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NOTE- ANY PART, PORTION, DESIGN, NUMBER, SPECIFICATION, AND/OR DIMENSION IN THIS MANUAL IS SUBJECT TO CHANGE WITHOUT NOTICE BY THE MANUFACTURER.

Bandit

INTRODUCTION

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 preceded 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
NOTICE	Important, but not hazard related	Minor

The chipper is designed and manufactured in accordance with the latest chipper industry standards. 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 a 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.

Bandit

**BANDIT INDUSTRIES, INC. LIMITED WARRANTY
(989) 561-2270**

NOTE: This warranty applies only to new and unused equipment or parts thereof manufactured by Bandit Industries Inc. and is void if the machine is operated with replacement parts or equipment not manufactured or recommended by Bandit Industries Inc.

All other components are warranted by their respective manufacturers (i.e. engines, axles, clutches, tires, batteries, etc.) Any machines used for lease or rental purposes warranty is limited to 90 days from the first day of initial service.

**NATIONAL INFORMATION PHONE NUMBERS FOR ACCESSORIES
(NOT COVERED UNDER CHIPPER WARRANTY PROGRAM)**

Cummins Engines	1-248-478-9700	Dexter Axles	1-574-295-7888
John Deere Engines	1-715-365-0500	Interstate Batteries	1-800-331-2000
Ford Engines	1-800-726-8870	Rockford Clutch	1-800-383-9204
Caterpillar Engines	1-800-551-2938	Twin Disc Clutch	1-630-250-0370
GM, Perkins Engines	1-800-551-2938	PGL Auto Clutch	1-800-551-2938
L.O.R. MFG.	1-866-644-8622	Electronic Solutions	1-866-736-6839
Tires	1-989-463-4088		

In order to process any warranty claims, it is the owner's responsibility to report the claims promptly to the Manufacturer, or our authorized dealer from whom the equipment was purchased.

It is necessary to include the following information on any and all requests for warranty:

- 1) Warranty Claim Form, obtained from Bandit Industries or it's dealers, completely and accurately filled out.
- 2) Dealer from whom purchased.
- 3) Date of delivery.
- 4) Serial number of unit.
- 5) Model number of unit.
- 6) Engine make and serial number.
- 7) Length of time in use.
- 8) Date of Failure.
- 9) Nature of Failure.

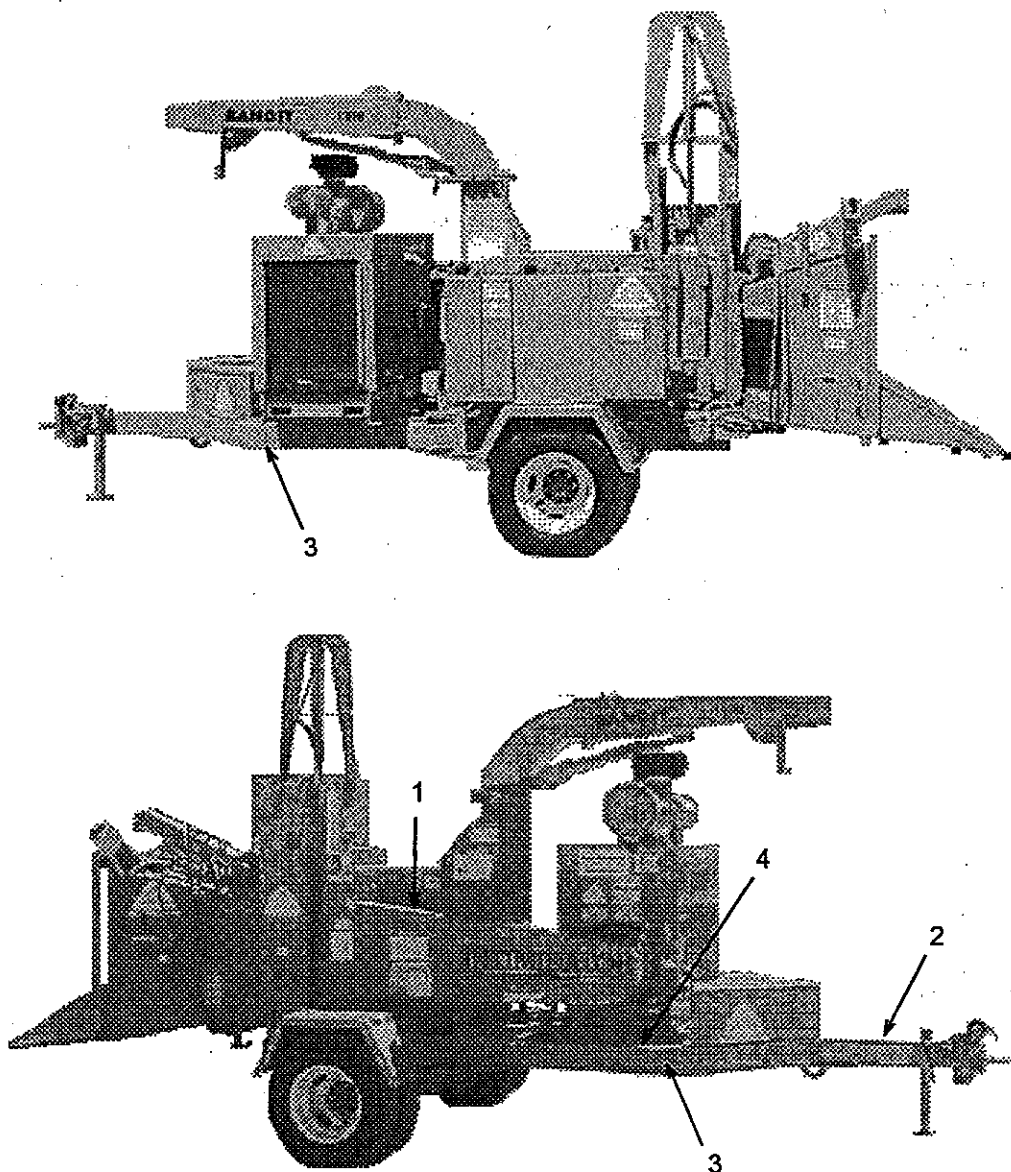
Bandit Industries Inc., reserves the right to alter, improve, revise or modify any parts or products with the altered, improved, revised or modified parts or products. They also may change design, specifications, or part prices without advance notice.

Bandit Industries Inc., is NOT responsible for updating or upgrading completed machines with design changes that are made after it's production.

Bandit Industries Inc., expects the Customer/Owner to bring their Chipper to the Dealer/Manufacturer for Warranty Repairs. The Manufacturer DOES NOT pay Dealers or Customers for bringing their machine in for repair. Nor does the Manufacturer furnish loaner machines while the unit is being repaired.

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TYPICAL CHIPPER SERIAL NUMBER AND/OR WORK ORDER NUMBER LOCATIONS



1. Belt shield
2. W/O # on top of tongue
3. Side of frame (other side of frame)
4. Top of frame

NOTE: The engine information is located on the engine block. The clutch information is located on the clutch plate.

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SAFETY PROCEDURES

⚠ DANGER

The words ⚠ Danger, ⚠ Warning, ⚠ Caution, and Notice are used on the safety decals and throughout this manual, to make you aware of the safety procedures. These procedures are very important, read and obey them.

YOUR SAFETY IS VERY IMPORTANT TO US!

This machine is equipped with safety decals, guards and designs for your protection.

Don't ever take the machine for granted, always be cautious and careful when operating your equipment.

Read and follow all the instructions in your manual thoroughly. Your safety is dependent on your knowledge of how to operate and maintain this machine. You may obtain additional copies of this manual from your Bandit Dealer.

Before operating chipper, you must have all potential operators; read and understand manuals, and follow the recommendations.

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.

This equipment is intended for use by personnel who are experienced with similar equipment. Always operate safely. It is also recommended that someone else is present while chipping or servicing in case an accident should occur. Never operate any machine while under the influence of drugs or alcohol.

Keep children, bystanders and animals clear of working area. Never operate equipment that is in need of repair or adjustment.

⚠ 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 hopper area. All tools not in use should be secured in a tool box.

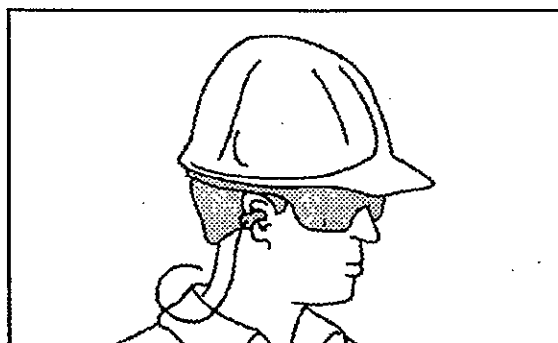
⚠ WARNING

Operators **must** at all times be located within easy reach of all feed control and shut-off devices when the unit is running. They must be attentive and prepared to activate the devices.

⚠ DANGER

Torn or loose clothing is more likely to get caught in moving machinery parts or tree branches. Keep such items as long hair, shirt sleeves, and shirt tails properly contained. Avoid wearing necklaces, rings, watches, and especially neckties while operating this machinery. Make sure the machine is in excellent condition, and all the guards are in place, tight and secure.

Wear all personal protection equipment and follow all safety standards per ANSI and OSHA instructions. Examples of equipment: hard hat, safety glasses, gloves, ear protection, etc. Always keep a fully charged fire extinguisher with the machine while chipping and servicing the machine.

**Bandit**

SAFETY PROCEDURES

⚠ DANGER

Never reach into the infeed hopper area of the chipper. There is never any reason to. The feedwheels are designed to pull trees and brush of any length into the chipper. Pulling a hand, arm, foot or entire body through the machine is much easier than pulling a tree. Do not think you will be able to pull yourself free of the feedwheels they will not let go. There is absolutely no reason to work inside of the infeed hopper. If the feedwheels become tangled or clogged, make sure to disengage clutch, turn off engine, wait for the drum to come to a complete stop, install the drum lock pin, disconnect battery, and make sure the ignition key is in your possession, before cleaning them out. If there are short pieces, or leaves and twigs, just leave them until feeding longer pieces. While the long pieces are feeding, simply toss the short pieces on top of them. The longer pieces will take them on into the chipper.

A wooden push paddle has been provided to assist in feeding smaller material. It is the owner's and operator's responsibility to use and keep a wooden push paddle with the chipper and to also secure it when transporting the machine. DO NOT use any body parts or any steel devices inside the infeed hopper area.

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

When feeding larger diameter wood, listen for the engine to possibly lug down. If it starts lugging down stop the feedwheels by pushing the hydraulic control bar to off, and let the engine recover to full speed. This will help stop the chipper from plugging the discharge chute.

⚠ DANGER

NEVER sit, stand, lay, climb or ride anywhere on this machine while it is running, operating, or in transit. You will be injured.

⚠ DANGER

Pay attention to the direction of the discharge chute before chipping. Never stand in front of the chipper discharge chute. Never direct the chute towards anyone or anything that could cause an accident or problems. Always stop chipping and warn anyone that comes near the discharge area. Failure to do this could result in severe injury. Wood chips flying out of the discharge chute can be very dangerous!

⚠ DANGER

The "Last Chance Stop" is a means of stopping/reversing the feedwheels if a negligent operator does not follow the safety rules and finds themselves in trouble! **DO NOT RELY ON THE "LAST CHANCE STOP" TO DISOBEY THE OPERATOR RULES!** The "Last Chance Stop" does nothing for the foolish operator who reach's or kicks into the infeed hopper area.

⚠ DANGER

DO NOT operate this machine indoors! Exhaust fumes can be fatal. Never refuel while the chipper is running. Never refuel in the shop or building. Always refuel in a well ventilated area, away from sparks or open flames, **DO NOT SMOKE**. Extinguish all smoking materials. Wipe up all spilled fuel before restarting the engine. Do not fill above 1/2" from top of tank.

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.

⚠ WARNING

Never use jumper cables during freezing temperatures. Tow the machine inside and allow the battery time to warm up. If the machine must be started outside, inspect the battery acid for ice formation. Explosion will occur with a frozen battery. Never use jumper cables in a confined or unventilated area. Battery acid fumes are explosive. Never expose a open flame or spark near the battery.

Bandit

SAFETY PROCEDURES

WARNING

It is very important after you have operated a new machine for approximately an hour to shut down the machine and recheck all nuts and bolts. It is normal for bolts to loosen once on a new piece of machinery. If you tighten them now, there is a good possibility they won't loosen again. Certain bolts must be checked periodically such as anvil and knife bolts, etc. for torque and fit.

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

After the engine is started, let the chipper drum turn at the lowest RPM's possible. Listen for any type of noise that is foreign. Any steel on steel noise is foreign. If you hear a noise, stop the engine, find the problem and fix it.

DANGER

Before attempting any type of maintenance disengage clutch, turn off engine, wait for the drum to come to a complete stop, install the drum lock pin, disconnect battery, and make sure the ignition key is in your possession.

ALWAYS install the lock pin into the chipper drum lock tube before working on the chipper.

Simply slide the lock pin into the drum lock tube. This is to insure that the drum cannot be started while you are working inside the chipper. If for some reason the drum would start to turn, it would simply hit the lock pin.

DANGER

DO NOT remove the hood pin until the chipper drum has come to a complete stop. The chipper drum will coast for several minutes after the engine is shutdown. Always wait at least several minutes.

DO NOT operate this machine without the Hood Pin in place. Do not operate the machine with any type of makeshift hood pin or an improperly installed hood pin! The Hood Pin MUST be padlocked.

DO NOT operate the machine with the chipper hood open under any circumstances.

DANGER

Before using the top feedwheel jack, remove the easy climb springs. Install lock pin in mount tube after using hand jack to raise top feedwheel. Hand jack is only provided as a means of lifting the top feedwheel, not holding it up for service.

WARNING

DO NOT GO NEAR HYDRAULIC LEAKS! High pressure oil easily punctures skin causing serious injury, gangrene, or death. DO NOT use fingers or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings. Use a piece of cardboard to find leaks. Never use your bare hands.

In cold weather situations let your hydraulic system idle for approximately 15 minutes to allow the system to warm up to operating temperature.

WARNING

Before you begin to transport your trailerized machine make sure all of the transportation procedures on page 40 are followed. Make sure that the tongue jack has been raised to the proper height and attach the machine securely to the towing vehicle. Once secured to vehicle locate tongue jack and secure it in the transport position. Always hook safety chains to vehicle by crossing them under the tongue allowing enough slack to avoid binding when making turns. Check brakes and highway lights make sure that they are all operating properly. Make sure that the discharge chute is in the transport position pointed over the tongue of chipper and be sure to check tire pressure before you begin to transport the machine.

SAFETY PROCEDURES

⚠ DANGER

Do not work inside the mouth of the chipper or around the feedwheels, until you have installed the yoke lock pin to keep the top feedwheel in the raised position.

⚠ WARNING

The machine was built with a chipper hood engine disable plug which disables the engine if it is not installed properly with the hood pin holding the chipper hood in the closed position. Correctly installed and maintained, the engine will not start or it will shut off if the chipper hood engine disable plug is disconnected. The chipper hood must NEVER be opened, operated, or pushed closed if the chipper drum is turning.

⚠ DANGER

DO NOT slam the chipper hood to the open position. This will cause damage to the hinge. If your hinge has become damaged by slamming the hood to the open position, Replace The Hinge Immediately! If the hinge has become damaged it will cause misalignment of the hood, the chipper drum may then hit the hood and cause a serious accident!

⚠ DANGER

Never turn the chipper drum by hand always use a pry bar. This will prevent the person turning the drum from being injured should the drum break loose.

A sight hole in the chipper belt shield has been provided. If chipper belts can be seen turning do not open chipper hood. Do not stick fingers in sight hole.

⚠ DANGER

Do not work on the machine if the engine is running with the clutch disengaged. A clutch can self engage if either the pilot or throw-out bearing happens to seize to the main output shaft.

There are various types of clutches (PTO's) available for this type of equipment. Make sure to study the original clutch manufacturer's manual that is provided with the machine and follow its instruction for operation, service and adjustments. Some styles require clutch engagement to be maintained so that it takes a lot of force, others will require very little force, and some are push button, electric or hydraulic, activation. Each different style clutch (PTO) is a very expensive item that will fail if not correctly maintained and adjusted. It will be quite costly if a few minutes are not taken daily, weekly, and monthly to keep the clutch serviced as required.

The operator must take care in the engagement and disengagement of the engine, RPM should always be below 1000 RPM. When the engine has sufficiently warmed up, bump the clutch handle against engagement to start the drum turning. This will have to be repeated until the chipper drum is turning at proper ratio with engine RPM. Then push the handle all the way in gear until it locks into position securely. 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.

SAFETY PROCEDURES

⚠ WARNING

Always stand to the side of the infeed hopper when inserting material. This will allow you to turn away from the wood, and walk away, without passing through the material. Chippers should be fed from curbside (right side) whenever possible. Anytime an operator is near infeed hopper, they must be attentive, within easy reach of, and prepared to operate the feed control devices.

To increase production, don't waste time watching the material being fed. Once the limbs have started into the machine, you can walk away and get more material.

Keep the feedwheel tension springs adjusted only tight enough to keep the feedwheel teeth from slipping on the material. **DO NOT OVERTIGHTEN!** This will overwork the hydraulic system, and make it difficult to feed larger material.

Always start the larger end (base end) of the log or branch into the feedwheels first.

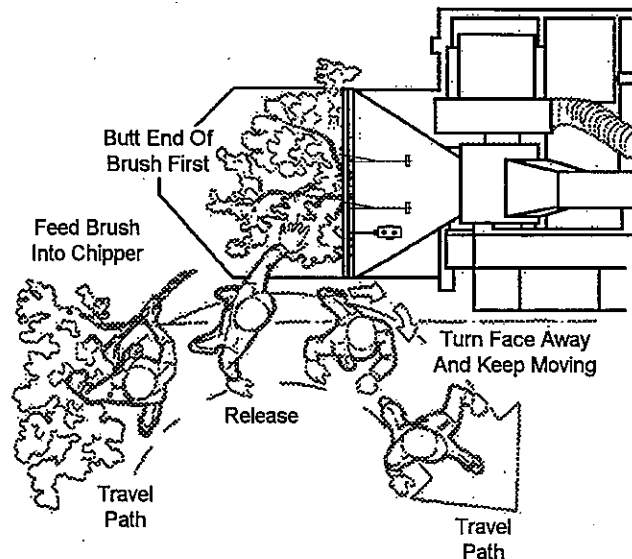
Keep the engine R.P.M.'s up whether you are chipping brush or round wood. Lower R.P.M.'s will cause weak throwing power, and can cause plugging in the discharge.

⚠ DANGER

Never feed any materials that might contain wires, stones, nails, or other metal objects which may damage the knives and become dangerous projectiles.

⚠ DANGER

DO NOT feed vines or viney type material! **DO NOT** pile vines or viney type material in front of the infeed hopper which may cause you to trip or fall! **DO NOT** allow vines or limbs to become entangled with you or your clothing! **DO** cut viney material into 4 to 5 foot length's, away from the chipper area! **DO** stop the feed system before feeding the cut viney material into the infeed hopper! **DO** use a wooden pusher paddle when feeding the cut vines into the feedwheels! **ALWAYS** be in position and prepared to activate the feed control handle!



⚠ DANGER

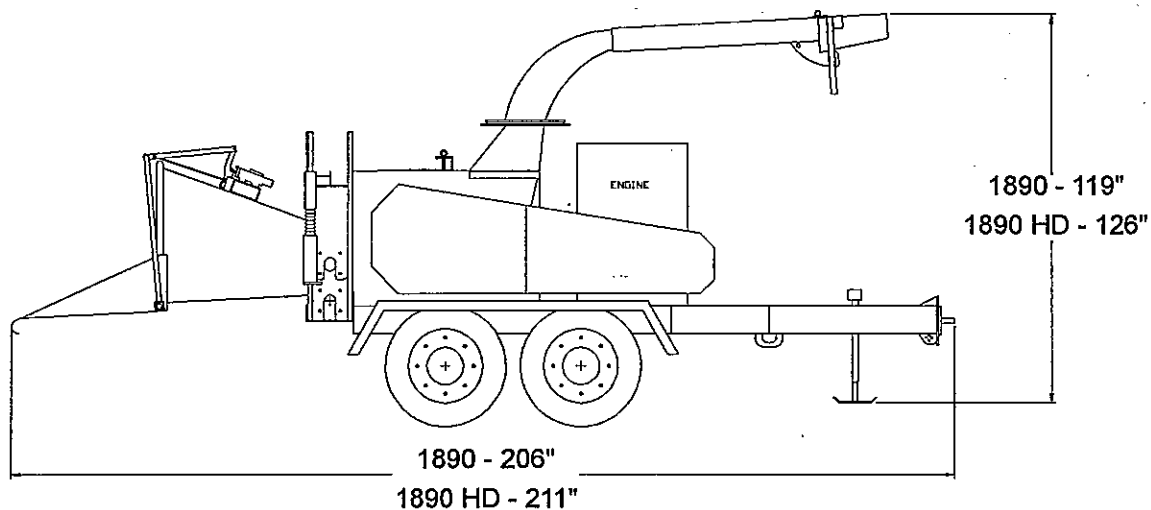
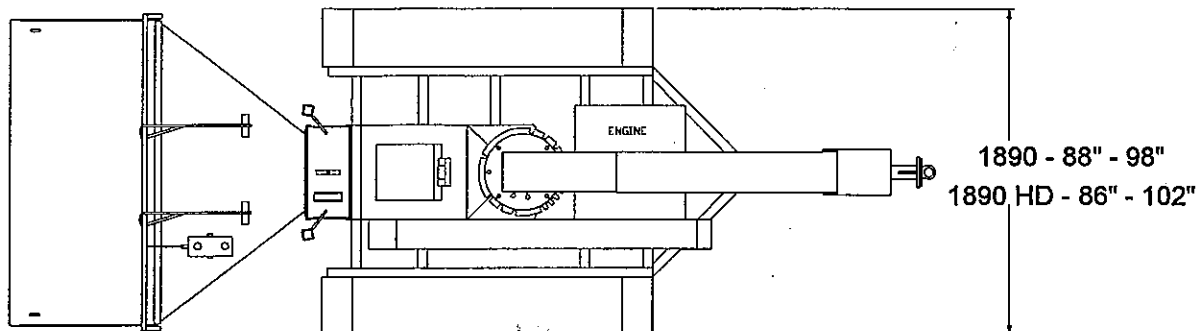
Always block the tires and the machine tongue whenever the Bandit is unhooked for operation. **DO NOT** rely on the tongue jack for operational stabilization.

NOTICE

Striped reflective tape has been installed on the feed control handle of the machine. This tape is reflective, self adhesive and has contrasting colors. The tape helps make the feed control handle stand out more and it makes the rear of the chipper more visible to a vehicle behind the machine while transporting the chipper. Striped tape can be obtained through your local Bandit Dealer.

Bandit

EQUIPMENT SPECIFICATIONS



Approximate Dimensions & Weights

(Dimensions & weights will vary depending on optional equipment)

Approx.	Model 1890	8,000 lbs. to 10,000 lbs.
Weight:	Model 1890 HD	10,000 lbs. to 12,000 lbs.

(Approximate weights depending on engine and equipment options.)

Overall	Model 1890	119" Height,	206" Length,	88-98" Width
Dimension:	Model 1890 HD	126" Height,	211" Length,	86-102" Width

(Appromiate dimension depending on equipment options.)

Bandit

SAFETY DECALS

Safety Decals located on your Bandit Chipper contain useful information to assist you in operating your equipment safely. Some of the decals on your machine and their location are shown in this section.

It is very important that all decals remain in place and in good condition on your machine. Please follow the care and instructions given below:

- 1) You should use soap and water to keep your decals clean. Never use mineral spirits or any other abrasive cleaners.
- 2) Replace immediately any missing or damaged decals. The location the decal is going to be applied to must be clean and dry, and at least 40° F (5°C) before applying decal.
- 3) When the need arises to replace a machine component with a decal attached, be sure and replace the decal.
- 4) Replacement decals are available, and can be purchased from the manufacturer or your Bandit Dealer.
- 5) Other language decals may be purchased. Spanish, Portuguese and other foreign language decals are available. Mail translated decals required to Bandit Industries, Inc.

EXAMPLES: (New Style Decals)

NOTICE

DECAL MAINTENANCE IS THE RESPONSIBILITY OF THE OWNER OF THIS MACHINE. KEEP DECALS LEGIBLE. DECALS (ETC.) ARE AVAILABLE IN OTHER LANGUAGES.

CONTACT: PARTS DEPARTMENT
6750 MILLBROOK RD.
REMUS, MI 49340
PHONE (888) 748-6348

 **DANGER**

DO NOT insert fingers or amputation could occur.

DO NOT perform any maintenance until belts inside this hole have completely stopped moving.

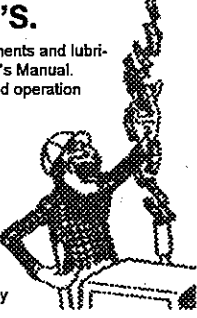
NOTICE

THE CLUTCH HANDLE SHOULD NOT BE ENGAGED OR DISENGAGED AT SPEEDS ABOVE 1000 RPM'S.

DO NOT operate this Clutch/PTO unless proper adjustments and lubrication are maintained per the Clutch/PTO Manufacturer's Manual. Different brands and models require different service and operation procedures. New Clutch/PTO's require more frequent adjustment.

GOOD OPERATORS DON'T WASTE MONEY!

Clutches will fail, glaze over, and burn up from improper adjustment. This will cost the owner of this machine thousands of dollars to repair. A well maintained, correctly adjusted clutch should function properly for years.



 **DANGER**

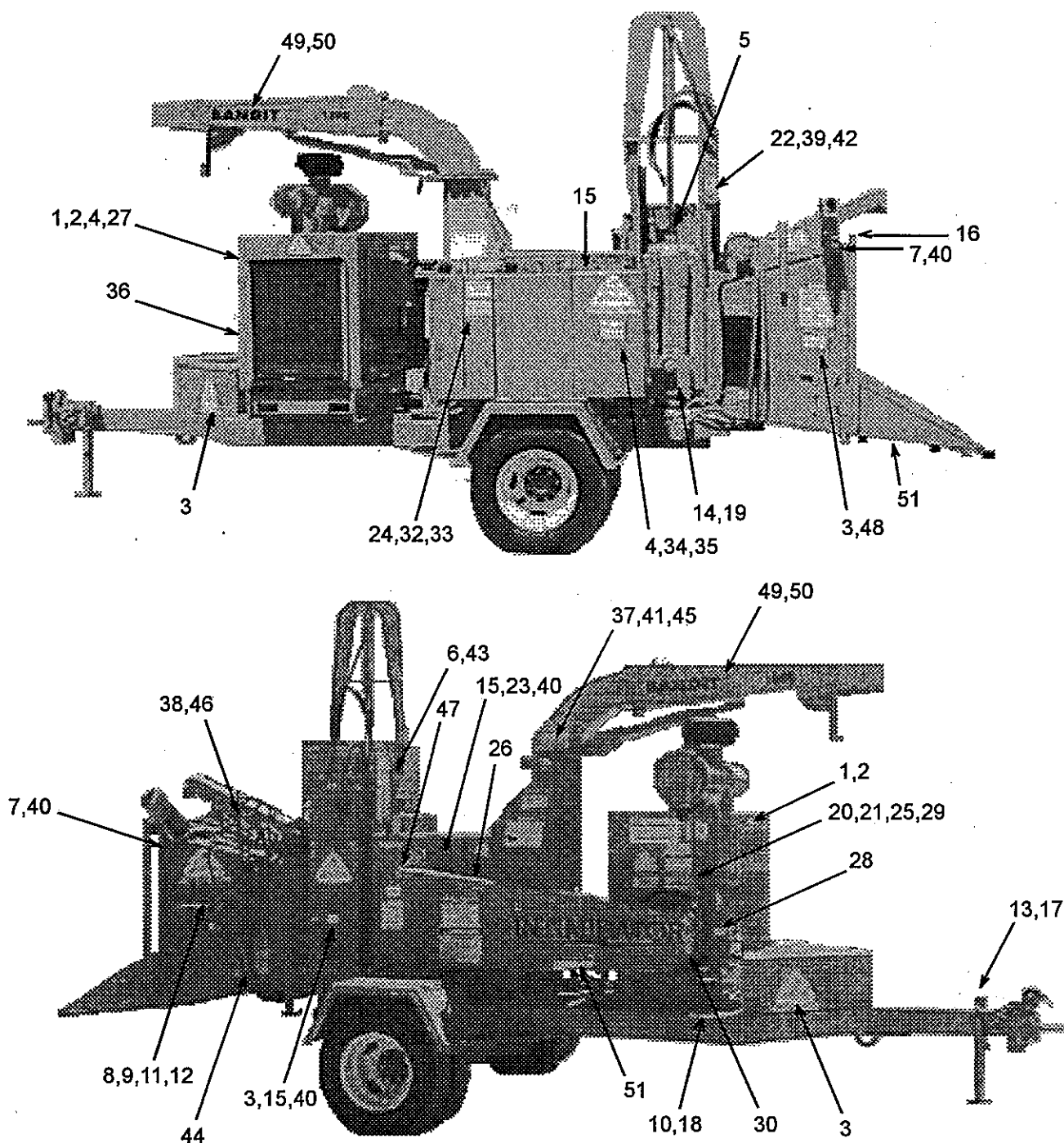
DO NOT sit, stand, lay, climb or ride anywhere on this machine while it is running, operating or in transit.

YOU WILL BE INJURED!

DECAL LOCATIONS

These Decals Are For Machines Built After 4-1-02

ALTHOUGH LOCATIONS MAY VARY, ALL DECALS MUST BE ON MACHINE DURING OPERATION
IF ANY DECALS BECOME DAMAGED, REPLACE IMMEDIATELY.



Bandit

DECAL LOCATIONS

These Decals Are For Machines Built After 4-1-02

Modifications and/or additions of decals to this list will happen.
Consult chipper dealer or manufacturer for most current decal package.

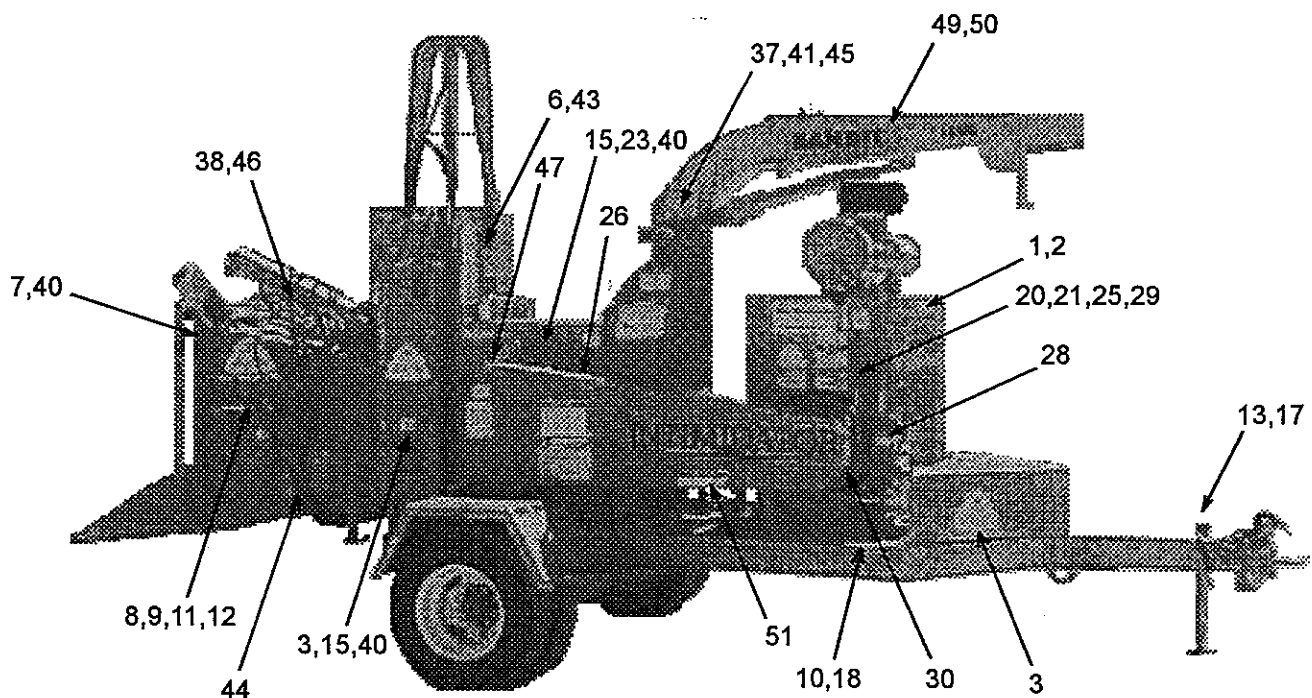
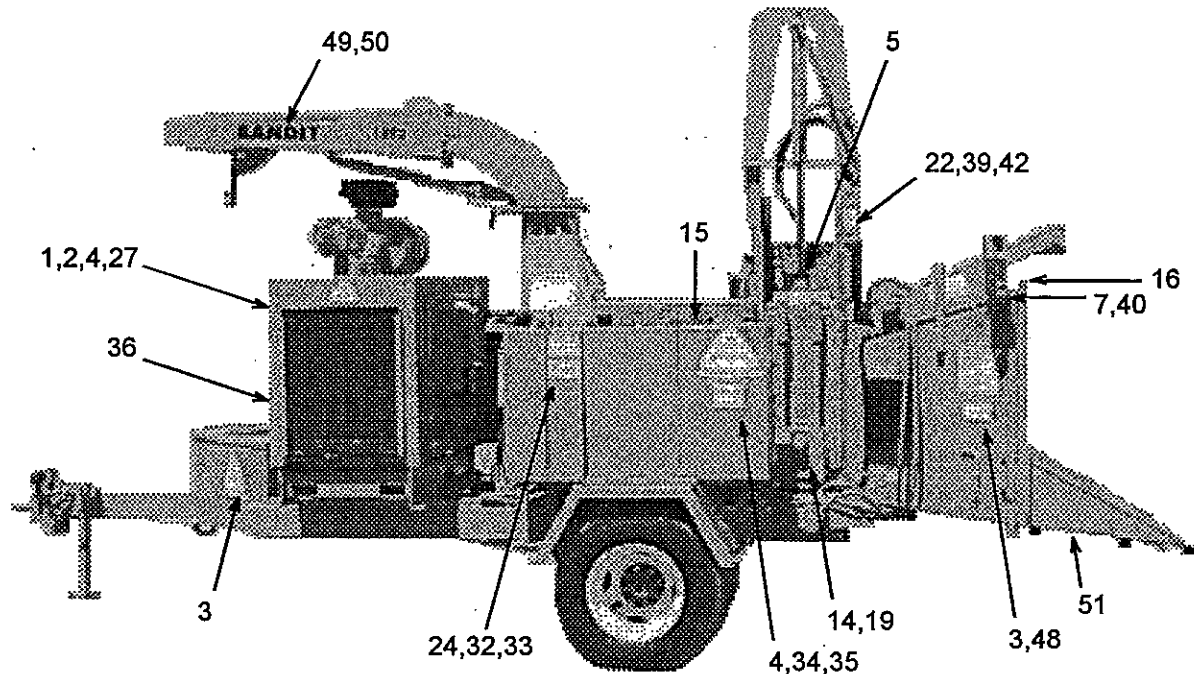
LOCATION	KEY	NUMBER	DESCRIPTION
1.	Optional	ID-19	Model 1890...
2.	Optional	ID-20	Model HD 1890...
3.		ID-39	Intimidator™ Logo
4.		ID-42	Bandit Industries Inc...
5.		INST-02	Yoke Lock Hole
6.		INST-03	Yoke Lock Bar
7.		INST-04	Arrow
8.	Optional	INST-05	Yoke Lift Up ↔ Down
9.	Optional	INST-06	Yoke Lift Up ↔ Down (small)
10.	Optional	INST-07	Discharge Swivel Right ↔ Left
11.	Optional	INST-08	Winch In ↔ Out
12.	Optional	INST-09	Selector Winch ↔ Feed
13.	Optional	INST-10	Stabilizer Up ↔ Down
14.	Optional	INST-11	Motor Coupler Guard...
15.		INST-12	Grease Daily Arrow
16.		INST-13	Push To Reverse
17.	Optional	INST-14	Out ↑ Articulating Tongue ↓ In
18.	Optional	INST-15	Flipper Down ↔ Up
19.	Optional	INST-40	Keep Coupler Clamp Bolt...
20.	Optional	INST-44	California Proposition 65 Warning...
21.	Optional	INST-46	Auto Feed Basic Info...
22.		INST-48	Disc/Drum Lock Tube
23.		INST-49	Disc/Drum Lock Pin
24.		INST-53	Hydraulic Oil This Machine Is Equipped...
25.		N-02	Notice Maintain Lubrication and Hydraulics...
26.		N-03	Notice Service Required Under...
27.	Optional	N-04	Notice Patent Pending
28.		N-05	Notice Frequent Adjustment...
29.		N-06	Notice Decal Maintenance Is...
30.		N-07	Notice The Clutch Handle Should Not...
31.		N-08	Notice This Machine Is Covered...
32.	Optional	N-09	Notice This Machine Is Equipped With...

KEY: SOME DECALS ARE FOR OPTIONAL COMPONENTS

DECAL LOCATIONS

These Decals Are For Machines Built After 4-1-02

ALTHOUGH LOCATIONS MAY VARY, ALL DECALS MUST BE ON MACHINE DURING OPERATION
IF ANY DECALS BECOME DAMAGED, REPLACE IMMEDIATELY.



Bandit

DECAL LOCATIONS

These Decals Are For Machines Built After 4-1-02

Modifications and/or additions of decals to this list will happen.
Consult chipper dealer or manufacturer for most current decal package.

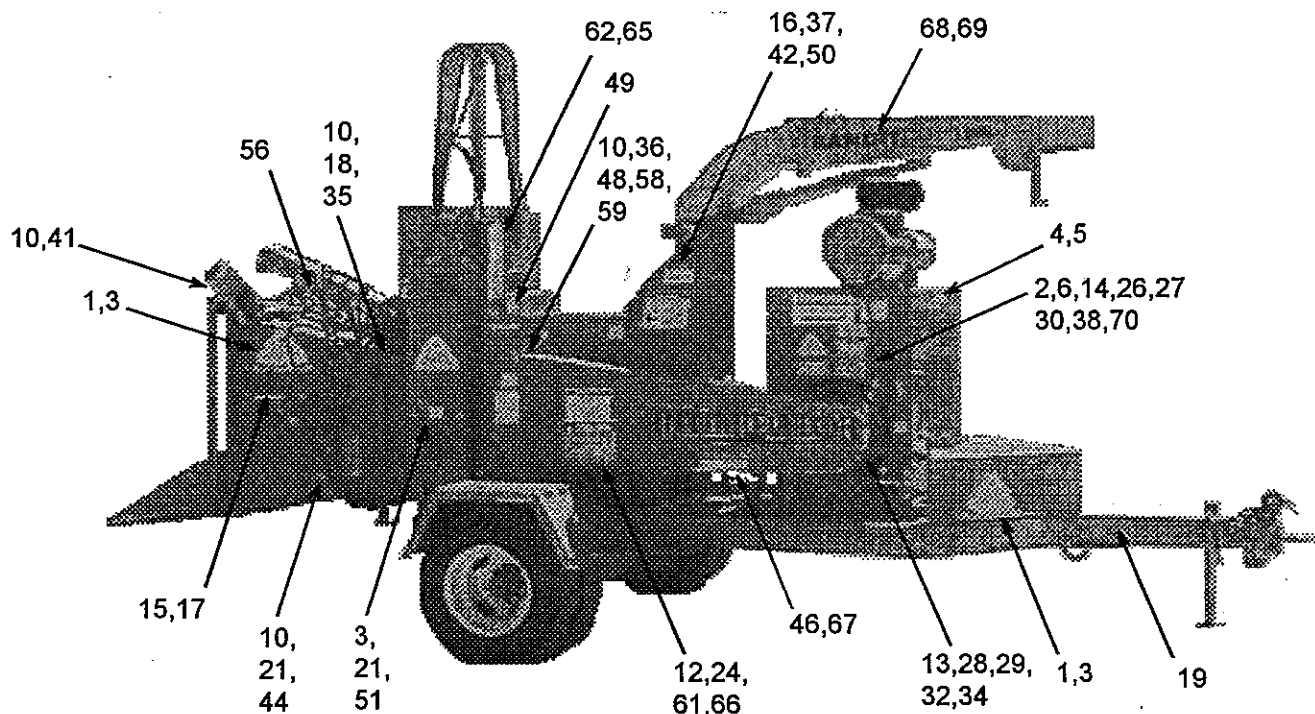
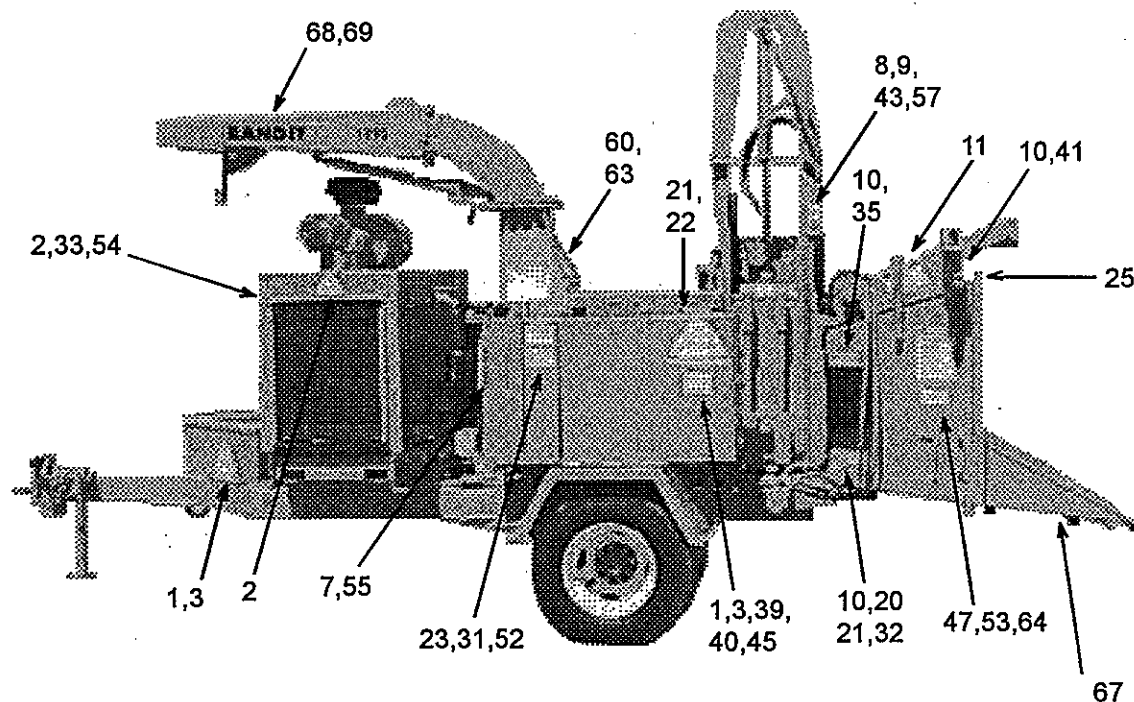
LOCATION	KEY	NUMBER	DESCRIPTION
33.		W-01	⚠ Warning Do Not Go Near Leaks...
34.	Optional	W-02	⚠ Warning Combustible Liquid...
35.	Optional	W-03	⚠ Warning Flammable Liquid...
36.		W-04	⚠ Warning Frozen Battery Will Cause...
37.		W-08	⚠ Warning Wear Eye & Personal Protection...
38.	Optional	W-10	⚠ Warning Hydraulic Winch Operation...
39.		D-01	⚠ Danger Avoid Injury Or Death...
40.		D-02	⚠ Danger Moving Parts...
41.		D-04	⚠ Danger Flying Discharge Material...
42.		D-07	⚠ Danger Last Chance Stop Cables...
43.		D-09	⚠ Danger Do Not Work Under Top...
44.		D-12	⚠ Danger Do Not Feed Vine-Like...
45.		D-20	⚠ Danger Flying Objects Stand Clear...
46.	Optional	D-22	⚠ Danger Emergency Shut Down Only
47.		D-28	⚠ Danger Do Not Insert Fingers...
48.		D-30	⚠ Danger Do Not Sit, Stand, Lay, Climb...
49.			Bandit Model 1890 Vinyl
50.			Bandit Model HD 1890 Vinyl
51.			Intimidator Vinyl
	Optional		Spanish/English Decals....
	Optional		Portuguese Decals....

KEY: SOME DECALS ARE FOR OPTIONAL COMPONENTS

Bandit

DECAL LOCATIONS - MODELS 1890/1890 HD

ALTHOUGH LOCATIONS MAY VARY, ALL DECALS MUST BE ON MACHINE DURING OPERATION
IF ANY DECALS BECOME DAMAGED, REPLACE IMMEDIATELY.



Bandit

DECAL LOCATIONS - MODELS 1890/1890 HD

Modifications and/or additions of decals to this list will happen.
Consult chipper dealer or manufacturer for most current decal package.

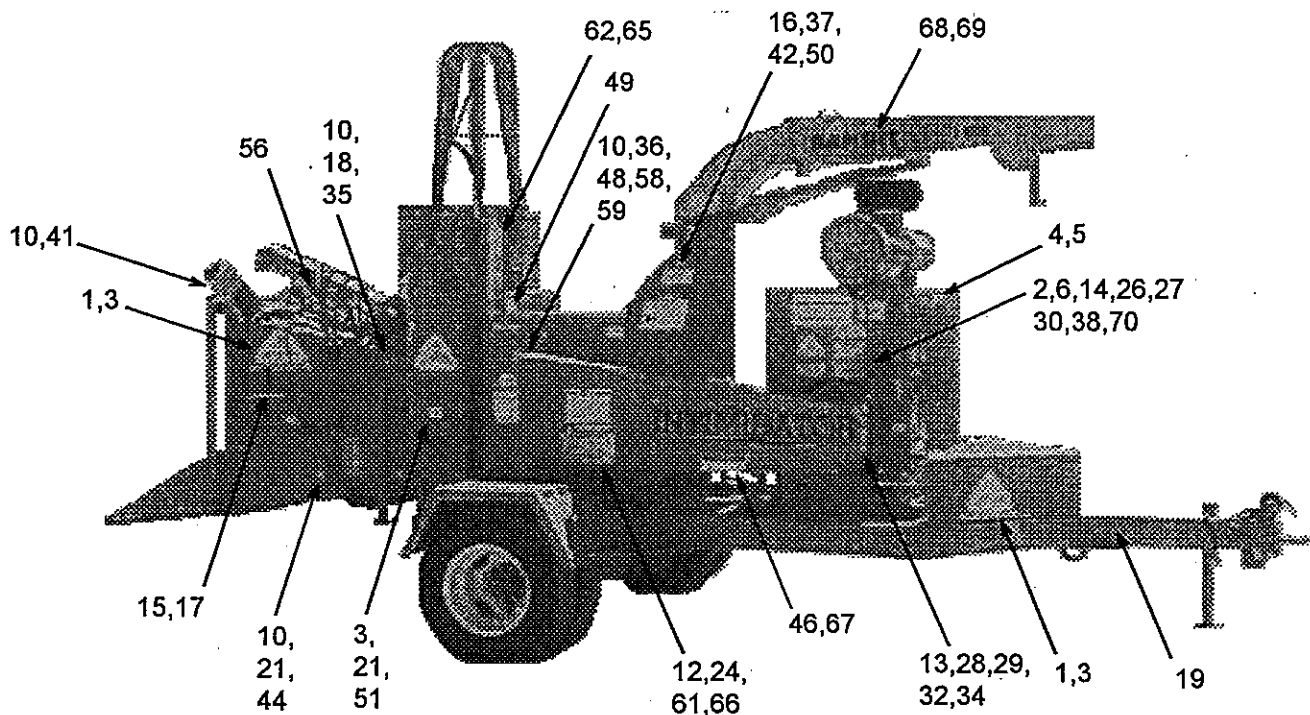
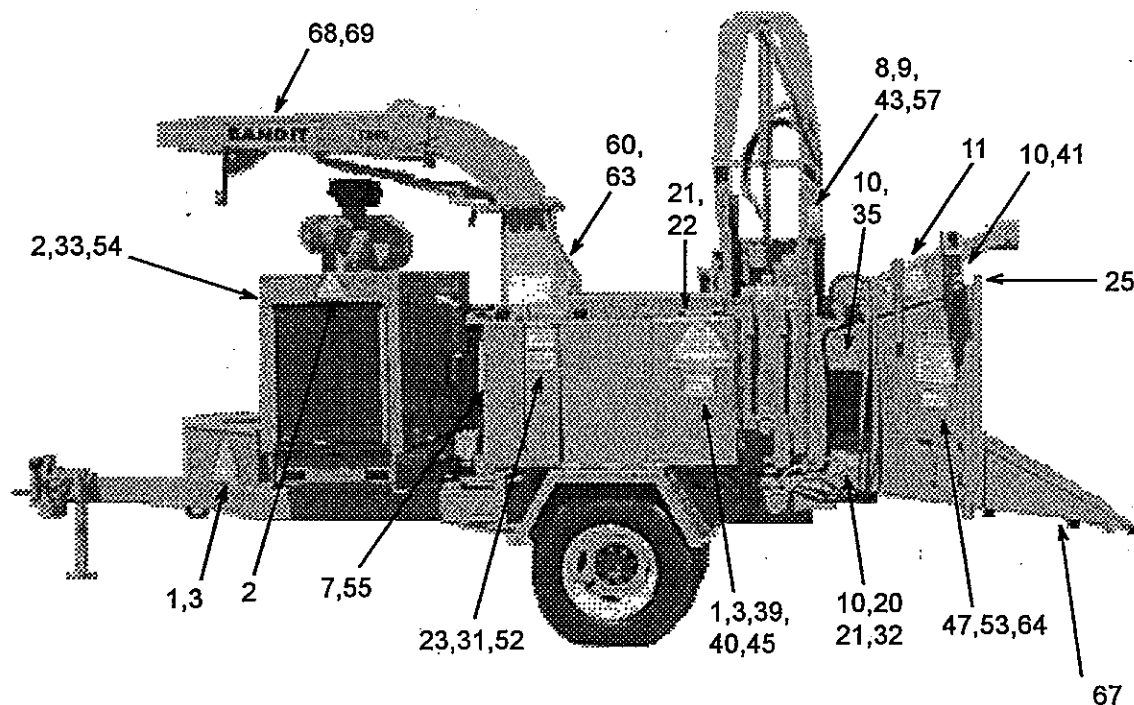
LOCATION	KEY	NUMBER	DESCRIPTION
1.		OOB-112	Bandit Industries, Inc.
2.		OOB-151	Small Intimidator Logo
3.		OOB-152	Large Intimidator Logo
4.	1890 Only	OOB-153	Model 1890
5.	1890 HD Only	OOB-154	Model 1890 HD
6.		OOB-213	Do Not Attempt To Operate...
7.		OOB-218	LE-10 Micron Filter
8.		OOB-220	Yoke Lock Hole
9.		OOB-221	Yoke Lock Bar
10.		OOB-223	3 1/4" Arrow
11.	Optional	OOB-226	Notice Hydraulic Winch...
12.		OOB-227	Notice Hydraulic Trouble Shooting...
13.		OOB-242	Notice Remove This Guard...
14.		OOB-243	Notice Owners Responsibility...
15.	Optional	OOB-250	Yoke Up→Down
16.	Optional	OOB-252	Discharge Swivel Right←Left
17.	Optional	OOB-253	Winch Out←In
18.	Optional	OOB-255	Selector Winch→Feed
19.	Optional	OOB-256	Stabilizer Down←Up
20.	1890 Only	OOB-272	Motor Coupler Guard
21.		OOB-275	Grease Daily
22.		OOB-277	Notice Proper Bearing...
23.		OOB-278	Notice Hydraulic Oil Tank...
24.		OOB-287	Patent Pending
25.		OOB-289	Push To Reverse
26.		OOB-2002L	Distributed by Bandit Industries...
27.		OOB-2003	Notice The Owner Is Responsible...
28.		OOB-2005	Notice The Clutch Handle...
29.		OOB-2011	Notice ↑ Belt Tension Slot...
30.		OOB-2019	This Machine Is Covered
31.		OOB-301	⚠ Caution This Machine Operates...
32.	1890 HD Only	OOB-308	⚠ Caution Coupler Clamp Bolts...
33.		OOB-311	Notice Important Information...
34.		OOB-320	Notice Frequently Adjust...

KEY: SOME DECALS ARE FOR OPTIONAL COMPONENTS

Bandit

DECAL LOCATIONS - MODELS 1890/1890 HD

ALTHOUGH LOCATIONS MAY VARY, ALL DECALS MUST BE ON MACHINE DURING OPERATION
IF ANY DECALS BECOME DAMAGED, REPLACE IMMEDIATELY.



Bandit

DECAL LOCATIONS - MODELS 1890/1890 HD

Modifications and/or additions of decals to this list will happen.
Consult chipper dealer or manufacturer for most current decal package.

LOCATION	KEY	NUMBER	DESCRIPTION
35.		OBR-400	⚠ Danger Keep Hands Clear
36.		OBR-401	⚠ Danger Never Open or Close...
37.		OBR-404	⚠ Danger Flying Chips Are..
38.		OBR-407	⚠ Danger Never Perform Any...
39.	Optional	OBR-408	⚠ Warning Flammable Fluid...
40.	Optional	OBR-409	⚠ Warning Flammable Fluid...
41.		OBR-410	⚠ Danger Moving Parts...
42.		OBR-412	⚠ Warning Do Not Attempt To...
43.		OBR-413	⚠ Danger Stop To Think...
44.		OBR-414	⚠ Danger Operation Tips...
45.	Optional	OBR-425	⚠ Warning Only Use This...
46.		OBR-441	⚠ Warning Keep Lug Nuts...
47.		OBR-443	⚠ Warning Maintaining Your...
48.		OBR-451	⚠ Danger Chipper Disc Stop...
49.		OBR-454	⚠ Danger Failure To Comply...
50.		OBR-456	⚠ Danger Before Moving Chipper...
51.	1890 HD Only	OBR-458	⚠ Danger Moving Parts...
52.		OBR-471	⚠ Warning Do Not Close Hydraulic...
53.		OBR-472	⚠ Warning This Chipper Is Designed...
54.		OBR-480	⚠ Warning Never Use Jumper...
55.		OBR-482	⚠ Warning Hydraulic Oil...
56.	Optional	OBR-486	⚠ Warning Hydraulic Winch...
57.		OBR-491	⚠ Danger Last Chance Stop...
58.		OBR-495	⚠ Danger Severe Injury Or...
59.		OBR-497	⚠ Danger Through This Inspection...
60.		OBR-499	⚠ Warning Prevent Chipper Damage...
61.		OBR-4004	⚠ Danger Brush Chippers Are...
62.		OBR-4005	⚠ Warning Severe Injury Or...
63.		OBR-4006	⚠ Danger Serious Injury Or...
64.		OBR-4010	⚠ Danger <u>NEVER</u> Sit, Stand, Or...
65.		OBR-4023	⚠ Danger Do Not Use A...
66.		OBR-4028	⚠ Danger <u>DO NOT</u> Feed Vines...
67.			Intimidator Vinyl
68.	Optional		Bandit Model 1890 Vinyl
69.	Optional		Bandit Model 1890 HD Vinyl
	Optional		Auto Clutch Decal
	Optional		Spanish/English Decals
	Optional		Portuguese Decals

KEY: SOME DECALS ARE FOR OPTIONAL COMPONENTS

Bandit

Examples of some previous (old style) decals on Bandit equipment containing safety information. This information is also contained in the current (new style) decals, in the operating manual, and in the operations video.



DANGER

STOP TO THINK!!!

**REACHING OR KICKING INTO THE INFEED HOPPER
WILL CAUSE SERIOUS INJURY OR DEATH!**

DO NOT reach with your hand or kick with your foot inside the infeed hopper. The feedrolls are very powerful. Once your hand or foot is grabbed by the feedrolls, you can be pulled into the chipper.

Do not think that you will be able to pull yourself out of the feedrolls they will not let go!

There is absolutely no reason to work inside of the infeed hopper. If the feedrolls become tangled or clogged, stop the machine and wait a minimum of three (3) minutes to clean them out.

⚠ WARNING when feeding material into the infeed hopper, always feed from the side of the infeed tray and then turn away from material and walk away as wood feeds in. Chippers should be fed from curbside (right side) whenever possible. Anytime operator is near infeed hopper, HE **MUST** be within easy reach of feed control devices. **ALWAYS** be in a position to activate the Forward-Off-Reverse Control Bar.



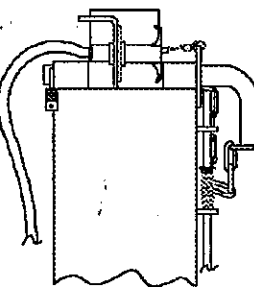
⚠ DANGER DO NOT use any body part or steel devices inside infeed hopper area. Always use a "Wooden Push Paddle" with this chipper to assist feeding material. It is owner's and operator's responsibility to use and keep a "Wooden Push Paddle" with chipper, also to secure it when transporting chipper. **DO NOT** operate this machine unless you have read the operator's manual and have been trained for safe operating procedures!





DANGER

DO NOT USE A "HOMEMADE" PIN OR IMPROPERLY INSTALLED CHIPPER HOOD PIN!! SOMEONE WILL GET INJURED! PEOPLE HAVE DIED FROM THIS. THIS CHIPPER IS SHIPPED WITH A HOOD LOCK PIN ASSEMBLY INCLUDING AN ELECTRIC SOCKET, PLUG CONNECTOR, HOOD PIN, CHAIN, PADLOCK, AND WIRE CABLE. MAKE SURE CONNECTOR PLUG IS COMPLETELY INSTALLED INTO THE ELECTRICAL SOCKET, AND THE HOOD PIN IS FIRMLY IN PLACE AND PADLOCKED BEFORE ATTEMPTING TO START THIS CHIPPER.



NEVER run machine with chipper hood opened or unsecured.

USE correct hood pin and installation.

USE hood pin padlock on chipper hood pin.

NEVER open hood when disc or engine is turning.

WAIT 3 minutes minimum after engine is shut off to open hood.

DO NOT slam chipper hood to open position.

ALWAYS repair or replace chipper hood hinge if damaged.

ALWAYS install disc lock pin before performing any maintenance.

ALWAYS train your operators and enforce safety rules.



WARNING

DO NOT USE A "HOMEMADE" HOOD PIN OR IMPROPERLY INSTALLED CHIPPER HOOD PIN! SEVERE INJURY OR DEATH CAN OCCUR! SOMEONE CAN GET KILLED UNLESS THESE INSTRUCTIONS ARE FOLLOWED! IF FOR ANY REASON THE PLUG CONNECTOR FAILS, THE ELECTRIC SOCKET BREAKS, THE CHAIN IS CUT OR BROKEN, OR THE CABLE CONNECTED TO THE HOOD PIN IS CUT OR BROKEN, SOMEONE CAN GET KILLED! THIS CAN BE VERY DANGEROUS! IF THE PLUG CONNECTOR OR THE ELECTRIC SOCKET IS BROKEN, OR IF THE CABLE IS CUT, IT VOIDS ALL WARRANTIES ON THE MACHINE!

BEFORE ATTEMPTING TO OPEN CHIPPER HOOD

NEVER perform any type of maintenance on this machine without shutting the engine off, then remove the engine key and put in your pocket.

NEVER attempt to open or close chipper hood, or attempt to pull on the hood lock pin with the engine running.

NEVER attempt to push the plunger pin down or move the hood pin, until after the engine and cutterwheel have both come to a complete stop.

WAIT at least 3 minutes minimum after engine is shut off before attempting to open chipper hood.

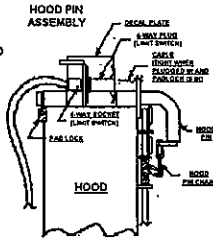
NEVER place your hands or feet anywhere near the cutterwheel, your hands or feet could become severely injured. Always use a pry bar to turn the cutterwheel during servicing or unplugging.

UNLOCK and remove padlock from hood lock pin.

FIRST pull the connector plug attached to the wire cable out from the electrical socket.

THEN push down the spring loaded plunger pin. **THEN** attempt to pull on the hood lock pin. The hood lock pin is on a chain, and stops on the last eyelet of the hood hinge. This will not allow the hood pin to come all the way out or be removed.

ALWAYS install disc lock pin before performing any maintenance. You can now open the chipper hood, but **DO NOT** slam the hood open.



BEFORE ATTEMPTING TO REINSTALL HOOD LOCK PIN

NEVER run machine with chipper hood opened.

ALWAYS make sure the engine and the cutterwheel are both still shutdown, and completely stopped.

REMOVE disc lock pin, and close chipper hood.

ALWAYS replace chipper hood hinge if damaged.

PULL the plunger pin down, and reinstall hood lock pin. The plunger pin must now spring back into place.

NEXT insert the connector plug into the electrical socket.

ALWAYS make sure hood pin and connector plug are firmly in place before attempting to restart chipper.

ALWAYS relock padlock on hood lock pin.

ALWAYS train your operators and enforce safety rules.



Examples of some previous (old style) decals on Bandit equipment containing safety information. This information is also contained in the current (new style) decals, in the operating manual, and in the operations video.

! DANGER

NEVER OPEN OR CLOSE THE CHIPPER HOOD WITH THE ENGINE RUNNING OR THE DISC TURNING.

NEVER PERFORM ANY TYPE OF MAINTENANCE ON THIS MACHINE WITHOUT SHUTTING THE ENGINE OFF AND REMOVING THE ENGINE KEY. THE CUTTERWHEEL WILL COAST FOR SEVERAL MINUTES AFTER THE ENGINE IS SHUT OFF.

ALWAYS WAIT UNTIL THE DISC HAS COME TO A COMPLETE STOP BEFORE OPENING THE CHIPPER HOOD.



! DANGER

YOKE LOCK PIN

NEVER PERFORM ANY WORK UNDER TOP FEED WHEEL UNTIL THE YOKE LOCK PIN IS SECURELY IN PLACE.

NEVER OPERATE/RUN THE CHIPPER DISC OR FEED WHEELS WITH THE YOKE LOCK PIN HOLDING TOP FEED WHEEL UP.



! DANGER

BRUSH CHIPPERS ARE VERY DANGEROUS MACHINES TO OPERATE! READ & BELIEVE THIS WARNING DECAL!

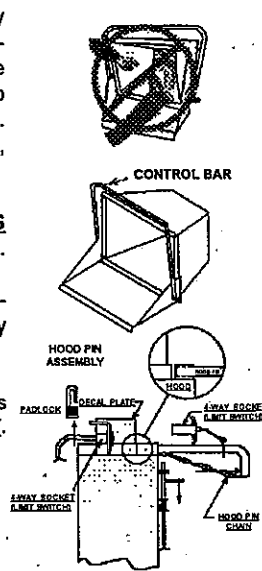
The chipper feedrolls are **VERY DANGEROUS**. They are designed to pull large diameter trees of any length into the chipper. Pulling your hand, arm, foot or entire body through the machine is much easier than pulling a tree. **FOLLOW** the operating instructions in the operator's manual, and **ALWAYS** be in a position to activate the *Forward-Off-Reverse* Control Bar. **NEVER** take chances pushing wood too far into the infeed hopper of the chipper. **NEVER** use your feet to try to kick wood into the machine. There have been **ACCIDENTS** involving the feed rolls, resulting in the amputation of hands, arms, feet, legs and **DEATH**. **DO NOT** let this happen to you!

DO NOT open the chipper hood without letting the chipper disc come to a complete stop. **THIS MEANS A COMPLETE STOP - NOT ALMOST! WAIT** at least 3 minutes before disengaging the hood lock pin.

NEVER operate the chipper without the hood lock pin **SECURELY** installed and the hood lock pin padlock **LOCKED**. Failure to do this will allow the chipper hood to slam to the open position and possibly injure someone.

There have been **ACCIDENTS**, all of them were **SERIOUS INJURIES** or **DEATH** involved with chipper hoods flying open and hitting someone. In **ALL** of the cases the hood lock pin was **NOT INSTALLED PROPERLY**. **DO NOT** operate this chipper if the hood lock pin is not **LOCKED INTO POSITION**.

DO NOT OPERATE THIS MACHINE UNLESS YOU HAVE READ THE OPERATOR'S MANUAL AND HAVE BEEN TRAINED FOR SAFE OPERATING PROCEDURES!



Examples of some previous (old style) decals on Bandit equipment containing safety information. This information is also contained in the current (new style) decals, in the operating manual, and in the operations video.

! DANGER

FAILURE TO COMPLY WITH THESE WARNINGS CAN RESULT IN SEVERE INJURY OR DEATH!

DO NOT remove this hood pin until the cutterwheel comes to a complete stop. The wheel will coast for several minutes after the engine is shut down. Wait at least three (3) minutes.

DO NOT operate this machine without the hood pin in place. Do not operate this machine with any type of makeshift hood pin! Hood pin must be padlocked.

DO NOT operate this machine with the chipper hood open under any circumstance.

! DANGER

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN CAUSE SERIOUS INJURY OR DEATH!

CHIPPER DISC STOP

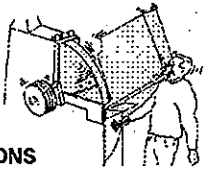
NEVER ATTEMPT ANY TYPE OF MAINTENANCE ON THIS MACHINE WITHOUT INSTALLING THE DISC STOP PIN! DO NOT REMOVE THE HOOD PIN UNTIL THE CUTTERWHEEL COMES TO A COMPLETE STOP. WAIT AT LEAST 3 MINUTES ON CHIPPERS WITH P.T.O.'S.

! DANGER

SERIOUS INJURY OR DEATH CAN OCCUR! UNLESS THESE INSTRUCTIONS ARE FOLLOWED!

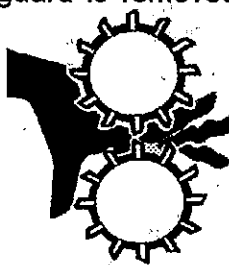
DO NOT OPERATE THIS CHIPPER WITH THE HOOD OPEN UNDER ANY CIRCUMSTANCES! DO NOT OPEN THIS CHIPPER HOOD WHILE THE CHIPPER DISC IS TURNING! THE CHIPPER DRIVE SHEAVE MUST HAVE STOPPED BEFORE OPENING HOOD!! THE CUTTERWHEEL COASTS AFTER THE ENGINE IS SHUT OFF. DO NOT REMOVE THE HOOD PIN FOR AT LEAST THREE (3) MINUTES AFTER THE ENGINE IS SHUT OFF. DO NOT REMOVE THE HOOD PIN UNTIL YOU HAVE VISUALLY LOOKED THROUGH THE HOLE IN THE BELT SHIELD OR LOOKED INTO THE OPEN AREA OF THE BELT SHIELD BETWEEN THE CHIPPER HOUSING AND THE BELT SHIELD. DO NOT OPERATE THIS CHIPPER WITH ANY TYPE OF MAKESHIFT HOOD PIN. DO NOT OPERATE THIS CHIPPER UNLESS THE PADLOCK IS LOCKED INTO THE HOOD PIN. DO NOT SLAM THE CHIPPER HOOD TO THE OPEN POSITION. THIS WILL CAUSE DAMAGE TO THE HINGE. IF YOUR HINGE HAS BECOME DAMAGED BY SLAMMING THE HOOD TO THE OPEN POSITION, REPLACE HINGE IMMEDIATELY! IF THE HINGE HAS BECOME DAMAGED IT WILL CAUSE MISALIGNMENT OF THE HOOD, THE CUTTERWHEEL MAY THEN HIT THE HOOD AND CAUSE A SERIOUS ACCIDENT!!

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN CAUSE SERIOUS INJURY OR DEATH!



! WARNING

DO NOT attempt to operate this machine without proper training and becoming very familiar with the operator's manual. The hydraulic feed wheels are designed to pull wood into the chipper. They do not know the difference between a hand or wood. If a guard is removed, it must be replaced or severe injury can result. The cutterwheel coasts for several minutes after the power is shut down. DO NOT attempt any maintenance while the wheel is turning. NEVER open or close the cutterwheel cover while the disc is still turning.

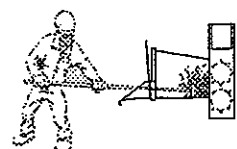


! DANGER

LAST CHANCE STOP!

Any contact with infeed rollers will cause serious injury or death. Injury will occur if you reach or kick into the infeed hopper or feed rollers. "Reaching In" is usually associated with trying to feed short limbs, twigs or leaves. Short or loose material must be tossed into the infeed hopper while longer material is feeding into the machine, or this material should be pushed in with a "Wooden Push Paddle."

Do Not Reach In!



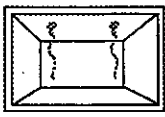
The "Last Chance Stop" is a means of stopping/reversing the feed rollers if the negligent operator does not follow the safety rules and finds themselves in trouble!

DO NOT RELY ON THE "LAST CHANCE STOP" TO DISOBEY THE OPERATOR RULES!

FOLLOW the operator instructions in the operator's manual. ALWAYS be in a position to activate the Forward-Of-Reverse Control Bar. Maintain and service the system so it is always operational if needed.

The "Last Chance Stop" does nothing for the foolish operator that kicks material into the infeed hopper. Kicking into the infeed hopper can cause loss of a foot, leg or DEATH.

DO NOT OPERATE THIS MACHINE UNLESS YOU HAVE READ THE OPERATOR'S MANUAL AND HAVE BEEN TRAINED FOR SAFE OPERATING PROCEDURES!



AUTOFEED OPTIONS

AUTOFEED SYSTEM

Consult the original manufacturer's manual for your chippers

Autofeed operating and maintenance procedures

When processing material through the chipper, the feed system will automatically stop when the engine drops below a preset RPM point. The engine is constantly being monitored by an adjustable electronic speed switch. The switch can be adjusted so that at a given RPM, an electronic relay system will operate the hydraulic solenoid valves. The "Autofeed Plus" system will reverse for a set period of time and then stop until the engine has recovered speed. The "Autofeed Plus" system will then automatically turn the feed on to resume forward travel.

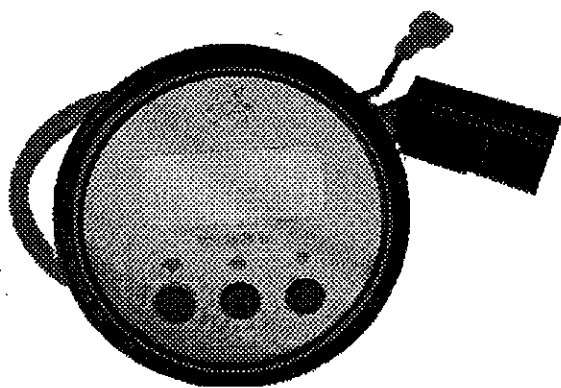
Do to required components and equipment options a chipper may have various types or brands of "Autofeed Plus" systems. Each chipper is shipped with the original manufacturer's manual for the "Autofeed Plus" system it is equipped with.

For the approximate "Autofeed Plus" settings on all optional "Autofeed Plus" systems refer to page 30 of the chipper manual.

For part numbers on the hydraulic portion of the "Autofeed Plus" systems refer to pages 98 & 99 of the chipper manual.

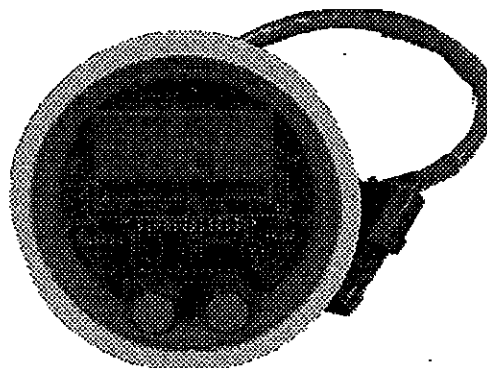
PART NUMBERS FOR AUTOFEED DIGITAL TACH HOUR METERS

Digital E-290 "Autofeed Plus"
(White Face)
Part Number 900-2906-82



For Service Call
1-866-644-8622

Round Digital "Autofeed Plus"
(See Through Face)
Part Number 900-2904-85



For Service Call
1-866-736-6839

AUTO FEED OPTIONS

The following is for the Digital E-290 "Auto Feed Plus" with the white face, part number 900-2906-82.

NOTICE

Before you begin programming, you will need to determine the appropriate numbers (values) to use for the following settings: (See page 30 for the approximate setting values)

HI RPM:

This is the RPM at which the controller will turn OFF.

LO RPM:

This is the RPM at which the controller turns ON.

BACK-UP TIME:

This is the time, in milliseconds, to allow the feed system to reverse.

PROGRAMMING SEQUENCE

1) Turning On Program Mode:

While The Engine Is Off:

Press and hold the set button while turning ignition key ON. Release button. Go To Step #2

While The Engine Is Running:

Press and hold the set button for 2 to 3 seconds. Release button. Go To Step #2

NOTE:

To advance from one setting to the next (while engine is running) you must **PRESS & HOLD** the **SET** button until the screen changes.

2) Set the HI RPM Value:

To decrease the setting value press the ^{down} ▽ button.

To increase the setting value press the ^{up} △ button.

To save the setting press the ^{set} ○ button. The set button initiates the program mode, saves settings, and finalizes the program mode.

3) Set the LOW RPM Value:

To decrease the setting value press the ^{down} ▽ button.

To increase the setting value press the ^{up} △ button.

To save the setting press the ^{set} ○ button. The set button initiates the program mode, saves settings, and finalizes the program mode.

AUTO FEED OPTIONS

4) Set the BACK-UP TIME Value:

To decrease the setting value press the ^{down} ▽ button.

To increase the setting value press the ^{up} △ button.

To save the setting press the ^{set} ○ button. The set button initiates the program mode, saves settings, and finalizes the program mode.

INFORMATION DISPLAY

(This information will only be displayed when in run mode, not in program mode.)

- 1) To display the running hours press the ^{down} ▽ button.
- 2) To display the engine speed (RPM's) press the ^{up} △ button.
- 3) To display the Total cumulative hours press the ^{Total hrs} ○ button.

DISABLING OUTPUTS

Holding the ^{down} ▽ button for 4 seconds disables BOTH outputs.

The unit then alternates between displaying the RPM's for 9 to 10 seconds and "OFF" for 1 second.

To enable outputs, press either the ^{up} △ or the ^{set} ○ buttons.

NOTE: This feature only works when engine is running.

RED LED

The Red LED will light when Output 1 is active and putting out positive voltage to the feed system solenoid valves. This happens when the Autofeed stops the feed system from feeding in, reverses and stays lit until the feed system starts to feed again.

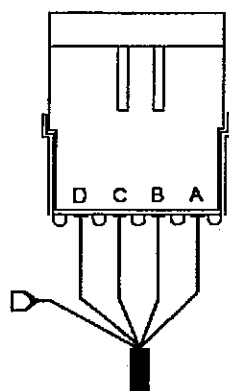
AUTO FEED OPTIONS

OUTPUT WIRING

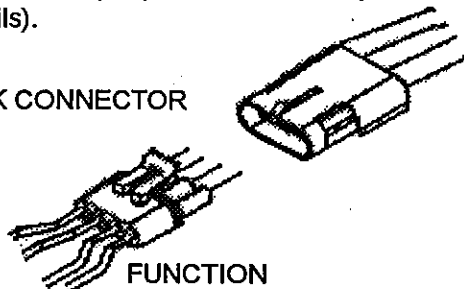
IMPORTANT:

It is of the utmost importance that the digital control be connected to a clean power source. The clean power source can or could include (first choice) the accessory side of the key switch or (second choice) the run side of the key switch.

A clean power source is the result of filtering unwanted voltage spikes and EMF. Spikes can be prevented by the installation of clamping diodes at their source (coils).



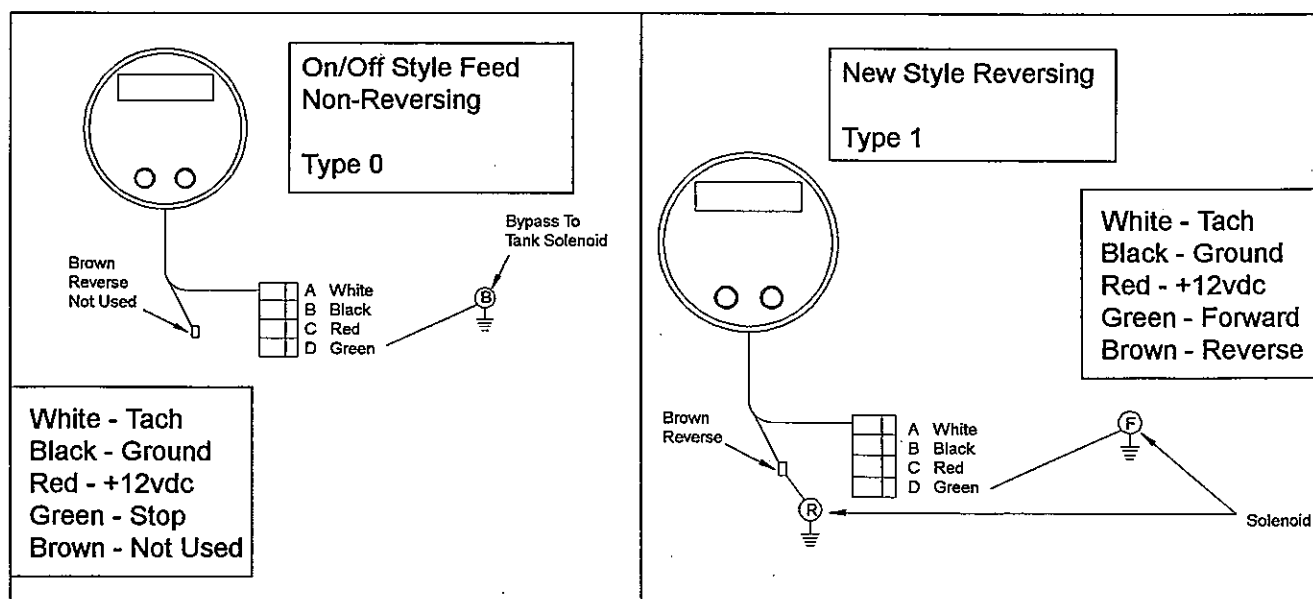
WEATHER-PACK CONNECTOR



POSITION	COLOR	FUNCTION
D	ORANGE	Positive output to solenoid coil (Reverse)
C	GREEN	Positive output to solenoid coil (Output 1)
B	RED	Positive Voltage from <u>clean</u> power source
A	BLACK	Ground
	WHITE	Signal from alternator or magnetic pickup

The following is for the Round Digital "Auto Feed Plus" with the see through face, part number 900-2904-85.

Programming & Wiring "Auto Feed Plus" System



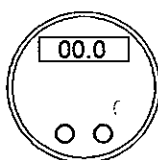
Bandit

AUTO FEED OPTIONS

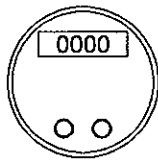
MENU-SIX STEPS & Hour

All functions May Be Programmed While Engine is RUNNING!

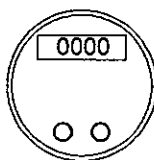
1. Calibrate



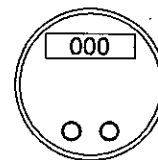
2. High



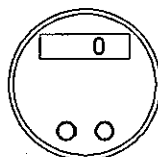
3. Low



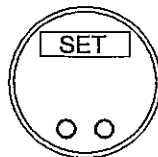
4. Back



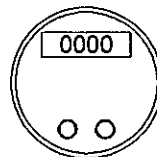
5. Type



6. Set



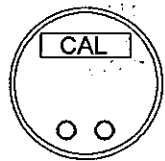
Hour



Note: To check the hours, simply press and release either button.

- To protect against accidental entry, the user must go through all six steps or program will not set.
- If, after starting to set the unit, no entries are made after 7 seconds, the unit will go back to the last program setting.
- So, if you make a mistake, not to worry, it will just go back to the last set program.

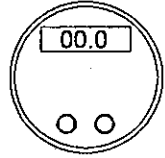
Step One - Calibration



- Press and hold both push buttons until you see "hour", the amount of hours, then a blank display. (About 4 seconds).

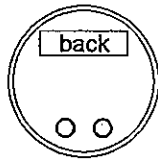
- Now release the buttons. You will see CAL displayed on the unit and then a CAL number.

Enter the Calibration Number (1-200)



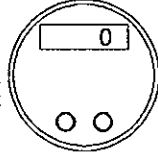
- After step 2 A, press the RIGHT button to increase the number the read - out.
- Press the LEFT button to decrease the number.

Step Four - Setting the Reverse Time



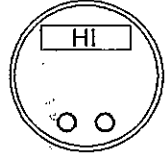
- Press and release both buttons again.
- You will see back displayed on the unit.

Enter the Reverse Time by:



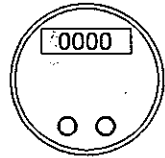
- Enter the desired reverse time or zero if reverse is not used. If the machine does not have reverse, it must be set to zero.
- Press the RIGHT button to increase the number the read - out.
- Press the LEFT button to decrease the number
- See page 30 of the chipper manual for the appropriate setting number.

Step Two - Setting the HI Limit



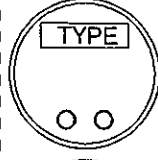
- Press and release both buttons again.
- You will see HI displayed on the unit.

Enter the HI or Feed On RPM number by:

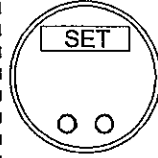


- Press the RIGHT button to increase the number the read - out.
- Press the LEFT button to decrease the number
- See page 30 of the chipper manual for the appropriate setting number.

Step Five - Setting TYPE



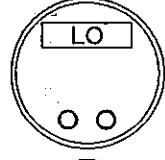
- Press and release both buttons again.
- You will see TYPE displayed on the unit. Enter TYPE 0 or 1. Use type 0 for standard autofeeds and 1 for autofeeds with reverse.



Step Six - Exit Program Mode

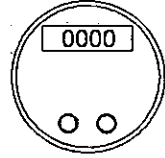
- Press both buttons again, now display will read SET! Unit is now programmed.

Step Three - Setting the LO Limit



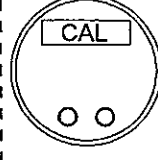
- Press and release both buttons again.
- You will see LO displayed on the unit.

Enter the LO or Feed Off RPM number by:



- Press the RIGHT button to increase the number the read - out.
- Press the LEFT button to decrease the number
- See page 30 of the chipper manual for the appropriate setting number.

"Auto-Feed On" Option



- While the unit is powered on, press and hold the RIGHT button until the display blanks out (About 4 seconds.) Release the buttons.
- You will see "hour" the number of hours, then "Auto-Feed On" displayed. NOTE: The decimal point is to show the auto feed is on.
- While the unit is powered on, press and hold the LEFT button until the display blanks out. (About 4 seconds.)
- Release button You will see "Auto Feed On" displayed.
- NOTE: No decimal point, showing the auto feed is off.

Bandit

TROUBLE SHOOTING GUIDE

POSSIBLE CAUSES WHY AUTOFEED DOES NOT WORK OR IS INTERMITTENT:

1. Switch is not turned on.
2. Engine not coming back to full rated RPM.
3. Bad ON/OFF switch.
4. Bad or corroded fuse holder.
5. Bad fuse.
6. Loose or corroded wire ends.
7. Not wired properly.
8. Alternator belt loose.
9. Alternator not working.
10. Hydraulic valve not working.
11. Hydraulic valve stuck in OPEN or CLOSED position.
12. Hydraulic coil bad.
13. Hydraulic coil not grounded properly.
14. Not adjusted properly.
15. Engine not wired correctly.
16. Chipper belts loose.
17. Clutch slipping, not adjusted correctly.

APPROXIMATE DIGITAL AUTOFEED SETTINGS (FOR ALL AUTO FEED SYSTEMS - REFERENCE ONLY)

Engine Type	Maximum RPM	Alternator PPR	Magnetic Pick-Up PPR	Off RPM	On RPM	ALR Setting	Feed Reverse Time
Caterpillar 3054 86-115 H.P.	2500	16	N/A	2400-2425	2150-2175	50	300
Caterpillar 3054TA 125 H.P.	2400	17	N/A	2300-2325	2050-2075	10	300
Caterpillar 3056 188 H.P.	2500	14	N/A	2400-2425	2150-2175	50	300
Cummins 4B & 6B 80 - 200 H.P.	2500	17	159	2400-2425	2150-2175	N/A	300
Cummins C-250 250 H.P.	2200	20	N/A	2125-2150	1775-1800	N/A	300
Ford 649 119 H.P.	2800	15	N/A	2700-2725	2400-2425	30	300
G.M. 4.3L 135 H.P.	2800	19	N/A	2700-2725	2400-2425	N/A	300
John Deere 4045 & 6068, 80 - 170 H.P.	2500	16	30	2400-2425	2150-2175	N/A	300
John Deere 6068 185 - 200 H.P.	2400	16	30	2300-2325	2050-2075	N/A	300
John Deere 6081 200-250 H.P.	2200	16	27	2125-2150	1775-1800	N/A	300
Perkins 1004 86-115 H.P.	2500	16	N/A	2400-2425	2150-2175	50	300
Perkins 1004-40TW 125 H.P.	2400	17	N/A	2300-2325	2050-2075	10	300
Perkins 1606 188 H.P.	2500	14	N/A	2400-2425	2150-2175	50	300

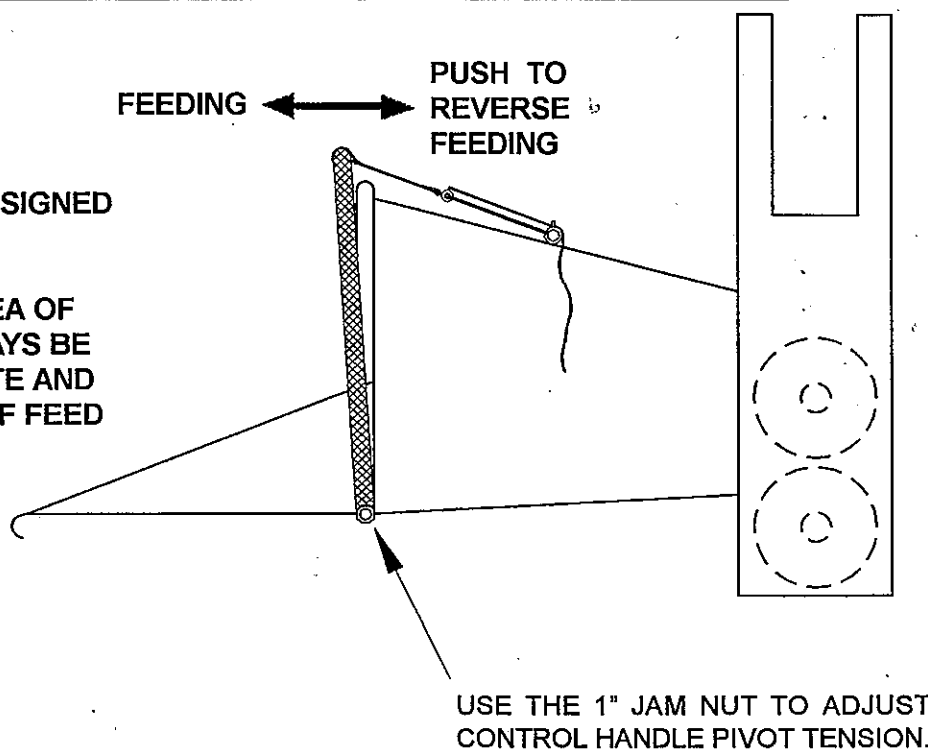
Bandit

CONTROLS

CORRECT OPERATION OF FEED CONTROL HANDLE

FOR ALL CHIPPERs DESIGNED TO BE "HAND FED".

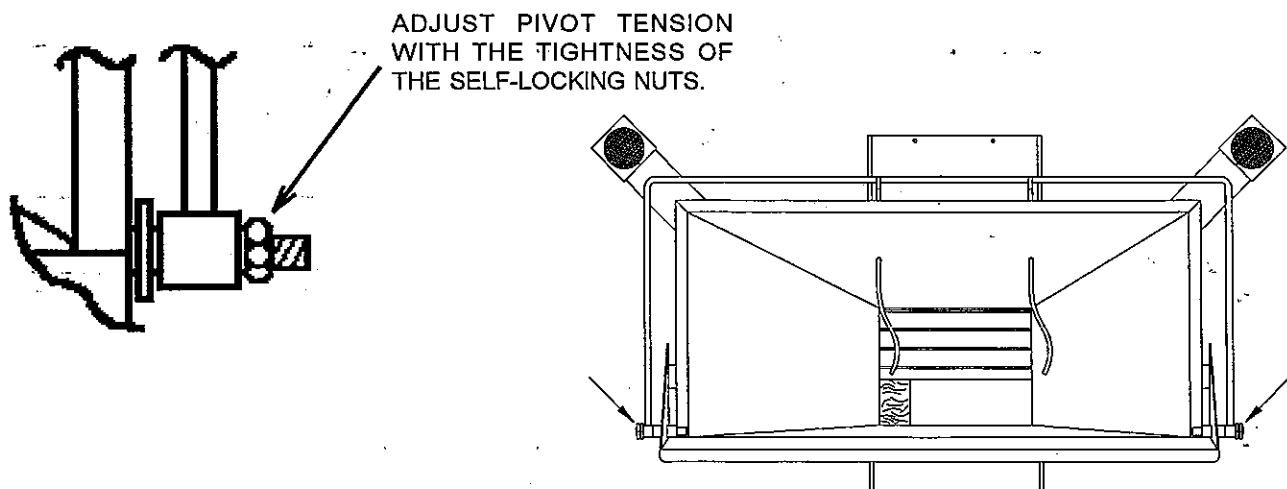
IF YOU ARE IN THE AREA OF INFEED HOPPER, ALWAYS BE PREPARED TO OPERATE AND WITHIN EASY REACH OF FEED CONTROL HANDLE.



ADJUSTING TENSION FOR CONTROL HANDLE PIVOT AND LAST CHANCE CABLE PULL.

NORMAL WEAR REQUIRES PERIODICAL ADJUSTMENT OF PIVOT TENSION.

FEED CONTROL HANDLE SHOULD PIVOT WITH LITTLE EFFORT, BY HAND OR WITH A PULL ON "LAST CHANCE" CABLES.



Bandit

CONTROLS

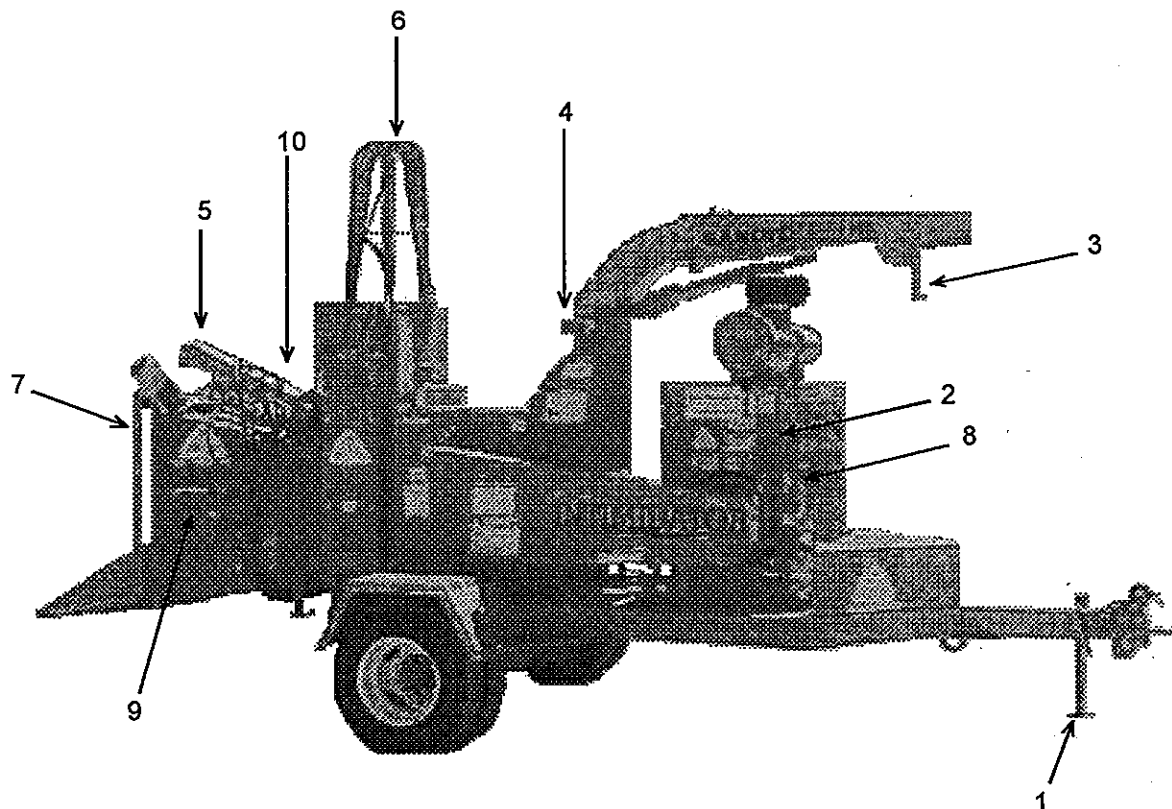
Models 1890/1890 HD Basic Location of Controls and Adjustments

LOCATION SHOWN

1. Foot Pad Jack
2. Engine Controls, Adjusters
3. Discharge Deflector Adjuster
4. Swivel Discharge
5. Hydraulic Winch Area "Optional"
6. Yoke Lift Cylinder
7. Feedwheel Control Bar
8. Engine Throttle Adjuster
9. Hydraulic Control Valves
10. Wooden Push Paddle (Not Shown)

NOT SHOWN

- Chipper Belts
- Knives & Hardware
- Motor Coupler
- Hydraulic Pressure
- All Bolts & Nuts
- Lug Nuts
- Optional Autofeed Control



**CONSULT THE ENGINE MANUFACTURER'S MANUAL FOR
SPECIFIC CONTROLS FOR TYPICAL GASOLINE ENGINES**

1)a. Ignition Switch:

Turn the ignition switch key clockwise one stop (on position) to turn the electrical system on. The key should remain in the on position while the engine is running. Turn the key fully clockwise (start position) this will start the engine. To shut off the engine, return the key to the off position.

1)b. On/Off Switch - Push Button Start:

Some gasoline engines may have a Toggle Switch or an On/Off Switch combined with a push button to start the engine. First turn the On/Off Switch or Toggle Switch to the on position, then depress and hold the Push Button Start until the engine starts, then release the button. To shut off the engine, return the On/Off Switch or Toggle Switch to the off position.

2) Choke Adjustment:

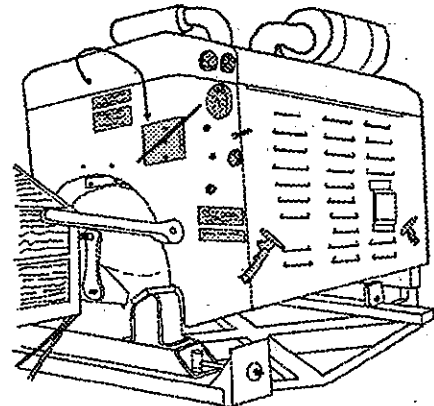
Pull the choke lever out to choke the engine.
Push the choke lever in for normal engine operations.

3) Throttle Adjustment:

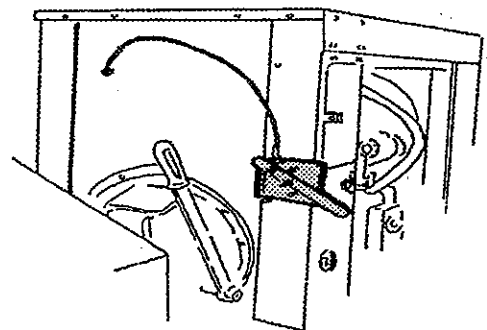
Some gasoline engines may have a knob or a handle for the throttle adjustment. Typically you would pull the knob out, or turn the handle to increase the engine R.P.M.'s. To decrease you would push in the knob or turn the handle the opposite way.

4) "Bandit" Lever Lock Cable Throttle System:

The Bandit throttle system has (2) positions, HIGH and LOW. Engine R.P.M. is controlled by moving the lever from one position to the other.



TYPICAL GAS ENGINE



BANDIT THROTTLE SYSTEM

**CONSULT THE ENGINE MANUFACTURER'S
MANUAL FOR SPECIFIC CONTROLS FOR
TYPICAL DIESEL ENGINES**

1) Ignition Switch With Preheat:

The typical diesel engine may have a preheat system to assist in starting the engine during cold weather. To activate the preheat system, continue to hold the ignition key in the Preheat position for 15 to 20 seconds, then attempt to start the engine. If the engine fails to start within 15 seconds, return the key to the Preheat position, hold 10 seconds, and try starting again.

2) Throttle Adjustment Knob:

Some diesel engines will have a throttle adjustment knob. Typically you would pull the knob out to increase engine R.P.M.'s. To decrease the engine R.P.M.'s you would push in the knob.

3) Alternator Warning Light:

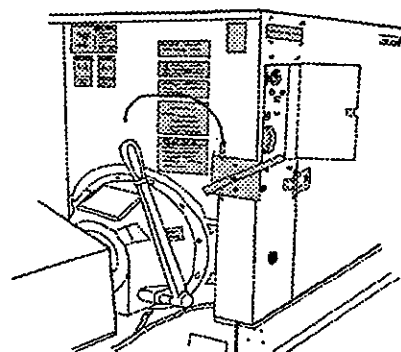
This light will glow when the alternator is not charging, or when the ignition switch is turned on and the engine is not running.

4) Oil Pressure Warning Light:

This light will glow when the oil pressure is too low, or when the ignition switch is turned on and the engine is not running.

5) Engine Temperature Warning Light:

This light will glow when the engine, or engine coolant, is above normal operating temperature. If this occurs allow the engine temperature to cool down. If the engine is overheating because of a loss of coolant, or a broken fan belt, shut the engine off immediately.



TYPICAL DIESEL ENGINE

CONTROL OPERATING PROCEDURES

Feedwheel Control Bar:

The feedwheel control bar operates the top and bottom feedwheels. To make the feedwheels operate so they are pulling material into the chipper, pull the control handle towards the operator away from the chipper. To make the feedwheels operate so they are pulling material out of the chipper, away from the chipper drum, the control handle should be pushed away from the operator away from you towards the chipper. The control bar is in the off position when it is in the center location.

Yoke Lift Control:

The yoke lift control operates the top yoke lift cylinder. To raise the yoke push the yoke lift control handle in, away from the operator. To lower the yoke pull the yoke lift control handle out, towards the operator. The yoke lift control handle is in the off position when it is in the center location.

Selector Valve Control - Optional:

The selector valve control allows the operator to change the operation function from the feedwheel function to the winch function or from the winch to the feedwheel function. The feedwheels will not operate when the selector valve is in the winch function and the winch will not work while the selector valve is in the feed function. To have the feedwheels operate the selector valve needs to be pushed in, away from the operator. To operate the winch the selector valve needs to be pulled out, towards the operator.

Winch Control - Optional:

The winch control operates the winch option. To make the winch reel out push the winch control handle in, away from the operator. To make the winch pull material in pull the winch control handle out, towards the operator. The winch also has a spool rotation lock make sure this is disengaged before operating the winch.

Discharge Swivel Control - Optional:

The discharge swivel control operates the discharge rotate. To make the discharge swivel to the right push the discharge swivel control handle down, towards the ground. To make the discharge swivel to the left pull the discharge swivel control handle up, away from the ground. The discharge swivel control handle is in the off position when it is in the center location.

Discharge Hydraulic Flipper Control - Optional:

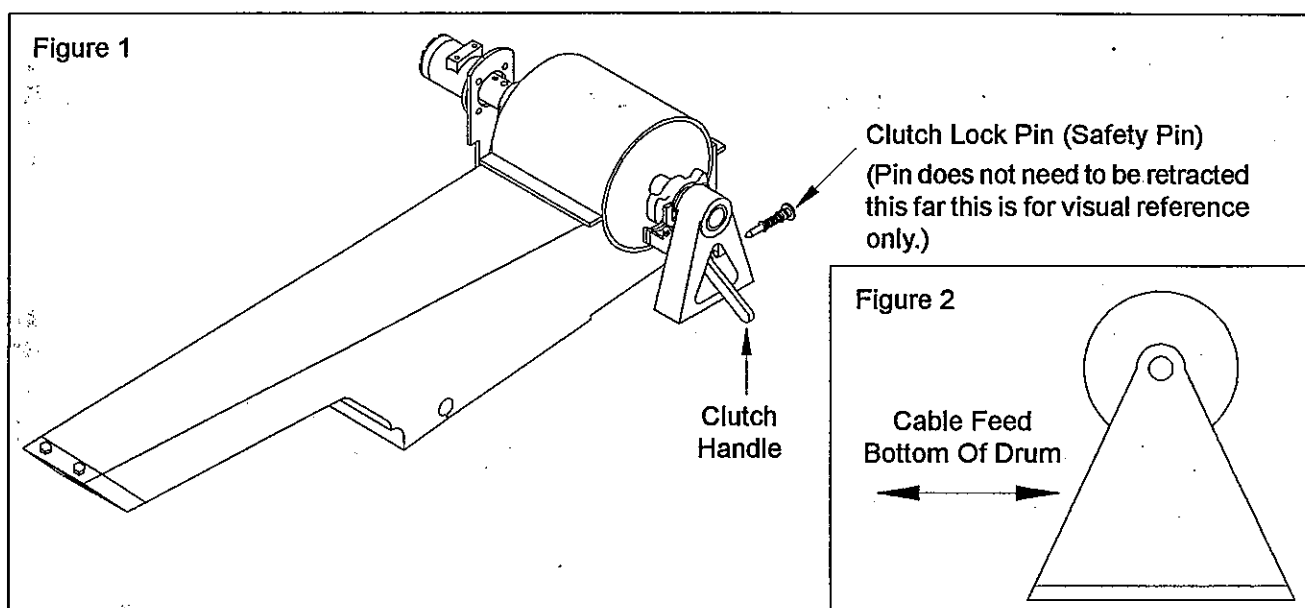
The discharge hydraulic flipper control operates the discharge flipper cylinder. To make the discharge flipper rotate up push the discharge hydraulic flipper control handle in, away from the operator. To make the discharge flipper rotate downward pull the discharge hydraulic flipper control handle out, towards the operator. The discharge hydraulic flipper control handle is in the off position when it is in the center location. Do Not use the hydraulics to secure the discharge when transporting the chipper. Make sure to insert the lock bolt and nut before transporting.

Front Stabilizer Control - Optional:

The front stabilizer control operates the front stabilizer cylinder. To raise the front of the machine pull the front stabilizer control handle up, away from the ground. To lower the front of the machine push the front stabilizer control handle down, towards the ground. The front stabilizer control handle is in the off position when it is in the center location.

Bandit

WINCH OPERATING PROCEDURES



⚠ WARNING

HYDRAULIC WINCH OPERATION PER WINCH MANUFACTURER!

Install 5/16" diameter cable to pull and feed from the bottom of the winch drum (See figure 2). Remove excess bolt length on cable bolts after cable is secured to the spool. Consult winch manufacturers decal for more details.

⚠ DANGER

Never reach into the winch or winch roller area.

OPERATING PROCEDURE

1. Winch operation is a one person job. This means the person who hooks the winch to the material is the same person who engages the winch.
2. Place the feedwheel control bar in the off position.
3. Locate the selector valve and engage it to the winch position.
4. Make sure the winch clutch is disengaged and pull the cable to the material to be reeled in.
5. Make sure everyone is clear and then retract the clutch lock pin and then pull the clutch handle up to engage the winch clutch. (See Figure 1)
6. Use the winch control valve to now pull the material towards the machine.
7. Once the material is pulled to the machine, unhook it from the winch and make sure the cable is completely reeled back in and out of the way. Make sure the cable is clear of the feedwheels or severe damage can occur if the cable should enter the chipper.
8. Disengage the clutch by retracting the clutch lock pin and pushing the clutch handle down. Always disengage clutch when not in use. (See Figure 1)
9. Engage the feedwheels and feed material.

Bandit

TRANSPORTATION PROCEDURES

WARNING

BEFORE TRANSPORTING THE MACHINE THE FOLLOWING MUST BE COMPLETED

- 1) Idle engine and disengage clutch.
- 2) Make sure the top feedwheel is in the lowered position.
- 3) Place all hydraulic controls in the off position.
- 4) Turn off engine, wait for the chipper drum to come to a complete stop and disconnect battery you must have the ignition key in your possession.
- 5) Return wooden push paddle to the mount and secure for transportation. Store all tools in the tool box and make sure all boxes and cabinets are closed and secured.
- 6) Remove all excess debris. Remove any wood or debris which have collected.
- 7) Close the folding infeed pan for the infeed hopper and lock into place.
- 8) Make sure the discharge is pointed over the tongue and bolted into the lock position.
- 9) Raise the front of machine with the tongue jack and remove any stabilization blocks used.
- 10) Couple machine to transport vehicle by lowering the machine onto the pintle hitch. Then close hitch and lock it.
- 11) Attach the safety chains by crossing them under hitch, make sure to allow the proper amount of slack in chains to avoid binding when making turns.
- 12) Connect the brake lines and plug in the electrical connection for the lights on the machine.
- 13) Check running lights, turn signals, and brake lights. All must be operating properly before transporting the machine.
- 14) Check tires for low pressure, cuts or damaged rims.
- 15) Inspect and replace any axle dust caps that are damaged or leaking.
- 16) Check oil level in hubs and grease axles per axle manufacturers manual.
- 17) Walk around the machine to confirm that everything is secure and that there isn't anything loose that could fall off during transport. Look under chipper to ensure nothing is dragging. Look down both sides of the machine for anything sticking out that may become damaged during transport.
- 18) The machine is now ready for transport. Make sure to obey all local regulation and laws regarding the transporting of this type of machine.

DAILY START UP CHECK LIST

Each day before starting your machine these checks must be made:

- ☐ Review all safety procedures, on decals and from manual.
- ☐ Wear all applicable safety equipment; hard hat, gloves, eye protection, ear protection, etc. Per ANSI and OSHA standards.
- ☐ Check entire machine for any loose nuts, bolts, or parts. Make sure all guards are tight and securely in place.
- ☐ Check hydraulic pump and motor shafts for fit and tightness.
- ☐ Check infeed hopper for any foreign objects. Check infeed hopper and around the entire machine for tools, cans, saws, etc.
- ☐ Check fuel level. (Running out and repriming is time consuming).
- ☐ Make sure engine oil and coolant are at proper levels.
- ☐ Check and always maintain hydraulic level at 7/8 full.
- ☐ Inspect all hydraulic hoses and fittings for damage.
- ☐ Daily grease all chipper related bearings.
- ☐ Daily grease all feedwheel bearings.
- ☐ Make sure hood hinge operates correctly, and is lubricated.
- ☐ Open chipper hood and check for any foreign objects.
- ☐ Check the condition of the knives, anvil, fan blades, and inspect hardware.
- ☐ Carefully rotate the chipper drum to insure proper anvil clearance.
- ☐ After closing chipper hood, reinsert the hood pin and padlock, make sure hood pin is tight and secure. Make sure the hood lock pin is firmly in place, the spring lock for hood pin springs back into position, and the chipper hood engine disable plug is installed correctly.
- ☐ Check radiator, debris screen. Clean as necessary. Clean cooling fan, shroud on air cooled engines.
- ☐ Check air cleaner, precleaner, clean as necessary.
- ☐ Check and/or adjust belt tension on chipper and hydraulic pump belt drives.
- ☐ Make sure discharge direction is pointed safely.
- ☐ Block tires and tongue for stability.
- ☐ Check clutch for proper engagement tension and lubrication, frequently adjust and grease, per PTO manufacturers manual recommendations.
- ☐ Inspect / replace axle dust caps, or grease axles per MFG. Manual. Inspect and adjust brakes as needed per axle MFG. Manual.
- ☐ Maintain and service the "Last Chance Stop" system so it is always operational if needed.
- ☐ Remember to check EVERYTHING on the checklist.

START-UP PROCEDURES

DANGER

Do not let anyone operate or maintain this machine until they have thoroughly read this manual. You can purchase additional Bandit manuals for a nominal fee.

WARNING

Consult your engine manual for proper break-in procedures. Various engines require somewhat different procedures, but basically the engines need to operate at lower R.P.M.'s and loads for a specific time.

WARNING

Failure to properly break-in your engine will result in poor bearing and piston ring surfaces.

WARNING

The Bandit has only been run for a short time to test proper hydraulic pressures, possible leaks, etc. The fuel tank will be empty. Fuel is provided through a small auxiliary tank for testing. This immensely helps maintain safety in our manufacturing facility and while shipping.

BEFORE STARTING ENGINE

- 1) Review all safety procedures on decals, from manual, and video.
- 2) Make sure all of safety equipment is being worn; hard hat, gloves, eye protection, ear protection, etc., per ANSI and OSHA standards.
- 3) Check the entire machine for any loose parts or components. Check for loose nuts or bolts. Torque, tighten, or replace any of the loose components. See page 49 for specific bolt torques. Make sure all guards are tight and securely in place.
- 4) Check hydraulic pump and motor shafts for fit and tightness.
- 5) Check the infeed hopper for any foreign objects. Check in the infeed hopper and around the entire machine for tools, cans, saws, etc. All tools not in use should be stored in a tool box.
- 6) Check the fuel level, check the fuel lines, fuel tank, and for any fuel leaks.
- 7) Check engine oil and coolant levels, make sure they are at the proper level for operation. Follow the specific ENGINE MFG. manual recommendations for radiator coolant, additives, etc.
- 8) Check hydraulic oil level, this should always be 7/8 full. Remember to check DAILY to avoid excessive heat build up.
- 9) Inspect all hydraulic hoses, and hydraulic fittings for damage or leaks. Replace if necessary. DO NOT use fingers or skin to check for hydraulic leaks.
- 10) Daily grease all chipper related bearings. Purge chipper bearings. You can not over grease these bearings. Use EP-2 Lithium grease.
- 11) Daily grease all feedwheel bearings with one shot of grease.
- 12) Make sure hood hinge operates correctly, and is lubricated. The hood hinge must be replaced if damaged.

Bandit

BEFORE STARTING ENGINE, cont.

USE CORRECT KNIFE HARDWARE

DO NOT

Use a size or style of chipper knife or bolt other than what is factory approved for this chipper.

DO NOT

Over torque or under torque knife bolts - see bolt torque chart.

DO NOT

Resharpen knife more than minimum width - see chipper section.

DO NOT

Use a knife bolt which has been tightened over (5) times, replace the bolt.



- 13) Before opening the hood make sure the clutch is disengaged, the engine is off, the drum lock pin is installed, battery is disconnected, and make also sure the ignition key is in your possession. Remove the hood pin padlock, disconnect the chipper hood engine disable plug, and then remove the hood lock pin. Look for any foreign objects inside the chipper housing. Remove any foreign objects found.
- 14) Check the condition of the knives, anvil, fan blades, and inspect the hardware.
- 15) Very carefully, manually turn the chipper drum a full revolution. This is to insure the anvil, and knives have the proper clearance. See maintenance section for clearance distance and exact checking procedures.
- 16) Close the chipper hood, and secure the hood by reinserting the hood pin and padlock. Make sure the chipper hood engine disable plug is installed correctly. Make sure hood pin is tight and secure.
- 17) Check radiator and/or debris screen for debris. Clean as necessary. Clean cooling fan and shroud on air cooled engines.
- 18) Check the air cleaner or precleaner for debris. Clean as necessary.
- 19) Check and/or adjust belt tension on chipper and hydraulic pump belt drives. See maintenance section for checking procedures and deflection.
- 20) Make sure discharge direction is pointed safely and locked into place.
- 21) Block tires and tongue for stability before operation.
- 22) Check clutch for proper engagement tension and lubrication, frequently adjust and grease, per PTO manufacturers manual recommendations.
- 23) Maintain and service the "Last Chance Stop" system so it is always operational if needed.
- 24) Remember to check EVERYTHING on the checklist.

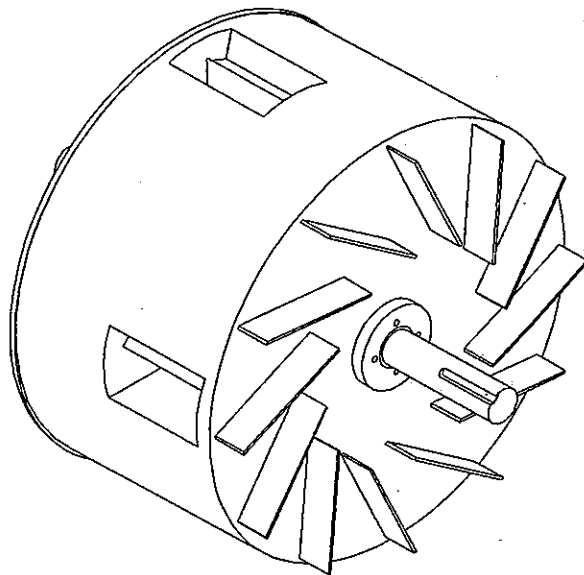
Bandit

MAINTENANCE SECTION

WARNING

WHEN YOU CHANGE CHIPPER KNIVES

CHECK CHIPPER DRUM ASSEMBLY FOR CONDITION OF KNIFE BOLT THREADS, SECURE WELDS, TORQUED BOLTS, EXCESSIVE WEAR AND IMPACT CRACKS. IF PROBLEM FOUND CONTACT CHIPPER MANUFACTURER, OR AUTHORIZED CHIPPER DEALER.



DANGER

LOCK OUT ALL ENERGY SOURCES BEFORE SERVICING OR REMOVING GUARDS OR HOODS!



1. Shut off engine/motor.
2. Disengage pto/clutch.
3. Wait for cutter disc/drum to come to a **COMPLETE STOP** (takes at least several minutes).
4. Install disc/drum lock pin.
5. Unplug engine disable plug.
6. Remove padlock from hood pin.
7. Press down and hold hood spring lock pin.
8. Retract hood pin.

**DO NOT RESTART UNTIL ALL GUARDS
AND HOODS ARE SECURELY AND PROP-
ERLY REINSTALLED**

Bandit

MAINTENANCE CHECK SHEET

DAILY

	O.K.	Repaired
1) Check the safety decals, and engine gauges replace if damaged.	☐	☐
2) Check entire machine for loose nuts, bolts, and components.	☐	☐
3) Check and secure all guards.	☐	☐
4) Check chipper hood hinge for damage.	☐	☐
5) Check hood lock pin and padlock.	☐	☐
6) Check chipper drum assembly.	☐	☐
7) Check the condition of your knives.	☐	☐
8) Properly torque knife bolts and nuts.	☐	☐
9) Check and/or adjust belt tension.	☐	☐
10) Grease all bearings daily.	☐	☐
11) Check hydraulic oil level.	☐	☐
12) Check engine oil, coolant levels, and correct engine speed. Follow ENGINE MFG. manual specs.	☐	☐
13) Check for fluid leaks.	☐	☐
14) Check radiator, debris screen. Check cooling fan, shroud.	☐	☐
15) Check air cleaner, precleaner.	☐	☐
16) Check clutch engagement, tension and lubrication. Frequently adjust and grease, per PTO manufacturers manual.	☐	☐
17) Inspect / replace axle dust caps, or grease axles. (If Needed)	☐	☐

WEEKLY

	O.K.	Repaired
1) Check anvil clearance, tightness, and wear.	☐	☐
2) Check alternator and fan belts on engine.	☐	☐
3) Check spring tension on easy climb system.	☐	☐
4) Check and retighten fuel tank, hydraulic tank mount bolts.	☐	☐
5) Check, retighten wheel lug nuts.	☐	☐

MONTHLY

	O.K.	Repaired
1) Check towing hitch for wear, keep pintle ring greased.	☐	☐
2) Check discharge, and infeed hopper for wear.	☐	☐
3) Check feedwheel teeth for sharpness.	☐	☐
4) Inspect feedwheel motor connections.	☐	☐
5) Check, retighten all bearing and chipper sheave bolts.	☐	☐
6) Replace hydraulic filter.	☐	☐
7) Check hydraulic pressure on the feedwheel system. Set to 2300 PSI.	☐	☐
8) Check and fill tires to rated pressure.	☐	☐
9) Check and grease wheel bearings, follow axle MFG. instructions.	☐	☐

Bandit

MAINTENANCE SECTION

The Bandit is a very simple machine to maintain. If you will follow a regular scheduled preventative maintenance program you should have years of trouble free operation.

⚠ DANGER

Before attempting any type of maintenance disengage clutch, turn off engine, wait for the drum to come to a complete stop, install the drum lock pin, disconnect battery, and make sure the ignition key is in your possession.

NOTICE

Expensive damage to the Bandit will occur if proper preparation is not taken before welding on the machine. Be sure to disconnect both battery cables before welding. Follow the specific Engine MFG. instructions for proper welding and grounding procedures, before attempting to weld on the machine.

DAILY MAINTENANCE

1) Check the safety decals and engine gauges:

Replace any missing or damaged decals and/or engine gauges.

2) Check entire machine for loose bolts, parts, or components:

Check for loose bolts. Torque, tighten, or replace any of the loss components.

3) Check all guards:

Check to make sure all guards are in place and installed correctly. Make sure they are secure.

4) Check chipper hood hinge:

Make sure the hood hinge operates correctly, and is lubricated. Must replace hinge if damaged.

5) Hood lock pin and padlock:

Make sure pin is tight and padlocked. If worn replace immediately. Don't use a worn or makeshift hood pin. Make sure the chipper hood engine disable plug is installed correctly and that it is also operating properly.

6) Check chipper drum assembly:

Check for the condition of knife bolt threads, secure welds, torqued bolts, excessive wear and impact cracks. If a problem is found contact the chipper manufacturer or an authorized Bandit dealer.

7) Check the condition of your knives, anvil, hardware, and fan blades:

Grind, file, or replace your knives to keep them sharp. Check the anvil, anvil hardware, and fan blades. Replace if necessary.

8) Check the knife bolts:

All knife bolts must be of premium quality, and meet all SAE standards for "Grade 8" hardness. Bolts must be replaced after a maximum of 4-5 knife rotations/changes to insure safe clamping ability.

Torque set, AT ALL TIMES to:

180 ft./lbs. for 5/8" X 5 1/2" X 10" knives

Bandit

DAILY MAINTENANCE (cont.)

9) Check and/or adjust the chipper drive belt tension:

The belts will need to be tightened several times in the first few days of operation. A loose belt will slip and then glaze over. Once they slip you must replace them. Check hydraulic pump drive belts also. See page 47 for exact belt tension procedures.

10) Grease all feedwheel, and chipper bearings daily:

Use an EP-2 Lithium type grease only for all bearings. Purge chipper bearings with grease you can not over grease these bearings. Grease feedwheel bearings with one shot of grease. These bearing are designed with a relief system that will not allow over greasing. In other words, you can not hurt the bearing seals by pumping in to much grease. Most of the failures related to bearings are diagnosed as "Contamination". Contamination is caused by improper lubrication.

11) Check hydraulic oil level:

The hydraulic oil reservoir tank level should always remain at 7/8 full.

12) Check engine oil and coolant levels:

Follow the engine manufacturer manual recommendations for fluid levels. You MUST follow specific ENGINE MFG. manual recommendations for radiator coolant, additives, correct engine speed, ETC.

13) Check for any fluid leaks:

Inspect for any oil, fuel, hydraulic oil, or engine coolant leaks. Check all hoses, fittings, lines, and tanks. Repair or replace any damaged or leaking components.

14) Check radiator, debris screen:

Thoroughly clean radiator fins at least once a day and twice in excessive conditions. Make sure debris is not packed between fins. Use pressurized water spray to clean. Do not rely on air pressure. The radiator will only appear to be clean. A partially plugged radiator will not allow the engine to cool properly. Clean cooling fan, shroud on air cooled engines, and the debris screen (if so equipped). Improper service, maintenance, or neglect will cause overheating problems and engine failure.

15) Check air cleaner or precleaner, clean or replace as necessary:

Clean or replace element following engine manual recommendations.

16) Check clutch:

Check for proper lubrication, and engagement tension adjustment, frequently adjust and lubricate per PTO clutch manufacturers manual. Bandit Industries, Inc. does not warranty clutch failures.

17) Inspect/replace axle dust caps:

Grease axles per axle MFG. manual. Inspect and adjust brakes as needed per axle MFG. manual.

WEEKLY MAINTENANCE

1) Check anvil clearance, tightness, and wear:

Measure the anvil clearance. The clearance should be .120 from highest knife. Check the anvil hardware, make sure the bolts are at the proper tightness. The anvil is a normal wear item, if it is worn you can rotate it to a new working edge. Refer to page 52 for the exact checking of anvil clearance procedure.

2) Check alternator and fan belts on engine (as applicable):

Adjust and maintain per the engine manufacturer's manual.

3) Check spring tension on feedwheel system:

Do not over tighten. Keep tight for small diameter material and progressively looser for larger diameter material.

4) Check and retighten fuel tank mount bolts:

Check the hydraulic tank mount bolts also at this time.

5) Check wheel lug nuts:

Keep lug nuts tight, retorque, replace if needed.

6) Lubricate all chains:

Use a dry lubricant on any chains used to drive any component parts. For example: chain driven feedwheels, and hydraulic swivel discharges, etc.

MONTHLY MAINTENANCE

1) Check towing hitch:

Check for excessive damage or wear. Replace if needed. Keep pintle ring greased to reduce wear.

2) Check discharge, and infeed hopper wear:

Check for wear on discharge, infeed hopper, and discharge direction adjustor, build up, repair or replace as needed.

3) Inspect feedwheel motor connections.

Check and maintain correct torque, on feedwheel motor connections.

4) Check feedwheel teeth for sharpness:

Replace if needed.

5) Check chipper bearings and chipper sheave:

Check, retighten all bearing bolts, bearing lock collars, and also belt sheave bushings to correct torques.

6) Hydraulic oil filter:

Must be replaced after FIRST 10 HOURS OF OPERATION, USE LE-10 MICRON FILTER, then every 400 hours afterwards. Change hydraulic suction screen once yearly.

7) Check hydraulic pressures on the feedwheel system:

Check, reset and maintain all hydraulic feedwheel pressure settings to a maximum of 2300 P.S.I. This will give you the best performance from the hydraulic feed system.

8) Tire air pressure:

Fill tires to rated tire capacity.

9) Check wheel bearings:

Check and grease wheel bearings per axle manufacturer's instructions.

BOLT TORQUE CHART

(THESE TORQUES ARE BASED ON DRY, CLEAN THREADS)

DESCRIPTION	BOLT SIZE	FT.-LBS. TORQUE
Knife Bolts	5/8" - 11 NC	180
Drum Head Bearing Bolts	3/4" - 10 NC	220
Feedwheel Bearing Bolts	1/2" - 13 NC	80
Feedwheel Bearing Bolts	5/8" - 11 NC	80
Drum Head Shaft Hub Bolts	5/8" - 11 NC	142
Engine Sheave Bushing "E"	1/2" - 13 NC	60
Engine Sheave Bushing "SF"	3/8" - 16 NC	30
Chipper Sheave Bushing "E"	1/2" - 13 NC	60
Chipper Sheave Bushing "F"	9/16" - 12 NC	75
Chipper Sheave Bushing "J"	5/8" - 11 NC	135
Hitch Mount Bolts	5/8" - 11 NC	220
Anvil Mount Bolts	1/2" - 13 NC	75
Bottom Feedwheel Coupler Clamp	5/8" - 18 NF	250
Feedwheel Motor Sprocket Bushing "Q2"	3/8" - 16 NC	29
Feedwheel Sprocket Bushing "R1"	3/8" - 16 NC	29
Quad Feedwheel Sprocket Bushing "Q1"	3/8" - 16 NC	29
"RE" Feedwheel Motor Shaft Nut	1" - 20 UNEF	250-300
"DT" Feedwheel Motor Shaft Nut	1 1/8" - 20 UNEF	340
Autofeed Cartridge Nut	1/2"	4-6

Before tightening bolts be sure you have the correct size bolt for the correct amount of torque. Knife Bolts Must Be Premium Quality, Grade 8 Hardness!

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

5 & 6 Lug Hubs (1/2" - 20 Studs)	90 - 120 ft./lb. Torque
8 Lug Hubs (1/2" - 20 Studs)	90 - 120 ft./lb. Torque
8 Lug Hubs (9/16" - 18 Studs)	110 - 120 ft./lb. Torque
8 Lug Hubs (5/8" - 18 Studs)	175 - 225 ft./lb. Torque
10 Lug Hubs (3/4" - 16 Studs)	450 - 500 ft./lb. Torque

(Torques per axle manufacturer specifications)

Bandit

MAINTENANCE

PROCEDURE FOR UNPLUGGING YOUR CHIPPER

If your chipper is plugging, it is usually caused by allowing the engine to drop below 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 the optional autofeed 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. Before attempting any type of maintenance disengage clutch, turn off engine, wait for the drum to come to a complete stop, install the drum lock pin, disconnect battery, and make sure the ignition key is in your possession.
2. Make sure the chipper drum is **NOT** turning and then open the hinged portion of the chipper hood.
3. Using gloved hands and some type of raking tool, dig the chips out of the chipper housing.
4. If the discharge chute is plugged, use a raking tool to pull the majority of chips out of the open outlet end of the chute. Then, two people must remove the chute. Do not attempt this with one person, because the chute can fall causing injury.
5. Never allow one person to turn the chipper drum when someone else is working inside the chipper housing. More than likely, the chipper drum will turn hard then loosen causing it to turn faster. If another person is anywhere near the chipper drum, they may be injured.
6. Never turn the chipper drum by hand. Always use a pry bar. This will prevent the person turning the drum from being injured should the drum break loose.
7. Reinstall the discharge chute, mount securely and point it in a safe direction away from anything.
8. Never leave the chipper hood open and try to start the engine in order to engage the chipper drum to blow chips out of the housing, this is very hard on the P.T.O. of the chipper and may burn clutch plates. Also, the flying debris is very dangerous. An exposed chipper drum turning very fast creates an unsafe condition. In other words, **DO NOT** start the chipper with the hood open because it is just too dangerous.
9. Once the drum turns freely, close the chipper hood, insert the hood pin, install the padlock in the hood pin, reinstall the chipper hood engine disable plug, start engine, properly engage clutch and throttle to full speed. Insert a small branch into the feedwheels. If the chips discharge properly, the chipper is clear and normal operation may resume.

BELT TENSION

GENERAL RULES FOR TENSIONING

1. Check tensioning during the first 2-48 hours of run-in operation.
2. Over tensioning shortens belt and bearing life.
3. Keep belts free from foreign materials that may cause the belt to slip.
4. Make V-drive inspection on a periodic basis. Never use belt dressing as this will damage the belt and cause early failure.
5. Belts should never be forced over the sheave. Allow enough room for belts to slip on.
6. Always make sure sheaves are aligned properly.

TENSIONING PROCEDURE

Main Drive Belts

Locate the center of the belt span between the sheaves. Push or pull on the belt until the belt has deflected $3/8"$. Record the push or pull force. The force should be 24 to 26 lbs./belt for the 1890 and 1890 HD with 250 HP engines and 22 to 24 lbs./belt for the 1890 HD. Adjust the belt tension if the force falls outside of this range. If not properly adjusted belts will slip, glaze over and be ruined. This is NOT covered by warranty.

Pump Drive Belts (If equipped)

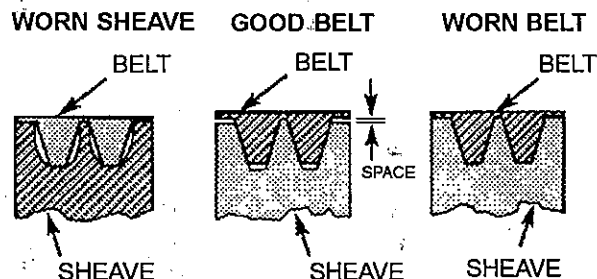
Locate the center of the span between sheaves. Push or pull down on the belt until the belt has deflected $1/4"$. Record the push or pull down force. The force should be 12 lbs. Adjust the belt tension if the force falls outside of this range. Do not over tighten the hydraulic pump belt. For best results use a good bent tension tester. Most all pump failures result from too much side load on the pump shaft. Too much belt tension is very easy to detect inside a failed pump. Pumps with this condition will not be covered under warranty.

DO NOT IGNORE THIS MAINTENANCE RULE!

New belts stretch very soon and must be adjusted several times in the first few hours of operation. Adjust after one hour of operation, then every four hours until the belts quit stretching.

Failure to do this will cause the belts to burn and fly off. **THIS FAILURE IS NOT COVERED BY WARRANTY!**

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.



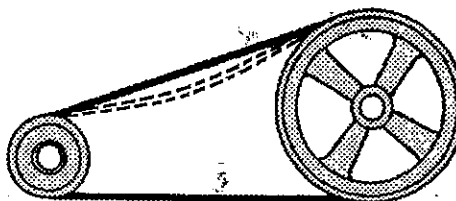
Main Drive belts

Maximum of $3/8"$ deflection with 24 to 26 lbs. of force for 1890 & 1890 HD with 250 HP engines.

Maximum of $3/8"$ deflection with 22 to 24 lbs. of force for 1890 HD.

Pump Drive belts

Maximum of $1/4"$ deflection with 12 lbs. of force.



TIRE WEAR DIAGNOSTIC CHART

Wear Pattern		Cause	Action
	Center Wear	Over Inflation	Adjust pressure to particular load per tire catalog
	Edge Wear	Under Inflation	Adjust pressure to particular load per tire catalog
	Side Wear	Not Hauling Trailer Level Bent Axles Wide Tires Wheel Bearings	Must be hauled parallel to ground Replace as needed Characteristic of wide flotation tires Adjust or replace
	Cupping	Out-Of-Balance Wheel Bearings	Check bearing adjustment and balance tires Adjust or replace
	Flat Spots	Wheel Lock Up & Tire Skidding	Avoid sudden stops when possible and adjust brakes.

The wear pattern and tread life of tires involves many variables that the user has control of, but **DOES NOT** fall under faulty manufacture or design.

The following is a list of some causes supplied by tire suppliers and axle manufacturers:

- Misalignment - from rough roads, pot holes, excessive speeds and hitting curbs.
- Tire Width - the wider the tire for flotation, the more uneven the tire wear.
- Tire Air Pressure - to much or too little, for the load.
- Vehicle Hitch Height - if trailer is not level with ground, axle camber is misaligned.
- Maintenance - wheel bearing lubrication and adjustment. Follow axle MFG. instructions.
- Brakes - uneven or misadjusted brakes cause irregular brake activation.

RECOMMENDED BRAKE ADJUSTMENT PROCEDURE PER AXLE MANUFACTURER.

The proper clearance between the shoe and drum surfaces will be set up initially from our factory to assure proper operation during the normal break in period. No further adjustment will be necessary until the vehicle completes the recommended break in period of 200 miles.

Since all brakes of this type must be burnished or "run in" before their full effectiveness can be achieved, the MFG. maintenance manuals call for readjustment after the first 200 miles of operation. This usually allows ample time for the burnishing to take place. Readjustments is not necessary for brakes fitted with self-adjustment features although periodic inspection is suggested.

The following shows the correct adjustment for the MFG. brakes of 12 1/4" diameter.

⚠ CAUTION Clearances that are too small will result in excessive drag and overheating while too much clearance can render the brake nonfunctional.

AXLE SIZE	SIZE	TYPE	DIAMETRAL CLEARANCE	CLICKS TO BACK OFF
5,200 LBS.	12" X 2"	Electric	.040"	10 TO 16
5,200 LBS.	12" X 2"	Hydraulic	.040"	10 TO 16
7,000	12 1/4" X 2.5"	Electric	.040"	7 TO 13
9,000-10,000	12 1/4" X 3.38"	Electric	.040"	AUTOMATIC ADJUSTING
9,000-10,000	12 1/4" X 3.38"	Hydraulic	.040"	AUTOMATIC ADJUSTING
12,000	12 1/4" X 5"	Electric	.040"	AUTOMATIC ADJUSTING
12,000	12 1/4" X 5"	Hydraulic	.040"	AUTOMATIC ADJUSTING

For additional brake adjustment procedures consult the axle manufacturer manual.

Bandit

EASY CLIMB FEED SYSTEM

⚠ DANGER

Before attempting any type of maintenance disengage clutch, turn off engine, wait for the drum to come to a complete stop, install the drum lock pin, disconnect battery, and make sure the ignition key is in your possession.

The Easy Climb System allows for adjusting the amount of spring tension put on the top feedwheel. The more spring tension, the harder it will be for top feedwheel to raise. More spring tension will keep the top feedwheel down on smaller brush material. The less spring tension, the easier it will be for the top feedwheel to raise. Less spring tension allows the top feedwheel to raise, and climb over the larger diameter material.

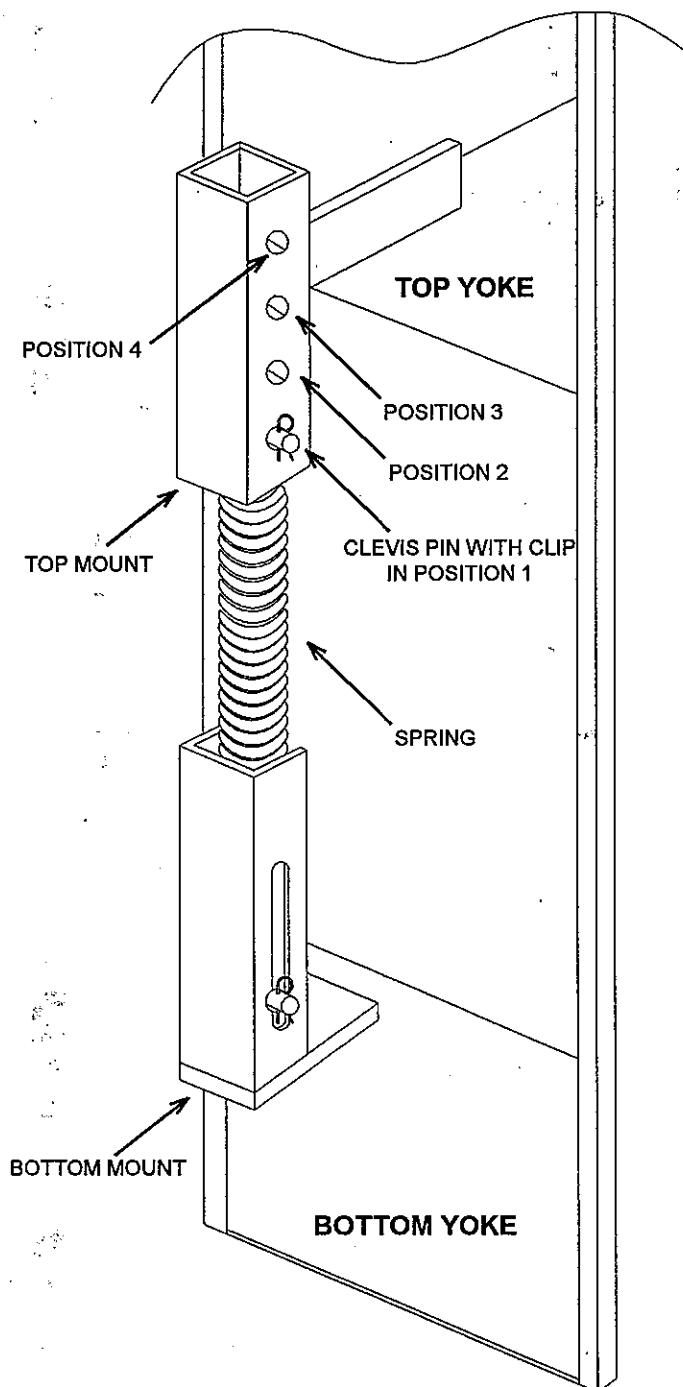
There are four adjustment positions on the Easy Climb System. When adjusting spring tension have the top feedwheel in the lowered position. Use the Clevis Pin with Clip to adjust the tension. Make sure that the Clevis Pin is installed properly and that the Clip is secured tightly in place.

With the pin in position 1 the Easy Climb System will have approximately 6" of travel before there is spring tension. Use this position when chipping the maximum diameter material allowed by the chipper.

With the pin in position 2 the Easy Climb System will have approximately 4" of travel before there is spring tension. Use this position while chipping slightly smaller material than the maximum diameter material allowed by the chipper.

With the pin in position 3 the Easy Climb System will have approximately 2" of travel before there is spring tension. Use this position when chipping brush type material.

With the pin in position 4 the Easy Climb System will have approximately 0" of travel before there is spring tension. Use this position when chipping small brush type material.



ADJUST ACCORDINGLY AS SPRINGS STRETCH.

Bandit

CHIPPER HOOD ENGINE DISABLE PLUG OPERATION

This chipper hood engine disable plug is installed for safety purposes. It is designed to shut down the engine if the hood pin is not properly in place holding the chipper hood in the closed position. Correctly installed and maintained, the engine will not start or it will shut off if the plug connector is disconnected.

The chipper hood engine disable plug is located on top of the chipper hood (see figure 1). The chipper engine disable plug is made up of two parts: an electric socket and a plug connector (see figure 2). The electric socket is bolted to the chipper engine disable plug mount bracket (see figure 3) and the plug connector is attached by a cable to the hood pin (see figure 4).

If the chipper engine disable plug is not properly installed then the engine will not start or run. If the chipper engine disable plug becomes disconnected while the chipper engine is running the engine will be shut down or be disabled from running. This is for safety purposes, to ensure that the hood pin is not removed and the chipper hood is not opened while the engine is running.

The chipper engine disable plug is wired to shut down the chipper engine. There are two wires connected into the electric socket which are tied into the engine electronics. There is a wire loop installed inside the plug connector so when the two are connected the electric circuit is complete. When the plug connector is pulled out of the electric socket the electric circuit is broken, disabling the engine (see figure 5).

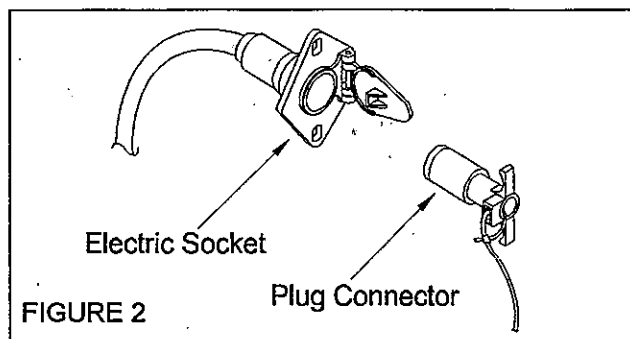


FIGURE 2

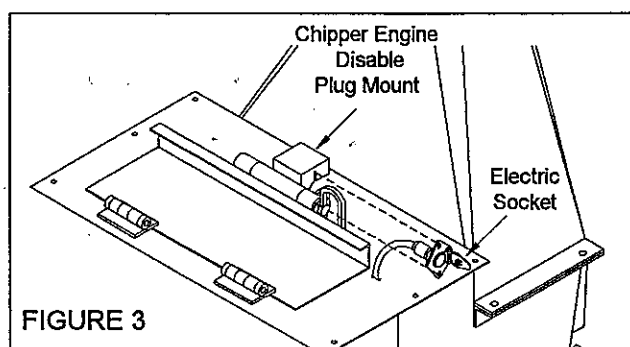


FIGURE 3

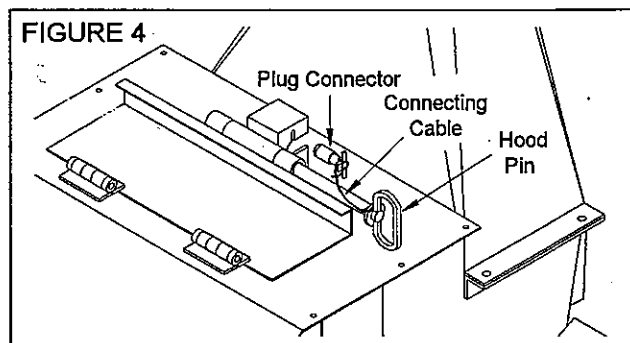


FIGURE 4

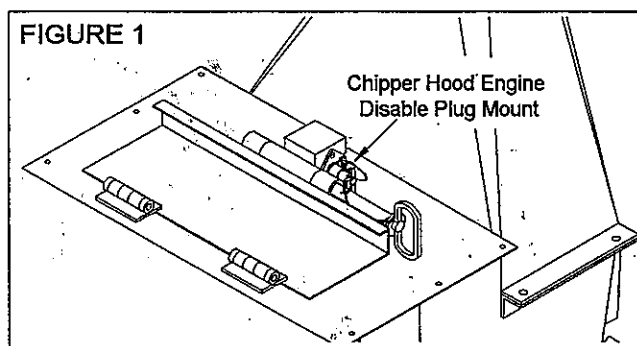


FIGURE 1

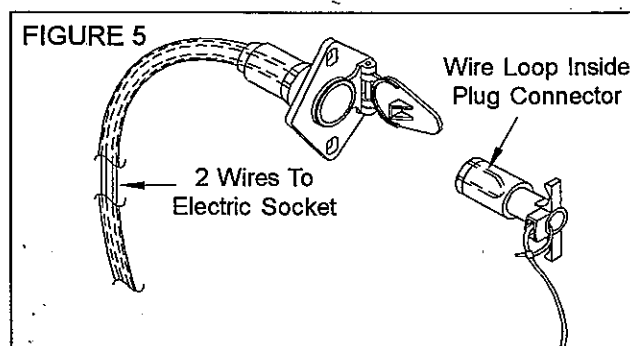


FIGURE 5

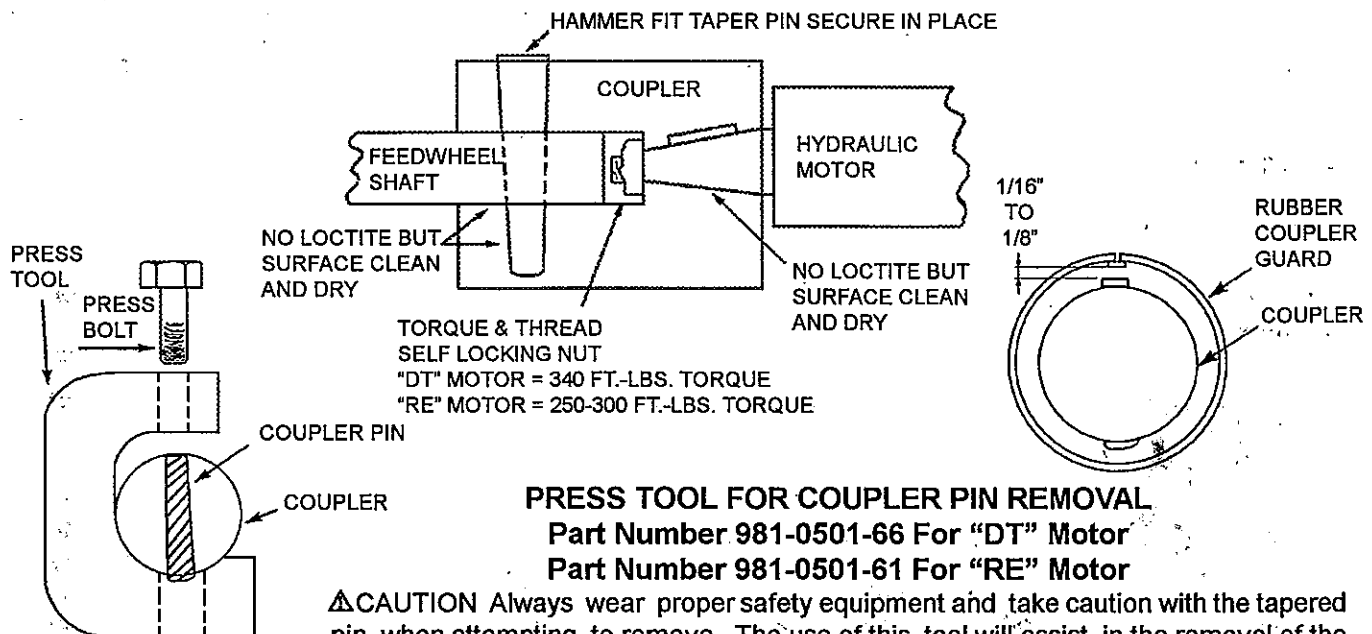
PROPER PROCEDURE FOR INSTALLATION AND REMOVAL OF J.B. COUPLERS AND TAPERED FEEDWHEEL MOTORS

A. Proper Equipment Needed:

- | | |
|---|-------------------------------|
| 1. Feedwheel motor with tapered shaft. | 5. Emery cloth and/or a file. |
| 2. 5/16" x 5/16" x 1 1/4" long key for DT motor. | 6. A degreaser agent. |
| 3. 5/16" x 9/32" x 15/16" long key for RE motor. | 7. Self locking nut. |
| 3. Correct feedwheel shaft, coupler and taper pin assembly. | 8. Hammer. |
| 4. Loctite-271. | 9. Torque wrench and |
| | 1 5/8" socket for DT Motor |
| | 1 3/8" socket for 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 self locking nut with Loctite-271 on the threads.
6. Tighten to the correct torque, 340 ft.-lbs for "DT" motor & 250-300 for "RE" motor.
7. Slightly tap with a hammer on the coupler face to insure proper seating.
8. Retorque self locking 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.



PRESS TOOL FOR COUPLER PIN REMOVAL

Part Number 981-0501-66 For "DT" Motor

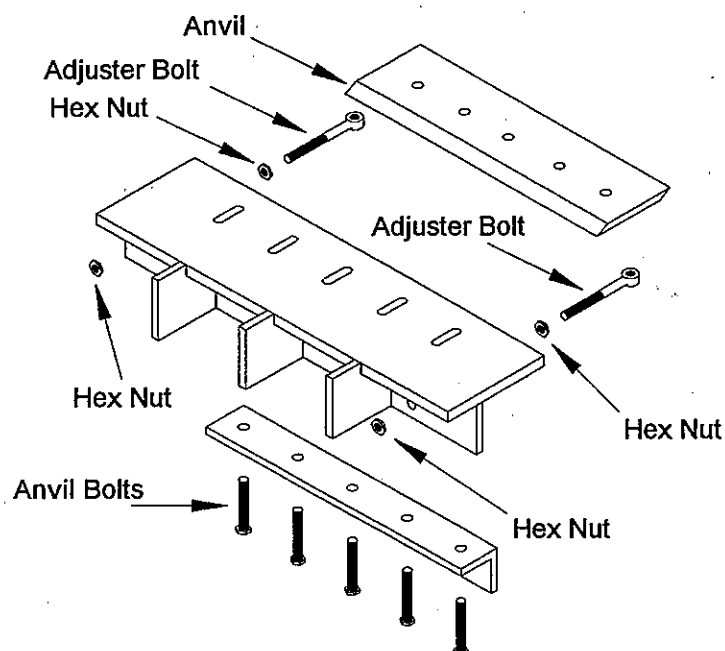
Part Number 981-0501-61 For "RE" Motor

CAUTION Always wear proper safety equipment and take caution with the tapered pin when attempting to remove. The use of this tool will assist in the removal of the tapered pin in the feedwheel coupler. Lubricate end of bolt and threads with grease.

Position the press tool so that it cradles the coupler, with the large end of the tapered pin at the side opposite the press bolt. You may want to remove yoke springs to get easier access to coupler. Set the tool as described and hand tighten press bolt to snug tool against coupler. Make sure press bolt is set on small end of tapered pin, and that pin will go through hole in tool without interference. Use of a 1/2" impact wrench is recommended. Run impact on bolt to start pin removal, then usually a good hit with hammer on the end of bolt will knock out the pin. You may have to run impact on bolt and hit with hammer a few times to remove pin.

Bandit

ANVIL ADJUSTMENT



⚠ DANGER

Before attempting any type of maintenance disengage clutch, turn off engine, wait for the drum to come to a complete stop, install the drum lock pin, disconnect battery, and make sure the ignition key is in your possession.

Before working inside the infeed hopper or under the top feedwheel remove the easy climb springs from the top yoke, raise the yoke, install the yoke lock pin, safety chain the yoke in the raised position, and insert a wooden block to assist in holding the yoke in the raised position.

Check the anvil to knife clearance

This clearance should be checked on a weekly basis. To check the anvil clearance the above safety procedures must be taken. Once all safety procedures are completed the anvil to knife clearance can be checked. In order to check the clearance one person will need to climb into the infeed hopper. Use a feeler gauge to check the clearance of the first knife to the anvil. Check the clearance at the left and right sides of the anvil. Once that knife has been checked climb back out of the infeed hopper and very carefully rotate the chipper drum so the other knives can be checked.

⚠ DANGER

Do Not under any circumstance attempt to rotate the chipper drum while someone is inside the infeed hopper. They may become seriously injured, Do Not Do This!

Once the drum has been rotated check the clearance between the next knife. Once all knives have been checked adjust the anvil according to the closest knife. The anvil to knife clearance should be .120 inches. Set the closest knife to this distance.

Anvil Adjustment Procedure

(Refer to above Figure)

To adjust the anvil first loosen two of the hex nuts on either the inside or outside of the anvil puller block. If the anvil needs to be adjusted closer to the drum, loosen the outside hex nuts. If the anvil needs to be adjusted away from the drum, loosen the inside hex nuts. Next loosen the anvil clamp bolts. Once the components have been loosened, move the anvil to the correct clearance. Once knife is set to the correct clearance, .120 inches, retighten all components. Make sure bolts are torqued to their specific bolt torques refer to bolt torques on page 45. Rotate the drum to make sure all the knives clear the anvil.

HYDRAULIC SECTION

WARNING

DO NOT GO NEAR HYDRAULIC LEAKS!

High pressure oil easily punctures skin causing serious injury, gangrene, or death. If injured, seek emergency medical help. Immediate surgery is required to remove oil. DO NOT use fingers or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings.

 **WARNING**



DO NOT GO NEAR LEAKS!

- Pressured oil easily punctures skin causing injury, gangrene or death.
- Seek immediate medical care.
- Do not use finger or skin to check for leaks.
- Remove hydraulic pressure or load before loosening fittings.

HYDRAULIC SECTION

TYPICAL HYDRAULIC RELIEF PRESSURE SETTINGS

TYPICAL HYDRAULIC FLOWS AND RPM SETTINGS

(Approximate, For Reference Only, Engine At Full RPM)

Equipment Model	1890 "RE" Motors S/N's 1007-1118 S/N's 1120-1123	1890 "RE" Motors S/N's 1119, 1125-1190 S/N's 1192-1225	1890 "DT" Motors Lee-tite Couplers Only S/N 1191	1890 & Quad Feed "DT" Motors Direct Drive	1890 "HD" & 1890 With HD Feed	1890 With HD Feed & Cat/Perkins Engine	1890 Big Wheel S/N's 1279,1300 1303,1315 1317,1331	1890 Big Wheel S/N's - 1346 1350,1369, 1373,1374, 1399,1442
Pump GPM	Single Pump 10.6	Single Pump 10.6	Single Pump 17	Single Pump 20.8	Tandem Pump 20.8 Total	Single Pump 20.5	Single Pump 19.1	Single Pump 20.8
GPM Top Feedwheel	5.3	5.3	6.8	10.4	12.5	12.3	12.8	11.9
GPM Bottom Feedwheel	5.3	5.3	10.2	10.4	8.3	8.2	6.3	8.9
Feedwheel RPM	36 - 37	36 - 37	Top 23 - 24 Bttm 35 - 36	36 - 37	Top 20 - 21 Bttm 29 - 30	Top 20 - 21 Bttm 29 - 30	Top 13 - 14 Bttm 22 - 23	Top 12 - 13 Bttm 32 - 33
IF Equipped Main Relief PSI	2500	3000	2300	2300	2300	2300	2300	2300
Feed Relief PSI	2500	3000	2300	2300	2300	2300	2300	2300
Yoke Up Relief	1800	1800	1800	1800	1800	1800	1800	1800
Yoke Down Relief	1800	1800	1800	1800	1800	1800	1800	1800
Winch Relief	2200	2200	N/A	2200	2200	2200	2200	2200
Disch. Rotate PSI	800 - 900 at idle	800 - 900 at idle	N/A	800 - 900 at idle	800 - 900 at idle	800-900 at idle	800-900 at idle	800-900 at idle
Disch. Flipper PSI	400 - 500	400 - 500	N/A	400 - 500	400 - 500	400-500	400-500	400-500
Front Stab. PSI	2200 at idle	2200 at idle	N/A	2200 at idle	2200 at idle	2200 at idle	2200 at idle	2200 at idle

⚠ CAUTION

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

NOTE: These Typical Hydraulic Flows And Relief Pressure Settings Are With The Engine At Full RPM. All Settings Are Subject To Change!

Bandit

HYDRAULIC SECTION

THE BANDIT HYDRAULIC SYSTEM

The Bandit is equipped with a very efficient, simple hydraulic system. Each component is capable of withstanding a specified PSI and still operate for a very long time.

If the simple rules mentioned below are followed, the hydraulic components will last for years:

- Avoid hydraulic pump cavitation. Low oil levels or cold start-ups will cause the hydraulic pump to cavitate. Cavitation will ruin the pump and possibly the entire hydraulic system. Cavitation only has to happen once. This will start the pump on its way to ruin. Allow hydraulic system to turn slowly for several minutes in cold weather in order for hydraulic system to warm up. Cavitation is not covered under warranty.
- Do not increase the feedwheel relief valve setting beyond the specified PSI. This will cause damage to hydraulic components. Do not set any other hydraulic component past it's specified pressure or this will cause damage to the hydraulic components.
- Keep hydraulic oil clean. Dirty oil will cause excessive wear and loss of feedwheel power.
- Replace the spin-on hydraulic oil filter with each 400 hours of operation or 3 months. See lubrication chart on page 63 for hydraulic oil requirements.
- Replace hydraulic oil & suction screen once yearly. This is also a very good time to flush and clean the tank. Replace hydraulic oil immediately if it is contaminated or looks "milky".
- If the Bandit's hydraulic system is kept clean and the feedwheel hydraulic pressure is not increased beyond the specified PSI, the maximum use and life should be received from the Bandit chipper hydraulic system.
- If a problem is encountered, it will more than likely be located in the relief valve or something as simple as belts slipping, check these first.
- Only use the optional adjustable speed control when chipping large diameter trees. Do not leave the speed adjustment partially open for long periods of time. This will cause excessive heat to the hydraulic system! Excessive heat will cause low feedwheel power and premature failure of all hydraulic components. Always operate system at full speed unless chipping large diameter trees!
- Do not close the optional hydraulic shut-off valve for more than 3 to 4 seconds. Hydraulic shut-off valve handle must be completely turned on (in line with hose) at all times unless checking hydraulic pressure. Pressure gauge should be safely stored and installed only when checking pressure. Follow above instructions or this will cause unwarranted damage to the hydraulic components.

HYDRAULIC COMPONENTS

Feedwheel hydraulic motors:

These hydraulic motors are attached to the feedwheels by a tapered feedwheel motor connection or a clamp style coupler.

Hydraulic pump:

The hydraulic pump could be bolted directly to the engine, or may be driven by a sheave/belt combination off of the chipper shaft or crank shaft of the engine.

Suction strainer:

This strainer stops contaminants from reaching the hydraulic pump. The suction strainer should be replaced at least once yearly.

Hydraulic tank:

This tank must be kept clean and filled minimum 7/8 full. Clean tank yearly.

Filter:

This spin-on cartridge filter must be replaced per maintenance schedule.

Filter mount:

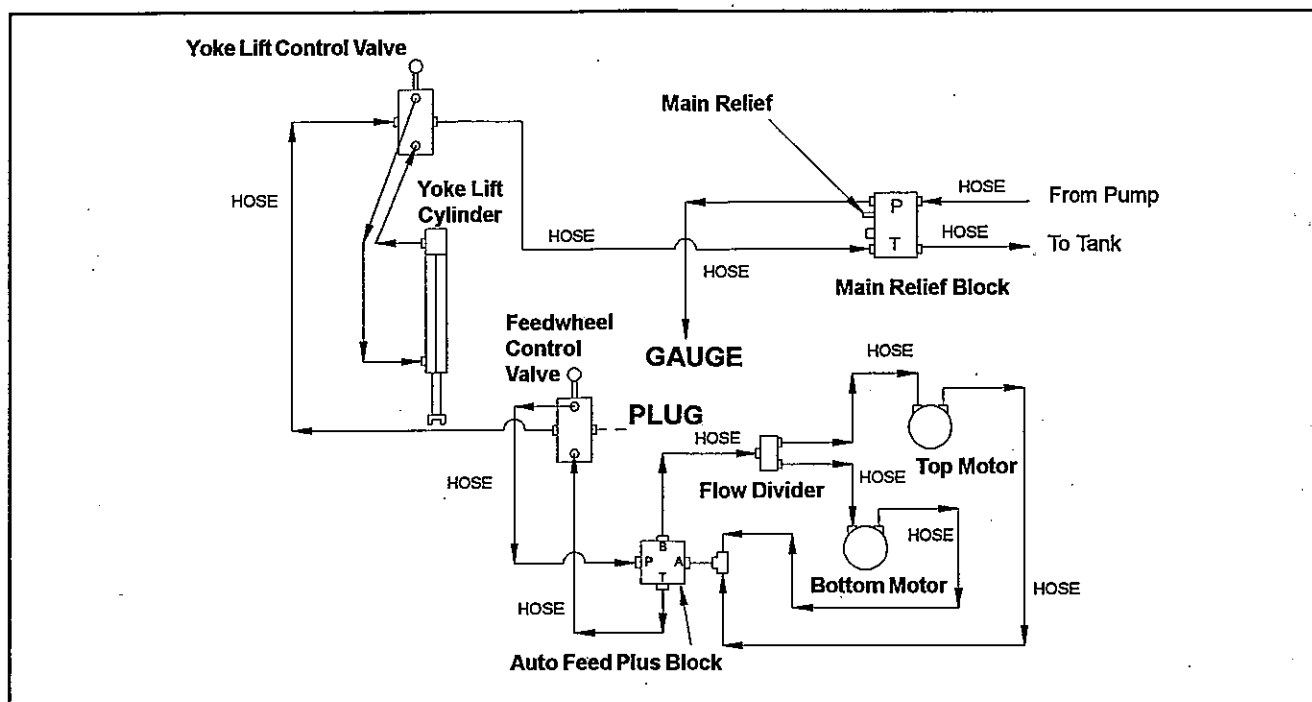
The filter is tightened on the Filter Mount.

Feedwheel valve:

This valve is actuated by the control bar. The valve actuates the feedwheel for forward, off or reverse.

SEE PAGE 54 FOR SPECIFIED RELIEF VALVE PRESSURE SETTINGS.

**THE BANDIT CHIPPER IS EQUIPPED WITH ONE OF THREE
FEEDWHEEL HYDRAULIC PRESSURE ADJUSTMENT PROCEDURES**



⚠ WARNING

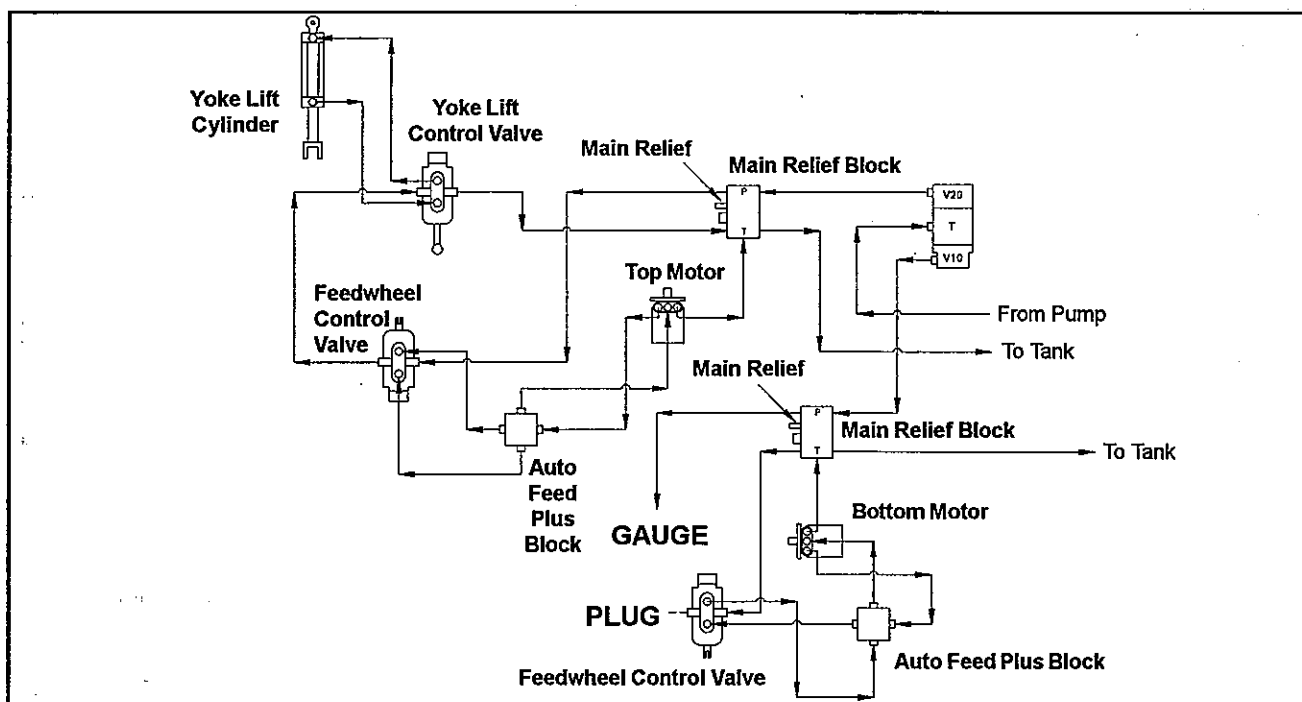
Before attempting any hydraulic pressure settings, disengage clutch, turn off engine, wait for the drum to come to a complete stop, install the drum lock pin, disconnect battery, and make sure the ignition key is in your possession. To correctly check relief valve pressure, gauge **MUST** be installed correctly.

1. First put control handle in off position.
2. Disconnect hydraulic hose going from main relief block to feedwheel control valve at the feedwheel control valve end.
3. Install pressure gauge at end of the hose, plug port on feedwheel control valve where you disconnected the hose.
4. Start engine and adjust engine to full throttle to activate reading on pressure gauge.
5. Pressure gauge should read maximum specified PSI. (See page 54)
ONLY RUN ENGINE FOR 4-5 SECONDS TO SET PRESSURE OR YOU MAY DAMAGE HYDRAULICS.
6. Locate relief below autofeed solenoid, loosen jam nut, use an allen wrench to readjust relief pressure setting if needed, and then retighten jam nut.
7. Reassemble hose from main relief block to feedwheel control valve.
8. Check for hydraulic leaks.
9. Relief valve pressure should be checked and/or readjusted every 3 months for best performance.

MAINTAIN FEEDWHEEL HYDRAULIC PRESSURE TO THE SPECIFIED PSI.

Bandit

HYDRAULIC PRESSURE CHECK AND ADJUSTMENT PROCEDURE (FOR MODEL 1890 HD ONLY)



⚠ WARNING

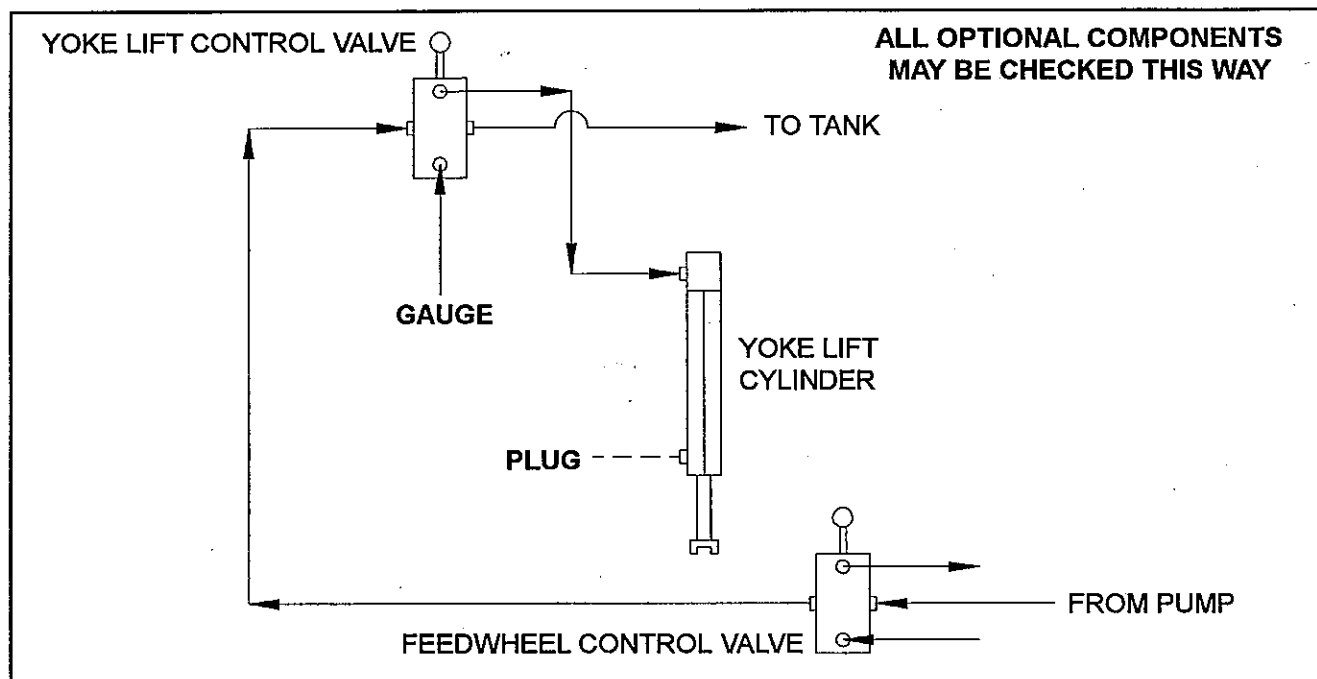
Before attempting any hydraulic pressure settings, disengage clutch, turn off engine, wait for the drum to come to a complete stop, install the drum lock pin, disconnect battery, and make sure the ignition key is in your possession. To correctly check relief valve pressure, gauge MUST be installed correctly.

1. Locate #1 Ground Feedwheel Control Valve, and #2 Ground Feedwheel Control Valve. These are on the tank side of the machine.
2. Now locate the #3, and #4 Main Relief Assembly. They will be attached to the right hand wall in the compartment under the cab. You will only be adjusting one of the Main Reliefs at a time.
3. Locate the #5 Power Hydraulic Hose. It will be connected from the #3 Main Relief to the #1 Valve. The #5 hose will be next to the #6 Pressure Adjustor.
4. Disconnect the #5 hose at the #3 Main Relief Assembly.
5. Attach a 0-6000 P.S.I. maximum range hydraulic pressure gauge to the end of the #5 hose fitting.
6. Start engine now, and loosen jam nut. Use an Allen wrench to turn #6 Adjustor to set hydraulic pressure to 2300 P.S.I.
7. Engine must run at full throttle while adjusting pressure, but only for 4 or 5 seconds, or you'll damage hydraulics.
8. Now turn engine back off, tighten jam nut, then remove plug and pressure gauge and reattach #5 hose back to #1 Ground Feedwheel Control Valve.
9. Repeat steps 1 through 5 with engine shut down, the steps 6, 7 and 8 for #4 Main Relief Assembly and the #2 Ground Feedwheel Control Valve. Check all connections for any hydraulic fluid leaks and repair.

MAINTAIN FEEDWHEEL HYDRAULIC PRESSURE TO THE SPECIFIED PSI.

Bandit

PROCEDURE FOR CHECKING OPTIONAL HYDRAULIC COMPONENTS

**⚠ WARNING****MODELS 1890/1890 HD PROCEDURE**

Before attempting any hydraulic pressure settings, make sure engine is shut off, the ignition key is removed and in your pocket. To correctly check relief valve pressure, the pressure gauge MUST be installed correctly.

1. First put control handle in off position.
2. Disconnect hose coming out of the bottom port of the control valve from the optional motor or cylinder, and plug the port.
3. Leave all other hydraulic hoses connected.
4. Install pressure gauge in the end of the hose which was disconnected from the optional motor or cylinder.
5. Start engine and adjust engine to full throttle to activate reading on pressure gauge.
6. Pressure gauge should read the maximum specified PSI for that component. (See page 54)
ONLY RUN ENGINE FOR 4-5 SECONDS TO SET PRESSURE OR YOU MAY DAMAGE HYDRAULICS.
7. Readjust relief pressure setting if needed, if not needed, shut off engine and remove plug and pressure gauge. Reassemble control valve to optional motor or cylinder.
8. Pressure adjustment is in the optional components control valve similarly to procedure 1 for the feedwheel pressure check.
9. Check for hydraulic leaks.
10. Relief valve pressure should be checked and/or readjusted every 3 months for best performance.

MAINTAIN HYDRAULIC PRESSURE TO THE SPECIFIED PSI.

Bandit

HYDRAULIC SYSTEM TROUBLE SHOOTING

Before attempting any type of maintenance disengage clutch, turn off engine, wait for the drum to come to a complete stop, install the drum lock pin, disconnect battery, and make sure the ignition key is in your possession!

PROBLEM	POSSIBLE CAUSE	SOLUTION
Feedwheels turn at normal speed but does not chip wood properly	1. Dull Knives 2. Worn feed teeth 3. Low feedwheel relief valve setting 4. Worn pump 5. Feedwheel springs too loose	1. Replace knives 2. Replace 3. Readjust to the specified PSI 4. Replace 5. Adjust
Feedwheels slow or stop when feeding	1. Dull knives 2. Relief valve is worn or dirty 3. Pump is worn 4. Motor is worn 5. Feedwheel springs too tight	1. Replace knives 2. Clean, reset or replace 3. Replace 4. Replace 5. Adjust
Feedwheels turn slowly or not at all	1. Relief valve stuck open 2. Worn hydraulic motor 3. Pump worn 4. Feedwheel Relief pressure off 5. Pinched or damaged hydraulic hose 6. Feedwheel valve (control valve) worn & leaking internally 7. Low hydraulic oil level 8. Plugged oil screen 9. Binding such as worn bearings, etc. 10. Control lever improperly shifting valve	1. Clean or replace 2. Replace 3. Replace 4. Reset to the specified PSI 5. Replace 6. Replace 7. Fill 7/8 full minimum 8. Replace 9. Repair 10. Readjust, valve must open completely
Hydraulic oil very hot, causing system to operate slowly	1. Dull knives 2. Low oil level 3. Worn pump 4. Relief valve stuck open or opens easily 5. Damaged hose 6. Oil suction screen or filter plugged 7. Worn motor 8. Binding 9. Operator running oil over relief too much	1. Replace knives 2. Fill 7/8 full minimum 3. Replace 4. Clean, reset or replace 5. Replace 6. Clean or replace 7. Replace 8. Repair 9. Don't

MAINTAIN HYDRAULIC PRESSURE TO THE SPECIFIED P.S.I.

Follow typical hydraulic flow and relief settings on pages 54, 56 - 58.

Follow proper hydraulic oil requirements on page 63.

Bandit

CORRECTING HYDRAULIC PROBLEMS

Before attempting any type of maintenance disengage clutch, turn off engine, wait for the drum to come to a complete stop, install the drum lock pin, disconnect battery, and make sure the ignition key is in your possession!

COMPONENT	PROCEDURE
Checking relief valve setting	Refer to the hydraulic pressure adjustment procedure section of the manual to find the correct procedure for checking relief valve setting. (pgs. 54 - 56)
Adjusting relief valve setting	Refer to the hydraulic pressure adjustment procedure section of the manual to find the correct procedure for adjusting relief valve pressure settings. (pgs. 54 - 56)
Cleaning relief valve (with engine shut off) (if applicable)	1. Remove plug from feedwheel valve (control valve), see illustration of relief valve components. (pgs. 54 - 56) 2. Unscrew slotted set screw completely out of the valve. 3. Remove poppit spring. 4. Remove poppit ball. 5. Clean all parts, inspect for damage and blow out relief hole with air. 6. Reassemble, set and maintain hydraulic pressure to the specified PSI.
Checking for defective pump	1. Disconnect the hose from the feedwheel motor to the feedwheel valve. 2. Install this same hose into flow meter and hose from meter to valve. 3. Start engine and adjust to full throttle with the control handle pulled forward in normal working position. 4. The pump should be pumping between the rated range of gallons per minute, see page 54. DO NOT run hydraulic tank out of oil.
Checking for defective motor	1. If everything checks out as correct, it may be time to check the hydraulic motor. 2. The procedure to check the motor is simple but it requires great caution. Do not attempt to check your hydraulic motor without first consulting your local dealer or Bandit Industries.

MAINTAIN HYDRAULIC PRESSURE TO THE SPECIFIED P.S.I.

Follow typical hydraulic flow and relief settings on pages 54, 56 - 58.

Follow proper hydraulic oil requirements on page 63.

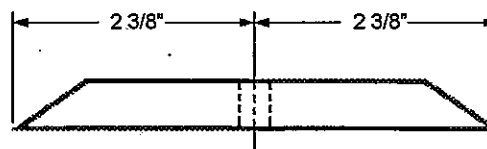
NOTE: When returning hydraulic components for warranty make sure to box up all warranted parts to avoid additional damage while shipping. Do not disassemble any hydraulic components which are to be warranted. Anything which has been disassembled or tampered with will not be warranted.

Bandit

CHIPPER SECTION

Knives should be replaced in sets. These sets are determined by the amount of resharpener done to the knives. It should be reinstalled with another knife of comparable usage. The Model 1890/1890 HD Drum has: (4) 1/2" x 5 1/2" x 10" (Old Style) or (4) 5/8" x 5 1/2" x 10" Knives (New Style).

NEVER allow these knives to wear beyond absolute specified minimum of 2 3/8" distance from the center line of bolt.



TROUBLE SHOOTING CHIPPER PROBLEMS

1) Chipper Makes Poor Quality Chips or Does Not Feed Properly.

- A. Knives have lost their edge. File, grind or replace knives. **DO NOT** operate the Bandit with dull knives.
- B. Knife anvil worn or needs adjustment. Rotate, repair or replace.
- C. Feedwheel is not operating correctly. (SEE HYDRAULIC TROUBLE SHOOTING).
- D. The throat/base opening is a high-wear area. The feed plate anvil takes much of this wear but other areas wear as well. Attention must be paid to any areas where outer, noncutting edges of chipper knife are exposed. These areas must be built up with weld to maintain the original integrity.
- E. Knives are at the wrong angle. Knives must be ground at a 30° degree angle.
- F. Feedwheel teeth worn (REPLACE).
- G. Material being chipped is very small, dry or rotting. This type of material does not produce good chip quality.

2) Chipper Knife Hits Anvil.

- A. Check the anvil clearance at both sides of the knife by using a feeler gauge,

the clearance should be approximately .120 from the highest knife.

- B. Check the chipper bearing bolts for tightness (SEE TORQUE CHART).

3) Discharge Plugs or Does Not Throw Chips Properly.

- A. Lugging engine on large material - keep engine RPM up.
- B. Knives are dull or worn to minimum size.
- C. Obstruction in discharge chute. Patches welded into the chute can cause obstruction of chip flow. Anything causing an obstruction will cause the chute to plug.
- D. Chipping rotting material that has little substance can also plug the discharge chute.
- E. Worn fan blades.

4) Chipper Bearings Running Too Hot.

- A. Improper lubrication-grease bearings once a day with EP-2 Lithium type grease.
- B. Chipper drum operating at too high RPM's. **DO NOT** exceed recommended RPM's.
- C. Bearings worn out (REPLACE).
- D. Bearing locknut is loose.

KNIFE GRINDING AND FILING

Only Bandit knives and hardware are recommended for use in your Bandit chippers. Only then can you be assured of a quality product that fits and performs the best to the standards of excellence that is expected from the Bandit chipper.

Chipper knives **MUST** be kept sharp at all times for the ultimate chipper and knife performance. The main cause of poor cutting performance is dull knives.

Dull Knives Cause:

- Excessive waste of engine horsepower.
- Bad quality chips; chunks, slivers, etc.
- Excessive strain on knives and knife bolts
- Excessive strain on chipper drum bearings and total machine
- Excessive chipping vibration damaging the machine
- Excessive strain on drives, PTO's, engines, etc.
- Loss of time and money

The Dulling Of Chipper Knives Is Caused By:

- Poor quality knives
- Improper anvil to knife clearance
- Force feeding wood faster than chipper will accept
- Dirt, grit, or foreign material on the wood
- Chipper knives ground at wrong angle
- Improper care of knives and knife hardware

These are just a few factors, there are other situations that can lead to the dulling of chipper knives.

NOTICE

Many times a chipper knives cutting edge/point can be brought back to a good edge with a #10 Flat Bastard Mill File. This can reduce the amount of re-grinding.

Typical Knife Grinding Angles:
"Bolt-In" Knives = 30° Angle

Knives should be replaced in sets. These sets are determined by the amount of resharpener done to the knives (knife width). Regrinding knives reduces the width of the knife. Knife replacement should be done in sets of the same width knives. That will reduce chipping vibration and increase chipping performance.

NOTICE

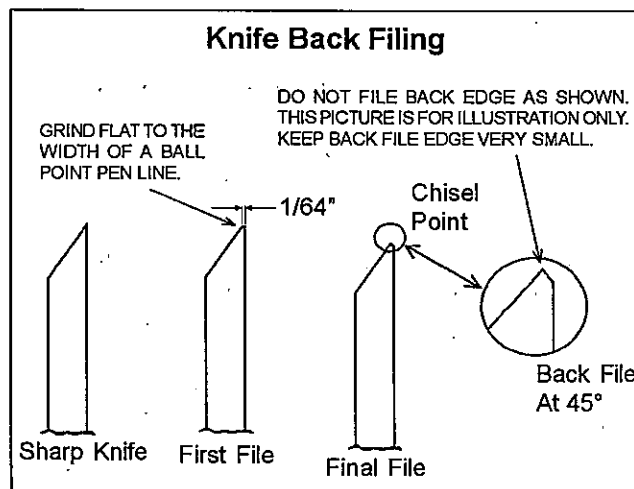
- Keep knives sharp
- Keep knife angle correct when grinding
- Do not over grind so knife is narrower than allowed width, or you will pack wood and break knives
- Use correct knife size, knife quality, knife bolts and torque knife bolts to the specified ft/lbs.
- Replace knife bolts after (5) times of tightening.

Back Filing Knives

Many people in the chipping industry have found that "Back-Filing" the knife point is helpful for a longer knife life. Do not over file or grind the back file edge. It is only intended to be a very small double edge point on the knife. Too much of a back file will hinder feeding wood.

Complete Instructions As Follows:

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



Bandit

LUBRICATION

1) Engine:

Follow original equipment manufacturers requirements for both changing oils and filters.

2) Clutch:

Follow original equipment manufacturers requirements for both greasing and adjusting. Frequently adjust, and grease per PTO manufacturers manual.

3) Hydraulic Reservoir Tank:

Completely change hydraulic oil, suction screen, and flush the tank annually. Change hydraulic oil filter AFTER FIRST 10 HOURS OF OPERATION. Then change hydraulic oil filter every 400 hours or 3 months thereafter. Maintain hydraulic oil level 7/8 full. See hydraulic oil requirements below. Check hydraulic oil level in tank daily.

4) Hydraulic Fluid Requirements:

This machine is equipped with "Petro-Canada Hydrex XV" hydraulic fluid. Replace with the same or equivalent. "Petro-Canada Hydrex XV" is an all season hydraulic fluid. This is a premium performance, long life anti-wear, hydraulic fluid, designed for all season use in heavy duty hydraulic systems. "Petro-Canada Hydrex XV" allows year round use under wide extremes of temperature. It allows the hydraulic system to start at temperatures as low as -40°C/-40°F, under no load conditions and it improves lubrication of hydraulic components at high operating temperatures. It will also help protect against hydraulic failures during the wide temperature swings of spring and fall.

5) Discharge Swivel:

Grease swivel plates for discharge every 3 months.

6) Hood Hinge:

Make sure the hood hinge operates correctly, and is lubricated. Must replace hinge if damaged.

7) Pintle Eye Ring:

Keep greased to reduce wear and extend the normal life of your pintle eye ring.

8) Chains Operated Components:

Use a dry lubricant on any chain driven components weekly. (i.e. hydraulic swivel discharge, or chain driven feedwheels)

9) Chipper & Feedwheel Bearings:

Use an EP-2 Lithium type grease only for all bearings. Purge chipper bearings with grease you can not over grease these bearings. Grease feedwheel bearings with one shot of grease. These bearing are designed with a relief system that will not allow over greasing. In other words, you can not hurt the bearing seals by pumping in too much grease.

Most of the failures related to bearings are diagnosed as "Contamination". Contamination is caused by improper lubrication.

Especially important is proper lubrication when the chipper is setting idle. The bearings must be fully purged when shut down. Then the bearings must be again fully purged each thirty (30) days and the machine allowed to run for approximately 10 minutes. Then fully purged again before the machine is put back into operation. Failure to do this will ruin the bearings. Bearings corrode when the machine is setting idle.

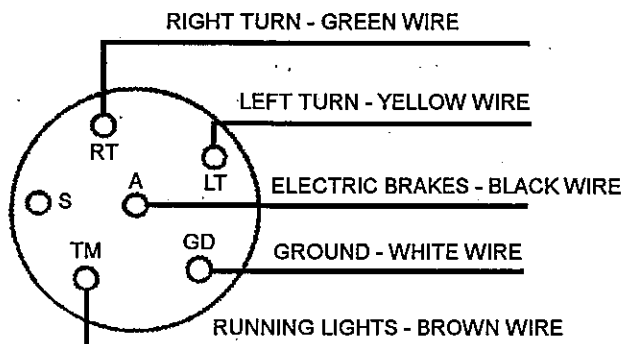
The second largest cause of bearing failure is operating them at high speeds when the grease is cold. This causes the bearing race to turn on the shaft. Naturally this ruins the bearing as well as the shaft. Allow the bearings to turn at slower speeds for at least five minutes. Also check the bearing lock nut for tightness each 30 days. A loose locknut allows the race to turn on the shaft. Failed bearings diagnosed as contamination or cold starts at high speed are not covered by warranty or by the bearing manufacturer.

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TYPICAL ELECTRICAL WIRING DIAGRAMS

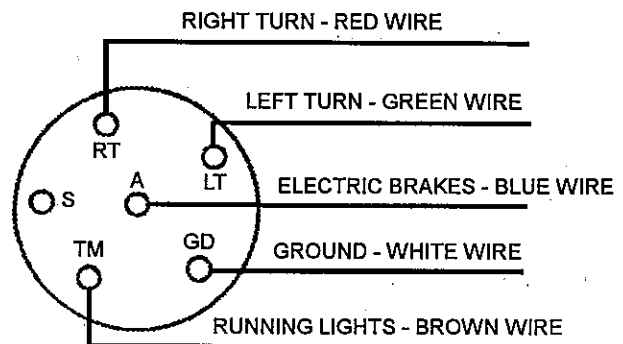
6 Wire Main Cable Color Code (New Style)

Black BL (Brakes)
 White W (Ground)
 Green G (Right Turn)
 Yellow Y (Left Turn)
 Brown BR (Running Lights)
 Red R (Breakaway Switch)

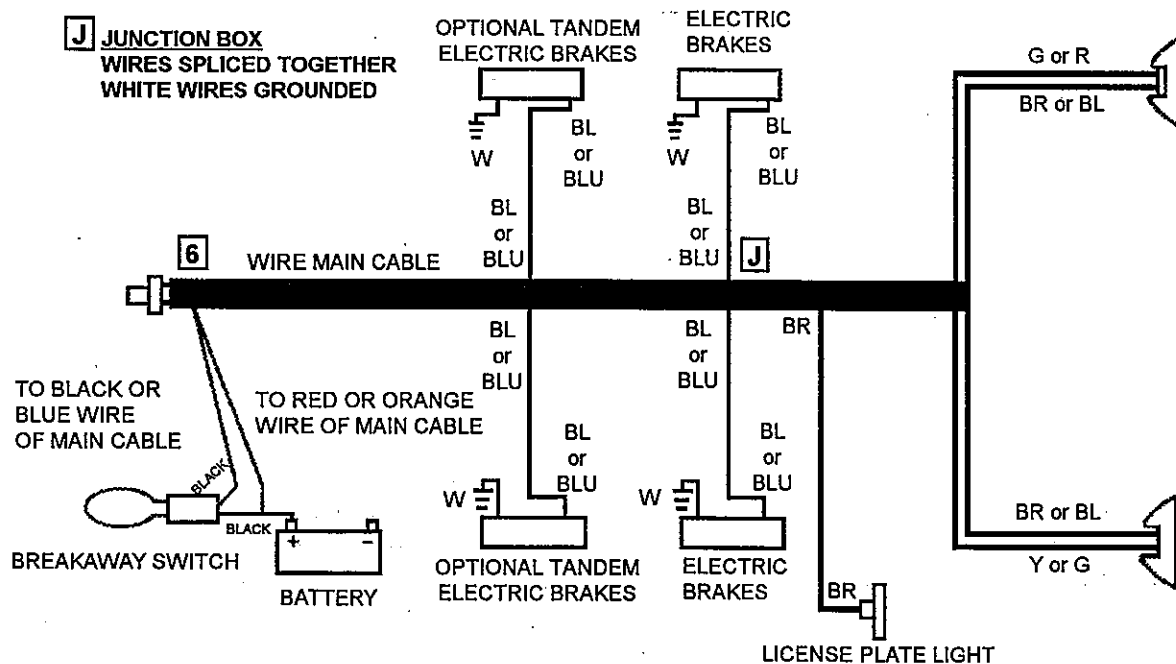


6 Wire Main Cable Color Code (Old Style)

Black BL (Running Lights)
 White W (Ground)
 Red R (Right Turn)
 Green G (Left Turn)
 Blue BLU (Brakes)
 Orange OR (Breakaway Switch)



J JUNCTION BOX
 WIRES SPliced TOGETHER
 WHITE WIRES GROUNDED



REPLACEMENT PARTS SECTION

Depending on what replacement parts you are ordering
the following information will be needed:

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 Number of Clutch

NOTE

When ordering any replacement parts you should have the serial number (S/N) of the machine to ensure that you receive the correct replacement part. See page 6 for typical serial number & work order number locations.

NOTE

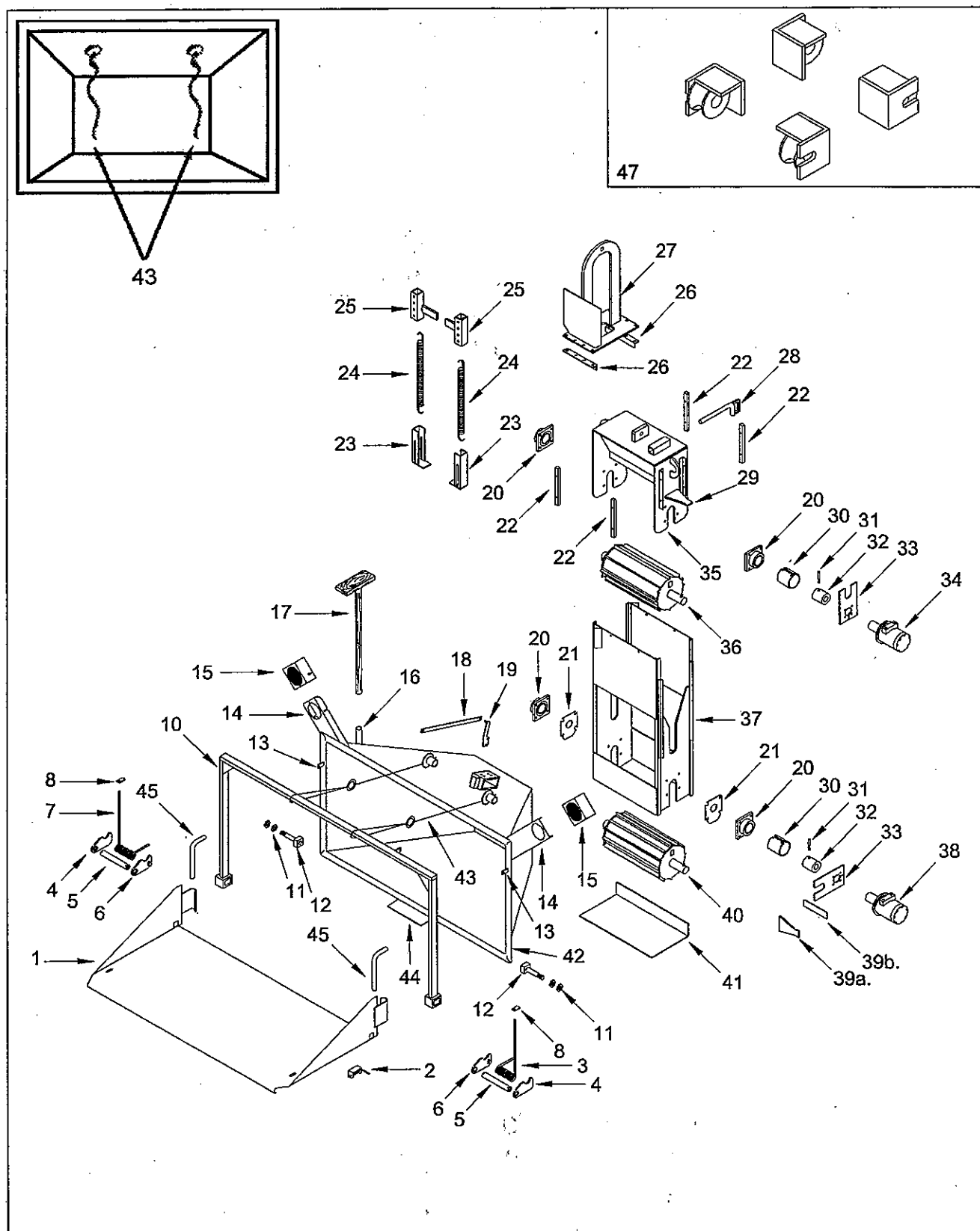
All nuts, bolts, washers, and all other components can be ordered by physical description.

NOTE

Some of the components shown in this section are for optional equipment and may not apply to every machine.

Bandit Industries Inc. reserves the right to make changes in models, size, design, installations and applications on any part without notification.

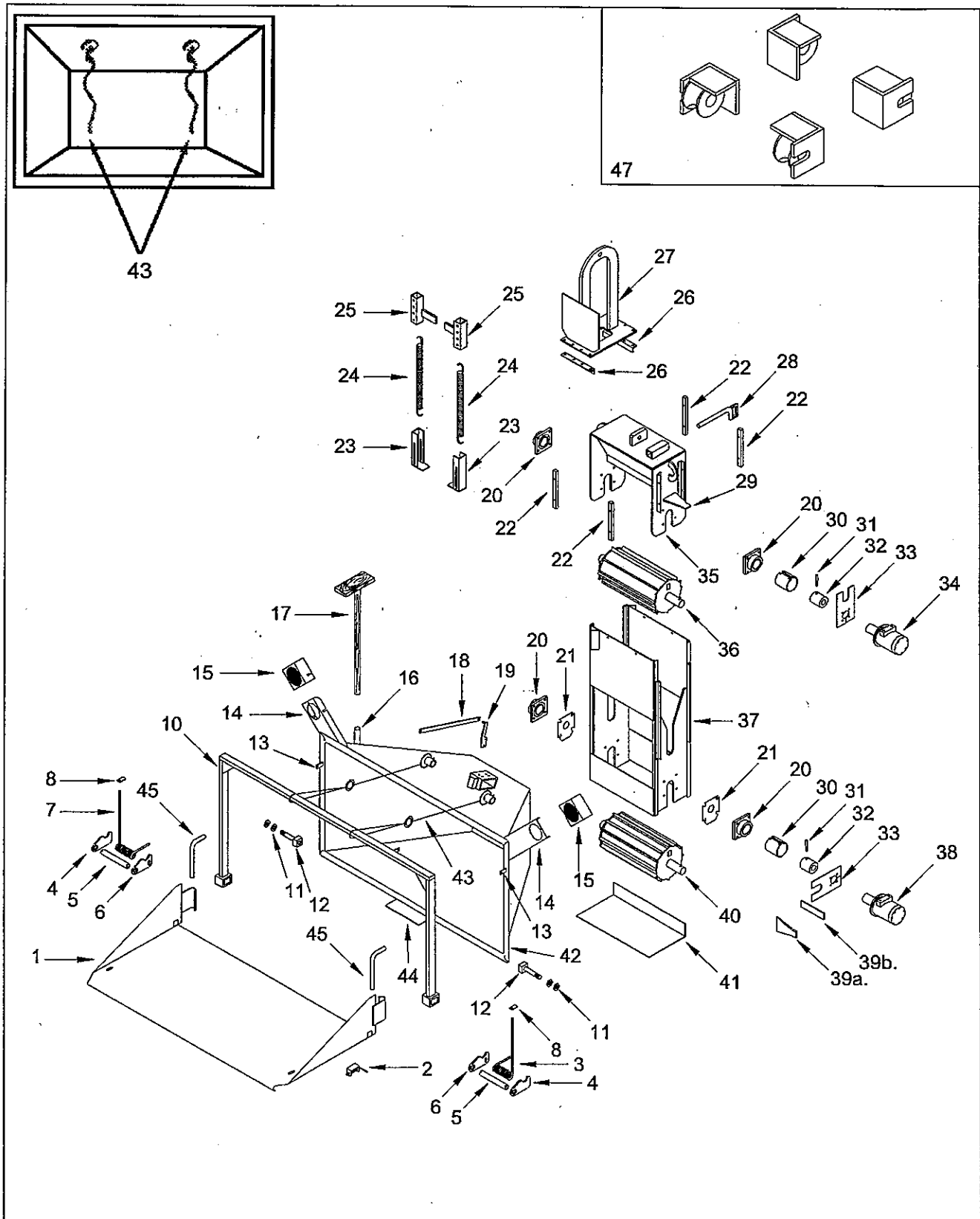
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MODEL 1890**INFEED HOPPER COMPONENTS**

LOCATION	STANDARD PART NUMBER	SUPER SIZED PART NUMBER	DESCRIPTION
1 a.	955-0501-67	955-0502-14	Folding Pan For Infeed Hopper
b.	955-0501-15	955-0502-15	Weld On Pan For Infeed Hopper
2.	900-4901-83	900-4901-83	Spring Lock For Folding Pan
3.	900-4905-40	900-4905-40	Right Spring For Spring Assist
4.	980-0129-84	980-0129-84	Outside Spring Mount For Spring Assist
5.	980-0129-86	980-0129-86	Spring Tube For Spring Assist
6.	980-0129-66	980-0129-66	Inside Spring Mount For Spring Assist
7.	900-4905-39	900-4905-39	Left Spring For Spring Assist
8.	980-0133-34	980-0133-34	Top Mount For Spring Assist
9 a.	980-0509-56	980-0509-56	Spring Assist Assembly (Includes #'s 3 to 8, & 9 b.)
b.	900-4905-45	900-4905-45	Cotter Pin For Spring Tube (Not Shown)
10 a.	937-0500-95	937-0502-03	Control Handle (Starting S/N 1229)
b.	955-0501-24	-----	Control Handle (S/N 1009 to 1225)
11.	900-4900-44	900-4900-44	Pivot Pin Jam Nuts
12.	955-1007-66	955-1007-66	Infeed Pan Pivot Pins
13.	980-0120-42	980-0120-42	Folding Infeed Pan Lock Tab
14 a.	980-0124-95	980-0124-95	Tail Light Mount
b.	900-2900-02	900-2900-02	Tail Light Bulb
c.	900-2902-54	900-2902-54	Tail Light
d.	900-2900-03	900-2900-03	Marker Light
e.	900-2905-60	900-2905-60	LED Tail Light
f.	900-2905-61	900-2905-61	LED Marker Light
15 a.	980-0508-72	980-0508-72	H.D. Tail Light Covers
b.	980-0510-41	980-0510-41	H.D. Tail Light Cover For L.E.D. Light (Specify Side)
16.	981-1005-30	981-1005-30	Wooden Push Paddle
17.	980-0122-55	980-0122-55	Wooden Push Paddle Mount
18.	980-0123-94	980-0123-94	Hydraulic Control Arm
19.	980-0125-74	980-0125-74	Hydraulic Control Valve Linkage
20 a.	900-1904-07	900-1904-07	Feedwheel Bearing (Starting S/N 1229)
b.	900-4900-19	900-4900-19	Feedwheel Bearing Bolt (Starting S/N 1229)
c.	900-1900-66	-----	Feedwheel Bearing (S/N 1009 to 1225)
d.	900-4900-16	-----	Feedwheel Bearing Bolt (S/N 1009 to 1225)

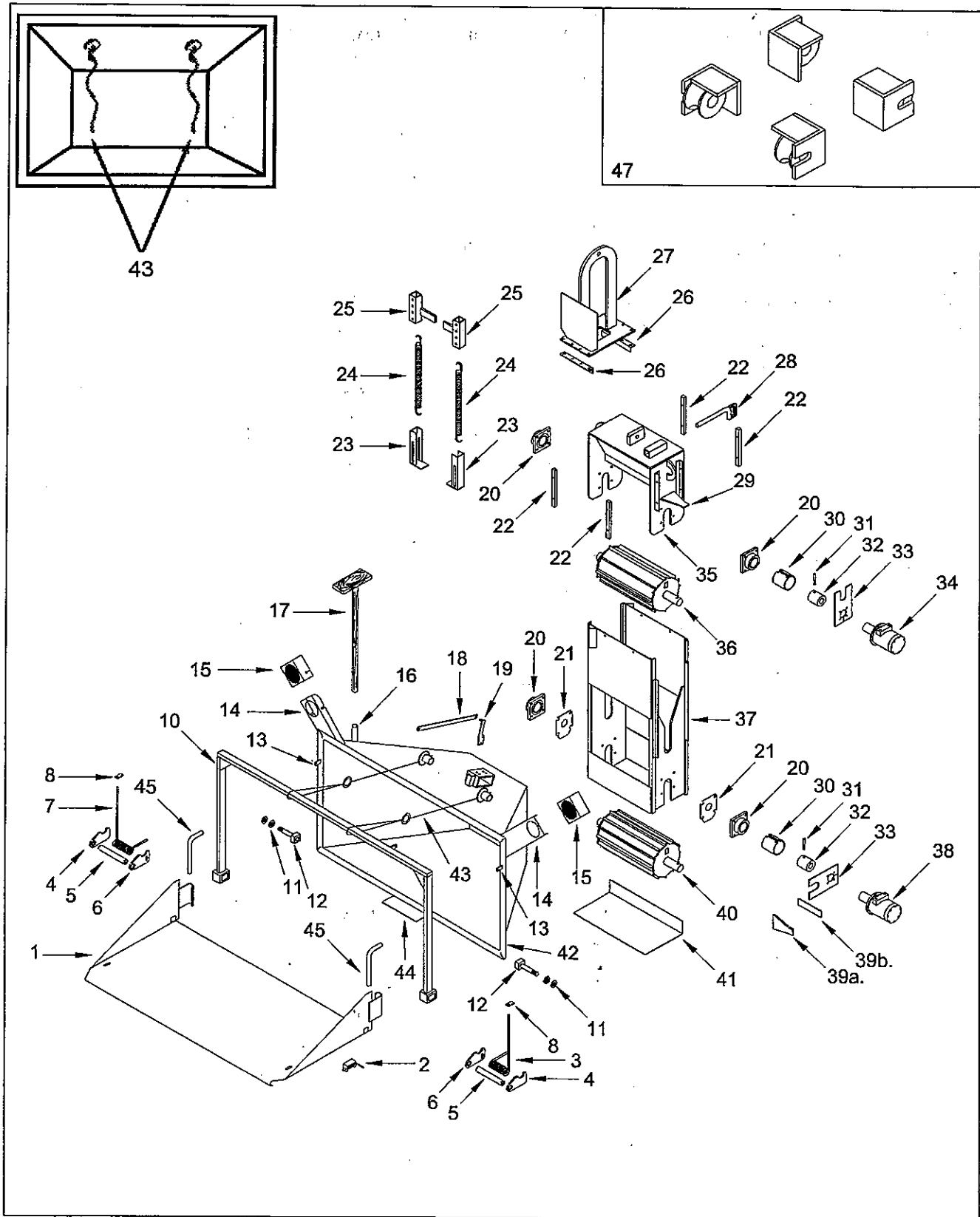
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MODEL 1890**INFEED HOPPER COMPONENTS**

LOCATION	STANDARD PART NUMBER	SUPER SIZED PART NUMBER	DESCRIPTION
21 a.	955-1002-14	955-1002-14	Bottom Feedwheel Bearing Baker Plate (Starting S/N 1229)
b.	955-1001-12	-----	Bottom Feedwheel Bearing Baker Plate (S/N 1009 to 1225)
22 a.	980-0111-08	980-0111-08	Yoke Ryertec Slide (S/N 1009-1225, 1389, Starting 1401)
b.	937-1006-49	937-1006-49	Yoke Ryertec Slide (S/N 1229-1397 except 1389)
23 a.	981-1007-12	981-1007-12	Easy Climb Bottom Spring Mount
b.	900-4905-14	900-4905-14	Cleavis Pin
c.	900-4905-19	900-4905-19	Hair Pin Cotter (For Cleavis Pin)
24 a.	900-4905-18	900-4905-18	Yoke Spring (Starting S/N 1229)
b.	900-4903-81	-----	Yoke Spring (S/N 1009 to 1225)
c.	900-4902-02	-----	Spring Adjuster (S/N 1009 to 1202 - Not Shown)
25.	981-1007-11	981-1007-11	Easy Climb Spring Top Mount
26.	955-1005-76	955-1005-76	Yoke Lift Mount
27 a.	937-0502-00	937-0502-00	Yoke Lift Assembly (Starting S/N 1257)
b.	900-3917-55	900-3917-55	Yoke Lift Cylinder (Not Shown - Starting S/N 1257)
c.	955-0500-36	-----	Yoke Lift Assembly (S/N 1008 to 1256)
d.	900-3908-16	-----	Yoke Lift Cylinder (Not Shown - S/N 1008 to 1256)
28.	955-1005-80	955-1005-80	Yoke Lock Pin
29 a.	937-1004-71	937-1004-71	Top Feedwheel Torque Arm Stop (Starting S/N 1229)
b.	981-1006-71	-----	Top Feedwheel Torque Arm Stop (S/N 1009 to 1228)
30 a.	937-1004-97	937-1004-97	Rubber Coupler Guard (Starting S/N 1229)
b.	900-7900-38	-----	Rubber Coupler Guard (S/N 1009 to 1225)
31 a.	900-4905-56	900-4905-56	Taper Pin Only (Starting S/N 1229)
b.	900-4905-55	-----	Taper Pin Only (S/N 1009 to 1225)
32 a.	937-1004-32	937-1004-32	Coupler Assembly (Starting S/N 1229)
b.	981-1006-45	-----	Coupler Assembly (S/N 1009 to 1225)
33 a.	955-1014-00	955-1014-00	Torque Arm 10" Long (Starting S/N 1229)
b.	955-1003-02	955-1003-02	Torque Arm 15 3/4" Long (Starting S/N 1229)
c.	981-1006-44	-----	Top Torque Arm (S/N 1009 to 1225)
34 a.	900-3917-18	900-3917-18	Top Feedwheel Hydraulic Motor (Starting S/N 1229)
b.	900-3908-68	-----	Top Feedwheel Hydraulic Motor (S/N 1009 to 1225)
35 a.	937-0500-48	937-0501-41	Top Yoke Assembly (Starting S/N 1229)
b.	955-0500-19	-----	Top Yoke Assembly (S/N 1009 to 1225)

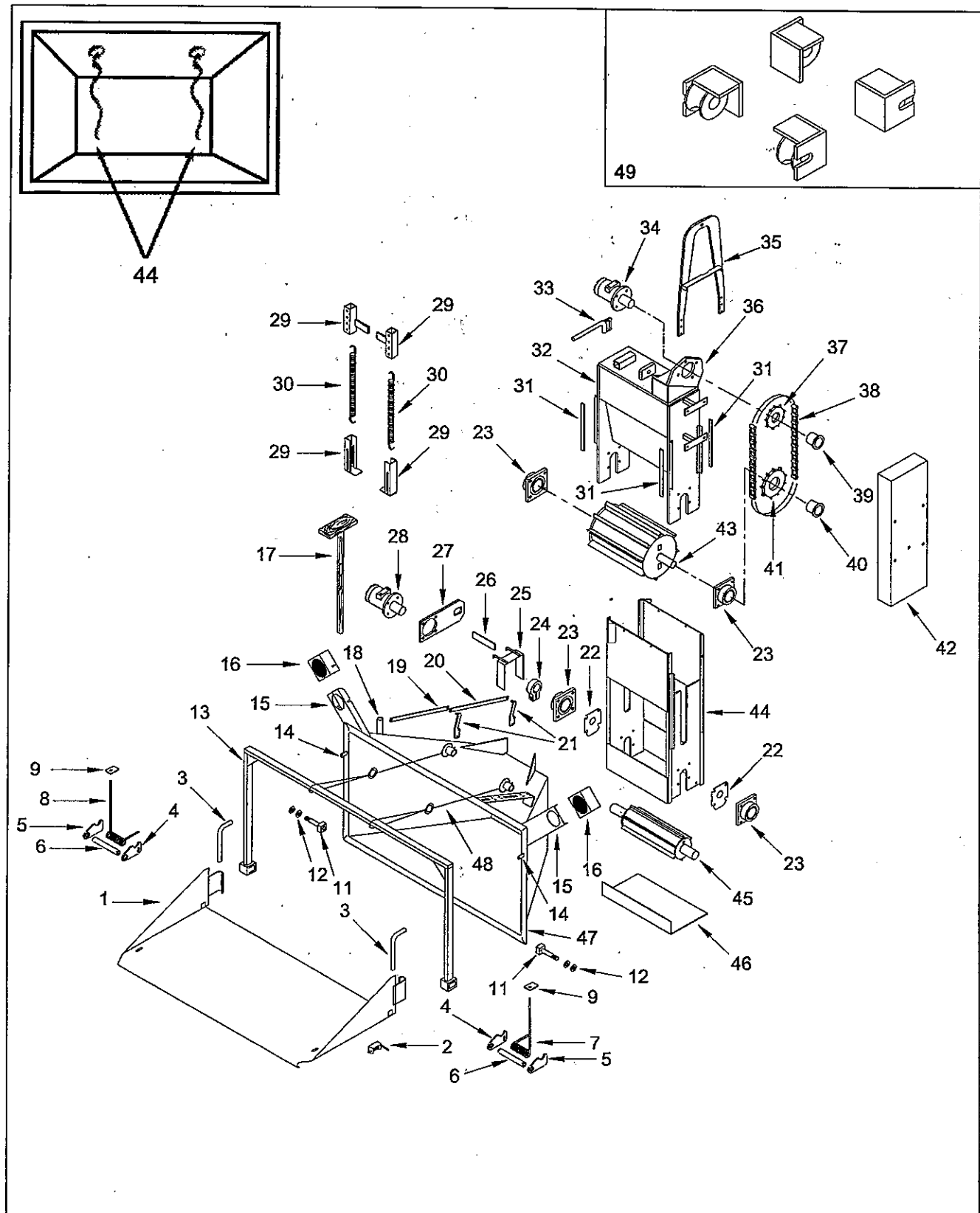
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MODEL 1890**INFEED HOPPER COMPONENTS**

LOCATION	STANDARD PART NUMBER	SUPER SIZED PART NUMBER	DESCRIPTION
36 a.	937-0500-42	937-0501-43	Top Feedwheel Assembly (Starting S/N 1229)
b.	955-0500-47	-----	Top Feedwheel Assembly (S/N 1009 to 1225)
c.	955-1001-52	937-1007-50	Top Feedwheel Tooth
d.	937-0500-46	937-0501-57	Top Feedwheel Shaft & Coupler Assembly (Starting S/N 1229)
e.	955-0500-46	-----	Top Feedwheel Shaft & Coupler Assembly (S/N 1009 to 1225)
37 a.	937-0500-47	937-0501-42	Bottom Yoke Assembly (Starting S/N 1229)
b.	955-0500-17	-----	Bottom Yoke Assembly (S/N 1009 to 1225)
38 a.	900-3917-18	900-3917-18	Bottom Feedwheel Hydraulic Motor (Starting S/N 1229)
b.	900-3908-67	-----	Bottom Feedwheel Hydraulic Motor (S/N 1009 to 1225)
39 a.	937-1004-71	937-1004-71	Bottom Feedwheel Torque Arm Stop (Starting S/N 1229)
b.	937-1004-70	937-1004-70	Bottom Feedwheel Torque Arm Stop (Starting S/N 1229)
c.	955-1004-48	-----	Bottom Feedwheel Torque Arm Stop (S/N 1009 to 1225 - Not Shown)
40 a.	937-0500-43	937-0501-09	Bottom Feedwheel Assembly (Starting S/N 1229)
b.	955-0500-48	-----	Bottom Feedwheel Assembly (S/N 1009 to 1225)
c.	955-1001-52	937-1007-50	Bottom Feedwheel Tooth (Starting S/N 1229)
d.	914-1011-43	-----	Bottom Feedwheel Tooth (S/N 1009 to 1225)
e.	937-0500-46	937-0501-07	Bottom Feedwheel Shaft, Coupler Assembly (Starting S/N 1229)
f.	955-0500-46	-----	Bottom Feedwheel Shaft, Coupler Assembly (S/N 1009 to 1225)
41 a.	955-1005-83	955-0502-18	Trap Door Assembly
b.	900-4901-83	900-4901-83	Trap Door Spring Lock Pin (Not Shown)
c.	981-1000-60	981-1000-60	Hinge For Trap Door (Not Shown)
42 a.	937-0500-73	937-0501-11	Infeed Hopper Assembly (Starting S/N 1229)
b.	955-0500-09	-----	Infeed Hopper Assembly (S/N 1009 to 1225)
43.	980-0508-64	980-0508-64	Last Chance Cable Assembly
44.	981-1008-68	981-1008-68	Infeed Pan Support
45 a.	955-1003-94	955-1003-94	Folding Pan Lock Pin
b.	955-1014-45	955-1014-45	Folding Pan Lock Pin Holder
46 a.	955-1005-90	937-1009-05	Bottom Feedwheel Scraper Bar (Not Shown)
b.	937-1006-08	937-1009-06	Bottom Feedwheel Scraper Bar Gusset (Not Shown)
47 a.	N/A	980-0510-10	Yoke Roller Assembly
b.	N/A	980-0132-29	Yoke Roller Mount Only
c.	N/A	980-0510-12	Yoke Roller With Bushing Only

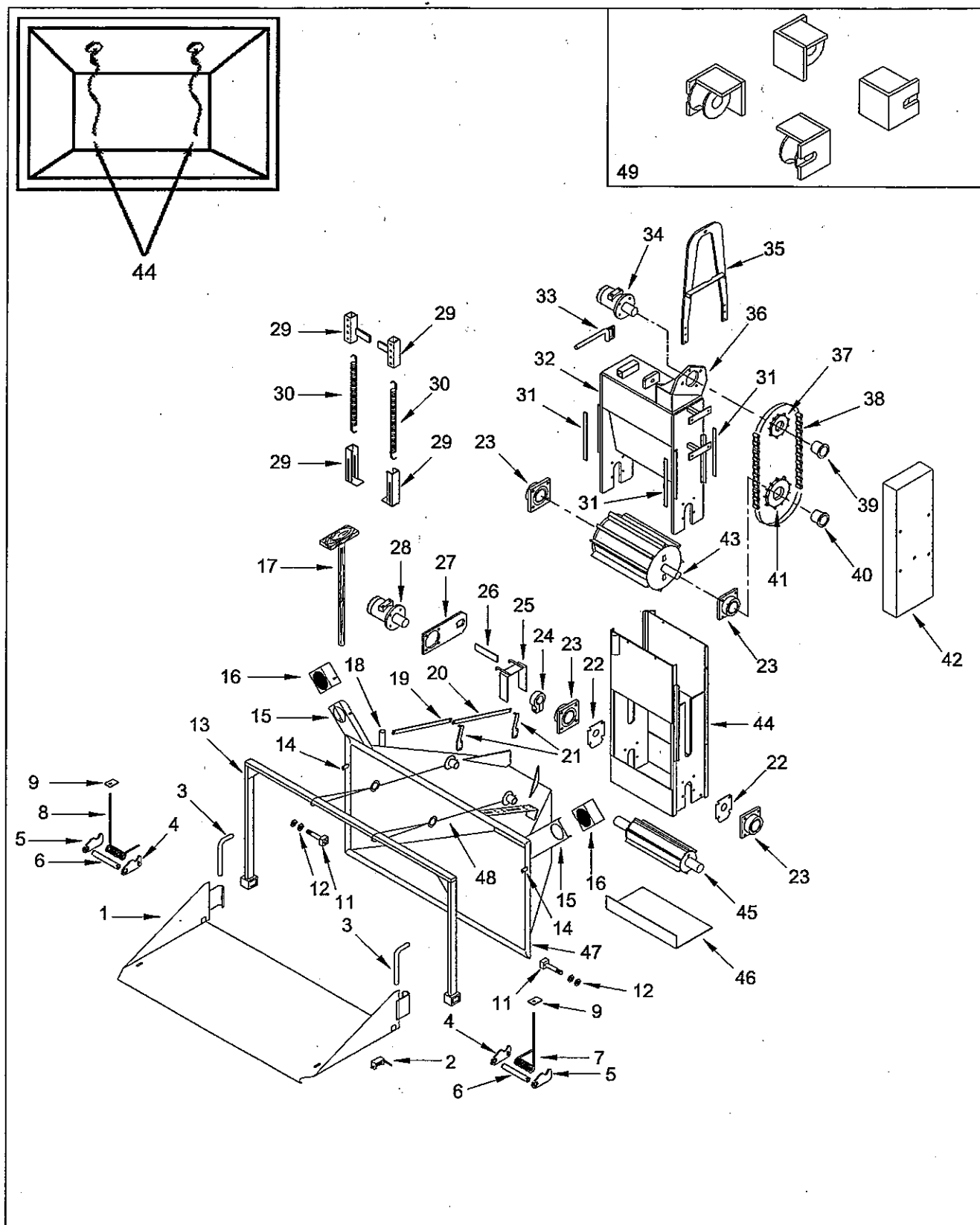
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MODEL 1890 HD**INFEED HOPPER COMPONENTS**

LOCATION	STANDARD PART NUMBER	SUPER SIZED PART NUMBER	DESCRIPTION
1 a.	955-0501-67	955-0502-14	Folding Pan For Infeed Hopper
b.	955-0501-15	955-0502-15	Weld-On Pan For Infeed Hopper
2.	900-4901-83	900-4901-83	Spring Lock For Folding Pan
3 a.	955-1003-94	955-1003-94	Folding Pan Lock Pin
b.	955-1014-45	955-1014-45	Holder For Lock Pin (Not Shown)
4.	980-0129-66	980-0129-66	Inside Spring Mount For Spring Assist
5.	980-0129-84	980-0129-84	Outside Spring Mount For Spring Assist
6.	980-0129-86	980-0129-86	Spring Tube For Spring Assist
7.	900-4905-40	900-4905-40	Right Spring For Spring Assist
8.	900-4905-39	900-4905-39	Left Spring For Spring Assist
9.	980-0133-34	980-0133-34	Top Mount For Spring Assist
10 a.	980-0509-56	980-0509-56	Spring Assist Assembly (Includes #'s 4 To 9 & 10 b)
b.	900-4905-45	900-4905-45	Cotter Pin For Spring Tube (Not Shown)
11.	955-1007-66	955-1007-66	Infeed Pan Pivot Pin
12.	900-4900-44	900-4900-44	Pivot Pin Jam Nut
13 a.	937-0500-95	937-0502-03	Control Handle (Starting S/N 1257)
b.	955-0501-24	-----	Control Handle (S/N 1008-1256)
14.	980-0120-42	980-0120-42	Folding Pan Locking Tab
15 a.	980-0124-95	980-0124-95	Tail Light Mount
b.	900-2900-02	900-2900-02	Tail Light Bulb
c.	900-2902-54	900-2902-54	Tail Light
d.	900-2900-03	900-2900-03	Marker Light
e.	900-2905-60	900-2905-60	L.E.D. Tail Light
f.	900-2905-61	900-2905-61	L.E.D. Marker Light
16 a.	980-0508-72	980-0508-72	H.D. Tail Light Covers
b.	980-0510-41	980-0510-41	H.D. Tail Light Cover For L.E.D. Light (Specify Side)
17.	981-1005-30	981-1005-30	Wooden Push Paddle
18.	980-0122-55	980-0122-55	Wooden Push Paddle Mount
19.	937-1003-57	937-1003-57	Hydraulic Control Arm
20.	937-1003-56	937-1003-56	Hydraulic Control Arm Linkage Between Valves
21.	980-0125-74	980-0125-74	Hydraulic Valve Linkage
22.	955-1002-14	955-1002-14	Bottom Feedwheel Bearing Backer
23 a.	900-1904-07	900-1904-07	Feedwheel Bearing
b.	900-4900-19	900-4900-19	Feedwheel Bearing Bolt (Not Shown)
c.	900-3921-02	900-3921-02	Grease Line For Top Feedwheel Bearing (Not Shown)
24.	960-0012-73	937-1004-32	Bottom Feedwheel Coupler
25.	955-1006-96	937-1004-97	Bottom Feedwheel Coupler Guard
26 a.	955-1013-99	955-1013-99	Bottom Feedwheel Torque Arm Stop For 10" Long Torque Arm
b.	955-1008-69	955-1008-69	Bottom Feedwheel Torque Arm Stop For 15 3/4" Long Torque Arm
27 a.	955-1014-00	955-1014-00	Bottom Feedwheel Torque Arm 10" Long
b.	955-1003-02	955-1003-02	Bottom Feedwheel Torque Arm 15 3/4" Long

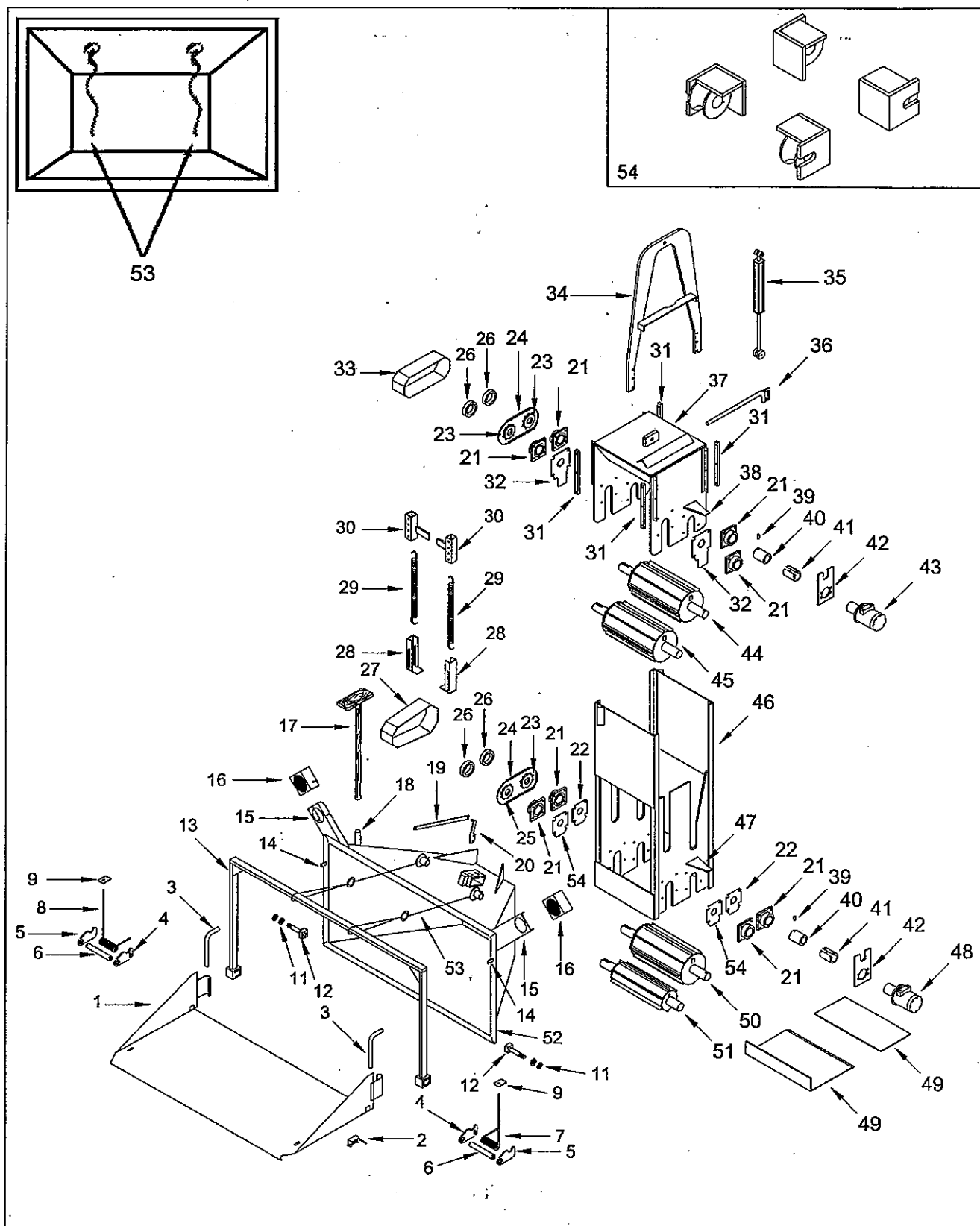
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MODEL 1890 HD**INFEED HOPPER COMPONENTS**

LOCATION	STANDARD PART NUMBER	SUPER SIZED PART NUMBER	DESCRIPTION
28.	900-3907-71	900-3917-18	Bottom Feedwheel Hydraulic Motor
29 a.	981-1007-12	981-1007-12	Easy Climb Bottom Spring Mount
b.	900-4905-14	900-4905-14	Cleavis Pin
c.	900-4905-19	900-4905-19	Hair Pin Cotter (For Cleavis Pin)
d.	981-1007-11	981-1007-11	Easy Climb Spring Top Mount
e.	900-4902-02	-----	Spring Adjuster (S/N 1009 to 1202 - Not Shown)
30 a.	900-4905-18	900-4905-18	Yoke Spring (Starting S/N 1257)
b.	900-4903-81	-----	Yoke Spring (S/N 1008 to 1256)
31 a.	960-0001-97	960-0001-97	Yoke Ryertec Slide (S/N 1008 to 1256, Start S/N 1441)
b.	937-1005-15	937-1005-15	Yoke Ryertec Slide (S/N 1257 to 1437)
32 a.	937-0500-50	937-0501-14	Top Yoke Assembly (Starting S/N 1257)
b.	955-0500-12	-----	Top Yoke Assembly (S/N 1008 to 1256)
33.	955-1007-72	955-1007-72	Yoke Lock Pin
34.	900-3906-29	900-3906-29	Top Feedwheel Hydraulic Motor
35 a.	937-0502-01	937-0502-01	Top Yoke Lift Lug (Starting S/N 1257)
b.	900-0500-66	900-0500-66	Top Yoke Lift Lug (S/N 1008 to 1256)
c.	900-3917-55	900-3917-55	Yoke Lift Cylinder (Not Shown - Starting S/N 1257)
d.	900-3908-16	-----	Yoke Lift Cylinder (Not Shown - S/N 1008 to 1256)
36.	955-0500-72	955-0500-72	Top Feedwheel Motor Mount
37.	900-1901-35	900-1901-35	Top Feedwheel Hydraulic Motor Sprocket
38.	900-1901-39	900-1901-39	Top Feedwheel Drive Chain (80-2 Chain)
39.	900-1901-36	900-1901-36	Top Feedwheel Hydraulic Motor Bushing
40.	900-1900-08	900-1900-08	Top Feedwheel Bushing
41.	900-1901-37	900-1901-37	Top Feedwheel Sprocket
42 a.	937-0501-91	937-0501-91	Top Feedwheel Chain Guard (Starting S/N 1257)
b.	955-0500-73	955-0500-73	Top Feedwheel Chain Guard (S/N 1008 to 1256)
43 a.	955-0500-27	937-0501-10	Top Feedwheel Assembly
b.	955-1000-87	937-1007-63	Top Feedwheel Tooth
c.	955-1002-07	937-1007-41	Top Feedwheel Shaft
44 a.	937-0500-49	937-0501-13	Bottom Yoke Assembly (Starting S/N 1257)
b.	955-0500-28	-----	Bottom Yoke Assembly (S/N 1008 to 1256)
45 a.	955-0500-21	937-0501-09	Bottom Feedwheel Assembly
b.	955-1001-52	937-1007-50	Bottom Feedwheel Tooth
c.	955-1000-92	937-0501-07	Bottom Feedwheel Shaft
46 a.	955-1005-83	955-0502-18	Trap Door Assembly
b.	981-1000-60	981-1000-60	Trap Door Hinge (Not Shown)
c.	900-4901-83	900-4901-83	Spring Lock For Trap Door (Not Shown)
47 a.	937-0500-73	937-0501-11	Infeed Hopper Assembly (Starting S/N 1257)
b.	955-0500-09	-----	Infeed Hopper Assembly (S/N 1008 to 1256)
48.	980-0508-64	980-0508-64	Last Chance Cable Assembly
49 a.	N/A	980-0510-10	Yoke Roller Assembly
b.	N/A	980-0132-29	Yoke Roller Mount Only
c.	N/A	980-0510-12	Yoke Roller With Bushing Only

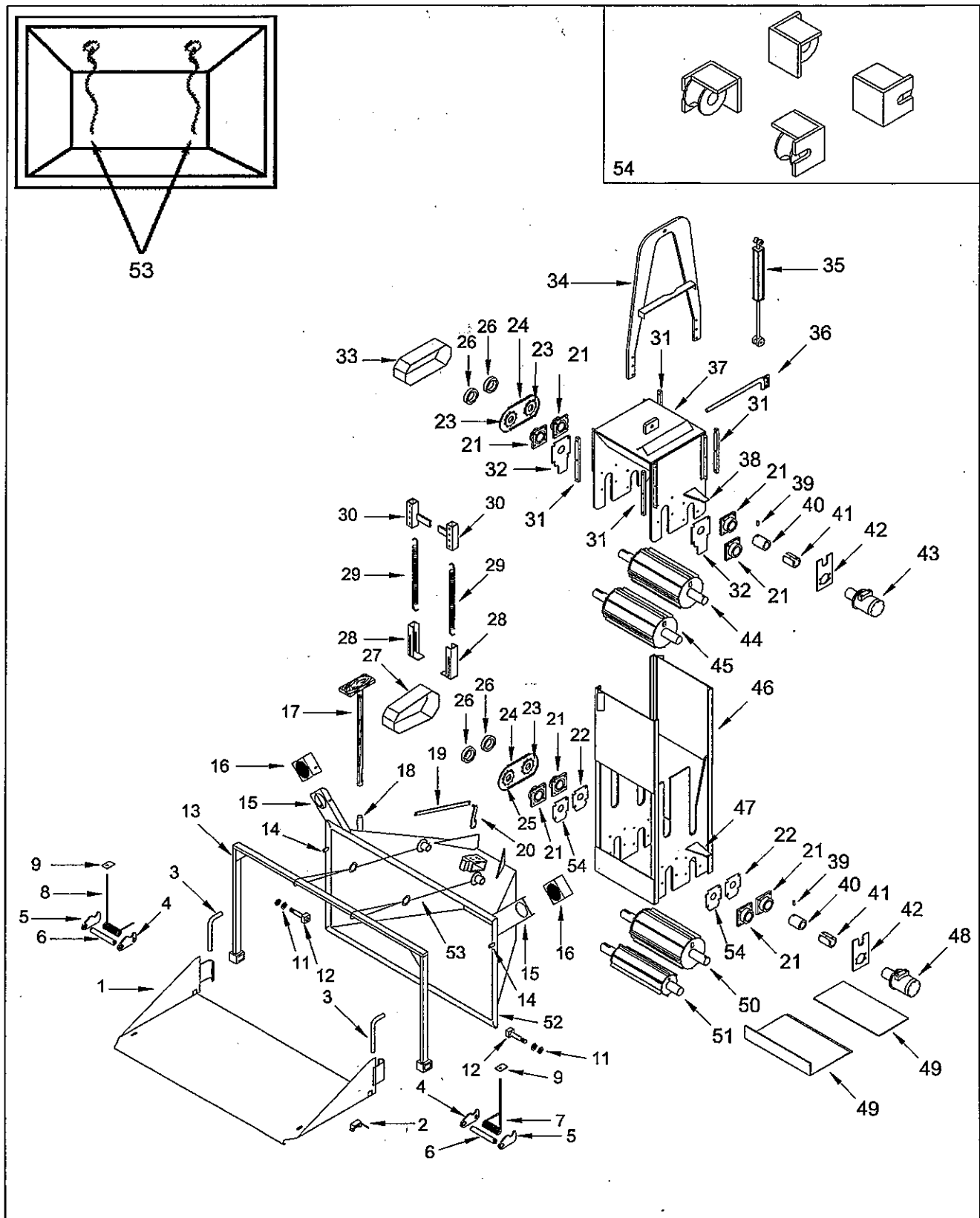
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MODELS 1890/1890 HD**QUAD-FEED COMPONENTS**

LOCATION	PART NUMBER	DESCRIPTION
1 a.	955-0501-67	Folding Pan For Infeed Hopper
b.	955-0501-15	Weld-On Pan For Infeed Hopper
2.	980-4901-83	Spring Lock For Folding Pan
3 a.	955-1003-94	Folding Pan Lock Pin
b.	955-1014-45	Holder For Lock Pin (Not Shown)
4.	980-0129-66	Inside Spring Mount For Spring Assist
5.	980-0129-84	Outside Spring Mount For Spring Assist
6.	980-0129-86	Spring Tube For Spring Assist
7.	900-4905-39	Right Spring For Spring Assist
8.	900-4905-40	Left Spring For Spring Assist
9.	980-0133-34	Top Mount For Spring Assist
10 a.	980-0509-56	Spring Assist Assembly (Includes #'s 4 To 9 & 10 b.)
b.	900-4905-45	Cotter Pin For Spring Tube (Not Shown)
11.	900-4900-44	Pivot Pin Jam Nuts
12.	955-1007-66	Infeed Pan Pivot Pins
13 a.	937-0500-95	Control Handle
b.	955-0501-24	Control Handle (S/N 1267 Only)
14.	980-0120-42	Folding Infeed Pan Lock Tab
15 a.	980-0124-95	Tail Light Mount
b.	900-2900-02	Tail Light Bulb
c.	900-2902-54	Tail Light
d.	900-2900-03	Marker Light
e.	900-2905-60	L.E.D. Tail Light
f.	900-2905-60	L.E.D. Marker Light
16 a.	980-0508-72	H.D. Tail Light Covers
b.	980-0510-41	H.D. Tail Light Cover For L.E.D. Light (Specify Side)
17.	981-1005-30	Wooden Push Paddle
18.	980-0122-55	Wooden Push Paddle Mount
19.	980-0123-94	Hydraulic Control Arm
20.	980-0125-74	Hydraulic Control Valve Linkage
21 a.	900-1904-07	Feedwheel Bearing
b.	900-4900-19	Feedwheel Bearing Bolt
c.	900-1900-66	Feedwheel Bearing - Climber Wheel (S/N 1267 Only)
d.	900-4900-16	Feedwheel Bearing Bolt (S/N 1267 Only)
22.	955-1015-49	Bottom Feedwheel Bearing Backer Plate
23.	900-1906-82	Feedwheel Sprocket
24 a.	900-1904-81	Bottom Feedwheel Chain
b.	900-1904-83	Master Link (Not Shown)
c.	900-1904-82	Half Link (Not Shown)
25.	900-1906-83	Bottom Climber Feedwheel Sprocket
26 a.	900-1906-39	Feedwheel Sprocket Bushing
b.	900-1904-85	Climber Feedwheel Sprocket Bushing (S/N 1267 Only)
27.	937-0501-56	Bottom Feedwheel Chain Guard Assembly
28 a.	981-1007-12	Easy Climb Bottom Spring Mount
b.	900-4905-14	Cleavis Pin
c.	900-4905-19	Hair Pin Cotter (For Cleavis Pin)
29 a.	900-4905-18	Easy Climb Yoke Spring
b.	900-4903-81	Easy Climb Yoke Spring (S/N 1267 Only)
30.	981-1007-11	Easy Climb Spring Top Mount

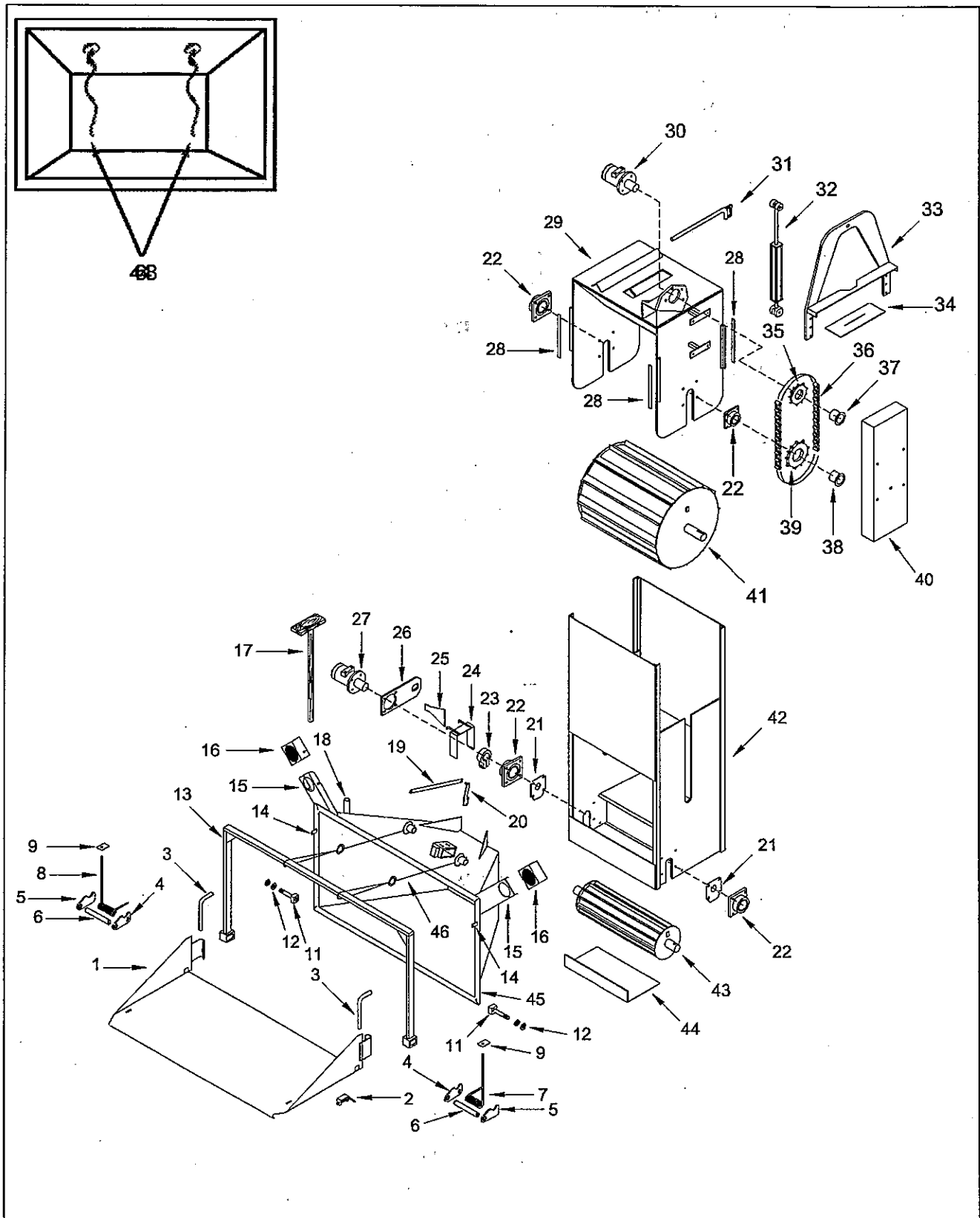
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MODELS 1890/1890 HD**QUAD-FEED COMPONENTS**

LOCATION	PART NUMBER	DESCRIPTION
31 a.	980-0104-22	Ryertec Yoke Slide
b.	980-0111-08	Ryertec Yoke Slide (S/N 1267 Only)
32.	955-1015-69	Top Climber Feedwheel Bearing Backer Plate
33.	937-1006-44	Top Feedwheel Chain Guard Assembly
34 a.	937-0502-04	Yoke Lift Assembly
b.	937-0502-07	Yoke Lift Assembly (S/N 1267 Only)
35 a.	900-3917-55	Yoke Lift Cylinder
b.	900-3903-57	Yoke Lift Cylinder (S/N 1267 Only)
36.	937-1006-82	Yoke Lock Pin
37 a.	937-0500-79	Top Yoke Assembly
b.	937-0502-05	Top Yoke Assembly (S/N 1267 Only)
38.	937-1004-71	Top Feedwheel Torque Arm Stop
39.	900-4905-56	Taper Pin Only
40.	937-1004-32	Coupler Clamp Assembly
41.	937-1004-97	Rubber Coupler Guard
42 a.	955-1014-00	Feedwheel Torque Arm 10" Long
b.	955-1003-02	Feedwheel Torque Arm 15 3/4" Long
43.	900-3917-18	Top Feedwheel Hydraulic Motor
44 a.	937-0500-67	Top Feedwheel Assembly
b.	955-1001-52	Top Feedwheel Tooth
c.	937-0500-64	Top Feedwheel Shaft Coupler Assembly
45 a.	937-0500-74	Top Climber Feedwheel Assembly
b.	937-0500-69	Top Climber Feedwheel Assembly (S/N 1267 Only)
c.	955-1001-52	Top Climber Feedwheel Tooth
d.	937-1006-40	Top Climber Feedwheel Shaft
e.	937-1006-05	Top Climber Feedwheel Shaft (S/N 1267 Only)
46 a.	937-0500-78	Bottom Yoke Assembly
b.	937-0502-06	Bottom Yoke Assembly (S/N 1267 Only)
47.	937-1004-71	Bottom Feedwheel Torque Arm Stop
48.	900-3917-18	Bottom Feedwheel Hydraulic Motor
49 a.	937-0500-98	Trap Door Assembly
b.	980-1000-60	Hinge For Trap Door (Not Shown)
c.	980-4901-83	Spring Lock For Trap Door (Not Shown)
50 a.	937-0500-66	Bottom Feedwheel Assembly
b.	955-1001-52	Bottom Feedwheel Tooth
c.	937-0500-65	Bottom Feedwheel Shaft Coupler Assembly
51 a.	937-0500-75	Bottom Climber Feedwheel Assembly
b.	937-0500-68	Bottom Climber Feedwheel Assembly (S/N 1267 Only)
c.	955-1001-52	Bottom Climber Feedwheel Tooth
d.	937-1006-40	Bottom Climber Feedwheel Shaft
e.	937-1006-05	Bottom Climber Feedwheel Shaft (S/N 1267 Only)
52 a.	937-0500-73	Infeed Hopper Assembly
b.	955-0500-09	Infeed Hopper Assembly (S/N 1267 Only)
53.	980-0508-64	Last Chance Cable Assembly
54 a.	980-0510-10	Yoke Roller Assembly
b.	980-0132-29	Yoke Roller Mount Only
c.	980-0510-12	Yoke Roller With Bushing Only

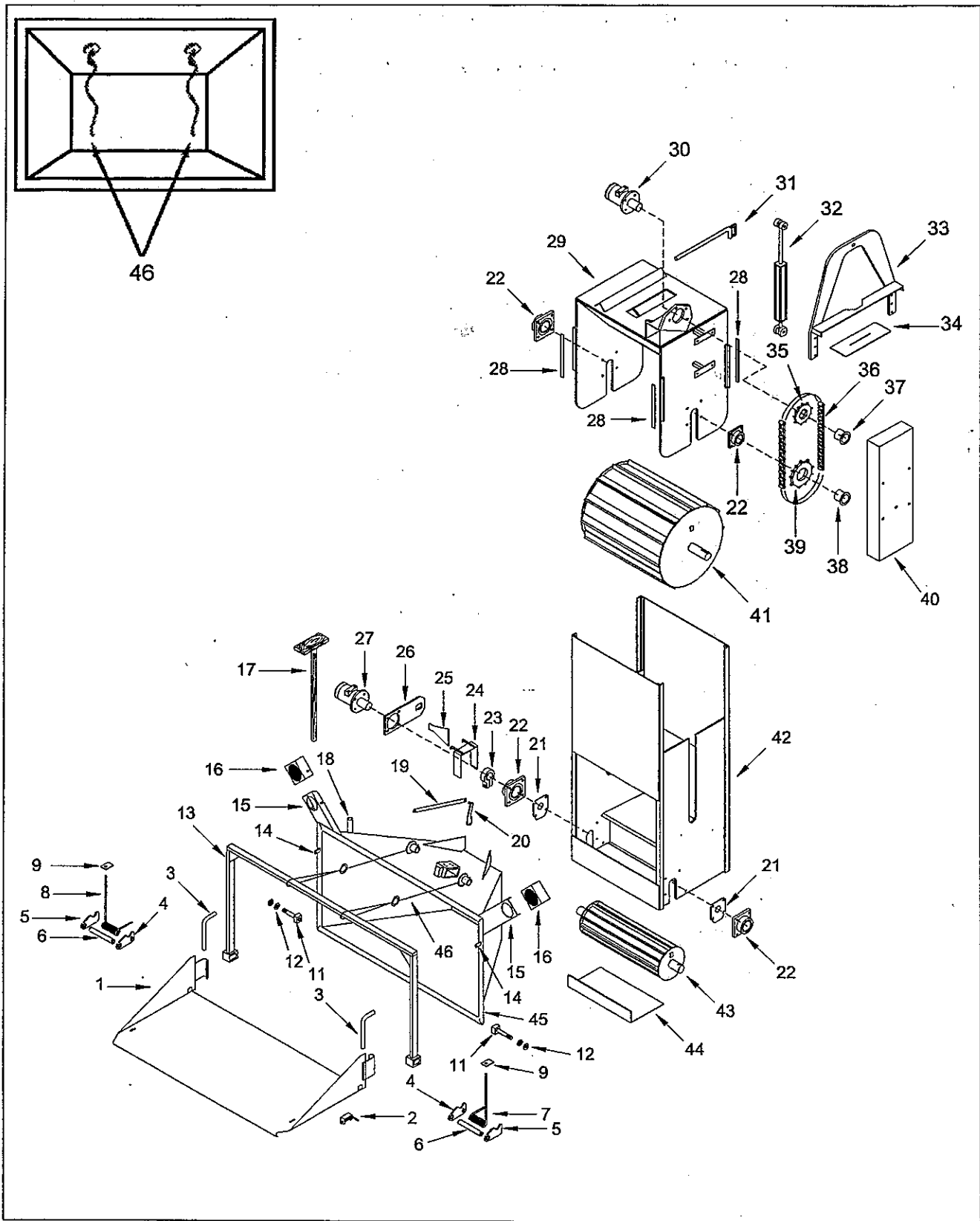
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MODELS 1890/1890HD**BIG WHEEL FEED COMPONENTS**

LOCATION	PART NUMBER	DESCRIPTION
1 a.	955-0501-67	Folding Pan For Infeed Hopper
b.	955-0501-15	Weld-On Pan For Infeed Hopper
2.	900-4901-83	Spring Lock For Folding Pan
3 a.	955-1003-94	Folding Pan Lock Pin
b.	955-1014-45	Holder For Lock Pin (Not Shown)
c.	955-1005-24	Lock Tube For Lock Pin (Not Shown)
4.	980-0129-66	Inside Spring Mount For Spring Assist
5.	980-0129-84	Outside Spring Mount For Spring Assist
6.	980-0129-86	Spring Tube For Spring Assist.
7.	900-4905-40	Right Spring For Spring Assist
8.	900-4905-39	Left Spring For Spring Assist
9.	980-0133-34	Top Mount For Spring Assist
10 a.	980-0509-56	Spring Assist Assembly (Includes #'s 4 To 9 & 10 b)
b.	900-4905-45	Cotter Pin For Spring Tube (Not Shown)
11.	955-1007-66	Infeed Pan Pivot Pin
12.	900-4900-44	Pivot Pin Jam Nut
13.	937-0500-95	Control Handle
14.	980-0120-42	Folding Pan Locking Tab
15 a.	980-0124-95	Tail Light Mount
b.	900-2900-02	Tail Light Bulb
c.	900-2902-54	Tail Light
d.	900-2900-03	Marker Light
e.	900-2905-60	L.E.D. Tail Light
f.	900-2905-61	L.E.D. Marker Light
16 a.	980-0508-72	H.D. Tail Light Covers
b.	980-0510-41	H.D. Tail Light Cover For L.E.D. Light (Specify Side)
17.	981-1005-30	Wooden Push Paddle
18.	980-0122-55	Wooden Push Paddle Mount
19.	980-0123-94	Hydraulic Control Arm
20.	980-0125-74	Hydraulic Valve Linkage
21 a.	955-1002-14	Bottom Feedwheel Bearing Backer (S/N's 1346,1350,1369,1373,1374,1399,1422)
b.	937-1005-77	Bottom Feedwheel Bearing Backer (S/N's 1279,1300,1303,1315,1317,1331)
22 a.	900-1904-07	Feedwheel Bearing
b.	900-4900-19	Feedwheel Bearing Bolt (Not Shown)
c.	900-3921-02	Grease Line For Top Feedwheel Bearing (Not Shown)
23.	960-0012-73	Bottom Feedwheel Lee-Tight Coupler
24.	955-0501-16	Bottom Feedwheel Coupler Guard

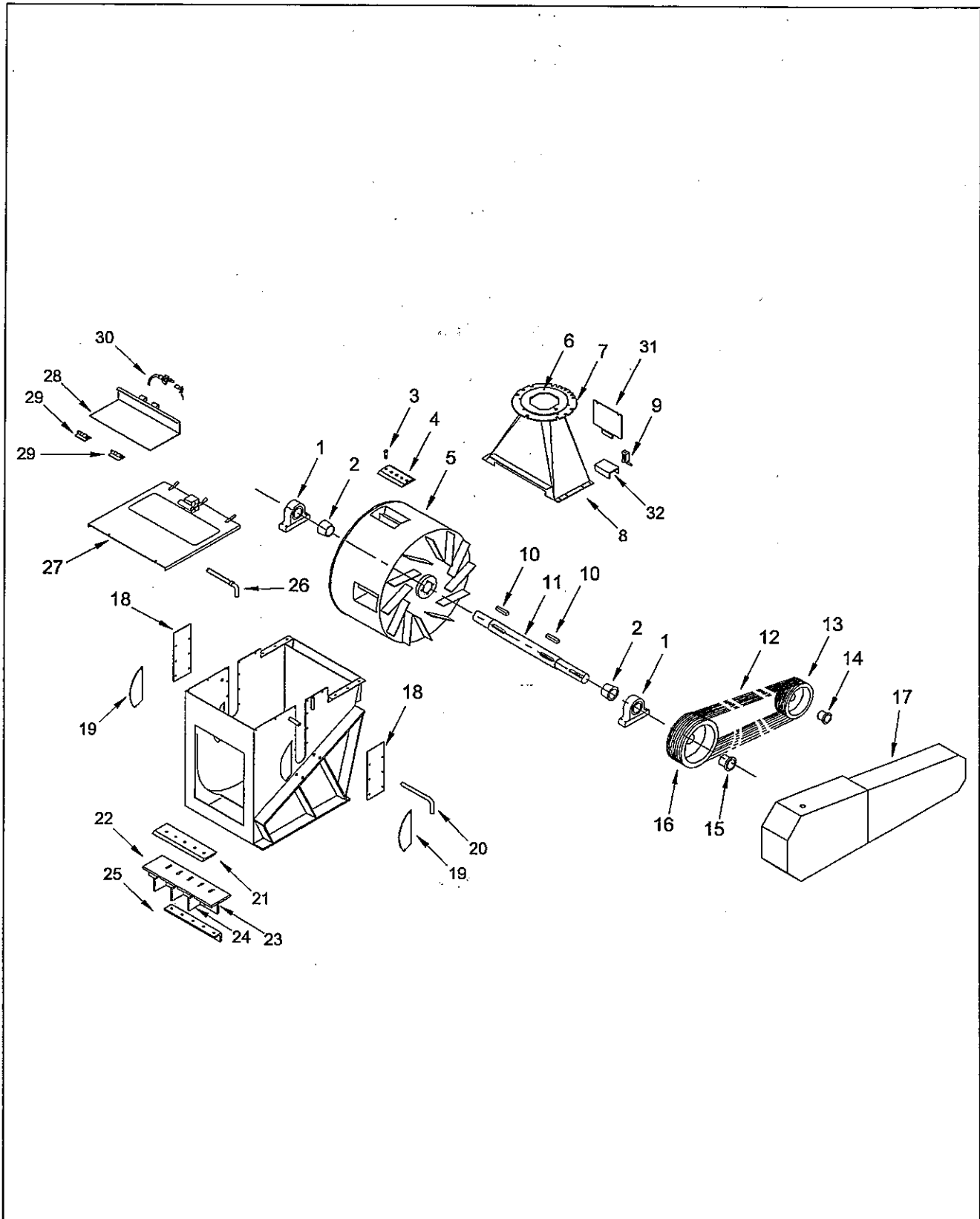
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MODELS 1890/1890HD**BIG WHEEL FEED COMPONENTS**

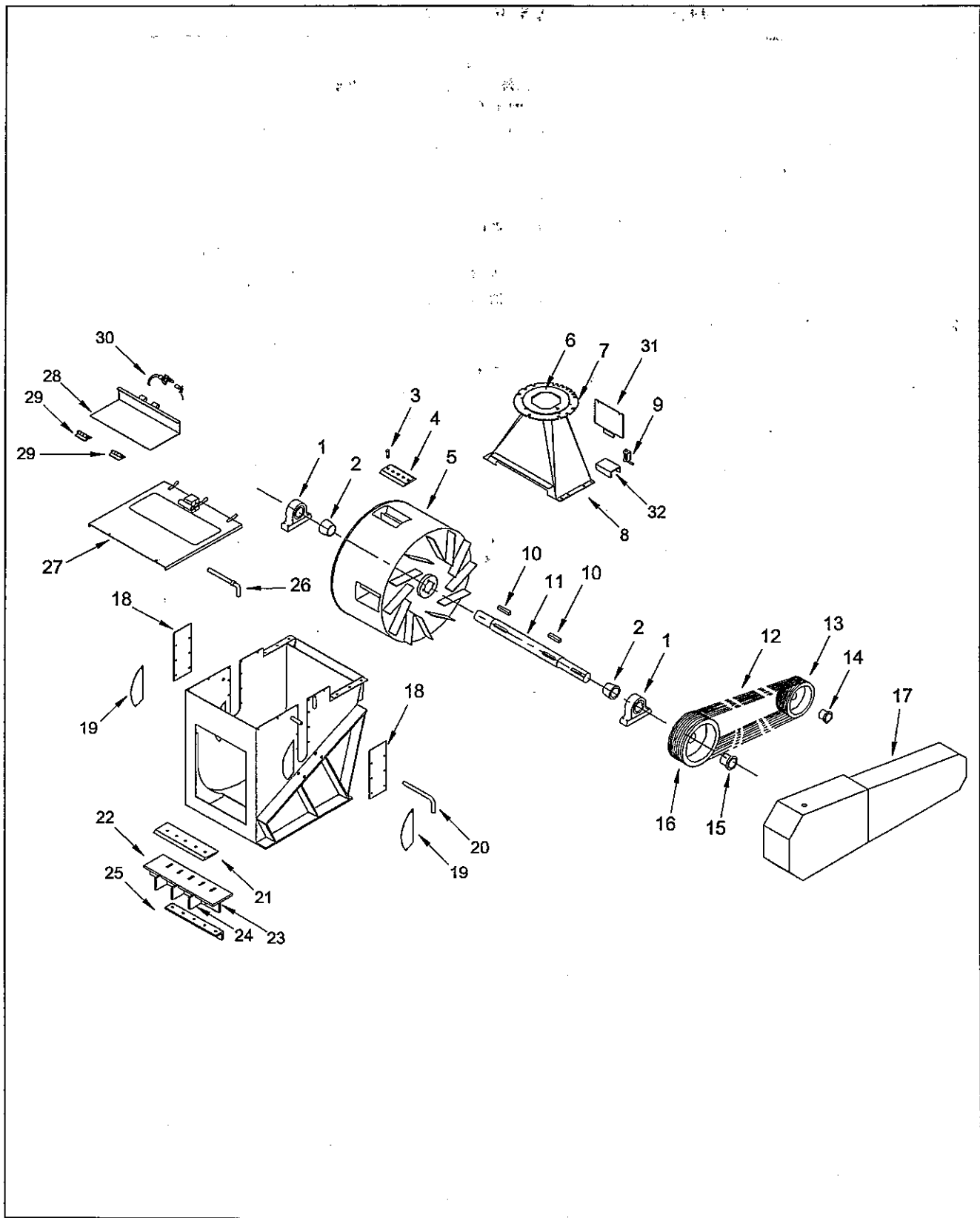
LOCATION	PART NUMBER	DESCRIPTION
25.	937-1004-71	Bottom Feedwheel Torque Arm Stop
26.	955-1003-02	Bottom Feedwheel Torque Arm
27.	900-3907-71	Bottom Feedwheel Hydraulic Motor
28.	937-1005-15	Yoke Ryertec Slide
29.	937-0500-77	Top Yoke Assembly
30 a.	900-3906-29	Top Feedwheel Hydraulic Motor
b.	955-0500-72	Top Feedwheel Motor Mount
31.	937-1005-51	Yoke Lock Pin
32.	900-3917-55	Yoke Lift Cylinder
33.	937-1007-07	Yoke Lift Lug
34.	937-1009-79	Yoke Lift Rubber Guard
35.	900-1901-35	Top Feedwheel Hydraulic Motor Sprocket
36.	900-1901-39	Top Feedwheel Drive Chain (80-2 Chain)
37.	900-1901-36	Top Feedwheel Hydraulic Motor Bushing
38.	900-1900-08	Top Feedwheel Bushing
39.	900-1906-99	Top Feedwheel Sprocket
40.	937-0501-44	Top Feedwheel Chain Guard
41 a.	937-0500-84	Top Feedwheel Assembly
b.	955-1000-87	Top Feedwheel Tooth
c.	955-1002-07	Top Feedwheel Shaft
42 a.	937-0500-83	Bottom Yoke Assembly (S/N 1346,1350,1369,1373,1374,1399,1422)
b.	937-0500-76	Bottom Yoke Assembly (S/N 1279,1300,1303,1315,1317,1331)
43 a.	955-0500-21	Bottom Feedwheel Assembly (S/N 1346,1350,1369,1373,1374,1399,1422)
b.	937-0500-56	Bottom Feedwheel Assembly (S/N 1279,1300,1303,1315,1317,1331)
c.	955-1001-52	Bottom Feedwheel Tooth
d.	955-1000-92	Bottom Feedwheel Shaft
44 a.	955-1005-83	Trap Door Assembly
b.	981-1000-60	Trap Door Hinge (Not Shown)
c.	900-4901-83	Spring Lock For Trap Door (Not Shown)
45.	937-0500-73	Infeed Hopper Assembly
46.	980-0508-64	Last Chance Cable Assembly (Not Shown)
47 a.	955-1005-83	Trap Door Assembly (Not Shown)
b.	981-1000-60	Trap Door Hinge (Not Shown)
c.	900-4901-83	Spring Lock For Trap Door (Not Shown)

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LOCATION	PART NUMBER	DESCRIPTION
1 a.	900-1905-97	Chipper Drum Bearing
b.	900-4905-97	Chipper Drum Bearing Bolt (Not Shown)
c.	900-4903-21	Chipper Drum Bearing Washer (Not Shown)
d.	900-4901-23	Chipper Drum Bearing Nut (Not Shown)
e.	900-3921-02	Grease Line For Chipper Drum Bearing (Not Shown)
2.	900-1906-26	Drum Head Taper - Lock Bushing & Key
3 a.	900-4900-20	Knife Bolt For 5/8" Thick Knives (New Style)
	Must Be Used With 5/8" Thick Knives Only	
b.	900-4903-32	Knife Bolt For 1/2" Thick Knives (Old Style)
	Must Be Used With 1/2" Thick Knives Only	
c.	900-4901-32	Knife Bolt Washer
4 a.	900-9902-27	5/8" x 5 1/2" x 10" Knife (New Style)
	Must Be Used With Knife Bolt For 5/8" Thick Knives Only	
b.	900-9901-54	1/2" x 5 1/2" x 10" Knife (Old Style)
	Must Be Used With Knife Bolt For 1/2" Thick Knives Only	
5.	937-0500-40	Chipper Drum Assembly With Shaft
6.	937-1005-63	Transition Flange
7.	980-0128-24	Bottom Swivel Ring (Manual Swivel Discharge)
8.	937-0500-41	Transition Assembly
9.	900-4904-90	Discharge Spring Lock
10.	937-1004-19	Key For Drum Shaft
11.	937-1004-17	Drum Head Shaft
12.	***	Chipper Belts
13.	***	Engine Sheave
14.	***	Engine Bushing
15.	***	Chipper Bushing
16.	***	Chipper Sheave

*** Components vary with engine options
order by physical description.



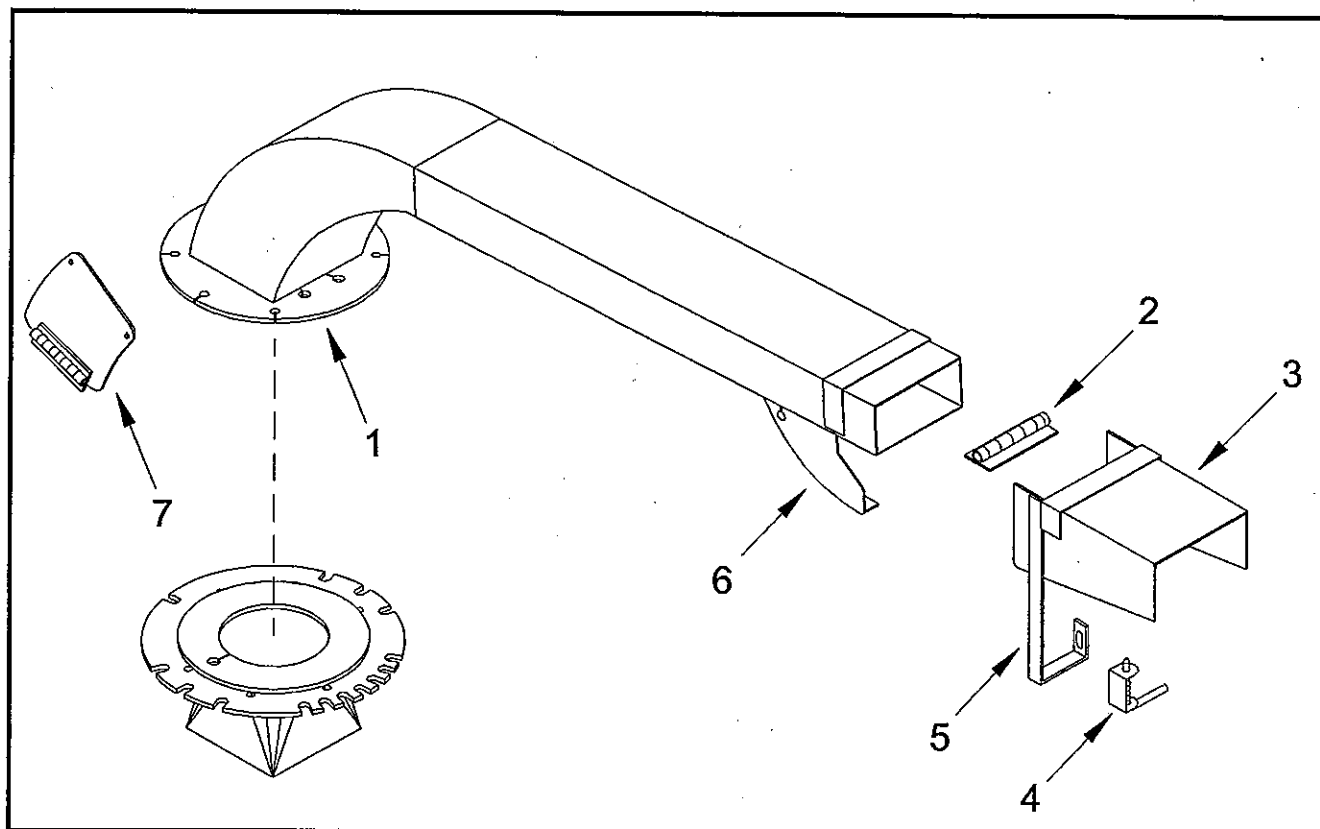
MODELS 1890/1890 HD**CHIPPER COMPONENTS**

LOCATION	PART NUMBER	DESCRIPTION
17 a.	937-0500-53	Beltshield Assembly
b.	937-0500-59	Beltshield Engine Sheave Half - Wide (8 1/4" Wide)
c.	937-0500-57	Beltshield Engine Sheave Half - Narrow (6 3/4" Wide)
d.	937-0500-58	Beltshield Chipper Sheave Half Assembly
e.	***	Beltshield Assembly (Old Style - Not Shown)
18 a.	937-1010-77	Base Strap (S/N 1485, 1489, 1490, 1492, 1493, Start 1495)
b.	937-0500-07	Base Strap (S/N 1007 - 1484, 1486, 1487, 1488, 1491)
19.	937-1006-85	Vent Cover
20.	955-1003-94	Drum Lock Pin
21 a.	937-1001-72	Anvil Only
b.	937-1004-37	"AR" Plate Anvil (Optional)
c.	937-0501-64	Anvil And Hardware Kit
d.	904-0003-90	Anvil Hardware Kit Only (Not Shown)
e.	900-4902-29	Anvil Eye Bolt (Not Shown)
22.	937-1001-73	Anvil Mount
23.	937-1002-02	Anvil Mount Support
24.	937-1002-15	Anvil Mount Gusset
25.	937-1001-74	Anvil Clamp Plate
26 a.	900-4905-37	Hood Pin (S/N 1485, 1489, 1490, 1492, 1493, Start 1495)
b.	937-1002-79	Hood Pin (S/N 1007 - 1484, 1486, 1487, 1488, 1491)
c.	900-4900-66	Padlock For Hood Pin (Not Shown)
27.	937-0501-98	Base Top Assembly
28 a.	937-1009-24	Hood Door (S/N 1485, 1489, 1490, 1492, 1493, Start 1495)
b.	937-1002-48	Hood Door (S/N 1007 - 1484, 1486, 1487, 1488, 1491)
29.	937-1002-82	Hood Door Hinge
30.	980-0509-04	Chipper Hood Engine Disable Plug
31.	937-0501-31	Optional Clean Out Door Assembly
32.	937-1004-42	Discharge Spring Lock Mount

*** Components vary with engine options
order by physical description.

Bandit

STANDARD DISCHARGE

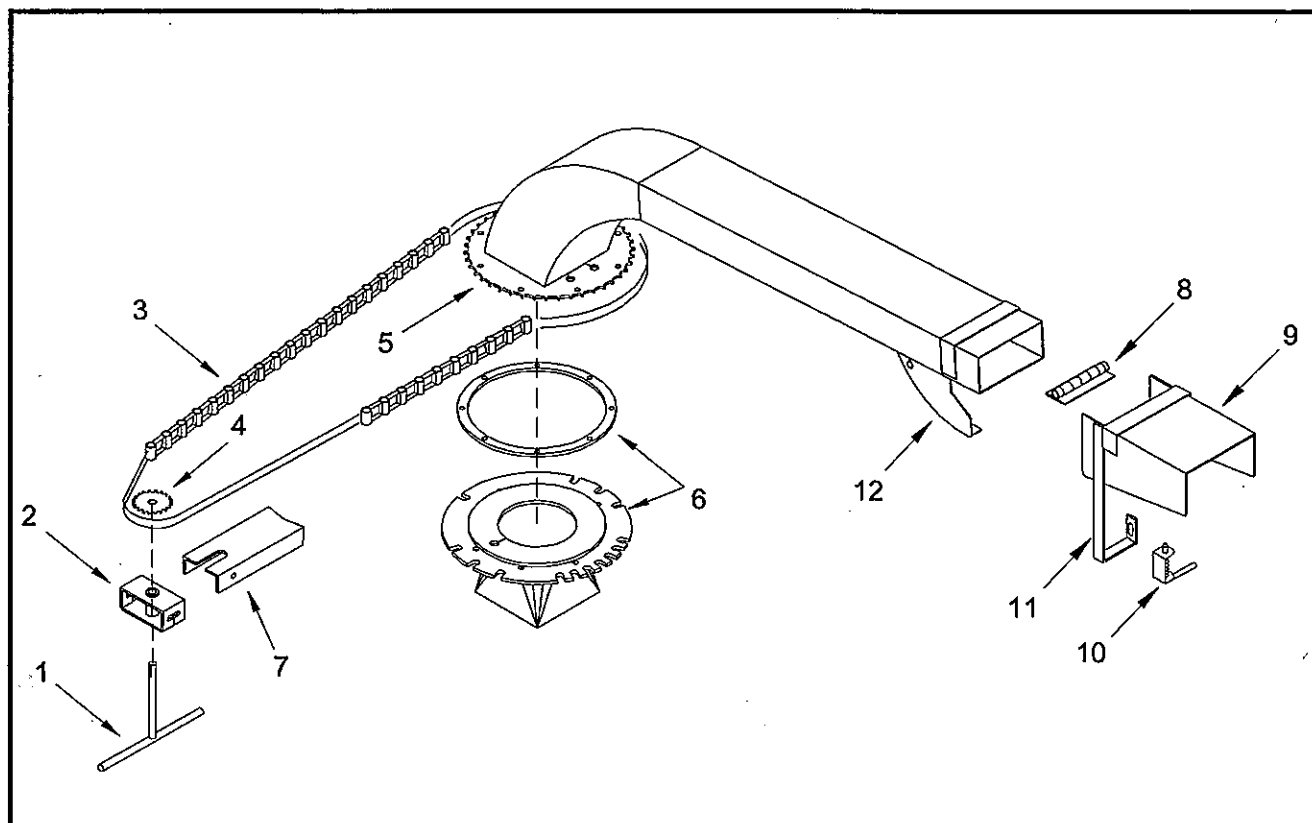


LOCATION	PART NUMBER	DESCRIPTION
1.	980-0127-33	Discharge Bottom Swivel Ring
2.	981-1001-63	Discharge Deflector Hinge
3 a.	937-1009-10	12" Discharge Deflector Assembly
b.	937-0501-63	12" Enclosed Discharge Deflector Assembly
4.	900-4901-83	Discharge Deflector Adjusting Spring
5.	937-1009-14	Adjusting Spring Mount
6 a.	980-0510-23	Adjusting Spring Lock Plate Assembly For Standard Flipper
b.	980-0510-24	Adjusting Spring Lock Plate Assembly For Enclosed Flipper
7.	980-0509-94	Optional Clean Out Door Assembly (Optional On All Discharge Options)

DISCHARGE ASSEMBLIES

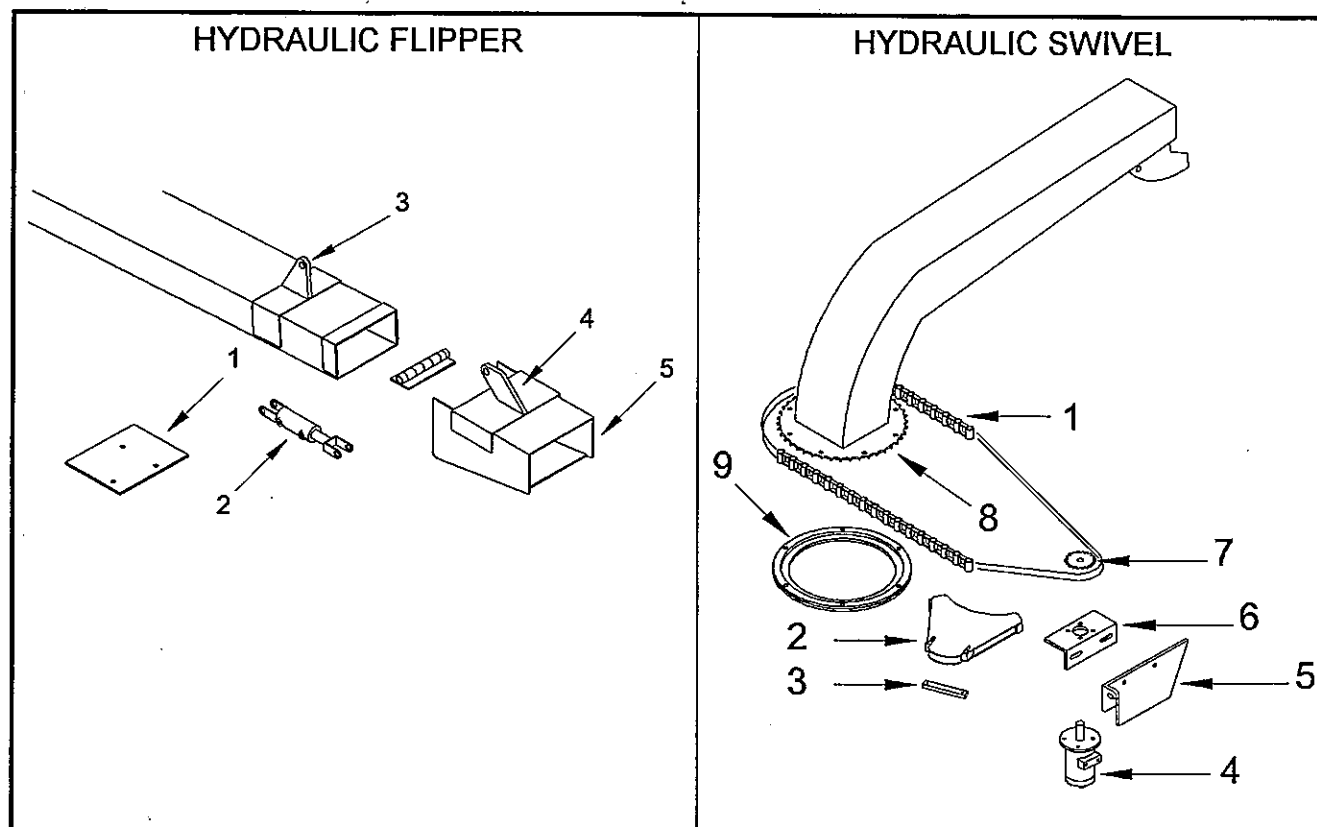
LOCATION	PART NUMBER	DESCRIPTION
1.	937-0500-14	Standard Discharge Assembly
2.	937-0500-19	Hand Crank And Adjustable Height Discharge Assembly
3.	937-0500-16	Hand Crank Discharge Assembly
4.	937-0500-18	Hydraulic Swivel And Adjustable Height Discharge Assembly
5.	937-0500-15	Hydraulic Swivel Discharge Assembly
6.	937-0500-17	Adjustable Height Discharge Assembly

HAND CRANK SWIVEL DISCHARGE



LOCATION	PART NUMBER	DESCRIPTION
1.	937-0500-38	T-Handle Assembly
2 a.	980-0509-40	Chain Adjuster Assembly
b.	980-0509-18	Hand Crank Swivel Handle Kit (Includes #'s 1 & 2)
3 a.	980-0128-74	#50 Roller Chain
b.	900-1901-18	Half Link - Chain (Not Shown)
c.	900-1901-19	Master Link - Chain (Not Shown)
4.	900-1905-59	T-Handle Sprocket
5.	980-0127-32	Sprocket For Hand Crank Swivel Discharge (Weld On)
6.	980-0510-32	Spacer Ring & Bottom Swivel Ring (Welded Together)
7.	937-1004-04	Chain Adjuster Mount
8.	981-1001-63	Discharge Deflector Hinge
9 a.	937-1009-10	12" Discharge Deflector Assembly
b.	937-0501-63	12" Enclosed Discharge Deflector Assembly
10.	900-4901-83	Discharge Deflector Adjusting Spring
11.	937-1009-14	Adjusting Spring Mount
12 a.	980-0510-23	Adjusting Spring Lock Plate Assembly For Standard Flipper
b.	980-0510-24	Adjusting Spring Lock Plate Assembly For Enclosed Flipper

HYDRAULIC DISCHARGES



HYDRAULIC FLIPPER

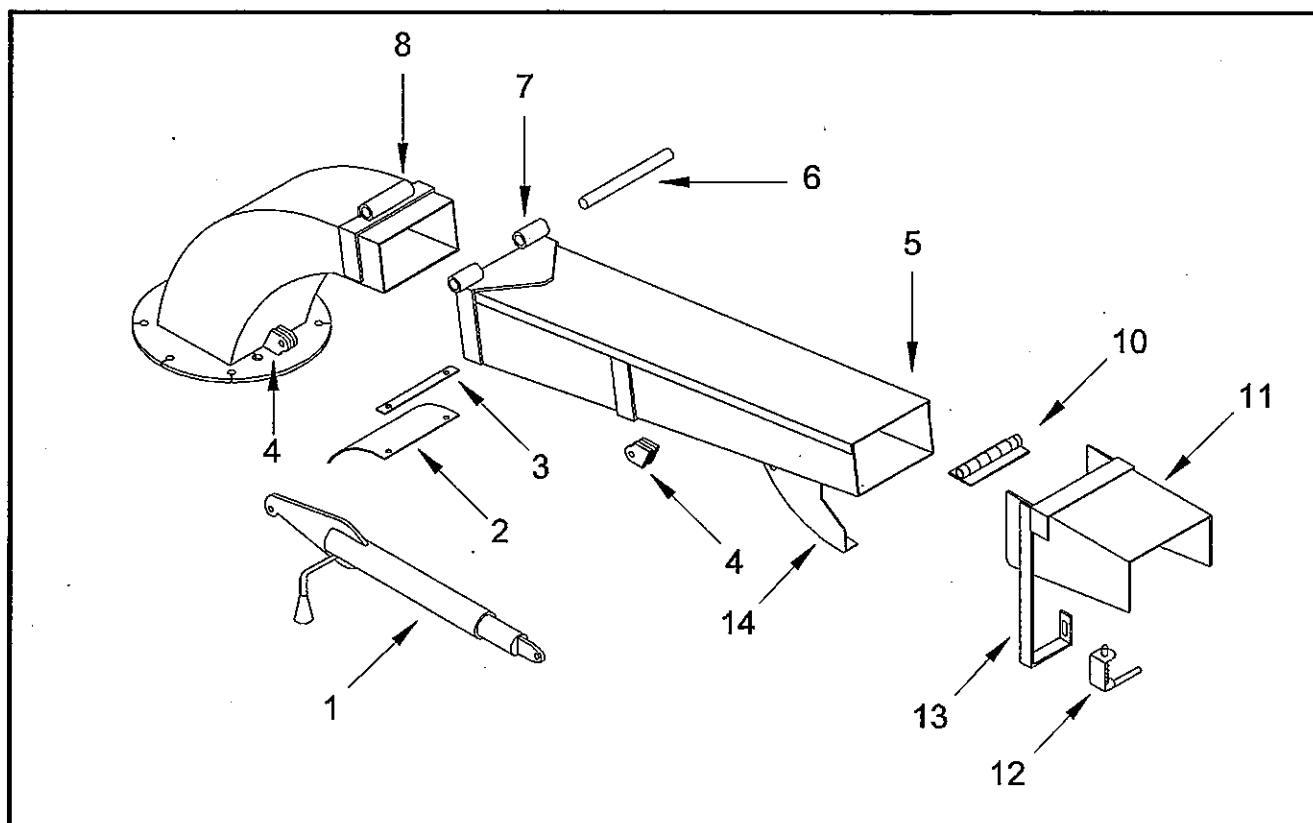
LOCATION	PART NUMBER	DESCRIPTION
1.	937-1003-30	Hydraulic Flipper Control Valve Mount
2.	900-3902-60	Hydraulic Cylinder
3.	960-0006-42	Discharge Cylinder Lug
4.	980-0126-48	Discharge Flipper Cylinder Lug
5.	937-0501-63	Hydraulic Flipper Assembly

HYDRAULIC SWIVEL

LOCATION	PART NUMBER	DESCRIPTION
1 a.	900-1901-20	#50 Roller Chain
b.	900-1901-18	Half Link- Chain (Not Shown)
c.	900-1901-19	Master Link - Chain (Not Shown)
2.	937-0500-25	Hydraulic Swivel Chain Guard
3.	937-1005-35	Chain Guard Mount
4 a.	900-3902-14	Discharge Swivel Hydraulic Motor (Pipe Fitting)
b.	900-3921-57	Discharge Swivel Hydraulic Motor (JIC Fitting)
5.	937-1004-30	Hydraulic Swivel Mount
6.	980-0110-66	Hydraulic Swivel Motor Mount
7.	900-1901-21	Sprocket For Hydraulic Motor
8.	900-1901-17	Hydraulic Swivel Discharge Ring
9.	980-0510-33	Spacer Ring & Bottom Swivel Ring Assembly
10.	900-4905-00	Washer Shims For Swivel Ring (Not Shown)

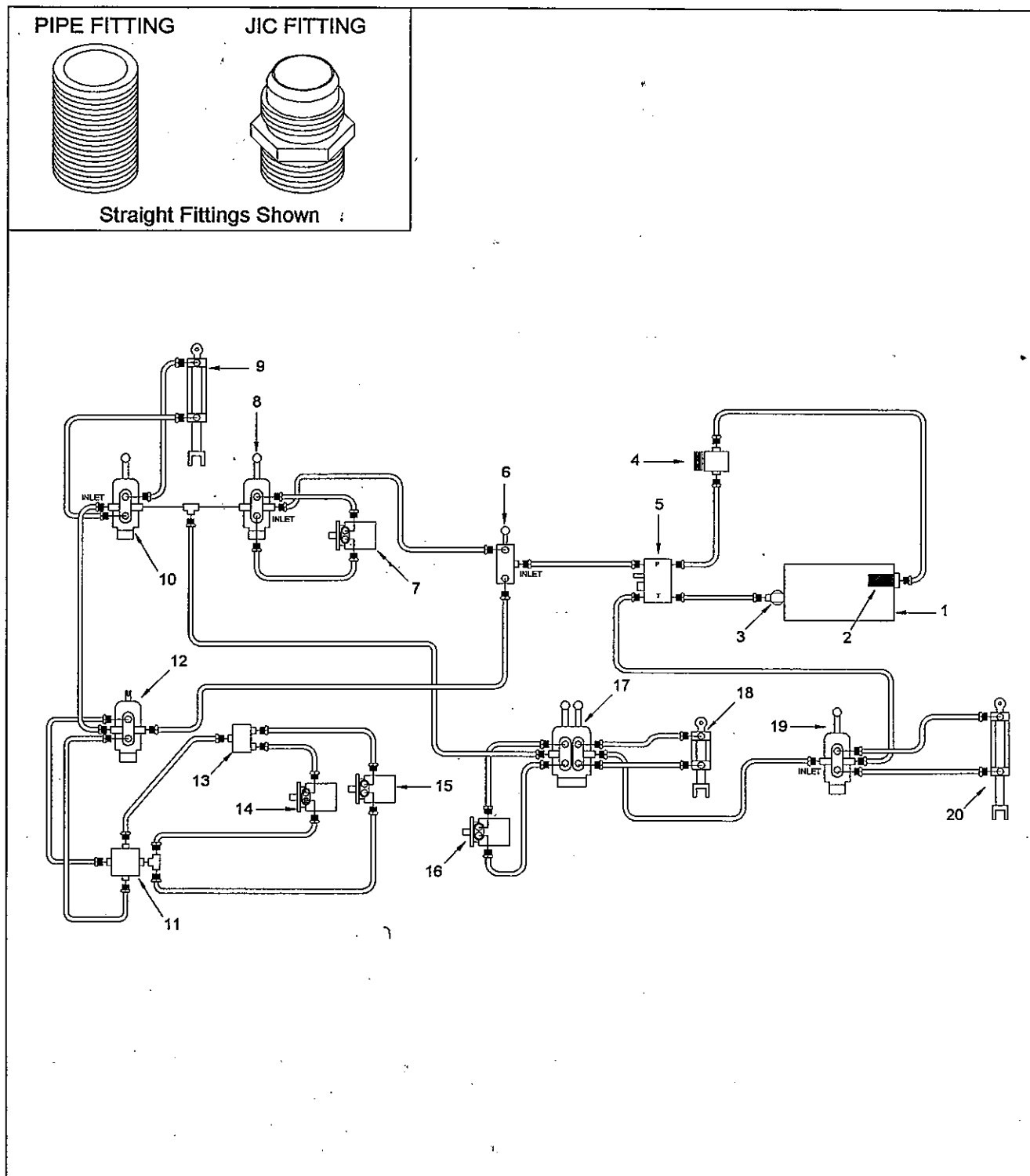
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HAND CRANK ADJ. HEIGHT DISCHARGE



LOCATION	PART NUMBER	DESCRIPTION
1.	980-0508-51	Jack For Adj. Height Discharge
2.	980-0126-12	Rubber Discharge Guard
3.	980-0126-11	Rubber Discharge Guard Mount
4.	980-0125-72	Top & Bottom Hand Crank Adj. Height Mount Brackets
5.	937-0501-65	Straight Section Hand Crank Adj. Height Discharge
6.	980-0126-52	Hand Crank Adj. Height Hinge Pin
7.	980-0126-53	Hand Crank Adj. Height Small Hinge Tube
8.	980-0100-98	Hand Crank Adj. Height Hinge Large Hinge Tube
9.	980-0508-93	Hand Crank Adj. Height Hinge Assembly (Includes #'s 6 - 8)
10.	981-1001-63	Discharge Deflector Hinge
11 a.	937-1009-10	12" Discharge Deflector Assembly
b.	937-0501-63	12" Enclosed Discharge Deflector Assembly
12.	900-4901-83	Discharge Deflector Adjusting Spring
13.	937-1009-14	Adjusting Spring Mount
14 a.	980-0510-23	Adjusting Spring Lock Plate Assembly For Standard Flipper
b.	980-0510-24	Adjusting Spring Lock Plate Assembly For Enclosed Flipper

TYPICAL MODEL 1890 HYDRAULIC SCHEMATIC
(With Options)



TYPICAL MODEL 1890 HYDRAULIC COMPONENTS (With Options)

LOCATION	PIPE FITTING PART NUMBER	JIC FITTING PART NUMBER	DESCRIPTION
1.	See Pages 108 & 109	See Pages 108 & 109	Hydraulic Tank Specify Options
2 a.	900-3912-51	900-3912-51	Hydraulic Tank Strainer (Starting S/N 1294)
b.	900-3903-39	900-3903-39	Hydraulic Tank Strainer (S/N 1009 to 1292)
c.	900-3901-41	900-3901-41	Hydraulic Tank Strainer (S/N 1007)
3 a.	900-3910-18	900-3910-18	Filter Head (Starting 1229)
b.	900-3900-09	900-3900-09	Filter Head (S/N 1007 to 1225)
c.	900-3901-66	900-3901-66	Filter Cartridge (Starting 1229)
d.	900-3900-10	900-3900-10	Filter Cartridge (S/N 1007 to 1225)
4.	**	**	Hydraulic Pump
5.	See Pages 98 & 99	See Pages 98 & 99	Relief Block
6.	900-3913-41	900-3913-41	Selector Control Valve
7.	900-3902-14	900-3921-57	Winch Hydraulic Motor
8.	900-3901-42	900-3920-02	Winch Control Valve
9 a.	900-3917-55	900-3917-55	Yoke Lift Cylinder (Starting S/N 1257)
b.	900-3908-16	900-3908-18	Yoke Lift Cylinder (S/N 1008 to 1256)
c.	900-3903-57	900-3903-57	Yoke Lift Cylinder (S/N 1267 Only)
10 a.	900-3901-24	900-3920-01	Yoke Lift Control Valve Without Winch
b.	900-3908-62	900-3920-09	Yoke Lift Control Valve With Winch
11.	See Pages 98 & 99	See Pages 98 & 99	"Autofeed Plus" Block
12.	900-3914-47	900-3920-05	Feedwheel Control Valve
13 a.	900-3917-29	900-3919-21	Flow Divider (S/N 1243 - 1245, Starting 1247)
b.	900-3901-40	900-3903-41	Flow Divider (S/N 1007 - 1241, 1247)

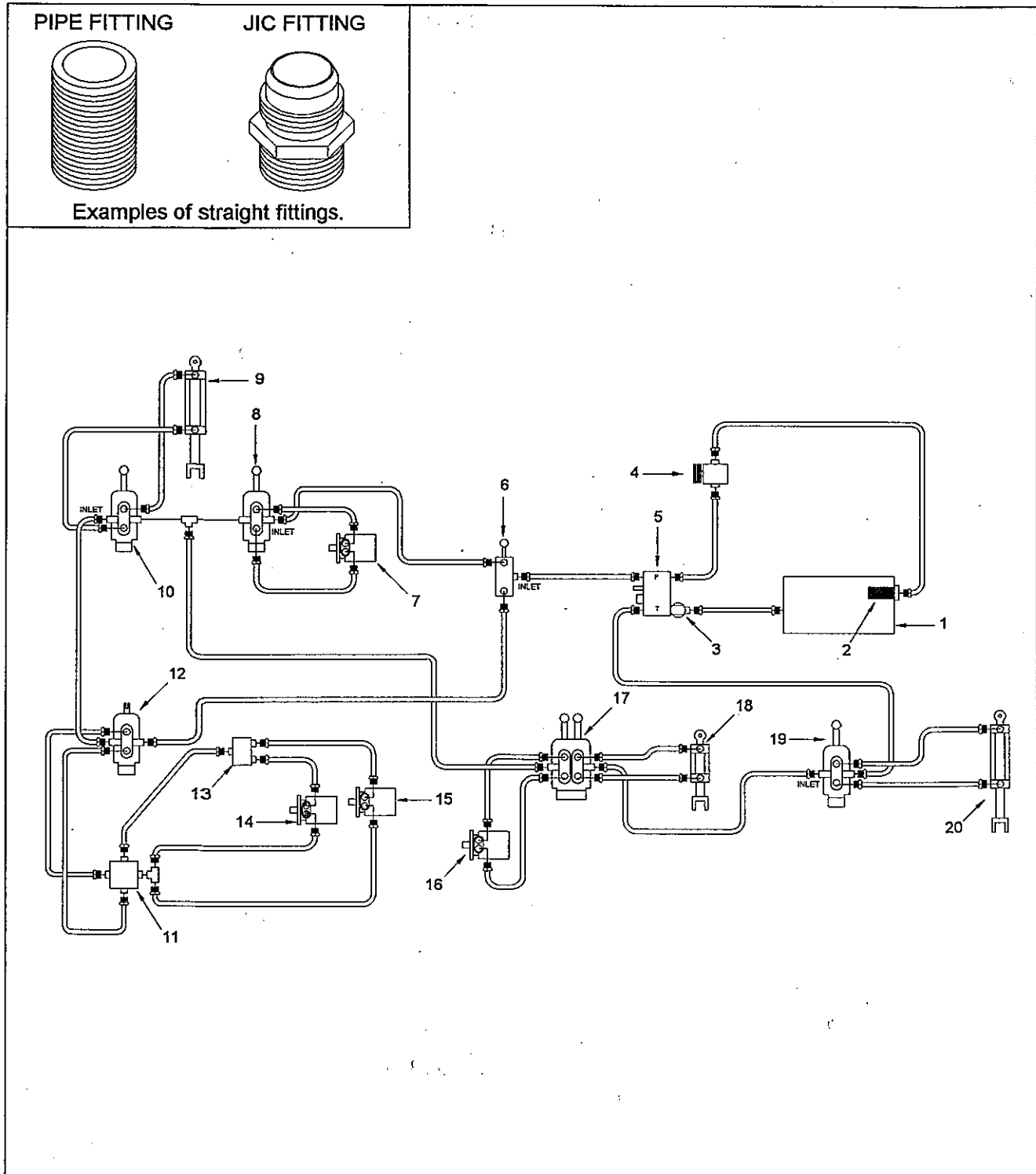
**NOTE: Make sure to order components according to fitting type
fittings may vary on all components.**

**** Hydraulic components, fittings, hoses will vary depending on
optional equipment. Order by physical description.**

**** Hydraulic pumps can be ordered by physical description.**

Bandit

TYPICAL MODEL 1890 HYDRAULIC SCHEMATIC
(With Options)



TYPICAL MODEL 1890 HYDRAULIC COMPONENTS (With Options)

LOCATION	PIPE FITTING PART NUMBER	JIC FITTING PART NUMBER	DESCRIPTION
14 a.	900-3917-18	900-3917-18	Bottom Feedwheel Hydraulic Motor (Starting S/N 1229)
b.	900-3908-67	900-3908-67	Bottom Feedwheel Hydraulic Motor (S/N 1007 to 1225)
15 a.	900-3917-18	900-3917-18	Top Feedwheel Hydraulic Motor (Starting S/N 1229)
b.	900-3908-68	900-3908-68	Top Feedwheel Hydraulic Motor (S/N 1007 to 1225)
16.	900-3902-14	900-3921-57	Swivel Discharge Hydraulic Motor
17 a.	900-3916-62	900-3916-62	Swivel Discharge & Flipper Control Valve
b.	900-3901-42	900-3920-01	Swivel Discharge Only Control Valve (Not Shown)
18.	900-3902-60	900-3902-60	Discharge Flipper Cylinder
19.	900-3901-42	900-3920-01	Tongue Jack Control Valve
20.	900-3903-57	900-3903-57	Tongue Jack Cylinder
THE FOLLOWING ITEMS ARE NOT SHOWN			
21.	900-3901-42	900-3920-01	Optional Articulating Tongue Control Valve
22.	900-3902-27	900-3902-27	Optional Articulating Tongue Cylinder
23.	900-3912-28	N/A	Optional In-Line Pressure Check Kit
24 a.	900-3917-15	900-3920-44	Optional Variable Speed Control Valve (Starting S/N 1229)
b.	900-3901-99	900-3920-43	Optional Variable Speed Control Valve (S/N 1007 to 1225)

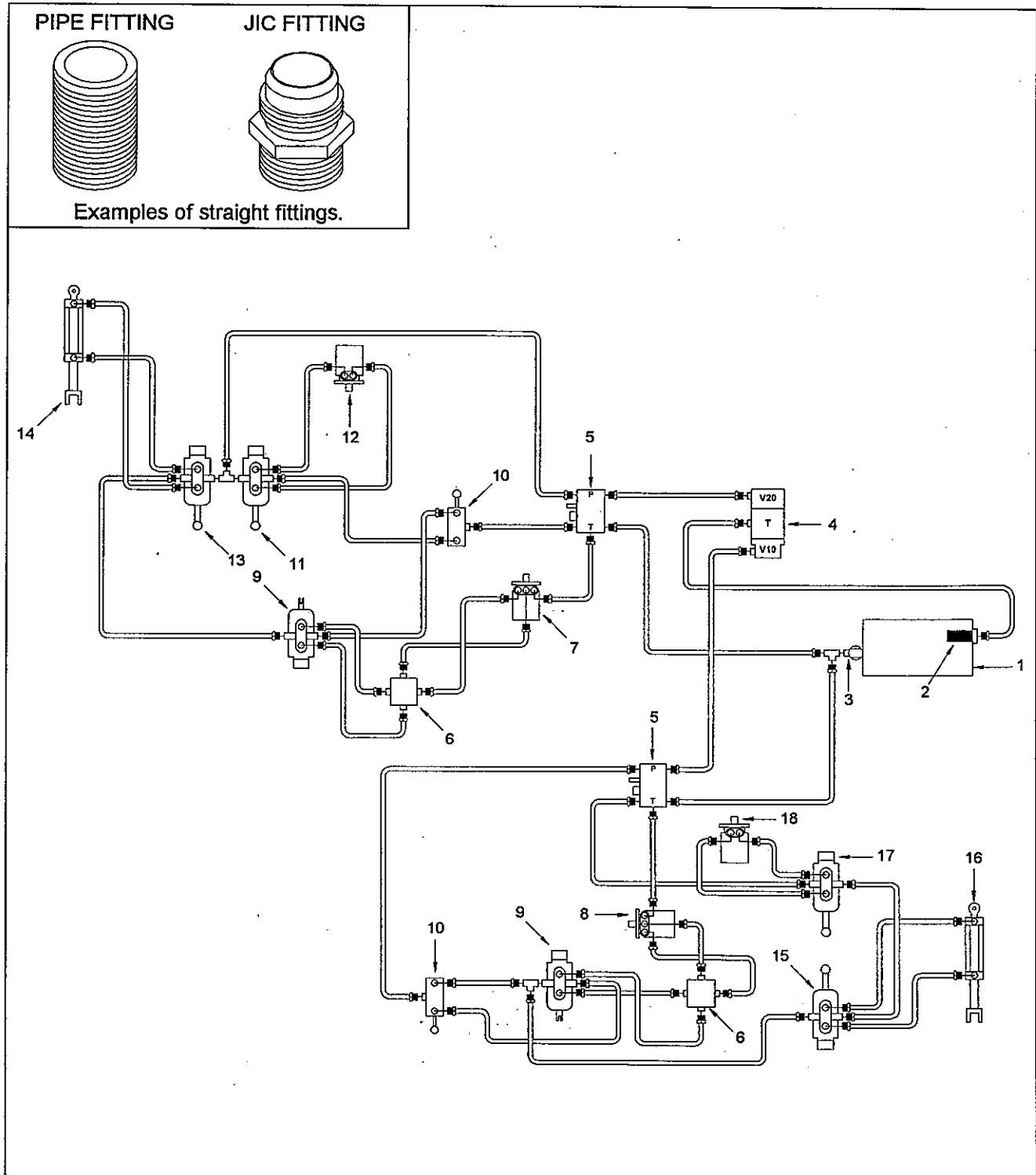
NOTE: Make sure to order components according to fitting type
fittings may vary on all components.

**** Hydraulic components, fittings, hoses will vary depending on
optional equipment. Order by physical description.**

**** Hydraulic pumps can be ordered by physical description.**

Bandit

TYPICAL MODEL 1890 HD HYDRAULIC SCHEMATIC
(With Options)



TYPICAL MODEL 1890 HD HYDRAULIC COMPONENTS (With Options)

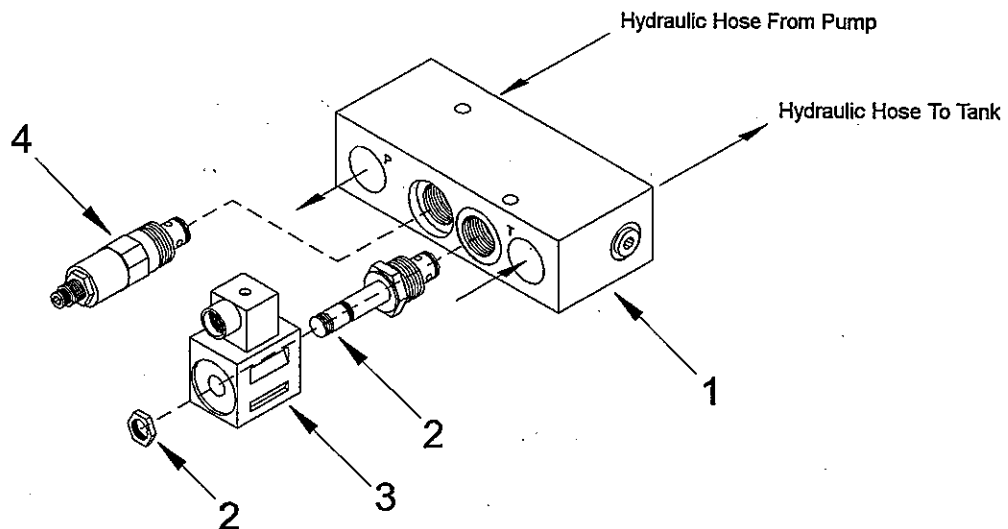
LOCATION	JIC FITTING PART NUMBER	PIPE FITTING PART NUMBER	DESCRIPTION
1.	See Pages 108 & 109	See Pages 108 & 109	Hydraulic Tank Specify Options
2 a.	900-3912-51	900-3912-51	Hydraulic Tank Strainer (Starting S/N 1296)
b.	900-3903-39	900-3903-39	Hydraulic Tank Strainer (S/N 1008 to 1293)
3 a.	900-3910-18	900-3910-18	Filter Head
b.	900-3901-66	900-3901-66	Filter Cartridge
4.	**	**	Hydraulic Pump
5.	See Pages 98 & 99	See Pages 98 & 99	Relief Block
6.	See Pages 98 & 99	See Pages 98 & 99	"Autofeed Plus" Block
7.	900-3906-29	900-3906-29	Top Feedwheel Hydraulic Motor
8 a.	900-3907-71	900-3907-71	Bottom Feedwheel Hydraulic Motor
b.	900-3917-18	900-3917-18	Bottom Feedwheel Hydraulic Motor For Super Sized Feed
9.	900-3914-47	900-3920-05	Feedwheel Control Valve
10.	900-3913-41	900-3913-41	Selector Valve
11.	900-3901-42	900-3920-01	Winch Control Valve
12.	900-3902-14	900-3921-57	Winch Hydraulic Motor
13 a.	900-3901-24	900-3920-02	Yoke Lift Control Valve Without Winch
b.	900-3908-62	900-3920-09	Yoke Lift Control Valve With Winch
14 a.	900-3917-55	900-3917-55	Yoke Lift Cylinder (Starting S/N 1257)
b.	900-3908-16	900-3908-16	Yoke Lift Cylinder (S/N 1008 to 1256)
15.	900-3901-42	900-3920-01	Tongue Jack Control Valve
16.	900-3903-57	900-3903-57	Tongue Jack Cylinder
17.	900-3901-42	900-3920-01	Swivel Discharge Control Valve
18.	900-3902-14	900-3921-57	Swivel Discharge Hydraulic Motor
19.	900-3901-99	900-3920-43	Variable Speed Control Valve (Not Shown)

**NOTE: Make sure to order components according to fitting type
fittings may vary on all components.**

**** Hydraulic components, fittings, hoses will vary depending on
optional equipment. Order by physical description.**

**** Hydraulic pumps can be ordered by physical description.**

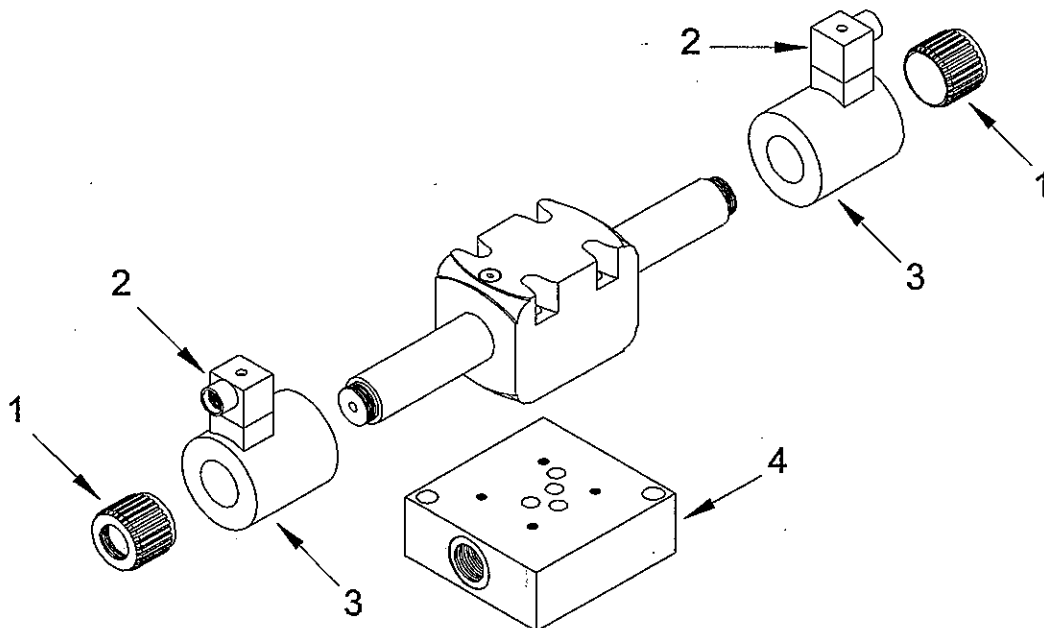
RELIEF BLOCK



NOTE: Torque Autofeed Cartridge Nut To 4 - 6 ft.-lbs. And Install Loc-Tite.

DO NOT OVER TIGHTEN, AUTOFEED CARTRIDGE NUT, OVER TIGHTENING WILL DAMAGE CARTRIDGE AND VOID WARRANTY!!

"AUTO FEED PLUS" SYSTEM (DOUBLE SOLENOIDS)



RELIEF BLOCK

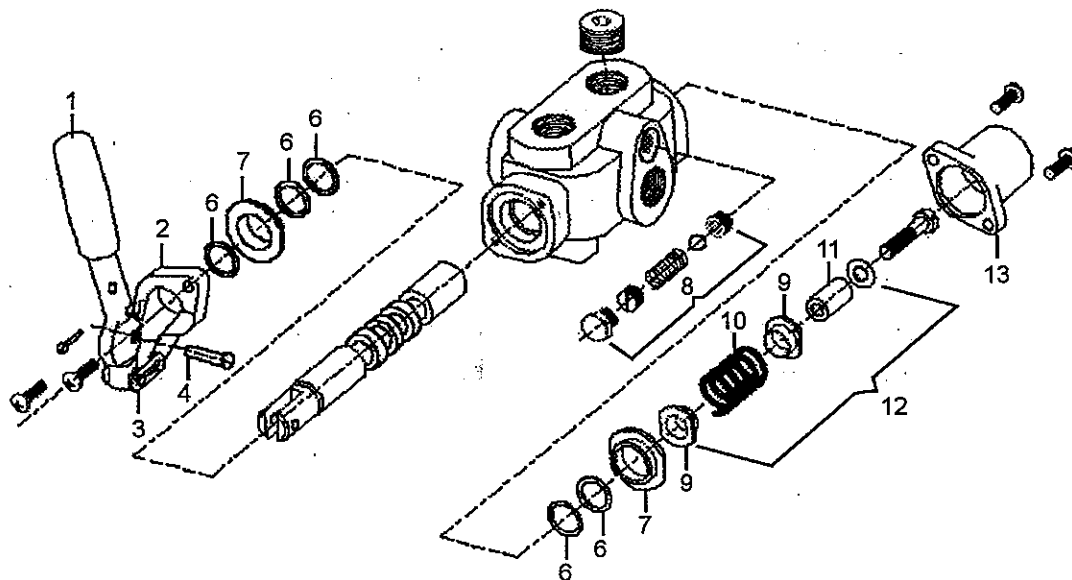
LOCATION	PART NUMBER	DESCRIPTION
1.	900-2900-82	Autofeed Block Only
2.	904-0003-40	Autofeed Cartridge Only
3.	904-0003-43	12 V Autofeed Solenoid Only
4.	900-3908-23	Main Relief Only
5.	900-3910-68	Autofeed Block Assembly With Relief and Solenoid
6.	900-3909-05	Main Relief Assembly (No Auto Feed Cartridge or Solenoid)

NOTE: #'s 2, 3, & 5 Are Only For Machines With The Old Style
Standard Auto Feed Not The "Auto Feed Plus" System

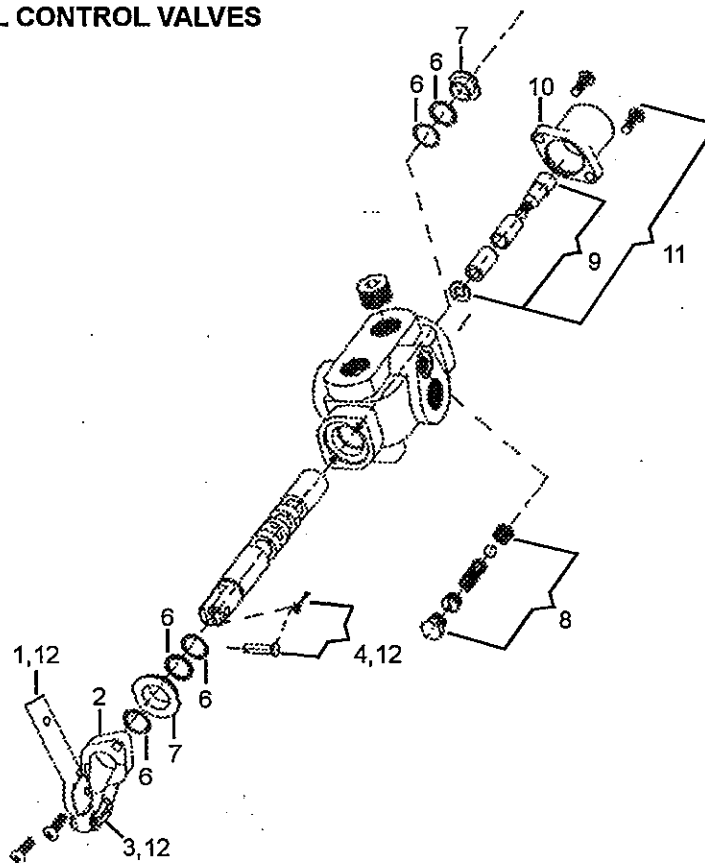
"AUTO FEED PLUS" SYSTEM (DOUBLE SOLENOIDS)

LOCATION	PART NUMBER	DESCRIPTION
1.	900-3920-20	Retainer Nut & Sealing Ring DanFoss
2.	900-3918-63	Molded Wire Plug Assembly
3.	900-3920-19	Coil Only DanFoss
4.	900-3918-43	Sub Plate
5.	900-3919-73	Solenoid Assembly (Includes #'s 1, 2, 3, & 6) DanFoss
6.	900-3915-44	Seal Kit (Not Shown)

TYPICAL SPRING LOADED CONTROL VALVE



TYPICAL FEEDWHEEL CONTROL VALVES



TYPICAL SPRING LOADED CONTROL VALVE COMPONENTS

LOCATION	PART NUMBER	DESCRIPTION
1.	904-0003-29	Handle Only (Long)
2.	900-3905-95	Valve Bracket Only With Screws
3.	904-0003-30	Master Link Only Control Valve
4.	904-0003-31	Pin And Cotter Key For Control Valve
5.	904-0003-32	Bracket, Handle And Chain Link
	NOTE: INCLUDES #s 1, 2, 3, 4	
6.	980-3900-62	Seal Kit For Control Valve
7.	904-0003-33	Seal Retainer For Control Valve
	NOTE: NOT INCLUDED IN SEAL KIT	
8.	900-3901-12	Relief Valve Kit - Spring, Ball, Screw
	NOTE: SOLD ONLY AS A KIT	
9.	904-0003-34	Valve Spool Stop For Spring Loaded Valve
10.	904-0003-35	Valve Spool Spring
11.	A-2885	Valve Spacer For Yoke Lift Valve
12.	900-A-2941	Spring Center Kit For Spring Loaded Valve
13.	904-0003-37	Detent Cap Only For Spring Loaded Valve

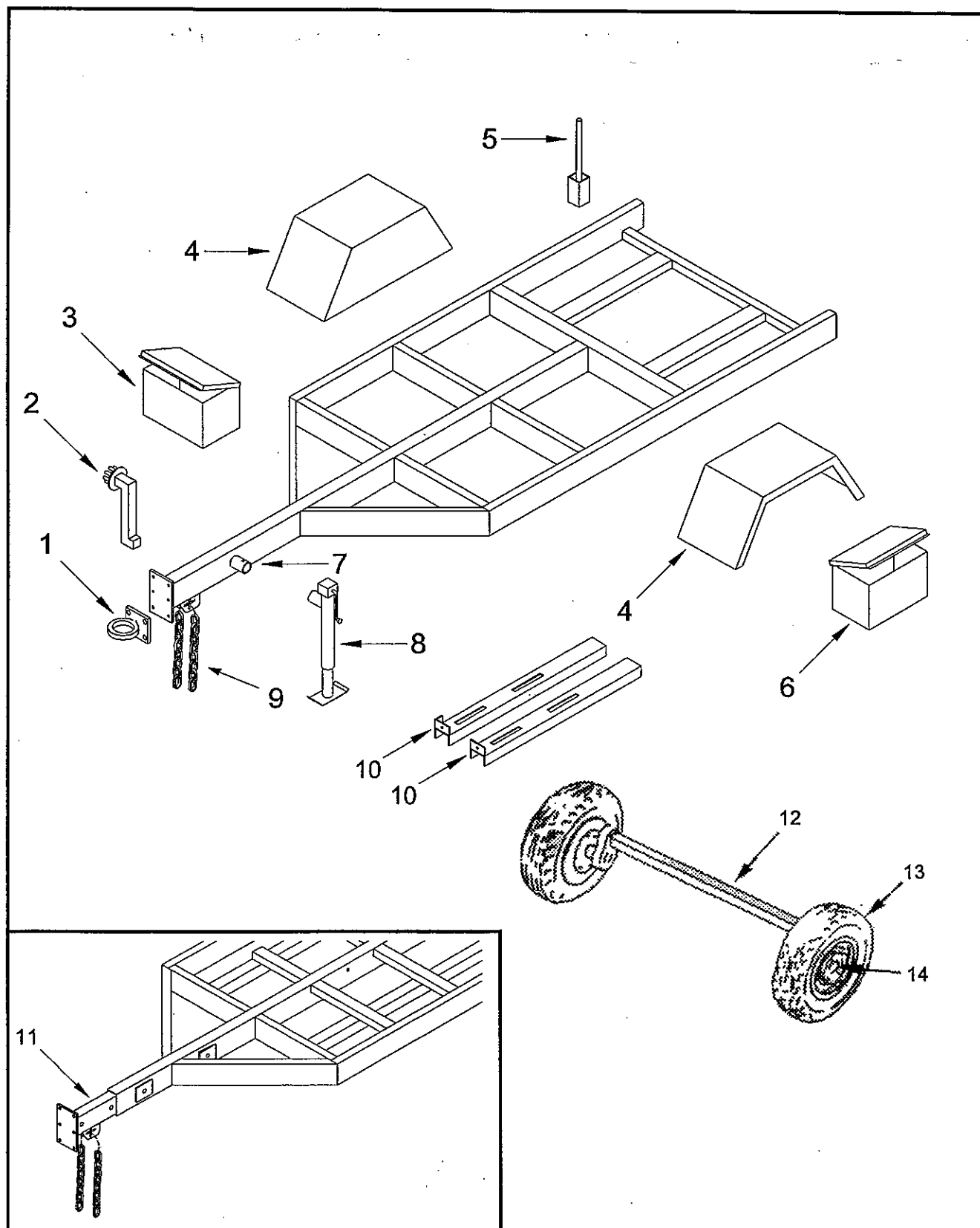
TYPICAL FEEDWHEEL CONTROL VALVE COMPONENTS

LOCATION	PART NUMBER	DESCRIPTION
1.	900-3905-95H	Handle Only (Short)
2.	900-3905-95	Valve Bracket Only With Screws
3.	904-0003-30	Master Link Only Control Valve
4.	904-0003-31	Pin And Cotter Key For Control Valve
5.	904-0003-32	Bracket, Handle And Chain Link
	NOTE: INCLUDES #s 1, 2, 3, 4	
6.	980-3900-62	Seal Kit For Control Valve
7.	904-0003-33	Seal Retainer For Control Valve
	NOTE: NOT INCLUDED IN SEAL KIT	
8.	900-3901-12	Relief Valve Kit - Spring, Ball, Screw
	NOTE: SOLD ONLY AS A KIT	
9.	900-3900-71	Detent Kit For Feedwheel Control Valve
	NOTE: SOLD ONLY AS A KIT	
10.	900-390071C	Detent Cap Only With Screws
11.	900-3900-71E	Detent Kit With Cap And Screws
	NOTE: INCLUDES #s 9 & 10	
12.	900-3905-59	Handle, Pin, and Link
	NOTE: INCLUDES #s 1, 3, & 4	

CONTROL VALVES

LOCATION	PIPE FITTING PART NUMBER	JIC FITTING PART NUMBER	DESCRIPTION
1.	900-3901-24	900-3920-02	Yoke Lift Control Valve Without Winch Option
2.	900-3908-62	900-3920-09	Yoke Lift Control Valve With Winch Option
3.	900-3901-42	900-3920-01	Winch, Hyd. Swivel Discharge, and Articulating Tongue
4.	900-3909-89	900-3920-06	Feedwheel Control Valve With Relief
5.	900-3914-47	900-3920-05	Feedwheel Control Valve With Out Relief

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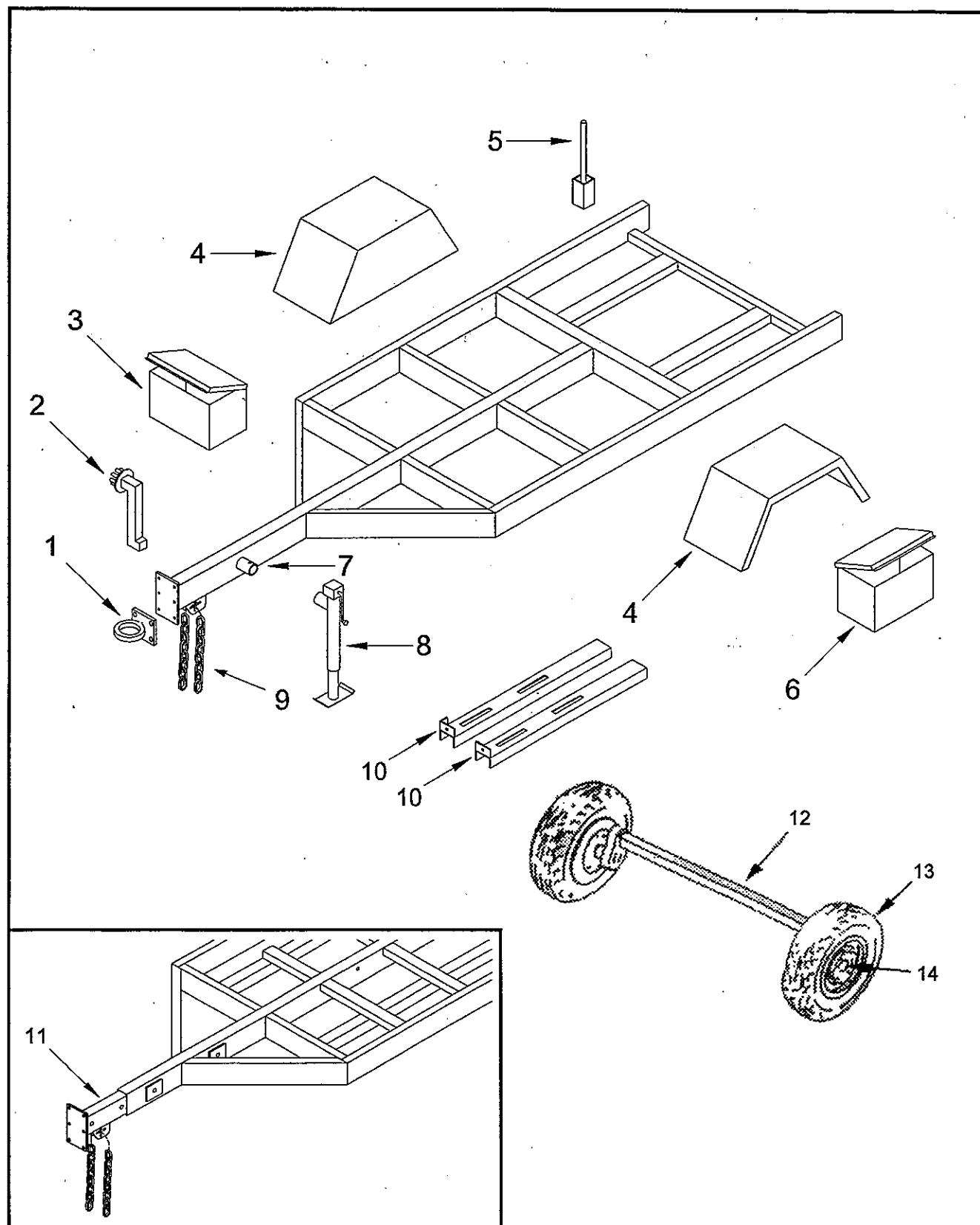
MODEL 1890**FRAME & ACCESSORY COMPONENTS**

LOCATION	PART NUMBER	DESCRIPTION
1 a.	900-5900-13	2 1/2" Heavy Duty Pintle Ring Hitch
b.	900-5900-71	3" Heavy Duty Pintle Ring Hitch
c.	980-0505-33	2 5/16" Ball Coupler Assembly
2.	980-0505-37	Optional Spare Tire Mount Assembly
3 a.	900-7900-78	Aluminum Tool Box
b.	980-0508-91	Metal Tool Box
4 a.	937-0501-93	Single Axle Fenders - 235/75R x 17.5" Tires (Starting S/N 1319)
b.	955-1001-72	Single Axle Fenders - 12.50 x 16.5" Tires (S/N 1007-1314)
c.	955-1001-73	Tandem Axle Fenders - 245/75R x 16" Tires (Optional)
5.	980-0508-30	Optional Cone Holder Assembly
6 a.	900-7900-78B	Aluminum Battery Box For 660 CCA Battery and Manual Holder
b.	980-0509-37	Metal Battery Box For 660 CCA Battery and Manual Holder
c.	900-9902-07	Manual Holder (Not Shown)
d.	M-1890Manual	Operating & Parts Manual
7 a.	937-1002-31	Mount for 5,000 LBS. Jack
b.	980-0127-45	Mount for Optional 7,000 LBS. Drop Leg Jack
c.	980-0127-44	Pin for Optional 7,000 LBS. Drop Leg Jack
8 a.	980-5903-86	5,000 LBS. Jack With Side Crank
b.	900-5903-78	Optional 7,000 LBS. Drop Leg Jack
9 a.	980-0508-83	Safety Chain With Hooks and Spring Latches for Std. Tongue
b.	980-0508-85	Safety Chain With Hooks and Spring Latches for Sliding Tongue
c.	900-4904-43	Hook With Clevis and Latch for Safety Chain
10 a.	*_*	Engine Rail
b.	900-4902-29	Engine Rail Adjuster Bolt
11.	981-0501-18	Sliding Tongue Assembly

**** Order Brake Hub And Drum Assembly According To Axle Type.
(Grease Type, Oil Type, Never Lube Type).**

***_* Order Engine Rails According To Engine Type.**

Bandit



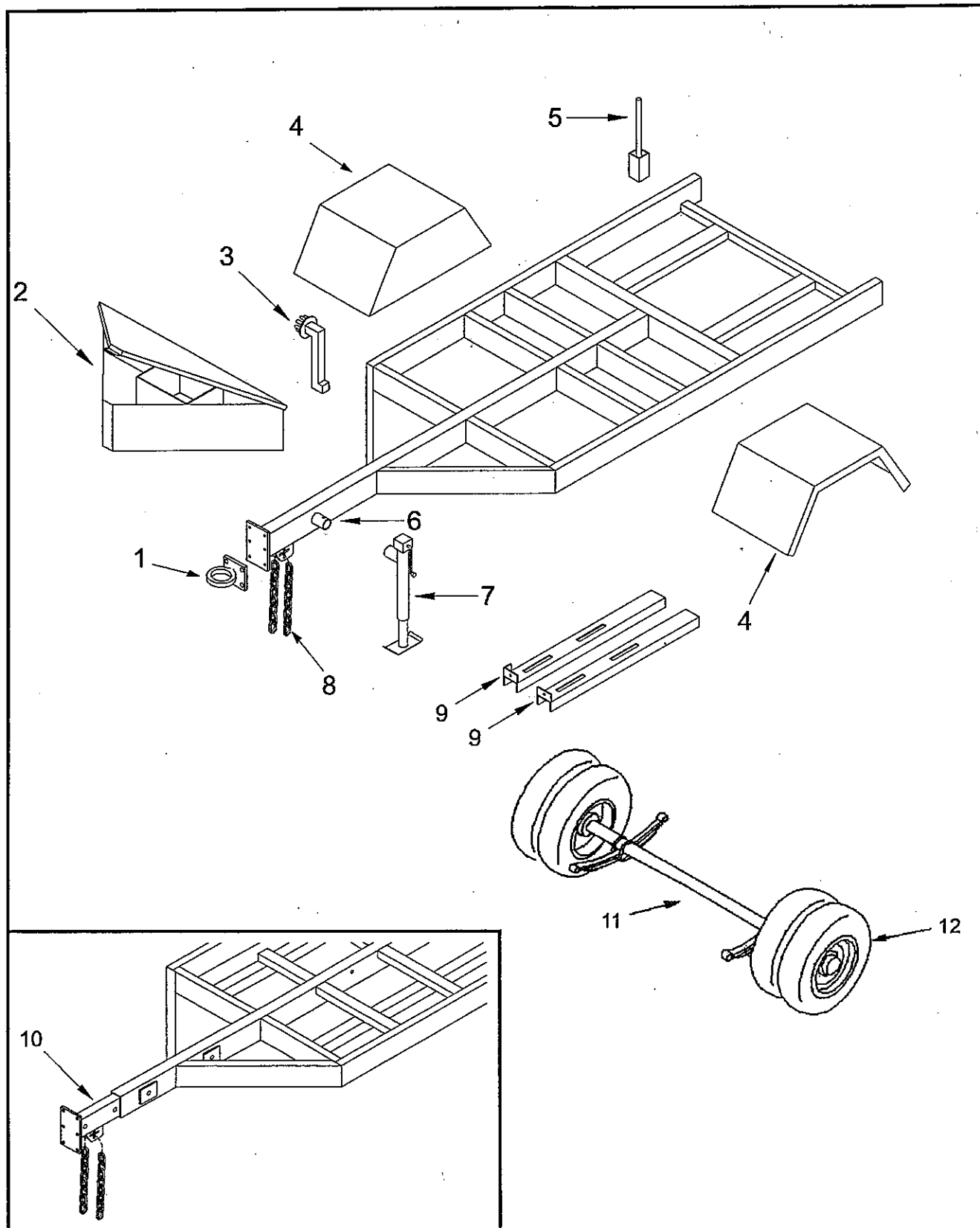
MODEL 1890**FRAME & ACCESSORY COMPONENTS**

LOCATION	PART NUMBER	DESCRIPTION
12 a.	900-5904-39	10,000 LBS Single Torflex Axle (Starting S/N 1229)
b.	900-5904-10	9,000 LBS Single Torflex Axle (S/N 1007 to 1225)
c.	900-5904-36	7,000 LBS Tandem Torflex Axle (Starting S/N 1229)
d.	900-5902-70	7,000 LBS Tandem Torflex Axle (S/N 1009 to 1225)
e.	900-5904-37	5,200 LBS Tandem Torflex Axle (Starting S/N 1229)
f.	900-5903-67	5,200 LBS Tandem Torflex Axle (S/N 1009 to 1225)
13 a.	900-5904-76	235/75R - 17.5" Tire And Rim
b.	900-5904-48	235/75R - 17.5" Tire Only
c.	900-5904-49	235/75R - 17.5" Rim Only
d.	900-5904-20	245/75R - 16" Tire And Rim (White Spokes - 5,200 LBS Axle)
e.	900-5904-18	245/75R - 16" Tire Only (5,200 LBS Axle)
f.	900-5904-22	245/75R - 16" Rim Only (White Spokes - 5,200 LBS Axle)
g.	900-5903-03	235/85R - 16" Tire And Rim (White Spokes - 7,000 LBS Axle)
h.	900-5905-01	235/85R - 16" Tire Only (7,000 LBS Axle)
i.	900-5905-02	235/85R - 16" Rim Only (White Spokes - 7,000 LBS Axle)
14.	**	Brake Hub and Drum Assembly
15 a.	900-2900-27	6-Prong Trailer Plug (Not Shown)
b.	900-2900-18	6-Prong Trailer Plug Female Plug Only (Not Shown)
c.	900-2904-15	Optional 7-Prong Trailer Plug (Not Shown)
16.	900-2900-07	License Plate Light (Not Shown)
17.	900-5900-09	Electrical Breakaway Switch (Not Shown)
18.	900-9901-49	Optional Plastic Battery/Tool Box (Not Shown)
19 a.	980-0508-25	Optional Wheel Chock Holders Aluminum Bolt-On (Not Shown)
b.	980-0508-26	Optional Wheel Chock Holders Metal Weld-On (Not Shown)
20.	900-5902-32	Optional Rubber Wheel Chock (Not Shown)
21 a.	900-9902-83	Optional Vise (Not Shown)
b.	981-1007-02	Optional Weld-On Vise Mount (Not Shown)
c.	980-0132-72	Optional Aluminum Vise Mount (Not Shown)
22.	900-5900-62	Optional Safety Flags For Fenders (Not Shown)

**** Order Brake Hub And Drum Assembly According To Axle Type.
(Grease Type, Oil Type, Never Lube Type).**

***-* Order Engine Rails According To Engine Type.**

Bandit



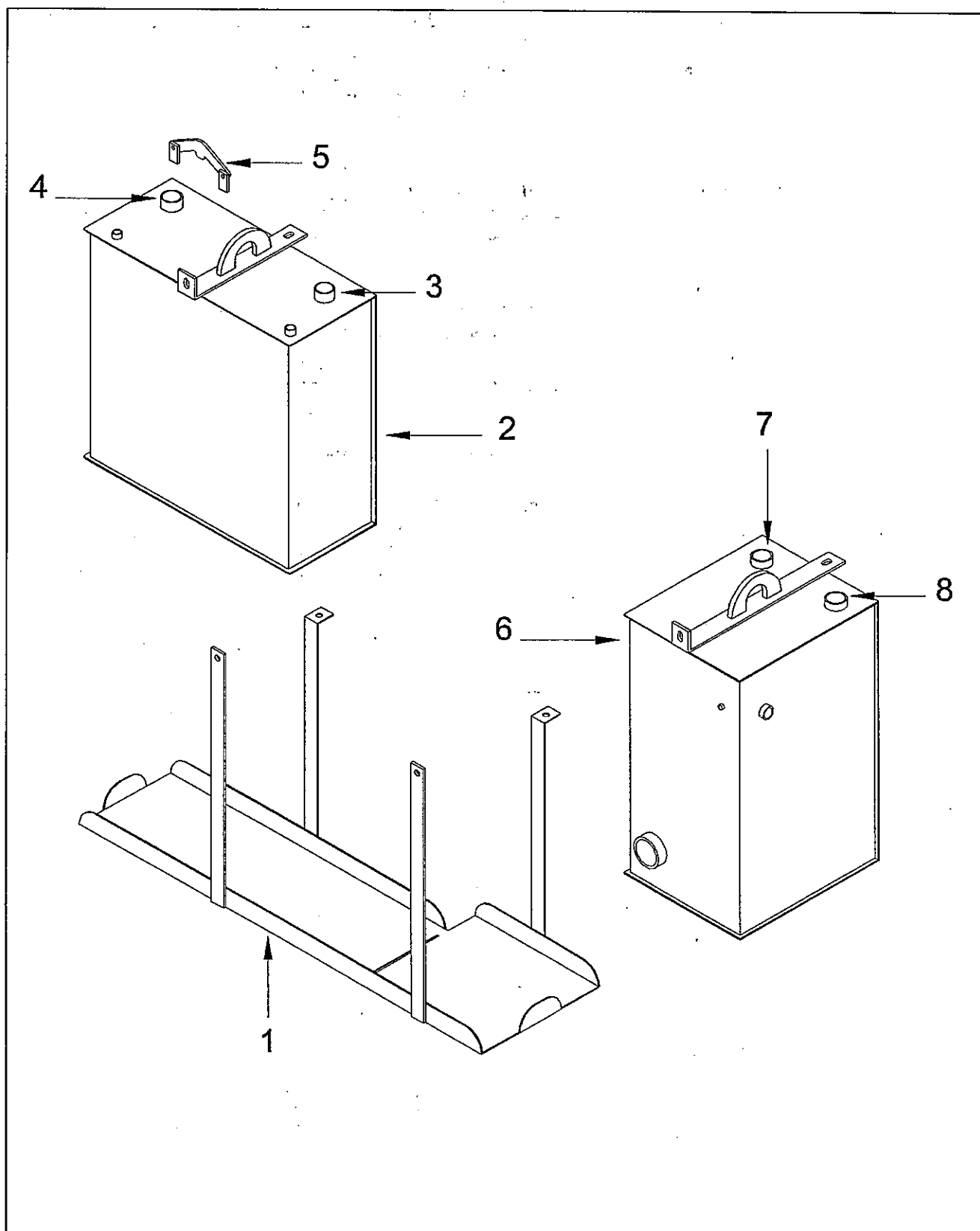
MODEL 1890 HD**FRAME & ACCESSORY COMPONENTS**

LOCATION	PART NUMBER	DESCRIPTION
1 a.	900-5900-13	2 1/2 Heavy Duty Pintle Ring Hitch
b.	900-5900-71	3" Heavy Duty Pintle Ring Hitch
c.	980-0505-33	2 5/16" Ball Coupler Assembly
2.	937-0500-20	Combination Tool and Battery Box
3.	980-0505-37	Optional Spare Tire Mount Assembly
4 a.	937-1002-04	Single Axle Fenders - Dual 235/75R X 16" Tires
b.	955-1001-73	Tandem Axle Fenders - 235/75R X 16" Tires (Optional)
5.	980-0508-30	Optional Cone Holder Assembly
6 a.	980-0127-45	Mount For 7,000 LBS. Drop Leg Jack
b.	980-0127-44	Pin For 7,000 LBS. Drop Leg Jack
7.	900-5903-78	7,000 LBS. Drop Leg Jack
8 a.	980-0508-83	Safety Chain With Hooks and Spring Latches for Std. Tongue
b.	980-0508-85	Safety Chain With Hooks and Spring Latches for Sliding Tongue
c.	900-4904-43	Hook With Clevis and Latch for Safety Chain
9 a.	*.*	Engine Rail
b.	900-4905-11	Engine Rail Adjuster Bolt
10.	981-0501-18	Telescopic Tongue Assembly
11 a.	900-5904-06	12,000 LBS Single Leaf Spring Axle
b.	900-5902-70	7,000 LBS Tandem Torflex Axle
12 a.	900-5904-18	245/75R x 16" Tire (Single Axle)
b.	900-5904-66	16 x 6 Dual Tire Rim (Single Axle)
c.	900-5904-64	245/75R x 16" Tire on Dual Rim Assembly (Single Axle)
d.	900-5903-03	235/85R - 16" Tire And Rim (White Spoke - Tandem Axle)
e.	900-5905-01	235/85R - 16" Tire Only (Tandem Axle)
f.	900-5905-02	235/85R - 16" Rim Only (White Spoke - Tandem Axle)
13.	**	Brake Hub and Drum Assembly
14 a.	900-2900-27	6-Prong Trailer Plug (Not Shown)
b.	900-2900-18	6-Prong Trailer Female Plug Only (Not Shown)
c.	900-2904-15	Optional 7-Prong Trailer Plug (Not Shown)
15.	900-2900-07	License Plate Light (Not Shown)
16.	900-5900-09	Electrical Breakaway Switch (Not Shown)
17.	900-9901-49	Optional Plastic Battery/Tool Box (Not Shown)
18 a.	980-0508-25	Optional Wheel Chock Holders Aluminum Bolt-On (Not Shown)
b.	980-0508-26	Optional Wheel Chock Holders Metal Weld-On (Not Shown)
19.	900-5902-32	Optional Rubber Wheel Chock (Not Shown)
20 a.	900-9902-83	Optional Vise (Not Shown)
b.	981-1007-02	Optional Weld-On Vise Mount (Not Shown)
c.	980-0132-72	Optional Aluminum Vise Mount (Not Shown)
21.	900-5900-62	Optional Safety Flags For Fenders (Not Shown)

**** Order Brake Hub And Drum Assembly According To Axle Type.
(Grease Type, Oil Type, Never Lube Type).**

***.* Order Engine Rails According To Engine Type.**

Bandit



MODELS 1890/1890 HD**FUEL & HYDRAULIC TANK COMPONENTS**

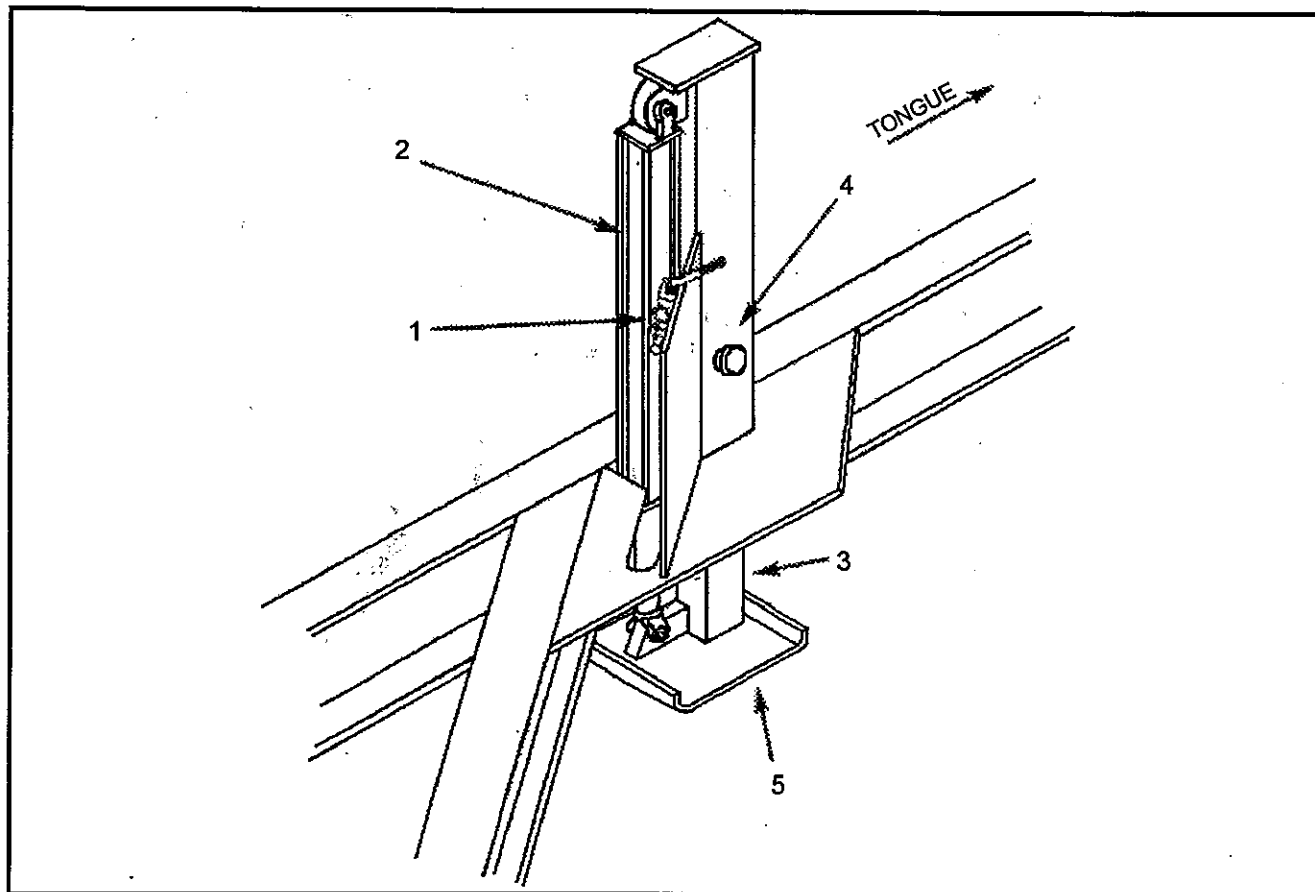
LOCATION	PART NUMBER	DESCRIPTION
1 a.	937-0501-92	Combo Tank Mount - 40 Gallon Fuel & 24 Gallon Hydraulic
b.	937-0501-96	Combo Tank Mount - 60 Gallon Fuel & 24 Gallon Hydraulic
2 a.	937-0500-09	40 Gallon Fuel Tank Assembly
b.	914-0502-10	60 Gallon Fuel Tank Assembly
c.	980-0509-58	24 1/2 Gallon Fuel Tank Assembly
d.	900-3908-92	24 1/2 Gallon Plastic Fuel Tank
3 a.	900-2903-95	Rochester Sight Gauge For 40 Gallon Fuel Tank
b.	900-2904-14	Rochester Sight Gauge For 60 Gallon Fuel Tank
c.	900-2903-94	Rochester Sight Gauge For 24 1/2 Gallon Fuel Tank
4 a.	980-3900-10	Fuel Cap Only No Dipstick
b.	900-3901-51	Fuel Cap Dipstick Style
c.	900-3907-67	Fuel Cap For Plastic Tank
5 a.	980-0506-85	Fill Cap Lock Assembly For Steel Tank
b.	980-0508-50	Fill Cap Lock Assembly For Plastic Tank (Not Shown)
6 a.	937-0500-89	24 Gallon Hydraulic Tank Assembly
b.	937-0500-10	12 Gallon Hydraulic Tank Assembly (STD 1890 Only S/N 1007 - 1225)
7.	900-2903-95	Rochester Sight Gauge For Hydraulic Tank (24 or 12 Gallon)
8.	980-3900-10	Fill Cap Only No Dip Stick
9 a.	937-0500-90	Hydraulic Tank Mount 24 Gallon (Individual Mount - Not Shown)
b.	937-0500-31	Hydraulic Tank Mount 12 Gallon (Individual Mount - Not Shown)
10 a.	937-0500-32	40 Gallon Fuel Tank Mount (Individual Mount - Not Shown)
b.	980-0508-41	24 1/2 Gallon Fuel Tank Mount (Individual Mount - Not Shown)
c.	955-0500-38	60 Gallon Fuel Tank Mount (Individual Mount - Not Shown)
11 a.	980-0111-61	Tank Mount On Frame (Individual Mount - Not Shown)
b.	980-0123-07	Tank Mount On Tank (Individual Mount - Not Shown)
c.	914-1000-25	Rubber Isolator For Tank Mount (Individual Mount - Not Shown)

**** Components vary with fuel type.**

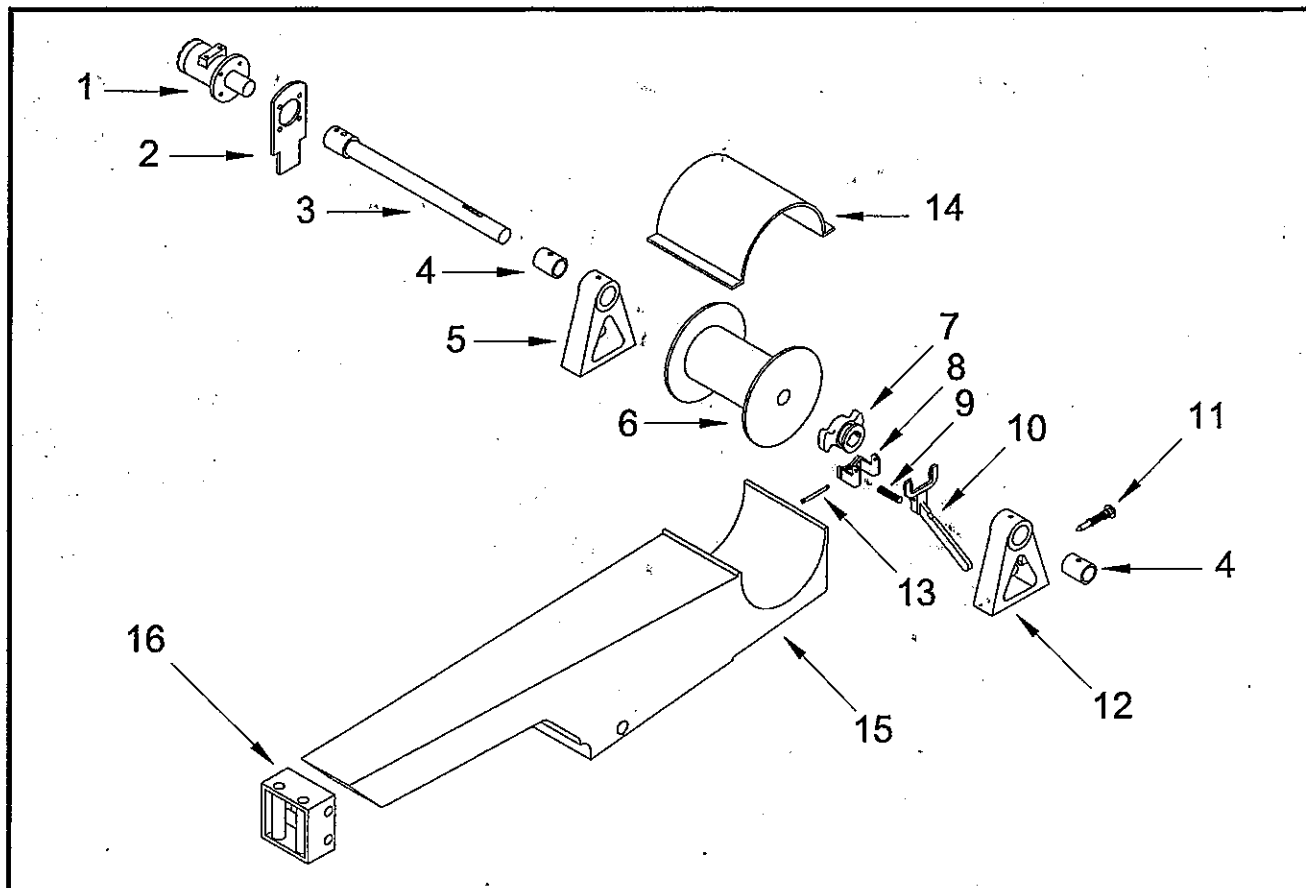
Specify gas or diesel when ordering fuel tank components.

**NOTE - Tank assemblies vary with options
specify all options when ordering.**

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LOCATION	PIPE FITTINGS PART NUMBER	JIC FITTINGS PART NUMBER	DESCRIPTION
1.	900-3901-42	900-3920-01	Tongue Jack Valve
2.	900-3903-57	900-3903-57	Tongue Jack Cylinder
3.	914-1013-65	914-1013-65	Inside Tube Assembly
4.	914-1000-38	914-1000-38	Lock Pin
5.	980-0509-53	980-0509-53	Drop Leg Foot Pad Assembly



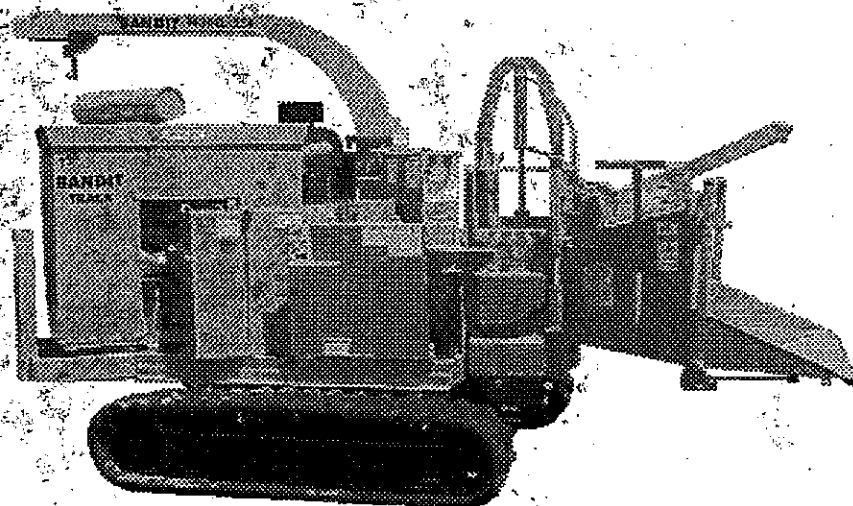
LOCATION	PART NUMBER	DESCRIPTION
1 a.	900-3902-14	Winch Hydraulic Motor (Pipe Fitting)
b.	900-3921-56	Winch Hydraulic Motor (JIC Fitting)
2.	981-1001-01	Winch Motor Torque Arm
3 a.	43626	Winch Shaft Only
b.	900-3905-22	Winch Shaft With Keys
4.	40003	Winch Bushing For A Frame
5.	900-3905-21	Winch A Frame Arm (Also Includes # 4)
6.	900-3905-19	Winch Drum
7.	900-3905-17	Winch Clutch
8.	40473	Winch Brake Shoe Only
9.	40024	Winch Spring
10 a.	40469	Winch Shift Lever Only
b.	900-3905-16	Winch Shift Lever With #'s 8 & 9
11.	900-3905-14	Winch Release Lever Pin Assembly
12.	900-3905-18	Winch Arm (Includes #'s 4, 8 - 11, & 13)
13 a.	40025	Winch Pin For Brake Assembly
b.	41669	Winch Snap Ring For Winch Pin
14.	980-0125-26	Winch Drum Cover
15.	911-0500-38	Winch Tunnel Assembly
16.	980-0505-82	Winch Roller Assembly
17.	904-0002-60	Winch Kit (Includes #'s 3 - 13)

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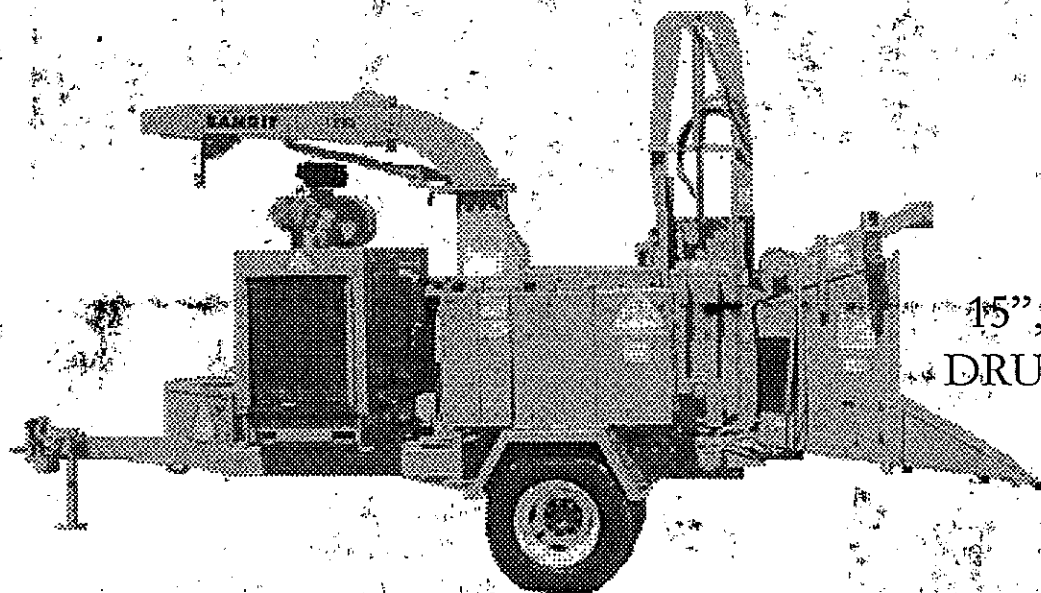
OTHER EQUIPMENT AVAILABLE FROM BANDIT INDUSTRIES, INC.

**FOR FURTHER INFORMATION ON AVAILABLE EQUIPMENT FROM
BANDIT INDUSTRIES, INC. CONTACT YOUR LOCAL
BANDIT DEALER OR BANDIT INDUSTRIES, INC. DIRECTLY.**

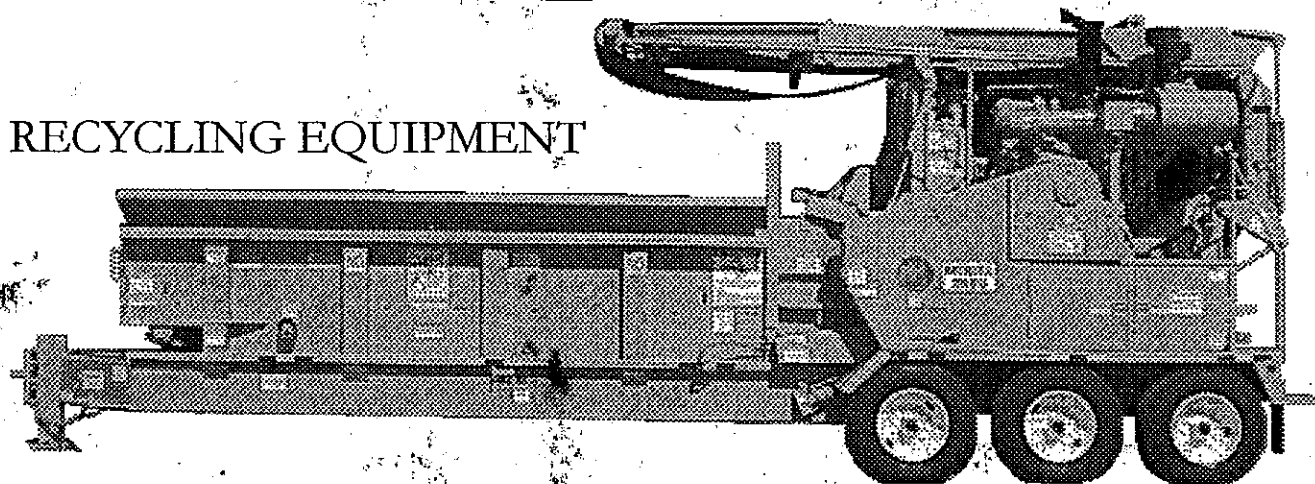
12", 14", 18",
19" AND 24"
TRACK CHIPPERS



15", 18" AND 20"
DRUM CHIPPERS



RECYCLING EQUIPMENT



Bandit