

TREE BANDIT
BUILT WITH QUALITY AND DESIGN FIRST
TREE CHIPPER
MODEL 1400
OPERATING & PARTS MANUAL

MODEL NO.: 1400 SERIAL NO.: _____

CUSTOMER: NAME _____

ADDRESS _____

PHONE NO. _____

DELIVERY DATE _____

CLUTCH MAKE _____ MOD. _____ S/N _____

ENGINE MAKE _____ MOD. _____ S/N _____

MANUFACTURED BY
PERFORMANCE FIRST, INC.

REMUS, MICHIGAN 49340

PHONE: (517) 561-2270 OR 561-2272

FAX: (517) 561-2273





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The purpose of this manual is to provide the user with specifications and procedures for the operation, maintenance and repair of the **BANDIT CHIPPER**. As with any piece of equipment safety should always be a constant thought while the machine is being operated, serviced or stored. In order to highlight this consideration, the material which addresses safety is proceeded by the following signal words:

Signal Word	Likelihood of Occurrence	Degree of Potential Injury or Damage
DANGER	Will occur if warning is ignored.	Severe
WARNING	Can occur if warning is ignored.	Severe
CAUTION	Will or can occur if warning is ignored.	Minor to Severe

The chipper is designed and manufactured in accordance with industry needs and standards with safety in mind. This alone does not prevent injury. It is the operator's responsibility to use good judgement and follow the warnings and instructions as indicated in this manual.

WARNING

Improper use of the chipper can result in severe personal injury. Personnel using the chipper must be qualified, trained and familiar with the operating procedures as defined in this manual.

WARNING

It is the responsibility of the owner or employer to insure that the operator is trained and practices safe operation while using and servicing the machine. It is also the owner's responsibility to provide and follow a regularly scheduled preventative maintenance and repair program on the chipper using only factory approved replacement parts. Any unapproved repairs or modifications may not only damage the machine and its performance but could result in severe personal injury. *Consult the equipment manufacturer!!!*

Each machine is shipped with manual, a customer's check sheet on the chipper, and any available parts & service manuals on component parts not produced by this manufacturer. Additional copies of these manuals and check sheets can be purchased from the manufacturer, or through the dealer. Engine parts, service and maintenance manuals **must** be purchased through the engine manufacturer or their dealer.

NOTE - The producer of the Bandit Chipper reserves the right to make any modifications or revisions to the design or specifications of its machine without advance notice. The producer also reserves the right to change machine and part prices as needed without advance notice.



MODEL 1400

WARRANTY

**PERFORMANCE FIRST, INC. BANDIT LIMITED WARRANTY
(517) 561-2270**

Performance First, Inc., hereafter referred to as "Manufacturer" warrants each new Tree Bandit Chipper to be free of defects in workmanship and material for a period of six (6) months or 1000 hours, whichever ever comes first.

This warranty takes effect upon delivery to the original retail purchaser. The manufacturer at its option will replace or repair at a point designated by the manufacturer, any parts which appear to have been defective in material or workmanship. The manufacturer is not responsible for labor or consequential damages.

This warranty will not apply if the Bandit is not operated in a manner recommended by the manufacturer. The following examples would void warranty:

1. The Bandit has been abused.
2. The machine is involved in or damaged by an accident.
3. Repairs or attempted repairs made without prior written authorization.
4. Repairs made due to normal wear.
5. Chipper damaged from foreign material such as steel, etc.

The owner is responsible for all regular maintenance as explained in the operators manual. Neglect in regular maintenance or failure to replace normal wear items such as knives, knife anvil, lubrication oils, filters, belts, etc. may void warranty.

This warranty is expressly in lieu of any other warranties, express or implied, including any implied warranty or merchantability of fitness for a particular purpose and of any non-contractual liabilities including product liabilities, based upon negligence or strict liability. Performance First, Inc. will not be liable for consequential damages resulting from breach of warranty.

IT IS NECESSARY TO RETURN THE WARRANTY VALIDATION REPORT & NOTIFY PERFORMANCE FIRST IN WRITING WITHIN TEN (10) DAYS FROM DELIVERY DATE TO VALIDATE THIS WARRANTY.

NOTE!! This warranty applies only to new and unused equipment or parts thereof manufactured by Performance First, Inc. All other component parts are warranted by their respective manufacturers (ie. engines, tires, batteries, etc.). Any machines used for lease or rental - warranty is limited to 90 days from first day of initial service.

NATIONAL INFORMATION PHONE NUMBERS FOR ACCESSORIES —
CUMMINS ENGINE CO.: INTERSTATE BATTERIES 800-331-1000
CUMMINS MICHIGAN 313-473-9000
24-HOUR HOTLINE 800-DIESELS

In order to process any warranty claims, it is the owner's responsibility to report the claims promptly to us or our authorized dealer from whom the equipment was purchased. It is necessary to include the following information on any and all requests for warranty:

- | | |
|-------------------------------|----------------------------------|
| 1) Dealer from whom purchased | 5) Engine make and serial number |
| 2) Date of delivery | 6) Length of time in use |
| 3) Serial number of unit | 7) Date of failure |
| 4) Model number of unit | 8) Nature of failure |





MODEL 1400

SAFETY PROCEDURES

SAFETY SECTION





MODEL 1400

SAFETY PROCEDURES

The Bandit is manufactured with every consideration of safety in mind. The machine is equipped with belt guards, safety decals, disc lock and a rugged design for less chance of an accident.

Regardless of how hard a manufacturer tries to produce a safe machine, accidents still happen. Normally accidents are caused by people making mistakes. They do not read the manual, they ignore warning decals or do not use lock-outs provided for their safety. This normally happens after the person has become accustomed to the machinery. In the initial start up and operation of the machinery, they are cautious, they are very careful because they do not understand the machine.



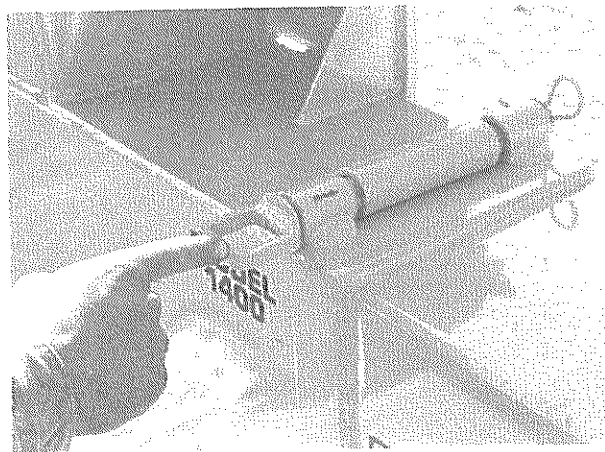
WARNING

Do not let this person be you. Don't ever take the machine for granted. This is when an accident will happen. The machine is designed to do a job, and it does. The chipper disc turns very fast and can be dangerous! The feed wheels are designed to pull limbs and branches into the chipper. They really do not know the difference between a branch or a hand, they just do their job.

These expressions are not to scare anyone, we just hope that operators and mechanics alike follow our suggestions for safety and use the Bandit in the safest manner possible.

DANGER

When first starting the machine, take a minute to check a few things before cranking the engine. Check the infeed spout, make sure it is clear of foreign objects such as wrenches, etc. Check the area around the machine completely.



DANGER

Never start the engine or chipper disc with the chipper hood open. Check the hood latch on the chipper to make sure the pin is secure.

DANGER

Whenever you are operating any type of machinery, do not wear loose clothing or big bulky gloves. This type of clothing is very dangerous because it can become tangled with the machinery. One of the most dangerous clothing articles is a neck-tie. **NEVER** wear one when operating machinery.

Wear a hard hat and safety glasses whenever you are working near the Bandit Chipper. These will help protect you from being hit accidentally by limbs or branches.

Bandit



MODEL 1400

SAFETY PROCEDURES

WARNING

Whenever guards are removed for service, make sure they are replaced before the machine is put into service. Guards are built to protect **YOU**.

WARNING

Always block the tires and the machine tongue whenever the Bandit is unhooked for operation. **DO NOT** rely on the hydraulic stabilizer for operational stabilization.

WARNING

Before starting to operate the Bandit, make sure you disengage the hydraulic safety locks to prepare for operation - A) Lock pin in hydraulic swivel discharge, B) Safety chain on jib boom, C) Cylinder lock bracket for main boom lift cylinder, D) If equipped with hydraulic front stabilizer, remove the lock pin on valve.

DANGER

Never stand in front of the chipper discharge spout. Never direct the spout towards anyone or anything that could cause an accident or a problem. Wood chips flying out of the discharge spout can be very dangerous!

CAUTION

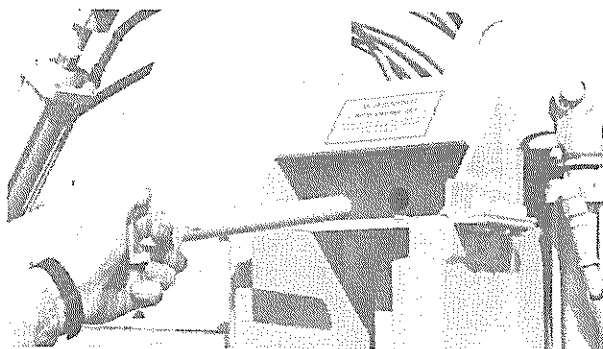
After the engine is started, let the chipper disc turn at the lowest RPM's possible. Listen for any type of noise that is foreign. Any steel against steel noise is foreign. If you hear a noise, stop the engine and find the problem before you crank to full throttle. This can help prevent an accident.

DANGER

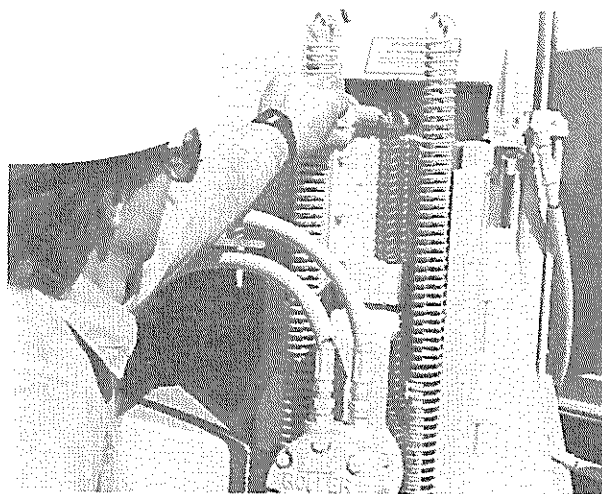
Remember, **NEVER** reach into the infeed spout of the chipper. You do not have any reason to do so.

DANGER

Do not work inside the mouth of the chipper or between the feed wheels without blocking the top feed wheel in the raised position. This will have to be done to adjust the knife anvil to the chipper knife.



Using the hood pin, always install the top feed wheel yoke lock when working under the top feed wheels. Never raise this wheel or work under it, even for a few seconds, without first inserting the lock pin on the top feed wheel.



DANGER

Never stand too close to the infeed, since injury could result from tree limbs.

Also, the top feed wheel is especially dangerous because it is constantly moving up and down on the trees. Keep your hands away!

Bandit



MODEL 1400

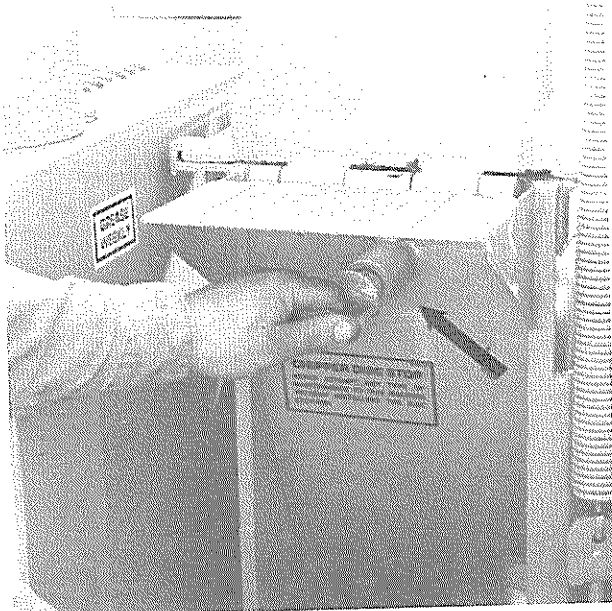
SAFETY PROCEDURES

DANGER

Never open the chipper hood for any reason while the chipper disc is still turning.

DANGER

NEVER work inside the chipper unless the engine key is removed. **ALWAYS** install the chipper hood lock pin into the chipper disc lock tube while working on the chipper.



Simply slide the hood lock pin into the disc lock tube located on the hinged infeed end of the chipper hood. This is to insure that the disc cannot be started while you are working inside the chipper. If for some reason the disc would start to turn, it would hit the disc lock pin and stall the engine.

DANGER

More than 50% of all accidents happen while someone is maintaining or repairing machinery. **DO NOT** work on the Bandit unless the following rules are observed.

Never attempt any maintenance while the diesel engine is running. Do not rely on the clutch lock to prevent an accident. There have been cases in which the clutch has been disengaged and the pilot bearing has frozen to the clutch shaft, allowing the clutch to engage.

When the machine is running, even the smallest adjustment can severely injure you!



Whenever a guard is removed to service a drive, always replace it! Guards are built to prevent injuries. Use them!

DANGER

Never perform **ANY** type of maintenance on the machine unless the operator area is clear and controls are shut off. The operator could accidentally engage a control lever causing you serious injury. Remove the ignition key, lock the gauge panel cover on engine and lock the clutch **OUT OF GEAR**.

WARNING

Always read, practice and replace any decals missing or unreadable on the machine. Decals must be replaced immediately.

Bandit



DANGER

Never trim trees or cut saw logs at the chipper site. This is both dangerous and expensive. A good skidder operator will spot the trees which need trimming. He should drop the trees before he gets to the machine, so the chain saw operator can work in a safe area.

If the trees are trimmed ahead of the chipper operation, the machine will be able to continuously chip wood, the the operator won't waste valuable time fighting with trees which will not go into the chipper.

DANGER

Stop the chipper if a tree does get caught in the feed wheels and must be trimmed. It is very dangerous to operate the machine while someone is trimming a tree.

DANGER

Do not enter chip vans while the chipper is operating. People frequently want to see what the wood chips look like, but it is the operator's responsibility to stop chipping and see that observers leave the chip van. Flying chips are as dangerous as bullets and can cause serious injury.

REMEMBER . . .

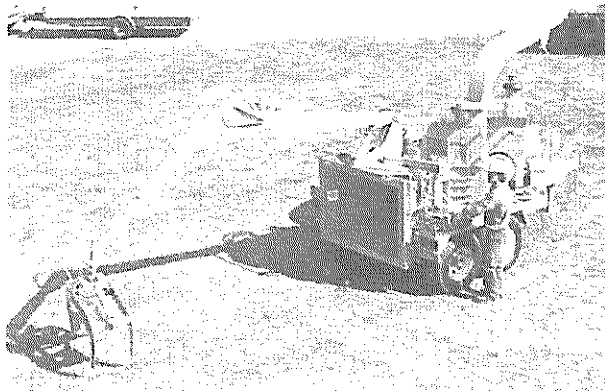
Always lower the stabilizers to ground level or blocks before leaving the job site. Passers-by could be injured if the machine dropped because someone hit the control levels.

Welding or cutting on the machine should be done early in the morning. Then you will be able to watch for fire throughout the day. If cutting or welding is necessary at night, two people should remain at the site for a couple of hours to watch for fire.

Always keep one — or better yet, two — fire extinguishers at the machine. Fire danger is always present when you work around diesel fuel, hydraulic oil or heat. Also, empty fire extinguishers don't do much good. If you use them, have them refilled immediately.

Never leave one person to work on a machine alone. If an accident occurred, someone could suffer or even die before help arrived.

Always keep a first aid kit on hand around chipping site.



WARNING

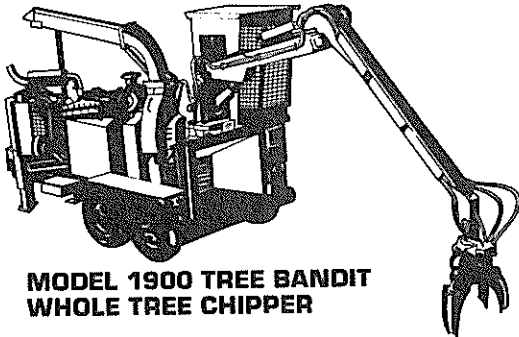
Never leave the loader positioned up in the air when the machine is shut off. To prevent accidents, always position the loader at ground level.

DANGER

Never stand or walk between tongue of machine and the chip van while chipping or while van is being backed into loading position. The tongue could shift into the van because of the loader or a tree being pulled into the chipper. You could be pinned between the frame and van. Never stand between the frame of chipper and a van being backed into position -you are putting your life in the driver's ability to stop a 60,000 pound truck in a short distance.

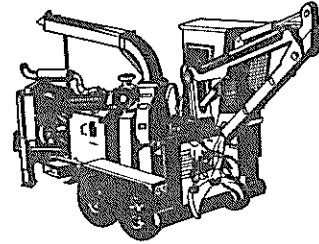


MODEL 1400

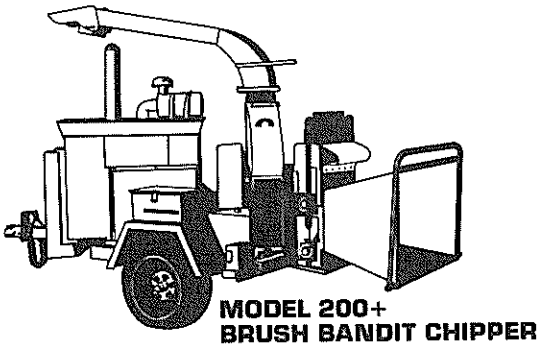
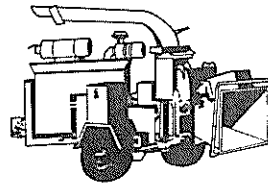


**MODEL 1900 TREE BANDIT
WHOLE TREE CHIPPER**

**MODEL 1700 TREE BANDIT
WHOLE TREE CHIPPER**

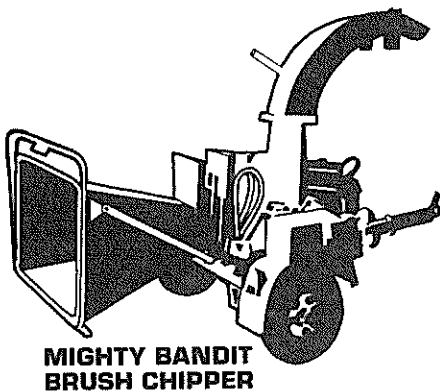
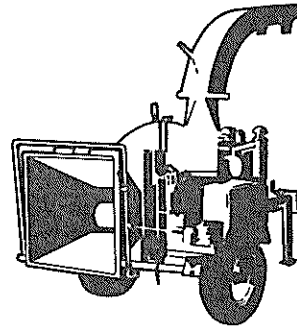


**MODEL 1200 TREE BANDIT
WHOLE TREE CHIPPER**



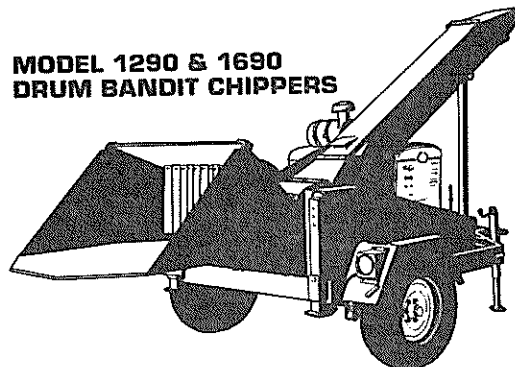
**MODEL 200+
BRUSH BANDIT CHIPPER**

**MODEL 90
BRUSH BANDIT CHIPPER**



**MIGHTY BANDIT
BRUSH CHIPPER**

**MODEL 1290 & 1690
DRUM BANDIT CHIPPERS**



Bandit



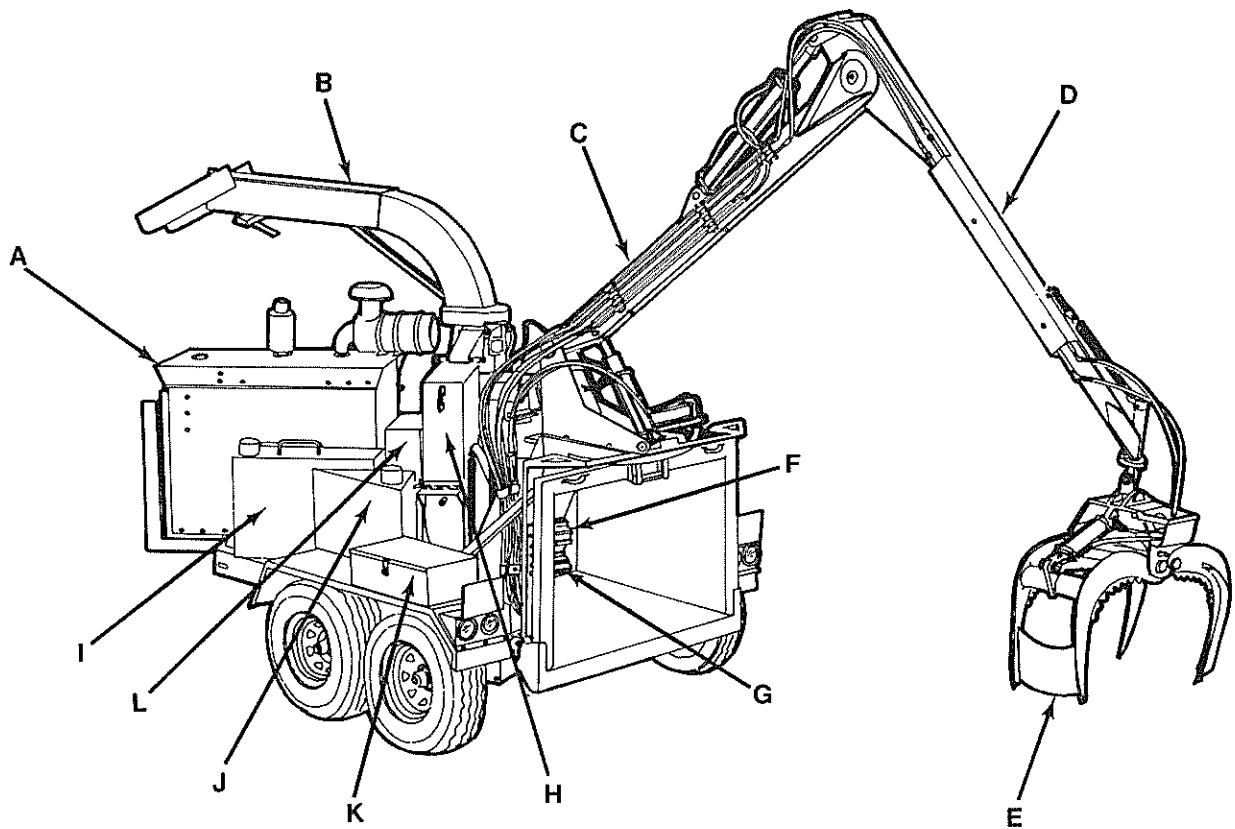
MODEL 1400

EQUIPMENT IDENTIFICATION

EQUIPMENT SECTION

(Description)





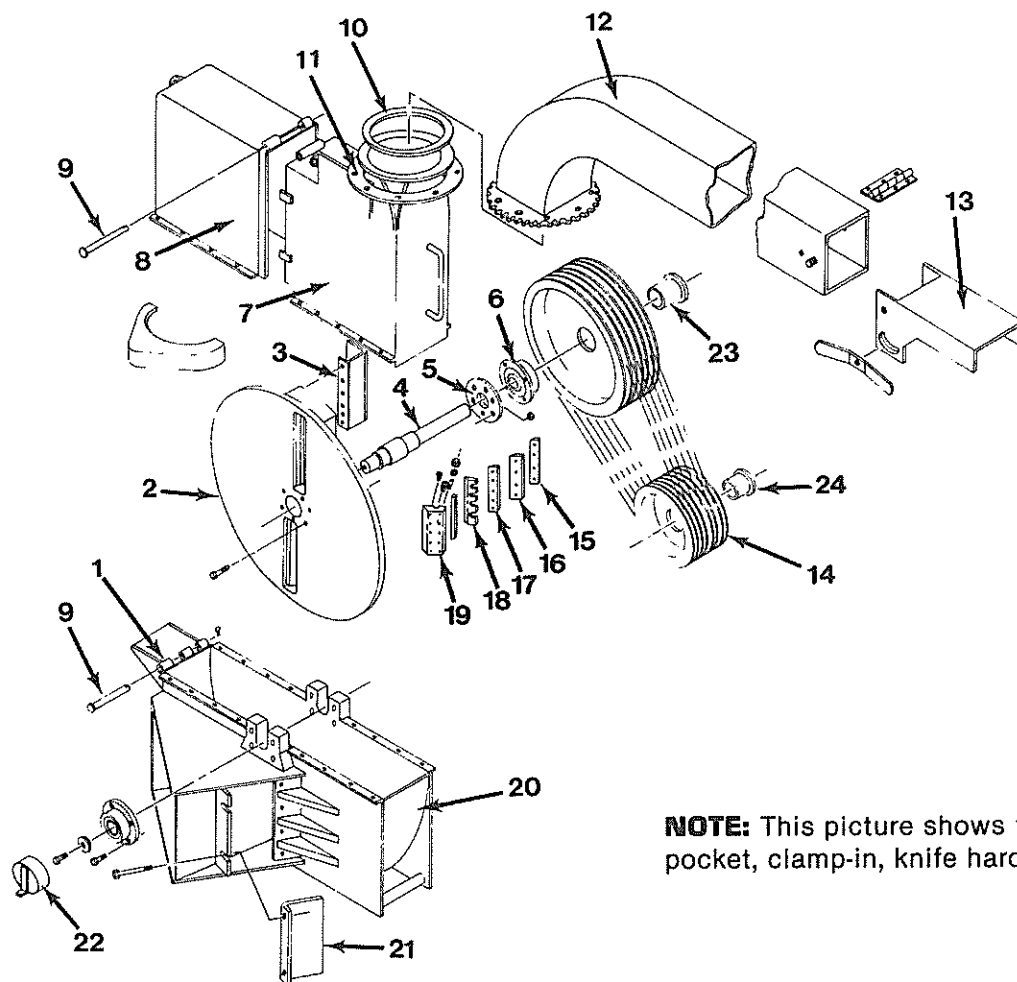
EQUIPMENT IDENTIFICATION

- | | |
|--|----------------------------------|
| A. Power Unit | G. Lower Feed Wheel (Stationary) |
| B. Discharge Spout | H. Chipper |
| C. Main Boom | I. Fuel Tank |
| D. Jib Boom | J. Hydraulic Tank |
| E. Grapple | K. Tool Box |
| F. Top Feed Wheel
(Moves Up & Down) | L. Belt Guard |



MODEL 1400

EQUIPMENT IDENTIFICATION



NOTE: This picture shows full pocket, clamp-in, knife hardware

CHIPPER IDENTIFICATION

- | | |
|--|----------------------------------|
| 1. Hood Hinge | 13. Chip Deflector (Flipper) |
| 2. Disc Assembly | 14. Engine Sheave |
| 3. Fan Blades | 15. Top Clamp - Knife Pocket |
| 4. Chipper Shaft | 16. Bottom Clamp - Knife Pocket |
| 5. Draw Ring | 17. Counter Knife - Knife Pocket |
| 6. Rear Chipper Bearing | 18. Knife - Knife Pocket |
| 7. Chipper Hood - (Stationary) | 19. Knife Holder - Knife Pocket |
| 8. Chipper Hood - (Hinged) | 20. Chipper Base |
| 9. Hood Lock Pin - Also is Disc Lock Pin and Yoke Lock Pin | 21. Feed Plate Anvil |
| 10. Spacer Ring - Swivel | 22. Guard - Chipper Shaft |
| 11. Lower Ring - Swivel | 23. Bushing - Chipper Sheave |
| 12. Discharge Spout | 24. Bushing - Engine Sheave |

Bandit

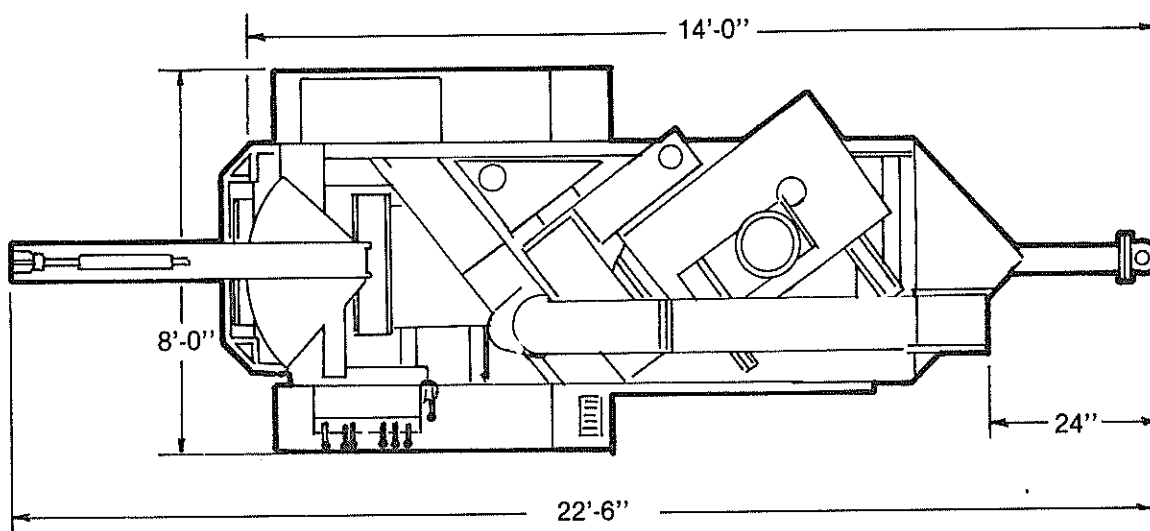


MODEL 1400

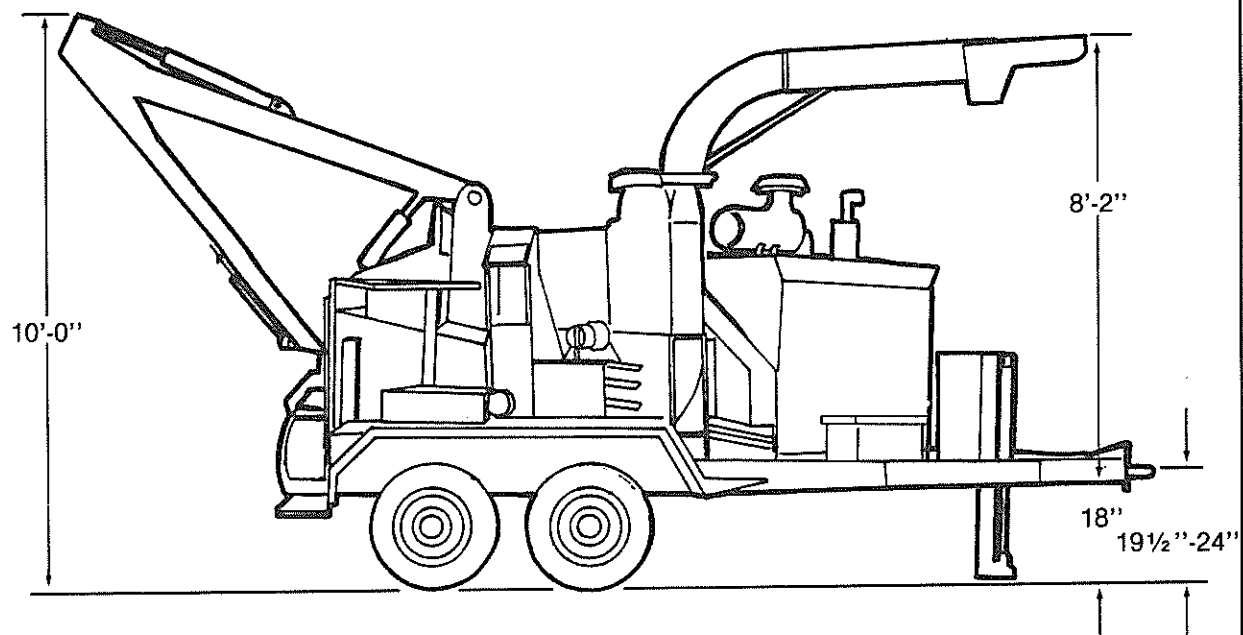
EQUIPMENT IDENTIFICATION

DIMENSIONS

TOP VIEW



SIDE VIEW



Bandit



MODEL 1400

EQUIPMENT IDENTIFICATION

MACHINE SPECIFICATIONS

Chipping Capacity	14" Round Wood
Chipper Disc Diameter	45"
Infeed Opening	14" High x 18½" Wide
Chip Sizes	¾" - 7/8" - 1"
Discharge Spout Rotation	360°
Loader Reach	11 feet
Loader Lift Weight (at 3 ft. reach)	2200 lbs.
Loader Pull Capacity	1500 lbs.
Loader Swing	90°
Fuel Tank Capacity	40 gallons
Hydraulic Tank Capacity	24 gallons
Hydraulic System - Loader	2,200 PSI
Hydraulic System - Feed System	3,000 PSI
Electrical System	12 Volt
Tongue Weight	750 lbs.
Axle Weight	9,050 lbs.
Total Weight	9,800 lbs.
Length of Frame	14'-0"
Overall Length	22'-6"
Height (for transport)	10'-0"
Width	8'-0"

Bandit



TRANSPORTING HINTS

- 1) Make sure pintle hitch, safety chains, brakes and wiring harness are securely fastened before transporting.
- 2) Look under the machine to affirm that there are no twigs, branches, or limbs hanging from the frame that will come loose going down the road.
- 3) Remove tail light covers and place them in tool box.
- 4) Knuckle boom under and hook up safety chain to end of jib boom.
- 5) Make sure stabilizers are fully retracted, and using the lock pin, lock the stabilizers up so they won't drift down.
- 6) Make sure the main boom cylinder lock block is installed securely to avoid undue stress on cylinder.
- 7) With engine shut down, clean out the debris in the infeed spout so that you are not dropping litter on the roads and creating a hazard.
- 8) Check tail lights, brake lights, turn signals and rear loader light to make sure all are in proper working condition before transporting.
- 9) Make sure discharge is pointed straight forward and pin lock in place.
- 10) You are now ready to move the Model 1400 to the next operation.



MODEL 1400

CONTROLS

CONTROLS

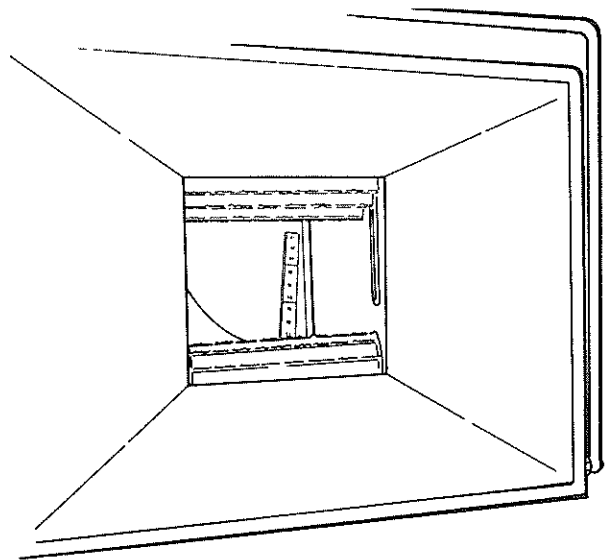




MODEL 1400

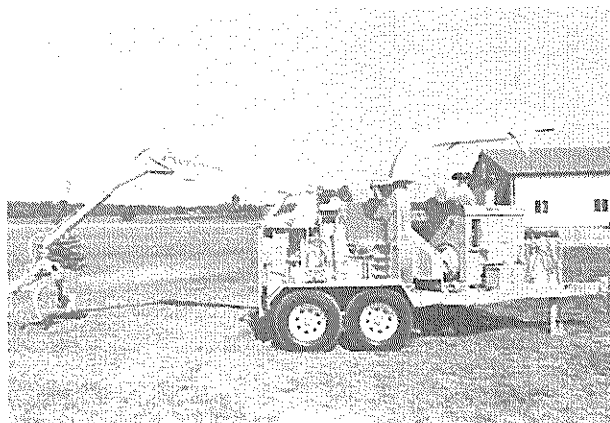
CONTROLS

The Model 1400 Tree Bandit is a multi-operation piece of equipment with the use of the variety of feeding systems available.



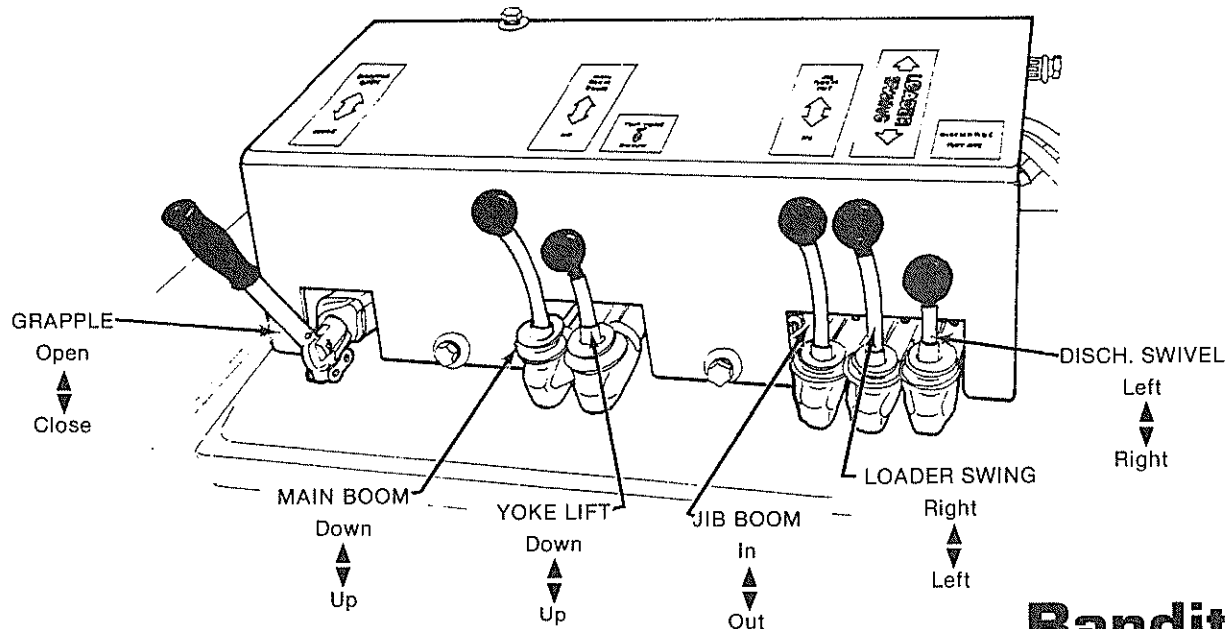
Everything depends on the aggressive 20" wide hydraulic powered feed wheels capable of 10,800 in/lb of torque to pull in up to 14" diameter tree length material.

The main feeding device is the hydraulic powered loader that has 11 ft. reach. It is a pulling style loader that develops 1500 lbs. pulling capacity, 500 lbs. lifting capacity at 11 ft. reach and 2200 lbs. lifting capacity at 3 ft. reach.



The loader controls are located at operator height on the top of curb side fender. They allow easy access for operator, and vision to work the loader, yet at a safe location.

LOADER VALVE BANK SYSTEM

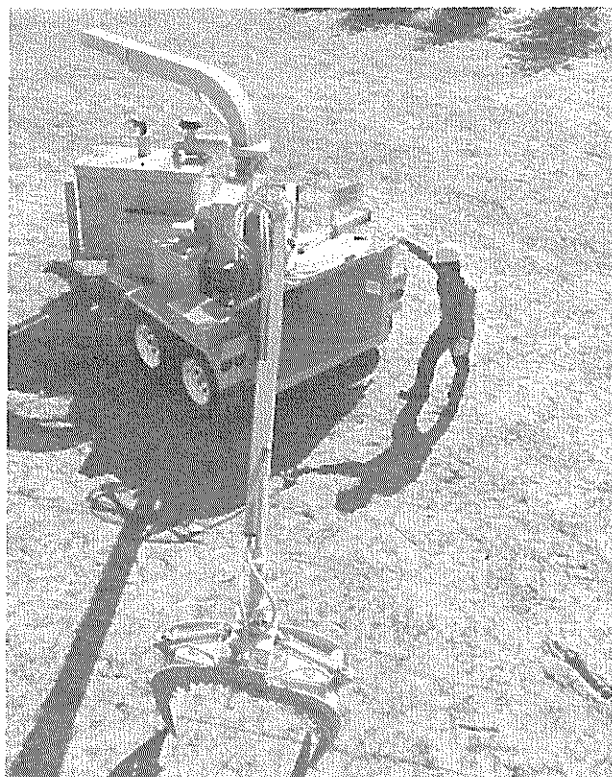


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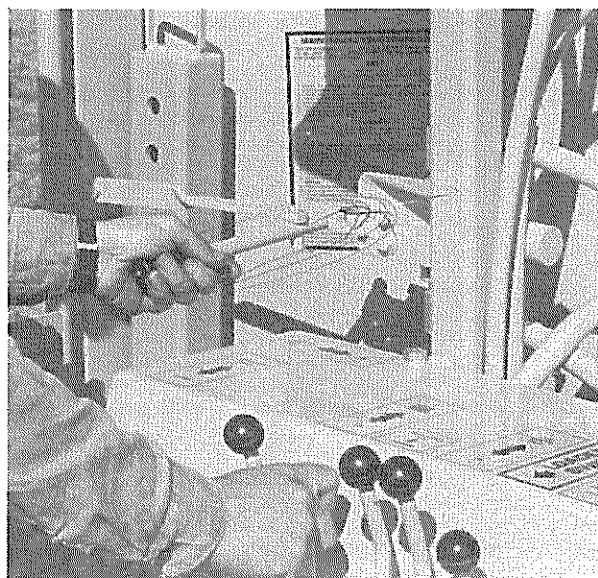


MODEL 1400

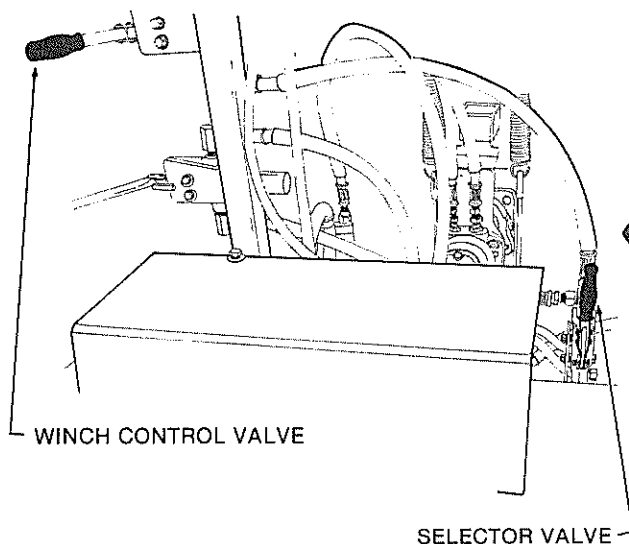
CONTROLS



Another feeding capability is by hand to clean up the small debris. Swing the loader all the way to side and for sure let no one near controls, the operator can clean up the left over material with security by having the safety feed wheel shut down handle around infeed. Pull to reverse and push to feed.



The feed wheel controls are also easily available from operator position. He can control the feed wheels direction forward-neutral-reverse and yoke lift up and down to assist the loader feeding the wood to chipper.



The optional hydraulic powered winch system lets you drag up that log you can't reach with loader. It is operated by using the selector valve to shut off feed wheels and power winch valve for in-neutral-out of the cable.



DANGER

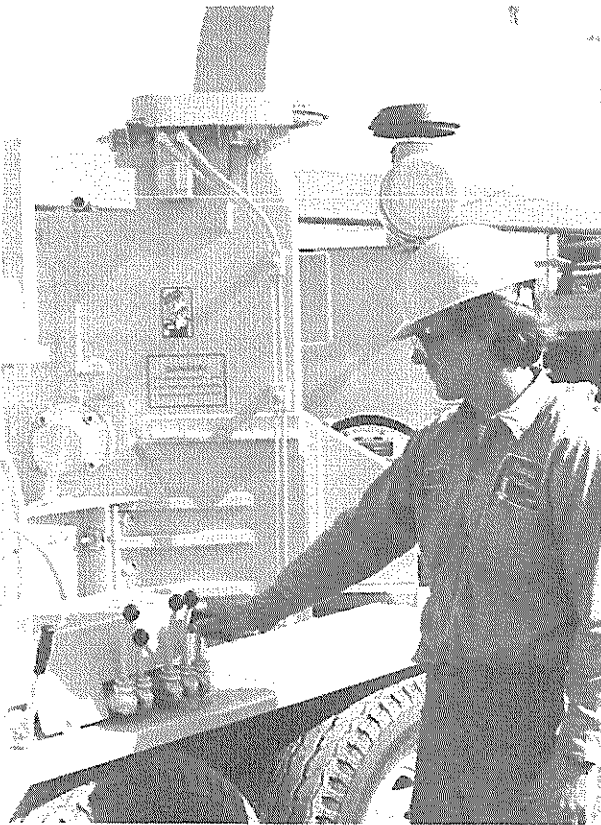
The winch and cable can be dangerous if misused or safety is not your #1 thought.

Bandit



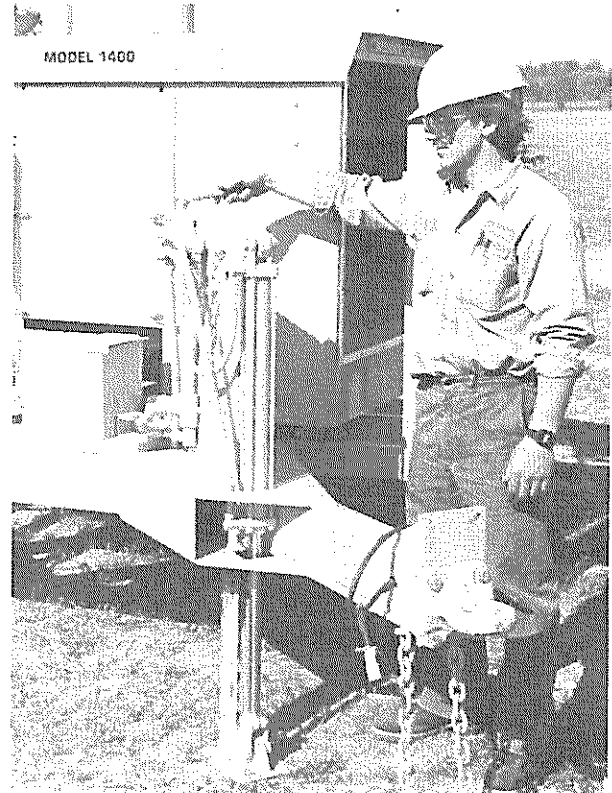
MODEL 1400

CONTROLS

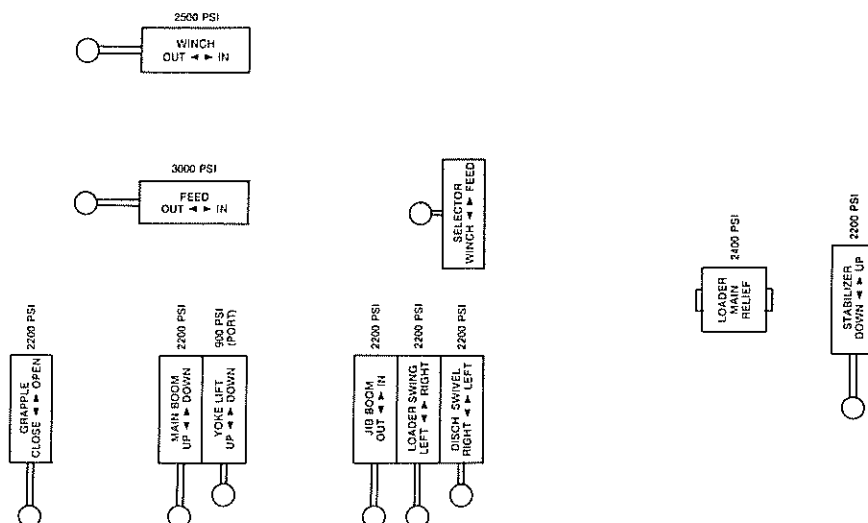


A common option on the tongue of machine is the hydraulic powered tongue jack that has the control valve located so it is easy to reach from either side of tongue.

The Bandit is also equipped with a hydraulic powered swivel on the top discharge of chipper. It allows 360° continuous rotation either direction and hydraulically locks in desired position.



BASIC LOCATION, OPERATION AND HYDRAULIC PRESSURES OF VALVES

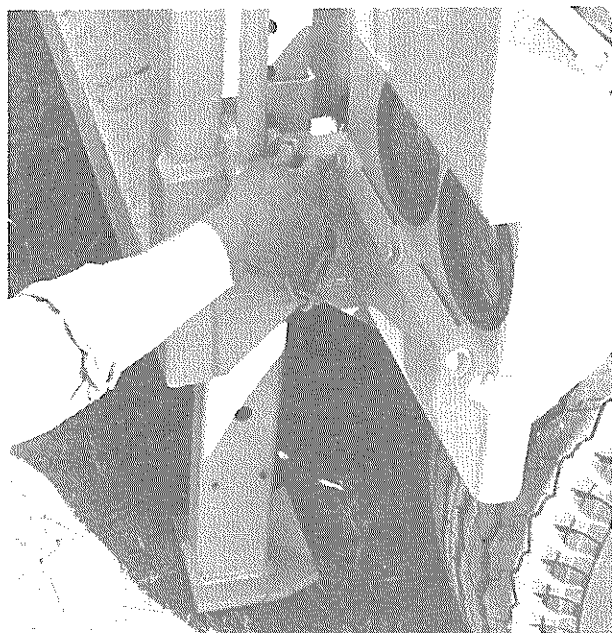


Bandit



MODEL 1400

CONTROLS

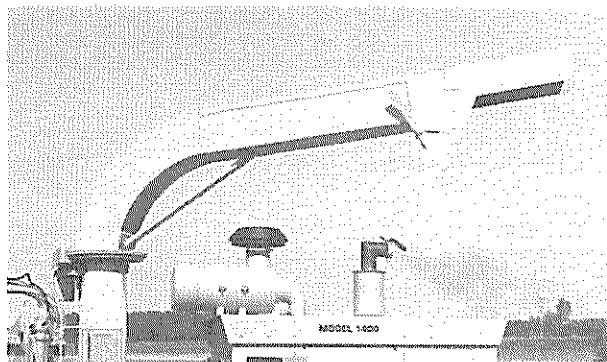
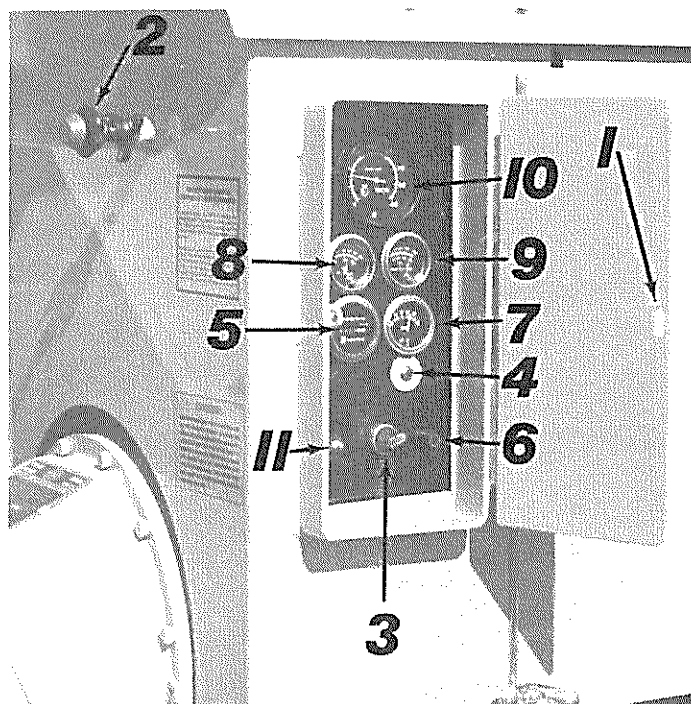


The Model 1400 Tree Bandit comes standard with two (2) mechanically adjustable rear stabilizers and (1) front stabilizer. The leg can be dropped to ground level and then insert the included pin to lock in position for stability.

On Cummins 6BTA - 200 HP

Engine Gauge Panel System

- | | |
|---------------------|----------------------|
| 1) Lockable Door | 7) Volt Meter |
| 2) Throttle | 8) Oil Pressure |
| 3) Key Start | 9) Water Temperature |
| 4) Permissive Start | 10) Tachometer |
| 5) Hour Meter | 11) Emergency Stop |
| 6) 10 Amp Fuse | |



The chipper discharge rotation is hydraulic powered for 360° swivel. For simple direction flow control of chips coming out of chipper discharge, a hand adjustable chip deflector is standard. It allows easy control to load van, boxed truck or stock pile.

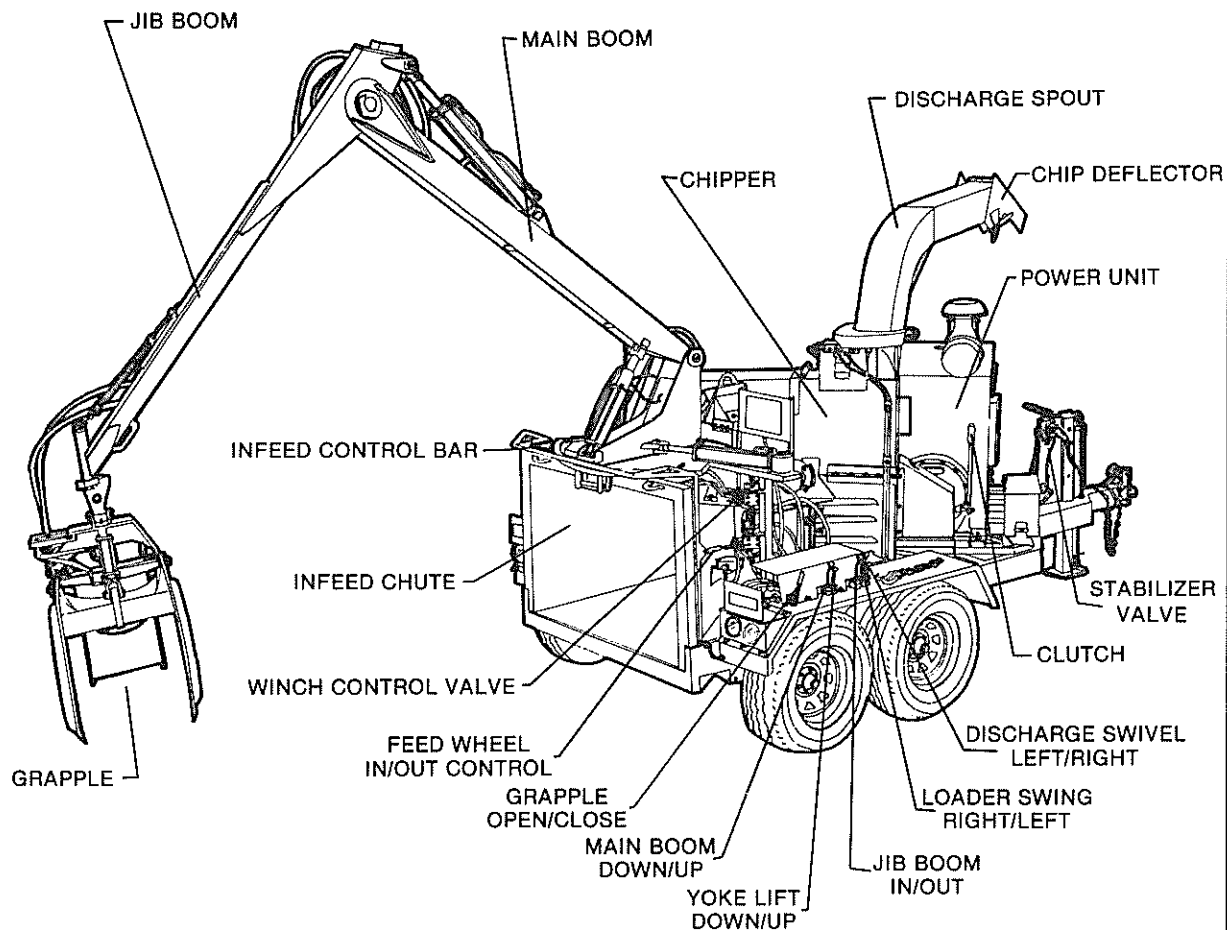
For safety and ease in operation the hydraulic system is designed to operate all controls EXCEPT feed wheels and winch with the engine running without engaging clutch/chipper.

Bandit



MODEL 1400

CONTROLS



OPERATIONAL CONTROLS AND MAIN COMPONENTS

WARNING

This machine must be operated and controlled by a safety minded and competent operator. Learn to operate the loader, chipper and engine in a smooth, non-jerky, unabusive fashion. Things do break, but most of the time it could have been prevented by regular maintenance schedule and logical, common sense operation. Regularly scheduled service avoids costly problems and preventable safety hazards.

Bandit

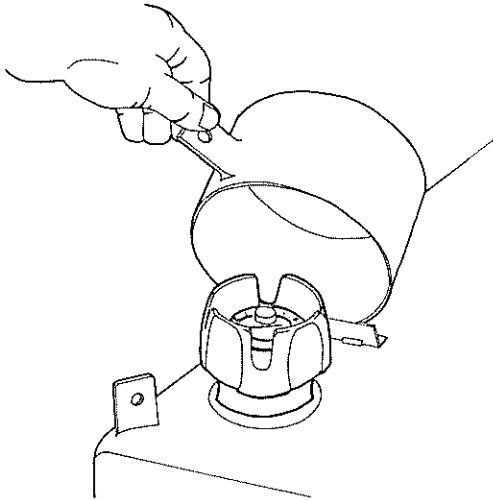


MODEL 1400

START-UP PROCEDURES

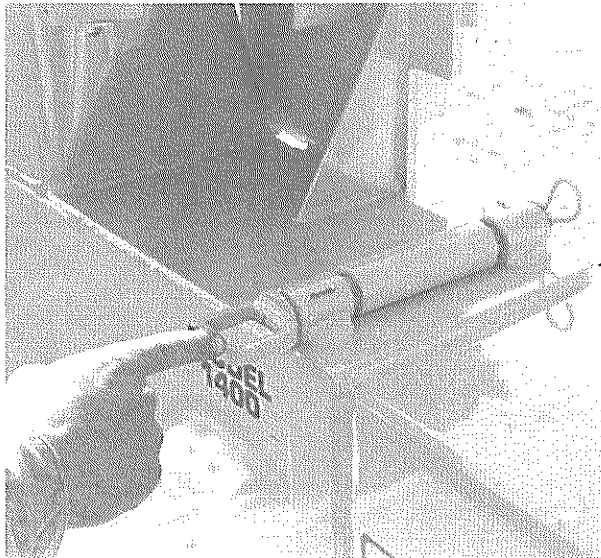
START-UP PROCEDURES





BEFORE STARTING ENGINE:

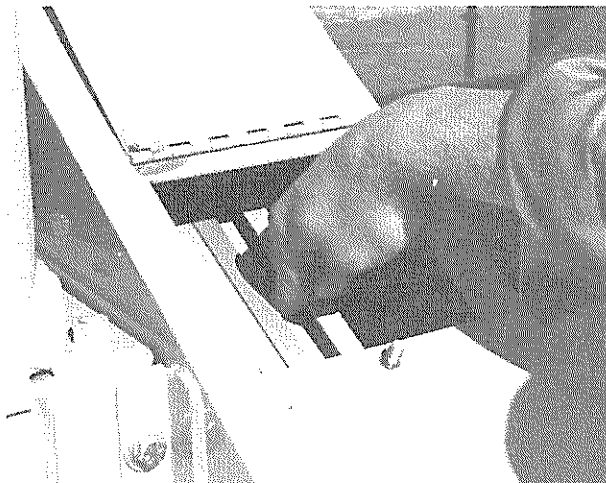
- 1) Read operator's manual thoroughly.
- 2) Check engine for oil, water and clean radiator guard.
- 3) Check hydraulic oil level, this should be at least $\frac{3}{4}$ full. Also check several times during day for excessive heat build up. Never run machine with hydraulic oil temperature over 150°.



- 4) Inspect your air filters and air precleaners often. Clean the air precleaners daily or twice daily in severe dust conditions. Change the air cleaners when sight gauge calls for it.
- 5) Clean and screen your radiator daily.
- 6) Make sure all guards are in place.



- 7) Check chipper to make sure chipper hood pin is securely in place.



- 8) Keep your chipper main drive belts tight but not overly tight, as this will train the rear bearing on the power takeoff. The chipper belts will need to be retightened several times in the first few days of running, as they will stretch.
- 9) Block wheels and install blocking under frame if unhooked from truck.



MODEL 1400

START-UP PROCEDURES



- 10) Your machine is equipped with stabilizer legs. It is a good idea to level the machine and block it.

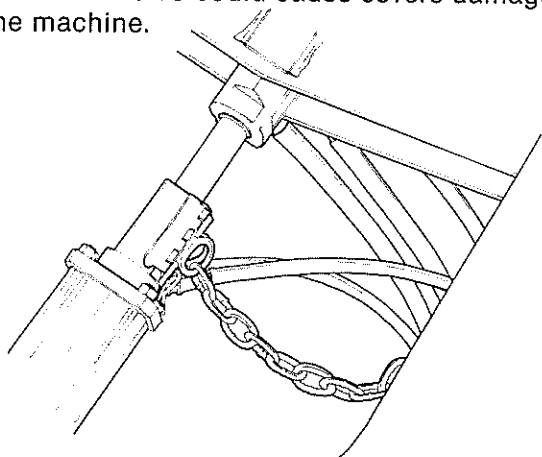
If your machine is equipped with hydraulic powered stabilizers, with the weight of the machine and the bouncing and rocking, the stabilizer cylinders have a tendency to leak off, letting the machine drop slowly down. Do not depend on them for sustained stability.

- 11) Check around machine to make sure everyone is clear.



CAUTION

Make sure the boom chain and cylinder block is removed before operating the loader. Failure to do so could cause severe damage to the machine.



CAUTION

Make sure wheels are blocked on both sides of the machine. This will stop the chipper from moving while the machine is working.

- 12) Unhook transport chains on loader and remove the transport cylinder block on main boom loader. (Store components in tool box.)

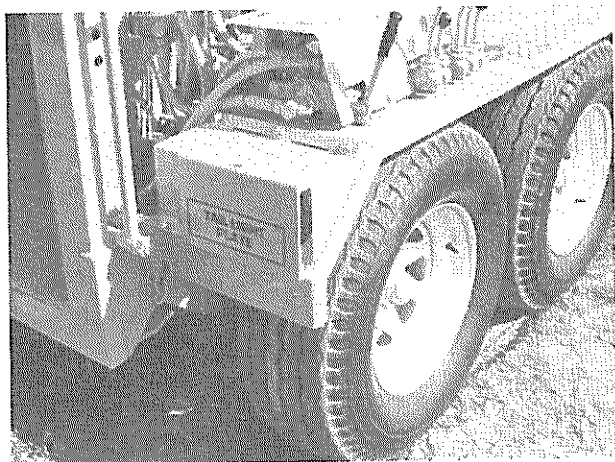
- 13) Make sure the chipper infeed chute is clear and the feed valve is in neutral.

Bandit



MODEL 1400

START-UP PROCEDURES



- 14) Make sure tail light covers are securely bolted in place over lights and tire blocks are in place.

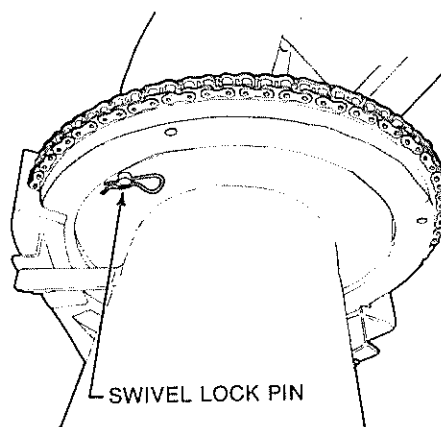
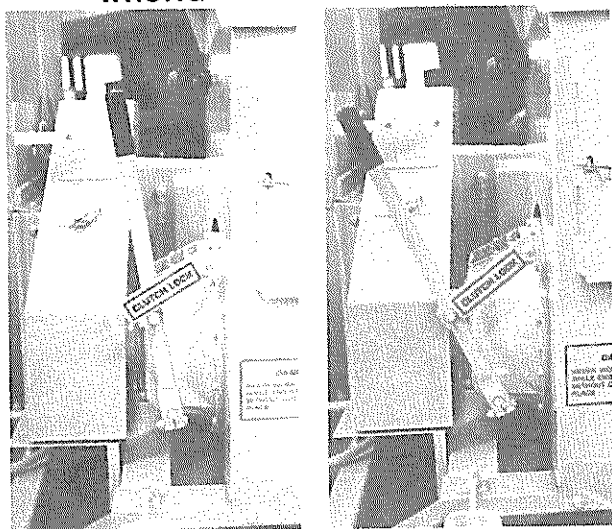
- 15) Make sure clutch is disengaged and locked out of gear.

- 16) Check the direction the discharge is pointing to, and make sure it is pointed away from buildings, people, animals or vehicles. Make sure you remove the swivel lock pin.

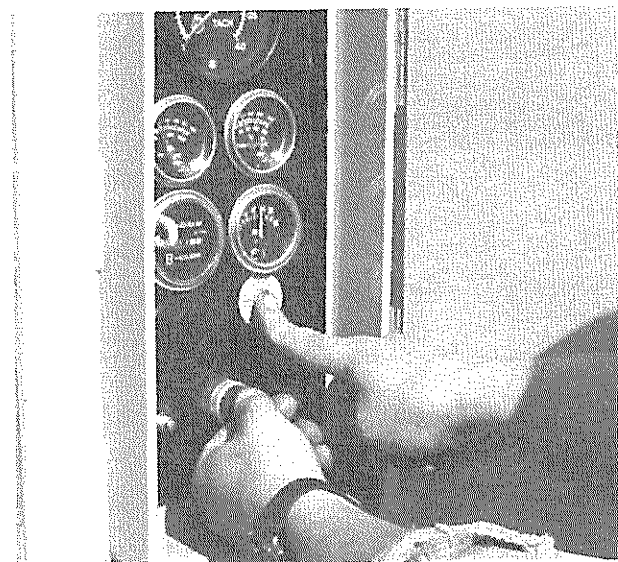
- 17) With your hard hat and safety glasses on, you are now ready to start the engine.

WRONG

RIGHT



- 18) Pull throttle out to $\frac{1}{4}$ throttle and turn key while holding in on safety switch. Continue to hold in safety switch when engine starts, until oil pressure goes above shut down setting. Release switch and engine should stay running.

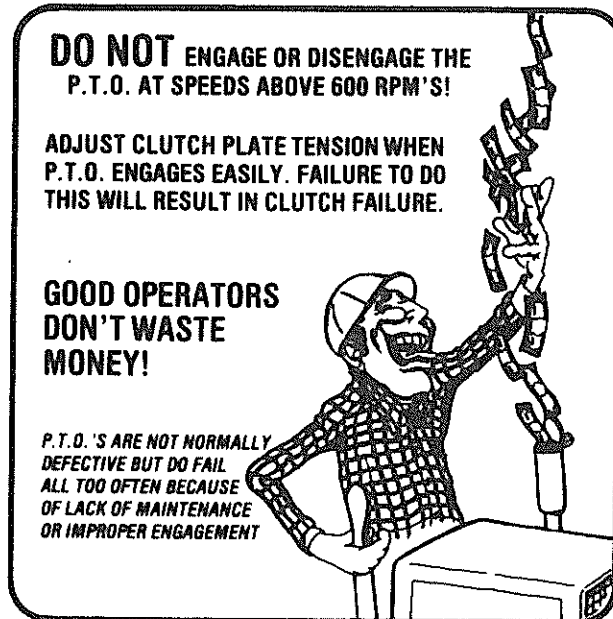


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MODEL 1400

START-UP PROCEDURES



- 19) With engine running at about 600 RPM, engage clutch slowly until chipper is turning same speed as engine. Engage clutch fully.

NEVER disengage the clutch at speeds above 600 RPM. This will also damage your clutch.

Always keep your clutch in adjustment, especially in the first few days of use. The clutch facings will wear in to fit together. If the clutch is slipping it will automatically burn your clutch up in a very short time.

The main way to tell if your clutch needs adjusting is to feel the tension on the clutch handle when engaging. If clutch engagement isn't taking most of your strength, the clutch needs adjustment.

- 20) Listen for any foreign ticking or steel on steel noises coming from chipper. If everything sounds good, start pulling out the throttle until it is fully extended. Tach should read 2400-2500 RPM on 200 HP Cummins.

- 21) You are now ready to assume operator position and chip wood.

- 22) Operate the loader controls to get a feel for speed and smoothness. This loader is made to lift and pull wood at the same time. The relief valves on the loader functions have been set accordingly. Don't ram and jam on the loader controls, learn to move loader in a smooth, slow but steady motion. Any loader can be damaged if it is abused. You can save time and be more efficient plus save down time from loader damage if you learn to run loader in a slow steady pace. If trees are tangled, start from top and take one at a time. Good skidder judgment on locating skids can also make the loader's job easier.

- 23) Position the discharge pipe into van or in a direction where it is not pointed at anyone or anything it could damage.

- 24) Make sure top feed wheel yoke goes up and down freely by hydraulically lifting it all the way to top and letting it free fall.

- 25) Check your machine over weekly for loose belts and hydraulic fittings. If you notice anything becoming loose, tighten it right away.

- 26) At the end of each day, clean around the machine. This will help to eliminate fire hazard and improve general conditions around the machine.

- 27) In cold weather situations, it is a good idea to let your hydraulic system idle for approximately 15 minutes before the machine goes into actual use. This will allow the hydraulic oil to warm up before hard use. Extremely cold oil will allow the pumps to cavitate and has a tendency to snap motor and pump shafts.



DAILY START-UP CHECKLIST

**EACH DAY BEFORE STARTING YOUR MACHINE
THE FOLLOWING CHECKS SHOULD BE MADE:**

- ☐ Observe all safety procedures.
- ☐ Check engine oil and coolant levels.
- ☐ Grease as recommended in lube schedule.
- ☐ Visually inspect all bearings for loose bolts and lock collars.
- ☐ Open hood and inspect the hardware and fan blades, making sure hood pin is securely locking hood.
- ☐ Check hydraulic oil level.
- ☐ Check drive belts and chains for proper tension.
- ☐ Inspect hoses for damage and replace if necessary.
- ☐ Check infeed spout for foreign objects.
- ☐ Make sure clutch is disengaged.
- ☐ Check around the machine for tools, cans, chain saws, etc.
- ☐ Check radiator screen and make sure it is clean.
- ☐ Check air cleaner and clean if necessary.
- ☐ Check fuel level (running out and re-priming is time consuming).
- ☐ Make sure all guards are in place.
- ☐ Block tires and tongue for stability and safety.
- ☐ Make sure discharge direction is pointed safely.



MODEL 1400

CHIPPING PROCEDURES

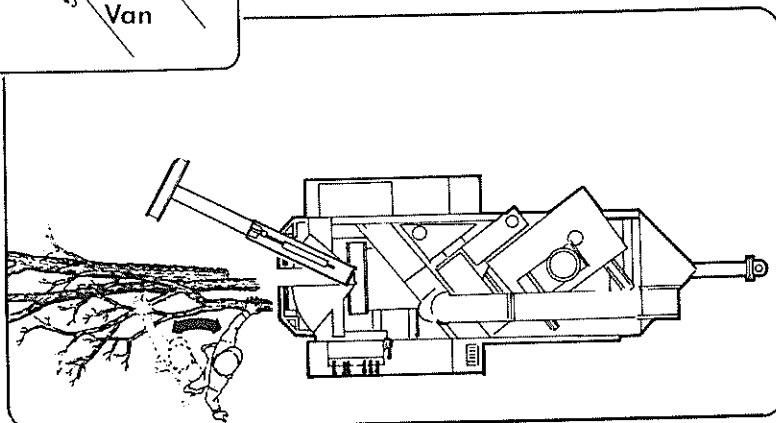
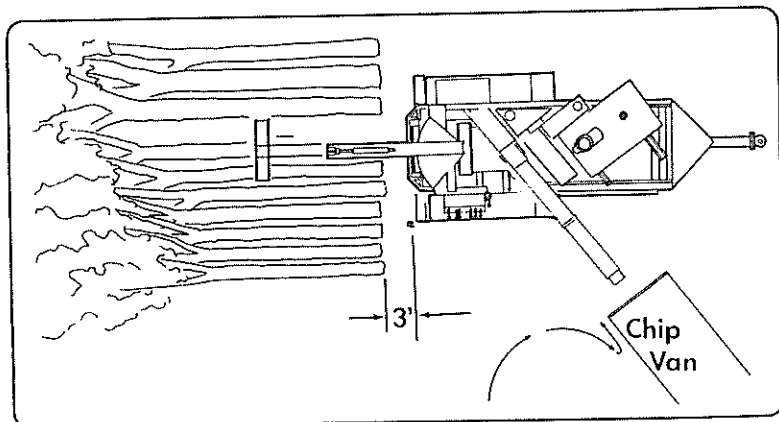
CHIPPING PROCEDURES





MODEL 1400

CHIPPING PROCEDURES



Always look over chipping landing and give some thought to the following:

1. Ease of spotting the chip vans, trying to give the drivers room to make a semi circle turn and then back up to discharge spout.
2. Ease of skidders locating skids around in-feed as shown. It is easier to start the trees into the chipper and takes less power of the loader if operator can work from the right side of the infeed center.

Note: Poor skidder judgement on location of trees can make it very hard for loader operator to keep trees feeding evenly.

3. Chipper and vans should be located on fairly level ground so that incline of discharge makes chips hit top of van about 2/3 of the way in. This will help fill the very front of the van for maximum pay load.
4. If the smaller wood must be fed into chipper by hand, always stand to the right (curb side) of the chipper. Wood has a tendency to pull

to the left after the chipper starts feeding. By standing on the right side of the wood, you will then be free to turn and walk away to retrieve more wood.

5. If you are after production, don't stand and watch the tree go into the machine. Once the tree has started into the machine, you can reach out with the loader and get the next one started in. Always listen to the engine RPM so you can feed the chipper to its capacity but not overfeed. It takes time and practice to use the chipper to its maximum capacity.

WARNING

If you have short pieces of wood, try to put them into the feed wheels by simply starting some longer pieces into the feed wheels and then lay the short pieces on top of the longer ones.

DANGER

Never locate your chipper site under or near electric power line. The loader boom goes very high and could contact the lines, which could electrocute someone near the chipper.

Bandit



KNIFE GRINDING

ALTHOUGH THE QUALITY OF KNIVES ARE VERY IMPORTANT, THERE ARE MANY VARIABLES WHICH WILL DETERMINE THE FREQUENCY OF GRINDS.

Chipper knives must be kept sharp at all times if good machine and knife performance is expected. The chief cause of poor cutting performance is dull knives.

Dull knives are caused by:

1. Stopping the feed of wood and allowing the knives to rub against the unfed wood.
2. Hydraulic feed too fast for chipper.
3. Excessive resin in material being chipped.
4. Dirt, grit or foreign objects on wood.
5. Use of wrong cutting angles and bevels.
6. Improper care of knives.
7. Poor grinding procedures.

Make sure the knives are ground at 29 to 31°. If knives are ground at less than 29° they will dull very rapidly. On the other hand, if they are over 31°, they won't allow wood to feed properly.

The species of wood will also have an effect on how long between grinding. Probably the most dramatic change will occur because of soil conditions. In late fall and spring when the soil is wet, dirt will cling to bark through the entire chipping process, dulling the knives very quickly.

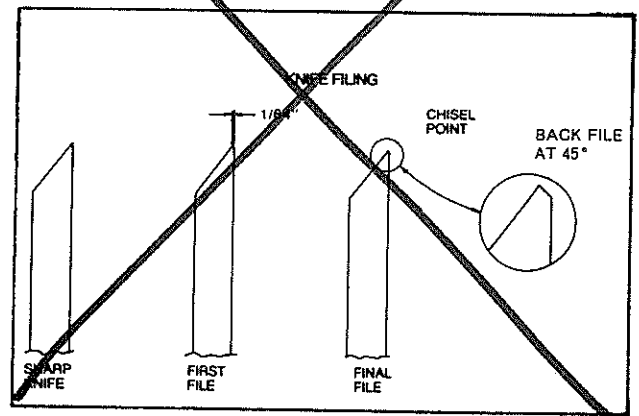
Many times the cutting edge can be brought back with a good #10 Bastard Mill File. This saves expensive grinding and replacement costs.

Dull knives produce poor quality chips. The chips will turn out to be chunks and long slivers. Dull knives cause unnecessary strain on the power unit and excessive fuel consumption.

Whether knives are reground or filed back to sharpness, many chipping people have found back filing to be helpful in sustaining longer knife life.

Knives should be replaced in sets. These sets are determined by the amount of resharpener done to the knives. A reground knife may be significantly narrower than a new knife and should therefore be installed with its mate.

Using a #10 Bastard File, file with the knife perpendicular to point, creating approximately 1/64" flat edge. Then on the backside of the knife at approximately 45°, file the edge back to a small chisel type point (see diagram below).



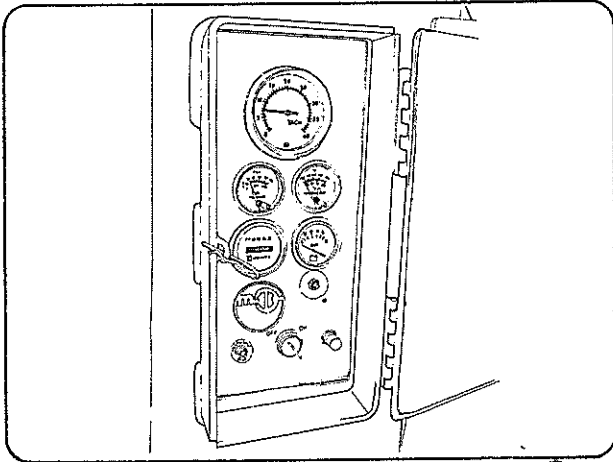
3 1/8"

REMEMBER . . .

Dull knives take a great deal more horsepower and cause a greater strain on the knives and chipper.



CHANGING CHIPPER KNIVES



DANGER

Never for ANY reason open or leave open the chipper hood while the disc is turning. With disc stopped, remove the chipper hood lock pin.

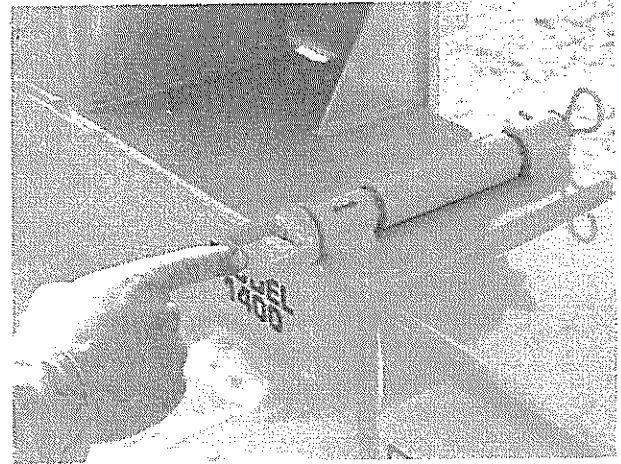


DANGER

The disc lock pin must be slid into secure position before attempting any maintenance or knife changing.

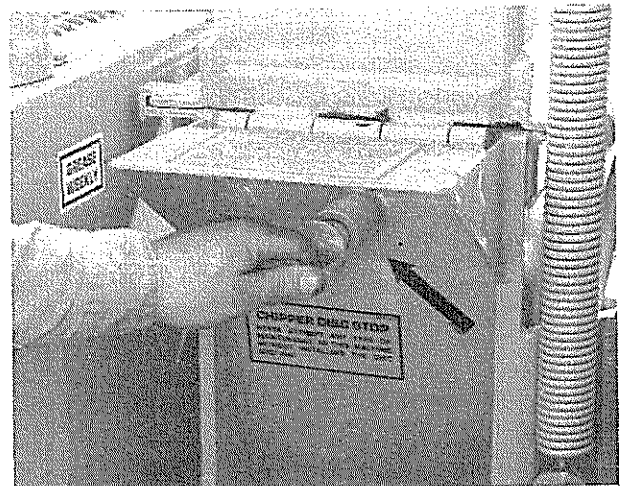
WARNING

Make sure that the engine is shut OFF and the ignition key is in your pocket, NOT in the gauge panel. Clutch lock must be disengaging the clutch.



DANGER

When opening chipper hood, do not slam the hood to the open position because it will damage the hood hinge. It will cause misalignment that lets knife possibly hit hood. During chipping, the force of disc RPM can make the hood break loose. It will be a dangerous flying object.



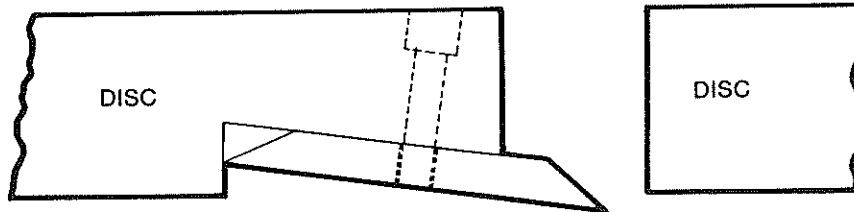


MODEL 1400

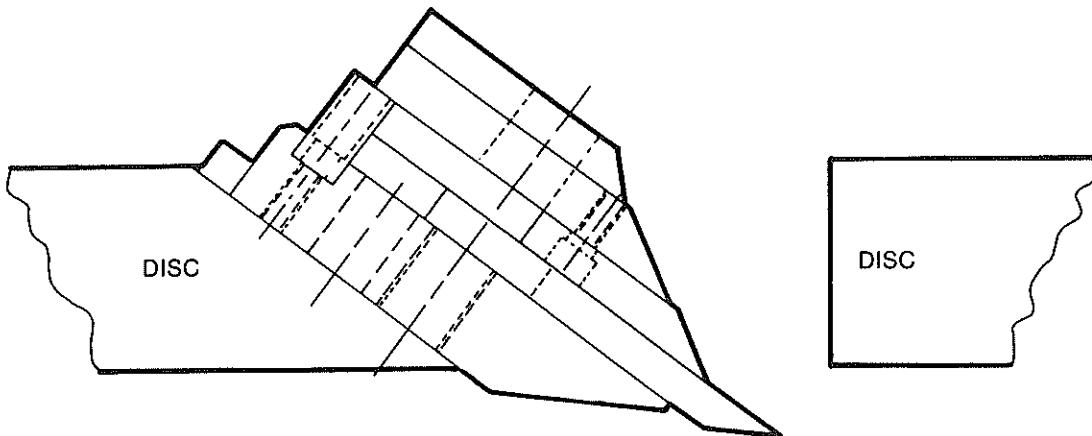
CHIPPING PROCEDURES

The Model 1400 Chipper comes standard with "bolt-in" double edged chipper knives. These knives are easily replaced by removing the bolts and nuts holding them to disc. There are (3) knives per pocket and (3) nuts and bolts hold each knife.

There is also a popular optional knife system called "clamp-in" knife or "full pocket hardware", This system involves more replaceable items that clamp the knife to hold it in position. This style gives a much more consistent uniform chip size. Because the knife is clamped in, the hardware doesn't need to be disassembled, just the nuts loosened. The "clamp-in" knife changing requires two people, one on each side of chipper disc, for security and accurate fit.



"BOLT-IN KNIFE" HARDWARE ASSEMBLY



"CLAMP-IN" KNIFE HARDWARE ASSEMBLY

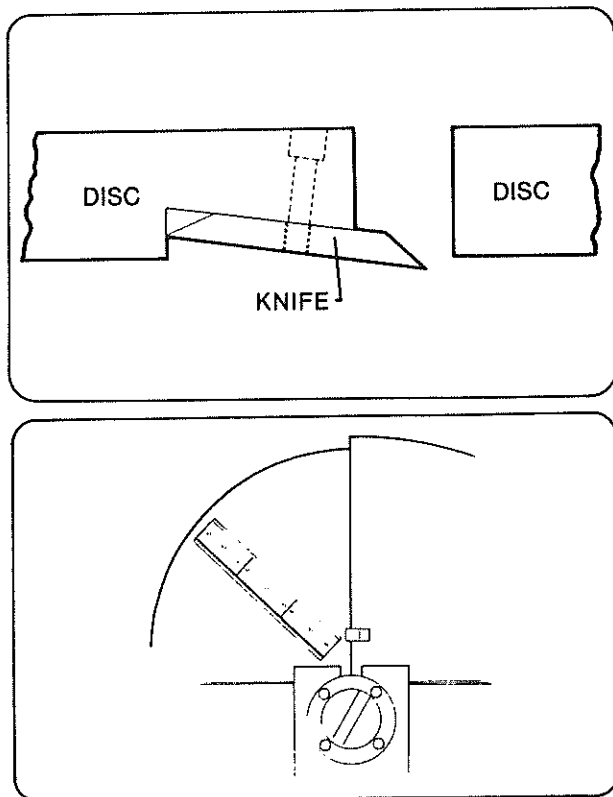
WARNING

Chipper knives are sharp and can be dangerous. It is always necessary for your protection to be extra careful and wear leather gloves when handling knives.

DANGER

The knives must be securely fastened and torqued in position. If one comes loose or breaks, someone or something can get hurt.

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**"BOLT-IN" KNIFE HARDWARE**

When changing "bolt-in" knives, it is a simple procedure that can be done much easier and safer with two people, one on each side of chipper disc. The person on the knife side of the disc can hold the knife in position and the "Allen" wrench in the head of each bolt securely. Then the other person can use a 6-point socket to remove nuts from bolts. These nuts are self locking and should be replaced after 5-6 times of removal. Take out all three knives from the pocket. Clean out completely the machined surface the knives set into. Check the pocket surface and the bolt holes for unusual wear. Re-install the knives starting with the inside knife and working out toward rim of disc. Torque knife bolts to proper torque (60 ft. lbs.). Make sure the sharp cutting line edge of all three knives are straight and even. Also readjust if needed to eliminate any gaps between each knife.

These bolt-in knives have sharp edges on both sides which doubles the knife life. However, when regrinding an edge back to sharpness, there is a stopping (throw away) point.

As shown in drawing, once a knife edge has reached the minimum dimension, that edge can no longer be used. If you try it, the pocket will pack wood and knife is likely to break, which can cause bodily injury as well as a severely damaged chipper.

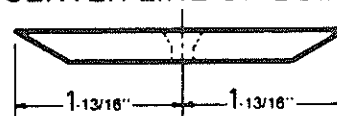
DANGER

Replace the bolts, nuts, and knives when they are due. DON'T stretch it! You will pay for it, either by damage to a machine or possible damage to a person.

—WARNING—

THIS CHIPPER DISC IS EQUIPPED WITH HEAVY DUTY 1/2" THICK CHIPPER KNIVES

NEVER ALLOW THESE KNIVES TO WEAR BEYOND THE ABSOLUTE MINIMUM OF 1-13/16" FROM THE CENTER LINE OF BOLT.

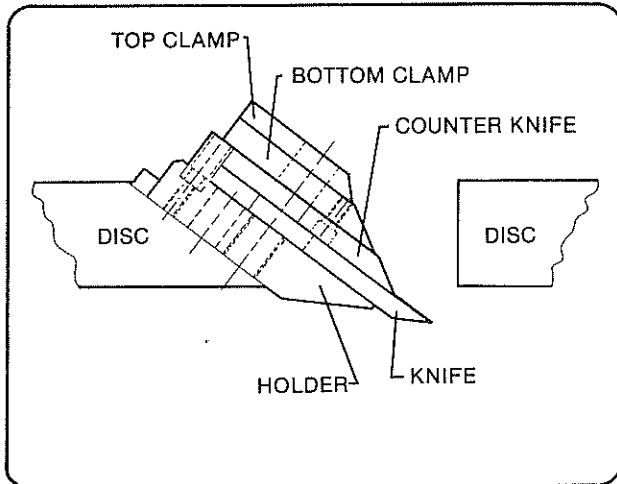


THESE CHIPPER KNIVES MUST BE ORDERED UNDER PART NO. 900-9902-00

OBR 430



"CLAMP-IN" KNIFE HARDWARE



When changing "clamp-in" knives, it is a must that one person be on each side of chipper disc to change knives.

To remove the dull knife, have one person hold the knife in position, carefully with leather gloves, from infeed side of disc. Then the other person from engine side of disc can loosen the clamp nuts with a 6-point socket. They only need to be loosened enough to let knife slide out infeed side of chipper disc. Clean all debris out of the knife slot in hardware. Always visually check the counter knife for replacement wear.

DANGER

Replace the bolts, nuts, knives, counter knives, clamps and holder when they need it. **DON'T** stretch it! You will pay for it, either by damage to machine or possible damage to a person.

Using a piece of wood and a screwdriver install the sharp babbitted knife and hold it firmly into position. The piece of wood will hold the knife back into pocket and the screwdriver must be used to raise the knife to the outer edge of pocket.

To retighten the knife clamp, first tighten center nut on clamp and then tighten the outside nuts. Clamp nuts must be torqued tight at 250 ft. lbs.

Always check with a .002 to .005 feeler gauge to make sure the knife, counter knife and clamps are seated tight at all seams when done.





MODEL 1400

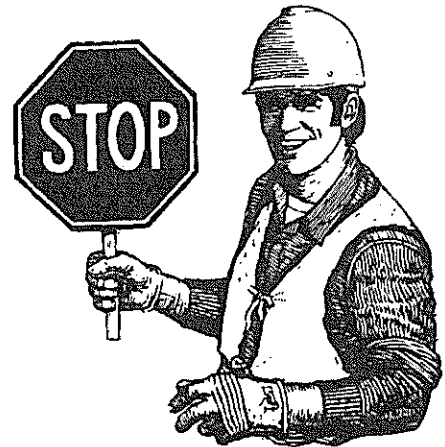
CHIPPING PROCEDURES

No matter which style of knife you have in your chipper, the following must be done very carefully after new knife is installed.

DANGER

Turning the disc by hand, use a feeler gauge to set knife edge to anvil clearance. It should be .060 to .080 and the adjustable feed rate anvil should be moved to insure this clearance from highest knife on disc. Moving the disc by hand is very dangerous. Be careful, no matter how slow the disc is turning, you can be severely injured.

Use the following chart and pages to change the chip size, if you have the optional clamp-in knife system.



DANGER

Always wear leather gloves when working with chipper knives!

FEED RATE SHEAVE COMBINATION AND SPECS

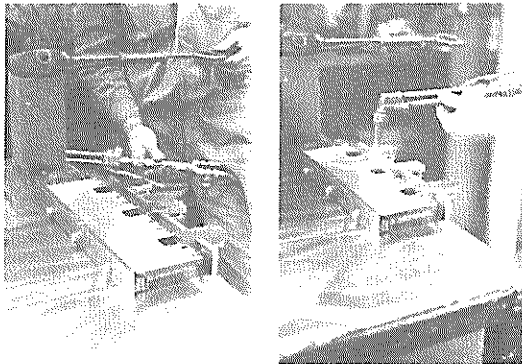
	3/4" Chip	7/8" Chip	1" Chip
Engine RPM (Cummins 6BTA)	2500	2500	2500
Engine Sheave	5V-7.1"	5V-7.1"	5V-7.1"
Chipper Sheave	5V-18.7"	5V-18.7"	5V-18.7"
Chipper RPM	950	950	950
Chipper Belts	5VX-1060	5VX-1060	5VX-1050
Feed Rate (ft. min.)	118	138	158
Pump Sheave	BK-9.0-H	BK-7.7-H	BK-7.0-H
Pump Belt	5VX-800	5VX-800	5VX-800
Pump RPM	2100	2500	2800
Pump Ring Size	7P	7P	7P
Pump Gal. Output	11.8	14.3	16.0
Feed Pump Pres.	3000	3000	3000
Feed Wheel RPM	56	67	75

The chip size change option is **ONLY** available with the clamp-in knife system. Please consult dealer or manufacturer on your application **before** changing chip size.

Bandit



KNIFE BABBITTING PROCEDURES

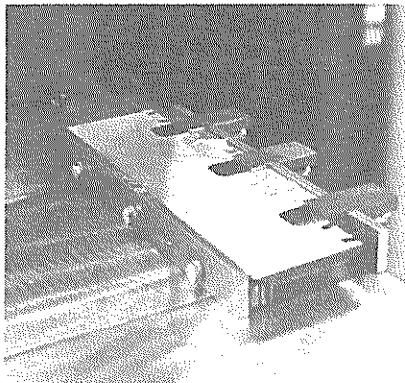


Insert the knives into the fixture and slide the spacers up tight to avoid overspill of the babbitt material.

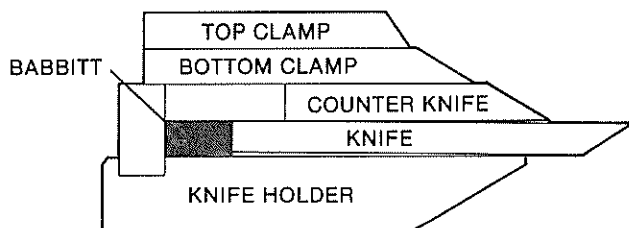
Heat the knives and babbitting fixture with a torch. This will prevent blow back which could occur if there were any moisture left in the fixture.

Pour babbitt slowly from the ladle, gradually filling the cavity.

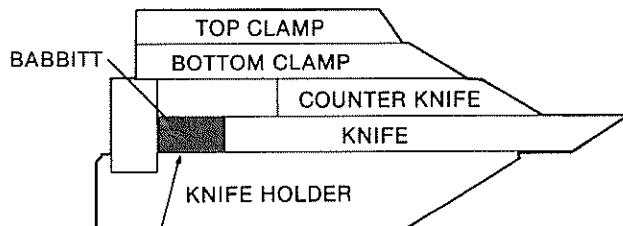
Once the babbitt has cooled, remove the knife and place on a stand so the excess babbitt can be filed away. Do not allow the babbitt to extend over the edges of the knife or serious damage will result to the components in the knife pocket.



"IMPROPER" USE OF BABBITT ON CHIPPER KNIVES



"PROPER" USE OF BABBITT ON CHIPPER KNIVES



THIS SURFACE HAS TO BE FILED FLAT ON BOTH SIDES!!!





CHANGING CHIP SIZE

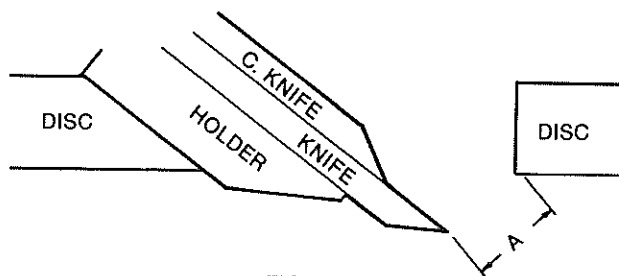


FIGURE 1

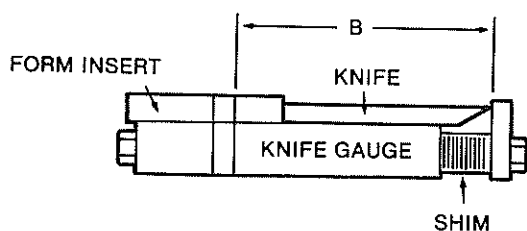


FIGURE 2

CHIP SIZE	A	B
3/4"	.87"	4.82
7/8"	1.00"	4.94
1"	1.12"	5.07

FIGURE 3

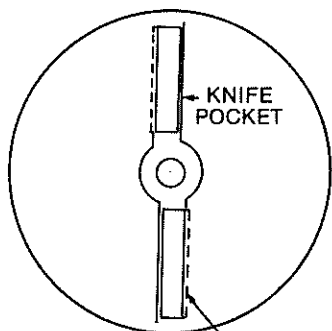
TRIM HERE TO
ENLARGE CHIP SIZE

FIGURE 4

Different customers may require different chip length, making it necessary to change the chip size.

This can be done by the following steps:

1. Remove knives and then back the anvil out about 1/4" for clearance.
2. Babbitt the knives after you have reset the knife gauge to the correct "B" dimension (see figure #2) for desired chip length. Install newly babbitted knives.
3. The Chip slot opening will need to be enlarged for a larger chip. Opening "A" should be 1/8" larger than the chip length required (see figure #3). This is done after the knife has been babbitted to proper width and installed back into chipper. Enlarging the chip slot is done by trimming the disc pocket. Decreasing the chip size can be done by building up the edge of the disc pocket with weld.
4. Once the knives have been installed and correct chip opening is obtained, rotate disc slowly by hand to make sure the knives have clearance with housing and anvil. Now reset the anvil so that you have .060" to .080" clearance to knife.
5. The next step is matching the hydraulic feed rate to the chipper feed rate. This is done by changing the sheave on the feed wheel pump. See chart on Feed Rate Sheave Combinations.
6. Keep in mind the bigger the chip size, the more horsepower is required to chip wood.

NOTE

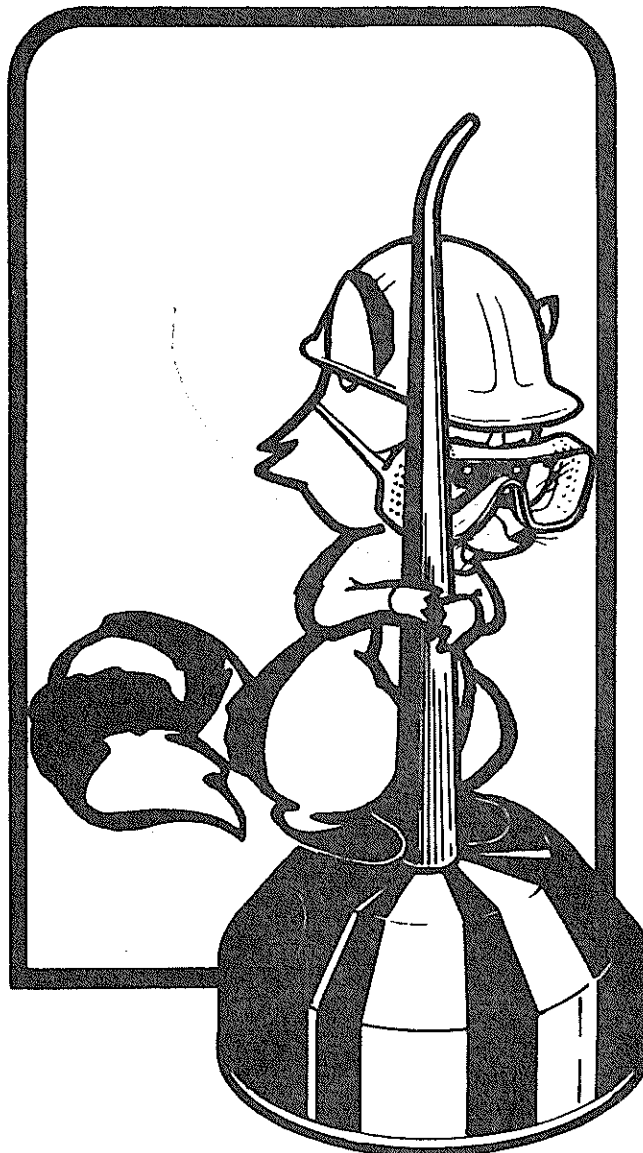
It may be to your advantage to consult with dealer or Bandit manufacturer about your application **BEFORE** changing chip size.



MODEL 1400

MAINTENANCE

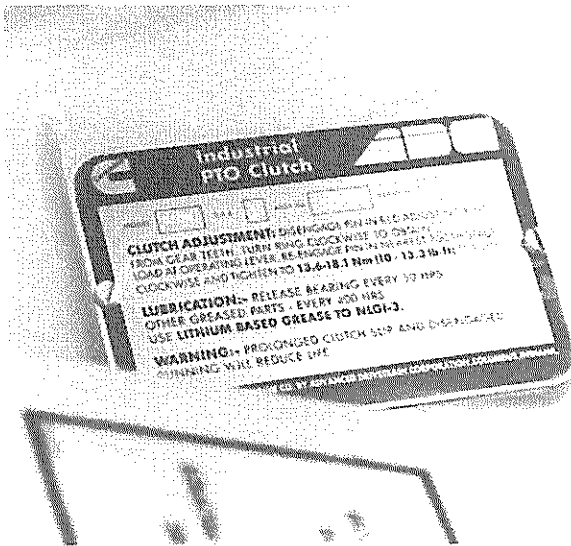
MAINTENANCE





DANGER

Never perform any type of maintenance on the machine unless the operator area is clear and all controls are shut off. Also install clutch lock. The operator could accidentally engage a control lever causing you serious injury.



NOTE:

CLUTCH FAILURES ARE VERY RARELY COVERED UNDER THE WARRANTY. Most failures are attributed to operator abuse.

The PTO CLUTCH is a relatively expensive wear item on the chipper. This decal is installed on each machine as a reminder to the operator to save money and down time by proper maintenance and usage. Refer to your PTO manual for proper maintenance procedures.

Please remember, if it **ISN'T** taking most of your strength to engage the PTO, **IT ISN'T ADJUSTED PROPERLY.**

DANGER

NEVER ENGAGE OR DISENGAGE THE CLUTCH ABOVE 600 RPM.

The new clutch will require a break-in period, and will need to be adjusted several times during this period. To adjust clutch, remove cover plate and turn until adjustment pin comes to the top. Pull the pin and rotate yoke clockwise, one notch at a time, or until proper pressure is required to engage clutch.

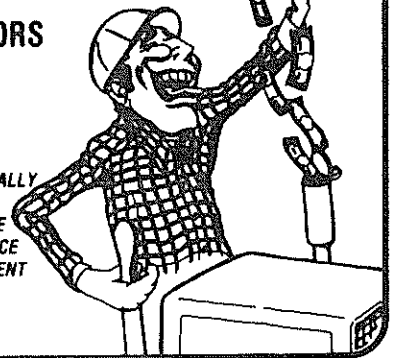
The inspection cover plate on the clutch is stamped with correct adjustment procedures. Grease throw out bearing with one shot of lithium based grease daily. The oil level in rear carrier bearing must be maintained at all times.

DO NOT ENGAGE OR DISENGAGE THE P.T.O. AT SPEEDS ABOVE 600 RPM'S!

ADJUST CLUTCH PLATE TENSION WHEN P.T.O. ENGAGES EASILY. FAILURE TO DO THIS WILL RESULT IN CLUTCH FAILURE.

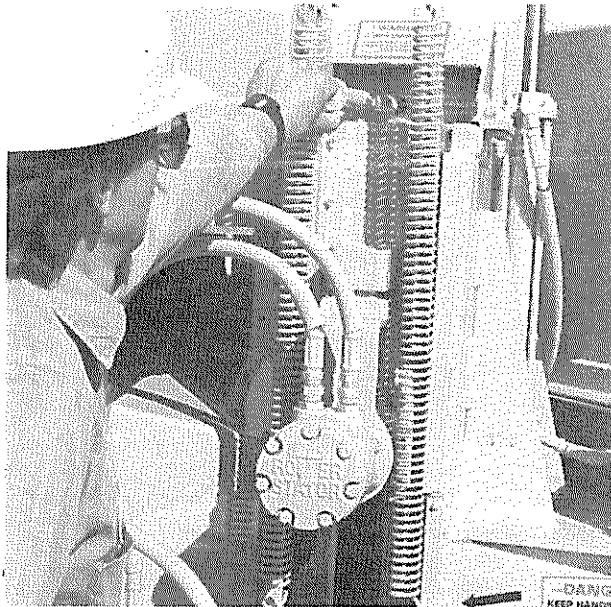
**GOOD OPERATORS
DON'T WASTE
MONEY!**

P.T.O.'S ARE NOT NORMALLY DEFECTIVE BUT DO FAIL ALL TOO OFTEN BECAUSE OF LACK OF MAINTENANCE OR IMPROPER ENGAGEMENT





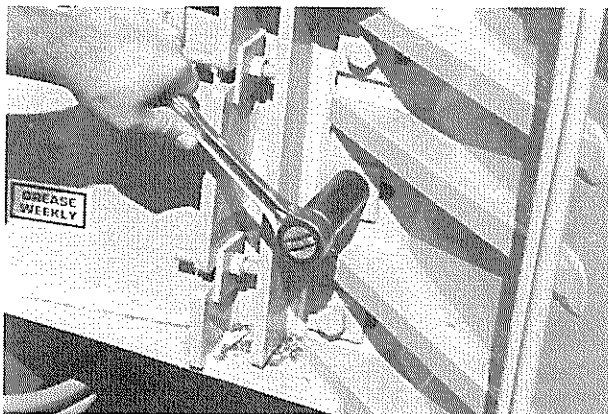
SETTING ANVILS



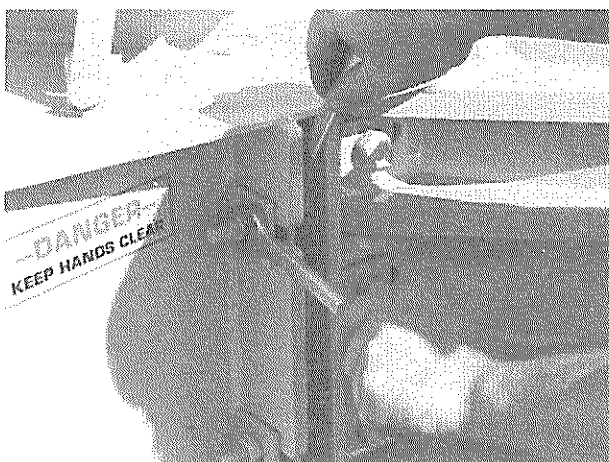
DANGER

NEVER WORK UNDER FEED WHEEL YOKE WITHOUT INSTALLING LOCK PINS FIRST.

Checking Anvil Clearance — Raise top feed wheel yoke. Insert lock pins inside of yoke. Shut off engine, remove key and make sure operator area is clear. Crawl into chipper spout with feeler gauges and a light. Check the distance between knife and anvil. The clearance should be .060 to .080. **The anvil must be replaced if it is excessively worn or broken.**



Setting Anvil Clearance — If you find that your anvil needs to be reset, start by loosening the anvil bolts on side of chipper spout.



Break loose the lock nuts on the adjusting bolts. Have someone inside the chipper spout check for proper clearance. Using the adjusting bolts or nuts, move the anvil in or out to obtain the proper clearance (.060 to .080).

Tighten the anvil bolts to the proper torque (210 ft. lbs.) and then tighten lock nuts on adjuster bolts. Check your clearance again to make sure the anvil didn't move. Make sure that both knives have clearance. If one knife is a little closer than the other one, use the closest one for the .060 to .080 setting.



HYDRAULIC OIL FILTERS



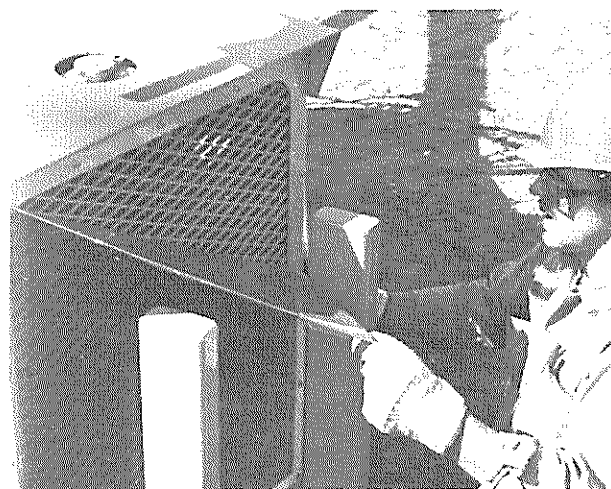
The hydraulic tank is a triangular tank on the left (driver) side of the machine. It has a return line filter that should be changed after 4 or 5 days of running, and then every 400 hours. There is also a gauge on the filter's head which indicates when the filters need changing. If the gauge needle is in the red, change filter immediately.

When you are done changing filter, always check the oil level to make sure it is at least $\frac{3}{4}$ full.

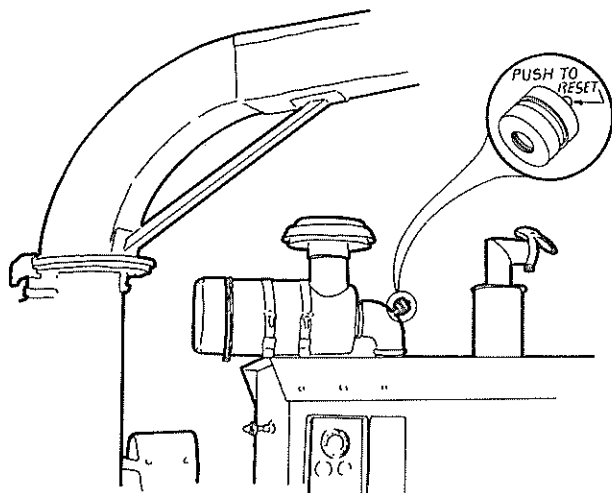
Replace worn hydraulic oil once a year. This is also a very good time to clean and flush the hydraulic tank.

RADIATOR

Blow radiator clean daily. The screen on the radiator will also collect dust and debris and should be cleaned frequently. To clean, shut down the engine and tap screen to knock off debris.



AIR FILTERS AND PRE-CLEANERS



Air filters and pre-cleaners must be inspected often. Clean air pre-cleaners daily and change air filters when necessary. Service indicator will show when filters need to be changed. Indicator window will turn red when filters become dirty and must be changed. After filter has been changed, press rubber button on top of indicator to return service indicator to its normal position.

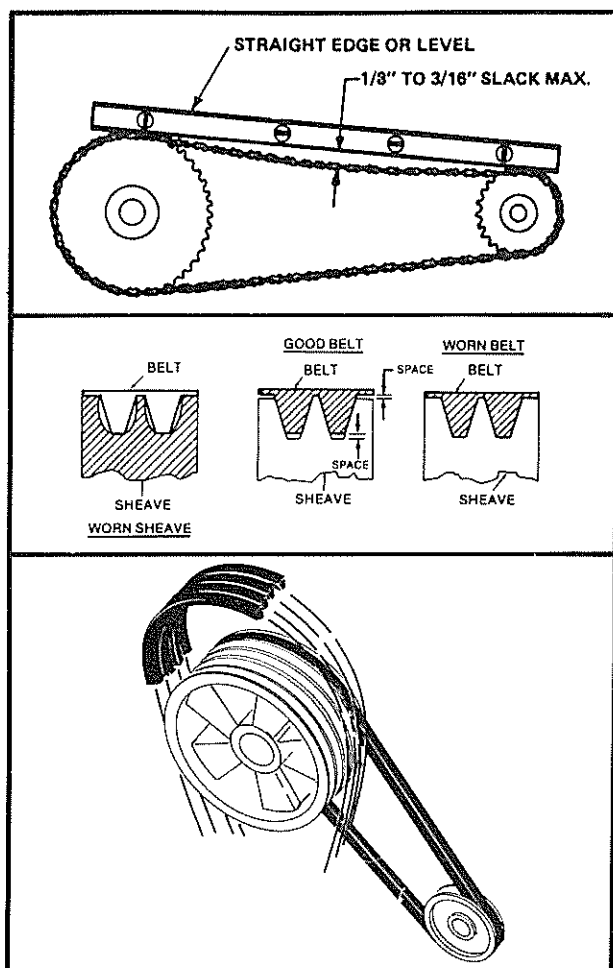
Occasionally engine compression may turn the indicator red. You may want to try the reset button before changing air filters.

Do not blow dust and debris out of air cleaner with air. To avoid possible engine damage, knock dirt out of air cleaner. When air passage becomes restricted, air cleaners must be replaced.

Bandit



GENERAL MAINTENANCE



During the first few days of operation, all chain drives must be inspected for slack. Chains should have between 1/8" and 3/16" slack, and should be tightened accordingly. Chains should be lubricated regularly to decrease friction and add additional life.

Pump belts must also be inspected frequently for slack during the first few days of operation and periodically thereafter. Worn or misaligned belts and sheaves in the power train causes belt slippage, thus power loss. Keep the power train working for you, not against you, by checking for needed adjustment or replacement.

CAUTION

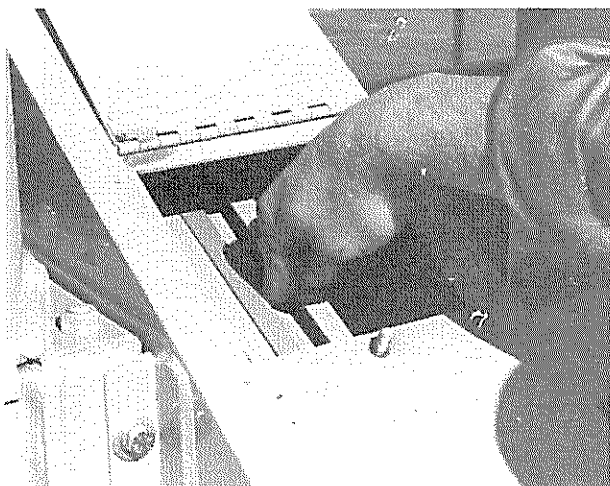
DO NOT OVERTIGHTEN PUMP BELTS. Tighten to 70 ft. lbs. — approximately 3/8" deflection, pushing hard on belt.

Chipper drive belts must be inspected frequently during the first few days of operation and weekly thereafter. To test proper tension of drive belts, push down as hard as possible using only two fingers, in center of each belt. Belt should only push down about 1 1/2"

To adjust belt tension, loosen engine frame on all four corners and pull engine forward, measuring to maintain alignment.

CAUTION

DAMAGE TO CLUTCH BEARING MAY RESULT IF CHIPPER DRIVE BELTS ARE OVERTIGHTENED.

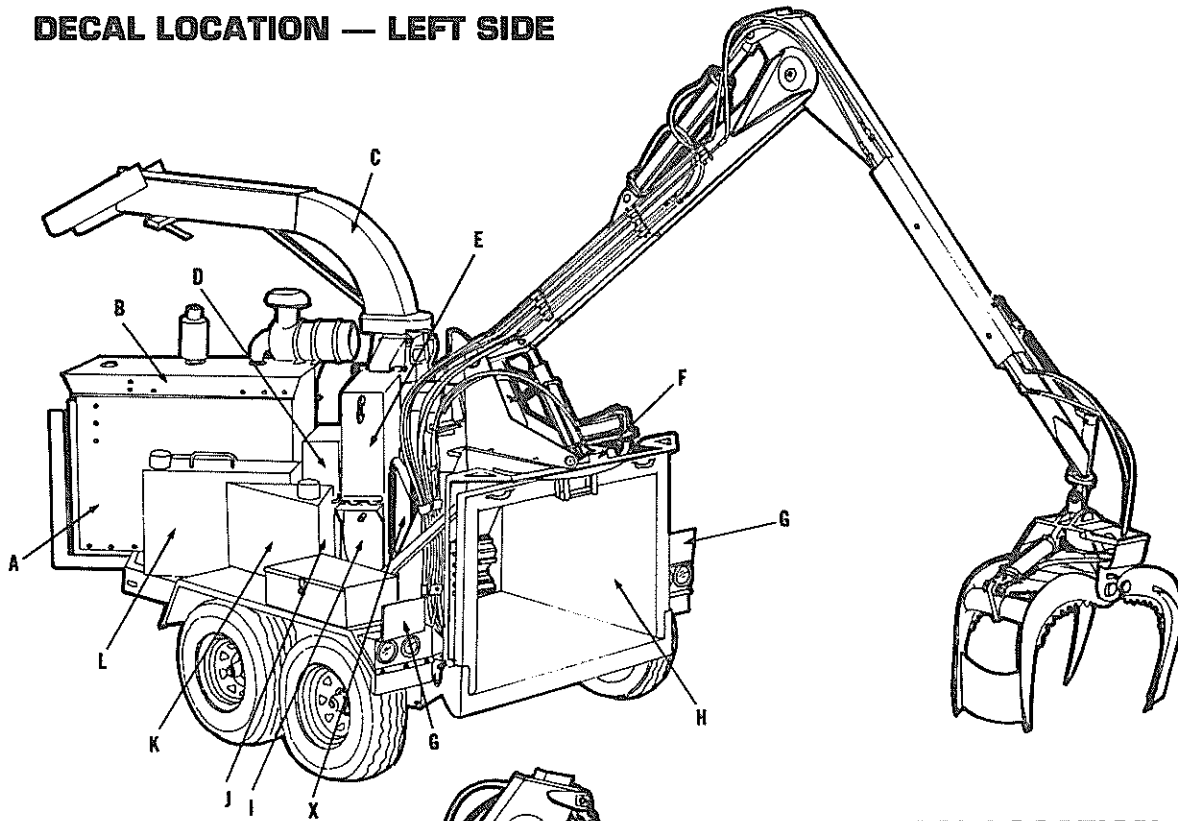




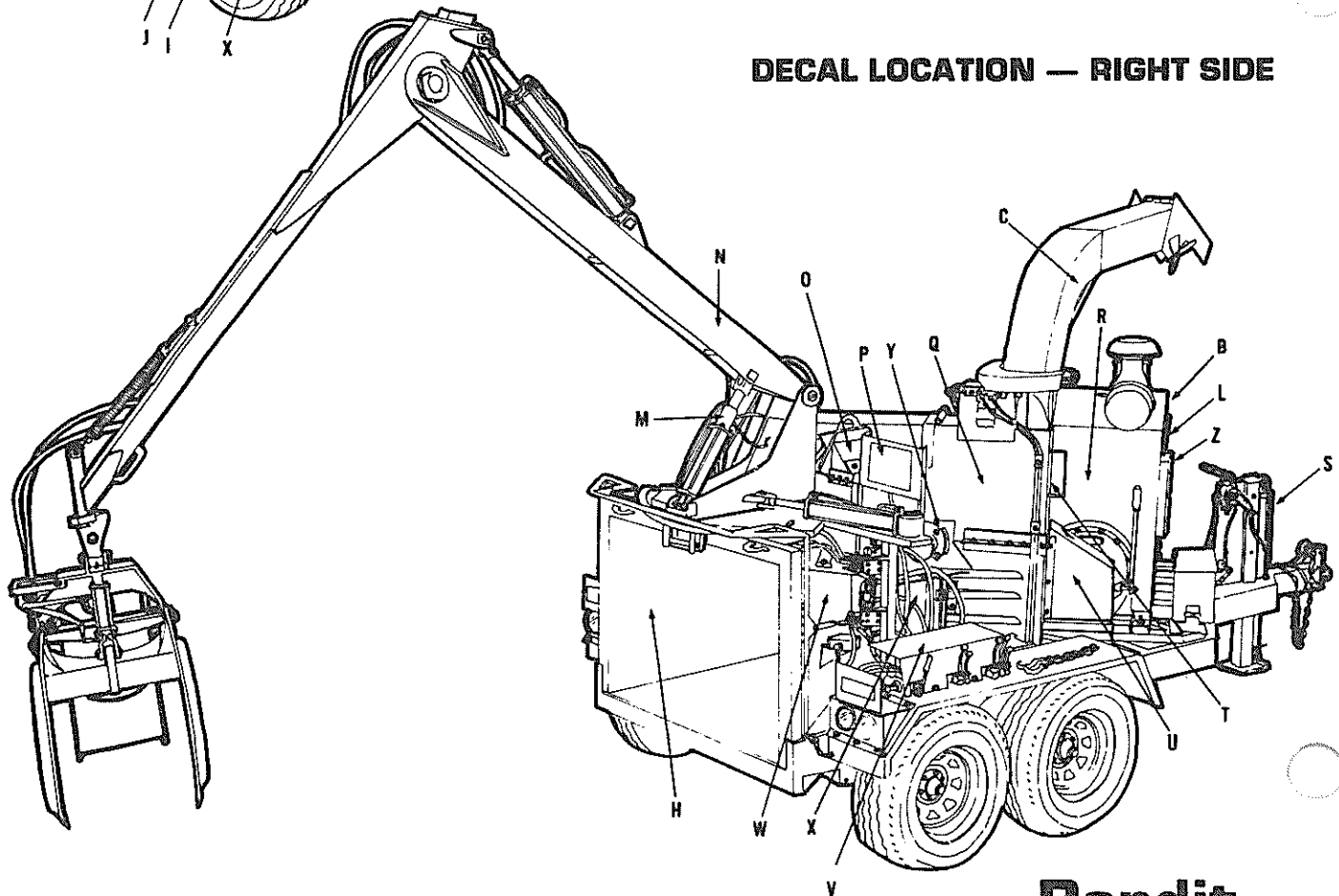
MODEL 1400

MAINTENANCE

DECAL LOCATION — LEFT SIDE



DECAL LOCATION — RIGHT SIDE





DECAL LOCATIONS

THE FOLLOWING IS A BASIC LIST OF THE DECALS AT THEIR GENERAL LOCATIONS. THEY ARE FOR YOUR BENEFIT, SO KEEP THEM READABLE OR REPLACE THEM.

LOCATION	NUMBER	DECAL DESCRIPTION
A	OOB-301	"Flammable Fuels... Maintain Service..."
	OBR-408	"Diesel Fuel Only..."
	OBR-431	"Warning... Leave 1/2" Top of Tank..."
B	OBW-107	"Small Bandit Logo"
	OOB-112	"Performance First, Inc."
	OOB-117	"Model 1400"
C	OBR-427	"Danger... Flying Debris..."
D	OOB-239	"Avoid Hydraulic Pump Failure..."
E	*OOB-240	"Knife Hardware Assembly"
	*OBR-430	"Warning... Knife Width..."
	OBR-411	"Danger — Cutterwheel Coasts..."
F	OOB-259	"Safety Control Bar... Pull to Reverse"
G	OOB-217	"Tail Light Plate"
H	OBR-400	"Danger — Keep Hands Clear..."
	OBR-423	"Warning... Disc... Infeed..."
I	OOB-215	"Chipper Disc Stop..."
	OBR-406	"Danger... Don't Slam Hood..."
J	OOB-247	"Obtain Best Bearing Life..."
K	OOB-214	"Hydraulic Oil Tank... 3/4 Full..."
	OOB-218	"LE-10 Micron Filter"
L	OBW-108	"Large Bandit Logo"
M	OOB-219	"Transport Brace..."
N	OBR-418	"Danger... Loader on Ground..."
	OBR-419	"Danger... In Front of Chipper..."
	OBR-421	"Danger... Near Power Lines..."
O	OBR-426	"... Insert Yoke Lock Pin..."
P	OBR-413	"Stop to Think..."
Q	OOB-240	"Knife Hardware Assembly..."
R	OOB-244	"Protect Main Throttle..."
	OBR-414	"Operation Tips..."
	OBR-424	"... Clutch Lock in Place..."
	*OOB-256	"Stabilizer, Down-Up"
S	OBR-404	"Danger... Flying Chips..."
T	OOB-216	"PTO... Adjustment..."
	OOB-242	"Remove Guard... Chipper..."
	OOB-300	"Caution... Belt Check Door..."
	OOB-248	"Grapple, Open-Close"
V	OOB-249	"Main Boom, Up-Down"
	OOB-250	"Yoke Lift, Up-Down"
	OOB-251	"Loader Swing, Left-Right"
	OOB-252	"Discharge Swivel, Right-Left"
	OOB-257	"Jib Boom, Out-In"
	*OOB-253	"Winch, Out-In"
	*OOB-255	"Selector, Winch-Feed"
W	*OOB-226	"Winch... Operating Instructions"
	OOB-228	"Hydraulic Trouble Shooting..."
	OOB-254	"Feed Wheels, Out-In"
X	OOR-410	"Danger — Moving Parts..."
Y	OOB-208	"Check... Retainer Bolt..."
	OOB-247	"Obtain Best Bearing Life..."
Z	OBR-412	"Warning... Must Operate With Training..."
	OBR-416	"Safety Practices..."
	OOB-243	"Owners Responsibility... Nuts & Bolts..."
	OOB-212	"Owners Responsibility... Decals..."

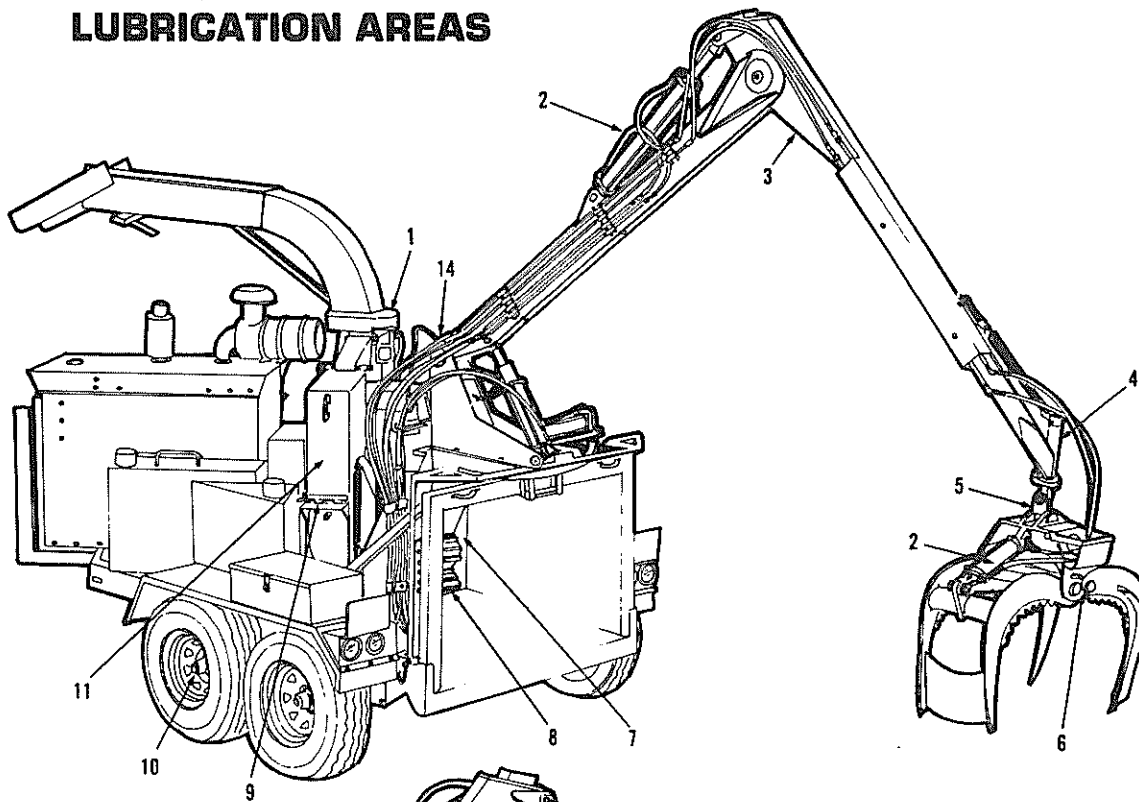
NOTE — THE STARRED (*) DECALS ARE INSTALLED ONLY IF THE OPTION IS ORDERED ON MACHINE.



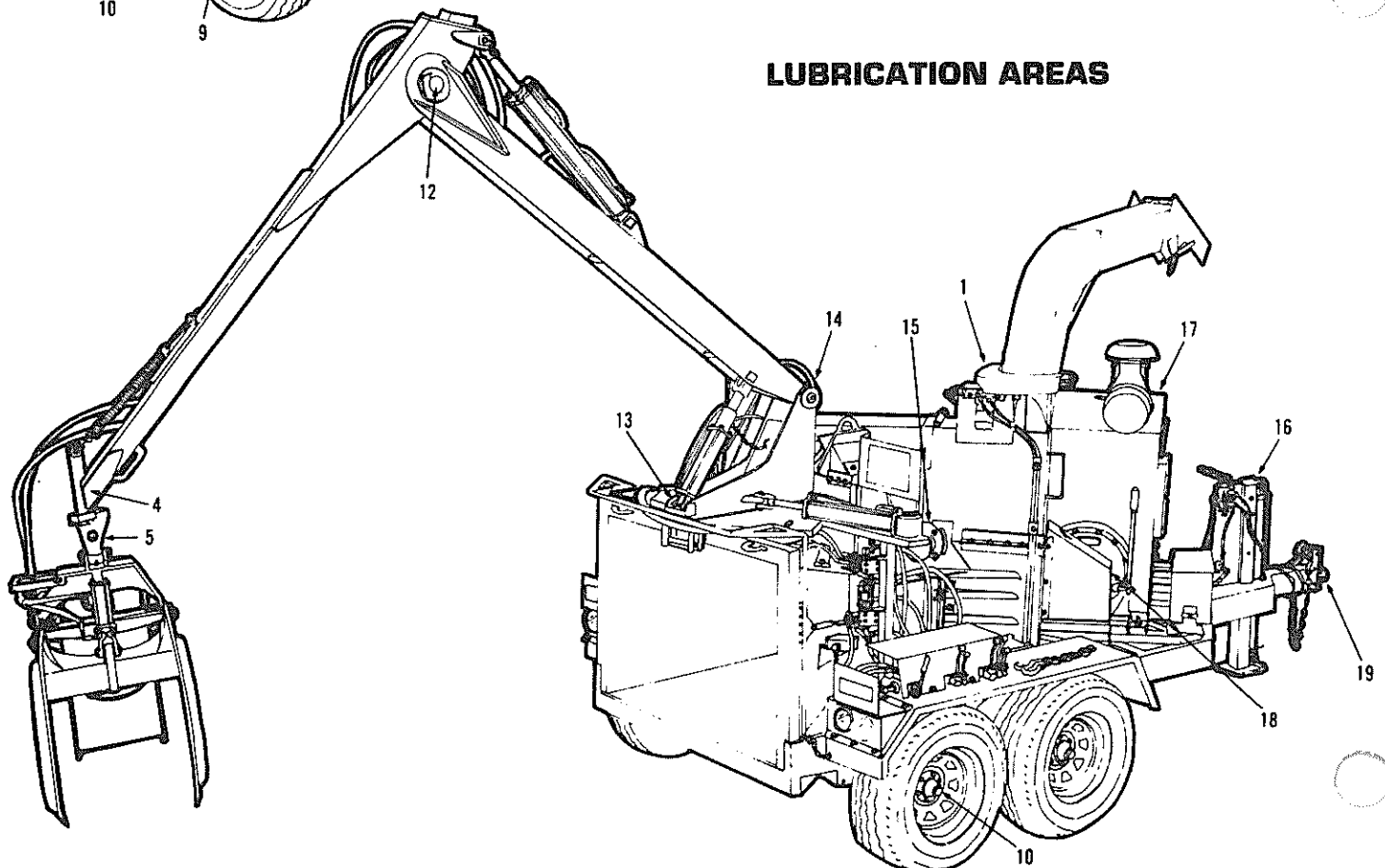
MODEL 1400

MAINTENANCE

LUBRICATION AREAS



LUBRICATION AREAS



Bandit



MODEL 1400

MAINTENANCE

LUBRICATION AREAS

BEARINGS — USE EP-2 LITHIUM BASE GREASE IN ALL APPLICATIONS

HYDRAULIC OIL — USE 10W40 MOTOR OIL GRADE API DESIGNATION OF SE CLASSIFICATION (ANTI-WEAR OIL)

PIN FRICTION OIL — MIN. 90W GEAR LUBE

LOCATION	DESCRIPTION	TYPE APPLICATION	DAILY	WEEKLY
1	Discharge Swivel Chain	Oil		X
	Discharge Swivel Plate	Grease		X
2	Cylinder Mount Pins	Oil		X
	—Loader Main Boom Cylinder			
	—Loader Jib Boom Cylinder			
	—Loader Grapple Jaw Cylinders			
	—Loader Swing Cylinder			
	—Stabilizer Cylinders			
	—Yoke Lift Cylinders			
3	Boom Joint Side Plates	Grease	X	
4	Grapple Rotate Pin	Grease	X	
5	Grapple Knuckle Pins	Grease	X	
6	Jaw Pivot Pins	Grease	X	
7	Top Wheel Slide Plates	Grease	X	
8	Feed Wheel Bearings	Grease	X	
9	Hood Hinge	Oil		X
10	Axle Wheel Bearings	As Required	—	—
11	Rear (Belt Side) Chipper Bearings	Grease	X	
12	Boom Pivot Pin	Grease	X	
13	Loader Pivot Plate	Grease	X	
14	Boom Pivot Pin	Grease	X	
15	Front Chipper Bearing	Grease	X	
16	Stabilizer Slides	Grease		X
17	Engine (Follow Engine Manufacturer Recommendations)	As Required	—	—
18	PTO (Clutch) (Follow Manufacturer Recommendations)	As Required	—	—
19	Pintle Ring Hitch (Many Users Say Greasing Pintle Increases Life)	Grease		X

THESE RECOMMENDATIONS ARE MINIMAL. EXTENSIVE USE AND DIRTY CONDITIONS WILL REQUIRE LUBRICATION MORE OFTEN.



HYDRAULIC OIL, FILTERS AND SCREENS

FILTERS

Filters must be replaced after first 40 hours of operation and every 400 hours thereafter. The filters must be replaced with a 10 micron rating, do not exceed this rating.

SUCTION SCREENS

In the bottom of the hydraulic tank are (2) replaceable suction screens. They are screwed into the tank and then the suction hoses screw into them. These screens should be replaced with each hydraulic oil change. Replace with original equipment.

HYDRAULIC OIL

Hydraulic oil should be changed after every 2000 hours of normal operating conditions. Replace oil every 1000 hours under dirty conditions. Contaminated or dirty oil and filters cause loss of power and excessive wear.

HYDRAULIC OIL TYPES (Anti-Wear Hydraulic Oils)

Suggested Summer Use	Suggested Winter Use	Brand Name
10W40 Motor Oil Grade API Designation of S.E. Classification		
AW30	AW20	Ashland Valvoline
AW HYD. 30	AW HYD. 20	Cities Service
Pacemaker XD-30	Pacemaker XD-20	
DTE-26	DTE-25	Mobil
Duro AWS-315	Duro AWS-215	Atlantic Richfield
Energol HLP-C68	Energol HLP-C46	BP Oil Corp.
Nuto H68 (54)	Nuto H46 (48)	Exxon
PO 150 VG 68	PO Lube C-103	American Oil & Supply
Rando HD 68 (HDC)	Rando HD 46 (HDB)	Texaco
Security 54 AW	Harmony 46 AW	Gulf Oil
Harmony 68 AW (54AW)	Harmony 48 AW	
Suntac 202 WR	Suntac 152 WR	Sun
Tellus 68 (33)	Tellus 46 (29)	Shell

BOLT TORQUE CHART

(These Torques Based on Dry, Clean Thread)

DESCRIPTION	BOLT SIZE	FT. LBS. TORQUE
Chipper Bearings Bolts	5/8 - 11 NC	160 ft. lbs.
Chipper Shaft Bearing Retainer	3/4 - 10 NC	300 ft. lbs.
Chipper Draw Ring	3/4 - 16 NF	320 ft. lbs.
Knife Holder (Clamp-In)	5/8 - 11 NC	180 ft. lbs.
Knife Holder Bar (Clamp-In)	1/4 - 20 NC	11 ft. lbs.
Knife Nuts (Clamp-In)	3/4 - 16 NF	250 ft. lbs.
Counter Knife to Clamp (Clamp-In)	1/4 - 20 NC	11 ft. lbs.
Fan Blade	5/8 - 11 NC	160 ft. lbs.
Feed Plate Anvil	3/4 - 10 NC	280 ft. lbs.
Hydraulic Motor Coupler	1/2 - 13 NC	85 ft. lbs.
Loader Turn Nut	1-3/4 - 5 NC	300 ft. lbs.
Loader Boom Pin Lock Bolts	1/2 - 13 NC	85 ft. lbs.
Engine Hold Downs	5/8 - 11 NC	180 ft. lbs.
Wheel Lug Nuts	1/2 - 20 NF	100 ft. lbs.
Knife Bolts (Bolt-In)	1/2 - NC	90 ft. lbs.
Cylinder Pin Lock Bolts	3/8 - 16 NC	40 ft. lbs.

**MAINTENANCE PROCEDURES**

ITEM TO BE SERVICED	CHECK			PROCEDURE (Always Replace If Needed)
	DAY	WEEK	MONTH	
Chipper Feed Rate Anvil		X		Readjust or replace
Chipper Bearings (Infeed Side)	X			(1) pump of grease
Chipper Bearings (Belt Side)	X			(1) pump of grease
Chipper Belly Band			X	Check for wear holes
Chipper Drive Belts	X			Tighten to correct tension - do not overtighten
Pump Drive Belt (Feed)	X			Tighten to correct tension - do not overtighten
Chipper Fan Blades		X		Check for tightness and wear
Chipper Knife Nuts	X			Check for tightness and wear
Chipper Knife	X			Check for tightness and wear
Chipper Counter Knife		X		Check for tightness and wear
Chipper Clamps & Holders		X		Check for tightness and wear
Engine Precleaner & Air Cleaner	X			Clean or replace element
Engine Coolant	X			Increase to full level
Engine Oil	X			Increase to full level
Feed Wheel Bearings	X			(1) pump of grease
Feed Wheel Teeth			X	Check sharpness
Hydraulic Oil	X			Min. 3/4 full - replace once a year
Hydraulic Oil Filter			X	Replace max. 400 hours
Inspect for Hydraulic Leaks	X			Repair or replace
Inspect Nuts and Bolts	X			Tighten or replace
Inspect Loader Boom Hoses	X			Check and repair
Inspect Hoses and Fittings	X			Check and repair
Machine Lubrication				See Lube Chart
Hydraulic Flow Dividers	—	—	—	Clean min. every 3 months
Engine Lubrication	—	—	—	See manufacturer manual
P.T.O. (Clutch)	—	—	—	See manufacturer manual
Radiator Debris Screen	X			Clean
Hydraulic Pressures			X	Check and reset
Flow Dividers			X	Clean if any spotty hydraulic problem
Hydraulic Motor Coupler	X			Check for fit and tightness
Bearing Retainer Bolt		X		Check for tightness
Discharge Swivel Chain		X		Adjust for tightness and lubricate
Discharge Swivel Lock		X		Must be there and used at transporting
Tire Air Pressure			X	Fill to tire capacity
Engine Radiator	X			Blow out to clean
Battery Posts			X	Clean and tighten
Discharge Wear		X		Check for wear holes
Chipper Throat Wear		X		Buildup as needed
Pintle Ring Hitch Wear		X		Replace as needed
Fuel Leaks	X			Repair or replace
Engine Gauges	X			Repair or replace
Engine Speed	X			Cummins 6BTA MUST run 2500 RPM
Spring Tension - Top Wheel		X		Tighten just enough not to slip on wood
Spring Tension - Grapple Pivot	X			As needed
Hood Lock Pins	X			Make sure they're tight and secure
Ends of Disc Pockets			X	Check wear to rim of disc
Chucking of Chipper Disc		X		No more than 1/16" or check front bearing
Axle Wheel Bearing			X	Adjust and grease



MODEL 1400

MAINTENANCE

There are several forms that must be completely filled out and returned to us in reference to our portion of warranty. Read and understand the Bandit Limited Warranty responsibilities. Some components on your machine are covered by their respective manufacturers and can not be handled through Bandit Industries as stated on Warranty Page 3 of this manual.

Use this manual to help you resolve what and where your problem is, in most cases you can fix it easily. If you still have problems, work through the dealer you purchased the machine through, or contact Bandit Industries direct if needed.

Make sure the following forms are used, for us as well as you, to keep track of service and pending warranty request. It is our company policy that all parts shipped out will be invoiced until the possible warranty parts are returned **with** Warranty Claim Form **completed** for consideration.

Make sure the Warranty Validation Form is completed and sent in to us as soon as you receive the Bandit. This will activate our warranty responsibilities.

IMPORTANT — THIS FORM MUST BE RETURNED TO PERFORMANCE FIRST, INC., WITHIN TEN (10) DAYS.

Performance First, Inc.
6750 Millbrook Road
Remus, MI 49340
(517) 561-2270

WARRANTY VALIDATION FORM

PURCHASER INFORMATION:
Company Name _____ Street Address _____
City _____ State _____ Zip Code _____
Telephone Number () _____ Contact Name _____
Chipper Model No. _____ Serial No. _____
Date Chipper Put Into Service _____ Engine Make & S/N _____

DEALER INFORMATION:
Dealer Name _____ Street Address _____
City _____ State _____ Zip Code _____
Telephone Number () _____ Contact Name _____

1 Customer has been instructed on operation and all safety aspects of operating the equipment.
2 Customer has been advised not to reach into the feed chute with hands or feet.
3 Customer has been instructed to always remove the engine key wait for the cutter wheel to come to a complete stop, and to install the disc lock before performing any type of maintenance on the machine.
4 Customer has been warned not to operate the cutter wheel with the chipper hood open.
5 Customer has been furnished with all parts and operator's manuals.
6 Customer has been instructed on equipment maintenance schedules and procedures.
7 Customer understands that it is his responsibility to perform maintenance that includes periodic relief valve adjustments, retightening all fasteners as needed, periodic cleaning of flow divider, etc.
8 Customer has reviewed and understands limited warranty as explained in owner's manual.
9 All operation and warning decals are properly displayed on equipment.
10 Yes, I would like the Service, Operations & Maintenance Video sent.

I have inspected this equipment and find it in good working condition. To the best of my knowledge, the customer and his personnel are aware of the above procedures.

Date: _____ Signed: _____ Dealer Representative

The equipment has been thoroughly checked by the above named dealer representative, and I am satisfied with his instructions.

Date: _____ Signed: _____ Purchaser

BANDIT INDUSTRIES, INC.
6750 Millbrook Road • Remus, MI 49340
Phone (517) 561-2270 • Fax (517) 561-2273

Dealer/Customer Name _____
Address _____
Phone _____
Dealer Reference # _____
Date _____

WARRANTY CLAIM FORM

Machine Model # _____ S/N _____ Date in Service _____ Failure Date _____

QUANTITY	PART DESCRIPTION	BANDIT INVOICE # PART WAS BILLED ON	TOTAL

NOTE: THIS CLAIM WILL BE AUTOMATICALLY RETURNED IF DEFECTIVE PARTS HAVE NOT BEEN RETURNED IN 30 DAYS OF PARTS INVOICE.

Total Part Cost _____ Labor Hrs _____ Labor Cost _____ Total _____

Description of Failure and Repair: _____

WARRANTY DENIED/PARTIAL DENIAL

IF FACTORY USE ONLY

THIS CLAIM HAS BEEN DENIED OR PARTIALLY DENIED FOR THE FOLLOWING REASONS:

This claim has been returned for one of the following reasons:
☐ Defective parts not returned within 30 days
☐ Description of failure not explained or legible
☐ Machine information is not completed
☐ Parts cost does not agree with invoice charges

☐ Warranty validation not sent in
☐ Labor charges exceed \$30 per hour
☐ Did not include parts invoice number

FACTORY USE ONLY



MODEL 1400

SERVICE

SERVICE

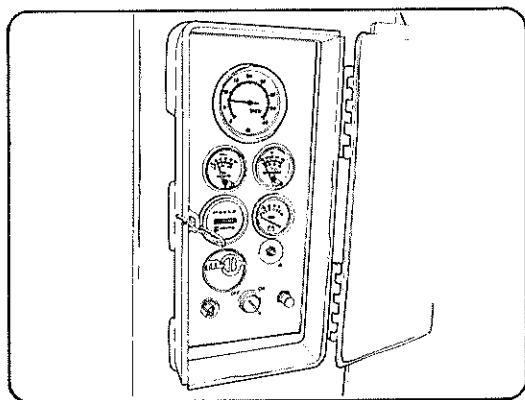


Bandit



DANGER

NEVER perform any maintenance without following the appropriate safety procedures **BEFORE** you start and as you're working. If you don't, your people or an onlooker could be hurt or killed. Always use the following safety rules AND good common sense.



Make sure the engine is turned off and the ignition key is in your pocket. Make sure loader operator position is clear of everyone. Make sure the area all around chipper is clear of people.

REMOVE THIS GUARD ONCE A MONTH!

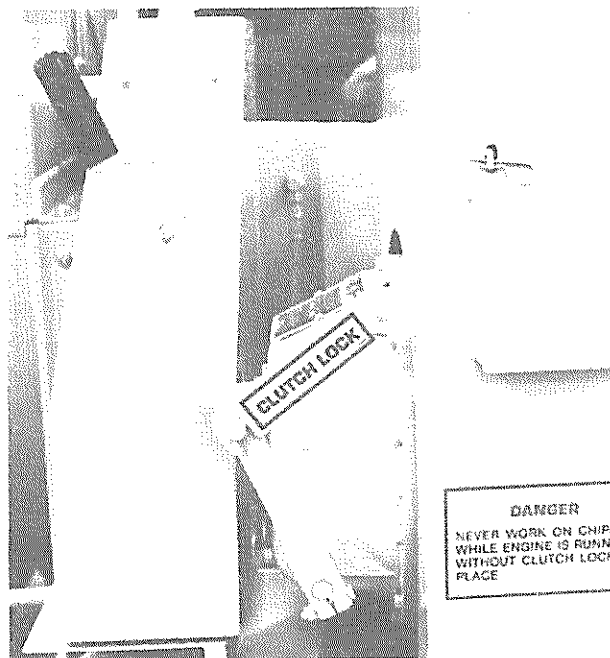
- Retighten The Chipper Bearing Bolts
- Retighten The Chipper Bearing Lock-Set Screws.
- Retighten Both Belt Sheave Bushings On Both Sheaves.
- Check Hyd. Pump And Chipper Belt Tension.

AVOID HYD. PUMP FAILURE

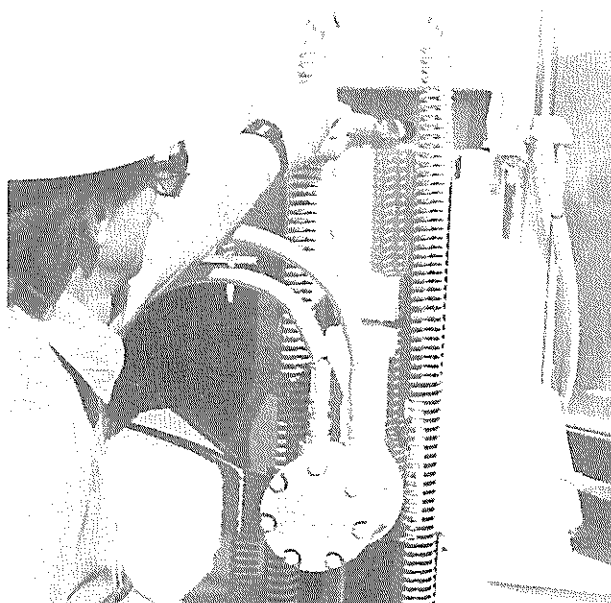
DO NOT OVERTIGHTEN THE HYDRAULIC PUMP BELT DRIVE. FOR BEST RESULTS USE A GOOD BELT TENSION TESTER. 95% OF ALL PUMP FAILURES RESULT FROM TOO MUCH SIDE LOAD ON THE PUMP SHAFT. TOO MUCH BELT TENSION IS VERY EASY TO DETECT INSIDE A FAILED PUMP PUMPS WITH THIS CONDITION WILL NOT BE COVERED UNDER WARRANTY!



USING BELT TENSION CHECKER, TIGHTEN THE HYDRAULIC PUMP BELT TO NO MORE THAN 75 LBS. PRESSURE AT THIS POINT OF THE BELT DRIVE.



Make sure clutch is disengaged and clutch lock is in position. Always work in a two man crew, for help in service, as well as in case an accident may happen. Always have fire extinguishers on site, especially if welding or torching.



If you have to climb inside of chipper throat to check or adjust something, the top wheel **MUST** be securely locked in the "Up" position. Make sure you and your people wear hard hats, safety glasses, and leather gloves.

Bandit



MODEL 1400

SERVICE

The following is a list of some normal wear items that require checking and repairing or replacing as needed:

Feed Plate Anvil
Chipper Knives
Chipper Hardware
Drive Belts
Radiator Screen
Batteries
Hydraulic Pressures
Pivot Pins

Infeed Throat
Discharge Wear
Drive Chains
Clutch
Set Screws
Nuts and Bolts
Top Wheel Springs
Lights and Wiring

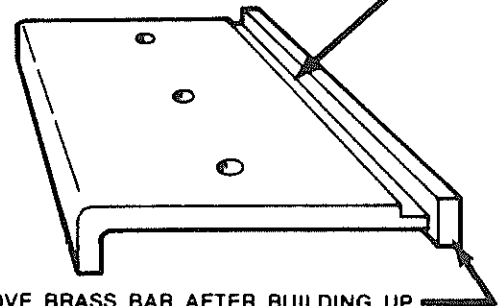
Hydraulic Oil
Hydraulic Filters
Engine Filters
Engine Fluids
Tires and Wheels
Wheel Bearings
Lubrication Points
Hydraulic Hoses

It is all up to you how long and how economical your chipper works for you, use common sense, a good maintenance schedule and if something doesn't feel, sound, look or act right - **CHECK IT OUT.**

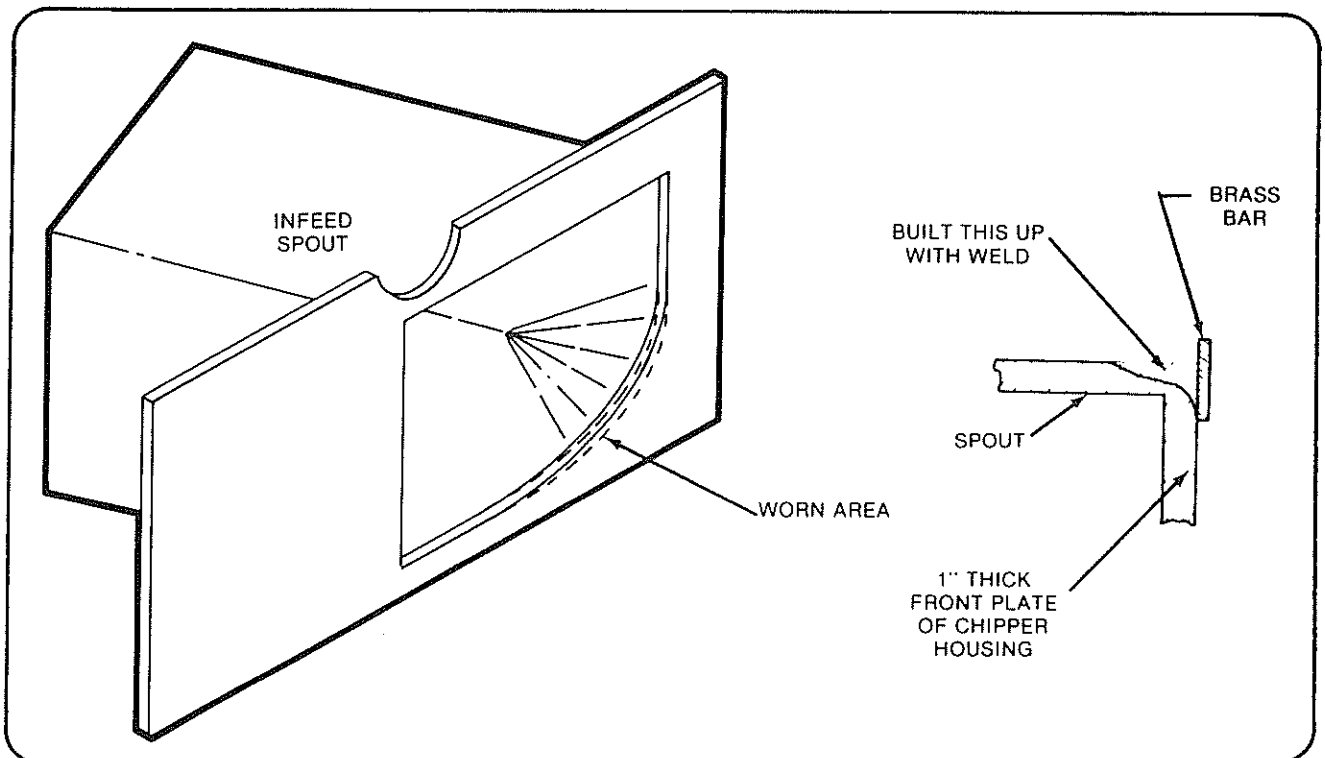
The anvil can be rebuilt as long as it is not "worn out" or severely damaged. The anvil has to have a good working edge and proper clearance, knife edge to anvil. Use highest knife for setting .060 to .080.

Check every 6 months and build up as needed, to a square corner as shown. Then grind it smooth on top for smooth flow of wood through chipper.

Fill Working Edge With Hard Surface Weld
As Flat To Anvil Surface As Possible.
Use A Non-Weldable Bar Stock (Brass).



REMOVE BRASS BAR AFTER BUILDING UP
AREA WITH HARD SURFACE WELD AND
SQUARE WORKING CORNER WITH GRINDER.





HYDRAULIC FLOW DIVIDERS

There are two flow dividers in the hydraulic system of the Model 1400. These dividers are used to split an oil flow in two directions to do two different operations. As you can understand, these devices are very important to the proper operation of the machine, and get a lot of wear. The cartridge on each of the flow dividers should be removed and cleaned, replaced if needed, quarterly (every three months).

Parts for Feed Flow Divider

900-3902-45	Complete Cartridge
900-3902-46	O-Ring Kit
900-3901-40	Complete Flow Divider

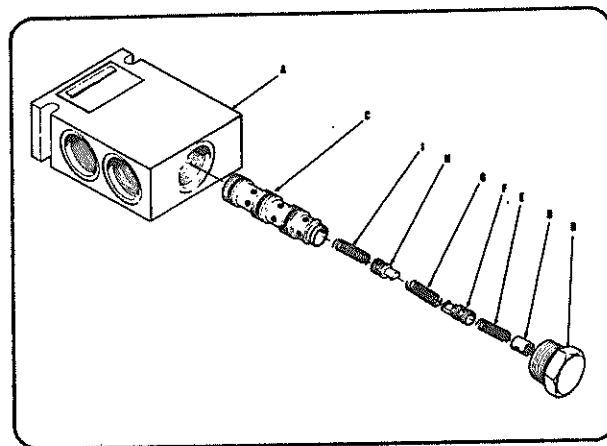
Parts for Loader Flow Divider

900-3901-13	Complete Cartridge
900-3900-61	O-Ring Kit
900-3901-00	Complete Flow Divider

TO DISASSEMBLE HYDRAULIC FLOW DIVIDER

- | | | |
|----------------|--------------|--------------|
| A. Body | D. Cap | G. Spring |
| B. Hex Nut Cap | E. Spring | H. Equalizer |
| C. Cannister | F. Equalizer | I. Spring |

1. Remove cartridge by unscrewing hex nut cap from body of flow divider.
2. Unscrew cartridge cannister from hex nut cap. You may have to carefully use pliers to remove.
3. Check O-Rings for cracks or nicks. Replace if necessary.
4. Some internal components may be stuck in cannister. If so, put a flat pointed punch through hole in non-threaded end of cannister and force parts out.
5. Unhook the equalizers from each other and pull apart to complete disassembly. Don't lose the parts or stretch out springs.



Most hydraulic problems that happen can be solved easily by checking and correcting one or several of the following — Check these first before you get real excited:

- A) Check the pump belt — make sure it isn't slipping. This pump operates your feed wheels and the optional winch.
- B) The engine RPM must be fast enough to make either pump "kick in" and operate correctly.
- C) The hydraulic oil must be min. 3/4 full in tank and not contaminated or milky in color.
- D) The hydraulic filter must be changed per schedule as well as the suction screens in tank bottom.
- E) The flow dividers must be operating properly and not sticking.
- F) The relief valves must be set correctly (see chart) and not stuck open.

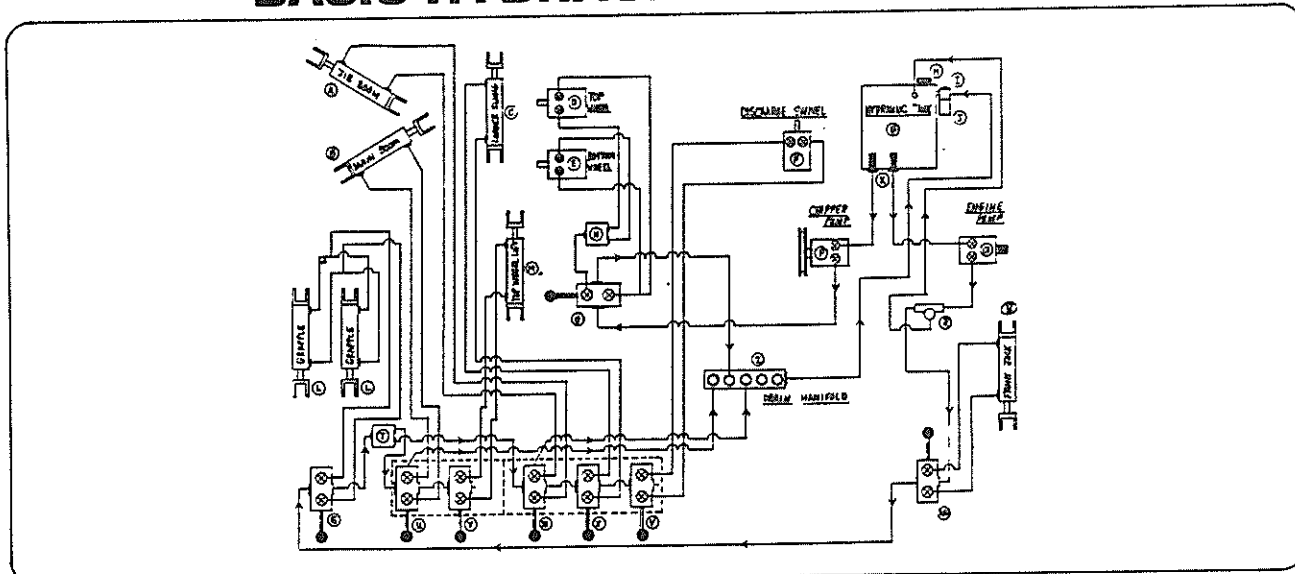


TROUBLE SHOOTING — HYDRAULIC SYSTEM

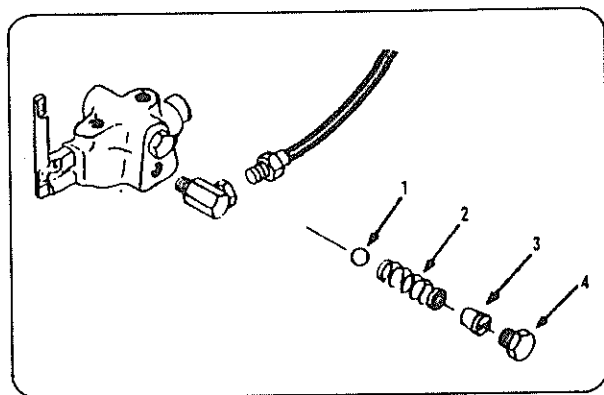
PROBLEM	POSSIBLE CAUSE	SOLUTION
One Feed Wheel Doesn't Turn	1. Flow divider dirty or faulty 2. Feed wheel motor is faulty	1. Take cartridge out of flow divider and clean thoroughly 2. Reverse hoses at flow divider - if same motor still doesn't turn, motor is probably bad; If other motor is now the one not turning, the flow divider is probably bad
Both Feed Wheels Don't Turn	1. Pump belt is loose 2. Engine/Chipper RPM too slow 3. Hydraulic oil level is too low in tank, hydraulic oil contaminated, or or hydraulic filter dirty 4. Hydraulic relief valve pressure is too low or stuck open	1. Tighten to proper tension - see chart 2. Make sure Cummins engine is running 2500 RPM 3. Follow proper maintenance schedule and fill or change as required 4. Clean reliefs and check or reset pressure as needed
One Section of Loader Bank Doesn't Work	1. Flow divider dirty or faulty 2. Problem within hoses or valve banks	1. Take cartridge out of flow divider and clean thoroughly; If it still doesn't work, reverse hoses at flow divider and if problem goes to other loader bank, divider is bad 2. Contact Bandit dealer or Performance First to help you trace it down
Both Sections of Loader Bank Don't Work	1. Relief valve is too low or stuck open 2. Main relief is too low or stuck open 3. Pump on front of engine is faulty 4. Engine RPM is too low to kick in pump 5. Hydraulic oil level is too low in tank, hydraulic oil contaminated, or hydraulic filter is dirty	1. Clean relief and check or reset pressure as needed 2. Clean relief and check or reset pressure as needed 3. Check oil flow and pressure capacity of pump 4. Pump operates best at full engine RPM of 2500 on Cummins engine 5. Follow proper maintenance schedule and fill or change as needed
Noisy Pump - Cavitation (Pump Starving)	1. Damaged inlet (suction) hose 2. Fluid viscosity too high 3. Oil operating temperature too low 4. Suction screens in oil tank restricted	1. Replace hose 2. Replace oil - refer to oil usage 3. Allow system to warm up 4. Needs to be cleaned or replaced
Overheating of Hydraulic Oil	1. Hydraulic oil level is too low in oil tank, hydraulic oil is contaminated, or hydraulic filter is dirty 2. Relief valve setting is too low 3. Operator is misusing controls so oil is forced over relief too much, too often 4. Hydraulic oil viscosity is wrong for atmospheric temperature	1. Follow proper maintenance schedule and fill or change as needed 2. Check relief pressures and reset as needed 3. As long as reliefs are set correctly the machine has power to do what it is designed to do; Don't hold valves over relief 4. Check hydraulic oil chart and service schedule



BASIC HYDRAULIC SCHEMATIC



ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
A	900-3903-06	Jib Boom Cylinder	O	900-3902-26	Valve - Feed Wheels
B	900-3903-02	Main Boom Cylinder	P	900-3902-95	Feed Pump on Chipper
C	900-3903-01	Loader Swing Cylinder	Q	900-3902-96	Loader Pump on Engine
D	900-3901-39	Top Wheel Motor	R	900-3903-40	Main Relief for Loader Pump
E	900-3901-39	Bottom Wheel Motor	S	900-3901-42	Grapple Valve
F	900-3902-14	Discharge Swivel Motor	T	900-3901-00	Flow Divider - Loader
G	914-0500-09	Hydraulic Tank	U	(in valve bank)	Main Boom Valve
H	900-3901-51	Filler Cap/Sight Gauge	V	(in valve bank)	Top Wheel Lift Valve
I	900-3902-99	Mount Hydraulic Filter	W	(in valve bank)	Jib Boom Valve
J	900-3901-66	Hydraulic Filter	X	(in valve bank)	Loader Swing Valve
K	900-3901-41	Feed Suction Strainers	Y	(in valve bank)	Discharge Swivel Valve
K	900-3903-39	Loader Suction Strainers	Z	914-0500-52	Drain Manifold
L	900-3903-03	Grapple Cylinders	AA	900-3901-24	Front Stabilizer Valve
M	900-3903-00	Top Wheel Lift Cylinder	BB	900-3903-57	Front Stabilizer Cylinder
N	900-3901-40	Flow Divider Feed Wheels			



1. **Poppit Valve** - This ball opens and closes to relieve excess pressure on hydraulic system.
2. **Relief Spring** - This spring tensions the amount of pressure required to open the relief valve ball. This spring weakens and must be readjusted every 3 months.
3. **Slotted Set Screw** - Turn clockwise to increase pressure, but do not surpass max. on pressure chart.
4. **Hex Head Plug** - Replace to access the relief valve.

The relief valves on machine must be checked and reset at least every 3 months. If there is a hydraulic problem, in most cases cleaning the flow dividers and cleaning these relief valves

thoroughly with diesel fuel will solve problem. Make sure parts are reassembled correctly and set correctly. Damaged components must be replaced.

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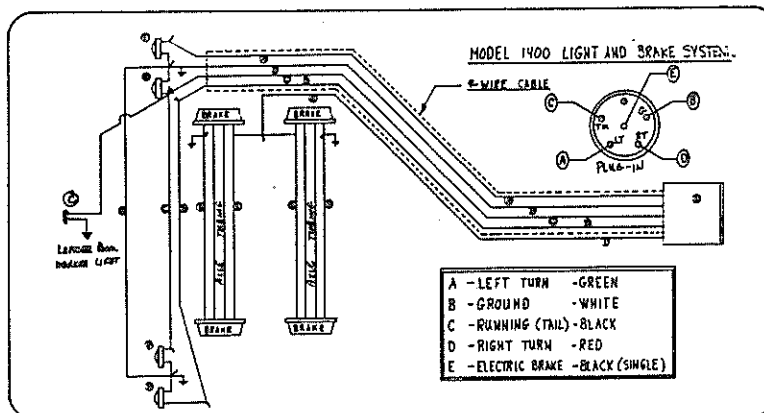
HYDRAULIC RELIEF PRESSURE SETTINGS

ITEM	DESCRIPTION/LOCATION	MAX. HYDRAULIC PRESSURE
A	Jib Boom Cylinder — Loader	2200 PSI
B	Main Boom Cylinder — Loader	2200 PSI
C	Loader Swing Cylinder	2200 PSI
D	Top Wheel Motor	3000 PSI
E	Bottom Wheel Motor	3000 PSI
F	Discharge Swivel Motor	2200 PSI
L	Grapple Cylinders — Loader	2200 PSI
M	Top Wheel Lift Cylinder (Port Relief)	800 PSI
R	Main Relief — Loader Pump	2400 PSI
BB	Front Stabilizer Cylinder	2200 PSI
—	Hydraulic Winch Motor	2500 PSI

CAUTION

DO NOT UNDER ANY CIRCUMSTANCES OVER-SET THESE PRESSURES, BECAUSE IT WILL CAUSE DAMAGE TO COMPONENT PARTS AS WELL AS HYDRAULIC PARTS.

WIRING SCHEMATIC



NOTE: Left Rear Corner is the junction point for main cable from tongue connector to read lights

ITEM	WIRE COLOR	DESCRIPTION	PART NUMBER
A	Green	Left Turn Wire	—
B	White	Ground Wire	—
C	Black	Running/Tail Light Wire	—
D	Red	Right Turn Wire	—
E	Black	Electric Brake Wire	—
F	—	Left Turn Light	900-2900-01
G	—	Tail Light	900-2900-01
H	—	Right Turn Light	900-2900-01
I	—	6-Prong Plug-In	900-2900-17
J	—	Running Light	900-2900-03
—	—	Plug-In For Towing Vehicle	900-2900-18



TROUBLE SHOOTING — CHIPPER

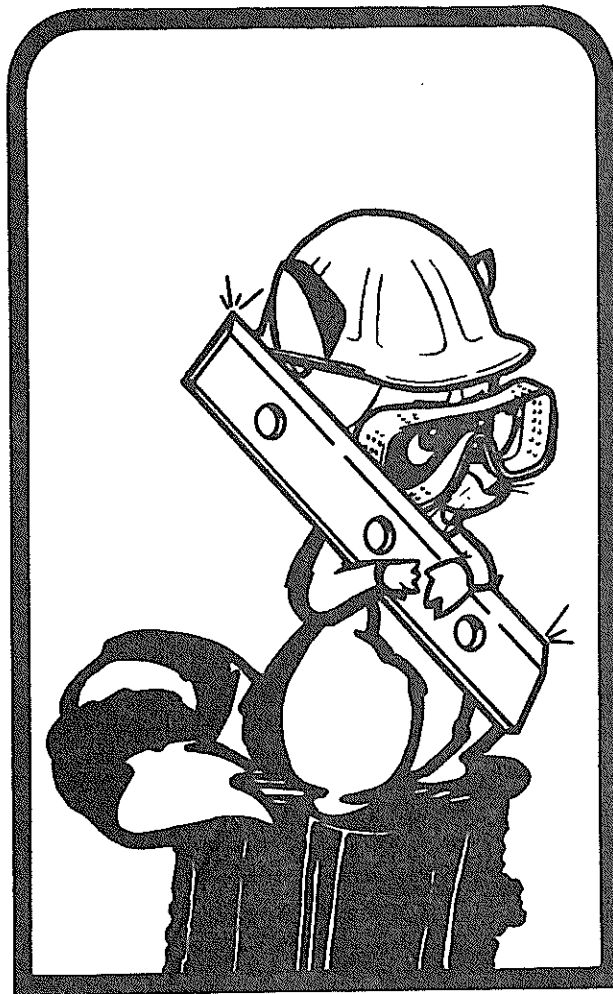
PROBLEM	POSSIBLE CAUSE	SOLUTION
Chips Too Big	1. Counter knives worn 2. Chipper disc speed too slow 3. Worn feed plate anvil 4. Chipper infeed spout worn	1. Replace counter knives 2. Chipper must run at 950 disc RPM - Engine at 2500 RPM at no load 3. Replace working edge or complete anvil as needed 4. Build up with weld
Chips Too Fine	1. Dull knives 2. Feed rate too slow 3. Damaged feed plate anvil 4. Dry and rotten (pulpy) wood	1. Replace with sharp knives 2. Check feed rate (see chart) 3. Repair or replace as needed 4. Pulpy wood makes powder and fires
Chipper Feeding Poorly	1. Anvil clearance is too close or too far away 2. Improper knife angle 3. Wood extremely dirty or dry 4. Wood extremely hard or frozen 5. Poor quality or dull knives 6. Chipper RPM too slow 7. Feed wheel teeth dull 8. Top feed wheel springs too tight	1. Check anvil clearance, should be .060 to .080 from high knife 2. Check angle, see knife grinding section 3. Caused by seasonal conditions which cannot be avoided; See knife grinding section 4. Same as 3 5. Replace knipper knives; Never chip with dull knives 6. Chipper must run at 950 disc RPM - Engine 2500 RPM at no load 7. Resharpen or replace 8. Springs should be just tight enough not to slip on wood
Wood Packing Between Knife & Counter Knife (Or Disc)	1. Counter knife excessively worn 2. Knives not properly tightened in pocket 3. Knives or hardware are not properly seated in the pocket, due to foreign material 4. Knives are worn too far	1. Check counter knife wear; When they are worn wood will pack in hardware and usually ruin it; Hardware must be replaced 2. Clamp-in knives must be tightened to 250 ft. lbs. torque at clamp nuts; Bolt-in knives must be tightened to 90 ft. lbs. torque 3. Every time you change knives, clean all debris out of pocket and hardware; it makes knives slip and break 4. Either type of knife can be resharpened (worn) too far, consult the chipper section of manual; Too far is dangerous
Chipper Disc Moving (Chucking) Back And Forth In Base	1. Loose draw ring bolts 2. Loose shaft on feed side bearing	1. Tighten draw ring bolts back and forth across pattern to align disc without a wobble; 320 ft. lbs. torque 2. Check bearing retainer bolt in center of front chipper bearing, tighten to 300 ft. lbs.; Check to see if bearing is worn and rollers allow chucking in bearing housing; Check bearing bolts on feed side chipper bearing; tighten to proper torque; 160 ft. lbs. torque



MODEL 1400

REPLACEMENT PARTS

REPLACEMENT PARTS SECTION



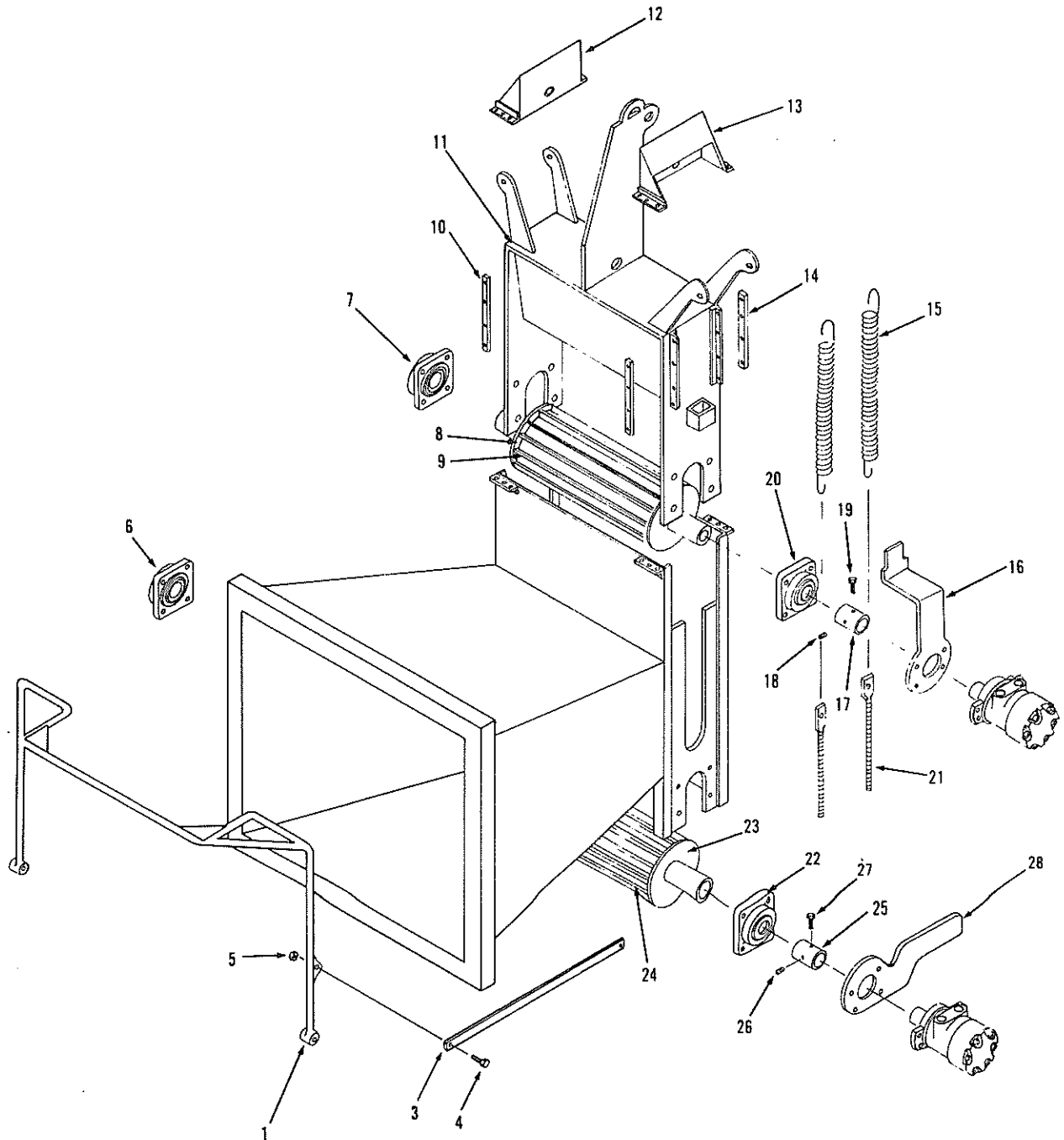
Performance First and Bandit Industries reserve the right to make changes in models, sizes, designs, installations and applications on any part without notification.

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MODEL 1400

FEED SYSTEM COMPONENTS



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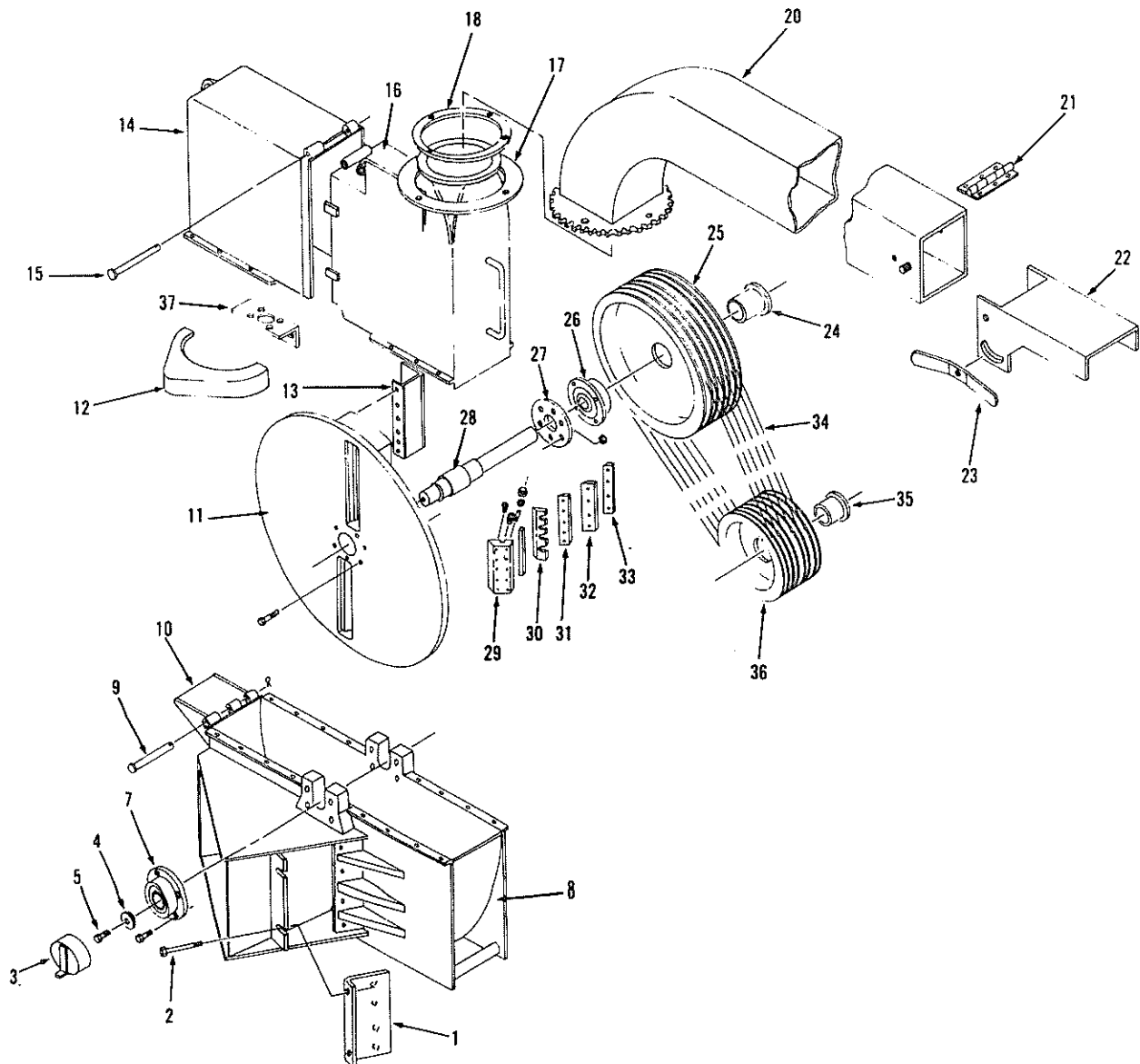
**MODEL 1400****FEED SYSTEM COMPONENTS**

ITEM	PART NUMBER	DESCRIPTION
1	914-0500-42	Feed Control Handle
2	900-4900-44	Control Handle Pivot Nuts (Not Shown)
3	914-1003-19	Feed Control Arm
4	900-4900-10	Control Arm Bolt
5	900-4900-52	Control Arm Nuts
6	900-1900-66	Feed Wheel Bearing
7	900-1900-66	Feed Wheel Bearing
8	914-0500-39	Top Feed Wheel
9	914-1003-51	Feed Wheel Teeth (Weld-On)
10	914-1003-81	Top Wheel Slide
11	914-0500-36	Top Wheel Mount
12	914-0500-54	Top-Left Security Bracket
13	914-0500-55	Top-Right Security Bracket
14	914-1003-81	Top Wheel Slide
15	900-4900-04	Springs - Top Wheel
16	914-1001-41	Top Wheel Torque Arm
17	914-1003-82	Top Wheel Motor Coupler
18	900-4900-46	Set Screws for Coupler
19		Bolt for Coupler
20	900-1900-66	Feed Wheel Bearing
21	914-0500-56	Tighteners - Feed Wheel Springs
22	900-1900-66	Feed Wheel Bearing
23	914-0500-40	Bottom Feed Wheel
24	914-1003-51	Feed Wheel Teeth (Weld-On)
25	914-1003-82	Bottom Wheel Motor Coupler
26	900-4900-46	Set Screws For Coupler
27		Bolt for Coupler
28	914-1003-83	Bottom Wheel Torque Arm



MODEL 1400

CHIPPER COMPONENTS





MODEL 1400

CHIPPER COMPONENTS

ITEM	PART NUMBER	DESCRIPTION
1	914-0500-57	Feed Plate Anvil with Bolts
2	914-0500-58	Adjuster Bolts for Feed Plate Anvil
3	914-0500-59	Front Bearing Cover
4	914-1003-84	Bearing Retainer
5	980-0107-92	Bolt - Bearing Retainer
6	900-4900-33	Lock Washer - Bearing Retainer (Not Shown)
7	900-1900-33	Front Chipper Bearing
8	(Not Available)	Chipper Base Assembly
9	914-0500-60	Hood Hinge Pin and Lock Clip
10	914-0500-61	Hood Stop (Weld-On)
11a	914-0500-06	Disc Assembly - "Bolt-In" Knives
11b	914-0500-05	Disc Assembly - "Clamp-In" Full Pocket Knives
12	914-0500-62	Guard for Discharge Swivel
13	914-0500-44	Fan Blade Assembly
14	914-0500-33	Hood - Hinged Half
15	914-0500-63	Hood Lock Pin and Lock Clip
16	914-0500-32	Hood - Discharge Half
17	914-1003-85	Bottom Ring - Discharge Swivel
18	914-1003-86	Spacer Ring - Discharge Swivel
19	914-0500-79	Lock Pin - Discharge Swivel (Not Shown)
20	914-0500-35	Discharge Assembly
21	914-1003-87	Deflector Hinge - Discharge
22	914-0500-64	Deflector - Discharge
23	914-0500-65	Handle - Discharge Deflector
24	900-1902-07	Bushing - Chipper Sheave
25	900-1902-34	Chipper Sheave
26	900-1900-67	Rear Chipper Bearing
27	914-1003-25	Draw Ring - Chipper Disc
28	914-1003-28	Shaft - Chipper Disc
29a	914-0500-07	Knife Holder Assembly - 3/4" Chip
29b	914-0500-08	Knife Holder Assembly - 7/8" & 1" Chip
30	900-9900-38	Chipper Knife
31	900-9900-40	Counter Knife - 2-1/4"
32	900-9900-42	Bottom Clamp
33	900-9900-43	Top Clamp
30a	900-9902-00	"Bolt-In" Chipper Knife (1/2" Thick)
30b	900-4900-53	"Bolt-In" Chipper Knife Bolt
30c	900-4900-27	"Bolt-In" Chipper Knife Nut
34	900-1902-33	Chipper Belts (Cummins 6BTA)
35	900-1902-32	Engine Bushing (Cummins 6BTA)
36	900-1902-31	Engine Sheave (Cummins 6BTA)
37	914-0500-66	Mount - Discharge Swivel Motor
38		Chain - Discharge Swivel Motor (Not Shown)
39	914-0500-67	Belt Shield - Chipper Drive (Not Shown)
40	914-0500-68	Set of Disc Spacers (Not Shown)
41	914-0500-48	Enclosed Deflector Assembly (Not Shown)
42	914-1003-40	Hinge - Enclosed Deflector (Not Shown)

For "Clamp-In" Knife Hardware

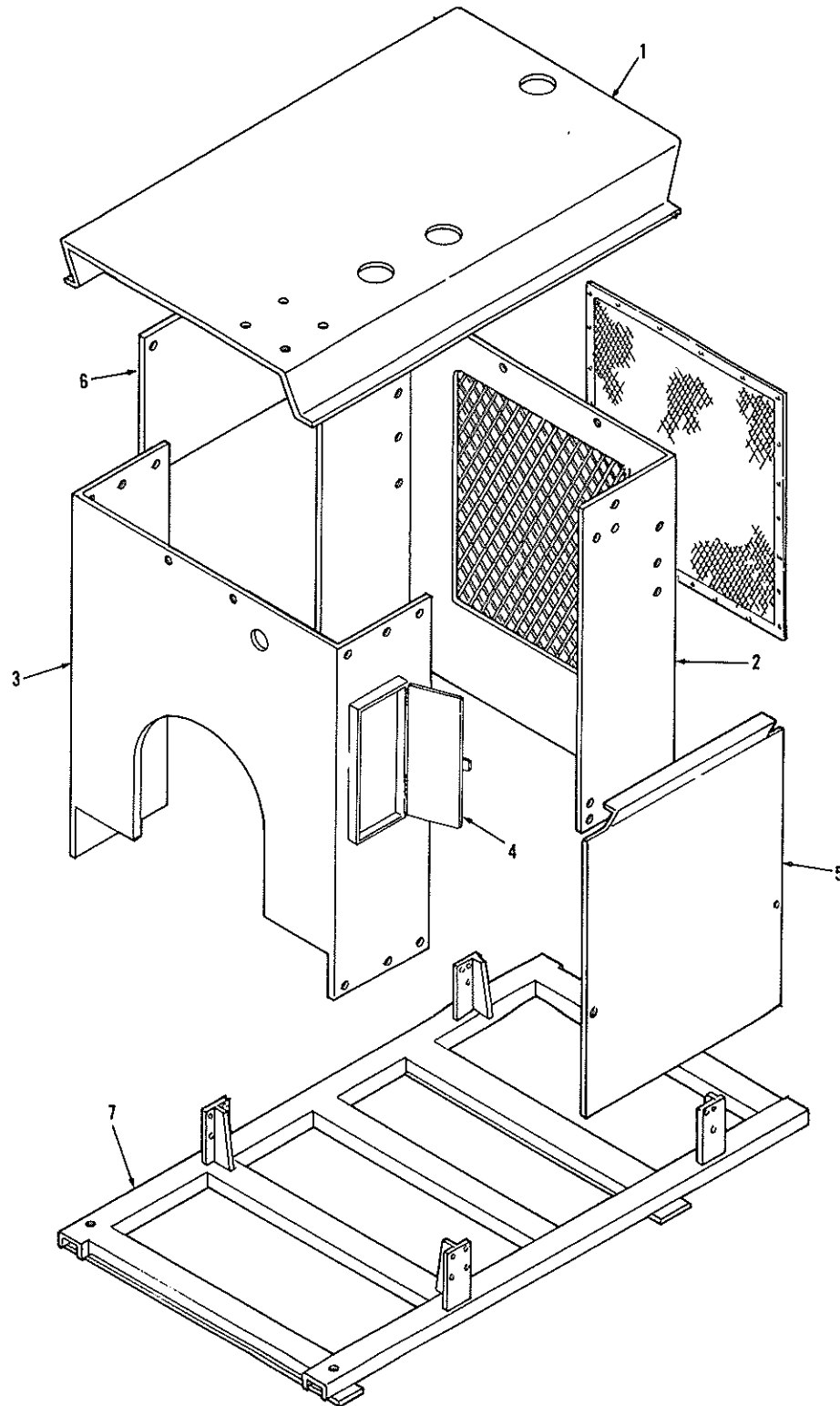
914-0500-02	Knife Gauge Assembly - 3/4" Chip
914-0500-03	Knife Gauge Assembly - 7/8" Chip
914-0500-04	Knife Gauge Assembly - 1" Chip

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MODEL 1400

ADD-ON ENGINE COMPONENTS





MODEL 1400

**ADD-ON
ENGINE COMPONENTS**

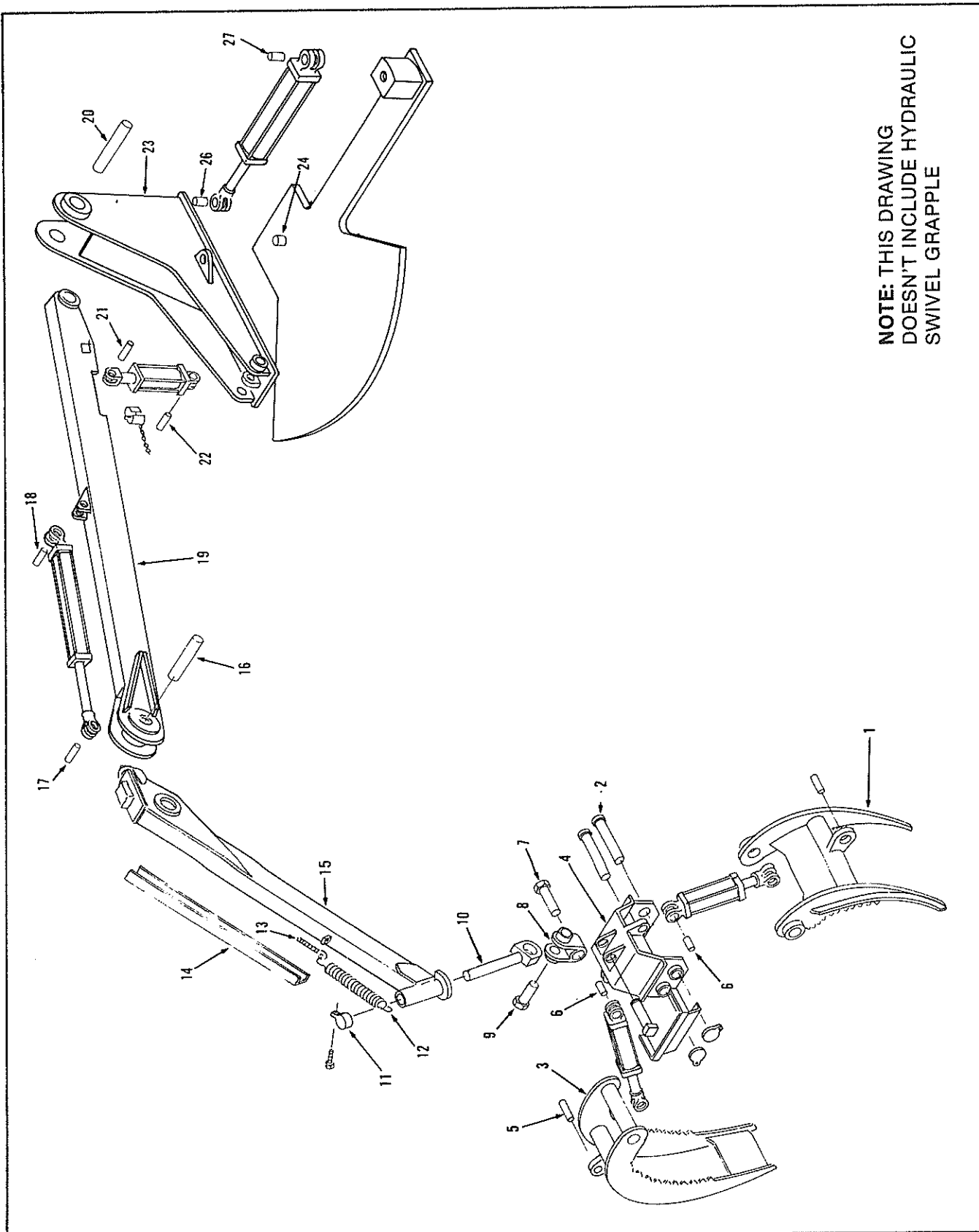
For Cummins 6BTA 200-HP Engine

ITEM	PART NUMBER	DESCRIPTION
1	914-0500-69	Engine Hood
2	914-0500-70	Radiator Shroud
3	914-0500-71	Rear Shroud
4	914-0500-24	Gauge Panel Cover
5	914-1003-79	Right Side Door Panel
6	914-1003-80	Left Side Door Panel
7	914-0500-72	Engine Cover Frame
8a	914-0500-82	Standard Vertical Muffler
8b	900-6901-09	Spark Arrestor Muffler (Super Trapp)
9	914-0500-83	90° Elbow for Standard Muffler
10	900-6901-03	Rain Cap
11	900-6900-96	Radiator Debris Screen
12	914-0500-84	Wing Nuts for Door
13	900-6901-10	Air Restriction Indicator
14		Engine Mount Bolts
15	914-0500-73	Engine Adjuster Bolts
16	914-0500-53	Clutch Lock-Out Assembly
17	914-1003-66	Air Cleaner Steel Connector Tube
18	900-6901-11	Air Cleaner Canister with Element and Mount Blades
19	900-6901-12	Air Cleaner Element Only



MODEL 1400

LOADER COMPONENTS





MODEL 1400

LOADER COMPONENTS

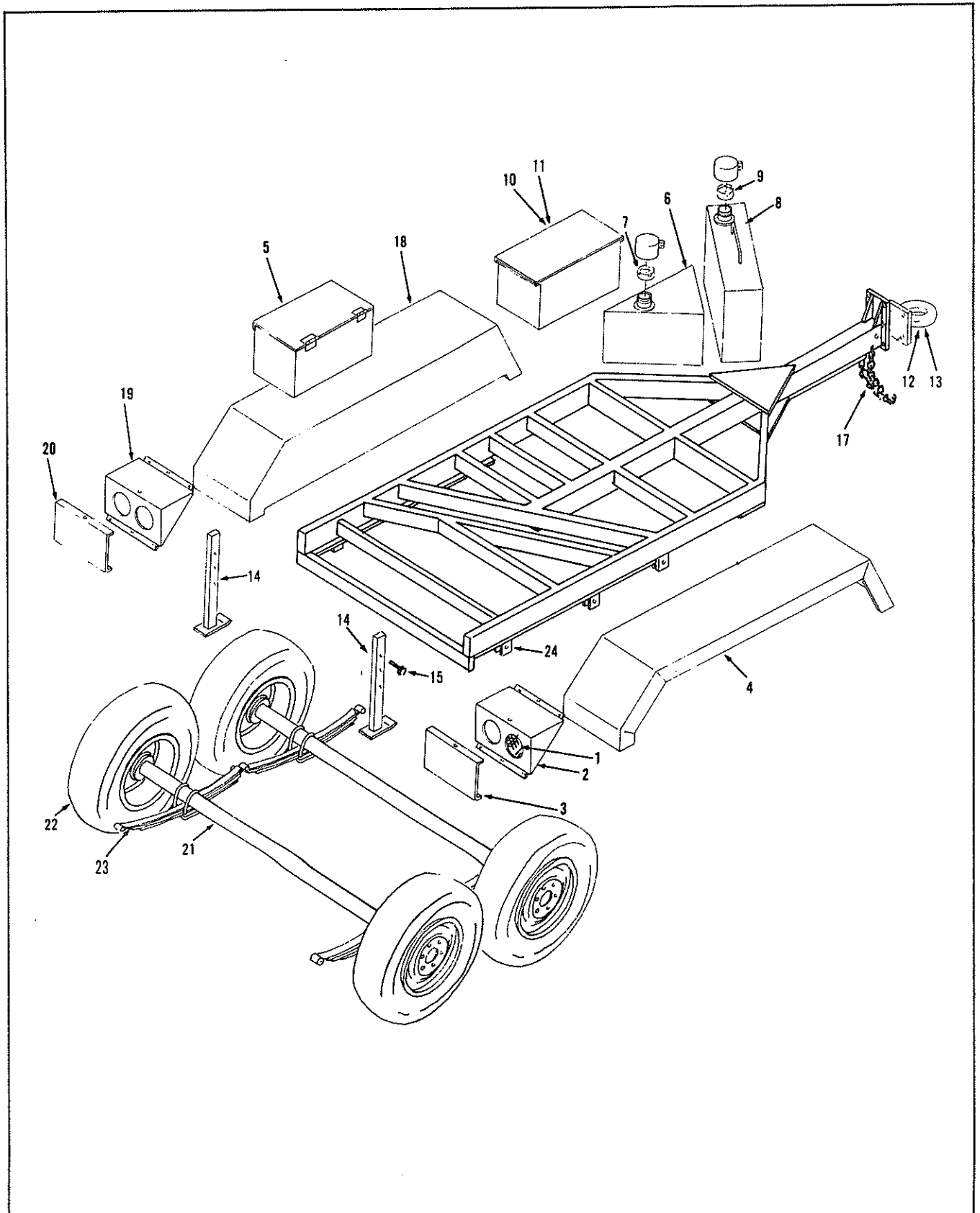
ITEM	PART NUMBER	DESCRIPTION
1	914-0500-85	Wide Grapple Jaw
2	914-0500-86	Jaw Pin Assembly
3	914-0500-87	Narrow Grapple Jaw
4	914-0500-88	Grapple Mount Head
5	914-0500-89	Grapple Cylinder Pin - Bottom
6	914-0500-89	Grapple Cylinder Pin - Top
7	914-0500-90	Pin Assembly - Grapple To Swivel
8	914-0500-18	Grapple Swivel Joint
9	914-0500-91	Pin Assembly - Swivel to Rotate Pin
10	914-0500-92	Rotate Pin Assembly
11	914-0500-93	Lock Cap Only - Rotate Pin
12	900-4901-62	Grapple Spring
13	914-0500-94	Tightener - Grapple Spring
14	914-0500-20	Hose Guard - Jib Boom
15	914-0500-16	Jib Boom Assembly
16	914-0500-14	Pivot Pin Assembly - Jib Boom to Main Boom
17	914-0500-95	Jib Boom Cylinder Pin - Top
18	914-0500-96	Jib Boom Cylinder Pin - Bottom
19	914-0500-15	Main Boom Assembly
20	914-0500-13	Pin Assembly - Main Boom to Pedestal
21	914-0500-97	Main Boom Cylinder Pin - Top
22	914-0500-98	Main Boom Cylinder Pin - Bottom
23	914-0500-12	Loader Pedestal Assembly
24	900-1902-86	Bearing - Loader Swing Pin
25	900-4901-63	Nut - Loader Swing Pin (Not Shown)
26	914-0500-99	Swing Pin Assembly - Cylinder Ram End
27	914-0500-00	Swing Pin Assembly - Cylinder Base End
28	914-0500-31	Transport Brace - Loader Boom

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MODEL 1400

FRAME COMPONENTS



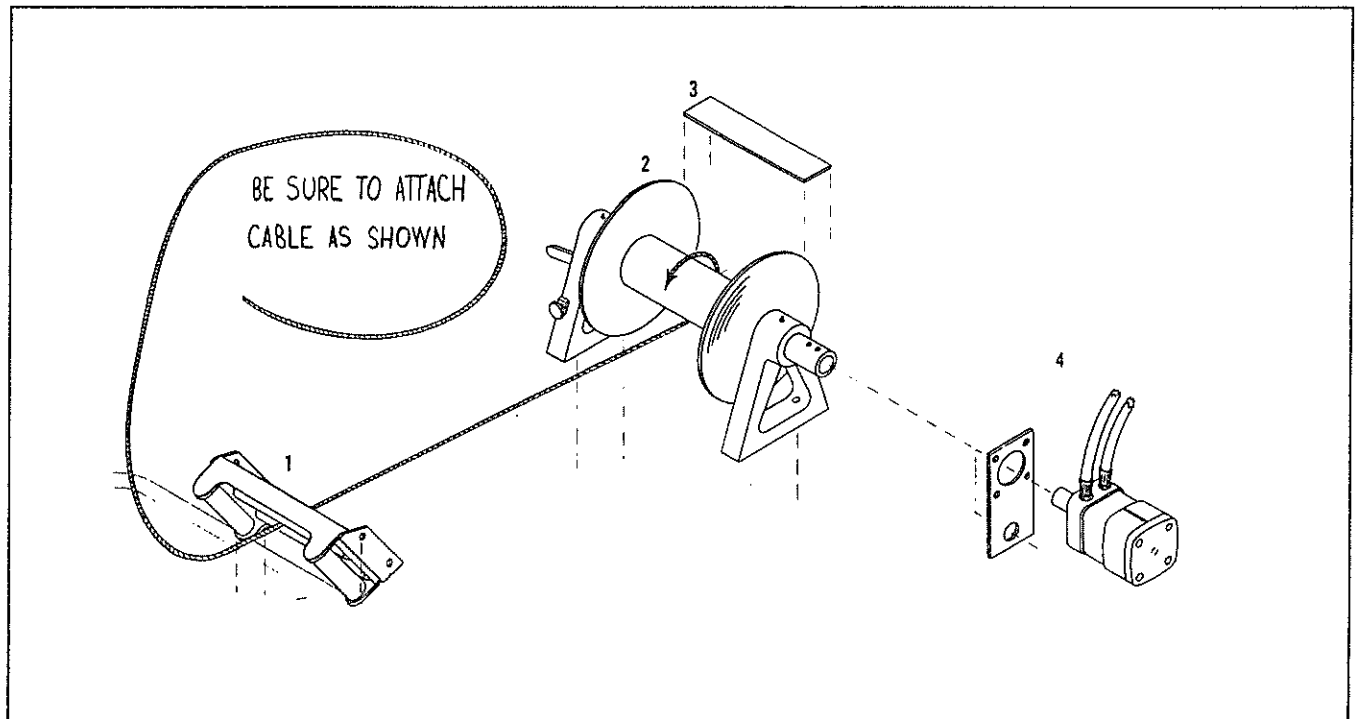
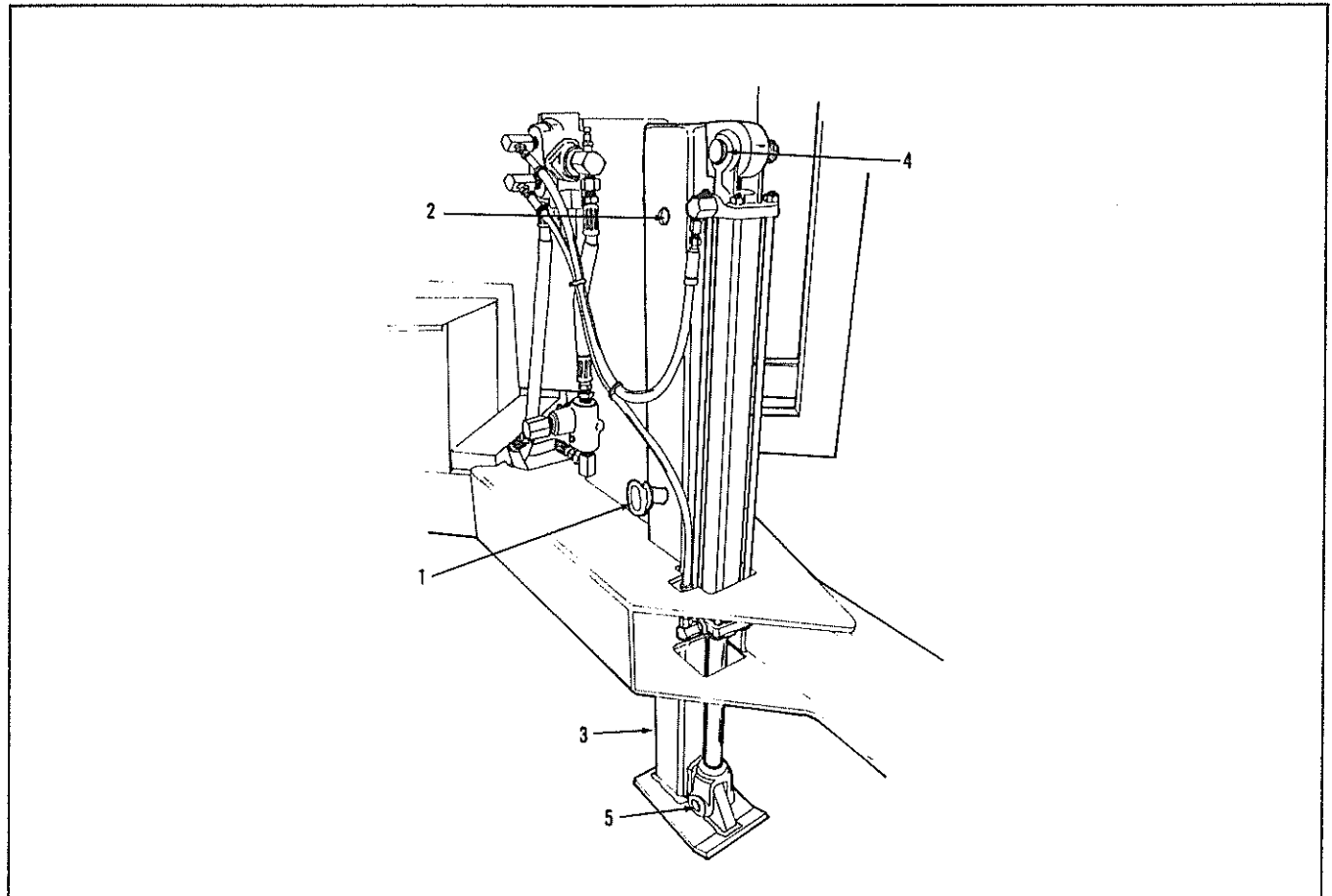
**MODEL 1400****FRAME COMPONENTS**

ITEM	PART NUMBER	DESCRIPTION
1	900-2900-01	Tail Light
2	914-0500-28L	Left Tail Light Holder
3	914-0500-27L	Left Tail Light Cover
4	914-0500-29L	Left Fender (Weld-On)
5	914-0500-43	Tool Box Assembly
6	914-0500-09	Hydraulic Tank Assembly
7	900-3901-51	Sight Gauge - Hydraulic Tank Cap
8	914-0500-74	Fuel Tank Assembly
9	900-3901-51	Sight Gauge - Fuel Tank Cap
10	914-0500-75	Battery Box Assembly
11	—	Battery (1000 CCA) (Not Shown)
12	900-5900-13	Standard 2½" Pintle Ring Coupler
13	900-5900-71	3" Pintle Ring Coupler
14	914-0500-76	Interior Tube - Std. Front & Rear Manual Stabilizer
15	914-0500-77	Lock Pin - Std. Front & Rear Manual Stabilizer
16	900-5901-53	Standard Crank Jack - Foot Pad (Not Shown)
17	914-0500-78	Safety Chains with Hooks
18	914-0500-29R	Right Fender (Weld-On)
19	914-0500-28R	Right Tail Light Holder
20	914-0500-27R	Right Tail Light Cover
21	900-5901-52	Complete Axle with Electric Brakes, Springs, Hubs & Bearings (No Mounts)
22	900-5900-22	Tire and Wheel Assembly - Black
23	900-5900-39	Leaf Spring Only
24	900-5901-48	Complete Suspension Hanger Kit
25	914-0500-80	Valve Back Cover Assembly (Not Shown)
26	900-5900-09	Break-Away Elec. Brake Away Actuator (Not Shown)



MODEL 1400

HYDRAULIC TONGUE JACK AND HYDRAULIC WINCH





MODEL 1400

HYDRAULIC TONGUE JACK AND HYDRAULIC WINCH

Hydraulic Tongue Jack (Option)

ITEM	PART NUMBER	DESCRIPTION
1	914-0501-01	Pin Lock - For Jack Valve
2	914-0501-02	Pin Lock - For Jack Tube
3	914-0501-03	Inner Jack Tube Assembly
4	914-0501-04	Upper Cylinder Mount Pin
5	914-0501-04	Lower Cylinder Mount Pin

Hydraulic Winch (Option)

ITEM	PART NUMBER	DESCRIPTION
1	914-0501-05	Roller Assembly
2	900-3903-50	Winch Wheel Complete Assembly
3	914-0501-06	Cable Guide System
4	914-0501-07	Motor Torque Arm for Standard Motor 24 cu. in. motor

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MODEL 1400

HYDRAULIC COMPONENTS

NOTE: Sizes And Design Will Change As Required

ITEM	PART NUMBER	DESCRIPTION
		A) From Hydraulic Pump To Feed Pump
1	900-3901-41	Suction Screen (TF-1015-3)
2	900-3901-47	1" (M) NPT to 1" NPT 90° Street Elbow
3	900-3903-93	1" x 25" Hose
4	900-3902-48	1" (M) NPT to 1" NPT 45° Swivel
—	900-3902-95	Feed Pump (V10-1PTP-1A20)
		B) From Feed Pump To Selector Valve
5	900-3900-21	½" (M) NPT to ½" (F) NPT 45° Swivel
6	900-3903-89	½" x 67" Hose
7	900-3901-30	½" (M) NPT to ½" (F) NPT 90° Swivel
—	900-3901-19	Selector Valve (V52-BKLF2)
		C) From Selector Valve To Feed Wheels Valve
8	900-3901-30	½" (M) NPT to ½" (F) NPT 90° Swivel
9	900-3903-83	½" x 23½" Hose
10	900-3900-22	¾" (M) NPT to ½" (F) NPT 90° Swivel
—	900-3902-26	Feed Wheel Valve (DCVAM-200)
		D) From Feed Wheels Valve To Flow Divider
11	900-3901-30	½" (M) NPT to ½" (F) NPT 90° Swivel
12	900-3903-81	½" x 21½" Hose
13	900-3903-95	¾" (M) O-Ring to ½" (F) NPT 90° Swivel
—	900-3901-40	Flow Divider - Feed Wheels (FDCI-16-6-44)
		E) From Flow Divider To Top Feed Wheel
14	900-3903-95	¾" (M) O-Ring to ½" (F) NPT 90° Swivel
15	900-3903-87	½" x 33½" Hose
16	900-3901-16	½" (M) O-Ring to ½" (F) NPT Straight Swivel
—	900-3901-39	Top Feed Wheel Motor (RE-240804)
		F) From Top Feed Wheel Motor To "Tee" On Feed Wheel Valve, Return Port Side
17	900-3901-16	½" (M) O-Ring to ½" (F) NPT Straight Swivel
18	900-3903-87	½" x 33½" Hose
		G) From Flow Divider To Bottom Feed Wheel Motor
19	900-3901-16	¾" (M) O-Ring to ½" (F) NPT 90° Swivel
20	900-3903-80	½" x 19" Hose
21	900-3901-16	½" (M) O-Ring to ½" (F) NPT Straight Swivel
		H) From Bottom Feed Wheel Motor To Feed Wheels Valve
22	900-3901-16	½" (M) O-Ring to ½" (F) NPT Straight Swivel
23	900-3903-86	½" x 28½" Hose
24	900-3900-36	½" Pipe Tee NPT
25	900-3900-35	½" NPT Close Nipple
—	900-3902-26	Feed Wheel Valve (DCVAM-200)
		I) From Feed Wheels Valve to Hydraulic Return Manifold
26	900-3900-22	¾" (M) NPT to ½" (F) NPT 90° Swivel
27	900-3903-84	½" x 24" Hose
—	914-0500-52	Hydraulic Return Manifold (5-Hole)
		J) From Selector Valve To Winch Valve
28	900-3900-70	½" (M) NPT to ½" (F) NPT Straight Swivel
29	900-3903-87	½" x 33½" Hose
30	900-3900-22	¾" (M) NPT to ½" (F) NPT 90° Swivel
—	900-3901-42	Winch Valve (CVA-200)

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MODEL 1400 STANDARD HYDRAULICS WITH OPTIONAL WINCH SYSTEM AND HYDRAULIC TONGUE JACK



**MODEL 1400****HYDRAULIC COMPONENTS**

ITEM	PART NUMBER	DESCRIPTION
		K) From Winch Valve To Winch Motor And Back To Winch Valve
31	900-3900-16	1/2" (M) NPT to 3/8" (F) NPT Straight Swivel
32	900-3903-68	3/8" x 13 1/2" Hose
33	900-3901-44	1/2" (M) NPT to 3/8" (F) NPT 90° Swivel
—	900-3902-14	Winch Motor (RS-24-01-01)
34	900-3901-44	1/2" (M) NPT to 3/8" (F) NPT 90° Swivel
35	900-3903-68	3/8" x 13 1/2" Hose
36	900-3900-16	1/2" (M) NPT to 3/8" (F) NPT Straight Swivel
—	900-3901-42	Winch Valve (CVA-200)
		L) From Winch Valve To Hydraulic Return Manifold
37	900-3900-22	3/4" (M) NPT to 1/2" (F) NPT 90° Swivel
38	900-3903-88	1/2" x 36" Hose
—	914-0500-52	Hydraulic Return Manifold (5-Hole)
		M) From Hydraulic Tank To Loader Pump
39	900-3903-39	Suction Screen (TF-1220-3)
40	900-3903-98	1 1/4" (M) NPT to 1 1/4" (F) NPT 90° Street Elbow
41	900-3903-99	1 1/4" NPT to 1 1/4" Hose Barb
42	900-3903-92	1 1/4" x 82" Hose
163	900-3904-01	1" NPT to 1 1/4" Hose Barb
—	900-3902-96	Loader Pump (V10-1P-5P-11-C-20-L)
		N) From Loader Pump To Relief Valve
43	900-3903-90	1/2" to 70" Hose
44	900-3900-22	3/4" (M) NPT to 1/2" (F) NPT 90° Swivel
—	900-3903-40	Relief Valve (Main) RV-IL
		O) From Main Relief To Hydraulic Tongue Jack Valve
45	900-3903-02	3/4" (M) NPT to 1/2" (F) NPT Bushing
46	900-3903-78	1/2" x 14 1/4" Hose
47	900-3900-22	3/4" (M) NPT to 1/2" (F) NPT 90° Swivel
—	900-3900-12	Tongue Jack Valve (DCVA-200)
		P) From Hydraulic Tongue Jack Valve To Tongue Jack Cylinder And Back To Hydraulic Tongue Jack Valve
48	900-3903-19	1/2" (M) NPT to 1/4" (F) NPT 90° Swivel
49	900-3903-62	1/4" x 32" Hose
50	900-3903-14	1/2" (M) O-Ring to 1/4" (F) NPT 90° Swivel
—	900-3903-57	Tongue Jack Cylinder (CTREO 2" x 20")
51	900-3903-14	1/2" (M) O-Ring to 1/4" (F) NPT 90° Swivel
52	900-3903-61	1/4" x 27" Hose
53	900-3903-19	1/2" (M) NPT to 1/4" (F) NPT 90° Swivel
—	900-3901-42	Hydraulic Tongue Jack Valve (CVA-200)
		Q) From Relief Valve - Main Relief (Dump Port) To Hydraulic Tank
54	900-3900-22	3/4" (M) NPT to 1/2" (F) NPT 90° Swivel
55	900-3903-91	1/2" x 110" Hose
56	900-3901-30	1/2" (M) NPT to 1/2" (F) NPT 90° Swivel
		R) From Hydraulic Tongue Jack Valve To Grapple Valve
57	900-3900-22	3/4" (M) NPT to 1/2" (F) NPT 90° Swivel
58	900-3903-85	1/2" x 27" Hose
59	900-3904-03	5/8" O.D. (F) to 1/2" (F) NPT 90° Swivel
60	900-3904-04	5/8" O.D. (F) x 120" Hydraulic Pipe
61	900-3904-05	5/8" O.D. (F) to 1/2" (F) NPT Straight Swivel

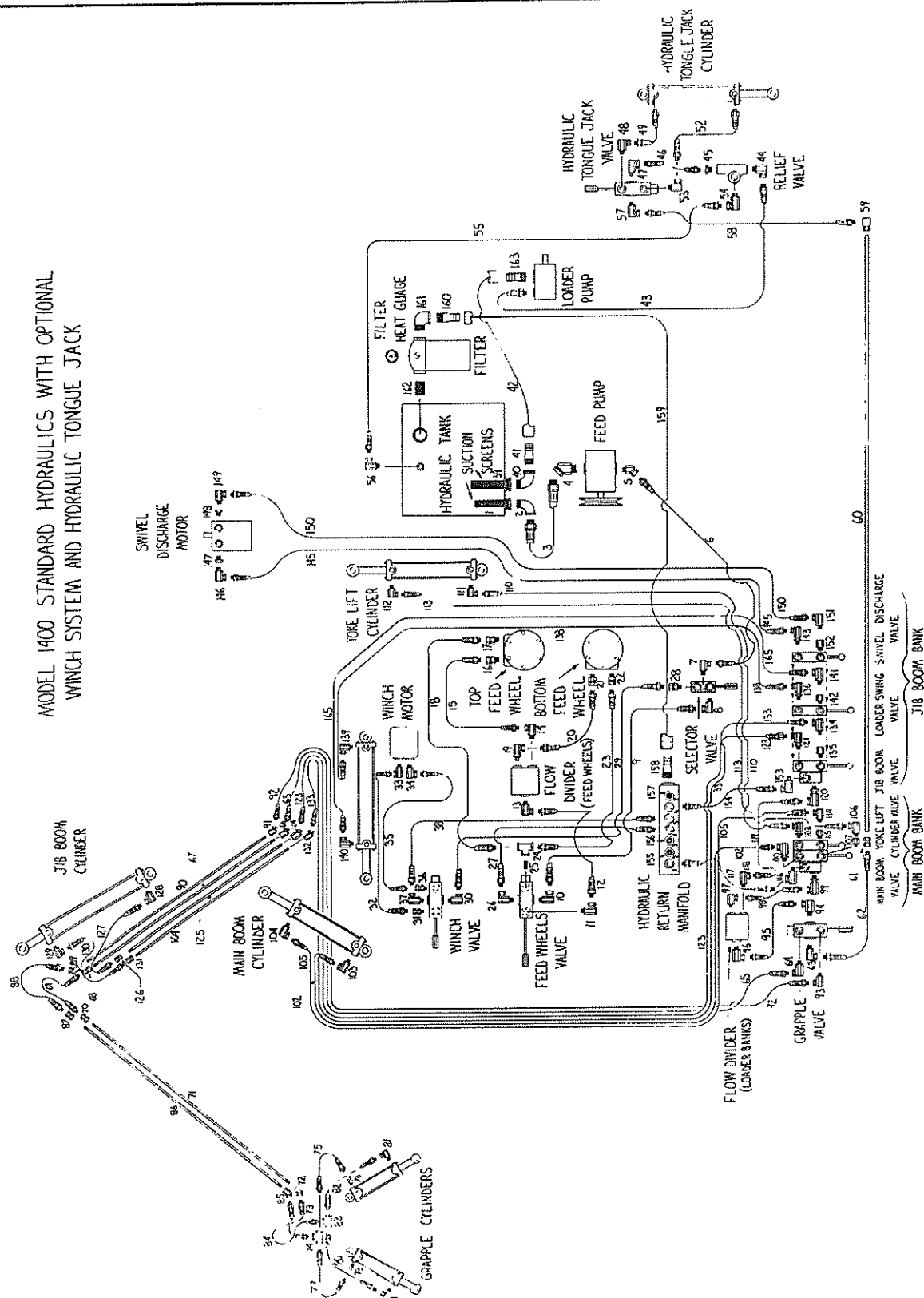
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MODEL 1400

HYDRAULIC COMPONENTS

MODEL 1400 STANDARD HYDRAULICS WITH OPTIONAL
WINCH SYSTEM AND HYDRAULIC TONGUE JACK



**MODEL 1400****HYDRAULIC COMPONENTS**

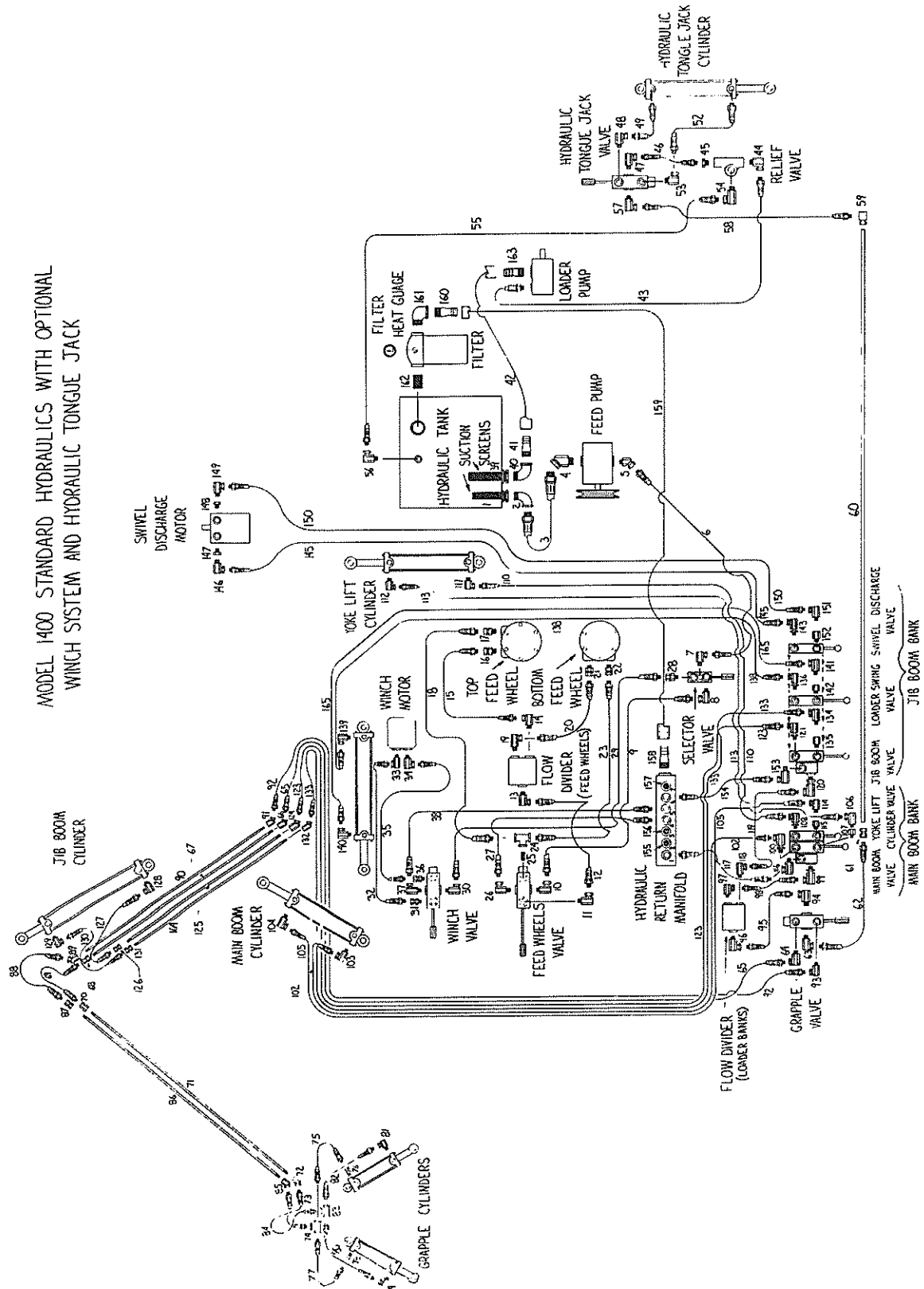
ITEM	PART NUMBER	DESCRIPTION
62	900-3903-87	R) From Hydraulic Tongue Jack Valve To Grapple Valve 1/2" x 33 1/2" Hose
63	900-3900-22	3/4" (M) NPT to 1/2" (F) NPT 90° Swivel
—	900-3901-42	Grapple Valve (CVA-200)
64	900-3901-44	S) From Grapple Valve To Grapple Cylinders 1/2" (M) NPT to 3/8" NPT 90° Swivel
65	900-3903-75	3/8" x 142" Hose
66	900-3903-15	3/8" (F) NPT to 3/8" (F) NPT 45° Swivel
67	900-3904-07	3/8" x 68" Standard Black Pipe
68	900-3903-16	3/8" (F) NPT to 3/8" (F) NPT Straight Swivel
69	900-3903-72	3/8" x 57" Hose
70	900-3903-15	3/8" (F) NPT to 3/8" (F) NPT 45° Swivel
71	900-3904-06	3/8" x 48" Standard Black Pipe
72	900-3903-16	3/8" (F) NPT to 3/8" (F) NPT 45° Swivel
73	900-3903-71	3/8" x 16" Hose
74	900-3903-97	3/8" Pipe Tee NPT From Tee To Right Cylinder 3/8" x 11 1/2" Hose
75	900-3903-67	1/2" (M) O-Ring to 3/8" (F) NPT Straight Swivel
76	900-3901-02	From Tee To Left Cylinder 3/8" x 11 1/2" Hose
77	900-3903-67	1/2" (M) O-Ring to 3/8" (F) NPT Straight Swivel
78	900-3901-02	T) From Grapple Cylinder To Grapple Valve From Left Cylinder to Tee 1/2" (M) O-Ring to 3/8" (F) NPT 90° Swivel
79	900-3903-59	3/8" x 19" Hose
80	900-3903-69	From Right Cylinder To Tee 1/2" (M) O-Ring to 3/8" (F) NPT 90° Swivel
81	900-3903-59	3/8" x 19" Hose
82	900-3903-69	3/8" Pipe Tee NPT
83	900-3903-97	3/8" x 36" Hose
84	900-3903-88	3/8" (F) NPT to 3/8" (F) NPT 45° Swivel
85	900-3903-15	3/8" x 48" Standard Black Pipe
86	900-3904-06	3/8" (F) NPT to 3/8" (F) NPT Straight Swivel
87	900-3903-16	3/8" x 57" Hose
88	900-3903-72	3/8" (F) NPT to 3/8" (F) NPT 45° Swivel
89	900-3903-15	3/8" x 68" Standard Black Pipe
90	900-3903-07	3/8" (F) NPT to 3/8" (F) NPT 45° Swivel
91	900-3903-15	3/8" x 142" Hose
92	900-3903-75	1/2" (M) NPT to 3/8" (F) NPT 90° Swivel
93	900-3901-44	Grapple Valve (CVA-200)
—	900-3901-42	U) From Grapple Valve To Flow Divider (For Loader Banks) 3/4" (M) NPT to 1/2" (F) NPT 90° Swivel
94	900-3900-22	1/2" x 10 1/2" Hose
95	900-3903-76	1/2" (M) O-Ring to 1/2" (F) NPT 90° Swivel
96	900-3902-66	Flow Divider for Loader Bank (FDCI-10-8T-66)
—	900-3901-00	V) From Loader Bank Flow Divider To Main Boom Valve Bank 1/2" (M) O-Ring to 1/2" (F) NPT 90° Swivel
97	900-3902-66	1/2" x 22 1/2" Hose
98	900-3903-82	1/2" (M) O-Ring to 1/2" (F) NPT 90° Swivel
99	900-3902-66	Main Boom Valve Bank (HFP-1770)
—	900-3903-08	



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ITEM	PART NUMBER	DESCRIPTION
		W) From Main Boom Valve To Main Boom Cylinder And Back
100	900-3903-14	1/2" (M) O-Ring to 1/4" (F) NPT 90° Swivel
101	—	—
102	900-3903-66	1/4" x 155" Hose
103	900-3903-51	3/8" (M) O-Ring to 1/4" (F) NPT 90° Swivel
—	900-3903-02	Main Boom Cylinder (3" x 10")
104	900-3903-51	3/8" (M) O-Ring to 1/4" (F) NPT 90° Swivel
105	900-3903-66	1/4" x 155" Hose
106	900-3903-96	3/8" (M) NPT to 1/4" (F) NPT 90° Swivel
107	900-3903-58	1/2" (M) O-Ring to 3/8" (F) NPT 90° Tall Swivel
—	900-3903-08	Main Boom Valve Bank (HFP-1770) (Main Boom Valve)
		X) From Yoke Lift Cylinder Valve To Yoke Lift Cylinder And Back
108	900-3903-58	1/2" (M) O-Ring to 3/8" (F) NPT 90° Swivel
109	—	—
110	900-3903-73	3/8" x 97" Hose
111	900-3903-58	1/2" (M) O-Ring to 3/8" (F) NPT 90° Swivel
—	900-3903-00	Yoke Lift Cylinder 2" x 14"
112	900-3903-58	1/2" (M) O-Ring to 3/8" (F) 90° Swivel
113	900-3903-74	3/8" x 102" Hose
114	900-3903-60	3/8" (M) NPT to 3/8" (F) NPT 90° Swivel
115	900-3903-58	1/2" (M) O-Ring to 3/8" (F) NPT Tall 90° Swivel
—	900-3903-08	Main Boom Valve Bank (HFP-1770) (Yoke Lift Valve)
		Y) From Main Boom Bank To Hydraulic Return Manifold
116	900-3901-16	3/4" (M) O-Ring to 1/2" (F) NPT 90° Swivel
117	900-3903-77	1/2" x 13" Hose
—	914-0500-52	Hydraulic Return Manifold (5-Hole)
		Z) From Flow Divider For Loader Bank To Jib Boom Valve Bank
118	900-3902-66	1/2" (M) O-Ring to 1/2" (F) NPT 90° Swivel
119	900-3903-79	1/2" x 17 1/2" Hose
120	900-3902-66	1/2" (M) O-Ring to 1/2" (F) NPT 90° Swivel
		AA) From Jib Boom Valve Bank To Jib Boom Cylinder and Back
121	—	1/2" (M) O-Ring to 3/8" (F) NPT 90° Swivel
122	—	—
123	900-3903-75	3/8" x 142" Hose
124	900-3903-15	3/8" (F) NPT to 3/8" (F) NPT 45° Swivel
125	900-3904-06	3/8" x 48" Standard Black Pipe
126	900-3903-16	3/8" (F) NPT to 3/8" (F) NPT Straight Swivel
127	900-3903-70	3/8" x 33" Hose
128	900-3903-59	1/2" (M) O-Ring to 3/8" (F) NPT 90° Swivel
—	—	Jib Boom Cylinder (3" x 24" with 4" Stop)
129	900-3903-59	1/2" (M) O-Ring to 3/8" (F) NPT 90° Swivel
130	900-3903-70	3/8" x 33" Hose
131	900-3903-16	3/8" (F) NPT to 3/8" (F) NPT Straight Swivel
164	900-3904-06	3/8" x 48" Standard Black Pipe
132	900-3903-15	3/8" (F) NPT to 3/8" (F) NPT 45° Swivel
133	900-3903-75	3/8" x 142" Hose

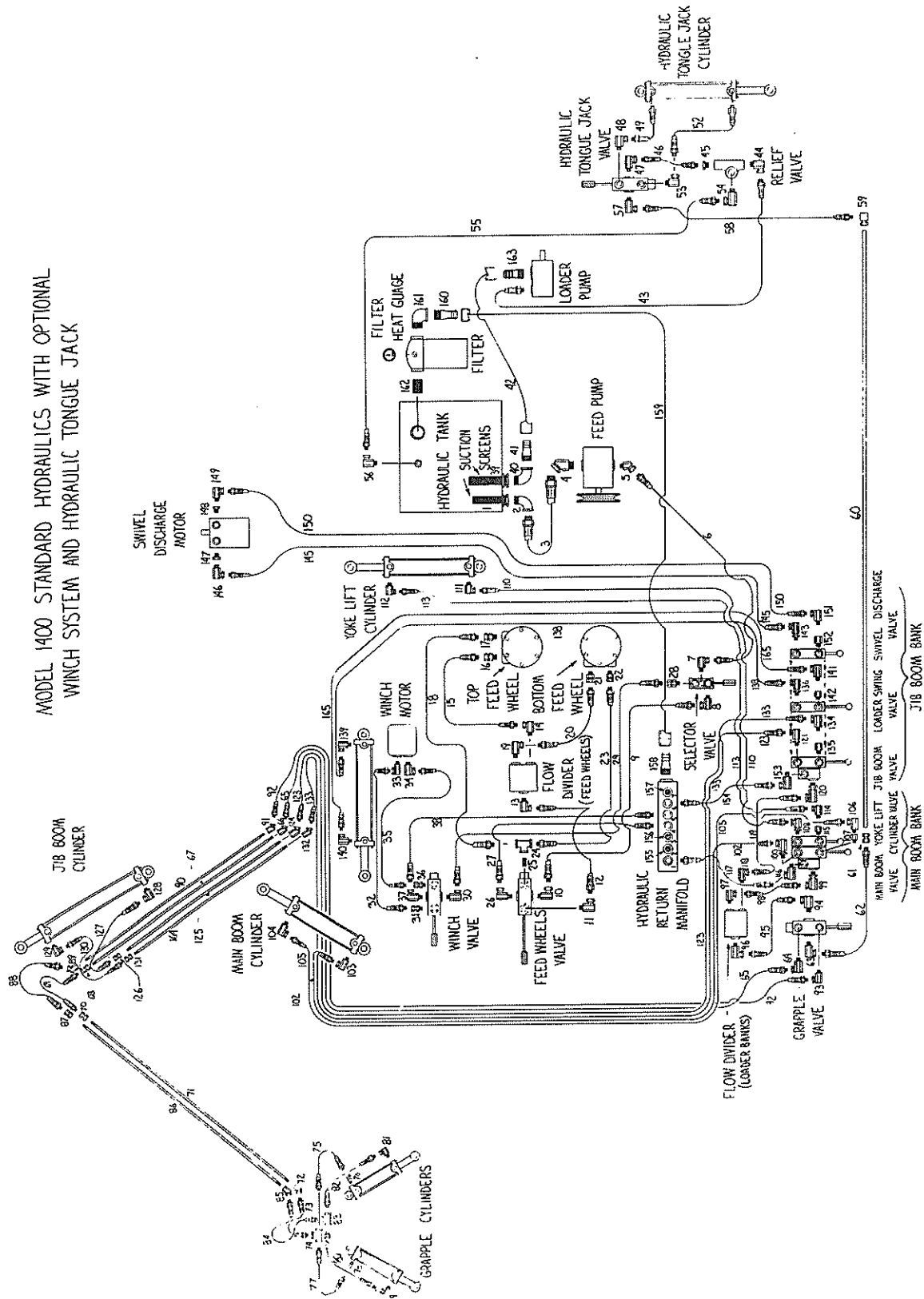
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ITEM	PART NUMBER	DESCRIPTION
		AA) From Jib Boom Valve Bank To Jib Boom Cylinder and Back (Continued)
134	900-3903-60	3/8" (M) NPT to 3/8" (F) NPT 90° Swivel
135	900-3903-58	1/2" (M) NPT to 3/8" (F) NPT Tall 90° Swivel
—	900-3903-09	Jib Boom Valve Bank (HFP-1771) (Jib Boom Valve)
		BB) From Loader Swing Valve In Bank To Loader Swing Cylinder And Back
136	900-3903-14	1/2" (M) O-Ring to 1/4" (F) NPT 90° Swivel
137	—	—
138	900-3903-63	1/2" x 49" Hose
139	900-3903-14	1/2" (M) O-Ring to 1/4" (F) 90° Swivel
—	900-3903-01	Loader Swing Cylinder (3" x 16")
140	900-3903-14	1/2" (M) O-Ring to 1/4" (F) 90° Swivel
165	900-3903-64	1/4" x 64" Hose
141	900-3903-96	3/8" (M) NPT to 1/4" (F) NPT 90° Swivel
142	900-3903-58	1/2" (M) O-Ring to 3/8" (F) NPT Bushing
—	900-3903-09	Jib Boom Valve Bank (HFP-1771) (Swing Cylinder Valve)
		CC) From Discharge Swivel Valve In Bank To Discharge Swivel Motor And Back
143	900-3903-14	1/2" (M) O-Ring to 1/4" (F) NPT 90° Swivel
144	—	—
145	900-3903-65	1/4" x 102" Hose
146	900-3903-96	3/8" (M) NPT to 1/4" (F) NPT 90° Swivel
147	900-3900-84	1/2" (M) NPT to 3/8" (F) NPT Bushing
—	900-3902-14	Discharge Swivel Motor (RS-24-01-01)
148	900-3900-84	1/2" (M) NPT to 3/8" (F) NPT Bushing
149	900-3903-96	3/8" (M) NPT to 1/4" (F) 90° Swivel
150	900-3903-65	1/4" x 102" Hose
151	900-3903-96	3/8" (M) NPT to 1/4" (F) 90° Swivel
152	900-3903-58	1/2" (M) O-Ring to 3/8" (F) NPT Tall 90° Swivel
—	900-3903-09	Jib Boom Valve Bank (HFP-1771) (Swivel Motor Valve)
		DD) From Jib Boom Valve Bank To Hydraulic Return Manifold
153	900-3903-95	3/4" (M) O-Ring to 1/2" (F) NPT 90° Swivel
154	900-3903-77	1/2" x 13" Hose
—	914-0500-52	Hydraulic Return Manifold
155	900-3900-59	1/2" NPT Pipe Plug
156	900-3900-59	1/2" NPT Pipe Plug
157	900-3900-59	1/2" NPT Pipe Plug
		EE) Hydraulic Return Manifold To Filter On Hydraulic Tank
158	900-3902-86	1 1/2" Hose Barb
159	900-3903-23	1 1/2" x 82" Hose
160	900-3902-13	1 1/2" Hose Barb
161	900-3901-86	1 1/2" Street Elbow
—	900-3902-99	Filter Head (SF-150-25-1-1 1/2")
—	900-3901-66	Filter Cartridge (LE-10)
—	900-3901-70	Filter Service Gauge (CI-20)
162	900-3901-87	1 1/2" NPT Close Nipple
—	914-0500-09	24 Gallon Hydraulic Tank Assembly

NOTE: Because of design changes and applications, part amounts and sizes will change without notice.

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TREE CHIPPER

MODEL 1400

OPERATING & PARTS MANUAL



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