



ROOTED IN LEGACY, DRIVEN BY INNOVATION.

# OPERATOR'S MANUAL



## VORTEX WOOD CHIPPER

Models:

V12-31

**V15-32**

V18-32





## FACTORY SERVICE AND SUPPORT

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[www.dyna-products.com](http://www.dyna-products.com)



**Factory Located in Millington, MI**

**Made in the USA**

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## **California Proposition 65 Warning**

This equipment contains and/or emits chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Lead and lead compounds, diesel engine exhaust, and used engine oil are chemicals known to the State of California to cause cancer.

Lead and carbon monoxide are chemicals known to the State of California to cause birth defects.

Lead is a chemical known to the State of California to cause reproductive harm.

# 1. Introduction

Congratulations on your purchase of your new Vortex brush chipper. This manual was prepared to make it easy for you to operate and maintain your new brush chipper.

Your serial number is located on the front of your chipper frame. This number is your machine's unique identifier and will be the key in assuring you receive the correct parts and service for your machine. Always have your chipper's serial number and build number ready when calling for parts or service information.

We believe that it is the customer's responsibility to ensure that all personnel, especially operators and maintenance people, become familiar with this manual prior to working with or around the brush chipper. Safety is everyone's responsibility, but the owner/operator must assume the duty of making sure that all training tools are used to help prevent injury.

The information, specifications, and illustrations in this manual are based on the information in effect at the time of approval for printing. DYNA Products reserves the right to discontinue model lines at any time or to change specifications of design without notice and without incurring obligations.

## 1.1 About This Manual

This manual contains important information on how to operate and maintain the Dyna Vortex Equipment drum chipper safely and correctly. Read and understand this manual. Failure to do so could result in personal injury and/or equipment damage. Consider this manual a permanent part of your equipment. Keep it with the equipment at all times.

This equipment is precisely engineered, heavy duty and designed to provide years of excellent service performing to customer specifications. We are proud to manufacture this equipment for your use and your profit. We also take pride in the quality of our service and replacement parts.

This manual does not supply replacement parts information.

Ongoing improvement of the product design may result in future changes to some parts. Always use part and model numbers to communicate with your dealer.

If anything in this manual is not clear or if you have any questions, concerns or just need general information about using your equipment, please feel free to contact Dyna at 231-660-7973.

### **(1) Units of Measure**

In this operation manual figures shown with in brackets () after the US units of measure are approximate metric conversions from the actual US measurement of the item.

### **(2) Procedure Guidelines**

The following procedure bar indicates the start of a procedure. Any safety warnings related to the procedure will be indicated in italic below the step.

## **PROCEDURE**

Follow all applicable safety regulations and recommendations in this manual as appropriate to your equipment and the situation/conditions prevailing at the time. Federal, state, and local laws and safety regulations must be always complied with to prevent possible danger to persons or property from accidents or harmful explosions. Become familiar with the manual prior to performing any procedures on the equipment.

## 2. Safety

### 1.2 Safety Alert Symbol

The safety alert symbol is used on safety signs and throughout this manual to alert you to potential personal injury hazards. Obey all messages that follow this symbol to avoid possible injury or death.



### 1.3 Vehicle Identification Number

The machine vehicle identification number (VIN) along with the model number are located on the frame near the tongue of the machine. Use the machine model and VIN numbers when making inquiries for parts, service or warranty.

### 1.4 Intended Use

This equipment is intended for industrial/commercial use by professional contractors and their employees. This product and approved options are designed to process wood waste of varying diameter material, as determined by equipment model type as identified on the VIN or serial located on the frame near the tongue of the machine. Use of this product in any other way is prohibited and contrary to its intended use.

### 1.5 Prohibited Use

Operating the equipment outside of its recommended range of applications or for any use which it is not intended, will result in a loss of any guarantee. The manufacture or dealer cannot be held liable for any way other than its intended use is prohibited. The manufacture will not be liable for any damage resulting from such use.

### 1.6 Safety & Product Notice

Safety of product uses is importance to Dyna - Vortex. Safety and product notices are used by Dyna - Vortex to communicate important safety and product information to dealers and machine owners. The information contained in the notices is tied to specific machines using the machine model and serial number. Distribution of bulletins is based on the most current owner on the record along with their associated dealer, so it is important to register your machine and keep your contact information up to date. To provide for the safety of personnel and the reliable continues operation of your machine, be sure to comply with the actions indicated in a respective notice.

## 1.7 Manual Storage Location

Store manuals in the designated location on the equipment, which is the toolbox, for operator and maintenance personnel to easily access. To order additional copies, contact the dealer or manufacturer at 231-660-7973.

## 1.8 Machine Registration

Product warranty registration is done by your authorized Dyna dealer. Your dealer is required to complete a machine inspection, assist in start-up of each chipper, and then submit the registration to Dyna Products through email to [DYNAPARTS@DYNAPARTS.COM](mailto:DYNAPARTS@DYNAPARTS.COM).

corrected typo

## 1.9 Contacting the Manufacturer

At times it may be necessary to contact the manufacturer of this machine. When you do, have the model and serial number ready for your equipment, along with your name and contact information.

- Accident reporting
- Questions regarding chipper modifications
- Standards and regulations
- Questions regarding product applications and safety
- Current owner updates, such as changes in machine ownership.

Please contact:

Dyna Products at 231-660-7973

## 1.10 Transfer of Machine Ownership

If you are not the original owner of this machine, please provide the model and serial number of your equipment, along with your name and the date of transfer of ownership to Dyna.

## 2.1 General Safety

This equipment is designed for processing wood waste and debris. When the equipment is used for purposes other than those which it was designed, user assumes responsibility for any injuries or damage that may result from said misuse.

There are hazards involved in the use of woodchippers. That is why we recommend that this equipment be operated only by personnel who are trained and competent in its use.

You can contribute to personnel safety by following these statements:

- Complying with OSHA, Federal, State and Local Regulations
- Read, understand and follow the instructions in this manual and other manual supplied with the equipment and on all safety signs affixed to the equipment prior to operating.
- Use good, safe work practices in a common sense.
- Only have trained operators, instructed by informed and knowledgeable supervisors, operating or servicing this equipment.

Dyna makes no guarantee, either expressly or by implication, that this equipment meets all local and federal safety regulations. It is the responsibility of those individuals who own and/or operate this machine to verify that all safety regulation is complied with before starting either this unit or any associated equipment.

When operating this chipper, always make sure wheel chocks are in place to prevent the chipper from moving during operation.

It is prohibited to chip round cookies or log cutoffs, square edged lumber and short pieces. The forces exerted are much greater than normal and may damage the chipper or eject pieces and injure the operator. Doing so will void the chipper warranty.

## 2.2 Safety Alert System

The safety alert symbol is used on safety signs and throughout this manual to alert you to potential personal injury hazards. Obey all messages that follow this symbol to avoid possible injury or death.



## 2.3 ANSI Hazard Classification System

This chipper contains ANSI type safety signs to assist in hazard recognition and prevention. The ANSI hazard classification system is a multi-tier system used to alert you to potential personal injury hazards. Signal words (DANGER, WARNING, and CAUTION) shown with the safety alert symbol are used throughout this manual as well as on chipper labels to indicate a specific level of severity of the potential hazard. Pictorials along with color and text descriptions for each applicable signal work and box are shown below.

### **DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.

**corrected typo**

### **WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.

### **CAUTION**

**CAUTION** indicates a hazard situation which, if not avoided, could result in minor or moderate injury.

## 2.4 Property Damage Messages

The signal word NOTICE, shown without the safety alert symbol, is used throughout this manual and on machine labels to draw attention to supplemental information that is not related to personal injury.

### **NOTICE**

**NOTICE** indicates information considered important, but not hazard related.

## 2.5 Safety Signs Pictorials

Under all safety regulations is a set of common-sense rules. Everyone who works with or near this chipper must be aware of these rules. To help and maintain such an awareness in our customers, safety signs are fixed on our equipment.

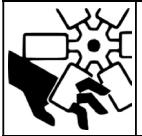
Pictorials on our safety signs remind both workers and supervisors of hazards and procedures that, in the course of a busy day, they might otherwise forget. The message of each pictorial is simple and direct. Safety sign pictorials are defined in the following table.

Safety signs must be replaced immediately if they become unreadable or lost. If the chipper is repaired and parts have been replaced on which safety signs were attached, be sure new safety signs are installed before the machine is put into service. Use mild soap and water to clean safety signs. Do not use solvent-based cleaners, which may damage the safety sign.

Safety signs affixed to major components are identified in the applicable component.

Symbol	Description
	Always be positioned and prepared to operate the feed control bar
	Never kick material into the infeed
	Never open chipper drum, discharge cleanout, or blower housing door when machine is running
	Pinch Point
	Flying Material
	Do not work under Yoke
	Do not reach into the infeed chute
	Arm entanglement in belt drive

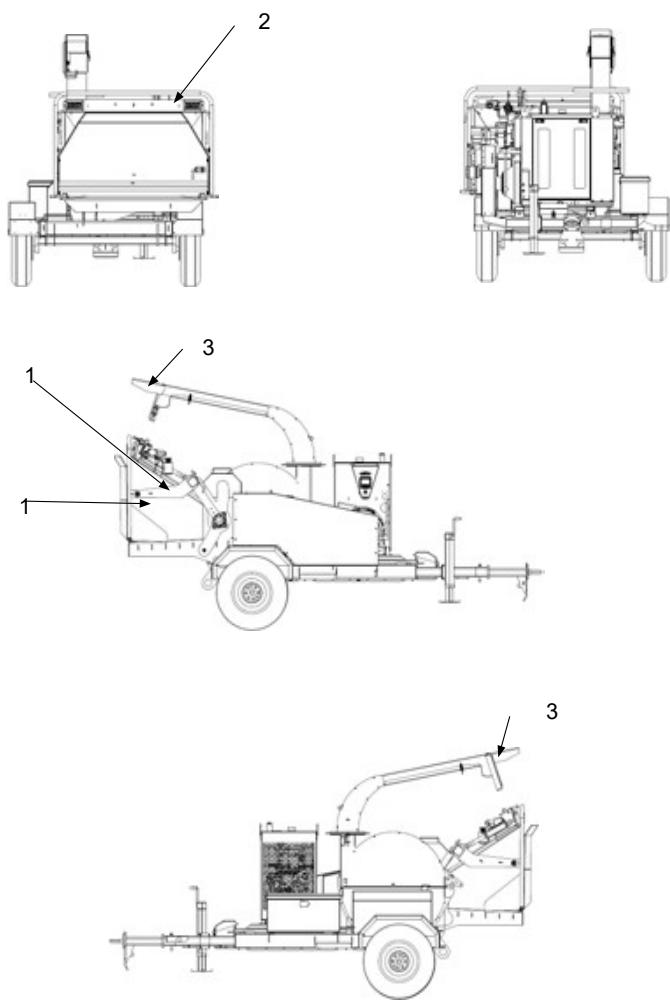
## Safety

Symbol	Description
	Entanglement with moving parts
	Keep hands clear
	Battery explosion - Frozen
	Entanglement/severing of fingers or hands from fan blades
	Flammable Liquid
	Breathing - Hazard
	High Pressure Leaks - Hazard
	Explosion Hazard

## Safety

Symbol	Description
	Hard Hat, Face Shield, Ear protection - Required
	High Vis Vest - Required
	No Cuff Gloves - Required
	Foot Protection Required – safety toe boots/shoes
	Falling from a height
	3-Point contact when using access system
	Burns from hot pressurized fluid (radiator)
	Do not remove cap when hot

## Safety



# Safety

Item	Sign	Item	Sign
1	 <p><b>DANGER</b></p> <p><b>KEEP HANDS CLEAR OF PINCH POINTS!</b></p> <p>DP-00138</p>	2	 <p><b>DANGER</b></p> <p><b>DO NOT</b> work under feed roller or yoke unless:</p> <ul style="list-style-type: none"> <li>• Yoke lock pin is securely in place</li> <li>• Engine is off and all machine parts have completely stopped moving</li> <li>• Bars with safety blocks and chain are properly positioned</li> <li>• All ANSI, OSHA and manufacturers safety instructions are followed</li> </ul> <p><b>DANGER</b></p> <p><b>DO NOT</b> reach or kick into the feed chute for any reason!</p> <p><b>DO NOT</b> reach or kick into feed chute to clear wood debris into the feed chute!</p> <p><b>DO NOT</b> reach or kick into the feed chute to clear debris from the feed chute.</p> <p><b>ALWAYS</b> be positioned to the side of the feed chute!</p> <p><b>ALWAYS</b> follow operation and safety instructions (ANSI, OSHA, and manufacturers).</p> <p><b>DO NOT</b> operate this machine without reading the operator's manual, read details, the machine's operating procedures.</p> <p>DP-00141</p>
3	 <p><b>DANGER</b></p> <p><b>FLYING DISCHARGE MATERIAL CAN BE HAZARDOUS</b></p> <p><b>DO NOT</b> direct discharge spout toward people or buildings.</p> <p><b>DO NOT</b> walk in front of chip discharge spout.</p> <p><b>DO NOT</b> operate or transport unless discharge is clamped, pinned and bolted securely.</p> <p>DP-00139</p>		

## 2.6 Personal Safety

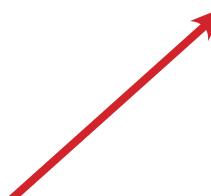
This chipper is designed with the safety of all personnel in mind. Never attempt to change, modify, eliminate or bypass any of the safety devices installed at the factory. Guards, covers and shields installed around the moving parts at the factory are meant to prevent accidental injury to operators and other personnel. Do not remove them.

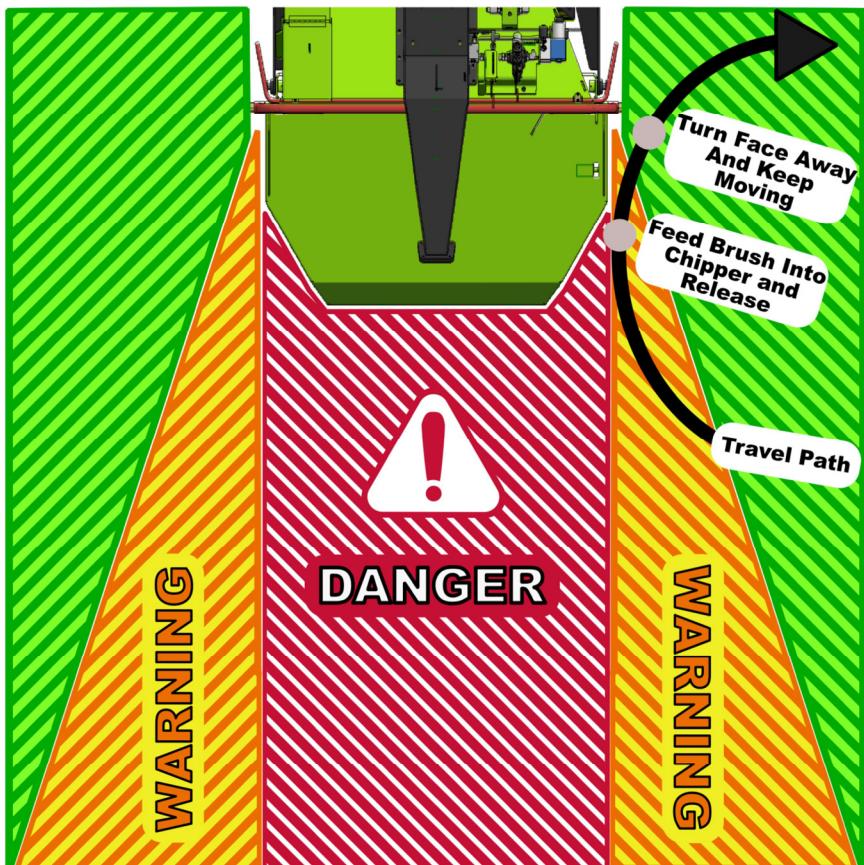
Make sure that everyone working on or near this equipment is familiar with safety precautions. We require the following basic safety practices:

- Read and understand all danger, warning, caution and notice signs prior to operating equipment.
- Wear proper personal protective equipment, including eye protection, hearing protection, hard hat, no cuff gloves, and specified safety footwear whenever you are near this machine while it is running.
- This machine requires 2 operators at any given time.

 **WARNING:** There are no "Safe" zones around a chipper. The green zone is not meant to imply that region is "safe" but rather to imply the safer regions.

 **WARNING:** These regions are meant to illustrate operating a chipper in an isolated environment. These Zones will not protect you from external hazards. Example: oncoming traffic, heavy machinery operation, falling trees, ETC. **ALWAYS** be aware of your site's hazards while operating.

 corrected typo



## 2.7 Winch Operation

### DANGER

Brush being fed into the chipper infeed hopper can catch on an extended winch line. The knives on the spinning disc/drum can then seize and rapidly pull in the winch line, potentially causing serious injury or death to nearby workers.

### DANGER

The winch line can be under tension and may suddenly let go, snapping back and causing serious injury or death to the operator.

### DANGER

Climbers' ropes and other lines at the work site can become entangled in material being fed into the chipper. The knives on the spinning disc/drum can then seize and rapidly pull in the ropes, potentially causing serious injury or death to nearby workers.

### DANGER

Never operate the winch while the woodchipper is detached from the towing vehicle. The load could shift the woodchipper or cause the tongue to come off the support blocking.

### DANGER

Some winch lines have a metal hook at the end. If the metal hook enters the chipper infeed hopper, it could be thrown out of the discharge chute at high speed, causing serious injury or death.

### DANGER

Ensure there is outbound strain on the winch line whenever it is being powered out. Using the hydraulic control to power out the winch line instead of free spooling it could cause the line to tangle around the spool and wind inward when the hydraulic lever is in the unspool position. If a worker is holding the winch line when this happens, it can create a pinch point between the line housing and hook, as well as between the winch line and material.

### **NOTICE**

Before operating the machine, ensure that all potential operators read and understand the manuals and decals, watch the instructional video, and follow the recommendations.

## Safety

### DANGER

Follow all winch operating procedures, failure to do so can result in severe injury or death.

The winch is designed to assist operators in pulling large tree limbs to the woodchipper feed wheel(s) without lifting and carrying.

- **\*\*Pinch Point Hazards:** \*\* Pinch points may develop during winching operations. The hydraulic controls are located on the side of the infeed hopper. Winch operation should be handled by one person only. Do not have one person operating the winch hydraulic control while another person is operating or holding the winch line, as this could result in the person holding the line getting their hand pinched.
- **\*\*Safety Precautions:** \*\* Stay clear when winching. Do not allow the winch line or other ropes to be caught and pulled into the chipper blades. Avoid becoming entangled in the winch line. Never put yourself between the brush or other materials and the winch line while pulling large tree limbs toward the chipper.
- **\*\*Potential Hazards:** \*\* The metal hook at the end of the winch line entering the wood chipper could result in serious damage to the blades and other internal parts, potentially causing injury to operators and bystanders.
- **\*\*Operation Restrictions:** \*\* Never pull out the winch line while material such as brush or limbs are feeding into the chipper. Never attach the winch line to an installed choker while feeding other limbs into the machine.

## Safety

- **\*\*Storage:** When not using the winch, make sure that the winch line is retracted and stowed or hooked to keep it from being pulled into the chipper.
- **\*\*Avoid Overloading:** Do not overload the winch. The line can break, or the choker can detach and hit a worker. Be aware of the hazards of a winch line breaking. Ensure everyone remains clear of the recoil vicinity in the event of load or line breaking.
- **\*\*Entanglement Risk:** Brush can snag the winch line or climbers' ropes. The blades can grab and pull in the line, and anything attached to it at high speed. If you are between the chipper and the winch line that is caught in the blades, the winch line will be pulled in very rapidly, giving you no time to get out of its way, potentially resulting in death or serious injury.
- **\*\*Safe Load Handling:** Pull loads in a manner that avoids angles which could cause the chipper and towing vehicle to tip or experience unintended movement.

### **WARNING**

You must operate the winch according to the instructions.

The winch line must be installed and fed from the bottom of the drum.

Here are the steps for operating the winch:

1. **\*\*Prepare the Chipper:** Place the feed wheel control bar in the off position. Ensure that the chipper and towing vehicle are securely blocked or secured in a solid location.

## Safety

2. **\*\*Prepare the Winch Unit:** \*\* Locate the handle on the winch unit and move it to the free spool mode by pulling the handle toward the operator. Note that while the winch is in normal operation or free spool mode, the feed system will not work.
3. **\*\*Attach the Winch Line:** \*\* Pull the winch line to the material to be pulled. Securely attach the winch line to the wood material that you want to pull towards the chipper.
4. **\*\*Engage the Winch:** \*\* Engage the winch by moving the hydraulic handle as indicated on the chipper.
5. **\*\*Safety Check:** \*\* Ensure that everyone is clear of the operation area. Use the winch control valve or the radio remote control (if applicable) to pull the wood material towards the chipper. Verify that the controls operate in the correct direction before proceeding with the operation.
6. Once the wood material is pulled to the chipper, the optional feed assist can be activated to momentarily operate the feed system. Position the feed control bar in the feed position to stage the wood into the feed wheels.
7. Re-hook the winch line as necessary before starting the wood into the feed wheels.
8. Ensure the feed control bar is returned to the off position.
9. Unhook the winch line from the wood material and secure the end of the winch line to the winch hook mount.
10. Reel in the winch line.

# Safety

## 2.8 Fueling

When adding fuel to a Vortex Chipper, it is crucial to follow proper safety procedures to prevent accidents and ensure the equipment operates efficiently. First, always turn off the engine and allow the chipper to cool down completely before refueling. Never add fuel while the engine is hot or running, as this can cause a fire or explosion. Ensure you are in a well-ventilated area and away from any open flames or sparks. Use a clean, approved fuel container to avoid contamination. Carefully pour the fuel into the designated fuel tank, taking care not to overfill. Wipe up any spilled fuel immediately and dispose of the rags properly. Before starting the engine, check for any fuel leaks and secure the fuel cap tightly. Always follow the manufacturer's instructions and local regulations regarding fuel type and refueling procedures. By adhering to these guidelines, you can help ensure safe and efficient operation of your woodchipper.

## 2.9 Towing and Safety Chains

The Department of Transportation (DOT) has specific regulations regarding the use of safety chains for trailers, primarily outlined in 49 CFR § 393.70. This regulation mandates that every full trailer must be coupled to the frame of the towing vehicle with one or more safety devices to prevent the trailer from breaking loose if the towbar fails or becomes disconnected.

Key requirements include:

**Safety Chains/Cables:** Safety chains or cables must be attached to both the towing and towed vehicles in a way that ensures the towbar will not drop to the ground if it fails. These chains or cables should also prevent the vehicles from separating in case of a tow-bar failure.

**Attachment Points:** The safety devices must be connected in a manner that does not rely solely on bolts or pins at the midpoint of the drawbar. Instead, they should be connected to points beyond any connecting devices to ensure stability.

**Extendible Drawbars:** For trailers with extendible drawbars, separate safety devices must be provided at both the front and rear. These devices must ensure the drawbar does not separate at its movable portion, and the welds or other connecting means must be strong enough to handle the impact forces of a fully loaded trailer.

These regulations aim to enhance safety by ensuring that trailers remain securely attached to the towing vehicle under all conditions (FMCSA) (FMCSA). For further details, you can review the full guidelines on the FMCSA website. <https://www.fmcsa.dot.gov/regulations>

## 2.10 Hood Safety Switch

Never attempt to open the hood on the chipper drum while the machine is running. Make sure the hood is completely closed prior to starting the machine. There is a safety switch that will prevent the machine from running and an error message will come up on the control panel if the hood is open. Safety Switch is shown in the picture below.



## Safety

1. PPE is required.
2. Keep anyone not operating the chipper back a minimum of 200 feet.
3. Read the owners manual.
4. Inspect the chipper before every use.
5. Keep hands and body away from the infeed at all times.
6. Do not wear loose clothing/scarves/jewelry.
7. Do NOT bypass any safety interlocks or guards.
8. Always use a push tool or a long branch to feed small material.
9. Do NOT allow untrained people to operate the machine.
10. Always make sure the discharge is pointed in a safe direction.
11. Never leave one person on the jobsite alone while the machine is running.
12. Lock out/Tag out the machine before attempting any repairs or maintenance.
13. Under no circumstances should any modifications be made without factory authorization.



**SAFETY FIRST**





# DANGER

**DO NOT** feed vine-like material into this machine without following appropriate precautions.

**DO NOT** allow rope or vine-like material to lay in front of infeed chute.

**DO NOT** allow rope or vine-like material to trip or otherwise entangle you or your clothing.

**MUST** cut vine-like material into 4-5 foot pieces!

**MUST** stop the chipper feed system and feed the shortened pieces with a wooden push paddle only!

**MUST** always be positioned and prepared to operate feed control handle!

**FAILURE TO FOLLOW THESE GUIDELINES  
MAY RESULT IN SERIOUS INJURY OR EVEN DEATH!**



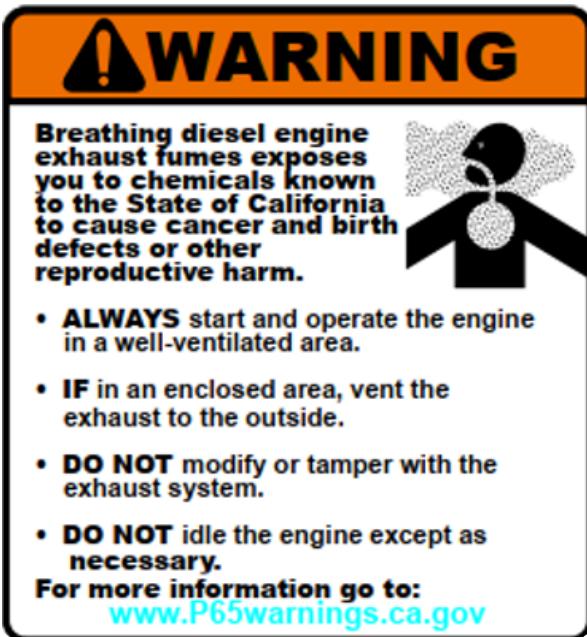
# DANGER

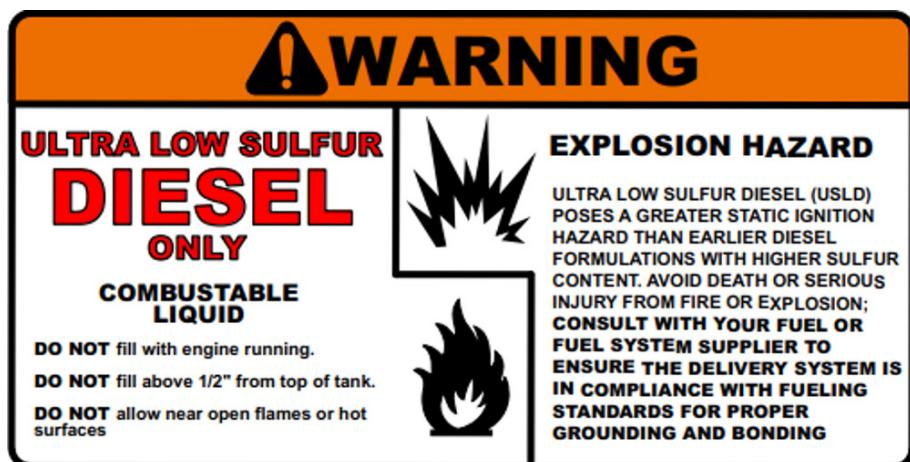
**BRUSH CHIPPERS ARE VERY DANGEROUS MACHINES TO OPERATE! READ & BELIEVE THIS WARNING DECAL!**

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

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

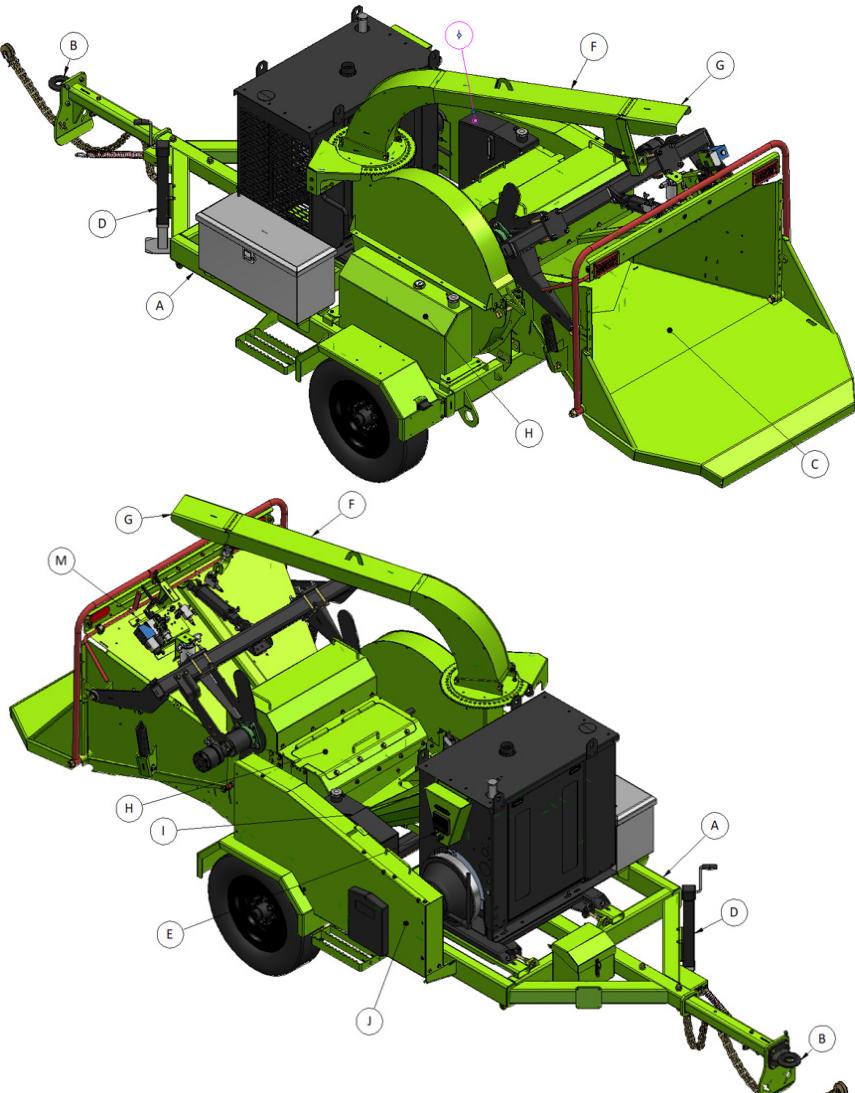
There have been **ACCIDENTS**, all of them were **SERIOUS INJURIES** or **DEATH** involved with chipper hoods flying open and hitting someone. In **ALL** the cases the hood was **NOT SECURED PROPERLY**. **DO NOT** operate this chipper if the hood is not properly secured with **ALL FASTENERS**.





### 3. Main Components

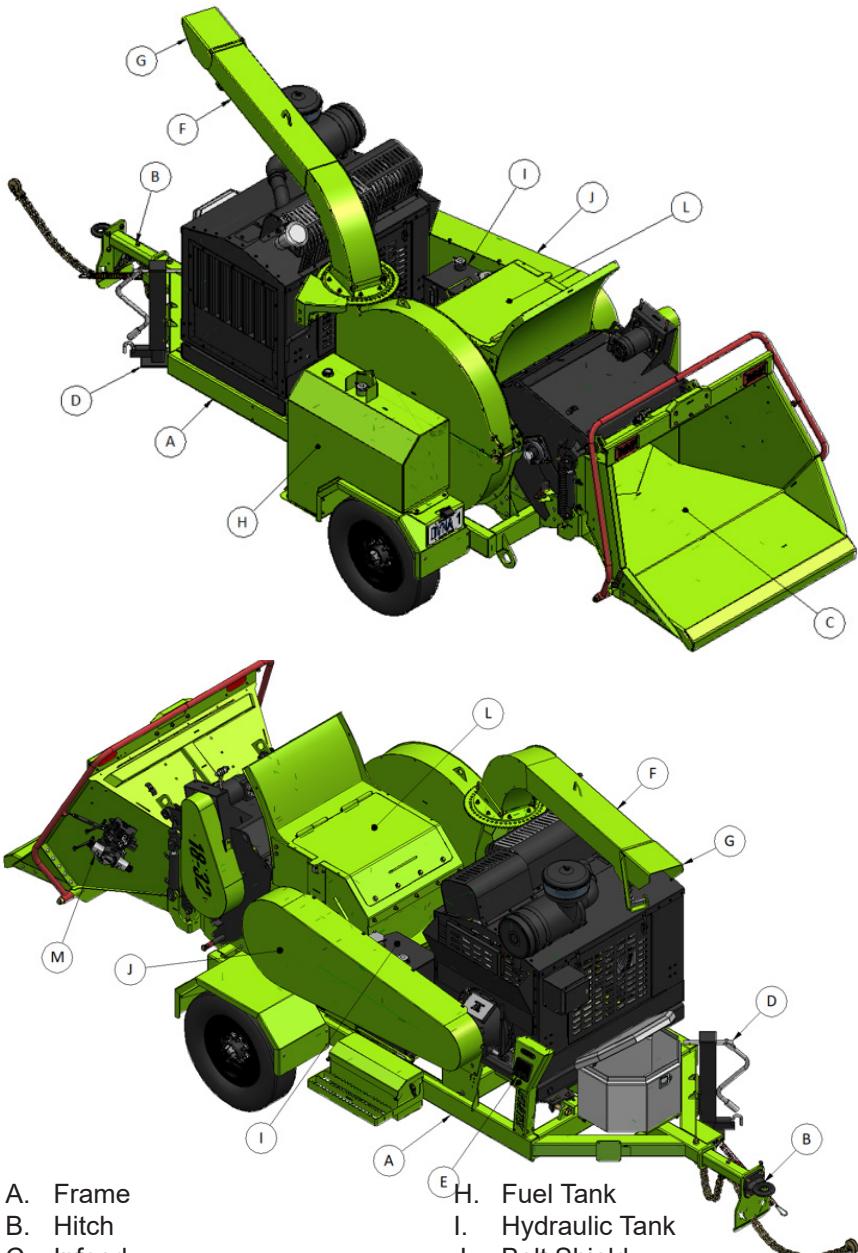
#### V12-31



A. Frame	H. Fuel Tank
B. Hitch	I. Hydraulic Tank
C. Infeed	J. Belt Shield
D. Jack	K. Axle
E. Control Panel	L. Drum Hood
F. Discharge Chute	M. Hydraulic Control Bank
G. Discharge Flipper	

## Main Components

### V15-32 and V18-32



- A. Frame
- B. Hitch
- C. Infeed
- D. Jack
- E. Control Panel
- F. Discharge Chute
- G. Discharge Flipper
- H. Fuel Tank
- I. Hydraulic Tank
- J. Belt Shield
- K. Axle
- L. Drum Hood
- M. Hydraulic Control Bank

## 4. Standard Operation

### NOTICE

#### MAINTAIN LUBRICATION AND HYDRAULICS

**DO USE ONLY EP#2 LITHIUM BASE GREASE.**

**DO LUBRICATE DAILY PER THE MANUALS SERVICE CHARTS.**

**DO CONSULT CLUTCH MANUAL AND ENGINE MANUAL FOR THEIR PROPER LUBRICATION SCHEDULE.**

**DO CHANGE HYDRAULIC FILTER AFTER FIRST (10) HOURS, THEN AFTER EACH (400) HOURS.**

**DO MAINTAIN HYDRAULIC TANK FLUID AT A LEVEL THAT'S CENTERED IN THE SIGHT GLASS AT ALL TIMES.**

**DO ALLOW HYDRAULICS TO WARM UP FOR A MINIMUM (5) MINUTES IN COLD WEATHER CONDITIONS.**

**DO NOT OVERTIGHTEN OR UNDERTIGHTEN PUMP BELT DRIVES. OVERTIGHTENING BREAKS PUMP SHAFTS AND UNDERTIGHTENING SLIPS BELTS LOSING HYDRAULIC POWER. CONSULT MANUALS.**

**IMPROPER MAINTANANCE TO HYDRAULIC AND BEARING COMPONENTS WILL NOT BE COVERED UNDER WARRANTY.**

### NOTICE

#### ENGINE OIL LUBRICATION:

- Oil usage will vary, especially during engine break-in period.**
- You must check and maintain oil level daily per engine manufacturer manual.**
- Avoid unwarranted unnecessary engine damage or failure!**

## NOTICE

**FREQUENTLY ADJUST  
AND GREASE PER PTO  
MANUFACTURER'S  
MANUAL.**

## NOTICE

Check bolt-on components for damage or cracks daily and repair or replace as needed. Also make sure the mounting bolts and all other bolts are tight

## NOTICE

If the blower housing or discharge chute 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.

## NOTICE

**KEEP  
RADIATOR  
CLEAN AND  
CLEAR OF  
DEBRIS**

1. Check all engine fluids.
2. Check that PTO/Clutch is disengaged. Make sure all safety guards and covers are secure and in place.
3. Make sure that the infeed table and the chipper drum are clear of debris.
4. Start the engine.  
-Cold Start- Allow the engine to warm for no more than 2-3 minutes before operation.
5. Engage the PTO/Clutch.  
⚠ NEVER engage the Clutch/PTO above an idle.  
-Engage the Clutch/PTO by “bumping” (1-2 second slip) 2-3 times to get the drum spinning, then fully engage the clutch handle.
6. Increase the throttle to full RPM. (Hit the + (2) times on the PV485 viewer)
7. Pull the Feed Control Bar to the FWD position.

## Standard Operation

8. Feed the material with the large (butt) end first. Feed the shorter material by placing it on top of longer material or use an approved push stick.

 NEVER put any part of your body on, or into, the infeed table.

9. When finished, throttle down to an idle. (Hit the – (2) times on the PV485 viewer.)

10. Disengage the Clutch/PTO.

 ALWAYS disengage the Clutch/PTO with the engine at an idle.

11. Allow the engine to idle and cool for 2-3 minutes, then turn the key to the “off” position.

 CAUTION– After the engine is turned off, the chipper drum and thrower will continue to coast (spin) for several minutes. Always make sure the drum has come to a complete stop before attempting any service or maintenance.

## **IMPORTANT:**

Inspect all fasteners, nuts and bolts, and hydraulic fittings

- First hour of operation
- After the initial 5 Hours
- After the initial 10 hours
- After the initial 15 hours
- After the initial 25 hours

**NOTE-** Fasteners, hardware, and fittings, may loosen up during normal operating conditions. Retorque or tighten as needed.

## 5. Adjusting Auto-Feed Settings

1. To access the Auto-feed settings, ensure the key is turned to the “ON” position. Then press the button with the square and arrow.



2. Next, select the “ADJUSTMENTS” menu by pressing the center button.



3. Next select the “FEED WHEEL” option by pressing the button to the far-right side. This will bring up the Disengage setting for the Auto-feed. This is the main setting that will be changed in order to feed different diameters of materials.



## Auto-Feed Settings

4. To increase the Disengage RPM press the button to the right (Increase) of the center button. This will raise the disengage RPM number, making the machine Auto-feed at a higher RPM. Generally, you raise this number to feed larger diameter materials to the machine without stalling the unit.



5. To lower the Disengage RPM push the button to the left (Decrease) of the center button. Generally, you will lower the Disengage RPM for smaller brushy materials. This allows the machine to feed the material without the Auto-feed kicking on as often.



## Auto-Feed Settings

6. To access the Engage RPM screen, push the far-right button while in the Disengage RPM screen. This will allow you to adjust the Engage RPM setting. This setting is set for the feed wheel to resume feeding the drum after the machine recovers RPM. This should rarely be adjusted. Use the same process as the Disengage RPM to increase or decrease the setting.



7. By pressing the far-right button while in the Engage RPM screen, you will access the reversing time. This is the length of time that your feed wheel will back the material away from the drum when Auto-feed is activated. You adjust this setting the same as your Engage and Disengage RPM. Use the Decrease and the Increase buttons to adjust the setting up or down. 200 milliseconds is the factory setting for Reversing time.



## Auto-Feed Settings

8. Once you set your changes you can exit out to the main screen by pressing the button to the far-left soft key multiple times.



### **Recommended settings for Disengage:**

These are the difference in the Disengage and the Engage numbers also known as "DROOP". For example if the Engage is set for 2100 RPM and the Disengage RPM is set to 1700 RPM that is a 400 RPM Droop. (Engage RPM – Disengage RPM = Droop)

- Large diameter materials 50 RPM – 100 RPM droop
- Medium diameter materials 150 RPM – 200 RPM droop
- Small diameter and brushy materials 250 RPM- 400 RPM droop
- For Palm trees and Bamboo 50 RPM – 200 RPM droop

## 6. General Maintenance

### a. Maintenance Schedule

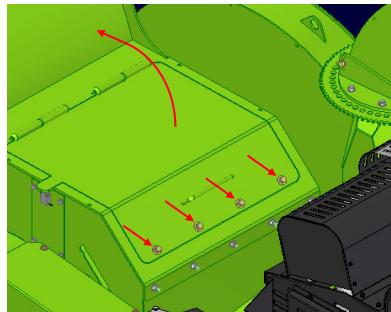
	Daily
Check and fill fuel level	<input checked="" type="checkbox"/>
Inspect knives and anvil	<input checked="" type="checkbox"/>
Check and adjust the drive belt tension	<input checked="" type="checkbox"/>
Check pulleys and guards	<input checked="" type="checkbox"/>
Ensure all safety features are functioning	<input checked="" type="checkbox"/>
Check for fluid leaks	<input checked="" type="checkbox"/>
Check clutch/PTO tension	<input checked="" type="checkbox"/>
Visual inspection	<input checked="" type="checkbox"/>
Tighten nuts and bolts	<input checked="" type="checkbox"/>
Check trailer lights and brakes	<input checked="" type="checkbox"/>
Grease required fittings	
Check the drum and blower for wear	<input checked="" type="checkbox"/>
Check the feedwheel drive system	
Check coolant/hydraulic oil level	<input checked="" type="checkbox"/>
Replace hydraulic filter	
Drain and replace hydraulic fluid	
Inspect/lubricate axle wheel bearings	
Inspect/replace brakes	
System check trailer breakaway system	
Inspect feedwheel bearings	
Perform a full safety inspection	

## General Maintenance

Weekly (25-40 Hours)	Monthly (50-100 Hours)	Annually (100-500 Hours)
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## b. Removal and replacement of the knives:

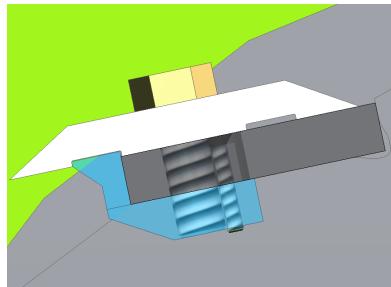
1. Lock out /Tag out the machine.
2. Remove the drum housing hood bolts and open the door.



3. Use the drum lock pin to secure the drum for knife removal, found behind the thrower wheel.



4. Remove the worn chipper knife. Do not worry about the Counter Knife (Blue). It is retained to the Knife Holder (Black) with flat head screws.



## General Maintenance

5. When flipping or replacing the knife, clean the debris from the back of the knife with a wire brush or scraper blade.

6. Clean the knife bed with a wire brush or scraper blade.

added V15

7. Replace the knife bolts and torque to 100 ft-lb (V12-31) or 200 ft-lb (V15-32 and V18-32).

–Replace the knife hardware (bolts) every time you replace the knife. (1 set of bolts for both knife edges)

8. Spin the drum by hand for at least (1) full revolution to make sure no knives are coming in contact with the anvil.

9. Replace the drum housing bolts.

NOTE: Sharp knives are critical to the performance and longevity of your Vortex chipper.

 NEVER work on the chipper knives with out the proper safety gloves. Chipper knives are very sharp and serious injury is possible.

## c. Anvil Adjustment Process

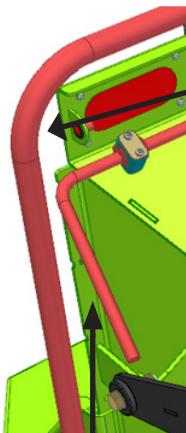
1. Disengage the Clutch/PTO and allow the engine to run at an idle. Make sure the drum has come to a complete stop.

2. Place the feed wheel control bar to the neutral position.

3. Raise the feed wheel using the yoke control valve and push in the yoke lock fully.

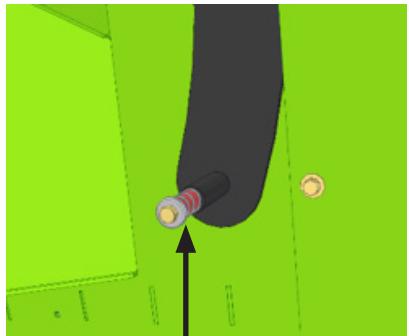
4. Turn the engine off and remove the ignition key. Follow the lock out procedure.

5. Loosen the anvil bolts on the bottom side of the machine. Do not remove the bolts.



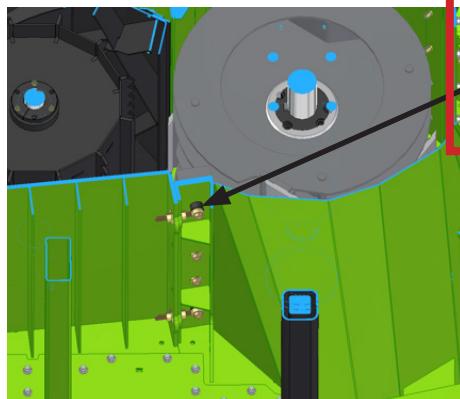
Infeed Control Bar

Yoke Control Valve



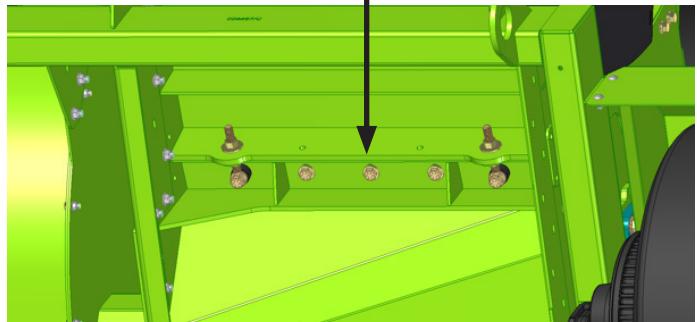
Yoke Lock

added V15



NOTE: The V15-32 and V18-32 use eye bolts for push/pull adjustment

Anvil Bolts

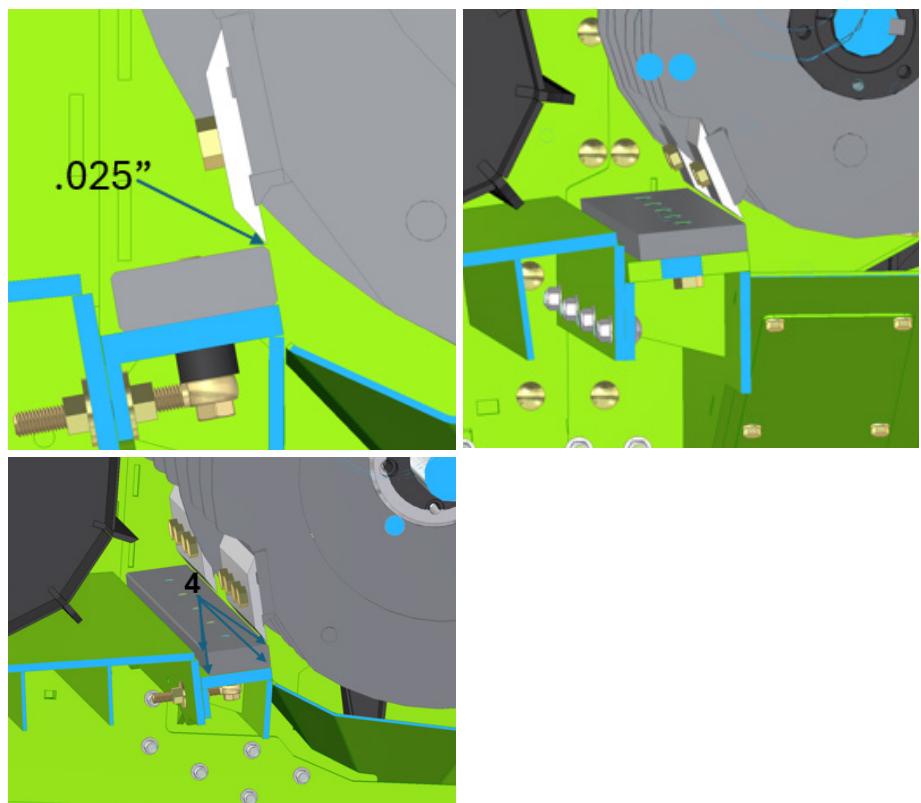


## General Maintenance

6. From the in-feed table, measure the anvil clearance between the cutting edge of the blade to the top edge of the anvil.
7. Adjust the anvil position so the closest knife is no less than .025" between the knife edge and the top corner of the anvil.
8. Tighten the anvil bolts. (see torque chart)
9. Rotate the drum backwards for several complete revolutions and check for interference and proper clearance. Start the engine and retract the yoke lock mechanism.

NOTE: Each knife may have a different clearance. Set the anvil gap to the CLOSEST knife. Make sure all knives are new or sharpened to the same width.

NOTE: If the anvil edge is worn, the anvil can be flipped and indexed to utilize all (4) corners.



## d. Bolt Torque Guide

When making repairs or performing maintenance, to your Vortex chipper, please reference the **Bolt Torque Guide** for the proper specifications.

### Tightening Torque Guide

Hex Head Cap Screws



#### GRADE 5

Coarse Thread

Size	Clamp Load	Plain	Plated
1/4-20 (.250)	2,025	8 ft. lbs.	76 in. lbs.
5/16-18 (.3125)	3,338	17 ft. lbs.	13 ft. lbs.
3/8-16 (.375)	4,950	31 ft. lbs.	23 ft. lbs.
7/16-14 (.4375)	6,788	50 ft. lbs.	37 ft. lbs.
1/2-13 (.500)	9,075	76 ft. lbs.	57 ft. lbs.
9/16-12 (.5625)	11,625	109 ft. lbs.	82 ft. lbs.
5/8-11 (.625)	14,400	150 ft. lbs.	112 ft. lbs.
3/4-10 (.750)	21,300	266 ft. lbs.	200 ft. lbs.
7/8-9 (.875)	29,475	430 ft. lbs.	322 ft. lbs.
1-8 (1.000)	38,625	644 ft. lbs.	483 ft. lbs.
1 1/8-7 (1.125)	42,375	794 ft. lbs.	596 ft. lbs.
1 1/4-7 (1.250)	53,775	1120 ft. lbs.	840 ft. lbs.
1 3/8-6 (.1375)	64,125	1470 ft. lbs.	1102 ft. lbs.
1 1/2-6 (1.500)	78,000	1950 ft. lbs.	1462 ft. lbs.

#### Fine Thread

Size	Clamp Load	Plain	Plated
1/4-28 (.250)	2,325	10 ft. lbs.	87 in. lbs.
5/16-24 (.3125)	3,675	19 ft. lbs.	14 ft. lbs.
3/8-24 (.375)	5,588	35 ft. lbs.	26 ft. lbs.
7/16-20 (.4375)	7,575	55 ft. lbs.	41 ft. lbs.
1/2-20 (.500)	10,200	85 ft. lbs.	64 ft. lbs.
9/16-18 (.5625)	12,975	122 ft. lbs.	91 ft. lbs.
5/8-18 (.625)	16,350	170 ft. lbs.	128 ft. lbs.
3/4-16 (.750)	23,775	297 ft. lbs.	223 ft. lbs.
7/8-14 (.875)	32,475	474 ft. lbs.	355 ft. lbs.
1-12 (1.000)	42,300	705 ft. lbs.	529 ft. lbs.
1-14 (1.000)	32,275	721 ft. lbs.	541 ft. lbs.
1 1/8-12 (1.125)	47,475	890 ft. lbs.	668 ft. lbs.
1 1/4-12 (1.250)	59,550	1241 ft. lbs.	930 ft. lbs.
1 3/8-12 (.1375)	72,975	1672 ft. lbs.	1254 ft. lbs.
1 1/2-12 (1.500)	87,750	2194 ft. lbs.	1645 ft. lbs.

#### GRADE 8

Coarse Thread

Size	Clamp Load	Plain	Plated
1/4-20 (.250)	2,850	12 ft. lbs.	9 ft. lbs.
5/16-18 (.3125)	4,725	25 ft. lbs.	18 ft. lbs.
3/8-16 (.375)	6,975	44 ft. lbs.	33 ft. lbs.
7/16-14 (.4375)	9,600	70 ft. lbs.	52 ft. lbs.
1/2-13 (.500)	12,750	106 ft. lbs.	80 ft. lbs.
9/16-12 (.5625)	16,350	153 ft. lbs.	115 ft. lbs.
5/8-11 (.625)	20,325	212 ft. lbs.	159 ft. lbs.
3/4-10 (.750)	30,075	376 ft. lbs.	282 ft. lbs.
7/8-9 (.875)	41,550	606 ft. lbs.	454 ft. lbs.
1-8 (1.000)	54,525	909 ft. lbs.	682 ft. lbs.
1 1/8-7 (1.125)	68,700	1288 ft. lbs.	966 ft. lbs.
1 1/4-7 (1.250)	87,225	1817 ft. lbs.	1363 ft. lbs.
1 3/8-6 (.1375)	103,950	2382 ft. lbs.	1787 ft. lbs.
1 1/2-6 (1.500)	126,450	3161 ft. lbs.	2371 ft. lbs.

#### Fine Thread

Size	Clamp Load	Plain	Plated
1/4-28 (.250)	3,263	14 ft. lbs.	10 ft. lbs.
5/16-24 (.3125)	5,113	27 ft. lbs.	20 ft. lbs.
3/8-24 (.375)	7,875	49 ft. lbs.	37 ft. lbs.
7/16-20 (.4375)	10,650	78 ft. lbs.	58 ft. lbs.
1/2-20 (.500)	14,400	120 ft. lbs.	90 ft. lbs.
9/16-18 (.5625)	18,300	172 ft. lbs.	129 ft. lbs.
5/8-18 (.625)	23,025	240 ft. lbs.	180 ft. lbs.
3/4-16 (.750)	33,600	420 ft. lbs.	315 ft. lbs.
7/8-9 (.875)	45,825	668 ft. lbs.	501 ft. lbs.
1-12 (1.000)	59,700	995 ft. lbs.	746 ft. lbs.
1-14 (1.000)	61,125	1019 ft. lbs.	764 ft. lbs.
1 1/8-12 (1.125)	77,025	1444 ft. lbs.	1083 ft. lbs.
1 1/4-12 (1.250)	96,600	2012 ft. lbs.	1509 ft. lbs.
1 3/8-12 (.1375)	118,350	2712 ft. lbs.	2034 ft. lbs.
1 1/2-12 (1.500)	142,275	3557 ft. lbs.	2668 ft. lbs.

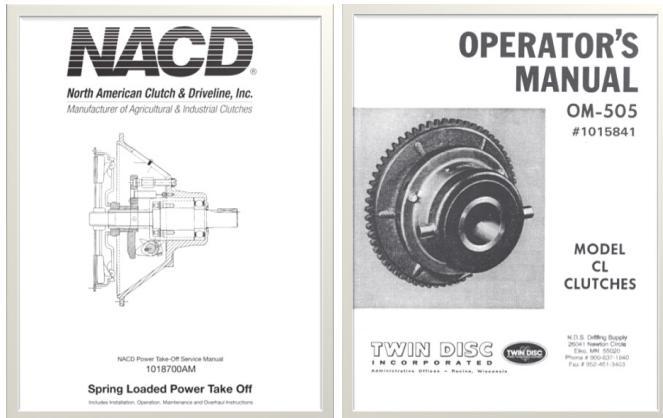
## e. Engine Maintenance

Please refer to your specific engine manual provided with your Vortex chipper for all maintenance, schedules, and specifications.



## f. Clutch Maintenance

Please refer to the manufacturer's service and operators manual.



**IMPORTANT:** Clutch maintenance, especially during the break in period, is critical. Please check the clutch adjustment daily for the first 100 hours of operation. Clutch failures due to poor maintenance are NOT covered under warranty.

## **g. Machine Lubrication**

### Specialized Grease Instructions

#### **DO NOT OVER GREASE THE BEARINGS OR CLUTCH/PTO**

- Over greasing components will cause failure that will NOT be covered under warranty.
- DYNA recommends a NGLI 2 (Mobile EP2) grease with a viscosity rating of ISO VG 150 to be used on our Vortex chippers.

#### Schedule

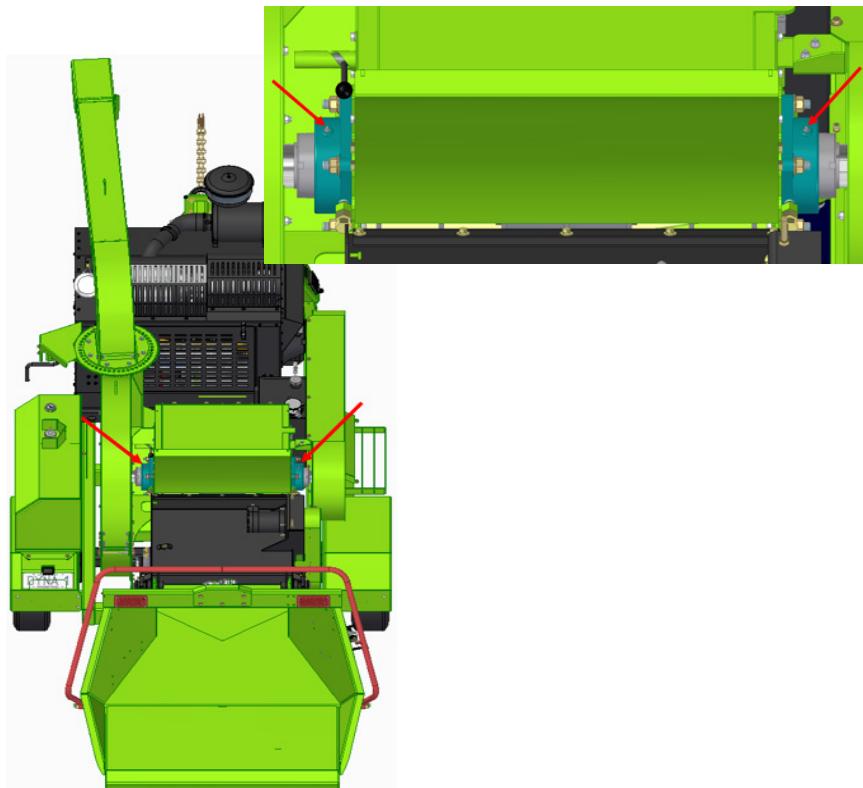
- Drum/Mill bearings: 3-4 shots/pumps (.30 -.50oz) of grease every 40 hours.
- Feed wheel bearings: 2-4 shots/pumps (.20 -.40oz) of grease every 100 hours.
- OHLA (Overhung Load Adapter): 10,000 hour service life.
- Feed wheel drive chain: Industrial chain wax applied every 100 hours.

#### Axles:

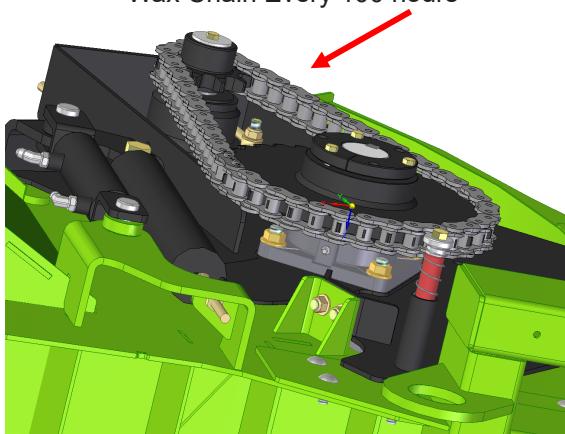
- Grease— Proper lubrication is essential to the proper function and reliability of your trailer axle. Bearings should be lubricated every 12 months or 12,000 miles. You should repack your bearing cone by placing a small amount, roughly the size of a half-dollar, of grease into the palm of your hand. Then press a section of the widest end of the bearing into the outer edge of the grease pile close to the thumb forcing grease into the interior of the bearing. You will need to repeat this while rotating the bearing from roller to roller. You should continue this process until the entire bearing is filled with grease. Before you reinstall the bearing, make sure you apply a light coat of grease to the bearing cup.
- Oil— If your axles are equipped with oil-lubricated hubs, periodically check, and refill the hub as necessary with a high-quality hypoid gear oil to the level indicated on the clear plastic oil cap. The oil can be filled from the oil fill hole, if present, in the hub to through the rubber plug hole in the cap itself.

PTO/Clutch: Grease per the manufacturer's specifications.

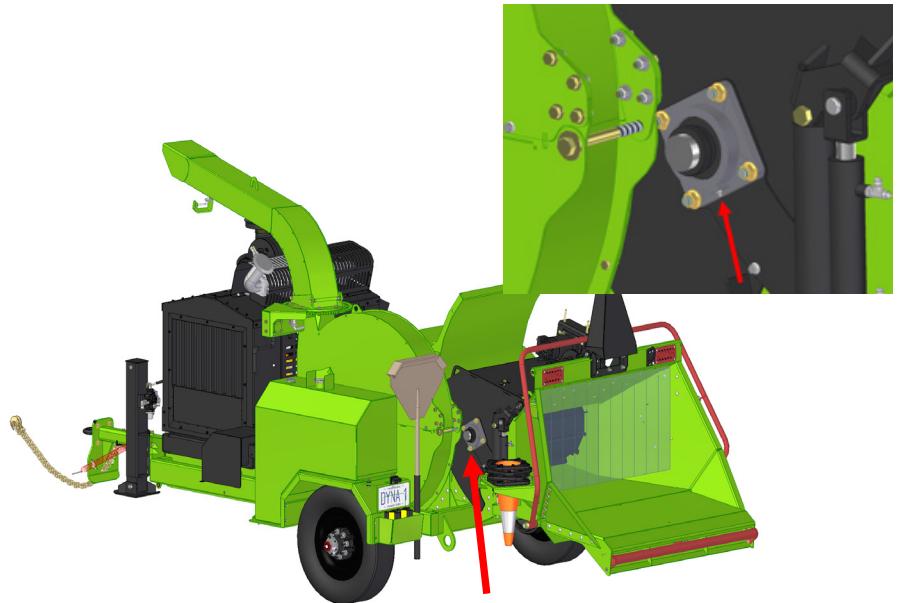
## Grease Point Locations



Wax Chain Every 100 hours

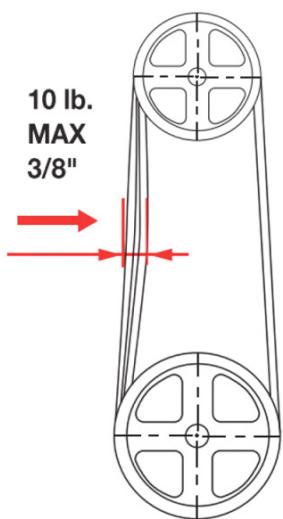


## General Maintenance



## h. Adjusting The Belt Tension

1. Loosen the (4) engine sled bolts.
2. Remove the drive belt outside cover.
3. Inspect the drive belt. Check for cracks, frays, flat spots, and glazing.
4. Mark the front of the engine sled start position on the frame.
5. Loosen the ~~jam nuts~~ corrected typo on the engine tension adjustment bolt.
6. Turn each engine adjustment bolt clockwise an equal amount of turns until proper belt tension is reached.
7. Check sheave alignment with a long straight edge or laser alignment tool.
8. Tighten the (4) engine sled bolts.
9. Replace the outer belt cover.



**Check belt tension before operating chipper. Belt deflection should be less than 3/8" when 10 lbs. of pressure is applied to the belt. The belt will relax after the first 1-2 hours of use. You must re-check and adjust accordingly or the belts will begin to slip and wear. For best performance check for proper belt tension every 20 hours of use.**

## 7. Machine Transport

1. The standard tow hitch is a 2 ½" Lunette ring (pintle hitch). The towing vehicle should be capable of handling a 1500# tongue weight.
2. Check and make sure that the hitch is properly attached and the safety pins are installed.
3. Check the tires for the proper inflation. (see the tire sidewall for recommended PSI)
4. Check the electrical connections. Make sure all lights and brakes are working properly.
5. Test the emergency breakaway switch.
6. Attach and cradle the safety chains.
7. Secure the tongue jack to the transport position.
8. Clean the infeed of all debris and secure the infeed tray in the upright position. (if equipped)
9. Remove the wheel chocks and check over the machine for any loose items or tools that may be lost during transport.
10. Check over the rims, tires, wheel studs, and lugs for fatigue before moving the machine.

## Machine Notes:

## 8. Maintenance Record



For more information, contact your nearest Dealer or DYNA Products at:

## DYNA Products

8440 State Rd

Millington MI 48746 USA

888-820-3962 Toll Free

989-823-6200 Local Phone

231-734-3681 Fax

[dynaparts@dyna-products.com](mailto:dynaparts@dyna-products.com)



Model # \_\_\_\_\_

Serial # \_\_\_\_\_

Date Purchased \_\_\_\_\_

Purchased By \_\_\_\_\_

Source DOCX file can be found: P:\Vortex Chippers\Manuals\VORTEX SAFETY & OPERATOR'S MANUAL 2025

### Internal Location:

## Service: IT Nextcloud

Directory: P:\SALES\MARKETING\LITERATURE\MISCELLA-

## NEOUS

Public Location: C:\Users\martha\Nextcloud\Dealer-Portal-Dealers\Public Files\2 - Parts Service\1 - Manuals

### Retention Period:

Not Set

### Classification:

Internal, Dealer use

Owner: Martha

Approved By: David Daymon

## Document updates: