MODEL 250/1250

BUILT WITH QUALITY AND DESIGN FIRST

MODEL 250/1250
OPERATING & PARTS MANUAL

ATTENTION:

Depending on what replacement parts you are ordering, we will need the following information:

CHIPPER COMPONENTS
Serial Number
Model Number of Chipper

ENGINE COMPONENTS
Engine Size
Engine Serial Number
Engine Spec Number

CLUTCH COMPONENTS
Name of Manufacturer
Serial Number
Assembly of Clutch

Model No: 250/1250

Serial No: _____

DEALER:

Name: _____

Address: _____

City/State: _____

Phone No: _____

Delivery Date: _____

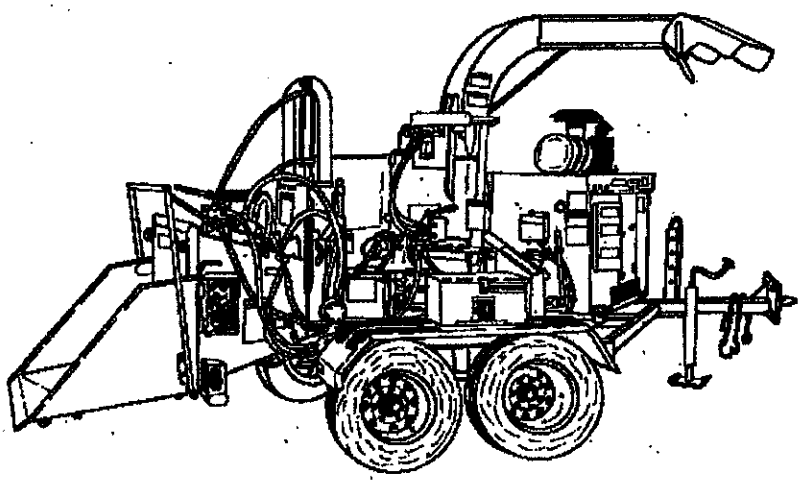
Engine Make: _____

Serial No: _____

Clutch Make: _____

Model: _____ S/N: _____

Changes in Manual 12/96



MANUFACTURED BY
BANDIT INDUSTRIES, INC.
6750 Millbrook Road
REMUS, MICHIGAN 49340
PHONE: (517) 561-2270 OR 561-2272
FAX: (517) 561-2273

IT IS VERY IMPORTANT THAT THIS FORM IS FILLED OUT COMPLETELY & ACCURATELY. IF WE CANNOT READ THE PURCHASER'S INFORMATION OR IT IS INCORRECT, THE FREE SERVICE & MAINTENANCE VIDEO WILL NOT GET TO THE PROPER PEOPLE AND OUR CUSTOMER LIST WILL NOT BE ACCURATE.

IMPORTANT – THIS FORM MUST BE RETURNED TO THE CUSTOMER DATA DEPARTMENT WITHIN TEN (10) DAYS IN ORDER TO RECEIVE FREE MAINTENANCE VIDEO AND VALIDATE WARRANTY

Customer Data Department
6750 Millbrook Road
Remus, MI 49340
Phone: (517) 561-2270
Fax: (517) 561-2273

WARRANTY VALIDATION FORM

PURCHASER INFORMATION:

Company Name _____ Mailing/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 _____ Mailing/Street Address _____

City _____ State _____ Zip Code _____

Telephone Number (_____) _____ Contact Name _____

1. _____ Customer has been instructed and understands operation and all safety aspects of operating the equipment.
2. _____ Customer has been advised and understands not to reach into the infeed chute with hands or feet.
3. Customer has been instructed and understands to always remove the engine key or completely disconnect battery from cables, 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 and understands not to operate the cutter wheel with the chipper hood open, or unless the hood pin is securely in place.
5. _____ Customer has been furnished with all parts and operators manuals and understands that his operators must read and follow the procedures.
6. _____ Customer has been instructed and understands 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, clutch adjustment, belt adjustment. etc.
8. _____ Customer has reviewed and understands limited warranty as explained in owners manual.
9. _____ All operation and warning decals are properly displayed on equipment and understood by customer.
10. _____ Customer has been instructed and understands that everyone within 100 feet of machine must wear personal safety equipment (i.e. hard hat, safety glasses, etc.)
11. _____ Customer has been instructed and understands that the machine operator must always be located within easy reach of feed control and shut down devices.
12. _____ Yes, I would like the Service, Operations & Maintenance Video sent. **THIS VIDEO ONLY APPLIES TO DISC STYLE CHIPPERS AND MAY NOT APPLY TO ALL MODELS. IT WILL NOT BE SENT ON MODEL 1400, 1900, OR DRUM BANDITS.**

I have inspected this equipment and find it in correct 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:** _____

7-97 FORM #Q-102

DATE PURCHASED: _____

MODEL: _____

SERIAL NUMBER: _____

DEALER NAME: _____

_____

TO BE RETURNED AFTER THIRTY (30) DAYS OF OPERATION

Please return to: Customer Data Department
6750 Millbrook Road
Remus, MI 49340

PH: (517) 561-2270
FAX (517) 561-2273

CHIPPER QUALITY REPORT

All of the employees that build your equipment strive to manufacturer the **very best quality** product on the market. We would appreciate your efforts in letting us know how we are doing.

We would like you to operate your machine for thirty (30) days and then fill out this questionaire and mail it to us. This will help us to keep producing a good product and improving our products through your recommendations.

1. Did your chipper perform to your expectations? _____
2. Was the machine delivered on schedule? _____
3. Was the paint color and finish to your satisfaction? _____
4. Was machine equipment as ordered? _____
5. Did all welds appear to be of high quality? _____
6. Was the overall machine to your liking? _____
7. What problems have you experienced? _____
8. Have any components regularly loosened that caused problems? _____
9. Does the hydraulic system seem to have adequate power for feeding wood into the chipper? _____
10. Is the machine manufactured to accommodate service in an adequate manner? If not, please explain:

    _____

11. General comments and/or suggestions: _____

    _____

    _____

12. Would you like to be contacted concerning more of our equipment? _____

YOUR COMPANY: _____

NAME: _____

ADDRESS: _____

CITY: _____

STATE & ZIP: _____

PHONE: (____) _____

TABLE OF CONTENTS

PAGES

INTRODUCTION 2
WARRANTY 3
SERVICE RECORD 4
SAFETY PROCEDURES 5
EQUIPMENT IDENTIFICATION 11
TRANSPORTING HINTS 18
CONTROLS 19
START-UP PROCEDURES 25
CHIPPING PROCEDURES 29
MAINTENANCE 37
SERVICE 49
PARTS ILLUSTRATIONS & LISTS
- FEED SYSTEM COMPONENTS 60
- CHIPPER COMPONENTS 62
- MAIN FRAME & COMPONENTS 66
- ADD-ON ENGINE COMPONENTS 72
- HYDRAULIC COMPONENTS 76
- ELECTRICAL COMPONENTS 83

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.

SERVICE RECORD

DATE	DESCRIPTION	AMOUNT

SAFETY SECTION



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 lockouts 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

Always start by wearing a hard hat and safety glasses whenever planning to work near the Bandit Chipper. These will help to protect you from being hit accidentally by limbs or branches

⚠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.

⚠WARNING

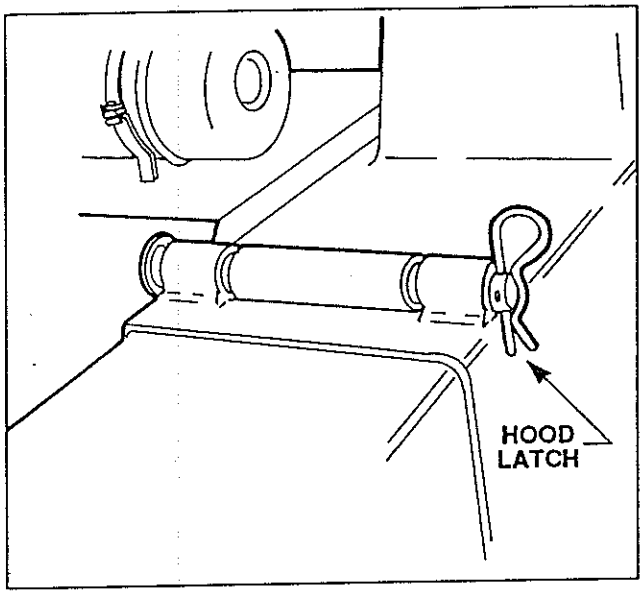
Always block the tires and the machine tongue whenever the Bandit is unhooked for operation. **DO NOT** rely on the tongue jack for operational stabilization.

⚠DANGER

Before starting the machine, take a minute to check a few things. The chipper should be in an area restricted from people passing by. This area around the chipper must be free of all objects that can obstruct your movement when working with the chipper. The machine should be checked for loose tools or foreign objects, especially in the infeed spout. All tools not in use should be secured in a tool box.

⚠WARNING

All guards must be in place. Whenever guards are missing or removed for service, make sure they are replaced before the machine is put into service. Guards are built to protect **YOU.**



⚠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.

⚠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 full throttle. This can help prevent an accident.

⚠DANGER

Pay attention to the direction of the discharge spout before chipping. Never stand in front of 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!

⚠DANGER

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

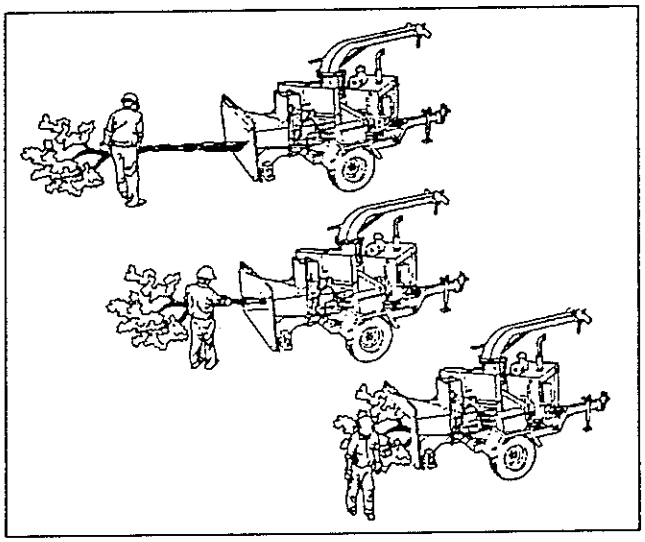
⚠DANGER

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 the trees. Keep your hands away.

⚠WARNING

When you are feeding wood into the machine, always stand to the right of the limbs. This will make feeding the machine much easier and will also keep the wood away from you. Limbs have a tendency to kick to the left as they are feeding into the chipper.



⚠DANGER

Never reach into the infeed spout area of the chipper. There is never any reason to.

If you have short pieces just leave them until you are feeding longer pieces. While the longer pieces are feeding, simply toss the short pieces on top of them. The longer pieces will take them on into the chipper.

⚠ DANGER

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

⚠ DANGER

Never open chipper hood when disc is moving. Chipper disc coasts for several minutes before coming to a stop. We have provided a sight hole in chipper belt shield. If belts can be seen moving, then do not open chipper hood.



THIS IS VERY DANGEROUS AND NOT TO BE DONE!

⚠ DANGER

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 engine is running. Do not rely on the clutch 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!

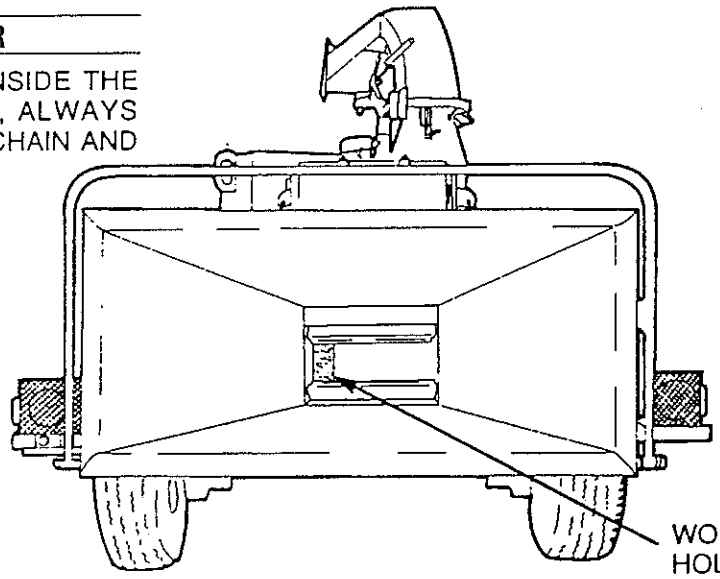
Whenever a guard is removed to service a drive, always replace it! Guards are built to prevent injuries. Use them!

⚠ 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 from engine and pull the clutch **OUT OF GEAR**.

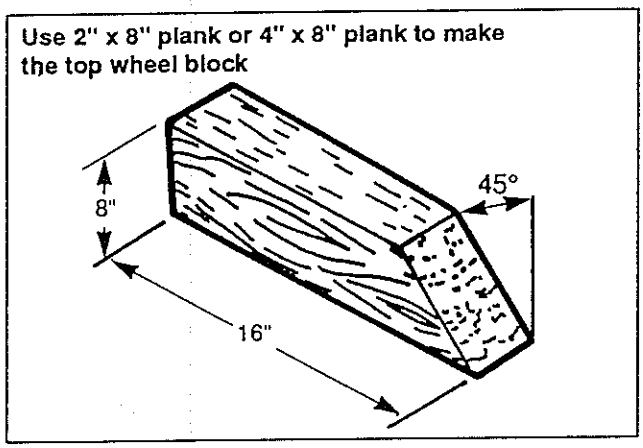
⚠ DANGER

WHEN WORKING INSIDE THE CHIPPER THROAT, ALWAYS HOOK UP SAFETY CHAIN AND INSERT BLOCK.



⚠DANGER

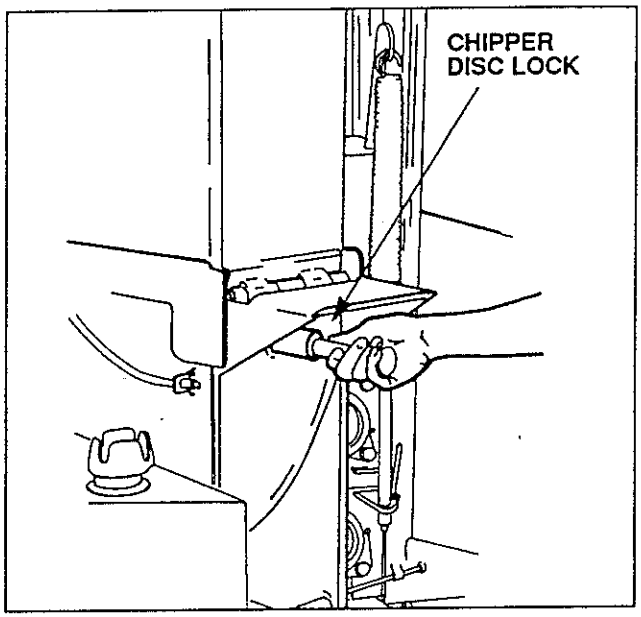
Do not work inside the mouth of the chipper or between the feed wheels without blocking the top feed wheel in the raised position. This will have to be done to adjust the knife anvil to the chipper knife. Follow the safety rules explained and make a block according to the illustration.



1. Unhook feed roll hold down springs. Insert block between the top and bottom wheels on the extreme left side. Feather the controls and have the engine running about 600 to 700 RPM's. This will let the feed wheels turn very slowly.
2. After the block is in place, place a chain through the top wheel yoke lug and the chipper hood handle. This practice helps insure that the top wheel can't come down if the block would happen to slip.

⚠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

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, and the operator won't waste valuable time fighting with trees which will not go into the chipper.

⚠WARNING

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

⚠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.

⚠WARNING

If you remove the chipper disc drive guard or any safety devices, REPLACE THEM when you are finished. Guards do absolutely no good if they are left in the shop.

⚠WARNING

Check all chipper bolts and nuts for proper torque weekly. The chipper turns very fast and requires attention to insure safety.

⚠WARNING

Most of the nuts used on the Bandit are self locking. After the nut has been removed a maximum of five times, it should be replaced to insure proper tightness. This is especially critical on the chipper knife lock nuts!

⚠WARNING

Before doing any maintenance, make sure the engine is shut off and disc lock pin is installed.

⚠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 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.

REMEMBER . . .

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 your work around engine fuel, hydraulic oil or heat. Also, empty fire extinguishers don't do much good. If you use them, have them refilled immediately.

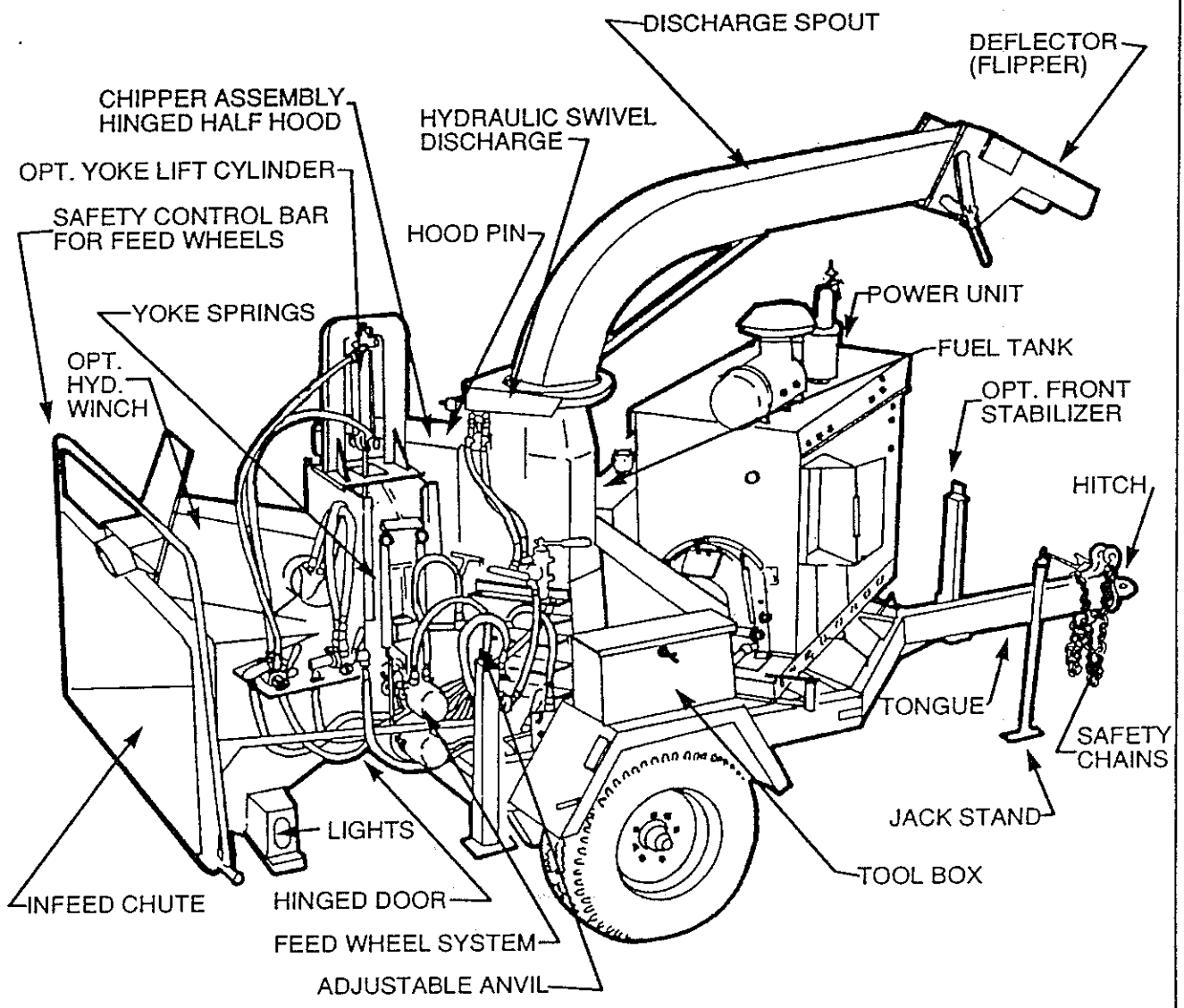
Never leave one person to work on a machine alone. If an accident occurred, someone could suffer or even die before help arrived.

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

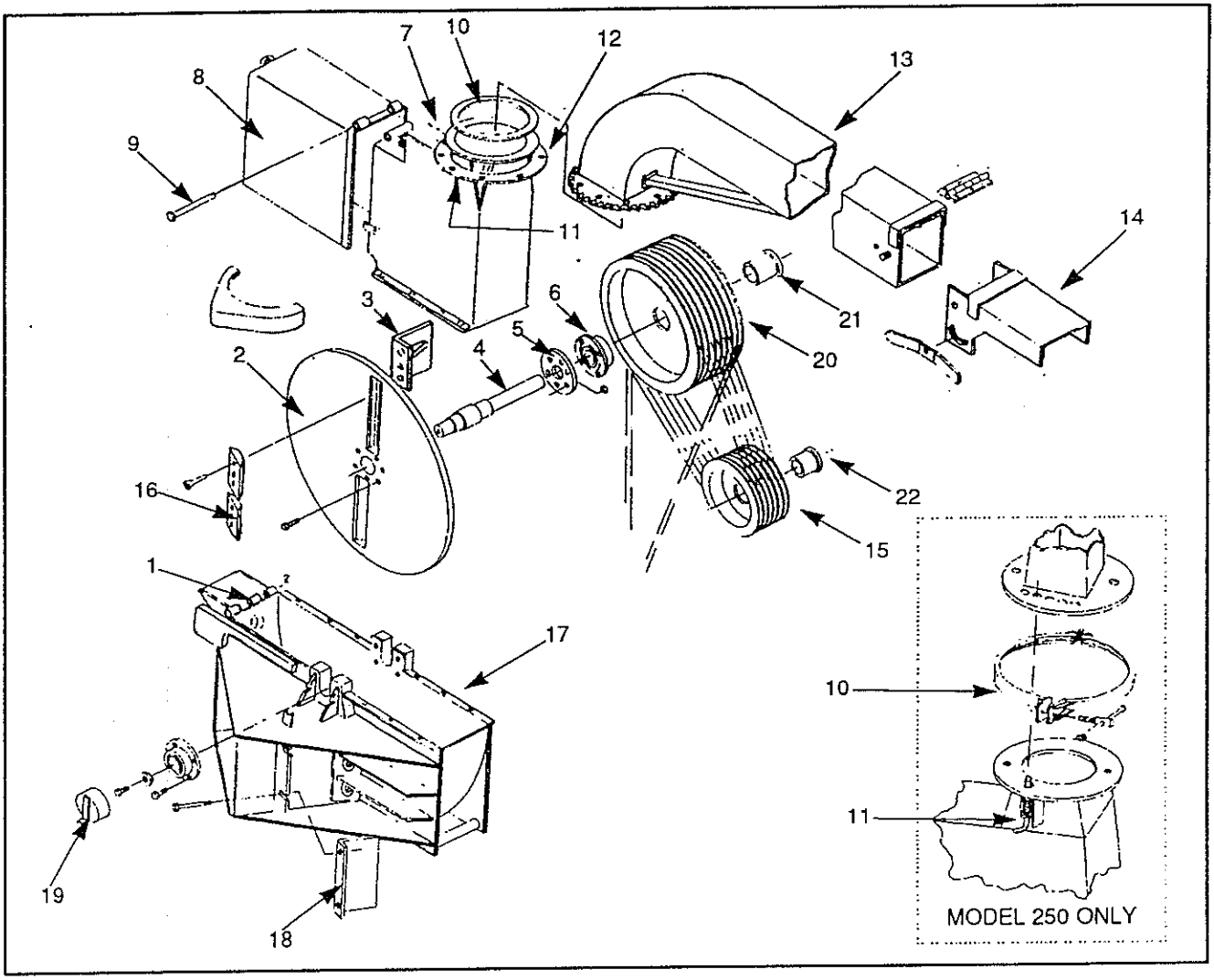
EQUIPMENT SECTION
(Description)



COMPONENT PARTS



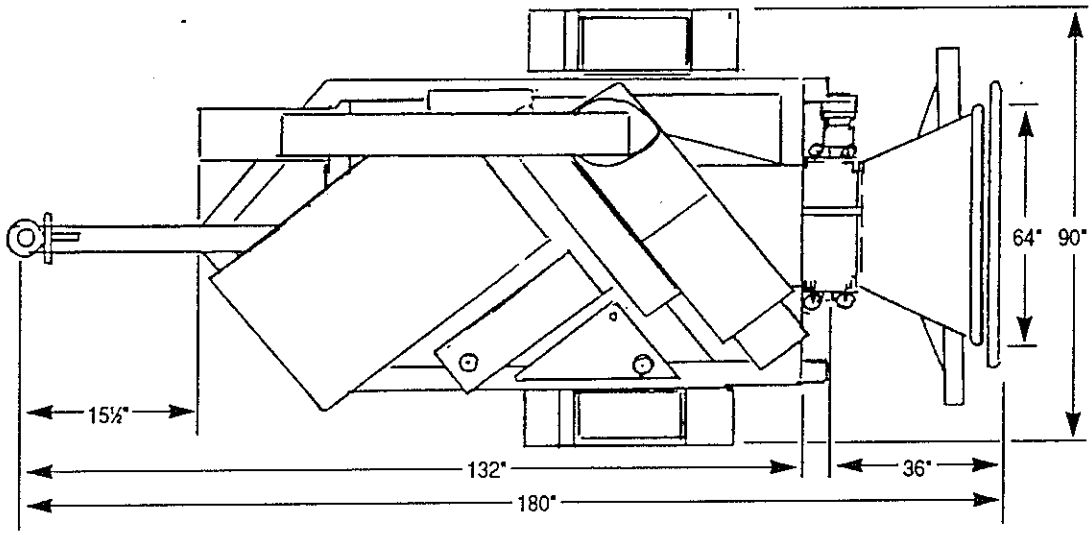
(MODEL 1250 SHOWN)

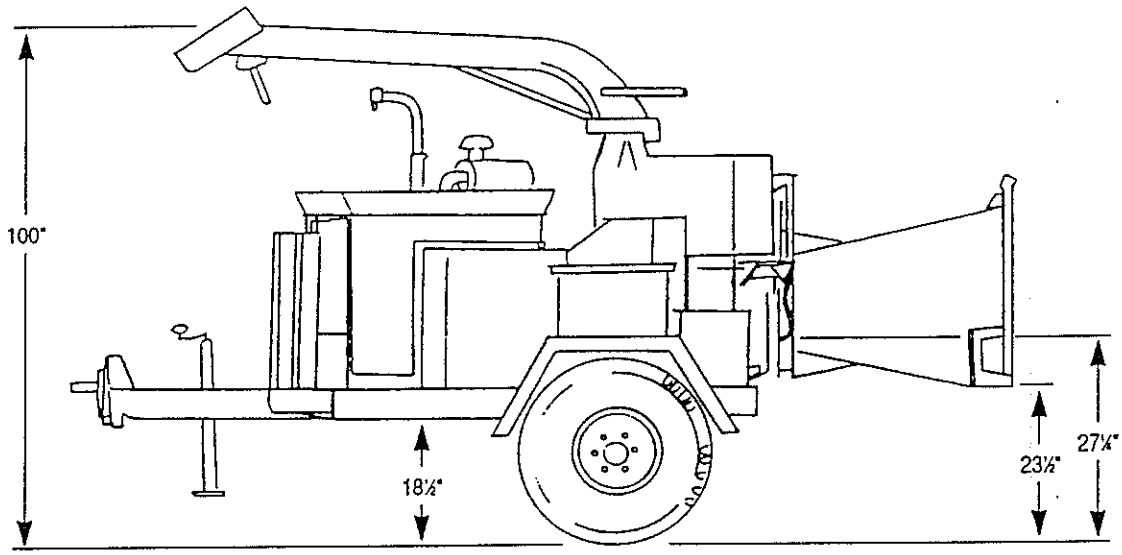


CHIPPER IDENTIFICATION

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

DIMENSIONS – MODEL 250



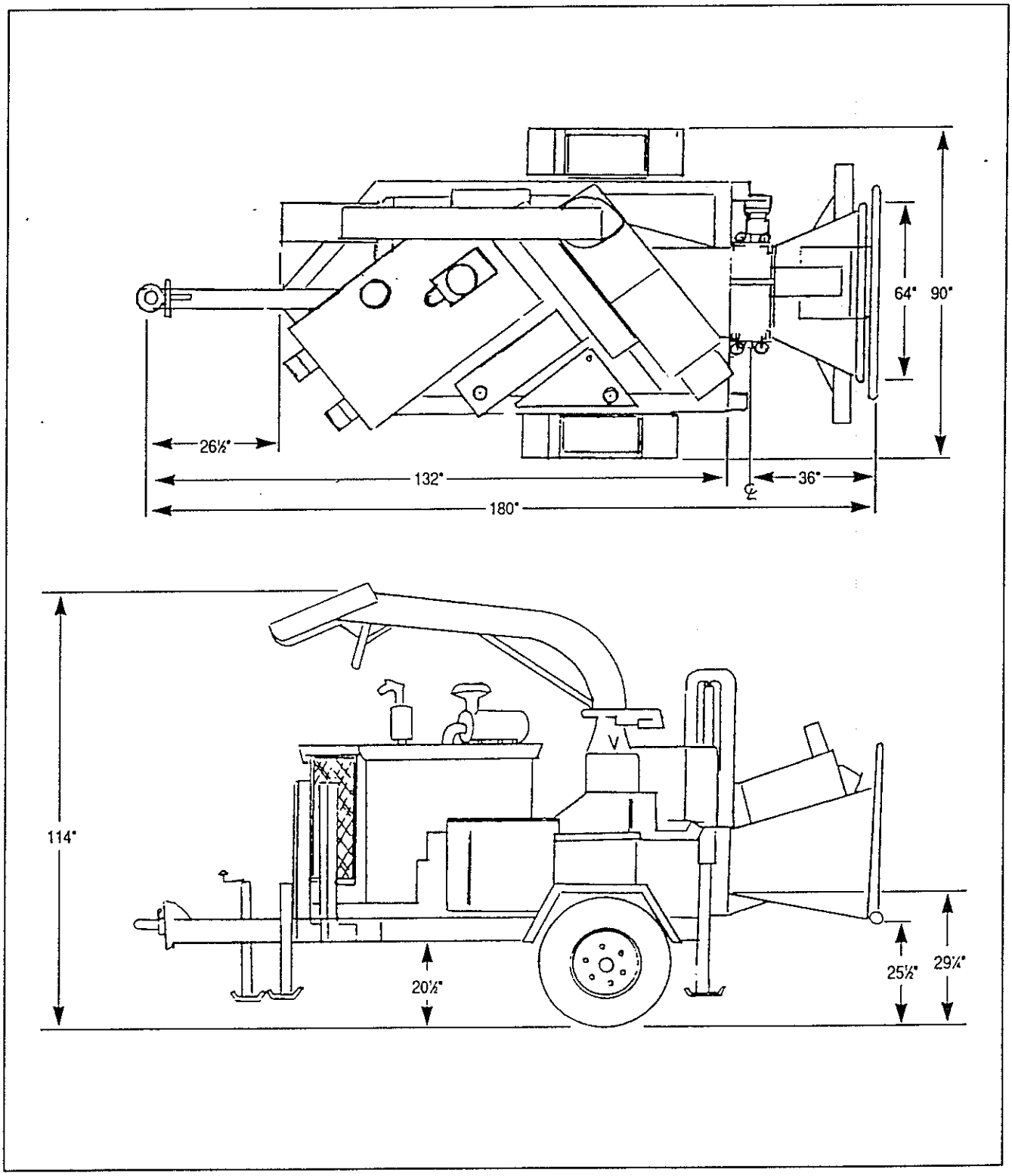


MACHINE SPECIFICATIONS
MODEL 250

Chipping Capacity	12" Round Wood
Chipper Disc Diameter	40"
Infeed Opening	12" High x 19-1/4" Wide
Chip Sizes	5/8"
Discharge Spout Rotation	360°
Fuel Tank Capacity	24-1/2 gallons
Hydraulic Tank Capacity	12 gallons
Hydraulic System - Feed System	2500 PSI
Electrical System	12 Volt
Tongue Weight (approximate)	275-300 lbs.
Axle Weight (approximate)	5150 lbs.
Total Weight (approximate)	5400 lbs.
Overall Length	15' 0"
Height (for transport)	8' 4"
Width	7' 6"

(Note -- All specifications are approximate, depending on power unit and options)

DIMENSIONS – MODEL 1250



MACHINE SPECIFICATIONS
MODEL 1250

Chipping Capacity	12" Round Wood
Chipper Disc Diameter	40"
Infeed Opening	12" High x 19-1/4" Wide
Chip Sizes	5/8"
Discharge Spout Rotation	360°
Fuel Tank Capacity	24-1/2 gallons
Hydraulic Tank Capacity	12 gallons
Hydraulic System - Feed System	2500 PSI
Electrical System	12 Volt
Tongue Weight (approximate)	275-300 lbs.
Axle Weight (approximate)	6550 lbs.
Total Weight (approximate)	6800 lbs.
Overall Length	15' 0"
Height (for transport)	9' 6"
Width	7' 6"

(Note -- All specifications are approximate, depending on power unit and options)

TRANSPORTING HINTS

1) Make sure 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) Make sure stabilizers are fully retracted, and using the lock pin, lock the stabilizers up.

4) 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.

5) With engine shut down, open the inspection door under the lower feed wheel, clean out debris and then fasten shut.

6) Check tail lights, brake lights, and turn signals to make sure all are in proper working condition before transporting.

7) Make sure discharge is pointed straight forward and lock is in place.

8) Check and tighten wheel lug nuts.

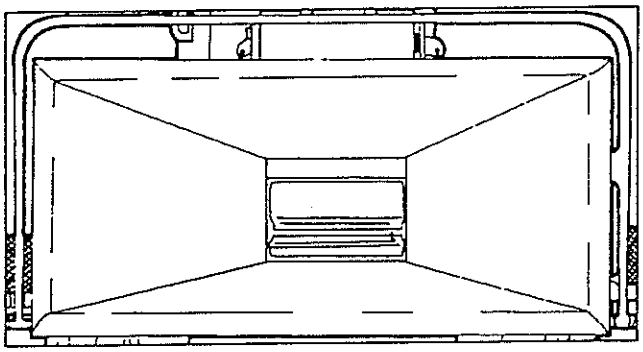
9) Make sure engine is shut off and fuel is secured.

10) You are now ready to move the Model 250 or 1250 to the next operation.

CONTROLS



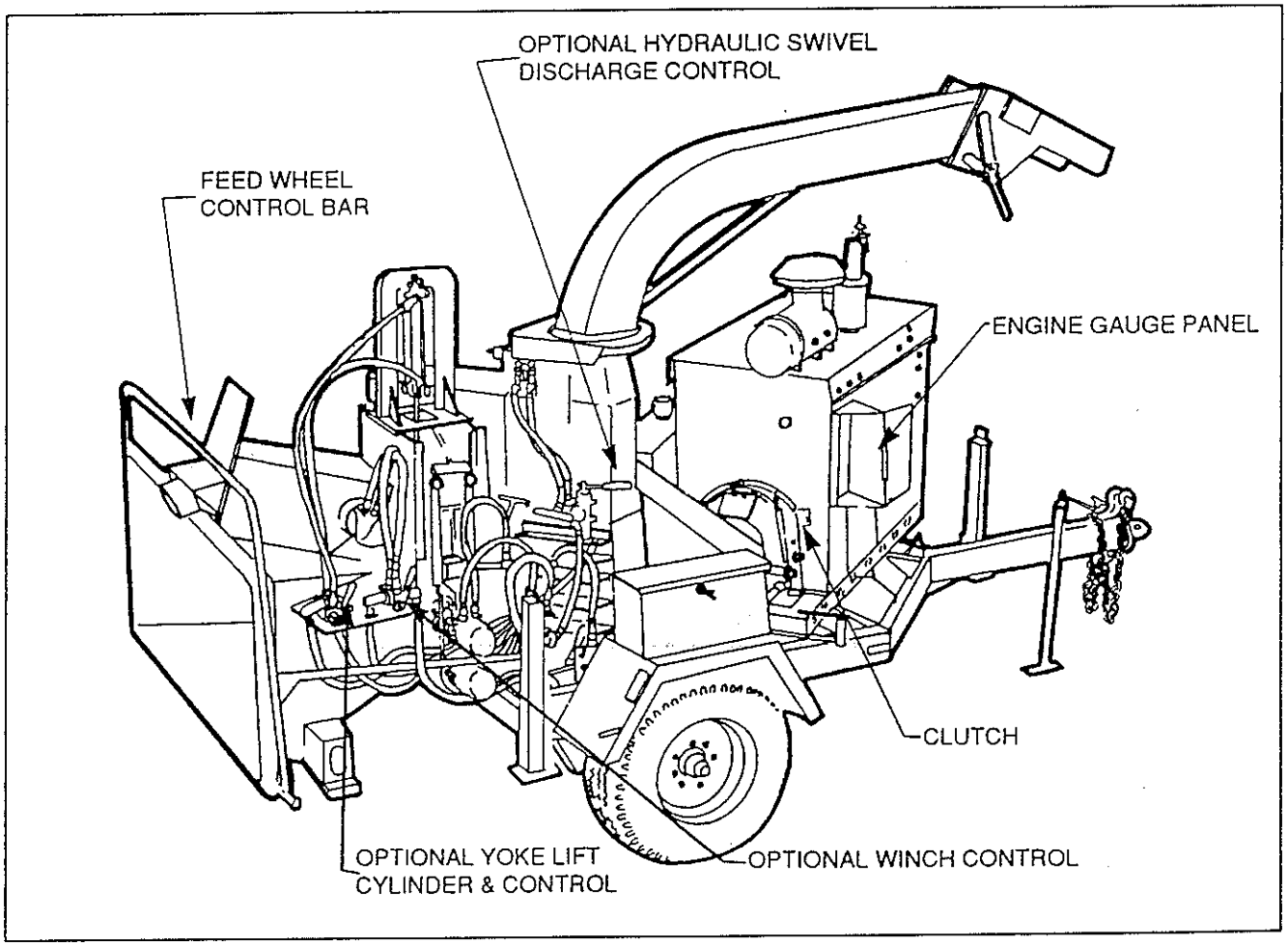
Bandit Models 250 and 1250 are uniquely designed with larger chipper openings and powerful feed wheels to allow faster chipping of limby trees.

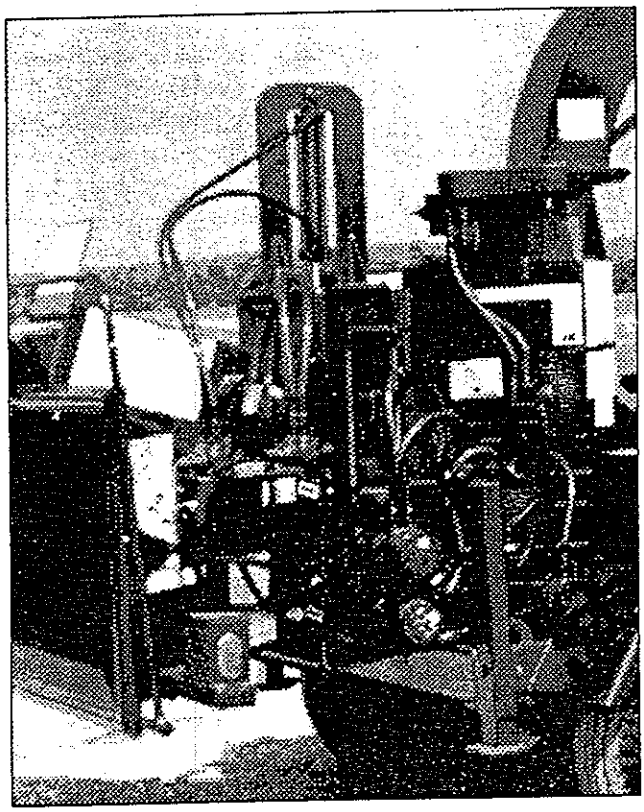


Everything depends on the aggressive 19" wide hydraulic powered feed wheels capable of 5,800 in./lb. of torque for the Model 250 and 8400 in./lb. of torque for the Model 1250 to pull in up to a 12" diameter tree length material

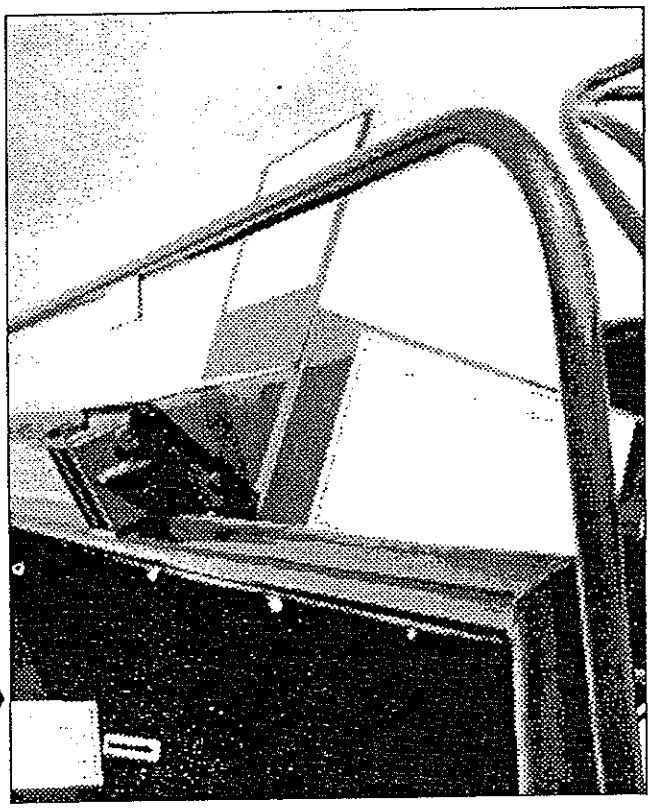
Feed wheels are operated by a forward-neutral-reverse control bar that extends around the top and sides of the infeed chute

The simple design allows the operator to access all controls from the curb side of the machine.



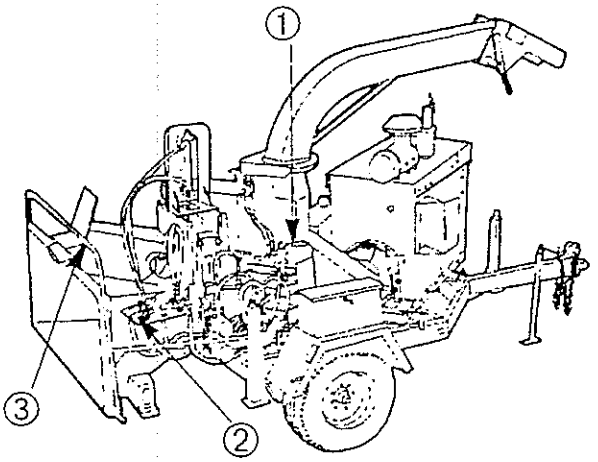


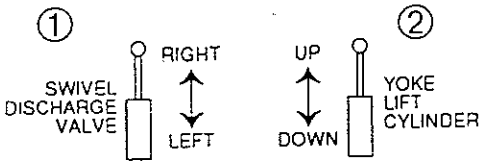
The optional hydraulic lift cylinder allows the top feed wheel to be raised so that large pieces can be easily pulled into the chipper and also can offer additional down pressure.

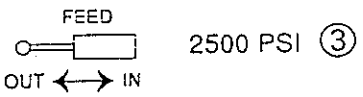


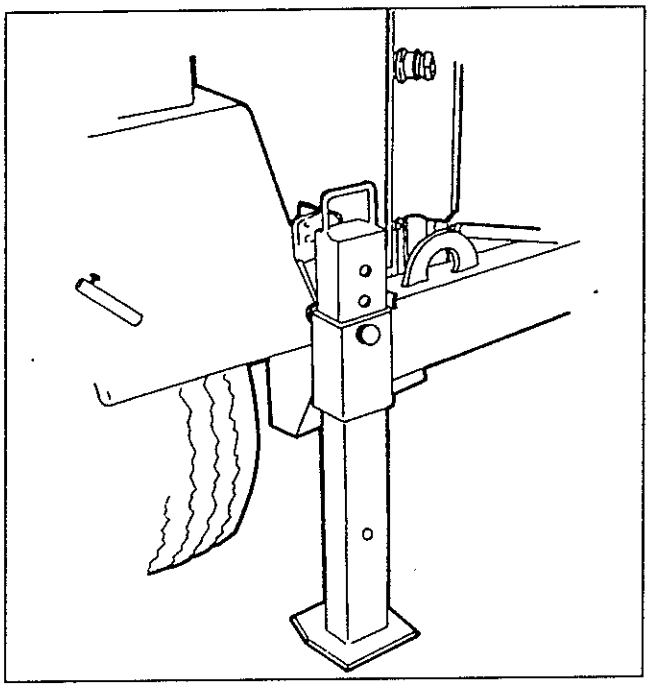
Another popular option is the hydraulic winch. It enables the operator to pull heavy trees and material to the chipper that would otherwise consume much time and effort bringing to the chipper.

BASIC LOCATION, OPERATION AND HYDRAULIC PRESSURES OF VALVES









The Model 1250 Tree Bandit comes standard with two (2) mechanically adjustable rear stabilizers. These legs can be dropped to ground level and then the included pin can be inserted to lock in position for stability.

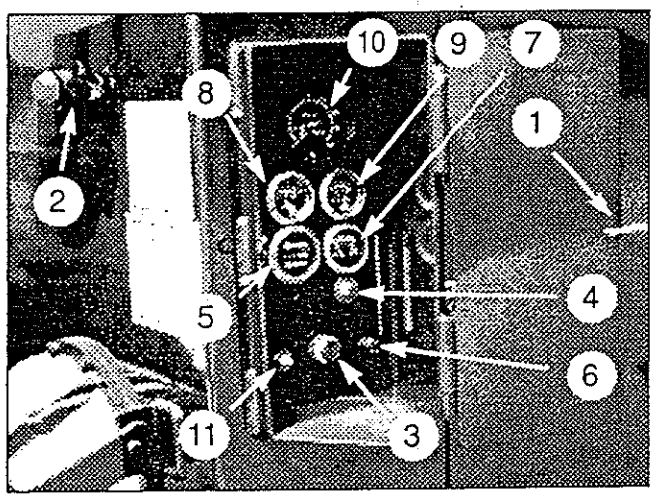
The Model 250 Brush Bandit also offers optional rear stabilizers.

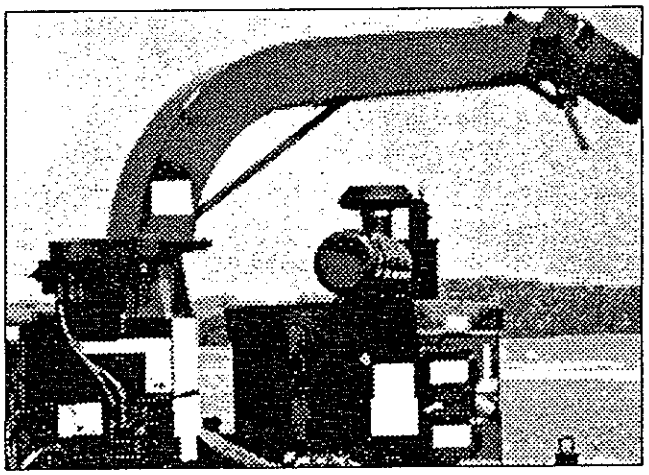
Standard Engine Gauge Panel System

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

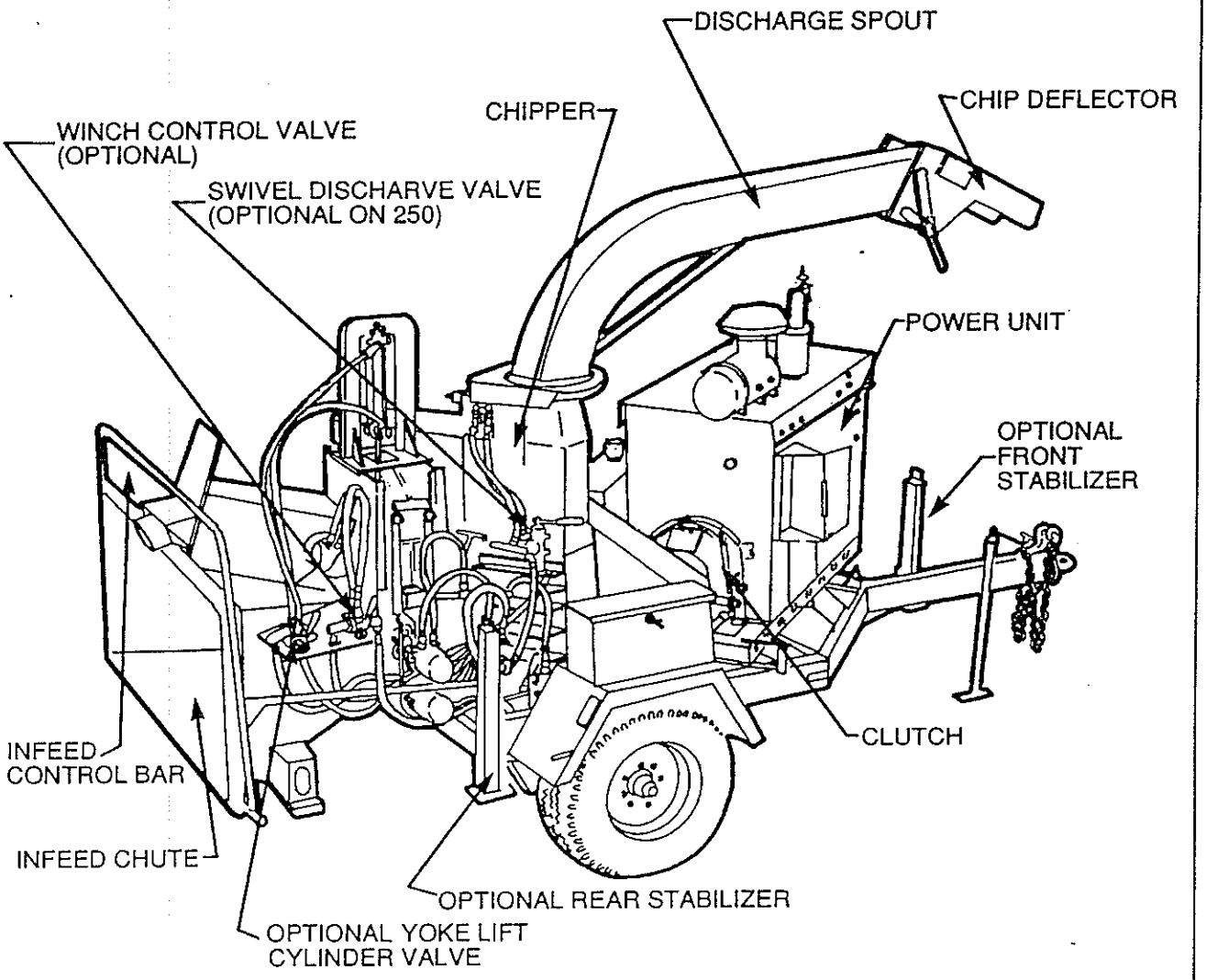
*Optional on 250

(**Note** -- Gauges and controls differ with engine options)





Standard on Model 1250 and optional on Model 250 is the hydraulic powered chipper discharge rotation 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.



(MODEL 1250 SHOWN)

OPERATIONAL CONTROLS AND MAIN COMPONENTS

⚠WARNING

This machine must be operated and controlled by a safety minded and competent operator. Learn to operate 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.

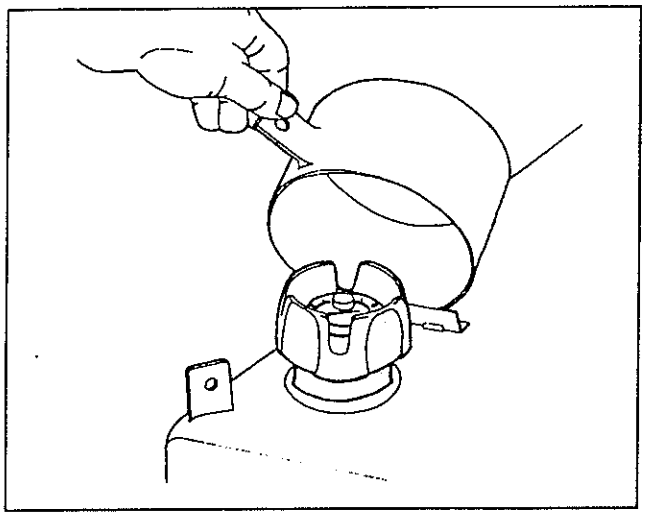
DAILY START-UP CHECKLIST

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. Maintain 7/8 full.
- ❑ Check drive belts and chain 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.
- ❑ Make sure discharge direction is pointed safely.
- ❑ Clean cooling fan, shroud on air cooled engines.

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 7/8 full. Also check several times during day for excessive heat build up. Never run machine with hydraulic oil temperature over 150°.

⚠ CAUTION!

1. You **MUST** follow the specific Engine MFG. Manual recommendations for radiator coolant, additives, ETC.
2. You **MUST** check and maintain the correct radiator coolant level **DAILY**, while the engine is cold.
3. You **MUST** thoroughly clean the radiator at least **DAILY**, and the debris screen (if so equipped).
4. Clean cooling fan, shroud on air cooled engines.
5. Improper Service, Maintenance, or Neglect **WILL** cause engine overheating problems.

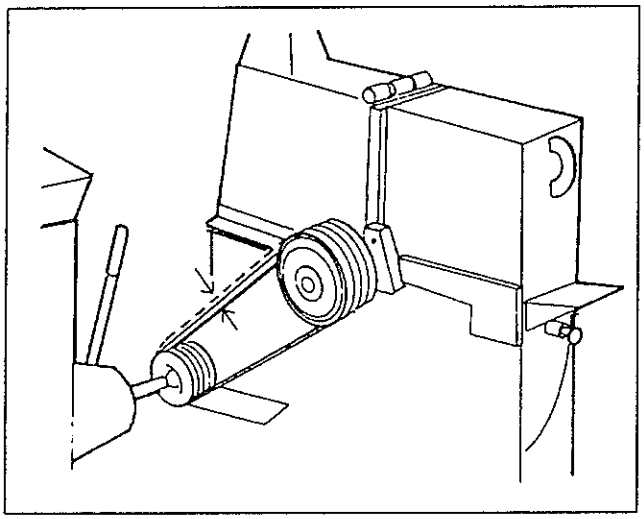
4) Inspect your air filters and air precleaners often. Clean the air precleaners daily or twice daily in severe dust conditions. Change the air cleaners when sight gauge calls for it (optional indicator).

5) Clean your radiator and screen daily.

6) Make sure all guards are in place.

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

Clean cooling fan, shroud on air cooled engines.

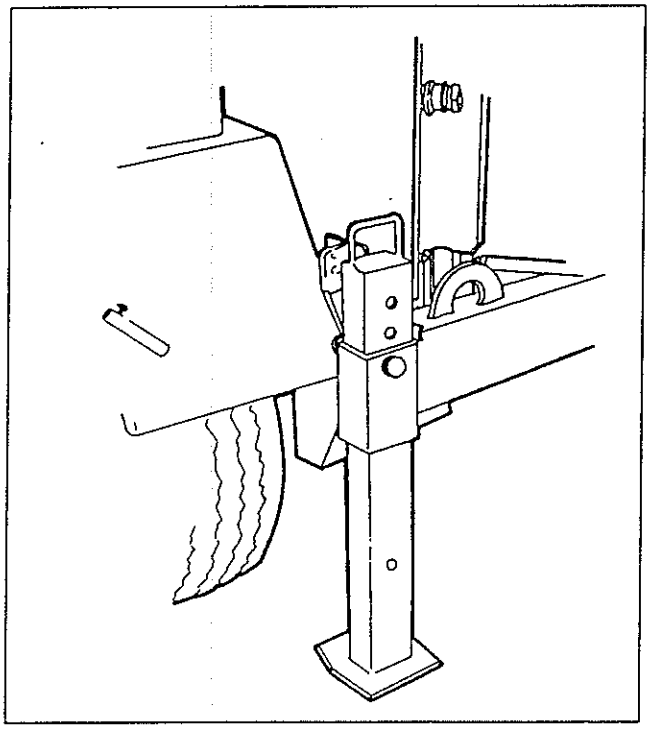


8) Keep your chipper main drive belts tight but not overly tight, as this will strain the rear bearing on the power takeoff. The chipper belts will need to be retightened several times in the first few days of running, as they will stretch.

9) Block wheels and if unhooked from towing vehicle, put tongue jack on a rubber or a fitted wooden block. Doing this will cut down on engine to frame vibration.

⚠CAUTION

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



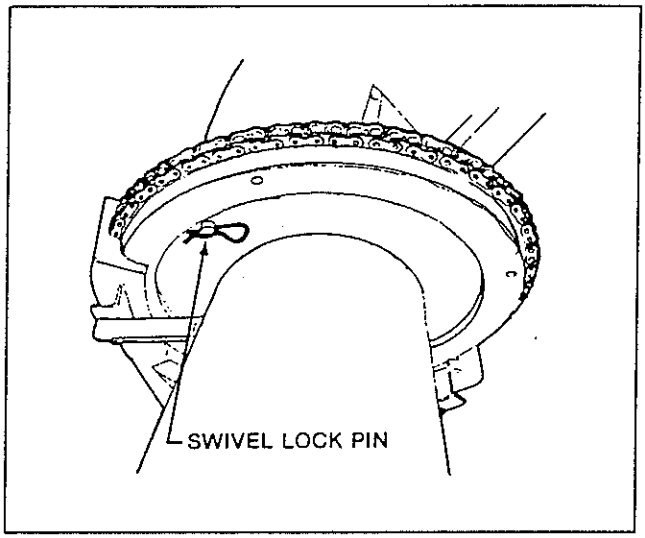
10) If your machine is equipped with stabilizers, lower them and use the pin lock to lock them down. It is a good idea to level the machine and block it.

    If your machine is equipped with hydraulic powered stabilizers, with the weight of the machine and the bounding 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.

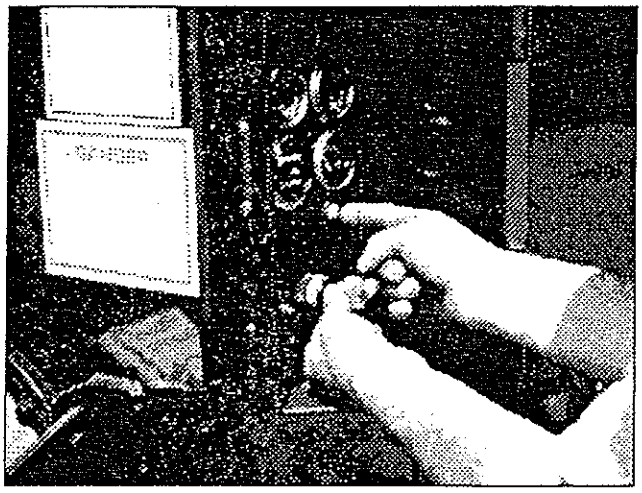
12) Make sure the chipper infeed chute is clear and the feed valve is in neutral.

13) Make sure clutch is disengaged.

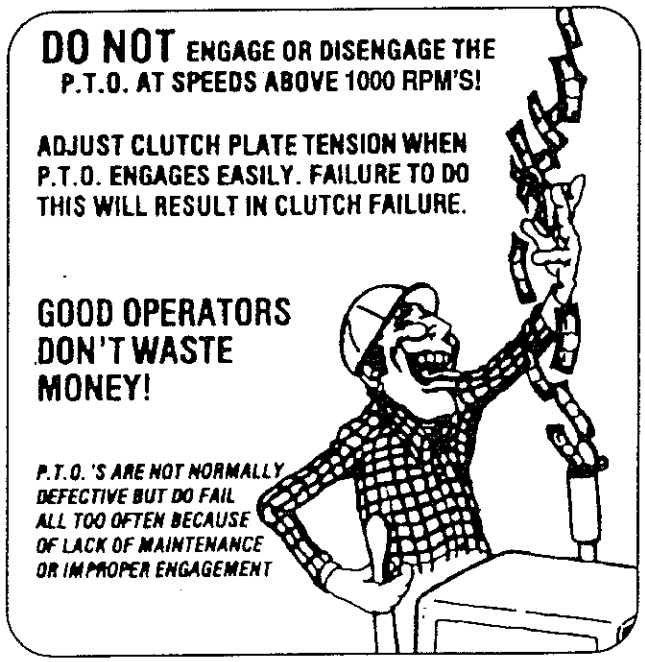


14) Check the direction the discharge is pointing to, and make sure it is pointed away from buildings, people, animals or vehicles. Make sure you remove the swivel lock pin.

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



16) Pull throttle out to 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.



17) With engine running at about 1000 RPM, engage clutch slowly until chipper is turning same speed as engine. Engage clutch fully.

NEVER disengage the clutch at speeds above 1000 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.

18) Listen for any foreign ticking or steel on steel noises coming from the chipper. If everything sounds good, start pulling out the throttle until it is fully extended. On a Model 1250 tachometer should read 2500 RPM. On a Model 250 tachometer will read 2500 or 2800 RPM, depending on your engine option.

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

20) Position the discharge pipe into van or in a direction where is is not pointed at any one or anything it could damage.

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

22) At the end of each day, clean around the machine. This will help to eliminate fire hazards and potentially dangerous obstructions of your movement around the machine.

23) 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.

PROCEDURE FOR UNPLUGGING YOUR CHIPPER

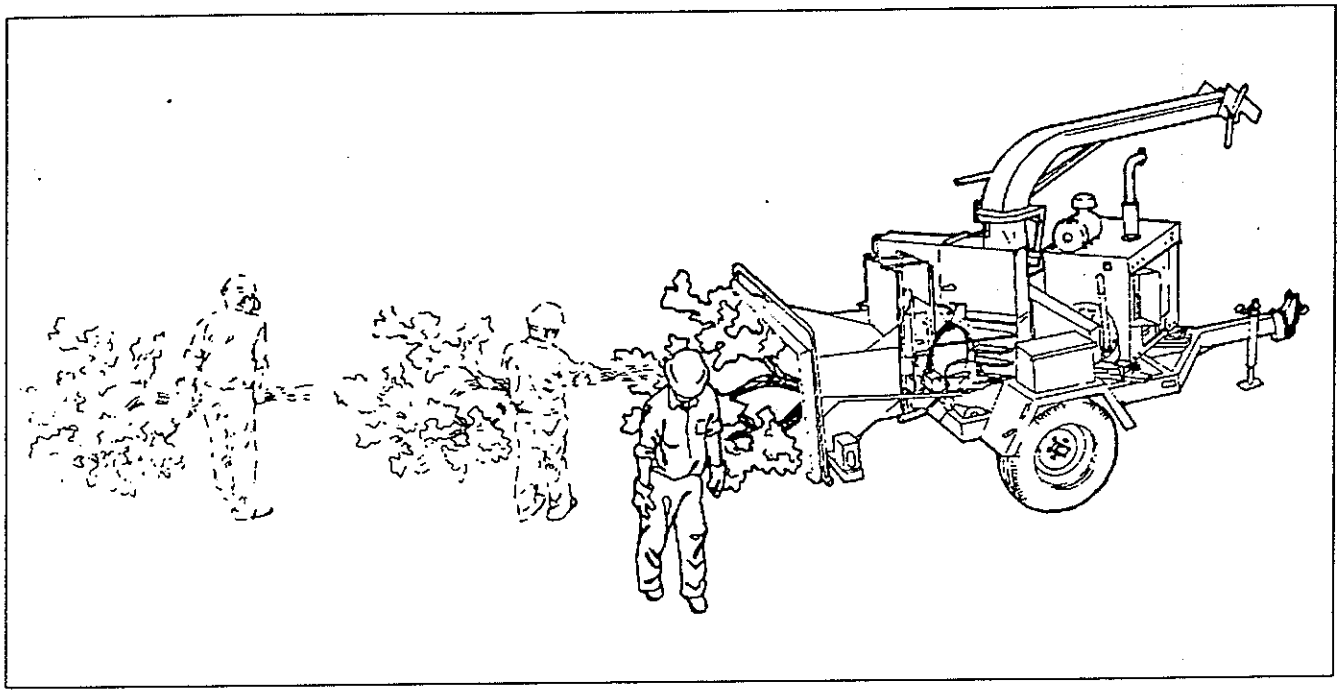
If your chipper is plugging, it is usually caused by allowing the engine to drop below the required R.P.M.'s. This can be resolved by simply shutting the feedwheels off when the engine begins to lug down. Operating the engine at speeds lower than full R.P.M.'s causes your chipper to plug. Always run the chipper at full engine speed. If your chipper is equipped with optional auto feed feature, make sure it is set correctly. The setting for the low R.P.M. stop must be high enough not to allow the chipper discharge to plug. Dull chipper knives also contribute to chipper plugging. Dull knives can create slivers and chunks, causing the engine to lug excessively. Both of the aforementioned conditions cause a plugging situation.

STEPS TO FOLLOW WHEN UNPLUGGING YOUR CHIPPER

1. The power unit should not be running, remove the engine key.
2. Open the hinged portion of the chipper hood.
3. Using your gloved hands and some type of raking tool, dig the chips out of the chipper housing.
4. If the discharge pipe is plugged, use a raking tool to pull the majority of chips out of the open outlet end of the pipe. Then, two people must remove the pipe. Do not attempt this with one person, because the pipe can fall causing injury.
5. Never allow one person to try to turn the chipper wheel when someone else is working inside the chipper housing. More than likely, the wheel will turn hard and then become loose, creating it to turn faster. If another person is anywhere near the cutter wheel, they may be injured.
6. Never turn the cutter wheel by hand. Always use a pry bar. This will eliminate the person that is turning the wheel from being injured when the wheel breaks loose.
7. Reinstall the discharge pipe, mount securely and point it away from anything.
8. Never leave the chipper hood open and try to start the engine when engaging the wheel to blow chips out of the housing. This is very hard on the P.T.O. of the chipper and may burn the clutch plates. Also, the flying debris is very dangerous. As well as, an exposed chipper disc turning very fast creates an unsafe condition. In other words, DO NOT do this because it is just too dangerous.
9. Once the wheel turns freely, close the chipper hood, insert the 1" hood pin, install a padlock in the hood pin, then start the engine, properly activate the clutch and engage to full speed. Insert a small branch into the feedrolls. If the chips discharge properly, the chipper is clear and normal operation may resume.

⚠WARNING

Whenever you feed limbs into the machine, stand on the side of the wood. Wood has a tendency to pull after the chipper starts feeding. By standing on the side of the wood, you will be free to turn and walk away to retrieve more wood.

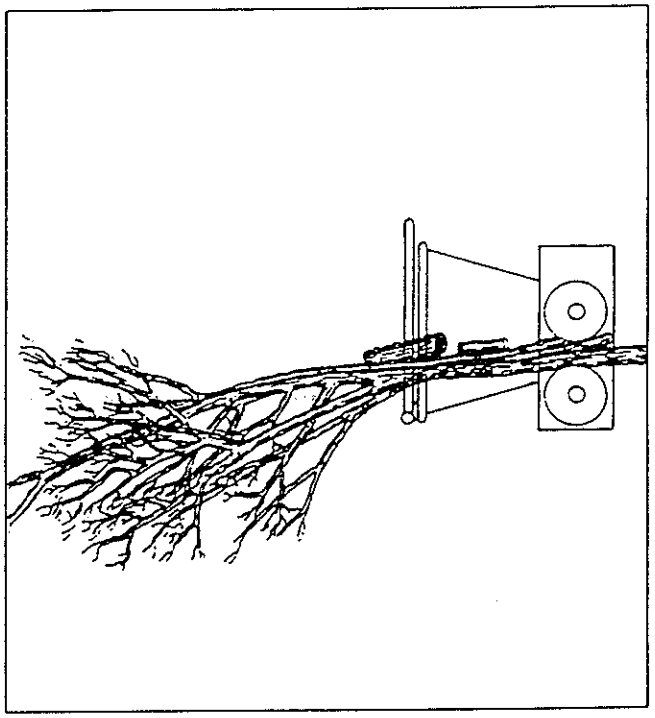


⚠WARNING

If you have short pieces of wood, DO NOT try to put them into the feed wheels with your hands. Simply start some longer pieces into the feed wheels and then lay the short pieces on top of the longer ones.

If you have large diameter wood, try to feed it with smaller diameter wood. Start a small diameter limb which will partially open the feed wheels. Once the feed wheels are partially open, it is much easier to insert the larger diameter wood.

If you are after production, don't stand and watch the limbs feed into the machine. Once the limbs have started into the machine, you can walk away to get more and continue feeding into the wheels. You do not have to wait for limbs to finish feeding into the chipper before inserting more.



If you are feeding large diameter wood, listen for the engine to possibly pull down. If it starts lugging down, stop the feed wheels by pushing the hydraulic control handle to neutral, and let the engine recover to full speed. This will stop the chipper from plugging the discharge pipe.

Small limbs and branches require the most spring tension on the top feed wheel yoke. If the feed wheels seem to slip on the wood, this would indicate the need to tighten springs. If you are running mostly larger diameter wood, the springs should be loosened. DO NOT over tighten the springs, this causes a loss in the feeding power of the wheels.

Always check the hydraulic oil and engine fuel before heading to the job sight.

The bottom feed wheel has a hinged enclosure plate located underneath. This keeps material from dropping through the feed wheel teeth onto the street. This plate is normally closed but can be opened by removing the pin lock. With the door hanging open, this material can fall out, removing the chance of plugging the bottom wheel.

To obtain the most from your chipper, for the least amount of cost, it is a good practice to set and follow a scheduled preventative maintenance program. It will eliminate many possible problems and down time.

The PTO clutch is an expensive component part of the Bandit. It needs proper maintenance (see maintenance section and manufacturers manual for detailed information). The operator must take care in the engagement and disengagement of the PTO. When engaging or disengaging the engine, RPM should always be below 1000 RPM. When the engine has sufficiently warmed up, bump the PTO handle against engagement to start the disc turning. This may have to be repeated until the chipper disc is turning at proper ratio with engine RPM. Then push the handle all the way in gear until it locks into position securely. If PTO engages and disengages loosely, it needs adjustment. After engagement raise engine RPM to full throttle. Engaging and disengaging the clutch at high engine RPM will quickly and excessively wear out clutch plates as well as bearings.

⚠ DANGER

IT IS ALL UP TO YOU -- USE COMMON SENSE, FOLLOW SAFETY PROCEDURES AND **ALWAYS** AVOID ANY SITUATION THAT CAN CAUSE DAMAGE OR INJURY TO PEOPLE, THE CHIPPER OR PROPERTY.

KNIFE GRINDING

ALTHOUGH THE QUALITY OF KNIVES IS 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. Excessive resin in material being chipped.
2. Dirt, grit or foreign objects on wood.
3. Use of wrong cutting angles and bevels.
4. Improper care of knives.
5. 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.

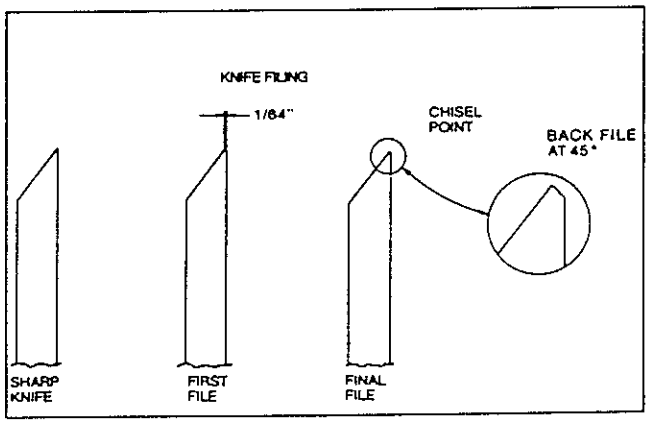
Many times the cutting edge can be brought back with a good #10 Bastard Mill File. This saves expensive grinding and replacement costs.

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.

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

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

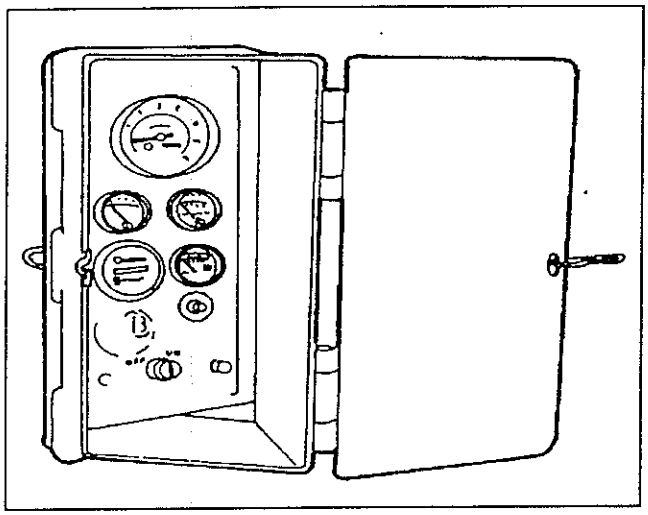
Using a #10 Bastard File, file the knife perpendicular to point, creating approximately 1/64" flat edge. Then on the backside of the knife at approximately 45°, file the edge back to a small chisel type point (see diagram below).



REMEMBER . . .

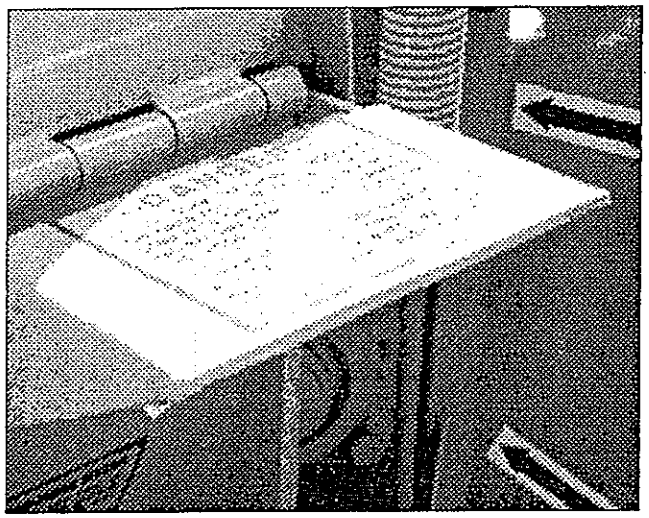
Dull knives take a great deal more horsepower and cause a greater strain in the knives and chipper.

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.

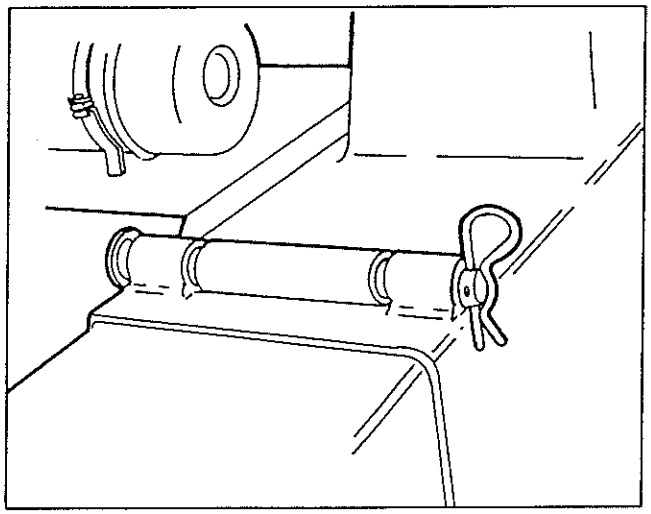


⚠DANGER

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

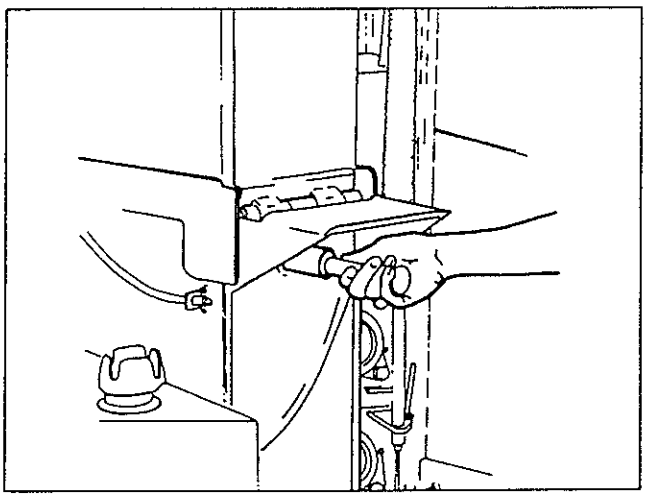
⚠DANGER

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

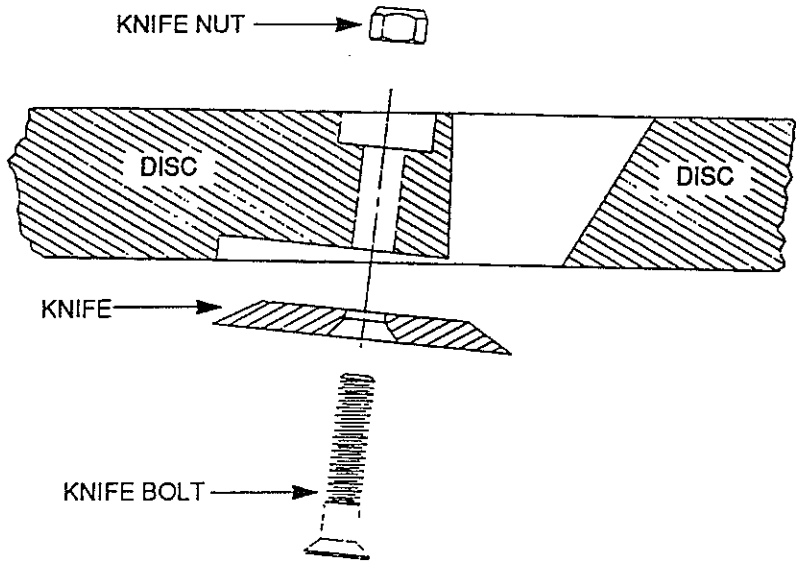


⚠DANGER

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.



The Model 250 & 1250 Chippers come standard with "bolt-in" double edge chipper knives. These knives are easily replaced by removing the bolts and nuts holding them to disc. There are (2) knives per pocket and (3) nuts and bolts hold each knife.



"BOLT-IN" KNIFE HARDWARE ASSEMBLY

KNIFE SIZE DESCRIPTION --

Model 250 - 1/2" Thick x 4" x 7 1/4" - #900-9902-00

Modl 1250 - 1/2" Thick x 4" x 7 1/4 " - #900-9902-00

⚠ DANGER

Do not use the wrong size thickness -- it can and will cause severe damage.

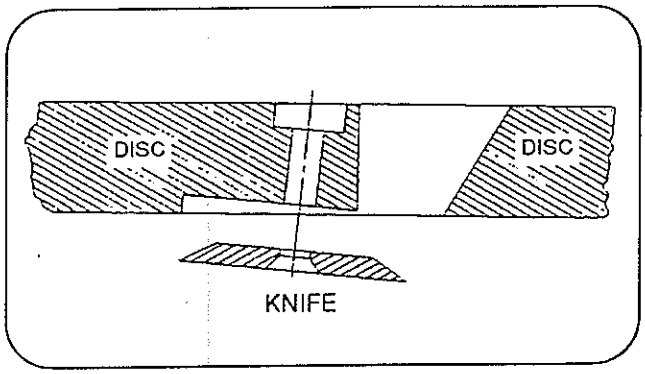
⚠ WARNING

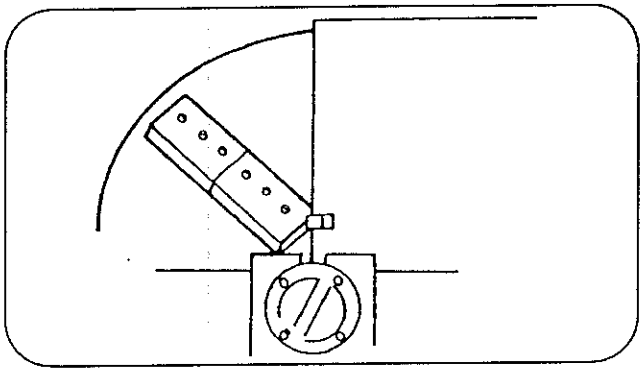
Chipper knives are sharp and can be dangerous. It is always necessary for your protection to be extra careful and wear leather gloves when handling knives.

⚠ DANGER

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

STANDARD "BOLT-IN" KNIFE HARDWARE





⚠DANGER

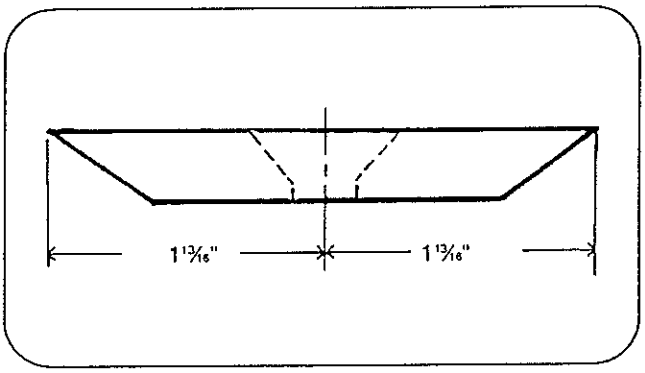
Replace the bolts, nuts, and knives when they are due. DON'T stretch it! You will pay for it, either by damage to a machine or possible damage to a person.

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 times of removal. Take out both 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 (70 to 80 ft. lbs.) Make sure the sharp cutting line edge of both knives are straight and even. Also read-just 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.

⚠WARNING

NEVER allow these knives to wear beyond the absolute minimum of 1-13/16" from the center-line of bolt.



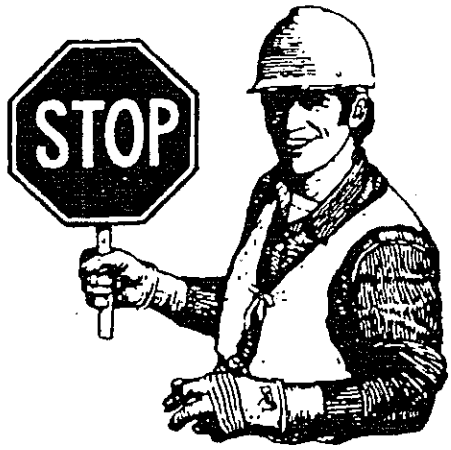
As shown in drawing, once a knife edge has reached the minimum dimension, that edge can no longer be used. If you try it, the pocket will pack wood and knife is likely to break, which can cause bodily injury as well as a severely damaged chipper.

The Model 250 is equipped with 1/2" thick chipper knives. These 1/2" thick Model 250 chipper knives can be ordered under part no. 900-9902-00.

The Model 1250 is equipped with heavy duty **1/2" thick** chipper knives. These 1/2" thick Model 1250 chipper knives can be ordered under part no. 900-9902-00.

⚠DANGER

Turning the disc by hand, use a feeler gauge to set knife edge to anvil clearance. It should be .045 to .065 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 slowly the disc is turning, you can be severely injured.



⚠DANGER

Always wear leather gloves when working with chipper knives!

FEED RATE SHEAVE COMBINATION AND SPECS

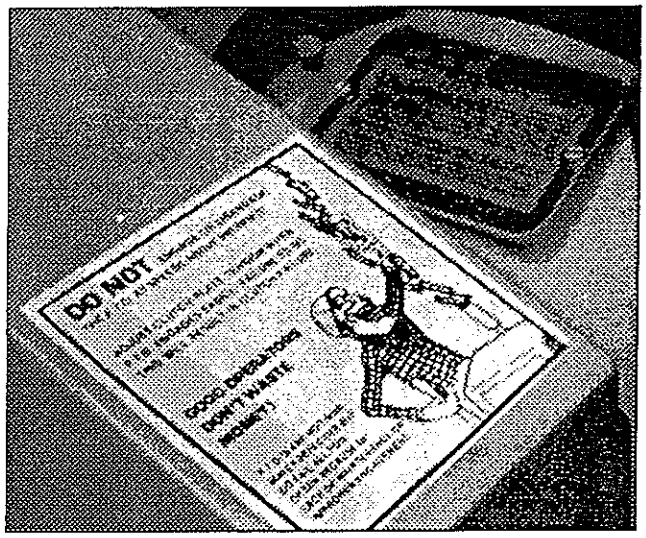
	MODEL 250 (Engine Options)		MODEL 1250
Engine RPM	2500	2800	2500
Engine Sheave	7.1"	6.3"	6G-B-7.0"
Chipper Sheave	6G-15.0"		8G-B-15.4"
Chipper RPM	1140		1140
Chipper Belts	5VX1000		(6) BX-100
Feed Rate (ft. min.)	120		120
Pump Sheave	8.5"		2G-BK-9.0"
Pump Belt	BX-70		(2) BX-70
Pump RPM	2082.9		2082.9
Pump Ring Size	7 Gallon		7 Gallon
Pump Gal. Output	8.0		12.0
Feed Pump Pres.	2500		2500
Feed Wheel RPM	60.0		60.0
Chip Size	5/8" Chip		5/8" Chip
Chipper Knife Part Number	1/2" x 4" x 7-1/4" 900-9902-00		1/2" x 4" x 7-1/4" 900-9902-00

MAINTENANCE



⚠DANGER

Never perform any type of maintenance on the machine unless the operator area is clear and all controls are shut off. Also disengage clutch. 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.

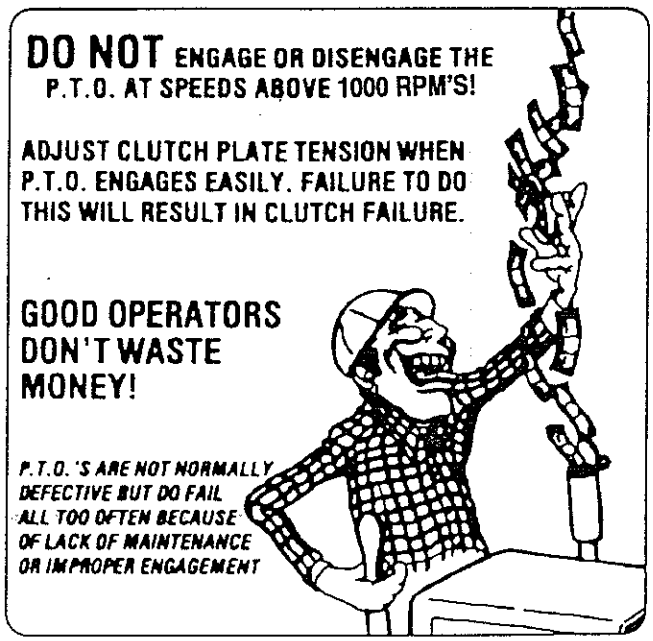
Please remember, if it **ISN'T** taking most of your strength to engage the PTO, **IT ISN'T ADJUSTED PROPERLY.**

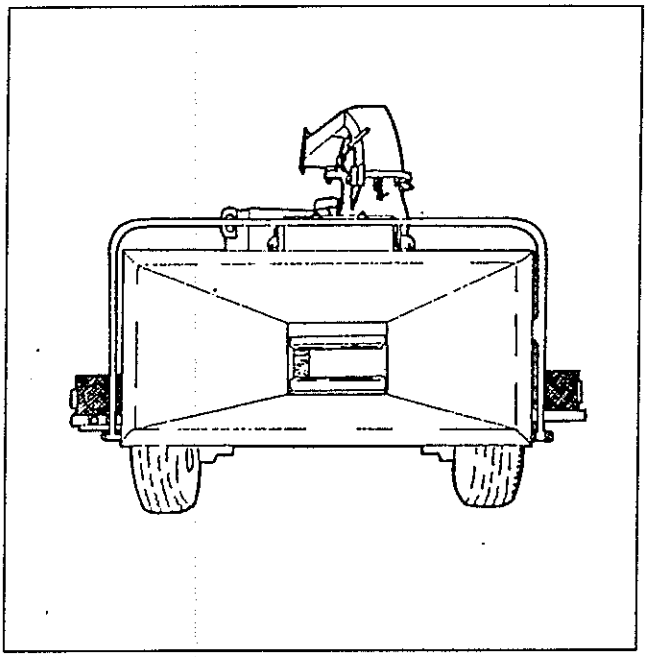
⚠DANGER

NEVER ENGAGE OR DISENGAGE THE CLUTCH ABOVE 1000 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 (varies with make).

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 (varies with make).

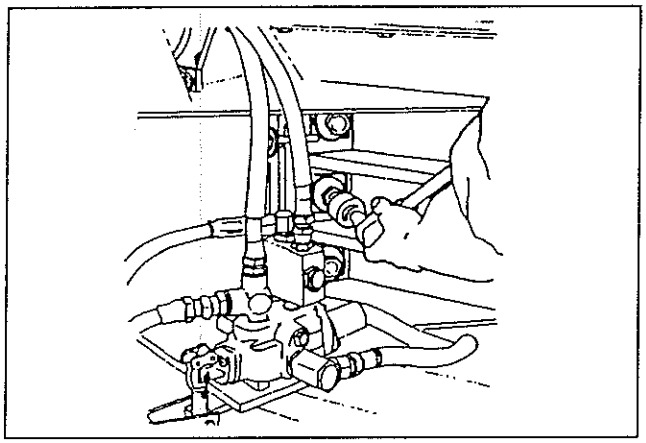




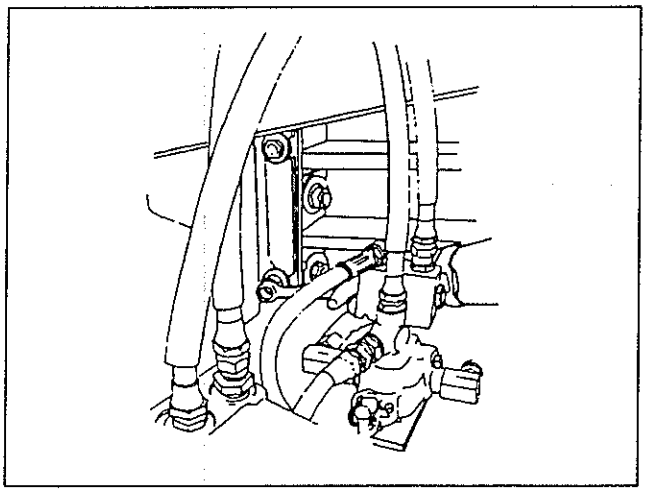
⚠DANGER

NEVER WORK UNDER FEED WHEEL YOKE WITHOUT BLOCKING AND CHAINING TOP FEED WHEEL IN RAISED POSITION.

Checking Anvil Clearance -- Raise the top wheel using the top wheel block described in the safety procedures section. Chain the top feed wheel yoke in the UP position! Shut off engine, remove key and make sure operator area is clear. Crawl into the chipper spout with feeler gauges and a light. Check the distance between knife and anvil. The clearance should be .045 to .065. **The anvil *must* be replaced if it is excessively worn or broken.**



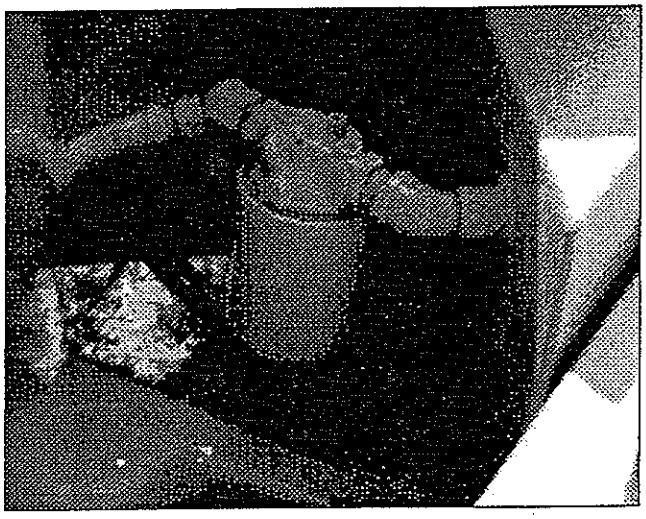
Setting Anvil Clearance -- If you find that your anvil needs to be reset, start by loosening the anvil bolts on side of chipper spout.



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 (.045 to .065).

Tighten the anvil bolts to the proper torque (175 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 .045 to .065 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.

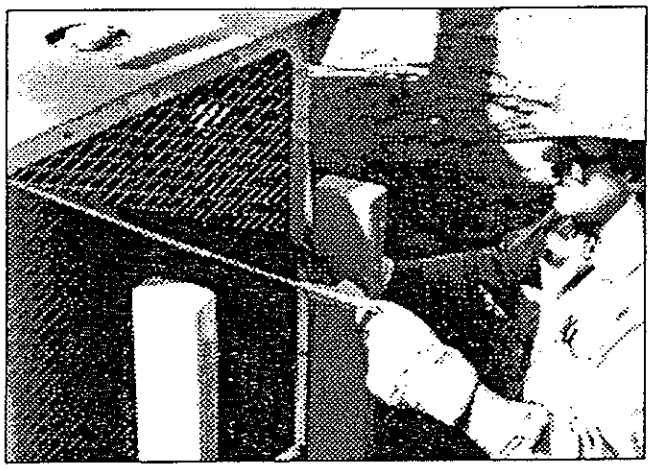
When you are done changing filter, always check the oil level to make sure it is at least 7/8 full.

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

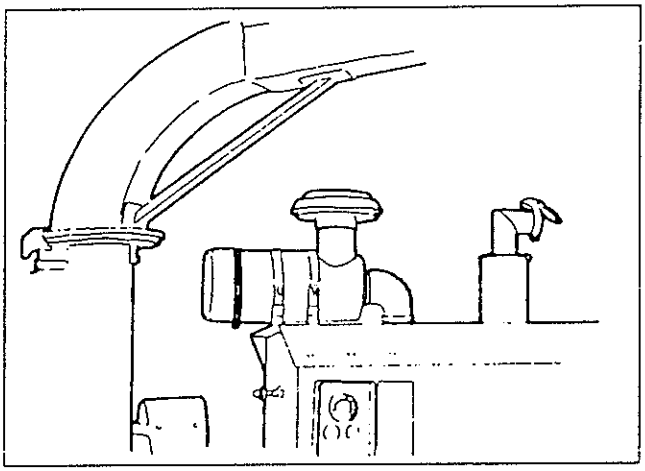
Clean cooling fan, shroud on air cooled engines.

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.



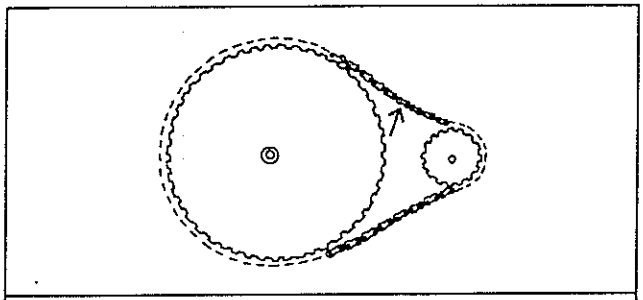
AIR FILTERS AND PRE-CLEANERS

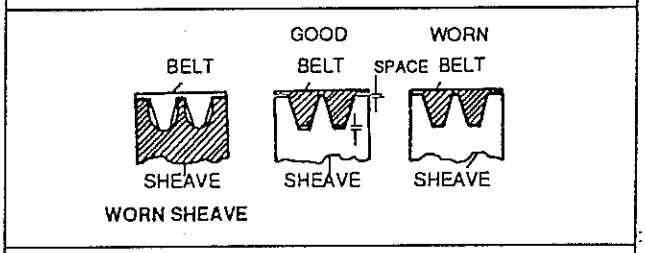


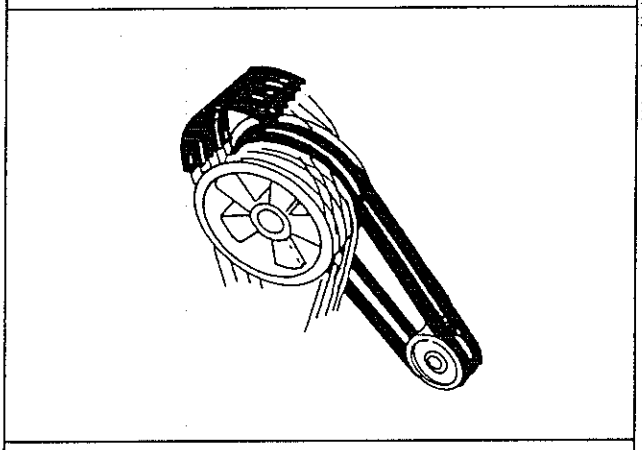
Air filters and pre-cleaners must be inspected often. Clean air pre-cleaners daily and change air filters when necessary.

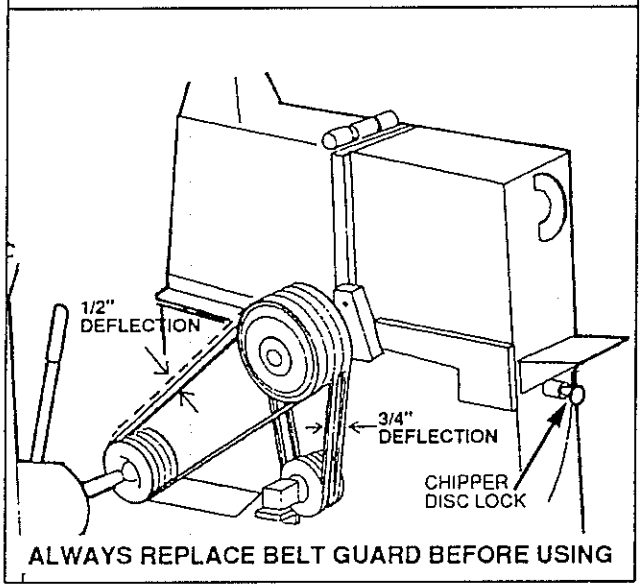
Do not blow dust and debris out of air cleaner with air. To avoid possible engine damage, knock dirt out of air cleaner. When air passage becomes restricted, air cleaners must be replaced.

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

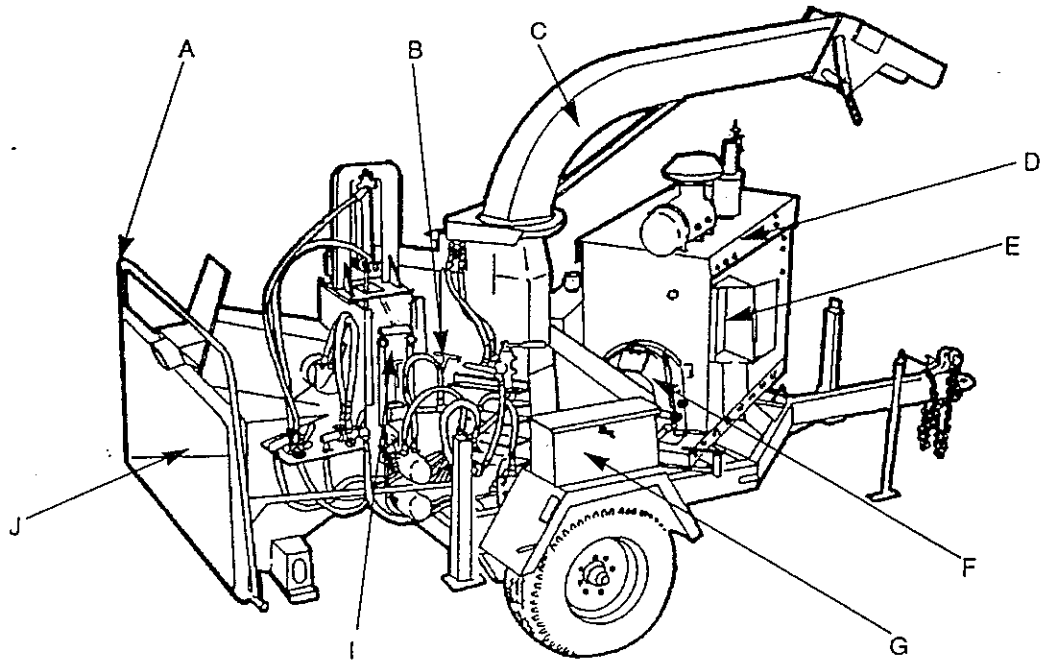
DO NOT OVERTIGHTEN PUMP BELTS. Tighten to 8 lbs. -- approximately 3/4" deflection, pulling fairly hard in middle of belt.

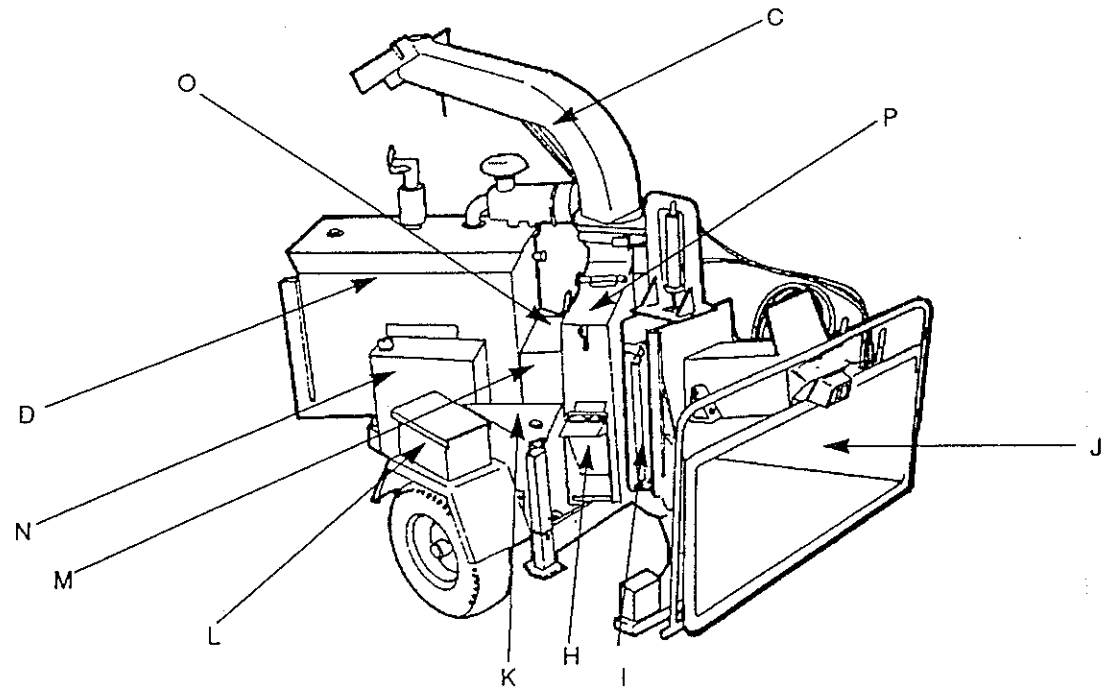
Chipper drive belts must be inspected frequently during the first few days of operation and weekly thereafter. Tighten to 20 lbs. of force with approximately 1/2" deflection, pulling fairly hard in middle of belt. To adjust belt tension, loosen engine frame on all four corners and pull engine forward, measuring to maintain alignment.

⚠ CAUTION

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

DECAL LOCATIONS





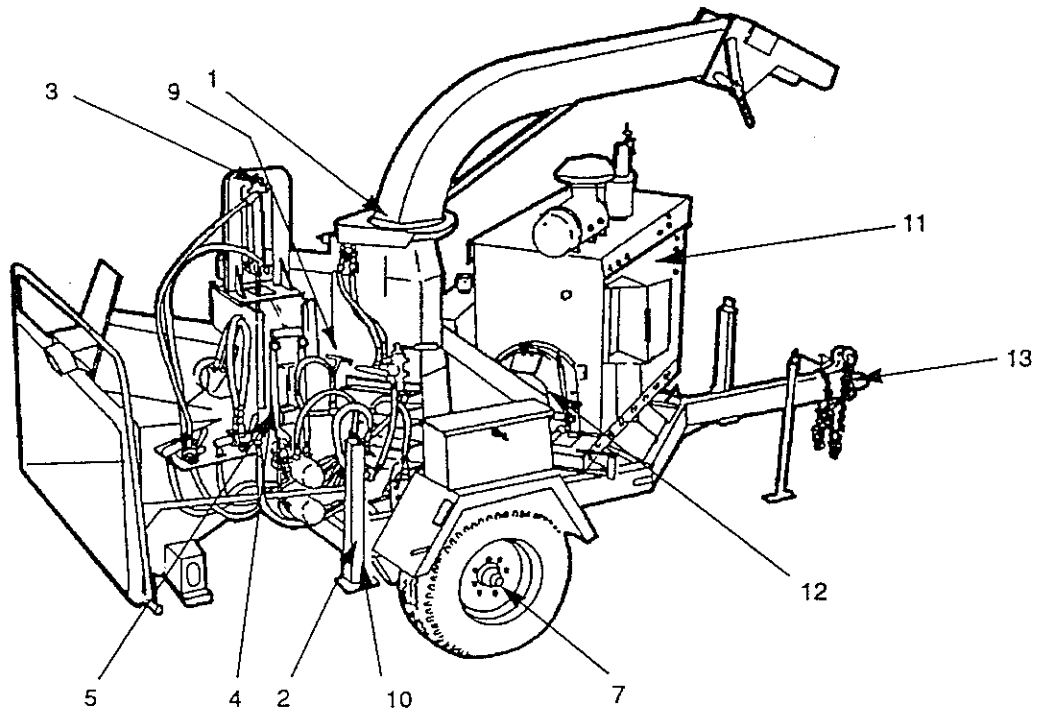
DECAL LOCATIONS

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.

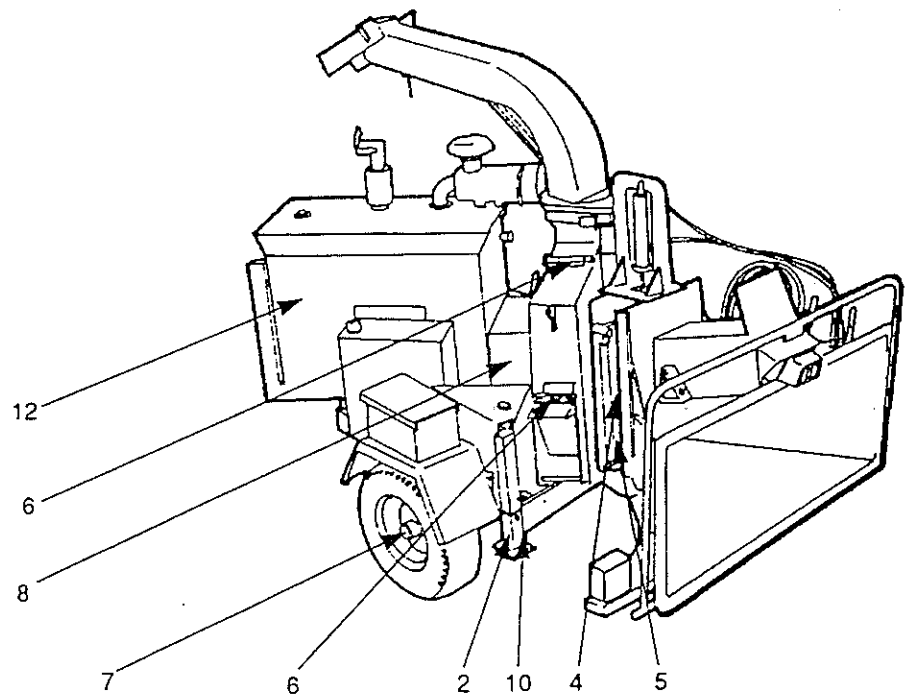
LOCATION	NUMBER	DECAL DESCRIPTION
D, G, M	OBW-107	Small Brush Bandit Logo
J	OBW-108	Large Brush Bandit Logo
J, G, P	OOB-112	"Performance First, Inc."
D	OOB-122**	Large "Model 250"
P	OOB-123**	Small "Model 250"
D	OOB-126*	Large "Model 1250"
P	OOB-127*	Small "Model 1250"
J	OBW-130*	Large Tree Bandit Logo
D, G, M	OBW-133*	Small Tree Bandit Logo
O, I, B	OOB-202	"Grease Weekly"
B	OOB-208	"Remove to Check Torque . . ."
E	OOB-212	"If Decals Are Damaged Or . . ."
E	OOB-213	"Do Not Attempt To Operate This . . ."
K	OOB-214	"Hydraulic Oil Tank Must Be . . ."
H	OOB-215	"Chipper Disc Stop . . ."
M	OOB-216	"Do Not Engage or Disengage...Above 1000 RPM..."
J, H	OOB-223	3-1/4" Arrow
M	OOB-224	"Inspect Tension on Pump Belts . . ."
M	OOB-227	"Hydraulic Trouble Shooting & Maintenance . . ."
M	OOB-239	"Avoid Hydraulic Pump Failure . . ."
M	OOB-242	"Remove This Guard Once A Month . . ."
F	OOB-243	"Owners Responsibility . . ."
D	OOB-244	"Protect Main Throttle Control By . . ."
B	OOB-247	"To Obtain The Best Bearing Life . . ."
P	OOB-301	"Caution -- This Machine Operates . . ."
F	OOB-303	"Caution -- Do Not Operate . . ."
I	OBR-400	"Danger -- Keep Hand Clear . . ."
P	OBR-401	"Danger -- Never Open or Close . . ."
C	OBR-404	"Danger! Flying Chips Are Very Dangerous . . ."
P	OBR-406	"Danger -- Do Not Slam The Chipper . . ."
E	OBR-407	"Danger! Never Perform Any Type . . ."
D	OBR-408 or	"Flammable Fluid - Diesel Fuel Only . . ."
	OBR-409	"Flammable Fluid - Gasoline Only . . ."
J	OOR-410	"Danger -- Moving Parts, Do Not . . ."
P	OBR-411	"Danger -- This Cutterwheel Coasts . . ."
P	OBR-412	"Warning -- Do Not Attempt To . . ."
I	OBR-413	"Before Reaching Inside The Feed . . ."
J	OBR-414	"Operation Tips for Brush Bandit . . ."
J	OBR-415**	"Maintaining Your Brush Bandit . . ."
P	OBR-431	"Warning -- Do Not Fill the Fuel Tank Full . . ."
D	OBR-435	"Danger -- No Not Place Your Hands or Feet . . ."
L, G	OBR-441	"Warning -- Keep Wheel Lug Nuts . . ."

*Model 1250 Only **Model 250 Only

LUBRICATION AREAS – RIGHT SIDE



LUBRICATION AREAS – LEFT SIDE



LUBRICATION AREAS

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

HYDRAULIC OIL -- USE 10W30 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	Stabilizer Cylinder Pins*	Oil		X
3	Yoke Lift Cylinder Pins*	Oil		X
4	Top Wheel Slide Plates	Grease	X	
5	Feed Wheel Bearings	Grease	X	
6	Hood Hinge	Oil		X
7	Axle Wheel Bearings	As Required	--	--
8	Rear (Belt Side) Chipper Bearings	Grease	X	
9	Front Chipper Bearing	Grease	X	
10	Stabilizer Slides*	Grease		X
11	Engine (Follow Engine Manufacturer Recommendations)	As Required	--	--
12	PTO (Clutch) (Follow Manufacturer Recommendations)	As Required	--	--
13	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.

*Optional on Model 250

HYDRAULIC 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 is a replaceable suction screen. It is screwed into the tank and then the suction hose screws into it. The screen should be replaced with each hydraulic oil change - maximum yearly. 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
10W30 Motor Oil Grade API Designation of S.E. Classification		
AW30	AW20	Ashland Valvoline
AW HYD. 30 Pacemaker XD-30	AW HYD. 20 Pacemaker XD-20	Cities Service
DTE-26	DTE-25	Mobil
Duro AWS-315	DURO AWS-215	Atlantic Richfield
Energol HLP-C68	Energol HLP-C4;6	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 68 AW (54AW)	Harmony 46 AW Harmony 48 AW	Gulf Oil
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 Bearing Bolts	5/8 - 11 NC	150
Chipper Shaft Bearing Retainer	3/4 - 10 NC	175
Chipper Draw Ring - Model 250	5/8 - 18 NF	150
Chipper Draw Ring - Model 1250	3/4 - 16 NF	250
Feed Plate Anvil	3/4 - 10 NC	175
Hydraulic Motor Coupler	1/2 - 13 NC	60
Engine Hold Downs	5/8 - 11 NC	125
Wheel Lug Nuts	1/2 - 20 NF	90
Knife Bolts (Bolt-In)	1/2 - 13NC	70-80

⚠WARNING

KEEP LUG NUTS PROPERLY TIGHTENED, CHECK NEW UNIT BEFORE OPERATION, CHECK AGAIN AFTER 20-25 MILES AND REGULARLY CHECK AT LEAST MONTHLY

5 & 6 lug hubs (up to 6,000 lb. axles) .....90 ft./lb. torque
8 lug hubs (8,000 lb. axles).....200 ft./lb. torque
10 lug hubs (over 8,000 lb. axles).....300 ft./lb. torque

(Torques per axle manufacturer specifications)

(OBR-441) 6/91

MAINTENANCE PROCEDURES

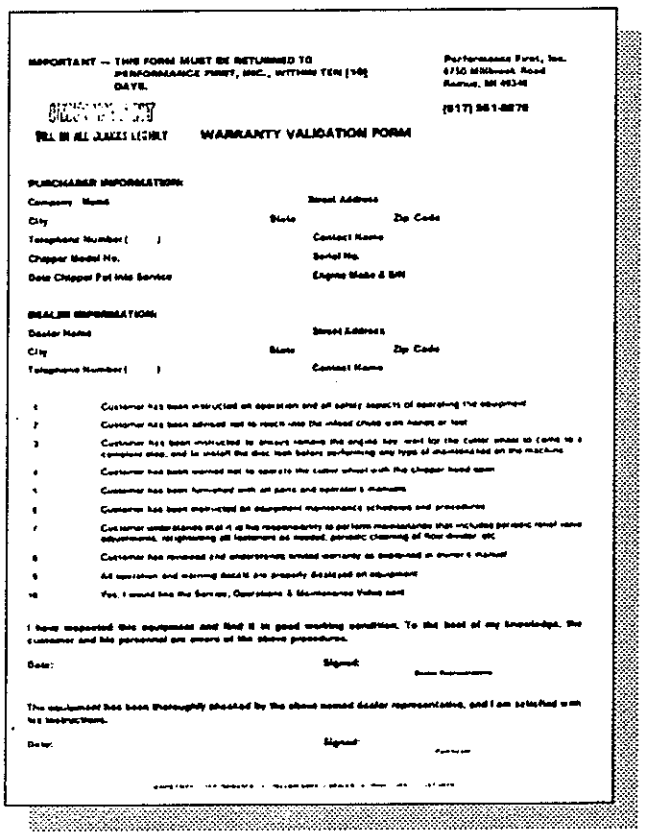
ITEM TO BE SERVICED	CHECK			PROCEDURE (Always Replace If Needed)
	DAY	WEEK	MONTH	
Chipper Feed Rate Anvil		X		Readjust or replace (only with new knife)
Chipper Bearings (Infeed Side)	X			(1) pump of grease
Chipper Bearings (Belt Side)	X			(1) pump of grease
Chipper Belly Band			X	Check for wear holes
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
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 Hoses and Fittings	X			Check and repair
Machine Lubrication	--	--	--	See Lube Chart
Engine Lubrication	--	--	--	See manufacturer manual
P.T.O. (Clutch)	--	--	--	See manufacturer manual
Radiator Debris Screen	X			Clean
Hydraulic Pressures			X	Clean and reset
Flow Divider			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		Build up 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			(Example) Cummins MUST run 2500 RPM
Spring Tension - Top Wheel		X		Tighten just enough not to slip on wood
Hood Lock Pin	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
Wheel Lug Nuts		X		Check and tighten
Safety Decals	X			Replace immediately
Clean cooling fan, shroud	X			on air cooled engines.

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 cannot 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 as soon as you receive the Bandit. This will active 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) 561-8878

FILL IN ALL BLANKS LEGIBLY

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

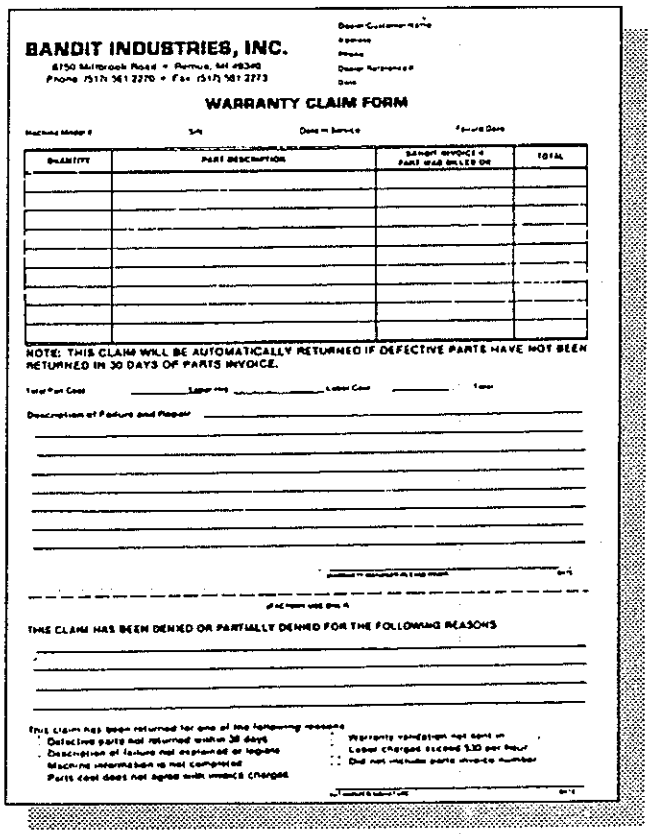
1. Customer has been instructed on operation and all safety aspects of operating the equipment
2. Customer has been advised not to reach into the infeed chute with hands or feet
3. Customer has been instructed to always remove the engine key and for the cutter wheel to come to a complete stop, and to 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 and it is his responsibility to perform maintenance that includes periodic belt 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 installed 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:

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

Date: Signed:



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

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

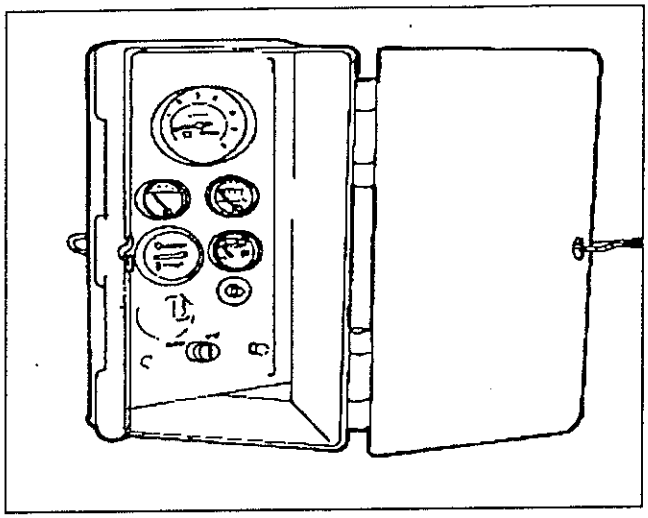
Description of Failure and Repair

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

SERVICE

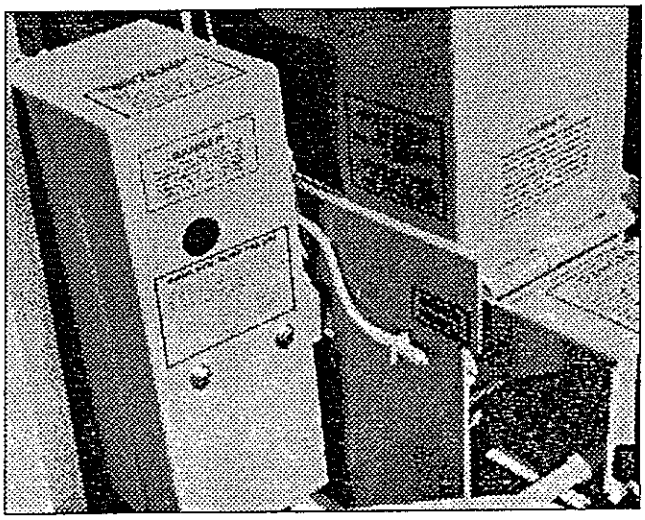




⚠DANGER

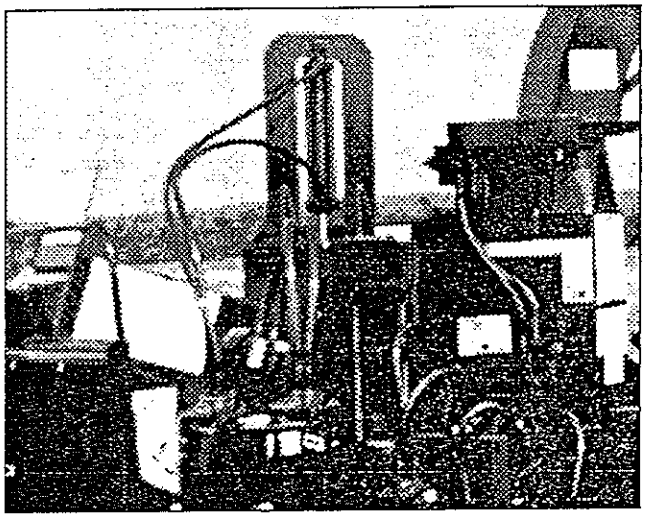
NEVER perform any maintenance without following the appropriate safety procedures BEFORE you start and as you're working. If you don't your people or an onlooker could be hurt or killed. Always use the following safety rules AND good common sense.

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



Never open the chipper hood unless the disc has completely stopped turning. There is a small hole in the belt shield on chipper end. You can see the chipper drive belts (don't feel), if they are moving - DON'T OPEN HOOD.

Make sure clutch is disengaged. 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 chained in the "Up" position. Follow instructions in Safety Procedures Section. Do not rely on the optional lift cylinder to hold top wheel in "Up" position. Make sure you and your people wear hard hats, safety glasses, and leather gloves. If you have an optional yoke lift cylinder, we have provided a yoke lock-up pin. You **MUST** use this pin because the lift cylinder will **NOT** sustain the yoke in the "Up" position.

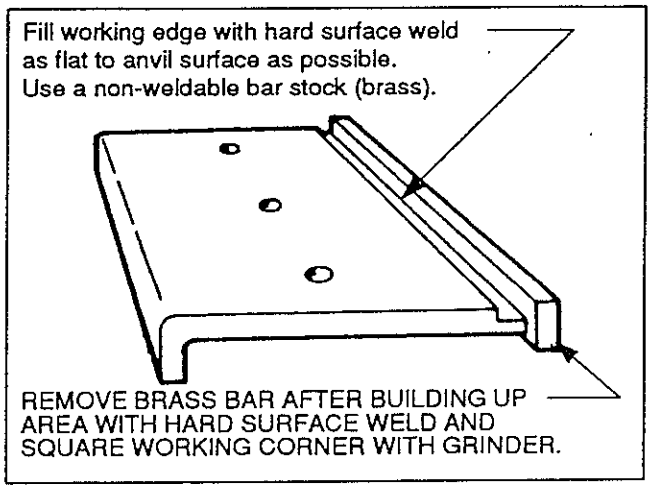
The following is a list of some normal wear items that require checking and repairing or replacing as needed:

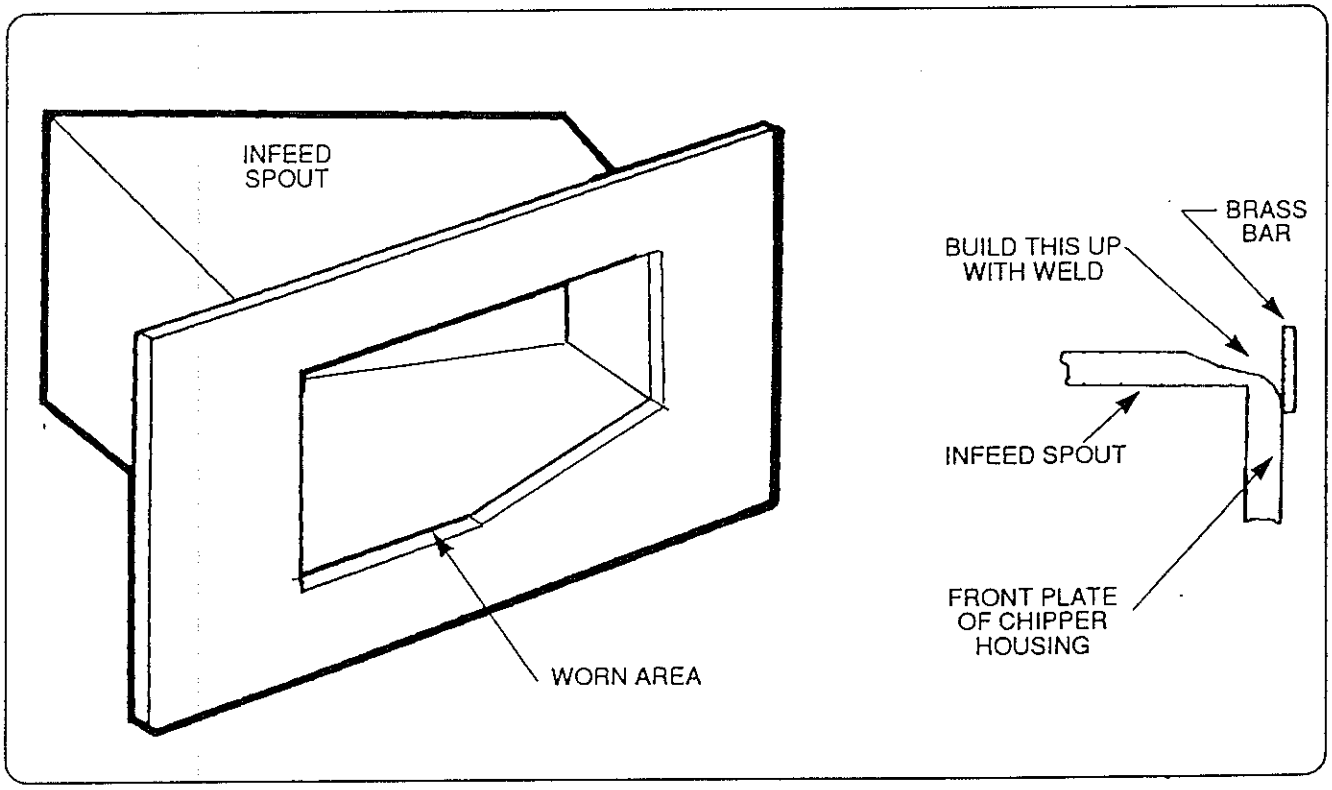
Feed Plate Anvil
Chipper Knives
Drive Belts
Radiator Screen
Batteries
Hydraulic Pressures
Pivot Pins
Infeed Throat
Discharge Wear
Drive Chains
Clutch
Set Screws
Nuts and Bolts
Top Wheel Springs
Lights and Wiring
Hydraulic Oil
Hydraulic Filters
Engine Filters
Engine Fluids
Tires and Wheels
Wheel Bearings
Lubrication Points
Hydraulic Hoses
Cooling Fan, Shroud

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 setting .045 to .065.

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.





TROUBLE SHOOTING – CHIPPER

DO NOT ATTEMPT TO MAINTAIN UNLESS ENGINE KEY IS REMOVED AND THE DISC LOCK IS INSTALLED

PROBLEM	POSSIBLE CAUSE	SOLUTION
Chips Too Big	1. Chipper disc speed too slow 2. Worn feed plate anvil 3. Chipper infeed spout worn	1. Chipper must run at 1150 disc RPM 2. Replace working edge or complete anvil as needed 3. 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 or too loose	1. Check anvil clearance, should be .045 to .065 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 chipper knives; **Never** chip with dull knives 6. Chipper must run at 1150 disc RPM 7. Resharpen or replace 8. Spring should be just tight enough not to slip on wood
Wood Packing Between Knife & Disc	1. Knives not properly tightened in pocket 2. Knives are not properly seated in the pocket, due to foreign material 3. Knives are worn too far	1. Bolt-in knives must be tightened to 70 to 80 ft. lbs. torque 2. Every time you change knives, clean all debris out of pocket and hardware; it makes knives slip and break 3. **Replace Knives!** Knife can be resharpened (worn) too far, consult the chipper section of manual; Too far is dangerous
Chipper Disc Moving (Chucking) Back & 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; 150 ft. lbs. of torque on Model 250; 250 ft. lbs. of Torque on Model 1250 2. Check bearing retainer bolt in center of front shipper bearing, tighten to 175 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; 150 ft. lbs. torque

TROUBLE SHOOTING – HYDRAULIC SYSTEM

DO NOT ATTEMPT TO MAINTAIN UNLESS ENGINE KEY IS REMOVED AND THE DISC LOCK IS INSTALLED

PROBLEM	POSSIBLE CAUSE	SOLUTION
Feed Wheels Turn Slow Or Not At All	1. Relief valve opens too easily or stuck open 2. Worn hydraulic pump 3. Pump belt slippage 4. Feed wheel motors are worn 5. Pinched or damaged hose 6. Control valve worn and leaking internally 7. Low hydraulic oil level 8. Plugged oil filter or suction screen 9. Control lever improperly shifting valve	1. Clean relief valve and check or reset pressure as needed 2. Check oil flow and pressure capacity of pump 3. Tighten or replace 4. Check and replace 5. Replace 6. Check and replace 7. Check and fill 8. Replace 9. Re-adjust; valve must open completely
Inconsistent Feeding (Varying Speeds)	1. Relief valve is worn or dirty 2. Pump is worn 3. Feed wheel motors are worn 4. Pump belt slippage 5. Spring tension loose	1. Clean relief and check or replace 2. Check and replace 3. Check and replace 4. Tighten or replace 5. Tighten
Only One Feed Wheel Turns	1. Pump is not pumping enough oil 2. Worn or dirty flow divider 3. Faulty feed wheel motor 4. Pinched hose	1. Speed up engine to recommended RPM 2. Clean or replace 3. 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 4. Replace
Over Heating of Hydraulic Oil	1. Hydraulic tank oil level is too low, hydraulic oil is contaminated, or hydraulic filter is dirty 2. Worn pump 3. Worn motors 4. Relief valve stuck open or opens too easily 5. Oil filter plugged 6. Hydraulic oil viscosity is wrong for atmospheric temperature	1. Follow proper maintenance schedule and fill or change as needed 2. Replace 3. Replace 4. Clean relief and check or reset pressure as needed 5. Replace 6. Replace oil - refer to oil usage chart
Noisy Pump Cavitation (Pump Starving)	1. Damaged inlet (suction) 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 chart 3. Allow system to warm up 4. Needs to be cleaned or replaced

HYDRAULIC FLOW DIVIDERS

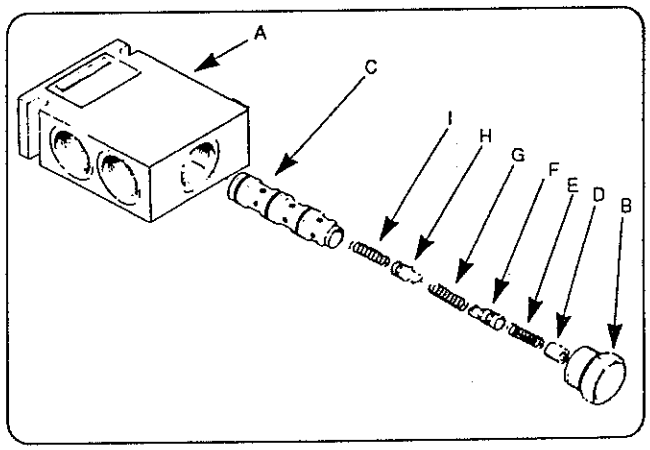
Models 250 & 1250 are equipped with a flow divider. The divider is used to split an oil flow in two directions to do two different operations. As you can understand, these devices are very important to the proper operation of the machine, and get a lot of wear. The cartridge on each of the flow dividers should be removed and cleaned, replaced if needed, quarterly (every three months).

MODEL 250 FLOW DIVIDER		MODEL 1250 FLOW DIVIDER	
900-3902-45	Complete Cartridge	900-3902-45	Complete Cartridge
900-3902-46	O-Ring Kit	900-3902-46	O-Ring Kit
900-3901-40	Complete Flow Divider	900-3901-40	Complete Flow Divider

TO DISASSEMBLE HYDRAULIC FLOW DIVIDER

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

1. Remove cartridge by unscrewing hex hut 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 to force parts out.
5. Unhook the equalizers from each other and pull apart to complete disassembly. Don't lose the parts or stretch out the springs.



HYDRAULIC PROBLEMS?

Check these components first:

A) Check the pump belt -- make sure it isn't slipping. This pump operates your feed wheels and the optional winch, optional yoke lift cylinder, and optional hydraulic swivel discharge.
B) The engine RPM must be fast enough to make either pump "kick in" and operate correctly.
C) The hydraulic oil must be min. 7/8 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.

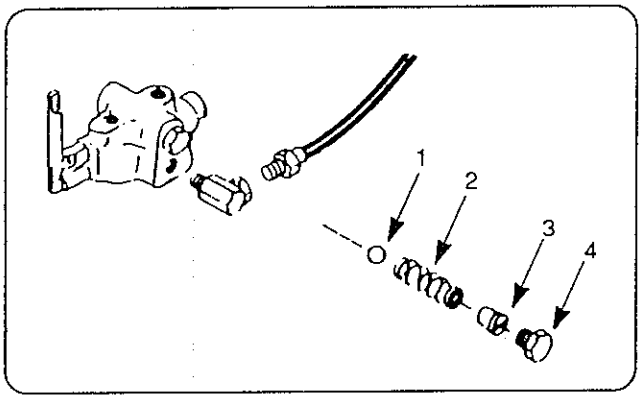
HYDRAULIC RELIEF PRESSURE SETTINGS

ITEM	DESCRIPTION/LOCATION	MAX. HYDRAULIC PRESSURE
A	Feed Wheel Valve	2500 PSI
B	Top Feed Wheel	2500 PSI
C	Bottom Feed Wheel	2500 PSI
D	Top Wheel Lift Cylinder	900 PSI
E	Swivel Discharge	900 PSI
F	Hydraulic Winch Motor	2300 PSI

⚠CAUTION

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

RELIEF VALVE COMPONENTS



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.

HYDRAULIC SERVICE AND TROUBLE SHOOTING

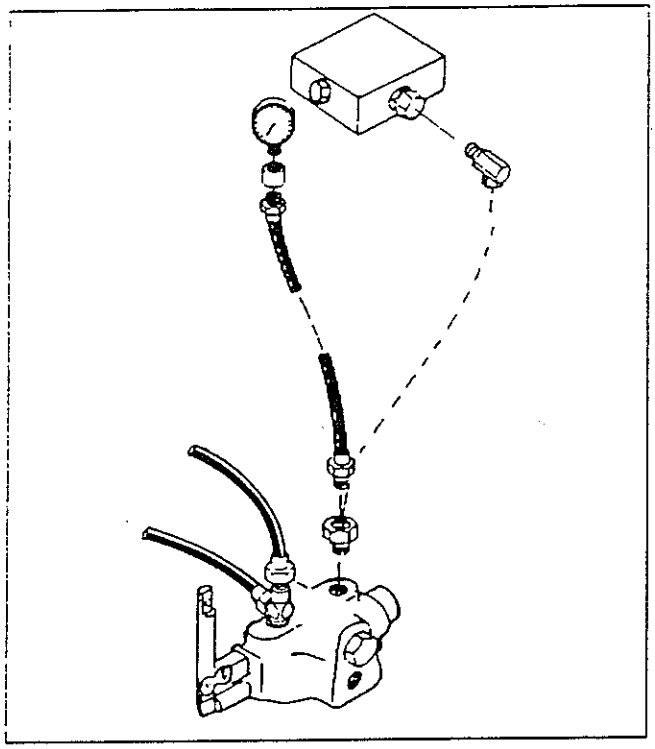
Should you encounter a hydraulic problem, follow the steps below:

1. **Check Relief Valve Setting**
   A. Put feed wheel control handle in neutral position.
   B. See instructions concerning your model on diagrams below
   C. Install pipe plug in port and install pressure gauge on end of hose.
   D. Pull control handle to normal operating position.
   E. Start engine and pull throttle to full engine RPM.
   F. Gauge should read 2400 to 2500 max. PSI.
   G. Reset relief pressure if needed, if not needed shut off engine and reassemble securely. Check for leaks.
   H. Relief valve pressure should be checked every 3 months for best performance.

2. **Adjust Relief Valve Setting**
   A. With pressure valve installed and engine running at full RPM as in Step #1, do the following:
   B. Remove hex head cap from control valve.
   C. Put feed wheel control handle in feed position
   D. Insert a straight edge screwdriver through port into slotted set screw.
   E. Turn set screw slowly - watch pressure gauge - turn screw clockwise to increase pressure.
   DO NOT set pressure over 2500 PSI or severe damage will be caused to the system.

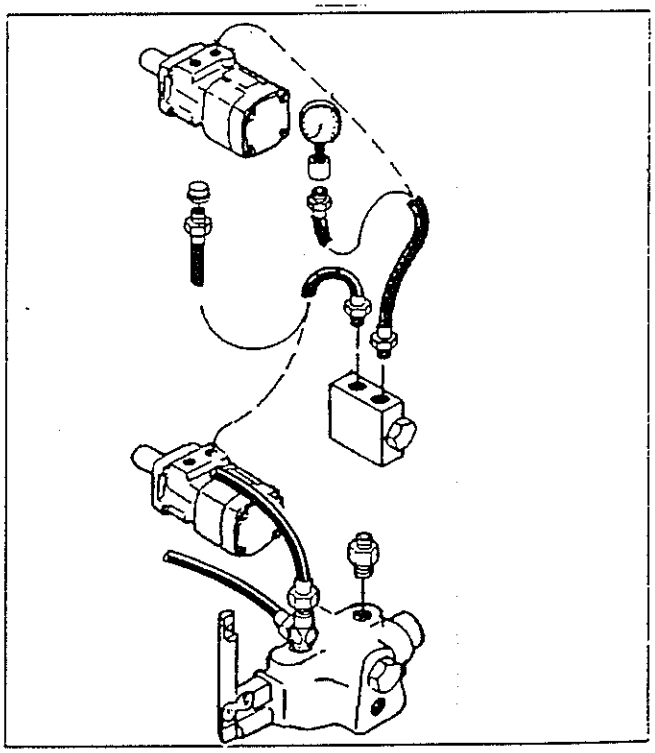
MODEL 1250

1. Disconnect hose from valve to flow divider and install coupling and pressure gauge



MODEL 250

1. Disconnect lower feed wheel motor hose and cap hose as shown.
2. Disconnect top wheel motor hose. Install coupling and pressure gauge.



HYDRAULIC SERVICE AND TROUBLE SHOOTING (Continued)

3. **To Clean Relief Valve**
   A. Remove hex head plug from control valve (feed wheels valve).
   B. Tighten slotted set screw counting exactly how many turns it takes to tighten.
   C. Then unscrew set screw removing relief spring and poppit ball.
   D. Clean completely all components and relief port in valve with fuel oil.
   E. Blow out port and parts with air pressure and inspect for damage.
   F. Reassemble components in valve port.
   G. Set relief valve pressure per instructions in Step 2.
   H. If pressure gauge is not available, snug tighten set screw and back off exactly same amount of turns as was originally.

4. **To Check For A Faulty Pump**
   A. If the relief valve setting is correct - Step 1. You should check to see if the pump is putting out all the necessary gallons it should.
   Model 250: 2-knife, 5/8" chip pumps 8.0 gallons per min. at full RPM.
   Model 1250: 2-knife, 5/8" chip pumps 12.0 gallons per min. at full RPM.

   There are two methods for testing gallons per min. from pump.

   (1) Using a hydraulic flow meter --
      (A) Disconnect flow divider from control valve (feed wheels valve).
      (B) Connect valve port to inlet side of flow meter.
      (C) Connect outlet side of flow meter into port on flow divider.

   (2) Using a measuring pail (not as accurate as flow meter) --
      (A) Using a 5 gallon pail, mark the side of pail at appropriate gallons pumping in 15 seconds --
      Model 250: (15 seconds) - 1-3/4 to 2 gal.
      Model 1250: (15 seconds) - 2-3/4 to 3 gal.
      (B) Install hose from hydraulic control valve (feed wheels valve) into pail (disconnect flow divider).
      (C) Make sure valve control handle is in neutral position.
      (D) Put engine RPM at full throttle
      (E) Using a stop watch, push hydraulic control handle into feeding position for **EXACTLY** 15 seconds, pumping oil into pail.

   If gallons per minute varies from requested output by more than 25% the pump is starting to wear out.

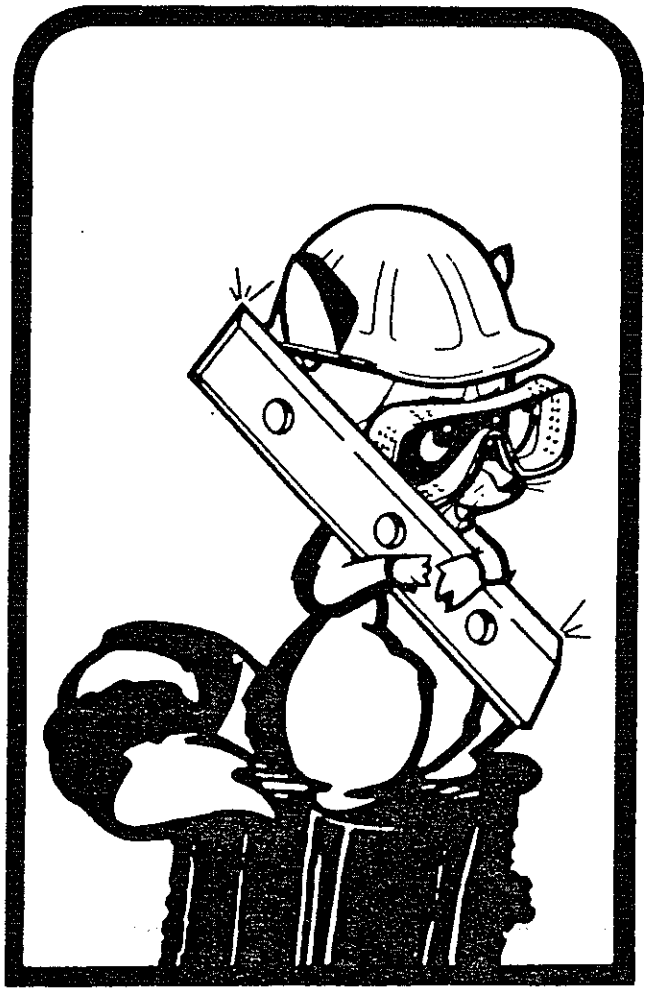
   Reassemble components after testing, put oil back in tank, and check for any fitting leaks.

5. **To Check For A Faulty Hydraulic Motor**
   If the flow divider and relief valve has been checked, as in steps #1, #2 and #4, and everything checks out as correct, it may be time to check the hydraulic motor.
   If one motor seems to be operating correct and the other seems to be weak or especially slow, switch the two hoses at Flow Divider. If the opposite motor starts acting incorrectly, then the motors are not at fault. If the same motor still acts incorrectly, then chances are that the motor is faulty.
   All motors slip some oil, the more oil that slips the less powerful that motor is because of normal wear.
   If both motors are acting incorrectly, then chances are it is a problem with pump belt, pump, relief valve, or pressure setting.

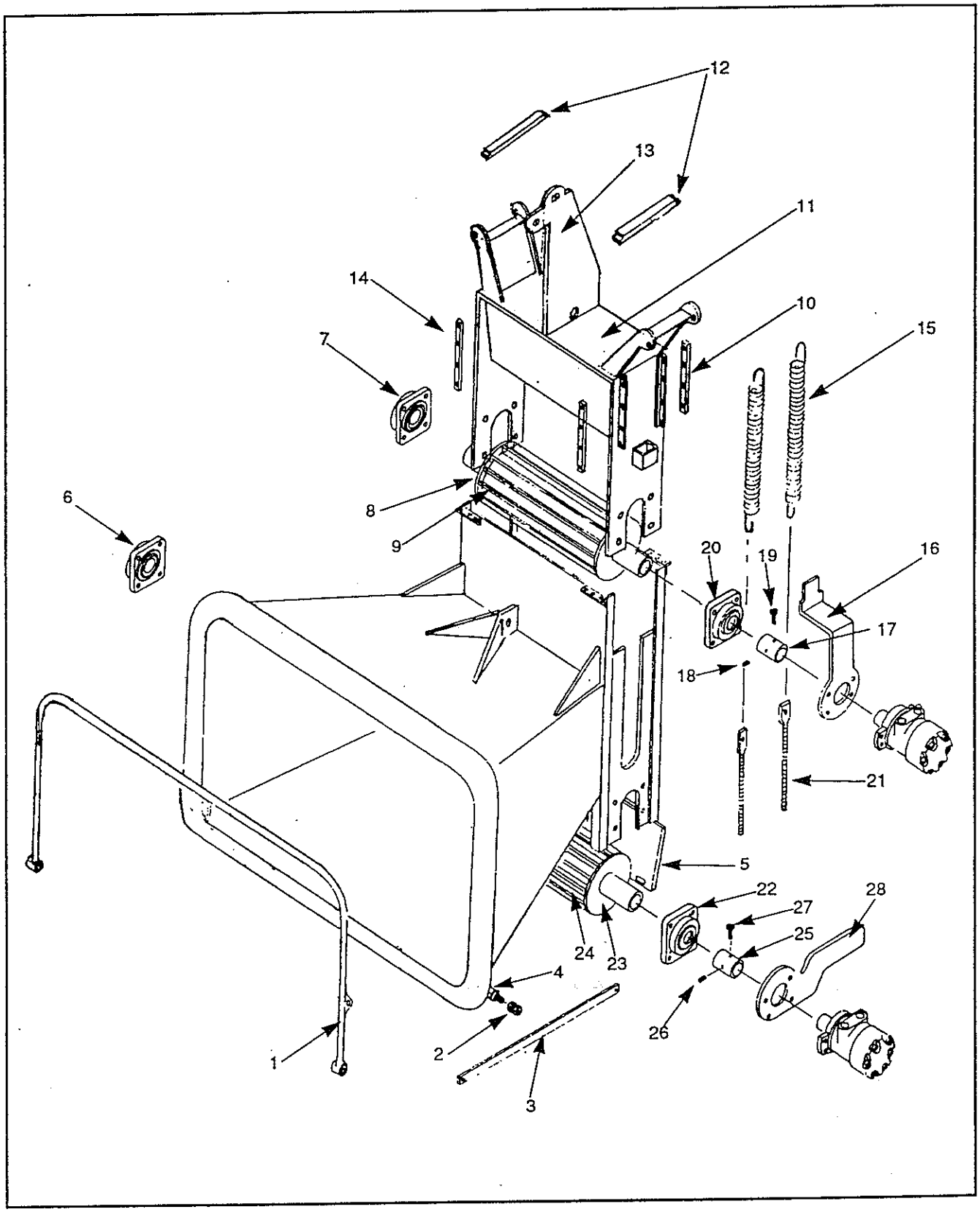
SERVICE RECORD

DATE	DESCRIPTION	AMOUNT

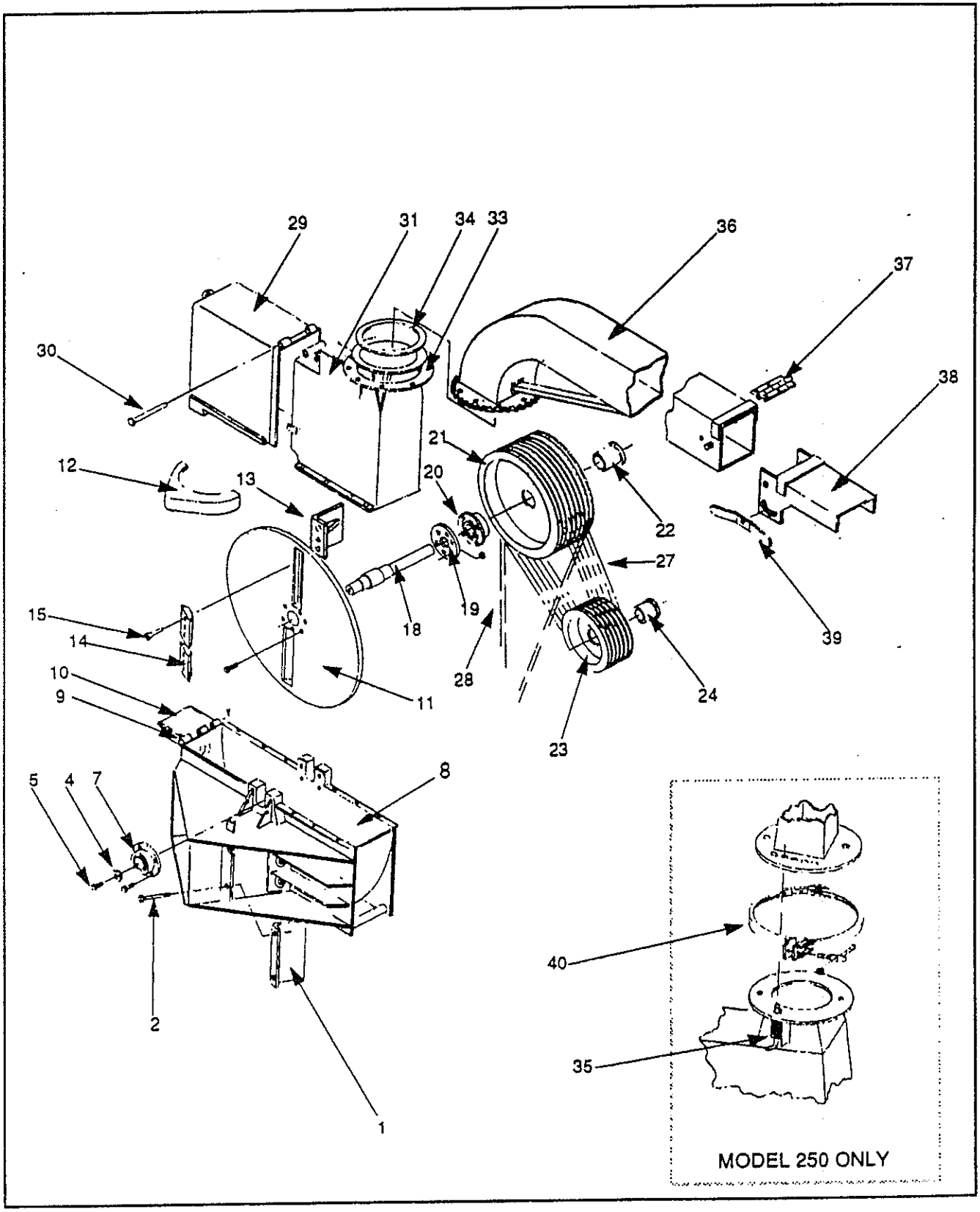
REPLACEMENT PARTS SECTION



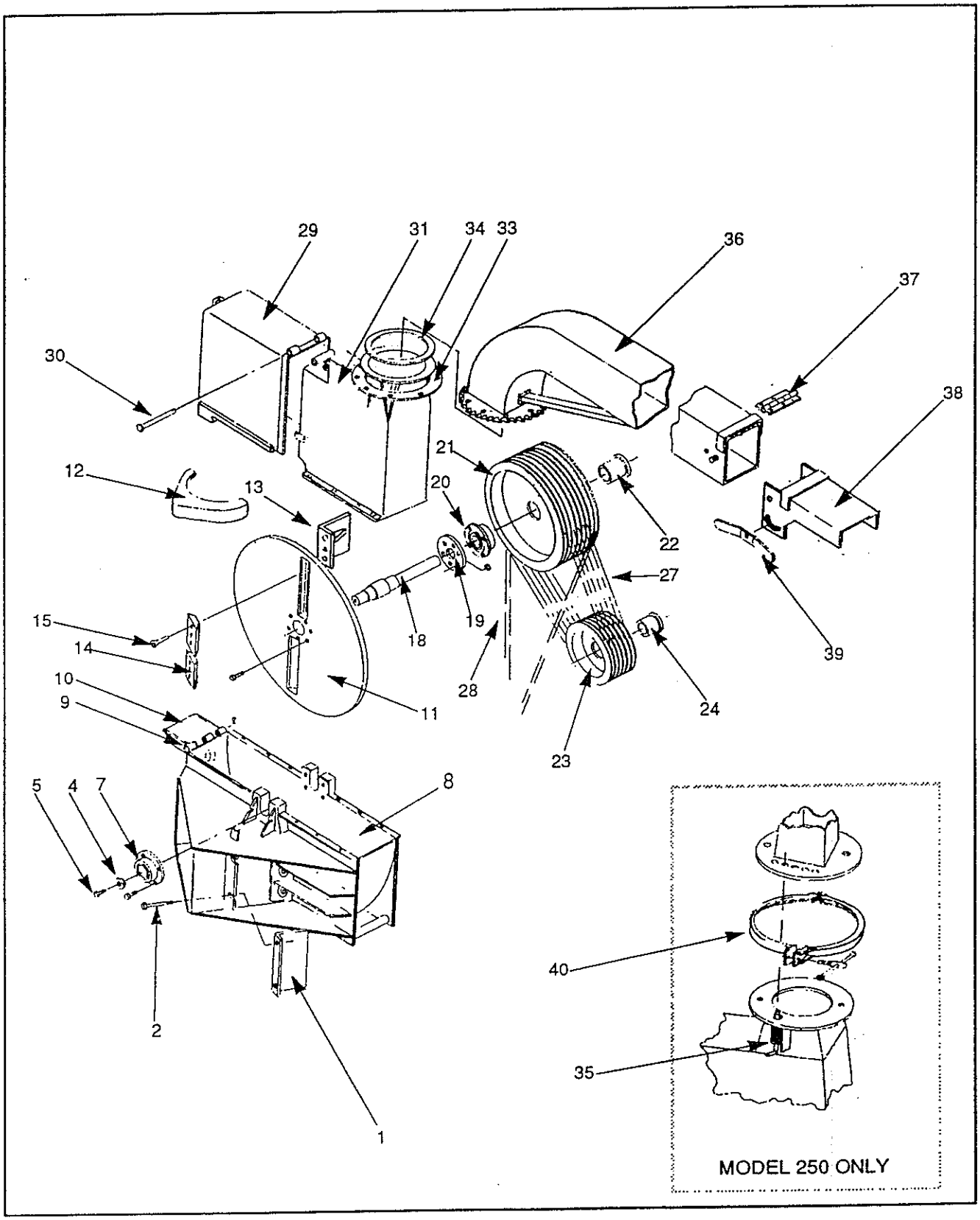
Performance First, Inc. reserves the right to make changes in models, sizes, designs, installations and applications on any part without notification.


12
13
11
14
10
15
7
6
8
9
20
19
16
17
18
21
5
22
27
28
25
24
23
4
26
2
1
3

ITEM	PART NUMBER	DESCRIPTION
1	981-0500-16	Feed Control Handle
2	900-4900-44	Control Handle Jam Nuts
3	980-0100-74	Feed Wheel Control Arm
4	980-0100-45	Feed Wheel Control Handle Pivot Pin
5	981-1000-66	Bottom Wheel Inspection Door
6	900-1900-66	Feed Wheel Bearing
7	900-1900-66	Feed Wheel Bearing
8	981-0500-02	Top Feed Wheel
9	981-1000-04	Feed Wheel Teeth (Weld-On)
10	980-0111-08	Top Wheel Slide
11	981-0500-18	Top Wheel Yoke
12	981-1000-53	Retaining Brackets
13	981-1000-92	Top Wheel Lift Cylinder Lug
14	980-0111-08	Top Wheel Slide
15	900-4900-04	Springs - Top Wheel
16a	980-0111-20	Top Wheel Torque Arm - Model 250
16b	980-0111-23	Top Wheel Torque Arm - Model 1250
17a	980-0110-28	Top Wheel Motor Coupler - Model 250
17b	980-0110-27	Top Wheel Motor Coupler - Model 1250
18	900-4900-46	Set Screws for Coupler
19	900-4900-37	Bolt for Coupler
20	900-1900-66	Feed Wheel Bearing
21	981-0500-19	Tighteners - Feed Wheel Springs
22	900-1900-66	Feed Wheel Bearing
23	981-0500-03	Bottom Feed Wheel
24	981-1000-04	Feed Wheel Teeth (Weld-On)
25a	980-0110-28	Bottom Wheel Motor Coupler - Model 250
25b	980-0110-27	Bottom Wheel Motor Coupler - Model 1250
26	900-4900-46	Set Screws for Coupler
27	900-4900-37	Bolt for Coupler
28a	981-1001-55	Bottom Wheel Torque Arm - Model 250
28b	981-1001-07	Bottom Wheel Torque Arm - Model 1250

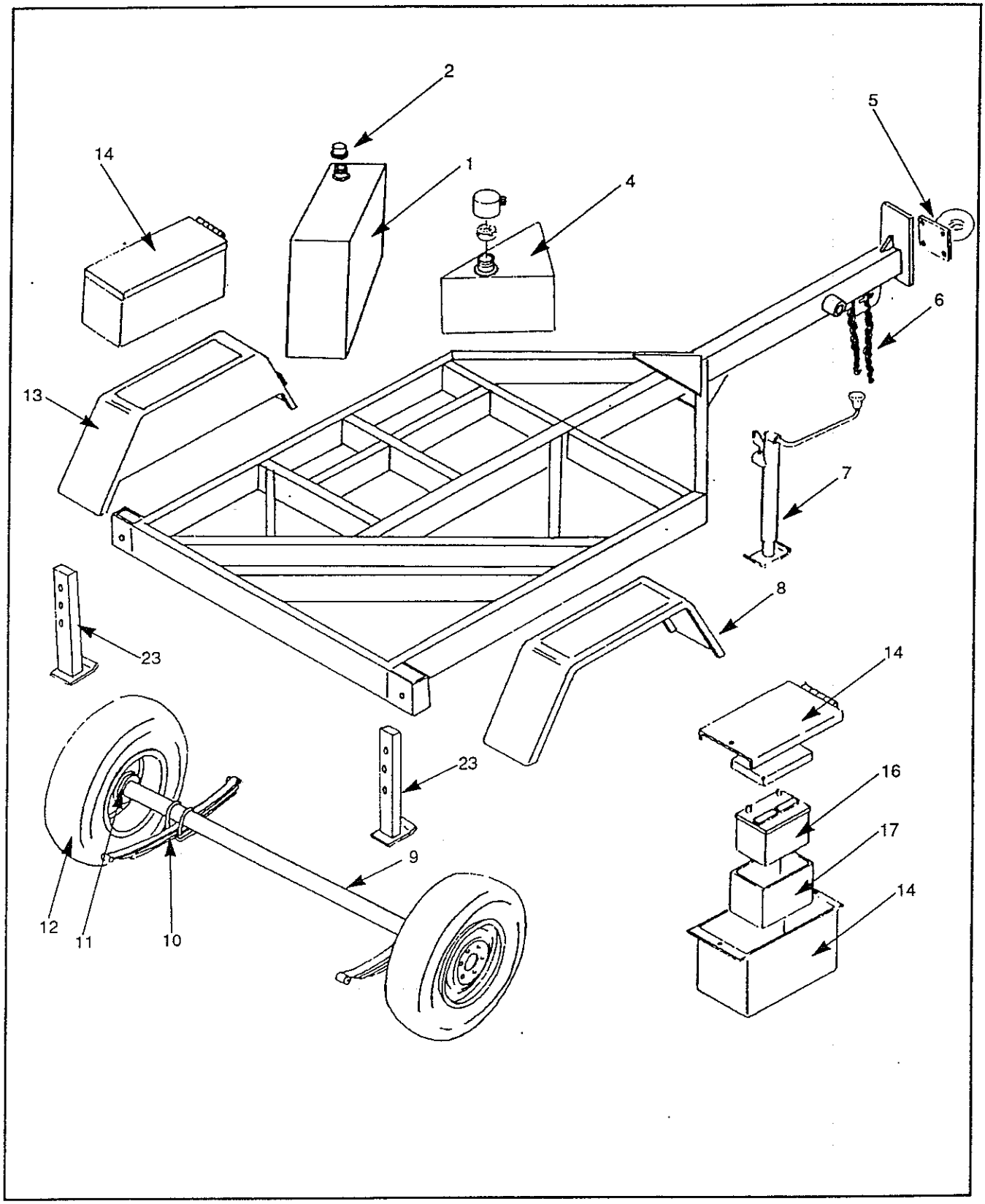

29
31
34
33
36
37
30
38
21
12
13
20
22
27
15
19
18
39
14
28
24
10
11
9
23
8
5
4
7
40
2
35
1
MODEL 250 ONLY

ITEM	MODEL 250 PART NUMBER	MODEL 1250 PART NUMBER	DESCRIPTION
1a	981-0500-42	981-0500-05	Standard Feed Plate Anvil with Bolts
1b	---	981-0500-01	Optional Feed Plate Anvil with Replaceable Insert
2	980-0502-12	980-0502-12	Adjuster Bolts for Feed Plate Anvil
4	980-0111-09	980-0111-09	Bearing Retainer
5	980-0107-92	980-0107-92	Bolt - Bearing Retainer
6	900-4900-33	900-4900-33	Lock Washer - Bearing Retainer
7	900-1900-33	900-1900-33	Front Chipper Bearing
8	Not Available	Not Available	Chipper Base Assembly
9	980-0101-59	980-0101-59	Hood Hinge
10	980-0111-22	980-0111-22	Hood Stop (Weld-On)
11	980-0503-69	980-0505-56	Chipper Disc Assembly (2-Knife, 5/8" Chip)
12	980-0505-69	980-0505-69	Guard for Hydraulic Discharge Swivel
13a	980-0505-84	980-0505-84	Fan Blade Assembly (for 1/2" bolts)
13b	980-0502-37	980-0502-37	Fan Blade Assembly (for 5/8" bolts)
14	900-9900-02	900-9902-00	Chipper Knife
15	900-4900-53	900-4900-53	Bolt - Chipper Knife
17	900-4901-76	900-4901-76	Nut - Chipper Knife
18	980-0110-87	980-0110-86	Chipper Shaft for Disc
19	900-0110-50	980-0100-71	Chipper Draw Ring
20	900-1900-34	900-1900-34	Rear Chipper Bearing
21	*	*	Chipper Sheave
22	*	*	Chipper Bushing
23	*	*	Engine Sheave
24	*	*	Engine Bushing
25	*	*	Pump Sheave
26	*	*	Pump Bushing
27	*	*	Chipper Belts
28	*	*	Pump Belts
29a	980-0505-85	980-0505-85	Half Hood - Hinged - With Guide Plates
29b	980-0505-17	980-0505-17	Half Hood - Hinged - With Angle Brackets
30	980-0500-16	980-0500-16	Hood Hinge Pin and Lock Clip
31a	980-0505-27	--	Half Hood - Stationary Side
31b	980-0505-29	980-0505-29	Half Hood - Stationary Side - for Hydraulic Swivel Discharge

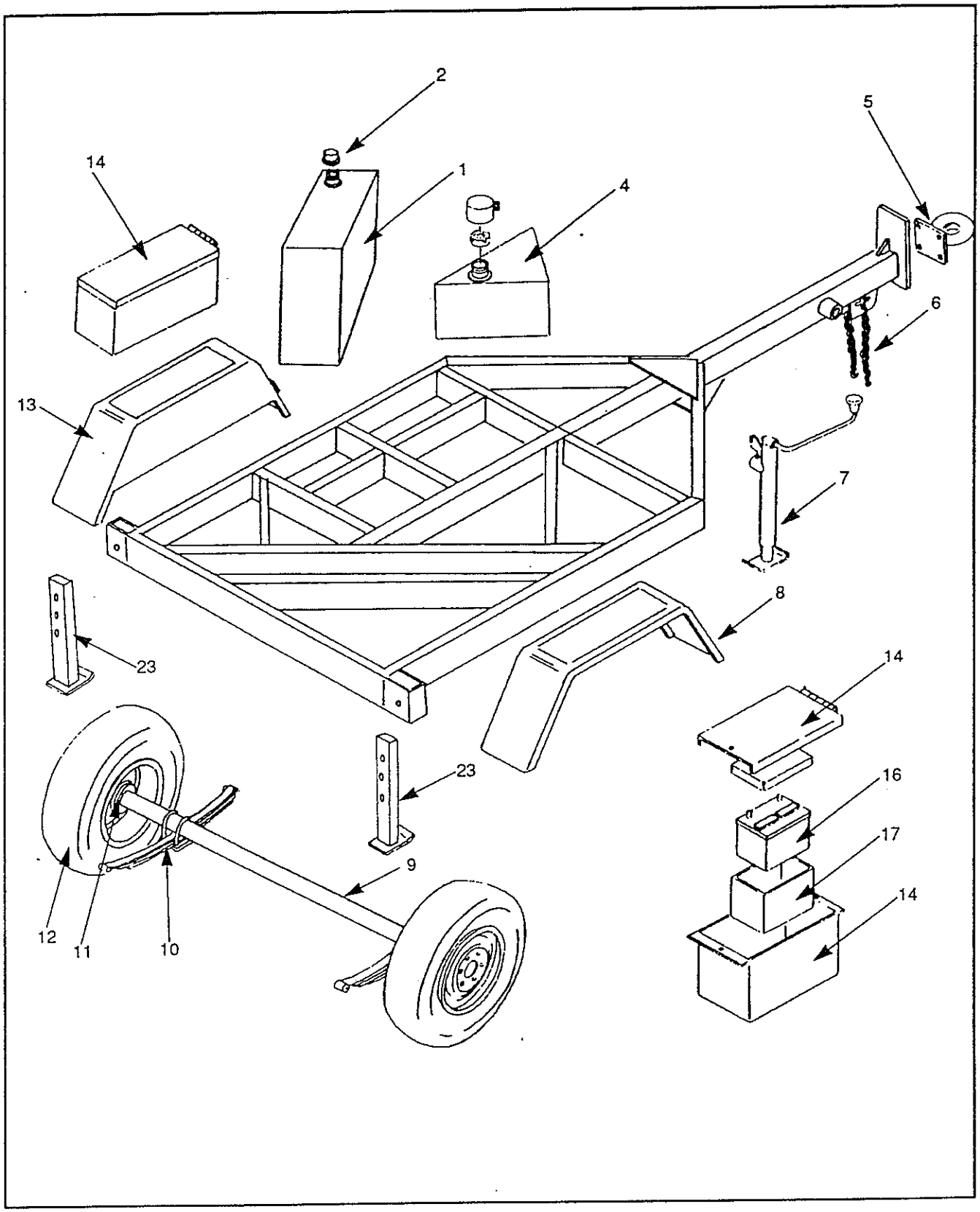

29
31
34
33
36
37
30
38
21
12
13
20
22
27
15
19
18
39
14
10
28
24
9
11
23
5
4
7
8
40
2
35
1
MODEL 250 ONLY

ITEM	MODEL 250 PART NUMBER	MODEL 1250 PART NUMBER	DESCRIPTION
32	900-1901-20	900-1901-20	Hydraulic Discharge Swivel Chain
33	980-0110-65	980-0110-65	Bottom Ring - Hydraulic Discharge Swivel
34	980-0110-64	980-0110-64	Spacer Ring - Hydraulic Discharge Swivel
35a	980-0505-86	--	Pin Lock - Spring Loaded
35b	914-0500-79	914-0500-79	Pin Lock - Hydraulic Discharge Swivel
36a	981-0500-21	--	Discharge Assembly
36b	981-0500-22	914-0500-35	Hydraulic Swivel Discharge Assembly
37	981-1001-63	914-1003-87	Deflector Hinge - Discharge
38a	980-0505-88	--	12" Standard Deflector
38b	980-0505-89	--	12" Optional Enclosed Deflector
38c	--	914-0500-64	24" Standard Deflector
38d	--	914-0500-48	24" Optional Enclosed Deflector
38e	980-0505-90	--	30" Optional Deflector
38f	980-0505-91	--	30" Optional Enclosed Deflector
39	980-0505-68	980-0505-68	Deflector Lock Handle
40	980-0501-96	--	Discharge Lock Ring Assembly

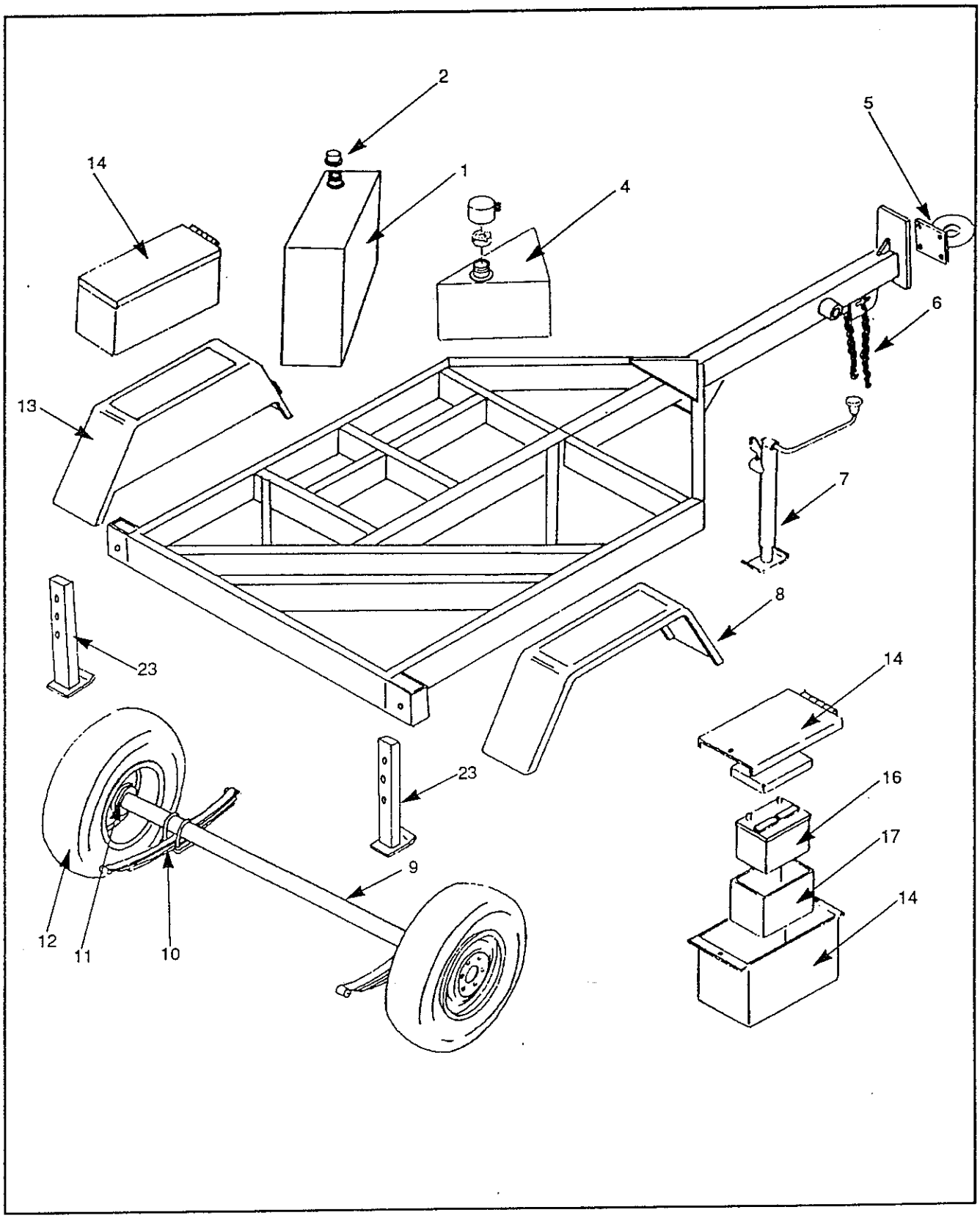
*Components vary depending on engine and disc options - Order components by physical description


2
5
14
1
4
6
13
7
8
23
14
23
16
17
9
14
12
11
10

ITEM	MODEL 250 PART NUMBER	MODEL 1250 PART NUMBER	DESCRIPTION
1a	980-0503-90	980-0503-90	24-1/2 gal. Rectangle Fuel Tank Assembly 10" Wide - WITH Sight Gauge
1b	980-0503-91	980-0503-91	24-1/2 gal. Rectangle Fuel Tank Assembly 10" Wide - NO Sight Gauge on Tank
2a	900-3901-51	900-3901-51	Filler Cap Sight Gauge - 24"
2b	900-3900-44	900-3900-44	Original Style Glass, Screws in Side of Tank, Sight Gauge
2c	980-0503-08	980-0503-08	Tube Type Sight Gauge Kit for Rectangle Fuel Tank
2d	900-3901-10	900-3901-10	Filler Cap - NO Sight Gauge
3	980-0104-95	980-0104-95	Rubber Cushion for Tanks
4			Hydraulic Tank (see hydraulic components section)
5b	900-5900-13	900-5900-13	2-1/2" ID Heavy Duty Pintle Ring Hitch
5c	900-5900-71	900-5900-71	3" ID Heavy Duty Pintle Ring
5d	980-0501-47	---	2" Ball Coupler with Mount Assembly
5e	900-5901-14	---	2" Ball Coupler - Only
5f	980-0505-33	980-0505-33	2-5/16" Ball Coupler with Mount Assembly
5g	900-5901-21	900-5901-21	2-5/16" Ball Coupler - Only
5h	980-0501-12	980-0501-12	2" Ball Hitch Hydraulic Surge Brake Actuator with Mount Assembly
5i	900-5900-27	900-5900-27	2" Ball Hitch Hydraulic Surge Brake Actuator - Only
5j	980-0502-18	980-0502-18	3" Pintle Hitch Hydraulic Surge Brake Actuator with Mount Assembly
5k	900-5900-24	900-5900-24	3" Pintle Hitch Hydraulic Surge Brake Actuator - Only
5l	900-5901-17	900-5901-17	"Croft" 2-1/2" Pintle Ring Adaptor to fit 2" Ball Hitch
5m	900-5901-18	900-5901-18	"Croft" 2" Ball Adaptor to fit 2-1/2" Pintle Ring Hitch
5n	900-5901-19	900-5901-19	"Croft" 2-5/16" Ball Hitch Adaptor to fit 2-1/2" H.D. Pintle Ring Hitch

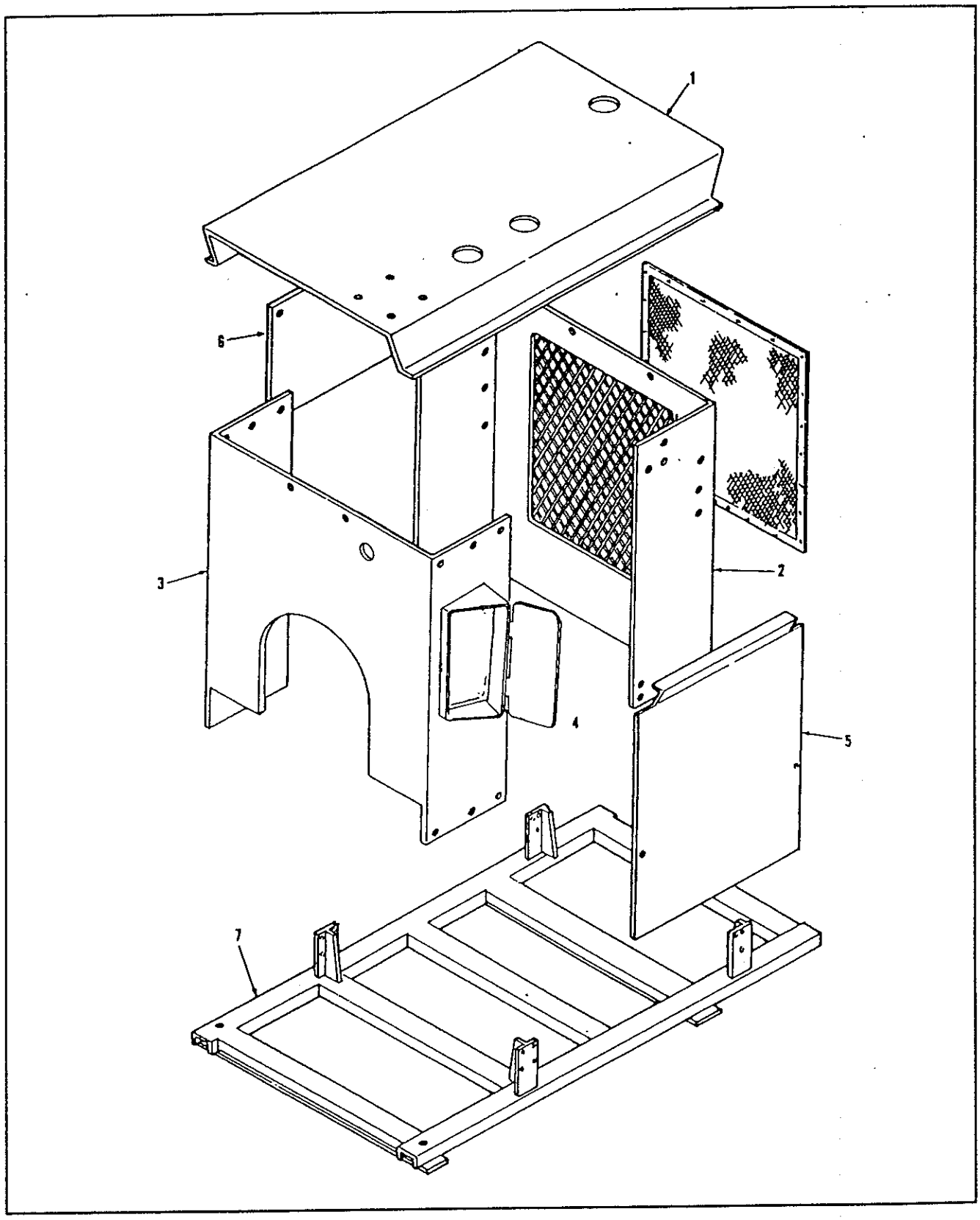

2
5
14
1
4
6
13
7
8
23
14
23
16
17
9
14
12
11
10

ITEM	MODEL 250 PART NUMBER	MODEL 1250 PART NUMBER	DESCRIPTION
5o	980-5901-20	900-5901-20	"Croft" 2-5/16" Ball Hitch Adaptor to fit 3" H.D. Pintle Ring Hitch
5p	900-5900-34	900-5900-34	For Towing Vehicle - Hitch Coupler - 2" Ball with 2-1/2" Pintle Ring Receptacle
6a	980-0500-42	980-0500-42	36" Long, 3/8" Set of Safety Chains with Hooks
6b	980-0503-32	980-0503-32	48" Long, 3/8" Set of Safety Chains with Hooks
6c	980-0503-33	980-0503-33	60" Long, 3/8" Set of Safety Chains with Hooks
7a	900-5900-77	900-5900-77	15" Foot Pad Tongue Jack with Tube Mount
7b	980-5900-78	900-5900-78	10" Castor Wheel Tongue Jack with 5" Castor Wheel and Tube Mount
7c	980-0505-34	980-0505-34	10" Castor Wheel Tongue Jack with 8" Pneumatic Castor Wheel and Tube Mount
8a	980-0503-31	980-0503-31	1/4" H.D. Right Fender Assembly (Weld-On) for 1200 x 16.5" Tires
8b	980-0502-66	980-0502-66	1/4" H.D. Right Fender Assembly (Bolt-On) for 1200 x 16.5" Tires
9a	900-5901-07	---	Complete Axle Assembly - **No** Brakes, **with** Mounts, Springs, Nuts, Hubs, Etc.
9b	900-5901-08	90-5900-80	Complete Axle Assembly - **Electric** Brakes, **with** Mounts, Springs, Nuts, Hubs, Etc.
9c	900-5901-09	900-5901-82	Complete Axle Assembly - **Hydraulic** Brakes, **with** Mounts, Springs, Nuts, Hubs, Etc.
9d	900-5901-22	---	Axle Tube Only - **No** Brake
9e	900-5901-23	900-5901-29	Axle Tube Only - **Electric** Brake
9f	900-5901-24	900-5901-30	Axle Tube Only - **Hydraulic** Brake
9g	900-5900-50	---	Field Kit to Convert No Brake Axle to Electric Brake Axle
10a	900-5900-10	900-5900-81	Complete Hanger Mounting Kit for Axle
10b	900-5900-39	---	3500#, 6 Leaf, Axle Spring #1769
10c	---	900-5901-31	4000# Slipper Leaf Spring
10d	900-5900-53	900-5901-32	Bolts for Hanger Mounts
10e	900-5900-54	900-5901-33	Nuts for Hanger Mounts
10f	900-5900-38	900-5901-34	Mount Plate for Spring (Tie Plate)
10g	900-5900-35	900-5901-35	U-Bolts for Spring Mount
10h	900-5900-36	900-5901-36	Nuts for U-Bolts
10i	900-5900-55	---	Pivot Bars for Spring Mount


2
5
14
1
4
6
13
7
8
23
14
23
16
17
9
14
12
11
10

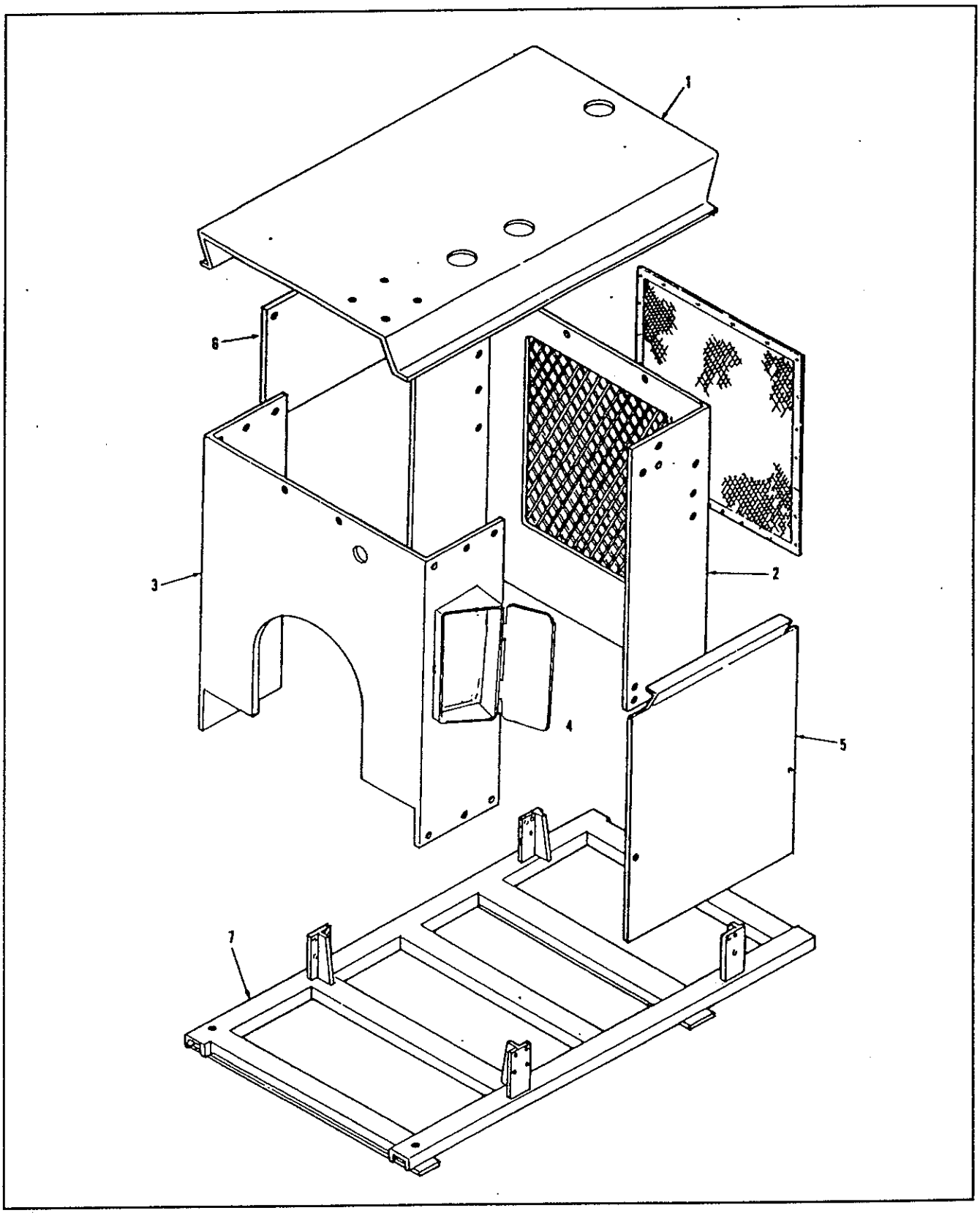
ITEM	MODEL 250 PART NUMBER	MODEL 1250 PART NUMBER	DESCRIPTION
11a	900-5900-37	900-5901-37	Idler Hub Assembly - **No** Brake, **with** Bearings, Seals, Nuts, Washers, Studs, Lug Nuts, & Cap
11b	900-5900-56	900-5901-38	**Electric** Brake Hub and Drum Assembly - with Brakes, Backer Plate,Bearings, Seals, Nuts, Washer, Studs, Lug Nuts and Cap
11c	900-5900-57	900-5901-39	**Hydraulic** Brake Hub and Drum Assembly - with Brakes, Backer Plate, Bearings, Seals, Nuts, Washer, Studs, Lug Nuts, and Cap
12a	900-5900-22	900-5900-79 (White)	Rim & Tire - 1200 x 16.5"
12b	900-5900-43	900-5900-43	Tire Only - 1200 x 16.5"
12c	900-5900-32	900-5901-40 (White)	Rim Only - 16.5"
12d	900-5900-60 (N/A)	900-5900-60 (N/A)	Chrome Baby Moon Hub Caps - 16.5" Wheels Main Frame
13a	980-0503-29	980-0503-29	1/4" H.D. Left Fender Assembly (Weld-On) for 1200 x 16.5 Tires
13b	980-0502-65	980-0502-65	1/4" H.D. Left Fender Assembly (Bolt-On) for 1200 x 16.5 Tires
14a	980-0500-15	980-0500-15	Battery/Tool Box - Hinged Top - for Group 24 Battery Optional
14b	980-0501-54	980-0501-54	Battery/Tool Box - Hinged Top - for Group 29 Battery Optional
15	900-7900-04	900-7900-04	Rubber Grommets for Cables
16a	900-6900-01	---	Battery - Group 24 - 450 CCA
16b	900-6900-02	900-6900-73	Battery - Group 29 - 625 CCA
17a	900-7900-01	900-7900-01	Plastic Battery Box - Group 24
17b	900-7900-08	900-7900-08	Plastic Battery Box - Group 29
18a	900-2900-27	900-2900-17	Standard 6-Prong Electric Trailer Plug
18b	900-2900-18	900-2900-18	Standard 6-Prong Electric Towing Vehicle Plug-In
19	900-5900-09	900-5900-09	12-Volt Break Away Break Actuator
20	900-5900-08	900-5900-08	12-Volt Brake Control Box for Towing Vehicle
23a	980-0503-05	980-0503-05	Rear Stabilizer Assemblies (Set) for 1200 x 16.5" Tires
23b	980-0503-75	980-0503-75	Inside Tube for 16.5" Stabilizer
24	980-0501-23	---	Inside Tube for Sliding Tongue
25	980-0501-76	980-0505-37	Spare Tire Mount (Weld-On) for 1200 x 16.5" Tire
26	980-0502-46	---	24" Tongue Extension for Stationary Tongue (Bolt-On)
27	900-5900-62	900-5900-62	Safety Flags for Fenders - Set of Two

NOTE- Studs Can Only Be Ordered By Physical Description
NOTE - Other Than Standard Black Rims, Such As Chrome, Must Be Ordered By Special Description
NOTE - All Nuts & Bolts Can Be Ordered by Physical Description, Grade 8 Hardness Wherever Possible


1
2
3
4
5
6
7

MODEL 250 ENGINE COMPONENTS

ITEM	PART NUMBER	DESCRIPTION
		A) Cummins 4B3.9, 76-HP Optional
1	980-0501-65	Engine Cover Hood
2	980-0503-52	Radiator Shroud
3	980-0501-64	Rear Shroud
4	981-0500-34	Gauge Panel Cover
5	980-0105-97	Right Side Door Panel
6	980-0107-78	Left Side Door Panel
7	980-0501-60	Engine Cover Frame
8	980-0105-98	Air Cleaner Tube
9	980-0101-37	Engine Key for PTO
		B) Cummins 4BT3.9, 100-HP & Cummins 4BTA3.9, 116-HP Optional
1	980-0503-55	Engine Cover Hood
2	980-0503-54	Radiator Shroud
3	980-0503-56	Rear Shroud
4	981-0500-34	Gauge Panel Cover
5	980-0105-97	Right Side Door Panel
6	980-0107-78	Left Side Door Panel
7	980-0501-60	Engine Cover Frame
8	980-0109-76	Air Cleaner Tube
9	980-0101-37	Engine Key for PTO
		C) Ford BSD-444, 80-HP
1	980-0505-46	Engine Cover Hood
2	980-0505-44	Radiator Shroud
3	980-0505-45	Rear Shroud
4	981-0500-34	Gauge Panel Cover
5	980-0110-22	Right Side Door Panel
6	980-0110-23	Left Side Door Panel
7	980-0505-43	Engine Cover Frame
8	980-0107-58	Air Cleaner Tube
9	980-0101-37	Engine Key for PTO

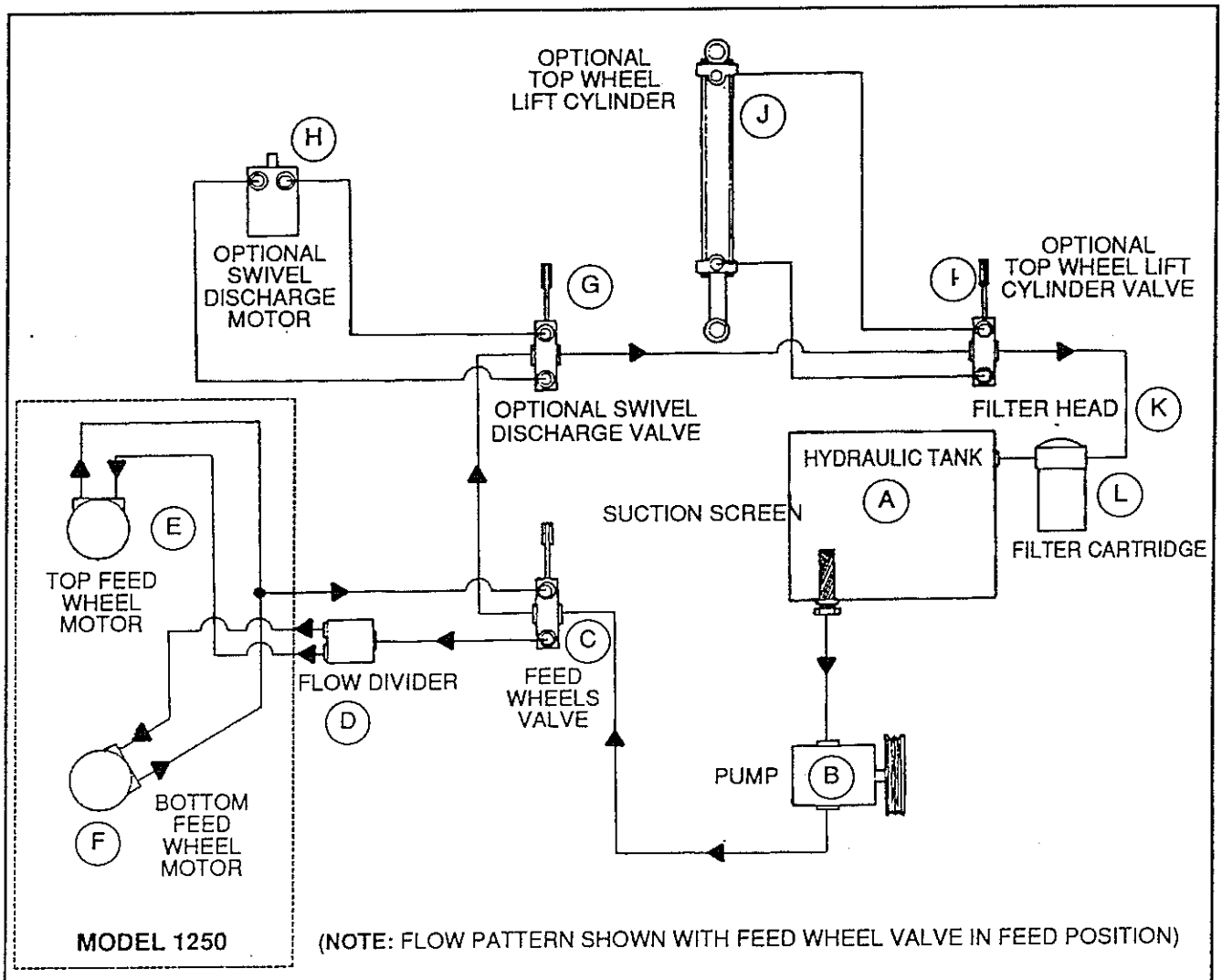

1
2
3
4
5
6
7

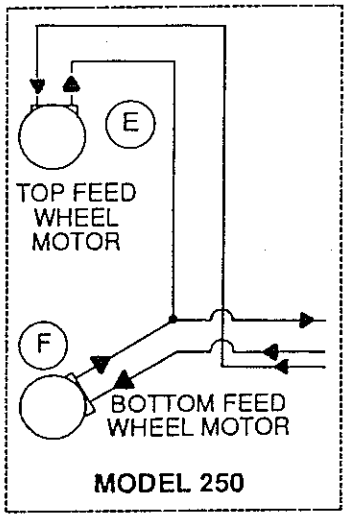
MODEL 250 ENGINE COMPONENTS

ITEM	PART NUMBER	DESCRIPTION	
		D) John Deere TO4039,80H	**Optional**
1	980-0503-51	Engine Cover Hood	
2	980-0501-88	Radiator Shroud	
3	980-0501-87	Rear Shroud	
4	981-0500-34	Gauge Panel Cover	
5	980-0105-97	Right Side Door Panel	
6	980-0107-57	Left Side Door Panel	
7	980-0501-86	Engine Cover Frame	
		E) Perkins 4.236, 80-HP & Perkins T4.236, 102-HP	**Optional**
1	980-0506-11	Engine Cover Hood	
2	980-0506-09	Radiator Shroud	
3	980-0506-10	Rear Shroud	
4	981-0500-34	Gauge Panel Cover	
5	980-0111-55	Right Side Door Panel	
6	980-0107-57	Left Side Door Panel	
7	980-0506-12	Engine Cover Frame	

MODEL 1250 ENGINE COMPONENTS

ITEM	PART NUMBER	DESCRIPTION	
		A) Cummins 6BTA 5.9, 177-HP & Cummins 6BTA 5.9-C, 200-HP	**Optional**
1	980-0505-52	Engine Cover Hood	
2	980-0505-51	Radiator Shroud	
3	980-0505-53	Rear Shroud	
4	981-0500-34	Gauge Panel Cover	
5	980-0110-05	Right Side Door Panel	
6	980-0110-40	Left Side Door Panel	
7	980-0505-57	Engine Cover Frame	
		B) John Deere 6359A, 176-HP	
1	980-0506-15	Engine Cover Hood	
2	980-0506-14	Radiator Shroud	
3	980-0506-13	Rear Shroud	
4	981-0500-34	Gauge Panel Cover	
5	980-0111-43	Right Side Door Panel	
6	980-0111-45	Left Side Door Panel	
7	980-0505-98	Engine Cover Frame	





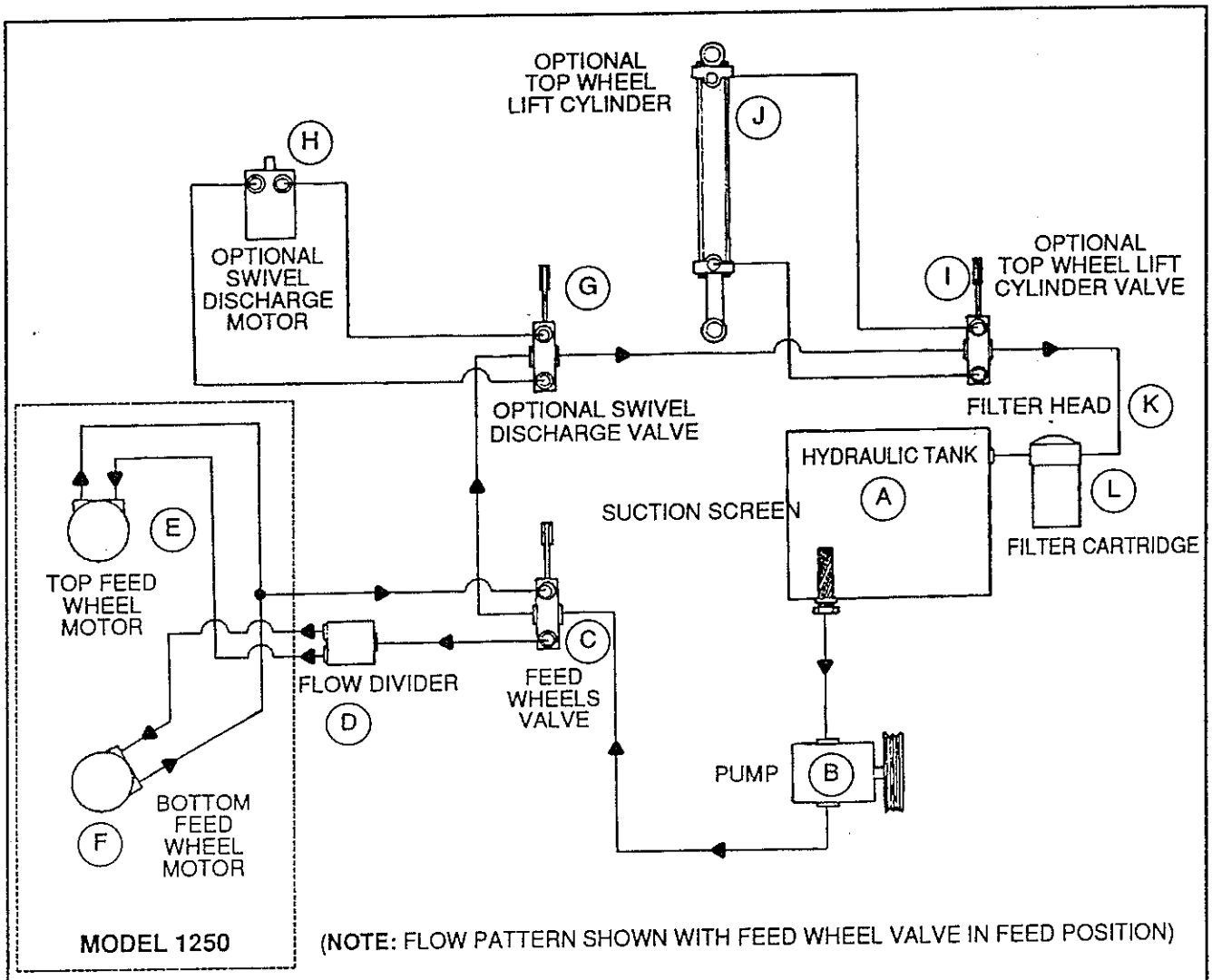
MODEL 250

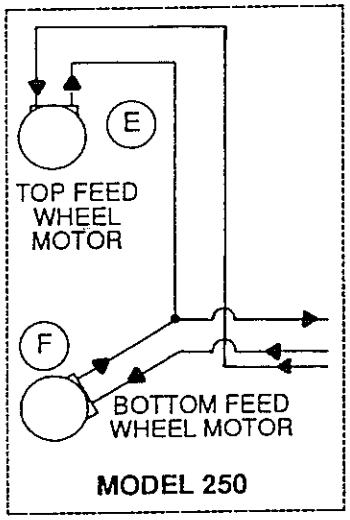
(Model 250 has a smaller cu. in. motor which rotates reverse that of the Model 1250 motor. Therefore, motors must be connected reverse on different models.)

TO FEED WHEEL VALVE

FROM FLOW DIVIDER

MODEL 250 PART NUMBER	MODEL 1250 PART NUMBER	DESCRIPTION
		FROM (A) HYDRAULIC TANK TO (B) HYDRAULIC PUMP
980-0500-09	---	1) Triangular Hydraulic Tank - 8 Gallon (No Sight Gauge)
980-0500-51	---	2) Triangular Hydraulic Tank - 8 Gallon (For Tube Sights)
980-0505-96	---	3) Triangular Hydraulic Tank - 8 Gallon (For Screw-In Type Sight Gauge)
980-0505-94	980-0505-94	4) Triangular Hydraulic Tank - 12 Gallon (No Sight Gauge)
980-0505-95	980-0505-95	5) Triangular Hydraulic Tank - 12 Gallon (For Tube Sights)
980-0505-87	980-0505-87	6) Triangular Hydraulic Tank - 12 Gallon (For Screw-In Type Sight Gauge)
980-0506-00	980-0506-00	7) Rectangular Hydraulic Tank - 20 Gallon (Single Suction and Return - With Sight Gauge)
980-0506-01	980-0506-01	8) Rectangular Hydraulic Tank - 20 Gallon (Double Suction and Return - With Sight Gauge)
980-0104-95	980-0104-95	9) Rubber Cushion for Tanks
900-3902-09	900-3902-09	10) Filler Cap Sight Gauge 12"
980-0505-97	980-0505-97	11) Tube Type Sight Gauge Kit
900-3900-44	900-3900-44	12) Screw-In Type Sight Gauge
900-3900-05	900-3900-05	13) Filler Cap - With Strainer
900-3901-10	900-3901-10	14) Filler Cap Only
900-3900-07	900-3901-41	15) Suction Screen
900-3904-57	---	16) 3/4" x 27-1/2" Hose
---	900-3901-48	17) 1" x 30" Hose
900-3902-18	900-3902-19	18) Hydraulic Pump
		FROM (B) HYDRAULIC PUMP TO (C) FEED WHEELS VALVE
900-3904-55	900-3904-55	19) 1/2" x 33" Hose
900-3900-12	900-3900-12	20) Feed Wheels Valve
		FROM (C) FEED WHEELS VALVE TO (D) FLOW DIVIDER
---	900-3900-47	21) 1/2" x 9-1/2" Hose
900-3901-00	900-3901-40	22) Flow Divider





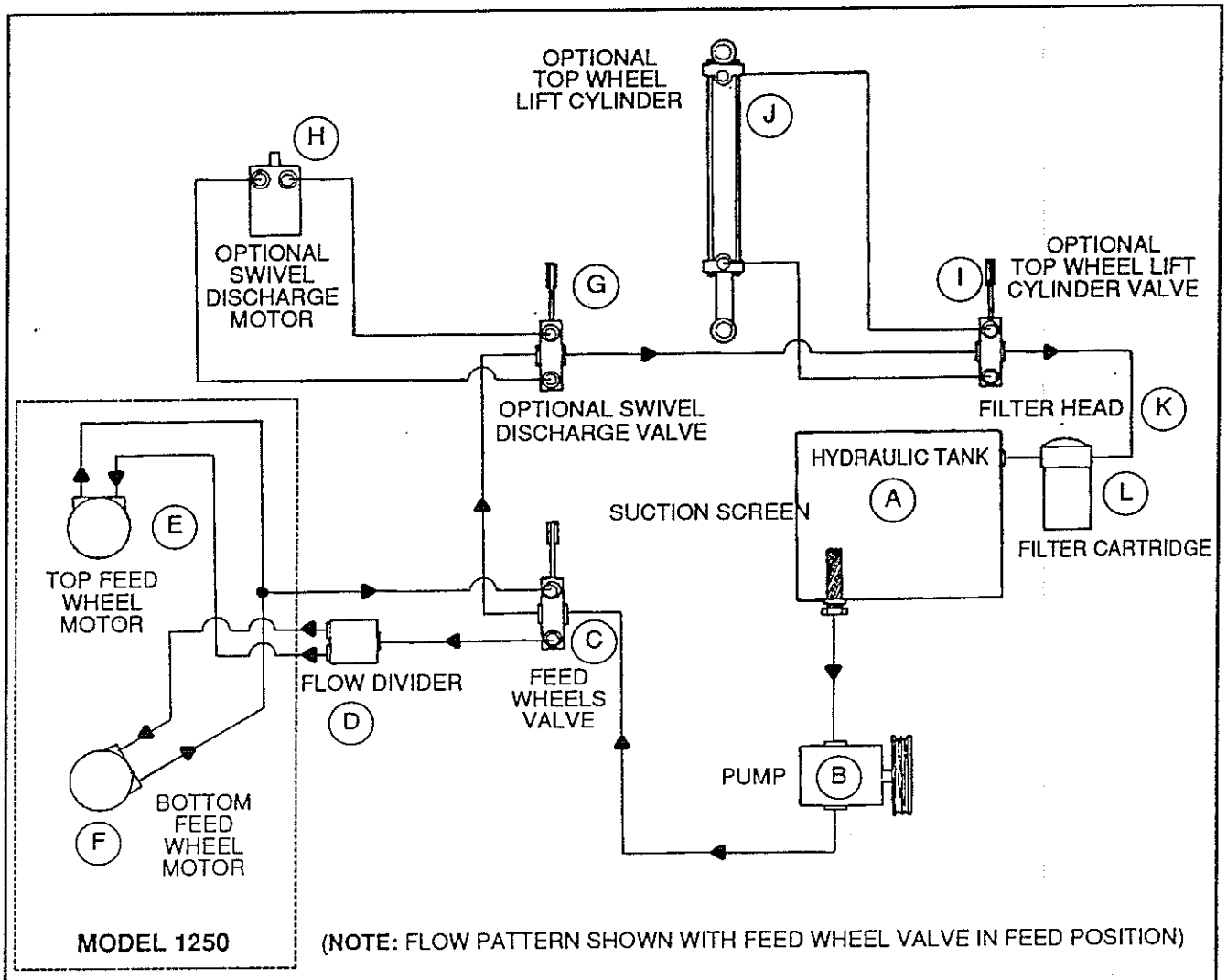
MODEL 250

(Model 250 has a smaller cu. in. motor which rotates reverse that of the Model 1250 motor. Therefore, motors must be connected reverse on different models.)

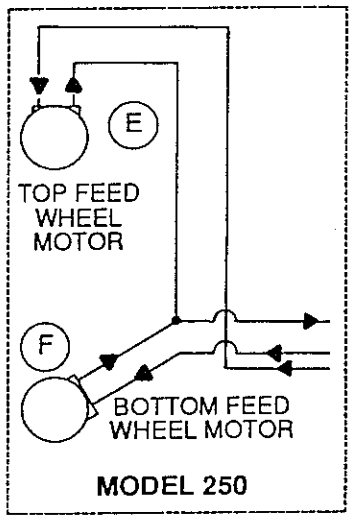
TO FEED WHEEL VALVE

FROM FLOW DIVIDER

MODEL 250 PART NUMBER	MODEL 1250 PART NUMBER	DESCRIPTION
		FROM (D) FLOW DIVIDER TO (E) TOP FEED WHEEL MOTOR
---	900-3900-82	23) 1/2" x 32" Hose
900-3902-47	---	24) 3/8 x 32" Hose
900-3900-08	900-3901-39	25) Top Feed Wheel Motor
		FROM (D) FLOW DIVIDER TO (F) BOTTOM FEED WHEEL MOTOR
900-3904-51	---	26) 3/8" x 16-1/2" Hose
--	900-3905-04	27) 1/2" x 15" Hose
900-3900-08	900-3901-39	28) Bottom Feed Wheel Motor
		FROM (F) BOTTOM FEED WHEEL MOTOR TO (C) FEED WHEEL VALVE
900-3904-54	---	29) 1/2" x 11" Hose
---	900-3900-82	30) 1/2" x 32" Hose
900-3900-12	900-3900-12	31) Feed Wheels Valve
		FROM (E) TOP FEED WHEEL MOTOR TO (C) FEED WHEELS
900-3904-52	---	32) 3/8" x 31" Hose
---	900-3900-82	33) 1/2" x 32" Hose
900-3900-12	900-3900-12	34) Feed Wheels Valve
		FROM (C) FEED WHEEL VALVE TO (G) SWIVEL DISCHARGE VALVE
900-3904-99	900-3904-99	35) 1/2" x 18" Hose
900-3901-42	900-3901-42	36) Swivel Discharge Valve
		FROM ((G) SWIVEL DISCHARGE VALVE TO (H) SWIVEL DISCHARGE MOTOR
900-3905-03	900-3905-03	37) 13/8" x 21-1/2" Hose
900-3902-14	900-3902-14	38) Swivel Discharge Motor
		FROM (H) SWIVEL DISCHARGE MOTOR TO (G) SWIVEL DISCHARGE VALVE
900-3900-29	900-3900-29	39) 3/8" x 23" Hose
900-3901-42	900-3901-42	40) Swivel Discharge Valve



(NOTE: FLOW PATTERN SHOWN WITH FEED WHEEL VALVE IN FEED POSITION)

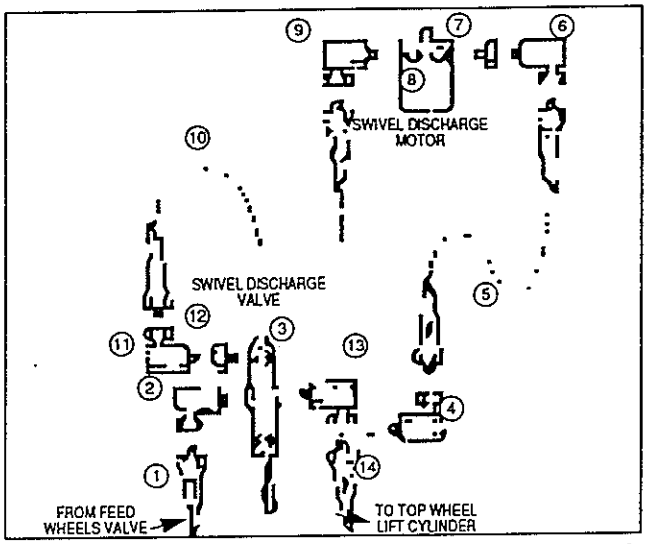


MODEL 250

(Model 250 has a smaller cu. in. motor which rotates reverse that of the Model 1250 motor. Therefore, motors must be connected reverse on different models.)

MODEL 250 PART NUMBER	MODEL 1250 PART NUMBER	DESCRIPTION
		FROM (G)SWIVEL DISCHARGE VALVE TO (I) TOP WHEEL LIFT CYLINDER VALVE
900-3905-01	900-3905-01	41) 1/2" x 73" Hose
900-3901-24	900-3901-24	42) Top Wheel Lift Cylinder Valve
		FROM (I) TOP WHEEL LIFT CYLINDER VALVE TO (J) TOP WHEEL LIFT CYLINDER
900-3903-72	900-3903-72	43) 3/8" x 58" Hose
900-3902-27	900-3902-27	44) Top Wheel Lift Cylinder
		FROM (J) TOP WHEEL LIFT CYLINDER TO (I) TOP WHEEL LIFT CYLINDER VALV3
900-3903-72	900-3903-72	45) 3/8" x 58" Hose
900-3901-24	900-3901-24	46) Top Wheel Lift Cylinder Valve
		FROM (I) TOP WHEEL LIFT CYLINDER VALVE TO (K)FILTER HEAD AND (L) FILTER CARTRIDGE
900-3903-91	900-3903-91	47) 1/2" x 110" Hose
900-3900-09	900-3900-09	48) Filter Head
900-3900-10	900-3900-10	49) Filter Cartridge
		FROM (K) FILTER HEAD TO (A) HYDRAULIC TANK

With all the optional equipment available, hydraulic components can very drastically.
All fittings can be ordered by physical description.

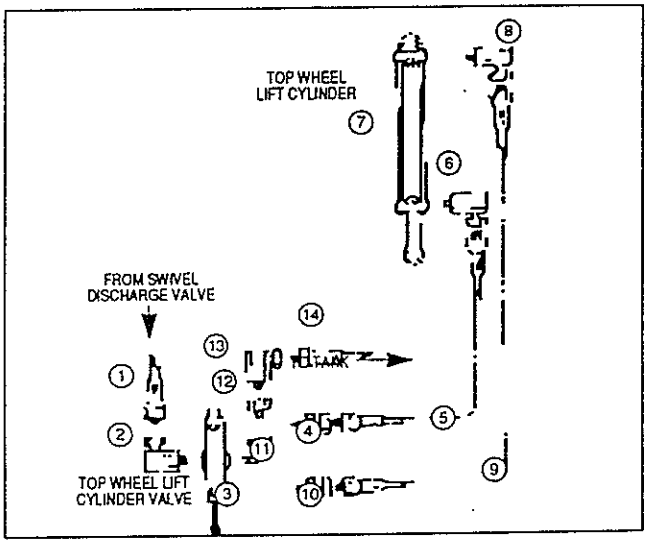


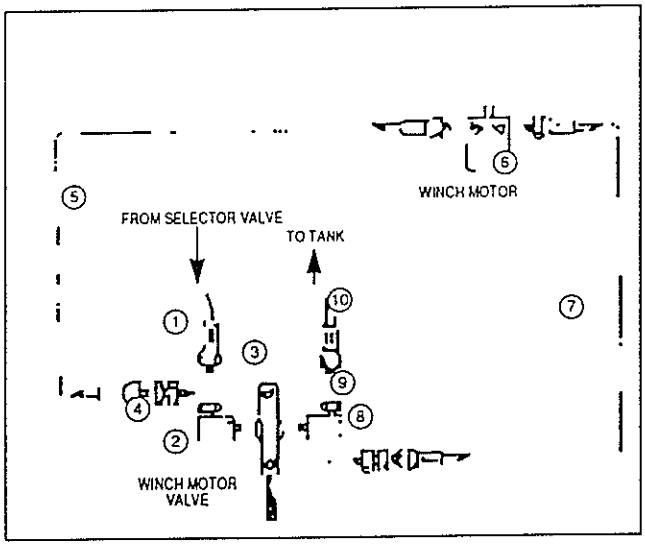
OPTIONAL HYDRAULIC SWIVEL DISCHARGE

	DESCRIPTION	PART NUMBER
1	1/2" x 18" Hose	900-3904-99
2	3/4" (M) NPT to 1/2" (F) NPT 90° Swivel	900-3900-22
3	Swivel Discharge Valve	900-3901-42
4	1/2" (M) NPT to 3/8" (F) NPT 90° Swivel	900-3900-22
5	3/8" x 21-1/2" Hose	900-3905-03
6	3/8" (M) NPT to 3/8" (F) NPT Restricted 90° Swivel	900-3901-46
7	1/2" (M) NPT to 3/8" (F) NPT Bushing	900-3900-84
8	Swivel Discharge Motor	900-3902-14
9	1/2" (M) NPT to 3/8" (F) NPT 90° Swivel	900-3901-44
10	3/8" x 23" Hose	900-3900-29
11	3/8" (M) NPT to 3/8" (F) NPT Tall 90° Swivel	900-3901-45
12	1/2" (M) NPT to 3/8" (F) NPT Bushing	900-3900-84
13	3/4" (M) NPT to 1/2" (F) NPT 90° Swivel	900-3900-22
14	1/2" x 73" Hose	900-3905-01

OPTIONAL TOP WHEEL LIFT CYLINDER

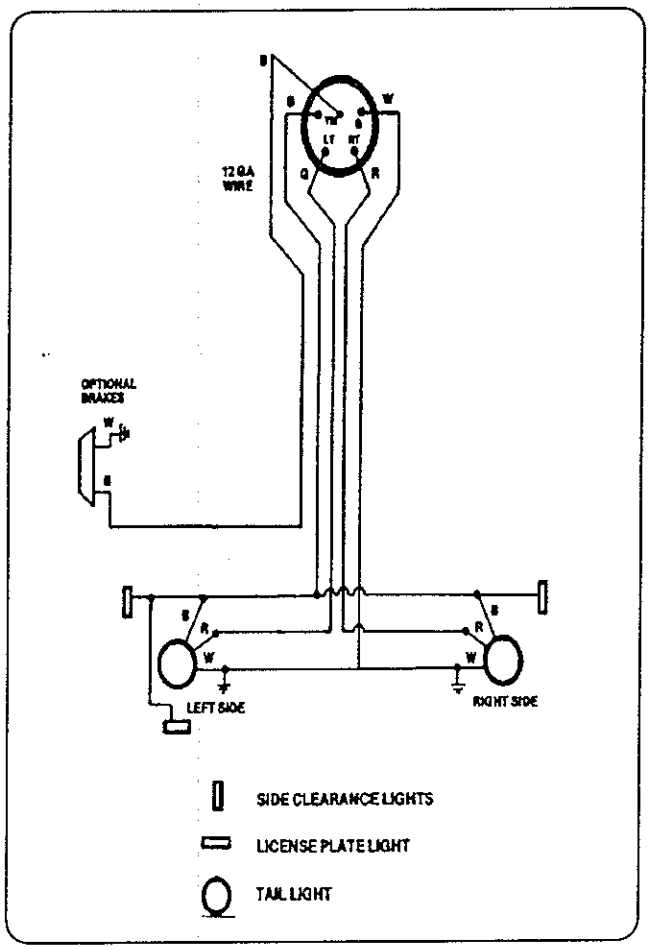
	DESCRIPTION	PART NUMBER
1	1/2" x 73" Hose	900-3905-01
2	3/4" (M) NPT to 1/2" (F) NPT 90° Swivel	900-3900-22
3	Top Wheel Lift Cylinder Valve	900-3901-24
4	1/2" (M) NPT to 3/8" (F) NPT Straight Swivel	900-3900-16
5	3/8" x 58" Hose	900-3900-72
6	3/8" (M) O-Ring to 3/8" (F) NPT 90° Swivel	900-3900-18
7	Top Wheel Lift Cylinder	900-3902-27
8	3/8" (M) O-Ring to 3/8" NPT 90° Swivel	900-3900-18
9	3/8" x 58" Hose	900-3903-72
10	1/2" (M) NPT to 3/8" (F) NPT Straight Swivel	900-3900-16
11	3/4" - 90° Street Elbow	900-3900-49
12	3/4" (M) NPT to 1/2" (F) NPT Bushing	900-3900-73
13	1/2" (M) NPT to 1/2" (F) NPT Tall 90° Swivel	900-3905-05
14	1/2" x 110" Hose	900-3903-91

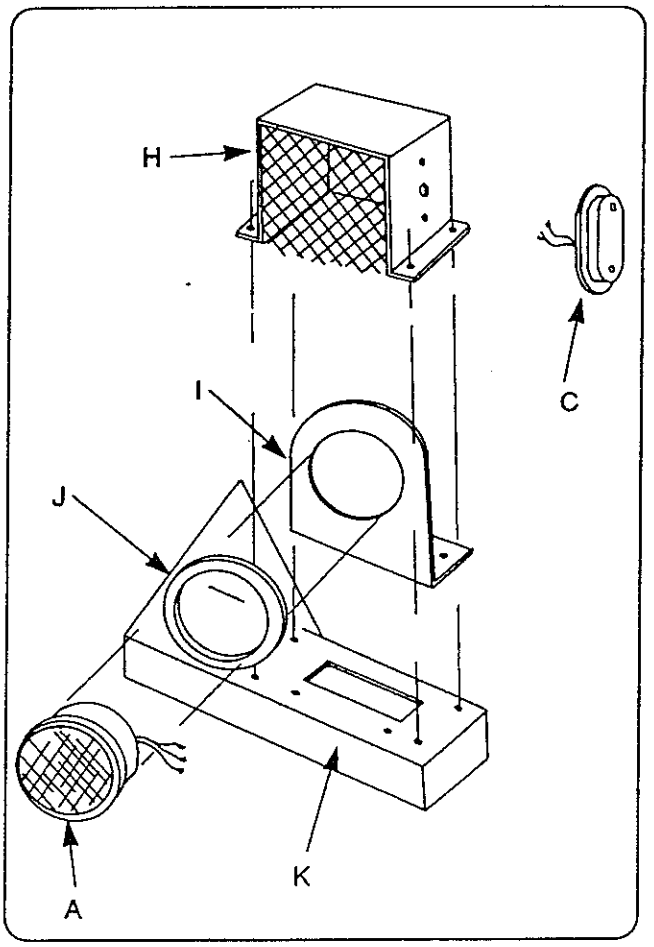




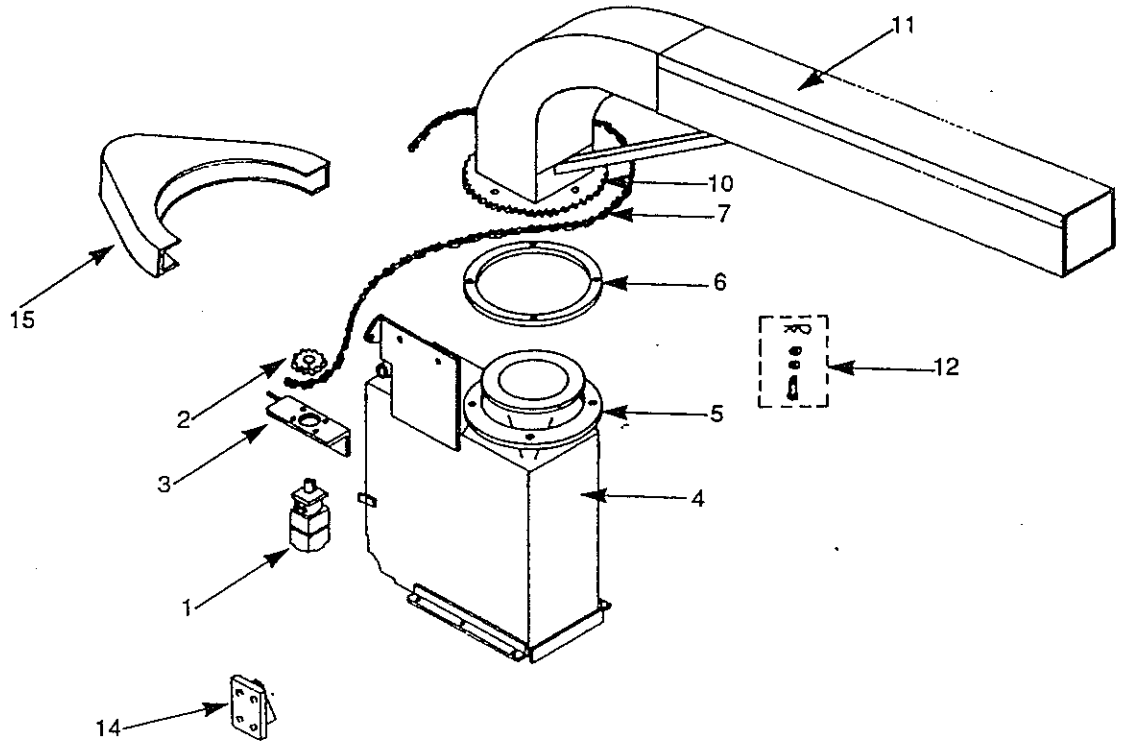
OPTIONAL WINCH

	DESCRIPTION	PART NUMBER
1	1/2" x 32" Hose	900-3900-82
2	3/4" (M) NPT to 1/2" (F) NPT 90° Swivel	900-3900-22
3	Winch Motor Valve	900-3901-42
4	1/2" (M) NPT to 1/2" (F) NPT Straight Swivel	900-3902-68
5	1/2" x 38" Hose	900-3905-00
6	Winch Motor	900-3900-08
7	1/2" x 38" Hose	900-3905-00
8	1/2" (M) NPT to 1/2" (F) NPT Straight Swivel	900-3902-68
9	3/4" (M) NPT to 1/2" (F) NPT 90° Swivel	900-3900-22
10	1/2" x 102" Hose	900-3905-02



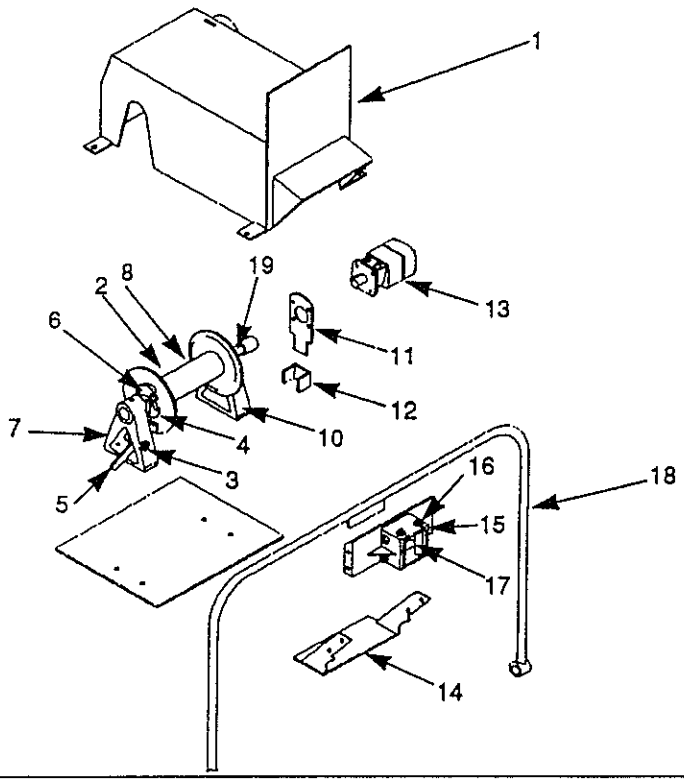


WIRE COLOR CODING	DESCRIPTION	PART NUMBER
	A Tail Light	900-2900-01
B - Black	B) License Plate Light	900-2900-07
	C) Side Clearance Lights	900-2900-03
R - Red	D) 6-Prong Plug In Female	900-2900-17
	E) 6-Prong Plug In Male	900-2900-18
G - Green	F) Red Reflector	900-2900-05
	G) Amber Reflector	900-2900-06
W - White	H) Right Side H.D. Taillight Cover	980-0502-34R
	Left Side H.D. Taillight Cover	980-0506-17L
	I) Taillight Mount Bracket	900-2900-21
	J) Rubber Mount	900-2900-39
	K) Right Side H.D. Taillight Mount (Weld-On)	981-0500-27R
	Left Side H.D. Taillight Mount (Weld-On)	981-0500-28L



ITEM	PART NUMBER	DESCRIPTION
1	900-3900-08	Motor - Hydraulic Swivel Discharge
2	900-1901-21	Sprocket for Motor
3	980-0505-25	Adjustable Mount for Motor
4	980-0505-29	Half Hood - Hydraulic Swivel Discharge
5	980-0110-65	Bottom Ring
6	980-0110-64	Spacer Ring
7	900-1901-20	Roller Chain
8	900-1901-18	Half Link - Chain (not shown)
9	900-1901-19	Master Link - Chain (not shown)
10	980-0110-63	Sprocket for Discharge (Weld-On)
11	980-0505-24	Discharge Assembly
12	914-0500-79	Pin Lock Assembly
13	900-3901-42	Swivel Discharge Valve (not shown)
14	980-0506-04	Mount for Swivel Discharge Valve
15	980-0505-69	Chain Guard

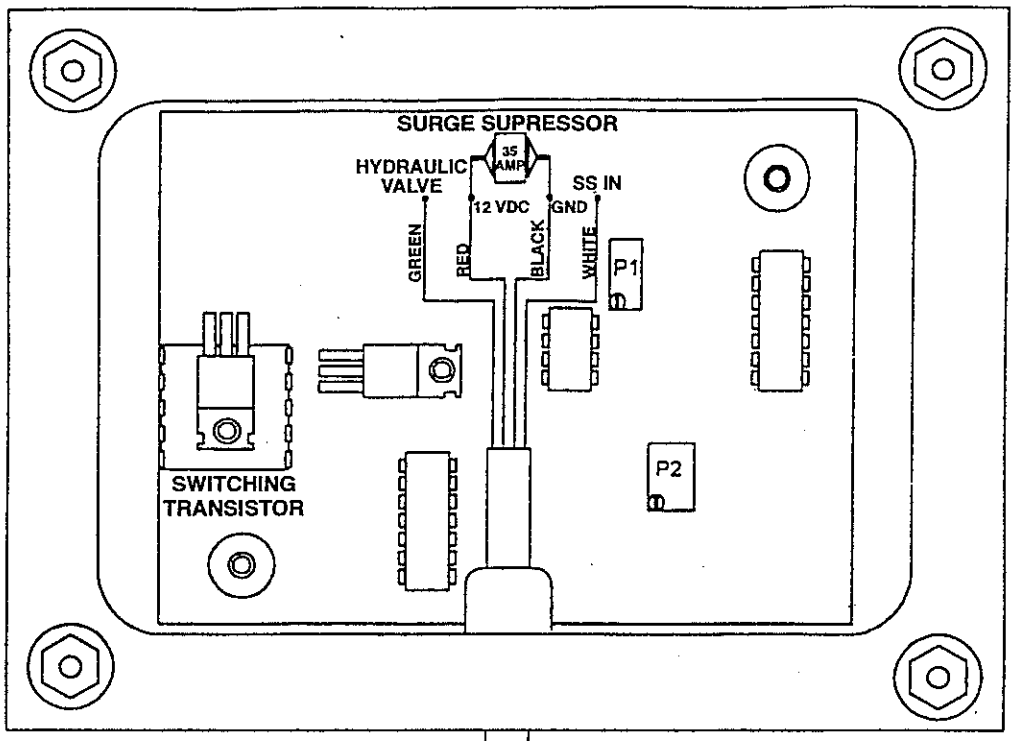
NOTE -- CONSULT HYDRAULIC SECTION FOR HOSES -- ALL FITTINGS CAN BE ORDERED BY PHYSICAL DESCRIPTION

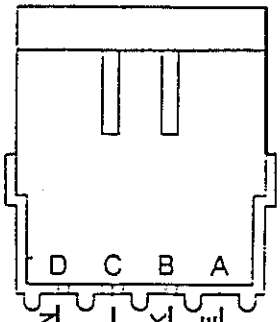


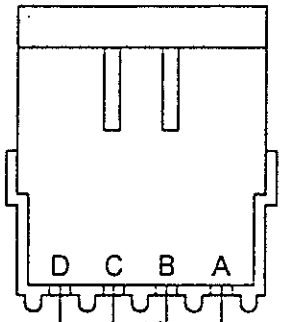
ITEM	PART NUMBER	DESCRIPTION
1	980-0506-20	Winch Cover Assembly
2	900-3905-13	Winch Drum Assembly with Clutch
3	900-3905-14	Pull Pin Assembly
4	900-3905-15	Brakeshoe with Pin, Spring, and Rings
5	900-3905-16	Shifter Lever
6	900-3905-17	Clutch
7	900-3905-18	A-Shaped Mount Bracket (Lever End)
8	900-3905-19	Drum
9	900-3905-20	Cable Clamp with Bolt (not shown)
10	900-3905-21	A-Shaped Mount Bracket (Motor End)
11	981-1001-01	Torque Arm - Motor
12	981-1001-03	Lock Block - Torque Arm
13	900-3900-08	Winch Motor
14	980-0506-02	Mount Bracket for Winch Rollers Assembly (Weld-On)
15	980-0505-82	Winch Rollers Assembly
16	914-1004-21	Bolt for Roller
17	914-1004-22	Roller
18	980-0506-03	Feed Wheel Control Handle
19	900-3905-22	Shaft for Winch with Keys

NOTE – CONSULT HYDRAULIC SECTION FOR HOSES -- ALL FITTINGS CAN BE ORDERED BY PHYSICAL DESCRIPTION

ELECTRONIC AUTOFEED BANDIT PART #900-2901-97







TO HYDRAULIC VALVE

TO GROUND

TO ALTERNATOR OR TACHOMETER SIGNAL

SWITCH

FUSE

TO 12 V.D.C.

P1 One turn clockwise rotation raises RPM setting by 50 Hz.

One turn counterclockwise rotation lowers RPM setting by 50 Hz.

P2 One turn counter clockwise rotation raises RPM spread by approximately 4 HZ.

One turn clockwise rotation lowers RPM spread by approximately 4 Hz.

Suggested RPM spread differential approximately 400 RPMs.

FEATURES:

The Speed Sensor Control includes several features.

- The Box is rubber mounted to help prevent vibration.
- Protecting the circuitry is a large surge suppressor.
- The entire circuit board is dipped in a protective coating to guard it against moisture and corrosion and then potted with silicone.
- The Output Switching Transistor is rated at 10 amps.
- There are two adjustments, one for increasing and decreasing the RPM sensing, and the second for the RPM spread.

This style autofeed option in effect as of 8/29/96

PROPER PROCEDURE FOR INSTALLING J.B. COUPLERS AND TAPERED FEEDWHEEL MOTORS

A. **Proper Equipment Needed:**

1. Feedwheel motor with tapered shaft.
2. A. 5/16" x 9/32" x 15/16" long key for RE motor.
   B. 3/16" x 3/16" x 3/4" long key for RS motor.
3. Correct feedwheel shaft, coupler and tapered pin assembly.
4. Loctite RC-271.
5. Emery cloth and/or a file.
6. A degreaser agent.
7. Pack nut.
8. Hammer.
9. Torque wrench and 1-3/16" socket RS motor - 1-3/8" socket RE motor.

B. **Installation Procedure**

1. Remove any sharp edges on the coupler bores or the motor shaft. Example: Emery cloth or file for burrs on keyways or shafts.
2. Clean the coupler bores and motor shaft with a degreasing solvent.
3. Install the correct key in the feedwheel motor shaft.
4. Slide the coupler onto the motor shaft, making sure that the two mate tightly. Example: The coupler does not rock or slop on the shaft.
5. Install the pack nut with RC-271 on the threads.
6. Tighten to the correct torque (RS motors 150-170 ft. lbs., RE motors 240 ft. lbs.
7. Slightly tap with a hammer on the coupler face to insure proper seating.
8. Re-torque pack nut.
9. Deburr and degrease the feedwheel shaft.
10. Install the motor and coupler assembly onto the feedwheel shaft.
11. Install the correct tapered pin through the coupler and feedwheel motor.
12. Hammer the pin into the coupler to secure the coupler and feedwheel shaft.

