Reinco

M-90 POWER MULCHER

SAFETY, OPERATION, PARTS & SERVICE

MANUAL

REINCO INC.
PO BOX 512
PLAINFIELD, NJ. 07061-0512

TOLL FREE (800) 526-7687
PHONE (908) 755-0921
FAX (908) 755-6379

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 operate 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 both 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.

REVISED 08/95
PN 85000900

REINCO MODEL M-90

POWER MULCHER

FORWARD

A MESSAGE FROM REINCO

Getting the most out of your new **M-90 POWER MULCHER** should be within the reach of an inexperienced crew 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 POWER MULCHER** 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 of trouble free performance with minimum attention and maintenance.

Every operator and foreman should read this booklet and familiarize himself with the operational 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 mulching 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 John Deere 4:039T 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.

WHAT IS MULCHING

From a horticultural point of view, mulch can cover a wide variety of organic materials. Pine bark, wood chips, pine straw, peat, and hay or straw is typical. At **REINCO**, our concern has been with the processing of the last two products in a useful productive form.

Reinco Power Mulchers process rectangular bales. After removing the twine or wire, the expanded slabs or flakes are thrashed into uniform stalk lengths, adjustable between 4" and 10" in length. These are then blown in place over prepared ground surfaces forming an intertwined mat. The mulch serves to control water evaporation and soil erosion while providing a beneficial micro climate promoting more rapid seed germination.

Mulch is commonly applied at the rate of 1-1/2 to 2 tons to the acre (about 3" to 4" of fluffed height), although higher rates, 6 tons or more, may sometimes be specified. There is a limit however, because more is not necessarily better. Too much will snuff out required air and inhibit growth.

To provide a sense of productivity, the **M-90** carries a nominal rating of 20 tons per hour. In more practical terms this machine will process good quality dry mulch weighing about 60 lbs. per bale at the rate of about 11 bales a minute.

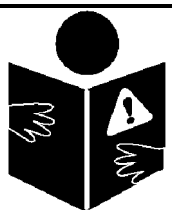
It is safe to predict that capacity limits are based on getting material to the machine and not how much the machine can blow out.

REINCO MODEL M-90

POWER MULCHER

SAFETY

POWER MULCHER SAFETY OVERVIEW



Personnel responsible for your Power Mulcher 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 Power Mulcher until they understand it, its operation and know how to do their job safely.

RECOGNIZE SAFETY INFORMATION

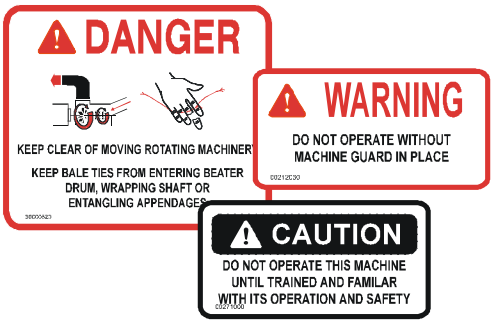
This is the safety alert symbol. When you see it in your operations manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

UNDERSTAND SAFETY WORDS

A signal word - **DANGER**, **WARWARNING**, 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 all safety messages in your operations manual and on your Power Mulcher. 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 effect machine life.

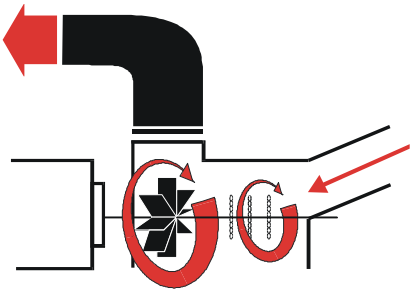
If you do not understand any part of this manual and need assistance, contact Reinco directly.

800-526-7687

CONCENTRATE ON YOUR JOB

Daydreaming, worrying about other problems or other improper operation of a machine could cripple you for life. Operating a Power Mulcher 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.

KEEP CLEAR OF THE WORK AREA



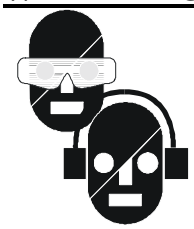
The purpose of a Power Mulcher is to cut and thrash bales of hay and discharge the processed mulch away from the machine. The Power Mulcher uses a powerful engine that turns a main drive shaft, beater chains and blower wheel at high speed to process the hay. It is obvious that this capacity will sever arms, hands, fingers or any other part of the body that is in the work area when the machine is activated.

Additionally, the discharge from the blower is capable of blowing mulch more than 100 feet on some models. The machine's discharge is powerful enough to dislodge pebbles, stones or other debris that may cause eye injury.

The person responsible for activating the machine is the boom 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 that requires manipulation within the beater drum, fan housing, boom, feed tray, engine or other work area, the key should be removed from the machine and battery disconnected.

WEAR PROTECTIVE CLOTHING



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

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

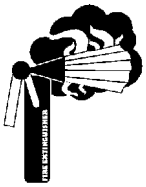
PRACTICE WORK AREA SAFETY RULES

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 Power Mulchers are 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 clean dry straw increases 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.

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.

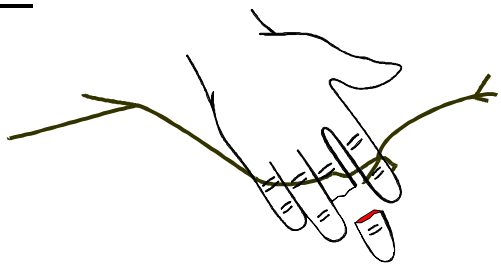
CLEAN AS YOU GO

Twine, when removed, should be disposed of immediately in a container away from the Power Mulcher. That loose piece of twine around the machine could cause you to fall or loose a hand or finger.

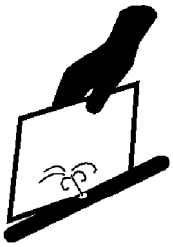
PROPER BALE HANDLING IS IMPORTANT

Bale twine or wire is dangerous. When cutting and removing twine from a mulch bale the handler must make sure that the twine is not pulled into the machine. The twine can wrap around a shaft and pull an arm or hand into the machine. It is capable of cutting through fingers.

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



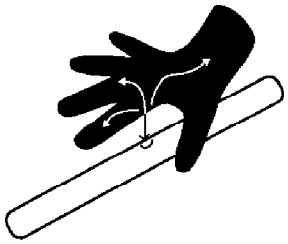
HYDRAULIC SYSTEM CONCERNS



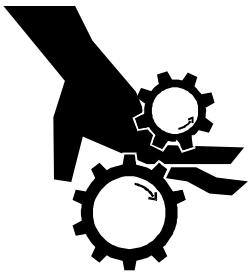
Some Power Mulchers are manufactured with hydraulically operated power feed systems. Hydraulic fluid lines are a high pressure fluid hazard. To prevent serious injury or death always relieve system pressure before repairing or adjusting or disconnecting.

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



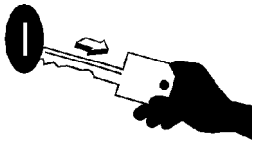
Should the hydraulic power feed system jam and the feed flipper drum stop rotating, the pressure relief valve in the flow control valve will open. Before attempting to clear any feed system jam, turn the engine off and return the feed system control cable to its closed position. The jammed bale may now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

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

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 remove key. Allow machine to cool.

Disconnect the battery before machine adjustments or welding on machine.

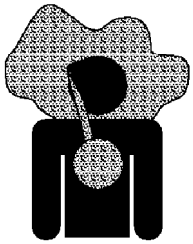
Keep all parts in good condition and properly installed. Fix damage immediately. Replace worn or broken parts. Remove any build-up of grease, oil or debris.

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.

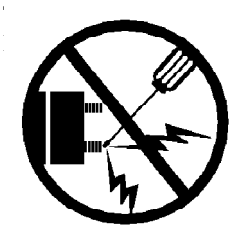
Store fuels in approved containers only. After refueling remove containers from work area.



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

Do not add coolant to water cooled units when engine is hot due to the possibility of steam burns. Only remove filler cap when cool enough to touch with bare hands. Slowly loosen cap first to relieve pressure before removing completely.

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



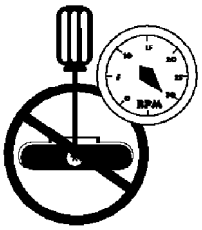
engines can be a source of high voltage. Never touch electrical wires or components when engine is running. engine by shorting across the starter solenoid.

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

Avoid accidental starts that could cause injury to yourself or fellow workers. Remove the ignition key. Disconnect and ground the spark plug wire on one and two cylinder gas units. On electric start units, disconnect the battery cables. Always remove the ground (-) cable first.

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

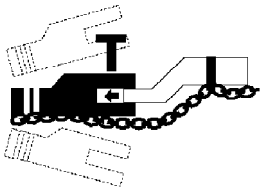
ENGINE SPEED IS IMPORTANT



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

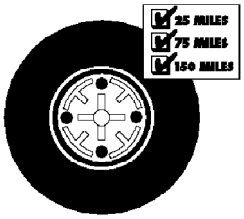
A rotation unbalance of any sort will become obvious in the form of vibration. Vibration is an important warning sign of impending mechanical failure. Notify your supervisor of any unusual vibrations or noises at the onset.

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 load tray. 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.

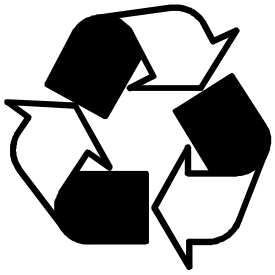
The flasher light switch of the truck, when engaged, will also activate the directional and tail lights mounted in the rear bumper. Whenever emergency signaling is required, use this circuit.



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.

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, emulsified asphalt, 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.

LOOK THINGS OVER CAREFULLY

Before operating your Power Mulcher, look to see if your machine is in the proper condition. Are the beater chains or flail knives all in place? Are they worn? Is the blower wheel in operating condition? Is the work space clean? Is the fuel properly stored? Is all the bale twine 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

Power Mulchers all have one characteristic in common. Once the beater shaft starts spinning, simply turning off the machine will not stop the main shaft and blower wheel from spinning. 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 mulching, 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 blower can kick up dust and blow over small items that are not secure.

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 beater drum 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 discharge rocks, nails, or other debris that may damage blower or cause premature wear.

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

10 • Twine or wire should be cut and removed to prevent loose trailing ends from being pulled into the beater chamber.

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

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 boom operator, but also for access to the stacked mulch bales.

17 • Daily, inspect the flailing chains, blower wheel blades and drive coupling assembly for signs of wear or misalignment.

18 • Always make sure chain stations are replaced in matched pairs.

19 • The flailing chains are made of case hardened steel. If a link breaks, an unbalance or vibration will occur. Do not under any condition operate the machine when vibrating. Always make sure chain stations are replaced in matched pairs.

20 • Check the leading edges of the blower wheel paddles. Dry mulch causes very little wear, but dirt laden, wet or moldy material will abrade the leading edges of the paddles. When they begin to feather and bend back, replace the wheel. Rocks and other foreign matter found in some mulch bales may also cause bending of the wheel blades that may produce a noticeable vibration.

21 • The drive coupling connects the engine to the blower shaft. Coupling misalignment will cause vibration. Realign immediately should this occur.

22 • Secure the discharge boom latch before transporting the machine.

23 • The Power Mulcher is not a passenger vehicle. Never board the machine while moving from site to site.

24 • Do not tow without proper electrical connection to the tow vehicle.

25 • Never attempt to hitch machine without using leveling jack.

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

REINCO MODEL M-90

POWER MULCHER

OPERATION

MACHINE IN GENERAL

The **M-90** Series POWER MULCHER is a self-contained, portable machine designed to thrash hay or straw into short, uniform lengths and then blow the mulch strands at distances up to 100 feet.

Primary components, namely, the engine, blower housing, beater drum, and load tray are mounted to a rugged base frame. The frame structure has 7" side channels with 4" "I" beam cross supports for rigidity.

The operator's deck is accessible by a boarding ladder. A foam cushioned seat with safety belt allows the operator to nest safely in comfort.

An engine instrument control panel, mounted on the engine cowl, is in convenient reach of the operator. The panel includes ammeter, oil pressure and temperature gauges, with high temperature and oil pressure shut downs, hour meter, keyed ignition, kill switch and protective clear plastic weather shield. Other operational controls are mounted on the operator's handle bars and seat bracket. They include throttle, horn and conveyor speed control.

The discharge boom is manipulated by the operator. Gas cushioned counter balance springs assure easy vertical boom articulation. Cleats on the work deck provide footing for horizontal rotation through leg action.

Mulch is fed to the beater drum by way of an adjustable feed tray that can be extended up and over the tail gate of the towing vehicle. The number of bales delivered is regulated by a variable speed drag chain moving the bales past a separating rake. A flipper drum then discharges the flakes to the beater chamber.

Thrashing and debaling of the mulch flakes in the beater drum is accomplished by a series of beater chain stations. Air drawn into the beater drum, by the blower, sucks the thrashed stalks and strands through the beater drum and convey them under high static pressure and volume through the discharge boom.

OPERATING CONTROLS

The engine throttle control is mounted on the left handlebar. Fine (vernier) adjustments are made by turning the control knob. Depressing the center button allows quick adjustment of the engine RPM.

There are two control circuits located on the operators right handlebar.

The signal horn, concealed in the trailer tongue, is activated by a weather tight push button on the end right handle bar. This circuit serves the boom operator in signaling the vehicle driver. For example, 2 toots for forward and one toot to stop.

The other circuit is for the conveyor bale feed delivery system. A vernier control is located on the right handlebar to regulate the conveyor drag chain. Speed is adjusted by dialing the knob similar to the engine throttle control. Speed ranges from zero to max in infinite steps. In the event of a jam, sufficient to cause an overload, a pressure shut down valve will automatically by-pass the system flow. To reset the valve, the PTO must be disengaged. The hydraulic pump and beater shaft must stop rotating. The jam may be cleared. Re-pressurizing the hydraulic system will automatically reset the by-pass valve.

CAUTION ! NEVER ATTEMPT TO MAKE ADJUSTMENTS, PERFORM MAINTENANCE OR CLEAR JAMS WHILE THE MACHINGE IS RUNNING.

TOWING THE MULCHER

The tongue of the main frame of the machine has 4 position hitch plate, allowing hitch adjustment from 17½" to 26½" in 4½" increments. A 2½" ID lunette is installed on the hitch plate. This should connect to a pintle hook, mounted on the tow vehicle. It is important that the pintle hook is properly positioned on the towing vehicle.

1 • The machine's frame should be level for towing, as well as boom operator safety.

2 • The hitch should be located so that the truck bed overhang will not interfere with the load tray when in the retracted position.

3 • Provide adequate set back from the vehicle chassis frame so that jack knifing, when backing up, will not damage machine.

4 • Provide for securing the safety chains.

5 • Running lights are standard for over the road travel. They include stop, directional, tail, marker, and license plate. A 30" connector pig tail is included. This must be installed on the vehicle chassis to complete the recommended trailer hook up.

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.

IMPORTANT ! Periodically 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.**

PRE-OPERATION INSPECTION

Each machine is packaged for near immediate operation and is tested at the factory before shipping. Before starting, however, retrace the factory inspection procedures as follows:

1 • Crank case oil level

2 • Air cleaner assembly

3 • Fuel [check engine manual for proper fuel grade]

4 • Throttle and Control Cables

5 • Remove boom lock and actuate boom

6 • Battery connections (negative ground)

7 • On-off and start switch, instruments, horn

8 • Check feed tray height and drag chain adjustment

9 • Remove any debris from beater drum

10 • Inspect flailing chain stations

11 • Inspect hydraulic system fluid level and for leaks

12 • Check all screws for tightness

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 in increased engine life.

IMPORTANT ! The recommended first oil change for the John Deere 4:039T is at 50 hours operation.

STARTUP

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

The engine instrument panel is located on the upper portion of the engine cowl. The panel includes gauges (oil pressure, temperature, ammeter), safety shutdowns (lube oil, water temperature), hour meter, kill switch, and keyed ignition with Murphy® "Tattle-Tale" start button.

Prepare to start the engine by disengaging the clutch (PTO), by moving the lever away from the engine. Push or turn the throttle all the way in. Then turn the ignition switch to the right and at the same time hold the Murphy start button down. When the engine starts, keep the Murphy button down until the safety gauges are actuated. Allow the engine to warm up, while monitoring the gauges for normal operations. Increase the engine RPM to about 1000 by turning the throttle cable knob counter clockwise.

Be sure to make your test run in an open area.

CAUTION ! THE FORCE FROM THE BLOWER CAN KICK UP DUST AND BLOW OVER SMALL ITEMS THAT ARE NOT SECURE.

Before engaging the clutch, release the boom lock and point the boom in a direction where the blast is not objectionable. Then force the PTO lever slowly towards the engine to engage the clutch. Now "rev" the engine up to the max governor setting of 2400 and allow the engine to run for a while.

Again, check the gauges and tach. There should be no strange noises or vibrations under normal operations. If there is, shut the engine down and rectify the problem (Maintenance & Service page 21 - 38). If not, cut the throttle back to about 1200 RPM and disconnect the clutch. Then push the throttle in all the way and continue to idle for about 5 minutes and turn off.

OPERATING CAUTIONS

BE SURE ALL OPERATORS READ AND UNDERSTAND THE FOLLOWING OPERATIONAL PRECAUTIONS:

1 • Twine or wire should be cut and removed to prevent loose trailing ends from being pulled into the beater chamber.

2 • Never attempt to clear the beater drum of debris or make adjustments while the engine is running.

3 • Check the thrashing chains at the end of every days operation. The chains are made of case hardened steel. If a link breaks, an unbalanced vibration will occur. Do not, under any condition, operate the machine when vibrating. Always make sure chain stations are in matched pairs.

4 • Routinely inspect the drive coupling connecting the engine drive shaft to the blower shaft. Wear on the center member or coupling looseness will result from a vibration situation caused by an imbalance or misalignment due to overloading, obstruction or low quality mulch. Do not operate the unit until the coupling has been aligned or repaired.

5 • The engine has been set to a maximum operating speed of 2400 RPM. Do not exceed or set speed higher, as wear from excessive vibration may occur.

ENGINE OPERATING CAUTIONS

1 • The engine has been set to a maximum operating speed of 2400 RPM. Do not exceed or set speed higher, as wear from excessive vibration may occur.

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 45° angle for not more than 10 minutes.

MULCHING

Your new Power Mulcher Model M-90 will accept full mulch bales for thrashing and blowing. A bale placed on the load tray must first be untied and the wire or twine removed to prevent from being engorged by the machine.

The **M-90** is equipped with standard flailing chain stations and can blow mulch strands uniformly at distances to 100 feet in calm air. This may vary slightly depending on bale moisture content and the degree of decomposition.

This unit is rated at 20 tons per hour. Dry bales, with a count of 40 to the ton, would equate to 800 bales per hour, or thirteen bales every minute. Conversely, oversized or wet bales weighing as much as 100 pounds may require more time for processing.

In practical terms, the machine can distribute mulch at higher outputs depending on the grade (quality), moisture content, and age. "Clean" mulch will be thrashed and blown faster than will old moldy mulch with many foreign objects. Similarly, hay characteristically will not "mulch" as quickly as straw.

Every load of mulch varies one way or another and requires some human or mechanical adjustment. The machine is not programmed to do this for you.

IMPORTANT ! IT IS IMPERATIVE THAT COMMON SENSE AND GOOD JUDGMENT BE EMPLOYED WHEN OPERATING THIS MACHINE.

CAUTION ! BEFORE MULCHING, BE SURE TO READ THIS ENTIRE MANUAL.

A minimum crew of two men, not including the vehicle driver, is needed. To get maximum output perhaps as many as four or more men will be required. Their function would be primarily to get to the baled mulch to the machine and remove the twine or wire wrap.

The boom operator is the key man to the whole operation. He directs the placement of the mulch by properly positioning the discharge boom. In addition he has finger tip control of the amount of mulch he is blowing. He can regulate the speed of the feed conveyor by adjusting a remote dial knob mounted on the right handle bar. Engine RPM determines range. A remote vernier type throttle, located on the left handle, is provided for regulation.

CAUTION ! NEVER DISCHARGE THE UNIT TOWARDS PEOPLE. BODILY INJURY MAY OCCUR.

Naturally it is to the crews advantage to mulch with the wind to obtain the best possible range and minimize operator fatigue and discomfort. This is particularly true when applying tackifier emulsions.

A horn control switch is used to signal the vehicle driver. A simple signal system to stop and to proceed will serve to regulate truck movement to best advantage.
The men supplying the mulch to the machine must be coordinated. One should be delegated the prime responsibility of placing the mulch on the load tray, and making absolutely certain all wire or twine is removed. Also, to take maximum advantage of the flaking system the loader must keep the bale in one piece and not be allowed to crumble.

Some skill must be developed to pull the twine from the bale while keeping the bale intact and not allowing twine to wrap around fingers or enter the beater drum. Should twine get into the beater drum it will wrap around the shaft eventually restricting the flow of material to the blower.

Wire wraps are a particular problem if rusty. They seem to attach to the mulch as if glued. Because of this, removal may sometimes be difficult.

Blowing range and output is partially controlled by the throttle. A low engine speed will blow only a portion of the maximum range while top engine speed will provide the greatest range. As engine speed decreases, the loading rate will be decreased accordingly. This adjustment in output should be coordinated with position, and travel speed to achieve the desired application rate. The crew should quickly adapt to a comfortable routine that will be clearly recognizable in the increased productivity.

ANCHORING MULCH

Mulch can be either "glued down" with tackifier, held down with netting, or "cut" into the soil with an implement.

Originally, emulsified asphalt was predominantly used for holding mulch in place. Although contractors still utilize this oil based tackifier, is use is becoming less common due to high cost, environmental concerns, availability problems and the associated cleanup liabilities in congested areas. The emulsion spray system option is utilized to spray the tackifier into the discharged mulch as it is placed.
Alternative tackifiers are available in either liquid or powder form, yet both are always applied in a liquid state through a HYDROGRASSER or a similiar mixing/spraying apparatus.

A straw incorporator implement is similar to a disc harrow yet the coulter blades are not angled. By rolling the "crimper" over blown hay or straw mulch, the notched blades "punch" the mulch strands into the soil thus holding it in place. The "packer" then "locks" the crimps permanently anchoring the mulch. Contact your REINCO representative for more information on tackifiers and "crimping" implements.

OPTIONAL EMULSION SPRAY SYSTEM

A positive displacement gearotor style pumping system can be installed for applying asphaltic tackifiers such as SS-1 or RC-1. The pump is driven by a belt powered from the beater shaft and engaged by the PTO. The flow is directed to a spray pipe mounted at the boom. A flat jet nozzle on the end of the pipe directs a fan pattern discharge of emulsion into the air blast carrying the mulch from the boom. When tacking is not required the belts should be removed and stored.

Emulsified asphalt should have the viscosity of latex paint at 70 degrees fahrenheit. To maintain this viscosity at lower temperatures the system preheater uses engine exhaust to warm the emulsion.

The suction pick-up tube must be immersed and the pump primed to draw binder from a drum or other source. Emulsion can be sprayed directly with the mulch. To do so, the valve on the pressure side of the pump is set to feed the boom spray hose. The alternate position provides for by-pass or recirculation. When not in use the pick up tube is stored in a holder and the valves are closed.

APPLICATION RATES

The pump employed is rated at 35 gpm with a liquid, having a viscosity of 400 SSU. Normally specifications call for 150 to 200 gallons per acre. This means that under ideal conditions it would take about 6 minutes to pump enough oil to cover an acre. On an hourly basis, the pump could theoretically cover 10 acres.

The boom operator must develop skill in applying the proper quantity of emulsified asphalt based on the amount of mulch that is being placed. This is done visually and can be estimated rather closely by the black/grey color the over spray casts on the mulch.

There are many variables controlling the actual pump flow, such as:

1 • Temperature as related to viscosity.

2 • Engine RPM.

3 • Cleanliness of the system.

4 • Age and quality of the emulsion.

PRIMING FOR START-UP

To insure an adequate supply of liquid to the pump, the system must first be primed. This is done with about 5 gallons of waste oil cut with kerosene. Here are the steps to follow:

1 • Disengage PTO and stop engine.

2 • Remove pick-up tube from holder and place in a clean can or pail. Open boom valve.

3 • Uncap riser pipe mounted on pump discharge and fill to top with cut waste oil.

4 • Rotate pump in a clockwise direction by pulling the belt. As the level in the riser pipe falls, continue to add more oil. When oil discharges from the pick-up tube, into the can, stop rotating the pump. Then fill the riser pipe to the top and recap.

5 • Place the pick-up tube in the remaining oil of the 5 gallon pail. Support the tube so it doesn't fall over.

6 • Start the engine. Engage the PTO and run at about 1000 RPM.

7 • As the pump forces oil through the system, the entrained air will cause a squealing noise. After a few minutes this will cease. The system is now primed.

8 • Close the boom valve, drain and store the pick-up tube in its holder. Disengage the PTO.

CLEAN-UP

After use, the system must be flushed. Fuel oil or cutback waste oil should be used for this purpose.

Here are the steps to follow:

1 • Remove pick-up tube from the asphalt and drain into a container.

2 • Place pick-up tube into 5 gallon container of flushing liquid.

3 • Start engine. Make certain valves are open and the spray valve is in the by-pass position. Engage PTO and run at a slow idle for about 5 minutes.

4 • Point the boom toward a mulched or waste site area and open the spray valve momentarily to clear the spray pipe and nozzles of residual liquid. Alternately, a hose may be secured over the nozzle, allowing recovery of the flushing medium.

5 • Close boom valve, replace pick-up tube in holder, disengage PTO and turn engine off.

6 • Any excess coating should be wiped clean with fuel oil.

7 • Remove strainer element and clean before replacing.

8 • Remove belts and place in their storage position.

If emulsified asphalt is used, flush the pump and spray hose with fuel oil or with a 50/50 oil kerosene mix.

If water based tackifiers are used, flush system with clean water making particularly certain the strainer is unclogged. Follow the water flush with a 50/50 oil kerosene mix.

REINCO MODEL M-90

POWER MULCHER

MAINTENANCE AND SERVICE

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 service 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 the engine. 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 regarding 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 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.
.

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 TWO 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 TWO YEARS 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.

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.

BEATER CHAINS: The position of the beater chain station nearest the blower inlet will determine stalk length. Moving closer to the blower will shorten the stalks. Positioning too close to the inlet, however, will act as a restriction in getting mulch to the blower.

When processing coarse or green mulch or salt hay, a series of cutting knives should be installed in lieu of the two center stations. These are available in sets, with two link chains (part no. 83271120). These are not installed as standard because stalk length with average mulch hay would be much to short.

Beater chains should be inspected on a daily basis for wear. Failure to replace worn chains could lead to serious injury if "thrown". Failure to replace "thrown" chains will cause an imbalance on the beater shaft which may be evidenced by a noticeable vibration. Broken links of chain must be immediately replaced.

Always install in matched pairs. If one side of a chain station needs replacement the other side will need to be replaced shortly also.

Standard commercially available chain is not suitable for operation in the Power Mulcher. Use beater chain purchased from Reinco or a Reinco Authorized Dealer only!

There are four matched flailing stations. Starting from the feed tray, the first is 3 link, the next two 4 link and the final one 3 link. The first is positioned about 6" from the face of the beater drum and the last so that about 3 inches of clearance from the cone surface exists when the chain hangs vertically. The two center stations are equally spaced. Each station is oriented 90 degrees from the other.

One or both of the center stations may not be required depending on the mulch. With very dry and old material these can be removed.

BEATER SHAFT: If a foreign object such as a boulder or log enters the beater chamber it may bend the shaft. The only way to check this is to remove the shaft and have a machinist check for straightness. If the total run out should exceed .020", replace the shaft.

BLOWER WHEEL: The blower fan is keyed to the driven shaft with four square head set screws. Inspect these screws for tightness periodically and after the first twenty hours of use. If the fan becomes loose, reposition if necessary, then re-tighten screws. Screws can be accessed through blower outlet after discharge chute has been removed.

Wear of the wheel is evident when the leading edges of the blades begin to curl back. If a heavy object hits the paddles, bending and unbalance can occur. In either case, replace the wheel.

DO NOT ATTEMPT TO REPAIR THE BLADES.

DO NOT OPERATE THE MACHINE WITH A WORN WHEEL.

A WORN OR UNBALANCED BLOWER WHEEL IS DANGEROUS AND MAY CAUSE DEATH OR SERIOUS INJURY!

DEFLECTOR/ SCRAPER: Sometimes hay wraps around the shaft. This occurs because twine from the bales is not properly removed or when green or stringy mulch is used. A scraper is positioned on the beater drum wall to which the load tray is attached. Proper adjustment of the scraper will peel off mulch wrapped around the shaft, preventing a build-up at the bearing. This is an important setting because mulch passing the scraper may cause the bearing to overheat.

If this occurs, reposition the scraper so that a minimum of 1/64" or less clearance exists between the scraper and the shaft.

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 blower housing assembly has shifted to one side or the driven shaft has shifted at the end opposite the engine.

If misalignment is detected, determine whether to adjust the blower shaft 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 2400. If the max RPM exceeds 2400 readjust this setting.

The engine temperature and oil pressure gauges are also preset for shut down. If for any reason a change in these average settings is warranted, a contact screw on the face of the gauge may be readjusted.

FEED SYSTEM

FLIPPER LOAD TRAY: The tray assembly delivering mulch to the beater drum has two sections. The first tray pivots and is adjustable in height with a pair of manually actuated screw jacks. The slide or extension tray section has a spring loaded lock pin on the right side. When this is lifted and rotated the tray can be extended into position, with increments in which the pin will again lock. The tray may be adjusted to accommodate various bale heights and widths. See Feed System Adjustments, page 34, for more details on this subject.

CONVEYOR SPEED CONTROL: The bale conveyor hydraulics are actuated by a vernier control cable on the right operator's handlebar. Dialing the control knob will adjust the drag chain speed from zero to maximum. Pushing the center control knob button will allow for quick adjustment. With the blower PTO engaged, the control is regulated to provide a continuous supply of mulch to the blower. Periodically extend the control cable and lubricate the shaft with light oil.

HYDRAULIC SYSTEM COMPONENTS: Daily inspection includes checking hoses and fittings for leakage. Do not operate the feed 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.

DRAG CHAIN: The speed of the chain should be regulated to produce a uniform discharge of mulch. Too high a speed may cause a clog. Various types of mulch as well as differences in moisture content, will determine speed adjustment to insure trouble free mulching.

CONVEYOR CHAIN TAKE-UP: The drag chain is powered by a hydraulic motor. The chain must be properly tensioned. To maintain this, a take-up is positioned under the forward end of the load tray. It should be checked after 8 hours of operation and every 60 hours there after for snug and axial engagement. Do not over tighten and stretch the chain.

POWER FEED: If the conveyor drag chain stops, the automatic pressure relief valve has tripped. Disengage the power take-off and 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. The tilt limits on the resevior are 30° forward/back and 12° side to side.

BLOW RANGE: Check engine RPM. If not 2400, reset the governor control.

BOOM ROTATION: The bearing contacting surface may be dirty making it hard to turn. The top boom assembly must be disassembled, then clean or replace the bearing seal. Lubricate with a good quality bearing grease and reassemble.

BOOM SEALS: Inspect boom air seals (top and bottom) for wear from abrasion. Worn, cracked or softened air seals will cause discomfort to the boom operator. Replace as required. Side wipers secured to the boom pivot sweep the elbow to seal the sides. Continuous movement may flatten the wipers after some time. Remove the discharge boom and reset the wiper angle.

EMULSION SYSTEM

DRIVE BELT: The sides of the pump driver and driven sheaves must be in line for the belt to run true. Tensioning is maintained by adjusting the pump base tension bolt.

PUMP: The pump is equipped with sealed, lubricated bearings that should last virtually for the life of the pump provided the mechanical seal remains intact. For this reason it is necessary to use clean emulsions or binders and to flush the pump (including the spray system) after each use. The pump must be flushed daily with cut back oil to protect the close tolerance surfaces. Drain oil, or a 50% mixture of low grade motor oil with kerosene (or fuel oil) is adequate.

The relief valve is equipped with a spring adjustment range of 100 to 150 psi. The exact pressure setting is not critical, but it must be high enough to prevent chattering and by-pass. Discharge pressure increases when turning the adjusting screw in a clock-wise direction.

If the screw bottoms out and chattering persists, the viscosity is too high and liquid must be thinned.

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

The seal is replaced by removing the head and pulling the shaft, rotor and seal out as a unit. The seal is not replaced from the pulley end. Refer to disassembly and reassembly instructions .

PUMP MOUNT BEARINGS: Lubricate with oil every 50 hours.

STRAINER ELEMENT: The strainer has a 1/8" mesh element. It is sized to keep congealed lumps of asphalt from plugging the nozzle or valves. If the strainer basket is clogged, the pump can not draw fluid. Inspect the screen daily for possible obstructions from dirty emulsion.

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.

WINTERIZING AND STORAGE

When the season is over, a preventive maintenance plan for laying up the machine over the winter months will simplify spring start up.

1 • It is assumed that the entire unit will have been thoroughly cleaned and washed down both inside and out. Peeling paint or rusty spots should be scraped, primed and painted. The standard 100 hour check should be performed on the engine. Reference the specific engine manual for cold weather preparation.

2 • Remove the battery, fill and charge, and store in a dry, preferably warm area. Never store a battery directly on the ground or on concrete. Check battery charge at 90 day intervals.

3 • Lubricate all components as listed per the ***"MAINTENANCE SCHEDULE".***

4 • Any identified repairs should be performed now to simplify next season's start up.

5 • If the machine cannot be stored inside during the winter months, cover the entire unit to protect from the elements.

6 • Jack up trailer and place frame on stands to remove weight from tires. Never jack up or support unit or running gear components (springs, beam, shackles, etc.)

MAINTENANCE SCHEDULE

At the end of each job, clean residual materials spilled or over sprayed onto and around the machine. Clean dirt and chaff from the engine cooling fins and shroud.

FIRST 4 HOURS:
- CHECK ENGINE AND ALL MOUNTING BOLTS.
- CHECK COUPLING SET SCREWS.
- RETORQUE IF LOOSE.
- CHECK ENGINE CONTROLS.
- CHECK ENGINE FLUID LEVELS.

EVERY 4 HOURS:
- CLEAN AIR CLEANER ELEMENT.
- REPEAT FIRST 4 HOURS INSPECTION.
- CLEAN CHAFF FROM ENGINE RADIATOR SCREEN.

EVERY 20 HOURS:
- INSPECT FLAIL CHAINS AND BLOWER WHEEL.
- OIL THE THROTTLE AND CHOKE MECHANISMS.
- CLEAN AIR CLEANER ELEMENT.
- REPEAT THE FIRST 4 HOURS INSPECTION.

EVERY 40 HOURS:
- CHECK BATTERY ELECTROLYTES.
- CHECK AND SET ENGINE RPM TO 2400 MAXIMUM.

EVERY 100 HOURS:
- TUNE UP ENGINE.
- CHANGE ENGINE OIL.
- REPLACE AIR CLEANER CARTRIDGE.
- LUBRICATE BLOWER SHAFT BEARING.

DO NOT OVER GREASE BEARINGS!

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

DRIVE TRAIN REPAIRS

DRIVE TRAIN DISASSEMBLY

To replace a blower wheel or beater shaft:

1 • Disconnect battery.

2 • Prepare to disassemble machine by placing leveling supports under the rear bumper. Also place a floor jack underneath the fan housing (This will be required in the following steps).

3 • Disconnect feed motor and horn wiring and remove the 3/4" bolts attached to the rod end bearings and removing the hair pin cotters and clevis pins securing the jack to deck. Remove entire load tray and jack assembly with a sling and crane and place to the side.

4 • Loosen the beater shaft pillow block bearing locking collars. Loosen and remove the bolts securing the forward (beater drum side) bearing mount weldment. Remove the weldment and bearing as a unit from the shaft.

5 • Remove the four bolts connecting the beater drum to the base frame. Tilt and slide the beater drum forward until the end of the beater shaft is cleared. Remove this assembly from the trailer frame.

6 • Locate the floor jack under the forward face of the fan housing. Pump jack until the fan housing side sheet has raised 1/16". Remove the ten cap screws holding the side sheet to the fan housing. Slide the side sheet forward until the shaft is cleared and remove from the trailer frame.

7 • Loosen the fan side coupling flange. Move shaft and/or flange to allow removal of the coupling flex element (center member). Remove both the flexible element and driven coupling flange. Disconnect the flange bearing and remove from shaft.

8 • Using a sling and crane, remove the shaft and blower wheel assembly from the fan housing.

9 • The fan may now be removed from the beater shaft.

DRIVE TRAIN ASSEMBLY

1 • If a new blower wheel and/or beater shaft is being replaced, the blower wheel should be dynamically balanced with the shaft. Wheels shipped from the factory have been balanced, however they should be re-checked at assembly.

2 • Install the blower wheel and key on the shaft, using anti-seize compound. The fit should be tight and there should be no "slop" in the keyway. Be sure that the blades on the blower wheel are oriented so that the flat side rotates toward the blower discharge.

3 • Follow steps 2 through 8 (above) in reverse, hand tightening fasteners only.

4 • Securely tighten all fasteners except the pillow block and blower wheel set screws.

5 • Align the drive coupling per the instructions on page , then torque the bearing bolts and recheck the alignment.

6 • Center the blower wheel within the fan housing, and securely fasten, insuring there is adequate clearance. Then replace the beater chains as, and adjust the shaft scraper (see page 25).

7 • Start the unit and verify the there is no vibration at 2400 RPM. SHOULD VIBRATION EXIST, REMEDY BEFORE PLACING THE MACHINE BACK INTO SERVICE.

8 • Replace the coupling guard.

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.

6 • Check to insure that all fasteners are securely torqued and replace coupling guard.

MULCH LENGTH AND BEATER CHAIN ADJUSTMENT

Pairs of steel clamps secure the chains to the beater shaft by means of a pair of ½" bolts. The chains are of alloy steel, case hardened and mounted in pairs of four link stations. The first is mounted 6" from the beater drum face. Each station is set 90° from one another as viewed from the open end of the shaft.

The position of the chain on the beater shaft will determine the stalk length of the discharged mulch. The station nearest the blower inlet will determine stalk length. Moving closer to the blower will shorten the stalks. Positioning too close to the inlet, however, will act as a restriction in getting mulch to the blower. One or both of the stations farthest from the blower inlet may not be required, depending on the mulch. With very dry and old material these can be completely removed.

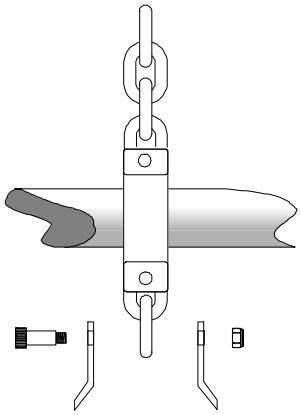
Chains do wear! Scheduled inspection should be made after every 40 hours as routine. If wet, moldy mulch is used, inspection should become a daily routine. The link chain used is case hardened (Grade 70) for wear resistance. On inspection, if an apparent groove is beginning to form between the mating links, the chain should be replaced in pairs.

When processing coarse or green mulch, or salt hay, a series of cutting knives should be installed instead of the 4 link station closest to the blower wheel. These are available in sets, which include mounting hardware for one station. (PART No. CH0643.21) *

These are not installed as standard equipment because stalk length with average mulch hay would be much to short.

To install the flail knives:

1 • Cut or burn the two outer links from the station closest to the blower wheel.



2 • Secure the knives as shown in the diagram to the left. One kit includes all parts required for one chain station.

Should the mulch be too fine, try removing one or both of the other stations. Also, try locating the knife assembly at another location.

*ALT (P/N 83271120 Knive Set - includes 2 Link Chains)

FEED SYSTEM ADJUSTMENTS

BALE SIZING

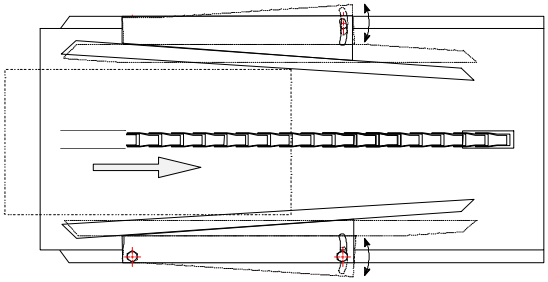
The most common bale size is 14"h x 18"w x 40-50" long, and weighs 40-65 pounds each depending on grade and moisture content. These bales are primarily found in the eastern United States. The "western" bales are somewhat larger and vary significantly (16"h x 18"w, 16"h x 22"w, 16"h x 25"w, 15"h x 22"w, 15"h x 23"w, all 40-50" long). The most common of these is the 16 x 22 size.

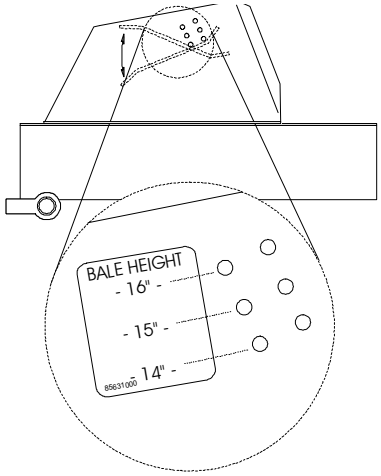
Bale sizes are determined by the baling machine used to process the mulch. Farmers typically try to achieve the largest bale size possible to facilitate their agricultural use. Not only may bale size change from supplier to supplier within a given area of the country, but also from a single source as they may very well operate multiple baling machines, each with different bale size settings.

It should be obvious that, to maximize the POWER MULCHER'S output, the feed system must be properly maintained and adjusted. Also, when purchasing mulch, be sure to obtain a load of homogeneous bale sizes. The cost of premium materials may very well be offset by the savings realized from increased productivity.

BALE WIDTH

Stop the engine before making these adjustments. Place a bale on to the conveyor tray and jog the bale forward until it just reaches the end of the bale guides. Evenly space the guides, while keeping the bale centered. Allow the guides to touch, but not compress, the bale sides. Then, securely tighten the guide bolts.





BALE HEIGHT ADJUSTMENT

Stop the engine before making these adjustments. Remove the flaker and stop bar. Place a bale into the flaker housing. Replace the flaker positioned so it lies level on top of the bale. Replace the flaker stop and securely fasten both items. The flaker should prevent the entire bale from lifting as the flipper turns. Run a few bales through the feed to assure proper adjustment.

CONVEYOR CHAIN TAKE-UP

Adjustment of the conveyor chain is required when the chain is stretched or slack. To adjust, loosen the hex nut used to retain the idler sprocket. Then tighten the take-up screw. The chain should be tensioned sufficiently to prevent mulch from being caught between the chain sprockets. Do not over tighten! Secure the jack screw retaining nut and idler sprocket retaining nut after chain is properly tensioned. If removed, replace the chain guard before operating the machine.

EMULSION PUMP SERVICE INSTRUCTIONS

VIKING PUMP
GG-195 HL-195

DISASSEMBLY

1 • Remove the head and O-ring gasket. Avoid tilting the head down, as the idler may slide off.

2 • Remove the idler from the idler pin. If the idler pin is worn, the head, idler pin and the idler bushing should be replaced. If the idler bushing is worn, it is strongly recommended that the idler and bushing be replaced.

3 • Remove the lock not from the shaft. A piece of brass rod or hardwood inserted in the port opening will keep the shaft from turning.

4 • The rotor and shaft can now be removed from the casing. The spring and rotary member of the mechanical seal will come out with the shaft.

5 • Loosen the two (2) set screws in the end of the bearing housing. Turn the housing counter clockwise and remove the casing. Remove the snap ring from the bearing housing to remove the double row ball bearing. Use a spanner wrench to remove the end cap.

6 • Remove the snap ring and casing ball bearing. The bearing retainer washer, located between the casing bearing and seal seat, can now be removed if it did not stay on the rotor shaft when the shaft was removed.

7 • The seal seat or stationary part of the seal can now be removed from the casing.

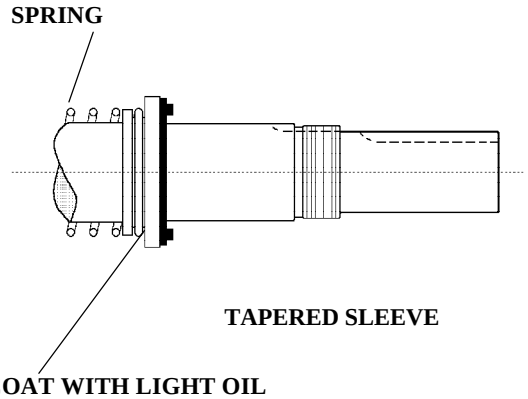
REASSEMBLY

1 • Installing New Mechanical Seal: This seal is simple to install and good performances will result if care is taken in its installation. Never touch the sealing faces with anything except the fingers or a clean cloth.

2 • Clean the rotor hub, shaft and seal seat housing in the casing, making sure they are clean and free from dirt and grit. Coat the outside diameter of the seal seat and the inside diameter of the seal housing bore with light oil. With thumb and forefinger, push the seal seat into place in the casing. Place the tapered sleeve (furnished with replacement seals) on the shaft as far as it will go. The small end must be toward end of shaft. Coat the inside of the rotary member and the outside of the tapered sleeve with light oil. Be sure the shaft is free of nicks and burrs. Place the spring and rotary member on the shaft, spring first, over the sleeve and against the hub of the rotor. REMOVE THE TAPERED SLEEVE

3 • .Flush the sealing faces of both the rotary member and seal seat with light oil and install rotor and shaft. Push the rotor and shaft into the casing slowly until the ends of the rotor teeth are just beyond the face of the casing.

MECHANICAL SEAL INSTALLATION



4 • Place the idler on the idler pin and the O-ring head gasket on the head. Place the head assembly on the pump and tighten the cap screws evenly and securely. The seal is now automatically compressed to its proper working length.

5 • Pack the single row ball bearing with grease and install in the casing and secure it with the snap ring.

6 • Pack the lubrication chamber between the casing ball bearing and the double row ball bearing in the bearing housing approximately half full with lithium base ball bearing grease.

7 • Pack the double row ball bearing with lithium base ball bearing grease and press into the bearing housing. Install the snap ring to hold the bearing in place.

8 • Start the bearing housing into the casing. Turn by hand until tight. This forces the rotor against the head. Replace and tighten the lock nut on the shaft. Insert a piece of brass or hardwood through the port opening between the rotor teeth to keep the shaft from turning

9 • Adjust the pump thrust bearing and rotor clearance by loosening the two set screws in the bearing housing and turn counterclockwise 1/2" measured on the outside of the bearing housing. This represents approximately .003" end clearance.

IMPORTANT! BE SURE THE SHAFT CAN BE ROTATED FREELY. IF NOT, TURN THE BEARING HOUSING COUNTERCLOCKWISE UNTIL THE SHAFT CAN BE TURNED. BE SURE SET SCREWS ARE TIGHTENED SECURELY AFTER ADJUSTMENT IS MADE. HIGH VISCOSITY LIQUIDS REQUIRE ADDITIONAL END CLEARANCE. THE AMOUNT OF END CLEARANCE DEPENDS ON THE VISCOSITY OF THE LIQUID BEING PUMPED.

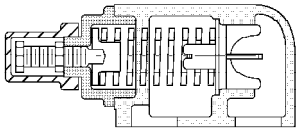
RELIEF VALVE PRESSURE ADJUSTMENT

1 • Remove the valve cap which covers the adjustment screw and loosen the lock nut which locks the adjusting screw. A pressure gauge somewhere in the discharge line must be used for accurate adjustment during operation. The adjusting screw should be turned in for increasing the pressure or turned out for decreasing the pressure.

2 • Should the pressure adjustments fail, then repair or replace the pump relief valve as follows:

3 • Reverse the preceding steps for reassembly. If valve is removed for repairs, be sure to replace in same position. The valve cap should point towards the suction port.

RELIEF VALVE ASSEMBLY



TROUBLE SHOOTING

SYMPTOM	POSSIBLE CAUSE	REMEDY	REF PAGE
POOR DISCHARGE RANGE	POOR ENGINE PERFORMANCE	SET ENGINE RPM TO 2400 RPM AT MAXIMUM THROTTLE.	26
		SERVICE ENGINE.	26
	LOW QUALITY WET,OR GREEN MULCH	BUY AND/OR USE BETTER MATERIALS.	17
	FEEDING MACHINE TO FAST	ADJUST FEED CHAIN SPEED	34
MULCH STRANDS TOO FINE	MULCH DRY OR OLD	ADJUST FLAILING CHAIN STATION LOCATIONS.	33
MULCH STRANDS TO LONG	MULCH GREEN OR COARSE	ADJUST FLAILING CHAIN STATION LOCATIONS.	33
		ADD FLAILING KNIVES.	33
CHAINS NOT "FLAILING" MULCH	MULCH WET, GREEN OR COARSE	ADJUST FLAILING CHAIN STATION LOCATIONS.	33
		ADD FLAILING KNIVES.	33
	TWINE OR WIRE WRAPPED AROUND BEATER SHAFT	REMOVE OBSTRUCTION.	16
	MULCH WRAPPING BEATER SHAFT	ADJUST BEATER SHAFT SCRAPER.	25
BALES NOT FLAKING	FLAKER ARM TOO HIGH	ADJUST FLAKER ARM.	34
BALES JAMMING IN FEED TRAY	WET, MOLDY MATERIALS	SLOW FEED RATE.	26
	FLAKER AND OR TRAY GUIDES NOT PROPERLY ADJUSTED.	ADJUST FLAKER/TRAY GUIDES.	34
FEED CHAIN TO FAST	SPEED SETTING TOO HIGH	ADJUST SPEED CONTROL.	26
FEED CHAIN TO SLOW	SPEED SETTING TOO LOW	ADJUST SPEED CONTROL.	26
FEED CHAIN STALLING UNDER LIGHT LOAD	FLAKER ARM TOO LOW	ADJUST FLAKER ARM.	34
FEED CHAIN WON'T ADJUST	CHAIN STRETCHED	REPLACE FEED CONVEYOR CHAIN.	34
FEED MOTOR DOES NOT RUN	TRAY JAMMING	SHUT UNIT DOWN, ADJUST FLAKER AND GUIDES.	34
	HYDRAULIC OIL LEVEL LOW	SERVICE HYDRAULIC RESEVIOR. CHECK LINES AND FITTINGS FOR LEAKS.	27
	HYDRAULIC OIL FOAMING	CHECK OPERATING LEVEL OF MACHINE (30° F/B, 12° S/S).	27
ENGINE WON'T START	AIR CLEANER RESTRICTION	SEVICE AIR CLEANER ELEMENT.	30
	FUEL RESTRICTION	SERVICE FUEL FILTER.	
		SERVICE FUEL LINES AND BLEED INJECTORS.	
	ELECTRICAL FAILURE	INSPECT INTRUMENT PANEL FUSES.	14
		REPLACE MURPHY® COMPONENTS IF FAILED.	14
ENGINE OVERHEATS	RADIATOR CORE RESTRICTED	CLEAN RADIATOR CORE.	17
		SERVICE CHAFF SCREEN.	17
	AIR CLEANER RESTRICTION	SEVICE AIR CLEANER ELEMENT.	30

SYMPTOM	POSSIBLE CAUSE	REMEDY	REF PAGE
NOTICABLE VIBRATION	BEATER CHAIN LINK THROWN	REPLACE BEATER CHAIN IN MATCHED SETS.	24
	COUPING OUT OF ALIGNMENT	INSPECT AND RE-ALIGN AS REQUIRED.	25
	BLOWER WHEEL OUT OF BALANCE OR WORN	INSPECT AND REPLACE IF NECCESSARY.	25
	BENT BEATER SHAFT	INSPECT SHAFT RUN OUT. IF IT EXCEEDS .020", REPLACE.	25
	BEARING FAILURE	INSPECT AND REPLACE AS REQUIRED.	24
COUPLING ALIGNMENT NOT MAINTAINABLE	BEARING FAILURE	INSPECT AND REPLACE AS REQUIRED.	24
	BENT BEATER SHAFT	INSPECT AND REPLACE AS REQUIRED.	25
	BLOWER WHEEL WORN	INSPECT AND REPLACE AS REQUIRED.	25
BOOM IS DIFFICULT TO ROTATE	SLEW BEARING DIRTY	CLEAN AND SERVICE BEARING ASSEMBLY.	27
	AIR SEAL BLOWN OUT	CLEAN AND SERVICE BEARING ASSEMBLY.	27
	WORN BEARING BALLS	CLEAN AND SERVICE BEARING ASSEMBLY.	27
	WORN BALL RACE	REPLACE SLEW BEARING.	27
BOOM IS DIFFICULT TO RAISE	COUNTER BALANCE SPRINGS WORN	REPLACE GAS SPRINGS.	44
EXCESSIVE BLOW BACK OF CHAFF	AIR SEALS WORN	SERVICE AIR SEALS, REPLACE IF WORN.	28
	DEFLECTORS DEFORMED	REMOVE BOOM, ADJUST SIDE DEFLECTORS.	28

REINCO MODEL M-90

POWER MULCHER

PART PICTORIALS

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.

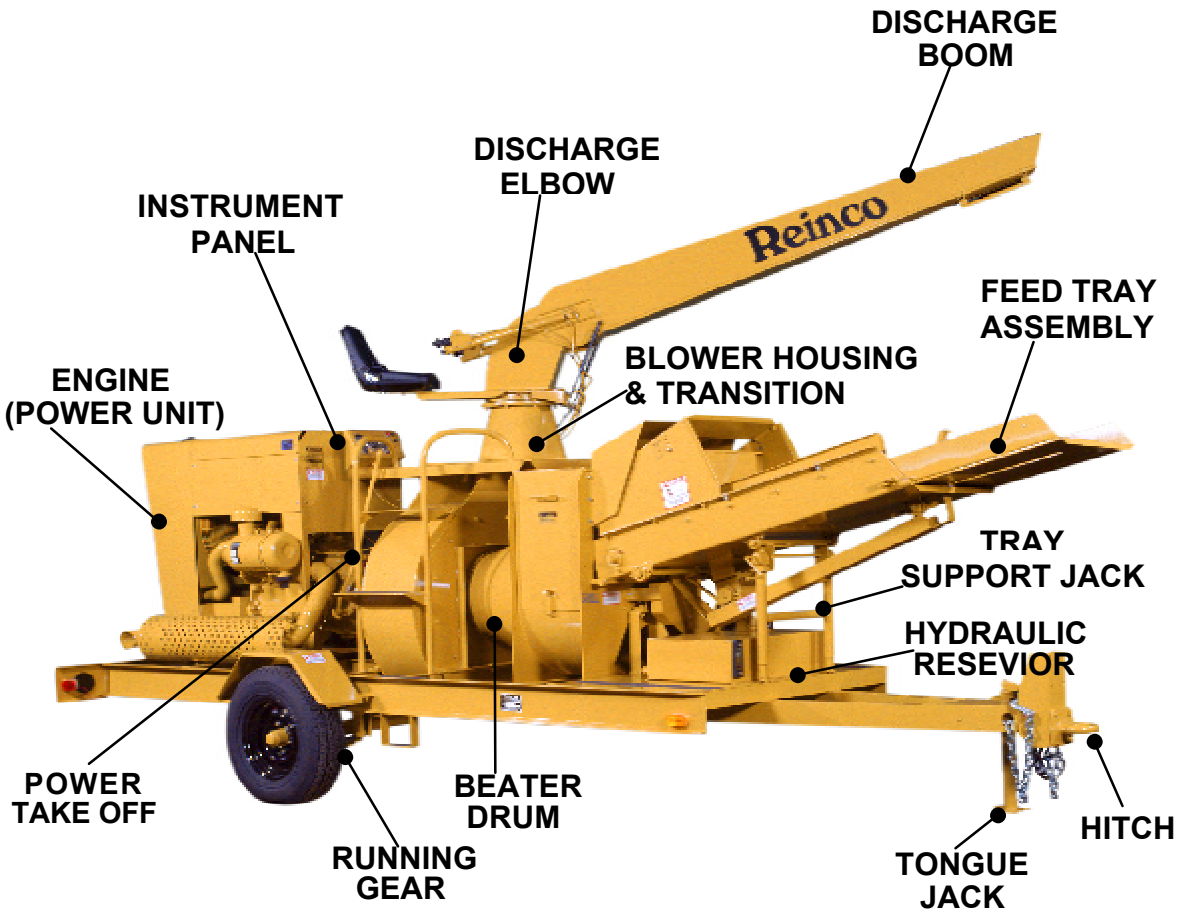
Should you require assistance with regard to locating these agencies, contact your **REINCO** dealer or **REINCO** directly.

OPERATION PARTS AND SERVICE MANUALS

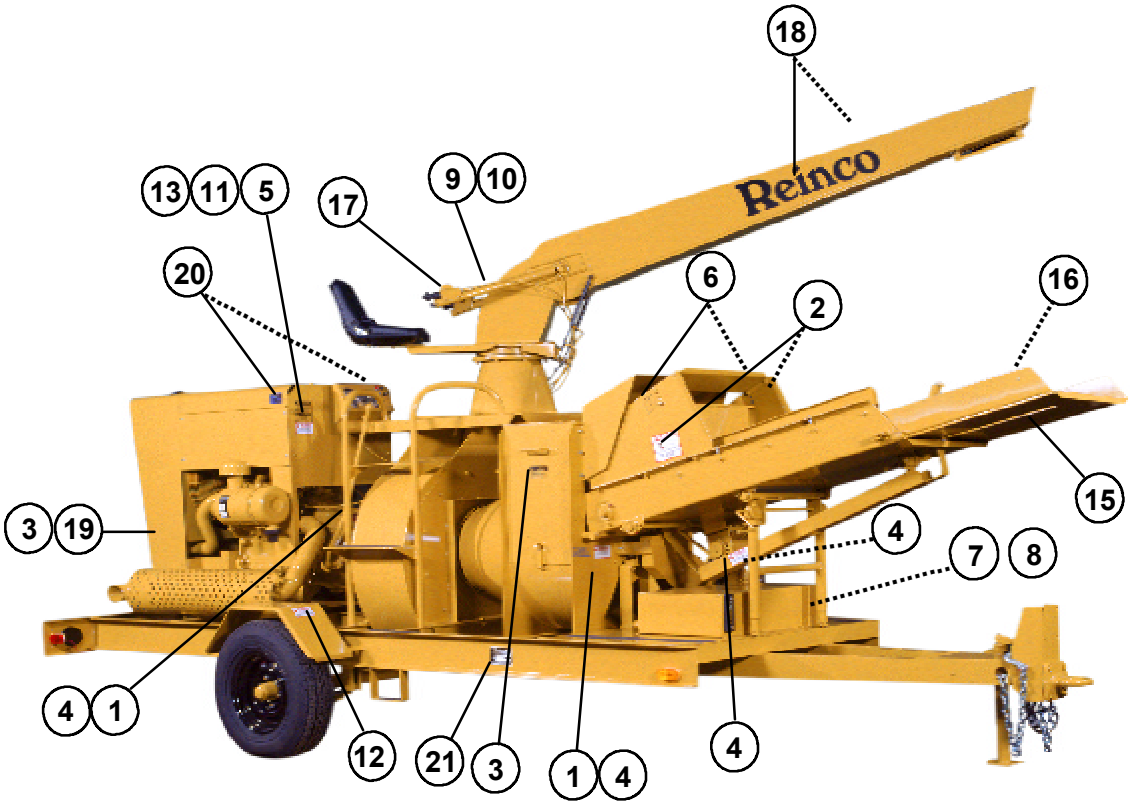
Additional user manuals may be ordered by part number pursuant to the following table:

MANUAL PART NO.	MACHINE DESCRIPTION
00902000	Power Mulcher Safety Manual Common for All Reinco Mulchers
85000900	M-90 Series, All Serial No.'s
EN3258.91	JD4039T Operations Manual OMRG-18293-C3
EN3258.90	JD4039T Parts Catalogue PC-2305
AX5110.51	Axle Service Manual 100-M
CL8065.01A	Power Take-off Manual 2-35278

NOMENCLATURE



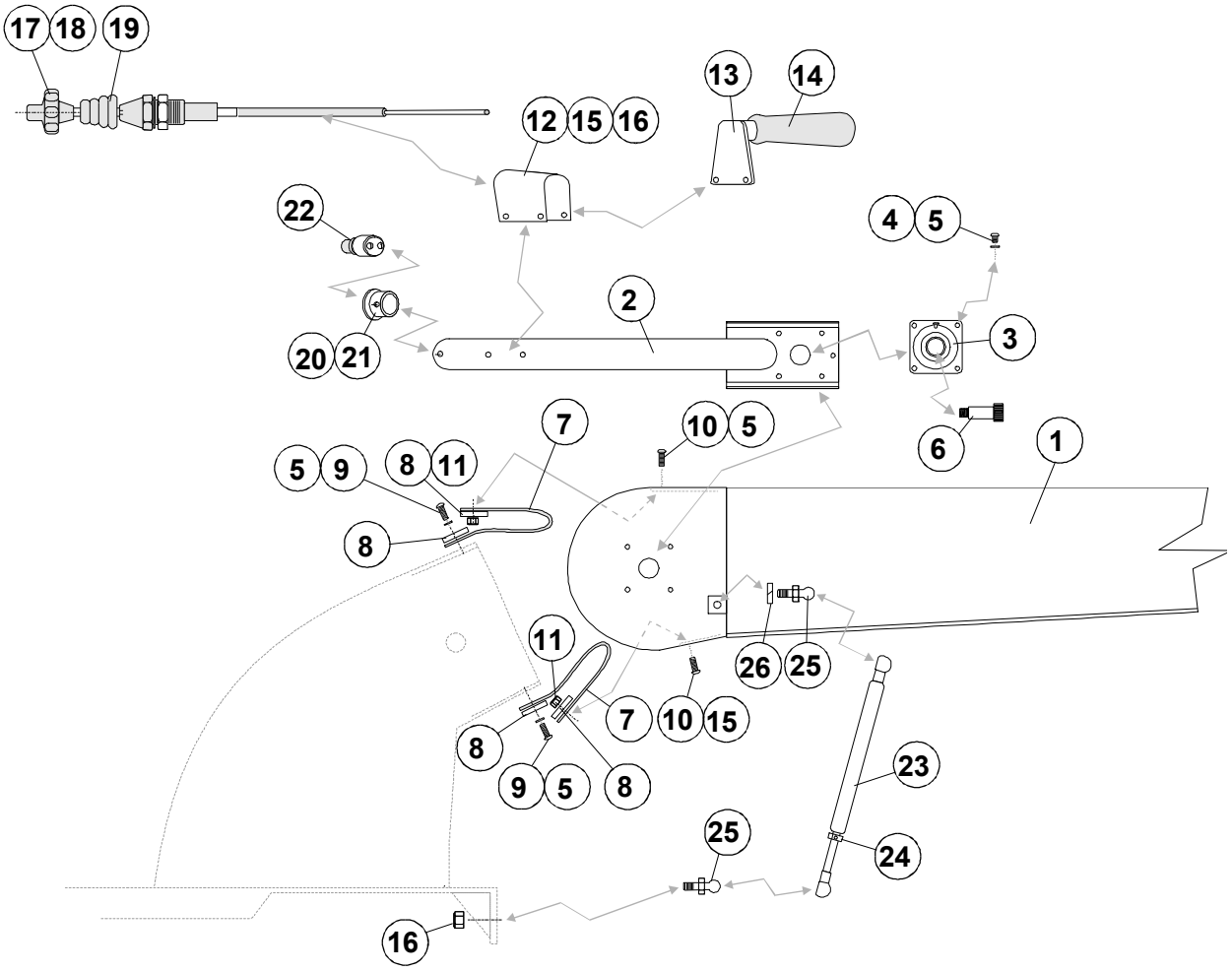
DECALS - EQUIPMENT LABELING AND APPLIQUÉS



DECALS - EQUIPMENT LABELING AND APPLIQUÉS

ITEM	PART NUMBER	DESCRIPTION	QTY
	00902090	M90 SAFETY DECAL KIT - STANDARD (Includes Items 1 - 13)	1
	00900291	M90 SAFETY DECAL KIT - NO FEED (Exclude Items 2, 6, 7, 8)	1
1	00191000	DECAL, BEARING LUBRICATION	2
2	30008200	DECAL, 'DANGER' BALE TIES	2
3	00211020	DECAL, 'CAUTION' STOP MACHINE	2
4	00211030	DECAL ' WARNING' GUARDS	4
5	85591000	DECAL, 'CAUTION' 2400 RPM	1
6	85631000	DECAL, BALE HEIGHT	2
7	00261000	DECAL, 'DANGER' HYDRAULICS	1
8	00183000	DECAL, 'HYDRAULIC FLUID'	1
9	00301000	DECAL, HEARING PROTECTION	1
10	85000810	DECAL, OPERATING INSTRUCTIONS	1
11	00291000	DECAL, 'WARNING' VIBRATION	1
12	00281000	DECAL, 'WARNING' WHEEL TORQUE	2
13	00271000	DECAL, EQUIPMENT TRAINING	
14	SA0101.90	ANTI-SLIP TAPE KIT	1
15	TA2012.09	TFE/FBR GLASS TAPE 3/4" x FT (TRAY SLIDE)	17
16	TA2012.20	TFE/FBR GLASS TAPE 2" x FT (CHAIN GUIDE)	4
17	83592020	DECAL, HORN/FEED	1
18	ID2625.03	APPLIQUE - REINCO LOGO	2
19	00182000	DECAL, 'DEISEL FUEL' ONLY	1
20	00241000	DECAL, 'NOTICE' - REINCO SALES & SERVICE	2
21	ID2600.11	SERIAL NUMBER NAME PLATE	1

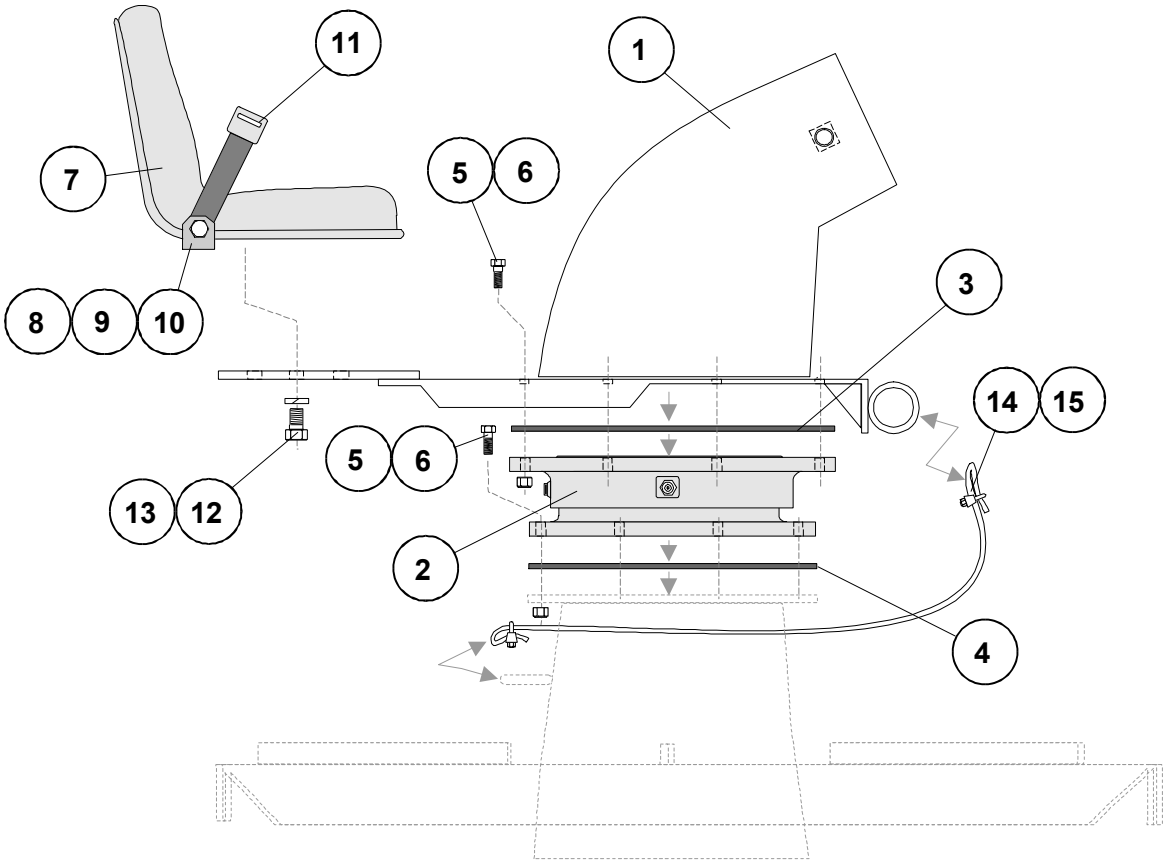
DISCHARGE BOOM DETAILS



DISCHARGE BOOM DETAILS

ITEM	PART NUMBER	DESCRIPTION	QTY
1	85102010	DISCHARGE BOOM	1
2	85053010	BOOM HANDLEBAR	2 R/L
3	BE0318.02	PIVOT BEARING	2
4	FA2153.04	5/16 - 24 x ½" BUTTON HEAD SCREW	8
5	FA0340.02	5/16 INTERNAL LOCKWASHER	
6	FA1189.22	3/4 x 2¼ SOCKET SHOLDER BOLT	2
7	85042010	AIR SEAL 6-5/8 x 12-3/4	2
8	85042030	SEAL HOLD DOWN STRIP	4
9	FA2153.05	5/16 - 24 x 5/8" BUTTON HEAD SCREW	8
10	FA2153.06	5/16 - 24 x3/4" BUTTON HEAD SCREW	8
11	FA2244.02	5/16 - 24 NYLON INSERT JAM NUT	8
12	83581000	CONTROL CABLE MOUNTING	2 R/L
13	85051020	HANDLEBAR GRIP ASSEMBLY	2 R/L
14	HA6010.01	HANDGRIP	2 R/L
15	FA2128.22	5/16 - 18 x 2¼" HEX HEAD SCREW	4
16	FA1241.02	5/16 - 18 NYLON INSERT NUT	
17	CO6270.00	THROTTLE CONTROL CABLE ASSEMBLY	1 R
18	CO6271.00	FEED CONTROL CABLE ASSEMBLY	1 L
19	CO6120.05	CONTROL CABLE BELLOWS	2
20	85731000	HORN SWITCH MOUNTING	1
21	FA1131.06	10-32 x 3/8" SLOTTED ROUND HEAD SCREW	1
22	EL2101.01	HORN SWITCH - PUSHBUTTON WITH CAP	1
23	SP7510.01	BOOM COUNTERBALANCE SPRING	2
24	BU7330.10	STOP COLLAR - SPLIT	2
25	SP7510.02	BALL STUD 13mm x 5/16 - 18 WITH RETAINER	4
26	FA0330.02	5/16" SPLIT LOCKWASHER	2

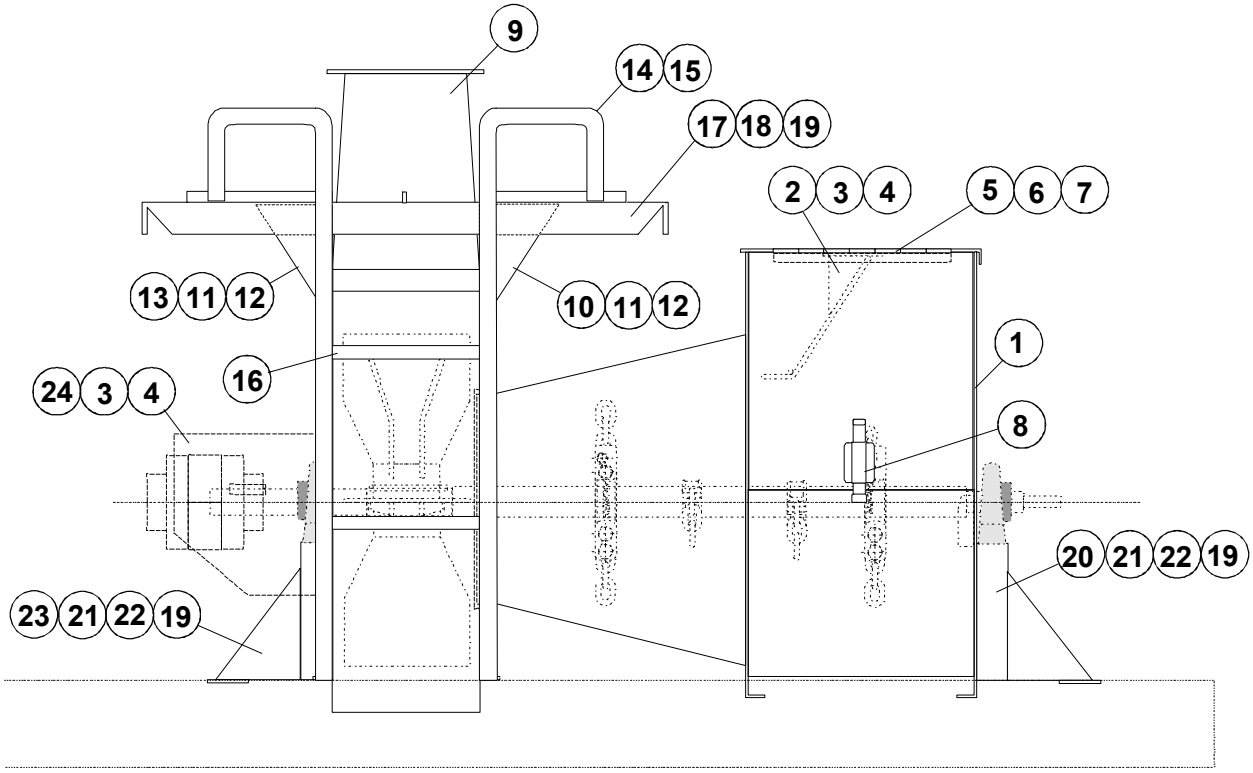
DISCHARGE ELBOW DETAILS



DISCHARGE ELBOW DETAILS

ITEM	PART NUMBER	DESCRIPTION	QTY
1	**85022000**	**DISCHARGE ELBOW**	1
2	84011000	SLEW BEARING ASSEMBLY	1
2.1	SE0551.17	BEARING AIR SEAL	1
2.2	BA5503.90	BALL BEARING ½" GRADE 200	80
3	GA7001.12	GASKET 1/8" x 16" x 12¼" ID	1
4	GA7001.11	GASKET 1/8" x 16-3/4" x 13¼" ID	1
5	FA1124.11	3/8 - 16 x 1¼" HEX HEAD SCREW	16
6	FA1241.03	3/8 - 16 NYLON INSERT NUT	16
7	SE0002.00	OPERATOR SEAT	1
8	SE0002.04	SEAT BELT BRACKET	1
9	FA1123.10	5/16 - 18 x 1" HEX HEAD SCREW	4
10	FA0330.02	5/16" SPLIT LOCKWASHER	4
11	SE0002.10	SEAT BELT	1
12	FA1126.11	½ - 13 x 1¼" HEX HEAD SCREW	1
13	FA0330.04	½" SPLIT LOCKWASHER	1
14	HA7118.03	SWING STOP CABLE 3/16" x FT	3
15	HA7130.03	CABLE CLIP 3/16" GALV.	2

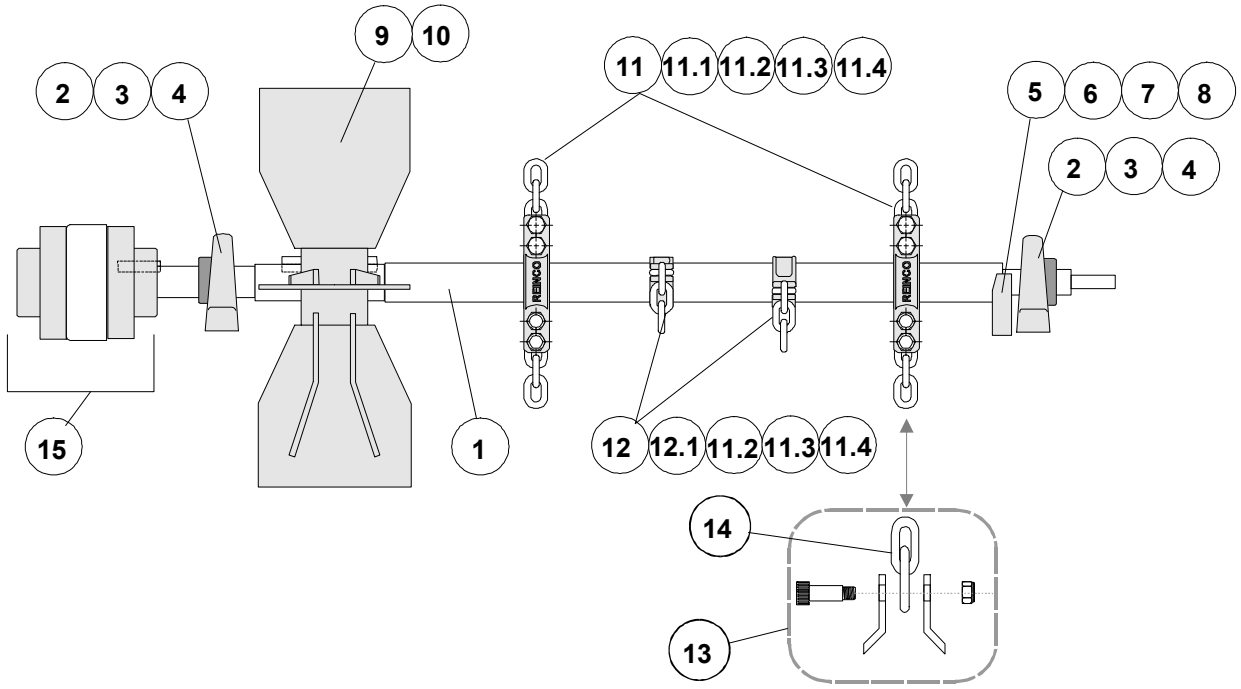
LOWER UNIT ASSEMBLY



LOWER UNIT ASSEMBLY

ITEM	PART NUMBER	DESCRIPTION	QTY
1	85204000	BEATER DRUM	1
2	85192000	BALE DEFLECTOR	1
3	FA1124.10	3/8 - 16 x 1" HEX HEAD SCREW	4
4	FA1241.03	3/8 - 16 NYLON INSERT NUT	4
5	HA7120.01	ACCESS DOOR HINGE	1
6	FA1122.05	¼ - 20 x 5/8" HEX HEAD SCREW	4
7	FA1241.01	¼ - 20 NYLON INSERT NUT	4
8	HA7106.00	ACCESS DOOR LATCH BOLT	1
9	85311000	BLOWER HOUSING/TRANSITION ASSEMBLY	1
10	85364000	DRUM SIDE BLOWER END SHEET	1
11	FA1126.10	½ - 13 x 1" HEX HEAD SCREW	
12	FA0330.04	½" SPLIT LOCKWASHER	
13	85334000	DRIVE SIDE BLOWER END SHEET	1
14	85342010	FORMED LADDER RAIL	2
15	FA1241.05	5/8 - 11 NYLON INSERT NUT	4
16	85342020	LADDER STEP	2
17	85224000	BOOM PIVOT DECK	1
18	FA1126.12	½ - 13 x 1¼" HEX HEAD SCREW	4
19	FA1241.04	½ - 13 NYLON INSERT NUT	4
20	85385000	DRUM SIDE BEARING MOUNT	1
21	FA1126.11	½ - 13 x 1¼" HEX HEAD SCREW	
22	FA0322.04	½" BEVEL WASHER	
23	85376000	BLOWER SIDE BEARING MOUNT	1
24	85923000	COUPLING GUARD	1

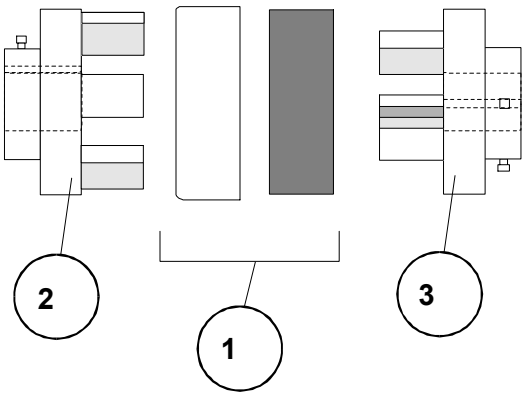
DRIVE TRAIN COMPONENTS



DRIVE TRAIN COMPONENTS

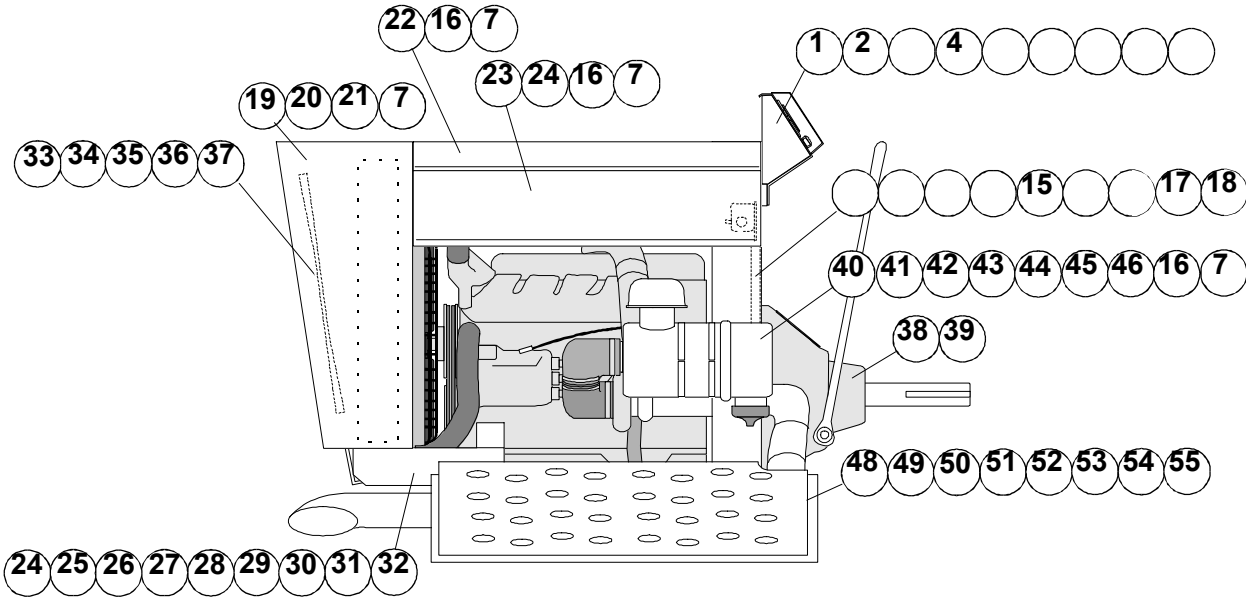
ITEM	PART NUMBER	DESCRIPTION	QTY
1	85303000	BEATER SHAFT	1
2	BE0280.02	SHAFT BEARING 2" HD	2
3	FA2128.22	5/8 - 18 x 2¼" HEX HEAD SCREW	4
4	FA2241.05	5/8 - 18 NYLON INSERT NUT	4
5	83271000	SHAFT SCRAPER	
6	FA1124.10	3/8 - 16 x 1" HEX HEAD SCREW	2
7	FA1241.03	3/8 - 16 NYLON INSERT NUT	2
8	FA0320.03	3/8 FLATWASHER	2
9	BL6040.03	BLOWER WHEEL	1
10	KE9003.20	KEY ½" x 5" BER	1
11	83271030	BEATER CHAIN STATION 3 LINK	2
11.1	CH0642.43	CHAIN 3 LINK GR 70 CASE HARDENED	2/STA
11.2	83251010	FORGED BRACKET	2/STA
11.3	FA2126.20	½ - 20 x 2" HEX HEAD SCREW	4/STA
11.4	FA2241.04	½ - 20 NYLON INSERT NUT	4/STA
12	83271040	BEATER CHAIN STATION 4 LINK	2
12.1	CH0642.44	CHAIN 4 LINK GR 70 CASE HARDENED	2/STA
13	CH0643.21	FLAIL KNIFE KIT WITH HARDWARE	OPT
14	CH0642.42	CHAIN 2 LINK GR 70 CASE HARDENED	OPT
OPT	83271120	BRACKET CHAIN KNIFE ASSEMBLY	1/STA
15	CO8446.60X	DRIVE COUPLING ASSEMBLY (REF: pg.52)	1

DRIVE COUPLING



ITEM	PART NUMBER	DESCRIPTION	QTY
	C08446.60X	**DRIVE COUPLING ASSEMBLY** (COMPLETE ITEMS 1 - 3)	
1	CO8446.45	CENTER MEMBER WITH RING	1
1.1	CO8446.43	CENTER MEMBER ONLY	1
1.2	CO8446.44	METAL RING ONLY	1
2	CO8446.61	FLANGE 2¼" B 5/8" KW (PTO)	1
3	CO8446.62	FLANGE 2" B ½" KW (BTR)	1
4	KE9005.02	KEY 5/8" x 4-7/8" BER (PTO)	1
5	KE9003.22	KEY ½" x 2-3/8" BER (BTR)	1

ENGINE COMPONENTS



ENGINE COMPONENTS

UNIT SERIAL: 7950 - CURRENT

ITEM	PART NO.	DESCRIPTION	QTY
1	02431000	INSTRUMENT PANEL	
1.1	02440010	PANEL - FRONT	1
1.2	02441020	PANEL COVER - REAR	1
1.3	FA1132.06	¼ - 20 x ¾" ROUND SCREW	2
2	02471000	PANEL COVER - LEXAN	1
2.1	HA7122.04	HINGE	1
3	FA0640.18	RIVET 1/8 x 3/16"	8
4	85761000	ENGINE WIRING HARNESS	1
5	EL2301.10	COWLING GROMMET	1
6	FA1124.12	3/8 - 16 x 1¼" HEX SCREW	2
7	FA1241.03	3/8 - 16 NYLON INSERT NUT	
9	FA1122.06	¼ - 20 x ¾" HEX SCREW	2
10	FA1241.02	¼ - 20 NYLON INSERT NUT	2
11	85886020	B HSG COWL ENCLOSURE	1
12	85813020	B HSG ENCL. MOUNT LH	1
13	85813030	B HSG ENCL. MOUNT RH	1
14	85813010	ENCL. SUPPORT LOWER	2
15	85833030	REAR ENGINE MOUNT	2
16	FA1124.06	3/8 - 16 x ¾" HEX BOLT	
17	FA1126.11	½ - 13 x 1¼" HEX BOLT	4
18	FA0330.04	½ SPLIT LOCKWASHER	4
19	85865000	RADIATOR ENCLOSURE	1
20	SH6060.10	STUD BUMPER	2
21	FA1124.10	3/8 - 16 x 1" HEX BOLT	
22	85886010	TOP COWL ENCL. COVER	1
23	85844000	COWL SIDE PANEL	2
24	85803010	RADIATOR SUPPORT LH	1
25	85803020	RADIATOR SUPPORT RH	1
26	85833010	ENGINE MOUNT - FRONT	2
27	FA1128.24	5/8 - 11 x 2¾" HEX BOLT	2
28	FA1241.05	5/8 - 11 NYLON INSERT NUT	2
29	FA1128.15	5/8 - 11 x 1½" HEX BOLT	2
30	FA0440.24	½ - 13 x 24" THREADED ROD	1
31	FA1221.04	½ - 13 STANDARD HEX NUT	2
32	FA1241.04	½ - 13 NYLON INSERT NUT	2
33	85173000	RADIATOR DEBRIS SCREEN	1
34	85873000	FILTER HOLD DOWN	2
35	FA1112.06	¼ - 20 SHLDR WING SCREW	4
36	FA0390.01	¼ NYLON FLATWASHER	4
37	FA1281.02	¼ - 20 BLIND NUT	4
38	CL8063.21	POWER TAKE-0FF SAE #3	1
39	85181000	CLUTCH HANDLE - FORMED	1
40	FI0100.80	AIR CLEANER FWG08-0026	1
41	FI0100.82	CAP GAX-00-2014	1
42	FI0100.83	MOUNTING BAND P00-4307	2
43	FI0150.30	3" x 90° ELBOW	2
44	EX3040.30	TUBE 3"/FT	.25
45	FI0180.30	HOSE CLAMP 3" #52	4
46	FI0100.55	VACUATOR VALVE	1
47	EX3000.42	MUFFLER 4" x 4" x 8½"	1
48	EX3080.10	EXHAUST SHIELD	1
49	EX3080.11	MUFFLER CLAMP 8½"	1
50	EX3022.42	TAIL PIPE	1
51	EX3050.42	FLEX TUBE 4"	.33
52	EX3060.40	EXHAUST CLAMP 4"	2
53	EX3062.40	LAP CLAMP 4"	1
54	85782020	TURBOCHGR ADPT ELBOW	1
55	EX3063.30	TURBO VEE CLAMP 3"	1
56	TA6053.00	FUEL TANK 33 GALLON	1
57	TA6036.02	FUEL INLET STRAINER	1
58	TA6053.03	TANK TIE DOWN	2
59	TA2010.12	FELT TAPE 1/8" x 1" x FT	1.2
60	HO7306.10	FUEL HOSE 3/8" x FT	4
61	HO7748.66	FTTG 3/8" HS x 3/8" FM FLR #1006B-406	1
62	HO7790.33	FTTG 3/8" HS x 1/8" NPT x 90 #1006B-C02	1
63	HO7746.32	FTTG 3/8" FLR x ¼" NPT #48X6	1
64	HO7302.51	FUEL HOSE ¼" x FT	1
65	HO7746.20	FTTG ¼" TB x ¼" HOSE #KA04-04RL	1
66	HO7746.23	FTTG ¼" HS x ¼" FM FLR #KA04-04NL	1
67	HO7747.23	FTTG ¼" FLR x 3/8" NPT x 90 #49-F	1

ENGINE COMPONENTS

UNIT SERIAL 7950 - CURRENT

ITEM	PART NUMBER	DESCRIPTION	QTY
	EN3258.53	**ENGINE - JOHN DEERE 4039T (SAE #3)**	**1**
		CODE: 1104, 1201, 1308, 1421/1425, 1505, 1602, 1718, 1908, 2026, 2109, 2208, 2413, 2818, 3007, 3115, 3906, 4006, 4499, 5909, 6202, 6506	
	EN3258.65	RADIATOR KIT (K1004454A)	1
	EN3258.65E	RADIATOR SUPPORT KIT (RE15938)	1
	EN3258.65A	RADIATOR HOSE - UPPER (R54534)	1
	EN3258.65B	RADIATOR HOSE - LOWER (FM59)	1
	EN3265.47	FAN SPACER (R91585)	1

UNIT SERIAL 7903 - 7949

ITEM	PART NUMBER	DESCRIPTION	QTY
	EN3258.52	**ENGINE - JOHN DEERE 4039T (SAE #3)**	**1**
		CODE: 1104, 1201, 1308, 1421/1425, 1505, 1602, 1718, 1904, 2004, 2102, 2204, 2401, 2819, 2902, 3007, 3114, 3901, 4502, 6506	

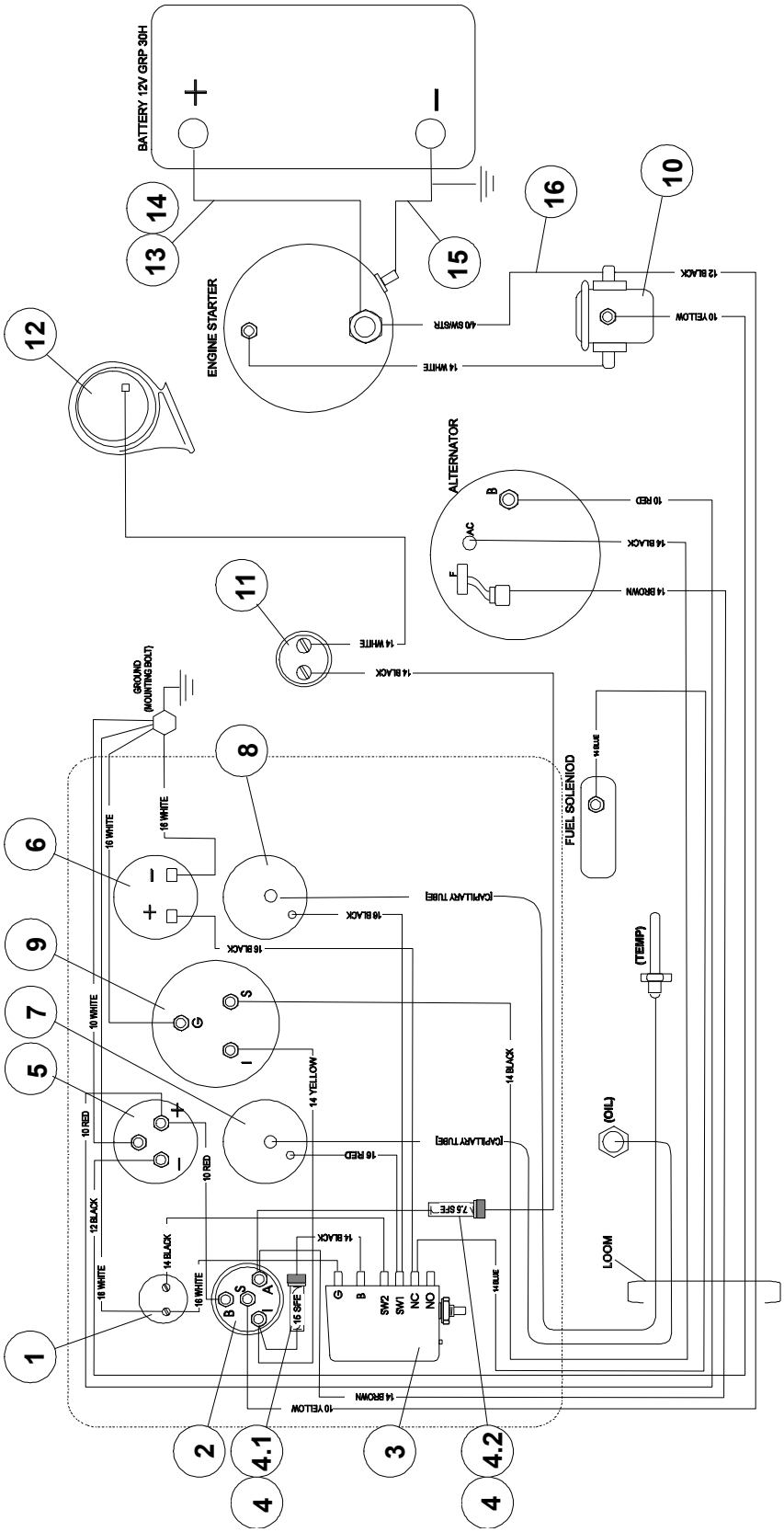
UNIT SERIAL 7900 - 7902

ITEM	PART NUMBER	DESCRIPTION	QTY
	EN3258.51	**ENGINE - JOHN DEERE 4039T (SAE #4)**	**1**
		CODE: 1104, 1201, 1302, 1401, 1501, 1602, 1904, 2004, 2102, 2204, 2402, 2902, 3001, 3101, 4502, 6506	
	EN3258.60	RADIATOR KIT (RE212428)	1
	EN3258.61	RADIATOR SUPPORT KIT (RE20477)	1
	EN3258.77	RADIATOR HOSE - UPPER (R81912)	1
	EN3258.78	RADIATOR HOSE - LOWER (R61433)	1
	EN3258.57	FAN SPACER (R18911)	1

ALL UNITS

ITEM	PART NUMBER	DESCRIPTION	QTY
	EN3258.56	SUCTION FAN 21" (AR98090)	1

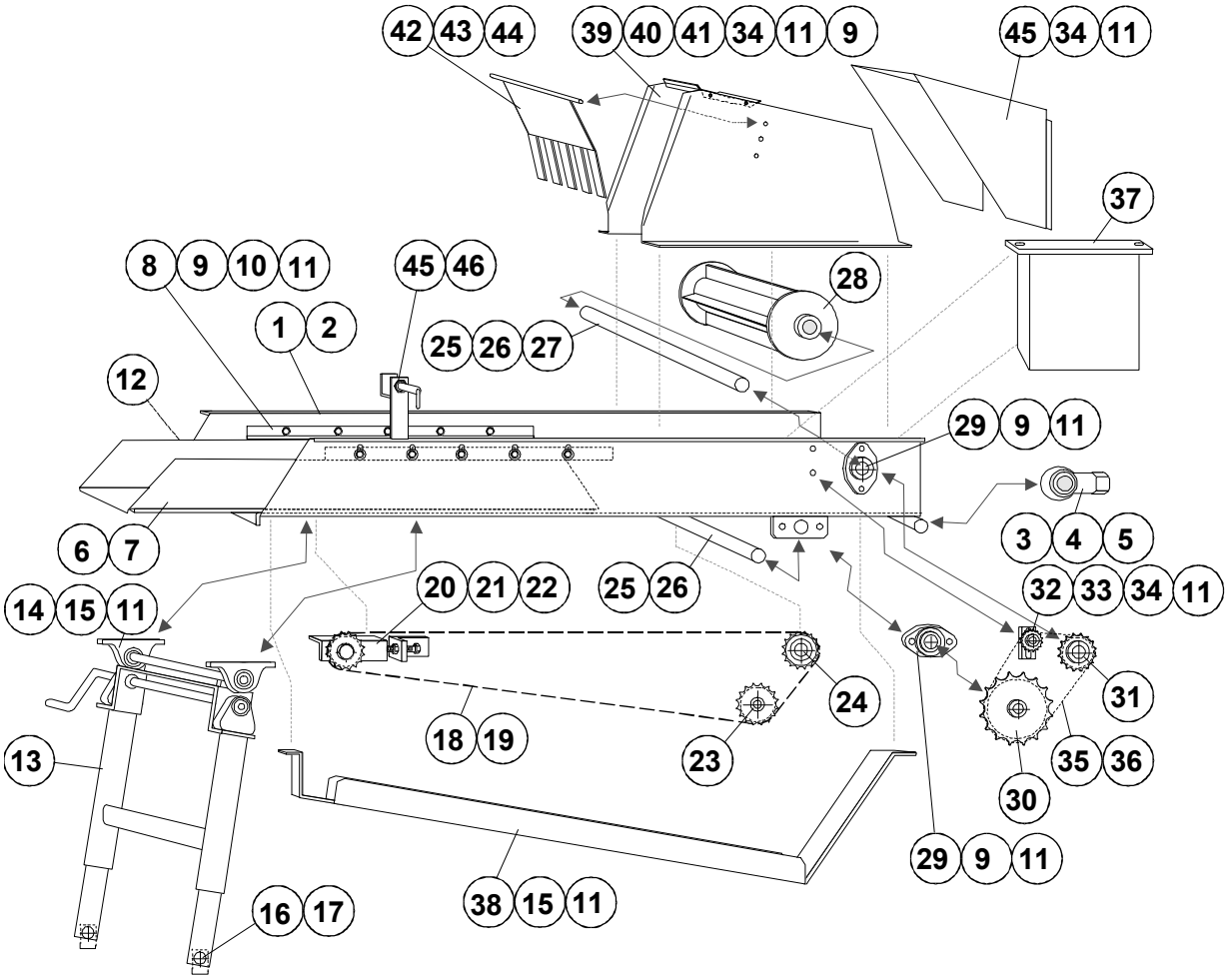
ENGINE INSTRUMENTS AND WIRING



ENGINE INSTRUMENTS AND WIRING

ITEM	PART NUMBER	DESCRIPTION	QTY
1	EL2101.10	ENGINE STOP SWITCH	1
2	EL2107.10	IGNITION SWITCH (KEYED)	1
2.1	EL2107.11	KEY SET - AETNA	1
3	EL2108.02	SAFETY SWITCH 518APH	1
4	EL2110.01	FUSE HOLDER - AGC	2
4.2	EL2112.07	HORN FUSE 7.5A	1
4.1	EL2112.08	PANEL FUSE 15 A	1
5	IN0501.00	AMMETER	1
6	IN3601.00	HOUR METER	1
7	IN6401.10	OIL PRESSURE GAUGE	1
7.1	IN6401.11	OIL PRES LINE W/FTTGS	1
8	IN8201.10	TEMPERATURE GAUGE	1
9	IN9030.20	TACHOMETER	1
10	EL2103.20	SOLENOID 12V 4T INT. DUTY	1
11	EL2101.01	PUSH BUTTON - MOMENTARY WITH CAP	1
12	SI0901.06	HORN 12V	1
13	BA8807.30	BATTERY CABLE	1
14	BA8850.01	BATTERY TERMINAL BOOT	1
15	BA8807.01	BATTERY GROUND STRAP	1
16	BA8808.05	SWITCH/STARTER CABLE	1

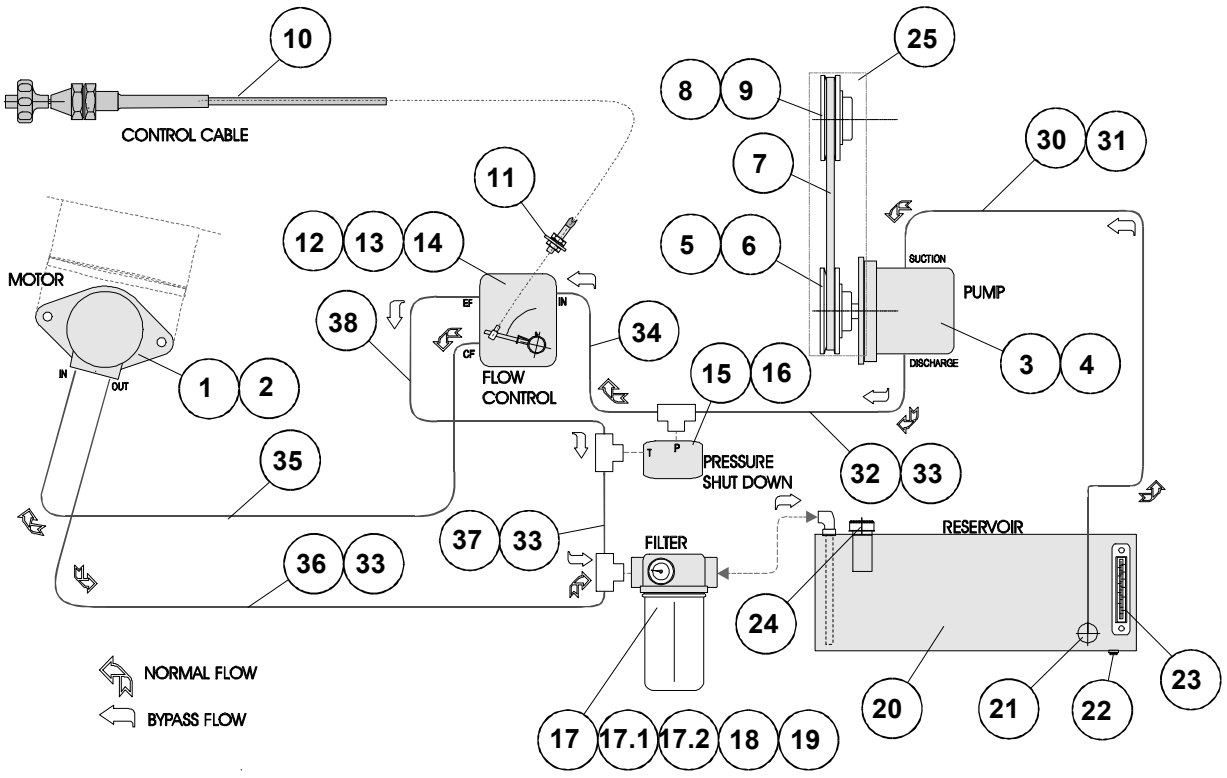
FEED TRAY & CONVEYOR



FEED TRAY & CONVEYOR

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	85454000	FLIPPER CHAIN TRAP	1	22	FA1221.03	3/8 - 16 STANDARD NUT	1
2	TA2012.20	TAPE TFE/FBRGLS 2" x FT	4	23	SP2410.18	CHAIN DRIVE SPROCKET	1
3	BE0420.01	TRAY BEARING 3/4"	2	24	85435060	FLIPPER DRIVE SPROCKET	1
4	FA2129.14	3/4 - 16 x 1½" HEX SCREW	2	25	85435020	SHAFT	2
5	FA0330.06	3/4" SPLIT LOCKWASHER	2	26	KE9001.18	KEY ¼ x 1¼" BER	2
6	85423000	SLIDE EXTENSION TRAY	1	27	KE9002.07	KEY ¼ x 7/8" OER	2
7	TA2012.09	TAPE TFE/FBRGLS 3/4" x FT	17	28	85438000	FLIPPER DRUM	1
8	85391000	TRAY GUIDE	2	29	BE0330.16	FLANGE BEARING 1"	4
9	FA1124.10	3/8 - 16 x 1" HEX SCREW		30	SP2110.60	ROLLER CHAIN SPROCKET	1
10	FA0320.03	3/8 " FLATWASHER	10	31	SP2110.15	DRUM SPROCKET	1
11	FA1241.03	3/8 - 16 NYLON INSERT NUT		32	SP1735.04	TAKEUP SPROCKET - IDLER	1
12	JA1003.02	TRAY LOCKPIN ASSEMBLY	1	33	CH2101.00	CHAIN TENSIONER	1
13	83391010	TANDEM JACK ASSEMBLY	1	34	FA1124.06	3/8 - 16 x 3/4" HEX SCREW	
14	BE0225.03	BEARING 1" PILLOW BLOCK	2	35	CH0648.00	ROLLER CHAIN # 35SS x FT	2.5
15	FA1154.10	3/8 -16 x 1" BUTTON SCREW		36	CH0647.01	CONNECTING LINK #35	1
16	HA7150.40	CLEVIS PIN ½ x 2"	2	37	85435030	FLIPPER SPROCKET GUARD	1
17	HA7150.01	HAIRPIN COTTER	2	38	85483000	FEED CHAIN GUARD	1
18	85473000	FEED CHAIN (87 LINK)	1	39	85464021	FLAKER ENCL. SIDE - RS	1
19	CH0646.21	CONNECTING LINK W/ PIN	1	40	85464022	FLAKER ENCL. SIDE - LS	1
20	85484000	CHAIN TAKE-UP ASSEMBLY	1	41	85463031	FLAKER ENCL. COVER	1
20.1	SP1550.02	TAKE-UP SPROCKET	1	42	85461010	FLAKER RAKE	1
20.2	FA1128.30	5/8 - 11 x 3" HEX SCREW	1	43	FA1280.04	½ - 13 ACORN NUT	2
20.3	FA1241.05	5/8 - 11 NYLON INSERT NUT	1	44	FA0390.04	½" NYLON WASHER	2
20.4	FA0320.05	5/8 " FLATWASHER	1	45	85641010	BOOM LOCK BRACKET	1
21	FA1116.35	3/8 - 16 x 3½ " TAP SCREW	1	46	HA7110.02	SPRING PLUNGER	1

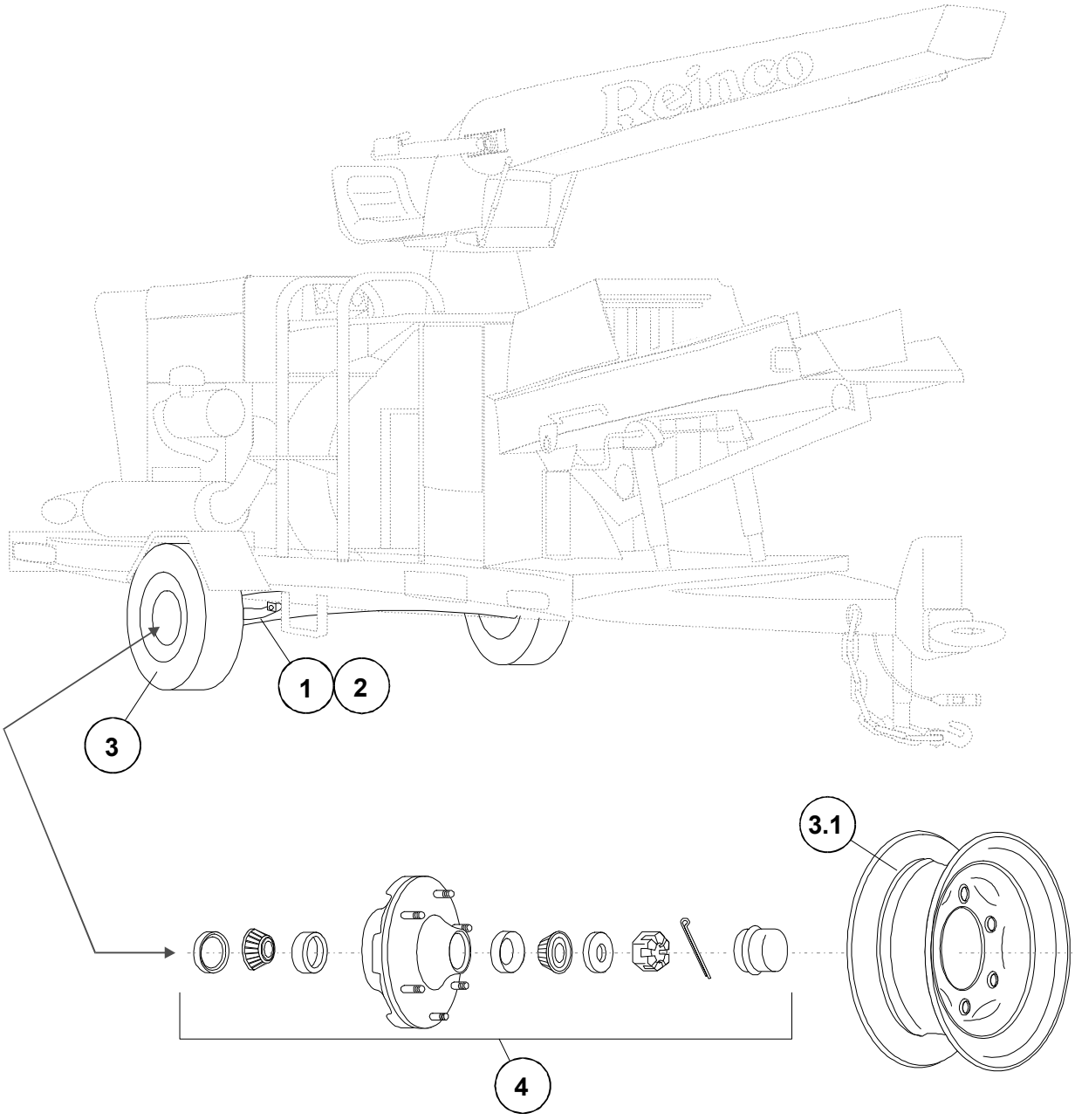
HYDRAULIC FEED SYSTEM COMPONENTS



HYDRAULIC FEED SYSTEM COMPONENTS

ITEM	PART NUMBER	DESCRIPTION	QTY
1	MO9000.00	GEROTOR MOTOR #ADM400-2RO	1
2	85723020	MOTOR MOUNTING	1
3	PU6000.01	GEAR PUMP #SP20A-9-A9H2L	1
4	85724010	PUMP MOUNTING	1
5	SH2121.10	PUMP SHEAVE	1
6	BU7400.10	BUSHING TYPE D 5/8"	1
7	BE5810.11	BELT 3VX-425	1
8	SH2121.11	DRIVER SHEAVE 1" B x ¼" KW	1
9	KE9001.18	KEY ¼" x 1¼" BER	1
10	CO6271.00	CONTROL CABLE ASSEMBLY	1
11	85691030	CABLE MOUNTING BRACKET	1
12	VA8005.01	FLOW CONTROL VALVE	1
13	85691010	VALVE BRACKET	1
14	CO6293.00	CABLE CONNECTOR/BALL JOINT	1
15	VA8015.00	PRESSURE SHUT-DOWN VALVE	1
16	85691020	SHUT-DOWN VALVE BRACKET	1
17	FI6000.00	RETURN FILTER ASSEMBLY	1
17.1	FI6000.01	ELEMENT #FA10	1
17.2	FI6001.02	FILTER HEAD #FA12A0-00	1
18	GA8001.21	GAUGE #BTI 15P	1
19	HO7800.08	¾" x 3/8" RED BUSHING #H3109 x 12 x 6	1
20	85254000	RESEVIOR - 16 GALLON	1
21	ST8000.00	STRAINER #SW1250753	1
22	PI2835.06	¾" MAGNETIC PIPE PLUG #PPM12	1
23	GA8005.00	SIGHT GAUGE WITH TEMP #LDR02	1
24	FL1000.00	FILLER/BREATHER #TFA005715	1
25	85901000	GUARD - HYDRAULIC PUMP DRIVE	1
30	85714010	HOSE - PUMP/RESEVIOR ¾" X 26"	1
31	HO7800.40	¾" 0-RING ELBOW #TF5515 x 12LL	1
32	85715020	HOSE - PUMP/PSD VALVE 3/8" x 19"	1
33	HO7800.15	3/8" MALE BRANCH TEE	3
34	85715030	HOSE - PSD TEE/FLOW VALVE 3/8" x 17"	1
35	85715040	HOSE - FLOW VALVE/MOTOR 3/8" x 45"	1
36	85715050	HOSE - MOTOR/FILTER 3/8" x 20"	1
37	85715060	HOSE - FILTER/PSD VALVE 3/8" x 15"	1
38	85715070	HOSE - PSD VALVE/FLOW VALVE 3/8" x 10"	1

RUNNING GEAR & RELATED PARTS



RUNNING GEAR & RELATED PARTS

5200 LB CAPACITY IDLER

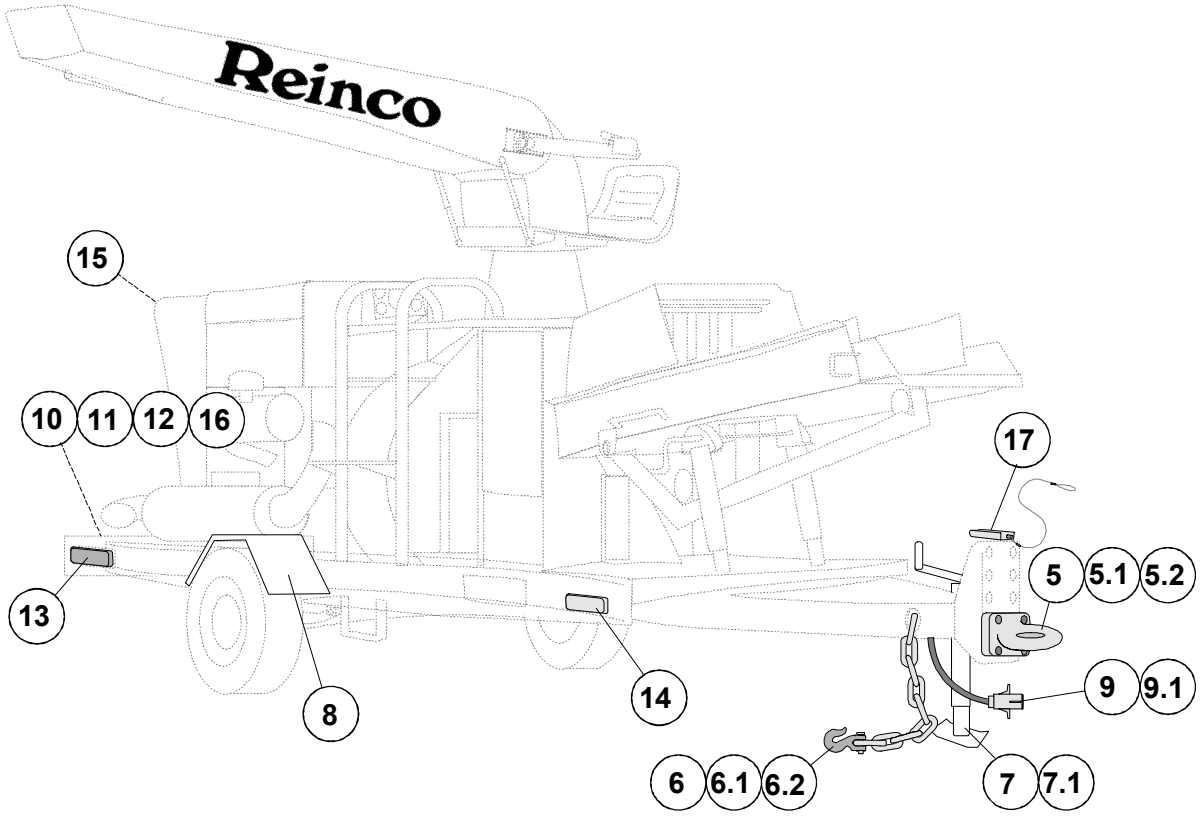
ITEM	PART NUMBER	DESCRIPTION	QTY
1	AX5103.52	AXLE ASSEMBLY 5200# 6-5.5 HUBS	
	AX5103.51	AXLE ASSEMBLY 5200# 4-9.4 HUBS	N/A**
2	AX5103.22	SPRING 72-26-3500	1
	AX5103.16	BOLT - SHACKLE 7-3	6
	AX5103.17	LOCKNUT - SHACKLE 6-7	6
	AX5103.21	LINK - SHACKLE 18-12 (3 1/8")	4
	AX5103.15	BUSHING - SPRINGEYE 14-01	4
3	TI7501.00	MOUNTED TIRE ASSEMBLY	2
3.1	AX5105.15	WHEEL 6-5.5 BC 17-118	2
	AX5103.02	WHEEL 4-9.4 BC 17-121 (STAR)	2**
3.2	TI7201.03	TIRE ST225/75R15-D 8 PLY	2
4	AX5103.34	HUB ASSEMBLY 8-213 90 6-5.5	1
	AX5103.04	HUB ASSEMBLY 8-157 90 4-9.4	1**
4.1	AX5103.08	GREASE CAP 21-1 2.4500	2
4.2	AX5103.07	COTTER PIN 19-2	2
4.3	AX5103.06	SPINDLE NUT 6-1	2
4.4	AX5103.05	SPINDLE WASHER 5-57D	2
4.5	AX5103.09	BEARING - OUTER CUP LM-67048	2
4.6	AX5103.10	RACE - OUTER CUP LM67010	2
4.7	AX5103.11	BEARING - INNER CONE 25580	2
4.8	AX5103.12	RACE - INNER CUP 25520	2
4.9	AX5103.13	GREASE SEAL 10-1 NTL #440972	2
4.10	AX5103.03	LUG BOLT 7-40	8**
4.10	AX5201.20	WHEEL NUT 6-80	12

****PRIOR TO S/N 7907**

OPTIONAL BRAKE ASSEMBLIES

ITEM	PART NUMBER	DESCRIPTION	QTY
ELEC	**AX5103.60**	**BRAKE AXLE ASSEMBLY**	
	AX5110.10	BRAKE ASSEMBLY LH 23-105 DXQ 12 x 12	1
	AX5110.08	BRAKE ASSEMBLY RH 23-106 DXQ 12 x 12	1
	AX5103.62	HUB & DRUM ASSEMBLY 8-201-90 6 - 5.5	2
ELEC	**AX5103.63**	**BRAKE AXLE ASSEMBLY WITH PARK**	
		BRAKE ASSEMBLY LH 23-112 DXQ 12 x 2	1
		BRAKE ASSEMBLY RH 13-113 DXQ 12 x 2	1
	BR3001.01	PARKING BRAKE KIT 60050400	1
HYDR	**AX5103.65**	**BRAKE AXLE ASSEMBLY**	
		BRAKE ASSEMBLY LH 23-324 12 x 2 5.2K	1
		BRAKE ASSEMBLY RH 23-325 12 x 2 5.2K	1
HYDR	**AX5103.67**	**BRAKE AXLE ASSEMBLY WITH PARK**	
		BRAKE ASSEMBLY LH 23-320 12 x 2 5.2K	1
		BRAKE ASSEMBLY RH 23-321 12 x 2 5.2K	1
	TU1000.01	TUBING KIT	1
	BR3000.01	PARKING BRAKE KIT 23852	1

TRAILER COMPONENTS



TRAILER COMPONENTS

HITCH COMPONENTS

ITEM	PART NUMBER	DESCRIPTION	QTY
5	CO9281.21	ADJUSTABLE EYE 2½" LUNETTE	1
5.1	FA1128.16	5/8 - 11 x 1¾" HEX HEAD SCREW	4
5.2	FA1241.05	5/8 - 11 NYLON INSERT NUT	4
HYDR	CO9212.21	ADJUSTABLE EYE 3" HYDR SURGE ACTUATOR	OPT
	CO9212.20	FIXED EYE 3" HYDR SURGE ACTUATOR	OPT
6	CH0641.41	SAFETY CHAIN WITH HOOKS	1
6.1	CH0641.40	CHAIN 3/8" GR 43/FT	5
6.2	CH0643.40	CLEVIS HOOK 3/8" M806ZL	2
	CH0643.42	SNAP HOOK 3804T2	OPT
7	JA1003.01	SWIVEL JACK	1
7.1	JA1003.02	JACK LOCKRING	1
8	83042000	FENDER	2
9	85495000	TRAILER WIRING HARNESS	1
9.1	EL2203.02	CONNECTOR PLUG 6 COND.	1
	EL2203.05	CONNECTOR PLUG 7 COND.	OPT
9.2	EL2203.01	CONNECTOR SOCKET 6 COND	1

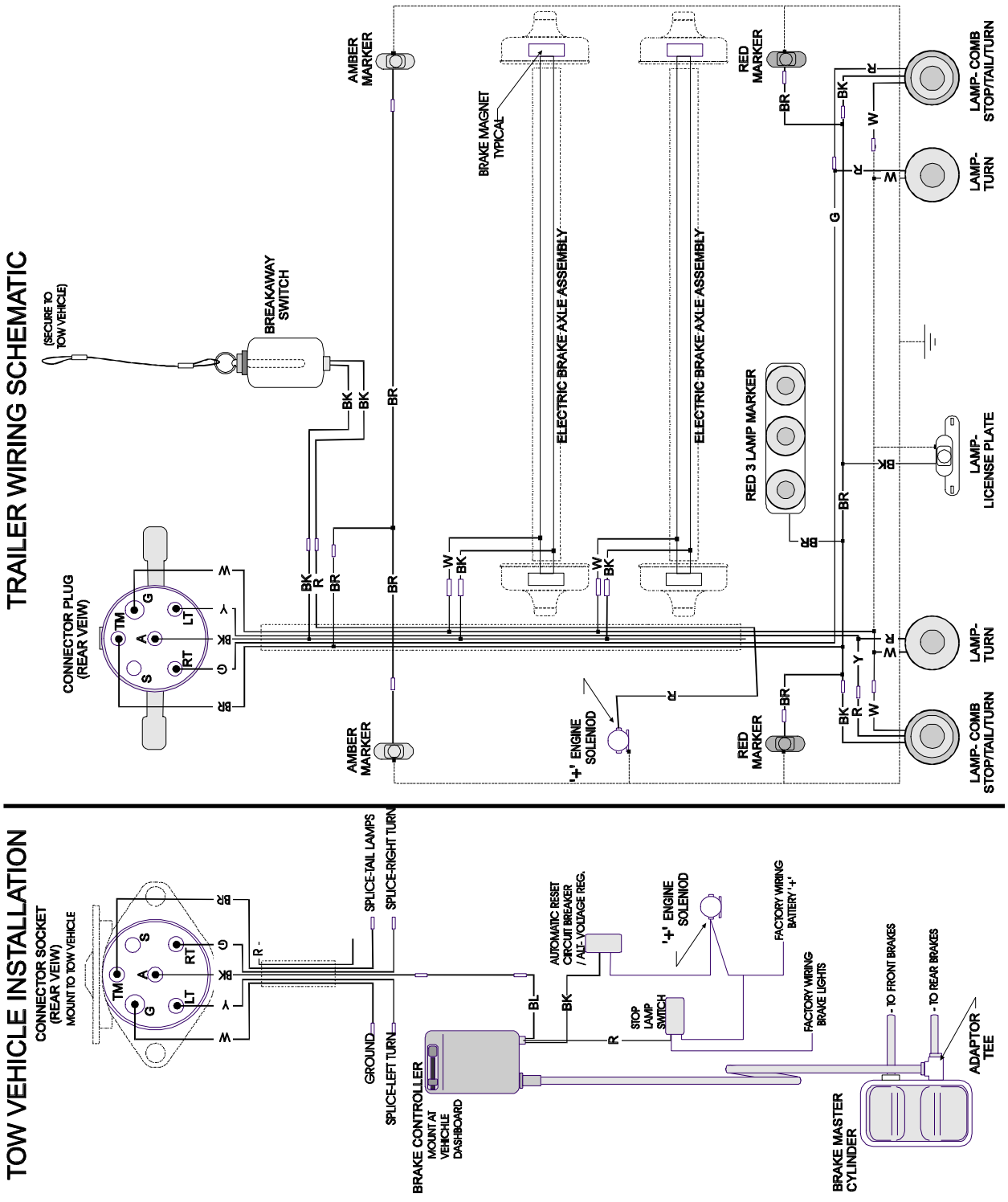
LIGHTING COMPONENTS

10	LI3302.07	TAIL LAMP - COMBINATION	2
11	LI3303.07	TAIL LAMP - DIRECTIONAL	2
12	LI3305.03	LICENSE PLATE LAMP/BRACKET	1
13	LI3301.21	MARKER LAMP - RED (REAR)	2
14	LI3301.22	MARKER LAMP - AMBER (FORWARD)	2
15	LI3301.23	MARKER LAMP BAR (3) RED	1
16	LI4030.01	REFLECTOR - RED	2

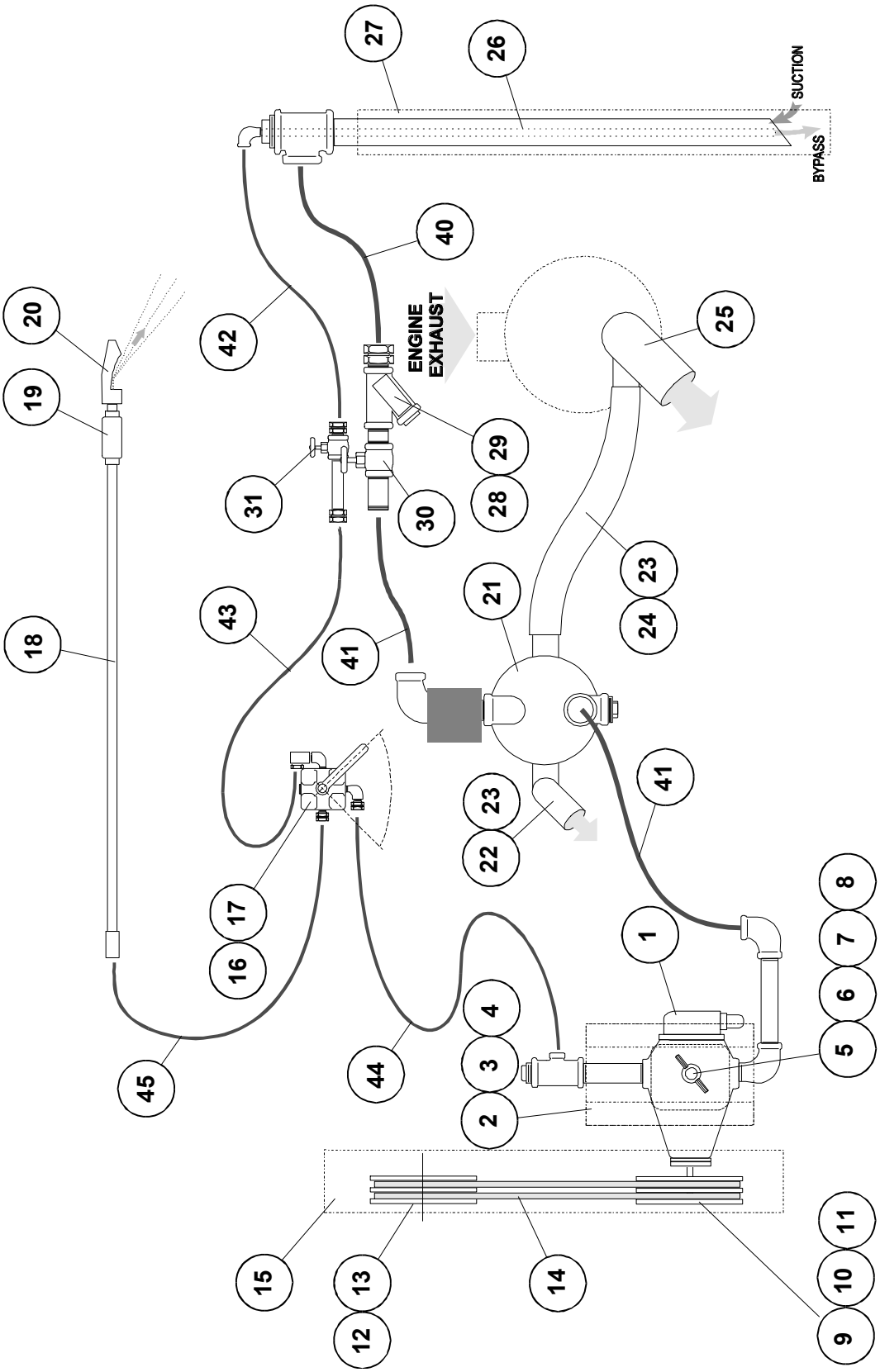
TRAILER RELATED PARTS

17	BR2022.03	BREAK AWAY SWITCH	OPT
18	BR0501.02	BRAKE CONTROLLER 12V ELECT #2030	OPT

TRAILER WIRING SCHEMATIC



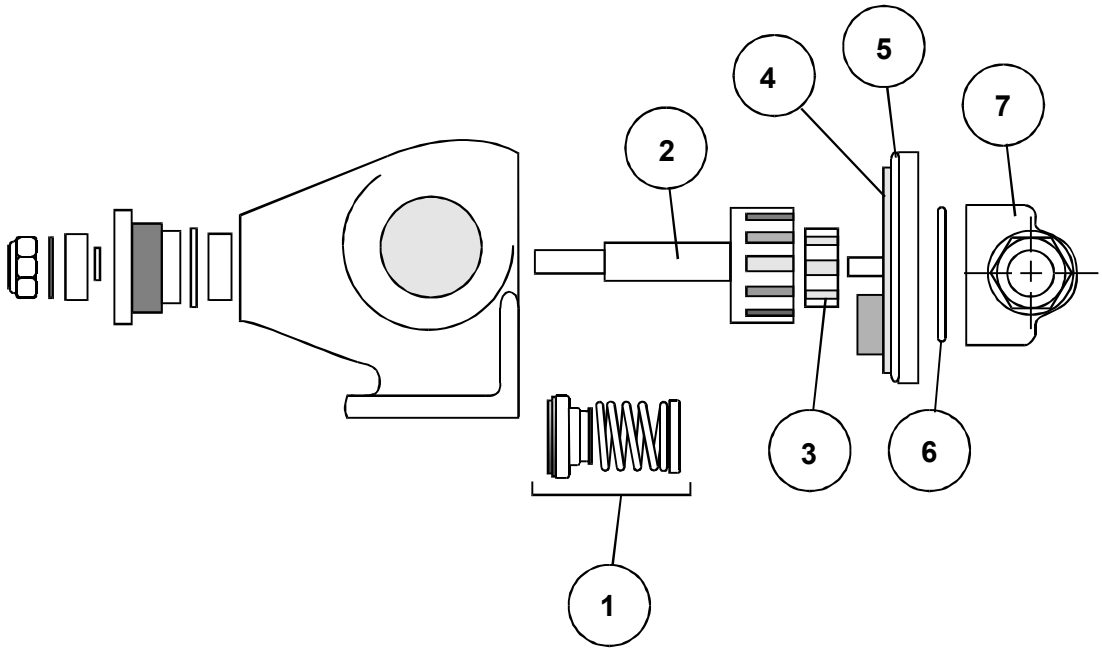
OPTIONAL EMULSION SYSTEM



EMULSION SYSTEM

ITEM	PART NUMBER	DESCRIPTION	QTY
1	PU5463.00	PUMP 1½" HL4195	1
2	85542010	PUMP MOUNTING BASE	1
3	85542020	PUMP SWING ARM	1
4	BE0225.02	BEARING 1" PILLOW BLOCK	1
5	FA1126.50	½ - 13 x 5" HEX HEAD SCREW	1
6	SP7420.01	TENSION SPRING ¾ x 1-1/8"	1
7	FA1271.04	½ - 13 WING NUT	1
8	FA1221.04	½ - 13 STANDARD NUT	1
9	SH2110.51	SHEAVE - DRIVEN	1
10	BU7318.03	BUSHING TL 2517, ¾ B, 3/16 KW	1
11	KE9001.01	KEY 3/16" SQ x 1½" BES	1
12	SH2110.61	SHEAVE - DRIVER	1
13	BU7360.02	BUSHING TL2517 2¼" b, 5/8" KW	1
14	BE5802.02	BELT BX60 VEE-COG	2
15	85582000	GUARD - PUMP DRIVEN	1
16	VA5170.00	VALVE ¾" 4 WAY	1
17	83681000	VALVE MOUNTING BRACKET	1
18	85532040	BOOM SPRAYPIPE ¾ x 60" TBE	1
19	VA5720.00	DRIP CHECK VALVE ¾"	1
20	NO9901.30	FLAT JET NOZZLE ¾"	1
21	85562000	EMULSION PREHEATER	1
22	EX3022.20	TAILPIECE 2"	1
23	EX3060.20	CLAMP 2"	
24	EX3050.20	2" FLEX TUBE/FT	2
25	85782041	EXHAUST ADAPTOR	1
26	85531010	PICKUP TUBE ASSEMBLY	1
27	85532020	PICKUP TUBE HOLDER	1
28	ST7105.00	STRAINER 1½" WYE	1
29	ST7105.01	STRAINER ELEMENT	1
30	VA5530.01	VALVE 1½" GATE	1
31	VA5515.02	VALVE ¾" GATE	1
40	85572010	SUCTION PICKUP HOSE 1½" x 108"	1
41	85572030	SUCTION HOSE 1½" x 38"	2
42	85572040	BYPASS HOSE ¾" x 114"	1
43	85572050	BYPASS HOSE ¾" x 186"	1
44	85571060	VALVE SUPPLY HOSE ¾" x 94"	1
45	85571070	DISCHARGE HOSE ¾" x 43"	1

EMULSION PUMP



ITEM	PART NUMBER	DESCRIPTION	QTY
1	PU5463.01	MECHANICAL SEAL ASSEMBLY	1
2	PU5463.02	ROTOR & SHAFT	1
3	PU5463.03	IDLER & BUSHING	1
4	PU5463.04	'O' RING	1
5	PU5463.05	HEAD & IDLER PIN	1
6	PU5463.06	GASKET-RELIEF VALVE	1
7	PU5463.07	INTERNAL RELIEF VALVE 150#	1

PARTS LISTED ARE AVAILABLE STOCK ITEMS. FOR ADDITIONAL PARTS CONTACT YOUR LOCAL VIKING PUMP DISTRIBUTOR.

NOTES