



OPERATING & PARTS MANUAL

MODEL 75



Model No: _____

Serial No: _____

Engine Make: _____

Serial No: _____

Clutch Make: _____

Model: _____ S/N _____

DEALER:

Name: _____

Address: _____

City/State: _____

Phone No: _____

Delivery Date: _____

Copyright 1/21

ATTENTION:

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

CHIPPER COMPONENTS

Serial Number
Model Number of Chipper

ENGINE COMPONENTS

Brand
Engine Serial Number
Engine Model Number

CLUTCH COMPONENTS

Brand
Clutch Serial Number
Clutch Model Number



MANUFACTURED BY BANDIT INDUSTRIES, INC
6750 Millbrook Rd. • Remus, MI 49340
PHONE: (989) 561-2270
PHONE: (800) 952-0178 IN USA
FAX: (989) 561-2273 ~ SALES DEPT.
FAX: (989) 561-2962 ~ PARTS/SERVICE
WEBSITE: www.banditchippers.com

CALIFORNIA PROPOSITION 65

WARNING

Breathing diesel engine exhaust exposes you to chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

- Always start and operate the engine in a well-ventilated area.
- If in an enclosed area, vent the exhaust to the outside.
- Do not modify or tamper with the exhaust system.
- Do not idle the engine except as necessary.

For more information go to:

www.P65warnings.ca.gov/diesel

W-46 8/18

WARNING

**Cancer and
Reproductive Harm**

www.P65warnings.ca.gov

W-47 8/18

**D
A
N
G
E
R**



**ACCIDENTS
INVOLVING
BRUSH CHIPPERS
CAN AND
SHOULD BE
PREVENTED...**

**Operator training and
enforcement of safety
policies are**

ESSENTIAL!



DANGER

READ, UNDERSTAND AND FOLLOW ALL
SAFETY RULES AND INSTRUCTIONS

This safety booklet describes important safety features on Brush Bandit® Chippers. This booklet involves safety for your employees and the chipper. The safety features are available as update kits for older chippers and can be obtained for very little expense. If you have chippers that Do Not have any of these - Add them to your chipper now.

If you have purchased a Brush Bandit® Chipper second hand, know someone that has, or have resold a Brush Bandit® Chipper - please contact us. Please fax us at (989) 561-2273 or e-mail us at www.banditchippers.com with the chipper model number, chipper serial number, and current owners name, address, etc. We need to know them and we want them to know us. Your assistance is greatly appreciated.

Make sure your chipper operators have been properly trained, and have read, understand, and follow safety and operational procedures contained in the manuals, on the chipper itself, on decals, in this booklet, and the video. These devices can be obtained through your local Bandit® dealer. To find your closest dealer, look in the yellow pages, look on our web page (www.banditchippers.com), or call 800-952-0178 or 989-561-2270.

Most, if not all, chipper related accidents are caused by operator negligence. A lack of proper and ongoing training and lack of enforcement of safety policies significantly increase the opportunity for operator error.

Many companies involved in tree care or tree maintenance have weekly meetings to review potential hazards and discuss how accidents can be avoided. These meetings are a benefit to new inexperienced employees, and also remind experienced employees of the obvious dangers involved with tree work. Even experienced employees may be injured if they mistakenly believe they fully understand the machine, yet take unnecessary chances.

Industry leaders agree that safety should be at the top of everyone's priority list. Employees need constant reminders not to become over confident and not to take a casual approach to the potential hazards they encounter on a daily basis. Improperly operating a brush chipper is very dangerous. The operator must be trained and warned that amputation and death can happen unless they follow all warning instructions. They must also always be in position and ready to operate feed controls if a dangerous situation should arise.

Bandit Industries, Inc. provides numerous decals on our chippers, safety instructions in operator manuals, and videos to warn operators of hazards involving the use of the chipper. Additionally, we endeavor to provide safety features on the machines to help prevent possible accidents when operators become careless and neglectful.

The Brush Bandit® Chipper was introduced in 1983. Since then there have been several accidents in the feed wheel area involving hands, arms, feet, and legs, some of which have resulted in death. These injuries are caused by operators who improperly reach or kick into the chipper feedwheels. An operator reaches or kicks into the feedwheels when he or she feels a need to push small twigs, leaves, etc. into the feedwheels or to dislodge a piece of material in the machine. DO NOT reach or kick into the infeed hopper under any circumstances!





DANGER

NEVER REACH INTO THE INFEED HOPPER.

Operators must be trained to be constantly thinking about being in a position and ready to use the forward-off-reverse feed control bar and other controls. They should be thinking and ready to stop or reverse the feed control bar the instant they feel any pulling toward the infeed hopper or feedwheels. It is very easy to activate the control when the operator is properly positioned, to stop or reverse the feedwheels, especially if they are properly trained and paying attention.

It is difficult to activate the forward-off-reverse feed control bar if the operator is bent over, reaching into the infeed hopper of the chipper. In this position the operator is past the feed control bar, and in a very unsafe situation requiring him/her to reach back and contact the control bar to stop or reverse the feedwheels. The operators manual, video, and decals (located several places on chipper) state; "never put feet or hands into the infeed hopper for any reason".

If you have short pieces of wood, leaves, or twigs simply lay them on top of longer material while it is feeding into the chipper. You can also use the wooden pusher tool. Do not feed vines or vine type material into the chipper. Cut the vines into 4 to 5 foot lengths and lay them on top of longer material while it is feeding into the chipper. With the vine material at this length, stop the feedwheels and lay the 4 to 5 foot pieces in the infeed hopper, then they should be fed with the wooden pusher paddle. If you can't cut the vines to this length, don't feed it into the chipper. Never put feet or hands into the infeed hopper for any reason! Always be positioned and ready to operate control handle.

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. Feeding from the side also positions the operator further from the feedwheels.

If you or your employees are not following these instructions, a very serious accident could occur. There is no such thing as a "minor accident" if an operator gets into the feedwheels. Severe lacerations, amputations, or even death can occur.



DANGER

NEVER REACH INTO THE INFEED HOPPER.

Do not let this happen to you or your employees. Follow correct operating instructions. There have been several accidents that involved foot amputations, leg amputations, and death as a result of operators kicking into the infeed hopper of the chipper. Brush chippers are designed to be operated with hands placing the material into the chipper - NOT FEET! If the operator kicks the material that has become lodged or is not going into the feedwheels, he or she is placing themselves in extreme danger. If the wood does free up and goes into the feedwheels, the operator can be thrown off balance. NEVER KICK OR PLACE A FOOT IN THE CHIPPER INFEED HOPPER! Use a wooden push paddle to feed light, loose, wood material such as twigs, leaves, etc. or when job is done you can shut off everything, sweep up everything, and throw it in the chip box or pile. If the wood material becomes lodged and stops feeding, back it out, and turn it to a better position or trim it with a chain saw. Then, re-feed it into the chipper. NEVER FIGHT WITH THE WOOD TO GET IT TO ENTER THE CHIPPER!

Bandit Industries, Inc. continues looking into what can be done to reduce chipper injuries. The following safety features have been developed for, and are currently being used on Brush Bandit® Chippers. They are available from your local Bandit® Dealer. Some are new and some have been presented before. We urge you to update your chippers with these devices.

To update your chippers, you must supply chipper models and serial numbers of every unit where you are installing these very important safety features. Safety devices available vary between "Hand Fed" and "Loader Fed" Chippers.



When you supply chipper model and serial number, these kits are available from your local Bandit® dealer.

Update Kit # UK-1007
"WELD-ON INFEED
EXTENSION PAN"

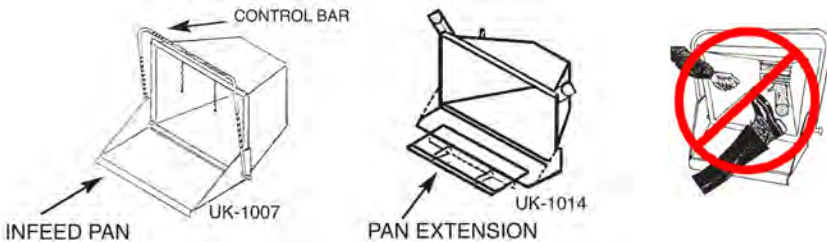
Update Kit # UK-1014
"12" EXTENSION FOR
18" PAN"



SAFETY FEATURE

WELD ON INFEED PAN EXTENSION

You must supply the chipper model number and chipper serial number when ordering, to ensure an accurate fit of the weld-on pan or pan extension. Also supply the inside width dimension of the inlet end of the infeed hopper or existing 18" deep folding infeed pan. Folding infeed pans were optional on Bandit Chippers for many years. The 18" deep infeed pan became standard equipment on Bandit hand-fed chippers in February 1994. The 30" deep folding infeed pan became standard in January 2000. If your chipper is not equipped with the pan device that extends the infeed hopper 30", one of these two weld-on kits would apply. They are simple to install. The purpose is to help locate the chipper operator further from the feedwheels; in the event he/she negligently reaches toward the feedwheels. THERE IS NO NEED TO REACH OR KICK INSIDE THE INFEED HOPPER AREA. It is foolish, negligent, and extremely dangerous. DO NOT DO IT! DON'T use your foot to push material inside the infeed hopper. ALWAYS be in a position and ready to quickly activate the forward-neutral-reverse feed control bar whenever you are near the infeed hopper. "Stop To Think" BEFORE you put your hand, foot, or body in a dangerous position - and then DON'T DO IT!



SAFETY FEATURE

WOODEN PUSH AND PADDLE MOUNT

Update Kit # UK-1008
"WOODEN PUSH PADDLE
AND MOUNT"

The "Wood Push Paddle and Mount" have been standard equipment on our hand fed chippers since March 21, 1994. The wooden push paddle, if used correctly, is intended to reduce the chance of a negligent operator disregarding correct procedures, and using his/her foot or hand to push small wood debris in the infeed hopper area. The wooden push paddle allows the operator to safely push materials from outside the infeed hopper.

The wooden push paddle can also be used to push wood that may be hung up in the feedwheels. If the hang up can not be dislodged by the wooden push paddle, a foot or hand won't help either. Do Not use steel or shovels or rakes. Reverse the material and trim it down, or shut down the chipper, wait as many minutes as it takes for everything to completely stop and dislodge the material using safety procedures. Have you heard reports or seen operators bending over and reaching way back into the infeed hopper, near the feedwheels? Have you seen or heard of your employees using their foot to kick or push material that is inside the infeed hopper? If either answer is yes, think how important the wooden push paddle can be to discourage reaching or kicking into the feedwheels. The wooden push paddle can be ordered through the Bandit® dealer:



#980-0507-42
19" Wide Paddle

#981-1005-30
22" Wide Paddle

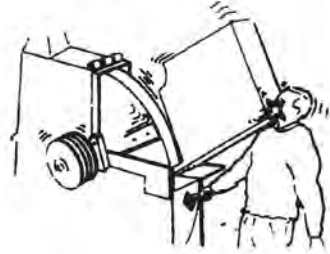


SAFETY FEATURE

SPRING LOCK FOR HOOD PIN

Update Kit # UK-1009
"SPRING LOCK FOR
HOOD PIN"

Since November 1996 Bandit Industries, Inc. has been installing on our hydraulic feed disc chippers a patented spring lock device for the hood pin. If properly maintained the device prevents the hood pin from being removed when the chipper disc is turning. The spring pin is positioned in front of a collar on the hood pin and when the hood pin is secured in place the hood is kept closed. While the disc is turning, the spring lock pin prevents the hood pin from being removed. The disc and disc shaft must stop turning to recess the spring lock pin and remove the hood pin. Do Not open the chipper hood with the chipper disc turning. Do Not run the chipper with the hood open. Do Not close the hood with the chipper disc turning. Do Not operate without a factory approved chipper hood pin system securely in place, and padlocked.



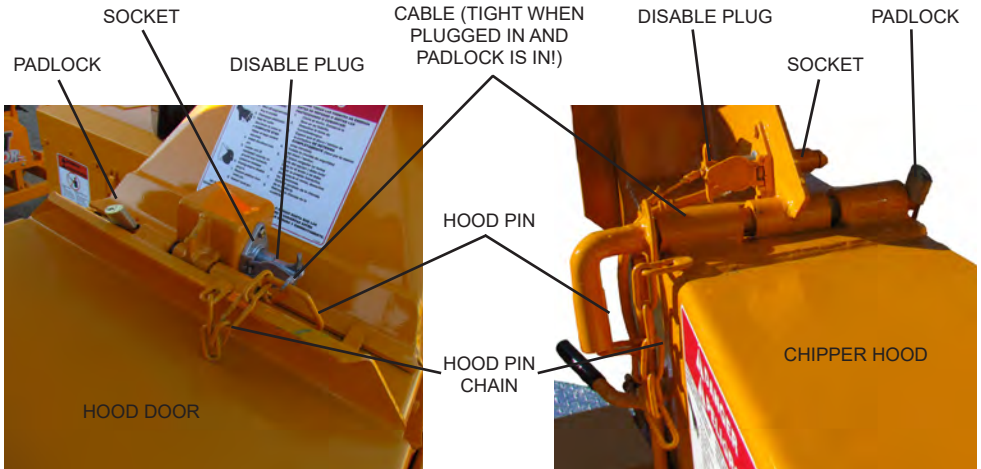
SAFETY FEATURE

CHIPPER HOOD ENGINE DISABLE PLUG

Update Kit # UK-1010
"CHIPPER HOOD ENGINE
DISABLE PLUG"

Since September 1998 mechanical feed hand fed Bandit® Chippers have been built with a plug-in device on the chipper hood that disables 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-in is disconnected. The chipper hood must NEVER be opened, or pushed closed if the disc/drum is turning.

When you supply the chipper model and serial number, this kit is available through your local Bandit® dealer. You also need to supply us with the engine make and model, then we will include the electric schematic to wire the device into the engine system.



DRUM CHIPPER

DISC CHIPPER



SAFETY FEATURE

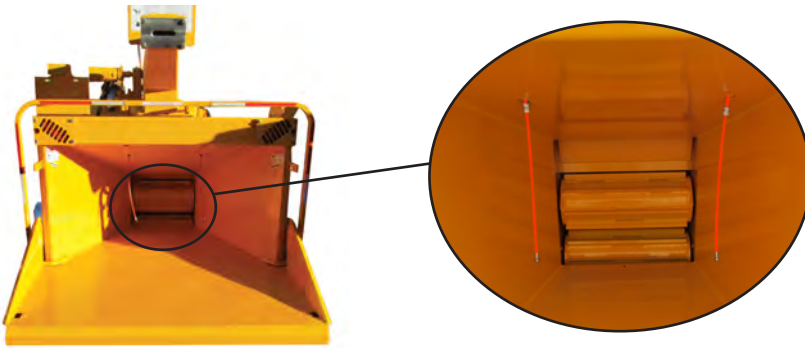
LAST CHANCE STOP

Update Kit # UK-1011
"LAST CHANCE STOP"

Have you heard reports or seen your employees bending over and reaching into the infeed hopper, near the feedwheels? Along with the wooden push paddle and the infeed hopper tray, Bandit Industries, Inc. began installing on their mechanical feed hand fed chippers the patented "Last Chance Stop" cable system. This system has been standard on Bandit® Chippers since March 1997. This device was developed to provide an emergency shut-off/reverse for the hydraulic feedwheels on most hand fed chippers, and operates without any electric parts. The system typically consists of two simple cables hanging inside the infeed hopper and in front of the feedwheels approximately halfway between the entrance of the infeed hopper and the feedwheels.

If an operator incorrectly finds themselves past the feed control bar and inside the infeed hopper, he/she has a cable to reverse/stop feedwheels and wood flow.

The "Last Chance Stop" is Not installed to encourage an operator to reach into the infeed hopper. Operators should never reach into that area with hands or feet. If your operator gets into a situation that the safety cable needs to be pulled, they have been operating the chipper in an unsafe manner contrary to all safety instructions. The system must be properly maintained and periodically checked. The "Last Chance Stop" will do nothing for the negligent operator kicking into the infeed hopper.

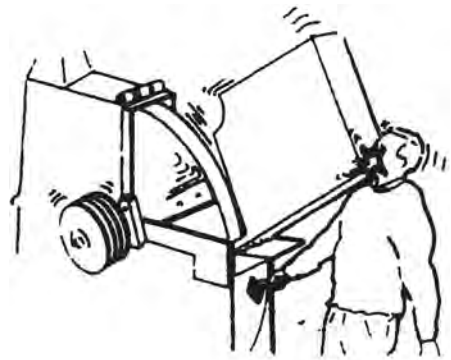


SAFETY FEATURE

HOOD LOCK PIN WITH ATTACHING CHAIN

Update Kit # UK-1012
"HOOD LOCK PIN WITH
ATTACHING CHAIN"

Brush Chippers have been involved in a number of hood related accidents over the years. Some have resulted in death! All known hood accidents happened because the factory installed solid steel pin joining the hood halves was removed and the disc was spinning when the chipper hood was opened or being closed. Do Not open the chipper hood with chipper disc/drum turning. Do Not close the hood with chipper disc/drum turning. Do Not run the chipper with the hood open. Do Not operate without the factory approved chipper hood pin system securely in place.



The Hood Pin has to be in place to do what it was designed to do.

Hood pins and associated parts like padlocks, engine disable plug, and spring lock for the hood pin are all available from Bandit® Dealers.

Do Not attempt to remove the hood pin or open chipper hood until the engine is shut off, you have waited as many minutes as it takes, and you can see, feel, and hear that the chipper disc/drum has stopped turning.

If the hood contacts a spinning chipper disc/drum it can suddenly fly open and severely injure or kill you.

Make-shift replacement pins don't work and are dangerous. Use the correct size factory approved pins.



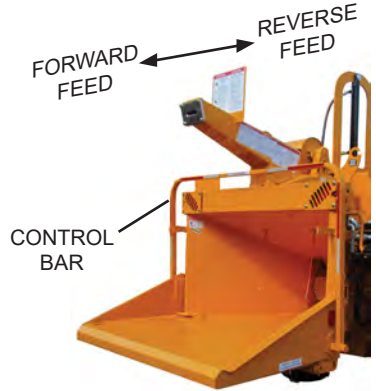
SAFETY FEATURE

FEED CONTROL BAR

Brush Bandit® Chippers that are designed to be hand fed have a simple, easy to reach feed control bar located across the top and down both sides of the infeed hopper. The feed control bar operates the feedwheels forward-neutral-reverse pulling, stopping, and reversing the wood branches into the chipper. The operator must always be thinking, ready, and in position to reverse the wood flow if a dangerous situation should arise. Push the control bar away from the operator (toward chipper) to reverse wood flow on all chippers that are designed for hand feeding.

Keep the control handle serviced, and properly operational at all times. If something gets hung up in the chipper feed system, reverse it back out. Reposition the material and re-feed it back into the infeed hopper. If the wood material is too big or limby, back it out, trim it, and re-feed it in portions. **NEVER** fight or wrestle with limbs or branches! Forcing material into the chipper is an unsafe practice. When you supply the chipper model and serial number, replacement feed control bars are available at your Bandit® dealer.

FEED CONTROL BAR



SAFETY FEATURE

ROPE / LINE SHEAR BAR

Update Kit # UK-1039 "ROPE/LINE SHEAR"

The "Rope/Line Shear" can be added to the chipper drum housing to shear or deflect either winch line or climbers' rope should either accidentally enter the rotating knives in the chipper housing, in order to prevent it from further being wrapped around the chipper drum. The device can offer an improved chance that the line can be severed, detached, or deflected from the chipping system in an accident situation.

COUNTER
BAR



COUNTER
KNIFE



WARNING

HOOD HINGE AND HOOD REST

HOOD HINGE AND HOOD REST

The hood hinge and the hood pin are what holds the pivoting hood half in place. Both have to be properly and securely fitted and maintained. A loose or bent hinge could cause the hood to come in contact with the chipper disc/drum. **IF A HOOD HINGE GETS SLOPPY OR CRACKED OR BENT, IT MUST BE REPLACED!** Don't wait, replace it! The hinge is used for hood alignment and hood location security.

Don't slam the chipper hood open! It damages the hinge!

The hinge needs periodic lubrication to properly operate and to avoid excessive wear! The hinge, hood rest, and hood require scheduled inspection. If they are damaged, replace them! Use only a Bandit factory replacement part.



HOOD
HINGE

HOOD
REST



WARNING

CHIPPER KNIVES

CHIPPER KNIVES

You must use sharp, good quality chipper knives that have not been resharpened past the recommended width, per manual. Dull chipper knives are not only dangerous, but add to operating costs and slow production. Chippers Do Not feed or throw chips properly when the knives are dull. Operating with dull knives may cause the operator to push, kick, or wrestle with the wood going into the chipper which is unsafe. Dull knives make the chipper vibrate excessively, causing machine fatigue, damage, and the engine to use more fuel. Keep the knives sharp and the chipper will work smoother, feed wood easier, and make a safer operation. In the long run, sharp knives can save you money.

The chipper knives must be of good quality and the correct design for that model chipper. The knives must be properly hardened at the edge, annealed at the bolt holes, and the correct metallurgical composition. Improper knives may break and cause a dangerous and costly accident. Use only factory approved knives and mounting hardware from Bandit Industries, Inc.

Bandit Industries, Inc. offers through our dealers a unique knife sharpening device called "The Knife Saver Kit™" that within minutes can put a sharp edge back on a dulled chipper knife. The knife doesn't have to be removed from the disc or drum. Use The Knife Saver Kit™ on brand new knives, on freshly resharpened knives, every day during Daily Start-Up & Maintenance while the knives are checked, and when the machine is shut down for a break during the day. The Knife Saver Kit™ sells under part number 900-9901-68.

The kit includes the sharpener, protective glove, a touch-up file, and comes in a protective case. The Knife Saver Kit™ will not restore knives that are severely nicked or damaged, but will extend knife life before needing a professional knife grind.



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 feedwheel(s) 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.

DANGER

If the chipper is properly maintained and operated correctly, the chipper should not plug. In the unlikely event that the chipper becomes plugged, do not attempt to clean out the discharge or chipper housing in the field. Take the machine to a local dealer or professional shop. If the machine is a rental, take it back to the rental company.

DANGER

If the discharge or hood need to be removed, always use some sort of mechanical device like an overhead hoist, loader, lift truck, etc. that is rated for lifting that component. Follow all OSHA instructions for lifting.

DANGER

Pinch points are created between the disc/drum and the housing for the disc/drum. Use a pry bar or wood bar to turn the disc/drum during the unplugging process. Do not use your hands to try to break free and turn a jammed disc/drum. The disc/drum could break free suddenly and your hand could become injured in the pinch point.

DANGER

The knives are very sharp and can cause injury if you come in contact with the knives during the unplugging process.

STEPS TO FOLLOW WHEN UNPLUGGING YOUR CHIPPER

1. Before attempting any type of maintenance, disengage clutch, wait for the disc/drum to come to a complete stop, turn off engine, remove the ignition key, make sure the ignition key is in your possession, install the disc/drum lock pin, and disconnect the battery.
2. There should, also, be at least two people on site during maintenance and service procedures in case an accident should occur.
3. Make sure the chipper disc/drum is **NOT** turning and then open the hinged portion of the chipper hood.
4. Using gloved hands and some type of raking tool, dig the chips out of the chipper housing.
5. 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. If the discharge chute needs to be removed, use some sort of mechanical device like an overhead hoist, loader, lift truck, etc. that is rated to lift the discharge. Follow all OSHA instructions for lifting.
6. Never allow a person to turn the chipper disc/drum when someone else is working inside the chipper housing. More than likely, the chipper disc/drum will turn hard then loosen causing it to turn faster. If another person is anywhere near the chipper disc/drum, they may be injured.
7. Never turn the chipper disc/drum by hand. Always use a pry bar or wood bar. This will prevent the person turning the disc/drum from being injured should the disc/drum break loose.
8. Reinstall the discharge chute, mount securely and point it in a safe direction away from anything.
9. Never leave the chipper hood open and try to start the engine in order to engage the chipper disc/ 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 disc/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.
10. Once the disc/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, make sure the spring lock for hood pin springs back to the correct operating position on disc chippers, pick up all tools, make sure the chipper is free of all debris, start engine, properly engage clutch and throttle to full speed. Insert a small branch into the feedwheel(s). If the chips discharge properly, the chipper is clear and normal operation may resume.



DANGER

SAFETY CLOTHING AND APPAREL

SAFETY CLOTHING AND APPAREL

It is essential that a chipper operator wears proper gloves, clothing, hard hat, face shield, hearing protection, safety glasses, etc. when operating a chipper. Don't wear gauntlet type gloves or loose improper clothing. Avoid wearing necklaces, rings, watches, and neckties while operating the equipment.

Follow the established "ANSI" and "OSHA" standards.

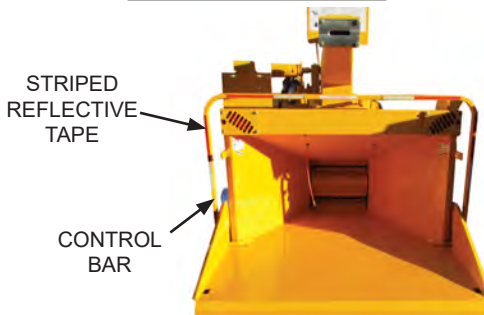


DANGER

REFLECTIVE STRIPED TAPE ON FEED CONTROL HANDLE

We began installing striped reflective tape on the feed control handle of our hand fed chippers. This tape is reflective, self adhesive, and has contrasting colors. The tape helps make the feed control bar stand out more and it makes the rear of the chipper more visible to a vehicle behind you while transporting the chipper. Striped tape can be obtained through your local Bandit® dealer. The striped tape can be ordered by the foot under part number 900-9901-69.

REFLECTIVE STRIPED TAPE ON FEED CONTROL HANDLE





WARNING

WARNING DECALS

WARNING DECALS

There are warning decals prominently displayed on the chipper to provide a constant reminder as to how the machine should be fed, operated, and maintained. It is the owners and operators responsibility to keep all decals, especially safety related decals, clean and readable. Every person involved in the operation or service of the chipper must be familiar, understand, and follow instructions on the decals. Decals are available in a variety of languages via Bandit® dealers or factory.

Correct Installation and Care of Decals

1. You should use soap and water to keep your decals clean. Never use mineral spirits or any other abrasive cleaners.
2. Immediately replace 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. Peel back about half of the backer paper on the decal. Position it on the flat, dry, clean surface so it is smooth and secure. Peel off the remainder of the backer paper as you continue to stick the decal on the surface.
6. Rub decal from the center outward to remove air bubbles and to secure contact.
7. Combination English / Spanish decals are typically standard. Other foreign language decals are available and may be purchased. Mail translated decals required to Bandit Industries, Inc.



WARNING

OPERATOR MANUALS

OPERATOR MANUALS

Chipper operator manuals are available for all of our equipment and when machines leave the factory, they are shipped with the manuals. There is extensive safety, service, and operational information in the manuals. An operator must never be allowed to use a chipper unless he/she is completely trained, has read and understands the manual and decals, and will follow the instructions provided. The instructions are for the safety of the operator, machine, bystanders, and nearby buildings. You can obtain manuals through your Bandit® dealers.



Training is essential! It is extremely important for everyone who operates a wood chipper to be trained. Operating instructions for the chipper are included in Bandit manuals, decals, and training videos with each chipper sold. We also highly recommend that you use the NAA chipper safety video. A copy of the video can be purchased by contacting NAA at the following address:

Tree Care Industry Association
3 Perimeter Road, Unit 1
Manchester, NH 03103
phone: 603-314-5380
800-733-2622
fax: 603-314-5386
website: www.tcia.org

Safety training and enforcement of safety operating procedures is an important process. No device will prevent accidents when equipment is operated in an improper manner. Operators need a frequent reminder as to the proper, safe operation of any piece of equipment, especially a chipper that is designed to quickly break down material much tougher than human flesh.

Please meet with your employees and have them read this Safety Booklet. Ask them what they think about the dangers we have discussed. Ask them if they have been guilty of some of the unsafe practices addressed in this bulletin. Lecture, preach, train, discuss, and enforce safety procedures constantly!!

Maintenance of a chipper also includes maintenance of safety devices. If you lose or destroy the wooden push paddle, get another one.

Chipper safety has to be a constant and continuing effort by all involved while operating and maintaining chippers.

Bandit Industries, Inc.
6750 Millbrook Rd.
Remus, MI 49340
USA

phone: (800) 952-0178 in USA
phone: (989) 561-2270 or 561-2272
fax: (989) 561-2273 ~ Sales Dept.
fax: (989) 561-2962 ~ Parts/Service Dept.
website: www.banditchippers.com

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WARRANTY VALIDATION FORM (HAND FED CHIPPER)

Customer Data Department
6750 Millbrook Road
Remus, MI, USA 49340
Phone: (800) 952-0178 in USA
Phone: (989) 561-2270
Fax: (989) 561-2273
Website: www.banditchippers.com

IMPORTANT - WARRANTY WILL BE DEEMED NULL AND VOID IF THIS FORM IS NOT FILLED OUT COMPLETELY AND ACCURATELY AND RETURNED TO THE CUSTOMER DATA DEPARTMENT WITHIN 10 DAYS OF EQUIPMENT DELIVERY

PURCHASER / OWNER INFORMATION:

Company Name _____ Contact Name _____
Mailing/Street Address _____ City _____
State _____ Zip Code _____ Country _____ Telephone Number (____) _____
E-mail _____ Machine Model No. _____ Date Put Into Service _____
Machine Serial No. _____ Machine Work Order No. _____ Machine Hours _____
Engine Make _____ Engine Serial No. _____ Machine Color _____

DEALER / SELLER INFORMATION:

Dealer/Seller Name _____ Contact Name _____
Mailing/Street Address _____ City _____
State _____ Zip Code _____ Country _____ Telephone Number (____) _____

- _____ The customer has received instruction and fully understands all operational, safety and maintenance requirements of the equipment.
- _____ The customer has received instruction and fully understands that everyone within 100 feet of the machine must wear proper personal safety equipment including hard hat, face shield, safety glass, gloves, ear protection and/or other items per OSHA and ANSI requirements.
- _____ The customer has received instruction and fully understands the equipment maintenance schedules and procedures. The customer understands that it is their responsibility to perform scheduled maintenance that includes periodic relief valve adjustments, retightening all fasteners as needed, periodic cleaning of flow divider, clutch and belt adjustments, and other items.
- _____ The customer has received instruction and fully understands not to reach into the infeed hopper with hands or feet.
- _____ The customer has received instruction and fully understands that the operators must always be located within easy reach of all feed control and shut down devices.
- _____ The customer has received instruction and fully understands that the wooden push paddle must be used to push small debris into the chipper and the operator is not to reach into or kick debris into the infeed hopper area of the machine.
- _____ The customer has received instruction and fully understands the purpose and how to operate the last chance device, and if used the machine has been operated in an unsafe manner. The customer understands to never attempt to override any safety devices or guards.
- _____ The customer has received instruction and fully understands that before performing any maintenance on the machine the ignition key must be removed, the cables must be completely disconnected from the battery, the disc/drum must have come to a complete stop, and the disc/drum lock must be installed. The customer understands they must allow the necessary time for the disc/drum to come to a complete stop before opening the disc/drum housing or starting any maintenance or service procedures. The customer has received instruction and fully understands the purpose of the beltshield inspection hole and that they are never to attempt any maintenance or service procedures until visually confirming the belts have come to a complete stop.
- _____ The customer has received instruction and fully understands that the machine is not to be operated without the factory approved hood pin assembly in place and padlocked, the machine is not to be operated with any type of make shift hood pin, and the machine is not to be operated under any circumstances with the chipper hood open or unsecured.
- _____ The customer has reviewed and fully understands limited warranty, and all written and visual instructions.
- _____ The customer has received instruction and fully understands that warranty will not apply if the machine is operated with replacement parts or equipment not manufactured or recommended by Bandit Industries, Inc.
- _____ The customer has received, been advised, and understands the manuals, and the Safety/Service video supplied with the chipper. A video is supplied for equipment models as available.
- _____ All Danger, Warning and Operational decals are properly displayed on equipment and fully understood by customer.
- _____ The customer has been instructed, understands, and agrees that all potential operators must: See the supplied video, be instructed on all the Danger, Warning and Operational decals, read the manual and follow the procedures.
- _____ The customer has been advised of all safety options.

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

Signed: _____ Date: _____

(Dealer Representative)

The equipment has been thoroughly checked by the above named dealer representative, and I am satisfied with his/her instructions. I have also read, understand, and agree to reverse side of page.

Signed: _____ Date: _____

**TO BE RETURNED AFTER THIRTY (30)
DAYS OF OPERATION**

DATE PURCHASE: _____

MODEL: _____

SERIAL NUMBER: _____

DEALER NAME: _____

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

Phone: (800) 952-0178 in USA
Phone: (989) 561-2270
Fax: (989) 561-2273
Website: www.banditchippers.com

EQUIPMENT QUALITY REPORT

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

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

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

11. General comments and/or suggestions: _____

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

YOUR COMPANY: _____

NAME: _____

ADDRESS: _____

CITY: _____

STATE & ZIP: _____

PHONE: (____) _____

E-MAIL: _____

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TYPICAL CHIPPER SERIAL NUMBER AND/OR WORK ORDER NUMBER LOCATIONS



- 1. Serial Number on side of frame
- 2. Work Order Number on side of tongue

NOTICE

The engine information is located on the engine block. The clutch information is located on the clutch plate (if equipped).

INTRODUCTION

The purpose of this manual is to provide the user with specifications and procedures for the operation, maintenance and repair of this BANDIT product. 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:

⚠ DANGER

DANGER indicates a hazardous situation that, if not avoided, **WILL** result in death or serious injury (contains white letters on red background).

⚠ WARNING

WARNING indicates a hazardous situation that, if not avoided, **COULD** result in death or serious injury (contains black letters on orange background).

⚠ CAUTION

CAUTION indicates a hazardous situation that, if not avoided, **COULD** result in minor or moderate injury (contains black letters on yellow background).

NOTICE

NOTICE indicates information considered important, but not hazard related (contains white italic letters on blue background).

SAFETY INSTRUCTIONS

SAFETY INSTRUCTIONS indicate general instructions relative to safe work practices and reminders of proper safety procedures (contains white italic letters on green background).

The equipment is designed and manufactured in accordance with the latest product industry standards. This alone does not prevent injury. It is the operator's responsibility to use good judgment and follow the warnings and instructions as indicated in this manual, on the machine and follow all safety standards per ANSI and OSHA instructions.

⚠ WARNING

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

It is the responsibility of the owner or employer to ensure 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 product, 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. Unapproved repairs or modifications will void warranty and eliminate manufacturer of any liability claims. Consult the equipment manufacturer with any questions.

Each machine is shipped with a manual, a customer's check sheet on the product, 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.

NOTICE

The producer of this Bandit product 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.

SAFETY PROCEDURES

YOUR SAFETY IS VERY IMPORTANT TO US!

WARNING

Before operating the machine, you must have all potential operators read and follow manuals and decals, watch the video and follow the guidelines.

Read and follow all the instructions in this 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.

Always be cautious and careful when operating your equipment.

This equipment is intended for use by adults who have been properly trained and are physically capable of operating the machine safely. Never allow minors to operate this machine. Never operate any machine while under the influence of drugs or alcohol. Never operate equipment that is in need of repair or adjustment. Keep children, bystanders and animals clear of working area.

There must be at least two qualified and trained operators at the work site. They must be positioned in safe working locations, following safety procedures and instructions, and aware of each others whereabouts. There must, also, be at least two people on site during maintenance and service procedures in case an accident should occur.

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

Accidents are typically caused by making mistakes. The operator does not read the manual, overlooks warning decals, or fails to use lockouts provided for their safety. This occurs after the operator has become familiar with the machine. The operator is very cautious in the initial start up and operation because they do not understand the machine.

NOTICE

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

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

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 machine more visible to a vehicle behind the machine while transporting. Striped tape can be obtained through your local Bandit Dealer.

DANGER

Torn or loose clothing is more likely to get caught in moving machinery parts. 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.

Wear all personal protection equipment (PPE) and follow all safety standards per ANSI and OSHA instructions. Examples of equipment: hard hat, face shield, safety glasses, gloves, ear protection, high visibility vest, and steel toe boots. Do not wear gauntlet or secured fit gloves. Always keep a fully charged fire extinguisher with the machine while operating or servicing the machine. Failure to do this will cause severe injury or death.

SAFETY PROCEDURES

⚠ DANGER

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

Always position the discharge chute in a safe direction. 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. Wood chips flying out of the discharge chute are very dangerous. Failure to do this could result in serious injury.

Never reach into the infeed hopper area of the machine, there is never any reason to. The feedwheels are designed to pull trees and brush of any length into the machine. Pulling a hand, arm, foot or entire body through the machine is much easier than pulling a tree. You will not 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 while the machine is operating.

Do not operate this machine indoors. Exhaust fumes are fatal.

Never refuel while the machine 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 while refueling. Extinguish all smoking materials. Wipe up all spilled fuel before restarting the engine.

Avoid moving parts. Keep hands, feet, and clothing away from power driven parts. Keep all guards and shields in place and properly secured. Contact with moving parts will result in serious injury or death.

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

Do not allow vines, vine-like material, or limbs to become entangled with you or your clothing.

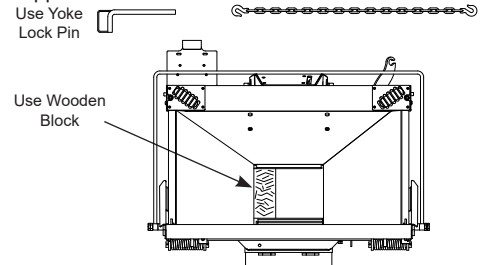
Do not pile vines or vine-like material in front of the infeed hopper, they will cause you to trip or fall.

Do not remove the hood pin until the chipper disc has come to a complete stop. The chipper disc will coast for several minutes after the engine is shut down. Always wait for the chipper disc to come to a complete stop.

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 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 disc will hit the hood and cause a serious accident. Lubricate the hood hinge daily.

Before doing any work inside the mouth of the chipper or around the feedwheels, always remove the yoke springs, raise the top feedwheel, install the yoke lock pin securely, block and chain the top feedwheel up, and block or stabilize the infeed hopper.



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.

SAFETY PROCEDURES

⚠ WARNING

Do not go near hydraulic leaks. High pressure oil easily punctures skin causing serious injury, gangrene, or death. Avoid burns from fluid. Hot fluid under pressure can cause severe burns. Do not use fingers or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings. Relieve all pressure in the system before disconnecting the lines, hoses, or performing other work. Use a piece of cardboard to find leaks. Never use your bare hands. Allow system to cool down to ambient temperature before opening any coolant or hydraulic oil system.

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. If the machine is going to be operated in excessively cold conditions, a larger cold cranking amp battery may be needed to ensure proper and prompt starting. Never use jumper cables in a confined or unventilated area.

Battery acid fumes are explosive. Never expose an open flame or spark near the battery, keep all burning materials away from the battery. When servicing the battery, shield eyes and face, and do not smoke; battery acid can cause severe burns. Service in a well-ventilated area.

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, or pushed closed if the chipper disc is turning.

The knives must be securely fastened and torqued in position. If one comes loose or breaks during operation, the machine will be damaged and someone may get injured.

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

Never turn the chipper disc by hand, always use a pry bar or wood bar. Always rotate the chipper disc backwards. Failure to do this could result in serious injury.

Before performing maintenance on the machine remove all debris, oil, grease, water, snow, ice, etc. from all machine surfaces.

Explosion hazard: Ultra low sulfur diesel (ULSD) poses a greater static ignition hazard than earlier diesel formulations with higher sulfur content. Avoid death or serious injury from fire or explosion; consult with your fuel or fuel system supplier to ensure the delivery system is in compliance with fueling standards for proper grounding and bonding practices.



Operation of this equipment may create sparks that can start fires around dry vegetation. A spark arrester may be required. The operator should contact local fire agencies for laws or regulations relating to fire prevention requirements.



SAFETY INSTRUCTIONS

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

Always install the disc lock pin to prevent inadvertent rotation. Insert the lock pin through the lock pin tube on the belly band of the disc housing. This is to ensure the chipper disc cannot be started while you are working inside the machine. If, for some reason, the disc started to turn, it would simply hit the lock pin.

To feed vine-like material, stop the feed system, cut the vines or vine-like material into 4 to 5 ft. (1.2 to 1.5 m) lengths, in a clear area, away from the machine, place them on the infeed tray, start the feed system, and use the wooden pusher paddle to guide them towards the feedwheel(s). Always be in position and prepared to activate the feed control handle.

Before working inside the infeed hopper or under the top feedwheel remove the yoke 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. Failure to do this will cause serious injury.

SAFETY PROCEDURES

NOTICE

Clean machine of all debris. Do not leave this machine unattended until all potential flammable debris is removed, no fire or smoldering exists, and hot spots are cold. The engine creates many hot spots including: exhaust manifold, exhaust, turbo (if equipped), etc. Remove all flammable debris such as wood, chips, leaves, oils, fuels from engine exhaust, engine turbo (if equipped), beside, around, and under engine, around and under tanks, inside belt shields and guards, inside battery and tool boxes, inside cabinets (if equipped), and anywhere materials collect. Always keep several type A:B:C fire extinguishers operational and on the job at all times.

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 nuts and 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. All nuts and bolts should be checked daily, especially the anvil and knife nuts and bolts for torque and fit.

Most of the nuts used on the machine are self locking. After a nut or bolt has been removed five times, it must be replaced to ensure proper tightness. This is especially critical on the chipper knife nuts and bolts. Anvil hardware must be replaced when the anvil is replaced.

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

It is very important after you have operated a new machine for approximately an hour to shut down the machine and recheck all hydraulic fittings. Relieve all pressure and retighten as needed.

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

The patented Last Chance Stop is a means of stopping 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 kicks into the infeed hopper area.

With engine shut off and all moving parts stopped, daily pull last chance cables to ensure they operate freely.

Do not operate this machine unless all hydraulic control devices operate properly. They must function, shift and position smoothly and accurately at all times.

Make sure the machine is in good operating condition and that all safety devices, including guards and shields are installed and functioning properly. Visually inspect the machine daily before starting the machine. Refer to the "Daily Start Up & Maintenance". Make no modifications to your equipment unless specifically recommended or requested by Bandit Industries Inc.

This chipper is designed to be hand fed only. Do not feed wood with any type of knuckle boom loader, front end loader, or mechanical device. It will cause damage to the machine. If this happens, the machine will not be covered under warranty.

Do not attempt to start the engine or engage the engine PTO (power-take-off) system on this machine if the chipper disc is jammed or frozen in place. If you do, you will damage or ruin the drive system which will not be covered under warranty and will cost you down time and money.

Tongue jacks or optional rear stabilizers, whether hydraulic or manually operated are designed to stabilize the machine. The tongue jack or rear stabilizers are not designed to hold the machine off the ground at any time. Install secure blocking and / or chocking as needed. Before transporting the machine, ensure the tongue jack and rear stabilizers are fully retracted and secured in the transport position.

Check laws and regulations. Know and obey all federal, state, and local laws and regulations that apply to your work situation and the transportation of a machine this size.

EQUIPMENT SPECIFICATIONS

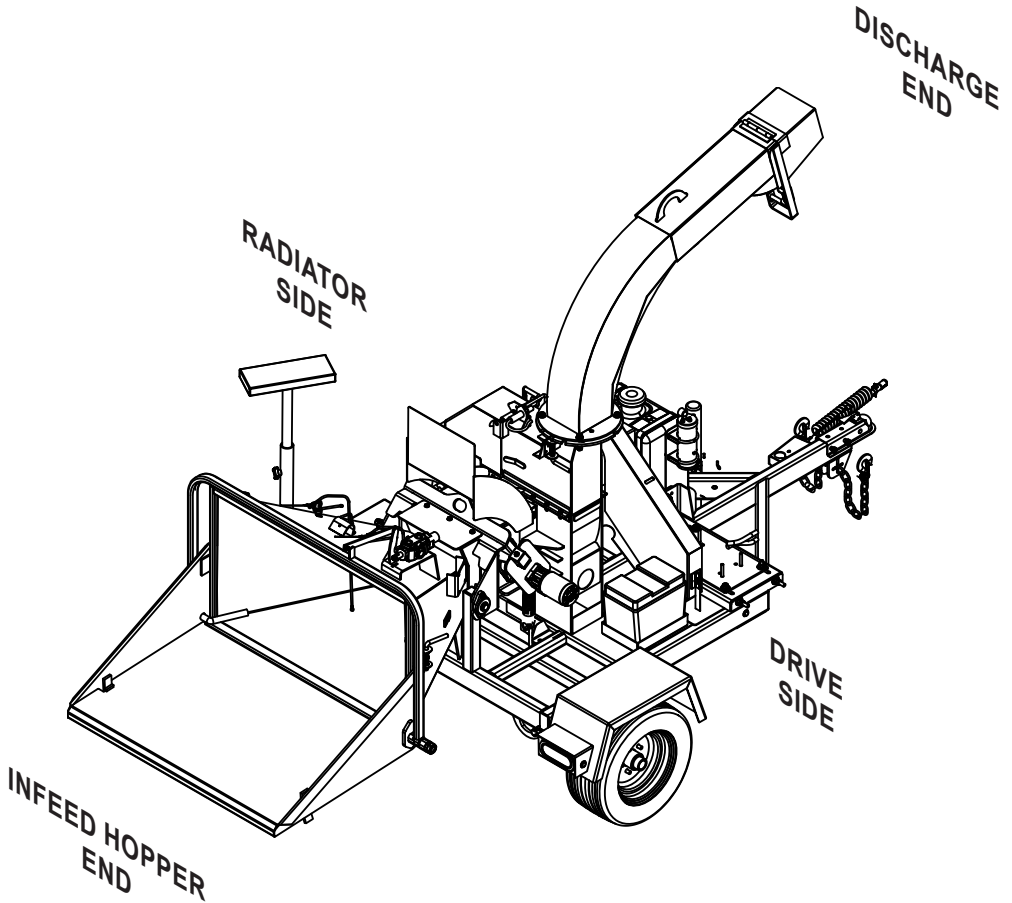


Approximate Dimensions & Weights
 (Dimensions & weights will vary depending on optional equipment)

Model 75

Length (Infeed Tray Down)	144" (3.7 m)
Width	68" (1.7 m)
Height	90" (2.3 m)
Weight	2,500 lbs. (1,100 kg)
Fuel Capacity	7 Gal. (26.5 L)
Hydraulic Fluid Capacity	7 Gal. (26.5 L)

MACHINE ORIENTATION REFERENCE

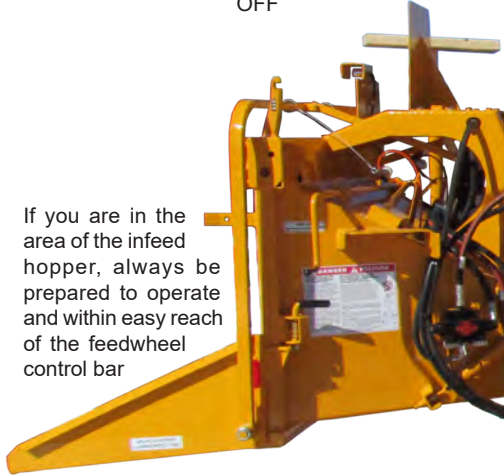


CONTROLS

CORRECT OPERATION OF FEEDWHEEL CONTROL BAR



If you are in the area of the infeed hopper, always be prepared to operate and within easy reach of the feedwheel control bar



ADJUSTING TENSION FOR CONTROL BAR PIVOT AND LAST CHANCE CABLE

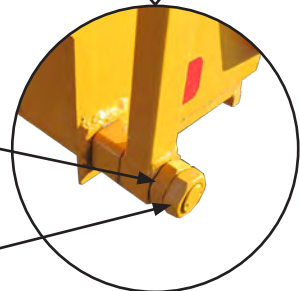
Normal wear requires periodical adjustment of pivot tension.

Feedwheel control bar should pivot with little effort, by hand or with a pull on the "Last Chance" cables. Lubricate pivot points of the feedwheel control bar weekly.



Adjust pivot tension with the tightness of inside friction nuts.

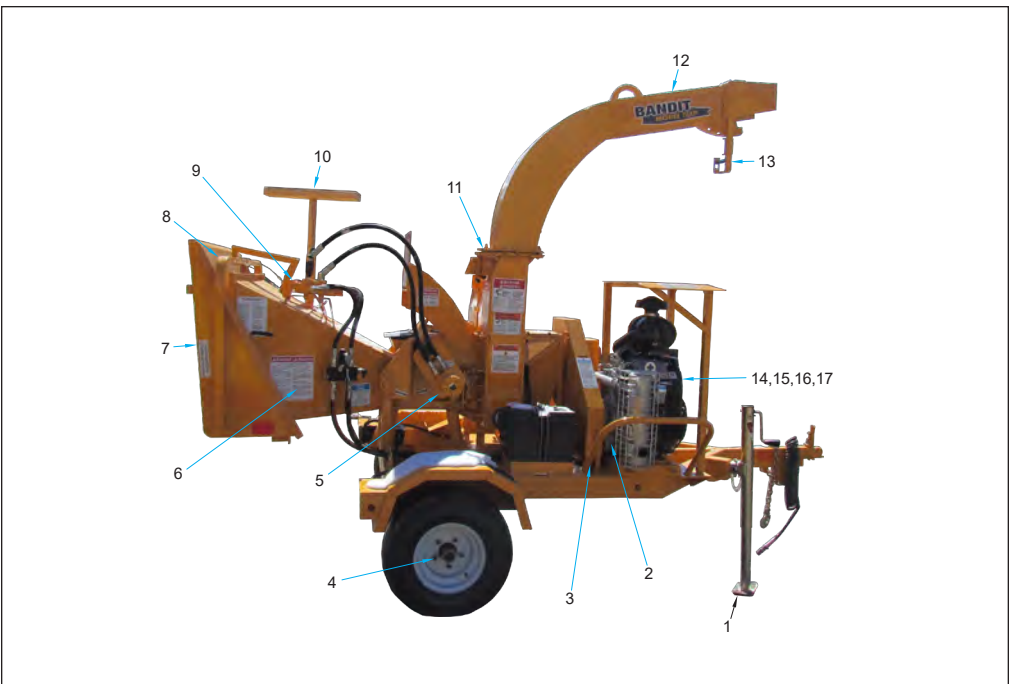
Secure adjustment with outside jam nuts



CONTROLS

Basic Location of Controls and Components

#	Description	Location
1	Foot Pad Jack	Discharge end, on tongue
2	Clutch Handle (If equipped)	Drive side, on engine
3	Chipper Belts / Pump Belts	Drive side
4	Lug Nuts	Drive side / Radiator side, on tires
5	Feedwheel Motor Coupler	Drive side, on top and bottom yoke
6	Infeed Hopper	Infeed hopper end
7	Folding Infeed Tray	Infeed hopper end
8	Feedwheel Control Bar	Infeed hopper end, around infeed hopper
9	Hydraulic Control Valves	Infeed hopper end, on top of the infeed hopper
10	Wooden Push Paddle	Radiator side, on the infeed hopper
11	Swivel Discharge	Drive side
12	Discharge Chute	Discharge end
13	Discharge Flipper Adjuster	Discharge end, towards the end of the discharge
14	Autofeed Controls	On engine
15	Engine Controls, Adjusters	On engine
16	Electric Engine Throttle Adjuster	On engine
17	"Bandit" Lever Throttle Adjuster	On engine
18	Optional Feedwheel Trap Door	Below optional bottom feedwheel (not shown)
19	Adjustable Height Discharge	Drive side, on discharge (not shown)
20	Knives & Hardware	On disc (not shown)



CONTROL OPERATING PROCEDURES

FEEDWHEEL CONTROL BAR

The feedwheel control bar operates the feedwheel(s). To make the feedwheel(s) operate so they are pulling material into the machine, pull the control handle towards the operator away from the machine. To make the feedwheel(s) operate so they are pushing material out of the machine, away from the chipper disc, the control handle should be pushed away from the operator, away from you and towards the machine. The control bar is in the off position when it is in the center location.

FEEDWHEEL TRAP DOOR (DUAL FEEDWHEEL OPTION)

SAFETY INSTRUCTIONS

Before opening or closing the feedwheel trap door: disengage clutch, wait for the disc to come to a complete stop, turn off engine, remove the ignition key, make sure the ignition key is in your possession, install the disc lock pin, and disconnect the battery. In the event that dirty material is being run through the chipper the feedwheel trap door can be opened.

CHIPPER HOOD ENGINE DISABLE PLUG

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. The system must be correctly maintained and operative at all times. If the disable plug is not correctly installed the engine will not start or run.

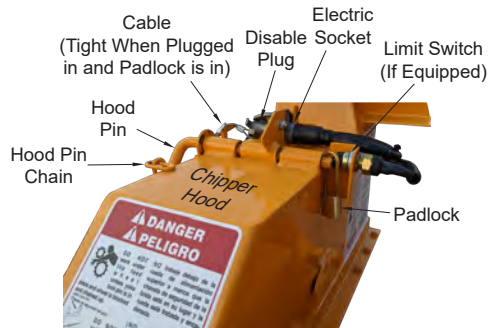
The chipper hood engine disable plug is located on top of the chipper hood. The chipper hood engine disable plug is made up of two parts: an electric socket and a disable plug. The electric socket is bolted to the chipper hood engine disable plug mount bracket and the disable plug is attached by a cable to the hood pin.

If the disable plug is not properly installed then the engine will not start or run. If the 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 hood engine disable plug is wired to shut down the chipper engine. When the disable plug is pulled out of the electric socket the electric circuit is broken, disabling the engine.

NOTICE

The engine disable plug has a circuit fuse. If the engine will not start or run, check the fuse first before consulting the engine manufacturer's manual. Circuit fuse locations: Caterpillar / Perkins - located at the "BATT" wire near the ignition switch, Cummins - located by engine manufacturer near the starter (wires labeled "POW"), John Deere - located by engine manufacturer "Short Stop" circuit breaker by the ignition switch on the instrument panel or fuse by the ECM, and Deutz, Hatz, Honda, Kohler, and Robin - located at the battery post on the starter.

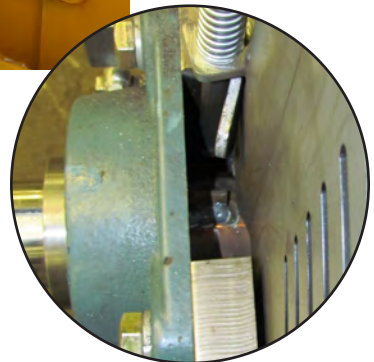


SPRING LOCK FOR HOOD PIN

The patented Spring Lock for Hood Pin is installed for safety purposes. It is designed to help keep the hood pin from being removed if the chipper disc is turning. Do not attempt to push the Spring Lock for Hood Pin down or remove the hood pin until after the engine and chipper disc both come to a complete stop.

The spring lock is located on the side of the chipper hood. The top of the spring lock should be directly behind the hood pin washer when the hood pin is properly installed in place holding the chipper hood in the closed position (See Figure 1)

With the chipper hood shut and hood pin in place the spring lock helps keep the hood pin from sliding out or from being removed if the chipper disc is turning. There is a shaft cam block installed on the chipper shaft which will not allow the spring lock to be pulled down if the chipper disc is turning (see Figure 2). If the spring lock was to be pulled down or recessed it would simply hit the shaft cam block bouncing the spring lock back into position not allowing for the removal of the hood pin.



ENGINE CONTROLS

CONSULT THE ENGINE MANUFACTURER'S MANUAL FOR SPECIFIC CONTROLS, OPERATION, & MAINTENANCE FOR TYPICAL ENGINES

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.

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.

CHOKE (IF EQUIPPED)

Some gasoline engines may have a choke, pull the choke lever out to choke the engine. Push the choke lever in for normal engine operations.

THROTTLE ADJUSTMENT (IF EQUIPPED)

Some 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.

"BANDIT" LEVER LOCK CABLE THROTTLE SYSTEM (IF EQUIPPED)

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.

PUSH BUTTON OR ELECTRIC THROTTLE SYSTEM (IF EQUIPPED)

Some engines may have a push button or electric throttle adjustment. Engine R.P.M. is controlled by pushing a button or switch to raise or lower the R.P.M.

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.

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.

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.

NOTICE

Most engines have an automatic low oil pressure shut down device, but some engines do not. Expensive damage may occur if the engine oil level and condition is not checked daily. Follow all maintenance procedures specified by the engine manufacturer's manual. Check the fuel level daily, running out and repriming is time consuming. Do not over fill the tank, there must be expansion space in the top of the tank. Inspect hoses, fittings, lines, tanks, etc. for any oil, fuel, engine coolant, etc. leaks daily. Repair or replace any damaged or leaking components.

TYPICAL DIESEL ENGINES

PUSH BUTTON OR ELECTRIC THROTTLE SYSTEM



BANDIT CONTROLS



BANDIT THROTTLE SYSTEM

TYPICAL GASOLINE ENGINES



OPERATION

⚠ DANGER

Avoid moving parts. Keep hands, feet, and clothing away from power driven parts. Keep all guards and shields in place and properly secured. Contact with moving parts will result in serious injury or death.

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

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.

⚠ WARNING

There must be at least two qualified and trained operators at the work site. They must be positioned in safe working locations, following safety procedures and instructions, and aware of each others' whereabouts.

NOTICE

Do not operate this machine unless all machine controls operate properly. They must function, shift smoothly and accurately at all times.

Make sure machine safety guards are properly installed and safety devices are functioning properly.

This chipper is designed to be hand fed only. Do not feed wood with any type of knuckle boom loader, front end loader, or mechanical device. It will cause damage to the machine.

Check laws and regulations. Know and obey all laws and regulations that apply to your work situation.

Make sure that all required maintenance has been completed before following the set-up procedures.

SET-UP

Before starting the machine, read all safety procedures and watch the start-up and safety videos.

- Prepare and set up the work site. Make sure there are no loose tools, cans, lines or any other foreign objects in the area. Anything not in use must be stored in a tool box or stowed away.
- Stabilize the infeed hopper and tongue if unhooked from a tow vehicle.
- Do not rely on a tongue jack to keep the machine stable if unhooked from a tow vehicle.
- Make sure to chock the tires.
- Fold the infeed tray out.
- Check for and remove any foreign objects in the infeed hopper.
- Remove transport bolt and nut, then make sure the discharge is pointed in a safe direction and locked into place.
- Adjust the flipper as needed.
- Make sure all personal protective equipment (PPE) is worn. Examples of PPE: hard hat, face shield, gloves (no gauntlet style gloves or secured fit), ear protection, high visibility vest, and steel toe boots.
- Follow all start-up procedures.

START-UP

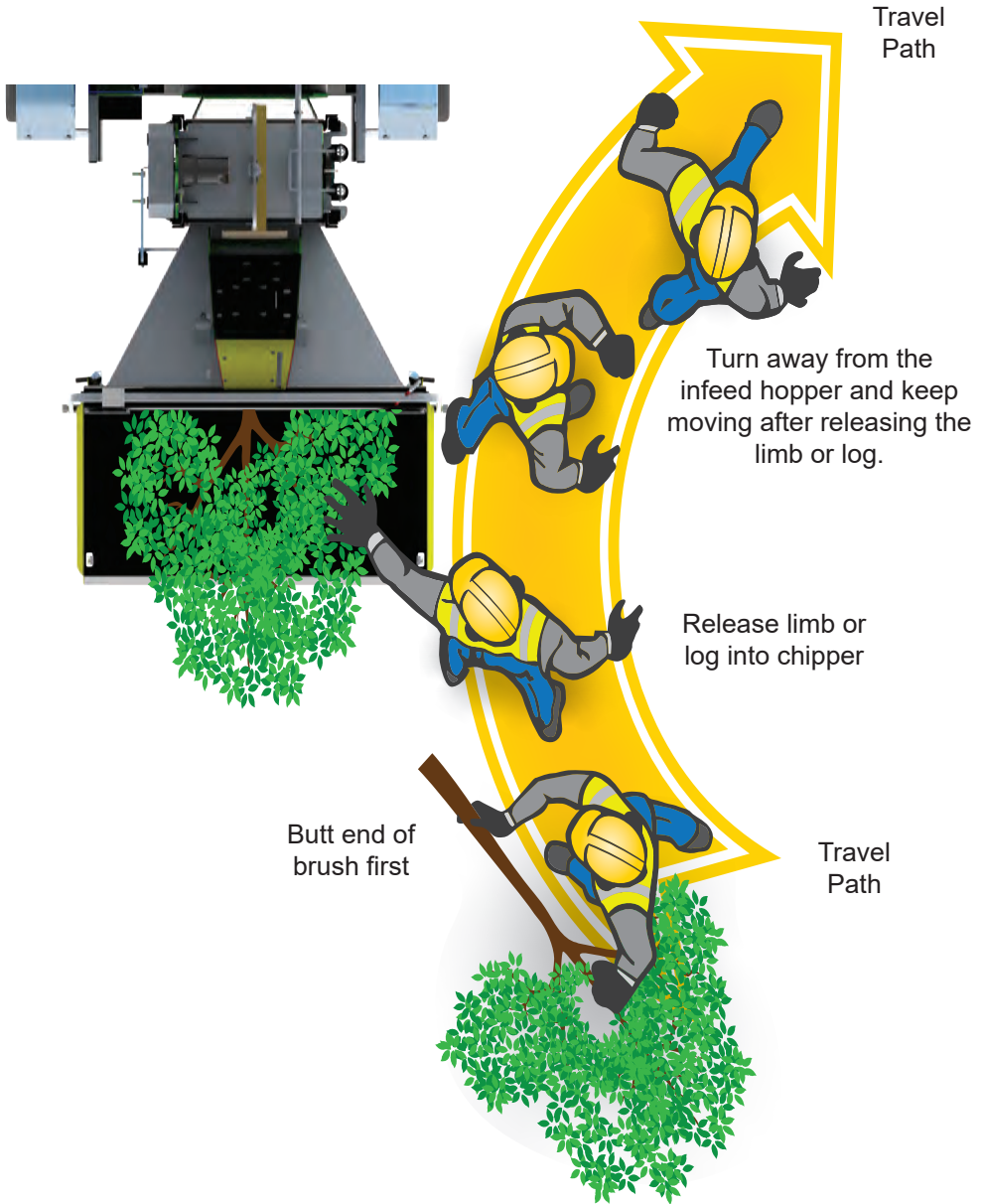
1. Follow all engine manufacturer's recommendations for starting the engine.
2. Bump the clutch handle until the disc is moving, then fully engage the clutch handle.
3. Throttle the machine up.

MACHINE OPERATION

1. Once the machine is at full RPM, engage the feedwheels in the forward direction.
2. Refer to feeding diagram (Figure 1).
 - A. Follow the travel path.
 - B. Feed only from the side of the infeed tray.
 - C. Release the limb or log.
 - D. Turn away and keep moving after releasing the limb or log and from the infeed hopper.
3. Feed large, or butt end, of the branch or log into the infeed hopper first.
4. If the limb or log does not feed, it may need repositioned. To reposition, read the following steps:
 - A. Reverse the feedwheels, reposition the limb or log, and feed again.
 - B. The log may need to be removed from the machine to a safe work area and trimmed before attempting to feed again if it still will not feed.

MACHINE OPERATION

Figure 1



MACHINE OPERATION

NOTICE

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 machine 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 feedwheel(s). Once the feedwheel(s) 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 feedwheel(s) by pushing the feedwheel control bar to off, and let the engine recover to full speed. If the machine is equipped with Autofeed and it is functioning properly, the feed system will automatically stop to let the engine recover. This will help stop the machine from plugging the discharge chute.

If there are short pieces, leaves, or twigs, 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 machine.

Chippers are not designed to cut chunk wood, dimensional lumber including rail road ties, or end cut logs standing on end. Chipper knives coming in contact with a flat surface puts an extreme shock load on the chipper disc components and bearings. This can cause damage to the machine that will not be covered under warranty.



SAFETY INSTRUCTIONS

To feed vine-like material, stop the feed system, cut the vines or vine-like material into 4 to 5 ft. (1.2 to 1.5 m) lengths, in a clear area, away from the machine, place them on the infeed tray, start the feed system, and use the wooden pusher paddle to guide them towards the feedwheel(s). Always be in position and prepared to activate the feed control handle.

SHUT DOWN

1. Stop feeding material.
2. Allow the machine to clear out any remaining material.
3. Make sure the top feedwheel is in the lowered position.
4. Throttle the machine down.
5. Disengage the clutch.
6. Wait for the disc to come to a complete stop.
7. Shut the engine off.
8. Remove the key, and make sure it stays in your possession.
9. Allow the machine to cool down
10. Remove all debris, wood chips, sawdust, leaves, etc. from the machine.
11. If transporting the machine, follow the transport procedures.

Some Current Engine Types	Maximum RPM	PPR	Off RPM	On RPM
Kohler CH740 - 25 Hp	3400	99	3300	3050
Kohler CH980 - 35Hp	3600	99	3500	3250
Kohler CH1000 - 37 Hp	3600	99	3500	3250
Vanguard - 27 Hp	3600	99	3500	3250
Vanguard - 35 Hp	3600	99	3500	3250

OPTIONAL HYDRAULIC BUMP BAR OPERATION

⚠ DANGER

The hydraulic bump bar is an optional device which may help prevent accidents. Do not rely on the hydraulic bump bar to prevent infeed accidents. Never reach or kick into the infeed hopper for any reason. Serious injury or death will result.

- The optional Hydraulic Bump Bar comes set from the factory and is non adjustable.
- If the Hydraulic Bump Bar is pushed, the feedwheels stop.
- After the Hydraulic Bump Bar has been pushed, the operator will need to reset it. Push the Hydraulic Bump Bar Reset towards the tongue of the machine. After the operator has done this, the feedwheels will operate again.
- If there is wood or a branch that is pushing the Hydraulic Bump Bar, the operator can push the button shown above to momentarily operate the feedwheels to reverse the wood back out. Then the operator can reposition the wood or remove the wood and cut the branch off before feeding again.



TRANSPORTATION PROCEDURES

BEFORE TRANSPORTING THE MACHINE THE FOLLOWING MUST BE COMPLETED

1. Shut the machine down properly.
2. Remove all excess debris. Remove any wood or debris which may have collected.
3. 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.
4. Close the folding infeed tray for the infeed hopper and make sure the spring latches are locked into place.
5. Couple machine or transport trailer to transport vehicle by lowering the machine onto the hitch. Make sure the hitch matches the coupling size. Then secure hitch and lock it.
6. Attach the safety chains by crossing them under hitch, make sure to allow the proper amount of slack in chains to avoid binding or dragging the ground when making turns.
7. Connect the brake breakaway cable (if equipped) and plug in the electrical connection for the lights on the machine or transport trailer.
8. Check running lights, turn signals, and brake lights. All must be operating properly before transporting the machine. Also check brakes (if equipped) to make sure they are operating correctly.
9. Do not transport unless discharge is secured into a transport position.
10. Check tires for correct pressure, cuts or damaged rims.
11. Check lug nuts and retorque if necessary. Check new units before operation, check again after 20-25 miles (32-40 km) and regularly check at least weekly.
12. Inspect and replace any axle dust caps that are damaged or leaking.
13. Check wheel bearings and grease or oil axles per axle manufacturer's manual.
14. Make sure the bottom feedwheel trap door is closed.
15. Walk around the machine to confirm that everything is secure and that there is not anything loose that could fall off during transport. Look under machine to ensure nothing is dragging. Look down both sides of the machine for anything sticking out that may become damaged during transport.
16. If machine is equipped with a vise, make sure to secure in place and clamp jaws closed.
17. Close and secure any of the following, if equipped: engine cowl doors and side panels, radiator debris screens, inspection doors, housing covers, tanks caps and covers, etc.
18. The machine is now ready for transport. Make sure to obey all local regulations and laws regarding the transporting of this type of machine.
19. Do not drive too fast for road conditions or exceed speed regulations for equipment towing. Machine must be hauled level and the towing vehicle must be sized to handle hitch weight, towing weight, and braking requirements.

MAINTENANCE

SAFETY INSTRUCTIONS

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

⚠ WARNING

Do not let anyone operate or maintain this machine until they have thoroughly read this manual, reviewed the equipment decals, watch the equipment video, and has been properly trained. You can purchase additional Bandit manuals, decals and videos for a nominal fee.

NOTICE

Consult your engine manual for proper break-in procedures. Various engines require somewhat different procedures.

NOTICE

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

The machine 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.

Expensive damage to the machine will occur if proper preparation is not taken before welding on the machine. Be sure to disconnect both battery cables and the engine ECM (engine control module) before welding. Follow the specific Engine manufacturer's instructions for proper welding and grounding procedures, before attempting to weld on the machine. If welding on the machine, do not ground the welder through the machine bearings, ground near work to be performed.

What to Check	How often to check					Procedure Page #	✓
	Daily (10 hrs.)	Weekly (50 hrs.)	Monthly (200 hrs.)	Quarterly (400 hrs.)	Yearly (2000 hrs.)		
Safety decals	X					25	
Engine gauges	X					25	
Safety equipment	X					25	
Loose bolts, nuts parts or components	X					25	
Safety guards	X					25	
Chipper hood hinge	X					25	
Foreign objects	X					25	
Chipper disc assembly	X					25	
Chipper disc to turn	X					25	
Knives, anvil, fan blades & attaching hardware	X					25	
Knife mounting hardware	X					25	
Hood lock pin & padlock	X					25	
Hydraulic oil level	X					25	
Fuel level	X					25	
Engine oil & coolant	X					25	
DEF level (Tier 4 engines)	X					25	
Fluid leaks	X					25	
Hydraulic pump & motor shafts	X					25	
Chipper disc bearings	X					25	
Feedwheel bearings	X					26	
Feedwheel pivot bearings	X					26	
Chipper drive belt tension	X					38 - 39	
Radiator debris screen	X					26	
Hydraulic control valves	X					26	
Electrical controls	X					26	
Air cleaner & precleaner	X					26	
Clutch	X					26	

REMEMBER TO CHECK EVERYTHING ON THE CHECKLIST!

MAINTENANCE

What to Check	How often to check					Procedure Page #	✓
	Daily (10 hrs.)	Weekly (50 hrs.)	Monthly (200 hrs.)	Quarterly (400 hrs.)	Yearly (2000 hrs.)		
Tires	X					26	
Axle dust caps	X					26	
Safety procedures reviewed	X					26	
Anvil clearance, tightness & wear		X				34 - 35	
Alternator & fan belts		X				27	
Wheel lug nuts		X				27	
Steel friction areas		X				27	
Chain driven components		X				27	
Towing hitch			X			27	
Infeed wear			X			27	
Discharge wear			X			27	
Feedwheel motor connections			X			41	
Sharpness of feedwheel teeth			X			27	
Chipper sheave & bearings			X			27	
Hydraulic function pressure			X			27	
Wheel bearings			X			27	
Brakes			X			27	
Hydraulic oil filter(s)				X		27	
Discharge swivel plates				X		27	
Hydraulic oil					X	27	
Hydraulic suction screen(s)					X	27	
Fuel tank					X	27	

REMEMBER TO CHECK EVERYTHING ON THE CHECKLIST!

BOLT TORQUE CHART

(THESE TORQUES ARE BASED ON DRY, CLEAN THREADS)

DESCRIPTION	BOLT SIZE	TORQUE (FT.-LBS.)	TORQUE (Nm)
Chipper Bearing Bolts	3/4" - 10 NC	300 - 325	406 - 440
Rear Chipper Bearing Bolts	5/8" - 11 NC	200 - 220	271 - 298
Anvil	1/2" - 13 NC	65 - 75	88 - 102
Knife Bolts	5/8" - 11 NC	180	245
Feedwheel Bearing Bolts	1/2" - 13 NC	75	102
Feedwheel Bearing Set Screws	3/8" - 24 NF	20	27
Grip-Tight Feedwheel Bearing Set Screws		2	3
Yoke Pivot Bearing Bolts	1/2" - 13 NC	75	102
Engine Hold Downs	5/8" - 11 NC	125	169
Engine Hold Downs	1/2" - 13 NC	60	81
"RS/TE" Hydraulic Feedwheel Motor Shaft Nut	3/4" - 28 NEF	150 - 170	203 - 230
Engine Sheave Bushing "SDS"	1/4" - 20 NC	9	12
Engine / Chipper Sheave Bushing "SK"	5/16" - 18 NC	15	20
Engine Sheave Bushing "Q1"	3/8" - 16 NC	30	41
Autofeed Cartridge Nut		4 - 6	5 - 8
Autofeed Plus Solenoid Retainer Nut		4 - 6	5 - 8
Hitch Mount Bolts	5/8" - 11 NC	220	298
Pump Coupler	1/2" - 13 NC	75 - 85	102 - 115

Before tightening bolts be sure you have the correct size bolt for the correct amount of torque.
Use only factory approved knives and hardware.

DAILY MAINTENANCE

SAFETY DECAL & ENGINE GAUGES

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

SAFETY EQUIPMENT

Check for proper operation. Repair or replace as needed. With everything shut down and stopped, ensure last chance cables freely operate feed control valve.

LOOSE BOLTS, NUTS, PARTS OR COMPONENTS

Check 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.

SAFETY GUARDS

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

CHIPPER HOOD HINGE

Make sure the chipper hood hinge operates correctly, and is lubricated. Replace hinge if damaged.

FOREIGN OBJECTS

Before opening the hood, make sure the clutch is disengaged, the engine off, the disc lock pin is installed, battery is disconnected, and also make sure the ignition key is in your possession. Remove the hood pin padlock, disconnect the chipper hood engine disable plug, and remove the hood lock pin. Look for any foreign objects inside the chipper housing or in the knife pockets of the disc. Remove any foreign objects found.

CHIPPER DISC ASSEMBLY

Check chipper disc assembly for excessive wear, elongated knife bolt holes, secure welds, and impact cracks. If a problem is found, contact your nearest dealer or Bandit Industries, Inc. Check the chipper base, belly band, and hoods for wear or damage. Inspect the chipper bearings for loose bolts and cracks.

CHIPPER DISC TO TURN

Very carefully, manually with a pry bar or wood bar, turn the chipper disc a full revolution. This is to ensure the anvil and knives have proper clearance. If the chipper disc is jammed with debris or frozen in place, DO NOT attempt to start the engine and engage clutch until the chipper disc rotates freely.

KNIVES, ANVIL, FAN BLADES & ATTACHING HARDWARE

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

KNIFE MOUNTING HARDWARE

All knife mounting hardware must be factory approved. Knife mounting hardware must be replaced after maximum of 4-5 knife rotations/changes to ensure safe clamping ability. Torque set, AT ALL TIMES to 180 ft.-lbs. (245 Nm)

HOOD LOCK PIN & PADLOCK

After closing chipper hood, reinsert the hood pin and padlock, make sure pin is tight and secure. If worn replace immediately. Don't use a worn or makeshift hood pin. Make sure the spring lock for the hood pin is in the correct position. Make sure the chipper hood engine disable plug is installed correctly and that it is also operating properly.

HYDRAULIC OIL LEVEL

The hydraulic oil reservoir tank level should always remain at 7/8 full. Remember to check DAILY to avoid excessive heat build up.

FUEL LEVEL

Check the fuel level, running out and repriming is time consuming. Do not over fill, and you must leave fuel expansion space in the top of the tank.

ENGINE OIL & COOLANT LEVEL

Follow the engine manufacturer manual recommendations for fluid levels. You must follow specific engine manufacturer's manual recommendations for radiator coolant, additives, lubrication, correct engine speed, etc.

DEF LEVEL ON TIER 4 ENGINES

Check the Diesel Emissions Fluid (DEF) level on Tier 4 engines. Fill to engine manufacturer's manual recommendations.

FLUID LEAKS

Inspect for any oil, fuel, hydraulic oil, or engine coolant leaks. Check all hoses, fittings, lines, and tanks. Do not use fingers or skin to check for hydraulic leaks. Repair or replace any damaged or leaking components.

HYDRAULIC PUMP & MOTOR SHAFTS

Check the hydraulic pump and hydraulic motor shafts for fit and tightness.

GREASE CHIPPER BEARINGS

Note: Must open the chipper hood to purge the chipper bearing.

Use an EP-2 Lithium type grease to purge chipper bearings. You cannot over grease these bearings. This type of bearing is designed with a relief system that will not allow over greasing. You cannot 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. Wipe off excess grease. **Excessive grease will attract dirt.**

DAILY MAINTENANCE

GREASE FEEDWHEEL BEARINGS

Grease the feedwheel bearings with one shot of an EP-2 Lithium type grease. You cannot over grease these bearings. This type of bearing is designed with a relief system that will not allow over greasing. You cannot 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. Wipe off excess grease. **Excessive grease will attract dirt.**

GREASE YOKE PIVOT BEARINGS

Grease the yoke pivot bearings with one shot of an EP-2 Lithium type grease. Wipe off excess grease. **Excessive grease will attract dirt.**

RADIATOR DEBRIS SCREEN

Thoroughly clean radiator fins at least once a day or more in excessive conditions. Make sure debris is not packed between fins. Use compressed air and/or pressurized water (soap may also be needed) to clean the radiator, depending on the level and type of debris. If pressurized water is used, be careful not to turn the debris hard and pack solid between the radiator fins. Make sure to clean the radiator in the correct direction depending on if the cooling fan is a sucker or a pusher; do not propel the debris into the radiator with compressed air or pressurized water. A partially plugged radiator will not allow the engine to cool properly. Keep the compressed air or pressurized water a safe distance from the radiator fins and parallel to the fins so they are not damaged. Visually inspect the radiator fins and make sure they are not bent or closed off, repair or replace as needed. 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/or engine failure. Refer to the engine manufacturer's manual.

CHECK OIL COOLER (IF EQUIPPED)

Thoroughly clean cooler fins at least once a day or more in excessive conditions. Make sure debris is not packed between fins. Use compressed air or pressurized water (soap may also be needed) to clean the oil cooler, depending on the level and type of debris. If pressurized water is used, be careful not to turn the debris hard and pack solid between the cooler fins. Make sure to clean the cooler in the correct direction; do not propel the debris into the cooler with compressed air or pressurized water a safe distance from the cooler fins, so they are not damaged. Visually inspect the cooler fins and make sure they are not bent or closed off, repair or replace as needed.

HYDRAULIC CONTROL VALVES

Inspect all hydraulic control valves and ensure they operate smoothly and shift correctly.

AIR CLEANER & PRECLEANER

Clean or replace element following engine manual recommendations. Also, check and clean the vacuator valve.

CHECK CLUTCH

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

TIRES

Check tires for wear, air pressure, weather checking and damage. Replace if damaged. Fill each tire to rated capacity on tire.

INSPECT AXLE DUST CAPS

Inspect axle dust caps and replace if damaged or leaking.

REVIEW ALL SAFETY PROCEDURES ON DECALS, FROM MANUAL, & FROM VIDEO

WEEKLY MAINTENANCE

ALTERNATOR & FAN BELTS ON ENGINE

Inspect belt condition and replace as needed. As applicable adjust and maintain per the engine manufacturer's manual.

CHAIN DRIVEN COMPONENTS

Use a dry lube on any chain driven components: hydraulic swivel discharge and chain driven feedwheels.

WHEEL LUG NUTS

Keep lug nuts tight, retorque, replace if needed.

STEEL FRICTION AREAS

Lubricate all steel friction areas including, but not limited to pivoting, hinged, sliding, rotating areas on the machine (i.e. stop bar, folding tray, discharge flipper, hydraulic valves & linkages, height adjustable discharge, discharge T-handle, etc.)

MONTHLY MAINTENANCE

TOWING HITCH

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

DISCHARGE & INFEED HOPPER WEAR

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

SHARPNESS OF FEEDWHEEL TEETH

Replace if needed.

CHIPPER BEARINGS & CHIPPER SHEAVE

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

WHEEL BEARINGS

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

BRAKES

Check and adjust brakes as needed per axle MFG. manual.

HYDRAULIC FUNCTION PRESSURES

Check, reset and maintain all hydraulic function pressure settings to a maximum of the specified pressure. This will give you the best performance from the hydraulic system.

DISCHARGE CHAIN TENSION

Check tension on hand crank swivel discharge chain drive and tighten as necessary. Chain tension is 1/4" (6 mm) per foot (0.3 m) of center distance between sprockets, NOT to exceed a 1/2" (13 mm) of deflection. Do not overtighten.

3 MONTH MAINTENANCE

HYDRAULIC OIL FILTER(S)

Must be replaced after first 10 hours of operation, use a 10 micron filter. After first change replace oil filter every 3 months or 400 hours.

DISCHARGE SWIVEL PLATES

Grease swivel plates for discharge as needed.

YEARLY MAINTENANCE

HYDRAULIC OIL

Change hydraulic oil and flush the hydraulic reservoir tank.

HYDRAULIC SUCTION SCREEN(S)

Change hydraulic suction screen(s) yearly or every 2000 hours.

FUEL TANK

Drain and clean the fuel tank yearly.

TOP 10 CHIPPER MAINTENANCE ITEMS

Maintenance, along with proper operation, is the most important thing you can do to get the optimum production and life out of the chipper. Failure to follow proper maintenance procedures will affect chipper life and void warranty!

SAFETY INSTRUCTIONS

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

MAINTENANCE ITEM	WHAT TO CHECK	RESULTS
Knives & Anvil	Sharp knives - Bandit approved new knives or professionally sharpened	Proper sharpening procedures will pay dividends! Maintaining your chipper knives will reduce fuel consumption and increase the life of your chipper.
	Proper knife width and angle	
	Properly torque the knife mounting hardware.	Operating your chipper with dull knives increases the amount of power required to chip, increases machine vibration and cause feeding problems. The extra vibration will cause cracks to develop throughout the machine and void warranty .
	Bandit approved knife mounting hardware, must be replaced after 4 - 5 knife rotations/changes to ensure safe clamping ability	
	Correct anvil to knife clearance.	
	Anvil's working edge is not rounded off or chipped up.	
Anvil hardware properly torqued.		
Belt Drives	Belts must be tightened several times in the first few days of operation.	Loose and slipping belts will affect the performance of feeding. Burnt, glazed, and broke belts due to improper adjustments will not be covered under warranty .
	Proper belt tension.	
	Proper belt alignment.	
Clutch	Adjust the clutch several times in the break-in period per the manufacturer's manual.	If not adjusted correctly, the clutch will slip under a load causing feeding problems. Burnt and glazed clutches will not be covered under warranty .
	DO NOT engage/disengage the clutch at high rpm.	
	Do Not use the clutch to dislodge a jam.	
Lubrication	All bearings, pivots points, hinges, chains, etc. need to be greased or oiled per the manual.	Improper lubrication will cause failure, premature wear, or binding, which will not be covered under warranty .
	The feed system slide box must be oiled to ensure proper operation, DO NOT grease.	
Engine Maintenance	All filters, radiator screens, radiator, coolant level, water separators, oil, etc. must be checked, serviced, and changed per the engine manufacturer's manual.	Not following these maintenance items will cause overheating, poor performance, and could cause possible engine damage that will not be covered under warranty .
Engine Radiators & Screens	Clean the radiator with compressed air and/or pressurized water (soap may also be needed) to clean the radiator, depending on the level and type of debris. If pressurized water is used, be careful not to turn the debris hard and pack solid between the radiator fins.	Not following these maintenance items will cause overheating, poor performance, and could cause possible engine damage that will not be covered under warranty .

TOP 10 CHIPPER MAINTENANCE ITEMS

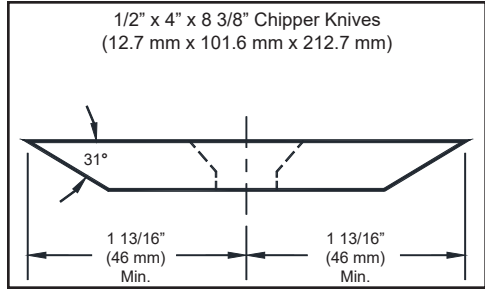
MAINTENANCE ITEM	WHAT TO CHECK	RESULTS
Chipper Hood Engine Disable Plug	If the engine does not start, check that the <u>Engine Disable Plug</u> is installed correctly. The terminals on the Engine Disable Plug socket may need to be spread to get a good connection and/or also check for corrosion on the terminals.	Engine will not start or will not stay running and will have down time for repairs.
Hydraulic System	Maintain the hydraulic tank level at 7/8 full. Change hydraulic filters per owners manual. Check hydraulic function pressures per owners manual. Start with simple checks if the feed system is not working properly. Look at any dump cartridges or solenoids on the hydraulic system, often tapping of the block or removing the cartridge and cleaning it will take care of problems.	Poor performance and will have down time for repairs.
Feed System Slide Box	Open the bottom feedwheel clean-out door and clean any debris to make sure no binding occurs. Adjust the yoke springs to the size of the wood. The feed system slide box must be oiled to ensure proper operation, DO NOT grease.	Bottom feedwheel binding up and possible down time for repairs. Too much pressure from the yoke springs will not allow the wood to feed properly. Too little pressure will allow the feedwheels to spin on the wood. The slide box may bind up causing down time for repairs.
Autofeed	Make sure the engine RPM returns to original RPM, if not the autofeed will not allow the feedwheels to run. Make sure the cartridges and valves in the hydraulic system are functioning properly. See if they are stuck or full of debris Refer to the autofeed manual for troubleshooting and the owners manual for additional troubleshooting and information on settings.	May let the engine stall out when feeding wood, the chipper could plug with wood chips causing down time for unplugging. Belts may slip and glaze over that will not be covered under warranty.

CHIPPER DISC

NOTICE

Knives must be replaced in sets. These sets are determined by the amount of resharpening done to the knives. It must be reinstalled with another knife of comparable usage. It helps to keep the disc balanced, and it helps maintain chip quality.

Never allow these knives to wear or be sharpened beyond absolute specified minimum distance from the center line of bolt.



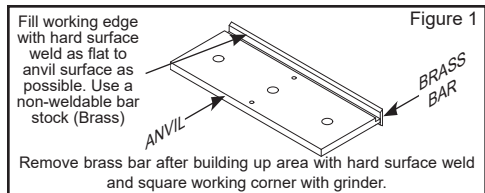
TROUBLE SHOOTING CHIPPER PROBLEMS

PROBLEM	POSSIBLE CAUSE	SOLUTION
Chipper makes poor quality chips or does not feed properly.	Dull knives.	Sharpen or replace knives
	Anvil worn or needs adjustment	Rotate, repair or replace
	Feedwheels not operating correctly	See Hydraulic Troubleshooting
	Throat/base wear	Repair with weld to original integrity.
	Knives sharpened at wrong angle	Must be sharpened to 30° to 31° angle.
	Feedwheel springs too loose	Adjust
	Clutch / belts out of adjustment	Adjust
Chipper knife hits anvil.	Engine not running at full RPMs	Adjust
	Anvil clearance.	Adjust the anvil clearance to approx. 1.1 mm to 1.6 mm (.045" to .065") from the closest knife.
Discharge Plugs or Does Not Throw Chips Properly.	Chipper bearing bolts	Torque according to the torque chart (see page 24)
	Lugging engine on large material	Keep engine RPM up.
	Dull knives or worn to minimum size.	Sharpen or replace.
	Obstruction in discharge chute	Clear the obstruction.
Chipper Bearings Running Too Hot	Chipping rotting material with little substance can plug the discharge chute.	
	Worn fan blades.	Replace
	Improper lubrication	Purge chipper bearings once a day with an EP-2 Type Lithium grease
Chipper Bearings Running Too Hot	Chipper disc operating at too high RPMs	Do not exceed recommended RPMs
	Bearings worn out	Replace.
	Bearing locknut is loose.	Tighten.

KNIFE SAVER KIT

Through various tests, Bandit has found that using the Knife Saver will increase the life span of chipper knives if used during the recommended times. Each knife installed in every new machine at Bandit has the Knife Saver used on it before leaving the factory. The Knife Saver can be purchased from your local Bandit dealer.

- Use the Knife Saver on brand new knives.
- Use the Knife Saver on freshly resharpened knives.
- Use the Knife Saver every day during the Daily Maintenance while the knives are checked.
- Use the Knife Saver when the machine is shut down for a break during the day.



UNDER NO SITUATION IS HEAL OF KNIFE TO BE INSIDE EDGE OF MILLED POCKET!



See page 68 for knife saver part numbers

KNIFE SHARPENING

⚠ DANGER

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

NOTICE

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.

Dull Knives Cause:

- Excessive waste of engine horsepower
- Bad quality chips; chunks, slivers, etc.
- Excessive strain on knives and mounting hardware
- Excessive strain on chipper disc bearings and total machine
- Excessive chipping vibration damaging the machine
- Excessive strain on drives, PTO's, engines, etc.
- Increase the probability of the discharge plugging and decreases the throwing distance
- 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 sharpened 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.

Many times a chipper knife's cutting edge/point can be brought back to a good edge with a #10 Flat Bastard Mill File. This can reduce the amount of resharping.

Typical Knife Sharpening Angles:
"Bolt-In" Knives = 30° to 31° Angle

Knives should be replaced in sets. These sets are determined by the amount of resharping done to the knives (knife width). Resharping 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.

Do not sharpen the knives in a direction which produces a radius, or hollow grind, on the surface of the knife. Strength and life of the cutting edge is reduced.

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.

- For maximum chipper efficiency, the original cutting angle must be maintained when the knives are sharpened. The knives should be machine ground to produce a flat, straight edge.
- Do not sharpen the knives with a hand held power grinder. The knife angle can't be held and heat will distort the metal.
- Sharpening techniques should be the same as those employed for any high carbon steel cutting edge. Use a coolant and exercise care not to draw temper or crack the cutting edges by excessive heating.
- Knives may be sharpened repeatedly as long as their original width is not reduced to less than the specified minimum width. If a knife measures less than the specified minimum width after sharpening, it must be discarded.
- Inspect the knives after sharpening to ensure the knives are free of cracks.
- Maintain spare sharpened knives to avoid downtime for knife sharpening.
- Keep knives sharp.
- Keep knife angle correct when sharpening.
- Do not over sharpen so knife is narrower than allowed width, or you will pack wood and break knives.
- Use correct knife size, knife quality, knife mounting hardware, and torque knife mounting hardware to the specified torque.
- Replace knife mounting hardware after (5) times of tightening.

USE CORRECT KNIFE & HARDWARE

- Do not use a size or style chipper knife, bolt or nut other than factory approved for this chipper.
- Do not over torque or under torque knife bolts and nuts.
- Do not resharpen knife more than minimum width.
- Do not use knife bolt or nut which has been tightened over five (5) times - replace.
- Check the chipper disc daily for secure welds, cracks, excessive wear, torqued bolts, elongated bolt holes and/or good bolt hole threads. If a problem is found contact the chipper manufacturer or authorized dealer.

KNIFE CHANGING PROCEDURE

SAFETY INSTRUCTIONS

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

⚠ DANGER

Chipper knives are sharp and can be dangerous. It is always necessary for your protection to be extra careful and wear proper hand protection when handling knives. Before changing knives make sure all shut down procedures are followed.

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.

1. Disconnect the chipper hood engine disable plug.
2. Remove the padlock from the hood pin.
3. Recess the spring lock for the hood pin and retract the hood pin.
4. Carefully open the hinged part of the chipper hood. Do not slam the chipper hood to the open position. This will cause damage to the hinge. If the hinge becomes damaged by slamming the hood open, replace the hinge immediately. If the hinge has become damaged, it will cause misalignment of the hood, the chipper disc may hit the hood and cause a serious accident.
5. Changing the chipper knives is a two person job. One person, using a wooden block, holds the chipper knife in place while the other person removes the chipper knife hardware. Typically a 5/16" allen wrench and a 7/8" socket are required to change or torque the knife hardware.
6. Once the knives have been removed, inspect the knife pocket. Check for secure welds, excessive wear, impact cracks, and elongated bolt holes. If a problem is found, contact your local dealer or Bandit Industries.
7. Clean out the knife pocket at this time. Remove all debris from the pocket and knife bolt holes.
8. Rotate, or replace the chipper knife. Knives must be professionally sharpened, maintaining angle and dimensional specifications. Knives must be replaced in sets. These sets are determined by the amount of resharpening done to the knives. The knife must be reinstalled with another knife of comparable usage. It helps to keep the disc balanced, and it helps maintain chip quality. Do not allow the knives to wear beyond the absolute minimum specified distance from the center line of the bolt hole. Reinstall the chipper knives. Make sure to properly torque the knife hardware, see page 24. Do not apply anti-seize to the knife bolts. Knife mounting hardware must be replaced after a maximum of 5 knife rotations/changes to ensure safe clamping ability. All knives and knife mounting hardware must be factory approved.
9. Remove the disc lock pin. Very carefully, manually with a pry bar or wood bar, turn the chipper disc to the next knife pocket. Reinstall the disc lock pin.
10. Repeat steps 6 through 9 for each knife pocket.
11. Once the knives have been changed or rotated, check the anvil clearance. Make sure the clearance is maintained to the specified distance from the highest knife. See anvil adjustment on pages 34 - 35. Do not under any circumstance attempt to rotate the chipper disc while someone is inside the infeed hopper. This will cause serious injury.
12. Close the hinged part of the chipper hood and reinstall the hood pin, hood pin padlock, and the chipper hood disable plug.

CHIPPER DISC

NOTICE

Check chipper disc assembly for excessive wear, elongated knife bolt holes, secure welds, and impact cracks. If a problem is found, contact your nearest dealer or Bandit Industries, Inc.

Make sure to check both knife pockets.

⚠ DANGER

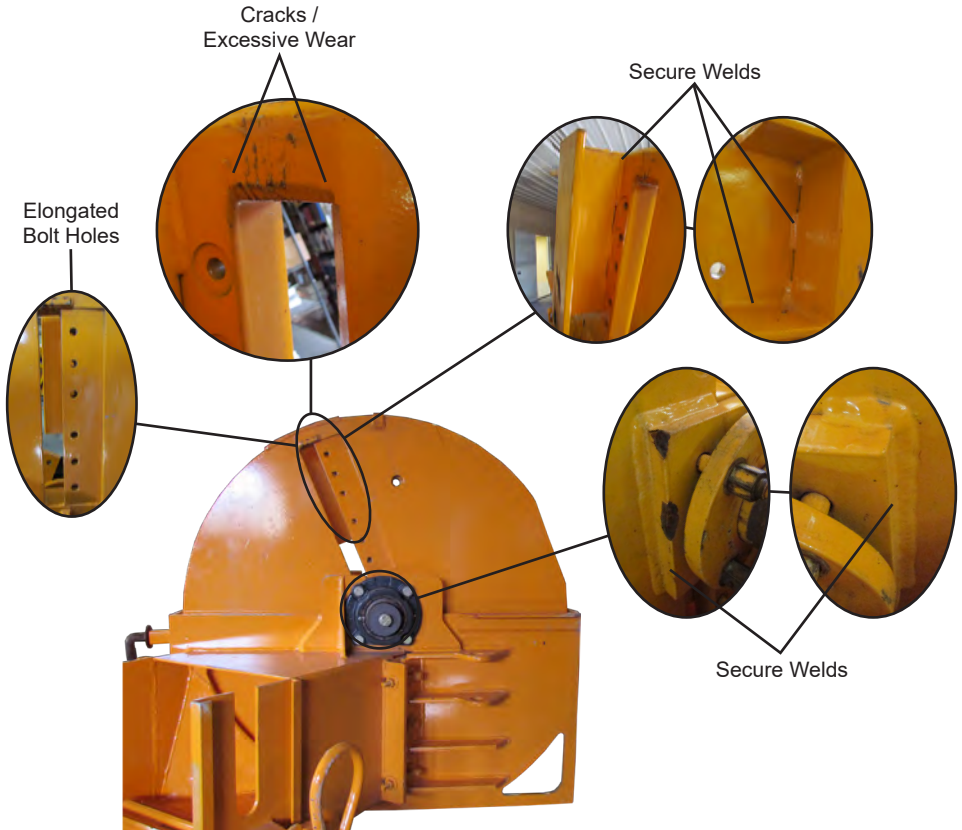
Do not under any circumstance attempt to rotate the chipper disc while someone is inside the infeed hopper. This will cause serious injury.

⚠ DANGER

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

SAFETY INSTRUCTIONS

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



ANVIL ADJUSTMENT

SAFETY INSTRUCTIONS

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

⚠ DANGER

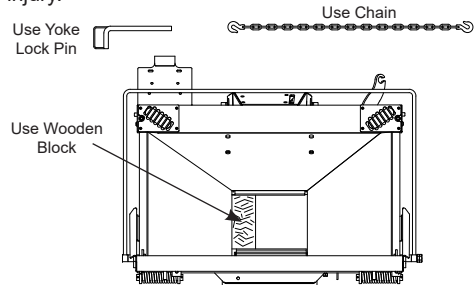
Do not under any circumstance attempt to rotate the chipper disc while someone is inside the infeed hopper. This will cause serious injury.

NOTICE

The anvil hardware must be replaced every time the anvil is replaced to ensure proper clamping ability.

SAFETY INSTRUCTIONS

Before working inside the infeed hopper or under the top feedwheel remove the yoke 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. Failure to this will cause serious injury.



CHECK THE ANVIL TO KNIFE CLEARANCE

1. This clearance should be checked on a weekly basis or as knives are changed. To check the anvil clearance, follow all pre-maintenance shut down procedures. Once all safety procedures are completed the anvil to knife clearance can be checked.
2. In order to check the clearance one person will need to climb into the infeed hopper. Use a feeler gauge or the anvil to knife gauge supplied by Bandit to check the clearance of the first knife to the anvil. Check the clearance at the left and right sides of the knife.

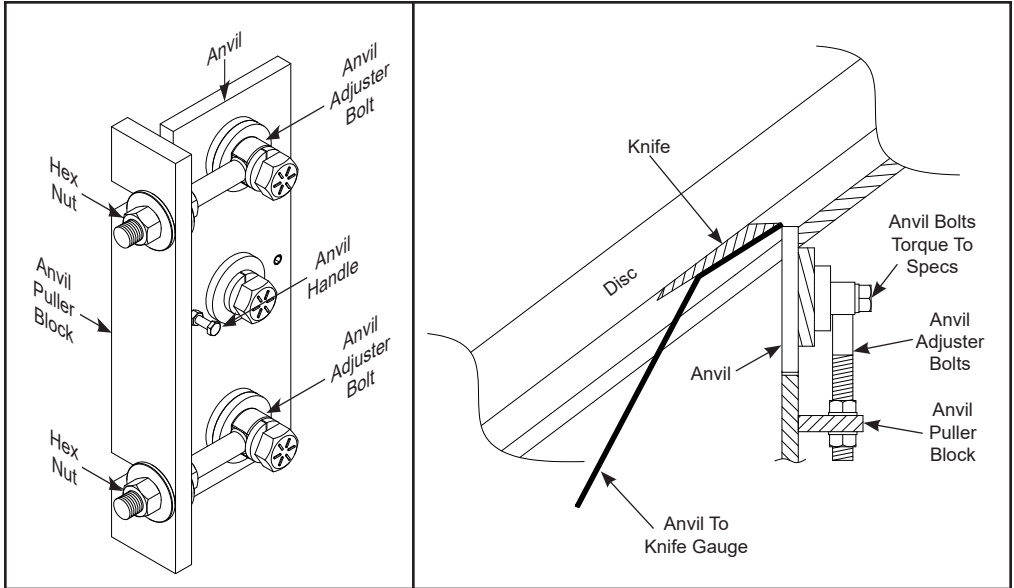
3. Once that knife has been checked climb back out of the infeed hopper, remove the disc lock pin, and very carefully rotate the chipper disc so the other knives can be checked.
4. Once all knives have been checked adjust the anvil according to the closest knife. The anvil to knife clearance should be .110" to .120" (2.8 mm to 3.0 mm).
5. Set the closest knife to this distance.

ANVIL ADJUSTMENT PROCEDURE

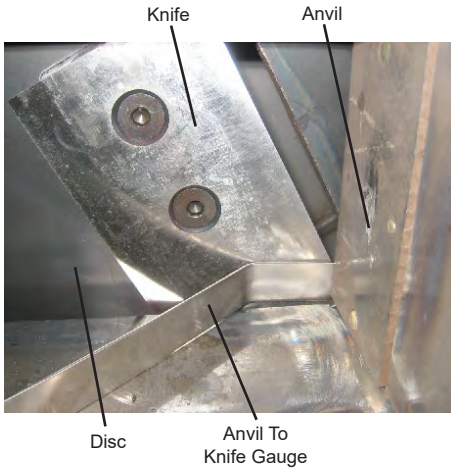
1. To adjust the anvil first loosen two of the hex nuts on either the inside or outside of the anvil puller block. If the anvil needs to be adjusted closer to the disc, loosen the outside anvil adjuster hex nuts. If the anvil needs to be adjusted away from the disc, loosen the inside anvil adjuster hex nuts.
2. Loosen the anvil bolts from underneath the machine.

3. Once the components have been loosened, move the anvil to the correct clearance using the anvil adjuster bolts and hex nuts.
4. Once the knife is set to the correct clearance, .110" to .120" (2.8 mm to 3.0 mm), retighten all components.
5. Make sure bolts are torqued to their specific bolt torques refer to bolt torques on page 24.
6. Carefully rotate the chipper disc to make sure all the knives clear the anvil.

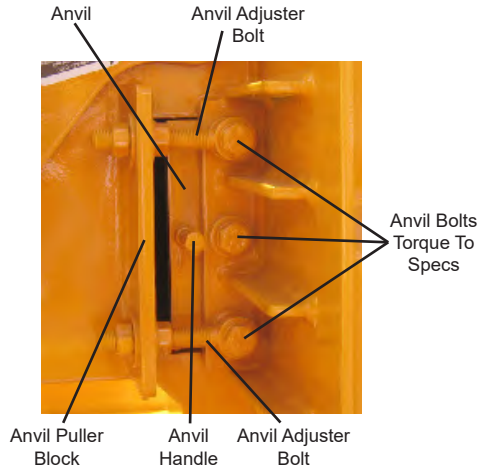
ANVIL ADJUSTMENT



View looking through the feedwheels at the throat area



View looking from the curb side of the machine at the anvil area



UNPLUGGING THE CHIPPER

DANGER

If the chipper is properly maintained and operated correctly, the chipper should not plug. In the unlikely event that the chipper becomes plugged, do not attempt to clean out the discharge or chipper housing in the field. Take the machine to a local dealer or professional shop. If the machine is a rental, take it back to the rental company.

The knives are very sharp and can cause injury if you come in contact with the knives during the unplugging process.

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

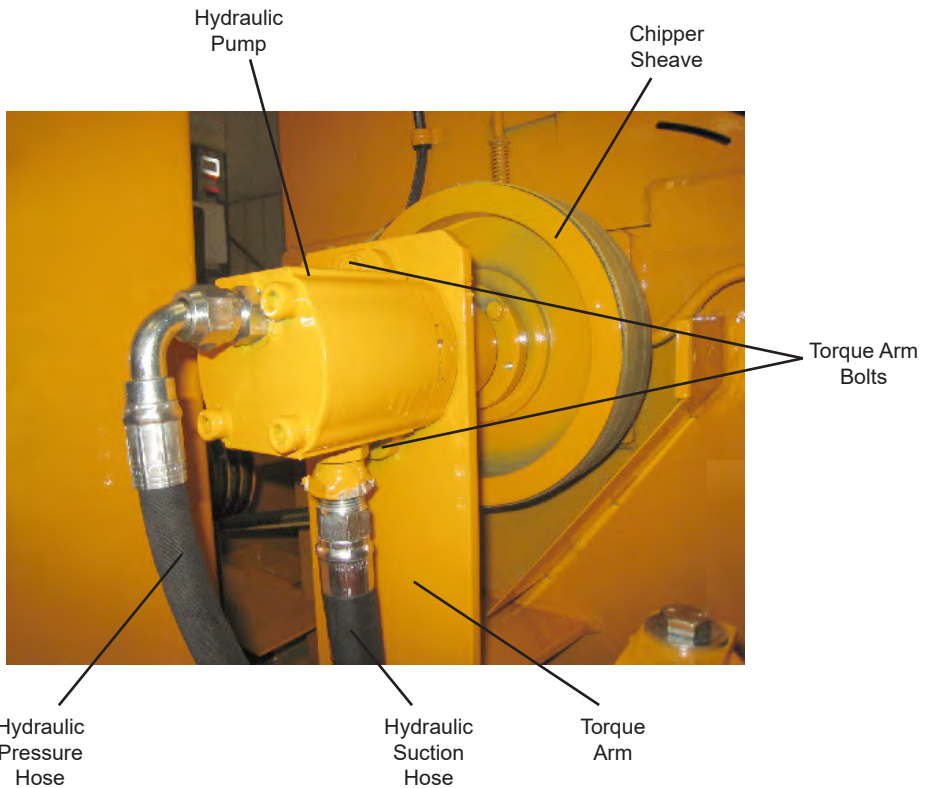
1. Before attempting any type of maintenance disengage clutch, turn off engine, wait for the disc to come to a complete stop, install the disc lock pin, disconnect battery, and make sure the ignition key is in your possession.
2. There should, also, be at least two people on site during maintenance and service procedures in case an accident should occur.
3. Make sure the chipper disc is **NOT** turning and then open the hinged portion of the chipper hood.
4. Using gloved hands and some type of raking tool, dig the chips out of the chipper housing.
5. 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. If the discharge chute needs to be removed, use some sort of mechanical device like an overhead hoist, loader, lift truck, etc. that is rated to lift the discharge. Follow all OSHA instructions for lifting.
6. Never allow a person to turn the chipper disc when someone else is working inside the chipper housing. More than likely, the chipper disc will turn hard then loosen causing it to turn faster. If another person is anywhere near the chipper disc, they may be injured.
7. Never turn the chipper disc by hand. Always use a pry bar or wood bar. This will prevent the person turning the disc from being injured should the disc break loose.
8. Reinstall the discharge chute, mount securely and point it in a safe direction away from anything.
9. Never leave the chipper hood open and try to start the engine in order to engage the chipper disc to blow chips out of the housing, this is very hard on the PTO of the chipper and may burn clutch plates. The flying debris is very dangerous. An exposed chipper disc turning very fast creates an unsafe condition. Do not start the chipper with the hood open because it is very dangerous.
10. Once the disc turns freely, close the chipper hood, insert the hood pin, install the padlock in the hood pin, reinstall the chipper hood engine disable plug, pick up all tools, make sure the chipper is free of all debris, 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.

If the discharge or hood need to be removed, always use some sort of mechanical device like an overhead hoist, loader, lift truck, etc. that is rated for lifting that component. Follow all OSHA instructions for lifting.

Pinch points are created between the disc and the housing for the disc. Use a pry bar or wood bar to turn the disc during the unplugging process. Do not use your hands to try to break free and turn a jammed disc. The disc could break free suddenly and your hand could become injured in the pinch point.

DRIVE BELT REPLACEMENT

1. Before attempting any type of maintenance, disengage clutch, wait for the disc/drum to come to a complete stop, turn off engine, remove the ignition key, make sure the ignition key is in your possession, install the disc/drum lock pin, and disconnect the battery.
2. If machine has been running, allow time for the hydraulic oil to cool down before continuing.
3. Remove beltshield.
4. Remove the hydraulic suction hose from the hydraulic pump, the hose can be capped with a 3/4" NPT pipe cap. If the hose is not capped, keep the end of the hose higher than the hydraulic tank.
5. Remove the hydraulic pressure hose from the hydraulic pump, the hose can be capped with a #10 male JIC cap.
6. Remove the bolts that hold the torque arm to the hydraulic pump.
7. Remove the old drive belts and place the new drive belts on. The engine may have to be adjusted in order to do this.
8. Adjust the belts to the correct tension, see pages 38 - 39.
9. Bolt the torque arm to the hydraulic pump.
10. Reassemble both hydraulic hoses to the hydraulic pump.
11. Reinstall beltshield.
12. Check the hydraulic fluid level and fill to 7/8 full, if needed.
13. After running the machine for a few minutes, the hydraulic oil level will need to be checked again and filled to 7/8 full, if needed.
14. Check the hydraulic hoses to make sure they are tight and not leaking.
15. Remember new belts stretch and will need to be checked often, tighten if needed, see pages 38 - 39.
16. Resume normal operation.



BELT TENSION

SAFETY INSTRUCTIONS

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

DANGER

Keep hands clear of all pinch points.

GENERAL RULES FOR TENSIONING

1. Check tensioning during the first 2 through 48 hours of run-in operation especially.
2. Over tensioning or under 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.

MAIN DRIVE BELTS

1. Follow all pre-maintenance shut down procedures.
2. Locate the center of the belt span between the sheaves.
3. Push or pull down on the belt until the belt has deflected according to the Belt Tension Table.
4. Record the push or pull down force. The force should be set according to the Belt Tension Table.
5. Adjust the belt tension if the force fall outside of this range.

Belt Tension Table	
Deflection	3/8" (9.5 mm)
Single Belt	12 - 13 lbs (5.4 to 5.9)
2 Groove Banded Belt	24 - 26 lbs. (10.9 - 11.8 kg)
3 Groove Banded Belt	36 - 39 lbs. (16.3 - 17.7 kg)

PUMP DRIVE BELTS (IF EQUIPPED)

1. Follow all pre-maintenance shut down procedures.
2. Locate the center of the span between sheaves.
3. Push or pull down on the belt until the belt has deflected 1/4" (6.4 mm).
4. Record push or pull down force. The force should be 9 lbs (4.1 kg).
5. Adjust the belt tension if the force falls outside of this range.

NOTICE

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.

Every month, the beltshield needs to be removed and the belts need to be checked and adjusted. For best results use a good belt tension tester. The slot in the beltshield is for a quick daily check of the belt tension.

Do not over tighten the hydraulic pump belt. 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.

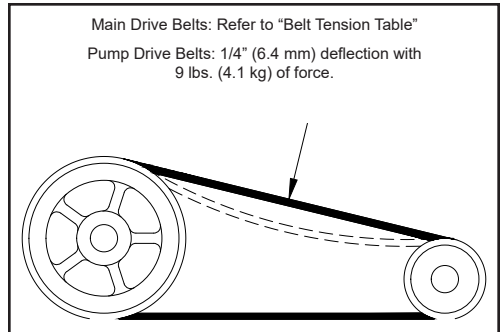
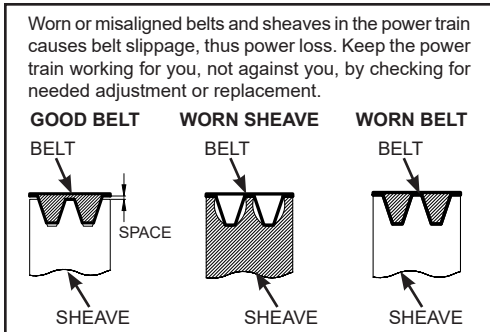
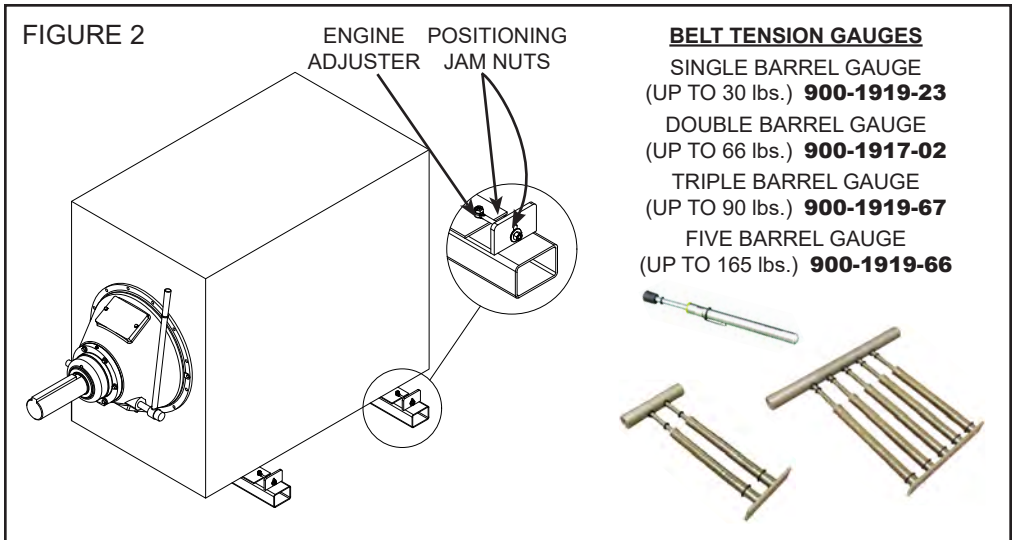
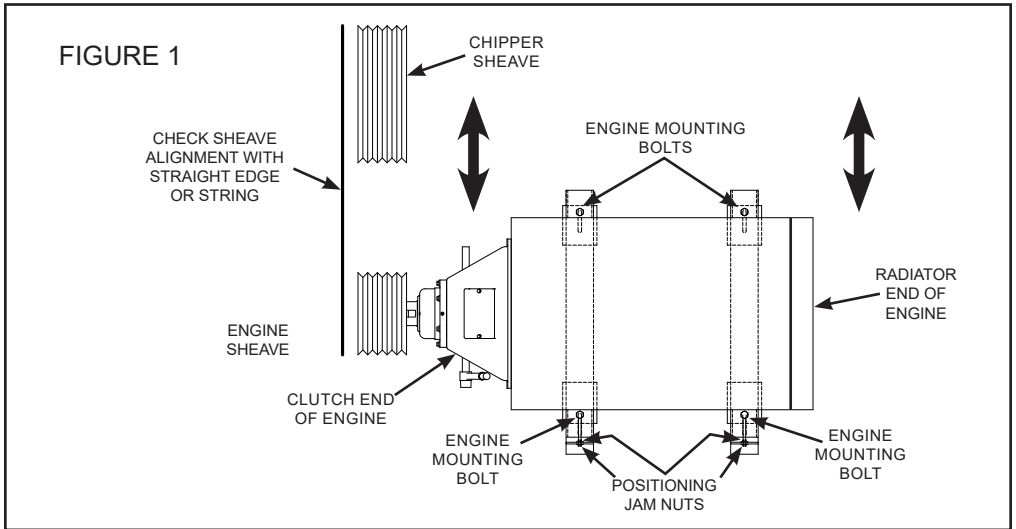
It is a good practice to rotate the sheaves during tensioning. Then recheck deflections. The belts may need to be tightened again.

If belts are not properly adjusted belts will slip, glaze over, and be ruined. This failure is not covered by warranty.

ADJUSTMENT PROCEDURE

1. Remove beltshield.
2. To adjust the belt tension, loosen the four engine mounting bolts and the jam nuts on the engine adjuster on the radiator end of the engine.
3. Adjust the belt tension with the engine adjuster on the clutch end of the engine. If you have to push the engine with the adjuster, the belts will tighten slightly after the engine is realigned.
4. Use the engine adjuster on the radiator end of the engine to realign the engine, so the engine sheave and chipper sheave are aligned. The sheaves can be checked with a string or straight edge.
5. Torque the two engine mounting bolts (see Torque Chart for the correct torque) on the opposite side of the engine from the engine adjusters.
6. Loosen the jam nuts on the engine adjuster on the radiator end of the engine.
7. Torque the engine mount bolt and then tighten the engine adjuster jam nuts on the radiator end.
8. Hand tighten the remaining engine mount bolt. Loosen the engine adjuster jam nuts all the way and torque the engine mount bolt.
9. Tighten the engine adjuster jam nuts on the clutch end.
10. Recheck the belt tension and alignment, if readjustment is needed go back to step 2.
11. Reinstall beltshield.

BELT TENSION

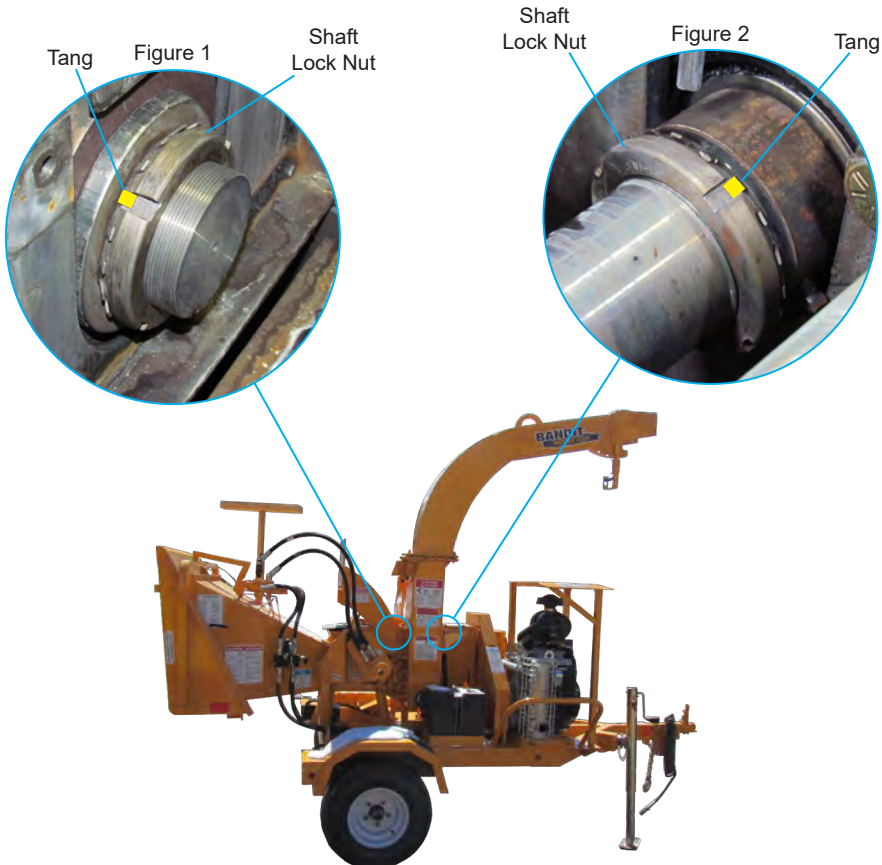


CHECKING CHIPPER DISC SHAFT LOCK NUTS

SAFETY INSTRUCTIONS

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

1. The shaft lock nuts should be visually inspected every month.
2. Remove the Top Feedwheel Cover to check the front shaft lock nut, see Figure 1. This shaft lock nut secures the disc shaft to the chipper disc.
3. Remove the Cover Plate over the chipper shaft to check the rear shaft lock nut, see Figure 2. This shaft lock nut secures the chipper disc and disc shaft assembly against the front chipper bearing.
4. Check the shaft lock nuts to make sure one of the tangs of the tang washer is still there and bent over into one of the slots on the shaft lock nut.
5. Check to make sure the shaft lock nuts are not loose.
6. Check to make sure there is no slop or space between the shaft lock nut, the tang washer, and the spacer ring.
7. If a problem is found contact the nearest, authorized Bandit dealer or Bandit Industries.



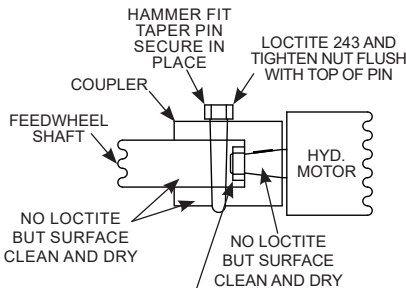
PROCEDURE FOR INSTALLATION AND REMOVAL OF J.B. COUPLERS AND TAPERED FEEDWHEEL MOTORS

EQUIPMENT NEEDED

1. Feedwheel motor with tapered shaft.
2. 5/16" x 9/32" x 1 1/4" long key (900-3937-23) for "DT" motor.
5/16" x 9/32" x 15/16" long key (900-3934-06) for "RE/TG" motor.
3/16" x 3/16" x 3/4" long key (900-3937-03) for "RS/TE" motor.
3. Correct feedwheel shaft, coupler and taper ass'y
4. Loctite 263 (red).
5. Loctite 243 (blue).
6. Emery cloth and/or a file.
7. A degreaser agent.
8. Self locking nut.
9. Hammer.
10. Torque wrench and 1 5/8" socket for "DT" motor.
1 3/8" socket for "RE/TG" motor.
1 3/16" socket for "RS/TE" motor.
11. 1 1/16" hand wrench for "RE/TG" motor
7/8" hand wrench for "RS/TE" motor

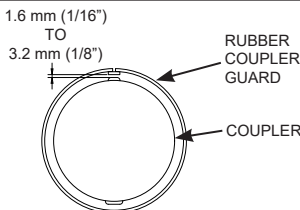
INSTALLATION PROCEDURE

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 263 on the threads.
6. Tighten to the correct torque, 461 Nm (340 ft.-lbs.) for "DT" motor, 339-407 Nm (250-300 ft.-lbs.) for "RE/TG" motor, & 203-230 Nm (150-170 ft.-lbs.) for "RS/TE" motor.
7. Slightly tap with a hammer on the coupler face to ensure 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 shaft.
12. If coupler pin is threaded and is equipped with a nut, make sure the nut is flush with top of pin.
13. Hammer the pin into the coupler to secure the coupler and feedwheel shaft. If the pin is threaded and has a nut do not hammer the pin directly, use a piece of wood as a buffer.
14. If the tapered pin is equipped with a nut, put Loctite 243 on the threads and then tighten nut flush with top of pin.

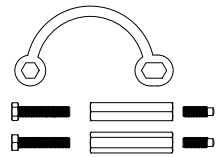


TORQUE AND THREAD SELF LOCKING NUT WITH LOCTITE 263
 "DT" MOTOR = 461 Nm (340 FT-LBS) TORQUE
 "RE/TG" MOTOR = 339 - 407 Nm (250 - 300 FT-LBS) TORQUE
 "RS/TE" MOTOR = 203 - 230 NM (150 - 170 FT-LBS) TORQUE

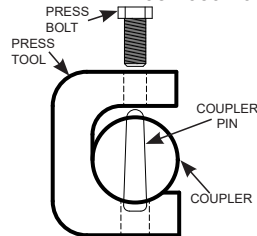
Removal if tapered pin is equipped with a nut to assist in pin removal: Use a hand wrench and turn the tapered pin nut clockwise, half a turn and then hit the small end of the tapered pin with a hammer and punch. Repeat this process until pin is removed.



Coupler Removal Tool Kit
 Part Number: 980-2003-59



Press Tool for Coupler Pin Removal
 Part Number: 981-0501-61



CAUTION

Always wear proper safety equipment and take caution with 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. Do not spend excessive time trying to remove the pin and coupler. If problems occur during pin and coupler removal, contact your nearest dealer or Bandit Industries.

SERVICING / CHANGING FEEDWHEEL BEARING

WITH THE GRIP TIGHT BEARING BEHIND FEEDWHEEL MOTOR

Your Bandit Chipper may be equipped with a tapered lock style (Grip Tight) feedwheel bearing on the hydraulic motor side of the feedwheel and a conventional (set screw) style on the opposite side. With the Grip Tight bearing this gives a very positive locking system to the feedwheel shaft. The set screws on both bearings should still be checked as part of normal maintenance.

A few simple rules and installation instructions must be followed if the bearings ever need to be replaced or removed during service.

The machine is set up with one set screw bearing and one Grip Tight bearing because the one Grip Tight bearing is all that is needed to securely hold the feedwheel shaft (along with the set screws on the opposite bearing). This also makes for very easy assembly. **When installing the bearing it is very important to install and lock the Grip Tight bearing first with the set screw bearing done after.** This is to keep the bearings from being put into a side load which will lead to premature failure.

INSTALLATION PROCEDURE

1. Clean the feedwheel shaft of all debris, use a degreaser.
2. Install both feedwheel bearings on the feedwheel shaft with the Grip Tight bearing on the hydraulic motor side and the set screw bearing on the opposite side. Do not lock the bearing on the shaft at this time, allow the feedwheel to shift freely for installation.
3. Position the feedwheel in the yoke mount and install all (8) feedwheel bearing bolts with Loctite 263 (red) applied. These are completely tightened and torqued at this time (refer to bolt torque chart).
4. The feedwheel then needs to be centered in the yoke and then it must be offset 4.8 mm (3/16") towards the set screw bearing side (away from the hydraulic motor). The weight of the feedwheel needs to be taken off the bearing also.
5. First the Grip Tight bearing lock must be tightened by hand as tight as possible (in a clock wise direction). This is the zero reference point. Scribe a line on the lock nut above the adapter slot.
6. Using a spanner wrench or drift pin and hammer, lock the bearing to the shaft by tightening the lock nut in a clock wise direction. Tighten 3/4 to 1 full turn (you may need to block the feedwheel from turning at this time). Now you can tighten the set screws on the Grip Tight bearing. Note: the set screw is only to be tightened to 2.7 Nm (2 ft.-lbs.).
7. Apply Loctite 263 (red) on the set screws of the set screw bearing and torque to 27 Nm (20 ft.-lbs.).

GRIP TIGHT BEARING



SET SCREW BEARING



HYDRAULIC BUMP BAR

BUMP BAR TRIP FORCE

1. To check the bump bar trip force, a tension gauge or similar tool must be used.
2. Make sure the engine is at full RPM and the machine has been pre-run to warm up the hydraulic oil.
3. With a tension gauge or similar tool trip the bump bar at five separate spots as shown in Figure 1. Testing of the trip force needs to be done in a swift, continuous motion straight into the bump bar.
4. Record the trip force at each individual spot and calculate the average.
5. The bump bar trip force from the factory is approximately 30 lbs. (13.6 kg). This can vary depending on items such as the width of the infeed tray, hydraulic oil flow, if the parts are worn, if the pivot points need lubrication, etc. The trip force of the bump bar should not exceed 50 lbs. (22.7 kg). If the trip force does exceed 50 lbs. (22.7 kg) check for binding of any parts, worn hydraulic valve, or any obstructions. If the required force can not be obtained contact your local dealer or Bandit Industries Inc.

BUMP BAR REVEAL DISTANCE

1. The reveal distance is the distance that the bump bar protrudes from the infeed tray while in the feed position.
2. Check the reveal distance on each end of the bump bar. Measure and make sure it protrudes approximately 1 1/4" (31.8 mm) from the infeed tray (see Figure 2).

NOTICE

The hydraulic bump bar valve may trip at different forces, depending on the temperature of the hydraulic fluid.

Figure 1

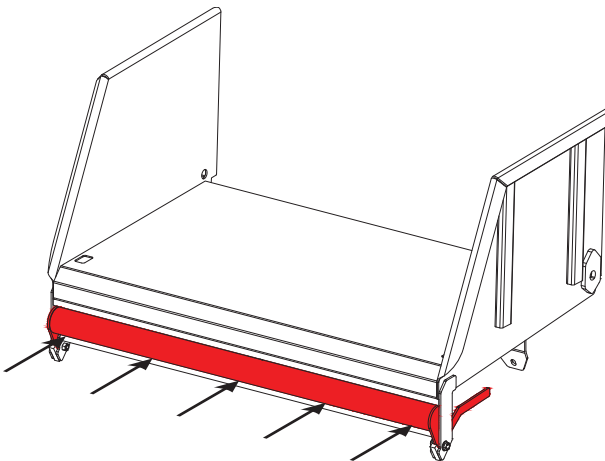
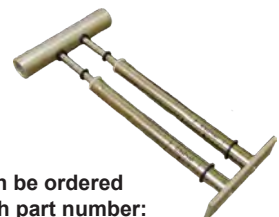


Figure 2



Tension Gauge Example



Can be ordered
with part number:
900-1917-02

PAINT & DECAL CARE

PAINT CARE

To help keep up the appearance of your Bandit equipment and reduce the possibility of surface rust follow these steps:

1. The machine should be washed by hand with water for the first 30 days when the paint is fresh. Afterwards, the **machine should be washed on a regular basis** with an automotive wash soap (not degreaser) and then rinsed thoroughly.
2. **Do not pressure wash sensitive areas** like: decals, gauges, electronic devices, near chips in the paint, etc. If a pressure washer is used after the first 3 months after painting, be aware they are capable of extreme pressures and can damage paint finishes. Also, only use 1500 to 2000 psi with a round pattern nozzle (not a pin point or knife style nozzle) and hold the gun/wand a minimum of 24" (0.6 m) away from the machine.
3. **Always wash the machine immediately upon delivery**, when the machine is new.
4. If shipping or towing the machine in conditions that include road salt/brine, any other ice melt or dust control products, **always wash the machine immediately upon arrival or at the end of the work day.**
5. Park the machine inside or under a roof when not in use.
6. Do not allow fuel, antifreeze, DEF fluid, or any other motor fluid to set on the machine. Remove immediately.
7. If a stone chip, paint scratch, or paint crack occurs - it should be repaired immediately. Simply sand the edges of the damaged paint area, mask off the surrounding area, and apply primer and paint to the dry, clean, and warm area. This will keep the damaged area from spreading or getting worse.
8. If you are unable to sand and mask the area, there are containers of primer and paint available. A small brush can be used to touch up the area after it is cleaned, dry, and warmed. Also, primer and most colors of paint are available in aerosol spray cans.
9. Keep good mud flaps on towing trucks to reduce stone chips.
10. Use an automotive wax on a regular basis after the first 3 months after painting.

DECAL CARE

Decals located on your Bandit equipment contain useful information to assist you in operating your equipment safely. The safety decals are shown and explained in this section along with decal locations.

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. Immediately replace 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. Peel back about half of the backer paper on the decal. Position it on the flat, dry, clean surface so it is smooth and secure. Peel off the remainder of the backer paper as you continue to stick the decal on the surface.
6. Rub decal from the center outward to remove air bubbles and to secure contact.
7. English/Spanish decals are typically standard. Other foreign language decals are available and may be purchased. Mail translated decals required to Bandit Industries, Inc.

TIRE MAINTENANCE

BASIC WHEEL TORQUE REQUIREMENTS (per mfg.)

Keep lug nuts properly tightened, check new unit before operation, after the first 10, 25, and again at 50 miles. Check the torque weekly.

DESCRIPTION	BOLT SIZE	TORQUE (FT.-LBS.)	TORQUE (Nm)
5 & 6 Lug Hubs	1/2" - 20 Studs	90 - 120	122 - 163
8 Lug Hubs	1/2" - 20 Studs	90 - 120	122 - 163
8 Lug Hubs	9/16" - 18 Studs	140 - 170	149 - 163
8 Lug Hubs (Cone Nut)	5/8" - 18 Studs	190 - 210	258 - 285
8 Lug Hubs (Flange Nut)	5/8" - 18 Studs	275 - 325	373 - 441
8 Lug Hubs (Flange Nut)	22 mm x 1.5 Studs	450 - 500	610 - 678
10 Lug Hubs	22 mm x 1.5 Studs	450 - 500	610 - 678
10 Lug Hubs	3/4" - 16 Studs	450 - 500	610 - 678
10 Lug Hubs	1 1/8" - 16 Studs	450 - 500	610 - 678

(Consult axle manufacturers manual shipped with each machine for specific axle-stud-wheel combination lug nut torques.)

Tighten the 5, 6, 8, and 10 lug hubs in sequence according to the following diagrams.

AXLE SIZE	SIZE	TYPE	DIAMETRAL CLEARANCE	CLICKS TO BACK OFF
6,000 LBS.	12 1/2" x 2"	Elec. or Hyd.	.040" (1 mm)	14 to 24
7,000 LBS.	12 1/2" x 2.5"	Elec. or Hyd.	.040" (1 mm)	7 to 13

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

TIRE WEAR DIAGNOSTIC CHART

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 - too 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 manufacturer's instructions.
- Brakes - uneven or misadjusted brakes cause irregular brake activation.

Wear Pattern	Edge Wear		Side Wear			Cup Wear	Center Wear	Flat Spots
Cause	Under Inflation	Not hauling trailer level	Bent axles	Wide tires	Wheel bearings	Out of balance wheel bearings	Over inflation	Wheel lockup and tire lock up
Action	Adjust pressure to particular load per tire catalog	Must be hauled parallel to the ground	Replace as needed	Replace as needed. Characteristic of wide flotation tires	Adjust or replace	Check bearing adjustment and balance tires. Adjust or replace.	Adjust pressure to particular load per tire catalog	Avoid sudden stops and adjust brakes

HYDRAULICS

SAFETY INSTRUCTIONS

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

⚠ WARNING

Do not go near hydraulic leaks. High pressure oil easily punctures skin causing serious injury, gangrene, or death. Avoid burns from fluid. Hot fluid under pressure can cause severe burns. Do not use fingers or skin to check for leaks. Lower load or relieve hydraulic pressure before loosening fittings. Relieve all pressure in the system before disconnecting the lines, hoses, or performing other work. Use a piece of cardboard to find leaks. Never use your bare hands. Allow system to cool down to ambient temperature before opening any coolant or hydraulic oil system.

It is very important after you have operated a new machine for approximately an hour to shut down the machine and recheck all hydraulic fittings. Relieve all pressure and retighten as needed.

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

This machine is equipped with a very efficient, simple hydraulic system. Each component is capable of withstanding a specified pressure 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.
- Keep hydraulic oil clean. Dirty oil will cause excessive wear and loss of hydraulic power.
- Replace the hydraulic oil filter(s) after first 10 hours and with each 400 hours of operation or 3 months.
- Replace hydraulic oil & suction screen(s) at least 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". See "Hydraulic Fluid Requirements"
- If the machine's hydraulic system is kept clean and the hydraulic pressures are not increased beyond the specified pressure, the maximum use and life should be received from the hydraulic system.

⚠ WARNING

Do not operate this machine unless all hydraulic control devices operate properly. They must function, shift and position smoothly and accurately at all times. Faulty controls can cause personal injury.

NOTICE

Some equipment and components including fluid engagement clutches (PTO's) have their own lubrication requirements. Consult their manufacturer's manual for that information.

After the initial start-up of the machine and after any replacement of hydraulic components, fittings and hoses must be re-checked for leaks and clearances.

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 warrantied. Anything which has been disassembled or tampered with will not be warrantied. Items being returned must be clean. All hydraulic components must have all hosing ports plugged. Failure to plug ports will allow debris to enter components which will void warranty.

- If a problem is encountered, it will more than likely be located in the relief valve or something as simple as belts or clutch slipping, check these first.
- Only use the optional adjustable flow 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 oil flow 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.
- Never close the ball valves on the hydraulic tank suction ports (if equipped) while the machine is running, this will ruin the hydraulic pump and components.

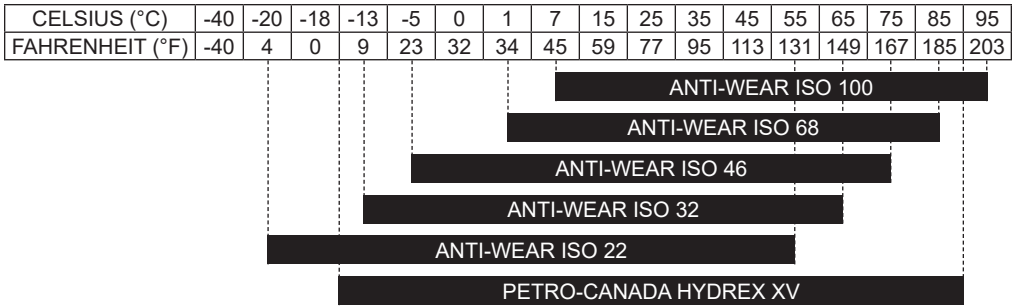
HYDRAULIC FLUID REQUIREMENTS

This machine is equipped with “Petro-Canada Hydrex XV” hydraulic fluid and it is recommended to be replaced with the same. “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.

Multi Viscosity motor oils are not recommended to mix with “Petro-Canada Hydrex XV” hydraulic oil. AW oils may mix with “Petro-Canada Hydrex XV” hydraulic oil. The following are specifications and authorizations of compatible oils. Only a high quality anti-wear (AW) hydraulic oil containing foam, corrosion, rust and oxidation inhibitors should be used. This viscosity grade depends on the oil temperature in service, based on the climate and operating conditions.

Alternative hydraulic oils are available, but they do not equal the performance or longevity of the “Hydrex XV” oil. Consult the following information supplied by the oil distributor.

	Hydrex XV	ISO 22, AW	ISO 32, AW	ISO 46, AW	ISO 68, AW	ISO 100, AW
Viscosity Index	245	110	110	104	106	102
Cold Start-up °C (°F)	-40 (-40)	-37 (-29)	-31 (-14)	-26 (-3)	-22 (16)	-16 (24)



NOTICE

The above chart is a suggested guide for viscosity of hydraulic fluids at start up ambient temperature. The load, demand, and cleanliness of the equipment will affect actual oil temperatures which can increase dramatically above ambient air temperatures during operation. The actual viscosity needed is based on oil temperature during operation and not air temperature. Compare your fluid specifications with the specifications below to verify compliance.

Based on the varying temperatures of the area where Bandit equipment is used, and the high demand and loads placed on this equipment, Bandit has filled each hydraulic system with Petro-Canada’s Hydrex XV All Season Hydraulic Fluid for maximum protection and performance.

Hydraulic fluids vary in their resistance to oxidation at elevated temperatures, their ability to protect against metal-to-metal contact under increasing temperature, and their ability to separate water from the fluid. Viscosity is temperature dependent. Fluids with high viscosity-index (VI) will thin out slower at higher temperature and thicken slower at colder temperatures allowing a wider operating range. Choose a fluid that has test results in these areas for best results.

When choosing a hydraulic fluid - these maximum and minimum specifications must be met:

- Minimum Viscosity during operation = 12 cSt
- Maximum No-Load Viscosity at start-up = 2000 cSt

Go to: lubricants.petro-canada.com and click on “Contact Us” then click “Request A Quote” to find your nearest Petro-Canada dealer.

HYDRAULICS

TYPICAL HYDRAULIC RELIEF PRESSURE SETTINGS TYPICAL HYDRAULIC FLOWS AND RPM SETTINGS (Approximate, For Reference Only, Engine At Full RPM)

NOTICE

Do not under any circumstances over-set these relief pressures, it will cause damage to component parts and hydraulic parts.

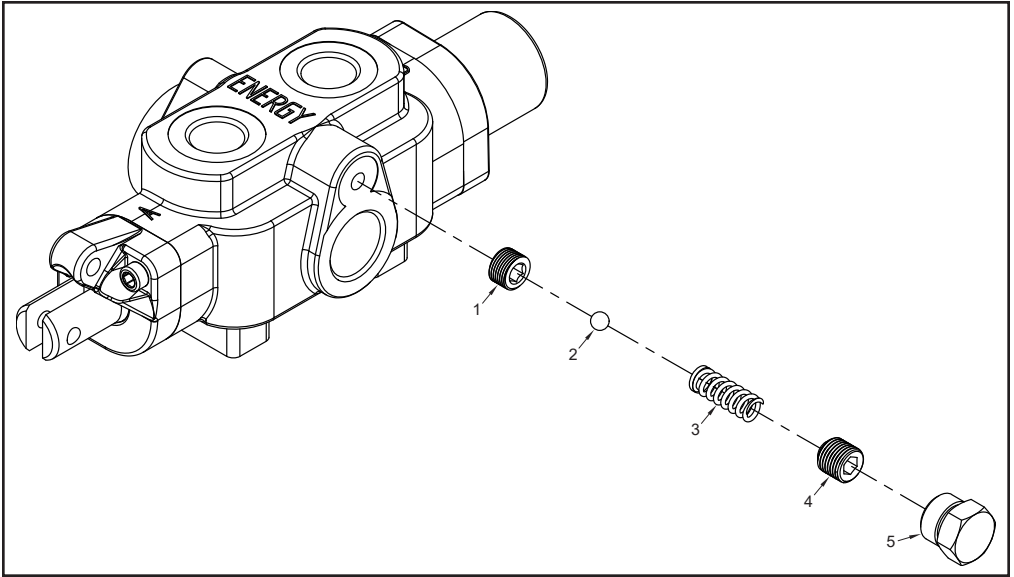
These typical hydraulic flows and relief pressure settings are with the engine at full RPM. All settings are subject to change.

After the initial start-up of the machine and after any replacement of hydraulic components, fittings and hoses must be re-checked for leaks and clearances.

Equipment Model	Standard 75	75 Dual Feedwheel
Pump GPM (LPM)	2.9 (11.0)	5.9 (22.3)
Top Feedwheel GPM (LPM)	2.9 (11.0)	2.8 (10.6)
Bottom Feedwheel GPM (LPM)	N/A	2.8 (10.6)
Top Feedwheel RPM	31 - 32	26 - 28
Bottom Feedwheel RPM	N/A	40 - 42
Feed Relief PSI (bar)	2000 (138)	2000 (138)

CONTROL VALVE RELIEF

The relief valve is typically located internally in the control valve. Do not adjust this relief valve above 2500 PSI (172 bar). The relief valve system is a simple spring tension design but small pieces of debris can stick the valve partially open which weakens the feedwheel power. The relief, hydraulic oil, and screen must be kept clean.



1. **VALVE SEAT:** The springs pushes the relief valve ball against it, until pressure builds. Make sure there is no cracking or distortion to the valve seat. Replace if damage occurs. Use a 7/32" allen wrench to remove the valve seat.
2. **POPPIT VALVE:** This ball opens and closes to relieve excess pressure on hydraulic system.
3. **RELIEF SPRING:** This spring tensions the amount of pressure required to open the relief valve ball. This spring weakens and must be checked and/or readjusted every month for best performance.
4. **ALLEN SET SCREW:** Turn clockwise using a 1/4" allen wrench to increase pressure, but do not surpass maximum of the specified PSI (bar). Previous valves require 7/32" allen wrench or a flat head screw driver.
5. **HEX HEAD PLUG:** Remove to access the relief valve with a 5/8" wrench.

MAINTAIN FEEDWHEEL HYDRAULIC PRESSURE AT SPECIFIED PSI (bar)

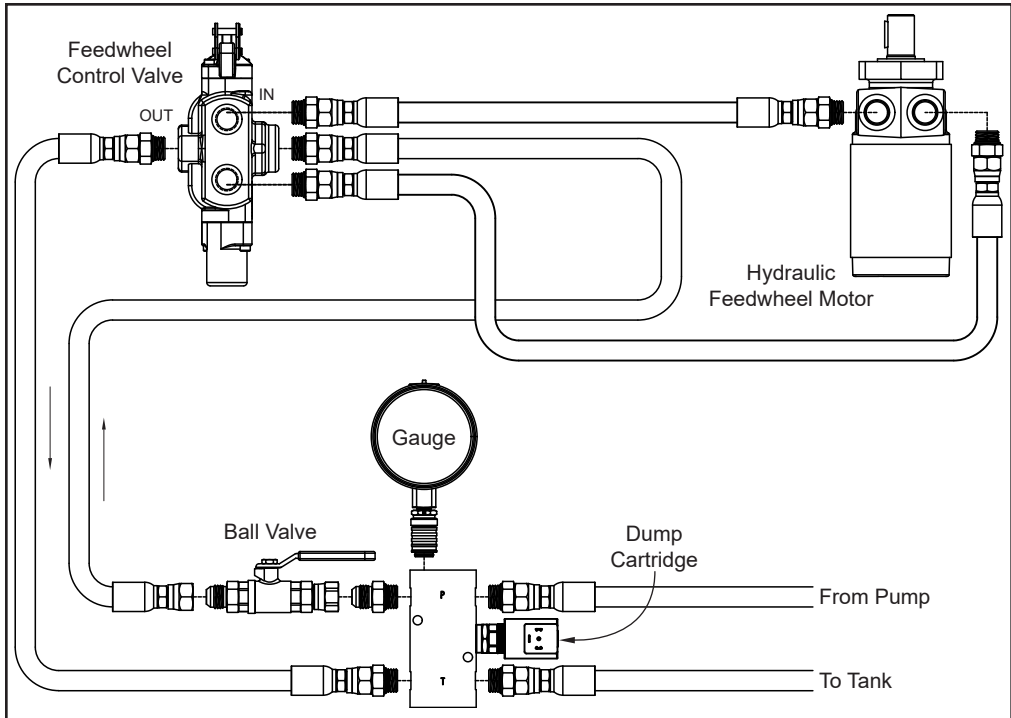
Follow typical hydraulic flow and relief settings on page 48

Follow proper hydraulic oil requirements on page 47

HYDRAULIC PRESSURE ADJUSTMENT PRESSURE CHECK KIT

SAFETY INSTRUCTIONS

With the engine shut down, make sure the hydraulic oil is clean and the tank is 7/8 full. Start the engine to allow the hydraulic oil to warm up. Before checking or adjusting the hydraulic pressure settings, make sure the engine is shut off and the ignition key is in your possession. Ensure the pressure gauge is installed correctly to check the relief valve pressure.



1. Put the control bar in the off position.
2. Install pressure gauge on the test nipple that is on the main relief.
3. Start engine with the control bar in the off position.
4. Adjust engine to full throttle.
5. Close the ball valve.
6. Pressure gauge should read maximum specified PSI (bar).
7. Locate the relief on the feedwheel control valve, loosen jam nut, use an allen wrench to readjust relief pressure setting if needed, and then retighten jam nut.
8. Remove the pressure gauge and place the rubber cap back on the test nipple.
9. Check for hydraulic leaks.
10. Relief valve pressure should be checked and readjusted as needed once a month for best performance.

ONLY CLOSE BALL VALVE FOR 4-5 SECONDS TO SET PRESSURE OR YOU MAY DAMAGE HYDRAULICS.

MAINTAIN FEEDWHEEL HYDRAULIC PRESSURE AT SPECIFIED PSI (bar).

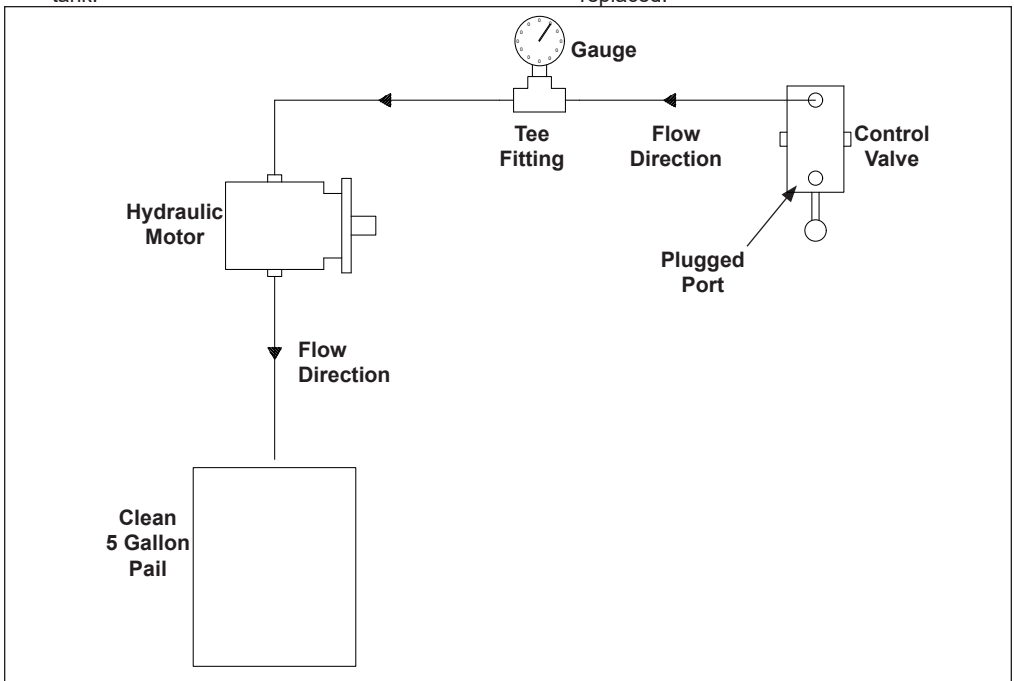
CORRECTING HYDRAULIC PROBLEMS

HYDRAULIC MOTOR CHECK OUT

MACHINES WITH LIVE HYDRAULICS

To check out the hydraulic motor, the following will be needed: a pressure gauge capable of reading 3000 psi (207 bar), a Tee fitting to install to the control valve, a plug fitting to install in the control or relief valve, and a clean 5 gallon (19L) pail.

- The following instructions are for machines with Live Hydraulics, for machines without Live Hydraulics contact your local dealer or Bandit Industries.
- In order to check out a hydraulic motor, it is necessary to mechanically stop the motor from turning while under load. The hydraulic pump needs to be driven without turning the chipper disc/drum (Live Hydraulics). Feed a reasonably large size log into the machine until it contacts the stationary disc/drum. This should stall the hydraulic motor(s). It may also be necessary to apply down pressure by operating the yoke control valve (if equipped).
- With the feedwheel(s) mechanically locked as described, turn the engine off and keep the key in your possession. If the hydraulic motor does not have a case drain, unhook the hose going from the hydraulic motor back to the control valve at the valve, some machines will be equipped with a flow divider between the hydraulic motor and the control valve. If the hydraulic motor has a case drain, unhook the case drain hose that goes to the relief valve at the valve and put the hose into the hydraulic tank.
- Place the end of the hose in a clean 5 gallon (19L) pail.
- Plug the open port of the control valve or main relief valve.
- Unhook the other hose in the control valve and install a Tee fitting into the control valve and attach the hose to the Tee fitting.
- Install a pressure gauge in the other port in the Tee fitting to monitor hydraulic pressure.
- Put the infeed control valve in the center position and start the engine.
- Increase the engine speed slowly to full rpm.
- Operate the infeed control valve to feed the log into the stationary disc/drum. If the feedwheel(s) try to turn, apply down pressure by using the yoke control valve (if equipped).
- Providing the pump and the relief are functioning properly, the pressure gauge should read the specified main relief setting.
- Observe the amount of hydraulic fluid coming from the hose into the pail. If the amount of leakage in the pail is 1 gpm. (3.8 Lpm) or less the motor is good. If the amount of leakage in the pail is over 1 gpm (3.8 Lpm) the motor needs to be replaced.



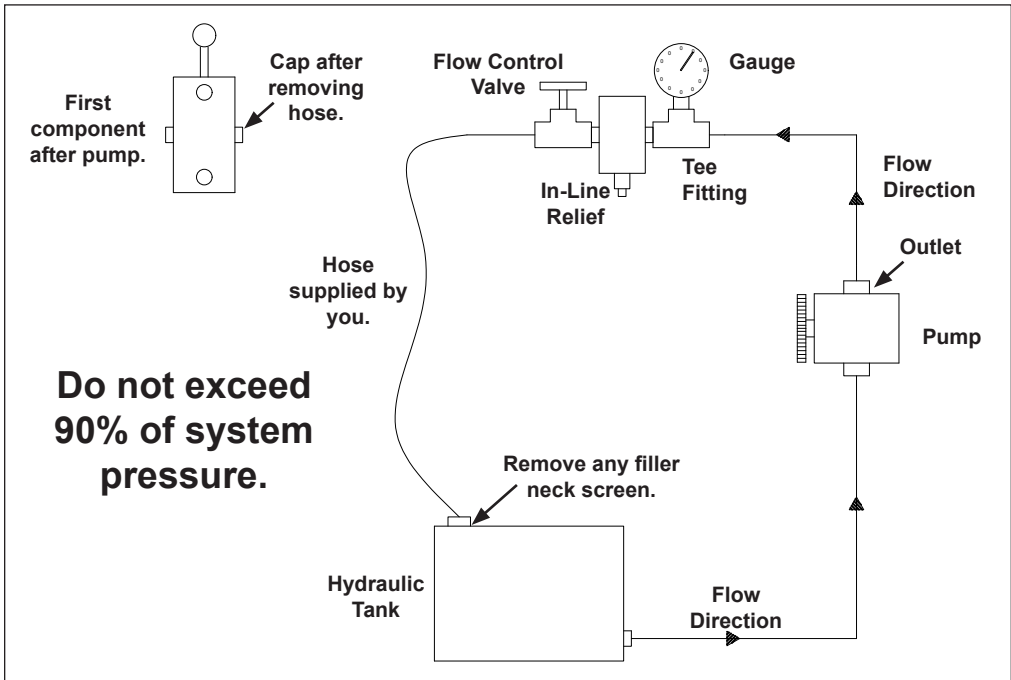
CORRECTING HYDRAULIC PROBLEMS

HYDRAULIC PUMP CHECK OUT

HYDRAULIC PUMP CHECK WITHOUT USING A FLOW METER

To check out the hydraulic pump the mechanic will need a needle type control valve, a pressure gauge capable of reading 5000 psi (344 bar), an in-line 2500 psi (172 bar) relief, and a hose long enough to span between the pump and the hydraulic tank.

1. Disconnect the pressure line going from the pump at the first component and cap the fitting at the component.
2. Attach a Tee fitting to the end of the pressure hose (which was removed from the component) and install the Tee fitting and gauge.
3. Attach an in-line 2500 psi (172 bar) relief to the Tee fitting with the gauge.
4. Attach the hydraulic flow control valve to the in-line relief and the hose (you supply) to the outlet port of the flow control valve.
5. **Make sure the pressure gauge is installed up stream from the flow control valve. Failure to do this will cause serious damage to the hydraulic pump when testing.**
6. If the hydraulic oil tank is equipped with a mesh strainer in the fill neck, remove it and place the open end of the hose (you supply) into the tank fill neck.
7. **MAKE SURE THAT THE FLOW CONTROL VALVE IS FULLY OPEN SO AS TO ALLOW UNRESTRICTED FLOW TO PASS THROUGH IT.**
8. Start the engine to engage the pump, the clutch may have to be engaged if the pump is belt driven.
9. Have a second person lift the hydraulic hose far enough out of the tank inlet to observe the flow of oil going into the tank. Observe the pressure gauge reading to make sure a high pressure does not exist.
10. Increase the engine speed slowly to full rpm and at the same time observe the pressure. This should still remain low.
11. **SLOWLY** turn the needle valve on the flow control in and observe the pressure increase on the pressure gauge.
12. Continue closing the flow control valve until the pressure gauge reading reaches 90% of the normal relief valve setting (example: if system operates at 2500 psi (172 bar), do not exceed 2250 psi (155 bar).
Never allow the pressure to go more than 90% of the main relief pressure.
13. If the pump is good there should be no noticeable decrease in the flow rate coming out of the hose and into the hydraulic tank.
14. If 90% of the main relief pressure can not be obtained and/or the flow rate of the hose is considerably less, then the pump is worn or damaged.



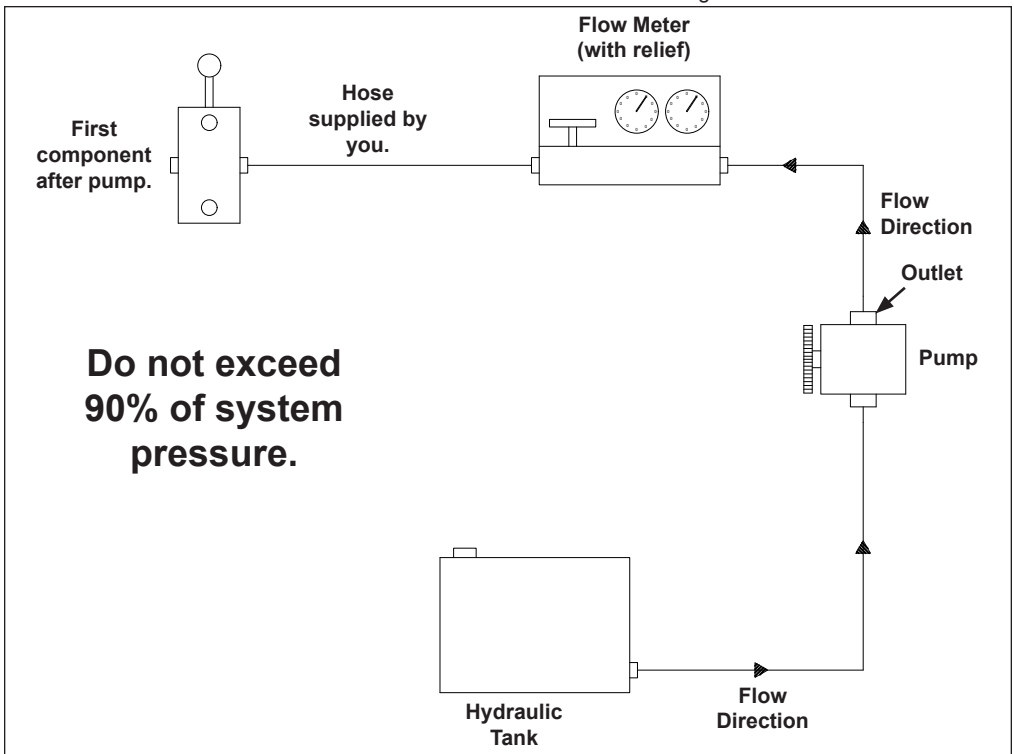
CORRECTING HYDRAULIC PROBLEMS

HYDRAULIC PUMP CHECK OUT

HYDRAULIC PUMP CHECK OUT USING A FLOW METER (WITH RELIEF)

To check out the hydraulic pump the mechanic will need a needle type flow meter capable of reading 5000 psi (344 bar) and a long enough hose that will go from the flow meter back to the first component.

1. Disconnect the pressure line going from the pump at the first component.
2. Attach the flow meter to the end of the pressure hose (which was removed from the component).
3. Attach the hose you supplied to the outlet of the flow meter and run the hose back to the first component. **MAKE SURE THE HOSES ARE ON THE CORRECT SIDES OF THE FLOW METER.**
4. **Make sure the pressure gauge is installed up stream from the flow control valve. Failure to do this will cause serious damage to the hydraulic pump when testing.**
5. **MAKE SURE THAT THE FLOW CONTROL VALVE IS FULLY OPEN SO AS TO ALLOW UNRESTRICTED FLOW TO PASS THROUGH IT.**
6. Start the engine to engage the pump, the clutch may have to be engaged if the pump is belt driven.
7. Observe the flow rate through the meter and pressure gauge reading to make sure a high pressure does not exist.
8. Increase the engine speed slowly to full rpm and at the same time observe the pressure and flow rate. The pressure should still remain low. Make a note of the flow rate (gpm or Lpm) at full engine rpm.
9. **SLOWLY** turn the needle valve on the flow control in and observe the pressure increase on the pressure gauge.
10. Continue closing the flow control valve until the pressure gauge reading reaches 90% of the normal relief valve setting (example: if system runs at 2500 psi (172 bar), do not exceed 2250 psi (155 bar). **Never allow the pressure to go more than 90% of the main relief pressure.**
11. If the pump is good, you should have at least 80% of the flow rate (gpm or Lpm) passing through the flow meter as noted at low pressure and full rpm (example: 10 gpm (38 Lpm) and low pressure = 8 gpm (30 Lpm) at 90% pressure).
12. If 90% of the main relief pressure can not be obtained and/or the flow rate passing through the meter is considerably less, then the pump is worn or damaged.



CONTROL VALVE DETENT ASSEMBLY AND O-RING REPLACEMENT

Tools Required:

- Small amount of clean hydraulic oil
- Clean working area, free of debris and shop rags
- 3/16" Tee handle hex driver
- 3/4" drag link drive socket
- Jawed vice

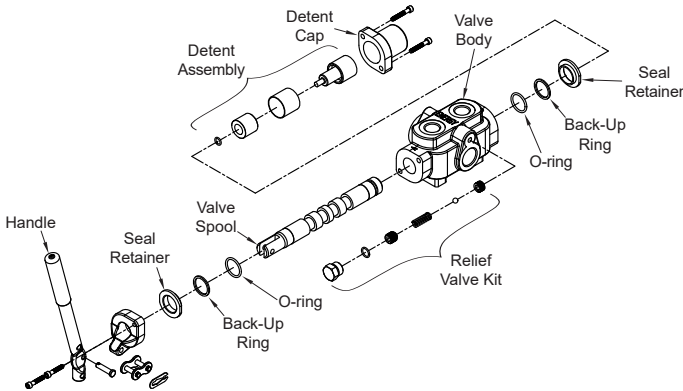
3/4" Drag Link
Drive Socket



GENERAL PROCEDURE:

Disassembly:

1. Secure valve in vice or suitable method to firmly hold valve.
2. Note the orientation and placement of all components during disassembly.
3. Using the 3/16" Tee handle hex driver, remove (2) two socket head cap screws which hold the spring cover to the valve body. Set aside for re-use.
4. The detent assembly is now visible. Insert the 3/4" drag link drive socket blade into slot of retaining screw. Loosen and remove the retaining screw along with the entire detent assembly.
5. With the 3/16" Tee handle hex driver, remove (2) two socket head cap screws that hold the control lever assembly to the valve body.
6. Detach hand lever from spool. Carefully remove the spool from the valve body. Take care not scratch, dent, or nick the spool. Note the orientation of handle attachment point on spool. Set aside for re-use.
7. Remove (2) two seal retainers, o-rings, and back-up rings from both ends of the valve.
8. Inspect and replace o-ring and back-up ring if cut, or if leak is suspected.



Assembly:

1. Lubricate spool, o-rings, and back-up rings with clean oil. Insert spool and center it in the valve body.
2. Place the new o-rings and back-up rings over spool ends and seat them into the valve body. Seat the seal retainer onto back-up ring making sure not to pinch the o-ring or back-up ring against the valve body.
3. Re-attach the hand lever to the spool. Mount control lever assembly onto the valve body using (2) two socket head cap screws. Apply Loctite 243 (blue) to the screws.
4. Thread a new detent assembly onto the spool end and hand tighten to 72 in-lbs (8 Nm) with the 3/4" drag link drive socket blade. No additional lubricant is required.
5. Mount the spring cover and the (2) two socket head cap screws. Apply Loctite 243 (blue) to the screws.
6. Hand tighten all (4) four socket head cap screws with the 3/16" Tee handle hex driver.
7. Shift valve with hand lever to assure operation. With some effort, the hand lever should move between three positions. The detent will hold the hand lever in the three positions.

Instructions provided by component manufacturer.

HYDRAULIC SYSTEM TROUBLE SHOOTING

SAFETY INSTRUCTIONS

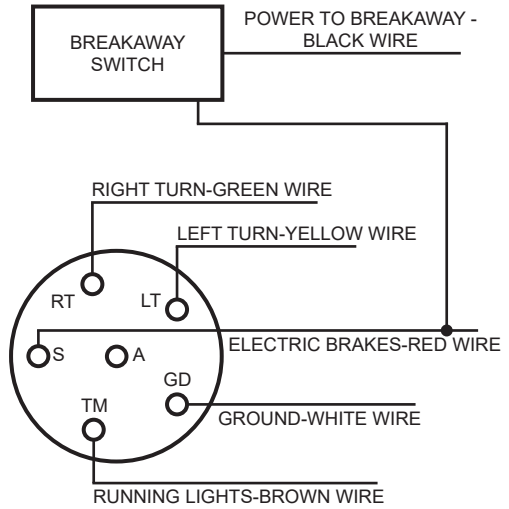
Before attempting any type of maintenance, disengage clutch, wait for the disc to come to a complete stop, turn off engine, remove the ignition key, make sure the ignition key is in your possession, install the disc/disc lock pin, and disconnect the battery.

PROBLEM	POSSIBLE CAUSE	SOLUTION
Feedwheel(s) turn at normal speed but does not chip wood properly.	Dull knives.	Replace knives
	Worn feed teeth	Replace
	Low feedwheel relief valve setting	Readjust to specified PSI (bar)
	Pump is worn	Replace
	Motor is weak	Replace
	Feedwheel springs too loose	Adjust
	Clutch / belts out of adjustment	Adjust
Feedwheel(s) slow or stop when feeding	Engine not running at full RPMs	Adjust
	Dull knives	Replace knives
	Relief valve is worn or dirty	Clean, reset, or replace
	Pump is worn	Replace
	Motor is worn	Replace
	Feedwheel springs too tight	Adjust
Feedwheel(s) turn slowly or not at all	Feedwheel slide box sticking or hanging up	Lubricate
	Relief valve stuck open	Clean or replace
	Worn hydraulic motor	Replace
	Pump is worn	Replace
	Feedwheel relief pressure not correct	Reset to specified PSI (bar)
	Pinched or damaged hydraulic hose	Replace
	Feedwheel valve (control valve) worn & leaking internally	Replace
	Autofeed dump valve stuck open	Lightly tap on dump block, remove & clean, or replace
	Low hydraulic oil level	Fill to 7/8 full minimum
	Plugged oil screen	Replace
	Binding such as worn bearings, etc.	Repair
Control lever improperly shifting valve	Readjust, valve must open completely	
Hydraulic oil very hot, causing system to operate slowly	Dull knives	Replace knives
	Low oil level	Fill 7/8 full minimum
	Pump is worn	Replace
	Relief valve stuck open or opens easily	Clean, reset, or replace
	Damaged hose	Replace
	Oil suction screen or filter plugged	Clean or replace
	Oil cooler plugged (if equipped)	Clean
	Motor is worn	Replace
	Binding	Repair
	Operator running oil over relief too much	DO NOT DO THIS
Flow control is on for too long	Open flow control	
Feedwheels do not come on	Autofeed valve stuck	Check to see if you have light or power on feed coil, or check for a bad fuse
	Engine RPM not high enough	Raise the engine RPM
	Flow control turned down	Turn back up
	Bad detent in feed valve	Replace detent assembly

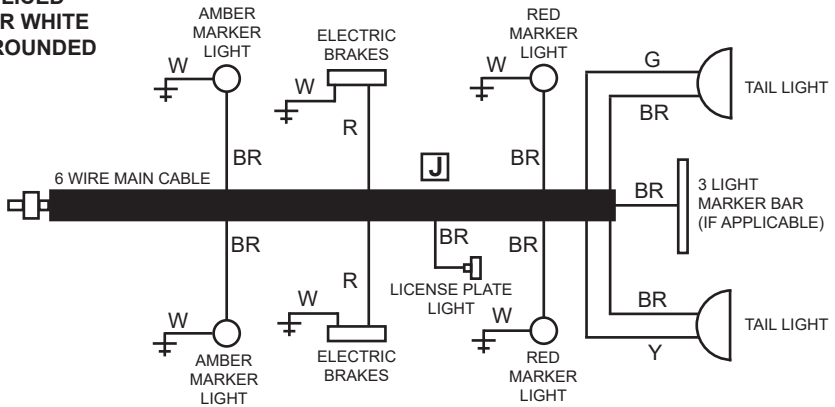
TYPICAL ELECTRICAL WIRING DIAGRAMS

WIRING FOR STANDARD 6 PRONG PLUG AND 6 WIRE MAIN CABLE

6 Wire Main Cable Color Code
 Red R (Brakes & Breakaway Switch)
 White W (Ground)
 Green G (Right Turn)
 Yellow Y (Left Turn)
 Brown BR (Running Lights)
 Black BL (Power to Breakaway Switch)



J JUNCTION BOX
WIRES SPLICED TOGETHER
WHITE WIRES GROUNDED



JUNCTION BOX



Running Lights (BR) Right Turn (G) Brakes (R) Left Turn (Y) Ground (W)

REPLACEMENT PARTS

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

MACHINE COMPONENTS

- Serial Number
- Model Number of Machine

ENGINE COMPONENTS

- Brand
- Engine Serial Number
- Engine Spec. Number

CLUTCH COMPONENTS

- Brand
- Serial Number
- Assembly Number of Clutch

NOTICE

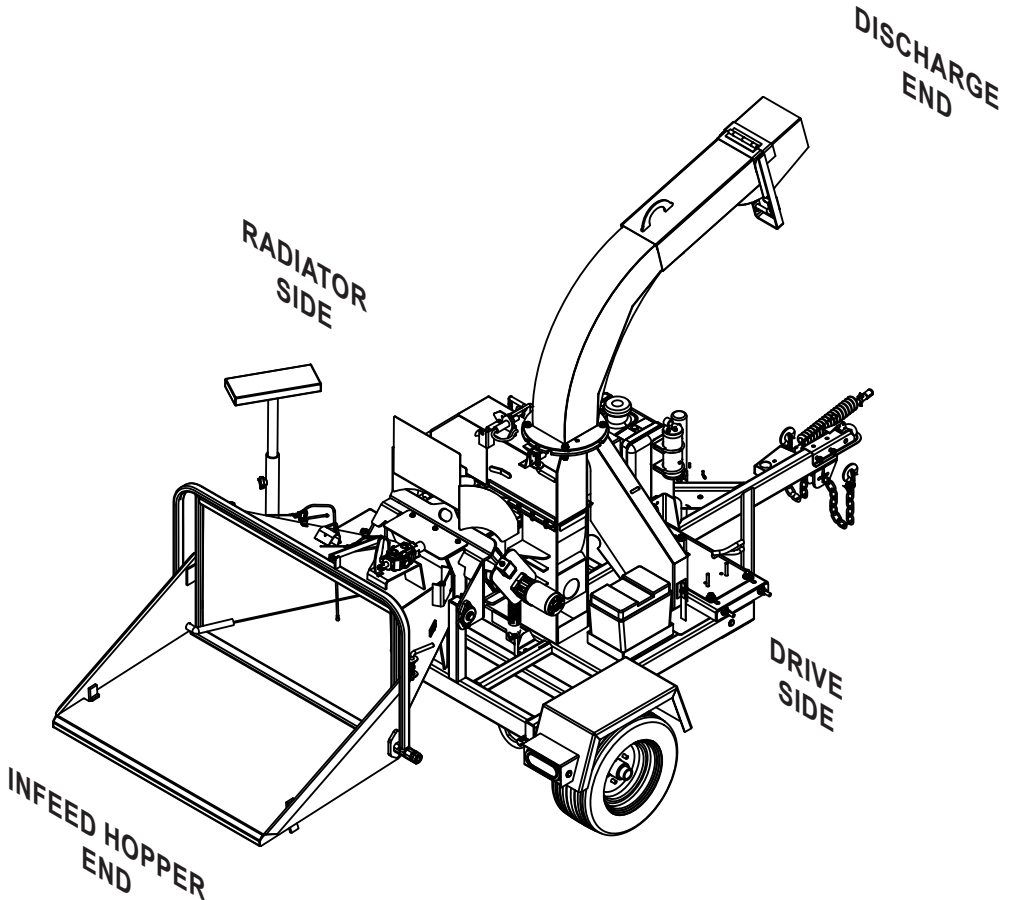
All nuts, bolts, washers, and many other components can be ordered by physical description.

All parts may not be exactly as shown.

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

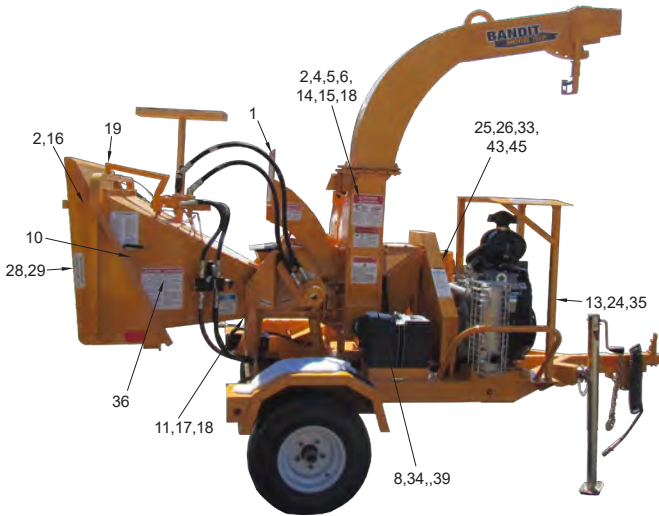
Bandit Industries Inc. reserves the right to make changes in models, size, design, installations and applications on any part without notification.

MACHINE ORIENTATION REFERENCE



DECALS

Decal locations may vary, these are general locations.



DECALS

#	Decal	Description
1	SPD-01	Avoid Injury or Death...
2	SPD-02	Moving Parts...
3	SPD-03	Lockout All Energy Sources...
4	SPD-04	Flying Discharge Material...
5	SPD-07	Last Chance Stop Cables...
6	SPD-09	Do Not Work Under Top Feed...
7	SPD-12	Do Not Feed Vine-Like...
8	SPD-28	Do Not Insert Fingers...
9	SPD-30	Do Not Sit, Stand, Lay, Climb...
10	SPD-34	Brush Chippers Are Very Dangerous...
11	SPD-52	Never Open Bottom Clean-Out Door...
12	SPD-53	...Always Use Some Sort of Mechanical Device...
13	ID-67	Bandit Industries...USA
14	INST-02	Yoke Lock Hole
15	INST-03	Yoke Lock Bar
16	INST-04	Arrow
17	INST-11	Motor Coupler Guard
18	INST-12	Grease Daily (Arrow)
19	SPINST-13	Push to Reverse
20	INST-48	Disc/Drum Lock Tube
21	INST-49	Disc/Drum Lock Pin
22	INST-53	Hydraulic Oil...Hydrex VX...
23	INST-95	Electric Plug-In Schematic
24	INST-101	Canada Engine Decal
25	INST-109	Basic Maintenance Check List
26	INST-200	...Open Chipper Hood...Grease
27	INST-229	Push to Activate Momentary Feed/Reverse
28	INST-230	Hydraulic Bump Bar Reset

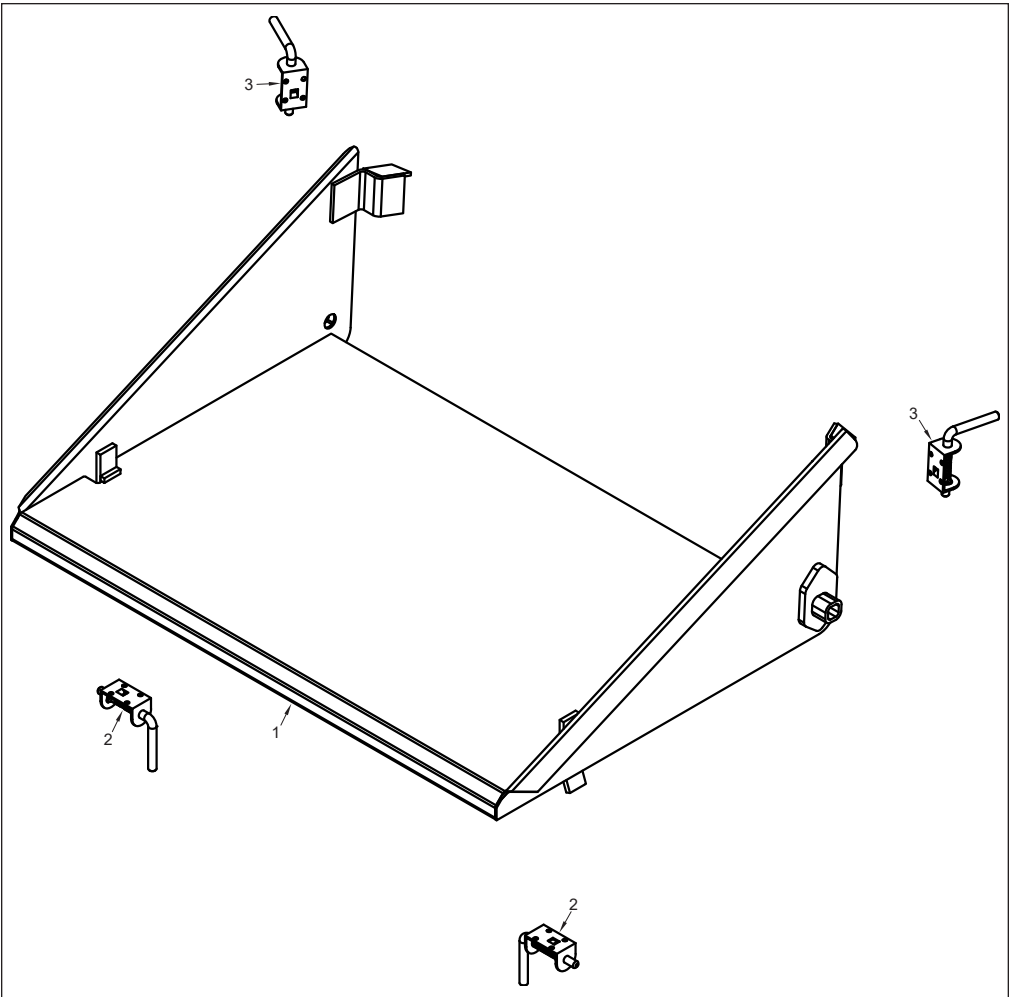
#	Decal	Description
29	INST-231	Hydraulic Bump Bar Stop
30	INST-270	Unlatch Before Closing Infeed Tray...
31	INST-275	Gasoline Only
32	INST-276	Test Trailer Brake System
33	N-02	Maintain Lubrication...
34	N-03	Service Required Beltshield...
35	SPN-06	Decal Maintenance...
36	N-09	Adjustable Feed Speed...
37	SPN-11	Correct Knife and Hardware...
38	N-70	Patents...
39	N-91	Check Bolt-On Components
40	SPW-01	Do Not Go Near Oil Leaks...
41	SPW-02	Diesel Fuel Only...
42	SPW-04	Frozen Battery Can Explode...
43	SPW-08	Wear Personal Protection...
44	SPW-27	Creating Sparks...
45	SPW-31	Explosion Hazard
46	SPW-39	Gasoline Only...
47	SPW-46	California Prop 65 - Diesel
48	SPW-47	California Prop 65
49	OL-274	Gasoline Fuel Only - Fuel Cap
50	OL-312	Diesel Fuel Only - Fuel Cap
51	OL-313	Hydraulic Fluid
52	900-2909-94	Red Reflective Decal
53	900-2909-95	Amber Reflective Decal
54	900-9901-69	Reflective Conspicuity Tape (Red/White)
55	900-8900-32	Basic Safety Decal Kit
56	900-8901-53	Bandit Model 75 Logo Decal Kit

NOTICE

Optional equipment may require additional decals.

Some decals are for optional equipment. Decal locations may vary, these are general locations. If any decals become damaged, replace immediately.

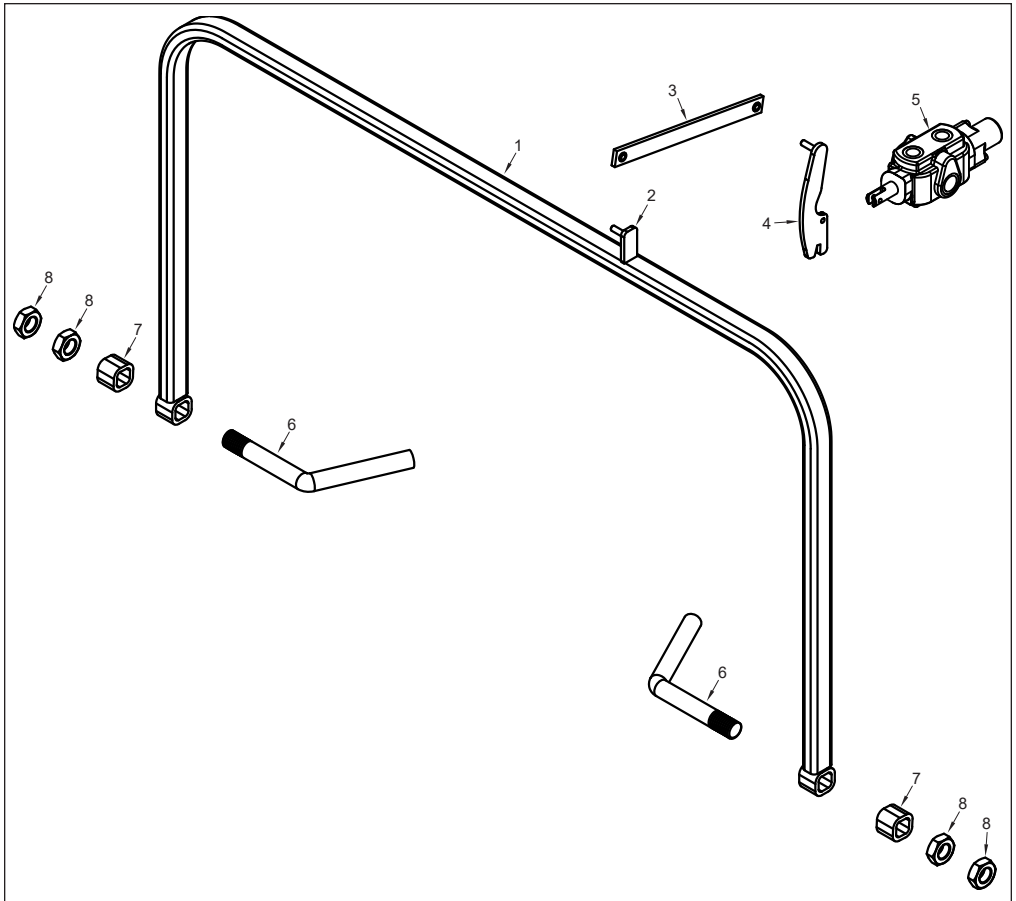
INFEEED TRAY ASSEMBLY



#	Part Number	Description
1	626-1001-12	Folding Tray Assembly
	626-200019	Folding Tray Weldment
2	900-4917-25	Spring Lock for Folding Tray

#	Part Number	Description
3	626-2001-40	Slam Latch Kit
	900-4917-25	Spring Lock for Slam Latch Kit

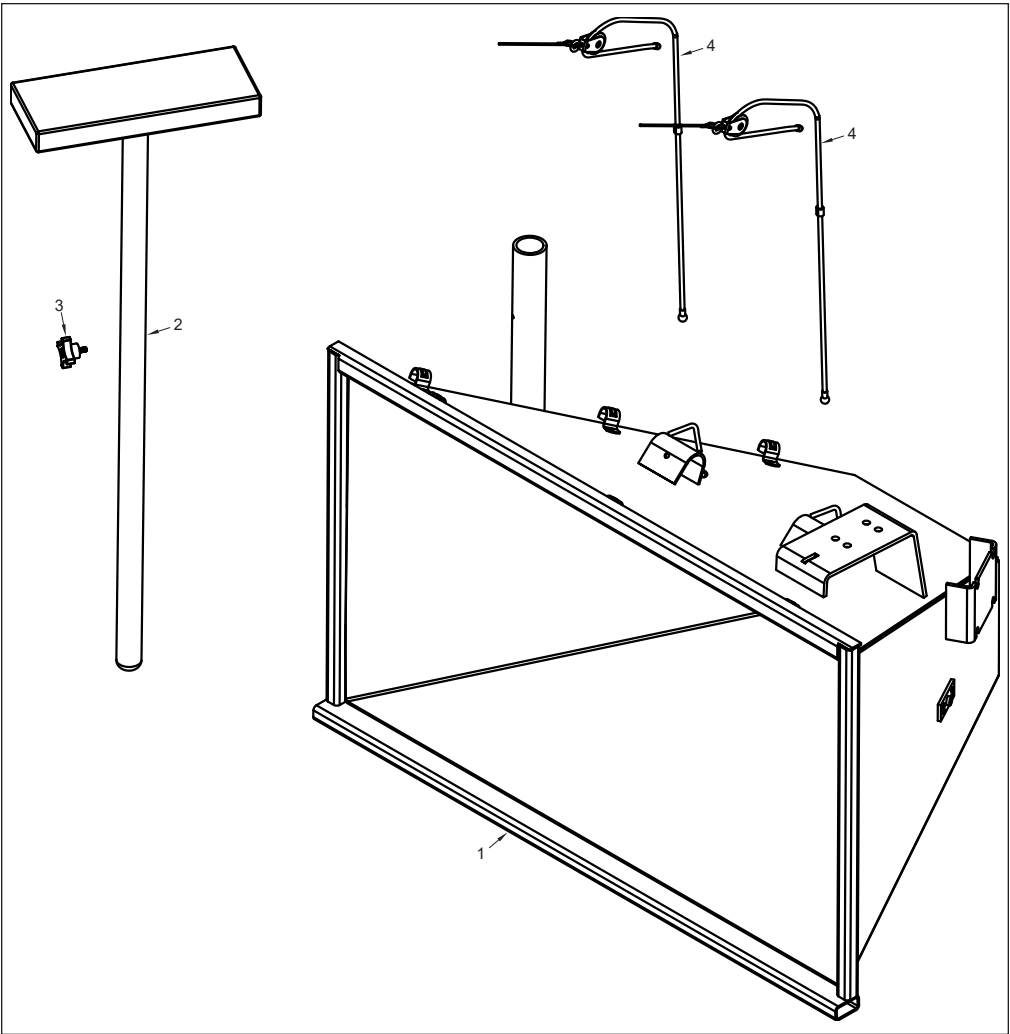
INFEED CONTROL BAR ASSEMBLY



#	Part Number	Description
1	626-100060	Control Bar Assembly (Includes 2 - 4)
	626-200020	Control Bar Weldment
2	980-100142	Control Bar Valve Linkage Tab
3	626-100061	Control Bar Valve Linkage

#	Part Number	Description
4	980-100141	Control Valve Handle Linkage
5	See page	Control Valve
6	626-300001	Pivot Pin
7	981-1008-93	Pivot Pin Tube
8	900-4900-44	Pivot Pin Jam Nut

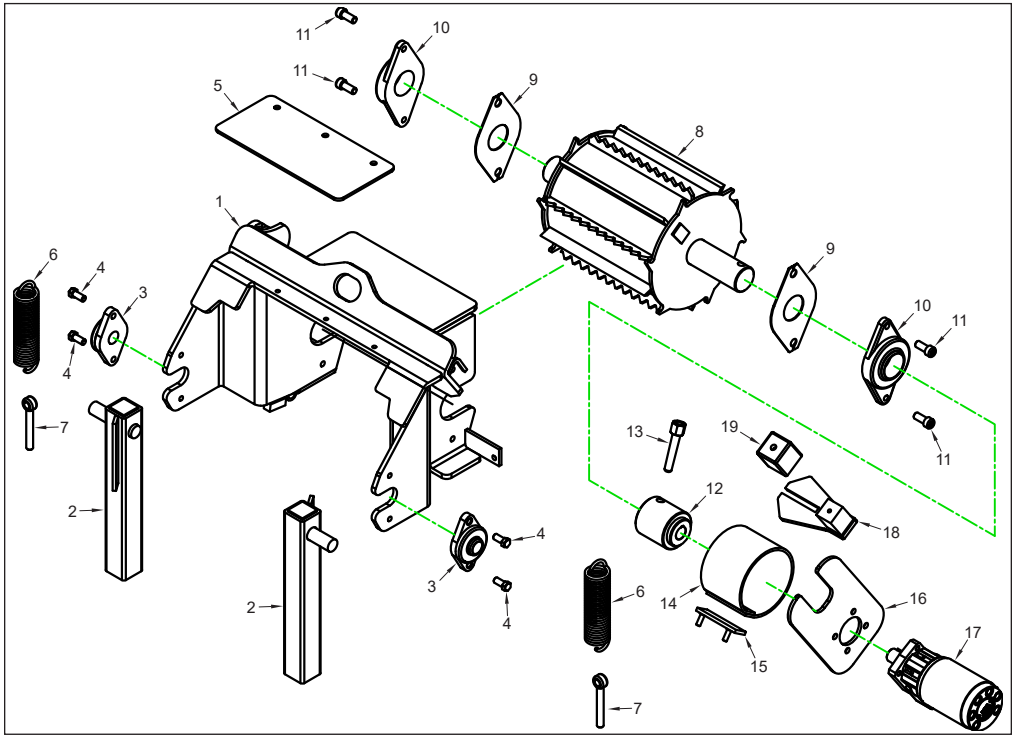
INFEED HOPPER ASSEMBLY



#	Part Number	Description
1	626-1001-10	Infeed Hopper Assembly
	626-200009	Infeed Hopper Weldment
2	980-0507-42	Wooden Push Paddle
3	900-4914-18	Plastic Knob

#	Part Number	Description
4	980-0509-25	Last Chance Cable Kit
	900-4904-28	Last Chance Orange Cable With Clamps

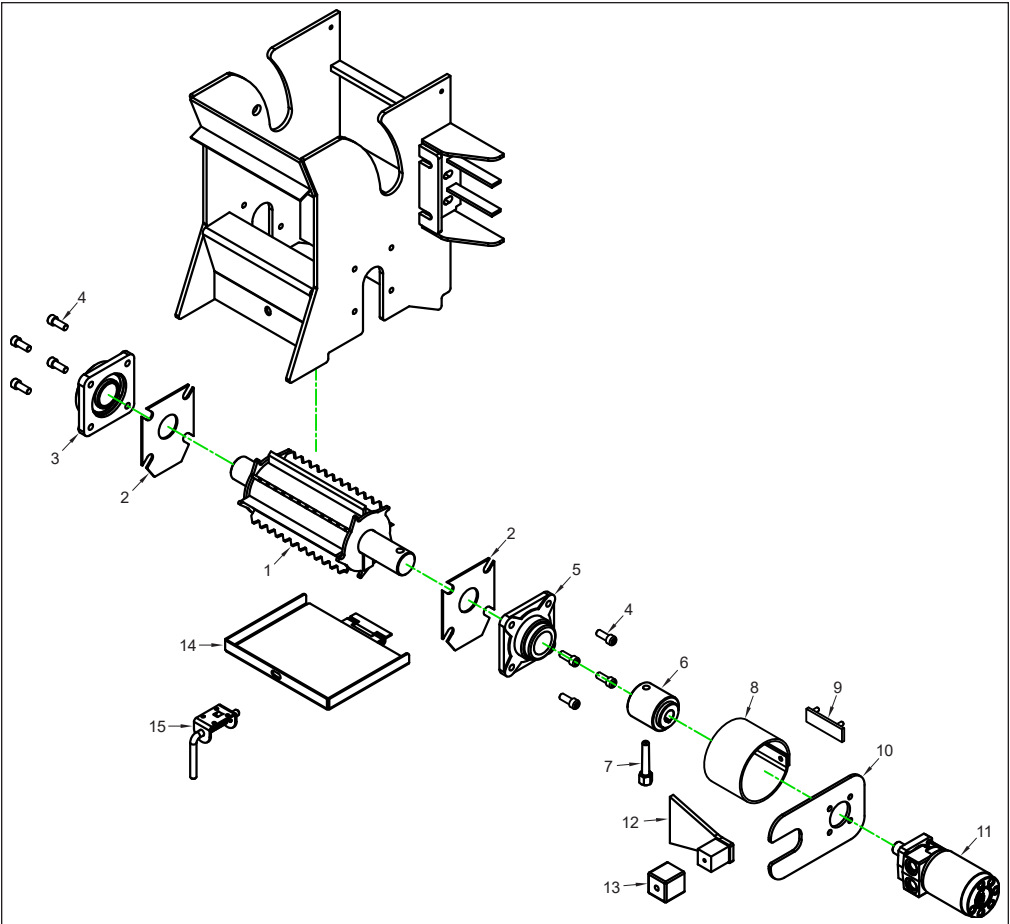
TOP YOKE ASSEMBLY



#	Part Number	Description
1	907-1000-01	Top Yoke Assembly
	907-2000-04	Top Yoke Weldment
2	907-2000-05	Yoke Pivot Pin
3	900-1901-08	Pivot Bearing
4	900-4906-67	Pivot Bearing Bolt - 7/16"-20NF x 1"
5	900-7901-69	Top Infeed Cover
6	900-4915-82	Yoke Spring
7	900-4905-43	Spring Adjuster Bolt
8	626-200014	Feedwheel Assembly
	626-100068	Feedwheel Shaft, Coupler, and Taper Pin Assembly
	626-300132	Feedwheel Tooth
	626-300134	Feedwheel Tooth - Serrated

#	Part Number	Description
9	986-1110-77	Feedwheel Bearing Backer
10	900-1904-14	Feedwheel Bearing
11	900-4913-62	Feedwheel Bearing Bolt - 1/2"-13NC x 1 1/2"
12	626-0001-69	Feedwheel Coupler Only
13	900-4909-53	Taper Pin & Nut
	900-4907-06	Nut for Taper Pin
14	900-7901-23	Rubber Coupler Guard
15	980-0508-57	Coupler Guard Mount
16	980-0124-98	Torque Arm
17	900-3972-05	Hydraulic Feedwheel Motor
18	907-2000-57	Torque Arm Stop
19	937-900009	Torque Arm Cushion

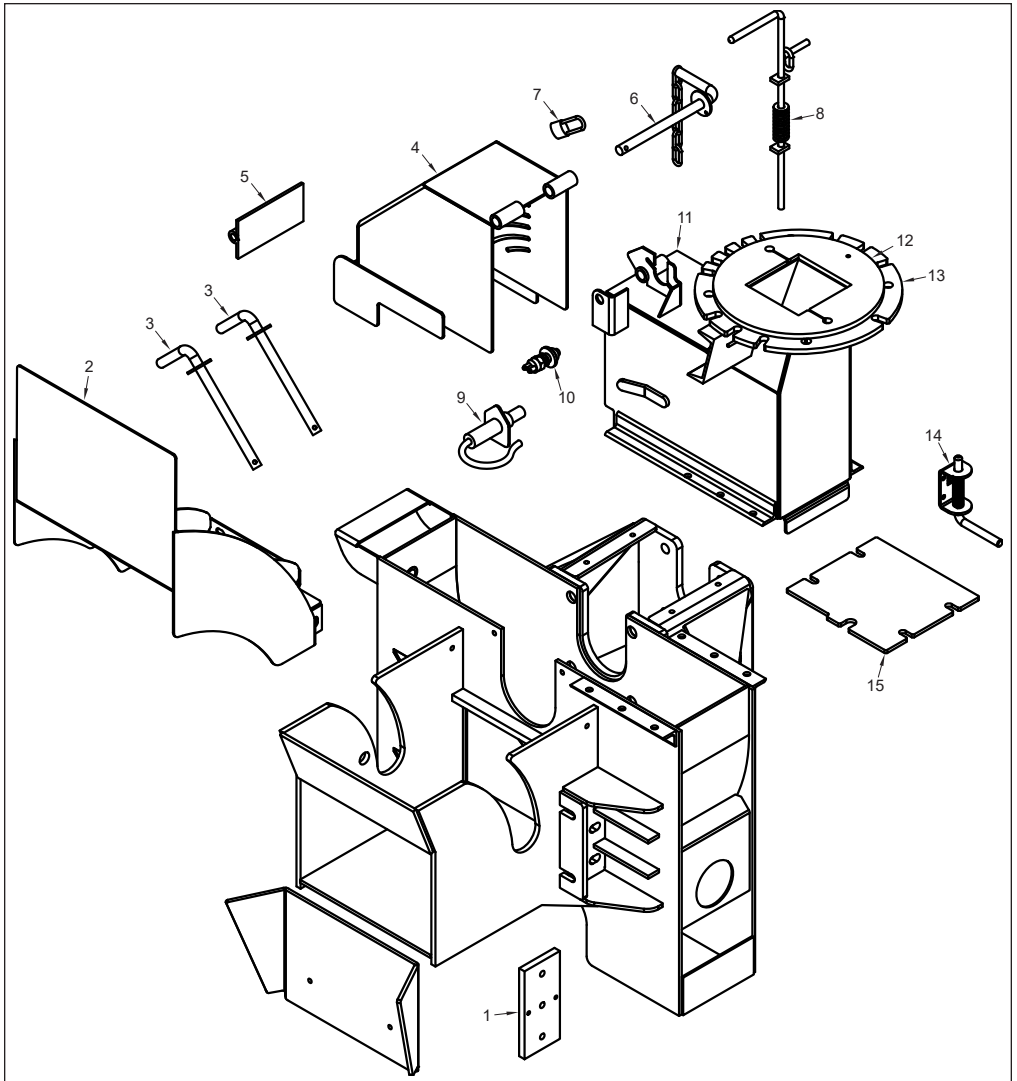
OPTIONAL BOTTOM YOKE (DUAL FEEDWHEELS)



#	Part Number	Description
1	626-200036	Feedwheel Assembly
	626-100020	Feedwheel Shaft, Coupler, and Taper Pin Assembly
	626-0005-99	Feedwheel Tooth
	626-300134	Feedwheel Tooth - Serrated
2	980-300082	Feedwheel Bearing Backer
3	900-1909-79	Feedwheel Bearing
4	900-4909-23	Feedwheel Bearing Bolt - 1/2"-13NC x 1 1/4"
	900-1909-80	Feedwheel Bearing - Motor Side
6	626-0001-69	Feedwheel Coupler Only

#	Part Number	Description
7	900-4909-53	Taper Pin & Nut
	900-4907-06	Nut for Taper Pin
8	900-7901-23	Rubber Coupler Guard
9	980-0508-57	Coupler Guard Mount
10	980-0124-98	Torque Arm
11	900-3972-04	Hydraulic Feedwheel Motor
12	626-2002-25	Torque Arm Stop
13	937-900009	Torque Arm Cushion
14	626-2001-19	Trap Door Assembly
	001-3004-00	Hinge for Trap Door
15	900-4901-83	Spring Lock for Trap Door

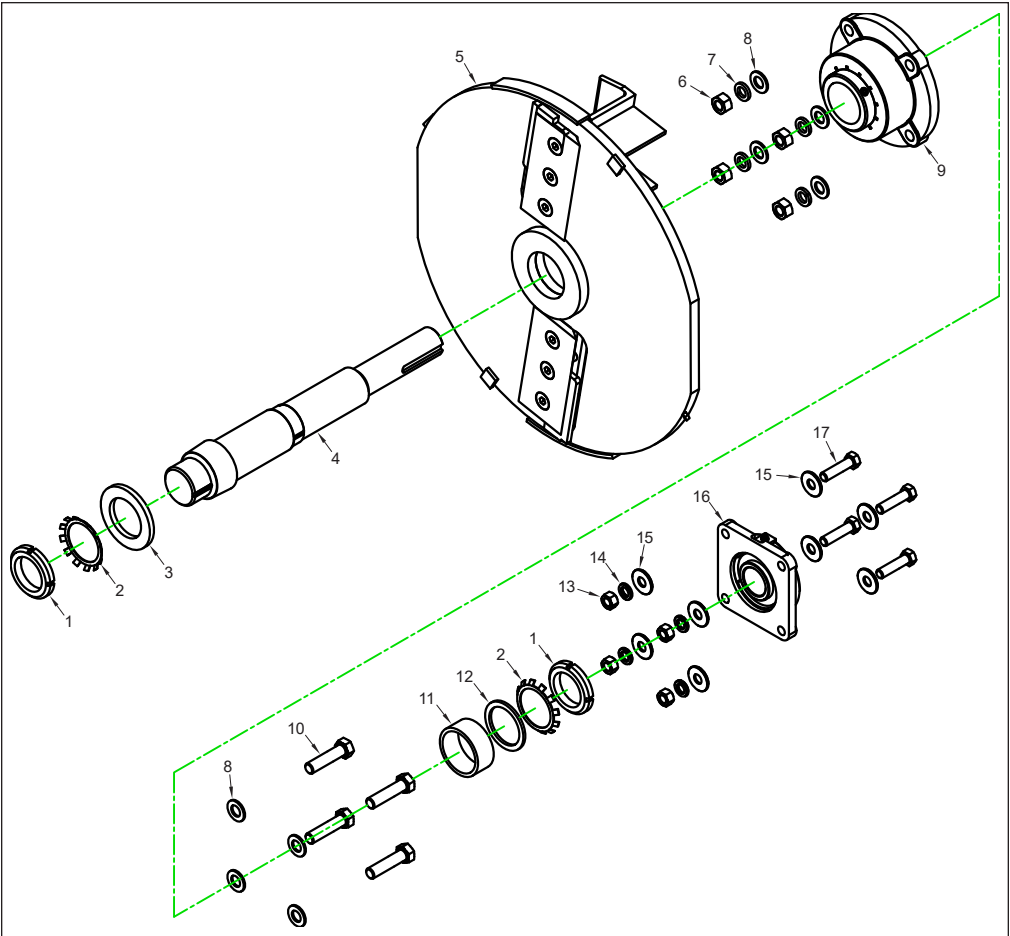
CHIPPER BASE ASSEMBLY



#	Part Number	Description
1	See Page 69	Anvil
2	907-2000-16	Feedwheel Guard
3	626-3000-68	Chipper Disc/Top Yoke Lock Pin
4	626-200006	Chipper Hood - Hinged Half
5	001-3004-17	Hinge for Chipper Hood
6	626-2001-81	Hood Pin with Attaching Chain
7	900-4902-20	Padlock for Hood Pin
8	626-100059	Spring Lock for Hood Pin
	900-7900-92	Vinyl Cap for Spring Lock
	909-1000-01	Engine Disable Plug Kit
9	900-2904-13	6-Prong Female Plug Only
	980-100083	6-Prong Male Plug with Wire Loop & Crimp Sleeves
10	900-2903-07	Chipper Hood Limit Switch

#	Part Number	Description
11	626-200007	Chipper Hood - Stationary Half with Manual Swivel Discharge
	626-2002-42	Chipper Hood - Stationary Half with Hand Crank Swivel Discharge
12	626-300290	Transition Flange
13	626-300401	Bottom Swivel Ring - Manual Swivel Discharge
	626-3005-54	Bottom Swivel Ring - Hand Crank Swivel Discharge
14	900-4901-83	Spring Lock for Discharge
15	907-3000-30	Chipper Shaft Cover Plate

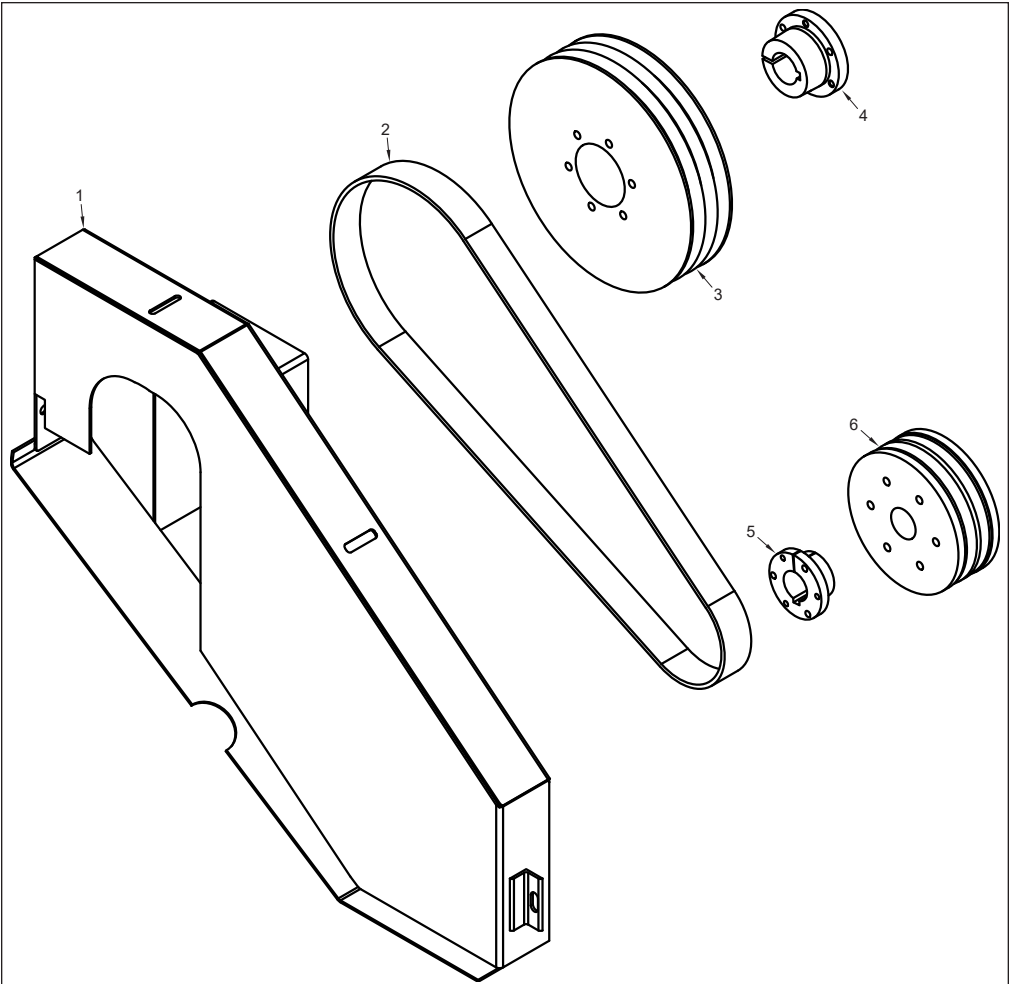
DISC CHIPPER ASSEMBLY



#	Part Number	Description
1	900-4915-83	Shaft Lock Nut
2	900-4915-84	Shaft Lock Washer
3	907-3000-25	Disc Draw Nut Washer
4	907-3000-03	Disc Chipper Shaft
5	907-2000-03	Disc Chipper Assembly
6	900-4903-41	Front Chipper Bearing Nut - 3/4"-16NF
7	900-4907-17	3/4" Lock Washer
8	900-4903-21	3/4" Mill Carb Washer
9	900-1904-41	Front Chipper Bearing

#	Part Number	Description
10	900-4907-14	Front Chipper Bearing Bolt - 3/4"-10NC x 3"
11	907-3000-44	Disc Lock Collar
12	907-3000-46	Lock Ring - Shaft to Bearing
13	900-4907-04	Rear Chipper Nut - 5/8"-11NC
14	900-4906-87	5/8" Lock Washer
15	900-4907-10	5/8" Flat Washer
16	900-1903-30	Rear Chipper Bearing
17	900-4906-95	Rear Chipper Bolt - 5/8"-11NC x 2 1/2"

DRIVE ASSEMBLY



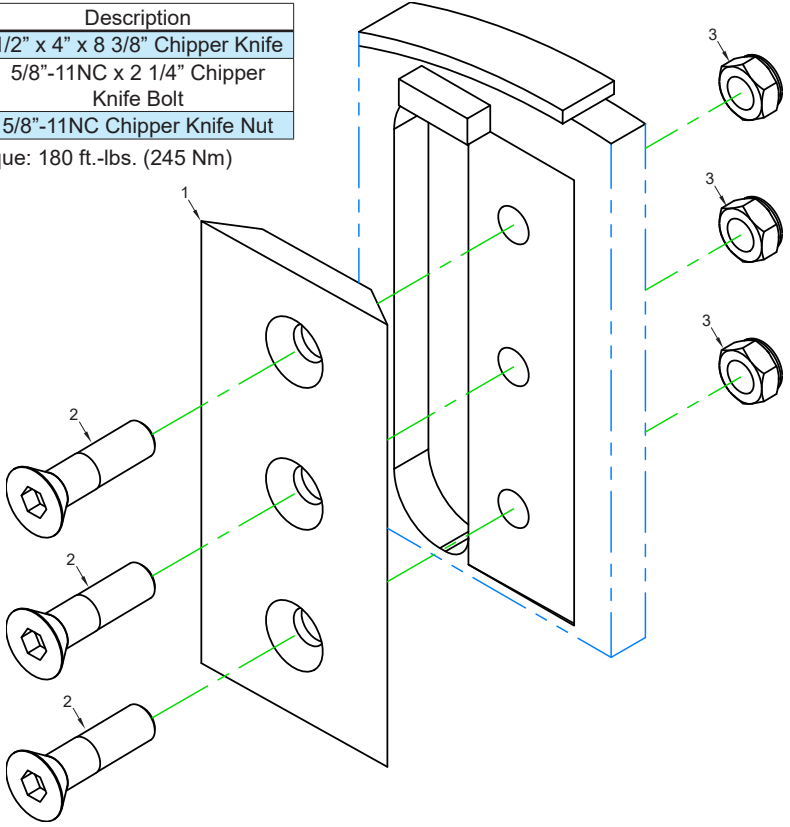
#	Part Number	Description
1	907-2000-27	Beltshield Assembly
2	**	Chipper Belt
3	**	Chipper Sheave

#	Part Number	Description
4	**	Chipper Sheave Bushing
5	**	Engine Sheave Bushing
6	**	Engine Sheave

CHIPPER KNIFE & HARDWARE

#	Part Number	Description
1	900-9904-43	1/2" x 4" x 8 3/8" Chipper Knife
2	900-4912-43	5/8"-11NC x 2 1/4" Chipper Knife Bolt
3	900-4903-93	5/8"-11NC Chipper Knife Nut

Knife Bolt Torque: 180 ft.-lbs. (245 Nm)

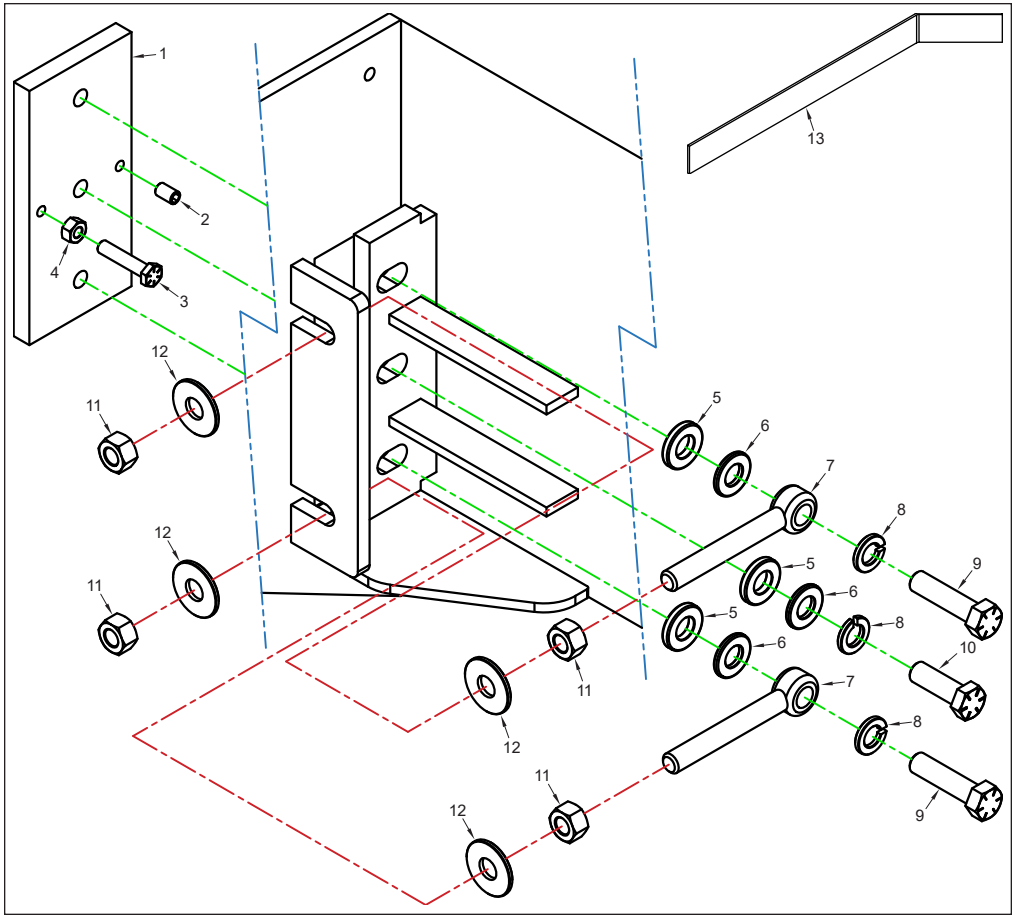


KNIFE SAVER KIT

#	Part Number	Description
1	500-0001-16	Knife Saver Kit
2	900-9901-65	File for Knife Saver Kit Only
3	900-9914-29	Replacement Blades for Knife Saver
4	900-9914-24	Knife Changing Gloves
5	986-0501-22	Tool Kit to Change Knives with 1/2" Bolts



ANVIL & HARDWARE

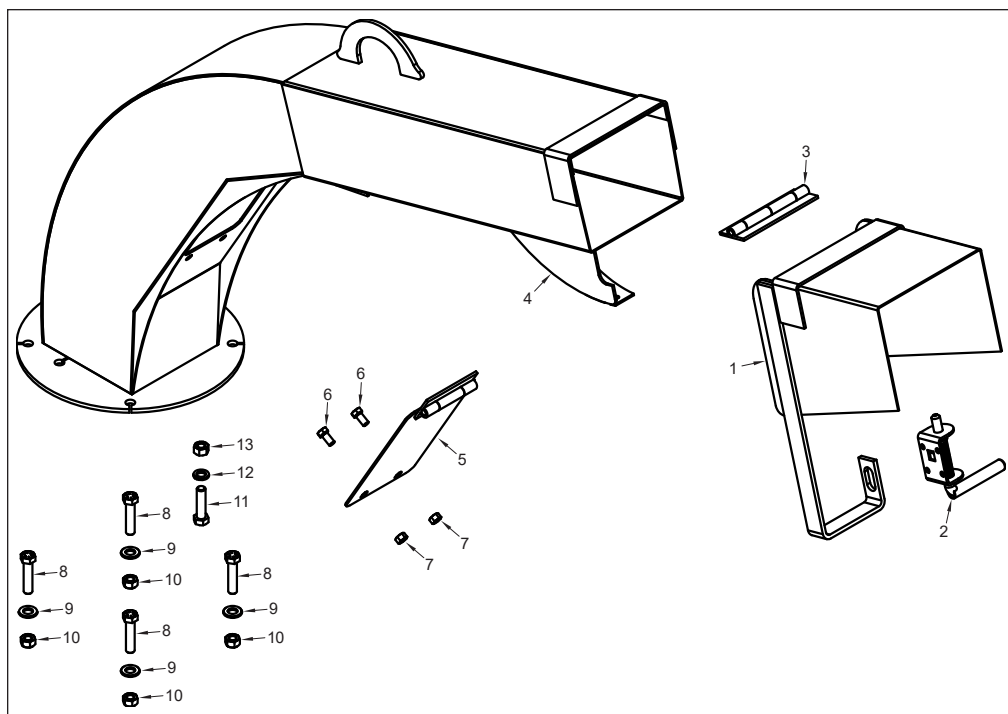


#	Part Number	Description
1	907-3000-09	Anvil Only - 4 Sided
2	900-4903-54	5/16"-18NC x 1/2" Set Screw
3	900-4906-39	5/16"-18NC x 1 1/2" Hex Head Bolt
4	900-4910-73	5/16"-18NC Hex Nut
5	900-4924-05	1/2" Mill Carb Washer
6	900-4906-88	1/2" Flat Washer
7	900-4905-43	Anvil Eye Bolt - 1/2"-13NC x 3 1/2"
8	900-4906-86	1/2" Lock Washer

#	Part Number	Description
9	900-4906-74	1/2"-13NC x 2" Hex Head Bolt
10	900-4906-72	1/2"-13NC x 1 1/2" Hex Head Bolt
11	900-4906-82	1/2"-13NC Hex Nut
12	900-4906-90	1/2" USS Flat Washer
13	955-300193	Anvil Gauge
14	626-0500-77	Anvil Hardware Only (Includes 2 - 12)
15	907-2000-07	Anvil & Hardware Kit (Includes 1 - 12)

Anvil Bolt Torque: 75 ft.-lbs. (102 Nm)

MANUAL DISCHARGE



#	Part Number	Description
1	626-200037	Flipper Assembly
2	900-4917-25	Spring Lock Pin
	900-7900-93	Rubber Grip
3	001-3004-02	Flipper Hinge
4	626-200039	Lock Plate for Flipper
5	626-3005-60	Discharge Clean-Out Door
	001-3004-00	Clean-Out Door Hinge
6	900-4906-54	Clean-Out Door Bolt - 3/8"-16NC x 3/4"
		Clean-Out Door Nut - 3/8"-16NC
7	900-4906-60	

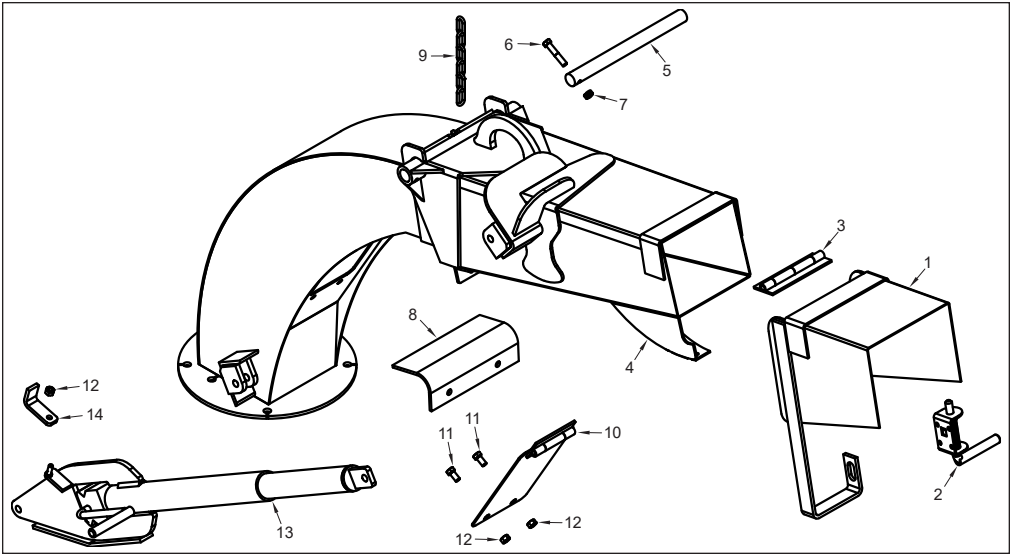
#	Part Number	Description
8	900-4909-27	Discharge Bolt - 1/2"-13NC x 2 1/4"
9	900-4906-88	1/2" Flat Washer
10	900-4906-84	Discharge Lock Nut - 1/2"-13NC
11	900-4906-74	Discharge Transport Bolt - 1/2"-13NC x 2"
12	900-4906-86	1/2" Lock Washer
13	900-4906-82	Discharge Transport Nut - 1/2"- 13NC

DISCHARGE ASSEMBLIES

#	Part Number	Description
1	626-200016	Manual Discharge (Gasoline Engines Only)
	907-1000-22	Manual Discharge (Diesel Engines Only)

#	Part Number	Description
2	626-1001-26	Manual Height Adjustable Discharge
3	626-200042	Hand Crank Swivel Discharge
4	626-200041	Hand Crank Swivel & Height Adjustable Discharge

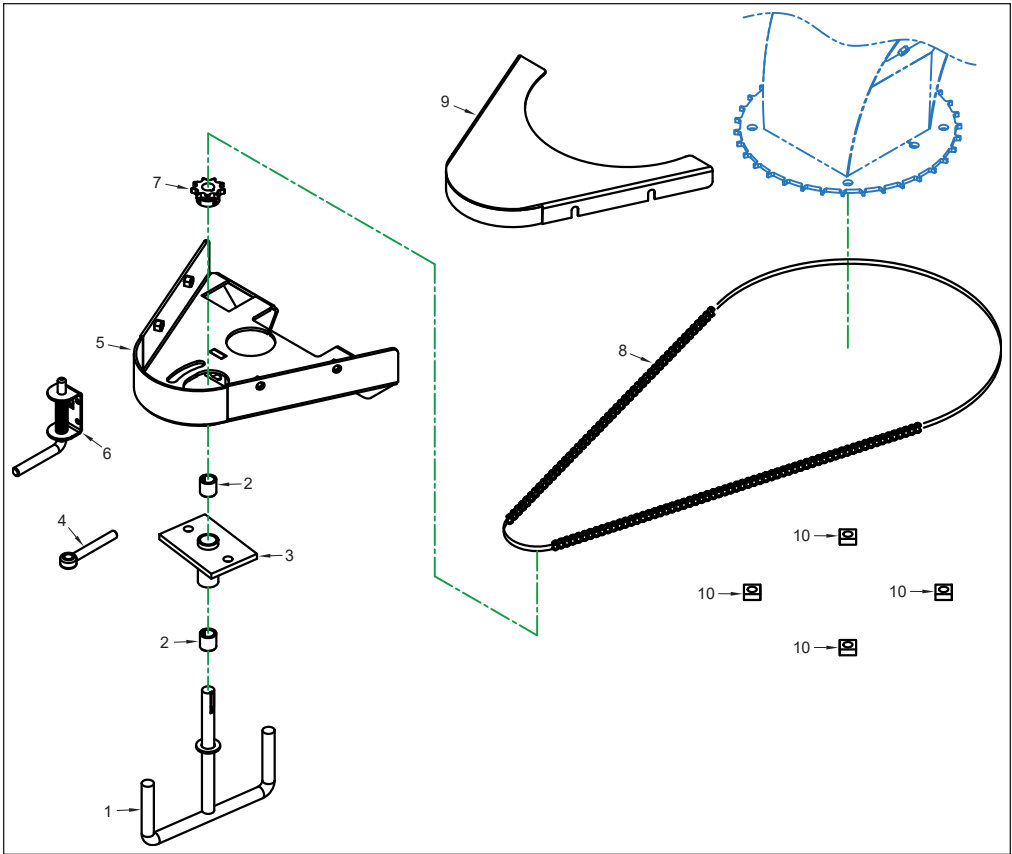
HEIGHT ADJUSTABLE DISCHARGE



#	Part Number	Description
1	626-200037	Flipper Assembly
2	900-4901-83	Spring Lock Pin
	900-7900-93	Rubber Grip
3	001-3004-02	Flipper Hinge
4	626-200039	Lock Plate for Flipper
5	626-3006-95	Hinge Pin
6	900-4906-53	Hinge Pin Bolt - 3/8\"-16NC x 2\"
7	900-4906-55	Hinge Pin Lock Nut - 3/8\"-16NC
8	980-0126-12	Discharge Rubber Guard

#	Part Number	Description
9	626-3004-87	Discharge Chain
10	626-3005-60	Discharge Clean-Out Door
	001-3004-00	Clean-Out Door
11	900-4906-54	Clean-Out Door Bolt - 3/8\"-16NC x 3/4\"
12	900-4906-60	3/8\"-16NC Hex Nut
13	900-5917-29	Hand Crank for Adjustable Height Discharge
	900-7900-93	Rubber Grip
14	955-300434	Hand Crank Handle Lock

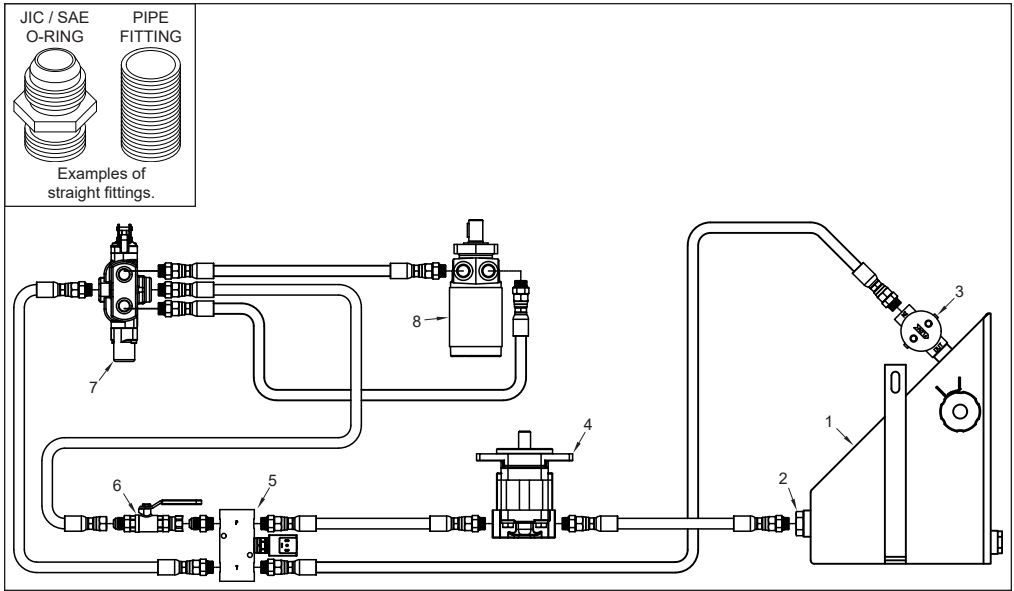
HAND CRANK SWIVEL DISCHARGE



#	Part Number	Description
1	937-200064	T-Handle
	900-7900-96	Rubber Grip for T-Handle
2	900-1908-38	Split Steel Bushing - 1" OD x 3/4" ID x 1"
3	980-200006	Chain Adjuster
4	900-4905-43	Chain Adjuster Bolt
5	626-2002-22	Swivel Mount Weldment

#	Part Number	Description
6	900-4917-25	1/2" Spring Lock
	900-7900-93	Rubber Grip for Spring Lock
7	900-1905-59	Sprocket
	500-0000-00	#50 Roller Chain
8	900-1901-18	Half Link for Roller Chain
	900-1901-19	Master Link for Roller Chain
9	626-200097	Chain Guard
10	900-4905-00	Spacer Block

HYDRAULIC SCHEMATIC



#	Part Number	Description
1	See Pages 80 - 83	Hydraulic Tank
2	900-3900-07	Hydraulic Tank Strainer
3	900-3900-09	Filter Head
	900-3900-10	Filter

#	Part Number	Description
4	**	Hydraulic Pump
5	See Page 75	Autofeed Valve
6	See Page 75	In-Line Pressure Check Kit
7	See Page 76	Feedwheel Control Valve
8	900-3973-15	Feedwheel Hydraulic Motor

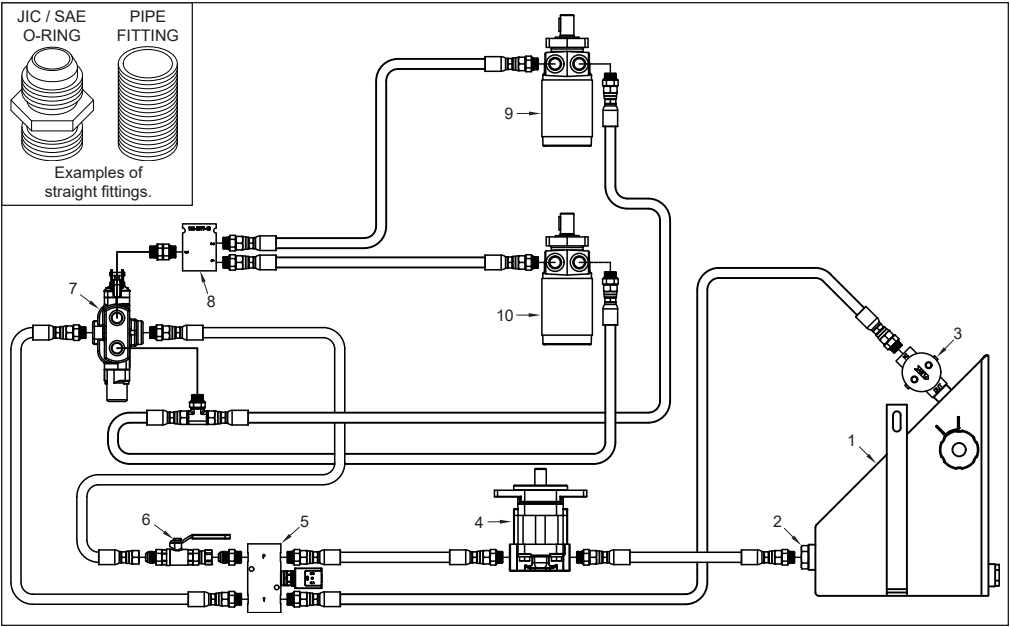
* Hydraulic components, fittings, hoses will vary depending on optional equipment. Order by physical description.

** Hydraulic pumps need to be ordered by physical description and serial number of machine.

NOTICE

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

HYDRAULIC SCHEMATIC (DUAL FEEDWHEELS)



#	Part Number	Description
1	See Pages 80 - 83	Hydraulic Tank
2	900-3900-07	Hydraulic Tank Strainer
3	900-3900-09	Filter Head
	900-3900-10	Filter
4	**	Hydraulic Pump

#	Part Number	Description
5	See Page 75	Autofeed Valve
6	See Page 75	In-Line Pressure Check Kit
7	See Page 76	Feedwheel Control Valve
8	See Page 77	Flow Divider
9	900-3973-15	Top Feedwheel Hydraulic Motor
10	900-3972-05	Bottom Feedwheel Hydraulic Motor

IN-LINE HYDRAULIC PRESSURE CHECK KIT

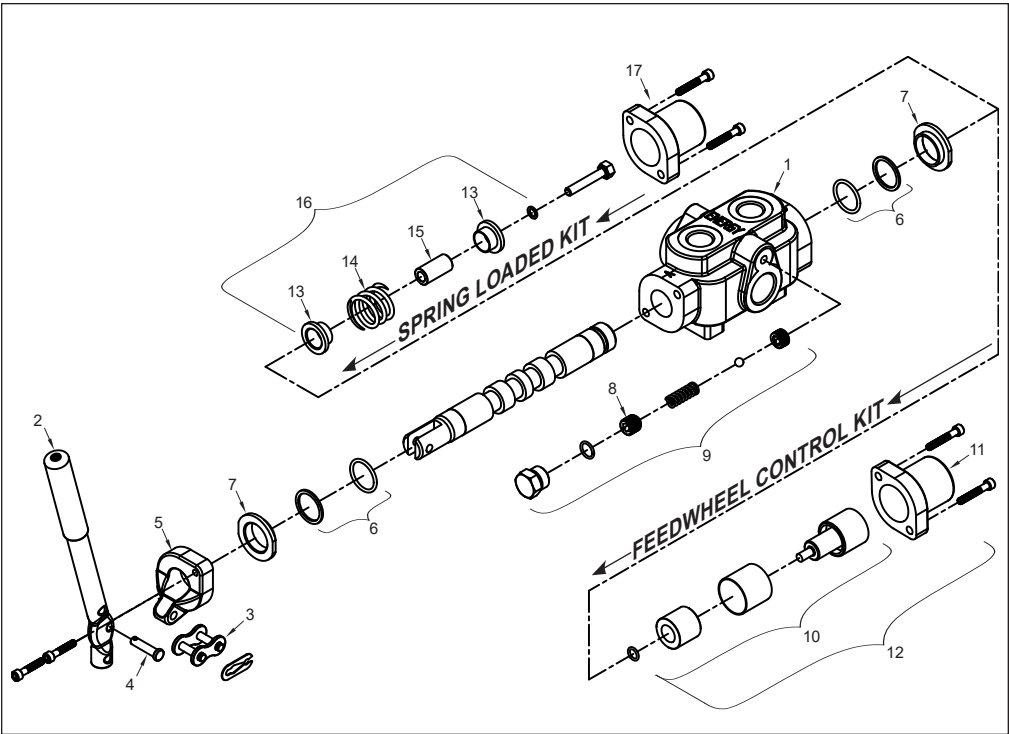
#	Part Number	Description
1	900-3920-73	5000 PSI Gauge
2	900-3929-34	Quick Coupler
3	900-3914-42	Test Nipple
4	900-3911-47	Rubber Cap for Test Nipple
5	900-3924-86	Fitting - JIC
6	900-3926-11	Ball Valve
7	900-3922-14	Fitting - Hose
8	907-1000-08	In-Line Pressure Check Kit - Single Feedwheel (Includes 1 - 7)
9	907-1000-09	In-Line Pressure Check Kit - Dual Feedwheel (Includes 1 - 7)
10	500-0000-43	Gauge & Quick Coupler Only (Includes 1 & 2)

AUTOFEED VALVE

#	Part Number	Description
1	900-3977-37	Autofeed Valve Block Only
2	900-3947-37	Autofeed Solenoid Only
3	900-3947-38	Dump Cartridge Only
4	500-0000-84	Autofeed Valve Assembly

Torque Autofeed Cartridge Nut to a maximum of 4 to 6 ft.-lbs. (5 to 8 Nm) and install Loctite 243. Over torque will cause damage and will also void warranty.

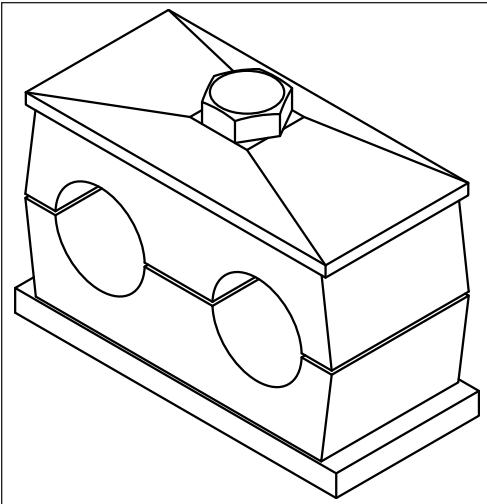
CONTROL VALVE



#	Part Number	Description
1	900-3920-06A	Feedwheel Control Valve (Includes 3 - 8, 11)
2	900-3905-95	Long Valve Handle Kit
	900-3930-96	Short Valve Handle
3	904-0003-30	Master Link Only
4	904-0003-31	Pin & Cotter Key
5	904-0003-32	Bracket, Handle & Chain Link
6	900-3937-34	Seal Kit
7	904-0003-33	Seal Retainer
8	900-4917-84	Relief Screw Only

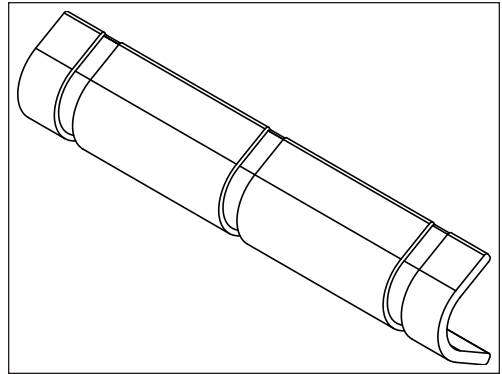
#	Part Number	Description
9	900-3901-12	Relief Valve Kit
10	900-3900-71	Detent Kit
11	900-3900-71C	Detent Cap with Screws
12	900-3900-71E	Detent Kit with Cap & Screws
13	904-0003-34	Valve Spool Stop
14	904-0003-35	Valve Spool Spring
15	904-0003-36	Valve Spacer
16	900-A-2941	Spring Center Kit
17	904-0003-37	Detent Cap with Screws for Spring Loaded Valve

HOSE CLAMP



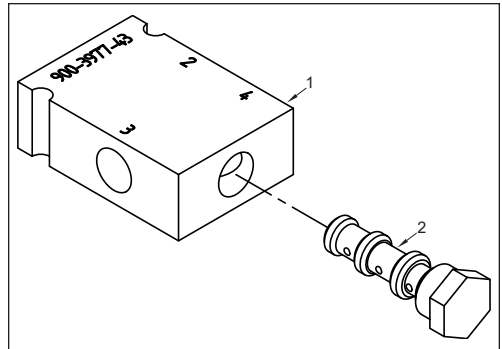
#	Part Number	Description
1	**	Bolt
2	900-3914-11	Locking Plate for 1/2" Double Clamp
3	900-3926-46	Plastic Clamp for 1/2" Double Clamp
4	900-3914-09	Weld Plate for 1/4" Double Clamp
	900-3914-08	Weld Plate for 1/2" Double Clamp
	900-3926-47	Weld Plate for 3/4" Double Clamp
5	900-3914-10	Stacking Bolt for 1/2" Double Clamp
	900-3920-11	Stacking Bolt for 3/4" Double Clamp
6	900-3917-25	1/4" Double Clamp Assembly
	900-3926-44	3/8" Double Clamp Assembly
	900-3928-19	1/2" Single Clamp Assembly
	900-3914-02	1/2" Single Clamp Assembly for Steel Lines
	900-3915-61	1/2" Double Clamp Assembly
	900-3913-32	1/2" Double Clamp Assembly for Steel Lines
	900-3914-03	3/4" Single Clamp Assembly
	900-3914-07	3/4" Double Clamp Assembly
	900-3914-04	1" Single Clamp Assembly
	900-3914-05	1 1/4" Single Clamp Assembly
900-3914-06	1 1/2" Single Clamp Assembly	

HOSE GUARD



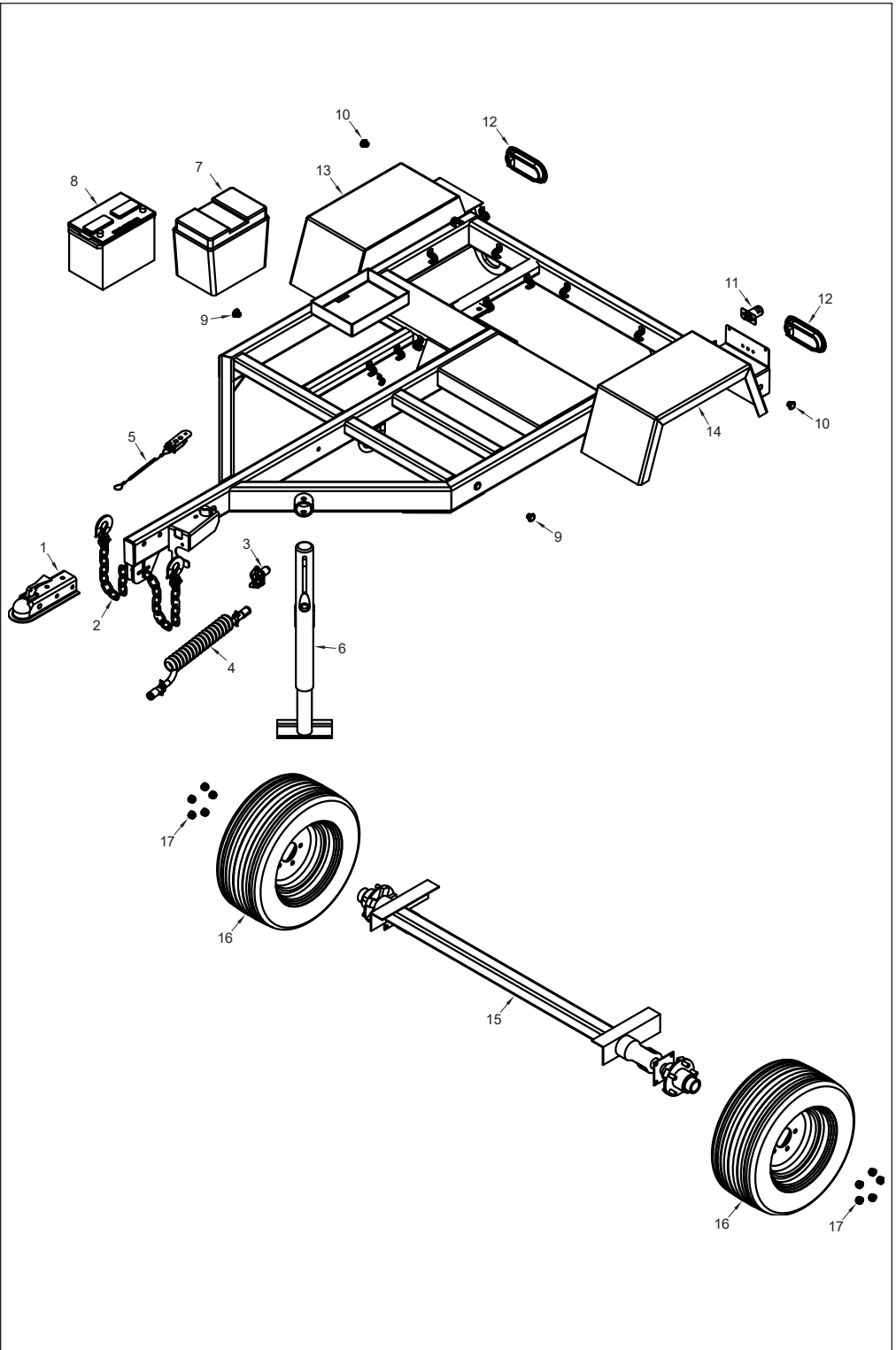
#	Part Number	Description
1	900-3934-76	Hose Guard - 4" Long
	900-3934-77	Hose Guard - 6" Long
	900-3934-78	Hose Guard - 8" Long

FLOW DIVIDER



#	Part Number	Description
1	900-3977-43	Flow Divider Body Only
2	900-3946-88	Flow Divider Cartridge Only

FRAME ASSEMBLY

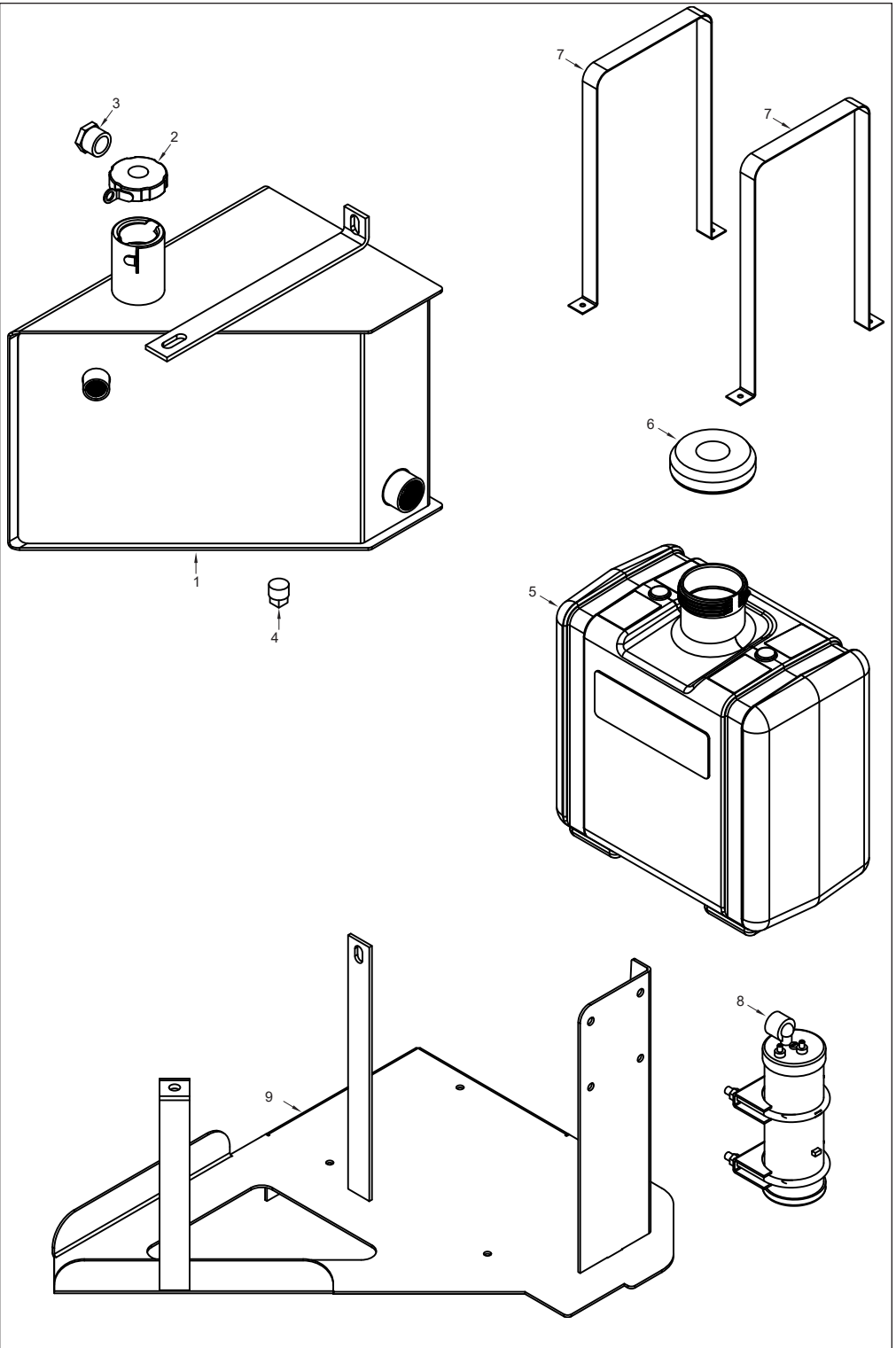


FRAME ASSEMBLY

#	Part Number	Description
1	900-5904-67	Fulton 2" Hitch
	900-5901-46	Adjustable Height 2" Ball Hitch
	900-5904-42	Bulldog 2" Ball Hitch
	900-5900-13	2 1/2" Pintle Hitch
	900-5901-79	3" Pintle Hitch
	900-5901-81	2 5/16" Ball Hitch
2	900-4905-82	Safety Chain
3	900-2904-13	Trailer Plug
4	900-2911-26	Coil Plug
5	900-5900-09	Breakaway Switch
6	900-5906-10	2000 lb. Tongue Jack
7	900-7900-01	Plastic Battery Box
8	900-6900-01	Battery
9	900-2927-86	Amber Marker Light
10	900-2927-85	Red Marker Light
11	900-2927-84	License Plate Light
12	900-2910-43	Oval Tail Light
13	626-2002-47	Drive Side Fender Assembly
14	626-2002-47	Radiator Side Fender Assembly

#	Part Number	Description
15	900-5905-83	2,200 Lb. Torflex Axle Assembly (No Brake)
	900-5905-82	2,200 Lb. Torflex Axle Assembly (Electric Brake)
	900-5905-85	3,500 Lb. Torflex Axle Assembly (No Brake)
	900-5905-84	3,500 Lb. Torflex Axle Assembly (Electric Brake)
	900-5908-55	3,500 Lb. Torflex Axle Assembly (Electric Brake & Parking Brake)
16	900-5905-90	20.5" x 8" x 10" Tire & Rim Assembly
	900-5905-88	20.5" x 8" x 10" Tire Only
	900-5905-89	20.5" x 8" x 10" Rim Only
	900-5903-09	P185/75R14 Tire & Rim Assembly
	900-5903-08	P185/75R14 Tire Only
	900-5903-06	P185/75R14 Rim Only
17	900-5910-82	9/16"-18NF Cone Nut

HYDRAULIC & GASOLINE TANK ASSEMBLY



HYDRAULIC & GASOLINE FUEL TANK ASSEMBLY

#	Part Number	Description
1	626-1001-36	7 Gallon Hydraulic Tank Assembly
	626-200018	7 Gallon Hydraulic Tank Weldment
2	900-3988-07	Hydraulic Tank Cap
3	900-3900-44	Sight Gauge
4	900-3922-60	Magnetic Drain Plug
5	900-3967-49	7 Gallon Gasoline Fuel Tank Assembly
	900-3967-50	7 Gallon Gasoline Fuel Tank Only

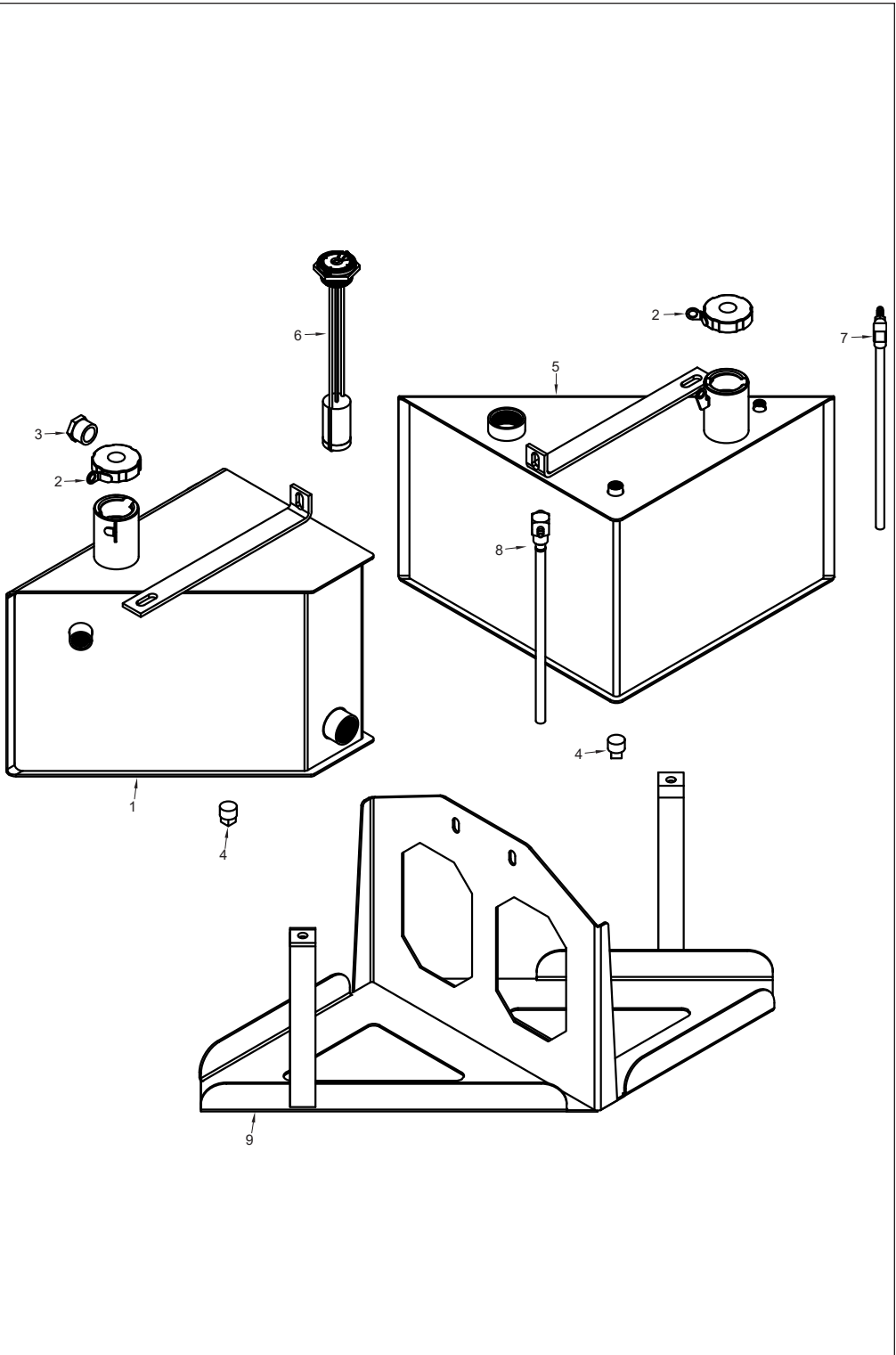
#	Part Number	Description
6	900-3966-28	Cap for Fuel Tank
7	900-3967-52	Fuel Tank Strap
8	900-3967-53	Carb Canister
	900-6910-94	Carb Canister Clamp
9	626-2001-53	Hydraulic & Gasoline Fuel Tank Tray

NOTICE

Components vary with fuel type. Specify gas or diesel when ordering fuel tank components.

Tank assemblies vary with options. Specify all options when ordering.

HYDRAULIC & DIESEL FUEL TANK ASSEMBLY

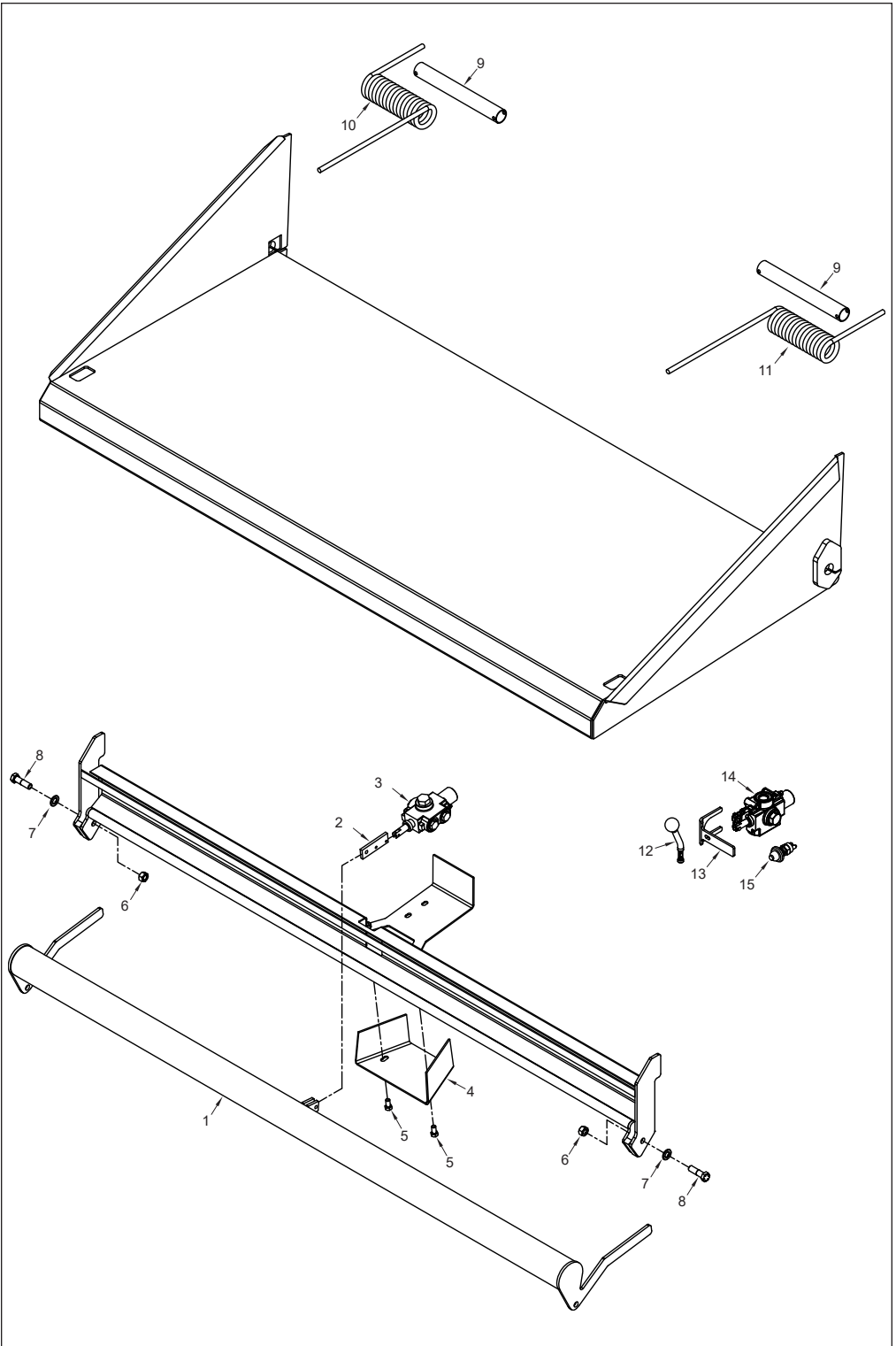


HYDRAULIC & DIESEL FUEL TANK ASSEMBLY

#	Part Number	Description
1	626-1001-36	7 Gallon Hydraulic Tank Assembly
	626-200018	7 Gallon Hydraulic Tank Weldment
2	900-3988-07	Tank Cap
3	900-3900-44	Sight Gauge
4	900-3922-60	Magnetic Drain Plug
5	626-1001-23	7 Gallon Diesel Fuel Tank Assembly
	626-200013	7 Gallon Diesel Fuel Tank Weldment
6	900-2903-93	Rochester 12" Sight Gauge
	900-2903-55	Face for Sight Gauge Only

#	Part Number	Description
7	900-3908-77	Return 1/4" NPTF Elbow 1/4" Hose Barb x 1/4" Hose Barb
	900-3936-69	Return 1/4" NPTF Elbow 3/16" Hose Barb x 1/4" Hose Barb
	900-3909-03	1/4" ID Drop Pipe Only
8	900-3909-00	Suction Drop Pipe Assembly Without Hose Barb (3/8" NPTF Male x 1/4" NPTF Female)
	900-3925-48	1/4" NPTF to 3/8" Hose Barb
	900-3909-01	1/4" NPTF to 5/16" Hose Barb
	900-3909-02	1/4" NPTF to 1/4" Hose Barb
	900-3943-22	3/16" NPTF to 3/16" Hose Barb
	900-3943-21	1/4" NPTF to 3/16" Hose Barb
9	626-200024	Hydraulic & Fuel Tank Tray

HYDRAULIC BUMP BAR Version 2



HYDRAULIC BUMP BAR Version 2

#	Part Number	Description
1	980-2005-44	Hydraulic Bump Bar Assembly - 35" Infeed
	626-2002-07	Hydraulic Bump Bar Assembly - 42" Infeed
	980-2005-39	Hydraulic Bump Bar Assembly - 45" Infeed
	915-2000-73	Hydraulic Bump Bar Assembly - 54" Infeed
	911-2002-52	Hydraulic Bump Bar Assembly - 64" Infeed
2	911-3003-66	Bump Bar Valve Linkage
3	900-3956-75	Bump Bar Valve
4	915-3002-17	Bump Bar Valve Cover
5	900-4906-54	3/8"-16NC x 3/4" Bolt
6	900-4906-84	1/2"-13NC Lock Nut

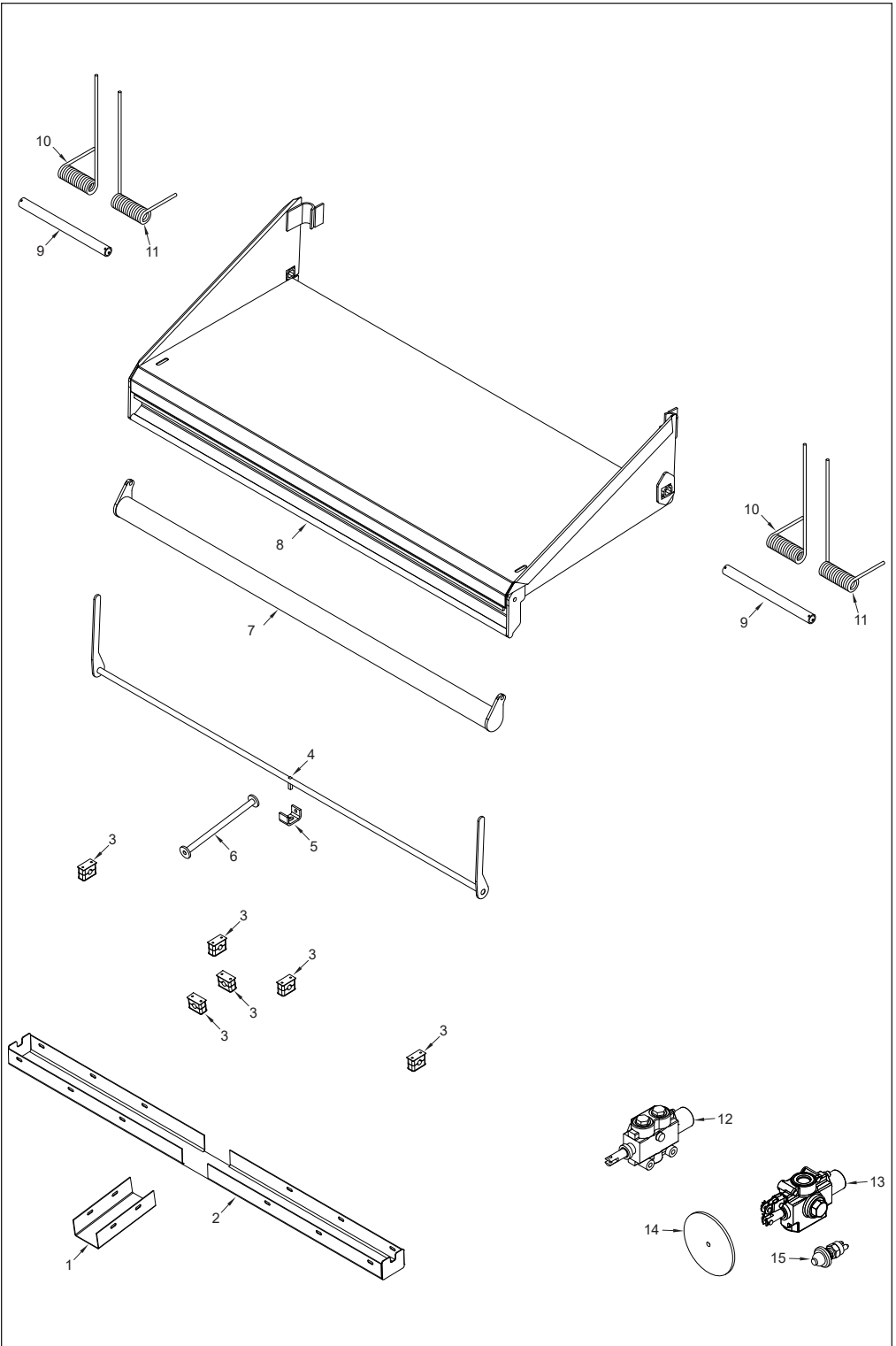
#	Part Number	Description
7	900-4906-88	1/2" Flat Washer
8	900-4906-73	1/2"-13NC x 1 3/4" Bolt
9	980-3011-43	Spring Tube for Spring Assist
	937-3009-68	Spring Tube for Spring Assist (64" Infeed Tray Only)
10	900-4917-76	Left Spring for Spring Assist
11	900-4917-77	Right Spring for Spring Assist
12	900-3961-02	Handle for Momentary Override Switch
13	905-3005-19	Decal Plate for Momentary Override Switch
14	900-3988-24	Momentary Override Valve
15	900-2903-07	Momentary Override Push Button Switch
	999-8001-88	Momentary Override Timer

AUTOFEED VALVE WITH RELIEF

#	Part Number	Description
1	900-3977-38	Autofeed Valve Block Only
2	900-3947-37	Autofeed Solenoid Only
3	900-3947-38	Dump Cartridge Only
4	900-3919-96	Main Relief Only
5	500-0000-77	Autofeed Valve Assembly w/ Relief

Torque Autofeed Cartridge Nut to a maximum of 4 to 6 ft.-lbs. (5 to 8 Nm) and install Loctite 243. Over torque will cause damage and will also void warranty.

HYDRAULIC BUMP BAR



HYDRAULIC BUMP BAR

#	Part Number	Description
1	905-3001-99	Valve Push Bar Cover
2	980-2003-42	Reset Pivot Handle Cover Assembly - 35" Infeed
	626-2001-29	Reset Pivot Handle Cover Assembly - 42" Infeed
	905-2000-57	Reset Pivot Handle Cover Assembly - 45" Infeed
	917-2000-22	Reset Pivot Handle Cover Assembly - 54" Infeed
	911-2001-18	Reset Pivot Handle Cover Assembly - 64" Infeed
3	900-3914-02	Clamp
4	980-2003-41	Reset Pivot Handle Assembly - 35" Infeed
	626-2001-30	Reset Pivot Handle Assembly - 42" Infeed
	905-2000-58	Reset Pivot Handle Assembly - 45" Infeed
	917-2000-23	Reset Pivot Handle Assembly - 54" Infeed
	911-2001-17	Reset Pivot Handle Assembly - 64" Infeed
5	905-3002-08	Bump Bar Trip Bracket
6	905-2004-59	Valve Push Bar Assembly
7	980-2003-40	Hydraulic Bump Bar Assembly - 35" Infeed
	626-2001-28	Hydraulic Bump Bar Assembly - 42" Infeed
	905-2000-50	Hydraulic Bump Bar Assembly - 45" Infeed
	917-2000-19	Hydraulic Bump Bar Assembly - 54" Infeed
	911-2000-99	Hydraulic Bump Bar Assembly - 64" Infeed

#	Part Number	Description
8	980-2003-37	Bump Bar Infeed Tray Assembly - 35" Infeed
	626-2001-26	Bump Bar Infeed Tray Assembly - 42" Infeed
	905-2000-56	Bump Bar Infeed Tray Assembly - 45" Infeed
	917-2000-20	Bump Bar Infeed Tray Assembly - 54" Infeed
	911-2001-13	Bump Bar Infeed Tray Assembly - 64" Infeed
9	980-3011-43	Spring Tube for Spring Assist - Single Spring (Start 4/14)
	980-0129-86	Spring Tube for Spring Assist - Single Spring (Pre 4/14)
	937-3009-68	Spring Tube for Spring Assist - Double Spring (Start 4/14)
	980-3010-34	Spring Tube for Spring Assist - Double Spring (Pre 4/14)
10	900-4917-76	Left Spring for Spring Assist (Start 4/14)
	900-4905-39	Left Spring for Spring Assist (Pre 4/14)
	900-4908-70	"HD" Left Spring for Spring Assist (Pre 4/14)
11	900-4917-77	Right Spring for Spring Assist (Start 4/14)
	900-4905-40	Right Spring for Spring Assist (Pre 4/14)
	900-4908-71	"HD" Right Spring for Spring Assist (Pre 4/14)
12	900-3988-24	Bump Bar Valve
13	900-3956-26	Momentary Override Valve
14	905-3002-14	Push Plate for Momentary Override Switch
15	900-2903-07	Momentary Override Push Button Switch
	999-8001-88	Momentary Override Timer

