



## OWNERS MANUAL



THANK YOU FOR PURCHASING A RAZOR-TUNE SKI SHARPENER!

Razor-Tune is a precision ski sharpener that delivers world cup sharpness and surface finish. This product has been engineered and manufactured for durability, ease of operation, and operator safety. Properly cared for, it will give you years of trouble-free performance.

Carefully read through this entire operator's manual before using your new tool. We want every customer to get the best results possible so it is important to use the tool with proper techniques outlined in this manual. Training videos are also available at [www.razor-tune.com](http://www.razor-tune.com).

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# SAFETY



**WARNING - Read all safety warnings and all instructions.** Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

- **Save all warning and instructions for future reference.**

## 1) Work area safety

- **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.
- **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.
- **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

## 2) Electrical safety

- **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.
- **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.
- **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.
- **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.
- **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.
- **If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply.** Use of an GFCI reduces the risk of electric shock.

## 3) Personal safety

- **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.
- **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask or hearing protection used for appropriate conditions will reduce personal injuries.
- **Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.
- **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.
- **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.
- **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

# SAFETY (continued)

## 4) Power tool use and care

- **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.
- **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.
- **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.
- **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.
- **Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

## 5) Service

- **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

# SELECTING AND CHANGING EDGE ANGLE

The ski side angle is set with the base angle plate. Each tool kit ships with a standard 3° angle plate installed on the base of the tool and a 2° plate in the bag. We also offer an optional 1° plate, 4° plate, and a 1/2° shim that can be used under any plate.

## To change the edge angle

- Unplug the power cord from the tool
- Remove the 4 small screws that attach the angle plate to the bottom of the tool
- Remove the current plate and place the desired angle plate in its place.
- Carefully align the holes in the plate with the holes on the base, and attach the plate with the 4 screws.
  - If using the 1/2° shim, place the shim under the angle plate and align all holes before attaching with the screws
- Do not over tighten the screws.



# PREPARING SKIS

Before you use the tuner, skis should be prepared by cutting back the side wall and deburring the base edge.

## Setting up vices

- Mount vices on a sturdy work bench or tuning table.  
**NOTE:** Narrow travel tables tend to be less stable. Brace table next to a wall to prevent it from sliding or tipping during use.
- Adjust position of the ski with the binding or base plate between the center vice with clamp.
- Adjust the height of the tip and tail stands so the center of the ski is higher than the center vice.
- Press down on the center of the ski and tighten center clamp to hold ski firmly.
- Check the ski position on the vice to ensure the tuner will not contact the vices. The ski should be hanging over the tip and tail stands. If necessary, move the center clamp out from the table edge slightly to give some overhang.



## Cut back the sidewall

The plastic material on the side of the ski **MUST** be cut back on new skis and periodically during the life of the skis. If the sidewall is even with the metal edge, the grind wheel will just ride on the plastic and it won't sharpen. A variety of sidewall cutting tools are available at your local ski shops.

- Mount the ski in vices with the base vertical.
- Adjust the depth of the cutter so it peels off a thin ribbon of plastic.
- Pull the cutter along the length of the ski with firm downward pressure. If the cutter is grabbing, reduce the depth of cut and make multiple shallow cuts. Repeat until the back side of the metal ski edge is slightly exposed.



## Deburr the base edge

The base side of the ski edge needs to be maintained in addition to the side wall. Rock hits cause scratches and burrs that need to be removed prior to sharpening the side edge. Mount the skis with the base side facing up.

- Use a diamond stone with a bevel guide or carefully use your thumb and forefinger to guide the stone along the edge with firm downward pressure.
- Keep most of the stone over the base and never allow the stone to roll over the edge.
- If the stone catches on burrs or damaged spots, make multiple passes until the stone slides smoothly.

# OPERATING INSTRUCTIONS



**WARNING** – Wear dust mask to prevent dust inhalation

- Plug the power cord connector into the tool and screw the locking ring finger tight.
- Lay the power cord running in the direction you will be moving the tool so it doesn't snag (Fig 2). It is best to start on the left end of the ski, moving to the right. Pay close attention so the cord doesn't snag and disrupt smooth motion of the tool.
- Set the tool flat on the on the base of the ski and place one hand on the finger grips of the tool. Keep hand close to the grind wheel-side of the tool for stability and control. Place the opposite hand with thumb and fore finger on the indents on the front of the wheel housing.
- Apply downward and sideways pressure until you feel both bearings "click" against the edge.

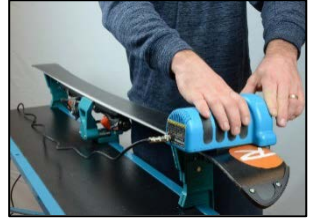
**NOTE:** The grind wheel is spring-loaded. You will feel the wheel touch the ski edge first. Continue pressing until both bearings contact the edge. Check to make sure marks on the tool are aligned at the edge.

**TIP:** When first learning to use the tool, you can practice sliding the tool along the edge with the power off.

- Once you have the bearings aligned against the edge, turn on the power switch and immediately start moving the tool along the edge. Guide the tool with constant motion and maintain downward and sideways pressure and to ensure tool stays flat on the ski and both guide bearings stay firmly against the ski edge.

**IMPORTANT:** Do not turn on the power until the bearings are pressed against the edge, and do not allow the bearings to drift away from the edge or tilt as you guide tool along the ski.

- When you reach the end of the ski, run the tool straight off end of the ski keeping the tool parallel to the ski edge.
- Check the sharpness of the edge at several locations by carefully running a thumb or finger perpendicular to the ski edge. If you can feel the edge "grabbing" your finger prints the edge is sharp.
- If there are dull spots use the tool to tune where needed. You can move forward and back in an area to sharpen a dull spot. After 4 or 5 passes move to a new area or wait a few seconds to allow the edge to cool.
- Once the entire edge is sharp, use one or two passes with medium or fine wheel to polish the edge.



# SELECTING AND CHANGING WHEELS

There are 3 different wheel grits, and each has a specific purpose and use.

## Coarse

The coarse wheel should be used anytime the ski edge has lost sharpness. The coarse wheel cuts quickly, but it still removes less than 0.0005" per pass. Edges in good condition may only require 2 or 3 passes to sharpen. A dull ski will require more passes depending on condition.



## Medium

The medium wheel is best suited for restoring a sharp edge after a day or two of skiing. One or two passes is frequently all that is required. The medium wheel only removes about 0.0001" per pass, so you can do a quick tune every ski day and still get long life out of your skis.



## Fine (Final Polish)

The fine wheel is only used to hone and polish after the edge has been sharpened with other wheels. Make a single slow pass with the fine wheel for a silky-smooth edge and almost mirror finish.



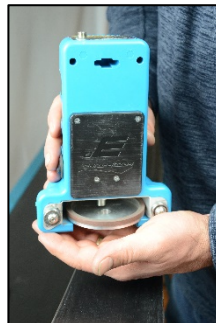
TIP: All grits can be used dry, but the fine wheel works even better with a lubricant. If desired, apply cutting lubricant to the abrasive wheel and to the ski edge using a sponge or cloth prior to sharpening.

## Changing Wheels



**WARNING:** Disconnect power supply before changing wheels to reduce the risk of starting the power tool accidentally.

- Hold the wheel with your thumb to prevent it from rotating, and unscrew the knob (counter clockwise).
- With the knob removed, tilt the tool vertically over your hand. The wheel will drop off the arbor and carefully pull out the wheel.
- Hold the tool facing up, and slide the desired wheel on to the arbor.
- Hold the wheel with your thumb to prevent it from rotating, and screw on the knob until finger tight (clockwise).



## Cleaning wheels

The grind wheels are constructed of high quality aluminum alloy and CBN super abrasive. The wheels are "self-dressing" and require minimal maintenance. Over time the abrasive can form a glaze from wax build-up, embedded metal dust, or contact with the plastic sidewall. Wheels can be cleaned with a stiff brush and hot soapy water. If wax or sidewall plastic is embedded in the abrasive, use nail polish remover or acetone with a stiff brush to deep clean the abrasive.



**WARNING:** Always wear appropriate gloves when using solvents.

# TROUBLESHOOTING

Problem	Inspection	Solution
Tool is not creating sparks	Check wheel grit installed on the tool	Always use coarse or medium wheel for sharpening. The fine wheel does not generate sparks and is only for polishing.
	Check for "hot plastic" smell while using the tool and condition of the sidewall.	Cut back plastic sidewall with appropriate tool until metal edge is fully exposed.
	Check surface of the abrasive wheel for contamination, gray or black "glazing".	If glazed with wax or plastic from the sidewall, clean the abrasive. Use a rubberized abrasive cleaner stick to remove glazing with the tool running. Alternatively, clean the abrasive with hot soapy water or acetone and a stiff brush.
Edge is dull in spots	Check base side of the edge for rock hits and spots where the base edge is rounded over.	If base edge is undamaged and flat, make multiple passes with a coarse wheel in the dull zone until sharp.
		If base edge has damage: <ul style="list-style-type: none"> <li>• Use a coarse diamond stone to smooth and flatten base side of the edge.</li> <li>• Have the ski bases stone ground and beveled.</li> <li>• If you have the experience and tools, base edges can be dressed with base scrapers and flat filing.</li> </ul>
Motor not operating properly	Check LED on power supply.	If LED is lit, the power supply is operating normally. Ensure connector is fully inserted at back of tool, and locking ring is tightened.
		If power supply LED is <u>not lit</u> , unit is not getting AC power. Check cord connection and house circuit breaker.
		<u>Flashing</u> LED indicates short circuit in the power cord to the tool. Contact Razor-Tune customer service.
Tool shuts off after heavy use.	Check on/off switch LED light.	If switch LED is on, but the wheel doesn't spin, the over-temp safety switch has activated. Turn off switch and allow tool to cool to room temp (20-30 min). Once cool, the tool will operate normally.
		If switch LED is off, the tool is not getting power. Ensure all cords are fully inserted. Check circuit breaker for the outlet.
Smoke coming from wheel housing	Look for grind dust build-up in corner of the wheel housing.	Remove wheel and clean out any grind dust that has accumulated.
Knob is tight but wheel spins.	Remove the knob and check for a white washer at the base of the screw.	If washer is not present, replace with spare washer provided. If spare washer is lost, order replacement.

# Technical Specifications

Specification	Value
Input Voltage Range	12 – 16 VDC
Operating Current	No Load: 2A, Nominal Load: 8A
Rated Speed	8000 rpm
Wheel Size	75mm OD (custom size, only use Razor-Tune wheels)
Vibration Level	<2.5 m/s <sup>2</sup>
Weight	800g / 1.7637lbs (with wheel installed)

## LIMITED WARRANTY STATEMENT

Razor Tune LLC warrants to the original retail purchaser that this product is free from defect in material and workmanship and agrees to repair or replace, at Razor Tune LLC's discretion, any defective product free of charge within 12 months, if the product is used for personal, family or household use. This warranty extends to the original retail purchaser only and commences on the date of the original retail purchase.

### How to Obtain Service

To obtain the benefit of this warranty, deliver the complete product via prepaid transportation to: Razor Tune LLC, 31 Oregon Trail, Waterford, NY 12188. Include a copy of the sales receipt and a written description of the problem for the warranty claim.

### What We Will Do to Correct Problems

Warranted products will be repaired or replaced, at Razor Tune LLC's option, and returned at no charge.

### What is Not Covered

Failures due to misuse, abuse or normal wear and tear are not covered by this warranty. Razor Tune LLC shall not be responsible for any incidental or consequential damages.

### How Local Laws Relate to the Warranty

Some areas do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific rights, and you may also have other rights, which vary, from state to state, province to province, or country to country.



Razor Tune LLC, 31 Oregon Trail, Waterford NY, 12188 USA