Reinco

HG-5H HYDROGRASSER

SAFETY, OPERATION, PARTS & SERVICE

MANUAL

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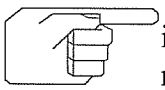
NOTICE

Every attempt has been made to make this manual complete, accurate and up-to-date. However, all information contained herein is subject to change due to updates and design modifications. All inquiries concerning this manual should be directed to **REINCO INC.**

CAUTION: The following information is **IMPORTANT** to the **HEALTH** and **SAFETY** of your employees. Please **READ**, take **ACTION** and **FILE** this document for future reference. Ask for additional copies if required.

Study this manual carefully before attempting to operate the machinery.

This safety alert symbol is used to call your attention to instructions concerning your personal safety. **Federal law requires you to explain the safety and operating instructions furnished with this machine to all employees before they are allowed to operated the machine.** These instructions must be repeated to the employees at the beginning of each season. Be sure to observe and follow these instructions for you and your employee's safety.



This symbol is used to draw attention to those operational and maintenance instructions we consider important to insure long trouble-free operation of this machine.

CALIFORNIA
PROPOSITION 65 WARNING

DIESEL ENGINE EXHAUST AND SOME OF ITS CONSTITUENTS ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS AND OTHER REPRODUCTIVE HARM.

INITIAL RELEASE 1/96
PN 0500920

REINCO MODEL HG-5H
HYDROGRASSER

FORWARD

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A MESSAGE FROM REINCO

Getting the most out of your new **HG-5H HYDROGRASSER** should be within the reach of an inexperienced operator in a few hours. The purpose of this manual is to minimize start up difficulties and acquaint the new owner with recommended operating procedures and techniques. The following pages also include information on parts, service and accessories to help in making your new machine a versatile and profitable investment.

Your new **REINCO HYDROGRASSER** represents the culmination of over thirty five years of expertise embodying field feedback, innovative design and manufacturing experience. Functional simplification and avoidance of mechanical complexities have been prime engineering objectives throughout this time. The benefits to be realized will be years if trouble free performance with minimum attention and maintenance.

Every operator and foreman should read this booklet and familiarize himself with theoperational and mechanical aspects described. Some of the following commentary may appear to be obvious, but at the expense of being repetitive or assuming certain basics, this will serve as a guide for both owners and operators not acquainted with tacking procedures as well as providing instructions on the detailed operation of your new unit.

This manual is provided to ship with new units manufactured at the date of this document's revision. It is also supplied as a reference guide for units of similar construction, manufactured under prior designs. Some parts, options, engines, etc., may not be, or may not have been, available at the time of production of your machine. Contact **REINCO** for cost and availability of any requested upgrades.

All references made to engines, apply to the KOHLER Command Series CH20S engine only. Owners of equipment with other power plants should consult the appropriate engine manufacturer's literature for applicable detailed information.

We at **REINCO** welcome this opportunity to be of service to you and wish to express our appreciation for the confidence extended by your selection of **REINCO** mulching and seeding equipment.

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WHAT IS HYDROGRASSING

HYDROGRASSING has emerged as one of the most practical methods of establishing ground cover, particularly on slopes and difficult access areas. Because of the varied slurry capabilities, prepared ground surfaces can be covered in a single pass, thereby realizing a significant labor savings.

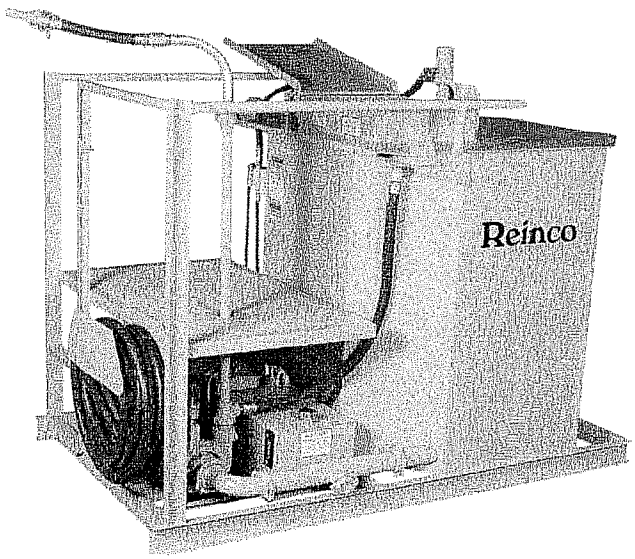
In basic concept, **HYDROGRASSERS** are mobile slurry generators which satisfy the needs of professional landscape or reclamation contractors. The concept of hydraulic grassing was researched by the Connecticut Department of Highways prior to World War II. Thereafter, developments followed making the technique more practical.

The early units combined earth, peat, seed and water to produce a slurry which was then applied to slopes from an elevated platform through a boom and spray nozzle mechanism. This seeding process evolved to a degree which the industry is now highly committed.

It is our understanding, that these original units employed a diaphragm mud pump to develop spray pressure with a separate propeller blade mixer installed to agitate the granular solids. Each had its own gasoline engine drive resulting in a cumbersome and maintenance prone arrangement requiring skilled and highly trained operators.

The present day **REINCO HYDROGRASSER** is a far cry from the early prototypes. Gone are the multiple engines, the antiquated horizontal agitators and the necessity of having a master mechanic's background for operational reliability. Simplicity, without sacrificing performance, has been **REINCO**'s prime development concept over the years. This credo has proven its merit since the first hydraulically agitated seeder was built back in 1960.

REINCO's exclusive **HYDRO-JET** mixing system generates a powerful and concentrated stream of water supplied from a common mixing manifold. This stream continuously flushes over and across the tank carrying the entrained materials up to the surface and then drift downward, thereby producing a well distributed homogeneous slurry. The benefits to be realized, in addition to performance, produces dividends year after year with reduced maintenance.



To provide a sense of productivity, the **HG-5H** carries a nominal rating of 1 acre per hour. This rating includes mixing, transporting and disharge (application) times. Having a 500 gallon working volume the effective coverage is up to one acre, at distances up to 180 ft. (with additional hoses). Depending on mulch requirements, using processed fiber, this machine will have up to 8,000 sq. foot coverage potential.

The **HG-5H HYDROGRASSER** can be used for tacking over hay or straw mulched jobs, as well as remote watering of newly seeded and landscaped areas. Patch-up or reworked washouts can be effectively handled.

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REINCO MODEL HG-5H

HYDROGRASSER

SAFETY

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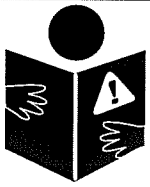
HYDROGRASSER SAFETY OVERVIEW



Personnel responsible for your Hydrograsser training program, maintenance, and operations must read and understand this safety manual and operator's manual. No one should set up, operate or maintain a Hydrograsser until they understand it, its operation and know how to do their job safely.

RECOGNIZE SAFETY INFORMATION

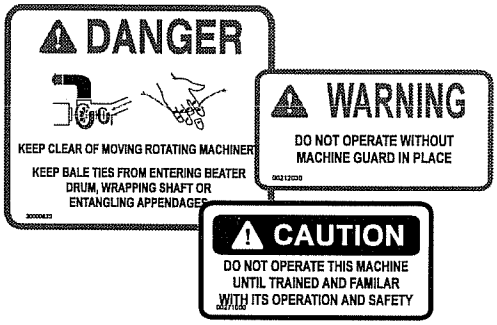
This is the safety alert symbol. When you see it in your operations manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

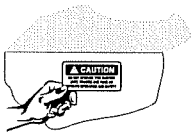
UNDERSTAND SAFETY WORDS

A signal word - **DANGER**, **WARNING**, or **CAUTION** - is used to identify a potential for serious injury. **DANGER** identifies the most serious hazards.

DANGER or **WARNING** safety signs are located near specific hazards. General precautions are listed on **CAUTION** safety signs. **CAUTION** also calls attention to safety messages in this manual and your operations manual.



FOLLOW SAFETY INSTRUCTIONS



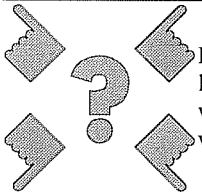
Carefully read this safety manual and all safety messages in your operations manual on your Hydrograsser. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include current safety signs and safety guards. Replacement safety signs and guards are available from your Reinco dealer or directly from Reinco.

Learn how to operate the machine and how to use the controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

800-526-7687 If you do not understand any part of this manual and need assistance, contact Reinco directly.

CONCENTRATE ON YOUR JOB



Daydreaming, worrying about other problems or other improper operation of a machine could cripple you for life. Operating a Hydrograsser requires your complete attention. Talking, joking or participating in or watching horseplay could result in physical injury to you . . . and that's not something to joke about. So watch what you are doing and concentrate on your job.

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KEEP CLEAR OF THE WORK AREA

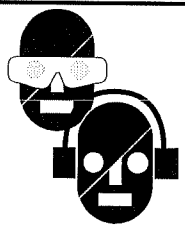
The purpose of a Hydrograsser is to mix and discharge the processed slurry away from the machine. The Hydrograsser utilizes a powerful engine which turns a main pump shaft at high speed to produce the agitation and spray pressures required to process the slurry. It is obvious that this same capacity will sever arms, hands, fingers or any other part of the body that is in the work area when the machine is activated.

Additionally, the discharge is capable of sparying slurry in excess of 35 feet. The machine's discharge is powerful enough to dislodge pebbles, stones or other debris which may cause eye injury.

The person responsible for activating the machine is the primary operator. It is his responsibility to see not only that his own body is clear of the work area and all moving parts, but that his co-workers are clear also and are entirely visible in a safe location before activating the machine.

During set-up, maintenance or other work on the machine which requires manipulation within the tank, pump, engine or other work area, the engine run switch should be 'OFF'".

WEAR PROTECTIVE CLOTHING



Protect your eyes from blowing chaff as well as rocks and other foreign debris found in some materials. Use approved impact resistant eye wear.

As the conditions dictate, the use of respirators to protect you from inhaling nuisance dust is recommended.

Construction equipment is noisy. Prolonged exposure to loud noise can cause impairment or loss of hearing. Use approved ear protection to control this hazard.

Reflective gear and hard hats may also be necessary depending on your job site.

PRACTICE WORK AREA SAFETY RULES

The location of your job site will demand that additional safety practices be implemented. Always follow the applicable OSHA regulations.

While working on road sides and interstate highways, insure that appropriate strobes, flashers and other warning devices are installed on all vehicles as required by law. All workers should be wearing high visibility reflective vests. Anti-crash vehicles should be employed when appropriate. The use of barriers and flagmen is suggested. Be aware of the traffic flow and use caution to avoid discharging towards vehicles.

Since the Hydrograsser may be used at a variety of locations (strip mines, coal storage areas, land fills, refineries, power plants, and protected wilderness areas) it is imperative to contact the appropriate safety official or regulating agency to obtain information regarding any special safety considerations on specific job sites.

FIRE IS ALWAYS A POSSIBILITY

The potential for fire always exists. The combination of fuels, heat from engines,and some materials increase the risk. Have a fire extinguisher near the work area. Learn to look for it before you begin working.

Always keep the machine clean of chaff and debris.

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NEATNESS IS IMPORTANT

Keep the floor of your work area clear of bales or flakes of mulch, twine, scrap and trash that could cause you to stumble. Falling or slipping can result in painful or perhaps even fatal injuries.

Put all fuel, tools and other equipment away when you are not using them. Even a screwdriver can be deadly if left on an enclosure of the machine.

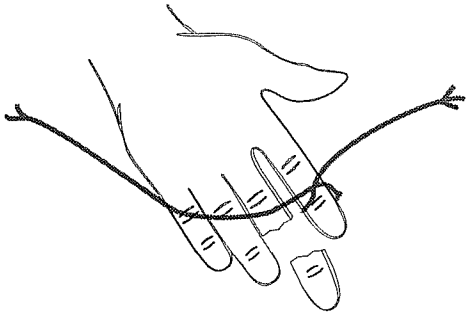
CLEAN AS YOU GO

Packaging, when removed, should be disposed of immediately in a container away from the Hydrograsser. That loose piece of twine or debris around the machine could cause you to fall and cause injury.

MATERIALS HANDLING IS IMPORTANT

When cutting and removing packaging from a mulch bale or opening other materials, the handler must make sure that the wrap is not pulled or dropped into the machine. Loose twine can wrap around a shaft and pull an arm or hand into the machine. It is capable of cutting through fingers. Knives can be extremely dangerous. Never reach into any rotating area of the machinery.

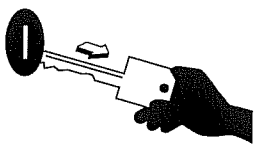
It takes only a fraction of a second to lose fingers. Pay attention to your fingers,debris, and the moving equipment when handling packaging.



VIBRATION IS A WARNING SIGN

A rotation unbalance of any sort will become obvious in the form of vibration. Vibration is an important warning sign of impending mechanical failure. Instruct all users of your equipment to report unusual vibration at the onset.

PRACTICE SAFE MAINTENANCE



Understand service procedure before doing work. Keep area clean and dry.

Never lubricate, service or adjust machine while it is running. Keep hands, feet and clothing away from moving or power driven parts. Disengage all power and operational controls, and relieve pressure. Stop engine and allow machine to cool.

Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any build-up of grease, oil or debris.

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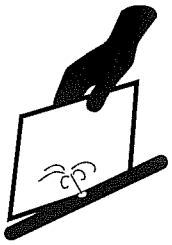
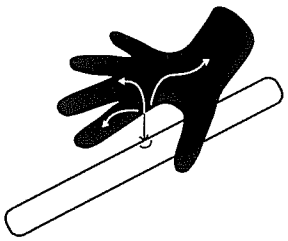
HYDRAULIC SYSTEM CONCERNS



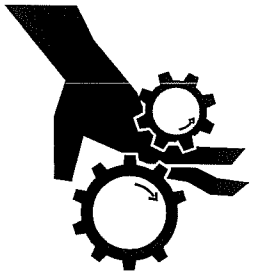
The HG-5H hydrograsser is manufactured with a hydraulically operated blender system. Hydraulic fluid lines are a high pressure fluid hazard. To prevent serious injury or death always relieve system pressure before repairing or adjusting or disconnecting any component of this system.

Tighten all connections before applying pressure. Search for leaks with a piece of cardboard. Leaking hoses, fittings or components should be reported to your supervisor immediately.



If an accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed in a few hours or gangrene may result. Doctors unfamiliar with this type of injury should reference a knowledgeable medical source.

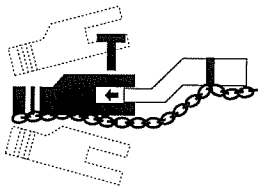
HYDRAULIC FEED SYSTEM JAMS



Should the hydraulic system jam and the blender stop rotating, the pressure relief valve in the flow control valve will open. Before attempting to clear any system jam, turn the engine off and return the system control valve to its closed position. The jammed blender may now be inspected and cleared.

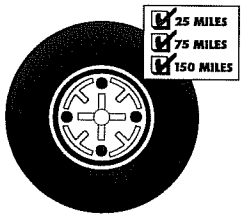
Failure to shut the machine down may cause the system to immediately resume operation when the system pressure drops below the relief valve setting. This situation could cause death or severe bodily injury.

TRAILERED UNIT CONCERNS



The machine's frame should be level for towing, as well as boom operator safety. The hitch should be located so that the truck bed overhang will not interfere with the machinery. Provide adequate set back from the vehicle chassis frame so that jack knifing, when backing up, will not damage machine. Provide for securing the safety chains. Running lights are standard for over the road travel. They include stop, directional, tail and license plate. Make sure all running lights are working at the start of each day.

The flasher light switch of the truck, when engaged, will also activate the directional and tail lights mounted in the rear bumper. Whenever emergency signaling is required, use this circuit.



Initially, it is important to check the torque of the wheel lug nuts. These are set at the factory at 90 ft. lbs. Due to relaxation associated with travel, they must be torqued at 25, 75, and 150 mile intervals.

Braking systems, if supplied must be checked for proper adjustment and operation. Brake adjustments should be made after the first 200 miles (seating) and again at 3000 mile intervals.

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PROPER ENGINE SERVICING IS IMPORTANT

Do not perform service on an engine if you are not qualified.

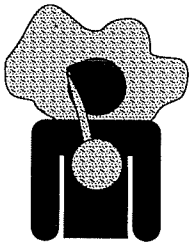
Use care when refueling all engines,whether gas or diesel units. Fuels and their vapors are extremely flammable and can explode when ignited. Do not fill the fuel tank when engine is hot or running , since spilled fuel could ignite if it comes in contact with hot parts or sparks from the ignition. Do not start the engine near spilled fuel; wipe up spills immediately. Never use gasoline as a cleaning agent.

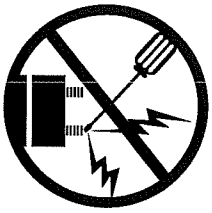
Store fuels in approved containers only. After refueling remove containers from work area.

Do not add oil when engine is hot or running as oil could vaporize and ignite.

Engines are a burn hazard. The crank case, cylinder head, exhaust system, and other components can get extremely hot from operation.

Engine exhaust gasses contain poisonous carbon monoxide. Never run engine in an enclosed area. Avoid inhaling exhaust fumes.



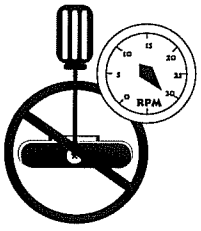


The electrical systems of engines can be a source of high voltage. Never touch electrical wires or components when engine is running. Never attempt to start the engine by shorting across the starter solenoid.
Avoid accidental starts which could cause injury to yourself or fellow workers. Disconnect and ground the spark plug wire.

Refer to the engine manufacturer's operation and safety manuals for more detailed information.

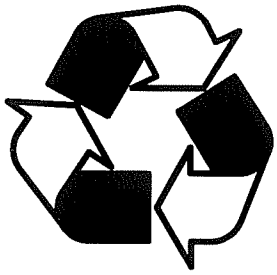
ENGINE SPEED IS IMPORTANT

Never tamper with the governor components settings to increase the maximum speed. The components used to build the Hydrograsser are designed to operate at a specific maximum speed. Severe personal injury and damage to the Hydrograsser can result at speeds set above the maximum.



A rotation unbalance of any sort will become obvious in the form of vibration. Vibration is an important warning sign of impending mechanical failure. Notify your supervisor of any unusual vibrations or noises at the onset.

DISPOSE OF WASTE PROPERLY



Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with Reinco equipment include such items as oil, fuel, coolant, filters,batteries, tackifier and fertilizers.

Use leak proof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them. Do not pour waste onto the ground, down a drain or into any water source.

Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your state's Environmental Protection Agency.

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LOOK THINGS OVER CAREFULLY

Before operating your Hydrograsser, look to see if your machine is in the proper condition. Is the work space clean? Is the fuel properly stored? Is all the bale packaging cleaned up? Are the machines guards and covers all in place? Are all nuts, bolts and screws tight? Do you know where the fire extinguisher is? Do all workers have protective safety gear? Is everything in proper operating condition? If not, report the unsafe condition to your supervisor and be sure the problem is corrected before beginning operation.

KNOW YOUR MACHINE

The Hydrograsser has one characteristic in common with most machinery. Do not assume that simply turning off the machine will insure that all moving parts have stopped. The moving machinery can cause serious injury and even death. Be aware that a shaft which rotates at more than 2000 revolutions per minute is extremely dangerous.

1 • Before operating this machine be sure to read this entire manual.

2 • Do not operate unit if unfamiliar with operational and safety procedures on this or any unit.

3 • The force from the discharge can kick up dust, dislodge unsecured items and damage property.

4 • Never discharge the unit towards people. Bodily injury may occur.

5 • Never force any material into the machine.

6 • Never attempt to clear the machinery of debris or make adjustments while the engine is running.

7 • Be sure to keep all body parts and clothing away from moving parts while engine is running.

8 • Do not attempt to mix or discharge rocks, nails, or other debris which may damage the machinery or cause premature wear.

9 • Do not operate machine without required coupling , shaft , or bearing guards installed.

10 • Material s packaging must be removed carefully to prevent being pulled into the machine.

11 • Do not allow fingers to become entangled in the bale twine or packaging.

12 • Do not wear loose clothing which may become entangled with the machinery.

13 • Do not add oil, water or fuel while engine is running or hot.

14 • Do not perform maintenance while unit is running or battery is connected.

15 • Do not under any condition operate the machine when vibrating.

16 • Working space must be allowed not only for the machine operator, but also for access to the stacked materials .

17 • Daily, inspect the machinery for signs of wear. Do not operate the machinery until problems have been remedied.

18 • Always make sure fittings are secure and valves are operational and in good order.

19 • The pump impeller is made of cast iron. If a vein breaks, or is clogged with debris an unbalance or vibration will occur. Do not under any condition operate the machine when vibrating.

20 • Check the agitating jets and fittings for wear. The granular nature of materials used will abrade and enlarge the nozzles causing a noticable reduction in mixing and discharge pressures. Rocks and foreign matter found in some materials may clog the nozzles or pump impeller and cause noticable reduction in pressure or vibration.

21 • Secure the discharge boom and hose(s) before transporting the machine.

22 • **It is imperative that common sense and good judgment be employed when operating this machine.**

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CHEMICAL REACTIONS

With the wide variety of Hydrograssing amendments available, it stands to reason that all may not be compatible.

CERTAIN FERTILIZERS REACT WITH LIME PRODUCING FREE AMMONIA.

Wetting agents may cause foaming. Binders may agglomerate (stick together) because of the minerals in the water. Foaming and aeration are visible conditions that point to material problems.

AERATION- This is not a chemical problem,but does affect pump performance. Too much air getting into the water will cause vapor blocks and consequent erratic pumping. The obvious cause is over agitation. Simply slow down the engine. Extremely light granular loads or low tank levels contribute to entraining air in the suction line and pump casing.

FOAMING- Excessive bubbles and froth point directly to this. The problem is that the pump has a reduced efficiency to move liquid because of vapor blockages and the impeller vanes cannot properly pump out. One solution is to add corn oil to the mix. Perhaps a 1/2 pint to 150 gallons. However, the materials suppliers should be contacted to establish a cause and offer recommendations.

DANGER! CERTAIN AMENDMENTS, WHEN COMBINED WITH OR WITHOUT THE ADDITION OF WATER OR HEAT OR THE ELEMENT OF TIME, MAY REACT CAUSING HARMFUL OR DEADLY GASSES! CONSULT YOUR MATERIAL SUPPLIERS REGARDING REACTIVITY INFORMATION

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REINCO MODEL HG-5H

HYDROGRASSER

OPERATION

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MACHINE DESCRIPTION

The model **HG-5H REINCO HYDROGRASSER** is a self contained, skid mounted, multi-purpose seeding machine comprised as follows:

A. **PUMP/ENGINE** combination, consistent with unit capacity and spray range.

B. **SLURRY TANK**, sized to contain the rated granular payload in what is termed "working volume". The tank is engineered to function integral to the mixing scheme.

C. **MULCH BLENDER**,hydraulically actuated assembly is vertically supported in the tank.

D. **CIRCULATING MANIFOLD ASSEMBLY**, incorporating cast iron **HYDRO-JET** agitating nozzles. Grooved piping connections allow for simplified maintenance.

E. **SPRAY SYSTEM** including boom, nozzles, and control valve for dispensing the slurry. The boom discharge swivel allows a 360 degree horizontal swing and the boom hose allows vertical movement for controlled placement.

F. **BASE FRAME**, serving as a mount for the foregoing components.

MOUNTING

Model HG-5H can be secured to any flatbed truck or trailer and is compact enough to be carried on a 10 foot platform body. The unit must be located so that when charged, the weight is evenly distributed on the vehicle.
When mounting the standard, skid mounted unit, a truck of adequate Gross Vehicle Weight (GVW), and proper Cab to Axle (CA) dimension should be used to get the desired handling capability. This information is listed in the respective specification bulletins. Consideration must also be given regarding specific options installed. It is equally important to locate the **hydrograsser** on the truck correctly, taking into account "DEAD" and "LIVE" load weights to satisfy acceptable axle loading.

A front end loader, or a fork lift with lifting chain or sling, can be used to transport and position the machine.
The center point of the lift rings welded to the tank, more or less, indicate the empty (dead weight) center of gravity. (Inclusion of the remote hose or hose reel option will offset that center, toward the boarding end of the unit, causing the machine to tilt when raised by crane). Ideally the empty center of gravity should be approximately 6" forward of the vehicle's rear axle when the **hydrograsser** is in place. When the tank is full (live load) the center of gravity moves forward (toward the cab of the truck). Proper positioning must take this into account. Additional space must be provided for any additional options. Consult your truck dealer for specific axle and spring loading information.
Chains looped over the ends of the base frame and tensioned with binders, is perhaps the most practical way to temporarily secure the machine to the truck bed while transporting the empty unit only. Once in place, secure with binders or mounting cleats and blocks.

IMPORTANT! INSURE THAT THE MACHINE BASE IS PLACED ON A LEVEL SURFACE BEFORE FASTENING. DO NOT DISTORT FRAME.

Federal guidelines (Federal Motor Vehicle Safety Standards) mandate strict requirements when mounting machinery on truck frames for over the road use. Installation of this **HYDROGRASSER** requires a **Completed or Altered Vehicle Certification** sticker issued by the installing dealer.

TRAILERED UNIT HOOK-UP

The machine's frame should be level for towing, as well as boom operator safety. The hitch should be located so that the truck bed overhang will not interfere with the machinery. Provide adequate set back from the vehicle chassis frame so that jack knifing, when backing up, will not damage machine. Provide for securing the safety chains. A harness connector socket is supplied for installation to the tow vehicle. Make sure all running lights are working at the start of each day. The flasher light switch of the truck, when engaged, will also activate the directional and tail lights mounted in the rear bumper. Whenever emergency signaling is required, use this circuit. Initially, it is important to check the torque of the wheel lug nuts. These are set at the factory, however, due to relaxation associated with travel, they must be torqued at 25, 75, and 150 mile intervals. Braking systems, if supplied must be checked for proper adjustment and operation. Connect the breakaway switch cable to the tow vehicle.

DO NOT ATTEMPT TO TOW MACHINERY UNTIL ALL HOOKUPS ARE COMPLETE AND FUNCTIONING PROPERLY.

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PRE-OPERATION INSPECTION

Every machine is tested for performance and checked for quality before shipment. Inspection at the factory includes wet-testing for range and system pressure, setting of engine throttle "UNDER LOAD", and inspection of the pump drive coupling and alignment; engine fluid levels and pump seal adjustment. Wet-test readings are recorded. Machines are then drained and prepared for shipment. Cold weather precautions are also taken (see pg.). Keys for starting the unit are usually included with the operations manual for safe keeping during shipment. Although each machine is packaged for near immediate operation and is tested at the factory prior to shipping, retrace the factory inspection procedures before starting.

Initial pre-starting inspection requires tracing the steps taken at the factory and rechecking those items as outlined:

1 • Crankcase Oil Level

2 • Air Cleaner Assembly

3 • Fuel [Check Engine Manual For Proper Fuel Grade] Residual Fuel Is Supplied. Add Required Amount During Field Start-Up.

4 • Throttle And Choke

5 • **Battery** - Inspect Battery Terminal Connections, And Electrolyte Levels.

6 • Remove Any Debris From Tank.

7 • Check Hydrauilic System Oil Level. Inspect System For Leaks.

8 • Inspect Piping And Hose Connections.

9 • Inspect Spray Boom Swivel Joint And Fittings.

10 • Inspect Valves And Put In Off Position.

11 • Check All Screws For Tightnes

12 • **Basic Unit** - Check All Bearings, Locking Collars And Set Screws.

13 • Inspect Pump Seal Assembly

14 • INSPECT OPTIONS OR ACCESSORIES SUPPLIED.

ENGINE BREAK IN

The BREAK-IN period for the specific engine is noted in the vendor operation manual supplied with this manual. Proper engine break in and maintenance scheduling will result as increased engine life.

The engine is equipped with an electronic ignition system. Other than servicing the spark plug, adjustments, timing or ignition maintenance is unnecessary. This non-contact ignition system should provide years of trouble free service if the engine is properly maintained.

ENGINE OPERATING CAUTIONS

1 • Turn the fuel tank supply valve to the OFF position while transporting the unit. Failure to shut valve could cause damage to the engine.

2 • Clean chaff from engine daily. Partial engine cowl removal may be required on a periodic basis.

3 • The engine is intended to run in a level position. Intermittently, the engine may run at a maximum of 10° angle for not more than 10 minutes.

4 • The available horsepower supplied by the engine drops 3% per one thousand feet above sea level. When operating unit at an altitude of 5000 feet or greater, a high altitude carburetor jet must be installed. Contact REINCO or your engine service distributor for details.

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STARTUP

Familiarize yourself with this entire manual. Also, read the engine manual.

FILL TANK APPROXIMATELY ONE THIRD WITH WATER FOR YOUR TRIAL RUN. MAKE SURE THE DICHARGE BOOM CONNECTIONS ARE SECURE AND THE DISCHARGE VALVES ARE OFF.

After reading the engine manual, you may start the engine. Before starting the unit, be sure it is mounted as described previously. Be sure to make your test run in an open area.
Open the fuel tank supply valve. Locate and move choke control to the closed position (cold engine only). Move throttle 1/4 of its travel. Start by turning the ignition key to the right, and hold momentarily until the engine starts. After starting, slowly reposition the choke to the fully open position. If vibration or roughness exist, stop engine and check for the cause.

After the engine has warmed up and everything appears in order, set the throttle for maximum speed. Run for a short period of time then reduce the speed to a slow idle, allowing the engine to cool. Turn the engine off.

If the machine runs smoothly, proceed to operation section of this manual. If no irregularities are noticed, the unit is mechanically ready for a trial fill. Should problems arise at this point,refer to maintenance section of this manual.

TRIAL RUN

The following steps should be followed for the first trial run to familiarize operators with using the **HYDROGRASSER**:

1. READ THIS MANUAL IN IT'S ENTIRETY.
2. Make sure the drain plugs and manifold cap covers are in place and secured.
3. It is worth noting the following with regards to filling :

   a) Many municipalities require the use of a fill assembly to prevent siphoning back into the water supply.

   b) Never fill through the remote spray or hose reel hoses.

   c) Many hydrant systems contain small rocks or pebbles which may plug the agitating jet.

   d) Always use a strainer when filling from ponds or streams.
4. Make certain that the spray boom and blender valves are turned to the off position before starting unit.
5. Check engine fluid levels. Fill as required.
6. Start the engine. Run at moderate idle till warm then rev up to half throttle.
7. Inspect the operation of the **HYDRO-JET** (item 23, pg.46) by raising the hatch cover/load tray and peering through the hatch. Make sure the jet is spewing a solid stream of water. If this is not the case, stop the engine and check for obstructions.
8. Inspect the operation of the **BLENDER** assembly by opening the control valve. Open the blender control valve by pulling the lever outward for forward rotation, then push in for reverse, (centered position would be closed or off) and observe the blender operating in the tank. The blender should spin freely. If this is not the case, close control valve, stop the engine and check for obstructions.

   DANGER! KEEP BODY AND CLOTHING CLEAROF BLENDER ASSEMBLY WHILE IN MOTION SEVERE INJURY MAY OCCUR!
9. Turn the engine off.

10. Locate the spray boom and three spray nozzles.

11. Select one of the spray nozzles and install it into the female quick coupling on the end of the spray boom. There is a sealing gasket in the seat of the quick coupling. Make certain it is in place or the connection will leak.

12. Verify that the spray valve is in the off position and that the spray nozzle is secure. Then restart the engine. After an adequate idle, bring the engine up to maximum throttle. Fully open the spray valve. Articulate the spray boom to judge the range and pattern of the nozzle. Then vary the throttle to observe how changes in engine RPM effect spray range. Repeat this procedure with the other nozzles supplied. Turn the engine off when done.

13. Determine if the **HYDROGRASSER** is equipped with an optional remote spray hose or hose reel assembly (see pg.54-55). If not, skip to paragraph 21. Remove and store the spray nozzles used above.

14. Locate the remote spray valve assembly (RSV). Connect the RSV to the end of the discharge hose. Select one nozzle and connect it to the female quick coupling on the RSV.

15. Unwind the discharge hose from the hose rack or reel. The reel is released by opening the "pin lock" assembly (item 4, page 55).

16. Close all system and hose valves. Restart the engine. Open the valve to supply water to the hose. Proceed, as in paragraph 15 above, to test and become familiar with the arious nozzles while controlling the flow from the RSV. Additional information regarding the use of the hose options may be found on page .

17. Close all system valves, rewind hose and idle engine down.

18. Resume filling machine with water. Prepare to add fiber mulch to the unit by becoming acquainted with the **BLENDER** system (see page 48).

19. Open the blender control valve fully. Bring the engine up to full throttle, so the blender is revolving with maximum speed and power.

20. **WHILE STANDING ON THE SPRAY PLATFORM**, Place a bale of fiber mulch on the load tray. Cut, remove, and discard the packaging material from the bale of mulch. Be certain not to allow packaging material to fall into tank!

21. Break the bale and drop into the rotating path of the blender. Most brands of mulch are drawn down and mixed into the slurry within several seconds. Some types of fiber may require more time to mix.

DANGER! DO NOT OPERATE THE BLENDERWHEN PEOPLE ARE ON THE TANK TOP SEVERE INJURY MAY OCCUR!

22. Add subsequent bales of fiber mulch. Two bales should be more than enough to get an idea of the speed and function of the blender system. It is important to be aware of the amount of water in the tank when loading mulch. Since each bale will require approximately 100 gallons of water to properly slurry, care must be taken not to put more mulch into the tank than the water level will allow.

23. Close the blender supply valve after the mulch has gone into the slurry. The tank may now be emptied by either spraying the load out or by shutting the engine off and then draining the tank by opening the drain cap (item 2, pg.47) located on the suction pipe.

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24. Remember these important operational procedures when using the **HYDROGRASSER**:

IMPORTANT! **BE AWARE OF WATER LEVEL WHEN LOADING MULCH DO NOT ATTEMPT TO LOAD MULCH WITHOUT SUFFICIENT WATER TO SLURRY.**

IMPORTANT! **KEEP BODY AND CLOTHING CLEAR OF BLENDER WHILE IN MOTION AS SEVERVE INJURY MAY OCCUR.**

IMPORTANT! **ALL VALVES MUST BE FULLY OPEN OR CLOSED. PARTIALLY OPEN VALVES WILL QUICKLY WEAR OUT.**

MIX PREPARATION

The most frequently asked question of the unseasoned operator is: "What to put into the tank? How much coverage can be expected?" Both are redundant since specifications, either formal or self conceived, determine the amounts to be mixed. Amendments may include seed, inoculant, and fertilizer. It is highly unlikely that all would go in simultaneously because of capacity limitation and/or incompatibility.

The REINCO HG-5H HYDROGRASSER is rated as follows:

GRANULAR SOLIDS CAPACITY (SEED, FERTILIZER, LIME) 1250 lbs.
PROCESSED FIBER MULCH = 200-250 lbs.
REINCO MULCH BINDER PLUS (RMB-plus) = 150 lbs.

Granular products will promote wear of the pump impeller as well as the mixing jet and piping components. For extended life of these components, it is advisable to source fertilizers with a minimum of fill materials (granualated rock). Liquid fertilizers and liquid limes are available alternatives, however, job specifications should be consulted.

Fiber mulches and tackifiers are rated separately from the granular solids capacity as these amendments require absorbtion of water to produce a pumpable slurry.

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HYDROGRASSING

STRAIGHT HYDROGRASSING

Straight Hydrograssing is based on typical highway specifications. This procedure places the seed, fertilizer and water slurry directly onto the prepared seedbed, insuring contact with the soil surface. The application is routinely followed with applications of mulch, either blown straw or hay, or processed fiber mulch. A final application of tackifier slurry insures the placement of these materials. A seasoned operator can effectively cover an acre with 500 gallons of slurry. This means that the model HG-5H can be used to seed 43,560 square feet, with the following sample charge:

AmendmentsPer Batch

Seed @ 150 lbs/Acre (K31, Fescue, Rye mix)=150 lbs.
Fertilizer @450 lbs/Acre (10:10:10, 45# N^2)=450 lbs.
TOTAL GRANULARS= 700 lbs.

In this example the granular solids capacity is not compromised and a single batch is capable of a full acre coverage.

STRAIGHT HYDROGRASSING WITH LIME

In many areas of the country, and particularly in mine reclamation work, heavy quantities of lime may be specified. Frequently lime must be applied first and then incorporated into the soil before seeding and fertilizing. It is not uncommon to distribute lime at one to two tons to the acre or even more. However, it becomes impractical to apply much larger quantities of lime, via the hydraulic seeding method, due to the abrasiveness of the product. Consult your materials supplier regarding pumpable grades and analysis.

IMPORTANT! USE ONLY FINELY GROUND PULVERIZED LIME STONE. DO NOT USE COARSE AGRICULTURAL PRODUCT OR HYDRATED LIME.

In this example, let's assume that specifications call for a ton of lime per the acre in addition to the seed and fertilizer in the prior mix. The immediate conclusion is that it is impossible to make a one acre batch because the 2000 lbs. of lime exceeds the **HYDROGRASSER'S** 1250 lbs. granular solids rating. Since 2000/1250 = 5/8 acre, calculate a 1/2 acre batch and see if the totals are within the machine's rated capacity.

AmendmentsPer Batch

Seed @ 150 lbs/Acre x 1/2 (K31, Fescue, Rye mix)=75 lbs.
Fertilizer @450 lbs/Acre x 3 (10:10:10, 45# N^2)=225 lbs.
Lime @ 2000 lbs./Acre x 3=1000 lbs.
TOTAL GRANULARS=1300 lbs.

Addition of the seed and fertilizer as granulars now exceeds the 1250 lb. machine rating. However, by dropping down to a 1/3 acre charge, the total granular solids would be 870 lbs., and therefore an acceptable load.

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HYDROGRASSING WITH PROCESSED FIBER

ommonly referred to as the 'ONE STEP METHOD' this procedure places the ingredients on the prepared seed bed simultaneously. The fiber mulch and tackifier are incorporated into the slurry mix and broadcast in a single application. Ideally suited to small areas where a sterile (weed free) application is preferred, the limitation is that the application will require multiple batches to cover a relatively large area. Fiber, whether paper, cellulose, virgin wood or a combination thereof, are not considered granular solids. It is important to realize, however, that when using fiber mulch, the mulch becomes the limiting factor in the loading equation. Usually 40 pounds of a good fiber requires about 100 gallons of water to produce a pumpable slurry. At a fiber application rate of 1200 pounds/Acre, the coverage per tank load will be approx. 7300 sq. ft.. Again, using the previous seed and fertilizer mix ratios the batch would be adjusted to the fiber application rate.

AmendmentsPer Batch

Seed @ 150 lbs/Acre x 1/6 (K31, Fescue, Rye mix) = 25 lbs.
Fertilizer @450 lbs/Acre x 1/6 (10:10:10, 45# N^2) = 75 lbs.
Fiber @ 1200 lbs./Acre x 1/6 = 200 lbs.
RMB-plus binder @ 100 lbs./Acre x 1/6=17 lbs.

Fiber mulch application rates, therefore, will determine the coverage per tankload.

HYDROGRASSING WITH FIBER & LIME

How would the proportions, in the preceding example, be affected by the additional requirement of 2000 pounds of lime per acre? Since it was determined that the maximum fiber that could be charged would cover one sixth acre, the corresponding proportion of lime would be 334 pounds. This brings the total granulars to 434 pounds, or well below the unit's 1250 pound rating. Therefore, the mix quantities do not exceed the machine's capacity and are acceptable.

HAY/STRAW TACKING

Your **HYDROGRASSER** may be used to apply binders or tackifiers to hay or straw mulches already placed.

The most common tackifier slurries use specially formulated powders that are known as hydrophilic colloids. They are quickly hydrated by the agitation produced by the **mixing jet**.

The resultant viscous slurry is then applied as an over spray to the previuosly applied hay or straw mulch. Usual application rates are 300 to 500 gallons to the acre. A typical tackifier slurry contains 50-100 pounds of paper or wood fiber mulch per acre. The addition of the processed fiber provides two benefits. First, the green dye used to color the mulch, serves as a spotting agent. Second, the discrete fibers of the fiber mulch serve to link the slurry droplets together as they are sprayed over the long fiber mulch mat.

Using **RMB-plus** mulch binder, the following mix is suggested (per acre) for flat areas:

AmendmentsPer Batch

WATER= 400-500 gal.
RMB-plus tackifier = 80-120 lbs.
FIBER = 40-100 lbs.

IMPORTANT! DO NOT PUT TACKIFIER IN TANK BEFORE FIBER IS FULLY WETTED.

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CHARGING SEQUENCE

Pouring amendments into the mix is not arbitrary. Experience and preference will dictate the sequence.
Normally charging may start with about a third of a tank of water to utilize the remaining fill time. The procedure outlined under 'Trial Fill' on pg. ,should be routinely followed prior to starting the charging sequence. Before starting the unit, make sure all system valves are in the 'off' position. Once started, inspect the operation of the hydro-jet as well as the blender assembly. Routinely inspect the spray boom discharge and hose(s) before commiting to a complete charge.

WARNING! DO NOT ATTEMPT TO LOAD OR CHARGE THE UNIT WHILE IN TRANSIT. LOAD ONLY WHEN PARKED ON LEVEL GROUND.

First,open granular bagged materials by slashing the middle of the bag on the bag breaker bar and lifting on the ends to pour these materials directly into the hatch. Care must be taken to insure that only the contents fall into the tank. Empty bags, as well as scraps and pieces may cause serious plugs.

Next fiber should be added to the tank. It is usually packaged in heat sealed bales or plastic lined paper bags. Place the bale on the hatch lid, cut the packaging from the bale with a razor or knife, around the middle, then slide the packaging off and away from the bale half. Do not to drop the packaging into the slurry. Break up the bale section into the hatch opening allowing the mulch to mix into the rotating path of the blender. The engine must be 'revved up' as the slurry thickens, to maintain adequate agitation.

When **RMB-plus** binder is used, it must be added after the fiber is fully wetted.
Slowly pour the tackifier into the tank directly though the loading hatch. If clumps form, pour more slowly.

NOTICE! Binder products, when hydrated, are extremely slippery before curing. Wash down and wipe surfaces where product has been unintentionally sprayed or applied. This is especially important while working on or around the machinery.

Seed is often added to the slurry near the end of the charging cycle.

ONCE CHARGING IS COMPLETE, check the uniformity of the slurry. When the mixture appears uniform, you are ready to proceed. Seldom is more than five minutes mixing time required for adequate batching. This mixing usually occurs during the transport time to the job site.

SPRAYING

Experience and practice will serve to develop a good spraying technique. By following a few simple guidelines, proper coverage can be assured. Novice operators may be trained by mixing a 1/4 acre batch of slurry in the **HYDROGRASSER**. Measure and stake out the area to be covered. Starting with the most remote point, spray out 1/2 of the batch as described above. Check the tank slurry level frequently to insure that the operator is not distributing too much or too little. Proceed when ready to spray the rest of the batch in the crisscross method as described above. When the area has received full coverage, take note of the color and wetness of the sprayed area. This will serve as a gauge to the operator's eye, for future applications.

1. The area to be covered will depend primarily upon the tank contents and job specifications. (Reference the section on MIX PREPARATION, pg.18).

2. **Stake out or mark the determined ares.**

3. Spray the described area in a crisscross manner, first from left to right, then top to bottom. Work the slurry placement from the most distant to closest, using only half a tank load.

4. Then retrace the first application placement with the remainder.

5. The most remote point should be covered first. Fully open the spray valve. If the engine must be revved up to reach the point, do so! Conversely, cut back the engine throttle to reduce the spray range.

6. Control the spray range by adjusting the engine RPM. Throttling the spray valve will cause premature wear on the valve seals and will require repair or replacement.

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7. When the slurry level drops to the point of surging, slow down the engine to get maximum pump-out.

8. Complete pump-out serves little purpose. When the pump looses prime, slow the engine down for a while to allow cooling and then shut off.

REBATCHING

After every load there are residuals left in the tank. Some compensation must be made during subsequent recharges due to this residual build up. This is particularly true when using fiber. Indications of the effects of this build up include poor agitation, slow mixing, or plugging after the second or third rebatch.

The simplest way to avoid residual problems is to cut back on the amount of material to be added by estimating the quantity of material left in the tank after the prior load.

Also during the recharge cycle, when the water level is approximately 1/3 full, start the engine and inspect the operation of the agitator stream. Also, open the control valve to actuate the blender. At this point in time the residuals from the preceding load should be disbursed and practically unnoticed in the rolling water. If all does not appear to be in proper working order, stop filling and try to establish why. The small amount of effort expended at this point will save the inconvenience of working out a solution with a full load. (refer to: TROUBLE SHOOTING, page 30-31).

Excessive fiber mulch residuals are often indicates a wetting problem. Addition of a surfactant or "wetting agent" will allow the mulch to absorb water faster and create a more uniform slurry. If a continual residue buildup occurs, it is simply due to overloading. The logical correction is to decrease the slurry water ratio, thus producing a more pumpable mixture. It is worthwhile repeating:

MAKE YOUR INSPECTIONS BEFORE COMMITTING TO A COMPLETE TANK FILL!

REMOTE SPRAYING

On the flat, up to 200 feet of hose may be attached directly. The spray valve is used to control the flow. (Although, contrary to recommended valve use, practicality dictates that periodic replacement of the valve outweighs the expense of another man stationed to control the engine speed.)

Remote spraying has limitations. As with routine operation, fluid volume and pressure is controlled by engine RPM. As additional hose lengths are added the frictional pressure drop increases. This means lower pressure at the nozzle and a lesser spray range. If the hose is extended upward, over a rocky outcrop, for example, the additional vertical lift will reduce nozzle pressure, thereby cutting back on effective range. A compromise has to be achieved between flow and pressure to satisfy the requirements allowing this attachment to be fully effective.

On tank pump out be sure to close the remote spray valve while it still contains slurry. This keeps the slurry in a fluid and pumpable state. At the end of the load, be sure to close the remote spray valve (at the hose end). Then shut off the supply valve at the machine. Recoil the hose without draining. Although heavy, this insures that the contained slurry will stay wet and pumpable. If preferred, the tank may be partially filled with water then pumped through to clean the hose. The remote spray valve can then be left open to drain the hose.

HOSE REEL OPTION

An option for remote spray flexibility is a hose reel. This can be operated from ground level, has the additional advantage of providing power to retract the hose, and a drum providing fixed storage. Up to 150 feet of 1-1/4" two braid water hose can be contained on the reel. Other optional packages are available to suit almost any situation. Collapsible (fire) hose is not normally used on reels because it restricts flow when coiled.

REINCO MODEL HG-5H

HYDROGRASSER

MAINTENANCE AND SERVICE

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SERVICE

Due to the simplified construction of REINCO HYDROGRASSERS AND POWER MULCHERS, most routine maintenance can be performed without the services of a skilled mechanic. In the event the unit requires expertise beyond that which is covered in this manual, contact your authorized REINCO servicing dealer.

If your REINCO dealer is not an authorized engine dealer, and the problem is engine related, contact an authorized engine service center. Call REINCO or your dealer for the name of your nearest engine service location.

The REINCO limited warranty which follows does not cover third party warranteed components. The engine manufacturer provides their own limited warranty found in the engine section of this manual.

ABOUT WARRANTY

The equipment warranty statement is provided as protection to our valued customers, when or if the situation occurs, that a part or parts fail prematurely during normal use and service. The warranty period as provided allows the purchaser to make claim for repair or replacement of the parts deemed defective within that period. The procedure that follows will provide that claims made, may be expedited promptly and that settlement will be made fairly and amicably.

WARRANTY PROCEDURE AND FILING

1 • NOTIFICATION - Promptly notify your dealer or REINCO of defect or failure and confirm in writing.

2 • AUTHORIZATION - Upon receipt of authorization from REINCO, initiate replacement or repair under the terms and conditions of the warranty.

3 • RETURN GOODS - Should part(s) be requested returned for inspection, obtain authorization for return (RGA). Return part(s) to REINCO Inc., freight prepaid. A copy of the return authorization should accompany the shipment.

4 • SUBMIT - Claims submitted for warranty consideration will require copies of notification, replacement part(s), invoice(s), and time record (Work Order). Copies of any additional correspondence with regard to the particular claim should be submitted as well.

REINCO's obligation under the terms of the warranty shall be limited to replacement or credit for the part(s). On request parts must be returned for inspection. Related labor must be considered fair and reasonable regarding work performed. A work order time record will be required to substantiate and validate labor reimbursement requests.

Claims submitted which upon review are determined to be the responsibility of third parties will be returned with instruction for forwarding to those parties.

Claims submitted for warranty consideration must be forwarded to REINCO for review within 30 days of the date of claim or the claim will be considered invalid and void.

Settlement of any claim will require that any prior claims or adjustments are settled.

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WARRANTY

The following warranty statement is provided to illustrate Reinco's typical Warranty. To the extent that there may be inconsistencies between this statement and that provided by the order Terms and Conditions, the order Terms and Conditions shall apply.

REINCO INC. PROVIDES A LIMITED ONE YEAR WARRANTY ON THE MACHINERY OF ITS OWN MANUFACTURE. REINCO INC. WARRANTS TO ANY BUYER THAT THE MACHINERY SHALL BE FREE OF DEFECTS IN MATERIAL OR WORKMANSHIP DURING NORMAL USE AND SERVICE FOR A PERIOD OF ONE YEAR FROM THE DATE OF SHIPMENT TO THE CONSUMER. THIS WARRANTY IS NOT EXTENDED FOR MACHINES PLACED INTO RENTAL SERVICE.

UNDER THIS LIMITED WARRANTY, REINCO INC. SHALL WITHIN ONE WEEK FROM THE DATE OF NOTIFICATION, (1) INITIATE REPLACEMENT OR ACTION FOR REPAIR OF THE PART(S) PROVEN DEFECTIVE IN MATERIAL OR WORKMANSHIP OR, (2) DIRECT THE SERVICING DEALER TO INVESTIGATE, REPORT, AND THEN AUTHORIZE AND PERFORM REPAIR OR, (3) ON DIRECT FACTORY SHIPMENT, INSTRUCT THE USER, UPON VERIFICATION OF FAILURE, TO PERFORM HIS OWN REPAIR WITH PRIOR AGREED UPON BACK CHARGES TO REINCO INC. THE CHOICE OF ALTERNATIVES SHALL REMAIN THE SOLE DECISION OF REINCO INC.

THIS WRITTEN WARRANTY IS THE ONLY WARRANTY MADE BY REINCO INC. IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IF ANY, ARE LIMITED TO THE SAME TERM AS THIS WRITTEN WARRANTY. CERTAIN STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY. HOWEVER, SOLELY WITH RESPECT TO THE BUYER, THE FOREGOING WARRANTY IS IN LIEU OF ANY AND ALL IMPLIED WARRANTIES INCLUDING, WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE AND IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, AND NO OTHER WARRANTY IS MADE OR AUTHORIZED TO BE MADE.

THE USER OR DEALER MUST PROMPTLY, WITHIN THE LIMITED WARRANTY PERIOD, NOTIFY REINCO INC., AND CONFIRM IN WRITING, THE DEFECTS, ALLOWING THE COMPANY TO ANALYZE THE FAILURE AND DETERMINE ITS OBLIGATION UNDER THE WARRANTY. COSTS INCURRED BY THE USER OR DEALER ARE TO BE ABSORBED, UNTIL SETTLEMENT UNDER TERMS OF THIS WARRANTY. THE COMPANY RESERVES THE OPTION AND THE RIGHT TO HAVE ALL DEFECTIVE COMPONENTS RETURNED, TRANSPORTATION PREPAID, FOR INSPECTION.

THIS LIMITED WARRANTY DOES NOT COVER UNSATISFACTORY PERFORMANCE OR FAILURE DUE TO MISUSE OR ABUSE OF THE PRODUCT, NOR WILL REINCO INC. BE RESPONSIBLE FOR UNSATISFACTORY PERFORMANCE OR FAILURE DUE TO IMPROPER ADJUSTMENT OR REPAIR OF THE PRODUCT. THE SPECIFICATIONS ARE DESCRIPTIVE AND ARE NOT WARRANTIES.

THIS LIMITED WARRANTY DOES NOT COVER EQUIPMENT AND ACCESSORIES MANUFACTURED BY THIRD PARTIES.

REINCO INC. SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, SPECIAL, CONTINGENT, INCIDENTAL OR ANY OTHER DAMAGES WHATSOEVER IN CONNECTION WITH REPLACEMENT, REPAIR OR REFUND AS SET FORTH ABOVE. CERTAIN STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS IN ACCORDANCE WITH YOUR STATE LAW.

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MAINTENANCE SCHEDULE

After each load, wash down any residual materials spilled or over-sprayed onto the machine. This is easiest accomplished during the water refill between loads.

FIRST 4 HOURS:
RE-TORQUE ENGINE AND PUMP MOUNTING BOLTS.
RECHECK PUMP/ENGINE COUPLING ALIGNMENT.
RETORQUE COUPLING SET SCREWS.
INSPECT PUMP SEAL/ LUBRICATOR.
CHECK ENGINE CONTROLS.
CHECK ENGINE FLUID LEVELS.

EVERY 4 HOURS:
INSPECT PUMP SEAL/ LUBRICATOR - ADD GREASE AS REQUIRED.

EVERY 20 HOURS:
OIL THE ENGINE THROTTLE MECHANISMS.
LUBRICATE SPRAY BOOM SWIVEL JOINT.
LUBRICATE HOSE REEL SWIVEL JOINT.
INSPECT AND CLEAN ENGINE AIR CLEANER.
REPEAT THE FIRST 4 HOURS INSPECTION.

EVERY 40 HOURS:
CHECK ENGINE OIL AND BATTERY ELECTROLYTES.
CLEAN CHAFF AND DEBRIS FROM ENGINE COOLING FINS.

EVERY 80 HOURS:
TUNE UP ENGINE, CHANGE OIL AND FILTER.
REPLACE AIR CLEANER CARTRIDGE.
CHECK PUMP IMPELLER CLEARANCE.
GREASE PUMP POWER FRAME BEARINGS.
GREASE GRINDER SHAFT BEARINGS.
INSPECT THE BLENDER HYRAULIC SYSTEM OIL LEVEL.
INSPECT HOSES AND FITTINGS FOR LEAKAGE OR WEAR.

DO NOT OVER-GREASE BEARINGS!
A SHOT OR TWO OF GREASE AT 80-100 HR. INTERVALS IS ADEQUATE!

For specific **ENGINE** maintenance instructions,
please refer to the engine manufacturer's manual.

Please refer to the specific **OPTIONS** descriptions and corresponding parts pages for maintenance and service information.

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MAINTENANCE OVERVIEW

The life of your equipment investment relates directly to the care you give it. By following the recommendations below, your new Power Mulcher should last many years.

BASIC

GENERAL: Keep your machine clean. Inspect beater chains, drive coupling, engine, oil and air cleaner before and after each use. Remove all dirt and chaff from the engine with a brush. Pay particular attention to the engine air intake at the radiator chaff screen.

SAFETY: Perform a daily inspection of the machine from a safety viewpoint. Replace safety decals when worn, faded or damaged.

DRIVE TRAIN

BEARINGS: The most common error committed by the casual operator is over lubrication of bearings. A shot or two of grease (Fiske Lubri-plate 930-AA or equivalent) every 100 hours is adequate. Periodically check locking collar set screws for tightness.

DRIVE COUPLING: The drive coupling transmits power to the blower and beater shaft. Excessive misalignment of the shafts (axial or angular) will produce vibration. If so, realign coupling as necessary. Check the set screws and connecting bolts every 100 operating hours for loosening or other abnormality.

If the coupling becomes misaligned, contact your servicing dealer. Otherwise, follow this procedure: Determine the direction and degree of misalignment by measuring with a caliper or divider around the periphery of the drive coupling flanges. If the gap is measured on the top of the driven coupling flange, this indicates that the shaft[s] have shifted downwards. If a gap is measured in the side of the driven flange this indicates that either the pump assembly has shifted, or the driven shaft (engine) has shifted.

If misalignment is detected, determine whether to adjust the pump or engine [shim as required]. Make the adjustment, then re-measure the two coupling flanges. If the gap is eliminated, tighten all bolts and again check alignment. If coupling is aligned, start engine and check for vibration. If vibration exists contact your servicing dealer or the factory for assistance.

For more information on coupling alignment, see ***"DRIVE COUPLING ALIGNMENT"*** .

ENGINE: Daily inspection involves checking oil level, air cleaner and removing dirt and chaff from engine cowl. Refer to engine manual for the manufacturers maintenance schedule and further details.

A governor setting limits the rpm nominally at 3200. If the max RPM exceeds 3200 readjust this setting.

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PUMP: The pump provides both agitation and discharge pressure. Should sytem pressure or spray range drop off suddenly, the pump impeller may be clogged. If the drop is over a period of time, the pump impeller is worn and requires adjustment or replacement.

PUMP SEAL: Should the mechanical seal fail, the first indication will be dripping sluury from the seal area of the pump. Replacement must be made immediately or the bearings will be ruined.

BLENDER ASSEMBLY

HYDRAULIC SYSTEM COMPONENTS: Daily inspection includes checking hoses and fittings for leakage. Do not operate the blender system with leaking hoses or fittings. Remedy by replacing the failing component completely.

The filter gauge is a restriction controlled device. Replace the service filter at approximately 500 hours operation or when restriction is indicated. The hydraulic pump belt should be inspected for fatigue. Do not over tension the belt.

Change system oil at 2500 hours. The system capacity is 12 gallons. Use ISO46 hydraulic fluid only. Dispose of waste oil in approved containers.

If theblender stops, the control valve's automatic pressure relief has tripped. Shut down the engine. Inspect and remove any obstructions. The valve will automatically reset when the system is stopped.
RESTART THE UNIT ONLY WHEN THE OBSTRUCTION IS COMPLETELY CLEARED.

Should the motor not run or stall continuously under normal operating conditions DO NOT ATTEMPT TO RESET THE VALVE. Replace the valve completely.

If the motor or pump should run hot, the system is drawing air or the resevior level is low. Also assure that the machine is being operated on the level.

DISCHARGE RANGE: Check engine RPM. If not 3200, reset the governor control. Check pump impeller clearance.

BOOM ROTATION: If the boom swivel becomes hard to turn, the seals may be worn from slurry granulars. Replacement of the swivel joint packings is required.

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TRAILER ASSEMBLY

AXLE: Inspect all suspension components for exercise wear at approximately 6,000 miles. Worn spring eye bushings, sagging or broken springs should be replaced. Repack bearings every 12 months or 12,000 miles.

BRAKES: Inspect and service trailer brakes at yearly intervals. Magnets which are worn unevenly should be replaced. Inspect drum surfaces and armature contact area for excessive wear or scoring. Test operation each use. Check adjustment at 200 miles (seating) and each 3000 miles.

BREAKAWAY: Check switch operation routinely.

HITCH: Inspect hitch components for wear. Periodically check hitch mounting bolts for loosening or wear. Replace all worn components.

JACK: Oil tongue jack periodically. Wipe dirt from retracting leg. Inspect locking pin and spring assembly for wear. Replace worn components as necessary.

LIGHTS: Routinely inspect and insure all lights are operational each time the unit is hitched.

TIRES: Check inflation pressure weekly to insure maximum life and tread wear. Check for tire wear frequently.

WHEELS: Retorque wheel bolts at 25, 75, and 150 mile intervals. Inspect for cracks, dents, or distortion at six months or 6,000 mile intervals.

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TROUBLE SHOOTING

THERE ARE OCCASIONS WHEN THE OPERATION OF THE HYDROGRASSER MAY NOT BE AT IT'S PEAK. WEAR IS A FACTOR THAT MUST BE CONSIDERED DEPENDING ON USAGE. MANY TIMES, HOWEVER, OTHER CONDITIONS EFFECT PERFORMANCE. THE FOLLOWING ARE EXAMPLES OF OUTWARD INDICATIONS OF POTENTIAL PROBLEMS WHICH USUALLY CAN BE CORRECTED WITH A MINIMUM OF EFFORT

SYMPTOM	POSSIBLE CAUSE	POSSIBLE REMEDY	REF	PAGE
NO SPRAY AND NO AGITATION	WATER LEVEL TO LOW.	ADD WATER.		
	PLUG IN SUCTION LINE	REMOVE AND INSPECT SUCTION LINE. CLEAR OBSTRUCTION AND REPLACE.		
		ADD ADDITIONAL WATER TO SLURRY BEFORE RESTARTING UNIT.		
	DEBRIS COVERING EYE OF IMPELLER.	REMOVE PUMP SUCTION LINE AND SUCTION HEAD, IF NECESSARY, TO EXPOSE IMPELLER. CLEAR OBSTRUCTION.		
	IMPELLER JAMMED BY ROCK OR OTHER FOREIGN MATTER.	REMOVE PUMP SUCTION LINE AND SUCTION HEAD, IF NECESSARY, TO EXPOSE IMPELLER. CLEAR OBSTRUCTION.		
	IMPELLER LOOSE OR OFF OF PUMP SHAFT.	REPAIR OR REPLACE PUMP ASSEMBLY AS REQUIRED.		
NO SPRAY BUTAGITATION IS NORMAL	PLUGGED SPRAY BOOM LINE.	REMOVE AND CLEAR PLUG IN SPRAY BOOM SUPPLY		
	PLUGGED HOSE REEL.	REMOVE HOSE AND CLEAR PLUG.		
LOW SYSTEM PRESSURE	IMPELLER OUT OF ADJUSTMENT.	ADJUST IMPELLER CLEARANCE.		
	IMPELLER WORN BEYOND ADJUSTMENT RANGE.	REPLACE IMPELLER.		
	HYDRO-JETS WORN.	REPLACE HYDRO-JETS.		
	LOW ENGINE RPM.	SERVICE ENGINE TO OBTAIN OPERATING PRESSURE UNDER LOAD.		
BLENDER DOES NOT TURN OR STALLS	HYDRAULIC SYSTEM FLUID LEVEL LOW	FILL SYSTEM RESEVIOR, INSPECT SYSTEM FOR LEAKS		
	AIR ENTRAINED IN SYSTEM FLUID	CHECK OPERATING LEVEL OF MACHINE		
	HYDRAULIC FLUID HOT	CHECK OPERATING LEVEL OF MACHINE		

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SYMPTOM	POSSIBLE CAUSE	POSSIBLE REMEDY	REF	PAGE
POOR AGITATION	LOW SYSTEM PRESSURE	SEE "LOW SYSTEM PRESSURE"		
	PLUGGED JETS	REMOVE OBSTRUCTION		
	WORN JETS	SEE "LOW SYSTEM PRESSURE"		
	ENGINE RUNNING TO SLOW	SEE "LOW SYSTEM PRESSURE"		
	DISCHARGE VALVES OPEN OR WORN	CLOSE DISCHARGE VALVE AND/OR REPLACE IF WORN.		
SHORT RANGE	LOW SYSTEM PRESSURE	SEE "LOW SYSTEM PRESSURE"		
	GRINDER SUPPLY VALVE LEFT OPEN OR WORN	CLOSE GRINDER SUPPLY VALVE AND/OR REPLACE IF WORN		
	PLUG OR RESTRICTION IN SUCTION LINE	CLEAR CLOGGED LINE		
	IMPELLER OBSTRUCTED	REMOVE OBSTRUCTION		
CONSTANT PLUGGING	UNIT LOADED ABOVE RATED CAPACITIES	LOAD UNIT PROPERLY PER RATINGS		
	MULCH NOT WETTING	ADD WETTING AGENT SUCH AS *FIBER FLOW*		
		CHANGE BRAND OF MULCH OR CONTACT MULCH SUPPLIER FOR ASSISTANCE		
	MULCH CONTAINS CONTAMINANTS	CONTACT MULCH SUPPLIER AND/OR CHANGE BRAND OF MULCH		
	IMPROPER LOADING PROCEEDURES	CHARGE MACHINE IN PROPER SEQUENCE		
	LOW SYSTEM PRESSURE	SEE "LOW SYSTEM PRESSURE"		
CONSTANT PLUGGING ON RELOADS ONLY	IMPROPER ALLOWANCE FOR RESIDUALS LEFT IN TANK	RE-BATCH FOLLOWING CORRECT PROCEEDURES, ALLOWING FOR MATERIAL STILL IN TANK		
ENGINE / PUMP VIBRATION	STONE OR OTHER OBSTRUCTION CAUSING IMPELLER IMBALANCE	REMOVE OBSTRUCTION		
	PUMP BEARING FAILURE	**INSPECT BEARING ASSEMBLIES AND REPLACE IF REQUIRED**		
	ENGINE RUNNING ROUGH	**SERVICE ENGINE**		

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BLENDER

Daily inspection includes checking the hydraulic system hoses and fittings for leaks. Do not operate the system with leaking hoses or fittings. Remedy by replacing the failing component completely.

The filter gauge is a restriction controlled device. Replace the service filter at approximately 500 hours operation or when restriction is indicated.

The hydraulic pump belt should be inspected for fatigue. Do not over tension the belt.

Change system oil at 2500 hours. The system capacity is 12 gallons. Use ISO-46 hydraulic fluid only. Dispose of waste oil in approved containers.

The blender is supported by two sealed pillow block bearings. Periodically inspect these bearings for wear. Scraping of the blender assembly on the tank bottom would require that the shaft be adjusted providing clearance. Make sure the bearing locking collar set screws and coupling set screws are torqued when adjustments are made. The blender blades should have sufficient clearance to sweep residuals from the tank bottom, without scraping the floor.

If the motor or pump should run hot, the system is drawing air or the resevior level is too low. Assure that the machine is being operated on the level. Exessive tilting of the unit may limit the flow of the hydraulic fluid from the resevior.

HYDRO-JET REPLACEMENT

The **HYDRO-JET**, or agitator jet, is located in the tank wall near the tank hatch. The nozzle is coupled to an 1-1/4" quick disconnect coupling mounted in the tank side.

The agitator nozzle will eventually wear from slurry granulars. It is important to realize that if the **HYDRO-JET** nozzle requires replacement, the pump impeller typically will also require adjustment, and visa versa.

Replacement of the agitator nozzle is as simple as changing the spray boom nozzles. When replacing the agitator nozzle adjust the spray to maintain a horizorntal flow.

Fill unit partially with water, start and inspect for leaks and proper agitation.

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DRIVE COUPLING ALIGNMENT

When aligning the coupling, it is important that the centerline of the driven shaft be true to the centerline of the engine shaft. Wear on the flex element due to the axial and radial misalignments will be avoided with proper alignment.

COUPLING SHOULD BE ALIGNED WITHIN .005" PARALLEL AND .092" ANGULAR.

1 •To check PARALLEL drive coupling alignment, use a notched straight edge (notch should be sufficient to clear the center member) and a feeler gauge. Place the straight edge across the two coupling flanges and measure the maximum offset at various points around the periphery of the coupling without rotating the coupling. If the maximum offset exceeds .005", realign the shafts.

2 •To check ANGULAR drive coupling alignment, a micrometer or caliper must be used. Measure from the outside of one flange to the outside of the other at intervals around the periphery of the coupling. Determine the maximum and minimum dimensions without rotating the coupling. The difference between the maximum and minimum must not exceed .092". If correction is required be sure to recheck the parallel alignment.

3 •In the field, the angular measurements may be approximated with a tape or ruler. Use opposite reference positions on the driven shaft flange, measuring to respective locations on the perimeter of the coupling flange (engine side). The variations should be limited to 1/32". However, this method should be rechecked as soon as possible as indicated above.

ALIGNMENT OR REPLACEMENT

It should not be necessary to replace any parts on the drive coupling assembly, provided that misalignment is discovered at the onset. The following procedure covers the method to replace an entire coupling assembly, and may also be used as a guide for alignment also.

1 • Inspect the coupling assembly for damage. Secure replacements as required.

2 • Remove any protective coatings or lubricants from bores, mating surfaces and fasteners. De-burr any marred surfaces and edges.

3 • Slide one coupling flange onto each shaft. The keys must fit snugly. Should the fit be loose, find out why and correct before proceeding further. Nest the sleeve (flexible element) with metal ring within one flange. Draw the two flanges together with some clearance between the element and flanges (approx. 1/32" total or 1/64" per side). Center the flanges between the two shafts. Then, using a thread locking resin, torque the set screws on the flanges securely.

4 • Check parallel and angular alignment as described above. Should the alignment be within specifications, proceed to step 6.

5 • Loosen bearing and/or engine bolts, as required, to shim to correct the alignment. Torque the bearing and engine fasteners, then repeat step 4 to assure the alignment is maintained.

6 • Recheck to insure that all fasteners and set screws are securely torqued.

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SWIVEL JOINT SERVICE INSTRUCTIONS

Repacking the swivel joint assembly is required when the joint seals have become worn from slurry granulars or fatigue causes excessive leaking. Remove the joint from the spray boom pipning and follow the procedure outlined below:

1. Remove swivel joint service plugs and squirt solvent into cavity to reduce grease.
2. Rotate tailpiece to remove balls from races, collecting the balls on a rag, as they fall from the service port. A pair of long nosed pliers or pencil magnet may be required to remove any stubborn balls.
3. With the balls removed, the tailpieces will separate from the body section. Remove the worn seal from the body sections, and the 'O' rings from the tailpiece. Thoroughly clean all surfaces of grease, grit and dirt.
4. Coat all surfaces with a light machine oil and install the new seals.
5. Replace the tailpieces into the body section with a slight twist to assure seating of the new seals.
6. Insert the balls through the service ports, swinging the tailpiece to completely load the races.
7. Replace the service plugs. If binding occurs, back off the plugs slightly.
8. Lubricate the assembly with a #1 consistency water-proof grease. Rotate the tailpiece to insure adequate lubrication. DO NOT FORCE GREASE.

NOTE: Refer to page for parts diagram.

BALL VALVE SERVICING

The valves used in this application are full flow ball type valves allowing quick on-off control of the slurry flow. Partially opening or closing the valves will quickly cause the ball and or the valve seats to wear from the slurry granulars.

REPLACEMENT OF THE ENTIRE VALVE IS RECOMMENDED AT THIS POINT. REPAIR OR REPLACEMENT OF THE WORN PARTS IS NOT OFTEN ECONOMICAL OR EFFECTIVE.

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HOUSEKEEPING

None of the ingredients used in the typical Tacking or Hydrograssing mixes are particularly corrosive, but allowing them to cake and collect both inside and out of the machine will contribute to premature deterioration. Make it a practice to hose your unit down with clear water on a daily basis to prevent this. If a load or portion thereof is still in the tank, it can usually remain overnight or even two, without damage. One of the outstanding practical virtues of **HYDRO-JET** mixing is the ability to pick up dormant or settled loads relatively easily. However, with the tank empty, and having been given a good wash down, here is the procedure to follow to prepare the inside of the tank and associated piping for work the next day.

1. Fill the tank about 1/3 full. Start the engine; run at a moderate idle. Open the circulation supply valve for a burst or two, run some of the fill through the spray hose(s), discharging into the tank hatch.

2. If the residual slurry is thin and moving freely, the machine can be shut down with the water remaining for the night. If the layover is going to extend for a longer period, the weekend, or 3 to 4 days, or during hot weather, the following additional steps should be taken:

3. Pump out the 1/3 tank load of weak slurry. Open the sump drain hose to drain the remaining materials.

4. Close all valves and refill as described above. Actuate the control valves and again flush the lines with intermittent discharges. Then pump out completely. To save time, remove the spray nozzle or hose assembly to get higher flows.

5. Turn off the engine, open the drain hose and wash down the unit inside and out.

WINTERIZING AND STORAGE

When the season is over, properly laying up the machine over the winter months will simplify spring start up.

1. GENERAL: Thoroughly clean and wash down unit both inside and out. Make sure the tank is fully drained. Disconnect the sump suction hose.

2. PAINTING: Peeling paint or rusty spots should be scraped, primed and painted.

3. ENGINE: Perform the standard 80 hour check on the engine. The air cooled engine should be fogged to prevent sticking valves. Refer to the engine manual for cold weather preparation.

4. VALVES: Open all valves. With extreme cold weather conditions, the valves should be set in a 1/2 open position allowing water to drain from the sealing area.

5. PUMP: Drain pump casing. Then add a biodegradable antifreeze to prevent any residual water from freezing. Check and adjust pump impeller clearance as required.

6. COVER: The unit should be storedinside during severe weather conditions. If indoor storage is not availble then the entire unit should be tarped and secured under cover in a protected area.

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NOTE: Item numbers in brackets refer to the reference numbers on the parts schematics. See page 53.

REINCO MODEL HG-5H HYDROGRASSER

PUMP MAINTENANCE

NOTE: Item numbers in brackets refer to the reference numbers on the parts schematics. See page 53.

LUBRICATION

BEARINGS: The shaft bearings are greased at the Deming factory when installed. Subsequent lubrication depends on a variety of conditions, but may best be based on a time sequence. Several shots of number "2" (medium soft) bearing grease, is recommended every 80 hours. **IMPORTANT ! DO NOT OVER LUBRICATE.** Too much grease is not necessarily good. Higher bearing temperatures result, shortening bearing life.

SHAFT SEAL: The factory installed double mechanical seal assembly (14) (recommended when pumping non-lubricating abrasive mixtures), assures seal performance only if properly maintained.

This method incorporates a spring loaded pair of lapped seal faces secured to the rotating shaft by neoprene sleeves. The seal faces mate to lapped stationary seats (one inserted into end of the cavity, the other inserted into the gland). This assembly requires that the cavity encasing the seal be charged and pressurized with grease. Once the seal has been properly installed this seal style is nearly maintenance free and leak proof with only an occasional charge to the external lubricator required to maintain the pressure of the seal cavity. A stem with an alemite fitting extends from the top of the grease cup as the indicator for grease consumed. When extended up the cup is full, likewise, when the stem is lowered, lubrication is required. It is essential that waterproof grease with an 'O' consistency (very soft), for spring or fall work, or a '1' consistency (soft) for summer work, be used to maintain adequate flow to the seal cavity. Inspect the cup stem often to maintain sufficient lubrication.

Important! If grease is not consumed, the lubricant (grease) is either too viscous (heavy), or the flow path to the seal cavity is obstructed. Cleck and rectify immediately. When feeding properly, the grease will ooze from the hose fitting at the seal cavity when disconnected.

IMPELLER ADJUSTMENT

In the event pump pressure drops off because of wear, the impeller (30) may be repositioned as follows:

1. Remove the pump suction line and elbow to expose the impeller eye. Do not remove the pump suction flange (32).

2. Loosen the drive coupling set screw(s).

3. Loosen the adjusting nut clip (9) on the pump support head and turn the adjusting nut (8) counter clockwise. Bump the shaft forward until the clearance between the impeller (30) vein and the suction head (32) is about 1/64" (.0156"). Should the impeller be worn beyond the range of adjustment, the optimum clearance will not be obtained. Note, that backing off on the adjusting nut, allows the shaft (1) to be moved axially toward the suction end. Tightening the nut (clockwise) increases the impeller clearance. With the suction line removed, the clearance can be measured with a feeler gauge. Under field conditions, seldom is the adjustment so critical as to require an actual measurement.

4. The practical field method to adjust the impeller is to bring it in contact with the suction head face, and then tightening down on the adjusting nut by notches, creating clearance. To do this the drive coupling must be disconnected allowing the pump to be rotated by hand. It is also essential that the shaft is bumped or tapped in the direction of movement to overcome any frictional restraint, until the impeller is in contact with the suction face. Two notches of the adjusting nut past the locking clip will allow approximately .015" clearance on the impeller face. The locking clip must be remounted after the clearance setting has been made.

5. Replace any piping that was removed.

6. Inspect the drive coupling assembly to determine the extent that the coupling is to be adjusted. The coupling must be adjusted to compensate for the axial movement of the shaft during impeller adjustment.

7. Securely torque coupling set screws and replace coupling guard.

NOTE: Item numbers in brackets refer to the reference numbers on the parts schematics. See page 53.

DISMANTLING LIQUID END

When the impeller clearance is out of adjustment range, the impeller (30) or the mating face of the suction head (32), is probably worn to the point requiring replacement. To determine this, the parts have to be removed and inspected. The following steps are to be followed in "opening up" the pump:

1. Disengage the piping suction line elbow by removing the attached elbow.

2. Remove the cap screws securing the suction head to the casing (31). Then, with a block of wood or brass bar that is angled to pick up the inside edge of the mounting flange, rap with a hammer, circularly moving 6" at a time until it is loose. Save the gasket (33) if not damaged. To keep it pliable and soft, store in water.

3. Extract the impeller nut cotter (5), then remove the castellated nut (3). Hold the shaft from turning with a stilson wrench on the drive coupling. Pop off the impeller washer (4). The impeller (30) is seated on the shaft taper. Most of the time it can be loosened by placing a soft metal (brass) bar on the end of the pump shaft, and rapping strongly with a sledge several times. If this does not work, note the three tapped holes on the shroud surrounding the impeller eye. Thread in three screws, at least 2" long, until they bottom out. Continue torquing equally, until the impeller will easily disengage.

Normally, the suction head (32) has two to three times the life expectancy of the impeller (30). In the field, it is impossible to measure wear of the casing (31). An obvious hole or abrasive metal erosion is a certain indication of wear.

REASSEMBLY - LIQUID END

The procedures covered in the foregoing sections must be reversed to reassemble. The single, most important requirement, is to make absolutely certain the impeller clearance is properly set and locked to avoid interference (see *IMPELLER ADJUSTMENT* pg.), and yet have minimum clearance for maximum pressure output.

Be sure to orient the liquid end so that the discharge flange mates with the piping. A slight adjustment, sometimes, may be required. Loosen the cap screws holding the casing to the power frame. The minor angular repositioning for make-up is then easily made. Tighten the screws when properly matched.

SEAL REMOVAL

1. Disassemble and remove the liquid end (see *DISMANTLING LIQUID END*).

2. Remove the two nuts from the gland (15) follower and disengage from the seal head (13) gently. Grasp the seal head firmly and pull from the power frame. Remove the exposed spring and rotating seal faces from the shaft. The shaft is now exposed and should also be inspected for wear. If the wear is smooth and uniform the shaft does not need to be replaced. If the wear prevents seating of the neoprene sleeves, then the shaft will require replacement.

3. Remove the stationary seal seat from the bottom of the cavity by gently forcing the seat outward with a screwdriver, from the back of the seal head. Remove the gland follower from the shaft with the gasket (16). Save the gasket if not damaged. Carefully remove the seat from the gland follower in the same manner.

If the seal faces are worn or cracked, or if the stationary seats are scored, the seal is not reusable. Separate components are not available. Repair requires complete replacement of the entire double mechanical seal assembly.

SEAL REPLACEMENT

Installing a seal in a pump exposed to abrasive service in particular, is a "white glove" operation usually performed under the worst of conditions. Note that the lapped (smooth) seal faces must be smooth and must not be marred or scratched, or installed with dirt between the mating surfaces. **(Normal lapping (machining) tolerances for these faces is .000016"). BE CAREFUL!**

The following procedure is given for installation when it is practical to service the pump in shop surroundings:

1. Diligently remove all existing grease and dirt. Then thoroughly clean the seal head, and gland follower.

2. Clean the shaft and impeller seating area, and coat with a light film of oil. Also clean the impeller shaft threads. Lubricate the exterior 'O' rings on the stationary seal seats (metal or ceramic).
3. Lay the seal gland down on a flat surface and press the stationary seat into place. Check to insure that it is firmly seated against all surfaces. **DO NOT** scratch or push against the lapped faces when forcing into position. Use a clean piece of cardboard when pressing.

4. Slip the seal gland (15) with the seat and gasket (16), onto the pump shaft. The lapped surface must face the *'wet end'* of the pump.

5. Lightly coat the shaft with oil and slide the assembled rotating seal faces with the bellows sleeves and the spring portion over the shaft. These parts must be stacked so that one seal face will point toward the stationary seat installed with the seal gland, and the other facing the *'wet end'* with the compression spring separating the two.

6. Wipe the seal head (13) clean and lightly coat with oil. Press the remaining stationary seat into the bottom of the cavity. As with the first, check to insure that it is firmly seated against all surfaces. **DO NOT** scratch or push against the lapped faces when forcing into position. Use a clean piece of cardboard when pressing.

7. Wipe all four seal faces again with a clean cloth and lightly coat with oil.

8. Carefully mount the seal head over the seal assembly on the shaft, and nest the piloting shoulder of the seal head in the power frame. Insert one of the top cap screws to prevent the head from dropping.

9. Gently secure the seal gland, while compressing the spring and aligning the seal head to comfortably access the gland mounting studs. Holding it in position, align and install the two opposite nuts.

10. Remove the cap screw holding the seal head and mount the casing. Reinstall the remaining casing cap screws. Reinstall the lubricator assembly. Reassemble the liquid end by reversing the instructions under *DISMANLTING LIQUID END.*

11. **IMPORTANT!** Pre-charge the seal cavity with grease. First remove the pipe plug opposite the lubricator fitting on the seal head. Pump grease through the lubricator assembly until a positive flow spills from the exposed port. It is absolutely necessary to expel any trapped air from the seal cavity at this point.

12. Replace the plug and charge the lubricator until the stem is fully extended. Do not attempt to force the stem or damage to the lubricator diaphragm may occur.

Remember to use either '0' or '1' consistency grease because it will flow under normal temperatures. Unless the seal cavity is completely full and pressurized the seal will quickly wear due to abrasive slurry particles entering the lapped surfaces. Proceed with reinstalling the pump and piping to the machine. When the installation is complete and the pump is coupled and aligned to the engine (see ***COUPLING ALIGNMENT*** pg.), fill tank with approximately 100 gallons of water. Start the engine and run at low idle for a few minutes. This will insure that the seal faces properly seat and adapt to slight misalignments that may have been generated during installation.

BEARING INSPECTION

The pump shaft is cradled by two ball bearings that are nested in what is termed the support head. This entire assembly, from the bearing cover to the seal head, is called the Power Frame. To inspect the pump bearings, the pump shaft must be removed from the power frame per the following:

1. Disconnect the suction and discharge pump flanges, the drive coupling, and the four pump base hold down bolts.

2. Lift the entire pump from the **HYDROGRASSER** and place on a work bench. Secure the pump power frame to the work bench.

3. Disassemble and remove the liquid end (See *DISMANTLING LIQUID END* pg.).

4. Remove the bearing cover (18) and seal head (13) assembly. The adjusting spring (7) should push the cover off. Place a wooden block on the end of the shaft, rapping with a hammer, to force the shaft and bearings from the power frame.The slinger(10) will slip off as the shaft end reaches the adjusting nut(8).

The bearings may now be easily examined, turned and checked. To remove the bearings, press from the inner race of the bearing to force to the respective end of the shaft.

BEARING INSTALLATION

The two bearings (6) are each equipped with a dirt seal on one side. When mounted, the sealed sides must face the coupling end of the pump shaft.

1. Remove all old grease and clean thoroughly before proceeding with the new bearing installation.

2. Mount the driven side (outboard, O.B.) bearing onto the pump shaft with the shielded side toward the shoulder on the center of the shaft. The bearing race should press tightly against the mid-shaft shoulder. If the shaft surface is marred, it must be cleaned and smoothed. Never PRESS a toleranced fit bearing. Instead warm the bearing in an oven to 180 degrees. This will expand the races so that the bearing may easily slide onto the shaft. Do not exceed the 180 degree temp. so as not to melt out lubricant or damage the bearing ball retainers. It would also be advantageous to cool the shaft at this time, to more easily slip the warmed bearing into position.

3. Mount the wet end (inboard, I.B.) bearing on the pump shaft using the same procedure as with the outboard bearing. **Make sure the bearing shields mirror each other.**

4. Apply a number "2" consistency bearing grease to the exposed balls (those opposite the shields), and rotate to work in.

5. Inspect the felt rings (11) and retaining collars (12) in the bearing cover (18) and the adjusting nut (8). Replace if necessary. The felt rings should be replaced when bearings are changed.

6. Insert the shaft and bearing asembly with the tapered (impeller mounting) end into the coupling end of the power frame until the shaft projects from the adjusting nut, then mount the slinger (10) and nudge into position on the shaft. Push the shaft the remaining distance into the frame until the inboard bearing rests against the adjusting nut.

7. Replace the adjusting spring (7) into the coupling end of the frame. While compressing the spring, replace the bearing cover(18), cover gasket(19), and screws. Now reassemble the pump seal head and liquid end. Adjust the impeller and shaft to mount the casing as described under *IMPELLER ADJUSTMENT.*

8. Install the drive coupling key, and remount the drive coupling flange.

9. Grease each bearing fitting, about 1 or two squeezes using a number "2" consistency bearing quality lubricant.

10. Recheck impeller clearance as described under *IMPELLER ADJUSTMENT* on page .

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REINCO MODEL HG-5H

HYDROGRASSER

PARTS LISTINGS & SCHEMATICS

MANUAL 00500920
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ISSUED 1/96

REPLACEMENT PARTS

TO ORDER REPLACEMENT PARTS:

Identify the part(s) by item number using the pictorial schematic provided. Match the item number to the list, and identify the part required by stock number. Contact your **REINCO** dealer for price and availability. Parts may be ordered directly from the factory, outside of dealer territories. Parts ordered from the factory, for shipment to a customer within a dealer territory will be directed through the respective dealer's Parts and Service departments.

Many of the parts listed are commercially available and may be procured locally. Manufacturer's specific part numbers are available on request.

Other parts, such as engine components may be obtained through the respective manufacturer's distribution and service network.

Should you require assistance with regard to locating these agencies, contact your **REINCO** dealer or **REINCO** directly.

OPERATION PARTS AND SERVICE MANUALS

Additional user manuals may be ordered by part number persuant to the following table:

MANUAL PART NO.	MACHINE DESCRIPTION
0500920	HG-5H SERIES SAFETY, OPERATIONS, PARTS AND SERVICE MANUAL

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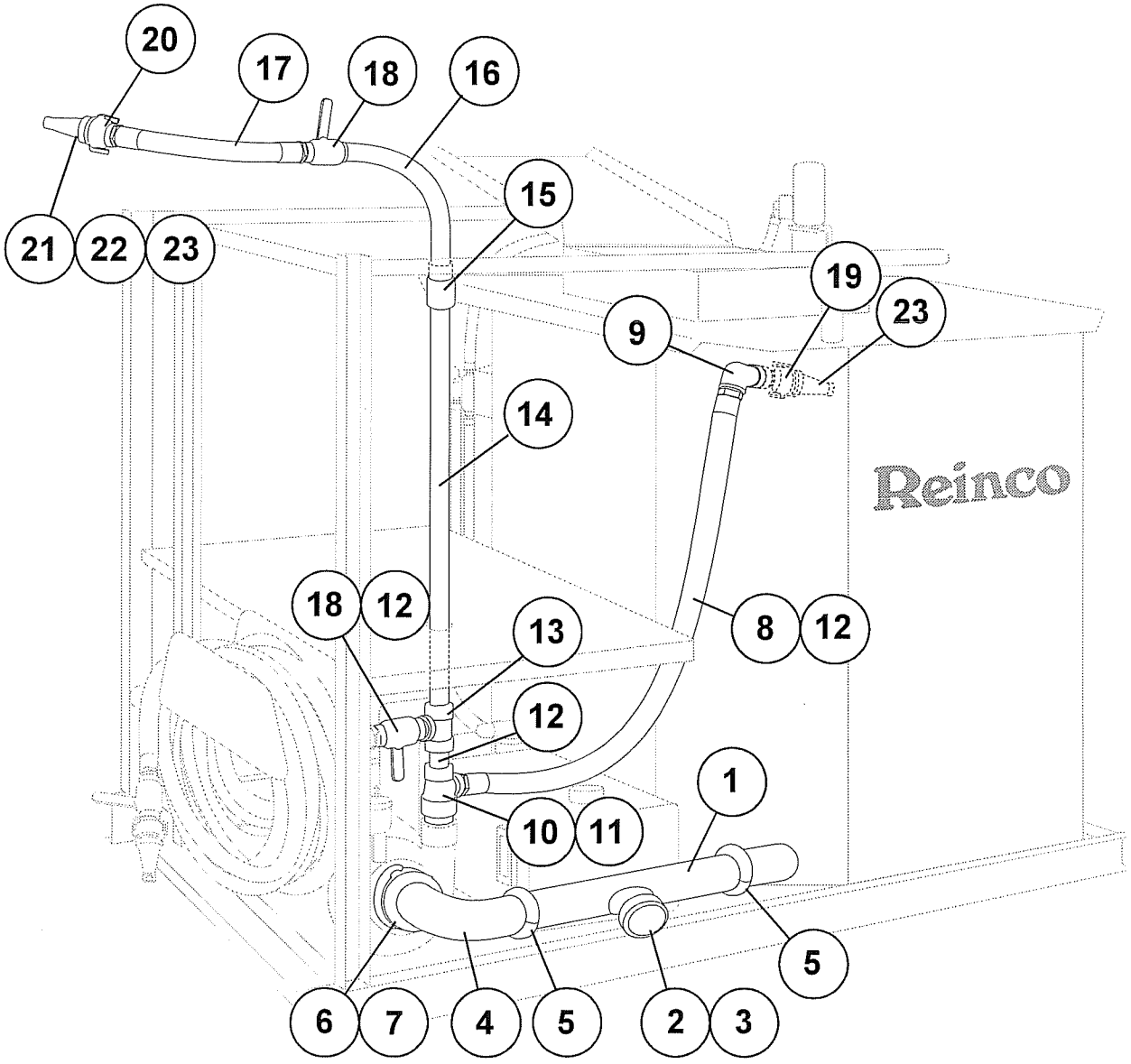
HG-5H PIPING COMPONENTS



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PIPING COMPONENTS

ITEM	PART NUMBER	DESCRIPTION	QTY
1	05411010	SUCTION TEE	1
2	PI2330.20	DRAIN CAP 2" #60	1
3	PI2311.20	LINE COUPLING w/GASKET 2" #78 (CAM)	1
	GA7005.20	GASKET ONLY 2" #H75E	
4	PI2356.30	SUCTION LINE ELBOW 3" x 90° #100	1
5	PI2310.30	LINE COUPLING w/GASKET 3" #75 (BOLT&NUT)	2
6	PI2311.30	LINE COUPLING w/GASKET 3" #78 (CAM)	1
	GA7005.30	LINE COUPLING GASKET ONLY 3" #H75E	
7	PI7530.03	ADAPTOR NIPPLE 3" x 3-3/4" GxT	1
8	05401070	HOSE ASSEMBLY 1-1/4" x 57"OA, MxF	1
9	PI2853.12	ELBOW 1-1/4" x 90° STREET GALV	1
10	PI7876.00	NIPPLE 2-1/2" x CLOSE - BLK	1
11	PI2882.91	TEE 2-1/2" x 1-1/4" x 1-1/4" - BMI	1
12	PI7872.00	NIPPLE1-1/4" x CLOSE - BLK	3
13	PI2880.12	TEE 1-1/4" STD - BMI	1
14	PI7912.48	NIPPLE 1-1/4" x 48" TBE- BLK	1
15	JO4120.10	SWIVEL JOINT ASSEMBLY 1-1/4" - STYLE 20	1
16	PI2856.20	SWEEP ELBOW 1-1/4" x 90° - GALV	1
17	O54XXXXX	HOSE ASSEMBLY 1-1/4" x 57"OA, MxF SCOVILL FTTG'S	1
18	VA5262.00	BALL VALVE 1-1/4" FULL FLOW BRASS	2
19	PI2821.25B	QUICK-DISCONNECT COUPLER 1-1/4" 'B' w/ GASKET	1
20	PI2821.26B	QUICK-DISCONNECT COUPLER 1-1/4" 'D' w/ GASKET	1
	GA7001.59	COUPLER GASKET ONLY 1-1/4"	
21	NO9940.00	NOZZLE 1-1/4" STRAIGHT STREAM (65 GPM) -SS	OPT
22	NO9941.00	NOZZLE 1-1/4" FAN PATTERN (NARROW 25°) -SS	OPT
23	NO9941.01	NOZZLE 1-1/4" FAN PATTERN (WIDE 50°) -SS	2

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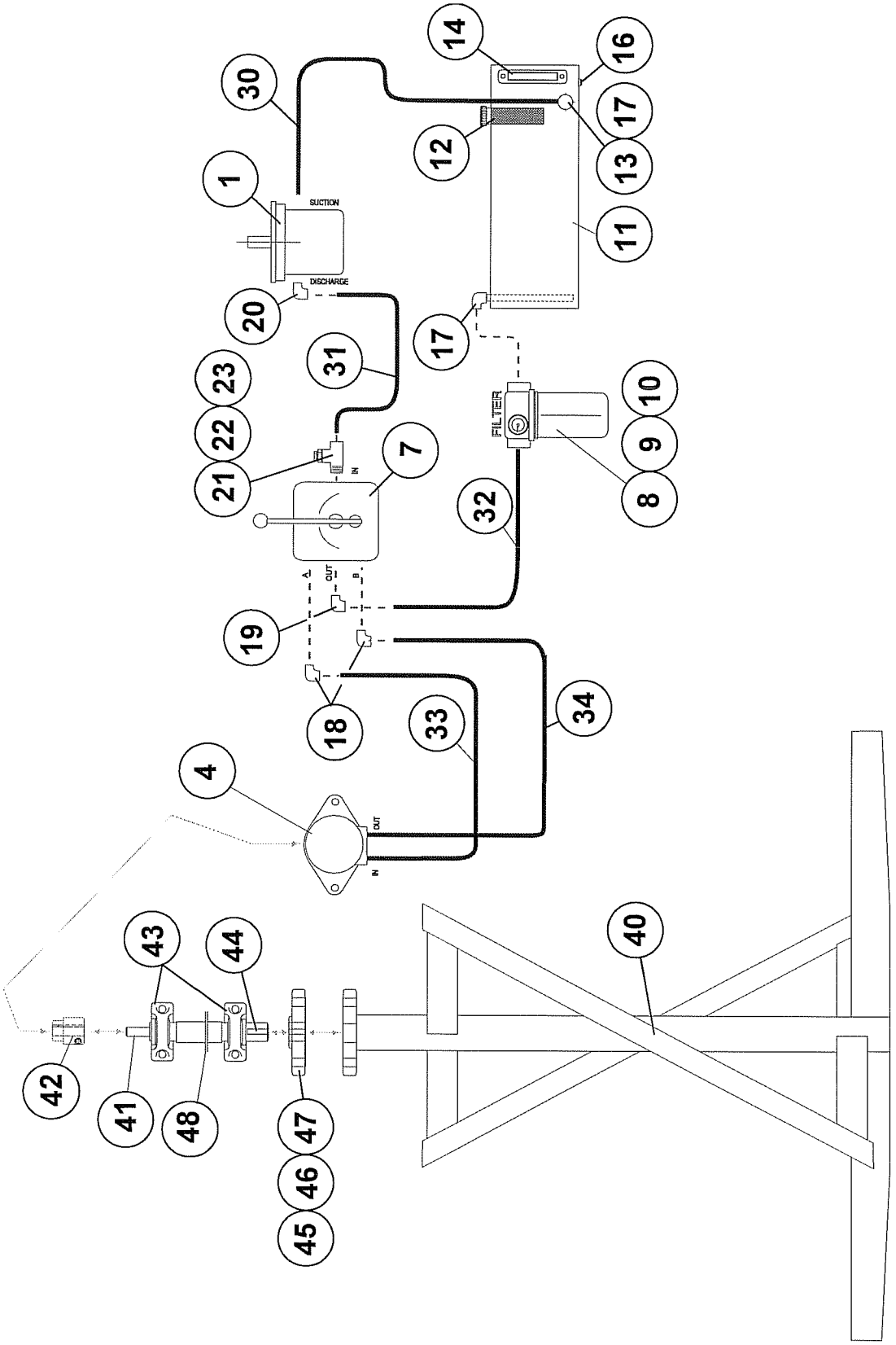
BLENDER & HYDRAULIC SYSTEM COMPONENTS& SCHEMATIC



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BLENDER & HYDRAULIC SYSTEM PARTS

ITEM	PART NUMBER	DESCRIPTION	QTY
1	PU6000.01	PUMP #SP20A-9-A9H2L	1
2	05841020	PUMP BRACKET	1
3	05431020	COUPLING GUARD	1
4	MO9001.00	MOTOR #ADM150-2RO	1
5	05451010	MOTOR BRACKET	1
6	05451020	MOTOR MOUNT	1
7	VA8006.00	CONTROL VALVE #SDCF755-TM12-4-F1-1200	1
8	FI6000.01	FILTER ELEMENT #FA10	1
9	FI6001.02	FILTER HEAD #FA12A0-00	1
10	GA8001.21	GAUGE- RESTRICTION #BTI15P	1
11	05391000	RESEVIOR TANK 17 GALLON	1
12	FL1000.00	BREATHER/FILL #TFA005715	1
13	ST8000.00	STRAINER #SW1250753	1
14	GA8005.00	GAUGE-OIL LEVEL/TEMP #LDR02	1
16	PI2835.06	DRAIN PLUG-MAGNETIC 3/4" PPM-12	1
17	PI2853.06	ELBOW 3/4" x 90° STREET- BMI	2
18	HO7800.31	ELBOW1/2" x 90° STREET-STL	2
19	HO7800.50	ELBOW-REDUCING 3/4" x1/2" x 90° STREET- STL	1
20	HO7800.26	ELBOW 5/8" O-RING x 90° #H5515X10	1
21	HO7802.12	TEE- 3/4" MALE RUN-STL	1
22	HO7803.12	BUSHING-REDUCING 3/4"x1/4"-STL	1
23	HO7800.05	PLUG-1/4" HEX -STL	
30	05403010	HOSE ASSEMBLY 48" #H03912U-J12-R72-04800	1
31	05403020	HOSE ASSEMBLY 79" #H10408U-112-650-07900	1
32	05402050	HOSE ASSEMBLY 50" #H10408U-112-M08-05000	1
33	05403030	HOSE ASSEMBLY 56" #H10408U-J08-R70-05600	1
34	05403040	HOSE ASSEMBLY 54" #H10408U-J08-R70-05400	1
40	05784000	BLENDER ASSEMBLY	
40.1	05784010	BLENDER POST	1
40.2	05784020	BLENDER BLADE	2
40.3	05784030	SWEEP BLADE	2
41	05771010	AGITATOR SHAFT	1
42	CO8440.10	COUPLING 1"B 14/"Kw #H25000-C	1
43	BE0260.01	BEARING 1-7/16" PILLOW BLOCK	2
44	KE9006.04	KEY 5/16" x 1" WOODRUFF #1008	1
45	05792010	FLANGE 1-3/4"B 5/16"Kw	1
46	FA1126.16	1/2"-13 NC x 1-3/4" HEX HEAD SCREW	4
47	FA1241.04	1/2"-13 NC NYLON INSERT NUT	4
48	GA0577.13	SLINGER -NEOPRENE	1

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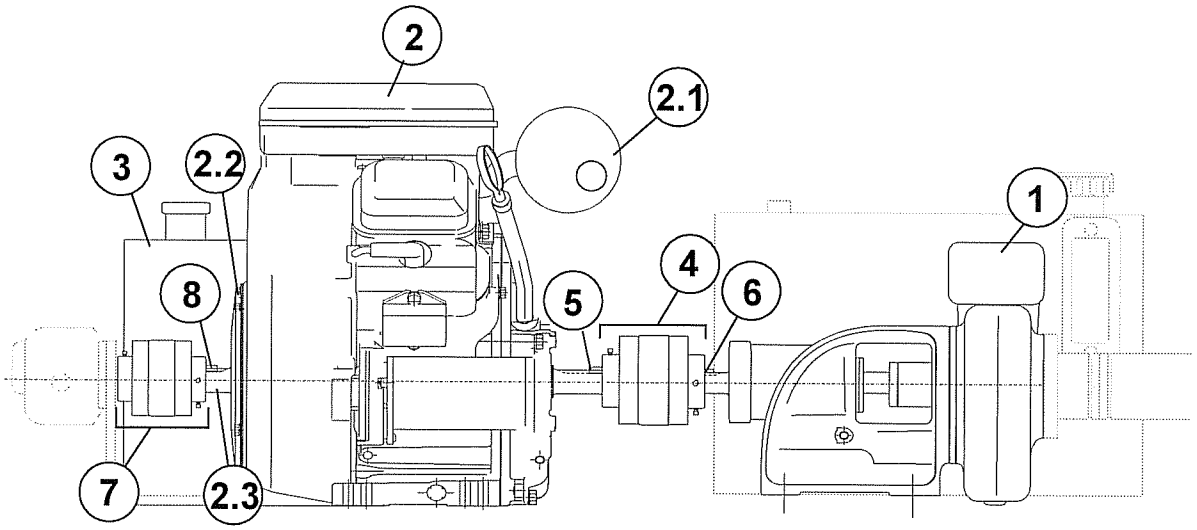
ENGINE & PUMP DRIVE COMPONENTS



ITEM	PART NUMBER	DESCRIPTION		QTY
1	PU5246.00	PUMP FIG.4001 3 x 2-1/2 x 7 (REF. PG.)		1
2	EN3020.50	ENGINE- KOHLER CH20S SPEC#64501		1
2.1	EN3020.51	MUFFLER- LH #24 786 06		1
2.2	EN3018.11	DEBRIS SCREEN #24 162-16		1
2.3	05841010	ENGINE FRONT SHAFT		1
3	TA6030.06	FUEL TANK - 6GALLON #RFZ-6RU\907077		1
3.1	TA6036.01	TANK CABLE 39-1/8"		2
3.2	FA1241.03	3/8"-16 NC NYLON INSERT NUT		2
3.3	HO7302.51	HOSE 1/4" C-404 /FT		1
3.4	HO7746.24	FITTING 1/4"MNPT x HOSE #KA04-04MB		1
4	CO8436.X	COUPLING ASSEMBLY 1-7/16" x 7/8" 502-R		
4.1	CO8435.31	COUPLING CENTER MEMBER (INSERT ONLY)		1
4.2	CO8435.32	COUPLING HARDWARE SET		1
4.3	CO8436.11	COUPLING FLANGE 1-7/16"B 3/8"Kw	(ENGINE SHAFT)	1
4.4	CO8436.25	COUPLING FLANGE 7/8"B 3/16"Kw	(PUMP SHAFT)	1
5	KE9002.10	KEY 3/8" x 2" OER	(ENGINE SHAFT)	1
6	KE9001.01	KEY 3/16" x 1-1/2" BES	(PUMP SHAFT)	1
7	CO8446.71X	COUPLING ASSEMBLY 1" x 5/8" #30		
7.1	CO8446.73	COUPLING INSERT - NEOPRENE		1
7.2	CO8446.75	INSERT RING ONLY		1
7.3	CO8446.71	COUPLING FLANGE 1"B 1/4"Kw	(ENGINE SHAFT)	1
7.4	CO8446.74	COUPLING FLANGE 5/8"B 5/32"Kw	(PUMP SHAFT)	1
8	KE9001.12	KEY 1/4" x 1" BER		1

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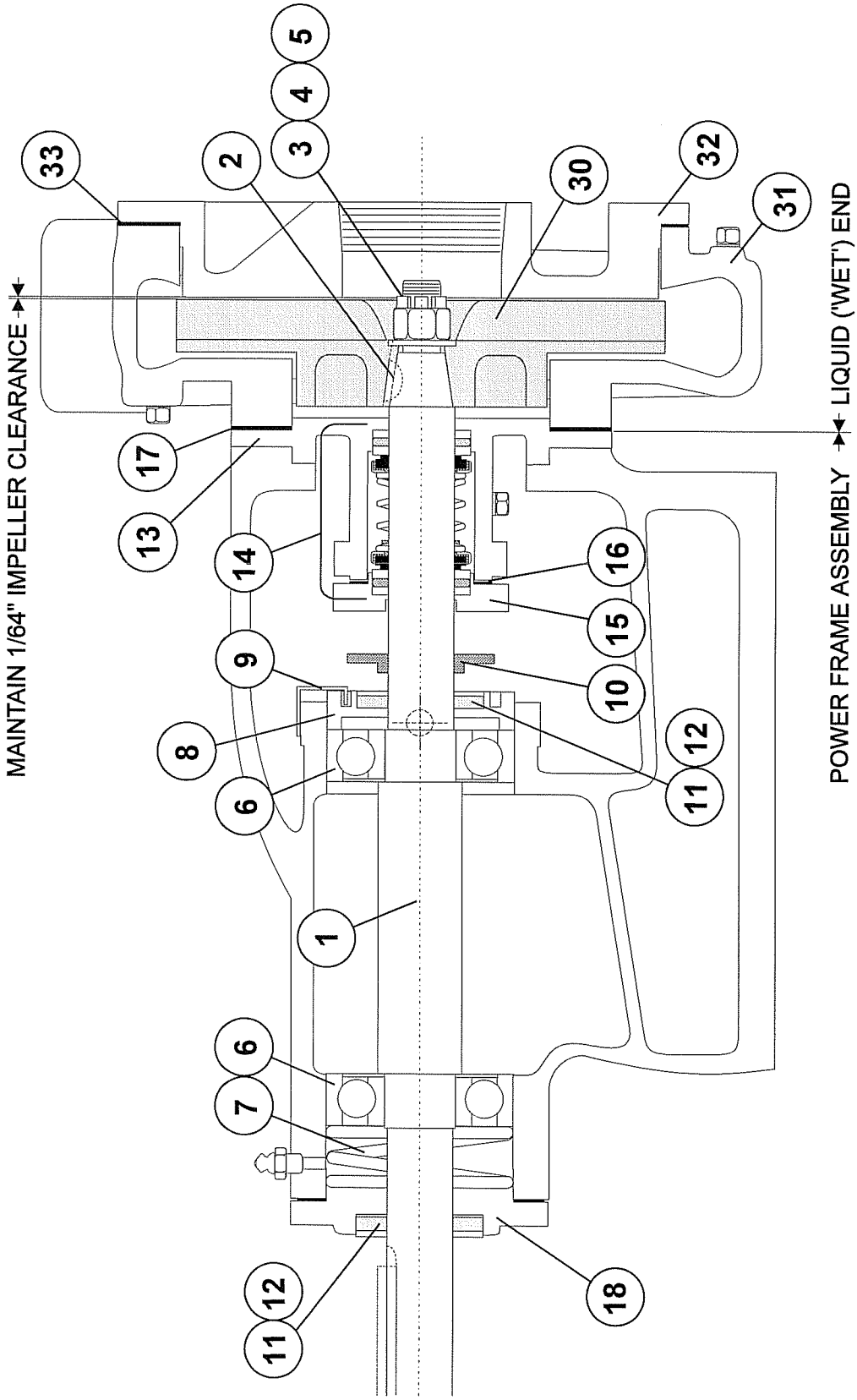
PUMP PARTS SCHEMATIC



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PUMP PARTS LISTING

ITEM	PART NUMBER	DESCRIPTION	QTY	
	PU5246.00X	**PUMP FIG.4001 3 x 2-1/2 x 7**		
	PU5246.01	**POWER FRAME # 4001-00-10-551 (INCLUDES ITEMS#1 - 20)**		
1	PU5246.51	SHAFT SS #0027497	1	
2	KE9006.05	IMPELLER KEY-WOODRUFF SS #0065013	1	σ
3	FA2285.04	IMPELLER NUT-CASTELLATED SS #0065010	1	
4	PU5246.04	IMPELLER WASHER SS #0065019	1	
5	CP1010.10	COTTER PIN SS #0065016	1	σ
6	PU5246.53	BEARING #003319	2	
7	PU5246.54	BEARING ADJUSTING SPRING #0009842	1	
8	PU5246.55	BEARING ADJUSTING NUT BRZ #0034336	1	
9	PU5246.56	ADJUSTING NUT LOCKING CLIP BRZ #0009845	1	
10	PU5246.60	SLINGER-NEOPRENE #0000704	1	σ
11	PU5246.57	FELT DUST SEAL #0009951	2	σ
12	PU5246.58	CLAMP RING #0009846	2	σ
13	PU5246.10	SEAL HEAD CI #0034262	1	
14	SE0570.85	DBL MECHANICAL SEAL ASSEMBLY #0030895 (7/8")	1	σ
15	PU5246.12	SEAL GLAND (FOLLOWER) CI #0013373	1	
16	PU5246.14	GASKET- SEAL GLAND #0013369	1	σ
17	PU5246.11	GASKET- SEAL HEAD #0006227	1	σ
18	PU5246.52	BEARING COVER CI #0009839	1	
19	PU5246.36	GASKET- BEARING COVER #0009841	1	σ
	PU5246.02	**LIQUID END 3 x 2-1/2 x 7 #0069274 (INCLUDES ITEMS# 30-33)**		
30	PU5246.03	IMPELLER CI #0010812 7"DIA	1	
31	PU5246.07	CASING CI #0034087	1	
32	PU5246.09	SUCTION HEAD CI #0030078	1	
33	PU5246.08	GASKET- CASING #0004468	1	
	PU5246.99	**REBUILD KIT (INCLUDES ALL s ITEMS)**	1	

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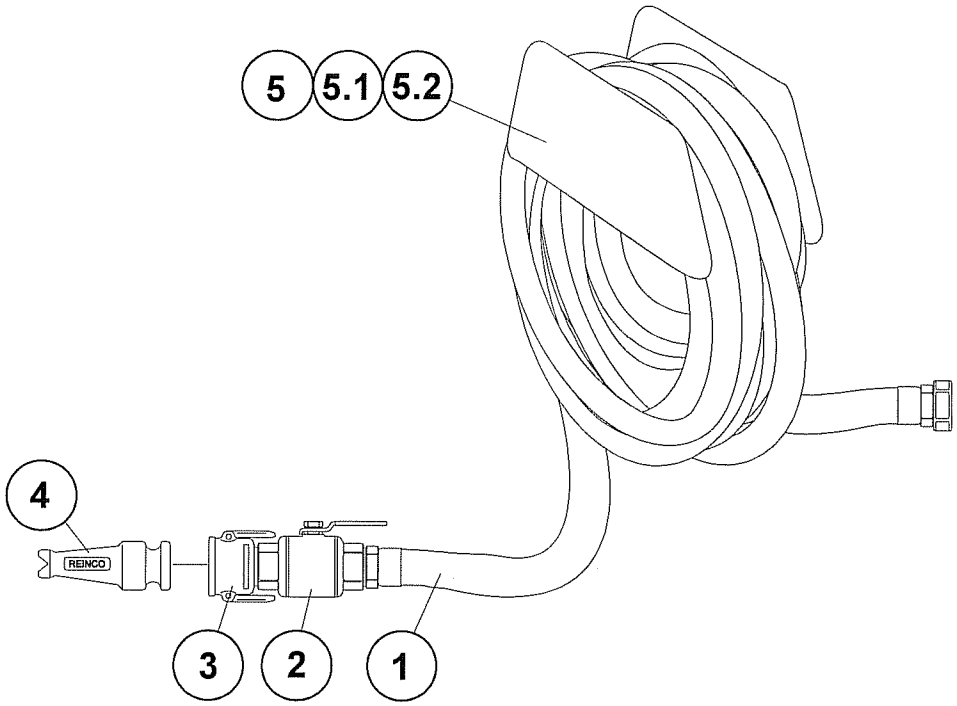
HOSE OPTIONS AND PARTS



ITEM	PART NUMBER	DESCRIPTION	QTY
1	HO7112.55	1-1/4" x 50' (HARD) NEOPRENE JACKETED HOSE MxF	
	HO7112.56	1-1/4" x 100' (HARD) NEOPRENE JACKETED HOSE MxF	
	HO7241.50	1-1/4" x 50' (SOFT) MILL JACKETED HOSE MxF	
	HO7241.51	1-1/4" x 100' (SOFT) MILL JACKETED HOSE MxF	
2	VA5262.00	1-1/4" FULL FLOW BALL VALVE	1
3	PI2821.25B	1-1/4" ALUM QUICK DISCONNECT COUPLING 'B' W/GASKET	1
4	NO9940.00	1-1/4" NOZZLE-SS STRAIGHT STREAM, 65 GPM @ 40PSI	1
	NO9941.00	1-1/4" NOZZLE-SS NARROW FAN 25° ANGLE, 50 GPM @ 40PSI	1
	NO9941.01	1-1/4" NOZZLE-SS WIDE FAN 50° ANGLE, 75 GPM @ 40PSI	1
5	05381050	HOSE RACK	1
5.1	FA1124.10	3/8"-16 NC HEX HEAD SREW	2
5.2	FA1241.03	3/8"-16 NC NYLON INSERT NUT	2

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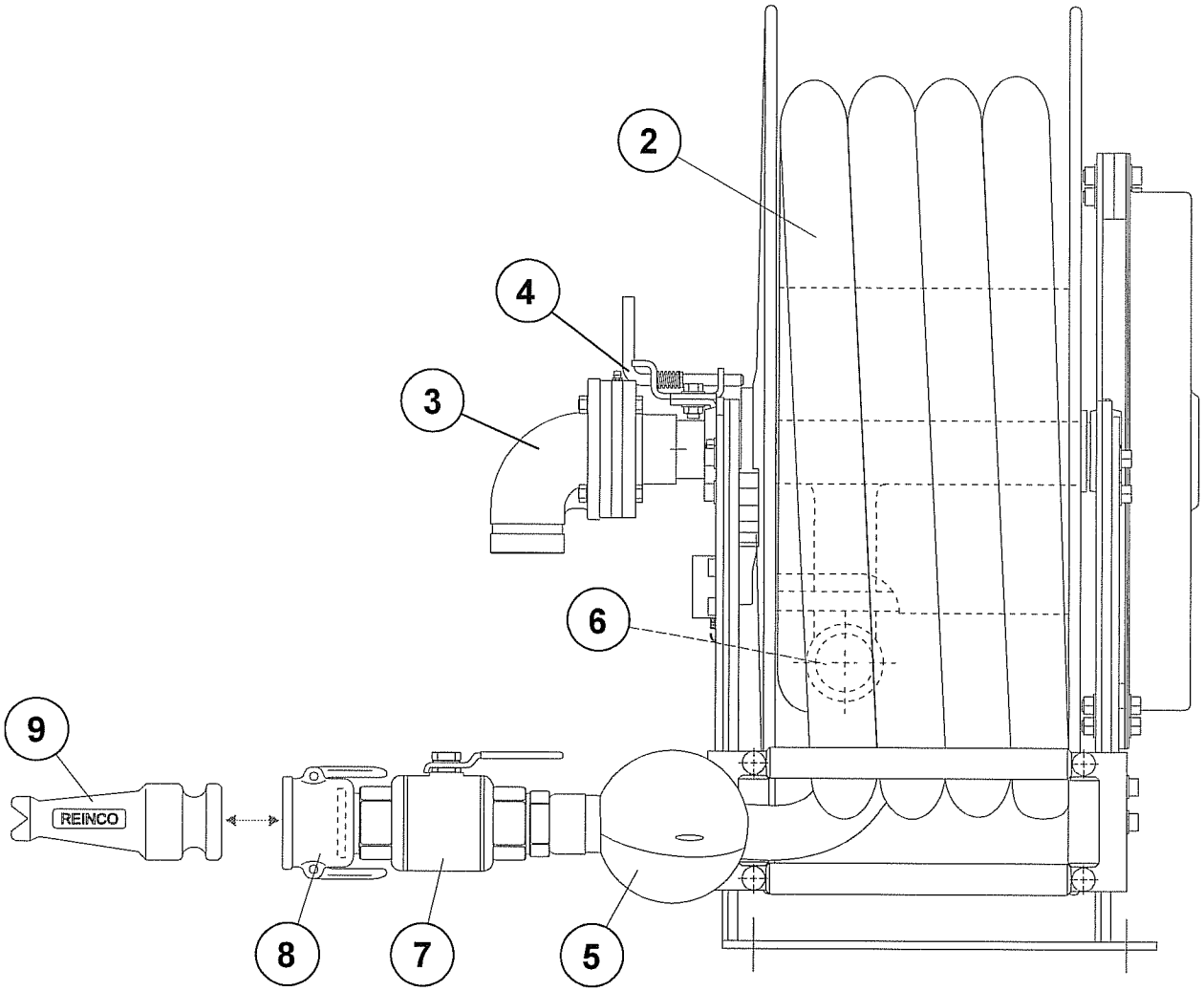
HOSE REEL PARTS



ITEM	PART NUMBER	DESCRIPTION	QTY
1	HR1010.00	HOSE REEL-Spring Rewind, 1-1/4"x100'cap. w/ Roller Assembly	1
2	HO7112.56	1-1/4" x 100' (HARD) NEOPRENE JACKETED HOSE MxF	1
3	JO4132.10	SWIVEL JOINT 1-1/2"x90°	1
3.1	JO4132.11	SWIVEL JOINT REPACKING KIT (incl. Bearing)	1
4	HR1000.28	PIN LOCK ASSEMBLY	1
5	HR1010.01	HOSE STOP	1
6	PI7912.00	1-1/4" CLOSE NIPPLE	1
7	VA5262.00	1-1/4" FULL FLOW BALL VALVE	1
8	PI2821.25B	1-1/4" ALUM QUICK DISCONNECT COUPLING 'B' W/GASKET	1
9	NO9940.00	1-1/4" NOZZLE-SS STRAIGHT STREAM, 65 GPM @ 40PSI	1
	NO9941.00	1-1/4" NOZZLE-SS NARROW FAN 25° ANGLE, 50 GPM @ 40PSI	1
	NO9941.01	1-1/4" NOZZLE-SS WIDE FAN 50° ANGLE, 75 GPM @ 40PSI	1

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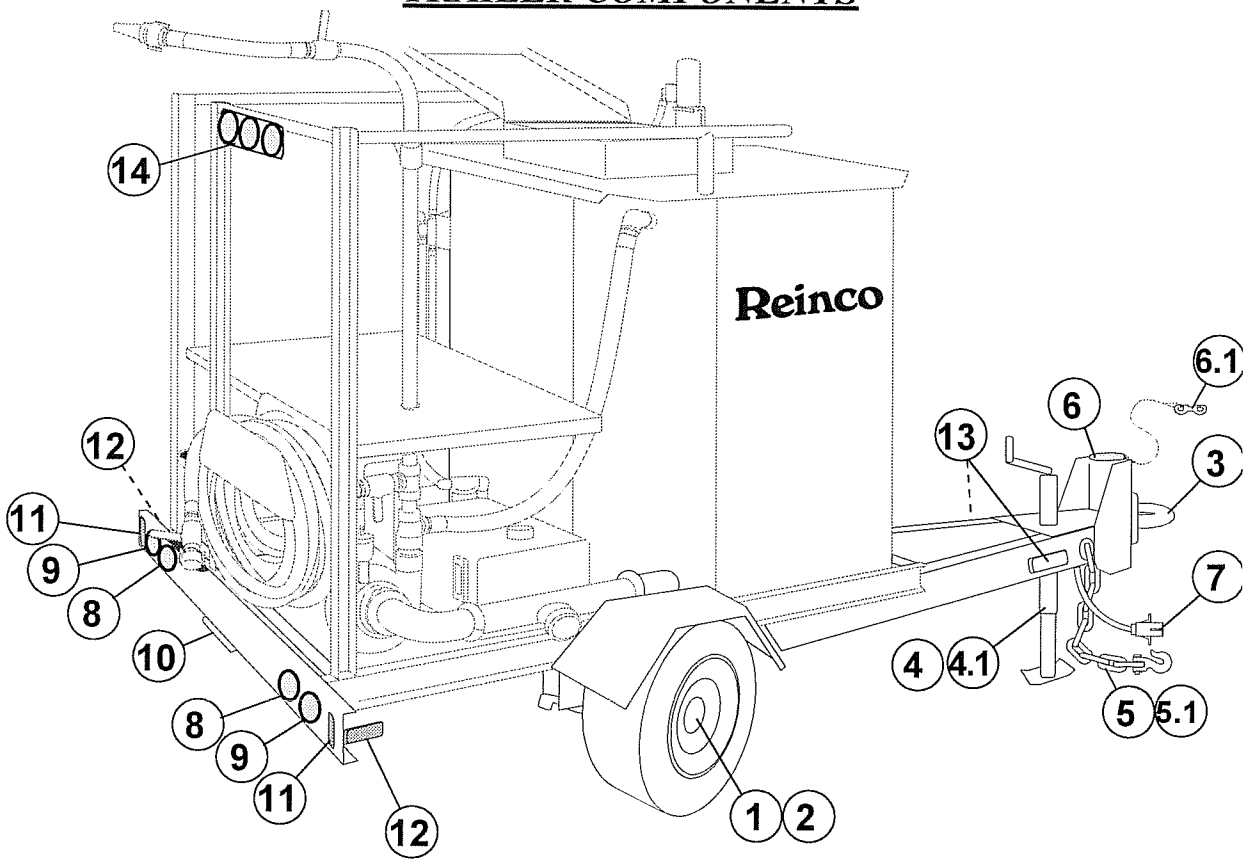
TRAILER COMPONENTS



ITEM	PART NUMBER	DESCRIPTION	QTY	
1	AX5203.30	BRAKE AXLE ASSEMBLY- 7K 72"TR, 55"SC	1	
	AX5201.05	HUB & DRUM ASSEMBLY 008-174-05 (INCL υ ITEMS)	2	
	AX5103.13	GREASE SEAL 010-001-00 NATIONAL #440972	1	υ
	AX5103.11	BEARING - INNER CONE 031-030--02 #25580	1	υ
	AX5103.12	RACE - INNER BEARING CUP 031-030-01 #25520	1	υ
	AX5201.06	BEARING - OUTER CONE 031-029-02 #15123	1	υ
	AX5201.07	RACE - OUTER BEARING CUP 031-029-01 #15245	1	υ
	AX5103.06	NUT - SPINDLE 1"-14 006-001-00	1	υ
	AX5201.31	WASHER - SPINDLE 005-057-00	1	υ
	AX5201.32	COTTER PIN - 1/8" x 1.75" 0019-002-00	1	υ
	AX5103.08	CAP 021-001-00 2.45"OD	1	υ
	AX5201.33	BRAKE ASSEMBLY - RH KIT 023-181-00	1	
	AX5201.34	BRAKE ASSEMBLY - LH KIT 023-180-00	1	
	AX5201.35	SPRING - SLIPPER 25S-3500 072-032-00	2	
	AX5106.09	SHACKLE BOLT 9/16"-18 x 3.5" 007-017-00	2	
	AX5103.17	LOCKNUT 9/16"-18 006-007-00	2	
	AX5106.13	KEEPER BOLT 5/16"-18 x 3.25" 007-007-00	2	
	AX5106.14	LOCKNUT 5/16"-18 006-011-00	2	
	AX5201.03	WHEEL NUT 9/16"-18 A307 006-005-00	10	

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TRAILER PARTS-CONTINUED

ITEM	PART NUMBER	DESCRIPTION	QTY	
2	TI7520.00	MOUNTED TIRE 9-14.5 LR'F' / T700 (INCL σ ITEMS)	2	
	TI7201.21	TIRE ONLY - 9-14.5 LT LR 'F'	1	σ
	AX5201.02	WHEEL ONLY T-700 017-048-00	1	σ
	TI7203.03	VALVE TR-416-S	1	σ
3	CO9281.21	COUPLER - ADJUSTABLE EYE BDB-1250-15	1	
	CO9214.60	COUPLER - ADJUSTABLE BALL HITCH 2-5/16" CB-30	OPT	
4	JA1002.02	TOUNGE JACK 125-803	1	
4.1	JA1005.02	JACK FOOT PAD 82660	1	
5	CH0641.56	SAFETY CHAIN W/ CLEVIS'	1	
5.1	CH0643.55	CHAIN CLEVIS 1/2"	2	
5.2	CH0641.55	CHAIN ONLY - 1/2" PROOF COIL x FT	5	
6	BR2022.03	BREAKAWAY SWITCH 2009	1	
6.1	CH0643.10	SNAP HOOK R12978	1	
7	05421000	TRAILER WIRING HARNESS ASSEMBLY	1	
7.1	EL2203.01	HARNESS CONNECTOR - PLUG 1235	1	
7.2	EL2203.02	HARNESS CONNECTOR - SOCKET 1254	1	
8	LI3303.07	DIRECTIONAL LAMP	2	
9	LI3302.07	COMBINATION LAMP (STOP/TAIL/TURN)	2	
10	LI3305.03	LICENSE PLATE BRACKET/LAMP	1	
11	LI4030.01	REFLECTOR - RED 224-00-020	2	
12	LI3301.21	MARKER LAMP - RED 065-75-722	2	
13	LI3301.22	MARKER LAMP - AMBER 065-75-712	2	
14	LI3301.23	TRIPLE BAR LAMP 038-00-022	1	
15	BR0501.02	BRAKE CONTROLLER (TOW VEHICLE) 2017	1	
	083042000	FENDER	2	

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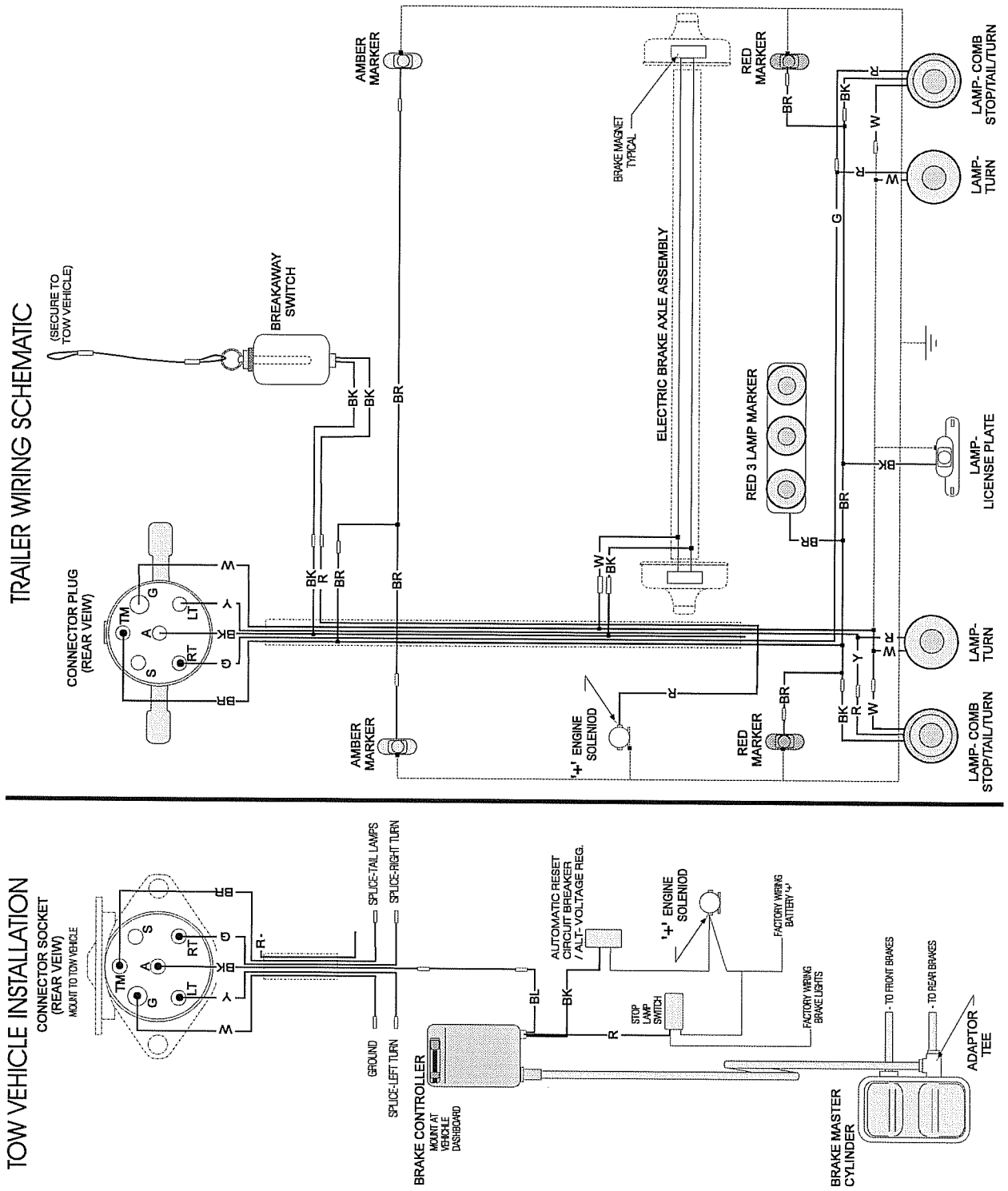
TRAILER WIRING AND SCHEMATIC



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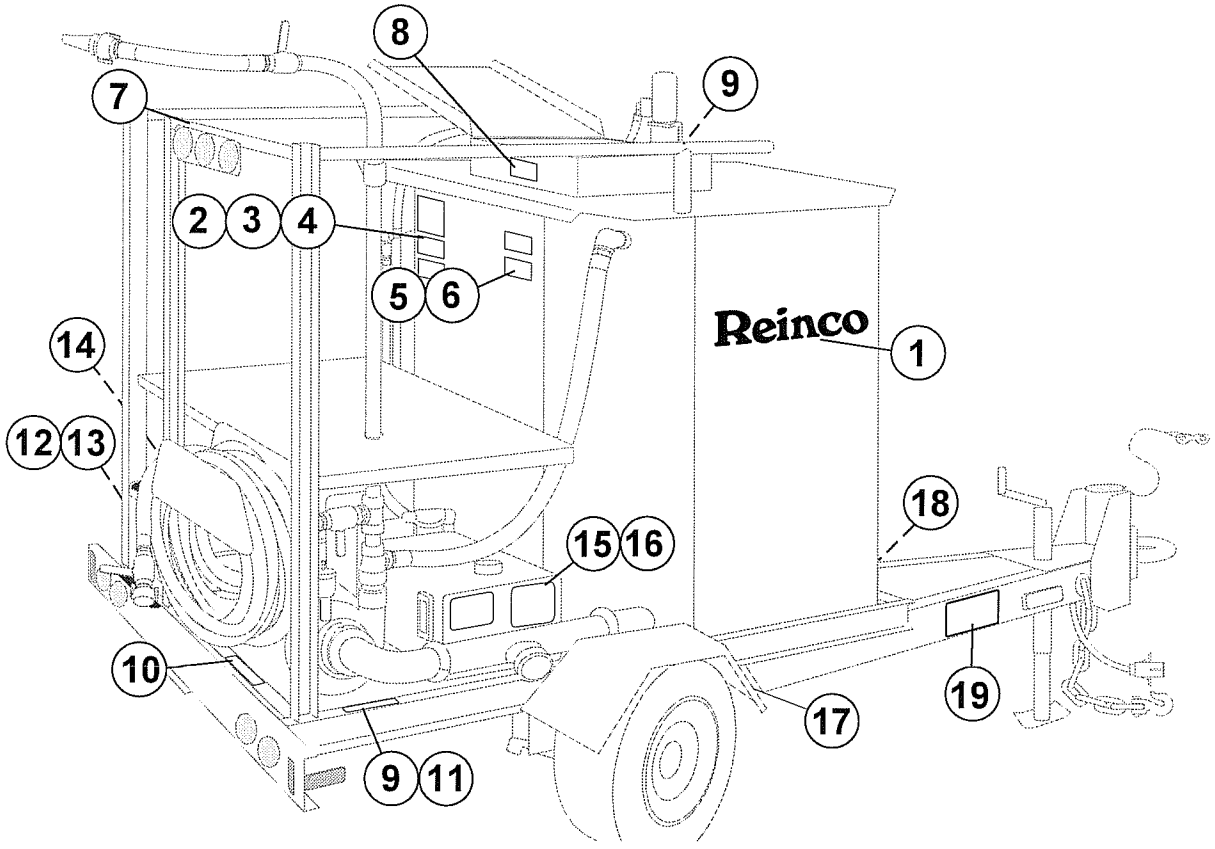
DECALS AND LABELS



ITEM	PART NUMBER	DESCRIPTION	QTY
1	ID2625.03	APPLIQUE 'REINCO' LOGO 6"x29"	2
2	00171020	DECAL - CHARGING	1
3	00202000	DECAL - LUBRICATION SCHEDULE	1
4	00271000	DECAL - EQUIPMENT TRAINING	1
5	00291000	DECAL - WARNING VIBRATION	1
6	00211020	DECAL - CAUTION STOP MACHINE FOR SERVICING	1
7	00171040	DECAL - DO NOT THROTTLE SPRAY VALVE	1
8	00251000	DECAL - WARNING CONFINED SPACE	1
9	00191000	DECAL - DO NOT OVERGREASE BEARINGS	1
10	00212030	DECAL - WARNING KEEP GUARDS IN PLACE	2
11	00171030	DECAL - MAINTAIN PUMP IMPELLER CLEARANCE	1
12	00231000	DECAL - CAUTION 3200 RPM MAXIMUM	1
13	00192000	DECAL - NOTICE FUEL SHUTOFF	1
14	00181000	DECAL - 'GASOLINE' ONLY	1
15	00183000	DECAL - HYDRAULIC FLUID	1
16	00261000	DECAL - DANGER HYDRAULICS	1
17	00291000	DECAL - WARNING WHEEL TORQUE	2
18	00241000	DECAL - REINCO '800' SALES & SERVICE	2
19	ID2600.11	SERIAL NUMBER NAMEPLATE	1

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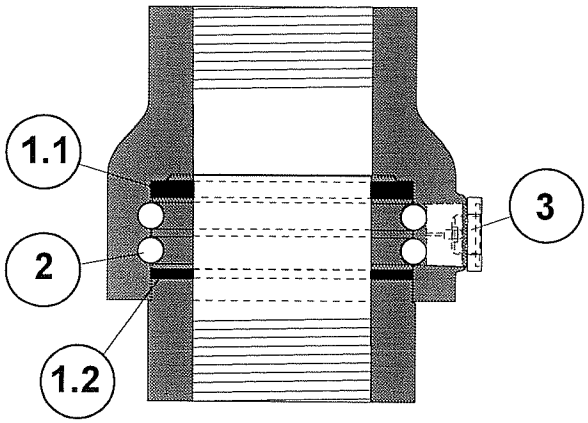
SPRAY BOOM SWIVEL JOINT PARTS



ITEM	PART NUMBER	DESCRIPTION	QTY
	JO4120.10	**SWIVEL JOINT ASSEMBLY 1-1/4" NPT STYLE 20**	**1**
1	JO4120.11	SEAL KIT #3108987	1
1.1		BUNA SEAL RING	
1.2		DUST SEAL	
2	JO4120.12	BALL SET 1/4 x 54	1
3	JO4120.13	HEX RETAINER w/ LUBR FITTING & O-RING	1

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A

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