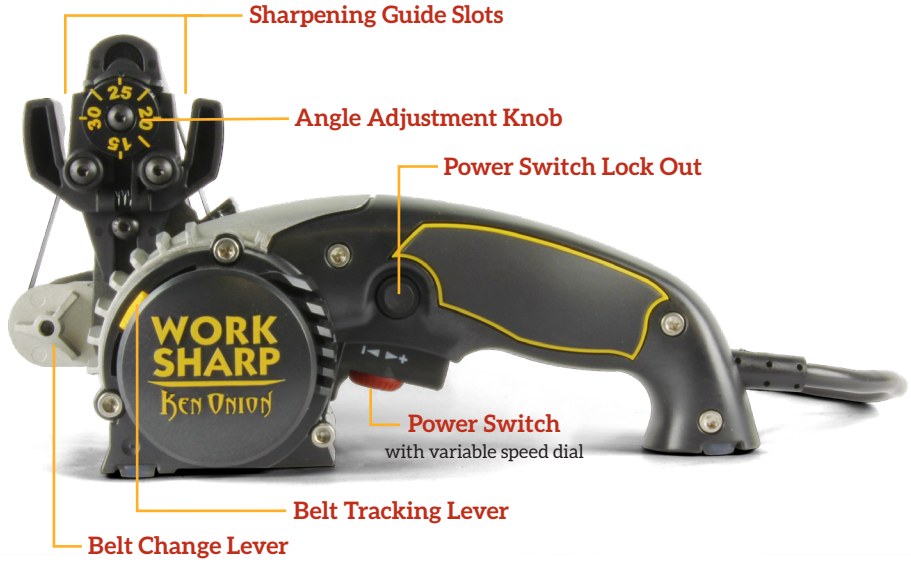
WORK SHARP®
KNIFE & TOOL SHARPENER
Ken Onion Edition

WSKTS-KO USER GUIDE

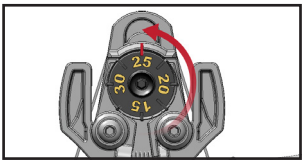
WORKSHARPTOOLS.COM

• CAUTION To reduce the risk of injury, the user must read and understand this instruction manual before using product. Save these instructions for future reference.

1 GETTING TO KNOW YOUR TOOL

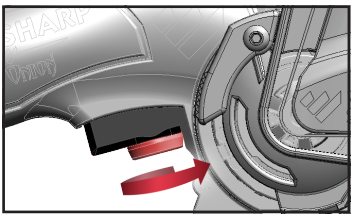


Not Pictured: Bench Mount Fastener (1/4" x 20)



KNIFE SHARPENING GUIDE ADJUSTMENT

15° - 30° in 1° increments. The dial indicates the angle per side. Align desired angle with the indicator line on top of guide.



SPEED CONTROL ADJUSTMENT

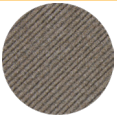
Low speed (+/-) is 1200 SFM

Mid speed (+/-) is 2000 SFM

High speed (+/-) is 2800 SFM

SFM = Surface Feet per Minute

BELT INFORMATION

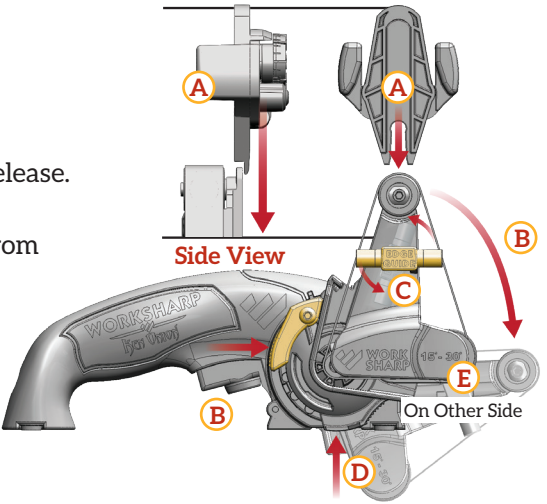
					
Belt Name	**Extra Coarse**	**Coarse**	**Medium**	**Fine**	**Extra Fine**
Grit	P120	X65	X22	X4	6000
Size	Norton SG	Norax 65µ	Norax 22µ	Norax 4µ	SiC 2µ
What it Sharpens	Tool Sharpening	Knife	Knife	Knife & Scissor	Gut Hooks
Uses	Knife Repair	Shape	Sharpen	Hone	Serrations

- *Engineered abrasives are long lasting and will meet your sharpening needs.*
- *Keep clean for best performance and optimum life.*
- *6000 Belt is narrow for improved gut hook sharpening.*
- *Belt Grits are labeled on backing (µ = micron).*
- *For reference, belts are equivalent to:* **X65 (P220) | X22 (P1000) | X4 (P3000)**

ABRASIVE BELT WEAR

Belt discoloration is not an indicator of wear. Engineered belts expose new abrasive as they break down. Used belts may take extra strokes but will continue to remove material. These belts will keep going longer than you think. Keep using them as long as they cut.

2 SETTING UP YOUR TOOL



Slide guide onto cassette (A)
Snap into place. Pull firmly to release.

Cassette Lock Lever (B)
Push & hold to rotate cassette from sharpening to grind mode.

Edge Guide: Pull & Rotate (C)
Clockwise to use, Counter-clockwise to parked position.

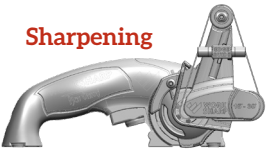
Bench Mounting (D)
Use 1/4" 20 fastener to secure tool.

Belt Change Lever (E)
Lift to reduce belt tension during belt changes.

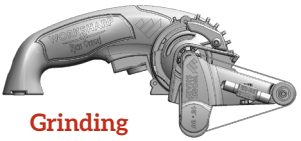
Belt Change:
Lift & hold Belt Change Lever to remove belt. Route belt around all 3 pulleys, then release the lever. Be sure belt is within pulley flanges. Lay tool onto its side for easier belt changes.

Belt Tracking Lever
Push lever inward, then slide up or down to track belt onto the center of the top pulley (factory set at center).

Trigger Lock
Pull trigger & push button in to lock "on" position. Pull trigger to release. Not intended for use when knife sharpening, use for grinding applications only.

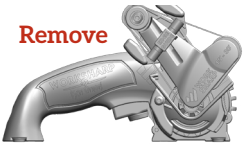


Sharpening Guide:
Rotate knob to select angle. Align number with mark on top. The dial indicates the angle per side.



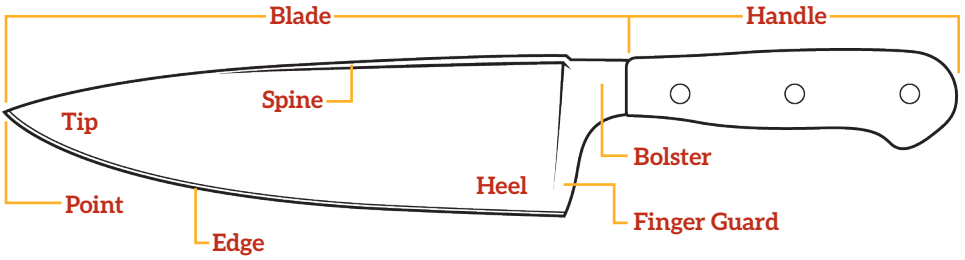
Removing the Sharpening Cassette:

1. Remove belt from sharpening cassette.
2. Push and hold lock lever and rotate cassette to position shown.
3. Dismount cassette by pulling outward.
4. Locate this same position to re-install sharpening cassette or attachments.

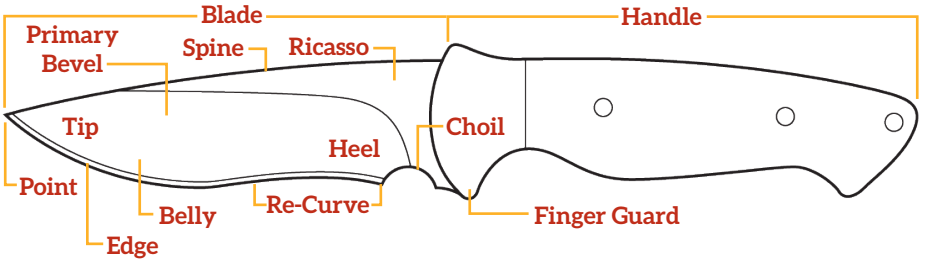


3 KNOW YOUR KNIFE

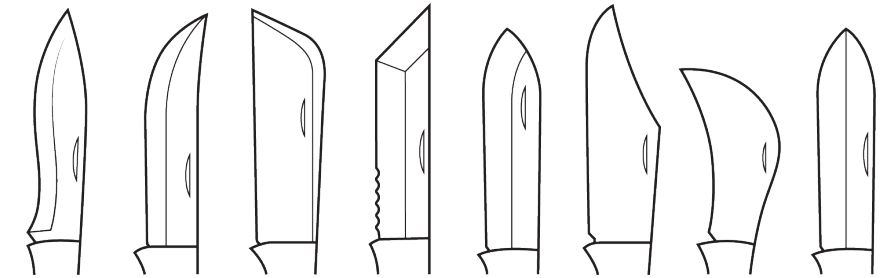
KITCHEN KNIFE



OUTDOOR KNIFE



BLADE TYPES



4 SHARPENING REFERENCE CHART

KITCHEN KNIVES

Pull rate: 1”/sec • **Use Edge Guide**

	Angle	Speed	X65	X22	X4	6000
Western	20°	L	4-8	4-8	10	0
Asian	16°	L	0	4-8	10	0
Paring	20°	L	4-8	4-8	10	0
Cleaver	30°	H	4-8	2-8	0	0
Bread	X	L	0	0	0	2
			Number of strokes per side.			

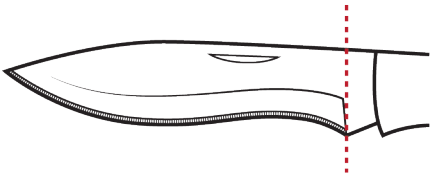
OUTDOOR KNIVES

Pull rate: 1”/sec • **No Edge Guide**

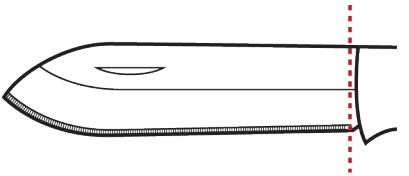
	Angle	Speed	X65	X22	X4	6000
Pocket	25°	L/M	6-10	6-10	10	0
Hunting	25°	L/M	6-10	6-10	10	0
Fillet	20°	L/M	6-10	6-10	10	0
Serrated	X	L	0	0	0	2
Gut Hook	X	M	0	0	0	2
			Number of strokes per side.			

BEST TECHNIQUES:

- **Resharpen using X4 only.**
- Follow the curve of the knife when sharpening for best results.
- Use the Edge Guide on long or flexible blades when possible.
- Masking tape can protect blade from scratching during sharpening.
- Use a practice knife to learn.



Position belt at the very start of the edge with motor off.

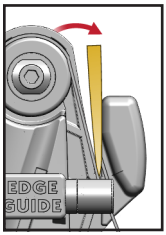


Place blade in guide then simultaneously power up and pull the blade.

5 SHARPENING OUTDOOR KNIVES

Reference Section 4 and the Sharpening Reference Chart for recommended angle settings, belt selection, stroke count, speed and choice of edge type.

1. PLACE THE BLADE IN THE GUIDE



With power off, insert blade into right side of sharpening guide all the way to the start of the edge.

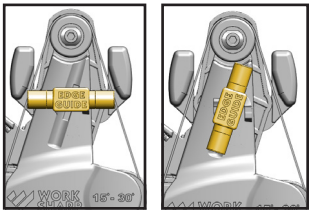
Place knife to bottom and outside edge of guide slot.

Do not put pressure onto / into the sharpening guide. It is intended to provide a reference point for blade position. Only use light pressure (weight of the blade) when using the sharpening guide to yield best results.

n **Best Techniques:**

When and why to use the Edge Guide:

- Most pocket / outdoor knives are best sharpened without using the Edge-Guide since they often have thumb studs or belt clips that can obstruct full blade insertion.
- It is helpful to support and guide long blades (filet knives and machetes) through the sharpening process.



Pull and Rotate

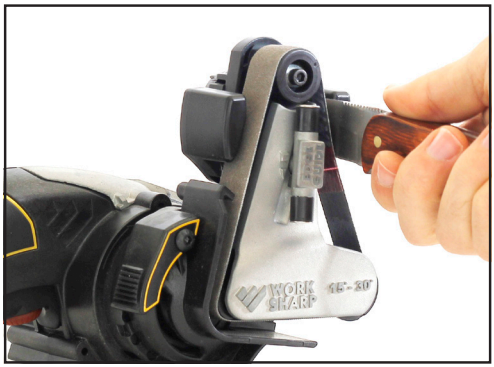
2. POWER ON AND PULL THE KNIFE

With power off and blade placed in the guide, simultaneously squeeze the power switch and pull blade steadily through the guide (1" per second).

Follow the curve of the blade as you pull through the guide. Keep cutting edge perpendicular to the belt for best and most consistent results.

Use only the weight of the blade – **do not press down into / onto guide.** Hover the blade and let the tool do the work for best results.

Guide will 'tip over' if too much outer pressure is applied.



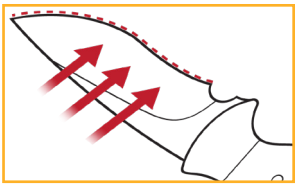
Power off as you come to the point, while the blade is still supported by the belt.

3. REPEAT AND FEEL FOR BURR

Continue sharpening on right side of guide. Check for a burr every 2-3 strokes (see picture).

Sharpen until a burr is created along the entire length of the edge.

If burr is not yet raised, See *"Knife not getting sharp"* in Troubleshooting section.



Check for a burr by brushing fingers across/ away from the blade edge.

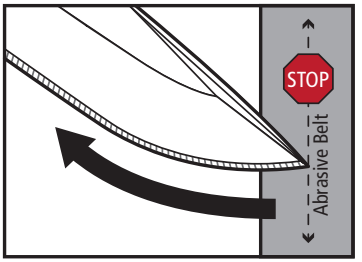
Repeat same **number of strokes** on other side of blade / sharpening guide.

Once the edge is shaped / formed, continue with finer grit belts using alternating strokes. **Alternating strokes** removes the burr and refines the edge faster.

See **Sharpening Reference Chart** in Section 4 for recommended belt use and stroke count based on the edge you want (Toothy, Shaving, Shiny).

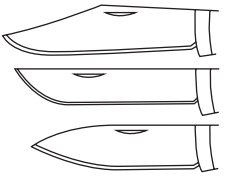
- **Best Techniques: (Avoid rounding the tip)**

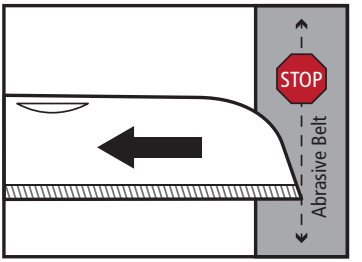
Maintain factory blade profile / shape:



Follow the curve of the blade so the edge remains perpendicular to the belt. Turn off the power as you come to the point.

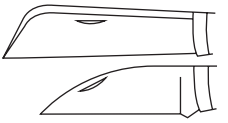
Use this technique for these blade types:





Pull straight through the guide and stop on the middle of the belt. Do not lift the blade handle. Turn power off as knife point contacts belt.

Use this technique for these blade types:



6 SHARPENING SERRATED KNIVES

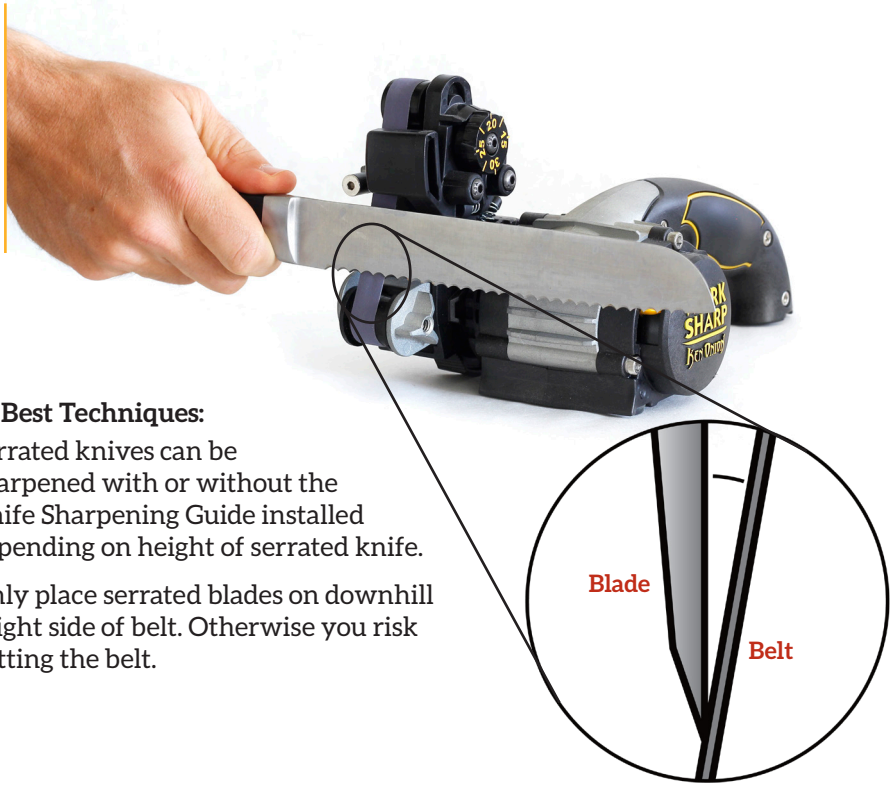
Most serrated knives have a flat side and a bevel side on the blade; **Sharpen only the flat side.**

Flat Side | Beveled Side

Only use the finest grit 6000 belt (purple, narrow) for serrated sharpening.

Place flat side of blade at the bolster / handle against the fine grit abrasive belt. Set to low speed and squeeze the power switch and pull knife steadily across the belt from bolster to tip. An 8" blade should take 8 seconds.

Repeat until no burr remains on the flat side of the blade and serration 'teeth' are sharp.

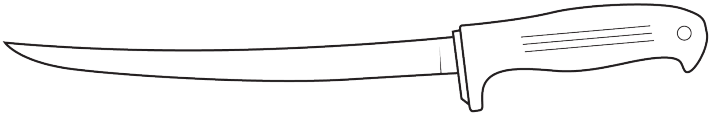


n **Best Techniques:**

Serrated knives can be sharpened with or without the Knife Sharpening Guide installed depending on height of serrated knife.

Only place serrated blades on downhill - right side of belt. Otherwise you risk cutting the belt.

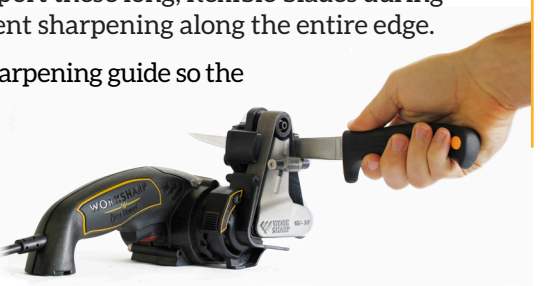
7 SHARPENING FILET KNIVES



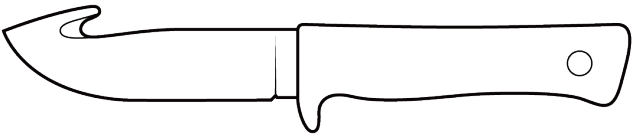
Reference the **Sharpening Reference Chart** in Section 4 for recommended angle settings, belt selection and speed. Otherwise sharpening a filet knife is the same as other knives.

Use the Edge Guide to help support these long, flexible blades during sharpening to ensure a consistent sharpening along the entire edge.

Use very light pressure in the sharpening guide so the blade does not flex.



8 SHARPENING GUT HOOKS



Only use finest grit 6000 belt (purple, narrow) for sharpening gut hooks.

Place curve of gut hook over the belt on downhill side; allow belt to conform to blade's curve. Squeeze power switch; hone 2 to 4 seconds. Repeat on other side.

- **Best Techniques:**

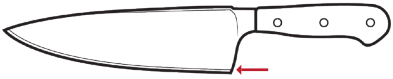
Only place gut hook on downhill - right side of belt. Otherwise you risk cutting the belt.

9 SHARPENING KITCHEN KNIVES

Reference the Sharpening Reference Chart in Section 4 for recommended angle settings, belt selection and speed. Otherwise sharpening a kitchen knife is the same as other knives.

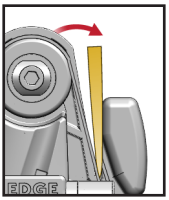
Most kitchen knives should be sharpened with the Edge-Guide.

No finger guard



Finger guard

1. PLACE THE BLADE IN THE GUIDE



With power off, insert blade into right side of sharpening guide all the way to the beginning of the edge or finger guard.

Place knife to bottom and outside edge of guide slot.

2. POWER ON AND PULL THE KNIFE

With power off and blade placed in the guide, simultaneously squeeze the power switch and pull blade steadily through the guide (1" per second).

Follow the curve of the blade as you pull through the guide. Keep cutting edge perpendicular to the belt for best and most consistent results.

Use only the weight of the blade – do not press down into / onto guide. Hover the blade and let the tool do the work for best results.

Guide will 'tip over' if too much outer pressure is applied.

Continue sharpening on right side of guide until a burr is created along the entire length of the edge.

Repeat same number of strokes on other side of blade / sharpening guide.

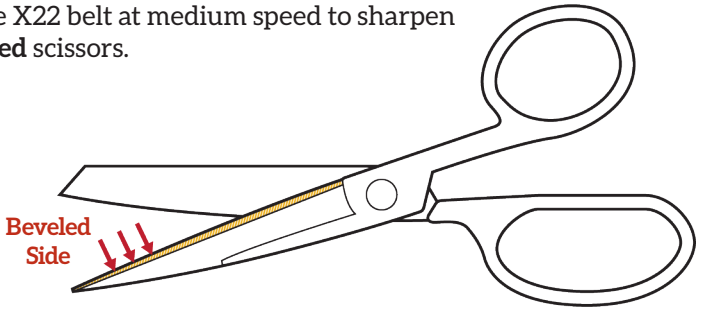
Continue sharpening with finer grit belts using alternating strokes. Alternating strokes removes the burr and refine the edge faster.

10 SHARPENING SCISSORS

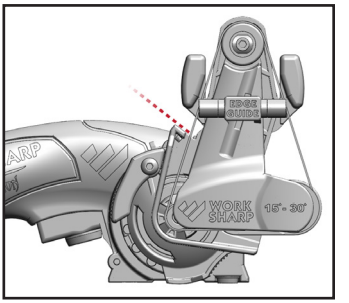
Sharpen **only the beveled side** of your scissors. Marking the beveled side with a black marker will make it easier to see when the cutting edge has been sharpened.

Use the 6000 grit belt at medium to hone or touch-up scissors.

Use the X22 belt at medium speed to sharpen **damaged** scissors.



Once scissor blade is properly placed in Sharpening Guide, squeeze power switch and simultaneously pull the scissor blade steadily through the guide.



Repeat 1-2 more times or until marker is removed from cutting edge.

Repeat on other scissor blade.

Test scissors for sharpness. Continue sharpening as needed.

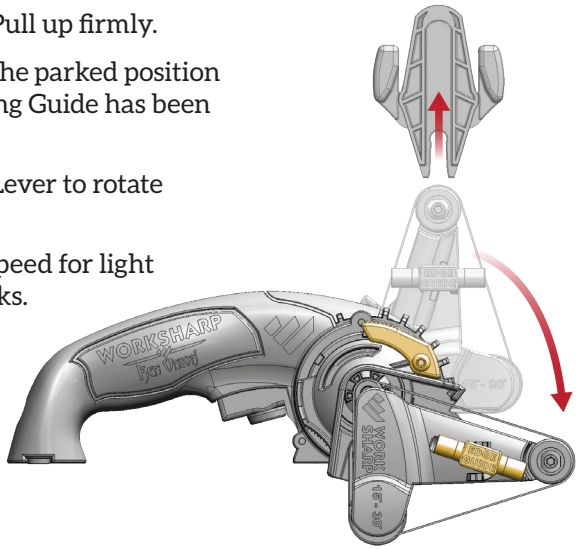
11 GRINDING, POLISHING, DEBURRING

Remove Sharpening Guide. Pull up firmly.

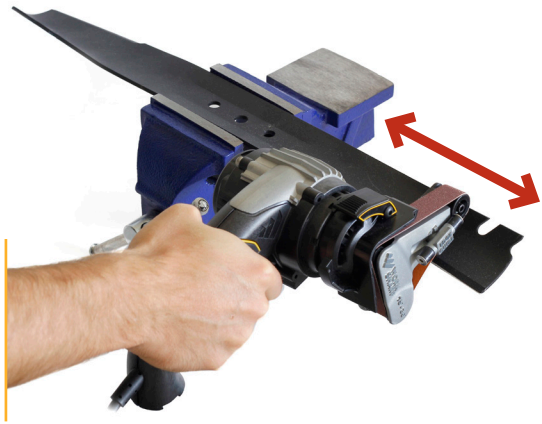
Ensure the Edge Guide is in the parked position and that the Knife Sharpening Guide has been removed before grinding.

Push Cassette Lock Release Lever to rotate cassette to grind mode.

Use the P120 belt and high speed for light sharpening and grinding tasks.



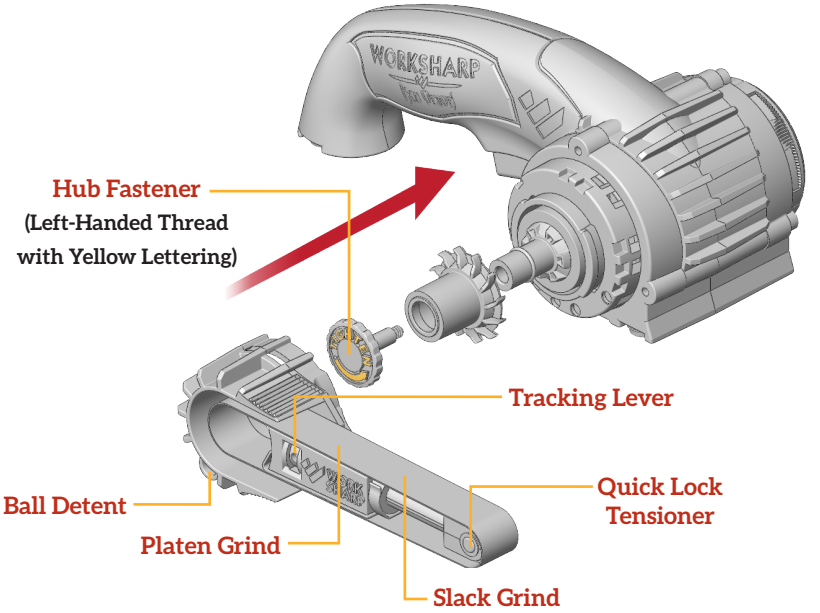
NOTE: Tools such as these do not require sharpening to a precise angle; just let the belt conform to the edge of the tool. It will take longer to restore an edge to severely damaged tools.



n **Best Techniques**

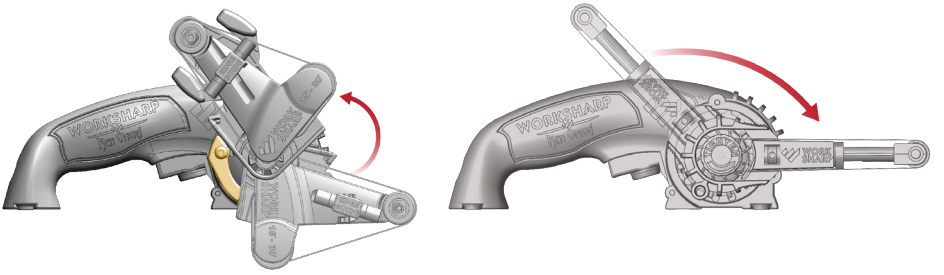
- Always clamp or fixture work piece before grinding for optimum safety.
- Let the tool do the work. Do not overload the tool during grinding. Abrasive selection and belt speed are already optimized.
- Only sharpen tools on the right hand / downhill side of the belt.
- Tool Grinding Attachment available for heavier grinding tasks (see Section 12).

12 TOOL GRINDING ATTACHMENT



INSTALLATION

Push lock release lever and rotate knife sharpening cassette to position shown, pull outward to remove cassette.



1. Install pulley drive hub onto tool using provided Left-Hand Thread Hub Fastener – turn **LEFT** to tighten and **RIGHT** to loosen, **do not over-tighten fastener.** Be sure the drive pulley is properly aligned onto the keyed motor shaft.
2. Install metal Tool Grinding Attachment by pressing inward and rotating forward.
3. Push in and turn tensioner to install / uninstall belt. Use tracking lever to center belt on pulley.

Sharpen Mower Blade

Use high speed
and low pressure.

Deburr Pipe

BELT INFORMATION:

P60
Norton ZA
Grinding

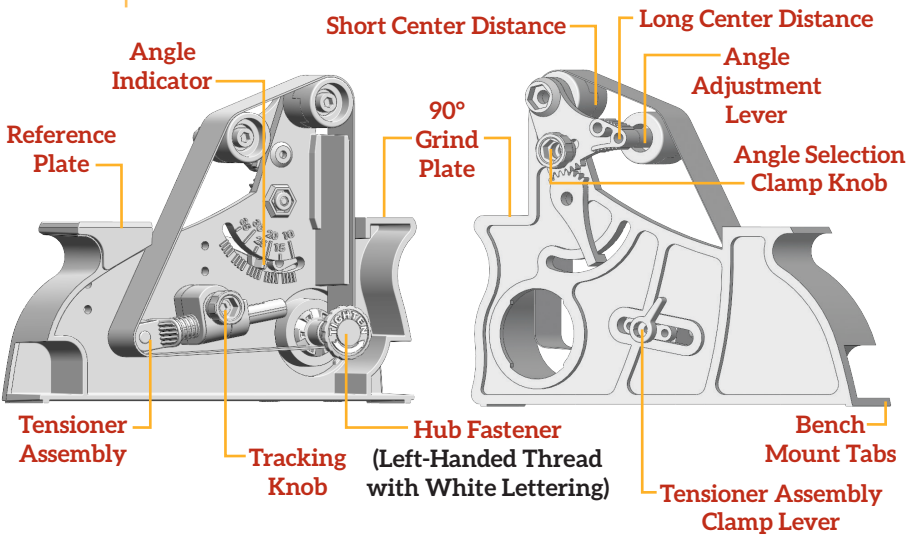
Belt Selection and Education:
P60 grit Zirconia Alumina belt from Norton is designed and intended for grinding tasks in metal.

NOTE: Never use this abrasive for knife sharpening – it is too coarse.

n **Best Techniques:**

- Remember – Lefty Tighty / Righty Loosey on Hub Fastener.
- Keep tool and attachment clean for optimum life and performance.
- Avoid overheating tool.
  - Allow tool to cool to room temperature between rated operating periods.
- Speed Setting: Use at full speed for optimum performance.
- Always secure work piece and wear eye protection when grinding.

13 BLADE GRINDING ATTACHMENT



BELT INFORMATION:

For reference, belts are equivalent to: X65 (P220) | X22 (P1000) | X4 (P3000)

Grit	**P120**	**X65**	**X22**	**X4**	**12000MM**
Color	Red	Brown	Light Grey	White	Grey
Size	Norton SG	Norax 65µ	Norax 22µ	Norax 4µ	SiC 1µ
Use	Repair	Shape	Sharpen	Hone	Strop

INSTALLATION

Push lock release lever & rotate knife sharpening cassette to remove cassette (see Section 12).

Install Blade Grinding Attachment by aligning the chassis to the keyed 'on / off' position then rotate into 'sharpening position'.

Install Hub Fastener with white lettering onto drive shaft. Turn LEFT to tighten, RIGHT to loosen.

Optional: Use a clamp to secure to work bench.

Push in and turn tensioner clockwise to install / uninstall belt.

Use tracking knob to center belt on pulley.

fig. 1

fig. 2

1. Choose either short or long center location for pulley depending on preference.
2. Select desired sharpening angle by moving the Angle Adjustment Lever.
3. Tighten Angle Selection Clamp Knob to secure selected angle.
4. Mount the belt of your choice based on task at hand (see chart left).
5. Turn on power to medium speed and press switch lock out button.
6. Ensure belt is tracking properly so it is centered on the pulleys.
7. Place blade flat onto reference plate *(see fig. 1).*
8. While keeping blade flat, move up onto belt surface and place the heel of the blade edge onto the abrasive. Use very light pressure on belt (3/16" deflection).
9. Move blade flat across abrasive (1" per second) and stop the tip on the middle of the belt. Then pull blade away from the belt.
10. Continue until a burr is raised along entire edge (count strokes).
11. Repeat same number of strokes on other side of blade.
12. Continue up the grit scale until desired sharpness is achieved.
13. Ensure tracking and tension is properly set when you change belts.

n **Best Techniques:**

Be mindful that accommodations will need to be made for every blade such as thumb studs, pocket clips, blade profile or handle design. Test run the blade through the process on both bevels without power first to ensure accommodations can be made before sharpening.

Do not over tension belt or it may negatively affect belt tracking or motor performance.

14 TROUBLESHOOTING

KNIFE NOT GETTING SHARP?

- **More strokes** - Grind all the way to the edge. Continue until a burr is raised. Then progress to a finer belt.
- **Higher Speed** - Slow belt speeds may not be removing enough material.
- **Coarser Belt** - Coarser grit belts will remove material more aggressively.

a) **Problem**: The tips of my knives are becoming rounded. See Section 5.

Solution 1: Stopping with the point still supported by the belt while powering down the tool will reduce tip rounding.

Solution 2: Keep the blade edge perpendicular to the belt. To reduce tip rounding, follow the curve of the blade.

b) **Problem:** The belt is cutting into the sharpening guide or edge guide.

Solution 1: Use the belt tracking lever to re-adjust the belt position to center of the pulley.

c) **Problem:** How do I feel for a burr at the cutting edge to know when to proceed to a finer belt?

Solution 1: Slide your finger perpendicular and away from the cutting edge. The burr will feel like a small 'ridge' or 'wire' at the edge.

d) **Problem:** My knives are cutting through my edge guide.

Solution 1: Use much lighter pressure on the Edge Guide. Using only the weight of the blade provides best results.

e) **Problem:** How do I avoid scratch marks on the side of my blade?

Solution 1: Run a piece of masking tape along the blade, exposing just the bevel.

n **Best Techniques:**

Only use P120 on blades with edge damage, thick / wide edges or very hard blade steels (D2, S30V, 154CM, etc.). This belt will remove material and raise a burr very quickly. Use sparingly and check for a burr after every stroke.

15 PARTS INDEX

ACCESSORY LIST:

Replacement Belts:

WSKTS-KO Belt Kit (¾" x 12" belts): *WSSAKO81113*
Extra Coarse P120 Grit Belt Kit (¾" x 12" belt): *WSSAKO81117*
Coarse X65 Grit Belt Kit (¾" x 12" belt): *WSSAKO81118*
Medium X22 Grit Belt Kit (¾" x 12" belt): *WSSAKO81119*
Fine X4 Grit Belt Kit (¾" x 12" belt): *WSSAKO81120*
Extra Fine 6000 Grit Belt Kit (½" x 12" belt): *WSSA0002705*

Tool Grinding Attachment:

WSKTS-KO Tool Grinding Attachment: *WSSAKO81111*
WSKTS-KO Tool Grinding Belt Kit (¾" x 12" belts): *WSSAKO81114*

Blade Grinding Attachment:

WSKTS-KO Blade Grinding Attachment: *WSSAKO81112*
WSKTS-KO Blade Grinding Belt Kit (1" x 18" belts): *WSSAKO81115*
Extra Coarse P120 Grit Belt Kit (1" x 18" belts): *SA0003564*
Coarse X65 Grit Belt Kit (1" x 18" belts): *SA0003585*
Medium X22 Grit Belt Kit (1" x 18" belts): *SA0003584*
Fine X4 Grit Belt Kit (1" x 18" belts): *SA0003565*
Extra Fine 12,000 Grit Belt Kit (1" x 18" belts): *SA0003566*
Cloth Belt Kit (1" x 18" belts with honing and polishing compound): *WSSAKO81121*

Visit worksharptools.com for a full list of replacement parts.

WARRANTY

1-year warranty on all WORK SHARP® components; excludes abrasives.
Warranty for consumer not industrial use.
Register online at www.worksharptools.com
...or complete and mail back the Warranty Registration card:

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