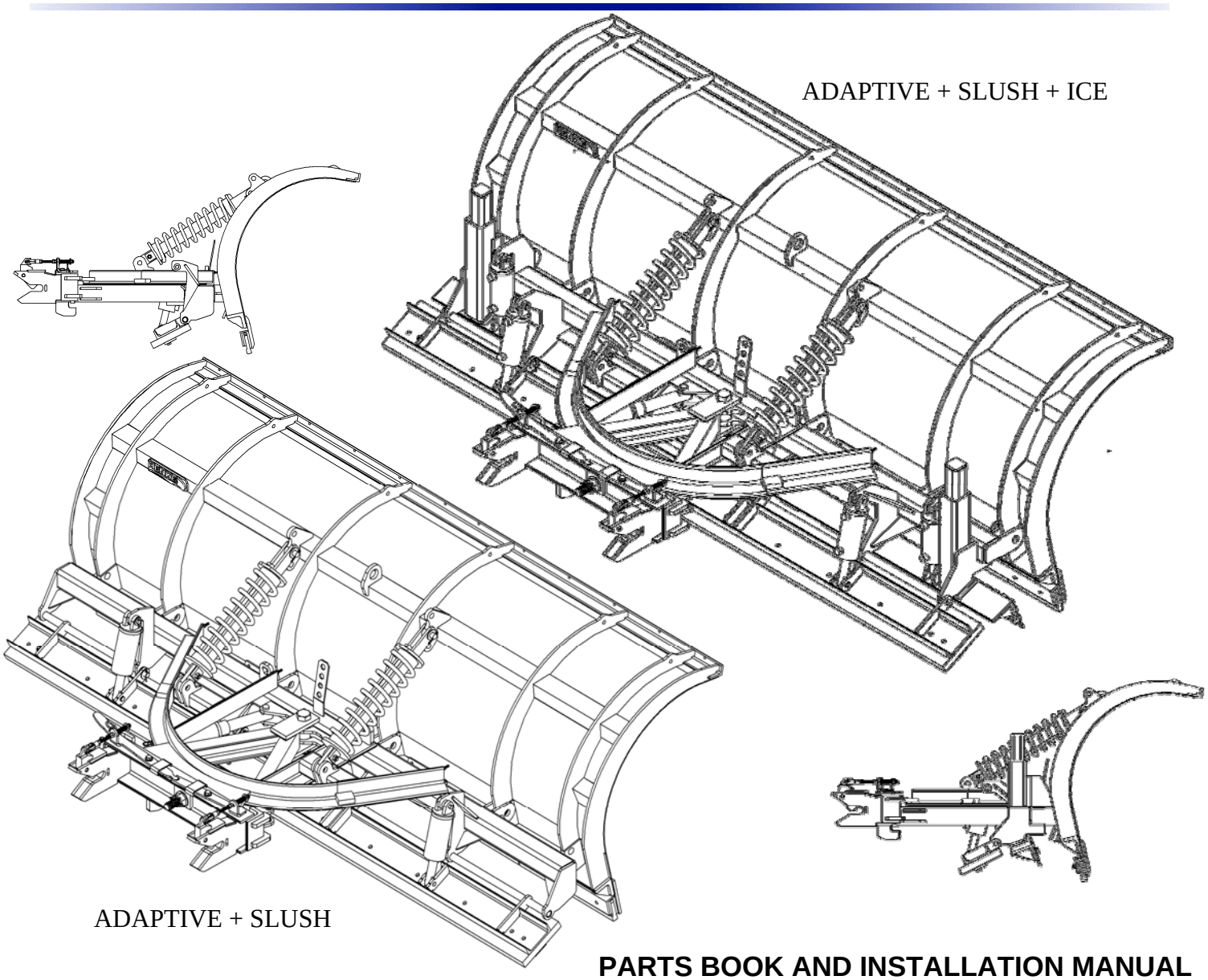
HENKE REVERSIBLE MULTI-BLADE PLOW

MODEL: I-PLOW MULTI-BLADE: ADAPTIVE + SLUSH + ICE

For Medium to Heavy Trucks



ADAPTIVE + SLUSH + ICE

ADAPTIVE + SLUSH

PARTS BOOK AND INSTALLATION MANUAL

SERIAL NUMBER: _____

VERSION 1.6, NOVEMBER 2014

HENKE MANUFACTURING CORPORATION

MANUFACTURERS OF SNOW REMOVAL EQUIPMENT FOR 95 YEARS

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Introduction

Thank you for your purchase of a Henke “I-Plow” Reversible Snow Plow. Your new Henke plow is designed with heavy-duty features for years of reliable use.
Product Features:

- 10 guage rolled plate steel moldboard with plasma-cut ribs standard.
- Moldboards available in a variety of shapes, including straight Reversible, One-Way, and Expressway; and with options such as mailbox cutouts or “Mouse Ears” (discharge ears).
- Multiple trip, hitch, and running gear options available.
- “Integral Snow Shield” prevents snow from blowing over top of moldboard.
- Double-acting reversing cylinders with Polypak rod seals.
- Cushion relief valve and hydraulic quick couplers standard.
- Chain lift points on pushframe are designed to provide continuous level lifting.
- Water drainage ports in ribs to prevent water from pooling when plow is stored.
- Wide variety of cutting edges, curb guards, and wear guards available.
- Many other options available, including rubber shields, rod markers, jack stands, etc.

In addition to their field-proven standard units, Henke designs and manufactures many plows and hitches to meet specific customer requirements.

Call Henke at 913-682-9000 if you need any replacement parts, or if we can provide you any other assistance.

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SAFETY SECTION

AK EXP - Extreme Duty Alaska
APR/APX
CITE - Compression Trip Edge
EXP - Expressway Reversible Plow
FV - Folding Vee-Plow
HH - Utility Dozer Blade
HHJR - Junior Dozer Blade
iPlow
ISL T - Light line
J Torsion Spring Trip Edge
LB30 - R - Dozer Blade
MAT - Montana Asphalt Topper
PCI-Power Circle Plow
REL - Reversable Snow Plow
SDDB - Dozer Blade
TT-Tube Table Plow
UBS - XH - Underbody Scraper

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SAFETY

GENERAL SAFETY INSTRUCTIONS AND PRACTICES

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



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

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

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

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

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

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

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

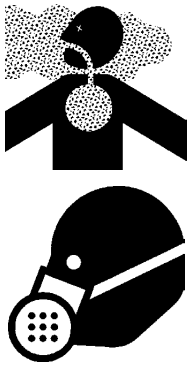
READ, UNDERSTAND, and FOLLOW the following Safety Messages. Serious injury or death may occur unless care is taken to follow the warnings and instructions stated in the Safety Messages. Always use good common sense to avoid hazards. (SG-2)



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



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



⚠DANGER Never operate the Snow Plow until you have read and completely understand this Manual, the Truck or Power units Operator's Manual, and each of the Safety Messages found in these Manuals and those affixed to the Snow Plow, Truck, or Power units and its components. Learn how to stop the power unit engine suddenly in an emergency. Never allow inexperienced or untrained personnel to operate the Truck or Power unit and Snow Plow without supervision. Make sure the operator has fully read and understood the manuals prior to operation. (SPNG-4)



In addition to the design and configuration of this Snow Plow, 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 Truck or Power unit Manuals. Pay close attention to the Safety Signs affixed to the Snow Plow. (SNPG-5)

PARTS INFORMATION

HENKE Snow Plows use balanced and matched system components for plows, carriers, and other components. These parts are made and tested to HENKE specifications. Non-genuine or "will fit" parts do not consistently meet these specifications. The use of non-genuine or "will fit" parts may reduce Snow Plow performance, void HENKE warranties, and present a safety hazard. Use genuine HENKE parts for economy and safety. (SNPG-6)

SEE YOUR HENKE DEALER

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

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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. (SNPS-02)

⚠ WARNING

The Snow Plow power unit should be equipped with a fire extinguisher, rated for all fires, in an accessible and visible area. The fire extinguisher should be inspected routinely by a certified inspector for operational use and replaced as needed. Never obstruct access to the fire extinguisher. (SNPS-6)

OPERATOR SAFETY INSTRUCTIONS AND PRACTICES

⚠ DANGER

NEVER use drugs or alcohol immediately before or while driving or operating the Snow Plow. 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 Equipment, 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. (SNPD-3)

⚠ WARNING

Always wear OSHA approved Personal Protective Equipment (PPE) while operating, servicing, repairing, and/or cleaning the Equipment. PPE is designed to provide bodily protection during such activities.

Personal Protective Equipment includes:
-Protective Eye Wear
-Steel Toed Safety Footwear
-Gloves
-Hearing Protection
-Close Fitted Clothing
-Hard Hat-When working around a raised hopper.
-Respirator-Depending on conditions and material being swept or cleaned.

Specialized protective equipment may be required if dangerous or hazardous material is being moved by the plow. (SNPD-4)

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⚠ CAUTION Prolonged operation of the Snow Plow ma y cause operator boredom and/or fatigue affecting the safe operation of the Snow Plow and Truck or Power unit. It is recommended that the op erator take scheduled work breaks to help prevent these potentially impaired operating conditions. If p ossible, completely shut down th e Equipment, exit the cab and move around stretching your arms and legs. Never operate the Equipment in a fatigued or bored mental state that impairs proper and safe Equipment operation. (SNPD-5)

⚠ CAUTION **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!** Equipment operation can o ften 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 wil l cause severe hearing loss. N oise over 90db adjacent to the Operator over an e xtended period of time will cause permanent or tot al hearing loss. ***Note:*** *Hearing loss from loud noise [from sweepers, chain saws, radios, and other such sources close to the ear] is cumulative over a lifetime without hope of natural recovery.* (SNPD-6)



⚠ CAUTION Prolonged operation of the Equipment in cold weather may cau se operator hypothermia affecting the safe operation of the Snow Plow and Truck or Power unit. It is recommended that the operator wear appropriate clothing take scheduled work breaks to help prevent these potentially impaired operating conditions. If pos sible, completely shut down the Equipment, exit the cab and warm the body in a properly heated area. Never operate the Equipment in a fa tigued or impaired mental state that effects the proper and safe Equipment operation. (SNPD-8)

⚠ WARNING Use both hands for support when getting on and off the truck or power unit. Use handles and steps on the equipment for support when boarding. Never use the Truck or Snow Plow control levers for support when boarding the equipment. (SNPO-01)

⚠ WARNING Use available truck or power unit handles and steps to exit th e operator's station. Make sure you have solid footing before stepping down. Be car eful of your step and use extra caution when mud, ice, snow, or other matter has accumulated on the steps or handrails. Never rush to exit or jump off the truck or power unit. (SNPO-02)

⚠ DANGER Do not attempt to mount the Truck or Power Unit while the machine is moving. Never attempt to mount a run away Snow Plow. Serious injury or death m ay occur from being run over by a moving Truck, Power Unit, or Snow Plow. (SNPO-03)

⚠ DANGER BEFORE leaving the operator's seat, always engage the parking brake and/or set the Truck's or Power Unit's transmission in the park position, stop the engine, remove the key, and wait for all moving parts to stop. Never dismount a Truck or Power Unit that is moving or while the engines are running. Op erate the equipment controls from the Op erator's seat only. (SNPO-04)

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SAFETY

⚠WARNING Always wear a seat belt while driving the equipment during operation and transport. Serious injury or even death could result from falling from the operator's station or from being involved in a collision. (SNPO-05)

⚠ DANGER Start the engines only when seated and belted in the operator's seat. Operate the equipment controls only while properly seated with the seat belt secured around you. Inadvertent movement of the power unit or attachment components may cause serious injury or death to the operator and passersby. Read the truck or Power Unit operator's manuals for proper starting instructions. (SNPO-06)

⚠ DANGER Do not operate, or perform maintenance to, the Equipment while wearing loose fitting clothing. Entanglement of loose clothing with the rotating elements can result in serious injury or death. Stay clear of all rotating elements at all times. (SNPD-7)

⚠ DANGER Operate only in conditions where you have clear visibility of the area in daylight or with adequate artificial lighting. Never operate in darkness of foggy conditions where you cannot clearly see at least 50 feet in front and to the sides of the equipment. Make sure that you can clearly see and identify passersby, steep slopes, ditches, drop-offs, overhead obstructions, power lines, oversized debris and foreign objects. If you are unable to see these types of items, discontinue operation until visibility improves. (SNPO-8)

⚠WARNING When transporting the Snow Plow between locations, follow all local traffic laws and regulations. (SNPO-10)

⚠WARNING Operate at a speed that allows you to safely operate and control the Truck and Snow Plow. Safe plowing speed depends on street condition and the type and amount of debris being moved. Slow down for corners, curbs, parked cars, protruding signs and other obstacles. Use slow traveling 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. (SNPO-13)

⚠WARNING Do not operate the Equipment if excessive vibration or noise exists. Shut down the equipment and the Truck or Power Unit engine. Inspect the Equipment to determine the source of the vibration or noise. If parts are loose, damaged, or missing, replace them immediately. Do not operate the Equipment until all necessary repairs have been performed. To reduce the possibility of property damage, serious injury, or even death, never operate the Equipment with missing or damaged components. (SNPO-16)

⚠WARNING Never attempt to plow debris that is too large for the Snow Plow (oversized objects such as broken limbs and discarded tires). Such objects may damage the snow plow components and cause serious mechanical damage to the equipment. If possible, carefully place such objects out of the Snow Plow and traffic path until properly removed by another means. (SNPO-17)

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⚠WARNING Unplowed snow, piled ice and debris, and snow drifts left behind the equipment might pose a driving hazard to vehicle traffic colliding with the debris or losing traction on the material. It is recommended to post warning signs alerting driver's of the equipment operation presence and the need to reduce vehicle speed. If such hazards are left behind following the Snow Plows passage, the area should be plowed a second time and any remaining hazards removed by an alternative method. (SNPO-19)

⚠ DANGER Do not allow the Snow Plow to come in contact with potentially dangerous and/or hazardous material. Such hazards may include, but are not exclusively limited to, the following:

- Fire Hazards- Fuel spills, burning material,
- Chemical Hazards- Chemical spills, discarded chemical containers, batteries,
- Biological Hazards- Decaying Carcasses, BioMedical Waste,
- Radioactive Hazards-Radioactive Waste, Radioactive Material,
- Carcinogenic Materials-Asbestos,
- Corrosive Materials-Batteries, Acids and Bases.

In most areas, these types of material require special handling requirements for safe and proper disposal and should not be plowed by the Snow Plow, nor can they be disposed of in a general landfill site like most swept waste. Contact the appropriate authority for the collection and disposal requirements of such dangerous and/or hazardous material. (SNPO-25)

⚠ DANGER Always wear required OSHA approved Personal Protective Equipment (PPE) when coming in contact with and removing potentially dangerous and hazardous material that has collected on the Snow Plow equipment or which is obstructing one or more components. Pay close attention to dangerous and hazardous material including, but not exclusively limited to, chemicals, decaying carcasses and sharp objects. (SNPO-26)

⚠WARNING Verbal communication near a Truck or Power Unit and Snow Plow is difficult and dangerous. Operating instructions and directions should be made prior to starting the equipment. Unclear and misunderstood communication may lead to operator and bystander injury or death and equipment damage. If communication by the operator is necessary, completely shutdown and exit the equipment. Never allow anyone to approach the equipment while in operation. (SNPO-28)

⚠ DANGER Never allow children to play on, under, or around the Truck or Power Unit nor allow children to operate equipment controls. Children can slip or fall off the equipment and be injured or killed. Children can cause the equipment components to shift or fall crushing themselves or others. (SNPO-29)

⚠WARNING Allow passengers only in situations where their presence is involved in the operation (operator training, supervision, maintenance inspection). Never carry passengers whose presence distracts from the safe operation or transport of the equipment. Passengers must be seated securely and belted in the cab's passenger seat. Never allow any person to ride on any other location of the Truck, Power Unit or Snow Plow during operation or transport. (SNPO-30)

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SAFETY

⚠WARNING Extreme caution should be used by the operator when operating near passersby. Stop snow plowing if a passerby comes within 25 feet of the plow to prevent possible passerby injury or death from being struck by the equipment or from a thrown object. (SNPO-31)

⚠ CAUTION Under certain conditions, the Snow Plow is capable of propelling objects up to 75 feet. Be extremely careful when plowing at higher speeds and hitting large dense objects, such as rocks, chucks of frozen ice, metal objects, broken glass, or other solid objects that might become propelled and cause bodily injury to passersby or damage to property such as windows and vehicles. (SNPO-32)

⚠WARNING Make sure that no bystander, animal or obstruction such as a vehicle, building, or street sign are within the width of the Snow Plow. The design of the Snow Plow may impair the operator vision when operating. Use extreme caution to ensure that the Snow Plow is not driven into the path of pedestrian or vehicle traffic. Serious injury or death and property damage could result from running into, being crushed by, or run over by a Snow Plow. (SNPO-33)

⚠ DANGER Make sure no bystanders or animals are within 25 feet of the equipment basket when dumping contents from or cleaning the Snow Basket. Bucket contents, which may exceed several thousand pounds, could fall and crush a bystander or an animal resulting in possible injury or death. (SNPO-34)

⚠ DANGER Use extreme caution when operating the Equipment in traffic. To alert motorist of the Equipment's presence, use all equipped warning signals to alert motorist and pedestrians of the equipment's presence and relatively slow speed. Serious injury or death and property damage may occur if a vehicle collides with this Equipment. (SNPS-3)

⚠WARNING Before starting a snow plowing operation, make sure all the warning signal lights are connected, visible and working. Routinely inspect the equipment's headlights, brake lights, backup lights, and turn signal lights for operational condition. Immediately repair non-functioning lighting. Always follow all local traffic regulations while operating the Snow Plow. (SNPS-4)

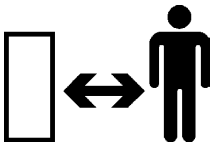
⚠WARNING Always turn on all safety lights and flashers when you operate the Snow Plow. (SNPS-5)

⚠ 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)

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CONNECTING OR DISCONNECTING IMPLEMENT SAFETY INSTRUCTIONS AND PRACTICES

⚠WARNING Do not stand or allow bystander or coworkers between the attachment and the truck or powe r unit while ins talling or disconnecting the attachment. Ke ep hands and body clear of th e attachment and the attachment mounts. Serious injury or death can result from a person being crushed between the attachment and truck or power unit. (SNPC-01)



⚠WARNING Reset the tripped snow p low edge by r aising the snow plow off the ground. DO NOT attempt to reset the trip edge by hand. T he trip edge is spring loaded and sudden and unexpected movement can o ccur resulting in serious injuries. Keep and hands and feet away from the trip edge. If the trip edge does not reset, stop plowing and have the snow plow repaired before resuming snow plowing. (SNPO-12)

⚠WARNING Make sure the implement is pr operly attached to the Power Unit and the r etaining pins securely lock th e Implement into position. Im proper mounting of the Imp lement onto the Power Unit can result in the Implement falling causing serious injury. (SNPC-02)

⚠WARNING The operator of the equipment must be tr ained in the operation and safe use of this machine. Th e operator must read and completely understand the operator's manuals of the Snow Plow, Truck or Power unit manufacturers. New operators should be trained in an open area clear of obstructions before operating on public roadways. If operation of the entire Snow Plow unit (Truck or Power unit) is not completely understood, consult your authorized sales representative for a de tailed explanation. Never allow an untrained or unqualified driver to operate the Snow Plow. (SNPD-1)

⚠ CAUTION The Snow Plow driver must meet the requirements and possess a Motor Vehicle License as determined by the state in which the Snow Plow is operated if used on public roadways. Contact your local State Department of Public Safety of fice for special licensing requirements to operate the Snow Plow in your area. (SNPD-2)

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MAINTENANCE AND SERVICE SAFETY INSTRUCTIONS AND PRACTICES

⚠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 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 are properly secured. Serious injury may occur from not maintaining this equipment in good working order. (SNPM-01)



⚠WARNING Inspect the entire Snow Plow before each use. Accidents may occur or damage to the equipment may result if the Snow Plow is not maintained in good mechanical working order.

- Check for loose bolts, worn or broken parts, pinched hydraulic hoses, and leaky or loose fittings.
- Make sure all pins are secure and safety pin equipped.
- Make sure replacement parts are the correct size and properly installed.
- Make sure all fluid levels are full and replenish as necessary.
- Make sure fuel, oil, and coolant caps are replaced and tightened.
- Check tire condition for tread wear and tire pressure at the rated PSI.
- Make sure that all safety shields and guards are attached and in good condition.
- Make sure all scheduled maintenance is up to date. (SNPM-02)

⚠WARNING Do not modify or alter this Snow Plow. Do not permit anyone to modify or alter this equipment, any of its components or any Snow Plow function. Modification can result in equipment failure and cause serious injuries to the operator, coworkers, or bystanders. (SNPM-03)

⚠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. (SNPM-04)

⚠WARNING Never attempt to repair, lubricate, adjust, clean, remove obstructions or perform any other type of service to any component while the Snow Plow is in motion or while the engine is running. Completely shut down the engine and wait for all motion to come to a complete stop before servicing the Snow Plow. (SNPM-05)

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⚠ DANGER Never leave the Snow Plow unattended while the plow is in the raised position. Accidental operation of the lifting lever or a hydraulic failure may cause a sudden drop of the unit which could result in injury or death by crushing. If the plow must be raised for inspection or service securely block up and support the Plow to prevent it falling. (SNPM-06)

⚠ DANGER Never crawl under the Snow Plow or any raised component unless it is properly blocked up and support to prevent it from falling. Accidental operation of a lifting lever or hydraulic failure may cause a sudden drop of the unit with injury or death by crushing. (SNPM-07)

⚠ WARNING Use proper protective equipment including gloves, safety eye wear, arm protection when handling plow blades and components during replacement, adjustment, and maintenance. Plow edges and components can become sharp and have burrs that could inflict puncture and cuts to the hands, arms, and/or eyes if proper protective equipment is not worn. (SNPM-08)

⚠ WARNING Replace bent, cracked, or broken plow blade with a new blade. Never attempt to straighten or weld on plow blades because this will likely crack or otherwise damage the blade with subsequent failure and possible serious injury from broken blade being ejected from plow. (SNPM-10)

⚠ 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 engine and relieve hydraulic oil pressure before performing any repairs to the hydraulic system. (SNPM-11)

⚠ WARNING Hydraulic pressure must be relieved from the hydraulic circuit prior to doing any maintenance or repair work and when the Snow Plow is parked at the end of the day. Place the Snow Plow(s) on the ground or securely blocked up. Turn off the Truck engine then engage the hydraulic remote cylinders several times to relieve hydraulic pressure prior to performing any maintenance or repair work. (SNPM-12)

⚠ WARNING Never remove debris from or unclog jams in the plow or lifting components until the engine have been completely shutdown and all components have come to a complete stop and are lowered to ground level and hydraulic pressure relieved. Always wear PPE when removing collected material and debris from the equipment. Serious injury or death may occur if any of these precautions are not followed when removing plugged or entangled debris. (SNPM-15)

⚠ 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. (SNPM-20)

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SAFETY

⚠ DANGER

Do not operate this equipment with hydraulic oil or fu el 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. (SNPM-21)



⚠WARNING

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

⚠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. (SNPM-23)

⚠WARNING

Avoid contact with hot surfaces on the bottom of the skid shoes or plow cutting edges. Use gloves and eye protection when servicing hot components. Contact with a hot surface can cause serious injury from burns or scalding. (SNPM-24)

⚠WARNING

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

⚠WARNING

Before conducting maintenance on the Snow Plow stop the truck or Power Unit, place the transmission in the park position and set the parking brake. Turn the engine off and remove the key to prevent inadvertent or accidental starting of the engine. Unexpected engine start up or vehicle movement can result in serious bodily injuries or death. (SNPM-27)

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Transporting Safety Instructions and Practices

⚠WARNING Transport the Truck, Power Unit, and Snow Plow only at safe speeds. Serious accidents and injuries can result from driving this equipment at unsafe speeds. Become familiar with the driving characteristics of the equipment and how it handles before operating or transporting on streets and highways. Make sure the Truck's or Power Unit's steering, brakes, and wheels are in good condition and operate properly)

Before transporting the Equipment determine the safe transport speeds for you and the machine.
Make sure you abide by the following rules:

- Test the Truck or power unit and Snow Plow at a slow speed and increase the speed slowly. Apply the brakes smoothly to determine the stopping characteristics of the Truck equipped with the Snow Plow. As you increase the speed of the Truck, the stopping distance increases. Determine the maximum safe transport speed for you and the equipment. When driving down a hill or on wet or icy roads, the braking distance increases: use extreme care and reduce your speed. Do not operate the equipment with weak or faulty brakes.
- Obey all traffic laws and regulations. Never exceed the posted speed limit.
- The Snow Plow has moved the center of gravity of the equipment forward. Use extreme caution when transporting at highway speeds. Slow down for sharp corners or on slopes to avoid loss of steering control.
- Only transport the equipment at the speeds determined as safe and which allow for proper control of the machine while driving and stopping during an emergency.
- When operating in traffic, use the Truck's or Power Units directional indicator or signal lights to indicate your movement. Always use the flashing warning lights and other equipped warning features to alert motorist of your presence and slow moving speed when operating in traffic. **Be Aware of Traffic Around You and Watch Out for the Other Guy.** (SNPO-09)

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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 plow and truck or other power unit operation, it is the employer's responsibility to:

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

Child Labor Under 16 Years of Age

Some regulations specify that no one under the age of 16 may operate power machinery. It is your responsibility to know what these regulations are in your own area or situation. (Refer to U.S. Dept. of Labor, Employment Standard Administration, Wage & Home Division, Child Labor Bulletin #102.)

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I-PLOW

Use the following decals from sheet 7332006.

Henke Part No.	Qty.	Description
7331003	1	Use genuine Henke replacement parts
7331004	1	Secure body with blocks
7331005	1	Stop Engine Stay clear of moving parts
7331007	1	Read and understand operator's manual If you cannot read English get assistance
7331011	1	Keep Push Frame parallel to ground
7331012	1	Raise plow before backing

(NOTE: Some decals on sheet 7332006 are not needed on this product. Discard decals not needed.)

Other Attachments and Decals

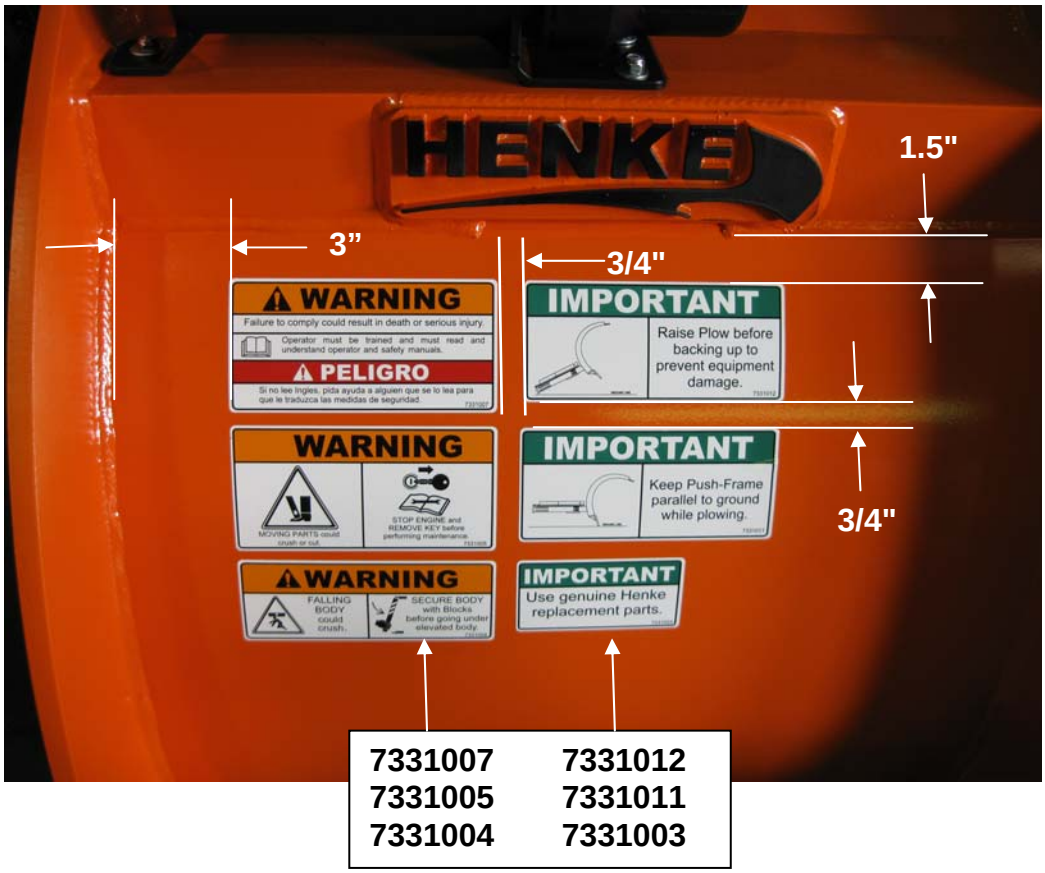
7330014	1	Henke Logo Decal
7331006	2	Do not use hands to check for oil leaks High Pressure oil leak-injection
7331010	2-3	Keep Clear, Pinch Point
7330012	1	Serial Number Tag
7330023	4	Tack - Serial Tag
7300047	1	Product Manual Canister
7300048	1	Plug for Product Manual Canister
7020391	3	Stud, 1/2-20 X 5/8 Non- Flange
7040002	3	Flat Washer, 1/4 USS
7030044	3	Nylock Nut, 1/4-20

Instructions:

Follow these instructions to position the above items to your Henke product for safety and professional appearance. Apply on clean surfaces only. They should be properly applied and kept in good condition. If a decal is worn out, torn, or otherwise defaced, call us for an immediate replacement at 1-913-682-9000, or 1-888-682-9010.

DECALS

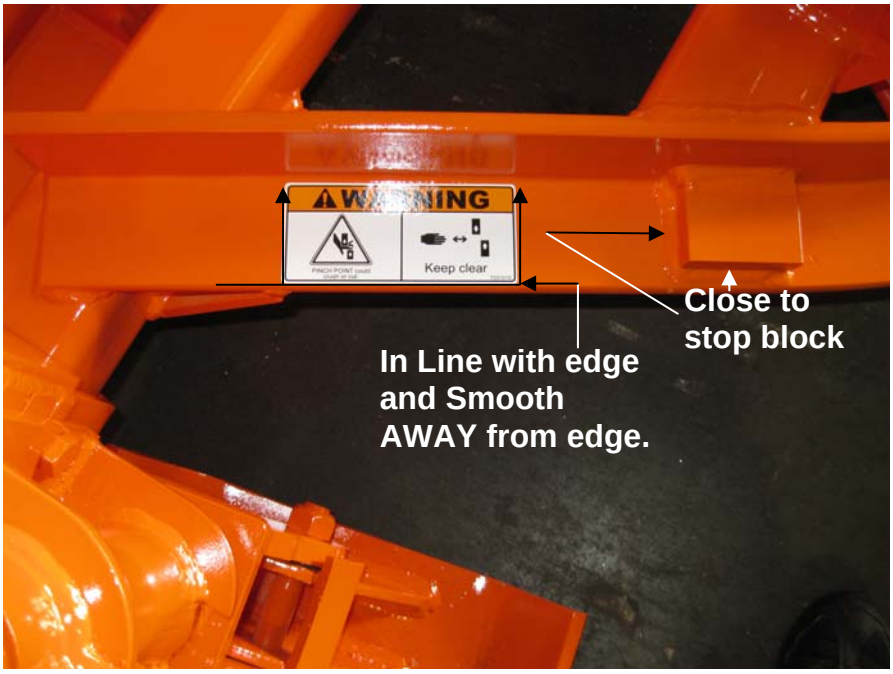
1. Position 7331007, 7331005, and 7331004 to the LEFT of 7331011, 7331012, and 7331003 of the Moldboard as shown.



2. Position 7330012 Serial Plate and 7300047 Manual Canister as shown.



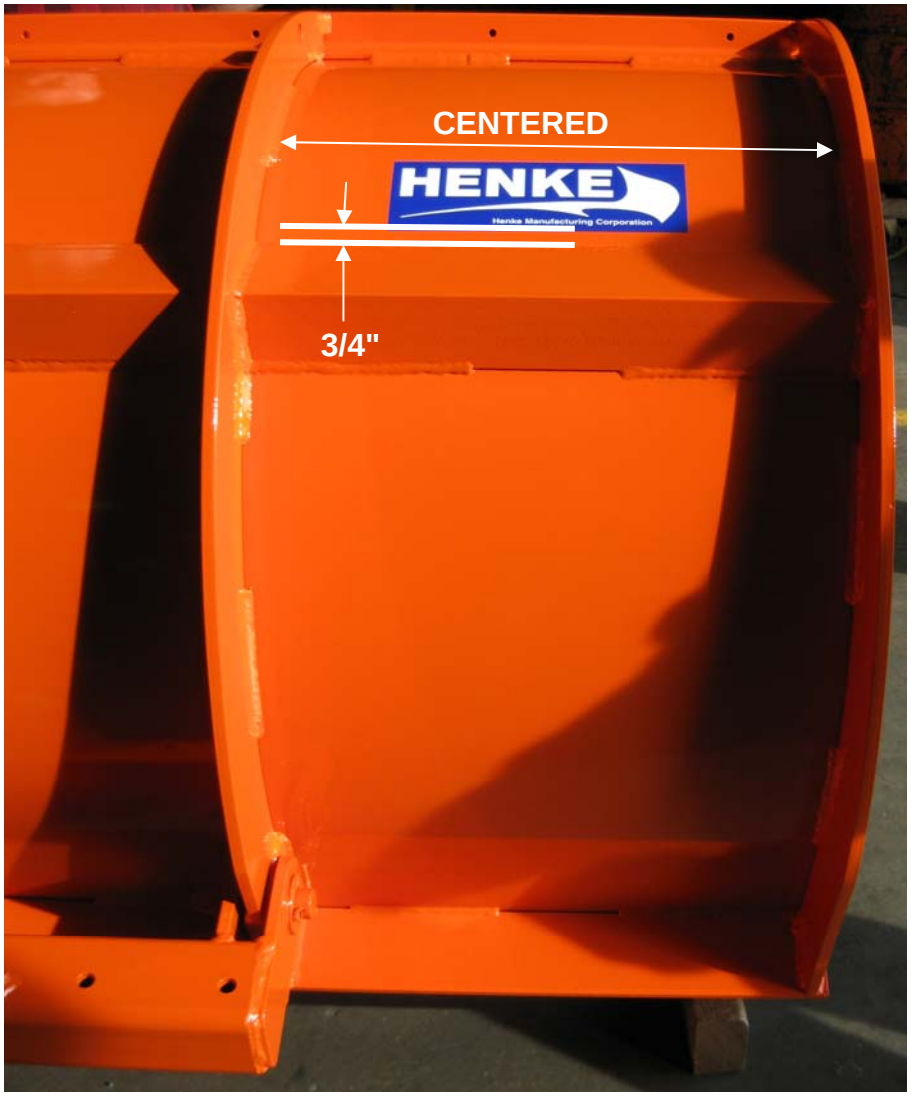
3. Position 7331010 (Qty. 2) as shown.



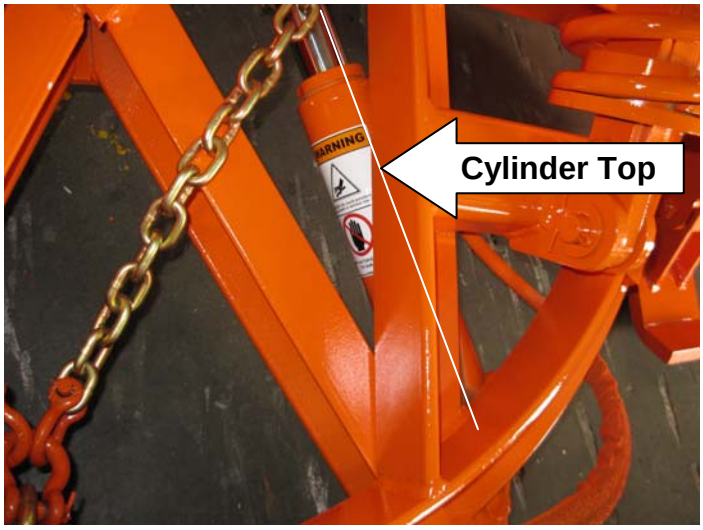
4. Position 7331009 (Qty. 2) as shown.



5. Position 7330014, Henke Logo in.



6. Position 7331006 decals (Qty. 2) on each hydraulic cylinder as shown.



In line with top of cylinder & Visible. Preferably on Port side of cylinder.

REVERSIBLE PLOW SET UP AND OPERATION

ALWAYS OPERATE PLOW WITH PUSHFRAME PARALLEL TO THE GROUND.

This will help provide proper moldboard layback angle and proper plowing position, which will allow proper operation of the plow trip mechanism, and optimal overall plow performance.
Operation in a significant out-of-level position can damage the plow swivel stops, trip mechanism, and structural members.

For new truck hitch installations, follow the mounting instructions to achieve the proper mount height, and resulting plow attaching height. (plow pin attaching height is approx. 14" for most plows, with the plow cutting edge resting on the ground.)

For pinning or coupling plows to existing hitches, select the proper mounting hole height for parallel operation, and install the hitch pin to secure the plow to the hitch. For some plows, the swivel plate can be flipped if additional up or down attaching distance is needed. If the above adjusting options do not provide reasonably parallel operation for your plow, mounting ears may need to be removed, repositioned, and reattached.

Attach plow lifting chain to the truck hitch lift arm, by first moving the lift arm parallel to the ground. Attach chain from plow frame to the lift arm by inserting the 7/16" chain link in the top center slot of the arm end plate. Raise plow and check for proper 10" ground clearance at the cutting edge. Adjust chain if necessary to accomplish 10" clearance. (For Husting hitch designs, no lift chain is used, and ground clearance of 8-10" is acceptable)

Runner shoe adjustment (if equipped). Raise plow, retract running gear. Lower plow so the cutting edge is touching the ground. Lower running gear until full contact with the ground is made. Plow performs best when the weight of the plow is evenly distributed between the cutting edge and the runner shoes.

Follow your organization's procedure for walk around safety and vehicle checks before operating. Include the snow plow in this procedure to check for loose, missing, or excessively worn components. Check for cracks or breaks in the components and structure. Check for proper markers, reflectors and safety decals, if any. Replace any items as needed before operating.

Drive prudently for the road conditions. In good plowing conditions, reversible plows can generally be operated safely and with good results up to 30 mph; expressway and one way plows up to 40 mph.

IN SEASON MAINTENANCE

Snow removal equipment must be cared for and maintained regularly. Daily or pre-route inspection and maintenance are necessary. Failure to do so may affect efficiency and safety.

A visual inspection must be carried out after every 8 hours of operation. Look for damaged components, bends, cracked welds or hydraulic leaks. **REPAIR IMMEDIATELY!** It is recommended to re-torque all bolts after the first 8 hours of use and to regularly check for loosened or missing fasteners. Replace any damaged or missing fasteners immediately.

Because of the environment in which snow equipment is expected to operate, hydraulic lines, fasteners, wearable or replaceable items and warning decals may become damaged by snow, ice and road debris. These items must be inspected daily and replaced if necessary to avoid equipment damage or personal injury.

Lubrication of moving parts is of the utmost importance. Exposure to snow, ice, salt and road debris will wash away lubrication quickly and it may be necessary to inspect and reapply lubrication more than once a day.

The **height of the cutting edge** must be maintained to **avoid damage** to the slush blade mechanism and maintain proper functioning. The distance from the lowest point on the plow bottom angle to the ground must not be less than 5.25 inches at any time. If adaptive blade sections wear past the carbide inserts, they **must be replaced.**

Alternate cutting edges may be used, but:

1. they must be carbide edges, or other provisions must be made to prevent the cutting edge from losing height due to wear, and

2. they must have an initial height of 7.5 to 8.5” from the bolt holes to the bottom of the cutting edge (measured along the face of the cutting edge).

END OF SEASON SNOW PLOW MAINTENANCE

GROUND ENGAGING COMPONENTS

- **CUTTING EDGES & GUARDS:** Replace any broken cutting edges, unevenly or excessively worn cutting edges, and broken or worn wear guards.

- **RUNNING GEAR:** Replace broken, worn, or missing running gear shoes, and any damaged adjuster leg components. Grease internal threads and sliding members (it's best to disassemble and grease directly; zerks aren't as effective at greasing these areas).

- **HARDWARE:** Replace missing or broken bolts. Proper torque is important! Use grade 8 plow bolts for steel cutting edges.

HYDRAULICS

- **HOSES:** Plug or cap any QC fittings or any open hose ends. Inspect hoses for any leaks or potential leaks. Secure hoses with hose clamps.

- **CYLINDERS:** Check for leaks, and any chrome rod dents or scratches. Apply a light coat of oil or grease on exposed rod surfaces.

FRAME AND MOLDBOARD

- **JOINTS:** Check pins, bushings, and pivot bolts for wear. Make sure all keepers are in place. Make sure shear bolts and pins are same as original equipment (usually grade 2). Some drivers don't like replacing shear pins and will install grade 8 replacements to avoid replacing during a storm. These items are *designed to shear* to protect the driver and the equipment. **CHECK WELDMENTS FOR CRACKS.**

REPLACE WORN OR BROKEN PARTS FOUND BY ABOVE INSPECTIONS

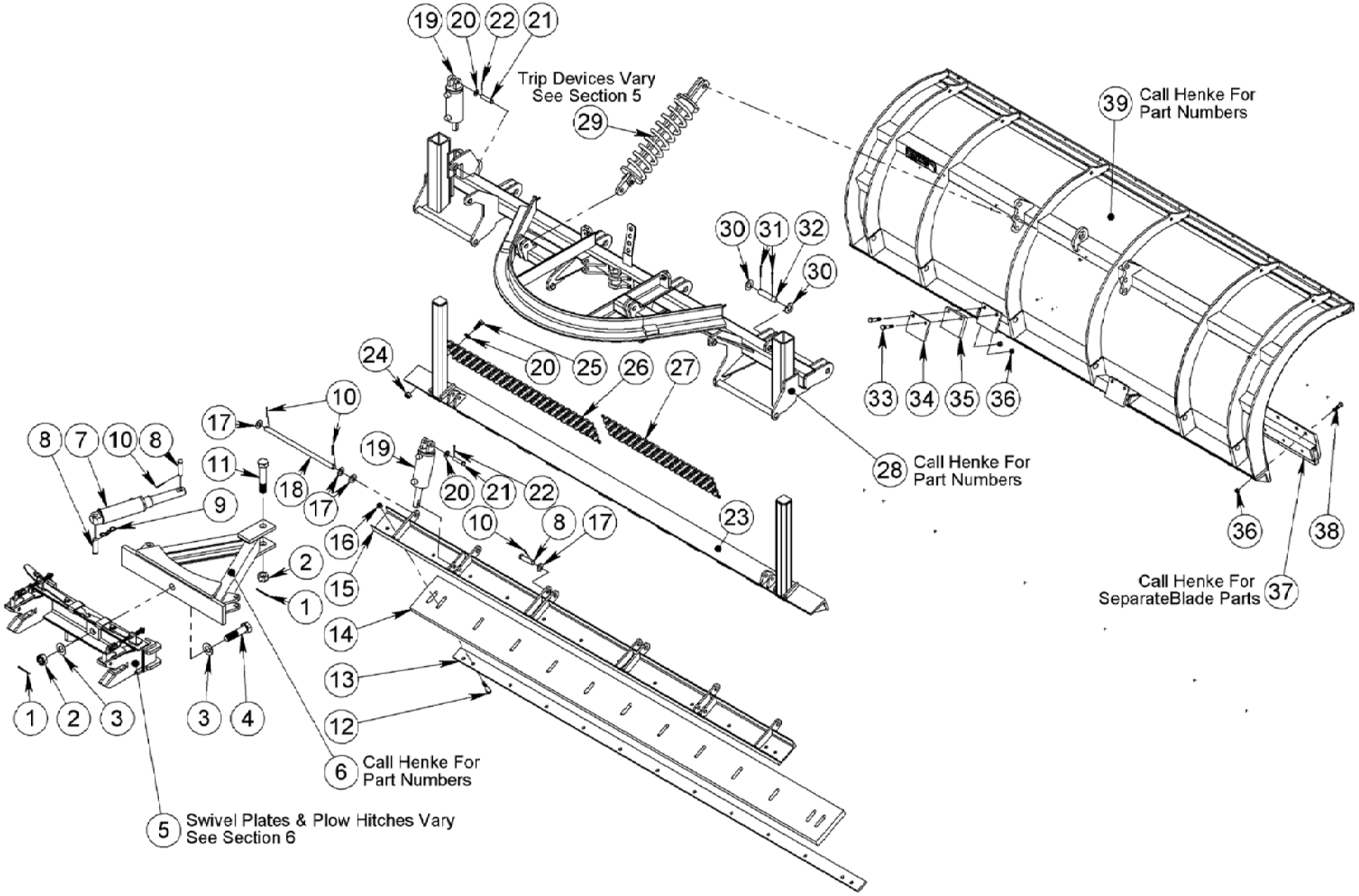


FIGURE 3-1 – Henke Reversible Multi-Blade Plow With Adaptive Front Blade and Slush Blade

TABLE 3-1 – Henke Reversible Multi-Blade Plow, Parts List

Item No.	Qty.	Part No.	Description
1	2	7050043 7050001	Cotter Pin, 3/16 X 2.5 Cotter Pin, 1/4 X 3.0
2	2	7030023 7030024	Slotted Nut, 1 1/4-7 Slotted Nut, 1 1/2-6
3	2	7040014 7040024	Flat Washer, 1 1/4 Hardened, SAE Flat Washer, 1 1/2 Hardened, SAE
4	1	1300-0372 1300-2665	Swivel Bolt, 1 1/4" Swivel Bolt, 1 1/2"
5	1	Varies*	Universal Quick Hitch (UQH), Plow Portion Hitch, Swivel
6	1	Varies*	A-Frame Weldment
7	2	7080226	Hydraulic Cylinder, Reversing
8	6	7050082	Clevis Pin, 1.0 X 3.5
9	2	7050123	Bow-Tie Cotter, .177 X 4.50
10	Varies	7050003	Cotter Pin, 3/16 X 2.0
11	1	2100-0591	Swivel Bolt, Long
12	Varies	Varies	Hex Capscrew, 5/8-11 (See Section 7)
13	1	4600-0012 4600-0025	Retaining Strip - 11' Retaining Strip - 12'
14	1	3500-0011 3500-0012	Rubber Cutting Edge - 11' Rubber Cutting Edge - 12'
15	1	469-0008 469-0003	Slush Blade Weldment, 11' Slush Blade Weldment, 12'
16	Varies	7030095	Nylock Nut, 5/8-11 GR. 8
17	8	7040013	Flat Washer, 1" Hardened, SAE
18	2	4600-0040 4600-0026	Pin, 1.0 X 22.13 (11' Plow) Pin, 1.0 X 28.13 (12' Plow)

TABLE 3-1 – Henke Reversible Multi-Blade Plow, Parts List (Continued)

Item No.	Qty.	Part No.	Description
18	2	4600-0040 4600-0026	Pin, 1.0 X 22.13 (11' Plow) Pin, 1.0 X 28.13 (12' Plow)
19	2-4	7080658	Pneumatic Cylinder
20	4-8	7040007	Flat Washer, 3/4 Hardened, SAE
21	4-8	7050105	Clevis Pin, 3/4 X 3
22	4-8	7050113	Cotter Pin, 1/8 X 1.5
23	1	469-0010 469-0018	Ice Blade Weldment, 11' Ice Blade Weldment, 12'
24	Varies	7030096	Nylock Nut, 3/4-10
25	Varies	7020074	Hex Capscrew, 3/4-10 X 2.0 GR. 8
26	Varies	7150179	Cutting Edge, Ice Blade, 9MM x 180MM x 1220MM
27	Varies	7150178	Cutting Edge, Ice Blade, 9MM x 180MM x 915MM
28	1	Varies*	Circle Pushframe Weldment, Adaptive & Slush Blade
29	1-2	Varies	Trip Assembly (See Section 5)
30	8-12	7040051	Flat Washer, 1 1/4, SAE
31	8-12	7050099	Cotter Pin, 1/4 X 2.5
32	4-6	1300-2936	Pin, 1.25 X 5.31
33	4	7020162	Hex Capscrew, 5/8-11 X 3.0 GR.8 (Certain Trip Devices Only)
34	2	1300-3302	Moldboard Trip Stop Plate (Certain Trip Devices Only)
35	2	1300-3301	Moldboard Trip Stop - Rubber (Certain Trip Devices Only)
36	Varies	7030084	Toplock Nut, 5/8-11 GR.C
37	Varies	7150401 7150402 Varies	Polar Flex Balde Assembly, 36" (See Note 1) Polar Flex Balde Assembly, 48" (See Note 1) (Standard Cutting Edges Options Vary, See Section 7) *CALL HENKE FOR SEPARATE BLADE PARTS*
38	Varies	Varies	Plow Bolt, 5/8-11, GR. 8 (See Section 7)
39	1	Varies*	Moldboard Weldment Varies

Note 1 * Call Henke Manufacturing for Part Numbers.

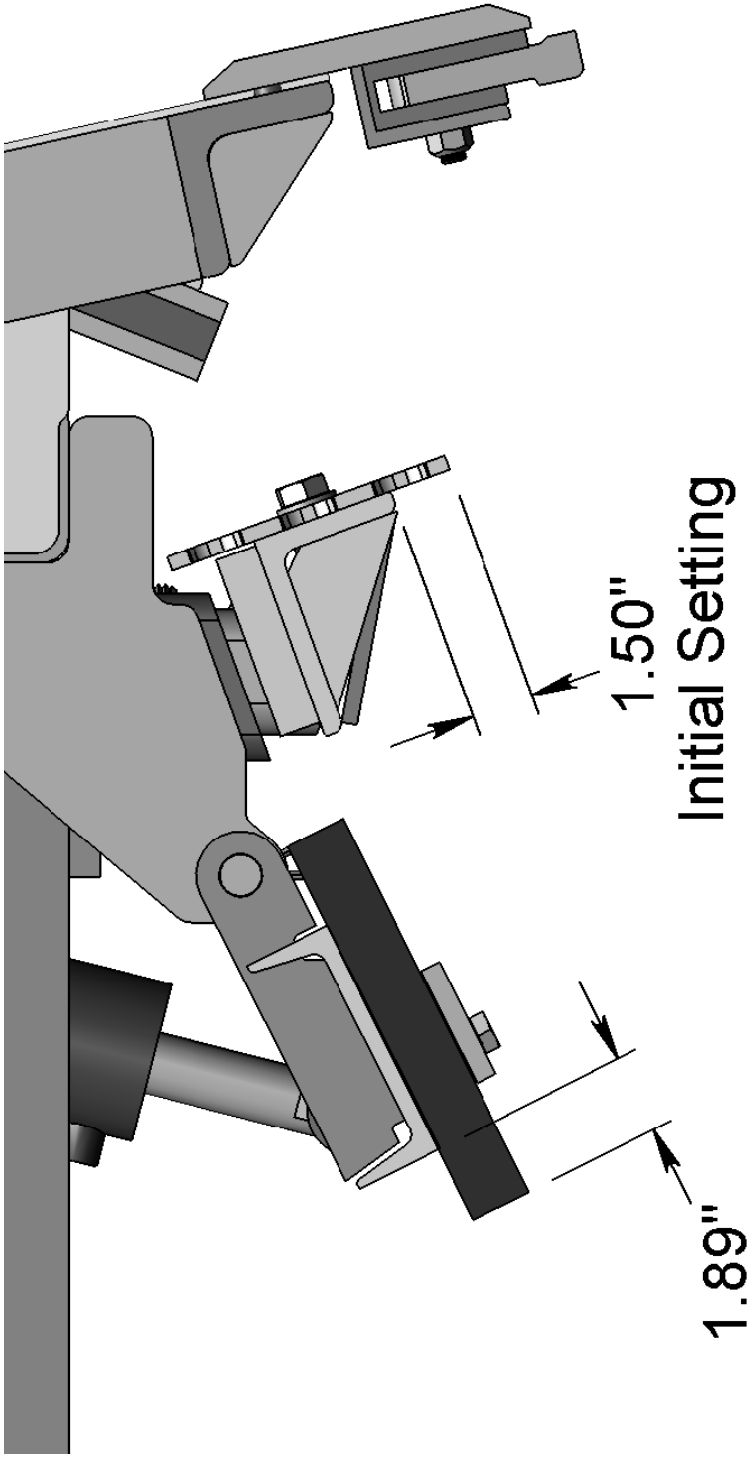


FIGURE 3-2 – Ice & Slush Blade Settings

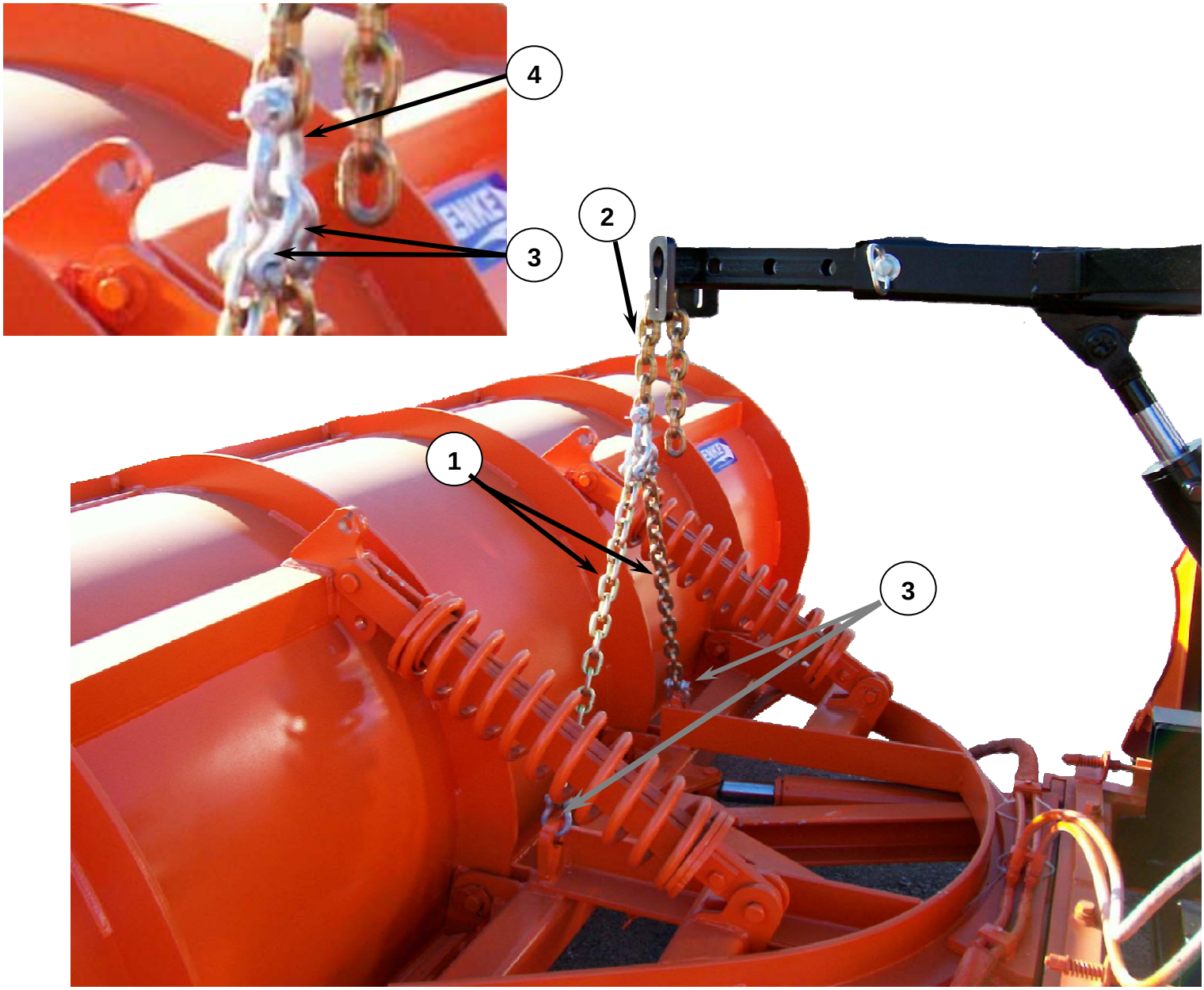


FIGURE 3-3 – 3-Piece Chain Lift Assembly

TABLE 3-2 – 3-Piece Chain Lift Assembly

Item No.	Qty.	Part No.	Description
1	2	Varies *(Call Henke for Part Number)*	Lower Chains, 3/8 GR. 70 *(Length Varies)*
2	1	1300-2700	Upper Chain, 7/16 x 20”
3	4	7060001	Shackle, 7/16 2-Ton, Round Pin
4	1	7060035	Shackle, 1/2 3-Ton, Round Pin



FIGURE 3-3 – Basic Installation Procedure for 3 Piece Chain Level Lift:

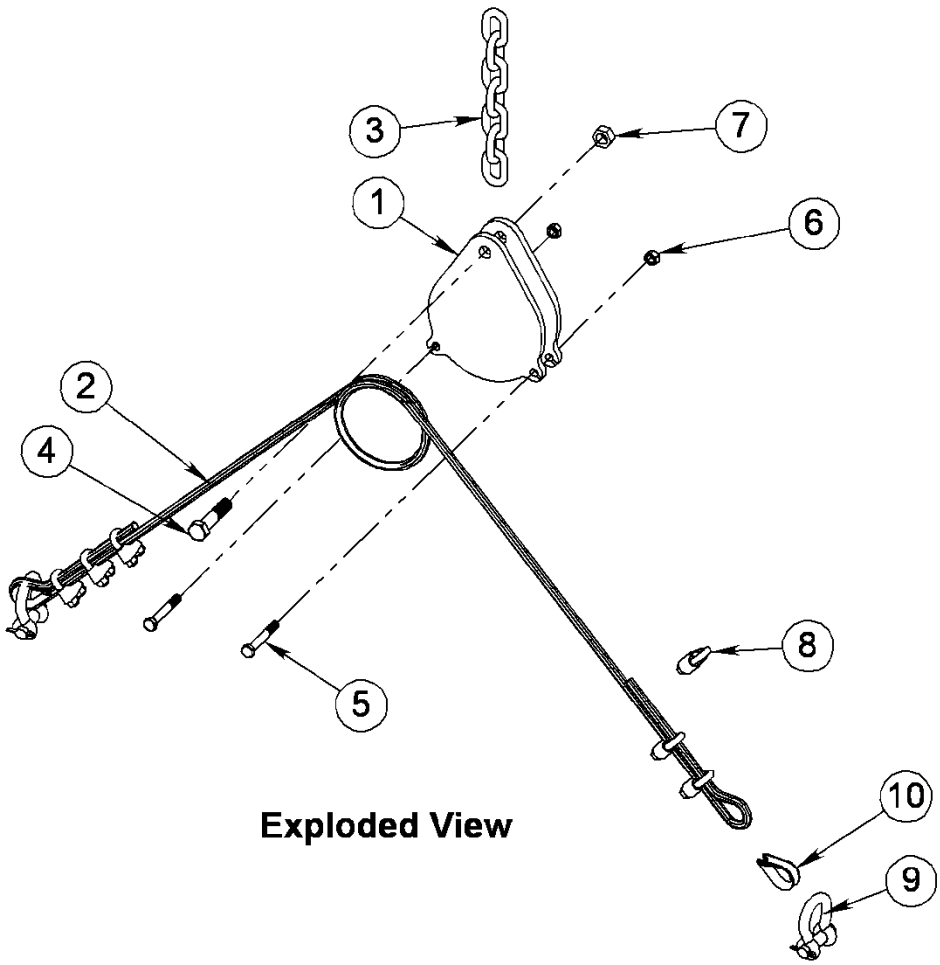
1. Attach plow to hitch using Pin-On or Quick-Hitch connection.
2. Raise hitch lift cylinder until hitch lift arm is approx. 5° below horizontal (with plow end of the lift arm being a little lower than hitch end).
3. Telescope lift arm out until lift chains are running just slightly forward as they run down to plow. Attach upper lift chain of 3-piece chain assembly to center lift eye on hitch inner tube assembly.
4. Begin to raise lift arm, and verify that lift chains become tight exactly when lift arm reaches horizontal position. Adjust chain lengths as necessary.
5. Lift plow off ground approx. 12”, then with plow in air, rotate plow side-to-side and verify that plow remains approximately level in all positions (with center of cutting edge 12-15” off ground, neither end of cutting edge should be closer than 10” from ground).
6. Adjust telescoping lift arm inward or outward to provide the best level lifting.

   Extending lift arm too far out can cause chain binding. With plow fully lifted, chain attachment point on the plow should never be more than 2” to the rear of front of telescoping lift arm, with plow in the straight position (not reversed left or right).

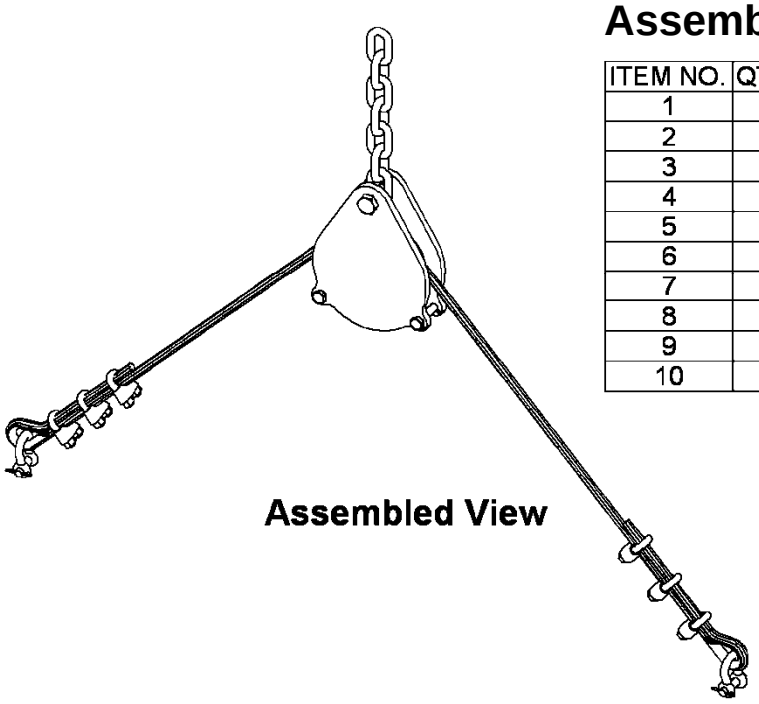
IMPORTANT: On fixed-angle (non-reversing) plows, telescoping lift arm must be set to shortest position, and 3-piece chain arrangement is not used. Instead, separate chains are used on each side.

WARNING: EXTENDING LIFT ARM TOO FAR OUT OR SETTING CHAINS TOO SHORT COULD CAUSE CHAIN BINDING, WHICH COULD CAUSE DEATH OR SERIOUS INJURY DUE TO FAILURE OF CHAIN, SHACKLES, OR OTHER ITEMS.

WARNING: 3-PIECE CHAIN ARRANGEMENT MUST BE USED ON REVERSING PLOWS. ATTACHING INDIVIDUAL CHAINS TO EACH SIDE OF LIFT ARM COULD CAUSE CHAIN BINDING, WHICH MAY CAUSE DEATH OR SERIOUS INJURY DUE TO FAILURE OF CHAINS, SHACKLES, OR OTHER ITEMS.



Exploded View



Assembled View

TABLE 3-3 – Optional Cable Lift Assembly, Parts List

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	1300-A1359	Cable Lift Drum Assembly
2	1	1400-0238	Wire Rope, 1/2-6 x 25 IWRC
3	1	1300-2460	Chain
4	1	7020082	Hex Capscrew, 3/4-10 x 3.5 Gr. 8
5	2	7020051	Hex Capscrew, 1/2-13 x 3.5 Gr. 5
6	2	7030101	Nylock Nut, 1/2-13 Gr. 2
7	1	7030030	Toplock Nut, 3/4-10 Gr. C
8	6	7060012	Cable Clamp, 1/2
9	2	7060001	Shackle, 7/16, 2 Ton
10	2	7060013	Cable Thimble, 1/2

NOTE: Must use double acting lift cylinder Truck Hitch

FIGURE 3-5 – Optional Cable Lift Assembly

TABLE 4-1 – Hydraulic Components

Hydraulic Reversing Assembly

Qty.	Part No.	Description
1	1300-0276	Cushion Valve Plate
2	7020371	Hex Capscrew 5/16-18 x 2.5 GR. 5
2	7030086	Nylock Nut, 5/16-18
2	7040003	Flat Washer, 5/16 Hardened, USS
1	7080322 7080133	Cushion Relief Valve, 2000 PSI *(Standard for Most Plows)* Cushion Relief Valve, 2500 PSI *(Standard for 48R & Expressway Plows)*
2	7090400	Straight Adapter, -10 ORB Male to -08 ORB Male
1	7090405	Dust Plug for 7090544
1	7090406	Dust Cap for 7090543
2	7090543	Quick Coupler, ISO 7241-A, 1/2" Body Size, -08 ORB, Poppet, Male
2	7090544	Quick Coupler, ISO 7241-A, 1/2" Body Size, -08 ORB, Poppet, Female
3	7090415	Clamp Base 3/8 2-Hose
1	7110570 *	Hose Assy., 3/8 x 28", -6 JIC F e/e
3	7110571 *	Hose Assy., 3/8 x 44", -6 JIC F e/e
2	7110572 *	Hose Assy., 3/8 x 36", -6 JIC F e/e
2	7090388 *	Elbow, 90°, -6 JIC M x -8 ORB Adj. Male
4	7090373 *	Straight Adapter, -6 JIC M x -8 ORB Male
2	7090387 *	Tee, -6 JIC Male
3	7090416 *	Clamp Pair, 3/8 2-Hose
3	7090417 *	Clamp Cover Plate, 3/8 2-Hose
3	7020011 *	Bolt, 5/16-18 x 1.25", Zinc Plated
2	1300-3107 *	NHS-125 Nylon Sleeve, Cut to 18"

** NOTE: * Included in* 7080421 *Standard Hydraulic Kit*

TABLE 4-2 – Pneumatic Components

Pneumatic Ice Blade Assembly
(Henke Item #6379101)

Item No.	Qty.	Part No.	Description
1	239"	7099001	Air Hose, .248 ID X .375 OD Poly
2	4	7099004	269PP-06-06, Elbow 90°
3	2	7099003	3300-BH-06-1.31, Bulkhead Coupler
4	2	7099002	272PP-06-06-06, Tee
5	4	7050105	Clevis Pin, 3/4 X 3
6	4	7050113	Cotter Pin, 1/8 X 1.5
7	2	7080658	Pneumatic Cylinder
8	4	7040007	Flat Washer, Hardened, SAE

Pneumatic Squeegee Blade Assembly
(Henke Item #6379100)

	Qty.	Part No.	Description
1	265"	7099001	Air Hose, .245 ID X .375 OD Poly
2	4	7099004	269PP-06-06, Elbow 90°
3	2	7099003	3300-BH-06-1.31, Bulkhead Coupler
4	2	7099002	272PP-06-06-06, Tee
5	4	7050105	Clevis Pin, 3/4 X 3
6	4	7050113	Cotter Pin, 1/8 X 1.5
7	2	7080658	Pneumatic Cylinder
8	4	7040007	Flat Washer, Hardened, SAE
9	4	7090447	Clamp, 7/8 ID 1-Hose
10	10	7210016	Nylon Tie, .30 X 8.0 Black
11	4	7030006	Nylock Nut, 3/8-16

Pneumatic Multi-Blade Control Kit
*****Need one each for Squeegee Blade and Ice Blade***
(Henke Item #6379001)

1	300"	7099001	Air Hose, .245 ID X .375 OD Poly
12	1	7080663	Air Valve, Push-Pull
13	1	7080664	Muffler For 7080663
14	1	7080665	Air Regulator
15	1	7080666	Panel Nut for 7080665
16	1	7080667	Air Pressure Gauge, Panel Mount
17	3	7099006	264PP-04-04-04, Tee
18	6	7099007	268PP-04-04, Straight
19	1	7099008	269-PP-04-02, 90° Elbow
20	2	7099009	268PP-04-02, Straight
21	2	7099010	269-PP-04-04, 90° Elbow

Section 4 – Pneumatic Plumbing for Squeegee and Ice Blade

PNEUMATIC PLUMBING RECOMMENDATIONS

- Ensure that your truck's auxiliary air tank provides for primary tank priority pressure, so that priority flow is always maintained to the critical systems of the truck, such as braking.

- If no auxiliary air tank is present, install a 5-gallon auxiliary air tank near the front of the truck, used exclusively as an air source for the plow pneumatic cylinders. Ensure that priority flow is always maintained to the primary tank(s) that supply the critical systems of the truck, such as braking, before pressurizing the auxiliary tank.

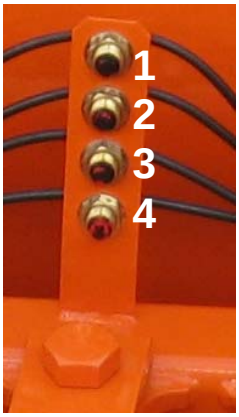
- Install an air line exiting the auxiliary tank to supply the plow's pneumatic cylinders. Install a variable pressure regulator in-line, and utilize an appropriate 4-way valve to control flow.

- When the line is split to go to the two cylinders on one blade, ensure that the hose lengths to each cylinder are kept identical. The point at which the hoses are split to go to each cylinder should be directly above the A-frame to pushframe pivot bolt on the plow, to minimize relative movement during plow rotation.

- Maintain all fitting and hose sizes at or above the port size of the cylinder throughout the plow pneumatic circuit.

- Install an independent cylinder speed control (variable flow control) on each pneumatic cylinder port to prevent chattering and regulate cylinder speed. The desired system is to have "controlled flow out, free flow in" on each cylinder port.

TABLE 4-3 – Pneumatic Plumbing Guide for Bulkhead Plate



Bulkhead Position	Hose Length (inches)	Location Description
1	63.75	Squeegee Blade Pneumatic Cylinder, Barrel End (top)
2	67.25	Squeegee Blade Pneumatic Cylinder, Rod End (bottom)
3	57.5 63.5	Ice Blade Pneumatic Cylinder, Barrel End (top) 11' Ice Blade Pneumatic Cylinder, Barrel End (top) 12'
4	60.75 66.75	Ice Blade Pneumatic Cylinder, Rod End (bottom) 11' Ice Blade Pneumatic Cylinder, Rod End (bottom) 12'



FIGURE 4-1 - Pneumatic Plumbing for Slush and Ice Blades

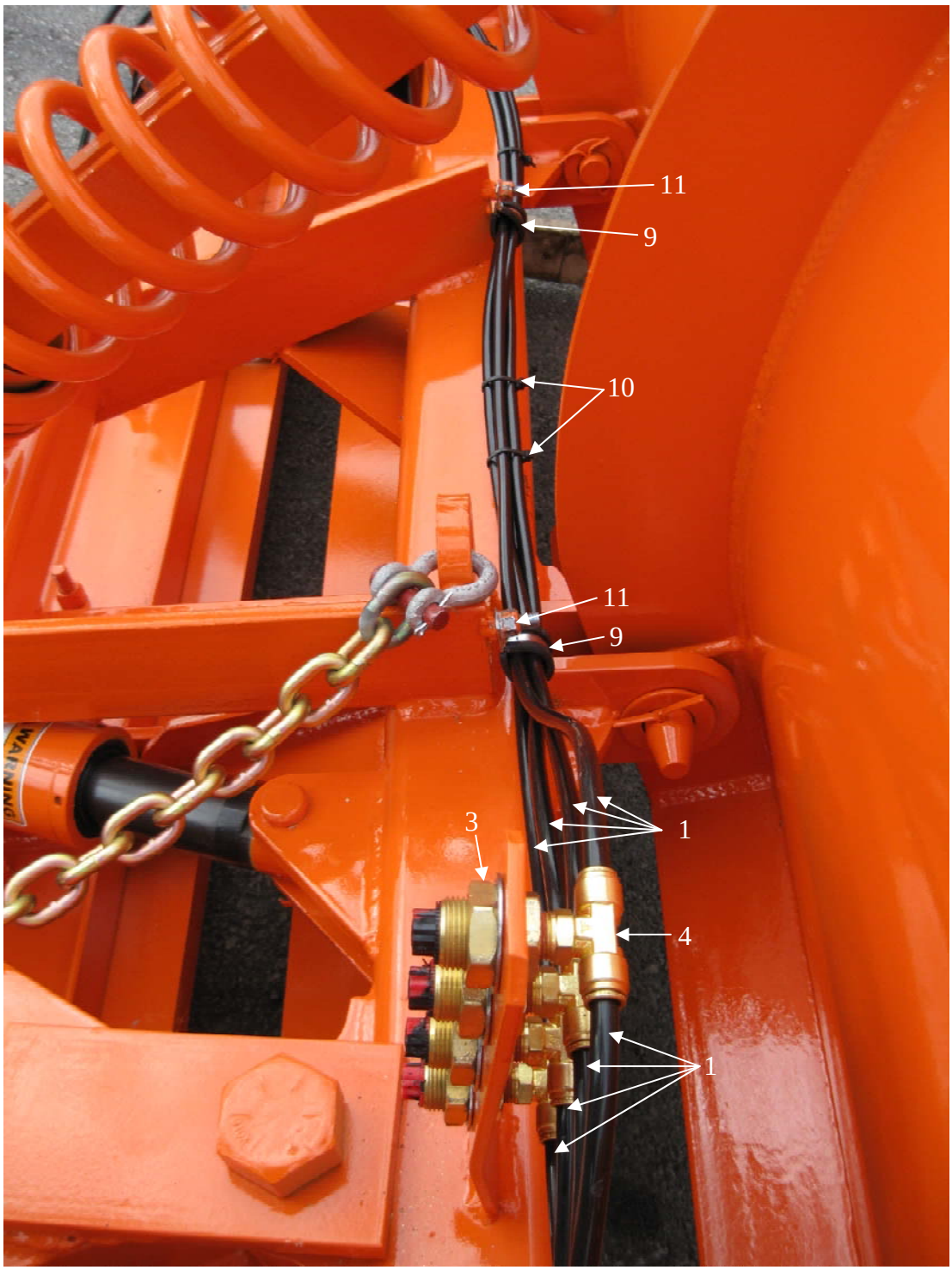


FIGURE 4-2 - Pneumatic Plumbing, Bulkhead Plate
(Parts are included in Henke Item No. 6379101 & 6379100)

NOTE: Numbering Coincides with Table 4-2

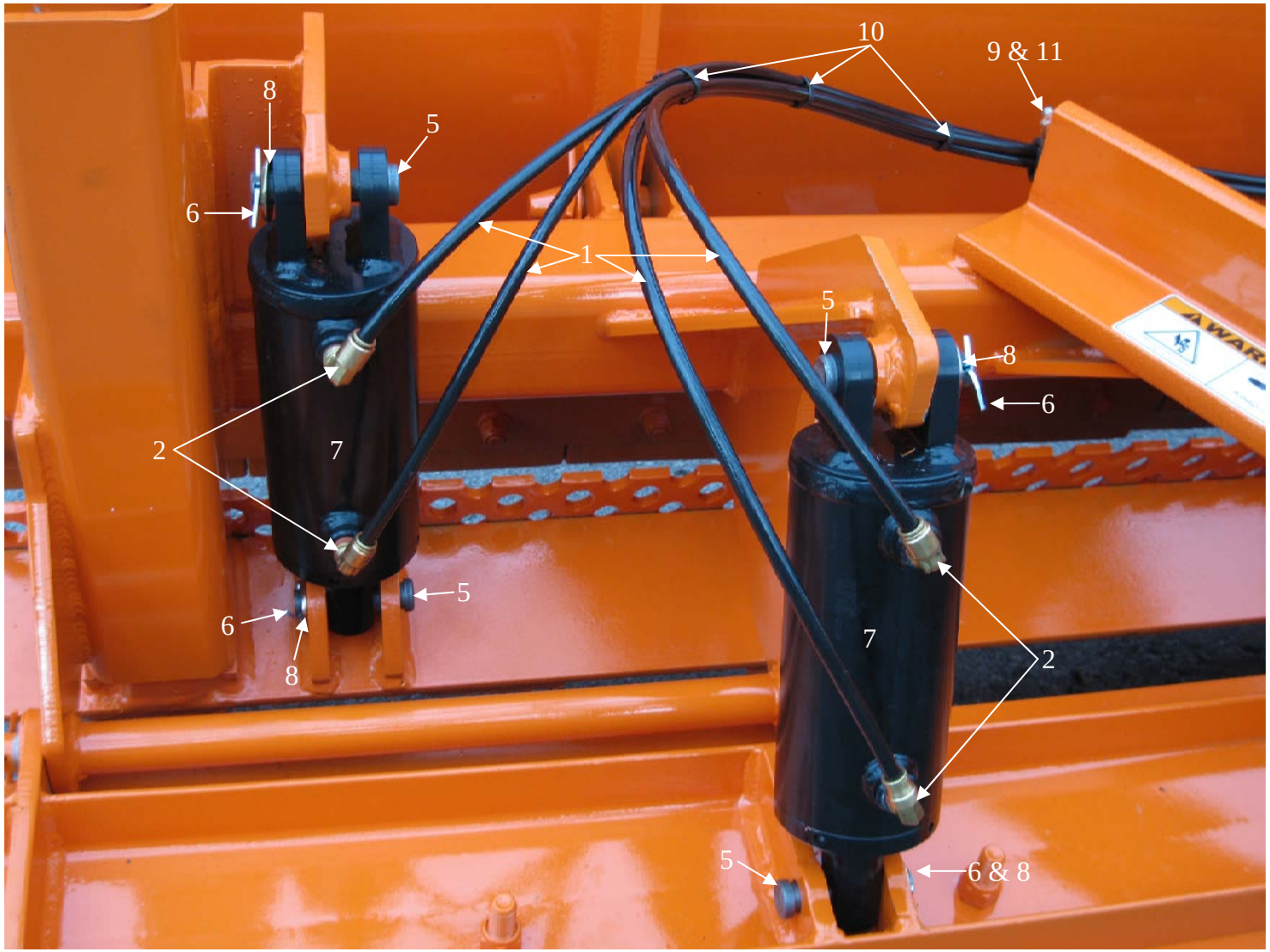


FIGURE 4-3 - Pneumatic Plumbing, Cylinders
(Parts are included in Henke Item No. 6379101 & 6379100)

NOTE: Numbering Coincides with Table 4-2

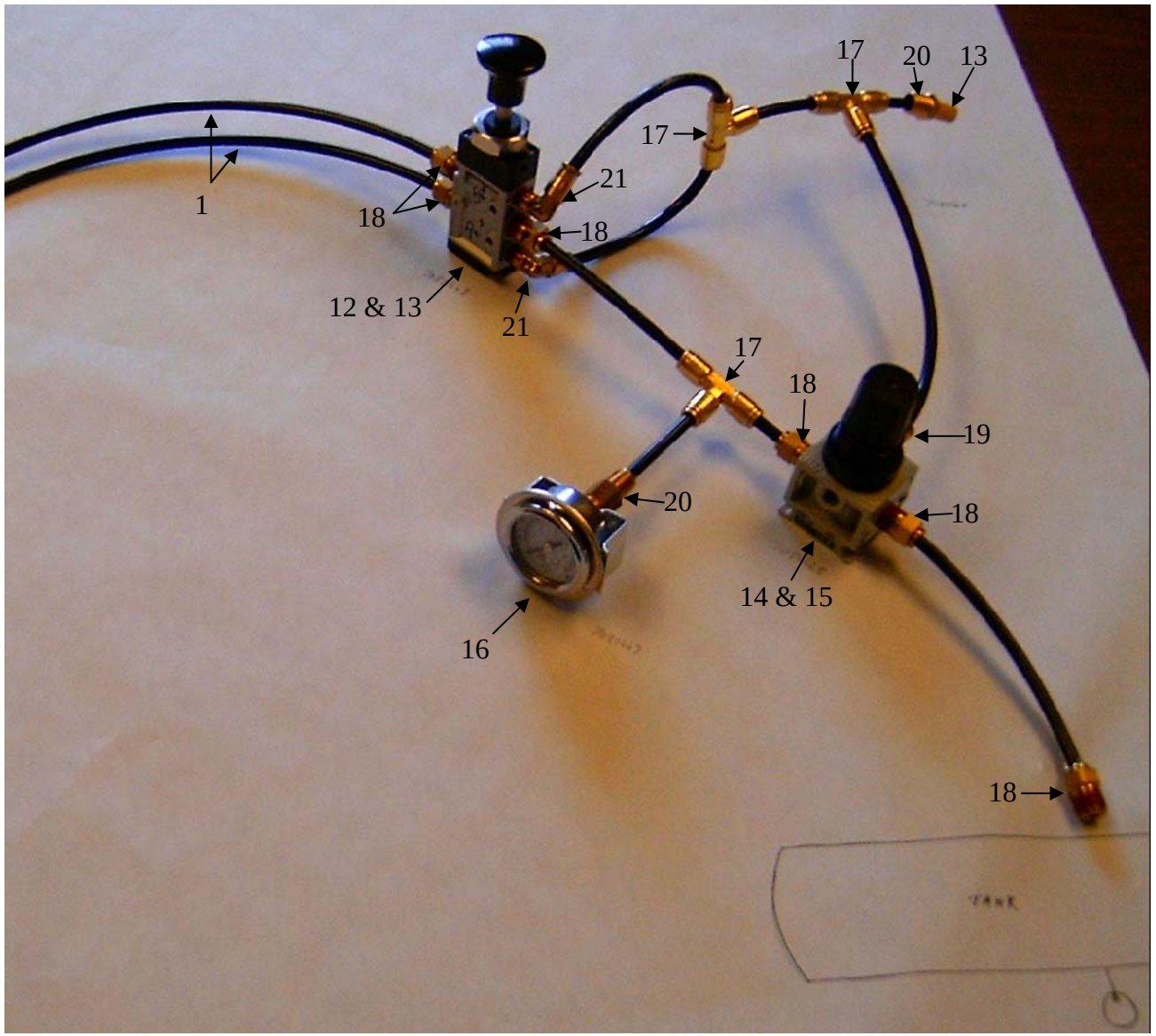


FIGURE 4-4 – Pneumatic Multi-Blade Control Kit (Henke Item No.6379001)

NOTE: Numbering Coincides with Table 4-2

TABLE 5-1 – Enclosed Spring Trip w/ Attachments, Parts List

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	1300-A0174	Canister, Complete (See Separate Exploded View)
2	1	1300-A1828 1300-A0678	Trunnion Plate Assembly, R/H EST * Trunnion Plate Assembly, R/H DEST *
3	1	1300-A1829 1300-A0677	Trunnion Plate Assembly, L/H EST * Trunnion Plate Assembly, L/H DEST *
4	1	1300-0414	Spacer
5	1	7020091	Hex Capscrew, 3/4-10 x 9 Gr. 2
6	9	7040021	Lock Washer, 3/4
7	9	7030013	Nut, 3/4-10 Gr. 8
8	2	7090111	Grease Fitting, 1/4-28
9	8	7020074	Hex Capscrew, 3/4-10 x 2 Gr. 8
10	1	1300-0463	Drilled Bolt
11	1	7030018	Slotted Nut, 1-8 Gr. 2
12	1	7050003	Cotter Pin, 3/16 x 2
13	2	1300-0410	Shear Bar

NOTE: * EST = Single Enclosed Spring Trip (one trip canister per plow)

* DEST = Dual Enclosed Spring Trip (two trip canisters per plow)

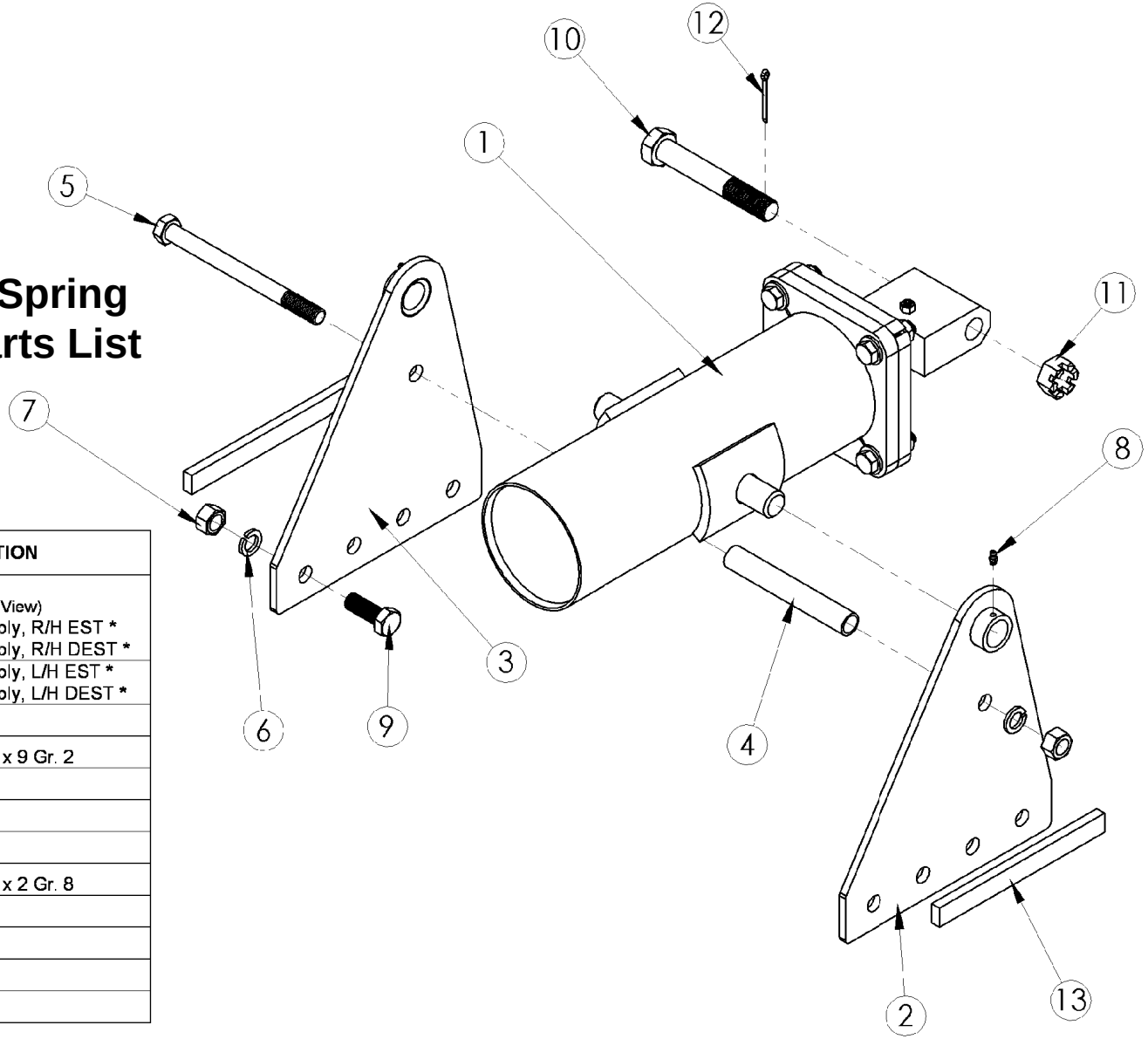


FIGURE 5-1 – Enclosed Spring Trip (EST) w/ Attachments

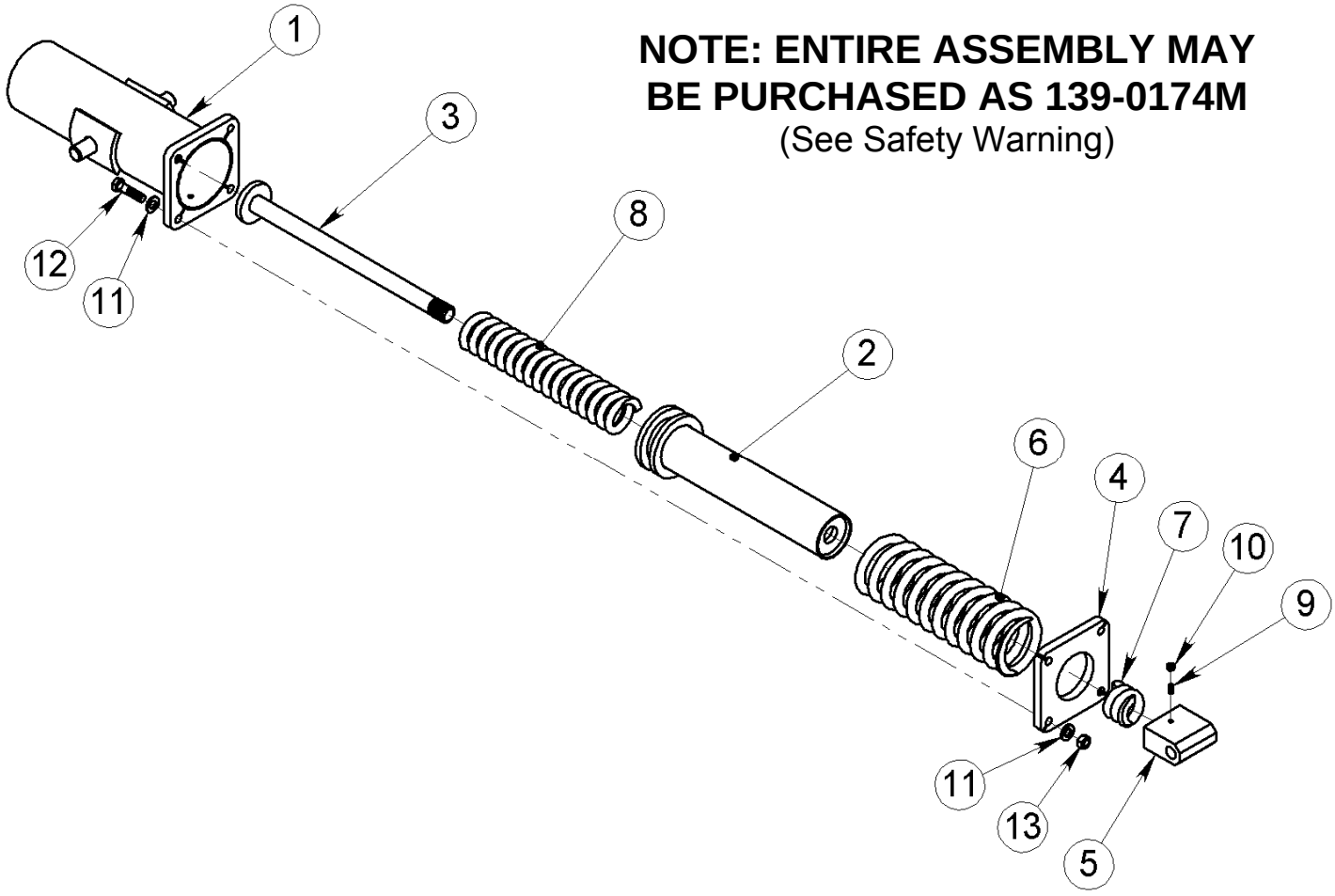


FIGURE 5-2 – Enclosed Spring Trip Assembly (EST)

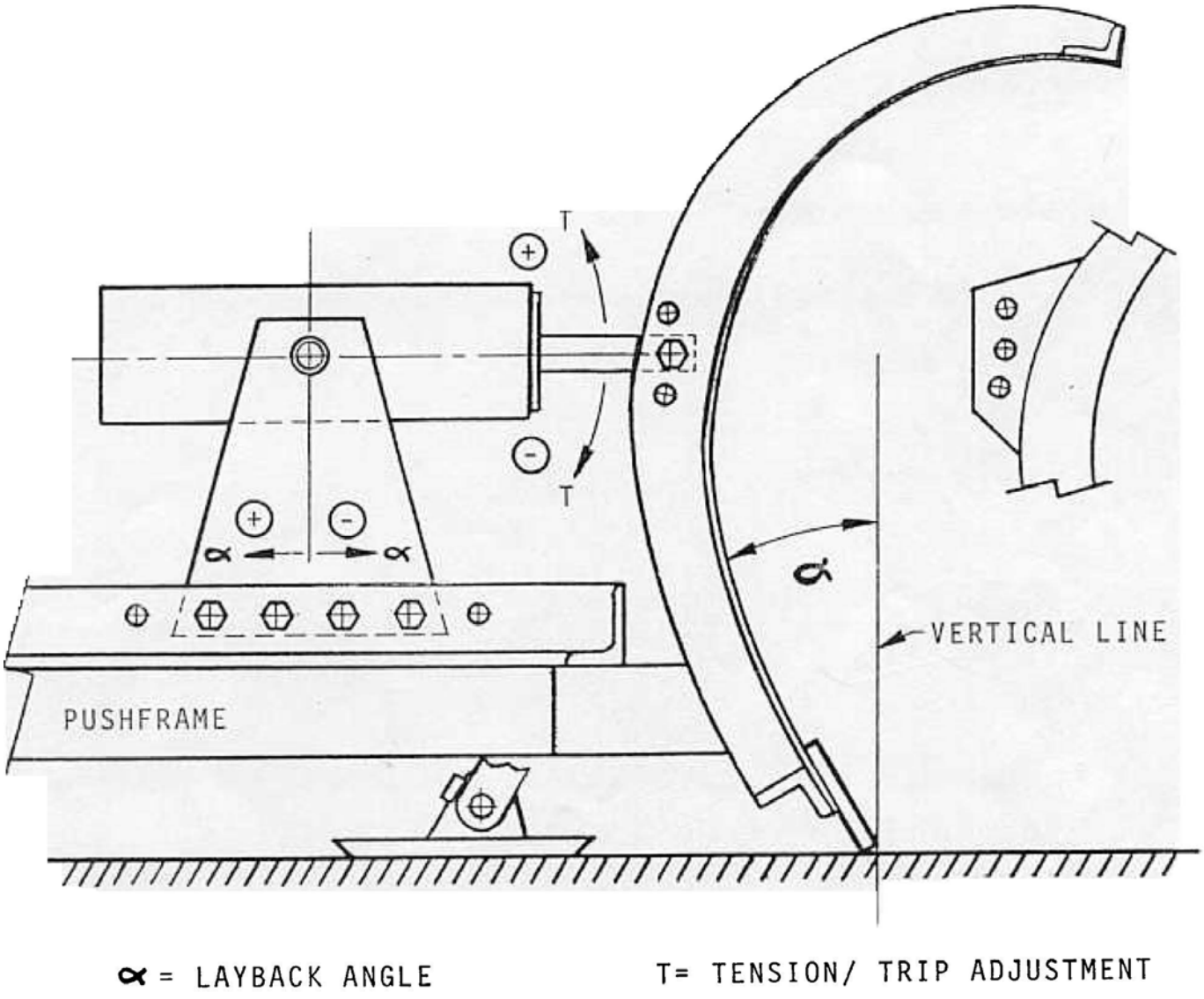
TABLE 5-2 – Enclosed Spring Trip Assembly, Parts List

Item No.	Qty.	Part No.	Description
1	1	139-0753	Housing Assembly
2	1	139-0886	Guide Tube Assembly
3	1	139-0088	Shaft Assembly
4	1	1300-1562	Cap Plate
5	1	1300-1560	Shaft End
6	1	7070009	Compression Spring - Large
7	1	7070011	Compression Spring - Small
8	1	7070010	Compression Spring - Medium
9	1	7020004	Set Screw, 3/8-16 x .75
10	1	7030004	Nut, 3/8-16 GR. 2
11	8	7040006	Flat Washer, 5/8 Hardened, SAE
12	4	7020288	Hex Capscrew, 5/8-11 x 2.5, GR. 8
13	4	7030084	Toplock Nut, 5/8-11, GR. C

WARNING: Dissassembly of Enclosed Spring Trip Canister COULD result in DEATH OR SERIOUS INJURY.

Suggested Layback Angle

Single EST = 15° Factory Setting. Do Not Exceed 25°.
Dual EST = 36R, 41R = 15° Factory Setting. Do Not Exceed 25°.
Dual EST = 48R = 20° Factory Setting. Do Not Exceed 27°.



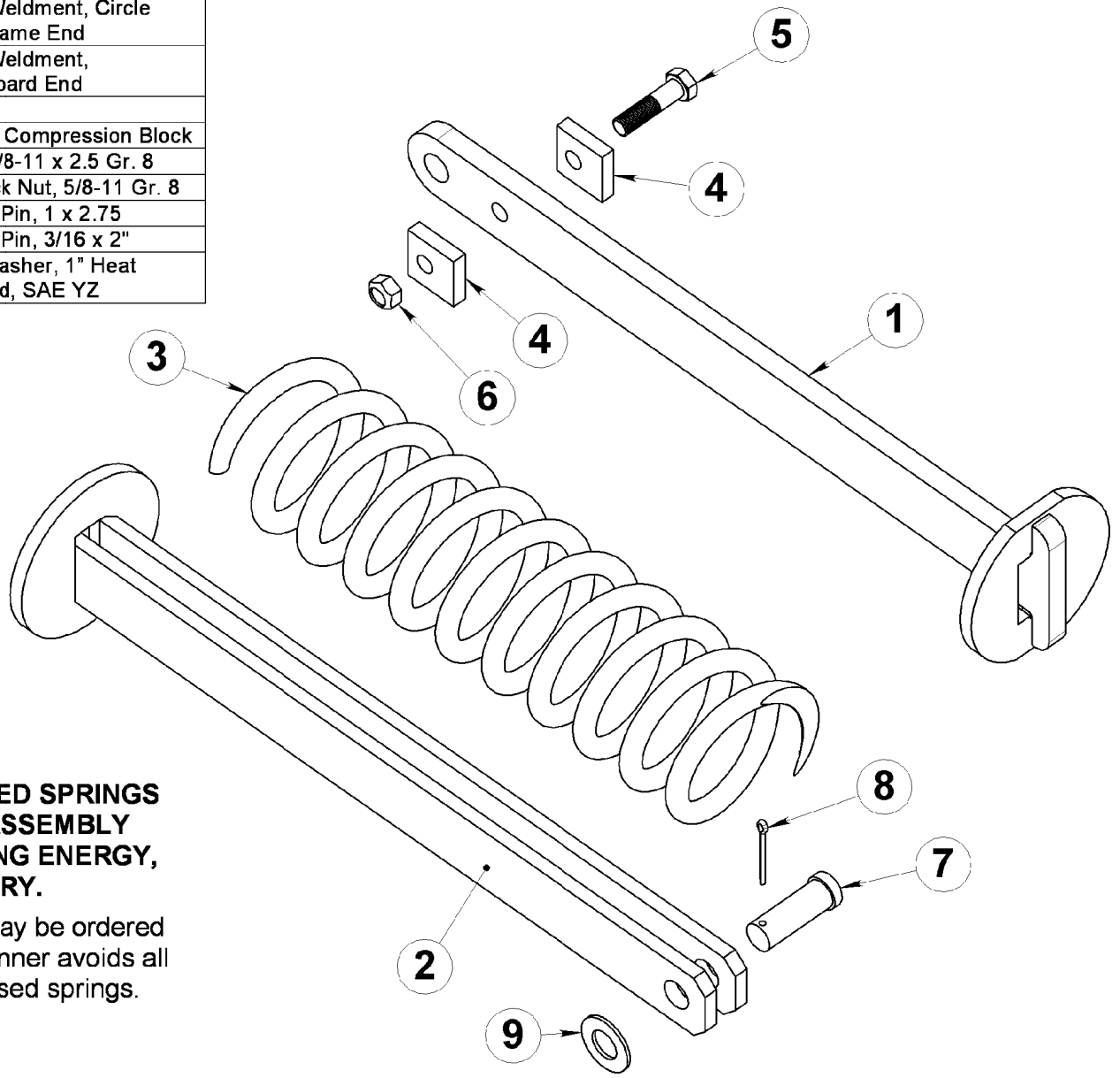
NOTE:

If Different Adjustment of the pl ow moldboard is needed, follow the above diagram.

FIGURE 5-3 – Enclosed Spring Trip Adjustment

TABLE 5-3 – External Compression Trip Assembly, Parts List

Item Number	Qty.	Part Number	Description
1	1	1300-A1596	ECT Weldment, Circle Pushframe End
2	1	1300-A1597	ECT Weldment, Moldboard End
3	1	7070025	Spring
4	2	1300-1543	Spring Compression Block
5	1	7020288	Bolt, 5/8-11 x 2.5 Gr. 8
6	1	7030084	Toplock Nut, 5/8-11 Gr. 8
7	2	7050100	Clevis Pin, 1 x 2.75
8	2	7050003	Cotter Pin, 3/16 x 2"
9	2	7040013	Flat Washer, 1" Heat Treated, SAE YZ



WARNING:

THIS ASSEMBLY CONTAINS PRESTRESSED SPRINGS UNDER COMPRESSION. IMPROPER DISASSEMBLY MAY CAUSE SUDDEN RELEASE OF SPRING ENERGY, WHICH COULD RESULT IN SERIOUS INJURY.

Note: Entire assembly, less items 7 thru 9, may be ordered as Part No. 1300-A1598. Ordering in this manner avoids all disassembly and assembly involving prestressed springs.

FIGURE 5-4 – External Compression Trip Assembly (ECT)

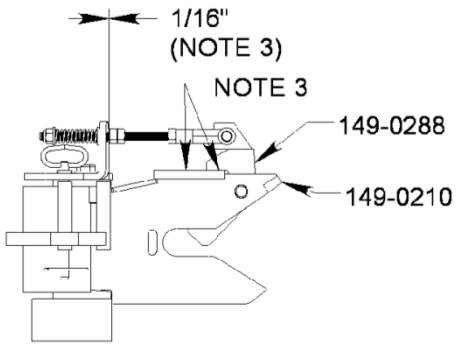
TABLE 6-1 –Universal Quick Hitch, Parts List

Item No.	Qty.	Part No.	Description
1	1	469-0014	UQH Plow Portion Weldment
2	1	1400-0426	Lever Left
3	1	1400-0427	Lever Right
4	2	1400-0552	Latch Adjuster
5	2	7020060	Hex Capscrew, 5/8-11 X 2.00 GR. 8
6	2	7030084	Toplock Nut, 5/8-11 GR. C
7	4	7040006	Flat Washer, 5/8 Hardened, SAE
8	1	7050017	Hair Pin, .125 X 2.65
9	2	7050044	Cotter Pin, 1/8 X 1
10	2	7070026	Adjusting Yoke
11	6	7030008	Hex Nut, 1/2-20 GR. 2
12	1	7050127	Hitch Pin, .5 X 5 Grip
13	2	7050009	Clevis Pin, .50 X 1.50
14	4	7040042	Flat Washer, 1/2 Hardened, SAE
15	2	7070099	Spring, 2.75in
16	2	7030091	Nylock Nut, 1/2-20

Assembly and Adjustment Instructions:

1. Install levers (items 2 & 3) using hardware indicated. Check handle function. If mechanism is tight, loosen locknuts just enough to allow smooth operation.
2. Install both lever-to-jaw linkages using hardware shown.
3. Adjust linkages (see "Linkage Adjustment View" below): With handle pinned in "closed" position (towards plow) and latch assembly. (149-0288) resting against top of jaw assy. (149-0210), tighten nuts (item 16) on springs to compress springs approximately 1/4" (compressed spring length = 2.50"). After adjusting spring, back-off both nuts (item 11) from levers (items 2 & 3) 1/16" and tighten.

NOTE: Entire Assembly Shown May Be Ordered as 469-0013.



Linkage Adjustment View

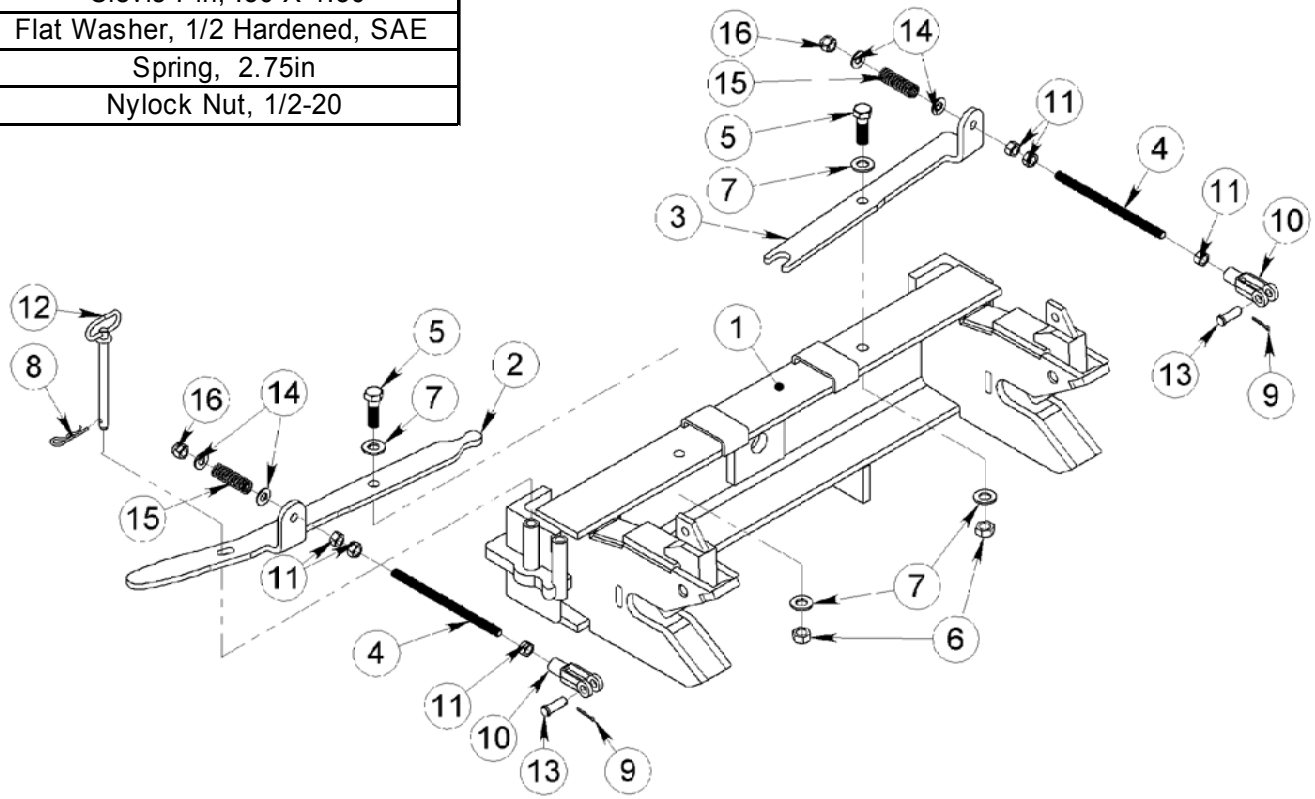
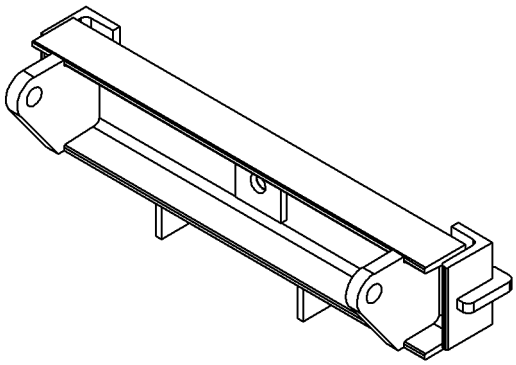


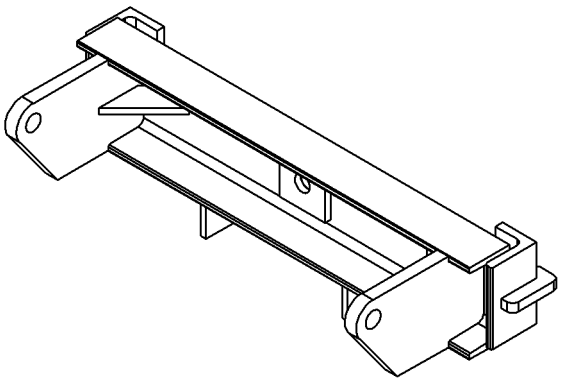
FIGURE 6-1 –Universal Quick Hitch, (UQH)

FIGURE 6-2 – Swivel Plates & Plow Hitches

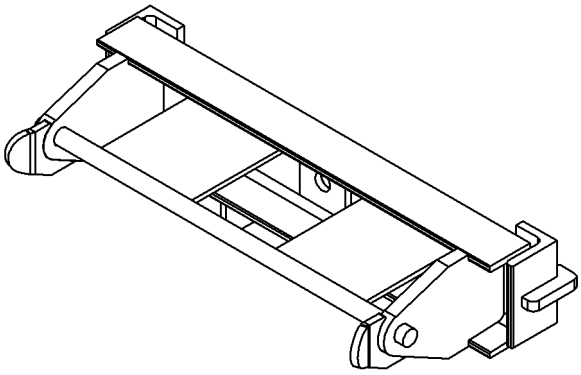
Many different types of swivel plates and plow hitches are available. Samplings are shown below. Please call Henke Manufacturing for part numbers.



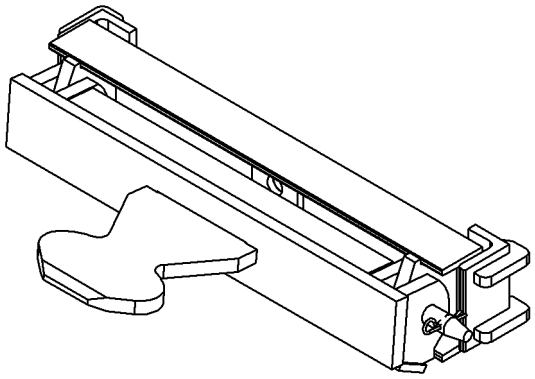
Swivel Plates with Standard Ears



Swivel Plates with Long Ears



Quick-Link Style Swivel Plate



Arrowhead Style Plow Portion

NOTES: Please see Figure 6-1 for UQH Plow Portion.

Universal pin-on type swivel plates are available in various widths, hole sizes, and ear lengths.

FIGURE 7-1 – Henke Cutting Edges

6" STEEL	1/2" THICK	5/8" THICK	3/4" THICK
2FT.	Call	7150119	7150189
3FT.	7150153	7150120	7150073
4FT.	7150154	7150129	7150072
5FT.	7150007	7150184	7150026
6FT.	Call	Call	7150004
7FT.	Call	Call	7150028
8FT.	7150172	Call	Call
9FT.	Call	Call	7150036
10FT.	7150008	7150090	7150197
11FT.	7150009	7150089	7150031
12FT.	7150010	7150082	7150032

CP 6" STEEL	1/2" THICK	5/8" THICK	3/4" THICK
3FT.	7150186	Call	Call
4FT.	7150187	Call	Call

CP 10" STEEL	1/2" THICK	5/8" THICK	3/4" THICK
10FT.	Call	Call	7150050

CARBIDE	3/4" THICK
3FT.X5" TALL	Call
3FT.X6" TALL	7150035
3FT.X8" TALL	7150163
4FT.X5" TALL	7150123
4FT.X6" TALL	7150025
4FT.X8" TALL	7150164
5FT.X8" TALL	7150097
6FT.X6" TALL	7150124

8" STEEL	1/2" THICK	5/8" THICK	3/4" THICK
2FT.	7150039	7150077	Call
3FT.	7150037	7150078	Call
4FT.	7150038	7150079	Call
5FT.	7150011	Call	7150054
6FT.	7150005	7150081	7150055
8FT.	7150012	Call	7150042
9FT.	7150013	7150045	7150046
10FT.	7150014	7150043	7150047
11FT.	7150015	7150040	7150048
12FT.	7150016	7150044	7150049

CP 8" STEEL	1/2" THICK	5/8" THICK	3/4" THICK
3FT.	7150021	Call	Call
4FT.	7150022	Call	Call
10FT.	7150017	Call	7150171
11FT.	7150018	7150169	Call
12FT.	7150019	7150056	Call

RUBBER Notes 5&6	1 ½" THICK X10" Tall CP	RETAINING STRIP
8FT.	3500-0008	3500-0026
9FT.	3500-0009	1300-2223
10FT.	3500-0010	1300-0394
11FT.	3500-0011	1300-0395
12FT.	3500-0012	1300-0396
14FT.	3500-0014	1300-0401
16FT.	3500-0016	1300-0402

SNOW BASKET	1" THICK X10" Tall CP
8FT.	7150052
9FT.	7150053
10FT.	7150088

NOTES:

1. For Cutting Edges Not Listed Call Henke Manufacturing at 1-888-682-9010.

2. Except as noted, all cutting edges have 1.5" gauge line (distance from top edge to center of holes)

3. "CP" = Center Punched

4. All edges shown are punched for 5/8" bolts.

5. For rubber cutting edges, 6" tall center punched steel edges, Items 7150186 & 7150187 may be used to provide proper support behind the rubber edge.

6. Henke's rubber cutting edges feature a minimum tensile strength of 2000 psi and a maximum DIN rating of 150, and last much longer in service than lower quality rubber cutting edges available from some other suppliers.

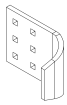
7.Polyurethane cutting edges also available - call for price and availability.

TABLE 7-2 – Cutting Edge Hardware

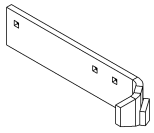
TYPE	LENGTH	PART NO.	USES/NOTES
PLOWBOLTS 5/8-11 GRADE 8	2” 2 ½” 3” 3 ½” 4” 4 ½” 5” 6”	7150001 7150003 7150002 7150103 7150105 7150106 7150108 7150107	FOR STANDARD CUTTING EDGES AND WEAR GUARDS
CARRIAGE BOLTS 5/8-11 GRADE 8	3” 4” 5” 6”	7020280 7020287 7020359 7020363	FOR SOME WRAPAROUND CURB GUARDS (SQUARE HOLES, NOT COUNTER SUNK)
HEX BOLTS	4” 4 ½” 5”	7020064 7020128 7020295	RUBBER AND POLY CUTTING EDGES (USE NYLOCK NUTS ONLY)
TOPLOCK NUT 5/8-11 GRADE C	N/A	7030084	USE WITH STEEL OR CARBIDE CUTTING EDGES
NYLOCK NUT 5/8-11 GRADE 8	N/A	7030095	USE WITH RUBBER OR POLY CUTTING EDGES

TABLE 7-3 – Henke Curb Guards & Wear Guards

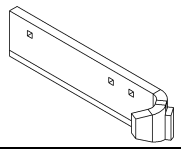
Wrap-Around Curb Guards, Steel

	7150122	6”, Left
	7150121	6”, Right
	7150117	8”, Reversible

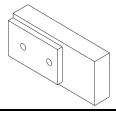
Wrap-Around Curb Guards, Chrome-Carbide Weld Deposit on Wrap-Around Corner

	7150125	6”, Left
	7150126	6”, Right
	7150115	8”, Left
	7150118	8”, Right

Wrap-Around Curb Guard + Wear Guard,
Chrome-Carbide Weld Deposit on Wrap-Around Corner + on Bottom Wear Edge

	7150113	6”, Left
	7150114	6”, Right
	7150130	8”, Left
	7150131	8”, Right

Bolt-On Curb Guards (Bolts to Outside of End Rib)

	139-1046	Bolt-On Guard Assy.
	1300-1633	Optional spacer (Required for Tripedge applications)

<u>Henke Wear Guards and Wear Shoes</u>

Wear Guards, Standard Length (9”), with Chrome-Carbide Weld Deposit
(Mount in front of cutting edge)

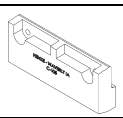
	7140106	6”, Reversible
	7140107	8”, Reversible

Wear Guards, Long Length (21”), with Chrome-Carbide Weld Deposit
(Mount in front of cutting edge)

	7140108	6”, Reversible
	7140008	8”, Reversible

Cast Wear Shoes

(Mount behind cutting edge)

	7140004	Wear shoe for 6” cutting edges, or 8” center-punched edges
	7140002	Wear shoe for 8” cutting edges

Bottom Angle Saver (Mount behind of Bottom Angle)

	199-0280	Bottom Angle Saver with Carbide Strip

HENKE
LIMITED WARRANTY

1. LIMITED WARRANTIES

1.01. Henke warrants for one year from the purchase date to the original non-commercial, governmental, or municipal purchaser ("Purchaser") and warrants for twelve months to the original commercial or industrial purchaser

1.02. Manufacturer will repair or 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 warranty does not include normal wear items such as cutting edges, wear guards, scarifier teeth, etc. or improper installation. HMC warranty for any purchased components, such as hydraulic cylinders will be superceded by, and equal to the component manufacturer warranty.

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. Warranty claims must be filled within 30 days of repair work during the one year warranty period and will be honored only if the completed warranty registration form has been returned. Henke reserves the right to require proof of purchase of original Henke replacement parts. If warranty is approved any allowed shipping expenses will be based on and will not exceed standard base shipping charges.

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 Leavenworth County, Kansas.

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.

Henke Implement Model _____ Serial Number _____

Date Purchased _____ Dealer _____

ATTENTION:

READ YOUR OPERATOR'S MANUAL

HENKE MANUFACTURING
An Alamo Group Company
3070 Wilson
Leavenworth, KS 66048
888-682-0300

Dealer Warranty Procedure

For units delivered within the past 12 months, report any warranty problems needing repair to our Product support department. Please have information ready regarding:

1. Henke unit model and serial number,
2. Model of equipment Henke unit is attached to (prime mover)
3. Description of the problem and any helpful information by the end user. (Photos are always helpful).

Measurements or photos may be requested by Henke engineering for any issues regarding prime mover proximity and clearance, or any other unique considerations of fit and adaptability. These may be necessary for a proper repair recommendation and procedure.

Henke will respond with a written labor hour allowance for Henke participation on a faxed claim form and will ship any required replacement parts. If necessary, a repair procedure will be included on the claim form. A parts invoice will be generated to confirm shipment of the replacement parts.

If defective parts are needed for analysis, Henke will request their return.
Any such returned items are to be labeled with the **claim number** and returned to:

Henke Manufacturing Corp.
ATTN: Product Support
3070 Wilson Ave.
Leavenworth, KS. 66048
RGA#_____

The dealer should perform repairs as agreed on a dealer warranty repair order. Return the claim form with a copy of the dealer warranty repair order and service report. Credit as agreed will be issued to the dealer upon receipt of the dealer warranty repair order invoice (Pro-forma invoice), and upon receipt, inspection and warranty confirmation of the returned parts if any.

Parts & Service Assistance

Parts and service assistance is available, Monday through Friday, from **8:00 am** to **5:00 pm, CST. Call 913-682-9000.**

Our web site, **www.henkemfg.com**, is a quick source for parts pricing, and many common parts diagrams.

Parts purchase orders may be faxed in at any time to **913-682-0300**. Faxed orders are encouraged, as they help insure order accuracy and follow up. Include any special instructions, such as drop ship addresses on your order.