



M8000MD
COMMERCIAL SNOW BLOWER

Published 12/04

Part No. 5040C

OPERATOR'S MANUAL

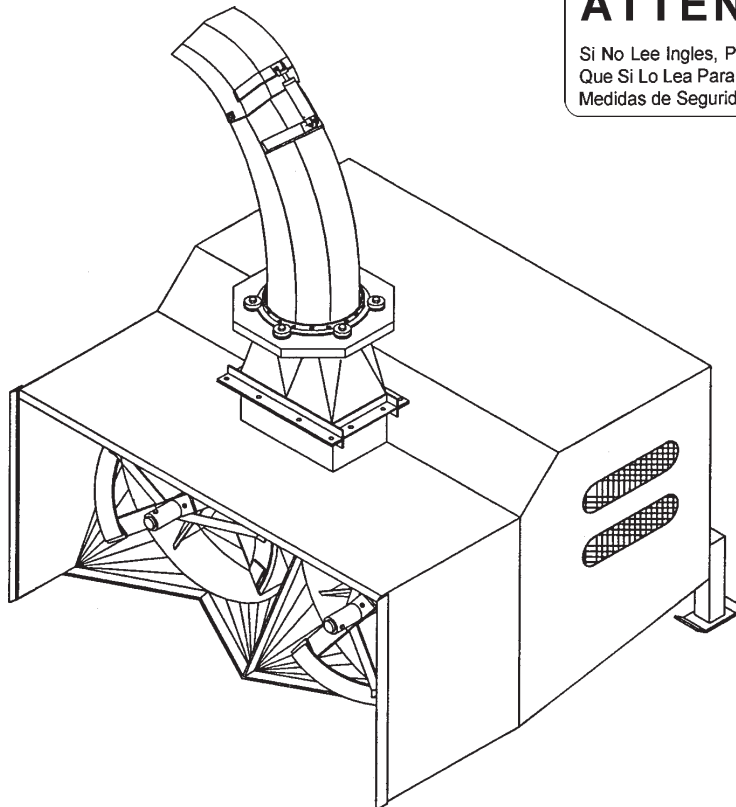


This Operator's Manual is an integral part of the safe operation of this machine and must be maintained with the unit at all times. **READ, UNDERSTAND, and FOLLOW** the Safety and Operation Instructions contained in this manual before operating the equipment.

ATENCIÓN!

LEA EL INSTRUCTIVO

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



ALAMO INDUSTRIAL

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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.

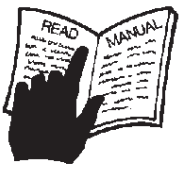



BEFORE YOU START!!

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.

<p>1.</p> 	<p>2. NO RIDERS, NO CHILDREN OPERATORS</p> 	<p>3. USE SEATBELT, ROPS AND PPE</p> 	<p>4. BLOCK UP SECURELY BEFORE WORKING UNDER.</p> 
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1. Study and understand Operator's Manuals, Safety Signs, and Instructional Decals for tractor & implement to prevent misuse, abuse, & accidents. Learn how to stop engine suddenly in an emergency. Be alert for Passersby and Especially children.
2. Allow no children on or near implement or tractor. Allow no riders on tractor or implement. Falling off can cause serious injury or death from being run over by tractor or implement or contact with rotating components..
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 component to prevent crushing injury or even death from sudden inadvertent Dropping. Make certain that area is clear before lowering.
5. Before transporting, put Lift Lever in Lift (Detent) position and follow traffic codes. Slow down at night, in turns and on hillsides..
6. Make certain that SMV sign, Warning Lights, and Reflectors are clearly visible.
7. Never operate with implement raised off ground to reduce possibility of injury from objects thrown under Implement structure.
8. Before dismounting, secure implement in transport position or lower to ground. Stop PTO, put tractor in park or set Brake, stop engine and remove key. Never mount or dismount a moving vehicle. Crushing from run over may can use injury or death

<p>5. TRANSPORT SAFELY,</p> 	<p>6. USE SMV, LIGHTS, & REFLECTORS.</p> 	<p>7. DO NOT OPERATE WITH UNIT RAISED</p> 	<p>8. DO NOT MOUNT OR DISMOUNT WHILE MOVING.</p> 
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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 Alamo 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.

TABLE OF CONTENTS

SAFETY SECTION

Safety Information	1-2
Safety Decal Location	1-18
Safety Decals	1-20
Federal Laws and Regulations	1-28

INTRODUCTION SECTION 2-1

ASSEMBLY SECTION 3-1

Spout Installation	3-2
Connection Hydraulic Hoses to Snowblower	3-4
Turning on Power Unit	3-5

OPERATION SECTION 4-1

MAINTENANCE SECTION 5-1

General Maintenance	5-2
Nuts and Bolts	5-2
Drive Assembly	5-2
Shear Bolt	5-2
PTO Lubrication	5-2
Chute Lubrication	5-2
Oil Reservoir	5-3
Clutch Adjustment	5-4
Chain Tightening Instructions	5-8
Storage	5-9
Maintenance Schedule	5-10

TRANSFLUID SECTION 6-1

OMNEX SECTION 7-1

ENGINE MANUAL

The Engine Manual is shipped with machine, and is supplied by Engine Manufacturer and should be consulted for engine maintenance care, and engine repair component part numbers.

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SAFETY SECTION

SAFETY

SAFETY

General Safety Instructions and Practices

A safe and 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 safely and responsibly.

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

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

CAUTION!

The lowest level of Safety Message; warns of possible injury. Decals located on the Equipment with this Signal Word are Black and Yellow.



WARNING!

Serious injury or possible death! Decals are Black and Orange.



DANGER!

Imminent death/critical injury. Decals are Red and White. (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)



SAFETY

PELIGRO!



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



!LEA EL INSTRUCTIVO!

WARNING!



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

WARNING!



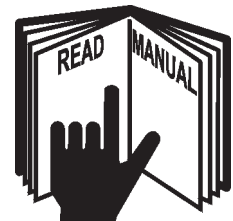
Battery posts, terminals and related accessories contain lead and lead compounds, chemicals known to the state of California to cause cancer and birth defects or other reproductive harm. Wash Hands after handling. (SG-31)

Operator Safety Instructions and Practices

DANGER!



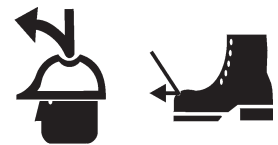
Never operate the Power Unit or Implement until you have read and completely understand this Manual, the Power Unit Operator's Manual, and each of the Safety Messages found in the Manual or on the Power Unit and Implement. Learn how to stop the Power Unit engine suddenly in an emergency. Never allow inexperienced or untrained personnel too operate the Power Unit and Implement without supervision. Make sure the operator has fully read and understood the manuals prior to operation. (SPU-36)



WARNING!



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



CAUTION!



PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS! Power Units 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 power units, chain saws, radios, and other such sources close to the ear] is cumulative over a lifetime without hope of natural recovery. (SPU-20)



SAFETY

SAFETY

WARNING!



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



DANGER!



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



DANGER!



Never allow children to play on or around the 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)

DANGER!



NEVER use drugs or alcohol immediately before or while operating the Power Unit 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 Power Unit 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. (SPU-25)



WARNING!



Prolonged operation may cause operator boredom and fatigue affecting safe operation. Take scheduled work breaks to help prevent these potentially impaired operating conditions. Never operate the Implement and Power Unit in a fatigued or bored mental state which impairs proper and safe operation. (SPU-37)

WARNING!



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

SAFETY

WARNING!



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

DANGER!



DO NOT operate this Implement on a Power Unit that is not properly maintained. Should a mechanical or Power Unit control failure occur while operating, immediately shut down the Power Unit and perform repairs before resuming operation. Serious injury and possible death could occur from not maintaining this Implement and Power Unit in good operating condition. (SPU-38)

WARNING!



Avoid contact with hot surfaces of the engine or muffler. Use gloves and eye protection when servicing hot components. Contact with a hot surface or fluid can cause serious injury from burns or scalding. (SG-38)

WARNING!



The rotating parts of this machine continue to rotate a short period of time even after the Power Unit has been turned off. The operator should remain in his seat for 20 seconds AFTER the parking brake has been set, the auxiliary hydraulics disengaged, the Power Unit turned off, and all evidence of rotation has ceased. (SPU-4)

“Wait a minute...Save a life!”

DANGER!



Do Not approach the front of the snow blower while the fan is rotating. Contact with the rotating fan can result in serious injury or even death. Stay away until all motion has stopped and the snow blower is securely blocked up before removing material, performing service, and making repairs. (SSB-05a)

DANGER!



Do not put hands or feet near the rotating fan. Fan contact can result in serious injury or even death. Stay away until all motion has stopped and the snow blower is securely blocked up before removing material, performing service, and making repairs. (SSB-6)



DANGER!



Do not operate the implement while wearing loose fitting clothing. Entanglement of the clothing with the rotating elements can result in serious injury or even death. Stay clear of all rotating elements at all times. (SSP-3)

SAFETY

SAFETY

Connecting or Disconnecting Implement Safety Instructions and Practices

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)

Equipment Operation Safety Instructions and Practices

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)

DANGER!



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



DANGER!



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)



DANGER!



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)



SAFETY

DANGER!



Do not operate this Equipment with hydraulic oil or fuel leaking. Oil and fuel are expensive 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 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)



SAFETY

DANGER!



Operate the Power Unit and/or Implement controls only while properly seated in the Power Unit seat with the seat belt securely fastened around you. Inadvertent movement of the Power Unit or Implement may cause serious injury or death. (SPU-26)

WARNING!



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

DANGER!



The center of gravity of a Power Unit equipped with a front-mounted Implement is shifted to the front and removes weight from the rear wheels. The Power Unit should maintain at least 20% total weight on the rear wheels to prevent tipping forward, loss of steering control, and possible injury. Add counterweight if required when operating on slopes and proceed with the load uphill to prevent tipping. Reference the Power Unit's Operator's Manual or an authorized dealer for information on adding additional weight. (SPU-6)

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)



SAFETY

SAFETY

DANGER!



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)

WARNING!



Only operate the snow blower in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never snow blow in darkness or in conditions where you cannot clearly see at least 100 yards in front and to the sides of the Power Unit and Snow Blower. 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 snow blowing. (SSB-1)

WARNING!



Extreme care should be taken when operating near loose objects such as gravel, rocks, wire and other debris. Foreign objects should be removed from the site to prevent machine damage and/or bodily injury or even death. Any object that cannot be removed must be clearly marked and carefully avoided by the operator. Stop snow blowing immediately if the auger or fan strikes a foreign object. Repair all damage before resuming snow blowing. (SSB-2)



WARNING!



Many varied objects, such as wire, cable, rope, or chains can become entangled in the operating parts of the Snow Blower. These items could then swing outside the housing at high speeds. Such a situation is extremely hazardous and could result in serious injury or even death. Inspect the work area for such objects before snow blowing. Remove any like object from the site. Never allow the auger to contact such items. (SSB-3)

WARNING!



Blow snow at the speed that you can safely operate and control the Tractor and Snow Blower. Safe speed depends on terrain and snow conditions. Normal ground speed range is from 0 to 5 mph. Use slow 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. (SSB-4)

SAFETY

DANGER!



Snow Blowers are capable under adverse conditions of throwing objects for great distances (200 feet or more). Do not allow the snow stream to fall on passersby. Ice, debris and heavy snow thrown from the snow blower can cause serious injury or death. (SSB-7)



STOP SNOW BLOWING IF PASSERSBY ARE WITHIN 200 FEET.

SAFETY

WARNING!



When blowing snow with two machines in the same area be sure that windows are closed. (SSB-10)

DANGER!



There are obvious and hidden potential hazards in the operation of this Snow Blower. **REMEMBER!** This machine is often operated in deep snow where vision is reduced. The fan blades of this Snow Blower can throw objects for great distances. 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 Snow Blowing if anyone is within 200 feet of Snow Blower. (SSB-11)

WARNING!



Do not operate Snow Blower if excessive vibration exists. Shut down Power Unit and Implement engines. Inspect the Snow Blower to determine the source of the vibration. If blades are missing or damaged replace them immediately. Do not operate the Snow Blower until the blades have been replaced and the Blower operates smoothly. Operating the Snow Blower with excessive vibration can result in component failure and 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 Snow Blower to be operated with blades missing. (SSB-32)

DANGER!



The rotating parts of this machine have been designed and tested for rugged use. However, the blades and rotating members 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 rotating blades to contact such obstacles. (SSB-13)

SAFETY

SAFETY

DANGER!



Always keep a careful lookout and use extreme care when working around utility lines. Never allow the Snow Blower within 10 feet of any Utility power or gas line. Heavy snow or ice storms can cause utility lines to sag or drop to the ground. Do not operate this equipment where power lines are on the ground. When working close to Utility lines consult your electric or gas company for a safe code of operation.

(SSB-15)

WARNING!



Before dismounting to clear a clogged machine, place the transmission in the park position, set the parking brake, shut down all power, including the PTO and the engine and remove the key. Wait until all rotating motion has stop before dismounting. (SSB-16)

WARNING!



Snow can cover and hide solid objects such as guard rails, curbs, concrete structures, large rocks, utility boxes, fire hydrants, etc. DO NOT allow the rotating parts of the Snow Blower to contact such items. Inspect the area before operating the Snow Blower. Mark all solid items clearly with a pole and flag. To reduce the possibility of property damage, serious injury, or even death, never allow the rotating blades to contact such obstacles. (SSB-20)

WARNING!



The Snow Blower can block the operators vision directly in front of the Snow Blower. Inspect the area before operating the Snow Blower and make sure that there are no obstacles, passersby, or coworkers in the path of the Snow Blower. (SSB-22)

DANGER!



Start the Power unit and Auxiliary engines only when seated and belted in the operator seat. Operate the Snow blower controls only while seated with the seat belt secured around you. Inadvertent movement of the Power unit and/or Snow Blower components may cause serious injury or death to the operator and passersby. Read the Power Unit and Auxiliary Engine operator's manuals for proper starting instructions. (SSB-24)

WARNING!



Never run the Power unit or Auxiliary engine in a closed building or without adequate ventilation. The exhaust fumes can be hazardous and deadly to your health. If it is necessary to run the Power unit or Auxiliary engine in an enclosed area, remove the exhaust fumes from the area to the outdoors with an exhaust pipe extension. If you do not have an exhaust pipe extension, or if it is not possible to use one, open doors and circulate outside air into the area. (SSB-30)

SAFETY

Transporting Safety Instructions and Practices

WARNING!



Make certain that the “Slow Moving Vehicle” (SMV) sign is installed in such a way as to be clearly visible and legible. When transporting the Equipment use the Power Unit flashing warning lights and follow all local traffic regulations. (SPU-40)



DANGER!



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

WARNING!



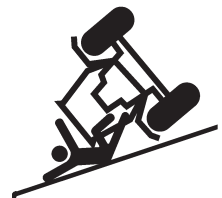
Transport only at safe speeds. Serious accidents and injuries can result from operating this equipment at unsafe speeds. Understand the Power Unit and Implement and how it handles before transporting on streets and highways. Make sure the Power Unit steering and brakes are in good condition and operate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

1. 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.
2. 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.
3. 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)



WARNING!



Before transporting the Snow Blower, position the snow discharge shoot in the center position to reduce the possibility of blocking the operators vision. (SSB-21)

WARNING!



When in transport, only raise the Implement to a height sufficient to safely clear ground obstructions. Maximum transport height is 18". Transport the Implement in a near level position and never obstruct visibility to the front of the Implement during transport. (SSB-23)

SAFETY

SAFETY

SAFETY

WARNING!



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

Maintenance and Service Safety Instructions and Practices

DANGER!



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)



WARNING!



Relieve hydraulic pressure prior to doing any maintenance or repair work on the Implement. Place the Mower Head on the ground or securely supported on blocks or stands, disengage the auxiliary hydraulics, and turn off the engine. Push and pull the Control Levers several times to relieve pressure prior to starting any maintenance or repair work. (SPU-34)

WARNING!



Never interfere with factory-set hydraulic calibrations. Any change in calibration could cause a failure of the equipment and may result in injury. (SBH-13)

WARNING!



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

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)

WARNING!



Never attempt to lubricate, adjust, or remove material from the Implement while it is in motion or while the Power Unit engine is running. Make sure the Power Unit is off before working on the Implement. (SPU-22)

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)



SAFETY

WARNING!



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

WARNING!



Never leave the Power Unit and Implement unattended while the Implement is in the lifted position. Accidental operation of the lifting lever or a hydraulic failure may cause a sudden drop of the unit with possible injury or death by crushing. Fully lower the Implement to ground level to disconnect the Implement or to perform service. Do not put hands or feet under lifted components. (SPU-30)

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)

DANGER!



Never crawl under a raised Implement supported solely by the Power Unit boom. Release of the control lever or mechanical failure will result in the Implement falling and possible injury or death. Always securely block up the Implement before crawling underneath to perform repairs and service. (SPU-33)

WARNING!



DO NOT weld or repair rotating Blower components. Welds and other repairs may cause severe vibration and/or component failure resulting in parts being thrown from the blower causing serious bodily injury. See your Authorized Dealer for proper repairs. (SSB-14)

WARNING!



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

WARNING!



Use only OEM specified shear pins as replacements pins. The use of incorrect shear pins can cause failures in the Snow Blower rotating components resulting in property damage and/or serious bodily injuries. (SSB-19)

WARNING!



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

SAFETY

SAFETY

DANGER!



Never attempt to repair, lubricate, adjust, clean, remove blockages, obstructions or perform any other type of service to any Snow Blower component while the Snow Blower is in motion or while the Auxiliary and/or Power unit engine is running. Completely shut down the Snow Blower and the Power unit and Auxiliary engines and wait for all motion to come to a complete stop before servicing the Snow Blower or Power unit. (SSB-26)

DANGER!



Escaping pressurized hydraulic oil generated by hydraulic pumps has the potential to inflict serious injury and possible death. Never attempt to repair a pump or hose or tighten a connection while the system is pressurized. Always shut down the Power unit and Auxiliary engines and relieve hydraulic oil pressure before performing any repairs to the hydraulic system. (SSB-27)

WARNING!



NEVER work on or near any engine component that has generated heat until it has cooled down. Use extra caution around the exhaust manifold near the water valve and the turbo charger manifold tubes. NEVER check or replenish the fluid levels of the Power Unit and Auxiliary engine coolant or hydraulic circuit oil levels until sufficient time has passed (up to 2 hours) to allow the system to cool down. Contact with a hot engine component or operating fluid may result in serious injury from burns, scalding and possible death. (SSB-28)

DANGER!



Use extreme caution when refueling the Snow Blower, fuel is highly Combustible and explosive if not handled safely. Always follow these precautions to reduce the dangers involved in refueling:

1. Completely shut down the Power unit and Auxiliary Engines before refueling.
2. Do Not refuel while smoking or near an open flame.
3. Do Not store Equipment with fuel in the tank in a building where fumes can reach an ignition source.
4. To prevent a fire and explosion caused by static electric discharge while filling the tank, use a plastic funnel. Avoid using a funnel that has a metal screen or filter.
5. Avoid spilling fuel. Fuel is expensive and can damage plastic and painted surfaces. Clean up spilled fuel immediately.
6. Store fuel and all oils at a site protected from moisture, dirt, and other contaminants. (SSB-29)

WARNING!



Before conducting maintenance on the Snow Blower stop the Power unit, place the transmission in the park position and set the parking brake. Turn the Power unit engine and the auxiliary engine off and remove the keys and disable the remote engine starting system to prevent inadvertent or accidental starting of the engines. Unexpected engine start up or Power unit movement can result in serious bodily injuries or death. (SSB-31)

SAFETY

DANGER!



All Safety Shields, Guards and other Protective Safety devices should be used and maintained in good working condition. All safety devices should be inspected carefully at least daily for missing or broken components. **NEVER REMOVE PROTECTIVE SHIELDS AND GUARDS! NEVER MODIFY OR CUT PROTECTIVE SHIELDS OR GUARDS!** When shields or guards are removed to access areas for maintenance, they must be replaced and be in good condition before operating. Missing, broken, or worn shields, guards, and other protective devices must be replaced at once and prior to operation to reduce the possibility of injury or death from thrown objects, entanglement, or contact. (SWS-2)

WARNING!



Remove the negative battery cable from the battery before performing any maintenance on the electrical system to prevent an accidental circuit shorting and sparks. Sparks can result in wiring damaged, fire or personal injury. (SWM-25)

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)

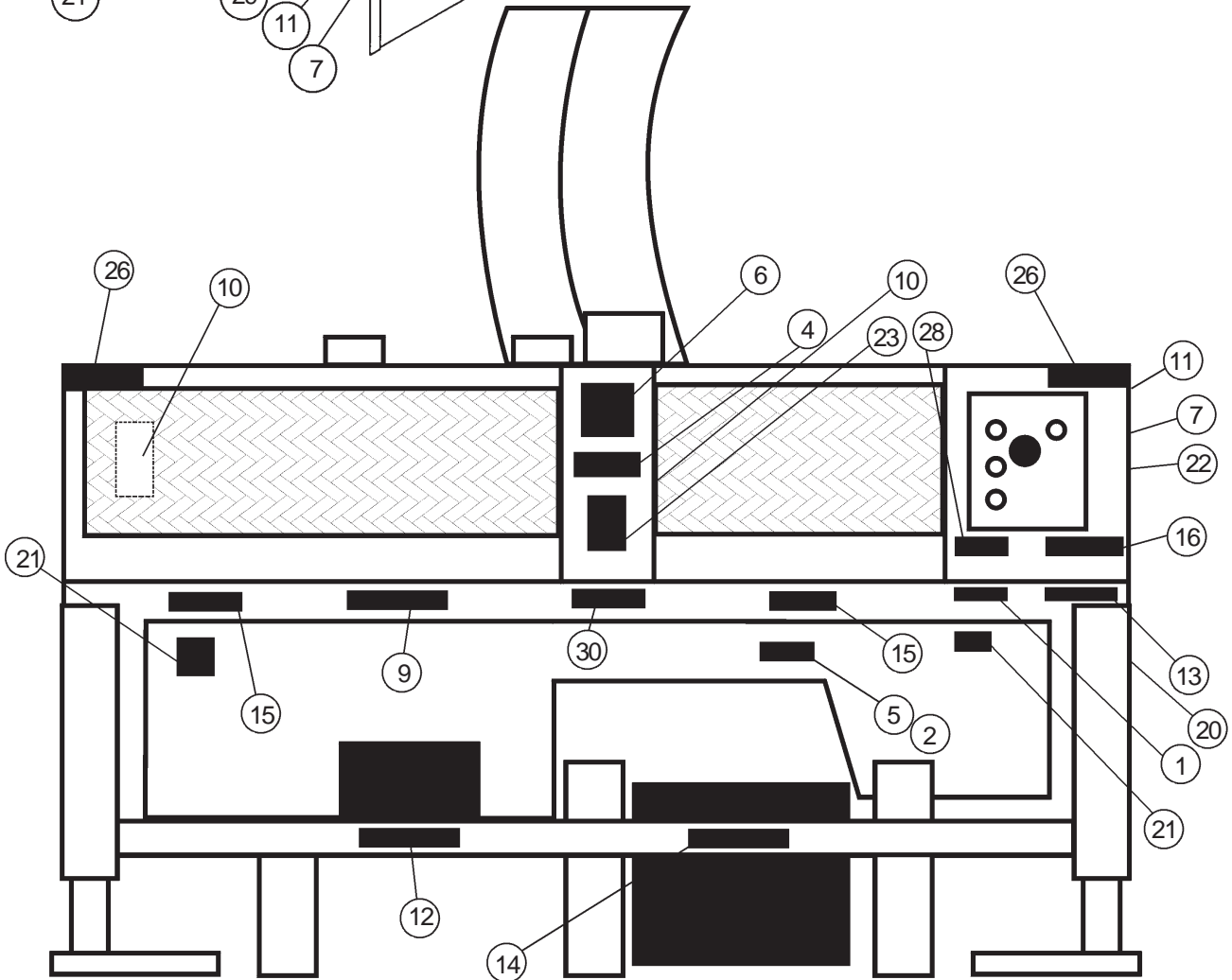
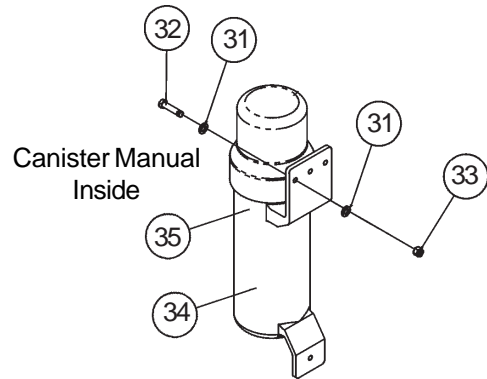
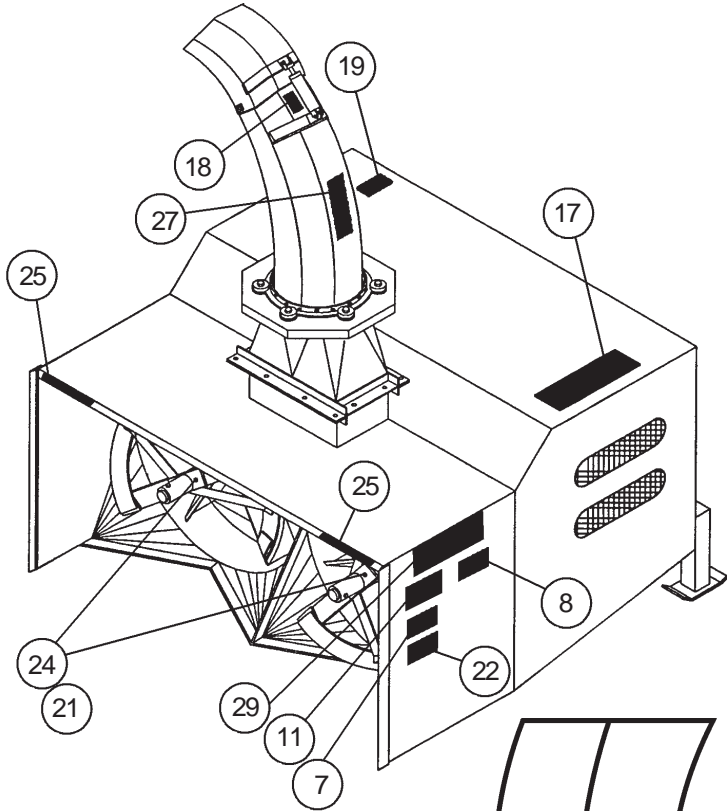
SEE YOUR ALAMO DEALER

Concluding Safety Instructions and Practices

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

SAFETY

SAFETY



SAFETY

SAFETY

ITEM	PART NO.	QTY	TYPE	DECAL DESCRIPTION
1	00725746	1	PELIGRO	Get Manual Translated
2	00756004	1	DANGER	Shield Missing
3	02925100	1	IMPORTANT	Genuine Alamo Industrial Parts
4	00763977	1	INSTRUCT	Notice To Owner
5	00783744	1	WARNING	Do Not Remove Guard
6	00784039	1	DANGER	Warning Multi-Hazard
7	00784040	2	DANGER	Rotating Snowblower Fan
8	00784041	2	DANGER	Thrown Objects
9	00784043	1	DANGER	Moving Parts
10	00784044	2	DANGER	Guard Missing
11	00784045	2	DANGER	Stay Back From Snowblower Intake
12	00784054	1	WARNING	No Smoking When Checking Battery Fluid
13	00784055	1	WARNING	No Smoking When Refueling Diesel
14	00784056	1	WARNING	Diesel Fuel Only
15	00784057	2	WARNING	Do Not Stick Hand In Rotaing Engine Fan
16	00784058	1	INSTRUCT	Lubrication Chart
17	00784059	1	WARNING	Remove Radiator Cap Slowly
18	00784061	1	WARNING	Do Not Let Spout Contact Electrical Power Lines
19	00784062	1	INSTRUCT	Type of Hydraulic Oil
20	00784063	1	INSTRUCT	Check Oil Level
21	02962764	4	WARNING	Pinch Points
22	02962765	1	DANGER	Multi-Hazard Pinch Points
23	02965262	1	WARNING	Hose Burst
24	1438333	6	INSTRUCT	Grease -10 Hrs
25	1458392	2	REFLECT	Red Reflector
26	1458393	2	REFLECT	Yellow Reflector
27	02979545	1	NAME	Alamo Industrial Logo
28	00784060	1	WARNING	Remove Key
29	00784326	2	LOGO	Great White
30	N/A	1	SER PLT	Great White Snowblower
31	00024100	6	-----	Flatwasher
32	10058000	3	-----	Bolt
33	02959924	3	-----	Top Locknut
34	00776031	1	-----	Canister, Operators Manual
35	5040C	1	-----	Operators Manual

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.

SAFETY

SAFETY

Item 1: Peligro - Spanish Translation



P/N 00725746

Item 2: DANGER: Shield Missing



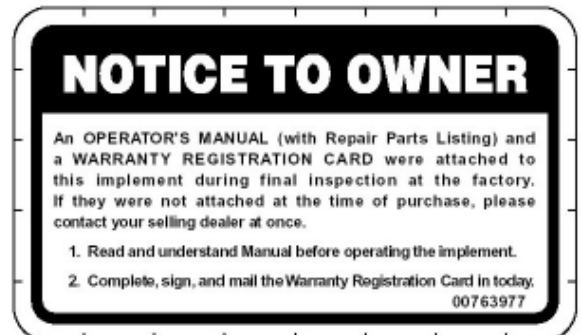
P/N 00756004

Item 3: Use Genuine Alamo Industrial Parts



P/N 02925100

Item 4: Notice To Owner



P/N 00763977

SAFETY

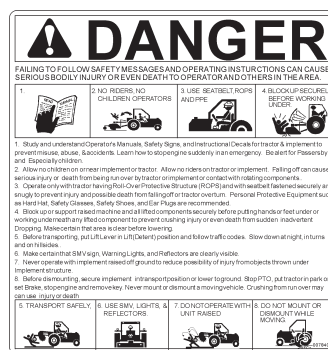
SAFETY

Item 5: Do Not Remove Guard



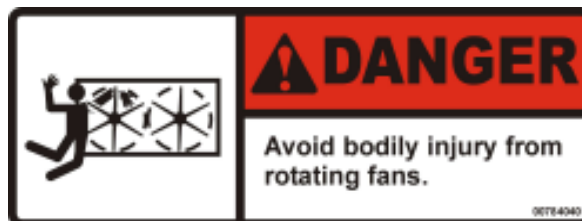
P/N 00783744

Item 6: WARNING: Multi Hazard



P/N 00784039

Item 7: DANGER: Avoid bodily injury from rotating fans.



P/N 00784040

Item 8: DANGER: Keep Away - Thrown object hazard. Stay away from discharge.



P/N 00784041

SAFETY

SAFETY

Item 9: DANGER: Moving part hazard. Close and secure guards and shields before starting. Keep hands, feet, hair and clothing away from moving parts. Make sure that all moving parts have completely stopped before clearing blockage, debris or servicing. Do not approach, stand or climb on machine when it is operating.



P/N 00784043

Item 10: DANGER: Guard Missing - Do Not Operate.



P/N 00784044

Item 11: DANGER: Shut off Engine and wait until all motion has stopped before unclogging or servicing. Keep Hands, Feet and Clothing away from rotating fans.



P/N 00784045

Item 12: WARNING: Do not smoke when checking battery level. Fumes from batteries are flammable and may explode.



P/N 00784054

SAFETY

SAFETY

Item 13: WARNING: No Smoking when refueling diesel.



P/N 00784055

Item 14: WARNING: Diesel Fuel Only.



P/N 00784056

Item 15: DANGER: Do not stick hand into rotating engine fan.



P/N 00784057

Item 16: Lubrication Recommendations Chart

LUBRICATION RECOMMENDATIONS		
Engine	All	Apply Manufacturer's Recommendation
Chain Drive	Snow Blower	Mobil Vactra No. 2 Chevron Wayoil Vistac® ISO 68
Hydraulic System	Snow Blower	Mobil DTE® 13m
Hydrostatic Option	Snow Blower	Mobil DTE® 13m
Chassis Grease	All	Mobilgrease® XHP 222 Special
Gearbox	Snow Blower Commercial Series	MobilubeSHC® 75W-90 00784058

P/N 00784058

SAFETY

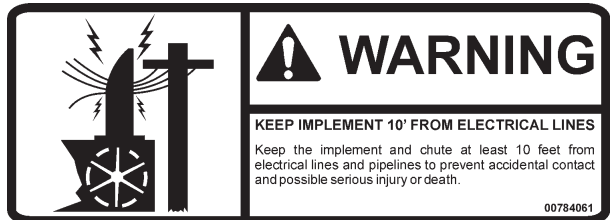
SAFETY

Item 17: WARNING: Remove radiator cap slowly. Contents are under pressure.



P/N00784059

Item 18: WARNING: Keep Implement and Chute at least 10 feet from electrical lines and pipelines to prevent accidental contact and possible serious injury or death.



P/N00784061

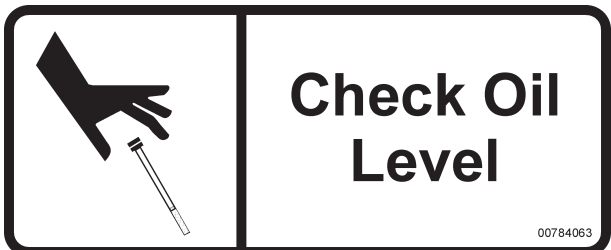
Item 19: Type of Hydraulic Oil used.

HYDRAULIC OIL
Use only 10 Weight
Hydraulic Oil

00784062

P/N00784062

Item 20: Check Oil Level

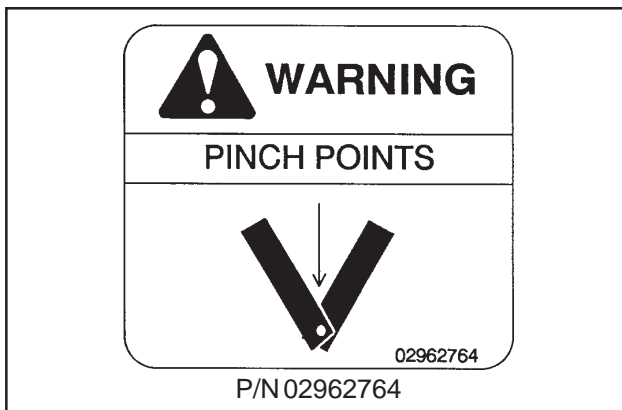


P/N00784063

SAFETY

SAFETY

Item 21: WARNING: Pinch Points



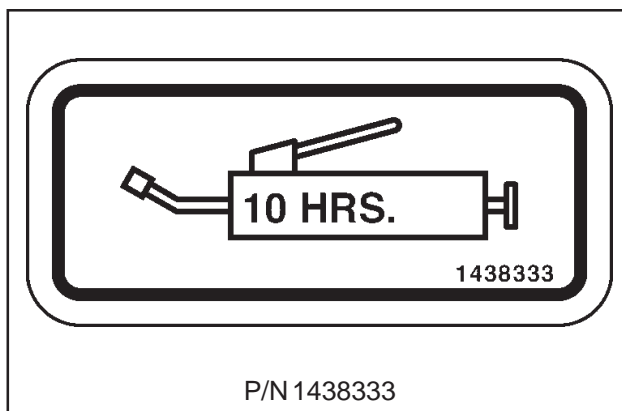
Item 22: DANGER: Moving machinery parts can pinch or crush or fall, which may cause injury or death.



Item 23: WARNING: Do Not Operate with Oil Leaks. Inspect daily and replace worn hoses which can rupture suddenly and violently resulting in serious bodily injury or death for scalding, fire, burn injury, or oil penetration. Always use cardboard to check for oil leaks. If oil penetrates the skin, serious injury could result.



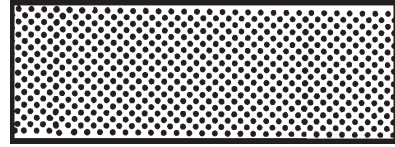
Item 24: Grease every 10 hours.



SAFETY

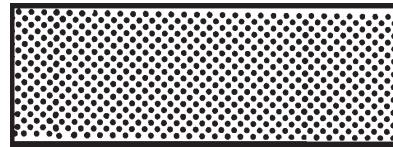
SAFETY

Item 25: Red Reflector



P/N 1458392

Item 26: Amber Reflector



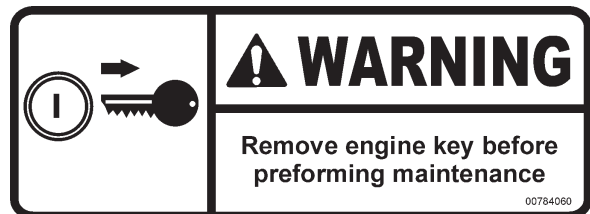
P/N 1458393

Item 27: ALAMO INDUSTRIAL Name Decal



P/N 02979545

Item 31: WARNING: Remove engine key before performing maintenance.



P/N 00784060

SAFETY

Item 32: NAME DECAL



P/N 00784326

SAFETY

SAFETY

FEDERAL LAWS AND REGULATIONS

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

Employer-Employee Operator Regulations

U.S. Public Law 91-596 (The Williams-Steiger Occupational and Health Act of 1970) OSHA

This Act Seeks:

“...to assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources...”

DUTIES

Sec. 5 (a) Each employer-

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA 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 Snowblowing operation, it is the employer’s responsibility to:

1. Train the employee in the proper and safe operation of the Snowblower.
2. Require that the employee to read and fully understand the Snowblower manuals.
3. Permit only qualified, properly licensed, and trained employees to operate the Snowblower.
4. Provide Personal Protective Equipment (PPE) to all operators, maintenance, and support workers of the Snowblower. This includes, but is not limited to, Safety Glasses, Safety Face shields, Safety toed shoes, Safety hard hat, Appropriate gloves, High-visual reflective vests, and Apron’s to provide adequate protection for the workers against inadvertent or accidental contact with hot surfaces, thrown objects, fluids, and chemicals used in the blowing processes and equipment.
5. Ensure that the operators, maintenance, and support workers wear the appropriate PPE when working on or around the Snowblower.
6. Ensure that adequate traffic awareness and protection including signage, lighting, barriers, shielding, and warnings are provided to protect the workers from inadvertent or accidental contact with vehicular traffic.

SAFETY

7. Maintain the Snowblower in a safe operational condition and maintain all shields and guards on the equipment.
8. Ensure the Endloader is equipped with a functional seat belt and require that the operator securely fasten the safety belt when operating the equipment.
9. Provide the required tools to maintain the Snowblower in a good safe working condition and provide the necessary support devices to secure the equipment safely while performing repairs and service.
10. Require that the employee operator to stop blowing if bystanders or passerbys come within 200 feet.

Hazard Communication and MSDS information.

OSHA requires the employer to inform the employee of the potential hazards associated with the chemicals and materials that the employee may contact. This includes, but is not limited to, the diesel fuel and hydraulic oil. The Employer must provide annual training for the employee in Material Safety Data Sheets (MSDS), the location of the MSDS sheets, how to read and understand the MSDS information and the PPE requirements when using the chemicals.

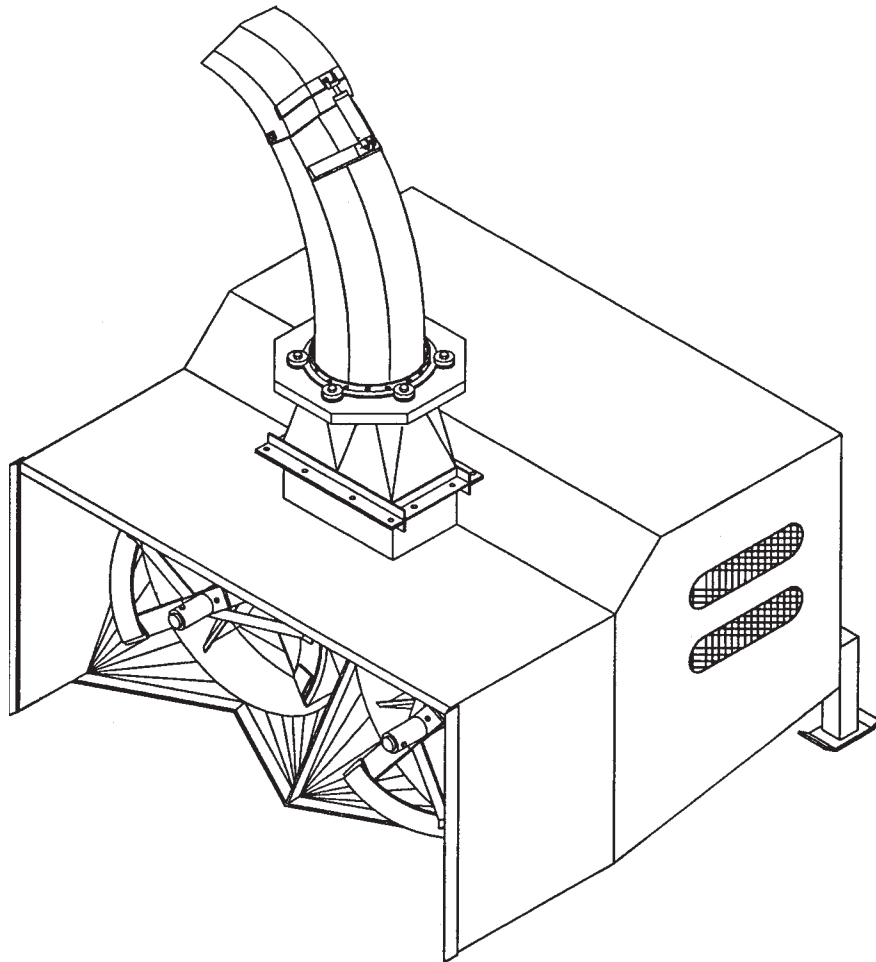
Proper Disposal of Hazardous Waste Materials

EPA regulations require the proper disposal of any hazardous chemicals and waste materials. This includes, but is not limited to, the diesel fuel, and hydraulic oil. Ensure that the employees and operators fully understand and comply with their responsibilities for the handling and proper disposal of any hazardous waste materials involved with the use of the Snowblower.

INTRODUCTION SECTION

INTRODUCTION

INTRODUCTION



The M8000MD Snowblower is strong, efficient, safe and easy to operate and provide you with years of trouble-free service. This snowblower works well in light, powdery or heavy, wet snow. A standard bolt-on replaceable tapered cutting edge is incorporated to loosen the snow on impact and guide it into the chopping system contributing to productivity. Our snowblowers use a helical feeding and chopping system as the main part of the blowing operation. This design allows the snow to be gathered, fed into the fan and discharged through the spout in one motion. The snow is never forced to change direction. You can blow the snow into a truck or free-cast without changing the spout.

Built to last, the body of the M8000MD is a uniframe construction which produces a shell of superior strength. The fans are driven by a high strength aircraft quality shaft that is coupled to a splined shear hub. Each fan is supported by bushings and bearings for cylindrical and thrust pressure. The M8000MD is designed with a minimum number of moving parts. The drivelines are enclosed in an oil bath reservoir. They can be easily adjusted from outside of the reservoir without removing the covers.

All functions of the blower are operated by a control panel located inside the cab or with an optional wireless remote control.

Safety is an important element of this snowblower. The snowblower's engine is mounted directly behind the blower unit. This gives the machine's operator a full range of sight for oncoming traffic and potential hazards in the area. The weight of the snowblower is evenly distributed for a balanced machine.

The M8000MD is designed to attach to a commercial payloader used for snow removal. It fits front-end loaders, trucks or four-wheel-drive tractors. The snowblower easily attaches to a loader using a quick coupler, specified by Customer.

INTRODUCTION

ATTENTION OWNER/OPERATOR

BEFORE OPERATING THIS MACHINE:

1. Carefully read the Operator's Manual, completely understand the Safety Messages and instructions, and know how to operate correctly both the Power Unit and Snowblower.

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 Industrial within thirty days of delivery of the Implement.*

3. Record the Implement 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.

INTRODUCTION

IMPORTANT

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.

///ALAMO
INDUSTRIAL 02925100

ASSEMBLY SECTION

ASSEMBLY

SPOUT INSTALLATION

The Spout has been removed for shipping purposes. **FIGURE 1** To install the spout to the main body of the snowblower use an overhead hoist. Align bolt holes on spout with flange on base unit. Spout should face the side of the machine. Securely tighten fasteners once all bolts have been installed. **FIGURE 2**



FIGURE 1 UNIT AS SHIPPED



FIGURE 2 SPOUT INSTALLED

ASSEMBLY

Attach the hydraulic hoses from the spout **FIGURE 3** to the couplers on the top side of the Snowblower. (**FIGURE 3**). Match color code on hose to color on coupler to match spout function on controls.



FIGURE 3



FIGURE 4

ASSEMBLY

ASSEMBLY

CONNECTING HYDRAULIC HOSES TO SNOWBLOWER

When connecting snowblower, make sure the control cord is fastened securely to avoid damage. The hoses coming from the telescoping chute are color coded to match the functions on the control box. **FIGURE 4**

Control Box (**FIGURE 6**) is mounted by the dealer in the payloader cab. When using optional wireless remote (**FIGURE 7**) this control box is mounted on the machine and the remote pendant operates the functions.

ASSEMBLY

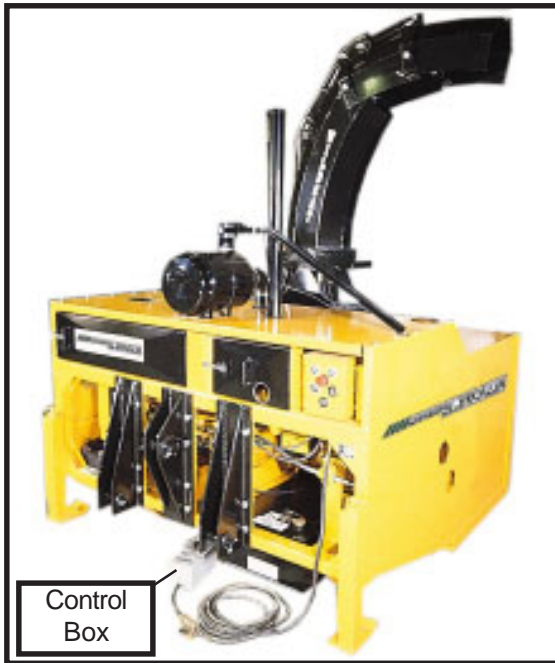


FIGURE 5



Cab Control Box

FIGURE 6



OPTIONAL
Remote Control

FIGURE 7

ASSEMBLY

TURNING ON POWER UNIT

Unit is equipped with an Master Power Switch. This should be turned to the off position when blower is disconnected from the power unit. Turn Master Power Switch to ON before coupling to power unit. Switch is located at the rear of the engine and can be accessed through to RH upper access panel. **FIGURE 8**

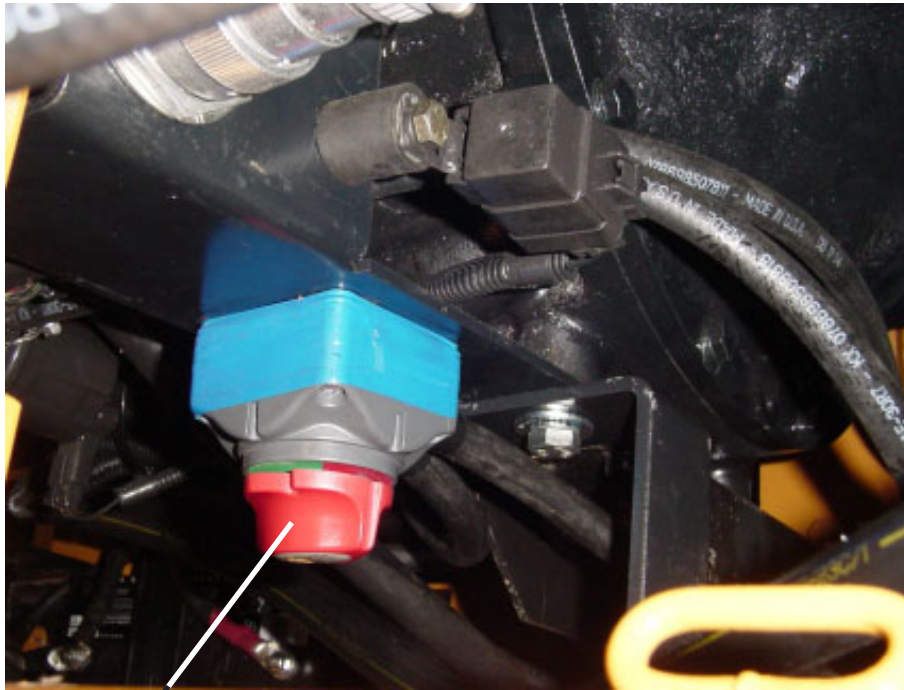


FIGURE 8

Power Switch

OPERATION SECTION

Operation Section 4-1

OPERATION

ALAMO INDUSTRIAL SNOW BLOWER OPERATION INSTRUCTIONS

The ALAMO INDUSTRIAL SNOWBLOWER is manufactured with quality material by skilled workers. This snow blower is designed for removing accumulations of snow from roadways and parking lots. The implement is equipped with enough protective gear to maintain the objects being thrown from SNOWBLOWER to prevent injury to bystanders and others, however, no shielding is 100% accurate. All shields and guards must be maintained in good operational condition.

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 SNOWBLOWER, tractor, or a thrown object. Do not operate the implement if passersby, pets, livestock, or property are within 200 feet of the unit.

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

IMPORTANT: To avoid implement damage, retorque all bolts after the first 10 hours of operation.

OPERATOR REQUIREMENTS	3-4
CONNECTING THE HYDRAULIC HOSES TO SNOWBLOWER	3-5
CONNECTING THE SNOWBLOWER TO UNIT	3-5
PRE-OPERATION INSPECTION AND SERVICE	3-6
FOREIGN DEBRIS HAZARDS	3-8
OPERATING THE SNOWBLOWER	3-9
STARTING THE SNOWBLOWER	3-11
STARTING THE FAN ROTATION	3-11
STORAGE	3-12
TROUBLESHOOTING	3-12

OPERATION

READ AND UNDERSTAND THE ENTIRE OPERATING INSTRUCTIONS AND SAFETY SECTION OF THIS MANUAL AND THE TRACTOR MANUAL BEFORE ATTEMPTING TO USE THE POWER UNIT AND IMPLEMENT.

If you do not understand any of the instructions, contact your nearest authorized dealer for a full explanation. Pay close attention to all safety signs and safety messages contained in this manual and those affixed to the Implement and power unit.

DANGER!



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)

SAFETY INSTRUCTIONS



PELIGRO!



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

!LEA EL INSTRUCTIVO!



OPERATION

OPERATION

OPERATOR REQUIREMENTS

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

Safe operation requires that the operator wear approved Personal Protective Equipment (PPE) for the job conditions while connecting, operating, servicing and repairing the snow blower. PPE is designed to provide operator protection from bodily injury and includes the following:

Personal Protective Equipment (PPE)

- Protective eye glasses, goggles, or face shield
- Hard hat
- Steel toed safety footwear
- Gloves
- Hearing protection
- Close fitting clothing
- Respirator or filter mask



OPERATION

DANGER!



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)



OPERATION

CONNECTING THE HYDRAULIC HOSES TO SNOWBLOWER

When connecting snowblower, make sure the control cord is fastened securely to avoid damage.



FIGURE 1



Cab Control Box

FIGURE 2



OPTIONAL
Remote Control

FIGURE 3

OPERATION

OPERATION

CONNECTING THE SNOWBLOWER TO UNIT

To mount on a front-end loader, the unit easily attaches by using a quick coupler. Ensure the coupler is locked in place before raising the boom.

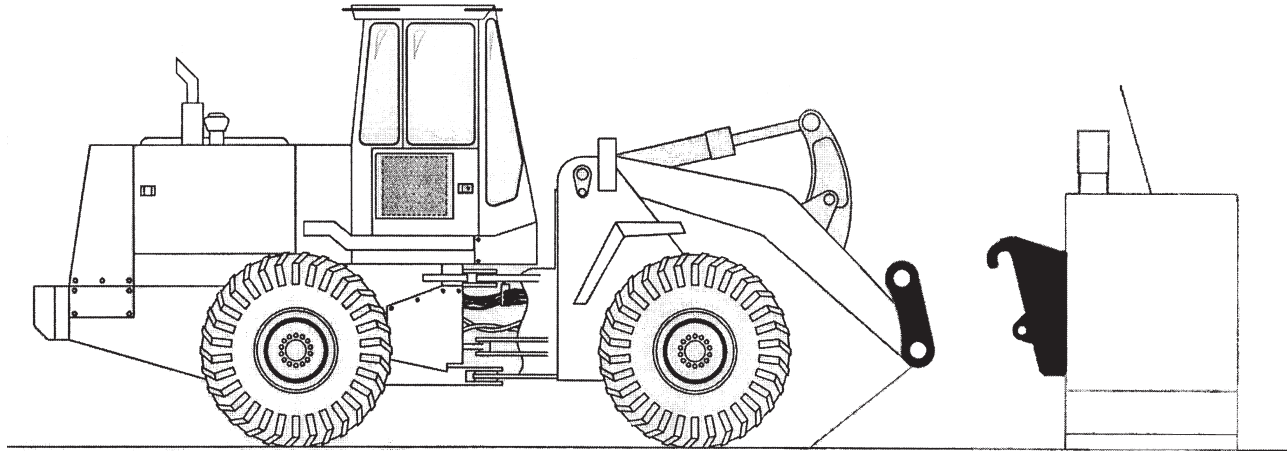


FIGURE 4

OPERATION

Snow Blower Pre-Operation Inspection/Service

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

- Ensure that the Manual Holder secured to the Implement with the Operator's Manual inside.
- Ensure all decals are in place and legible. Replace missing, worn, and non-legible decals.

NOTE: The snow blower Operator's Manual and affixed Decals contain important instructions on the safe and proper use of the snow blower. Maintain these important safety features on the snow blower in good condition to ensure the information is available to the operator at all times.



FIGURE 5

OPERATION

- Grease the blower completely as per the lubrication guide.
- Ensure chute ring is greased and rotating freely
- Inspect that all bolts and screws are in position and are properly torqued.
- Check blade wear and if worn reverse it or replace.
- Check the engine air cleaner.
- Check the engine oil level and the coolant level.
- Check the hydraulic oil level and add if needed. Use 10wt. hydraulic oil or equivalent, ISO32.
- Use correct diesel fuel for cold weather conditions.
- Grease the spouts generously with a silicone-based grease.
- Make sure that control cord is securely attached in the loaders cab and the wiring harness is clear of any pinch points. Always disconnect the wiring harness from the snow blower first when disconnecting from machine.



FIGURE 6

- Perform scheduled lubrication as specified in the maintenance section.
- Inspect the oil level and condition of oil reservoir and replenish if needed. (Add specific type oil if low)
- Ensure there are no oil leaks and fittings are properly connected and tightened.

NOTE: Refer to original manufacturers engine manual for maintenance on engine repair.

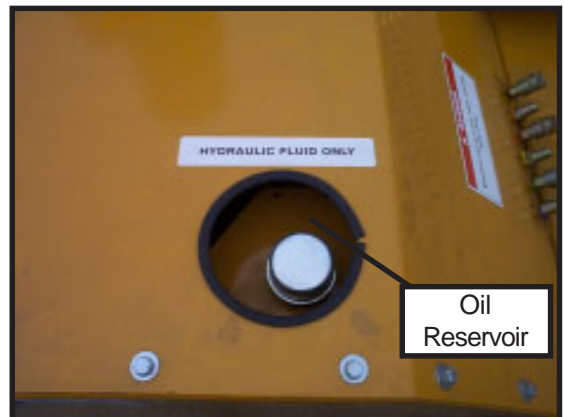


FIGURE 7

OPERATION

- Check Chain Case Oil on RH side of machine. Remove plug shown in Figure. Oil level should be at level of groove on Dip Stick. Add oil if required. Use Chevron Vistec ISO68 or Mobil Vacetra #2.

There are three separate oil systems on the M8000MD, Excluding the engine.

1. Hydraulic Oil Level - Use ISO32 Hydraulic Oil
2. Drive Chain Case - Recommended: Mobil Vacetra No. 2 or Chevron Wayoil Vistac ISO68 - both of these recommended lubricants contain a tacking agent which improves the lubricants ability to adhere to components, preventing corrosion. **FIGURE 8**

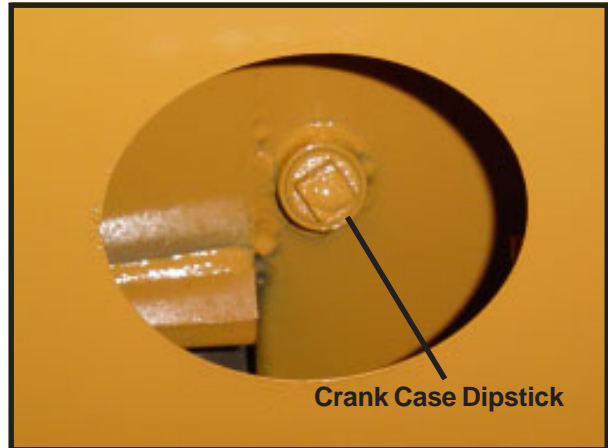


FIGURE 8

- Gearbox Lubricant - Recommended Lubricant ISO32 hydraulic oil. The gearbox oil is circulated through an oil cooler and requires a light weight oil. **FIGURE 9**



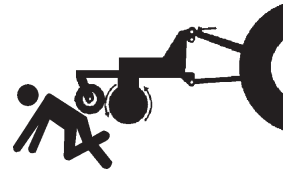
FIGURE 9

OPERATION

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!



Do not operate this Equipment with hydraulic oil leaking. Oil is expensive and its presence could present a hazard. Do not check for leaks with your hand! Use a piece of heavy paper or cardboard. High-pressure oil streams from breaks in the line could penetrate the skin and cause tissue damage including gangrene. If oil does penetrate the skin, have the injury treated immediately by a physician knowledgeable and skilled in this procedure. (SG-15)



OPERATION

Foreign Debris Hazards

Remove all foreign objects and debris. If objects are too big to remove, mark them clearly and be sure to prevent the implement from contacting them.



FIGURE 10

If you hit a solid object or foreign debris stop the Snow Blower at once. Wait for all rotating motion to stop, then raise the blower off the object. Inspect the area and mark the location of the debris. Inspect the condition of the implement and make any needed repairs immediately. Make sure the auger is not damaged before resuming operation.

WARNING!



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

DANGER!



There are obvious and hidden potential hazards in the operation of this Snow Blower. **REMEMBER!** This machine is often operated in deep snow where vision is reduced. The fan blades of this Snow Blower can throw objects for great distances. 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 Snow Blowing if anyone is within 200 feet of Snow Blower. (SSB-11)

WARNING!



Blow snow at the speed that you can safely operate and control the Tractor and Snow Blower. Safe speed depends on terrain and snow conditions. Normal ground speed range is from 0 to 5 mph. Use slow 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. (SSB-4)

OPERATION

Operating the Snow Blower

When ready for use, stop the snow blower and set the chute deflector to the desired position. Adjust shoe so that the blade is at the desired height. Make sure that the blade is running at an even height at both ends. Check that the skid shoes are approximately 1/2" below the snowblower frame. This will pitch the machine forward slightly to provide a steeper cutting angle for the cutting edge. Be sure to replace the cutting edges when they become worn to prevent wear on the snowblower frame. Adjust the skid shoe using the crank handle. Count the turns of the handle for each side to ensure level adjustment.



FIGURE 11

Optional Gauge Wheels

On units equipped with optional gauge wheels, set height by adjusting the ratchet jack. Once height is set use jam nut on Jack to lock in place.



FIGURE 12

Adjust Ratchet to set
Gauge Wheel Height

OPERATION

Before operating the snow blower recheck that all fasteners, nuts, bolts, screws and cotter pins are in place and all bolts are torqued to specification.

Check Roller chains for tightness and adjust the idler sprockets accordingly. **ALWAYS** keep roller chain tight.

See Cummins Engine Manual for instructions related to QSB220 Powerunit.

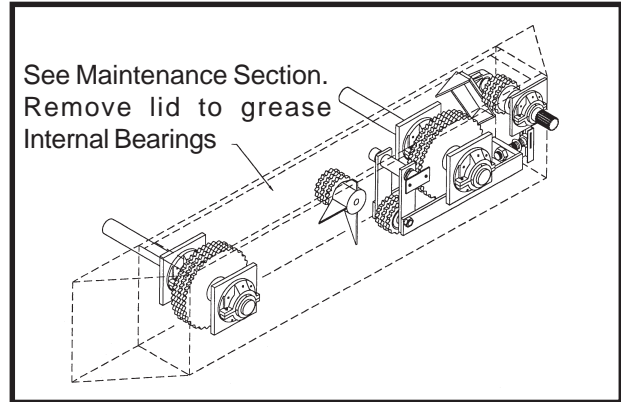


FIGURE 13

WARNING!



Only operate the snow blower in conditions where you have clear visibility in daylight or with adequate artificial lighting. Never snow blow in darkness or in conditions where you cannot clearly see at least 100 yards in front and to the sides of the Power Unit and Snow Blower. 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 snow blowing. (SSB-1)

DANGER!



DO NOT operate this Implement on a Power Unit that is not properly maintained. Should a mechanical or Power Unit control failure occur while operating, immediately shut down the Power Unit and perform repairs before resuming operation. Serious injury and possible death could occur from not maintaining this Implement and Power Unit in good operating condition. (SPU-38)

CAUTION!



If removing snow from other than paved or hard surfaced areas, move deflector to the low position to minimize the distance that gravel or foreign material is ejected.

OPERATION

DANGER!

Never direct discharge of snow towards people, pets, or property.



When blower is ready to snow blow do not use the snow blower to **PUSH SNOW!** Speeds may vary with the depth and condition of the snow. Let the machine work its way through deep drifts and hard packed snow. **NEVER** ram the snowblower into snowbanks. This action puts undue stress on all driveline components and may possibly plug the spout. For best results travel at speeds that will let the blower efficiently handle the load. Choose a speed that will keep the speed of the snowblower engine at the engine manufacturers recommended RPM level.

If the snowblower becomes overloaded in deep snow, raise the machine and remove the top layer. Once the top layer is removed, back up and remove the lower layer.

The casting chute should not plug during normal operation. However, if fan RPM is allowed to drop drastically in wet, sticky conditions, or if a shear bolt breaks in the fan the casting chute may plug. If the chute should plug, try raising the snow blower to transport position and dropping it suddenly, if this fails to clear blockage, the casting chute will have to be manually cleared.

DANGER!

Shut off all power to blower, then ensure all rotation has ceased before attempting to clear blockage from spout.



CAUTION!

Do not allow snow or ice to build up around the chute rotation mechanism as this may cause damage to snow blower chute or the chute rotator mechanism.



When operating the snow blower occasionally rotate the chute left then right to clear the front housing of snow.

DANGER!

Snow Blowers are capable under adverse conditions of throwing objects for great distances (200 feet or more) and causing serious injury or death. Follow safety messages carefully. (SSB-7)



STOP SNOW BLOWING IF PASSERSBY ARE WITHIN 200 FEET.



When blowing snow, be sure not to get too close to the shoulder of the road. If one side of the prime mover drops into the ditch, it may cause a rollover.

The snow blower should be operated with blower housing close to the ground when possible. Only operate in raised position when clearing top layer of heavy snow bank that cannot be cleared in one pass. Do not tilt the blower at angles greater than five degrees.



FIGURE 14

OPERATION


Starting the Snow Blower

To Start

Make sure that the clutch is disengaged.

Make sure that the blower is securely attached to the prime mover. Failure to do so can result in bodily injury or damage to the machine.

Start engine only with throttle set to idle.

DANGER!  Never use ether (Starting Fluid) as Engine is equipped with a grid heater on the intake manifold. Use of ether could result in an explosion and possibly cause injury.

Use key to start engine. On units equipped with wireless remote turn key on control box to on position power on pendent. Press shift key and start button to start engine. Wait for engine to warm up before engaging fan clutch.

To Start Fan Rotation

Slow the engine down to an idle before engaging the clutch by pushing the green, "Clutch On" button. Never engage or disengage the clutch at higher speeds or serious damage to the power train could result. The clutch push button is illuminated.

To disengage clutch set throttle to slow and push clutch off switch.

On blowers equipped with a wireless remote engage clutch by depressing "Clutch On" button. To turn off clutch press "Clutch Off" button.

Before starting into a snowdrift, speed up the engine to the maximum RPM (approx. 2500 RPM) by pushing the throttle up. Continue into the snow approximately 1/3 to 1/2 MPH or whatever speed the engine will allow the blower to travel.

When shutting down the blower, throttle down the snowblower to an idle and disengage the clutch before shutting down the blower engine.

Never have the snowblower clutch engaged and running when the operator is not sitting in the operators seat on the power unit.



CONTROL BOX

FIGURE 15

OPERATION

REMOTE CONTROL FUNCTION GUIDE (Optional Feature)

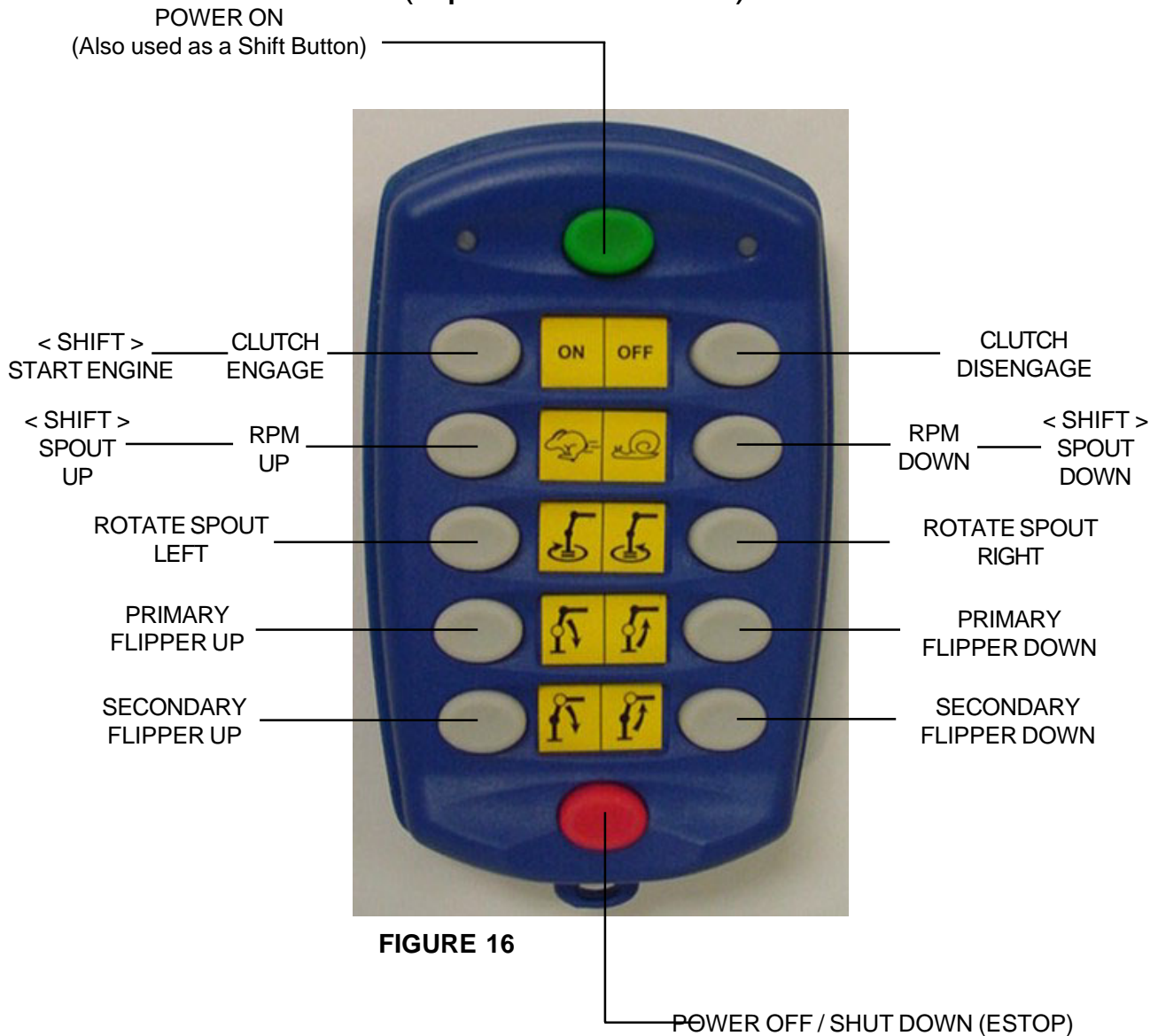


FIGURE 16

Turn on key on Snowblower Control Box to power up the remote control. To power up Engine, depress shift and power button. Wait for engine to warm up before raising the RPM or engaging clutch.

ENGINE START

The Engine Start is a momentary output that can only be activated once. After the output has been activated the E-Stop must be pressed and the link reestablished before it can be activated again.

SPOUT ACTIVATION

For spout activation momentarily press button as outlined above.

OPERATION

SNOW BLOWER STORAGE

Properly preparing and storing the snow blower 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:

1. Thoroughly clean all debris off the implement to prevent damage from rotting grass and standing water.
2. Lubricate all implements points and fill gearbox oil levels as detailed in the maintenance section.
3. Tighten all bolts and pins to the recommended torque.
4. Check the implement for worn and damaged parts. Perform repairs and make replacements immediately so that the implement will be ready for use at the start of the next season.
5. Store the implement in a clean, dry place with the implement resting securely on blocks or at ground level.
6. Keep the drivelines yokes or hydraulic hoses from sitting in water, dirt and other contaminants.
7. Use spray touch-up enamel where necessary to prevent rust and maintain the appearance of the implement.
8. Shut off Master Power Switch.



FIGURE 17



FIGURE 18
MASTER POWER SWITCH

OPERATION

CLUTCH HYDRAULIC PRESSURE



Hydraulic Clutch System Pressure Gauge

FIGURE 19

OPERATION

TROUBLE SHOOTING GUIDE (SNOW BLOWER)

TROUBLE	POSSIBLE CAUSE	POSSIBLE REMEDY
Excessive power required to operate snow blower	Gear Ratio too high on Prime Mover	Gear down Prime Mover
	Blade scraping ground	Increase unit height
Wheel slippage	Ballast or Prime Mover	Install chains
Excessive Mechanical noise	Loose bolts	Tighten bolts
	Worn universal joints bearings	See your dealer
	Worn bearings	See your dealer
Does not throw snow	Check hydraulic pressure	Install check valve as shown on parts page
Fan Does not Work	Driveline Shear Bolt Broken	Replace Shear Bolt

MAINTENANCE SECTION

MAINTENANCE

General Maintenance Schedule

- Check the engine air cleaner regularly. (FIGURE 1)
- Check the engine oil level and the coolant level frequently as per the engine manual.
- Check the hydraulic oil level regularly and add when needed. Use a 10 wt. hydraulic oil or equivalent.
- Use the correct diesel fuel for cold weather conditions.
- Check that the skid shoes are approximately 1/2" below the snowblower frame. Be sure to replace the cutting edges when they become worn to prevent wearing into the snowblower frame.



Check Air Cleaner Service Indicator

FIGURE 1

Nuts And Bolts

1. Check all nuts and bolts for correct torque after the first 5 hours of operation then yearly.

IMPORTANT: Each fan is protected by a shear bolt located at the front of the fan shaft. FIGURE 3. Replace as needed. Shear bolts should not be over tightened, as this may cause unpredictable shearing action.

Drive Assembly

The oil bath housing for the drive assembly contains approximately 15 gallons of standard ISO 68 oil - Mobil Vactra 2 or Chevron Vistac ISO 68 (enough oil to cover the bottom 2" of the drive sprockets). This oil bath assures long sprocket and chain life while dissipating heat caused by moving parts. Periodically check the oil level and replenish as necessary. Check roller chains for tightness and adjust the idler sprockets accordingly. **ALWAYS** keep the roller chain tight. See Section 5-4 for procedure.

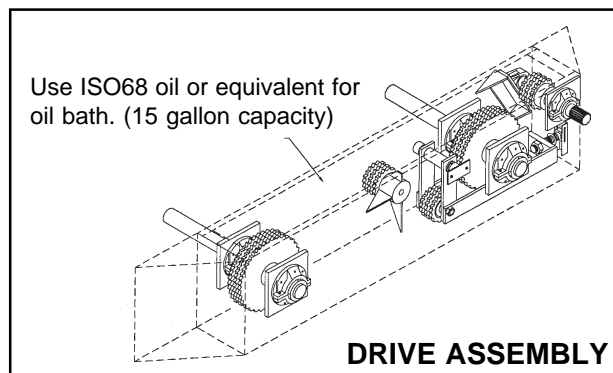


FIGURE 2

Chute

Apply grease to the exposed face of the chute ring.

MAINTENANCE

Shear Bolt

1. **IMPORTANT:** If a shear bolt breaks during operation immediately shut down the Power Unit and wait for all rotation to cease before replacing the shear bolt.

2. The shear bolts used on this snow blower are machined with a shear groove for this specific application. Use only Part No. 00783322. Always stock spare shear bolts in case you encounter tough conditions. The machine is shipped with 8 spare bolts.

IMPORTANT: Tighten nut only enough to draw the shear plates together. Do not over tighten nut. Occasionally grease shear mechanism inside and toward front of fan and toward rear of fan. Fan is equipped with taper bearing for shear rotation.

IMPORTANT: Replacement of the shear bolt with one of any other grade or size will be considered an unauthorized modification and the warranty will be void.



FIGURE 3

Shear Bolt
Double Nut Shear Bolt to prevent loosening.

Never install two shear bolts. Second hole provided as alternate if first hole is damaged.

OIL RESERVOIR

Use SAE ISO68 oil or equivalent for oil bath. (15 gallon capacity)

Remove lid to grease Internal Pillow Block Bearing.

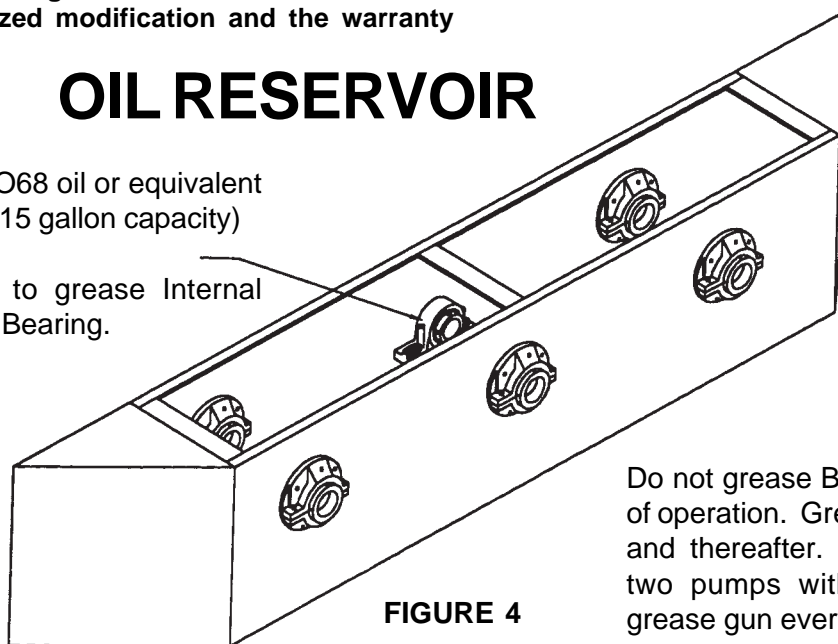


FIGURE 4

Do not grease Bearings the first year of operation. Grease the second year and thereafter. Give each Bearing two pumps with a hand operated grease gun every season.

WARNING!



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)



WARNING!



Never attempt to lubricate, adjust, or remove material from the Implement while it is in motion or while tractor engine is running. Make sure the tractor engine is off before working on the implement. (SG-20)

MAINTENANCE

CHAIN TENSIONING INSTRUCTIONS

Follow these simple steps to tighten the main drive chain which runs in the oil bath reservoir. Remember: You do not need to remove the reservoir cover to tighten the drive chain.

1. Locate the take-up bolt. This bolt is found on the right side of the blower, through the large hole in the side shield. Inside the shield you will find a locking channel up, exposing the idler take-up bolt.
2. Using a torque wrench, tighten the take-up bolt by turning it clockwise to 9 ft. lbs. of torque. Turn bolt head clockwise until the bolt head flats are parallel with the locking channel to slip back over the bolt head.

NOTE: Be sure to tighten the chain by following these instructions. The chain should be tightened after the first 10 hours of operation and ever 100 hours thereafter.

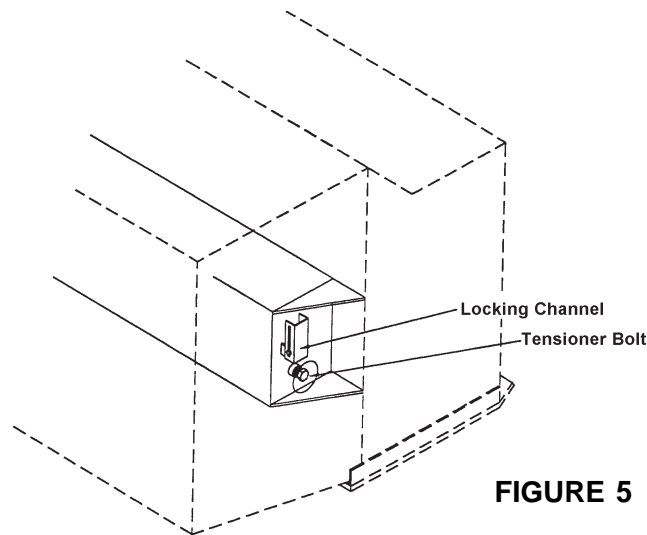
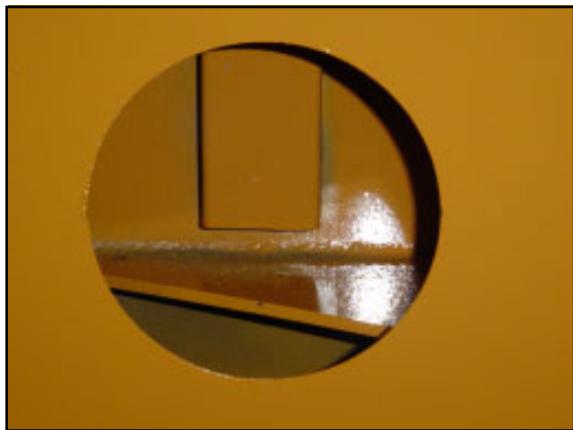


FIGURE 5



Locking Channel
FIGURE 6



Tensioner Bolt
FIGURE 7

MAINTENANCE

STORAGE

Wash any dirt or salt off the snow blower.

Smear grease over any exposed hydraulic cylinder rods.

MAINTENANCE

Schedule for checking Components, Fluid Levels, Greasing and Maintaining Blowers.

MAINTENANCE TO PREFORM	Daily (8-10 Hrs.)	Weekly	100 Hrs.	150 Hrs. or 1 Month	500 Hrs. or 6 Months	2000 Hrs. or 1 Year
Engine Oil Level	X					
Engine Coolant Level	X					
Engine Air Cleaner	X					
Hydraulic Oil Level	X					
Check Engine Radiator	X					
Check Hydraulic Oil Cooler	X					
Check Hydraulic Oil Temp.	X					
Clutch: Cross Shaft		X				
Fan Shaft Assembly Bearings		X				
Oil All Chain Couplings		X				
Engine Oil Change			X			
Engine Oil Filters			X			
Clutch: Throw-Out Bearings			X			
Gearbox (Mobil SHC 75W-90)					X	
Grease All Bearings					X	
Hydraulic Filters Replacement					X	
Engine Fuel Filters					X	
Spout Bearings						X
Engine Coolant Change						X
Hyd. Oil Change (ISO 32 Hyd. Oil)						X
Fan Shaft Bearings						X
Engine Water Filters (if applicable)						X
Oil Bath (ISO68 Bar Chain Oil)						X

* **NOTE:** On a new engine, change oil and oil filter at 50 Hrs. and every 100 Hrs. thereafter.

■ **NOTE:** Hydraulic oil filter should be changed at 50 Hrs. and every 500 Hrs. thereafter.

MAINTENANCE

TRANSFLUID CLUTCH ASSEMBLY

TRANSFLUID Section 6-1

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INSTALLATION AND MAINTENANCE MANUAL

THIS MANUAL CONTAINS INSTRUCTIONS FOR INSTALLATION, START UP, FUNCTIONING, AND MAINTENANCE OF HFO-HFF OIL POWER TAKE OFFS. WE SUGGEST THAT ANY PERSON WHO IS RESPONSIBLE FOR USE AND/OR MAINTENANCE, SHOULD BE PROVIDED WITH THIS MANUAL. THE RESPECT OF RULES, CONTAINED IN THIS MANUAL IS MANDATORY FOR WARRENTY VALIDITY.

WE REQUIRE THAT, FOR SPARE PARTS ORDERS, IT IS IMPORTANT TO PROVIDE, BESIDES PART NUMBER AND QUANTITY: MODEL, SPECIFICATION No AND SERIAL No WHICH ARE STAMPED ON NAME PLATE.

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Tipo / Type :

Specifica nr. :
Spec. number

Serie nr. :
Serial number

**HFO - HFF
211 / 211-L**

drive with us

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HFO-HFF 211/211-L

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DESCRIPTION

These units are OIL POWER TAKE OFFS with clutches composed by two discs having the outer driving ring connected to the internal combustion engine flywheel. The output shaft is supported by two taper roller bearings or for 211-L by a spherical roller bearing grease lubricated, fitted in a cover flanged to the engine flywheel housing. A pilot bearing, fitted into the flywheel, supports the output shaft at the engine side.

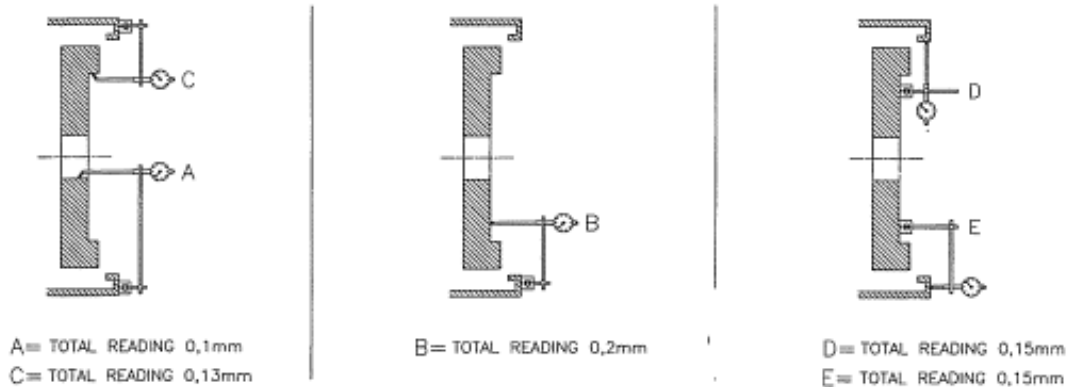


Fig. 1

Before mounting HFO-HFF power take offs onto the engine, it is important to check that flywheel be within SAE tolerances (see FIG.1). This is very important for good functioning of the power take off.

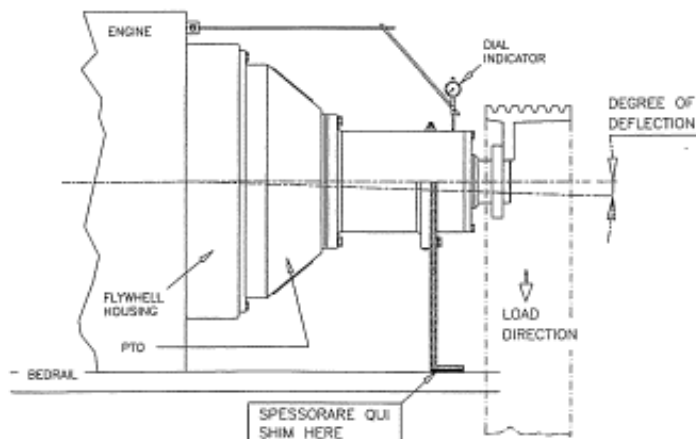


Fig. 2

ATTENTION:

engage power take off ONLY with engine at idling speed. Too high a belt tension may reduce drastically the life of bearing 4 or 39 (see pag. 6). At ambient temperature close to or below 0°C, keep engine running at idling speed for 5 minutes, at least before engagement.

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HFO-HFF 211/211-L

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INSTALLATION (see FIG.2 and drawing at page 7)

- 1 Mount driving ring 31 onto engine flywheel.
- 2 Mount the pilot bearing 41 (greased for life), onto shaft 5 of the power take off.
- 3 Mount the housing 1 onto engine flywheel housing. Position power take off, paying attention to alignment between shaft 5 and pilot bearing 41, with its flywheel seat and driving ring 31 mounted onto flywheel. In order to align between housing 1 and flywheel housing, use 3 threaded rods with adequate lengths, mounted 120° apart onto flywheel housing.
- 4 Through opening on housing 1, guide the teeth of the plates 23 into the driving ring 31. External housing should be orientated to get the opening on vertical line. Tighten screws of external SAE flange.
- 5 All power take-offs are supplied already greased. Only for the HFF 211-L, after the first 100 hours of operation the grease level should be checked. Removing the overflow plug 40, insert a screw driver into the cavity and check if the grease is present. If necessary add grease (see BEARING GREASE table page 6) through the greaser 11. For next maintenance cycle see Maintenance table page 3.
CAUTION: Do Not Overgrease, through greaser 11, bearing cavity. It might cause the main bearing to overheat and grease to exit from seals.
- 6 Hit the shaft on the end, with a rubber mallet, to relieve any pre-loading against the bearings that may result due to the resistance of pilot bearing when being pressed into the flywheel.
- 7 For HFF 211-L mount a support plate onto spacer 36, to assure that the overhung load on the engine flywheel housing is relived and any misalignment caused by this overhang is relived, the support plate should be shimmed following the procedure:
A-attach dial indicator to engine block (see FIG. 2 page 1) with indicator anvil resting on bearing carrier at opposite direction of belts.
B-set indicator to zero.
C-tension the belts
D-shim under support plate to return indicator to zero.
- 8 Rotary union 14 is supplied separately. Before installation, grease O-Ring mounted on rotary union. Fix lockwasher 15 tightening screws 16.
- 9 Connect rotary union 14 through a suitable flexible hose.
- 10 Install a three way valve for oil pressure feeding. The operating oil pressure must be 25 bar (max 30 bar).
CAUTION: With the clutch disengaged the residual pressure should be 0 bar. For pressure over 0 bar contact TRANSFLUID.
- 11 At first start up, rotate engine by hand in insure there are no interferences. After, run power take off with engaged clutch and engine at half of max speed for not less than 10 minutes.
CAUTION: In case of a long start up period, mor than four seconds, or engine kill, or clutch overheating, caused by a sizable mass and driven inertial load, a BUMPING-IN sequence may be used. Engage the power take off for no more than 3 or 4 times lasting one second each.

INSTALLATION (see FIG.2 and drawing at page 7)

- 1 Every 500 working hours add 13g (14 cc) of grease (see BEARING GREASE table page 6) through the greaser 11.
- 2 After 3000 working hours it is recommended to purge the old grease. The old grease should be replaced if the unit has not been used for more than 6 months. Each bearing, not the bearing cavity, should be packed with approximately 19 g (20 cc) of new grease. Grease should then be added through the greaser 11. To refill, to the proper level (approximately 50%), a completely empty bearing cavity will require approximately 56 g (60 cc) of grease.
- 3 **In case of taper roll bearings replacement, adjust as follows:**
A - Refill grease inside the bearings and the bearings cavity as described above at point 2.
B - Tighten threaded ring 8, turning manually the shaft 5, until some resistance of shaft rotation occurs.
C - Back off threaded ring, 1 - 2 notches.
D - With a rubber mallet (non metallic), hit the shaft on the end, to seat bearing outer race against threaded ring. This should give, approximately, the end play of 0.15 - 0.25 mm.
E - Lock threaded ring 8 through lock bearing retainer 12 and screw 10.
F - See item 6 and 11 on INSTALLATION table page 2.
- 4 It is advisable, every 4000 working hours, to check bearing condition.
- 5 Check driving plate condition once a year.

MAINTENANCE for HFO-HFF 211-L

- 1 After the first 100 hours of operation the grease level should be checked as described on INSTALLATION table at point 5 page 2.
- 2 Every 500 working hours add 19g (20 cc) of grease (see BEARING GREASE page 6) through the greaser 11. Remove the overflow plug 40 to insure that the grease is not overfilled.
- 3 After 3000 working hours it is recommended to purge the old grease. The old grease should be replace if the unit has not been used for more than 6 months. The bearing, not the bearing cavity, should be packed with approximately 49g (52 cc) of new grease and the cover remounted. Remove the overflow plug 40 to control for overfilling. Grease should then be added through the greaser 11. To empty bearing cavity will require approximately 89g (94 cc) of grease. 100 hours of operation after purging, the grease level should be checked as described on INSTALLATION table at point 5 page 2.
- 4 It is advisable, every 4000 working hours, to check bearing condition.
- 5 Check condition of driving plates once a year.

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HFO-HFF 211/211-L

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TROUBLE SHOOTING

SYMPTON	CAUSE	REMEDY
Clutch slip and/or overheating.	Driving plates.	Check plates wearing. Check driven machine. Check engine rpm.
	Low oil pressure.	Check pressure feeding system. Check rotary union. Check possible loss.
Noise and/or overheating output bearing carrier.	Grease missing.	Add grease. If old grease was black colour, check bearing condition.
	Bearing failure.	Replace.
	Radial load too high.	Decrease belts tension.
	Slip plates.	Check oil pressure.
	Misalignement.	See INSTALLATION table pag. 2 item 7.
	Torsional vibration.	Contact TRANSFLUID.
Oil leakage at clutch side.	Tooth wear on driving ring and/or clutch plates.	Dismantle and replace driving ring and/or clutch plates.
Not complete disengagement (drag of load, smoke from clutch).	O-ring too much worn or damaged.	Replace.
	Residual pressure over 0 bar.	Check disengaging pressure.
	Engine rpm not at minimum.	Check engine rpm at minimum.
	Presence of dirt between internal and external teeth of plates.	Remove dirt. Check the housing, all holes must be closed and all window openings must be sealed with gasket.

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AXIAL LOAD FOR CLUTCH PACK ASSEMBLY

If it is necessary to disassembly the clutch group, or substitute it with a new one, the conical mating surfaces, both shaft and hub, should be cleaned very well before reassembly. For the reassembly of conical hole splined hub onto shaft, apply an axial load on hub as indicated in the following table.

Make sure to align the keyway by mounting the key before applying the load.

TIPO / SIZE	CARICO ASSIALE / AXIAL LOAD	
	Kp	N
HF.. 211 / 211-L	10.468	102.656

SPECIFICA TECNICA GRASSO PER CUSCINETTI TECHNICAL SPEC. FOR BEARINGS GREASE	
Base del sapone - Soap base	Litio - Lithium
Campo di temperatura - Temperature range	-20°C ÷ +120 °C
Viscosità - Viscosity	< 150 cSt (40 °C)
Classe di consistenza - Consistency (NLGI)	2
Fattore di velocità - Speed factor	> 200.000
Servizio - Duty	Pesante - Heavy

GRASSI PER CUSCINETTO BEARING GREASE	
CASTROL	SPHEEROL EPL2
SHELL	ALBIDA LX
KLUBER	CENTOPLEX 2EP
FAG	ARCANOL L135V
AGIP	ROCOL SAPPHIRE 2

Vedi disegno pag. 6 / see drawing pag. 6

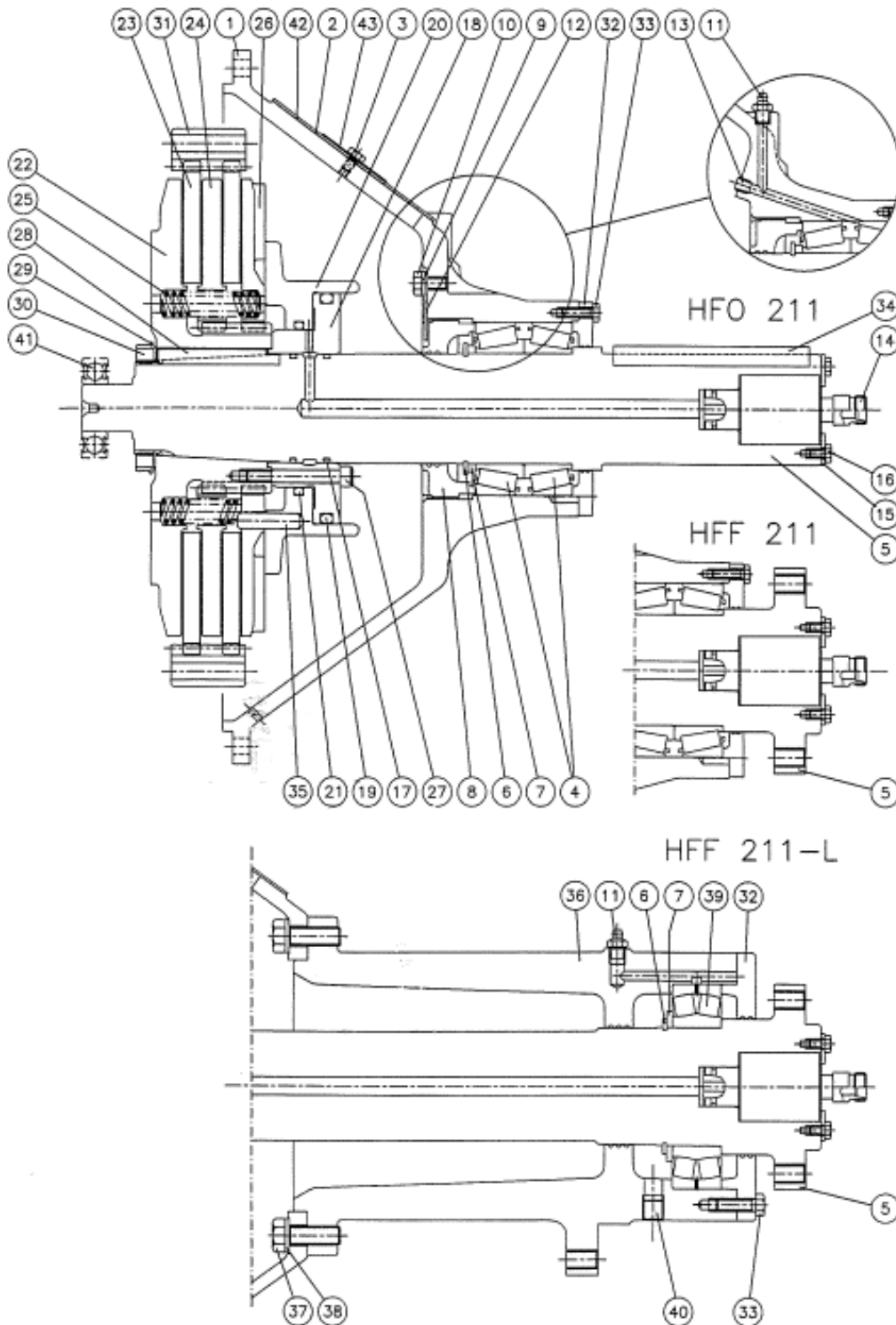
Pos.	Denominazione	Name	Pos.	Denominazione	Name
1	Campana	Housing	23	Disco esterno	Driving plate
2	Coperchio	Cover	24	Disco interno	Center plate
3	Vite	Screw	25	Molla	Spring
4	Cuscinetto a rulli conici	Taper roller bearing	26	Piatto pressione	Pressure plate
5	Albero	Shaft	27	Vite	Screw
6	Anello elastico	Snap ring	28	Linguetta	Key
7	Anello di compensazione	Spacer	29	Rondella di sicurezza	Lock washer
8	Ghiera	Lock nut	30	Ghiera	Lock nut
9	Rondella	Lock washer	31	Anello di trascinamento	Driving ring
10	Vite	Screw	32	Coperchietto	Cover
11	Ingrassatore	Greaser	33	Vite	Screw
12	Piastrina di fermo	Tab washer	34	Linguetta	Key
13	Tappo conico	Taper plug	35	Spina elastica	Elastic pin
14	Collettore rotante	Rotary union	36	Allunga	Spacer
15	Piastrina di fermo	Lock washer	37	Vite	Screw
16	Vite	Screw	38	Rondella	Lock washer
17	Gommino OR	O-Ring	39	Cuscinetto orientabile a rulli	Spherical roller bearing
18	Mozzo	Hub	40	Tappo conico	Taper plug
19	Gommino OR	O-Ring	41	Cuscinetto pilota a sfere	Pilot ball bearing
20	Pistone	Piston	42	Guarnizione	Gasket
21	Gommini OR	O-Ring	43	Targhetta di identificazione	Name plate
22	Mozzo appoggia dischi	Hub and backplate			

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30/01/2003

TF6145 Rev.6 HF 211-211L

M-8000MD 12/04

TRANSFLUID Section 6-7

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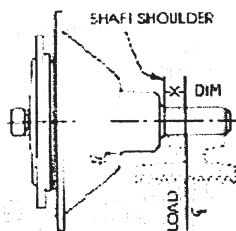
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HF & AF
CARICO RADIALE AMMESSO / PULEGGIA CONSIGLIATA
PERMISSIBLE SIDE LOAD (N) / SUGGESTED PULLEY

TF 6093-C
Rev. 5

- Calcolo durata cuscinetti > 5000 ore.
- Velocità oltre i 2100 giri devono essere approvate.
- Diametri pulegge sono i minimi ammissibili.
- Per velocità periferiche superiori a 35 m/s, è raccomandata la bilanciatura dinamica.
- Il numero di cinghie è il massimo ammissibile.
- L'impiego di cinghie dentate deve essere approvato.
- Quota "X" è funzione del numero e tipo di cinghie.
- Fattori di servizio:
Frantumatori e truciolatori ≥ 2.5x1.8
Frese stradali ≥ 2.2.



- Calculated bearings life over 5.000 hours.
- Engine speed over 2100 rpm needs specific approval.
- Pulley diameter is the minimum permissible.
- Over 35 m/s, dynamic balancing is recommended.
- Belts nr. is maximum permissible.
- Timing belts must be approved by Transfluid.
- "X" distance is according to belts type & number.
- Load factors:
Stone crusher & wood chipper ≥ 2.5x1.8
Road milling machine ≥ 2.2.

211		La puleggia deve essere installata sormontando il portacuscinetto di 55 mm Pulley must be installed overlapping bearing carrier by 55 mm			
Potenza fino a Power up to	Max "X" (mm)	Carico max (N) Max load	Min. dia puleggia Min. pulley dia.	Max nr. cinghie e tipo Max belts nr. and type	
90 kW @ 1800 rpm frantumatore - cippatore / stone crusher - wood chipper	-7	21.000	200 mm	5 x 5V	
110 kW @ 2100 rpm frantumatore - cippatore / stone crusher - wood chipper	2	20.000	200 mm	6 x 5V	
200 kW @ 2100 rpm fresa stradale / road mill machine	28	19.000	200 mm	9 x 5V	

311		La puleggia deve essere installata sormontando il portacuscinetto di 55 mm Pulley must be installed overlapping bearing carrier by 55 mm			
Potenza fino a Power up to	Max "X" (mm)	Carico max (N) Max load	Min. dia puleggia Min. pulley dia.	Max nr. cinghie e tipo Max belts nr. and type	
200 kW @ 1800 rpm frantumatore - cippatore / stone crusher - wood chipper	28	34.000	280 mm	9 x 5V	
240 kW @ 2100 rpm frantumatore - cippatore / stone crusher - wood chipper	46	31.000	315 mm	11 x 5V 7 x 8V	
370 kW @ 2100 rpm fresa stradale / road mill machine	55	27.000	280 mm	12 x 5V	
	93	24.000	315 mm	10 x 8V	

214 - 314		La puleggia deve essere installata sormontando il portacuscinetto di 55 mm Pulley must be installed overlapping bearing carrier by 55 mm			
Potenza fino a Power up to	Max "X" (mm)	Carico max (N) Max load	Min. dia puleggia Min. pulley dia.	Max nr. cinghie e tipo Max belts nr. and type	
300 kW @ 1800 rpm frantumatore - cippatore / stone crusher - wood chipper	46	39.000	355 mm	11 x 5V	
	50			7 x 8V	
	52			8 x SPC	
340 kW @ 2100 rpm frantumatore - cippatore / stone crusher - wood chipper	55	36.000	380 mm	12 x 5V	
	65			8 x 8V	
	64			9 x SPC	
450 kW @ 2100 rpm fresa stradale / road mill machine	122	26.000	355 mm	12 x 8V	
	128			14 x SPC	

314HD		La puleggia deve essere installata sormontando il portacuscinetto di 55 mm Pulley must be installed overlapping bearing carrier by 55 mm			
Potenza fino a Power up to	Max "X" (mm)	Carico max (N) Max load	Min. dia puleggia Min. pulley dia.	Max nr. cinghie e tipo Max belts nr. and type	
360 kW @ 1800 rpm frantumatore - cippatore / stone crusher - wood chipper	94	45.000	355 mm	9 x 8V	
	105			11 x SPC	
530 kW @ 2100 rpm fresa stradale / road mill machine	165	30.000	355 mm	14 x 8V	
	169			16 x SPC	

218 - 318		La puleggia deve essere installata sormontando il portacuscinetto di 55 mm Pulley must be installed overlapping bearing carrier by 55 mm			
Potenza fino a Power up to	Max "X" (mm)	Carico max (N) Max load	Min. dia puleggia Min. pulley dia.	Max nr. cinghie e tipo Max belts nr. and type	
430 kW @ 1800 rpm frantumatore - cippatore / stone crusher - wood chipper	141	58.000	355 mm	13 x 8V	
	146			15 x SPC	
600 kW @ 1800 rpm fresa stradale / road mill machine	212	40.000	355 mm	18 x 8V	
	210			20 x SPC	

CONSULTARE TRANSFLUID PER APPLICAZIONI DIFFERENTI DA QUANTO INDICATO
ASK TRANSFLUID FOR ANY APPLICATION DIFFERENT THAN ABOVE

TF6093-C rev.5 / 01/03

M-8000MD 12/04

TRANSFLUID Section 6-8

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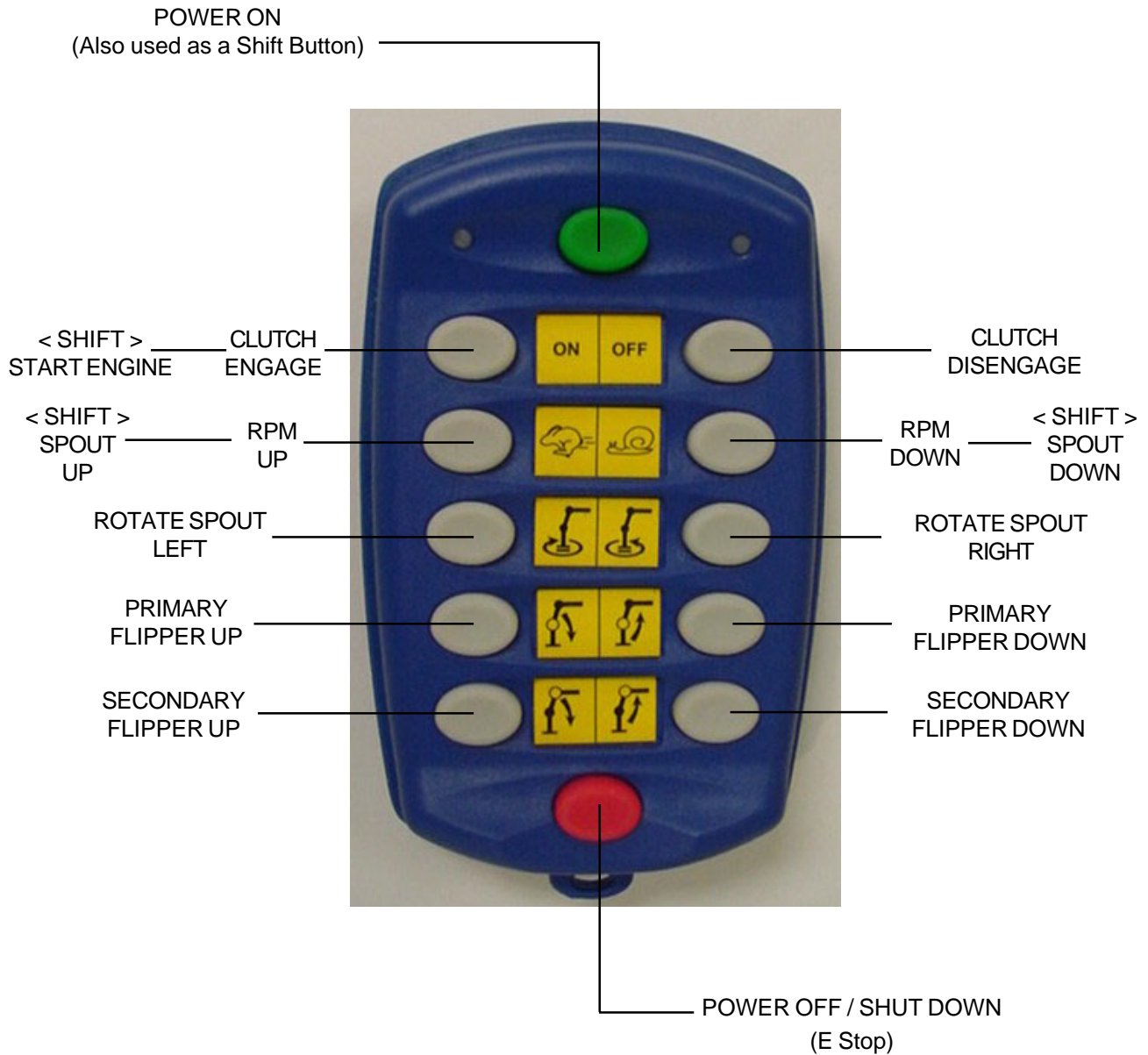
OMNEX

OMNEX OPTIONAL EQUIPMENT

OMNEX Section 7-1

OMNEX (OPTIONAL EQUIPMENT)

REMOTE CONTROL FUNCTION GUIDE (Optional Feature)



OMNEX

OMNEX (OPTIONAL EQUIPMENT)



Wildcat Snow Blower ORIGA T110 / R160 User Manual



T110 Transmitter

The ORIGA T110 is an easy to use Frequency Hopping Spread Spectrum weatherproof Transmitter. Each T110 Transmitter uses a unique ID code to ensure that no two systems will conflict on a job site. It also features three configuration modes that control how the system will power up and shut down.

R160 Receiver

The R160 Receiver has nineteen FET outputs and one E-Stop output that allows a safe emergency shutdown of power to the outputs and external circuits. The R160 Receiver is designed to be powered from a 12VDC or a 24VDC system. For wiring details, refer to the **R160 Receiver Wiring Diagram** on the third page of this manual.

Preparing the ORIGA System

1) Power the R160 Receiver

Refer to the **R160 Receiver Wiring Diagram** on the third page of this manual to correctly power the R160 Receiver.

2) Power the T110 Transmitter

Batteries are installed in the Transmitter by removing the battery cover using a slotted screwdriver and inserting 4 "AA" alkaline batteries. Orientation of the batteries is embossed inside the battery housing.

To turn on the Transmitter, press the green [Power] button
To turn off the Transmitter, press the red [E-Stop] button

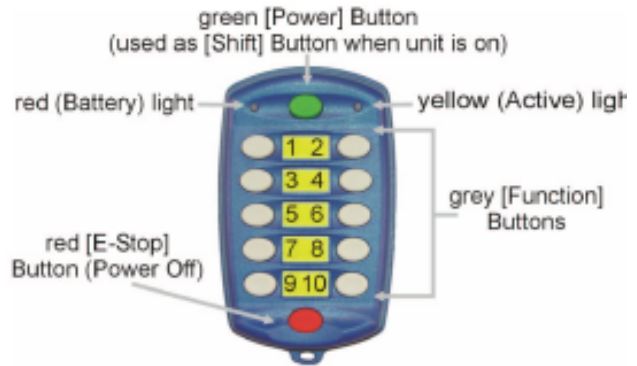
3) Test the Transmitter / Receiver Link

In order to determine if there is a Link between the Transmitter and Receiver:

- 1) Supply power to the Receiver. The (E Stop) light and the (Link) light will come on red (provided the Transmitter is off), and the (Status) light will come on green.
- 2) Turn on the Transmitter by pressing and releasing the green [Power] button. The yellow (Active) light will come on. If the yellow (Active) light on the Transmitter is flashing and the (Link) light on the Receiver is flashing green, a Link between the two exists.

The ORIGA System is now ready for use.

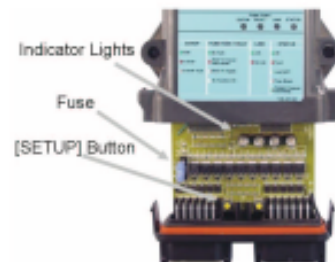
If the Transmitter's yellow (Active) light does not flash, check the battery orientation.
If the Receiver's (Link) light does not become green follow the steps under **Download ID Code** on the following page.



Accessing the Receiver Circuit Board

In order to replace the fuse or to download the ID Code and Configuration Information from the Transmitter, it is necessary to remove the Receiver circuit board from its housing. This is done by releasing the two side tabs on the Receiver housing (use a small slotted screwdriver to press the tabs inward) and sliding out the connector blocks and circuit board until the [SETUP] button is accessible and the 4 indicator lights are visible.

If necessary, replace fuse with an automotive blade type Bussman ATC-15 or equivalent fuse.



OMNEX (OPTIONAL EQUIPMENT)

Download ID Code (Use in case of Link Test failure)

Follow these steps to download the Transmitter's unique ID Code into the Receiver. This will allow the Receiver to establish a Radio Link with a specific Transmitter. Follow the directions under **Accessing the Receiver Circuit Board** on the previous page before performing these steps.

NOTE: It is necessary to download the ID Code when replacing either the Transmitter or the Receiver.

- 1) Supply power to the Receiver. The (E-Stop) light and the (Link) light will come on red (provided the Transmitter is off), and the (Status) light will come on green.
- 2) Turn on the Transmitter by pressing and holding the red [E-Stop] button and the green [Power] button, and then releasing first the red [E-Stop] button and then the green [Power] button. This will power up the Transmitter into Download Mode. The yellow (Active) light will begin flashing slowly (once per second).
- 3) Press and hold the [SETUP] button on the Receiver. The (Status) light will flash slowly. Continue to hold the [SETUP] button until the (Status) light starts flashing rapidly (approximately 5 seconds) and then release; it will now remain on steady. NOTE: If left idle in Setup Mode for over 30 seconds, the Receiver will time out, indicated by the red (Status) light flashing rapidly. To return to Setup Mode, repeat step 3.
- 4) Press and release the green [Power] button on the Transmitter to start sending the ID Code to the Receiver. On the Transmitter, the red (Battery) light will come on and the yellow (Active) light will flash rapidly; on the Receiver, the (Link) light will become green. Once the ID Code has been downloaded, the red (Battery) light and the yellow (Active) light on the Transmitter will go out. The (Link) light on the Receiver will change from green to red.

Changing the Startup and Shutdown Configuration

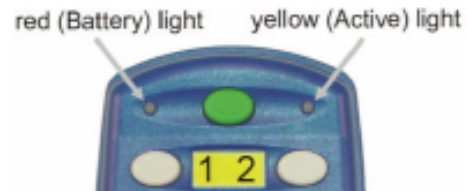
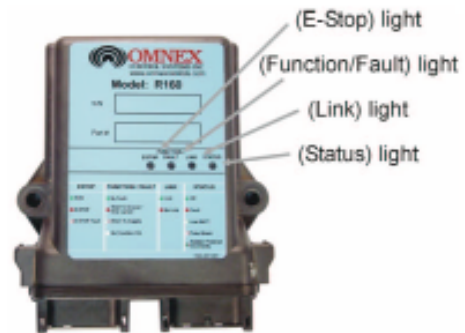
The ORIGA system has three available startup and shutdown modes that can be configured with the following steps. Follow the directions under **Accessing the Receiver Circuit Board** on the previous page before performing these steps.

- 1) Supply power to the Receiver. The (E-Stop) light and the (Link) light will come on red (provided the Transmitter is off), and the (Status) light will come on green.
- 2) Turn on the Transmitter by pressing and holding the red [E-Stop] button and the green [Power] button, and then releasing first the red [E-Stop] button and then the green [Power] button. This will power up the Transmitter into Download Mode. The yellow (Active) light will begin flashing slowly (once per second).
- 3) Enter the Configuration Password Code by pressing the Function buttons "3, 1, 4, 2" and then the green [Power] button to set the Transmitter into Configuration Mode. The yellow (Active) light and the red (Battery) light will start flashing rapidly.
- 4) Enter the 10-digit Configuration Code associated with one of the following startup and shutdown modes:
 - ON / OFF Mode** 1188888888 **ON** normal. **OFF** when Radio Link is lost.
 - Secure Mode** 4188888888 **ON** by entering the "3, 1, 4, 2" password on the Transmitter and pressing the green [Power] button. **OFF** when Radio Link is lost.
 - Auto Power Down Mode** 5188888888 **ON** normal. **OFF** when Radio Link is lost or after 10 minutes of being idle.
- 5) Press and hold the [SETUP] button on the Receiver. The (Status) light will flash slowly. Continue to hold the [SETUP] button until the (Status) light starts flashing rapidly (approximately 5 seconds) and then release; it will now remain on steady. NOTE: If left idle in Setup Mode for over 30 seconds, the Receiver will time out, indicated by the red (Status) light flashing rapidly. To return to Setup Mode repeat step 5.
- 6) Press and release the green [Power] button on the Transmitter to start sending the Configuration Information to the Receiver. The red (Battery) light and the yellow (Active) light on the Transmitter will flash rapidly; on the Receiver, the (Link) light will become green. Once the ID Code has been downloaded, the red (Battery) light and the yellow (Active) light on the Transmitter will go out. The (Link) light on the Receiver will change from green to red.

Diagnostics

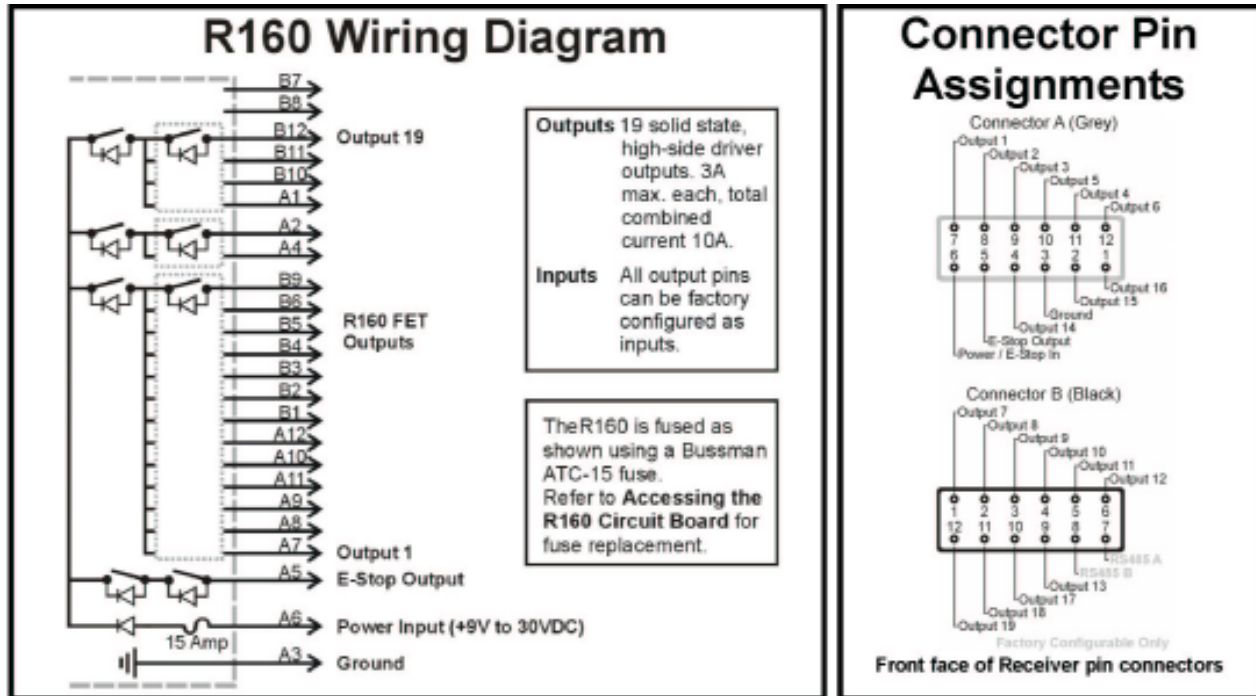
R160 Receiver Indicator Lights	
(E Stop)	GREEN- E-Stop active RED- E-Stop inactive Flashing RED- E-Stop fault
(Function/Fault)	GREEN- Function ON, no fault RED- Short to ground / over-current Flashing RED- short to supply Not lit- No function ON
(Link)	GREEN- Link RED- No Link
(Status)	GREEN- Status OK RED- Fault Flashing GREEN- Low battery Flashing RED- Fuse blown Flashing GREEN and RED- System powered incorrectly
(Link) and (Status)	Flashing RED together- Setup failure

T110 Transmitter Indicator Lights	
yellow (Active)	Flashes during normal operation. Will remain on momentarily whenever a function button is pressed or released. Slow Flash- Download Mode
red (Battery)	Slow Flash- Low battery Fast Flash (10 seconds)- T110 failure
yellow (Active) and red (Battery)	Fast Flash together- Configuration Mode Slow Flash together- Stuck button detected Slow Flash after Power Down- Unit still powered



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Switch Function Table				
Button Number	Control	Pin Assignment	Color Code	Function
Button 1	Output 1	A7	Orange/Green	Clutch Engage (see TBL description below)
Button 2	Output 2	A8	Red/Green	Clutch Disengage (see TBL description below)
Button 3	Output 3	A9	White/Red	Throttle Up (see TBL description below)
Button 4	Output 4	A11	Blue/Red	Throttle Down (see TBL description below)
Button 5	Output 5	A10	Orange/Black	Spout Left (see TBL description below)
Button 6	Output 6	A12	Orange/Red	Spout Right (see TBL description below)
Button 7	Output 7	B1	White/Red/Black	Spout A Cappers Up (see TBL description below)
Button 8	Output 8	B2	Red/Black/White	Spout A Cappers Down (see TBL description below)
Button 9	Output 9	B3	Green	Spout B Cappers Up (momentary)
Button 10	Output 10	B4	Green/Black/White	Spout B Cappers Down (momentary)
Shift + Button 1	Output 11	B5	White	Engine Start (see description below)
Shift + Button 2	Output 12	B6	Orange	Spare output (momentary)
Shift + Button 3	Output 13	B9	Red/White	Telescope Up (momentary)
Shift + Button 4	Output 14	A4	Green/Black	Telescope Down (momentary)
Shift + Button 5	Output 15	A2	Black/White	Spare output (momentary)
N/A	Input 16	A1	Blue/Black	Trommel Option A Input (Makes Output 3 and 4 TBL)
N/A	Input 17	B10	Blue/White	Trommel Option B Input (Makes Output 5 and 6 TBL)
N/A	Input 18	B11	White/Black	Trommel Option C Input (Makes Output 7 and 8 TBL)
N/A	Input 19	B12	Black/Red	Hydraulic Clutch Option Input (Makes Output 1 and 2 TBL)
POWER INPUT		A6	Red	+ 9V to 30VDC
GROUND		A3	Black	GROUND
E-Stop Out		A5	Black/White/Red	Switches to POWER with Link

Engine Start

The Engine Start is a momentary output that can only be activated once. After the output has been activated the E-Stop must be pressed and the link re-established before it can be activated again.

TBL—Two Button Latch

The Option Input is checked *only* on power up of the R160 and if the input is active (+12 VDC), the respective outputs change from momentary to Two Button Latch. When in Two Button Latch operation both outputs are normally off and are forced off on an E-Stop. The respective odd numbered button (1, 3, 5 or 7) will turn the odd numbered output. The respective even numbered button (2, 4, 6 or 8) will turn the output off. The even numbered output will never be on.

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Installation Considerations

There are a number of considerations that should be made when installing the ORIGA T110 / R160 system. These include mounting location, power supply, wiring and filtering of undesired transients.

Mounting and Installation

The Receiver can be mounted by fastening two ¼" bolts through the two mounting holes in the unit's enclosure. When mounting, ensure that the Receiver is oriented so that the text is reading right.

When selecting a mounting point for the Receiver, it is recommended that the location require only a minimal length of wiring to connect it to the control panel, that it will be in a visible area where it has good exposure to the operator and that it is mounted on a surface that is protected from the weather and sustains minimal vibration. It is also recommended that the Receiver (or the external antenna, if applicable) have the best possible line of sight with the Transmitter.

If custom work requires that welding be performed, be sure to observe proper grounding practices before welding and make sure all connectors to the Receiver have been disconnected.

Power Connections and Wiring

Whenever a power connection is made to an electronic device, it is a good practice to make both the Power (+) and Ground (-) connections directly to the Battery and avoid connecting the power from the charging side of existing wiring or making use of existing "ACC" or other peripheral connection points.

Make sure that wire of sufficient gauge and insulator type is used when connecting the outputs of the Receiver to the control panel. Observe any component manufacturer's instructions and recommendations for proper integration of their product. This includes the power ratings and requirements of such components as relays, valves, solenoids, etc.

Filtering and Noise Suppression

Whenever a solenoid or electromagnetic switch is controlled by the Receiver, it is a good practice to install a Diode across its terminals to ensure that surges and spikes do not continue back into the circuit. Appropriate 36V Bi-directional Diodes Kits can be ordered under the OMNEX part number "AKIT-2492-01".

OMNEX Replaceable Parts & Accessories

Part	OMNEX Part Number	Description
Dash Cradle	Call OMNEX	see illustration below
Leather Pouch	FMEC-2234-01	see illustration below
Belt Clip	AKIT-2428-03	see illustration below
Magnets	AKIT-2428-01	see illustration below
R160 Output Cable	ACAB-2292-01	Generic Output Cable- see illustration below
Keypad Label T110	FLBL-1726-02	see illustration below
Bipolar Diode Kit	AKIT-2492-01	Motorola P6KE36CA
Batteries	B0010	4 x AA alkaline
Fuse	F0039	36V Bi-directional, Bussman ATC-15
Connector Kit	AKIT-2337-01	Includes Deutsch socket connectors, wedges, pins and sealing plugs



Dash Cradle



Leather Pouch



Belt Clip



Magnets



R160 Output Cable



Keypad Labels

FCC Rules and Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Part 15.247
ISC RSS 210

Warranty

OMNEX Control Systems Inc. warrants to the original purchaser that the OMNEX products are free from defects in materials and workmanship under normal use and service for a period of ONE YEAR, parts (EXCLUDING: SWITCHES, CRYSTALS, OR PARTS SUBJECT TO UNAUTHORIZED REPAIR OR MODIFICATION) and labor from the date of delivery as evidenced by a copy of the receipt. OMNEX's entire liability and your exclusive remedy shall be, at OMNEX's option, either the (a) repair or (b) replacement of the OMNEX product which is returned within the warranty period to OMNEX freight collect by the OMNEX APPROVED carrier with a copy of the purchase receipt and with the return authorization of OMNEX. If failure has resulted from accident, abuse or misapplication, OMNEX shall have no responsibility to repair or replace the product under warranty. In no event shall OMNEX be responsible for incidental or consequential damage caused by defects in its products, whether such damage occurs or is discovered before or after replacement or repair and whether or not such damage is caused by the negligence of OMNEX Control Systems Inc.

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OMNEX (OPTIONAL EQUIPMENT)



OMNEX
TRUSTED WIRELESS

OMNEX Control Systems Inc.
74 - 1833 Coast Meridian Road,
Port Coquitlam, BC Canada V3C 6G5
Toll Free: 800.663.8806
Tel: 604.944.9247
Fax: 604.944.9267

R160 Receiver Data Sheet

19- Function Receiver with E-Stop



The OMNEX R160 features 19 I/O combinations (more can be achieved with expansion modules) and an E-Stop output for the safe emergency shutdown of power to the outputs and external circuits. The R160 is designed to be powered from a 12VDC or 24VDC system and is fully customizable to operate momentary, latched, toggled and interlocked functions. Depending on the application, the R160 can provide digital and analog (current, voltage and PWM output) signals. Using OMNEX's Trusted Frequency Hopping Spread Spectrum technology, this receiver provides dependable, interference free operation even in the harshest environments.

Remote Control Solutions

www.omnexcontrols.com | sales@omnexcontrols.com

R160 Receiver 1.1

OMNEX Radio Remote Control is:

Safe, Accurate & Reliable

Customizable

Global & License Free

Interference Free (FHSS)

Maintenance Free

OMNEX will save you money by:

Increasing Operator Productivity

Reducing Unnecessary Manpower

Eliminating Pendants and Wiring

Increasing Machine Revenues

FEATURES

- 19 I/O combinations
- Diagnostic indicators
- Factory configurable for custom applications
- Digital outputs
- Proportional outputs
- Weatherproof
- Pendant Capable

APPLICATIONS

- Truck Mounted Cranes • Tow Trucks
- uTILITY tRUCKS • Vacuum Trucks
- Service Cranes • Mixer Trucks • Material Handling Equipment • Marine

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OMNEX (OPTIONAL EQUIPMENT)



OMNEX
TRUSTED WIRELESS

OMNEX Control Systems Inc.
74 - 1833 Coast Meridian Road,
Port Coquitlam, BC Canada V3C 6G5

Tel: 604.944.9247
Fax: 604.944.9267

R160 Receiver Data Sheet

19-Function Receiver with E-Stop

Outputs	19 functions (17 digital + 2 proportional + E-Stop relay)
Inputs	19 (outputs can act as inputs)
Indicators & Diagnostics	Four status LEDs + Internal LEDs
Security	ID code programmed from transmitter, CRC-16 error detection
Power	9 -32VDC
Operating Temperature Range	-40 °F to 158 °F (-40 °C to 70 °C)
Size	5.1" x 4.7" x 1.4" (130mm x 119mm x 36mm)
Weight	.65lbs (295g)
Construction	High impact plastic, weatherproof, UL 94, 746A, C, D, IEC 60695-2-20
Frequency	902 to 928MHz - ISM band 2.4 - 2.483GHz - ISM band
Antenna Connector	Internal
Approvals / Certificates	USA - FCC Part 15 Class B Canada - ISC RSS 210 Europe - EN 440 European Union - CE (#0359) Australia - C-Tick
Environmental	IEC 61000-4-3 (30V/m) IEC 60068-2-6

Specifications subject to change without notice

The R160 will work with the following Expansion Modules:

D160 - 19 I/O
D180 - 14 proportional outputs



Compatible Transmitters



T100 - 8 (16)-Function Hand-Held Radio Remote Control



T110 - 10 (20)-Function Hand-Held Radio Remote Control



T150 - 14-Function Hand-Held Radio Remote Control



T300 - 31-Function Radio Remote Control

Accessories



Pendant Bracket



Pendant Cable
(optional with T150 or T300)

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ALAMO INDUSTRIAL

LIMITED WARRANTY

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 ("Purchaser") that the goods purchased are free from defects in material or workmanship.
- 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 in your Operator's Manual.
- 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. NOT WITHSTANDING 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 THE OWNER/OPERATOR/DEALER

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

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

REQUIRED OF THE OWNER:

1. Provide a Roll-Over-Protective Structure that meets the requirements of this Standard; and
2. Provide 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.

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



PLEASE FILL OUT OWNER WARRANTY REGISTRATION INFORMATION
SIGN, AND DROP LAST COPY IN ANY MAILBOX.

IMPORTANT!

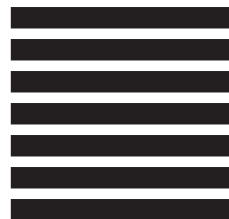
TO PLACE THIS WARRANTY IN EFFECT,
THIS WARRANTY REGISTRATION MUST BE
FILLED OUT, SIGNED, AND MAILED WITHIN 30
DAYS OF DELIVERY DATE OF THIS MACHINE.
DEALER AND PURCHASER MUST SIGN.



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ATTENTION: ANY CLAIM SUBMITTED TO ALAMO INDUSTRIAL®
WILL BE REFUSED UNTIL COMPLETED, SIGNED
WARRANTY REGISTRATION CARD IS ON FILE.

