

Vortex 12-31 Brush Chipper Safety Manual

Proudly Built in Michigan by
DYNA Products



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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.



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**Factory Located in Millington, MI
Made in the USA**

1 Introduction

1.1 About This Manual

This manual contains important information on how to operate and maintain the Dyna Vortex Equipment V12 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.

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 manufacture 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@DYNA-PRODUCTS.com.

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.

Safety

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. (Contains black letters on red background).

 **WARNING**

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury. (Contains white letters on orange background).

 **CAUTION**

CAUTION indicates a hazard situation which, if not avoided, could result in minor or moderate injury. (Contains white letters on yellow background).

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. Contains black italic letters on blue background.









2.5 Safety Signs Pictorials




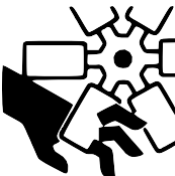




Under all safety regulations is a set of common-sense rules. Everyone who works with or near this chipper must be aware of these rules. To help and maintain such an awareness in our customers, safety signs are fixed on our equipment.


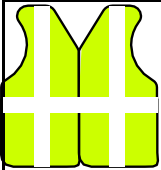



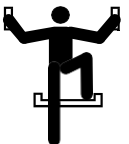


Pictorials on our safety signs remind both workers and supervisors of hazards and procedures that, in the course of a busy day, they might otherwise forget. The message of each pictorial is simple and direct. Safety sign pictorials are defined in the following table.

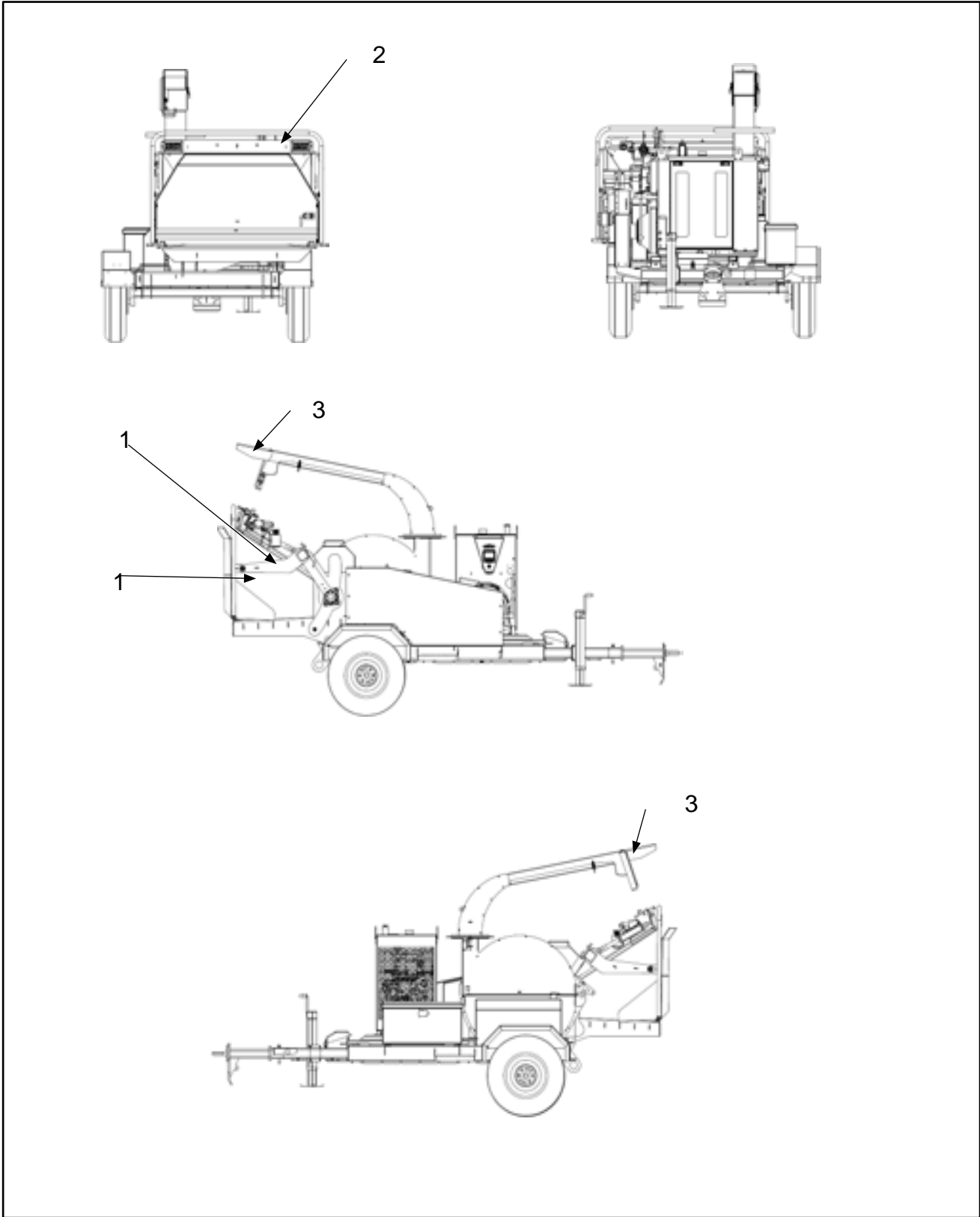
Safety signs must be replaced immediately if they become unreadable or lost. If the chipper is repaired and parts have been replaced on which safety signs were attached, be sure new safety signs are installed before the machine is put into service. Use mild soap and water to clean safety signs. Do not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


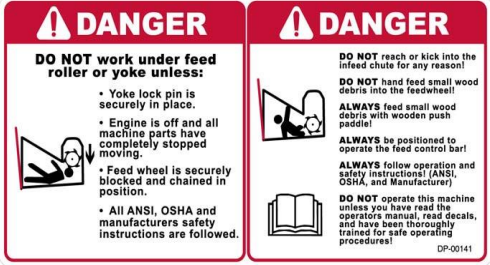

Safety signs affixed to major components are identified in the applicable component.

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

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

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



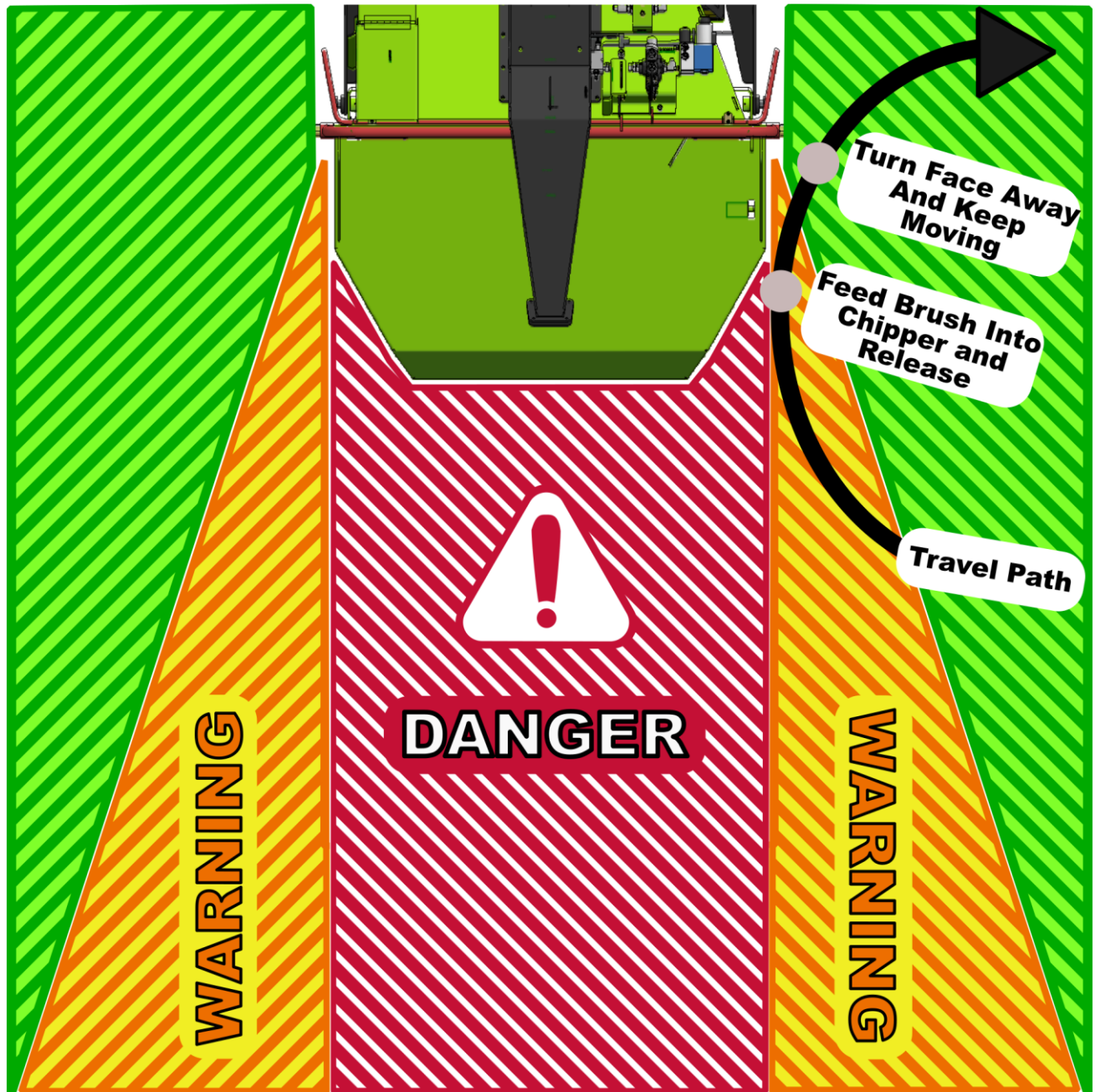
Item	Sign	Item	Sign
1	 <p>DANGER</p> <p>KEEP HANDS CLEAR OF PINCH POINTS!</p> <p>DP-00138</p>	2	 <p>DANGER</p> <p>DO NOT work under feed roller or yoke unless:</p> <ul style="list-style-type: none"> • Yoke lock pin is securely in place. • Engine is off and all machine parts have completely stopped moving. • Feed wheel is securely blocked and chained in position. <p>All ANSI, OSHA and manufacturers safety instructions are followed.</p> <p>DANGER</p> <p>DO NOT reach or kick into the infeed chute for any reason!</p> <p>DO NOT hand feed small wood debris into the feedwheel!</p> <p>ALWAYS feed small wood debris with wooden push paddle!</p> <p>ALWAYS be positioned to operate the feed control bar!</p> <p>ALWAYS follow operation and safety instructions! (ANSI, OSHA, and Manufacturer)</p> <p>DO NOT operate this machine unless you have read the operators manual, read decals, and have been thoroughly trained for safe operating procedures!</p> <p>DP-00141</p>
3	 <p>DANGER</p> <p>FLYING DISCHARGE MATERIAL CAN BE HAZARDOUS</p> <p>DO NOT direct discharge spout toward people or buildings.</p> <p>DO NOT walk in front of chip discharge spout.</p> <p>DO NOT 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 recommend 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.
- 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 sites hazards while operating.



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.

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.

- ****Single-Person Operation: **** Winching large limbs to the woodchipper should be performed by one person.

- ****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.

- **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. **Single-Person Operation:** Winch operation is a one-person job. The person who hooks the winch line to the wood material must also be the one who starts the winch.

2. **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.

3. ****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.

4. ****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.

5. ****Engage the Winch: **** Engage the winch by moving the hydraulic handle as indicated on the chipper.

6. ****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.

7. 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.

8. Re-hook the winch line as necessary before starting the wood into the feed wheels.

9. Ensure the feed control bar is returned to the off position.

10. Unhook the winch line from the wood material and secure the end of the winch line to the winch hook mount.

11. Reel in the winch line.

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.



