid accidental contact with the power unit transmission to prevent sudden and unexpected movement. *OPS-TC-0009*

![DANGER](image)

Start the Power Unit only when properly seated in the Power Unit seat. Starting a Power Unit in gear can result in injury or death. Read the Power Unit Operator’s Manual for proper starting instructions. *(SPU-19)*

6. CONNECTING THE CUTTER TO THE POWER UNIT

Use extreme caution when connecting the cutter to the power unit. The cutter should be securely resting at ground level or setting on blocks. Keep hands and feet from under the cutter deck and clear of pinch points between the power unit hitch arms and cutter pins. *OPS-TC-0010*

![DANGER](image)

Always shut the Power Unit 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 Power Unit hitches. *(SPU-32)*
7. PRE-OPERATION INSPECTION AND SERVICE

Before each use, a pre-operation inspection and service of the cutter 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 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-TC-0011*

**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)*

**DANGER**

Always disconnect the auxiliary hydraulic couplers from the Power Unit before performing service on the Implement. Never work on the Implement with the Power Unit auxiliary hydraulics connected. Rotating parts such as blades could turn without warning and cause immediate entanglement, injury or death. *(SPU-31)*

**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)*
7.1 Power Unit Pre-Operation Inspection/Service

Refer to the power unit 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
- Power Unit’s lights are clean and functional
- Power Unit Seat belt is in good condition
- Power Unit ROPS is in good condition
- ROPS is in the raised position
- No power unit 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

7.2 Cutter Pre-Operation Inspection/Service

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

- Ensure all decals are in place and legible.
- Check frame and shroud for damage.
- Check all cutter blades/bits for condition and retention.
- Check motor and motor baseplate bolts for security.
- Check main shaft and cutters for wire, rope or other material wrapped around.
OPERATION

- Check mounting pins from Grizzly to carrier for security and wear.
- Check all mounting adapter bolts.
- Lubricate hinge pin from Grizzly to Carrier with good quality grease.
- Check hydraulic lines and connections for chafing, leaks or looseness.
- Check hydraulic oil level in tank, top up as necessary. *OPS-TC-0034*

**DANGER**  All Safety Shields, Guards and Safety devices including (but not limited to) - the Deflectors, Chain Guards, Steel Guards, Gearbox Shields, PTO integral shields, and Retractable Door Shields should be used and maintained in good working condition. All safety devices should be inspected carefully at least daily for missing or broken components. Missing, broken, or worn items must be replaced at once to reduce the possibility of injury or death from thrown objects, entanglement, or blade contact. *(SGM-3)*

- Inspect the oil level.
- Lubricate upper and lower bearing. Use Shell EP2 or equal. Do not overgrease, one pump of a hand gun is usually sufficient. Overgreasing will cause high bearing housing temperature. *OPS-TC-0035*

**DANGER**  Replace bent or broken blades with new blades. NEVER ATTEMPT TO STRAIGHTEN, WELD, OR WELD HARDFACING ON BLADES SINCE THIS WILL LIKELY CRACK OR OTHERWISE DAMAGE THE BLADE WITH SUBSEQUENT FAILURE AND POSSIBLE SERIOUS INJURY FROM THROWN BLADES. *(SGM-10)*
7.3 Cutting Component Inspection

Inspect blade pan and blade assembly for the following:

*OPS-U-0031*

**Damaged Pan**

*Cause:* Blade Pan contacts an immovable object while mower was in motion.

*Remedy:* Inspect the area before mowing to determine where the immovable objects are located and place visible hazard markers to identify the areas. Avoid mowing in the area where immovable foreign objects exist.

**Notches and Gouges**

*Cause:* Blade contacting foreign objects

*Remedy:* Inspect the area to be mowed and remove foreign objects that could cause damage to the blades

**Excessive Blade Wear**

*Cause:* Mower height set too low.

*Remedy:* Replace blades more often. Adjust mower height for mowing conditions to eliminate blade-to-ground contact

---

**DANGER**

Inspect the Blades daily for abnormal wear. REPLACE BOTH BLADES on that carrier IMMEDIATELY if either blade has:

- Become bent or deformed from it's original shape or
- Any cracks are visible, or
- Deep gouges in the blade's surface are present, or
- Gouges or chipped areas in the cutting edge are larger than 1/2" (12.7mm), or
- The material on the leading edge has been worn away by more than 1/2 (12.7mm)"

Failure to replace abnormally worn blades may lead to catastrophic failure of the blades and ejection of the broken part with tremendous force which may cause serious bodily injury or death. *OPS-U-0032*
7.4 Blade Bolt Inspection

Inspect Blade Bolt Head daily for wear as followed:

**Excessive Blade Bolt Wear**
*Cause:* Blade Bolt contacts a foreign or solid object while Blade is in motion.

*Remedy:* Inspect the area before mowing to determine where the foreign objects are located and place visible hazard markers to identify the areas where immovable foreign objects exist, and avoid hitting the objects.

**Notches and Gouges**
*Cause:* Blade Bolt contacting foreign objects

*Remedy:* Inspect area to be mowed and remove foreign objects that could cause damage to the blade bolts.

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**DANGER**

Inspect the Blade Bolt Heads daily for abnormal wear. REPLACE BOTH BLADE BOLTS on the Blades IMMEDIATELY if either blade bolts has:

- Visible cracks or
- If the blade bolt crown is worn off or
- If Blade Bolt has gouges or chipped areas.

Failure to replace abnormally worn blade bolts may lead to catastrophic failure of the blades and ejection of the broken part which may cause serious bodily injury or death.

*Always replace Blade Bolts with new bolts whenever replacing the Blades.*  *OPS-U-0037*

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8. DRIVING THE POWER UNIT AND TREE CUTTER

Safe power unit transport requires the operator possess a thorough knowledge of the model being operated and precautions to take while driving with an attached cutter. Ensure the power unit has the capacity to handle the weight of the cutter and the power unit operating controls are set for safe transport. To ensure safety while driving the power unit with an attached cutter, review the following.  *OPS-TC- 0014*
Never run the Power Unit engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous to your health. (SPU-23)

Transport only at safe speeds. Serious accidents and injuries can result from operating this equipment at unsafe speeds. Understand the Power Unit and Implement and how it handles before transporting on streets and highways. Make sure the Power Unit steering and brakes are in good condition and operate properly.

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

- Test the Power Unit at a slow speed and increase the speed slowly. Apply the Brakes smoothly to determine the stopping characteristics of the Power Unit and Implement. As you increase the speed of the Power Unit the stopping distance increases. Determine the maximum safe transport speed for you and this Equipment.
- Test the equipment at a slow speed in turns. Increase the speed through the turn only after you determine that it is safe to operate 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 safe turning speed for you and this equipment before operating on roads or uneven ground.
- Only transport the Power Unit and Implement at the speeds that you have determined are safe and which allow you to properly control the equipment.

Be aware of the operating conditions. Do not operate the Power Unit 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. When operating in traffic always use the Power Unit’s flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy. (SPU-21)

8.1 Starting the Power Unit

The procedure to start the power unit is model specific. Refer to the power unit operator’s manual for starting procedures for your particular power unit. 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 power unit. OPS-TC-0015
8.2 Brake and Differential Lock Setting

Make sure the power unit brakes are in good operating condition. Power unit 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 power unit differential lock when turning. When engaged the differential lock will prevent or limit the power unit from turning. During normal cutting conditions, locking the differential provides no benefit and should not be used. OPS-TC-0016

Be aware of the operating conditions. Do not operate the power unit 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 power unit’s flashing warning lights and reduce your speed. Be aware of traffic around you and watch out for the other guy.

8.3 Driving the Power Unit and Cutter

Start off driving at a slow speed and gradually increase your speed while maintaining complete control of the power unit and cutter. Moving slowly at first will also prevent the power unit from rearing up and loss of steering control. The power unit 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 power unit immediately as the carrier will be difficult to control.

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

To avoid overturns, drive the power unit with care and at safe speeds, especially when operating over rough ground, crossing ditches or slopes, and turning corners. Power unit 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 carrier in a low gear when going downhill. DO NOT coast or free-wheel downhill. OPS-TC-0017

Always keep a careful lookout and use extreme care when working around overhead obstructions. Never allow the Mower head or boom within 10 feet of any power line. When working close to overhead power lines consult your electric company for a safe code of operation.

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Never Leave the mower unattended while the head is in the raised position. The mower could fall causing serious injury to anyone who might inadvertently be under the mower. (SBM-4)

9. OPERATING THE POWER UNIT AND CUTTER

THE OPERATOR MUST COMPLETELY UNDERSTAND HOW TO OPERATE THE POWER UNIT AND CUTTER AND ALL CONTROLS BEFORE ATTEMPTING TO OPERATE. The operator must read and understand the Safety and Operation Sections of the cutter and power unit operator’s manuals. These manuals must be read and explained to any operator who cannot read. Never allow someone to operate the cutter and power unit 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.

Extreme care should be taken when operating near loose objects such as gravel, rocks, wire, and other debris. Inspect the area before mowing. Foreign objects should be removed from the site to prevent machine damage and/or bodily injury or even death. Any objects that cannot be removed must be clearly marked and carefully avoided by the operator. Stop mowing immediately if blades strike a foreign object. Repair all damage and make certain rotor or blade carrier is balanced before resuming mowing. (SGM-5)

Many varied objects, such as wire, cable, rope, or chains, can become entangled in the operating parts of the mower head. These items 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 cutting area for such objects before mowing. Remove any like object from the site. Never allow the cutting blades to contact such items. (SGM-6)
9.1 Foreign Debris Hazards
Before cutting, inspect the area to make sure there are no foreign objects that the cutter blades could hit or become entangled with. Remove all foreign objects and debris. If objects are too big to remove, mark them clearly and be sure to prevent the mower blades from contacting them. If you hit a solid object or foreign debris, stop the cutter and power unit at once. Immediately idle the engine speed and disengage the PTO. Wait for all cutter rotating motion to stop, then raise the cutter and move the power unit and implement off the object. Inspect the area and remove, or mark the location of the debris. Inspect the condition of the cutter and make any needed repairs immediately. Make sure the blades are not damaged and the carrier is balanced before resuming operation. Always wear your seat belt securely fastened and only operate the power unit and cutter with the ROPS in the raised position. If the power unit or cutter hits a tree stump, rock, or bump, a sudden movement could throw you off of the seat and under the power unit and/or cutter. The seat belt is your best protection from falling off the carrier and the ROPS provides protection from being crushed during a power unit roll-over. OPS-TC-0019

9.2 Bystanders/Passersby Precautions
If a bystander comes within 300 feet of the power unit while the cutter is being operated, stop the power unit at once, idle the engine and disengage the PTO. Do not engage the PTO again until all bystanders are well past the 300 foot distance. OPS-TC-0020
OPERATION

**DANGER** Rotary Mowers are capable under adverse conditions of throwing objects for great distances (300 feet or more) and causing serious injury or death. Follow safety messages carefully.

STOP MOWING IF PASSERSBY ARE WITHIN 100 YARDS UNLESS:
- Front and Rear Deflectors, Chain Guards, or Bands are installed and in good, workable condition;
- Mower sections or Wings are running close to and parallel to the ground without exposed Blades;
- Passersby are outside the existing thrown-object zone;
- All areas have been thoroughly inspected and all foreign material such as rocks, cans, glass, and general debris has been removed.

**NOTE:** Where there are grass and weeds high enough to hide debris that could be struck by the blades, the area should be inspected and large debris removed, mowed at an intermediate height, inspected, closely with any remaining debris being removed, and mowed again at desired final height. (This will also reduce power required to mow, reduce wear and tear on the Mower drivetrain, spread cut material better, reduce streaking, and make the final cut more uniform). (SRM-1)

**9.3 Operating Speed and Ground Speed**

Ground speed for cutting will depend upon the height, type, and density of vegetation to be cut. Recommended speed for efficient cutter performance is between 1 and 3 mph. Operate the cutter at its full rated PTO speed to maintain blade speed for a clean cut. Refer to the power unit operator’s manual or the power unit instrument panel for the engine speed and gear to provide the required PTO and desired ground speed. Make sure that the cutter is operating at its full rated speed before entering the vegetation to be cut. If it becomes necessary to temporarily regulate engine speed, increase or decrease the throttle gradually. Ground speed is achieved by transmission gear selection and not by the engine operating speed. The operator may be required to experiment with several gear range combinations to determine the best gear and range which provides the most ideal performance from the cutter and most efficient power unit operation. As the severity of cutting conditions increase, the ground speed should be decreased by selecting a lower gear to maintain the proper operating PTO speed. **OPS-TC-0022**

**WARNING** Do not exceed the rated PTO speed for the Implement. Excessive PTO speeds can cause Implement driveline or blade failures resulting in serious injury or death. (SG-26)

**WARNING** DO NOT EXCEED 1800 RPM. The shaft speed of the Grizzly must not - UNDER ANY CIRCUMSTANCES - exceed 1800. Operation in excess of the maximum RPM may result in damage to component parts and is a safety hazard.
9.4 Operating the Cutter

The cutter is designed to cut vegetative material up to 8” in diameter. The power unit and cutter can be operated by driving across growth that a properly rated power unit can safely pass over. This includes grass, brush, small trees and other type of growth up to about 3” in diameter.

To cut larger vegetation (up to 8” maximum diameter), slowly position the cutter into the material. Use extreme care when backing the power unit and cutter. Allow the cutter sufficient time to cut through the material and maintain the operating speed to prevent overloading the cutter and power unit. Only raise the retractable rear guard while backing into areas to be cut. The guard must be maintained in the lowered position at all other times. *OPS-TC-0023*

**WARNING**

Mow only in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never mow in darkness or foggy conditions where you cannot clearly see at least 100 yards in front and to the sides of the Power Unit and mower. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, debris and foreign objects. If you are unable to clearly see these types of items discontinue mowing. *(SPU-27)*

**WARNING**

Never mow in the reverse direction. The Power Unit’s operator protective structure obstructs the operator’s visibility of the unit’s path when traveling in the reverse direction. *(SPU-8)*
9.5 Operating Instructions

Startup

1. With the Control Valve in the “OFF” position, start up the machine. Bring it up to operating temperature and check the hydraulic pressure to ensure it is within the operating range. Once it is warmed up reduce the engine speed to “IDLE”.

2. With the Grizzly 36 horizontal to and about a foot or more above clear ground, momentarily move the Control Valve to the “CUT” position, then return it to “OFF”. As long as no usual noises are heard from the Grizzly 36, tilt the Grizzly 36 towards the cab so that the operator can see the blades rotating as they slow down. The cutter should rotate freely. If it does, the Grizzly 36 is ready for use. If it doesn’t, follow the maintenance procedures in the Maintenance Section to determine the cause.

3. Note the direction of rotation. Normal rotation is clockwise (looking down on the top of the Grizzly). Note the arrow on the top of the shroud which indicates normal direction of rotation. Once the direction of rotation has been determined to be correct and the Control Valve notation indicates the correct direction (in the case of dual direction installations), return the Grizzly 36 to the horizontal position a foot or so above the ground and run it up to speed. It will probably be necessary to increase the engine speed to provide adequate hydraulic pressure/volume to reach maximum shaft speed.

4. Once it is verified that everything is working satisfactorily, shut the machine down.

Normal Operation

CAUTION

First, inspect the area to be cut. Walk through the area looking for rocks, boulders, culverts, stumps, etc. Mark the area with flags.

1. Drive the power unit to the start of the inspected area, lower the cutter head close to the material to be cleared and engage the cutter. Always engage the cutter with the power unit engine at IDLE to avoid damage to the coupling.

2. Increase the engine speed to bring the cutter speed up to operational level. DO NOT EXCEED 1800 RPM shaft speed. Lower the cutter to the material.

3. The “GATE” on the cutter shroud is normally on the “front” side of the shroud so the cutting swath is customarily outwards from the power unit.

4. Starting close to the power unit, cut or clear the material by sweeping the cutter outwards, then returning over the cleared area to start the next swath. Keep the cutting head parallel to the ground as far as possible to keep the debris from spraying outwards. Stop immediately and shut off the engine if the cutter hits a solid object, or vibrates excessively, and inspect for damage.
Do not operate the Grizzly 36 within 10 feet of overhead power lines.

The operator’s cab must be protected with a strong wire screen. Avoid cutting with the head tilted at such an angle that objects could be thrown towards the cab.

Only engage the cutting head with the engine at IDLE. Provide a locking device to prevent accidental engagement when the operator is out of the cab.

Only mow where you have good visibility and can clearly see the ground and surrounding area that you are working in. Reduce speed when vision of the area is reduced or if you are avoiding foreign debris.

Follow these guidelines to reduce the risk of equipment and grass fires while operating, servicing, and repairing the Mower and Tractor:
- Equip the Tractor with a fire extinguisher in an accessible location.
- Do not operate the Mower on a Tractor with an underframe exhaust.
- Do not smoke or have an open flame near the Mower and Tractor.
- Do not drive into burning debris or freshly burnt areas.
- Ensure slip clutches are properly adjusted to prevent excessive slippage and plate heating.
- Never allow clippings or debris to collect near drivelines, slip clutches, and gearboxes.
- Periodically shut down the Tractor and Mower and clean clippings and collected debris from the mower deck. (SGM-12)

When you get to the end of a pass, slightly raise the cutter (2-4") before turning. Never raise the cutter entirely while the blades are turning. If the cutter must be raised higher than 12" from ground level, disengage the power unit PTO and wait for all cutter rotation to come to a complete stop before proceeding to raise the cutter. 
OPS-TC-0024

Do not let the Blades turn when the Mower Deck is raised for any reason, including clearance or for turning. Raising the Mower deck exposes the Cutting Blades which creates a potentially serious hazard and could cause serious injury or even death from objects thrown from the Blades. (SRM-7)

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

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9.6 Shutting Down the Cutter
To shut down the cutter, first bring the power unit to a complete stop. Then slow down the cutter by reducing the engine speed before disengaging the PTO. Wait for all rotating motion to stop before proceeding to drive or shut down the cutter. The momentum created by the blade carrier weight and lack of resistance resulting from the overrunning clutch result in the blades turning for an extended period of time after the PTO had been disengaged.

Park the power unit on a level surface, place the transmission in park or neutral and apply the parking brake, lower the attached cutter to the ground, shut down the engine, remove the key, and wait for all motion to come to a complete stop. Push and pull the hydraulic remote control lever several times to relieve hydraulic pressure before exiting the power unit. **OPS-TC-0027**

10. DISCONNECTING THE CUTTER FROM THE POWER UNIT
Before disconnecting the cutter, the PTO must be disengaged and blade rotation at a complete stop. Move the cutter to a level storage location and lower it to the ground. If the cutter is not resting securely on the ground, block the cutter up securely before attempting to disconnect it from the carrier. Use extreme care to keep feet and hands from under the cutter and clear of any pinch points caused by the power unit hitch arms and cutter pins. **OPS-TC-0028**

⚠️ **DANGER**
Always shut the Power Unit 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 Power Unit hitches. **(SPU-32)**

⚠️ **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. CUTTER STORAGE

Properly preparing and storing the cutter 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 cutter to prevent damage from rotting grass and standing water.
• Lubricate all cutter grease points and fill gearbox oil levels as detailed in the maintenance section.
• Tighten all bolts and pins to the recommended torque.
• Check the cutter for worn and damaged parts. Perform repairs and make replacements immediately so that the cutter will be ready for use at the start of the next season.
• Store the cutter in a clean, dry place with the mower housing resting securely on blocks or at ground level.
• Keep the driveline yoke from sitting in water, dirt and other contaminants.
• Use spray touch-up enamel where necessary to prevent rust and maintain the appearance of the cutter.

It is critical that driveline clutches slip when an obstacle or heavy load is encountered to avoid cutter and/or power unit damage. If the cutter sits outside for an extended period of time or is exposed to rain and/or humid air, the clutch lining plates must be inspected to ensure they are not frozen together from rust or corrosion. If the cutter has been exposed to such conditions, at the start of each cutting season, and any time it is suspected that the slip clutch plates may be frozen together, readjust the slip clutch as detailed in Seasonal Clutch Maintenance of the maintenance section in this manual. **OPS-TC-0030**

**DANGER**

Never allow children to play on or around Power Unit or Implement. Children can slip or fall off the Equipment and be injured or killed. Children can cause the Implement to shift or fall crushing themselves or others.  **(SPU-24)**

12. TRANSPORTING THE CARRIER AND CUTTER

Inherent dangers of operating the power unit 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 power unit and cutter between locations. By using good judgement and following safe transport procedures, the possibility of accidents while moving between locations can be substantially minimized. **OPS-TC- 0031**

**DANGER**

Never allow children or other persons to ride on the Power Unit or Implement. Falling off can result in serious injury or death.  **(SPU-16)**
Before transporting the power unit and cutter, idle the power unit engine, disengage the PTO and wait for all cutter moving parts to come to a complete stop. Once all cutter parts are completely stopped, raise the cutter to transport height. **NOTE:** When raising the power unit, maintain 1” clearance between the driveline and cutter. If additional cutter height is needed for safe transport, disconnect the driveline from the power unit and secure its end to the cutter deck. The cutter can then be raised to the maximum lift height. **OPS-TC-0032**

Before transporting the power unit on a public roadway or boarding a trailer for transport, the power unit 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 power unit brakes when towing heavy loads at road speeds. Never tow the implement at speeds greater than 20 MPH. **OPS-TC-0037**

### 12.1 Transporting on Public Roadways

Extreme caution should be used when transporting the power unit and cutter on public roadways. The power unit must be equipped with all required safety warning features including a SMV emblem and flashing warning lights to alert drivers of the power unit’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 power unit’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 power unit and cutter before entering a public road. **OPS-TC-0038**

**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 Power Unit flashing warning lights and follow all local traffic regulations. **(SPU-13)**
The SMV (Slow-Moving Vehicle) emblem is a 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 power unit and cutter on a public roadway. Replace the SMV emblem if faded, damaged, or no longer reflective.  

Make sure that all power unit flashing warning lights, headlights, and brake/tail lights are functioning properly before proceeding onto public roads. While newer model excavators and backhoes have plenty of lighting to provide warning signals and operating lighting, most older models are only equipped with operating lights. Consult an authorized excavator or backhoe dealer for lighting kits and modifications available to upgrade the lighting on older power unit models.  

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 excavators and backhoes. Always stay alert when transporting the power unit and cutter on public roads. Use caution and reduce speed if other vehicles or pedestrians are in the area.
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 Power Unit and Implement**

Before transporting a loaded power unit 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-TC-0042*

Use adequately sized and rated trailers and equipment to transport the power unit 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 power unit utilizing the proper tie down locations as specified by the power unit manufacturer. *OPS-TC-0043*
Arrange the chains so that when tightened, the chains are pulling downward and against themselves. Carefully tighten the securing chains or other fasteners using boomers 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 power unit and implement, make occasional stops to check that the power unit 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-TC-0044*
### 13. TROUBLESHOOTING GUIDE

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<td>Cutter Windrowing</td>
<td>Cutting heavy material.</td>
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MAINTENANCE

General Maintenance

The importance of regular maintenance as a means of prolonging the life and maintaining the efficiency of the Grizzly 36 cannot be overemphasized. For lubrication, use Shell EP2 grease or equal. The bearings are packing during assembly. Each bearings should be given one “shot” of grease with a hand gun each day (8 hour shift) before starting up. DO NOT OVERGREASE. A hot bearing housing usually indicates over greasing.

Cutter bits may become damaged due to rock impact. It is not necessary to throw away a cutter bit if the carbide insert is lost. The cutters may be built up with hard surface rod. The cutter must be preheated to 300 degrees F. Build up with hard surface rod (e.g. Artec Ecoface 60) and post heat then cool slowly. The disc is balanced at the time of manufacturing. Cutter bits must be of equal weight. If cutter bits are hard surfaced, they must be weighed. All outer rim bits must be of equal weight to insure balanced operation.

Blades may be sharpened as necessary. It is imperative, however, that the weight of each blade in a pair be the same. Maximum variation in weight must not exceed 2 oz. After sharpening, file any burrs from the blades and flail arm. Clean the blade bolt and check the fit to the bushing in the flail arm. Replace the bushing when 50% of the thickness is worn away. Replace the bolt when the shoulder diameter is 2” in any direction or the pin diameter reaches 1-1/8” minimum. Replace the blade when the hole reaches 2-1/2” diameter in any direction. Lightly oil the bolt and bushing before reassembling. Use new cotter pins in the slotted nuts.

The cutter bits, blades and flail arms are constructed of specially treated steel of specific composition to withstand the stresses of operation on the Grizzly. Replace only with genuine Alamo parts. Do not repair except as noted in paragraph 3.

Many other parts on the Grizzly 36 are of special construction, treatment or composition. These items which are clearly indicated on the Parts list must always be replaced by genuine Alamo parts. Other items may be replaced from local suppliers provided they are of equal quality and specification.

At some point in time the bearing will wear out sufficiently to require replacing. Since this will only occur after many hours of use, it will be appropriate to carefully inspect the shaft, arm, and/or disc for stress damage at that time while the Grizzly 36 is disassembled. If at all possible, have these parts magna-fluxed. If doubtful concerning either the condition or procedure, contact Alamo or their authorized representative.
Disassembly
1. Disconnect and plug the hydraulic lines. Plug the hydraulic connection on the motor.
2. Undo the bolts and nuts and remove the disc.
3. Undo the bolts on motor and remove the motor.
4. Undo the bolts on motor plate and remove plate.
5. Undo bolts on BIKON lock assembly and use bolts to remove lock.
6. Undo housing bolts and remove housing.
7. Undo locknut and lockwasher and remove.
8. Remove shaft from housing.
9. Remove bearing from housing.
10. Using a large pair of snap ring pliers, remove retaining ring from the bottom of the housing.
11. Remove bottom cover from housing.
12. Wash all parts in solvent and inspect carefully for damage or excessive wear. Magnaflux the shaft while disassembled.
13. When ordering replacement parts, refer to Parts Section for correct part numbers and ensure that all parts are genuine Alamo parts. **DO NOT** use substitutes.

Assembly
1. As a general rule, always use new oil seal, lockwashers and lockwire when reassembling.
2. Pack the bearing with grease.
3. Press the lower bearing onto the shaft, then press the shaft and bearing into the bearing housing from the bottom.
4. Press the upper bearing into the housing and onto the shaft.
5. Press the oil seal into the lower cover. Apply gasket compound to the cover and secure in place with the retaining ring.
6. Position the lockwasher and then tighten the locknut on the shaft.
7. Pump six to eight shots of grease into each bearing while rotating the shaft.
8. Install spacer.
9. Place the shaft and housing assembly into the frame and bolt in place.
10. Install motor plate and wire bolts.
11. Install BIKON lock assembly flush with end of hub and install the whole coupling assembly flush with the end of the shaft.
12. Install disc.
13. Install motor.
14. Connect all hydraulic lines and bleed the system. Check manually for free rotation of the shaft and disc. Make sure all fastenings are securely wired or pinned.
SERIES II MODEL

Disassembly
1. Discount and plug the hydraulic lines. Plug the hydraulic connections on the motor.
2. Undo the bolts and remove cutting tool (flail arm, flail disc or mulching disc).
4. Undo bolts on clamp hub and remove. Keep round keys with the hub.
5. Undo bolts attaching motor mount plate and remove with dowels attached.
6. Remove QM “Quick-Flex” Coupling Assembly by first sliding the splined hub off the insert. Second, remove the lower snap ring that retains the cover. Third, slide the insert off the lower hub. Finally, loosen the screws holding the taper-lock bushing onto the shaft, this will allow the lower hub to slide off the shaft.
7. Undo the bearing housing bolts and remove the bearing housing assembly from the frame.
8. Undo locknut and lockwasher then remove.
9. Undo bolts and remove upper cover.
10. Remove shaft complete with upper bearing from bearing housing. Remove bearing from shaft.
11. Using a large pair of snap ring pliers, remove retaining ring from housing.
12. Remove lower cover and lower bearing from housing.
13. Wash all parts in solvent and inspect carefully for damage or excessive wear. Magnaflux the shaft while disassembled.
14. As a general rule, always use new oil seals and lockwashers when reassembling.
15. When ordering replacement parts, refer to the parts list and ensure that all parts other than fasteners, seals and bearings are genuine Alamo parts. DO NOT use substitutes.

Assembly
1. Pack the bearings with grease.
2. Press the lower bearing onto the shaft, then press the shaft and bearing into the bearing housing from the bottom.
3. Press the upper bearing into the bearing housing and onto the shaft.
4. Press the oil seal into the lower cover, apply gasket compound to the cover and secure in place with the retaining ring.
5. Pump six to eight shots of grease into each bearing while rotating.
6. Install spacer onto shaft.
7. Press oil seal into upper cover, apply gasket compound to cover, and then bolt cover to bearing housing.
8. Position the lockwasher and then tighten the locknut onto the shaft.
9. Place housing assembly into frame and bolt securely.
10. Install motor mount plate. Set plate into its original dowel holes and check the maximum runout on the bore compared to the shaft, if over 0.020” then the motor mount plate must be re-doweled. If not over 0.020”, bolt in place. If re-doweling is required, ensure there is no rocking of the motor mount plate, if so, grind the upper frame to fit prior to re-doweling
11. Install motor. Using Loctite, torque motor mount bolts to required values and wire lock heads.
MAINTENANCE

LIGHT MODEL

Disassembly
1. Disconnect and plug hydraulic lines. Plug the hydraulic connections on the motor.
2. Undo the shaft nut and remove the Flail Arm. A puller may be required.
3. Unbolt the Motor Mounting Plate and remove the motor, plate and upper half of the coupling.
4. Unbolt the Bearing Housing from the frame and remove the shaft assembly.
5. Remove the coupling half from the shaft, again a puller may be required.
6. Remove the Locknut and washer from the shaft then unbolt and remove the upper cover and oil seal.
7. Using a large pair of snap-ring pliers, remove the retaining ring from the bottom of the Bearing Housing and remove the Bottom Cover and oil seal.
8. Press the Shaft and Lower Bearing downwards from the Housing.
9. Press the Upper Bearing from the Housing.
10. Remove the slotted nuts from the Flail Arm and tap out the Blade Bolts to remove the Blades.
11. Remove the upper half of the coupling from the motor shaft, unbolt the motor from the Motor Base Plate. Reference mark the motor and Base Plate.
12. Wash all parts in solvent and inspect carefully for damage, stress fractures or excessive wear. Magnaflux the Shaft and Flail Arm while unit is disassembled.
13. When ordering replacement parts refer to the Parts List. Use genuine Alamo replacement parts. Do Not use substitutes.

Assembly
1. As a general rule, always use new oil seals, lockwashers and cotter pins (or lockwire) when re-assembling.
2. Pack the Bearings with grease.
3. Press the Lower Bearing onto the Shaft, then press the Shaft and Bearing into the Bearing Housing from the bottom.
4. Press the Upper Bearing into the Housing and onto the Shaft.
5. Press the oil seal into the Upper Cover, apply gasket compound to the cover and bolt in place on the Housing.
6. Position the lockwasher and then tighten the locknut. Secure with lockwire or cotter pin.
7. Press the oil seal into the Lower Cover, apply gasket compound to the cover and secure in place with the retaining ring.
8. Pump six to eight shots of grease into each bearing while rotating the Shaft.
9. Place the Shaft and Housing Assembly into the Frame and bolt in place.
10. Slip the bottom half of the Coupling and Bushing onto the Shaft.
11. Aligning the reference marks, bolt the Motor to the Base Plate, place the upper half of the Coupling and its Bushing onto the motor shaft and securely fasten. Leave at least 1/8” clearance between the coupling and the underside of the Base Plate. Wire the Capscrew.
12. Bolt the Base Plate to the Frame, aligning the reference marks, and wire the bolt heads. Slide the lower half of the Coupling and bushing up to the upper half and tighten the Capscrews. Wire the heads.
13. Install the Flail Arm, tighten and wire or pin the Nut. Install the blades and tighten and wire or pin the nuts. Nuts are to be torqued to 150 ft./lb. minimum.
14. Connect all hydraulic lines and bleed the system. Check manually for free rotation of the shaft and the blades. Make sure all fastenings are securely wired or pinned.
Bikon Hub

1. Read and be familiar with the Bikon Lock Instructions.
2. Dismantle new Bikon Lock. Clean off preserving oil with rag.
3. Clean shaft end and bore of Bikon Lock.
4. Apply light coat of machine oil to shaft and Bikon Lock bore.
5. Reassemble Bikon Lock assembly taking care that slits in all components are in line and the near and far collars are not reversed.
6. Take two 3/8” square spacer bars and lay them on the shroud support plate on either side of the shaft.
7. Put hub on shaft up against the spacer bars.

**NOTE:** Threaded holes face out.

8. Slide Bikon Lock over shaft and inside hub until it rests against the spacer bars.
9. With a marker pen, mark torquing sequence on hub face to match Bikon Lock instructions, per Mnt-R-0253.
10. Tighten bolts to specified torque in Table 1 in several stages following the numbered sequence. You must go around at least three times before reaching this value.
11. Remove spacer bars.
12. Install retaining ring and Spirol Lock Ring. Make sure ring seats in groove.
13. Mount cutter disk on hub and rotate until holes line up.
14. Place dust cover on hub and insert bolts with lockwashers. Torque to specified value in Table 3.

**Table 1:**

<table>
<thead>
<tr>
<th>BIKON TORQUE VALUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 mp/ 52 mp</td>
</tr>
<tr>
<td>60 ft./lb.</td>
</tr>
<tr>
<td>66 mp</td>
</tr>
<tr>
<td>105 ft./lb.</td>
</tr>
</tbody>
</table>

BIKON TORQUING SEQUENCE
Motor Mounting Plate

**NOTE:** The Motor Mounting Plate must be true to shaft to prevent excessive wear on couplings and splined inserts.

1. The surface of the shroud and motor mount plate must be flat with no rocking allowed.
2. Clamp and dial in Motor Mounting Plate to Grizzly Housing Shaft.
3. Drill 4 holes for mounting bolts.
4. Bolt Motor Mounting Plate to shroud and check run out. Adjust position of plate of meet tolerances for maximum indicated run out. See Table 2.
5. Drill and ream dowel holes.
6. Install insert and snap ring. Fill insert with 10 pumps of grease.
7. Install Motor. Torque to required values and wire lock heads.

### Table 2:

**Motor Mounting Plate**

<table>
<thead>
<tr>
<th>Maximum indicated run out</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Face of Plate</td>
<td>.008</td>
</tr>
<tr>
<td>Bore of Plate</td>
<td>.004</td>
</tr>
</tbody>
</table>

**Proper Torque For Fasteners**

The chart lists the correct tightening torque for fasteners. When bolts are to be tightened or replaced, refer to the 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.
Table 3:

<table>
<thead>
<tr>
<th>Bolt Diameter</th>
<th>Head Marking</th>
<th>Head Marking</th>
<th>Head Marking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No Marks</td>
<td>Three Lines</td>
<td>Six Lines</td>
</tr>
<tr>
<td></td>
<td>Grade Two</td>
<td>Grade Five</td>
<td>Grade Eight</td>
</tr>
<tr>
<td></td>
<td>Pound - Foot Value Dry</td>
<td>Pound - Foot Value Dry</td>
<td>Pound - Foot Value Dry</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>6.5</td>
<td>9</td>
<td>12.5</td>
</tr>
<tr>
<td>5/16&quot;</td>
<td>11</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td>3/8&quot;</td>
<td>20</td>
<td>33</td>
<td>46</td>
</tr>
<tr>
<td>7/16&quot;</td>
<td>32</td>
<td>52</td>
<td>75</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>50</td>
<td>80</td>
<td>115</td>
</tr>
<tr>
<td>9/16&quot;</td>
<td>70</td>
<td>115</td>
<td>160</td>
</tr>
<tr>
<td>5/8&quot;</td>
<td>100</td>
<td>160</td>
<td>225</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>175</td>
<td>280</td>
<td>460</td>
</tr>
<tr>
<td>7/8&quot;</td>
<td>176</td>
<td>460</td>
<td>660</td>
</tr>
<tr>
<td>1&quot;</td>
<td>270</td>
<td>675</td>
<td>975</td>
</tr>
<tr>
<td>1-1/8&quot;</td>
<td>375</td>
<td>860</td>
<td>1350</td>
</tr>
<tr>
<td>1-1/4&quot;</td>
<td>530</td>
<td>1200</td>
<td>1950</td>
</tr>
<tr>
<td>1-1/2&quot;</td>
<td>700</td>
<td>1550</td>
<td>2550</td>
</tr>
<tr>
<td>1&quot;</td>
<td>930</td>
<td>2100</td>
<td>3350</td>
</tr>
</tbody>
</table>

*To get Newton-Meters multiply pound-foot of torque by 1.356

Blade Arm

1. The taper fit between the Blade Arm and the shaft must be blued and checked. Only perfect fits are acceptable -- reject anything less.
2. Warm Blade Arm to 180-200 degrees C.
3. Slip Blade Arm on shaft and tighten nut to 500 ft./lb. (27 on torque multiplier).
4. Allow Blade Arm to cool to ambient temperature.
5. Remove nut, apply Never-Seeze or equivalent to the thread and retorque per Table 4.

Never Hammer Blade Arm

Table 4:

<table>
<thead>
<tr>
<th>Blade Arm &amp; Bolt Torque Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>52&quot; PBC</td>
</tr>
</tbody>
</table>
Blade Bolts

1. Make sure washer is right side up with the relief of the washer clearing the radius of the bolt.
2. Apply Never-Seeze of equivalent to threads of Blade Bolt.
3. Use Stover Lock Nut.
4. Torque to required value as per Table 4.

Installation & Removal of Locking Assembly

Installation

Locking assemblies are supplied ready for installation. However, if for some reason locking assemblies with odd number of screws were disassembled. Make sure that in addition to lined-up slits in all collars, near-and-far-side clamp collar item “1”. Likewise, there must be no threads behind taps in center collar item “3” as illustrated in Mnt-R-0254.

The frictional torque capacity of these devices is based on lightly oiled screw, taper or shaft and bore contact areas with a coefficient of friction Therefore, it is important not to use Molybdenum Disulfide, e.g. Molykote, Never Seeze or similar lubricants in any locking assembly installation.

1. Make sure shaft and bore contact areas are clean and lightly oiled.
2. Loosen all locking screws by a minimum of 2 turns and transfer at least 3 screws each to equally spaced push-off threads in clamp collar item “1” and center collar item “3” in order to disengage tapers for easy installation of locking assembly. See Mnt-R-0254.
3. After installation of locking assembly, relocate locking screws used for separation of collars.
4. Tighten locking screws evenly in several stages to tightening torques as specified on assembly drawing or, as shown in Table 6, a diametrically tightening sequence, except for locking screws adjacent to slit in clamp collar item “1”, which should be torqued one after the other.

NOTE: a) Since initial passes require almost no torque, even tightening is best achieved by turns approximately 90 degrees for each locking screw.

b) To compensate for bolt setting during installation, a 5% higher than specified tightening torque is recommended for final tightening round.

5. After completion of installation, check all locking screws again in a clockwise (or counterclockwise) sequence and make sure no screw can be turned at specified tightening torque

It is not necessary to recheck tightening torque after equipment has been in operation.

NOTE: In installations subjected to extreme corrosion, the slits in clamp collars item “1” and “2” as well as in center collar item “3” should be sealed with a suitable caulking compound or otherwise.
## Table 5:

**HEX BIT SOCKET RECOMMENDED FOR ASSEMBLY & REMOVAL**

<table>
<thead>
<tr>
<th>SCREW SIZE</th>
<th>M6</th>
<th>M8</th>
<th>M10</th>
<th>M12</th>
<th>M14</th>
<th>M16</th>
<th>M18</th>
<th>M20</th>
<th>M22</th>
</tr>
</thead>
<tbody>
<tr>
<td>S (mm)</td>
<td>5</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>14</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>DRIVE</td>
<td>1/4&quot;</td>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Removal**

1. Make sure axial movement of clamp collars - necessary for release of connection - is not restricted.
2. Relax all locking screws by at least 2 turns and transfer locking screws into all push-off threads provided in clamp collar item “3” as illustrated in Mnt-R-0254.
3. Release connection by progressively tightening all push-off screws in diametrical sequence except for screws adjacent to slit in clamp collar item “1”, which should be tightened one after the other.

---

## Table 6:

<table>
<thead>
<tr>
<th>LOCKING ASSEMBLY</th>
<th>METRIC SIZES</th>
<th>INCH SIZES</th>
<th>SCREW SIZE</th>
<th>TIGHT TORQUE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>METRIC Dim 812</td>
<td>M₉₉ x 1.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Gage 12.9</td>
<td>M₉₉ x 1.25</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M₉₉ x 1.25</td>
<td>12</td>
</tr>
<tr>
<td>45 x 75 to 65 x 95</td>
<td>1-1/16 to 1-3/16</td>
<td>M₉₉ x 1.25</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>70 x 110 to 90 x 130</td>
<td>1-1/16 to 1-3/16</td>
<td>M₉₉ x 1.25</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>100 x 145 to 120 x 165</td>
<td>2-5/8 to 3-5/8</td>
<td>M₉₉ x 1.25</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>130 x 180 to 160 x 210</td>
<td>3-1/4 to 4-1/4</td>
<td>M₉₉ x 1.25</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>170 x 225 to 200 x 225</td>
<td>4-5/8 to 6</td>
<td>M₉₉ x 1.25</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>280 x 355 to 340 x 425</td>
<td>6-7/8 to 8</td>
<td>M₉₉ x 1.25</td>
<td>166</td>
<td></td>
</tr>
<tr>
<td>360 x 455 to 600 x 695</td>
<td>6-7/8 to 8</td>
<td>M₉₉ x 1.25</td>
<td>257</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M₉₉ x 1.25</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M₉₉ x 1.25</td>
<td>675</td>
</tr>
</tbody>
</table>

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MAINTENANCE

General Instructions

1. The brush cutter requires a constant flow of hydraulic oil that will not be reduced when another machine function is used simultaneously.
2. Use a “Motor spool” type of control valve. If not possible, a system of recirculating check valves must be used. Circulating system and crossover relief for drive motor protection are provided with the cutter.
3. Line Sizes: All pressure lines are to be minimum 1” diameter. All return lines, 1-1/4” tubing (except when dual rotation is used - both lines must be high pressure. Flows below 30 GPM may use smaller line sizes. Confirm line size with each application. High pressure machines uses a motor capable of operating at 3500 PSI with a correspondingly lower flow rate.
4. The shaft speed must not - UNDER ANY CIRCUMSTANCES - exceed 1800 RPM.
5. Secure all wear parts as per factory original installation. (Following servicing, sharpening, etc.)

Mnt-R-0257

UNDERSIDE OF BRUSHCUTTER KEYLESTEEL PLACEMENT

UDSIDE DOWN SECTION VIEW OF BRUSHCUTTER FOR HUB INSTALLATION
1. LIMITED WARRANTIES

1.01. Alamo Industrial warrants for one year from the purchase date to the original non-commercial, governmental, or municipal purchaser (“Purchaser”) and warrants for six months to the original commercial or industrial purchaser.

1.02. Manufacturer will replace for the Purchaser any part or parts found, upon examination at one of its factories, to be defective under normal use and service due to defects in material or workmanship.

1.03. This limited warranty does not apply to any part of the goods which has been subjected to improper or abnormal use, negligence, alteration, modification, or accident, damaged due to lack of maintenance or use of wrong fuel, oil, or lubricants, or which has served its normal life. This limited warranty does not apply to any part of any internal combustion engine, or expendable items such as blades, shields, guards, or pneumatic tires except as specifically found.

1.04. Except as provided herein, no employee, agent, Dealer, or other person is authorized to give any warranties of any nature on behalf of Manufacturer.

2. REMEDIES AND PROCEDURES.

2.01. This limited warranty is not effective unless the Purchaser returns the Registration and Warranty Form to Manufacturer within 30 days of purchase.

2.02. Purchaser claims must be made in writing to the Authorized Dealer (“Dealer”) from whom Purchaser purchased the goods or an approved Authorized Dealer (“Dealer”) within 30 days after Purchaser learns of the facts on which the claim is based.

2.03. Purchaser is responsible for returning the goods in question to the Dealer.

2.04. If after examining the goods and/or parts in question, Manufacturer finds them to be defective under normal use and service due to defects in material or workmanship, Manufacturer will:

(a) Repair or replace the defective goods or part(s) or
(b) Reimburse Purchaser for the cost of the part(s) and reasonable labor charges (as determined by Manufacturer) if Purchaser paid for the repair and/or replacement prior to the final determination of applicability of the warranty by Manufacturer.

The choice of remedy shall belong to Manufacturer.

2.05. Purchaser is responsible for any labor charges exceeding a reasonable amount as determined by Manufacturer and for returning the goods to the Dealer, whether or not the claim is approved. Purchaser is responsible for the transportation cost for the goods or part(s) from the Dealer to the designated factory.

3. LIMITATION OF LIABILITY.

3.01. MANUFACTURER DISCLAIMS ANY EXPRESS (EXCEPT AS SET FORTH HEREIN) AND IMPLIED WARRANTIES WITH RESPECT TO THE GOODS INCLUDING, BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

3.02. MANUFACTURER MAKES NO WARRANTY AS TO THE DESIGN, CAPABILITY, CAPACITY, OR SUITABILITY FOR USE OF THE GOODS.

3.03. EXCEPT AS PROVIDED HEREIN, MANUFACTURER SHALL HAVE NO LIABILITY OR RESPONSIBILITY TO PURCHASER OR ANY OTHER PERSON OR ENTITY WITH RESPECT TO ANY LIABILITY, LOSS, OR DAMAGE CAUSED OR ALLEGED TO BE CAUSED DIRECTLY OR INDIRECTLY BY THE GOODS INCLUDING, BUT NOT LIMITED TO, ANY INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES RESULTING FROM THE USE OR OPERATION OF THE GOODS OR ANY BREACH OF THIS WARRANTY. NOTWITHSTANDING THE ABOVE LIMITATIONS AND WARRANTIES, MANUFACTURER’S LIABILITY HEREUNDER FOR DAMAGES INCURRED BY PURCHASER OR OTHERS SHALL NOT EXCEED THE PRICE OF THE GOODS.

3.04. NO ACTION ARISING OUT OF ANY CLAIMED BREACH OF THIS WARRANTY OR TRANSACTIONS UNDER THIS WARRANTY MAY BE BROUGHT MORE THAN TWO (2) YEARS AFTER THE CAUSE OF ACTION HAS OCCURRED.

4. MISCELLANEOUS.

4.01. Proper Venue for any lawsuits arising from or related to this limited warranty shall be only in Guadalupe County, Texas.

4.02. Manufacturer may waive compliance with any of the terms of this limited warranty, but no waiver of any terms shall be deemed to be a waiver of any other term.

4.03. If any provision of this limited warranty shall violate any applicable law and is held to be unenforceable, then the invalidity of such provision shall not invalidate any other provisions herein.

4.04. Applicable law may provide rights and benefits to purchaser in addition to those provided herein.

KEEP FOR YOUR RECORDS

ATTENTION: Purchaser should fill in the blanks below for his reference when buying repair parts and/or for proper machine identification when applying for warranty.

Alamo Industrial Implement Model Serial Number

Date Purchased Dealer

ATTENTION:

READ YOUR OPERATOR'S MANUAL

ALAMO INDUSTRIAL
An Alamo Group Company
Post Office Drawer 549
Seguin, Texas 78156
830-379-1480
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 Seatbelts that meet the requirements of this paragraph of this Standard and SAE J4C; and
3. Ensure that each employee uses such Seatbelt while the tractor is moving; and
4. Ensure that each employee tightens the Seatbelt sufficiently to confine the employee to the protected area provided by the ROPS.

REQUIRED OF THE OPERATOR:

1. Securely fasten seatbelt 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.

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.