

# Reinco

## POWER MULCHER SAFETY MANUAL

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

[www.reinco.com](http://www.reinco.com)

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

EMAIL [sales@reinco.com](mailto:sales@reinco.com)

## 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. Updated versions of this manual are available at [www.reinco.com](http://www.reinco.com). All inquiries concerning this manual should be directed to [REINCO INC.](http://www.reinco.com)



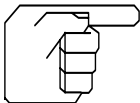
**CAUTION:** The following information is **IMPORTANT** to the **HEALTH** and **SAFETY** of your employees. Please **READ**, take **ACTION** and **FILE** this document for future reference. Ask for additional copies if required.

### **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 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.**

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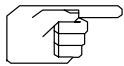


# FORWARD

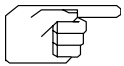
## *A MESSAGE FROM REINCO*

Getting the most out of your **Reinco 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 **Reinco Power Mulcher** represents the culmination of over forty-five years of expertise embodying field feed back, 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.



For references made to engines, consult the appropriate engine manufacturer's literature for applicable detailed information.

**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 variety of organic materials. Pine bark, wood chips, pine straw, peat, and hay or straw are 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 and separated into uniform stalk lengths, varying between 4" and 10" in length. These are then broadcast over prepared ground surfaces forming an intertwined mat.

The mulch serves to control topsoil water evaporation, and protect from wind and water erosion while providing a beneficial microclimate promoting more rapid seed germination. Decomposition of the mulch material enhances the organic structure of the soil and provides nutrients for the new growth.

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

To provide a sense of productivity, the **TM-35 Power Mulcher** carries a nominal rating of **5 tons per hour** (Compared to the M-90 which is rated at 20 tons per hour). In practical terms this machine will process good quality, dry mulch weighing about 60 lb. per bale, at the rate of about three bales a minute. Bale weight and grade vary significantly dependent on type of mulch, baling equipment and storage facilities.

Productivity requires that the material is available to the machine, and is most often stacked on the truck bed with the machine mounted to the rear corner for discharging. 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.

Optional accessories provide for handling a host of other materials, including ground mulches, peat, leaves and debris, and even seeding and fertilizing. Hose attachments provide extended discharge range and the suction adapter kit can extend the seasonal capabilities of the machinery.



# 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**



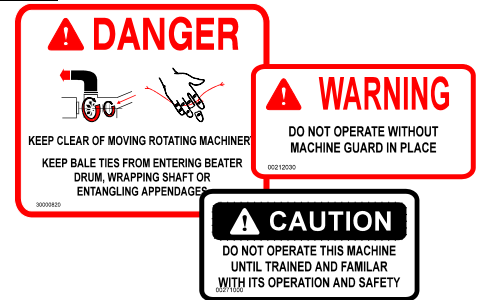
This is the safety alert symbol. When you see it in your operations manual be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.

## **UNDERSTAND SAFETY WORDS**

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

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



## **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.

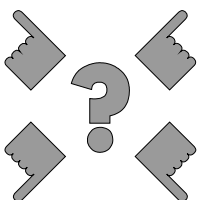
Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

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



800-526-7687

## **CONCENTRATE ON YOUR JOB**

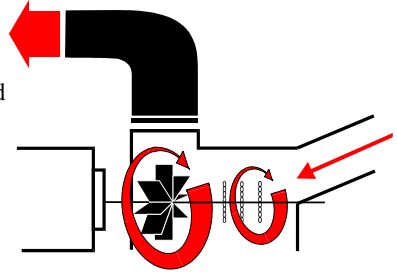


Daydreaming, worrying about other problems or other improper operation of a machine could cripple you for life. Operating a Power Mulcher requires your complete attention. Talking, joking or participating in or watching horseplay could result in physical injury to you . . . and that is not something 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 thrash and separate strands of baled hay or straw and discharge the processed mulch away from the machine. The Power Mulcher utilizes engine power to turn a common main drive shaft, flailing chain stations and blower wheel at high speed to process the hay. It is obvious that this same capacity will sever arms, hands, fingers or any other part of the body that is in the work area when the machine is activated.

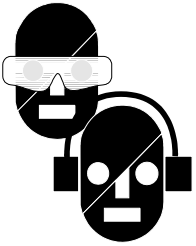
Additionally, the discharge from the blower is capable of discharging the processed mulch at high velocity (more than 100 feet on some models). The discharge of the machine is powerful enough to dislodge pebbles, stones or other debris, which may cause eye or personal injury.



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 which requires manipulation within the beater drum, blower housing, discharge 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, which may be found in mulch bales. Use approved impact resistant eyewear.

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

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

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

## **PRACTICE WORK AREA SAFETY RULES**

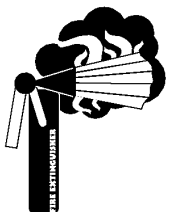
The location of your job site will demand that additional safety practices be implemented. Always follow the applicable OSHA regulations.

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



Since 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 combinations of fuels, heat from engines, and clean dry straw increase the risk. Have a fire extinguisher near the work area. Learn to look for it before you begin working. Always keep the machine clean of chaff and debris.

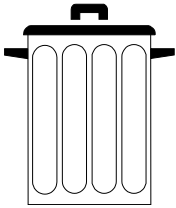
## NEATNESS IS IMPORTANT



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 !

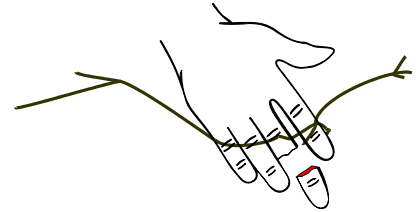


Twine, when removed, should be disposed of immediately in a container away from the Power Mulcher. That loose piece of twine around the machine could cause you to fall or loose a hand or finger.

## 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 HAZARDS

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 SYSTEM JAMS



On Power Mulchers manufactured with hydraulically operated power feed systems, 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.

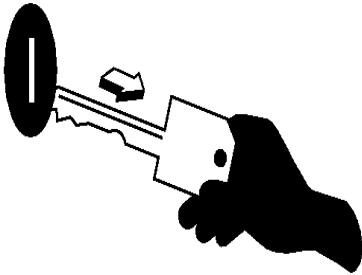
Failure to shut the machine down will cause the power feed system to immediately resume operation when the system pressure drops below the relief valve setting. This could cause death or severe bodily injury.

## VIBRATION IS A WARNING SIGN

A rotational 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 areas clean and dry.
- Keep clothing away from moving or power driven parts.
- Disengage all power and operational controls, and relieve pressure.
- Stop engine and remove key. Allow engine to cool down before working on any engine component.
- Disconnect the battery before machine adjustments or welding on machine.
- Keep all parts in good condition and properly installed.
- Fix damaged components 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 the engine. Fuels and their vapors are extremely flammable and may explode when ignited. Do not fill the fuel tank while the engine is hot or running, since spilled fuel may ignite if it is exposed to hot parts or sparks from the ignition.

Do not start the engine near spilled fuel; wipe up spills immediately.

**Never use fuel for a cleaning agent.**



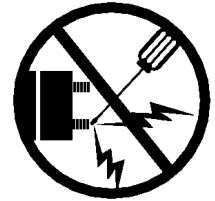
Store fuels in approved containers only. After refueling, remove any containers from the immediate work area.

**Do not add oil when engine is hot or running as oil may 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.

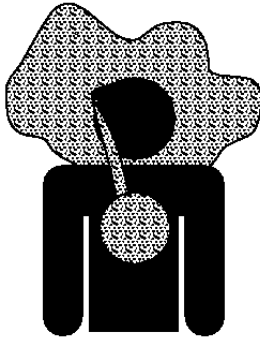
Engines are a burn hazard. The crankcase, cylinder head, exhaust system, radiator, and other components can get extremely hot from operation.

The electrical systems of engines can be a source of high voltage. Never touch electrical wires or components when engine is running.



**Never attempt to start the engine by shorting across the starter solenoid.**

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



Avoid accidental starts, which could cause injury to you or fellow workers. **Remove the ignition key when servicing the unit.** Disconnect and ground the spark plug wire on one or two cylinders. On electric start units, disconnect the battery cables. Always remove the ground (-) cable first.

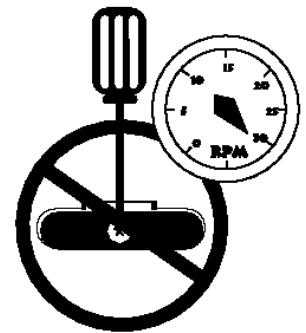
**Refer to the engine manufacturer's operation and safety manuals for more detailed information.**

## **ENGINE SPEED IS IMPORTANT**

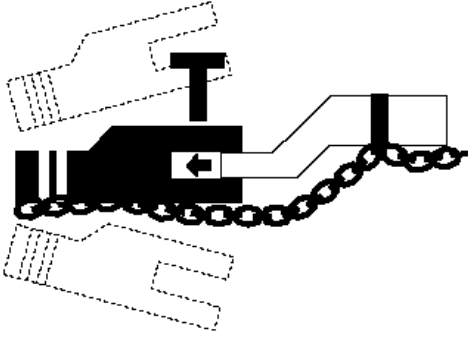
**Never tamper with the governor component settings to increase the maximum speed.**

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.**



## TRAILED UNIT CONCERNS



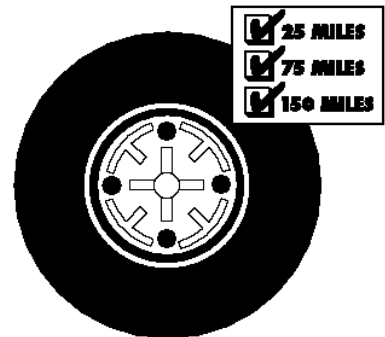
The machine's frame must be level for ease of towing, as well as operator and crew safety. The hitch should be located so that the truck bed overhang will not interfere with the extended load tray.

- 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 and breakaway (if provided). Make sure hitch is secured before attempting to tow machinery.
- Running lights are standard for over the road travel. They include stop, directional, tail side markers 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 taillights mounted in the rear bumper.
- Whenever emergency signaling is required, use this circuit.

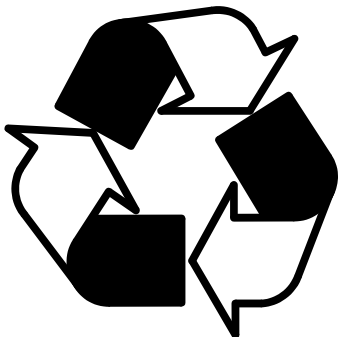
**It is important to check the torque of the wheel lug nuts.**

Initially, These are set at the factory at 90-ft. lb. 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 associated with Reinco equipment include such items as oil, fuel, coolant, filters, batteries, emulsified asphalt, tackifier and fertilizers. Bale wire or twine should be disposed of in appropriate containers.

Use labeled, leak proof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from these. Do not pour waste onto the ground, into 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 workspace clean? Is the fuel properly stored? Are all the bale ties cleaned up? Are the machine 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 the shaft and the associated components, 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. Allow the machine to clear material from the drum.
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 factory provided 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. 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.
14. Before attempting to clear any feed system jam, turn the engine off and return the feed system control cable to its closed position
15. Do not add oil, water or fuel while engine is running or hot.
16. Do not perform maintenance while unit is running or battery is connected.
17. Do not, under any condition, operate the machine when vibrating.
18. Working space must be allowed not only for the boom operator, but also for access to the stacked mulch bales.
19. Daily, inspect the flailing chains, blower wheel blades and drive coupling assembly for signs of wear or misalignment.
20. The flailing chains are made of case hardened steel. If a link breaks, an unbalance or vibration will occur. Always make sure chain stations are replaced in matched pairs.
21. 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 that are found in some mulch bales might also cause bending of the wheel blades that may produce a noticeable vibration.
22. The drive coupling connects the engine to the blower shaft. Coupling misalignment will cause vibration. Realign immediately should this occur.
23. Secure the discharge boom before transporting the machine.
24. The Power Mulcher is not a passenger vehicle. Never board the machine while moving from site to site.
25. Do not stand on fenders.
26. Make sure all towing systems are operational and in good order.
27. Never attempt to hitch machine without using leveling jack.
28. **IT IS IMPERATIVE THAT COMMON SENSE AND GOOD JUDGMENT BE EMPLOYED WHEN OPERATING THIS MACHINE.**

