



**AMERICAN CUTTING EDGE**  
Industrial Blades & Knives

A division of CB Manufacturing



# Wood Chipper Knife Maintenance Guide



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# Wood Chipper Knife Maintenance Guide

## INTRODUCTION

For most arborists and forestry professionals, their wood chipper is the heart of their business. Without it, production halts and both you and your team are unable to complete projects or take on new work. As a large and complex piece of equipment, your wood chipper requires ongoing, consistent maintenance to achieve peak performance.

Well-maintained wood chippers provide effective, efficient, and safe operation. Each part of the wood chipper must be routinely examined and inspected.

During use and while in-transit, wood chippers are subjected to extreme vibration that can lead to cracks, breaks, and part fatigue. These vibration-induced failures contribute to machine breakdown and unsafe conditions, especially in areas that are weakened by rust.

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A leading cause of excessive vibration is dull wood chipper knives. Dull knives set-off a chain reaction of poor maintenance conditions within the wood chipper.

As the machine struggles to power-through material with dull knives, there is excessive strain placed on the engine, bolts, clutch, bearings, and drive belts. This leads to increased horsepower draw and increased vibrational load on areas of the chipper that may already be weakened by rust or other maintenance concerns.

As your wood chipper works harder to chip material, the output is decreased contributing to frustration and bad choices on the part of your team. This, in turn, creates unsafe working conditions and can result in damage to the equipment or serious injury.

The knives of your wood chipper are crucial to the safety of your team and the long-term performance of your wood chipper.

In this guide, we will cover:

- ➔ **Evaluating Your Wood Chipper Blades**
- ➔ **Recognizing the Warning Signs of Dull Knives**
- ➔ **Precision Sharpening of Your Wood Chipper Blades**
- ➔ **Evaluating Your Wood Chipper Knife Supplier**

## EVALUATING YOUR

### WOOD CHIPPER BLADES

The knives of your wood chipper are influenced by a variety of factors, including chipping material, weather, and maintenance. For example, both white pine and maple are softwoods and will wear chipper blades more slowly than hardwoods like red oak. Fibrous materials, such as palm trees, also wear the blades more quickly.

As a rule, blades used in warm, humid climates provide more operating hours between blade maintenance than those used in cooler, drier climates. Cold, icy temperatures make wood harder to go through, causing chipper knives to wear more quickly.

Rocks, nails, and fence posts can also decrease the life of your chipper knives.

When possible, track the number of hours between blade changes, the type of material fed into the wood chipper, and the environmental conditions to evaluate the performance of your wood chipper blades. Utilize this information to determine if blades are wearing prematurely and to plan wood chipper blade inventory.

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## RECOGNIZING THE WARNING SIGNS OF

### DULL WOOD CHIPPER KNIVES

Irregular wood chips and increased engine noise are often the first signs of dull wood chipper blades.

Dull wood chipper blades shred and pull the wood apart instead of cutting it, creating poor quality wood chips, and contributing to regrinds. When blades are dulled or damaged, the chips produced are inconsistent and are torn, instead of cut. When your customer sees that your chips are not consistent, the entire order may be rejected.

Dull wood chipper knives also increase strain on the wood chipper engine. Wood chippers require more energy to force a dull blade through a piece of wood than a sharp blade. As the knives dull, the wood chipper will be louder and will require more horsepower.

Within the wood chipper, the chipper blades rotate around a drum. An anvil meets the rotating blade to create a pinch point (the point where the material is cut). As the blades wear, they become narrow and no longer meet the anvil to form a clean cut.

The blades within the wood chipper are spinning at a high rate of speed, from 500 to 1000 RPM. When the knife tolerances are not maintained, there is additional stress on the rotor, belts, motor, and housing, which contributes to premature failures, wear, and increased machine downtime.

In extreme cases, the wood chipper can come off the ground, or the blades can become unseated and [break through the housing](#). When a wood chipper failure occurs, the results can range from severely damaging the equipment to the death or serious injury of operators and other workers in the vicinity.



## SHARPENING YOUR

## WOOD CHIPPER BLADES

Often, operators consider wood chipper blades to be a disposable item. However, wood chipper knives can and should be sharpened to maintain the integrity of the cutting surface. It is a common misconception to believe that precision sharpening requires too much effort or is too costly. As a result, wood chipper operators often throw away blades or utilize imprecise sharpening methods.

However, when sharpened correctly, wood chipper knives are restored to like-new condition for less than the cost of purchasing new blades. Wood chipper knives can be sharpened several times at a price that is 30 percent less than the cost of buying new blades.

Wood chipper blades are precision equipment; meaning that they must be maintained to precise tolerances to provide optimum performance.

Imprecise sharpening changes the geometry of the knife and impacts the balance of the equipment. When this occurs, the pinch point of the wood chipping blades is compromised, and there is additional wear and tear on the blade itself. As a result, the cutting edge of the knife dulls more quickly, and cuts are not as efficient or consistent.

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### PRECISION SHARPENING IS A MUST!

Wood chipper knives are manufactured to precise, specific tolerances based on the specifications of the wood chipper, the cutting material, and the knife manufacturer. These tight tolerances must be maintained to within five- to ten-thousandths of an inch to achieve optimum wood

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**If a knife is not precision sharpened, the material is forced through specific points on the knife, the knife wears unevenly, and the wood chipper produces inconsistent chips.**

chipper performance. Tolerances this tight are impossible to keep without precision sharpening equipment.

Using a hand sharpening tool, bench grinder, or local general machine shop to sharpen knives creates many inconsistencies on the cutting edge and results in varying geometries along the blade edge.

Within the wood chipper, there is a designated space between the anvil (bed) and the knife. This space must be maintained throughout the length of the knife, from edge to edge.

If a knife is not precision sharpened, the material is forced through specific points on the knife, the knife wears unevenly, and the wood chipper produces inconsistent chips.

Additionally, a seated wood chipper knife must maintain an exact level of squareness and flatness, any deviation outside of the set tolerances can interfere with the balance of the knife. When the balance of the knife is off, only a portion of the blade may be coming in contact with the wood.

Precision sharpening of entire knife sets, instead of just one or two blades, ensures that these tolerances are maintained throughout the machine.

Precision knife sharpening requires precision equipment. [Sharpening programs](#), like those provided through American Cutting Edge, ensure that wood chipper blades maintain the sharpest cutting edge without exposing the knife to high temperatures (which damages the blade) or compromising the blade's exact tolerances.



This ensures that both your knives and your wood chipper are always operating at peak performance. It also provides you with more consistent chips, fewer blade changes, and increased machine uptime.

## **MAINTAINING A WOOD CHIPPER BLADE INVENTORY**

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Storing wood chipper blades can be challenging for some operators. However, maintaining even a small inventory of wood chipper blades ensures that you always have a fresh set of knives available when new jobs arise.

Develop a maintenance schedule and inventory that fits the needs of your business. At a minimum, maintain three sets of wood chipper blades for each machine model. This will allow you to have one set on the machine, one set as a backup, and one out for sharpening.

Maintaining a consistent, high-quality product and peak wood chipper performance requires wood chipper blades that are routinely evaluated, precision sharpened, and when needed, replaced.

## EVALUATING YOUR

### CHIPPER BLADE SUPPLIER

When was the last time you reviewed your chipper blade supplier options? Most forestry and debris removal experts use the same supplier without routinely evaluating their options.

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**The decision regarding where to purchase your replacement chipper knives should not become so routine that it is made out of habit or based solely on price.**

If the knife is available and seems reasonably priced, why not order it? The decision is as easy as deciding to buy gas for your truck. You need the gas, it is available, and the price is consistent with your expectations. Done.

The decision regarding where to purchase your replacement chipper knives should not become so routine that it is made out of habit or based solely on price. Putting a little more thought into your supplier options could have a significant impact on your bottom line.

Here are some critical things to consider when evaluating your supplier relationship.

#### ➔ **Are you getting the right value for your purchase?**

There is more to a product than just price. If you are a dealer, does your supplier offer stock rotation agreements, extended terms, and warehouse agreements to help support the unique needs of tree care

equipment dealers? If you are an owner/operator, does your supplier have a team of industry experts who are available to evaluate your specific blades needs?

➔ **Are you getting your replacement blades when you need them?**

Does your supplier have enough available inventory on-hand so that you do not have to wait for your shipment to arrive? How quickly do you typically need your replacement blades? Can you afford to wait or do you need them right away?

➔ **Are your replacement blades the quality you expect and deserve?**

Are the replacement blades you are purchasing made with the highest quality steel? Are they engineered to meet the exact specifications of leading manufacturers? Is the price point comparable to or better than OEM replacement blades? Does the price you are being charged for your replacement blades require you to evaluate the price you are charging your customers so you can retain your margins and profitability?

## IS IT TIME TO REPLACE MY

## CHIPPER BLADE SUPPLIER

The right supplier for your business provides competitive pricing, consistent product availability, knowledgeable staff, and of course, a high quality, reliable product.

Choosing the wrong supplier could mean that you do not have the tools needed to meet the demands of your customer(s). In short, if your supplier lets you down, you could let your customer(s) down. If your supplier overcharges for your replacement chipper blades, you could be overcharging your customer(s).

As an essential part of your business, consistent pricing and availability of replacement knives enable you to plan your workload, ordering, and budget with confidence.

Suppliers of OEM compatible blades that meet the exact specifications demanded by your Altec®, Asplundh®, Bandit®, Vermeer®, Morbark®, Rayco®, and Woodchuck® equipment provide a one-stop-shop for all of your chipper blade replacement needs – whether you operate a single wood chipper or maintain a fleet of chipping and mulching equipment.

Wood chippers are a significant investment in any business. Be certain that you are getting the best possible performance from your equipment by accomplishing consistent maintenance, utilizing precision sharpening services, and purchasing high-quality replacement chipper knives from a supplier that provides reliable products and competitive pricing.

By following these practices, you will achieve longer run times with fewer blade changes and ultimately realize increased productivity and safety.

## ABOUT US

Since 1965, American Cutting Edge has been a market leader in the design and manufacturing of industrial machine knives and razors. Our extensive product selection provides same-day shipping of a wide array of granulating, pelletizing, food and meat processing, wood chipping, converting, textile and fiber processing, flooring, and steel cutting knives and razors.

When an off-the-shelf solution won't work for your specific application, American Cutting Edge has the experience and resources to quickly engineer and manufacture custom machine knives and industrial razors. If you can imagine it (and provide us a sketch and dimensions), we can build it.

Need a steel or carbide wear part that is not a blade? Many customers rely on us to build steel wear parts that aren't knives or razors. As specialists in grinding and machining of large steel parts to precise tolerances, American Cutting Edge is more than just a knife and razor company. We're partners to our customer who help solve problems.

**Contact us today and let American Cutting Edge help you solve your industrial machine knife, industrial razor, and tool steel wear part challenge.**

**VIEW OUR PRODUCT CATALOG →**



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