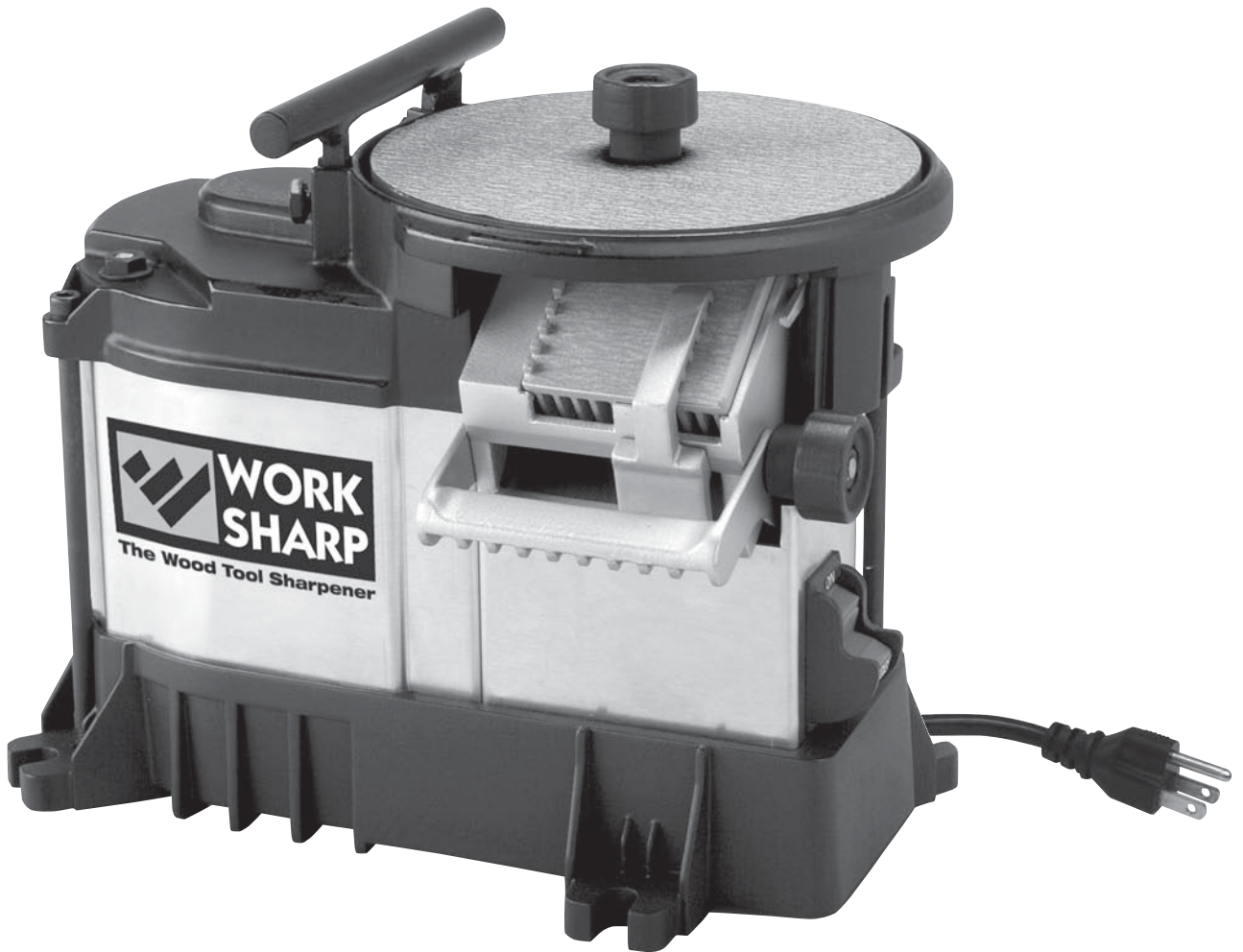




The Wood Tool Sharpener



USER'S GUIDE

Fast, Precise, Versatile Wood Tool Sharpening

Thank You

Thank you for purchasing a **WORK SHARP™** Wood Tool Sharpener. As president of this company, I am very excited and proud to offer you this quality, innovative product. I am equally proud of the great people at Professional Tool Mfg. LLC who are dedicated to designing, marketing, and manufacturing great products.

At ProTool, we strive to make every sharpening experience easy, fast, and effective. I am confident you will find the performance and precision you expect in this high quality sharpening system. With this breakthrough approach to sharpening, you can now sharpen your wood tools much faster and without the mess of a wet system. It will work every time.

If you have questions, suggestions, or need help with your **WORK SHARP™** Wood Tool Sharpener, please contact us. Our customer representatives are here to help. We support what we build and we appreciate hearing from you!

Though we believe operating your **WORK SHARP™** tool will be intuitive, please read this User's Guide to ensure you achieve the superior results you desire. We have included some sharpening tips you may find handy. Please visit our website at www.worksharptools.com.

There you will find:

- Demonstrations of all operations with the sights and sounds leading to successful tool sharpening
- Downloadable copies of this User's Guide
- Warranty registration
- Service and contact numbers

Thank you again for buying a **WORK SHARP™** Wood Tool Sharpener. Enjoy its performance, quality and precision.

And remember, Work Smart, Work Sharp!

Hank O'Dougherty
President, Professional Tool Mfg., LLC
Maker of **WORK SHARP™**, **Drill Doctor™**, and **DAREX™**

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Work Sharp Technology—Creating the Edge

Precision

Rigid bevel angle settings and Skew Cam provide precise positioning of the Sharpening Port. Bevel and skew geometry are not affected by wheel diameter, chisel size, or complex user setup.

Speed

Forced air-cooling allows higher material removal rates without affecting the steel temper. Conventional dry systems surface speed is limited by heat buildup in the tool and wet systems surface speed is limited by the mess from water flinging off the wheel.

The **WORK SHARP™**'s design allows for quick reshaping of a new or damaged chisel, and fast honing of a micro bevel. Precise bevel angles are set in the Sharpening Port, not in a fixture or jig, so switching between angles is simple and fast.

Simplicity

Simple setup. Just set the angle and sharpen. No calibration required for changing wheel diameter. No measurement required for setting of tool stick out and angle.

Coarse grinding for rapid shaping and micro-fine honing in one port. No need to change between fixtures, grade wheels, or move from machine to hand sharpening to achieve a razor-sharp edge.

Repeatability

The system's repeatability allows the user to sharpen multiple tools at any combinations of angle and abrasive type without extra set-up. Most conventional systems require a jig or user set-up that requires sharpening one tool at a time because the setup can't be repeated accurately.

IMPORTANT Safety Instructions

For your own safety, please read this User's Guide before operating the **WORK SHARP™** Wood Tool Sharpener.

Installation / Assembly

- Carefully unpack the **WORK SHARP™** Wood Tool Sharpener and set it on a table or workbench. Check to see that no damage has occurred in shipment. Check all packing material to be sure that all parts are present. See User's Guide for part identification diagram.
- The **WORK SHARP™** Wood Tool Sharpener needs to be placed on a flat stable tabletop to complete assembly.
- Connect to properly wired outlet, or electrical shock may occur.

Precautions

When using electric tools, basic safety precautions should always be followed to prevent the risk of fire, electric shock, and personal injury.

- **KEEP WORK AREA CLEAN.** Cluttered areas and work benches invite accidents.
- **FREQUENTLY CLEAN SHARPENING DEBRIS FROM UNIT AND WORK AREA.**
- **DO NOT USE IN DANGEROUS ENVIRONMENT.** Do not use in damp or wet locations, avoid exposure to rain. Keep work area well lit. Do not use tools in the presence of flammable liquids or gases.
- **GUARD AGAINST ELECTRIC SHOCK.** Avoid body contact with earthed or grounded surfaces (e.g., pipes, radiators, ranges, refrigerators).
- **KEEP OTHER PERSONS AWAY.** Do not let persons not involved in the work (especially children) touch the tool or power cord.
- **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate the tool.
- **DO NOT FORCE THE TOOL.** It will do the job better and safer at the rate for which it was intended.
- **USE THE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed. Don't force small tools to do the job of a heavy duty tool. Do not use the tool for purposes not intended.
- **DRESS PROPERLY.** Do not wear loose clothing or jewelry; they can be caught in moving parts. Wear protective hair covering to contain long hair.
- **NON-SLIP FOOTWEAR IS RECOMMENDED.**
- **USE PROTECTIVE EQUIPMENT.** Use safety glasses. Use face or dust mask if working operations create dust.

- **USE EAR PROTECTION DURING USE.** The **WORK SHARP™** Wood Tool Sharpener can generate in excess of 85 dB(A) noise emissions under certain load conditions.
- **DO NOT ABUSE THE CORD.** Never yank the cord to disconnect it from the socket. Keep the cord away from heat, oil and sharp edges. Do not modify the electrical plug provided—if it will not fit the outlet, have the proper outlet installed by a qualified electrician.
- **USE PROPER EXTENSION CORD.** Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Use marked outdoor extension cord leads when the tool is used outdoors.
- **NEVER LEAVE TOOL RUNNING UNATTENDED.** Ensure tool has come to a complete stop before leaving work area.
- **MAINTAIN TOOL WITH CARE.** Keep the **WORK SHARP™** Wood Tool Sharpener clean for best and safest performance. Follow instructions for maintenance and changing accessories. Inspect cords periodically and if damaged have them repaired by an authorized service facility. Inspect extension cords periodically and replace if damaged. Keep unit dry, clean and free from oil and grease.
- **DISCONNECT TOOLS.** Always disconnect the **WORK SHARP™** Wood Tool Sharpener when cleaning, inspecting, and changing accessories, such as the tempered glass wheel plates. When not in use, disconnect from the power supply. Never touch internal parts of the sharpener when it is turned on or plugged in. The rotating glass plate wheel can cause injury.
- **STORE IDLE TOOLS.** When not in use, tools should be stored in a dry, locked-up place out of the reach of children.
- **AVOID UNINTENTIONAL STARTING.** Make sure switch is in the "OFF" position before plugging in.
- **STAY ALERT.** Watch what you are doing, use common sense and do not operate the tool when you are tired or impaired.
- **DON'T OVERREACH.** Keep proper footing and balance at all times.
- **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
- **DO NOT OVERTIGHTEN TOP KNOB.** The Knob only needs to be finger tight.
- **CHECK DAMAGED PARTS.** Before use of the tool, it should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated in the instruction manual. Have defective switches replaced by an authorized service center. Do not use the tool if the switch does not turn it on and off.
- **INSPECT TEMPERED GLASS WHEEL FOR DAMAGE. DO NOT USE TOOL IF GLASS WHEEL IS CHIPPED OR DAMAGED AS INJURY MAY OCCUR.** Dispose of a chipped or broken Glass Wheel

accordingly, being careful to not cut yourself on the glass chips or fragments. The tempered glass wheels should not break or present a safety risk when used under normal conditions.

For best results, use only PSA Abrasive disks recommended by **WORK SHARP™**.

- **WARNING.** The use of any accessory or attachment other than one recommended in the instruction manual may present a risk of personal injury.
- **HAVE YOUR TOOL REPAIRED BY A QUALIFIED PERSON.** This electric tool complies with the relevant safety rules. Repairs should only be carried out by qualified persons using original spare parts; otherwise this may result in considerable danger to the user.
- **LATEX ALLERGY.** The provided Crepe Stick used to clean the PSA Abrasives is a natural latex product. If you have a latex allergy, do not touch or handle the Crepe Stick. It has been bagged to protect against allergic reaction.
- **SAVE THESE INSTRUCTIONS AFTER READING.**

For Service Contact:

Professional Tool Manufacturing, LLC
Work Sharp
 210 E. Hersey St.
 Ashland, OR 97520
 USA
 Phone: 1-800-597-6170
 FAX: 541-552-1377
 Email: tech@worksharptools.com

WARNING:

Some dust created by power sanding, grinding, miscellaneous construction activities, as well as contents from the machine including the molding, wiring, grinding wheel, or any other parts may contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm and can be hazardous to your health.

WARNING:

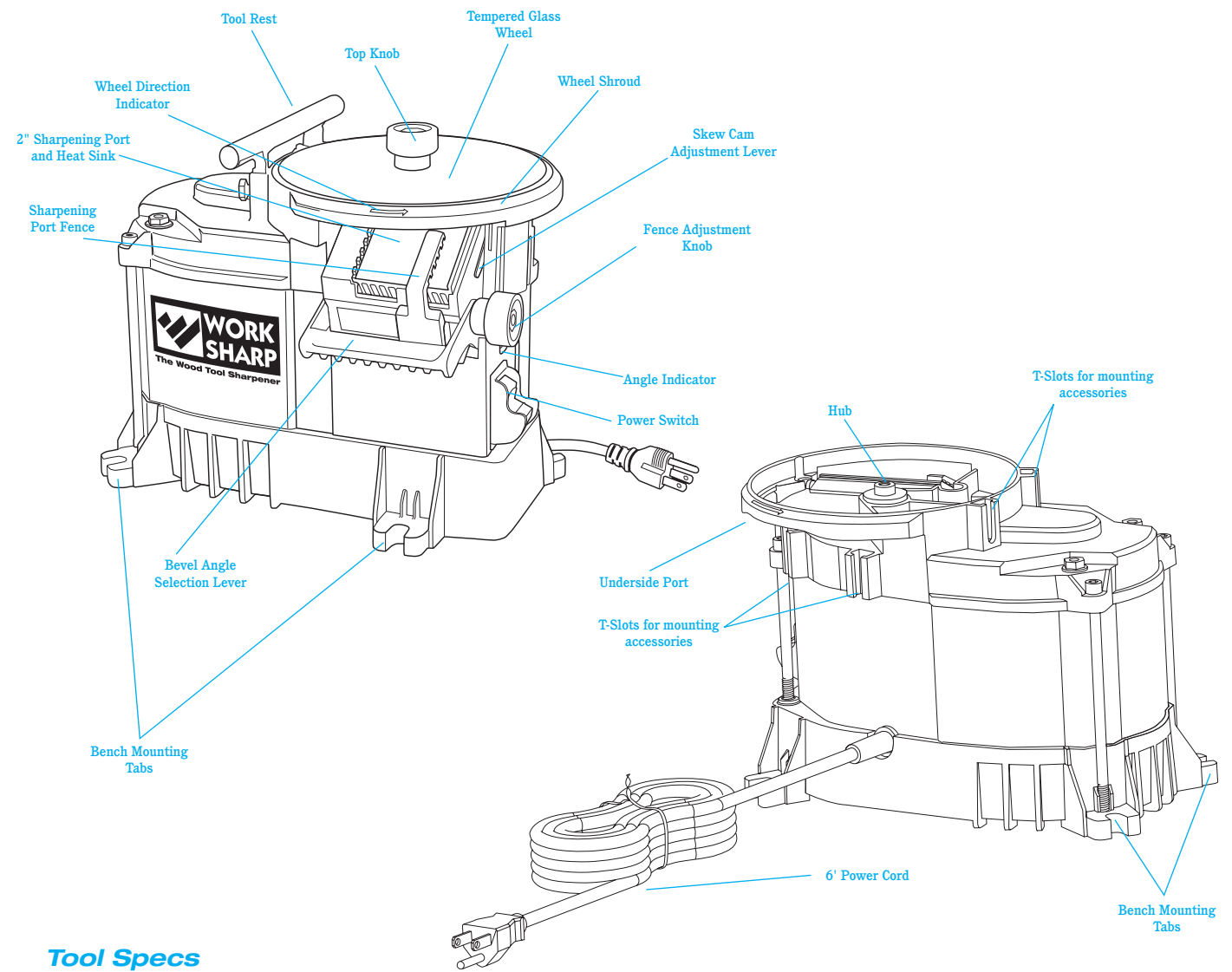
Keep your Work Sharp unit and the work space clean for best performance and safety. Do not let sharpening debris accumulate on, in or around the Work Sharp Wood Tool Sharpener. Accumulated fine metal sharpening debris can be very hot and may present a fire danger if the machine or your workspace is not properly cleaned and maintained. Accumulated sharpening debris can also degrade the life of your Work Sharp unit and cause premature wear on some components.

If sharpening debris has accumulated, do not immediately throw it into a trash receptacle without ensuring the debris is completely cool and free of heat. Improperly disposing of the accumulated sharpening debris may present a fire risk. The Work Sharp Wood Tool Sharpener has been designed to suspend the sharpening debris as long as possible and disperse the debris onto the workspace behind the tool. This maximizes the opportunity to cool the sharpening debris being produced. Do not collect the sharpening debris during sharpening. This increases the risk of heat build up in the debris and the potential for fire.



1 Getting to Know Your Tool

WORK SHARP™
 The Wood Tool Sharpener & Hone



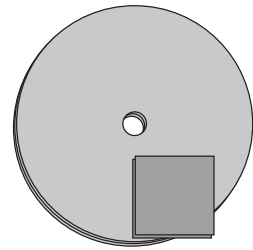
Tool Specs

Motor	1/5 horsepower induction
Wheel Speed	580 RPM (gear reduced)
Wheel Material	150mm tempered float glass
Tool Construction	Cast-aluminum top; sheet-metal housing; impact and vibration-resistant, tool-grade plastic base
Cooling System	Heat sink with routed airflow
Power Connection	Industrial grade switch with safety lockout; grounded 6' power cord
Abrasives	150mm and 2" premium, durable PSA (Pressure Sensitive Adhesive) ceramic oxide and aluminum oxide abrasives (Also accepts standard 6" abrasives. Trimming is required to fit 150mm tempered glass wheel.)
Honing	150mm Micro-Mesh™ 3600 cushioned abrasive (6 μ micron) (Leather disk and honing compound accessory available.)

Work Sharp Wood Tool Sharpener Component Checklist

Standard Kit includes:

PSA (Pressure Sensitive Adhesive) Abrasive Kit



PSA Abrasive Kit includes:

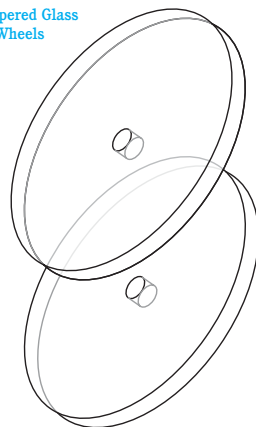
150 mm PSA Abrasive to be adhered to the tempered Glass Wheels:

- P120 (127µ) Ceramic Oxide
- P400 (35µ) Aluminum Oxide
- P1000 (18µ) Aluminum Oxide
- Micro Mesh 3600

2"x2" PSA Abrasive for the heat sink/lapping surface:

- 400x (35µ) Ceramic Oxide

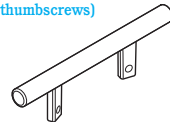
2 tempered Glass Wheels



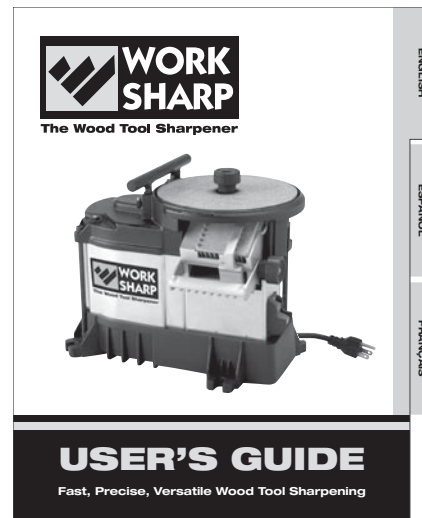
Top Knob



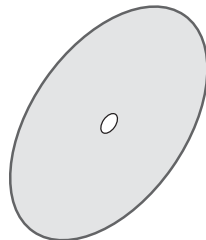
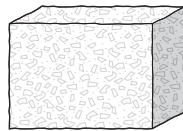
Top Tool Rest and Hardware (2 thumbscrews)



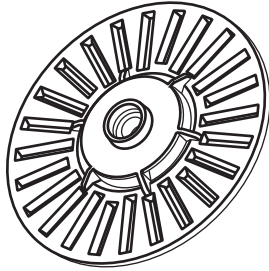
User's Guide



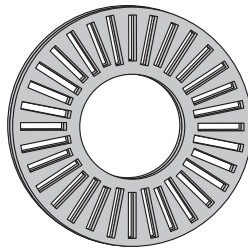
Crepe Stick



Micro-Mesh™ 3600 cushioned honing abrasive, equivalent to 6µ (micron)

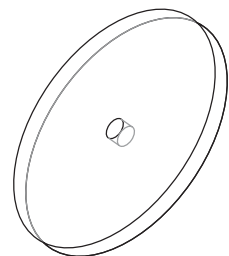


Slotted Wheel

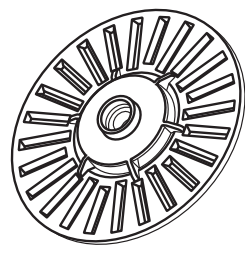


Additional Abrasives

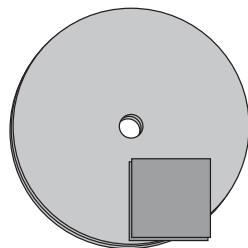
2 Available Accessories



Tempered Glass Wheel
#WSSA0002023

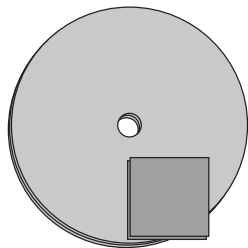


See-Through Slotted Wheel
#WSSA0002029



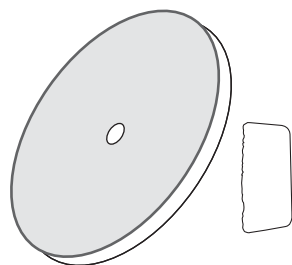
Abrasives Kit: Coarse
#WSSA0002005

2 pcs. 150mm P80, 2 pcs. 150mm P120,
3 pcs. 150mm P220, 2 pcs. 2" P400



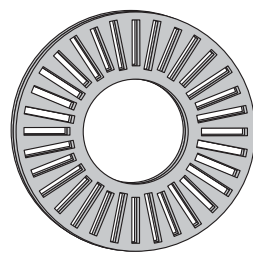
Abrasives Kit: Fine
#WSSA0002043

4 pcs. 150mm P400, 6 pcs. 150mm P1000,
2 pcs. 2" P400



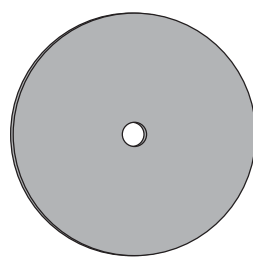
Leather Honing Wheel with Compound
#WSSA0002001

150mm leather disk adhered to a 150mm tempered glass wheel (Chromium oxide honing compound included)



Abrasives Kit: Slotted
#WSSA0002002

1 pc. P80 slotted, 2 pcs. P400 slotted, 2 pcs. P1200 slotted, 1 pc. 150mm Micro-Mesh™ 3600 slotted



Abrasives Kit: Micro-Mesh™ Honing Kit
#WSSA0002044

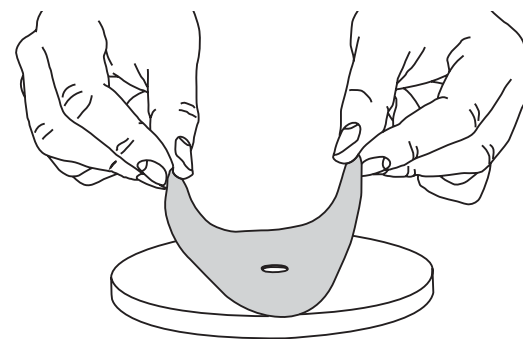
1 pc. 150mm 3600 Micro-Mesh™,
1 pc. 150mm 6000 Micro-Mesh™

3 Assembling Your Tool

1. Carefully remove the tool and the accessories kit from the box.
2. Refer to Component Checklist (page 6) to ensure that you have received all the components, including Abrasives.
3. Remove all packing materials and store in case you ever need to return the unit for servicing.
4. Visually inspect your tool for potential damage incurred during shipment. If there is damage, call 800-597-6170 to speak to a Customer Service Representative.
5. Apply PSA Abrasive. A clean work environment is critical during the adhesion of the PSA Abrasive. Unpack and clean the tempered Glass Wheels with isopropyl alcohol, paint thinner or acetone to ensure a clean surface to adhere the PSA Abrasives. Mineral spirits is not recommended since it leaves an oily residue.

The 2 tempered glass wheels provided are intended to have a different abrasive grit on each surface. This allows you to have a coarse grinding wheel for shaping and sharpening and a fine grinding wheel for honing.

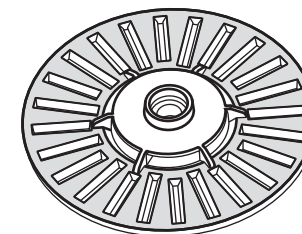
To apply the chosen 150 mm Abrasive to a Glass Wheel surface, simply peel the backing off the abrasive disk. Handle the Abrasive disc by the outer edges, being careful not to get any contaminants on the PSA backing as they will produce lumps under the paper and decrease sharpening performance. Flex the paper into a "U" shape so the center of the Abrasive is centered on the Glass Wheel. Slowly flatten out the Abrasive from the center working toward the outer edge of the Glass Wheel. For best results, roll a dowel over the Glass Wheel after adhering the Abrasive to remove any air bubbles that have formed. If air bubbles remain under the PSA Abrasive after rolling, pierce them with a needle or fine knife point and then press them firmly to remove the air.



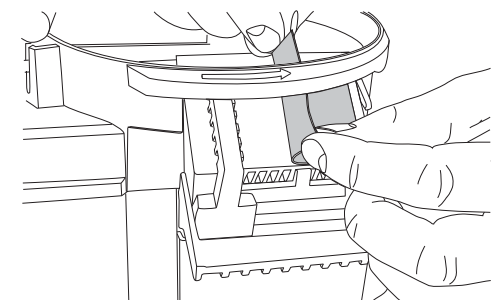
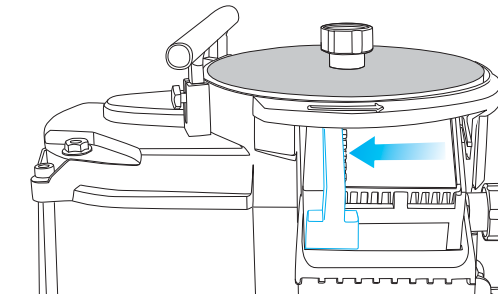
Your Work Sharp also includes a Slotted Wheel for see-through sharpening of radius tools using the Underside Sharpening Port. The corresponding slotted Abrasive is specifically designed for this Wheel. Make sure all the slots in the abrasive properly align with the slots in the wheel surface. This will ensure proper performance of the Slotted Wheel during use.

Sharpening Port PSA Abrasive adhered to the heat sink. The 2" x 2" P400 PSA Abrasive is adhered to the heat sink at the manufacturer. The abrasive in the Sharpening Port laps the back of a tool during sharpening. This significantly decreases the burr, or wire, during sharpening and dramatically reduces sharpening time.

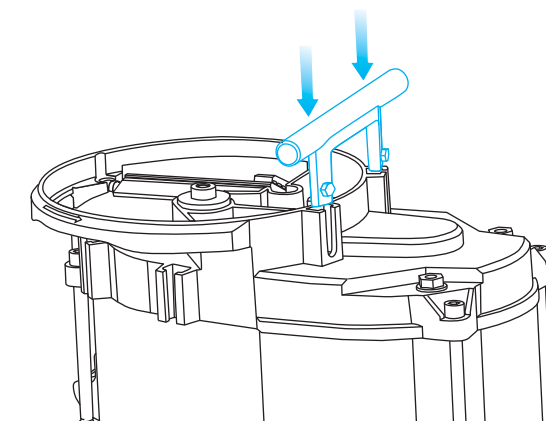
An extra piece of this abrasive has been provided for you. To



replace this Abrasive to the heat sink, the Fence must first be moved all the way to the left of the Sharpening Port, and the wheel must be removed. To traverse the Fence to the left, simply roll the Fence Alignment Knob toward yourself. Keep traversing the Fence to the left side of the Sharpening Port until it passes the notched wall on the left side and stops. Do not force the Fence Alignment Knob or Fence. Once the Fence is completely on the left side of the Sharpening Port, peel the backing off the 2" x 2" P400 PSA abrasive. Handle the Abrasive by the outer edges, being careful not to get any contaminants on the PSA backing as they will produce lumps under the paper and decrease sharpening performance. You will have to slide the Abrasive under the Wheel Shroud. Be sure that the Abrasive fits squarely on the heat sink and that the upper edge of the Abrasive (closest to the center of the Wheel Hub) fits right to the edge of the heat sink.



6. Place the tempered Glass Wheel with coarse abrasives onto the Wheel Hub. Mount the Wheel so the coarser side of the Glass Wheel is facing up. Secure the Wheel with the provided Top Knob. **Do not over-tighten the Top Knob**; it only needs to be finger tight.
7. Install the Top Tool Rest. To install your Top Tool Rest, first remove it from the packaging and locate the 2 provided thumbscrews to mount the Tool Rest. Simply slide the Top Tool Rest into the T-Slots on the top of the unit. Thread the provided fasteners into the tapped holes in the Tool Rest. Ensure the Tool Rest is level by placing a level on top of the Tool Rest surface. Once you have located the height and level of the Tool Rest you wish, tighten the 2 thumbscrews to secure the Tool Rest. Do not over-tighten these 2 thumbscrews, as you can potentially stress and/or damage the T-Slots in the top casting.



4 Quick Start Guide

This is intended as a brief introduction or refresher on the use of your tool, please read the following sections in their entirety before first use of the Work Sharp Wood Tool Sharpener.

STEP 1

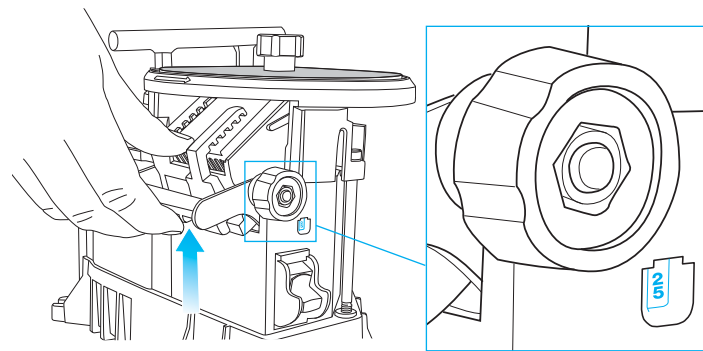
Determine tool type and desired sharpening angle: 20°, 25°, 30° or 35°.

- Chisels and plane irons up to 2" are sharpened in the Sharpening Port.
- Wider tools are sharpened freehand on top of wheel surface using the Top Tool Rest.
- Carving and lathe tools are sharpened using the see-through Slotted Wheel.

STEP 2

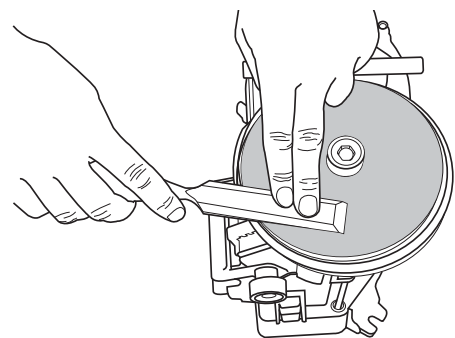
Set the angle of the Sharpening Port to the desired angle.

To change Sharpening Port angles, place your thumb on the heat sink, while grasping the Bevel Angle Adjustment Lever with your fingers (see image). Squeeze thumb and fingers together to release spring loaded tooth engagement. Move Port up or down to change angles. Look on the right side of Sharpening Port next to the Fence Alignment Knob to reference the angle selected.



STEP 3

Assure that you have the proper grit selected and installed on the Sharpener. Please refer to "Selecting the Right Abrasive for the Job" (p. 10) for more information concerning grit selection.

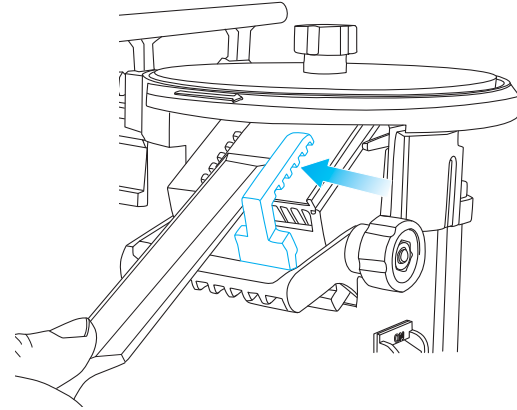


STEP 4

Flatten tool back on top of wheel using a two-handed, freehand method. **IMPORTANT:** Lay tool onto Abrasive heel first. Do not grind or round off the cutting edge!

STEP 5

Place tool to be sharpened back down (bevel facing up) in the Sharpening Port onto the lapping Abrasive.

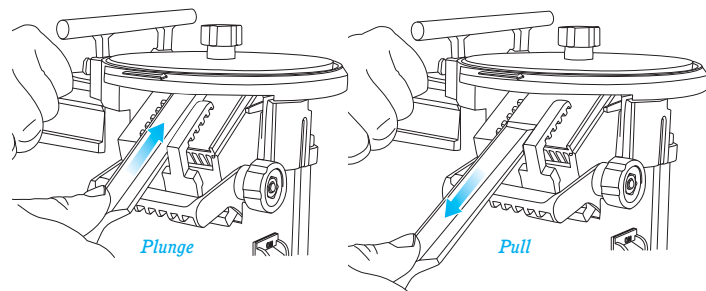


STEP 6

Move Fence lightly against tool using the Fence Alignment Knob on right side of port. Leave Fence loose enough for tool to slide between Fence and guide rail.

STEP 7

Slide tool (bevel up) into Sharpening Port between Fence and guide rail. Contact Wheel for 1-2 seconds (no longer), then pull tool away from the Wheel, being sure to keep the back of the tool flat on the lapping Abrasive. It is important to pull the cutting edge at least halfway down the lapping Abrasive to remove any burr that may have been created. Repeat this plunge and pull process approximately 10 times until damage to the cutting edge has been removed and a consistent finish is attained.



STEP 8

Repeat this plunge and pull process using finer grit selections until the tool has reached desired finish or sharpness. For optimum finish use all grits provided. Final hone and micro bevel if desired.

5 Selecting the Right Abrasive for the Job

P120	equivalent to 127 μ (micron)	for use with damaged or chipped tools
P400	equivalent to 35 μ (micron)	for use with nearly sharp tools which only require a touch-up
P1000	equivalent to 18 μ (micron)	for use when fine sharpening the tool
Micro-Mesh™ 3600	equivalent to 6 μ (micron)	for use when honing the tool

About Work Sharp Abrasive Technology

Finish

- Coated abrasive disks start flat and stay flat. (Bonded abrasives used in stones and most power systems require frequent dressing to keep the wheel flat.)
- Heat treated aluminum oxide and ceramic abrasives provide a polished finish superior to oil and water stones without the mess.
- Premium P-graded Abrasives provide more consistent cutter height and smoother surface finish than traditional bonded and plated abrasives. (As bonded wheels wear they tend to round the edges/corner of the tool. As the abrasive particles wear, the bond breaks down, exposing new particles but always at a different depth.)
- The grit size is engineered to provide optimal sharpness and surface finish at each stage of sharpening. (Users who are interested in a "utility sharp" edge will find exceptional edge performance on the faster coarse grits without the need to hone.)

Speed

- The abrasive selection is integrated with design of the Work Sharp drive train and cooling system to provide the fastest material removal rate while minimizing the risk of overheating tool steels.
- The sharpening port includes a lapping abrasive that provides superior burr control and allows for 1-step re-sharpening.
- Two-sided wheel and off-the-shelf abrasive makes it easy to switch between coarse and fine abrasives. (Doesn't require re-grading the wheel just to switch between coarse and fine Abrasives. Doesn't require an expensive selection of custom wheels or disks.)

Simplicity

- Accepts standard 150 mm or 6" PSA-backed adhesive that is readily available. (No custom adhesives or expensive custom wheels required. Coarse grits are available at most hardware/woodworking stores. Fine grits are readily available at any automotive paint supply store.)
- Abrasive disk life can be extended significantly by regular cleaning using the supplied disk cleaner (Crepe Stick). Simply rub the Crepe Stick across the surface of the Wheel to remove any loading or build-up on the Abrasive.

Ceramic Oxide Benefits	Aluminum Oxide Benefits
• Fastest cut rate	• Fast cut rate
• Cool cutting	• Consistent finish
• Longest life	• Increased life
• Maximum load resistance	• Reduced loading

CAMI (USA) Individual Mesh	FEPA (Europe) "P"	Micro Mesh	Micron μ
80	P80		197
100			141
120	P120		127
	P150		97
150			93
180	P180		78
220			66
	P220		65
	P240		58
240			53
	P280		52
	P320		46
280			44
	P360		40
320			36
	P400		35
	P500		30
360			28
	P600		25
400		1500	23
	P800		21
500	P1000		18
600		1800	16
	P1200		15
800	P1500		12
		2400	11
	P2000		10
1000			9
	P2500		8.5
1200		3200	6.5
1350		3600	6
1500		4000	3
		6000	2
		8000	1.2

6 Sharpening Straight-Edged Tools

Master Tip: Sharpen even new tools

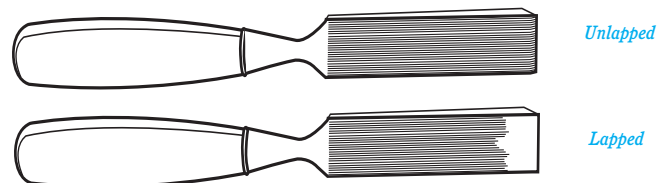
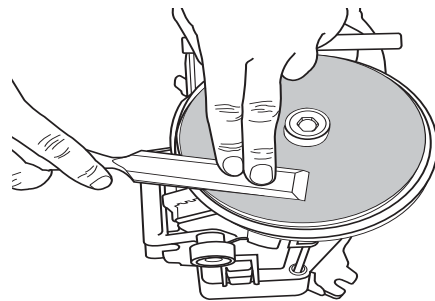
It is imperative to sharpen a new tool before use. Most manufacturers only rough grind a tool and do not properly flatten the back or hone the primary bevel angle. The entire back does not need to be flat, only the third of the chisel back from the cutting edge to the handle needs to be flat. Once this is done to a new tool, it does not need to be done again, unless the tool has become damaged or you have sharpened past the third of the back you have already flattened. For best tool performance and ease of use, a new tool must be sharpened to achieve a flat back and keen bevel edge. New tools often come coated in lacquer, or some type of hardened protective coating. For best results, remove this coating with paint or lacquer thinner before sharpening. This will keep your Abrasives from loading up and needing premature replacement.

Master Tip

Be sure to lay the tool down **heel first** and not cutting edge first on the right side of the wheel. This will ensure that you do not grind material away from the tool back at the cutting edge, which makes it very difficult to sharpen to a keen edge. If you do accidentally remove material from the chisel back at the cutting edge, you must continue to grind the tool back flat until the damage is removed. It may take a long time to perform this task, but it is crucial to achieving a keen cutting edge.

STEP 1 • Flatten the tool back

Mount your coarse Abrasive Wheel with P120 face up to flatten the chisel or plane iron back. Turn on the unit and use the freehand method to flatten the tool back by carefully placing the tool back onto the right side of the wheel (so the wheel is spinning away from you).



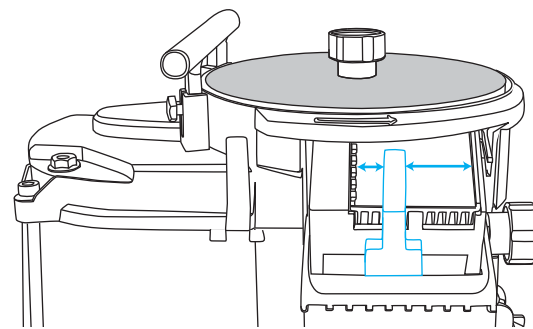
STEP 2 • Sharpen the primary bevel

The Work Sharp Wood Tool Sharpener has the ability to sharpen precise and repeatable bevel angles of 20°, 25°, 30° and 35°. To change Sharpening Port angles, place your thumb on the heat sink while grasping the Bevel Angle Selection Lever with your fingers. Squeeze thumb and fingers together to release spring-loaded tooth engagement. Pull Sharpening Port all the way up to get a 20° bevel angle, move down one click for a 25° bevel angle. Move down two clicks for a 30° bevel angle, and all the way down to the bottom for a 35° bevel angle. Release thumb and finger squeeze to engage teeth to hold selected angle.

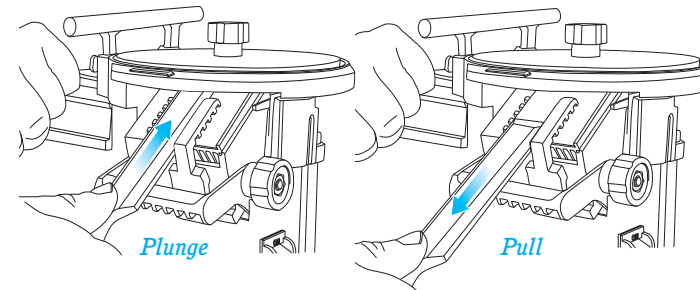
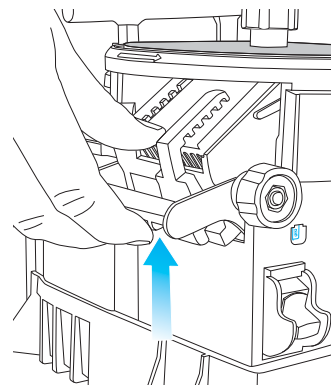
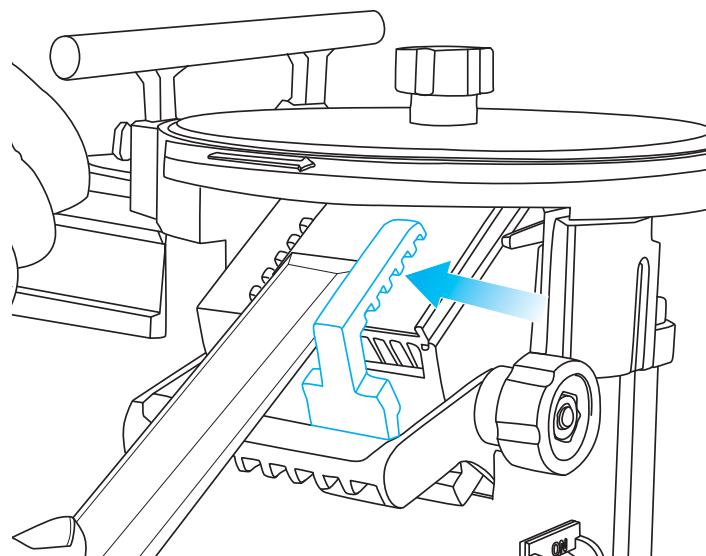
Look through the Bevel Angle Selection Window on the right side of Sharpening Port next to the Fence Alignment Knob to reference the angle selected.

Once you have selected the desired Sharpening Port angle, you can proceed to fit the tool into the Sharpening Port. To do so, lay the tool to be sharpened into the Sharpening Port back down (bevel up) so that it lies flat on the heat sink surface. The Sharpening Port offers a guide rail on each side and also an Adjustable Fence to ensure a square bevel grind.

Tools under ½" wide can be sharpened on the left side of Port, while tools wider than ½" should be sharpened on the right side of the Port. This is due to the varying Wheel speed at different surface points. The center of the Wheel has a slower surface speed and is less likely to overheat a smaller tool.



Once the tool is placed on the proper side of the Port, move the Fence lightly against tool using the Fence Alignment Knob. Leave the Fence just loose enough for the tool to slide between the Fence and guide rail. Slide tool (bevel up) into the Sharpening Port between the Fence and guide rail and contact the Abrasive Wheel for 1–2 seconds (longer will only produce more heat and a large burr wire). Pull the tool away from the Wheel no less than one inch, while keeping it flat



and square on the lapping Abrasive in the Sharpening Port. **This is a critical step since the lapping Abrasive on the heat sink removes the burr wire.** The best sharpening method is to repeatedly 'plunge and pull' the tool in the Sharpening Port. This not only minimizes heat build up in the tool being sharpened, but also assists in removing the burr wire edge when you pull the tool back across the lapping Abrasive in the Sharpening Port. Using this plunge and pull method will yield a keen sharp edge the fastest. Once the tool back and primary bevel have been completely sharpened (the entire surface has an even grind finish), turn unit off and change Abrasive Wheel to a finer grit. Repeat same sharpening steps on finer grits to remove scratches from previous coarser grit grinding. Continue sharpening all the way up to the finest grit to achieve sharpest results.

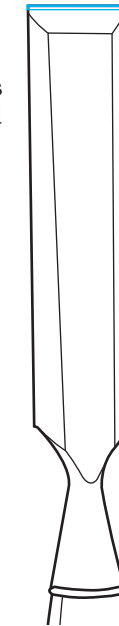
Master Tip: Create a micro bevel

If you desire, you can now sharpen your tool to have a micro bevel. Generally, a micro bevel is sharpened onto a cutting tool to minimize the amount of time it takes to re-hone the cutting edge after use, and to provide a stronger cutting edge. As an additional benefit, a micro bevel will extend the life of your Abrasives since you will be re-sharpening a much smaller area each time. Use the following micro bevel angle guide to create a micro bevel quickly and easily:

- Use your P1000 Abrasive Wheel surface face down to sharpen the micro bevel
- You only have to contact the wheel very briefly to create the micro bevel
- If you sharpened to 20°, micro bevel in the Sharpening Port at 25°
- If you sharpened to 25°, micro bevel in the Sharpening Port at 30°
- If you sharpened to 30°, micro bevel in the Sharpening Port at 35°

STEP 3 • Re-sharpening a tool

The steps to re-sharpen a tool are fundamentally the same as the instructions outlined above for a new tool. The differences are that you may not need to flatten the tool back again, depending on the damage, and you will not need to start your sharpening on the coarse grits. If the tool is not visibly chipped or damaged, start with the fine Abrasive Wheel. Or, if you have sharpened a 5° micro bevel on your tool as outlined above, you only need to re-sharpen the micro bevel on the P1000 abrasive surface. If the tool is chipped or damaged, start sharpening with a coarser grit for fastest results.



STEP 4 • Honing the Tool

Honing chisels, plane irons, etc.

Micro-Mesh™ 3600 is a cushioned silicone carbide abrasive that provides a superior finish to tool steel. The provided Micro-Mesh™ honing disk is the equivalent of 6µ (micron). For best results, sharpen your tool with the provided abrasives of at least P400 and then P1000 and ensure that the surface finish is clean, even and smooth after sharpening on the P1000 disk.

To hone the bevel of your tool, mount the Micro-Mesh™ honing disk face down and turn the tool on. Repeatedly plunge and pull the tool to the desired angle in the Sharpening Port. Continue bevel honing until a consistent finish is achieved.

To hone the back of your tool, mount the Micro-Mesh™ honing disk face up on the Work Sharp Wood Tool Sharpener. Firmly grasp the tool to be honed and place the back of the tool (heel first) onto the right side of honing surface so the wheel is turning away from you. Briefly contact the honing surface with your tool back and check for finish. Continue honing until desired finish is achieved.

Honing carving and lathe tools

Sharpen your carving and lathe tools using the slotted see through wheel and underside sharpening port. To sharpen a carving or lathe tool, mount the slotted wheel with the abrasive side face down. Turn the unit on and place the tool to be sharpened under the wheel in the underside sharpening port on the back side of the unit. As the wheel spins, look down through the wheel to see the tool to be sharpened. Slowly and carefully bring the tool to be sharpened up to the wheel surface. You should now be able to see the exact point of contact where the abrasive disk is contacting the tool. Sharpen the entire heel of the tool until a consistent finish is achieved. Now move the tool so the point of sharpening contact is at the cutting edge. Continue sharpening or honing until desired finish or sharpness is attained.

Optional Honing Accessories for your Work Sharp sharpener

- **The Work Sharp Leather Hone Accessory Kit** comes with a 150mm premium leather disk attached to a tempered glass wheel and Chromium Oxide honing compound.
- **The Work Sharp Honing Media Accessory Kit** comes with PSA-backed Micro-Mesh™ 3600 (6µ micron) and Micro-Mesh™ 6000 (2µ micron).
- **The Work Sharp Slotted Media Accessory Kit** comes with a slotted piece of Micro-Mesh™ 6000 that will fit directly onto your Slotted Wheel. This will allow you to hone your tools to a mirror finish using the see-through Slotted Wheel.

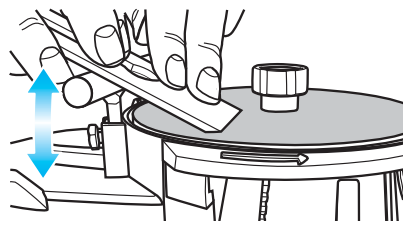
7 Freehand Topside Sharpening

STEP 1 • Mount Top Tool Rest

Mount the Top Tool Rest as shown on pages 7-8.

STEP 2 • Select Top Tool Rest height to determine angle

The height of the Tool Rest above the wheel and the tool projection off the Tool Rest determine the bevel angle sharpened. Lay the tool to be sharpened across the Tool Rest and onto the Abrasive Wheel surface. Be sure that the bevel is laying flat on the Abrasive Wheel surface. Raise or lower the Top Tool Rest to find the proper bevel angle desired. Check the Tool Rest for level by using a common level. Once you have located the desired height and level of the tool, tighten the 2 thumbscrews to secure the Tool Rest. Do not over-tighten.



STEP 3 • Sharpening

Once proper Tool Rest height and tool projection are determined, simply lay the tool on the right side of the Tool Rest and contact the Wheel surface while the unit is turned on. Similar to the bevel grinding instructions for the Sharpening Port, start with a coarse grit Abrasive Wheel for damaged tools or tools that need to be ground to new angles. For tools that need to be sharpened, start with a finer grit Abrasive. Please refer to "Selecting the Right Abrasive for the Job" (p. 10) for more information concerning grit selection. Working on the right side of the Tool Rest allows you to sharpen with the Wheel turning away from you. This is the best position on the Tool Rest for optimum control during sharpening. Sharpening in this manner also draws a burr wire onto the edge of the tool, so you may need to touch the back of the tool being sharpened onto the Abrasive Wheel surface to remove the burr wire.

Master Tip

Be careful not to grind too aggressively as it will generate heat in the tool being sharpened. If the tool being sharpened is getting warm to the touch, simply stop sharpening for a moment until the tool cools down. This will help ensure against damaging the tool steel.

8 Underside Sharpening with See-through Slotted Wheel

The following instructions explain how to use the Slotted Wheel to sharpen carving and lathe tools.

STEP 1 • Select the proper Abrasive

For carving tools

These tools should be sharpened using the provided slotted wheel and abrasives, then final honed using the provided Micro-Mesh™ Hone Wheel. Caution: using too coarse of an Abrasive on smaller tools may cause the tool to overheat. If a carving tool has damage on the cutting edge or needs to be shaped to meet your needs, start with a coarser abrasive wheel and sharpen until damage is removed or desired geom-

etry is achieved. Then proceed to a finer grit slotted media to refine the cutting edge and surface finish. Use the Micro-Mesh™ hone to polish tool until desired finish is achieved.

For lathe tools

Lathe tools are more tolerant to coarse grinding and do not need to be honed to a mirror finish. For these types of tools you can achieve workable sharp results using the coarser slotted Abrasives.

STEP 2 • Apply Slotted Abrasive to Slotted Wheel

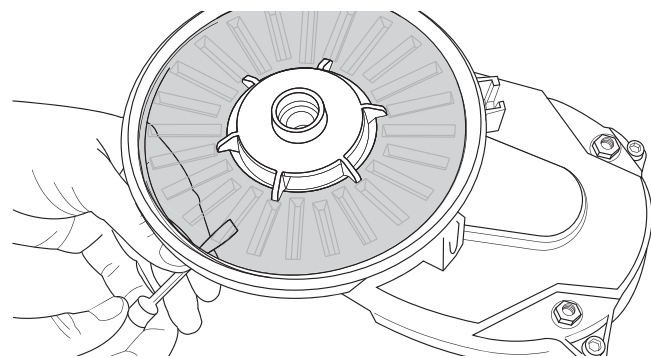
If you have not already applied the Slotted Abrasive to the Slotted Wheel, refer to the instructions on page 7. Standard 6" abrasives can be used on the Slotted Wheel. Trimming will be required.

STEP 3 • Mount the Slotted Wheel

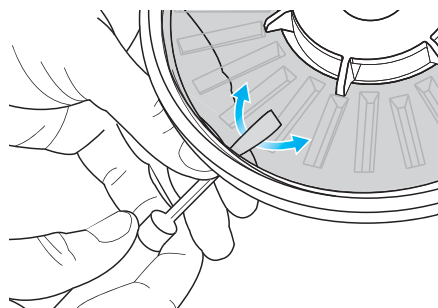
The Slotted Wheel mounts to the unit the same as the tempered Glass Wheels. Always mount the PSA Abrasive face down. With the slotted wheel safely mounted and the unit turned on, **you should be able to see through the slotted wheel clearly** for sharpening carving and lathe tools underneath the wheel. A standard shop light or spot light can also be used to shine on top of the slotted wheel during use to aid in the visibility of the cutting edge.

STEP 4 • Freehand sharpening of radius tools with the Slotted Wheel

With the Slotted Wheel properly mounted, you can begin sharpening your radius carving and lathe tools. Orient the machine so that the back of the machine is facing you and turn the Work Sharp unit power switch to the on position. Slowly and carefully approach the Work Sharp unit



with your tool to be sharpened and position the tool. Looking down through the Slotted Wheel, you should be able to see the tool to be sharpened. Slowly approach the wheel with the tool to be sharpened and place the heel of the tool onto the abrasive surface. You should be able to see the exact point of contact between the Wheel and tool being sharpened as you **look down through the Slotted Wheel**. Slowly and carefully move the tool being sharpened on the abrasive so the entire bevel heel is sharpened. Now carefully roll the surface being sharpened up to the cutting edge. Continue until the entire cutting edge is sharp. Once the tool has an edge you are satisfied with, you can stop sharpening. You can also mount the Micro-Mesh™ wheel to hone a mirror polish on your tools if you desire.



Master Tip

Use a permanent marker to mark the edge of the tool you wish to sharpen. As you sharpen, you will be able to see the marker ink being removed by the Abrasive. When the ink is gone, your tool is sharp.

STEP 5 • Honing the inner edge of the bevel

After sharpening the beveled side of the radius tool, you will want to remove the burr created on the inside edge of the tool. To do so you can use either a very fine cone-shaped slip stone (available from any woodworking supply store or catalog) or a dowel wrapped with a very fine abrasive of at least P1000.

9 Work Sharp Wood Tool Sharpener Maintenance

After sharpening only a few tools, sharpening debris will accumulate on your workbench and also under the Glass Wheel. Grinding particles will promote wear in the Sharpening Port and can potentially contaminate your finer grit Abrasives, so cleaning on a consistent basis can add life to your machine and Abrasives. Before any maintenance or cleaning is performed, **be sure to unplug your WORK SHARP Wood Tool Sharpener.**

Cleaning your Work Sharp Wood Tool Sharpener

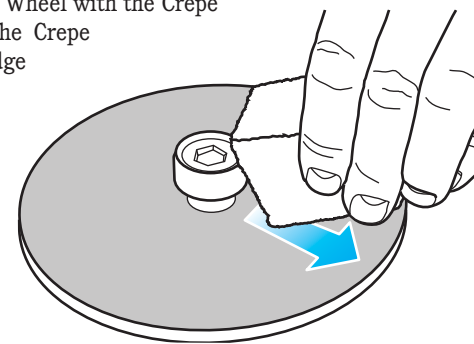
With the **WORK SHARP Wood Tool Sharpener unplugged**, remove the Glass Wheel to expose the top of the unit and Sharpening Port. Brush the accumulated sharpening debris from the Wheel and Sharpening Port area into a disposable container. Remove dust particles with a small, dry brush. Dispose of the container and grinding dust in a safe and environmentally approved manner. With a dry cloth or soft brush, clean the Sharpening Port area to remove any sharpening debris that may have accumulated.

Important Safety Tip

BE SURE GRIT IS NOT HOT OR GLOWING, AS IT MAY START A FIRE!

Cleaning your PSA Abrasive during or after sharpening

With the **WORK SHARP Wood Tool Sharpener** plugged in and turned on, use the provided Crepe Block to clean the Abrasive. Start in the center of the Wheel on the right side (with the Wheel turning away from you) and apply the Crepe Block with light pressure. Keeping constant light pressure on the Wheel with the Crepe Block, slowly pull the Crepe Block to the outer edge of the Wheel. Cleaning the Abrasive frequently will not only enable it to cut faster and last longer, it will also keep your work environment cleaner.



Determining if replacing the 150mm or 2" Abrasive is required

The provided selection of Abrasives with the **WORK SHARP Wood Tool Sharpener** is designed to give you the best sharpening performance available. We have included long-lasting and cool-grinding ceramic oxide and aluminum oxide Abrasives that will provide you with long-lasting results. However, it will wear out eventually. It may need to be changed if:

- When sharpening a tool, it takes noticeably longer to achieve sharp results
- Abrasive is 'loading up' and is not able to be cleaned further
- There is a tear, wrinkle, or hole in the Abrasive
- Cross contamination has occurred from a coarser grit
- There is a bubble or lump under the Abrasive on the Glass Wheel

For best results, use the **WORK SHARP** replacement abrasives kits. **WORK SHARP** recommends the type of ceramic and aluminum oxide Abrasives we provide because they create a finish superior to oil and water stones—without the mess. In addition, the grit size is engineered to provide optimal sharpness and finish at each stage of sharpening.

However, if you choose, you can also use any standard 6" PSA abrasive available at your local hardware store or tool distributor. Trimming of standard 6" abrasives will be required to fit the 150mm tempered glass wheels. Or, you can also use a standard 8" x 11" sheet of your preferred sandpaper, and cut it to size. First spray the Abrasive backing with a spray tack adhesive, then place the Glass Wheel onto the paper. Trace and cut the wheel shape out of the sheet of sandpaper.

Contact the store or dealer where you purchased the **WORK SHARP Wood Tool Sharpener**, or contact **WORK SHARP** directly at www.worksharptools.com, to purchase replacement abrasive kits.

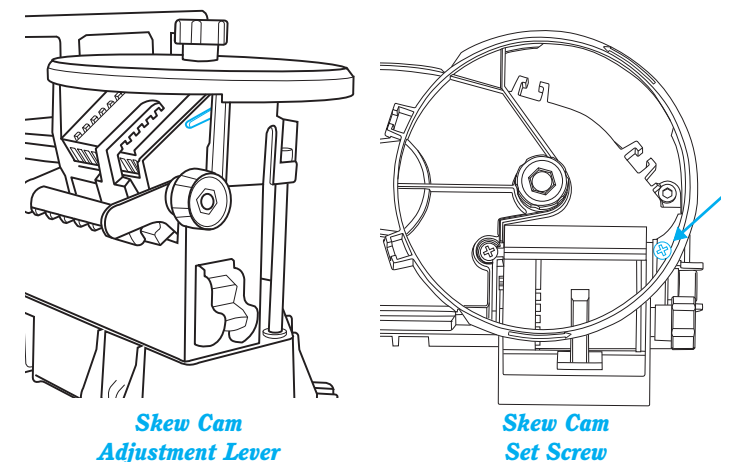
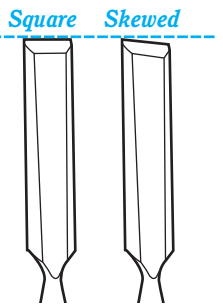
10 Troubleshooting FAQ

Problem

Bevel edge not square

Solution

The bevel edge of the tool is skewed. You can adjust the Skew Cam to compensate. The **WORK SHARP Wood Tool Sharpener** has the ability to fine tune the amount of skew sharpened onto a tool at the bevel edge. The unit is factory set to provide you with a square

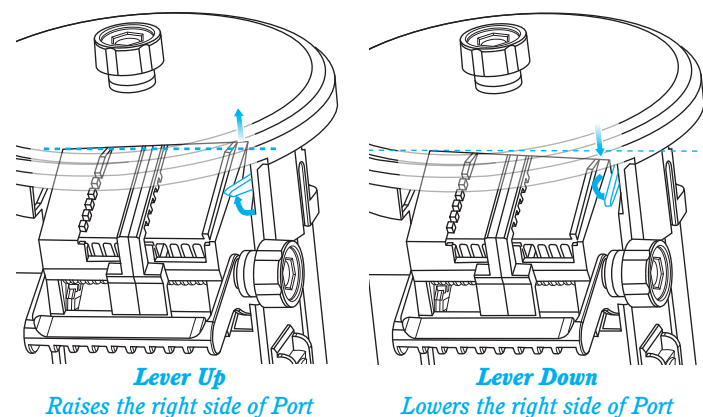


tool edge. If the cutting edge on your tool is not perfectly square after sharpening, you can adjust the Skew Cam on the Sharpening Port to return the Port to square. (NOTE: The Skew Cam adjustment is not designed to create or restore a skew chisel bevel edge. It is designed to allow adjustment of the Sharpening Port to ensure square bevel edges.) To do so, follow these simple steps:

STEP 1. Remove Glass Wheel from unit.

STEP 2. Locate Skew Cam Adjustment Lever and Scw Cam Set Screw on right side of Sharpening Port.

STEP 3. Loosen Skew Cam Set Screw, do not remove.



STEP 4. Adjust Skew Cam Adjustment Lever according to amount of skew desired.

STEP 5. Carefully hand tighten the Skew Cam Set Screw. Do not over-tighten, as you may damage the thread surface in the top housing casting.

STEP 6. Sharpen your tool and measure for squareness. Adjust again as desired.

Problem

Not sharpening entire bevel face

Solutions

- Not sharpening to the same bevel angle previously sharpened onto tool.
- Sharpening not complete yet. Use coarse grit for fast material removal.
- Tool being sharpened is not completely flat on the heat sink during sharpening.
- Sharpening port fence is not snug against tool, which allows tool to skew in port.

Problem

Excessive heat build-up

Solutions

- Leaving tool in sharpening port against abrasive disk too long.
- Applying too much load pressure against abrasive disk during sharpening.
- Abrasive needs to be cleaned or replaced.
- Smaller tools should be sharpened on the left side of port using light pressure and less sharpening time.

Problem

Micro bevel on heel of bevel, not cutting edge

Solution

Wrong angle selected for micro bevel. You must micro bevel to a steeper (larger) angle than your primary bevel to achieve a micro bevel. Example, if you sharpened your chisel to a 25° bevel and attempted to micro bevel at 20°, you will grind the heel of the bevel edge, not the cutting edge. Reference micro bevel detail on page 12.

Problem

Sharpening Port fence feels too tight

Solution

The sharpening port fence is tight by design to prevent fence deflection. However, sharpening debris may contaminate the port fence thread surface and create excessive friction during use. Clean the exposed thread surface with a soft brush to remove any grit or contamination. If excessive friction still occurs, use only a small amount of oil or synthetic lubricant spray to lubricate the thread surface. Do not over apply any lubricant since it will only collect more sharpening debris and can lead to premature thread wear.

Problem

Cannot get sharpening grit pattern removed from tool

Solutions

- You have skipped an abrasive grit in the sharpening process. Use each grit provided for best results.
- You have not spent enough time on each grit during sharpening. Ensure all grind marks from previous grit have been removed before proceeding to the next finer grit.
- Abrasive needs to be cleaned or replaced.

Problem

Sharpening takes excessively long time

Solutions

- PSA Abrasive needs to be cleaned with the Crepe Stick or replaced.
- Tool being sharpened is excessively damaged and should be re-ground or re-shaped using P120 Abrasive.

Problem

Excessive vibration

Solutions

- Glass wheel is damaged. STOP IMMEDIATELY and inspect glass wheel for damage.
- Work Sharp unit not placed stably on work bench or work area. Clamp to work bench with mounting tabs for best performance and stability.
- If excessive vibration continues, call a customer service agent for direction.

Problem

Sharpening Port jumps down under pressure

Solutions

- Sharpening Port engagement teeth are not properly aligned. See Angle Selection View Port on right side of tool near Fence Knob to ensure the proper angle selected is fully engaged.
- You are applying too much downward force during sharpening. Do not use excessive force.
- If condition persists, please call a customer service agent for direction.

Problem

Tool is not sharp

Solutions

- Back of tool is not flat at the cutting edge.
- Bevel has not been sharpened all the way to the cutting edge.
- Burr has been created at cutting edge. Follow repeated 'plunge and pull' method for best results.

- Marks from previous (coarser) grit have not yet been removed. Follow grit selection criteria.

Problem

Tool will not stay sharp

Solutions

- Tool was sharpened to too small of an angle for application. Try a larger (stronger) bevel angle.
- The burr at the cutting edge was not removed. Follow repeated 'plunge and pull' method for best results.
- Try micro beveling your tool for a stronger, more durable cutting edge.
- Tools made of softer steels do not hold an edge as long and may need to be sharpened more often.

For Technical Support

1-800-418-1439 (toll-free USA and Canada only)

1-541-552-1301

Please call 6:00 AM–3:30 PM Pacific Time.

Warranty

*2-year warranty on all Work Sharp components;
excludes Glass Wheel, crepe, and abrasives*

Your Work Sharp is warranted to be free of defects due to workmanship or design for 2 years from the purchase date. If your Work Sharp fails to operate, or if any operating problem occurs, contact Work Sharp Technical Service at:

1-800-418-1439

(toll-free USA and Canada only)

1-541-552-1301

Please call 6:00 AM–3:30 PM Pacific Time.

Do not return this product to the store where you purchased it. Do not attempt any service or repairs other than those suggested by a Work Sharp Technical Service Representative (TSR). During the period of warranty, Work Sharp will, at our discretion, repair or replace this product free of charge and will refund Standard Ground UPS postage or shipping charges providing that the following conditions are met:

1. A copy of the proof of purchase is provided.
2. The product has been operated for the purpose intended as described in the operating instructions and has not been abused or mishandled in any way.
3. The product has not been dismantled and no service or repairs have been attempted other than those suggested by a Work Sharp TSR.

4. The Return Goods Authorization number (RGA #) (assigned by the Work Sharp TSR) is written on the shipping label.

Please make certain to package items in such a way as to eliminate further damage during shipping. Ship via a traceable carrier and properly insure the package. No CODs are accepted. Unapproved shipping charges are nonrefundable.

Complete and mail back the Warranty Registration & Customer Survey in the Work Sharp box, or register online at:

www.worksharptools.com

Please Fill in the Following for Your Records.

Work Sharp Serial Number:

Date of Purchase:

____ / ____ / ____

Purchased from:



The Wood Tool Sharpener

Phone:

1-800-597-6170

1-541-552-1301

Professional Tool Mfg., LLC

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