



BETTCHER
Industries, Inc.

EdgeKing[®]

PRECISION SHARPENER

Operating Instructions and Spare Parts List

115 V / 1 Phase / 60 Hz

230 V / 1 Phase / 50 Hz

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Operating Instructions in other languages are available on request. Additional copies of this Operating Instruction are available by contacting your Regional Manager, or:

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The Information provided in these Operating Instructions
is Important to Your Health, Comfort and Safety.
For Safe and Proper Operation, Read this
Entire Manual before Using this Equipment.



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Original Instructions

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SECTION 1.0 Machine Specifications

The Bettcher® EdgeKing® Scissors Sharpener is effective in the production re- sharpening of the Bettcher® Airshirz® straight and curved scissors blades and many other commercial scissors blades. It has been designed to maintain the precision and accuracy necessary to consistently re-sharpen valuable commercial scissors blades without grinding away excessive material.

General Information :

Machine Weight :	58 lbs. (26.1 kg)
Overall Size With Eyeshields :	13.8” High x 17.9” Wide x 15.0” Deep (35.1 cm) x (45.5 cm) x (38.1 cm)
Power Cord Length :	91” (231.2 cm)

Electrical Specifications Grinder Motor :

115 Volt / 1 Phase / 60 Hz	3.1 amps	358 Watts	3600 RPM	.33 HP
230 Volt / 1 Phase / 50 Hz	2.1 amps	480 Watts	3000 RPM	.33 HP

SECTION 2.0 Designated Use

2.1 Recommended Operation

The EdgeKing® was designed and built for the conditioning and re-sharpening of the straight and curved blades of the Bettcher® Airshirz® scissors. Sharpening of similar shape and size manual scissors is also possible.

2.2 Warning

Any use in applications other than those for which the EdgeKing® was designed and built may result in equipment damage and/or serious injuries.

	<u>WARNING</u>		
THE MANUFACTURER ASSUMES NO LIABILITY FOR ANY UNAUTHORIZED DESIGN CHANGES, MODIFICATIONS, OR USE OF PARTS NOT SUPPLIED BY THE MANUFACTURER OR THE USE OF PARTS NOT DESIGNED FOR USE ON THIS SPECIFIC MODEL, AND INCLUDES CHANGES IN OPERATING PROCEDURES MADE BY THE OWNER OR ANY OF HIS PERSONNEL.			
<u>FOR SAFE AND PROPER OPERATION, READ THE ENTIRE MANUAL BEFORE USING THIS EQUIPMENT.</u>			

SECTION 3.0 Function

3.1 Machine Functions



The system consists of a special, double shaft grinder motor fitted with integral grinding and buffing guides mounted on a base bracket having a pivot arm with sealed ball bearings, a lift-spring supported arm mechanism and a clamping device. The Bettcher® long life grinding and buffing wheels are specifically designed and manufactured for the EdgeKing®. The EdgeKing® is also fitted with eye shields, spark arrestors, and guards for safe operation.

The blade clamp with the grinding and buffing guides, position the scissors blade to the wheels to produce a consistent sharpening angle on both curved and straight scissors blades. A steeling rod is mounted so that accurate steeling of the blade edge is done while the scissors blade is still clamped.

3.2 Safety Recommendations and Warnings

		<u>W A R N I N G</u>		
ALWAYS WEAR SAFETY GLASSES! AVOID WEARING LOOSE CLOTHING WHILE OPERATING THIS UNIT. AVOID USE OF THIS MACHINE IN STANDING WATER.				

		<u>W A R N I N G</u>		
SCISSORS BLADES ARE VERY SHARP AND MAY CAUSE CUT INJURY! WEAR CUT RESISTANT GLOVES WHILE HANDLING THE BLADES.				

	<u>W A R N I N G</u>	
ALWAYS TURN OFF THE MOTOR, DISCONNECT THE POWER AND ALLOW THE WHEELS TO COMPLETELY STOP BEFORE MAKING ANY ADJUSTMENTS OR BEFORE REMOVING THE GRINDER GUARD COVER. NEVER LEAVE THE UNIT UNATTENDED WITH THE MOTOR RUNNING OR WHILE A SCISSORS BLADE IS POSITIONED IN THE CLAMP.		

3.2 Safety Recommendations and Warnings (Continued)


 **WARNING** 

MAINTAIN TOOLS WITH CARE
KEEP TOOLS SHARP AND CLEAN FOR BEST AND SAFEST PERFORMANCE.
FOLLOW INSTRUCTIONS FOR LUBRICATING AND CHANGING ACCESSORIES.



 **WARNING** 

IF AT ANY TIME THIS MACHINE DOES NOT APPEAR TO OPERATE NORMALLY,
DEVELOPS UNUSUAL VIBRATION, OR EXHIBITS A MARKED CHANGE IN
PERFORMANCE, IT SHOULD BE IMMEDIATELY SHUT DOWN, UNPLUGGED,
AND TAGGED AS “UNSAFE” UNTIL SUCH TIME AS PROPER REPAIRS ARE
MADE AND THE MACHINE AGAIN OPERATES NORMALLY.

DO NOT USE WHEELS THAT HAVE BECOME MISSHAPEN OR UNBALANCED.

 **WARNING** 

REMOVE ADJUSTING KEYS AND WRENCHES
FORM THE HABIT OF CHECKING TO SEE THAT KEYS AND ADJUSTING
WRENCHES ARE REMOVED FROM THE TOOL BEFORE TURNING IT ON.

 **WARNING** 

KEEP WORK AREA CLEAN
CLUTTERED AREAS AND BENCHES INVITE ACCIDENTS.

 **WARNING** 



KEEP CHILDREN AWAY
ALL VISITORS SHOULD BE KEPT A SAFE DISTANCE FROM THE WORK AREA.

3.2 Safety Recommendations and Warnings (Continued)

 **WARNING** 

DON'T FORCE THE TOOL
IT WILL DO THE JOB BETTER AND SAFER AT THE RATE FOR
WHICH IT WAS DESIGNED.



USE THE RIGHT TOOLS
DON'T FORCE TOOLS OR ATTACHMENTS TO DO A JOB FOR WHICH
IT WAS NOT DESIGNED.

 **WARNING** 

DON'T OVERREACH
KEEP PROPER FOOTING AND BALANCE AT ALL TIMES.

 **WARNING** 

KEEP GUARDS IN PLACE
AND IN WORKING ORDER.



 **WARNING** 

REDUCE THE RISK OF UNINTENTIONAL STARTING
MAKE SURE SWITCH IS IN OFF POSITION BEFORE PLUGGING IN.

 **WARNING** 

USE RECOMMENDED ACCESSORIES
CONSULT THE OWNER'S MANUAL FOR RECOMMENDED ACCESSORIES.
THE USE OF IMPROPER ACCESSORIES MAY CAUSE RISK
INJURY TO PERSONS.

3.2 Safety Recommendations and Warnings (Continued)





 **WARNING** 

CHECK DAMAGED PARTS

BEFORE FURTHER USE OF THE TOOL, A GUARD OR OTHER PART THAT IS DAMAGED 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.





  **WARNING**  

CHECK WITH A QUALIFIED ELECTRICIAN OR SERVICE PERSONNEL IF THE GROUNDING INSTRUCTIONS ARE NOT COMPLETELY UNDERSTOOD OR IF IN DOUBT AS TO WHETHER THE TOOL IS PROPERLY GROUNDED.

  **WARNING**  

ELECTRICAL SHOCK MAY OCCUR! USE ONLY 3-WIRE GROUND TYPE CONNECTOR. THIS MUST BE CONNECTED TO A PLANT GROUND VIA A SUITABLE GROUNDED THREE CONDUCTOR RECEPTACLE.
AVOID USE OF THIS MACHINE IN STANDING WATER.

3.2 Safety Recommendations And Warnings (Continued)

		<u>WARNING</u>		
<u>USE PROPER EXTENSION CORD</u>				
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.				
REFER TO THE TABLE BELOW FOR CORRECT SIZE. IF IN DOUBT, USE THE NEXT HEAVIER GAGE. THE SMALLER THE GAGE NUMBER, THE HEAVIER THE CORD.				

Minimum Gage For Extension Cord				
Total Length of Cord:	25 Feet	50 Feet	100 Feet	150 Feet
Minimum Gage:	18 AWG	16 AWG	16 AWG	14 AWG

SECTION 4.0 Safety Features

The EdgeKing® is equipped with spark arrestors and eye shields to deflect grinding particles and sparks away from the operator.

The wheel guards and covers prevent contact between the operator's hands and the grinding and buffing wheels. There are also guards at the lower front of the wheels to prevent pinching of the operators hands or clothing between the lower part of the wheels and the guards.

SECTION 5.0 Ergonomics And Environment

5.1 Ergonomic Features

5.1.1 Clamp Knob

The blade clamp has a large star shaped knob to enhance the operators grip and reduce the manual stresses that can be experienced when repeatedly clamping scissors blades for sharpening. A spring under the clamp knob provides a light initial clamping action that holds the scissors blade in position allowing the operator to use both hands to hold and tighten the clamp knob.

5.1.2 Support Arm Lifting Springs

The support arm for the clamp has springs at the pivot to lift the scissors blade up against the grinding guide during grinding and steeling. The lifting springs provide sufficient force to reduce the required operator effort.

5.2 Environmental Features

5.2.1 Wheel Guards

The Edge King is equipped with wheel guards having dust collection fittings that should be attached to an external dust collection system.

5.2.2 Grinding Wheel

The Bettcher® abrasive grinding wheel never needs truing or dressing, nor does it get smaller in diameter during the grinding process.

5.3 Noise and Vibration Levels

5.3.1 Noise Emission

With normal use, the EdgeKing®'s noise emission value is less than 70 dB(A).

5.3.2 Vibration Level

While running, the EdgeKing®'s vibration levels are less than 2.5 M/sec².

SECTION 6.0 Unpacking

6.1 Included with Your Machine

The following parts and assemblies are included with your EdgeKing® Scissors Sharpener. Please check when unpacking and advise your local Bettcher Industries representative if the delivery is incomplete.

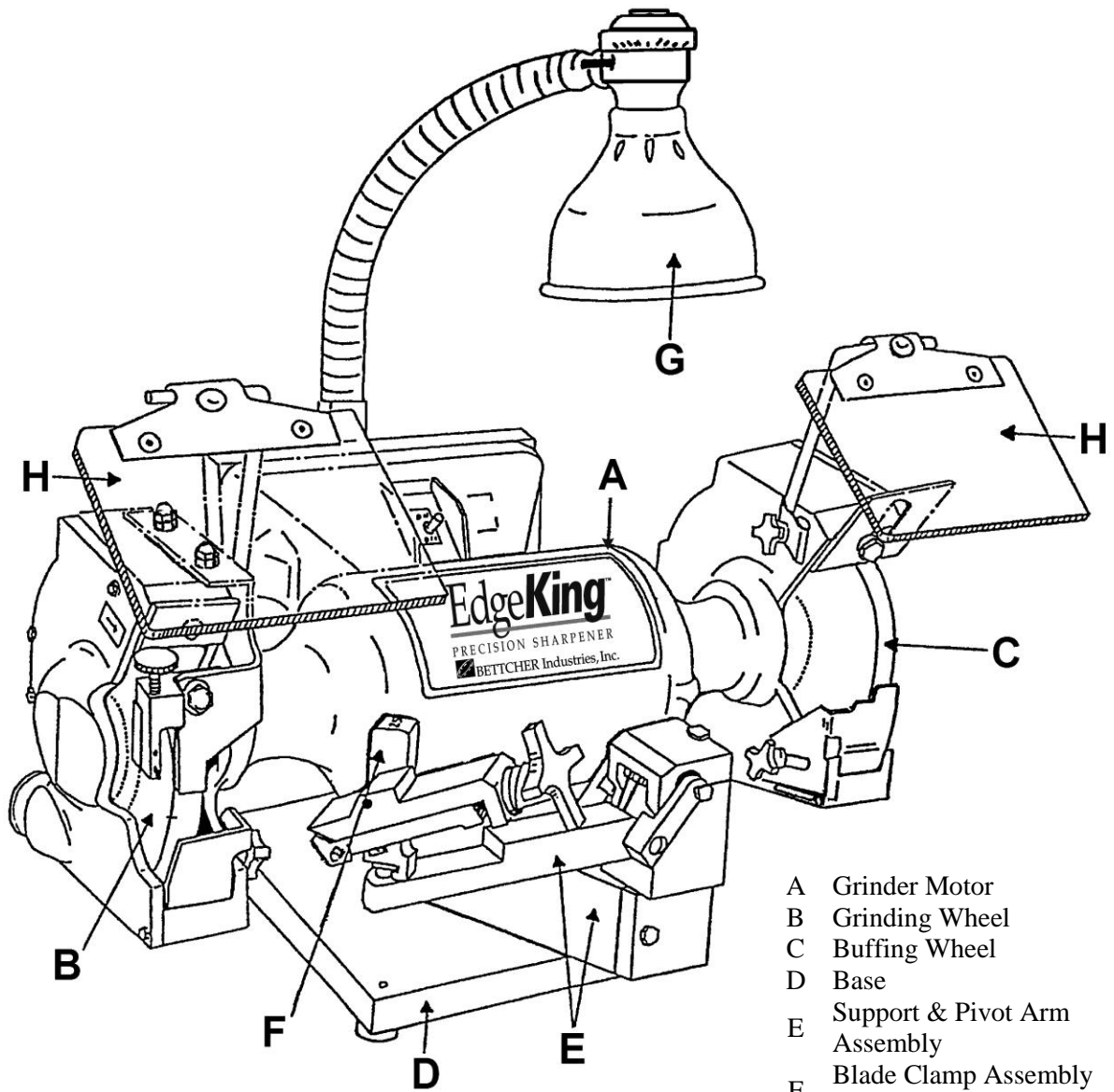


Figure 1

- A Grinder Motor
- B Grinding Wheel
- C Buffing Wheel
- D Base
- E Support & Pivot Arm Assembly
- F Blade Clamp Assembly with Dressing Rod
- G Work Light
- H Eye Shields

Operating Instructions and
Spare Parts Manual

6.2 Installing Un-Assembled Parts

6.2.1 Buffing Wheel Guide

Remove from loose parts package and install as shown in Figure 1. Adjust as described in Section 8.3.7.

6.2.2 Blade Clamp Assembly

Remove from loose parts package and install as shown in Figure 1 and Section 8.3.8.

6.2.3 Work Light And Gap Gauge

Remove gap gauge from loose parts package. Remove the two small screws from the back of the vertical base plate. See Figure 1.1 below. Place these screws through the holes in the work light mounting bracket and reinstall them into the vertical back plate. Also place the lower screw through the loop end of the gap gauge lanyard. Place the lanyard toward the grinding wheel (left) side and tighten both screws. Plug work light power cord into the receptacle in the left side of the grinder motor base. Install a 60 watt maximum lamp (not furnished).

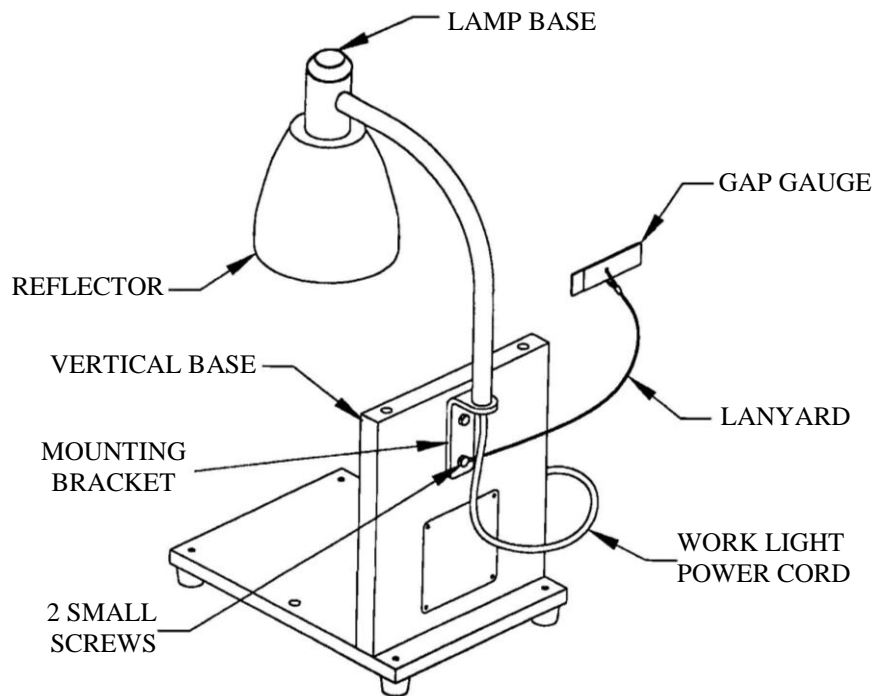


Figure 1.1

6.2.4 230V Units Only

A plug is not provided on the power cord with this machine. Proper connection to a two pole disconnect or switch is required to ensure disconnection of all poles.

SECTION 7.0 Installation

7.1 Work Station & Lighting

The Sharpener should be located on a level, rigid support table with adequate lighting.

7.2 Dust Collection System

The grinder motor guards should be attached to a separate dust collection system. See dust outlets in Section 10.1.

SECTION 8.0 Instruction for Operation

8.1 Scissors Cutting & Sharpening Basics

To better understand how to properly sharpen a scissors it is helpful to understand a little about why a scissors cuts or does not cut. Basically, scissors cut best when its two sharp cutting edges rub against each other, smoothly, uniformly and firmly at the cutting point for their entire length. Scissors will not cut well when the edges are dull or when they do not touch against each other uniformly, or at all, anywhere along the entire scissors length. The two factors, sharpness of the blades edges and the uniformity of contact along the length of the blades, are important to the cutting performance of a pair of scissors. The following shows the sequence of the sharpening process:

A) Shows an enlarged view of a scissors blade with a dull, rounded edge.

B) Shows that, during grinding a burr or 'wire' is formed.

C) Shows how the steeling rod rolls the burr over.

D) Shows how the rolled over burr is removed by the buffing wheel.

E) Shows the completely re-sharpened blade edge.

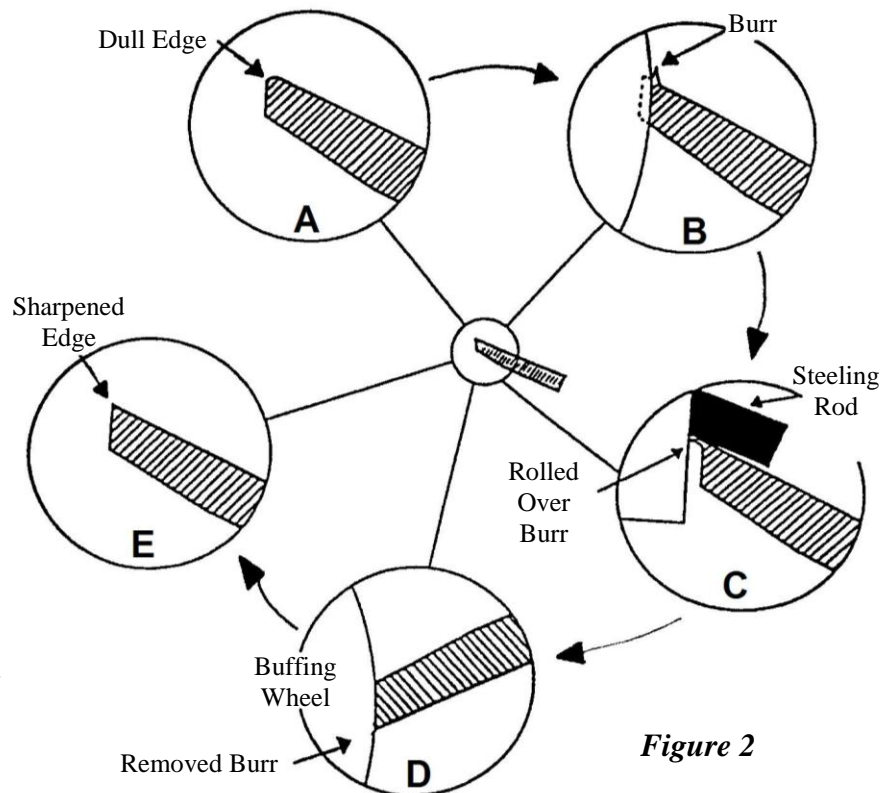


Figure 2

8.1.1 Blade Cut Point

Before sharpening, inspect the scissors' blades to assure that they properly contact each other at the cut point for the full cutting length.

8.1.2 Adjustment and Shaping Scissors Blades

Airshirz® blades and most commercial scissors blades are carefully and precisely formed and shaped by the manufacturer so that they contact only at the sharpened edges. The pivot nut or screw must also be correctly adjusted to maintain the necessary edge contact firmness. The shaping or reshaping or adjusting of any scissors blades is not recommended or described in this manual. See the Bettcher Industries Airshirz® manual for proper Airshirz® blade adjustments and service.

8.2 Sharpening Angle Determination and Selection (See Figure 3)

The 'sharpening angle' at which blades are sharpened is measured and expressed as shown below. Commercial manual scissors are often sharpened at 35 degrees. Airshirz® blades, except neck breaker blades, are sharpened at 25 degrees. Refer to your Bettcher Industries Airshirz® manual for the correct sharpening angle.

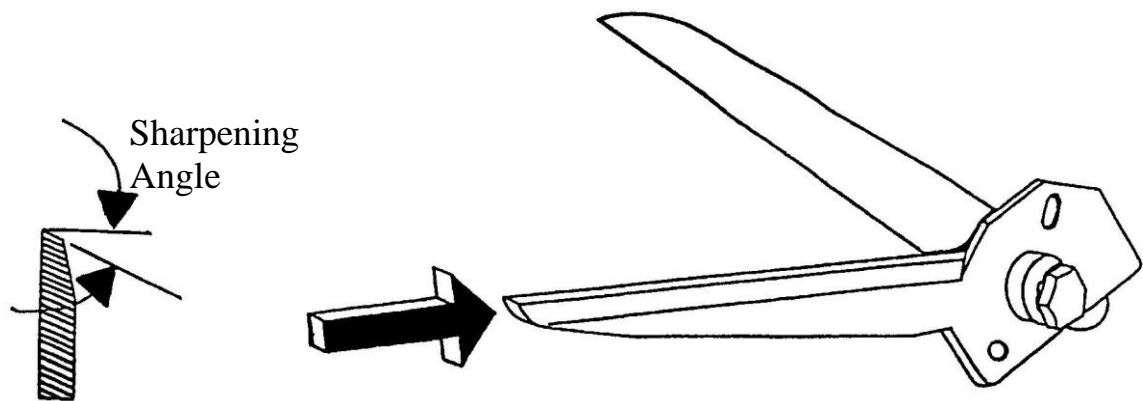


Figure 3

8.3 Preparing the EdgeKing® For Sharpening (See Figure 4)

8.3.1 Clamp Support Angle

The angle of the clamp assembly determines the angle at which the scissors blade will be sharpened. The clamp supplied with the EdgeKing® has a fixed (non-adjustable) sharpening angle of 25 degrees. An adjustable support, like the one shown in Figure 4, is available from Bettcher Industries.

8.3.2 Setting the Angle of the Adjustable Support

Loosen the knob. Move the clamp assembly up or down to the desired angle position setting. Tighten the knob.

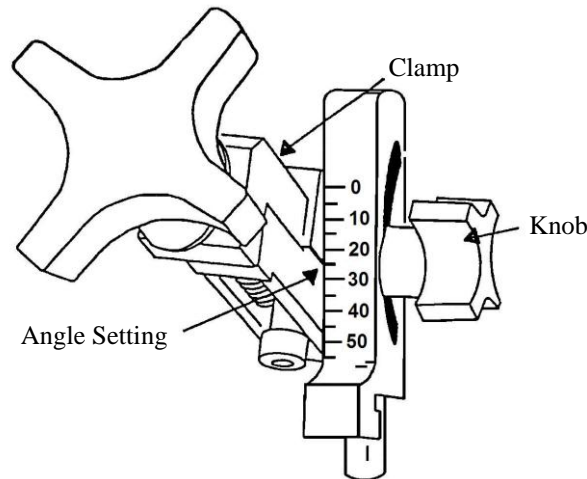


Figure 4

8.3.3 Steeling Rod Angle (See Figure 5A & 5B)

The angle of the steeling rod must be set so that it touches the scissors blade flush against the inside face or at the sharpened edge as shown in Figure 5A below.

The rod should not contact the blade as shown in Figure 5B below.

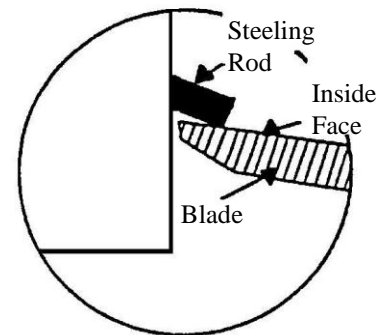
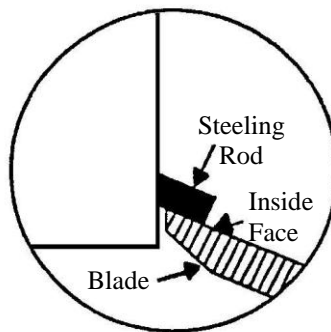
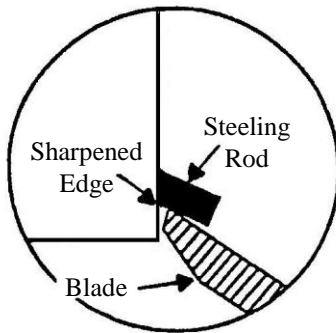


Figure 5A - Correct Settings

Figure 5B - Incorrect Setting

8.3.4 Setting the Steeling Rod Angle (See Figure 6)

The steeling rod holder has four holes that are labeled 0, 20, 10, and 30 degrees. The steeling rod must be placed and secured in the proper hole as described in the table in Figure 6 below. The steeling rod is held in place by the knob.

Use Holder Hole	0	When sharpening angle is between	0	and	9	degrees
Use Holder Hole	10	When sharpening angle is between	10	and	19	degrees
Use Holder Hole	20	When sharpening angle is between	20	and	29	degrees
Use Holder Hole	30	When sharpening angle is between	30	and	40	degrees

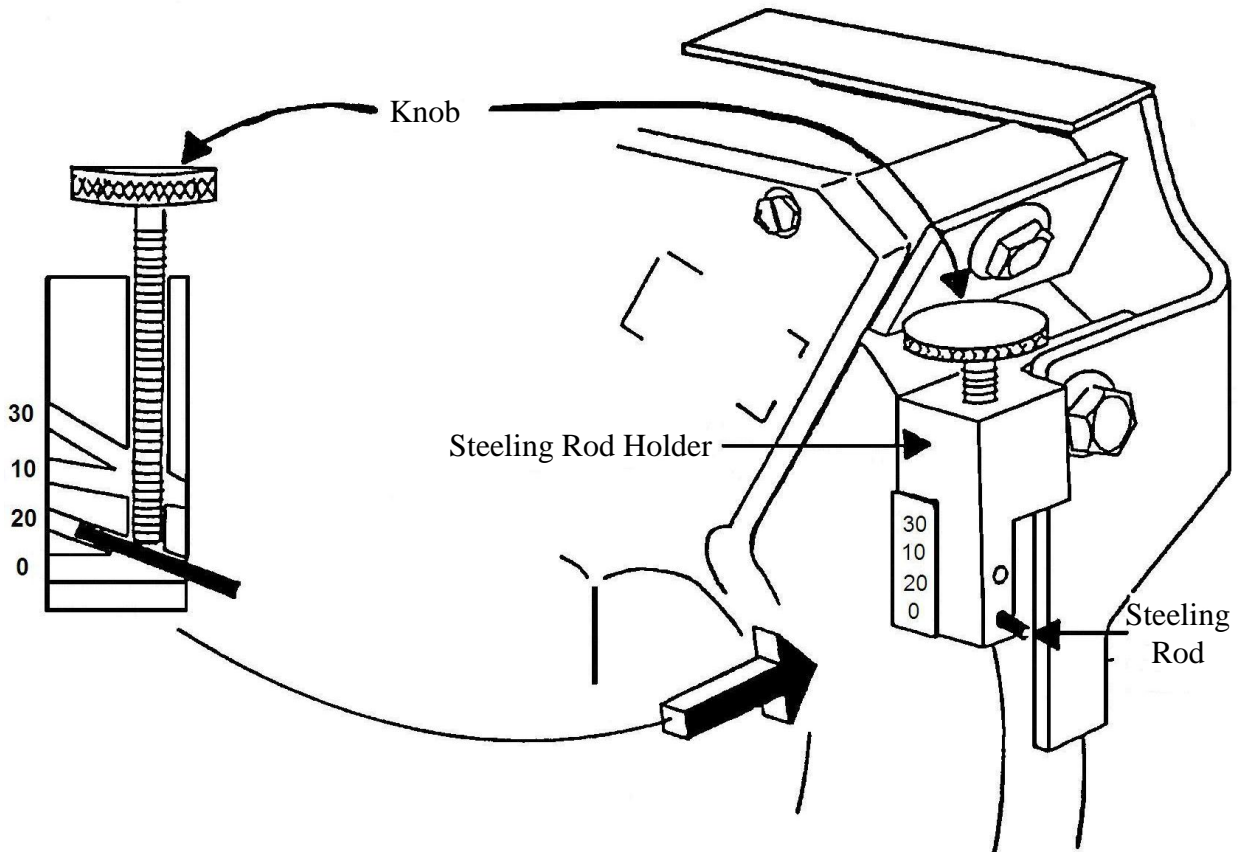


Figure 6

Do not attempt to 'steel' scissors blades that are sharpened at angles greater than 40 degrees with the EdgeKing®.

8.3.7 Buffing Wheel Guide Adjustment (See Figure 8)

The buffing wheel guide gap is the space between the buffing wheel and the buffing guide. This guide is held in place by a knob. The bottom edge of the guide should rest against the boss located on the grinding guide below the knob. This gap should always be as small as possible without touching the buffing wheel. As the buffing wheel wears, the buffing guide must be re-adjusted to keep this gap very small. If the gap is allowed to become too large, scissors blades may be damaged or will not sharpen correctly.

 **WARNING** 

WHEN THE BUFFING WHEEL BECOMES WORN DOWN SO THAT THE BUFFING WHEEL GUIDE GAP CAN NOT BE ADJUSTED AS SHOWN, IT IS TIME TO REPLACE THE BUFFING WHEEL.

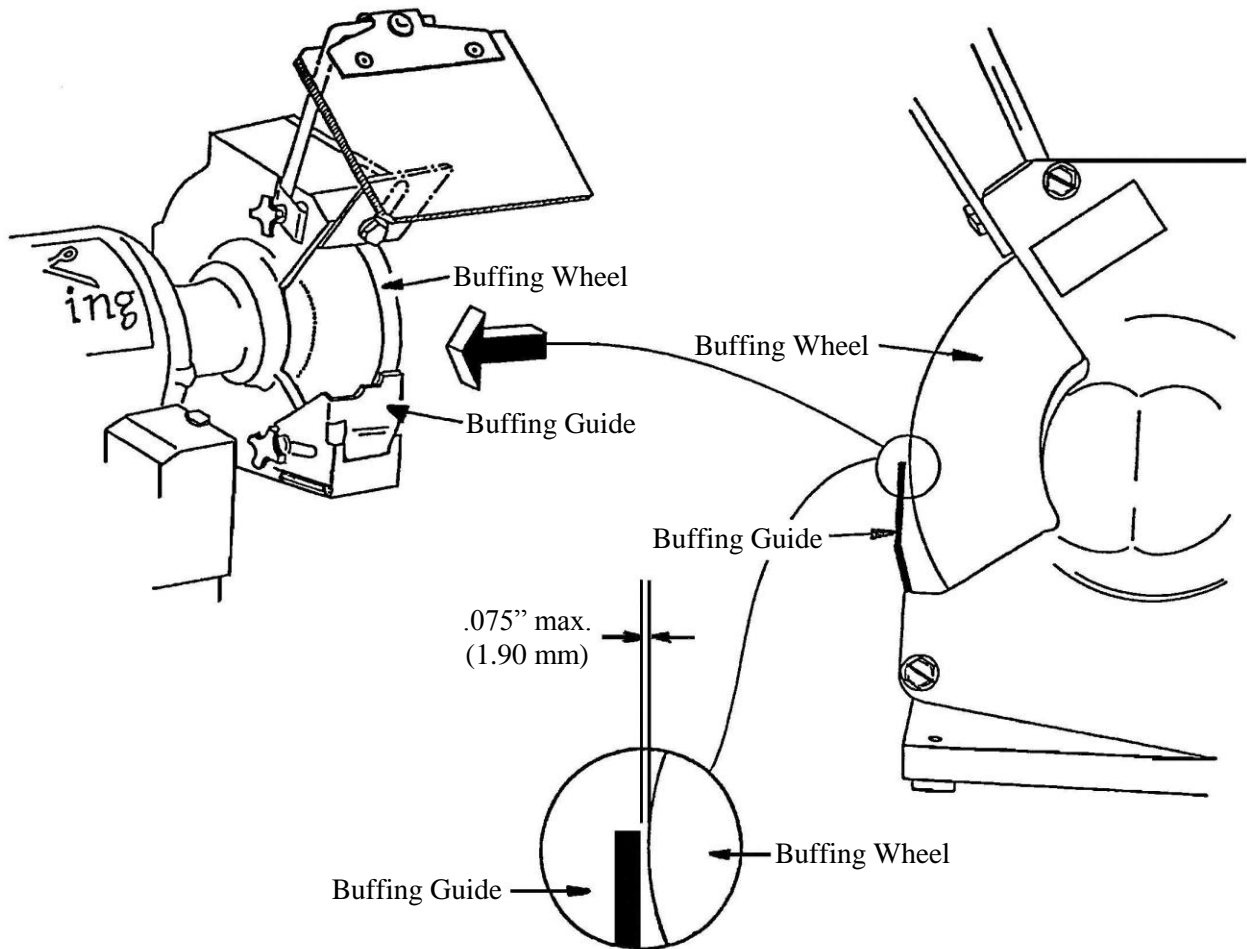


Figure 8

8.3.8 Attaching The Blade Clamp Onto The Support Arm Assembly (See Fig. 9)

To install the blade clamp assembly, align the clamp hook with the flat on the bushing and start the pin into the bushing. Press down to depress the lock pin and rotate the clamp to lock the hook under the bushing edge. The blade clamp assembly hook must not rest on top of the bushing.

To remove the blade clamp assembly, pull the lock knob and pin to allow the clamp hook to rotate and align with the flat on the bushing. Withdraw the blade clamp assembly from the bushing.

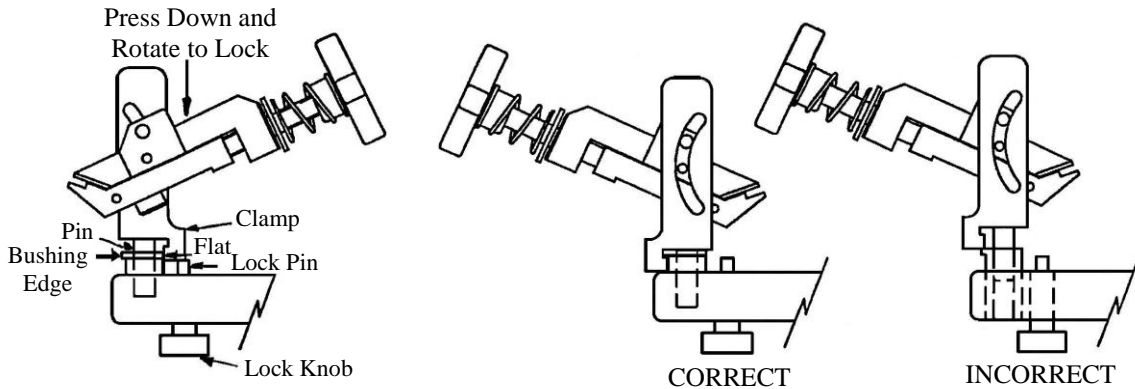


Figure 9

8.3.9 Buffing Wheel Dressing And Truing (See Figure 10)

A dressing rod is located on the side of the blade clamp to allow precise dressing of the buffing wheel. This rod is designed to rest on top of the buffing guide while being moved across the face of the rotating buffing wheel. The buffing wheel should be dressed whenever it has worn uneven or becomes unbalanced. After dressing the wheel, adjust the spark arrestor plate to maintain a gap to the wheel below 2mm (.080 inches).



WARNING



DO NOT USE THIS DRESSING ROD ON THE GRINDING WHEEL!

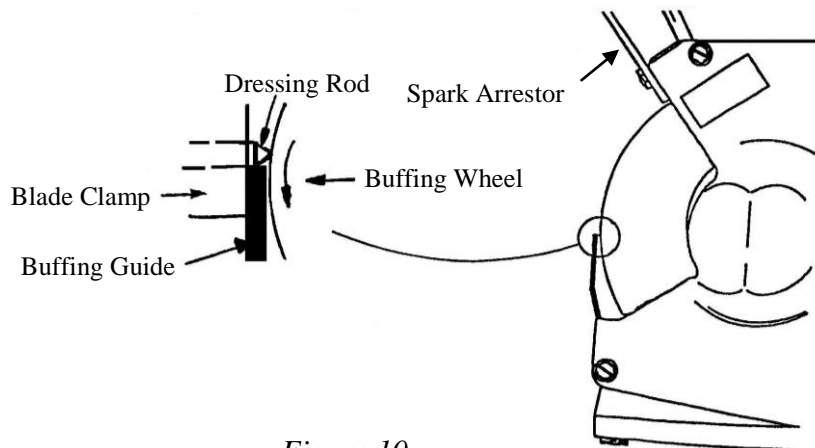


Figure 10

8.4 Sharpening Scissors

After setting up the machine, but before sharpening any blades, run a test using an old set of blades following the procedure in Section 8.5 called “Blades Won’t Sharpen” where the blade is “painted” to determine what adjustment are needed.

8.4.1 Complete Sharpening

The complete re-sharpening of a scissors with the EdgeKing® requires that the first blade be clamped, ground, steeled, buffed and un-clamped. The same sequence is to be repeated on the second blade. The scissors may then be carefully closed and cut tested if required. Do not close the scissors blades before both blades are sharpened, ground, steeled and buffed.

8.4.2 Conditional Sharpening

Depending on the condition of the blades, slightly dull scissors may often be restored to satisfactory sharpness by only buffing the blades. This is faster and prolongs scissors blade life.

8.4.3 Check Sharpening Angle Setting

Check to see that the correct fixed angle clamp is being used or that the adjustable clamp is set at the desired sharpening angle.

8.4.4 Clamping The Blade (See Figure 11)

The clamp is opened by loosening and pressing in on the knob. Center the scissors blade in the clamp as shown in Figure 11A. Most scissors, including Airshirz®, can be clamped in the first notch (A). Larger and wider scissors and shears blades may have to be inserted fully into the clamp to (B) to fit under the grind guide for grinding.

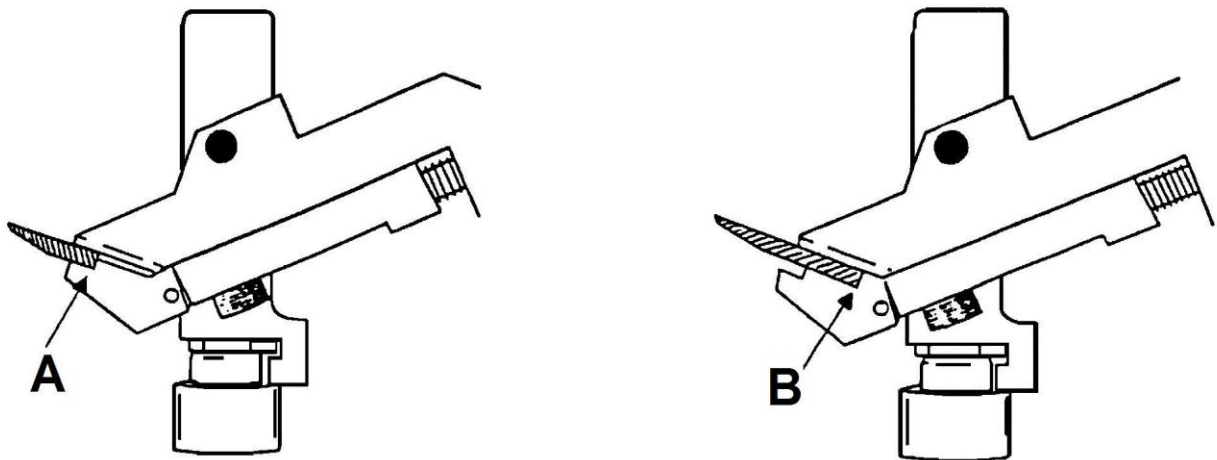


Figure 11

8.4.4 Clamping The Blade - Continued (See Figure 11A)

Tighten the clamp knob. The blade should protrude out from the clamp far enough as shown so that the clamp will not touch the grinding or buffing wheels or guides.

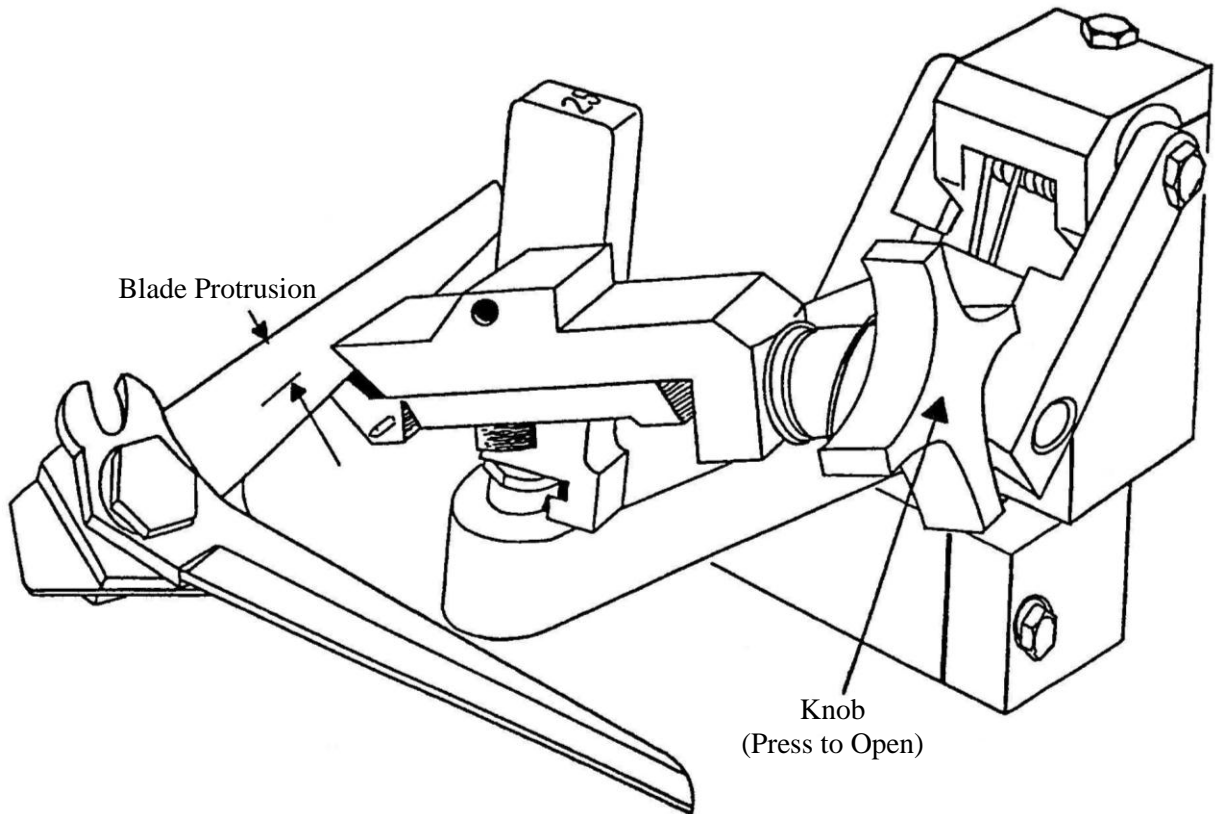


Figure 11A

8.4.5 Grinding The Blade (See Figure 12)

Turn the grinder motor on.

Step 1 - Lower the clamped blade (A) until the left end of the edge can go under the grinding guide (B) and carefully place the blade up, under and against the grinding guide (B) without touching the grinding wheel (C).

Step 2 - While allowing only the upward spring force to hold the blade against the grinding guide (B) carefully move the blade against the grinding wheel (C) while slowly and uniformly sliding the blade across the wheel from pivot to tip as shown by arrow (D). Do not allow the blade to jump up as it leaves the grinding guide (B).

CAUTION

THE EDGE KING'S LONG-LIFE ABRASIVE WHEEL IS VERY AGGRESSIVE
AND REQUIRES VERY LITTLE PRESSURE TO SHARPEN.

Step 3 - Repeat Step 2 until a continuous burr or 'wire' is formed along the edge. Stop grinding at this point because grinding further will do nothing except shorten the life of the scissors. This burr can be easily be felt with ones finger by carefully touching and wiping away from the edge.


**SHARP AND DULL BLADES CAN CAUSE CUT INJURIES!
BLADE MAY BE VERY HOT AND CAN CAUSE BURN INJURIES!**

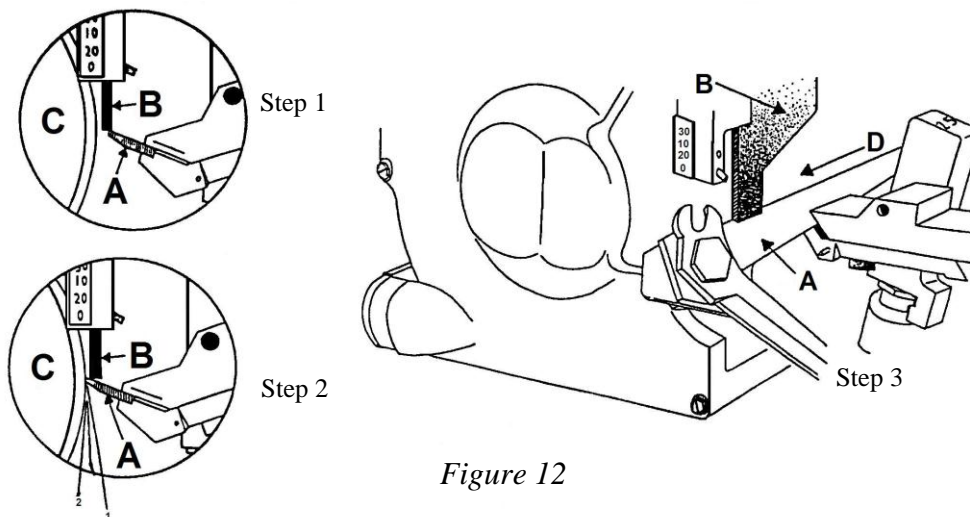


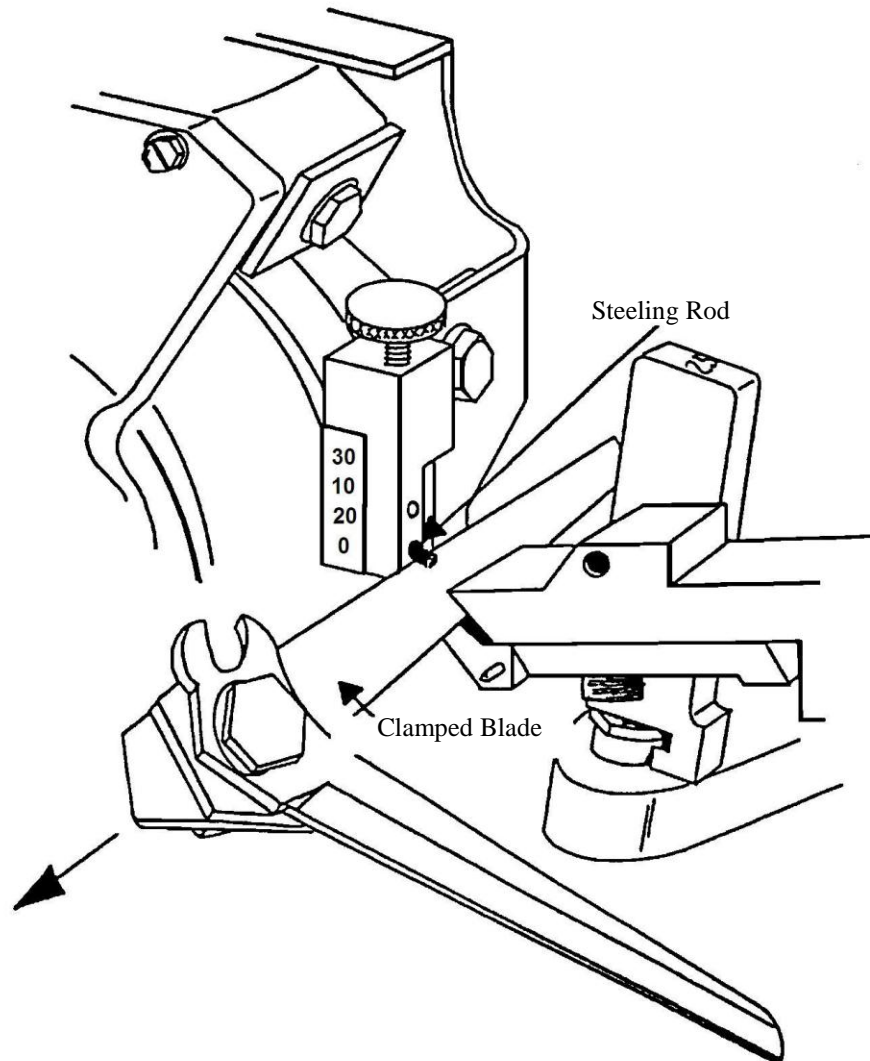
Figure 12

8.4.6 Steeling The Blade (See Figure 13)

Step 1 - Check that the steeling rod is positioned at the correct angle as described in section 8.3.4.

Step 2 - With the support arm and clamped blade positioned as for sharpening, allow just the upward spring force of the arm to raise the blade up so that it rubs against the bottom side of the steeling rod. Gently slide the blade across from pivot to tip as shown by arrow. Very little or no force should be necessary to hold the blade up against the steeling rod. This steeling operation rolls the burr or 'wire' back over toward the surface that was ground.

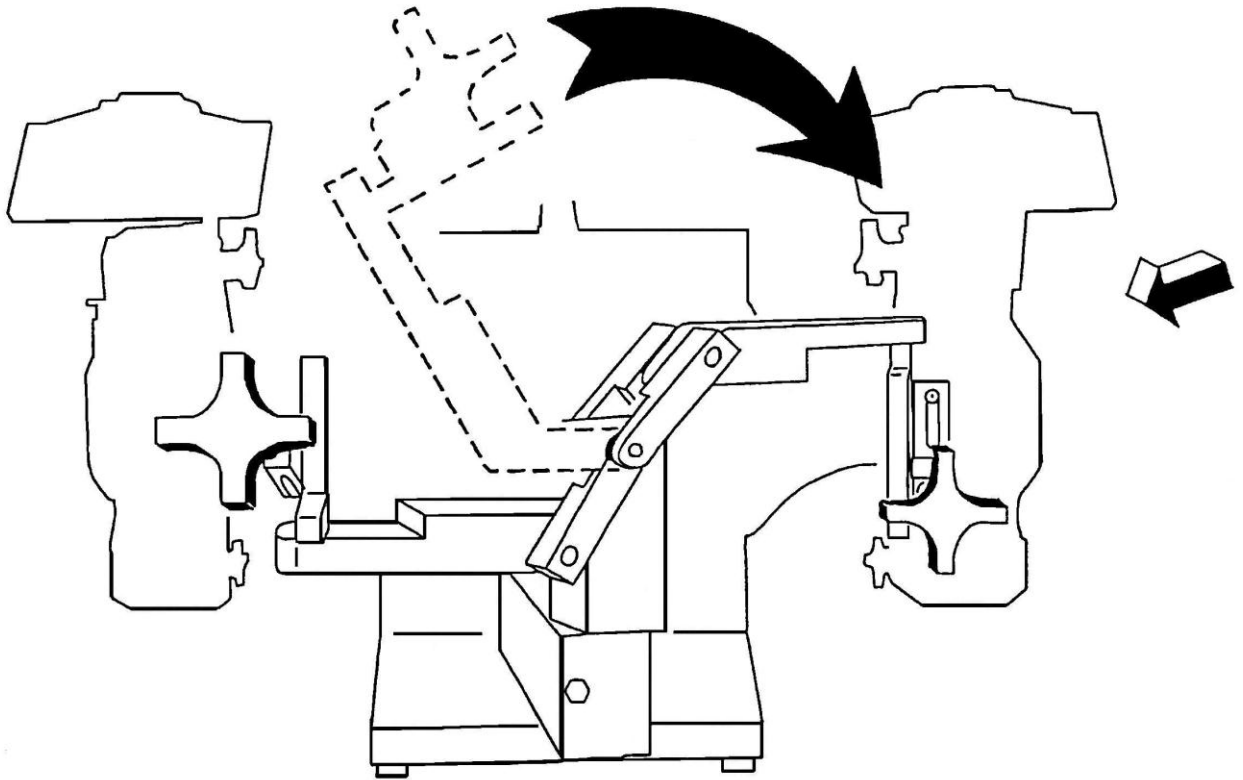
Step 3 - Check that the above step is completed by carefully touching and wiping away from the edge. The complete length of the burr is rolled over toward the edge area that was previously ground. Repeat step 2 above if necessary. It should not take more than two times.



8.4.7 Buffing the Blade (See Figure 14)

Step 1 - Assure that the buffing wheel guide gap is properly set as described in Section 8.3.7 and turn the EdgeKing® on.

Step 2 - With blade clamped as for grinding and steeling, flip the arm and clamp over to the right side for buffing as shown in Figure 14.



8.4.7 Buffing the Blade - Continued (See Figure 14A)

Step 3 - Lay the blade against the buffing guide. Touch the blade against the buffing wheel and slide it across the buffing wheel from pivot to tip as shown by the arrow in Figure 14A.

Step 4 - This buffing operation removes the burr or 'wire' that was rolled over when steeling and makes the blade edge extremely sharp! If there is still some of the burr or 'wire', repeat steeling and buff once again. It should not take more than two times to remove it. Often, if the burr is small, closing the scissors will remove it.

CAUTION

BLADE MAY BE VERY HOT AND CAUSE BURN INJURIES!

Buffing the blade edge also smoothes, hones and polishes the ground surface. This also removes some of the fine serrations or 'tooth' that was created during the grinding process. Too much buffing may dull or burn the blade edge. Some practice and experience may be necessary to find the best way to get the best edge.

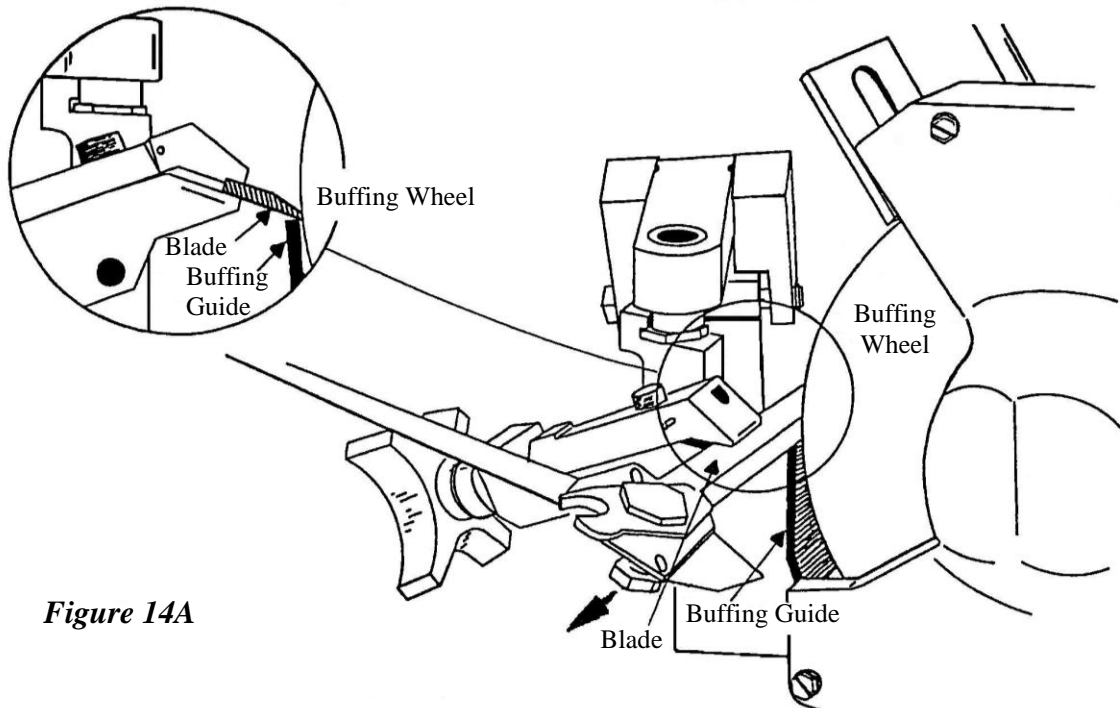


Figure 14A

8.4.8 Completing the Scissors Sharpening Process

Repeat the steps described in sections 8.4.4 through 8.4.7 on the other scissors blade. Then carefully close the scissors blades and make test cuts on sample materials to complete the sharpening process. Grinding dust, if any, should be cleaned off the scissors before placing the unit back in operation.

8.5 Fault Detection And Correction

Problem	Remedy
Motor / Wheels Won't Run	Check that the unit is plugged into a properly grounded outlet. The work light should come on when the motor switch is turned on.
	With the unit unplugged, check that the wheels can turn freely and that the grinding buffing guides or spark arrestors are not up against either wheel
Excessive Vibration	Check buffing wheel for out-of-round condition and true if necessary.
	Check that the grinding and buffing wheel nuts are tight and that the grinding wheel is not bent damaged or otherwise out-of-round. Replace if necessary.
	Check that the grinder shafts are not bent or damaged.
	Check the side play of the motor and shafts. If excessive side play exists, the motor shaft or bearings may have to be replaced.
Blades Won't Sharpen	Check the condition of the grinding wheel. It may need cleaning (see Section 9.0) or it may be worn out and need replacement.
	Check the grinding and buffing guide gaps and reset if needed. If the buffing wheel guide gap can not be adjusted as described in Section 8.3.7, replace the buffing wheel.
	<p>Check for worn guides and adjust or replace if needed:</p> <ul style="list-style-type: none"> • Verify that the grinding guide and buffing guide gaps are set as described in Sections 8.3.6 and 8.3.7 of this manual. Grind a blade and steel it as described in Sections 8.4.5 and 8.4.6 of this manual. Paint the ground surface completely with a felt-tip marker (red is easiest to see). Lightly buff the blade as described in Section 8.4.7. • Look at the blade edge, if the felt-tip marker paint is completely removed from the blade edge, the guides are not worn and do not need adjustment. <p style="text-align: center;">NOTE: The buffing guide must <u>not</u> be adjusted during this check!</p>

8.5 Fault Detection And Correction (Continued)

Problem	Remedy
Blades Won't Sharpen (Continued)	<ul style="list-style-type: none"> • If some of the felt-tip marker paint is left near the sharpened edge, adjust the grinding guide by loosening its knob and turning both of its adjustment screws <i>clockwise</i> 1/2 turn. Re-tighten the knob and repeat the grinding and steeling operations as well as the felt-tip marker check as described above. • If the felt-tip marker paint is removed from only near the sharpened edge, adjust the grind guide by loosening its knob and turning both of its adjustment screws <i>counterclockwise</i> 1/2 turn. Re-tighten the knob and repeat the grinding and steeling operations as well as the felt-tip marker check as described above. • If the grinding guide can not be adjusted so that the marker paint can be completely removed by lightly buffing, both the grinding and buffing guides must be replaced and adjusted as described above.
	Check that the steeling rod position is correct.
	Check for shiny areas on the grinding wheel. Clean with a solvent and wire brush or replace if necessary.

SECTION 9.0 Maintenance/Cleaning

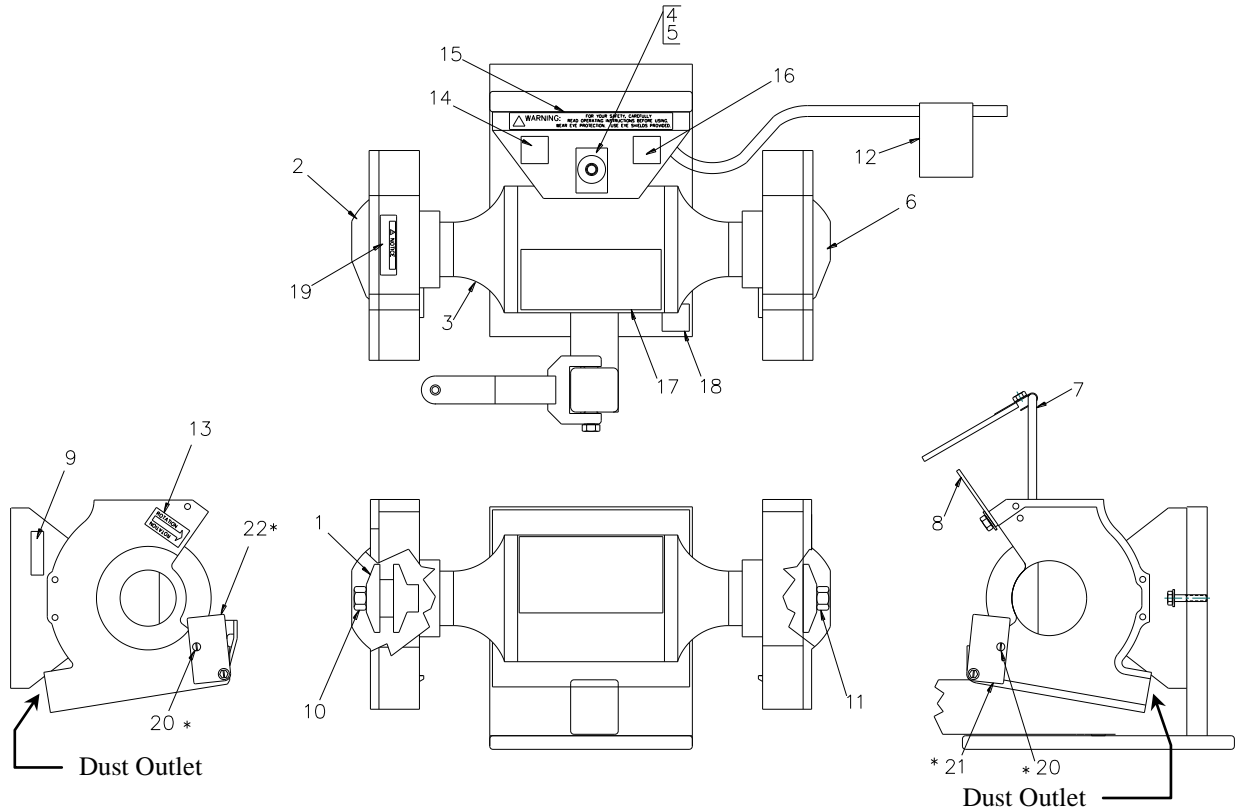
Periodically remove the grinding wheel and clean the grinding surface with a solvent and wire brush to remove any buildup.

Regularly remove the wheel guard end covers and clean the dust from the wheel guards.

Occasionally, remove the clamp for the arm and clean the mounting pin and arm bushing.

SECTION 10.0 Spare Parts List

10.1 Grinder Motor Assembly and Spares 115V (*230V)



10.1 Grinder Motor Assembly and Spares 115V (*230V) (Continued)

Item	Part Number	Description	Qty.
	108284	EdgeKing® Sharpener Assembly, 115V / 60Hz / 1Ph	
	108442	EdgeKing® Sharpener Assembly, 230V / 50Hz / 1Ph	
1	108419	Flange, Wheel	2
2	108415	Guard Cover, Left	1
3	108309	Grinder Assembly Complete, 115V / 60 Hz / 1Ph	1
	108443	Grinder Assembly Complete, 230V / 50Hz / 1Ph	1
4	108413	Switch	1
5	108418	Boot, Switch	1
6	108414	Guard Cover, Right	1
7	108416	Eye Shield	2
8	108417	Spark Arrestor	2
9	108446	Lamp Use Label	1
10	108438	Nut, Arbor LH Screw	1
11	108437	Nut, Arbor RH thread	1
12	108436	Power Cord & Plug, (115V)	1
	163591	Wiring Guide Tag, (230V)	1
13	108408	Rotation Label	1
14	108450	Water Warning Label	1
15	108406	Operation Warning Label	1
16	108409	Eye Hazard Label	1
17	108407	EdgeKing® Label	1
18	103709	Warning Label	1
19	108435	Instruction Notice Label	1

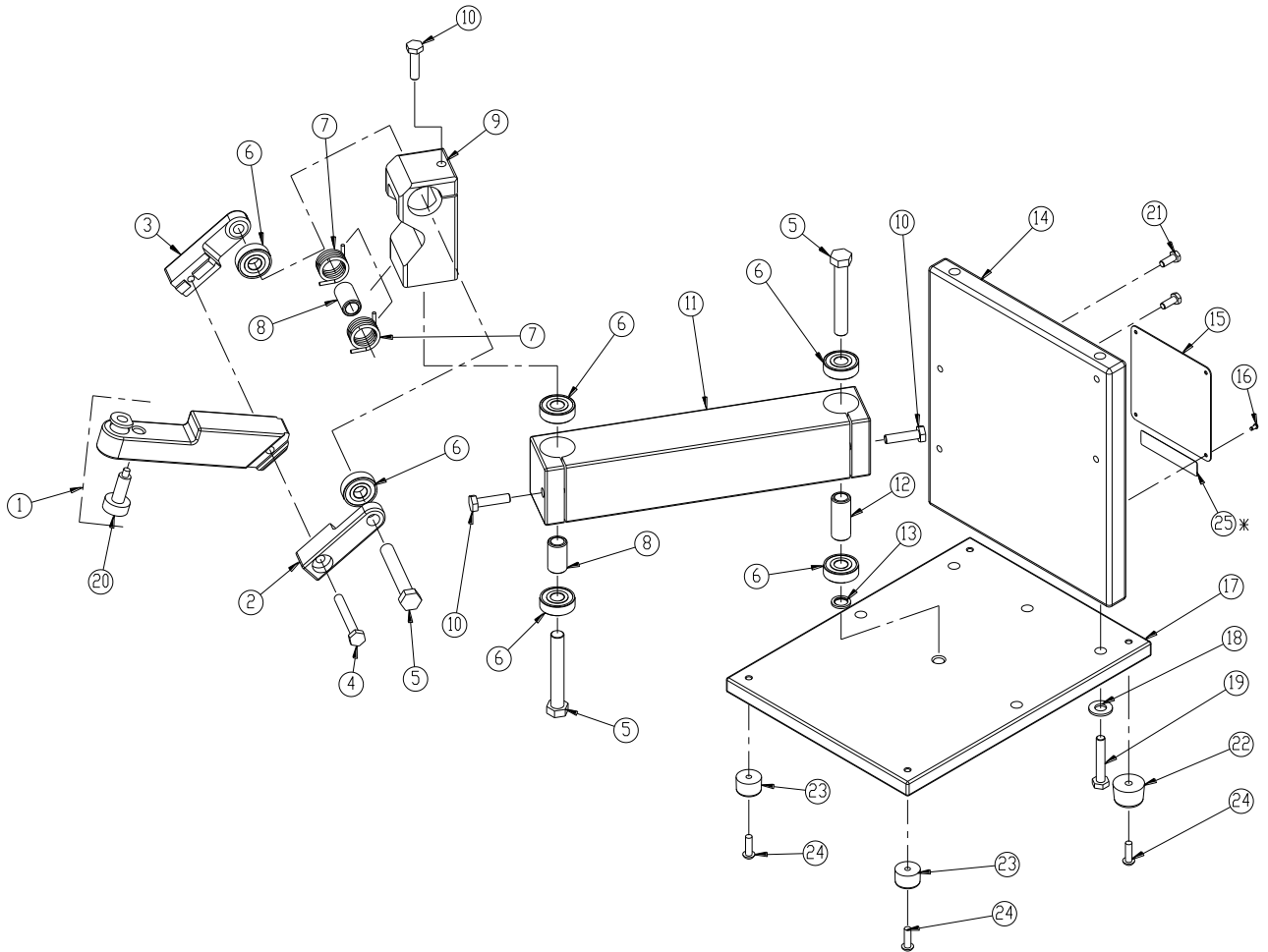
230V Only

20	120754	Screw #10-32 x 3/8 Pan Head, Slotted	2
21	108721	Guard Extension Plate – RH	1
22	108722	Guard Extension Plate – LH	1

Also Available

	108524	Capacitor, Motor Run (Not Shown)	
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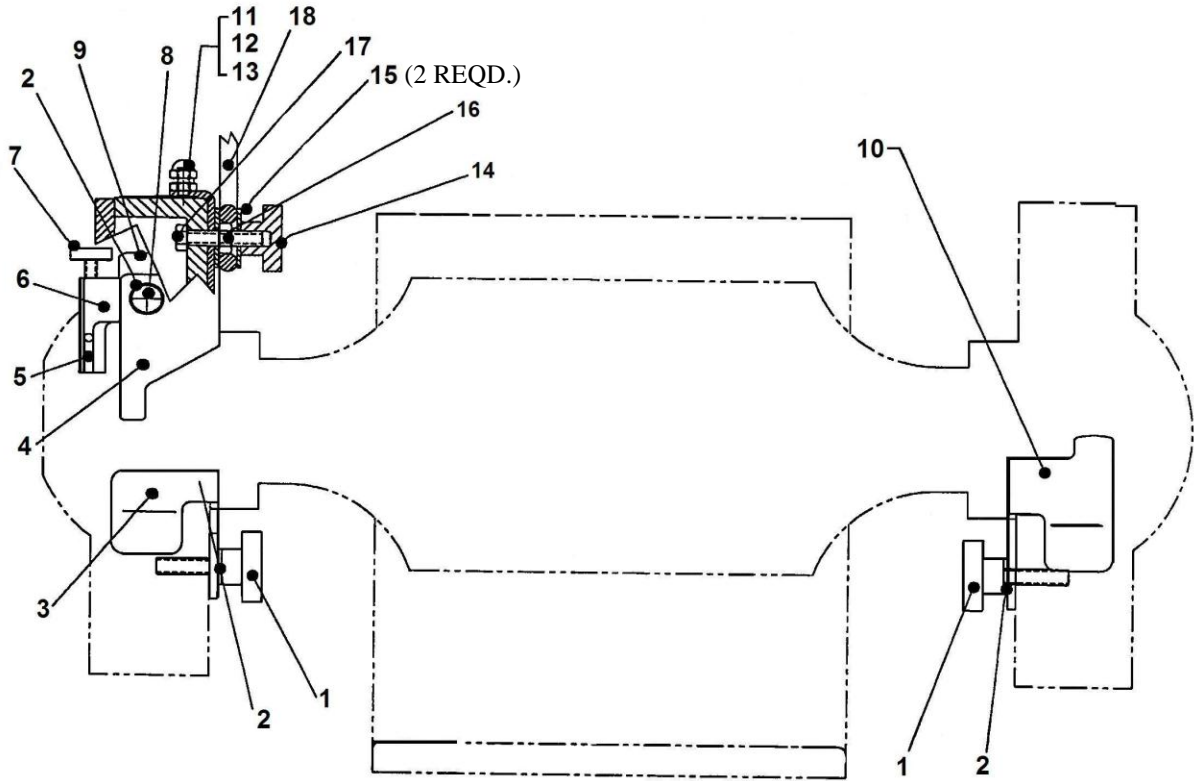
10.2 Base and Arm Assembly 115V (*230V)



10.2 Base and Arm Assembly (Continued)

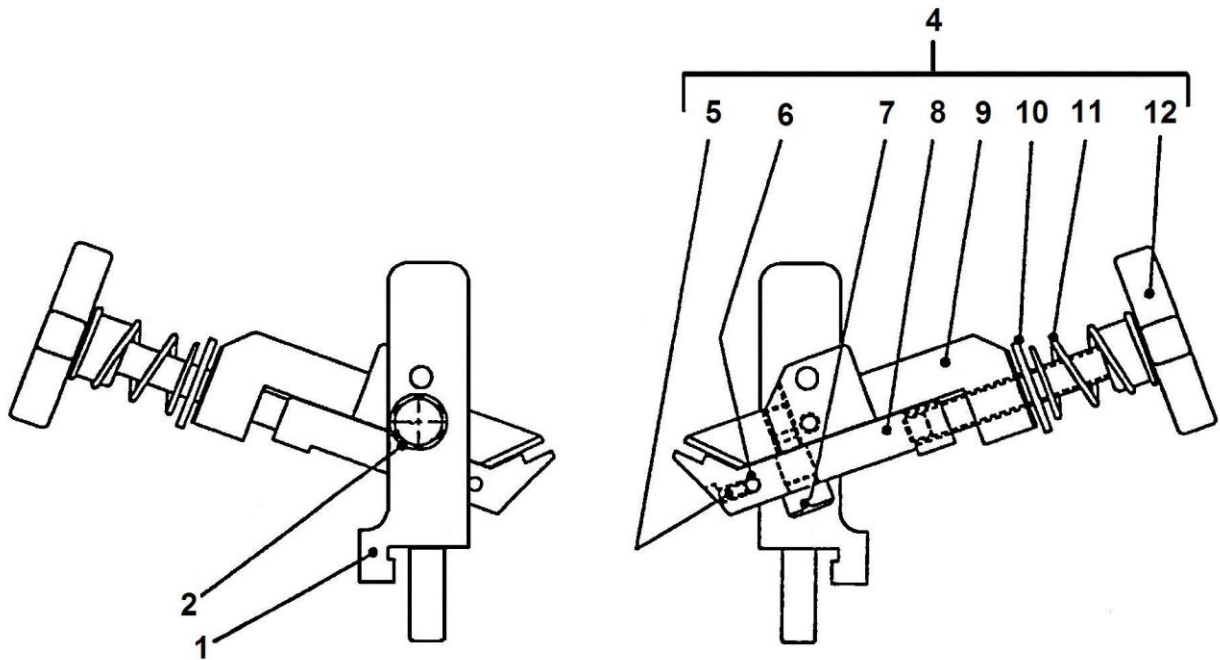
Item	Part Number	Description	Qty.
1	108383	Bar Assembly	1
2	108396	Yoke Half, Plain	1
3	108395	Yoke Half, Threaded	1
4	120773	Screw 1/4-20 x 2	1
5	120851	Screw 3/8-16 x 2-1/2	3
6	121753	Bearing	6
7	108387	Spring	2
8	108267	Spacer .375 x .97	2
9	108336	Trunnion-3	1
10	120576	Screw 1/4-20 x 1	3
11	108303	Link, Support	1
12	108266	Spacer .375 x 1.37	1
13	108272	Spacer .375 x .06	1
14	108301	Base Plate Vertical	1
15	108449	Spec. Plate	1
16	123469	Drive Screw #2 x 3/16	4
17	108300	Base Plate Bottom	1
18	120258	Washer 5/16	3
19	120030	Screw 5/16-18 x 1-1/2	3
20	122601	Plunger, Spring Return	1
21	120785	Screw #10-24 x 1/2	2
22	105395	Bumper Rear	2
23	108517	Bumper Front	2
24	120127	Screw #10-32 x 5/8	4
25	108759	Label – Wheel Limits (230V units only)	1

10.3 Guide and Steel Assembly



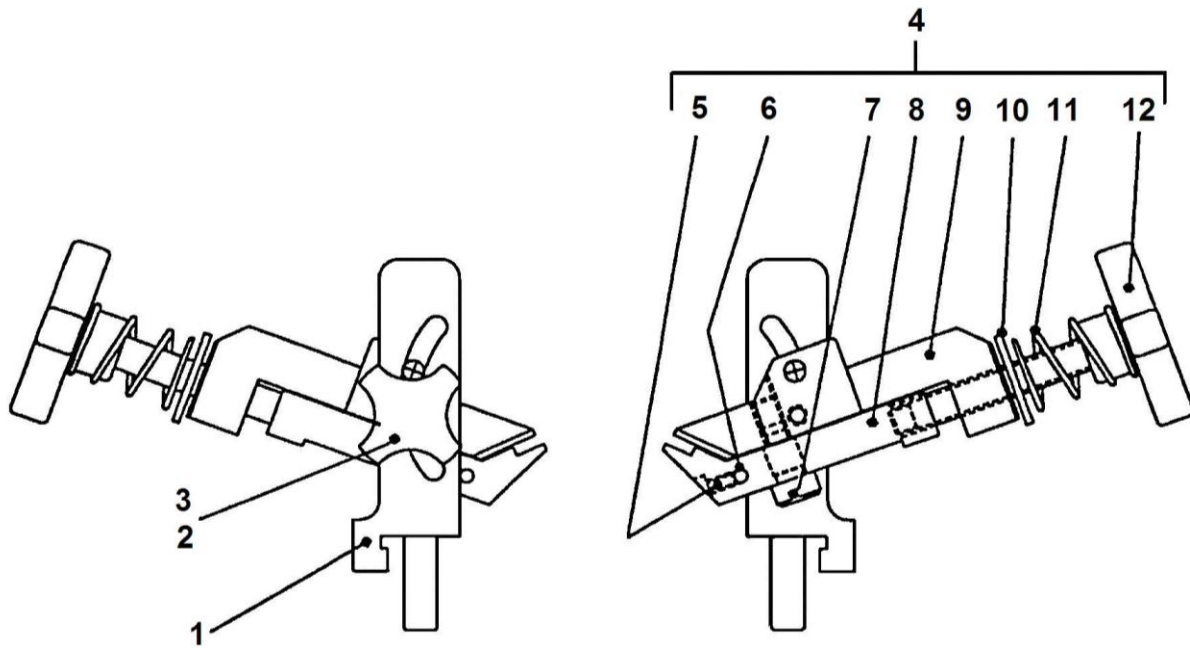
Item	Part Number	Description	Qty.
1	108378	Knob Screw Assembly	2
2	120261	Washer 1/4	2
3	108379	Grind Guard	1
4	108294	Grind Guide	1
5	113961	Rod	1
6	108397	Holder and Label Assembly	1
7	108376	Knurled Head Screw	1
8	121419	Screw 1/4-20 x 1/2	1
9	108412	Spark Arrestor	1
10	108292	Buff Guide	1
11	120054	Set Screw 10-32 x 1/2	2
12	120342	Nut, Hex 10-32	2
13	120701	Nut, Acorn 10-32	2
14	500355	Knob	1
15	120273	Washer, Flat, 1/4, Special	2
16	120327	Nut, Hex, 1/4-20	1
17	108445	Screw, Special, 1/4-20 x 1-1/4	1
18	108444	Bracket, Eyeshield	1

10.4 Blade Clamp Assembly - 25 Degree



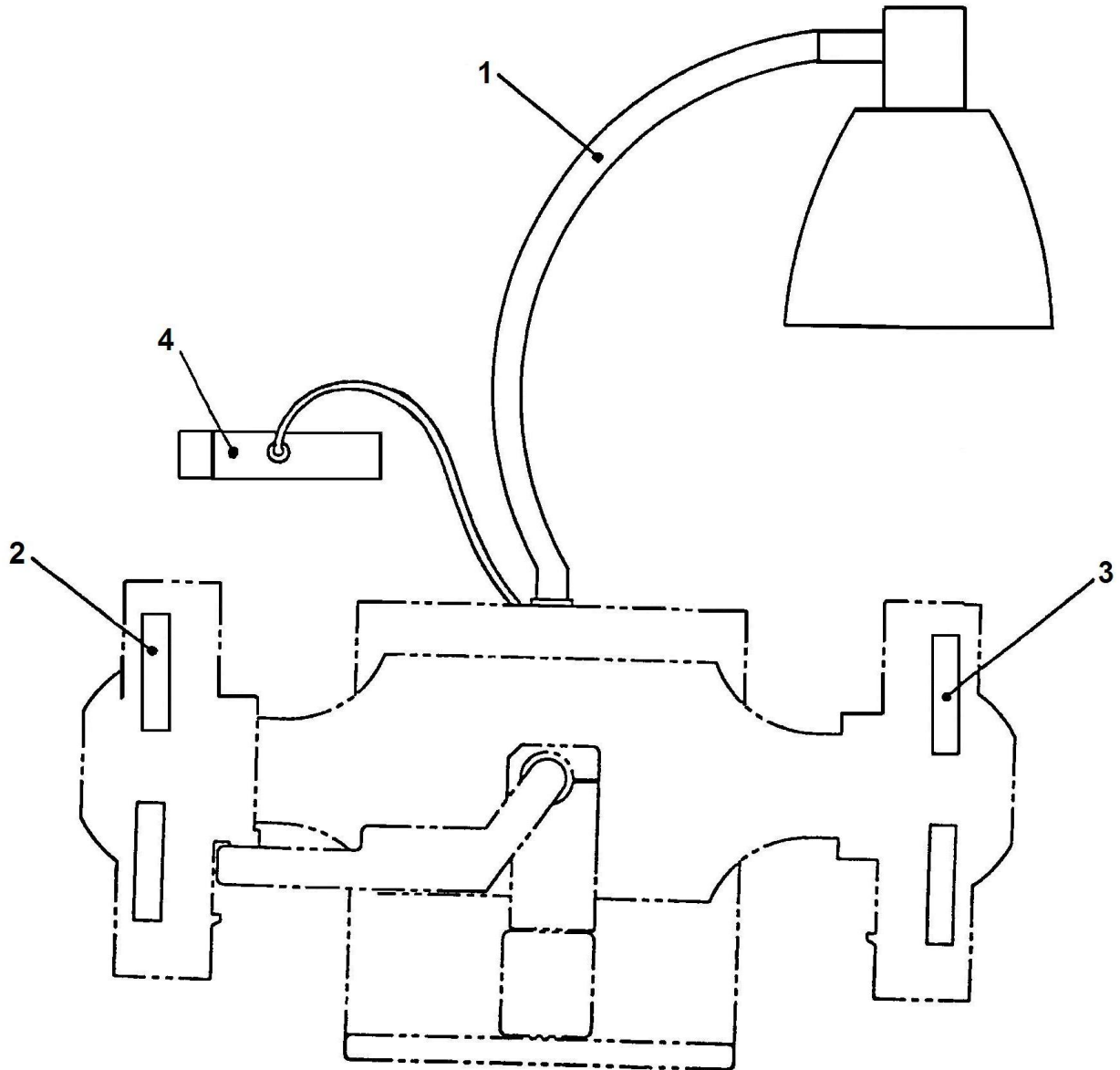
Item	Part Number	Description	Qty.
	108350	Clamp-Support Assembly Complete - 25 Degree	1
1	108351	Support Assembly - 25 Degree	1
2	120576	Screw 1/4-20 x 1	1
4	108368	Clamp Assembly	1
5	120053	Screw, Set #10-32 x 1/4	1
6	108323	Diamond Point	1
7	108326	Screw, Shoulder 5/16 x 3/8	1
8	108268	Jaw 2-Point Clamp	1
9	108391	Base Clamp Assembly	1
10	123526	Washer 5/16 x .88 x .06	1
11	121629	Compression Spring	1
12	108355	Knob Screw Assembly	1

10.5 Blade Clamp Assembly - Adjustable



Item	Part Number	Description	Qty.
	108275	Clamp-Support Assembly Complete - Adjustable	1
1	108314	Support Assembly - Adjustable	1
2	108378	Knob Screw Assembly	1
3	120268	Washer 1/4	1
4	108368	Clamp Assembly	1
5	120053	Screw, Set #10-32 x 1/4	1
6	108323	Diamond Point	1
7	108326	Screw, Shoulder 5/16 x 3/8	1
8	108268	Jaw 2-Point Clamp	1
9	108391	Base Clamp Assembly	1
10	123526	Washer 5/16 x .88 x .06	1
11	121629	Compression Spring	1
12	108355	Knob Screw Assembly	1

10.6 Wheels & Accessories



Item	Part Number	Description	Qty.
1	108393	Work Light Assembly	1
2	108372	Wheel, Abrasive, Crowned, 70 Grit	1
3	108374	Wheel, Buffing	1
4	108431	Gap Gauge Assembly	1



10.7 Optional Equipment – Long Blade Sharpening Kit

Longer, straight knife-type blades may be grind-sharpened on the EdgeKing® with the Kit shown in 10.7.1. The 1.75 inch wide clamp (see 10.7.2) supports these blades and permits sharpening angles between 45° and 80°. The extension bracket and extra arm support the clamp and permit grind-sharpening of knife-type blades up to approximately 16 inches long.

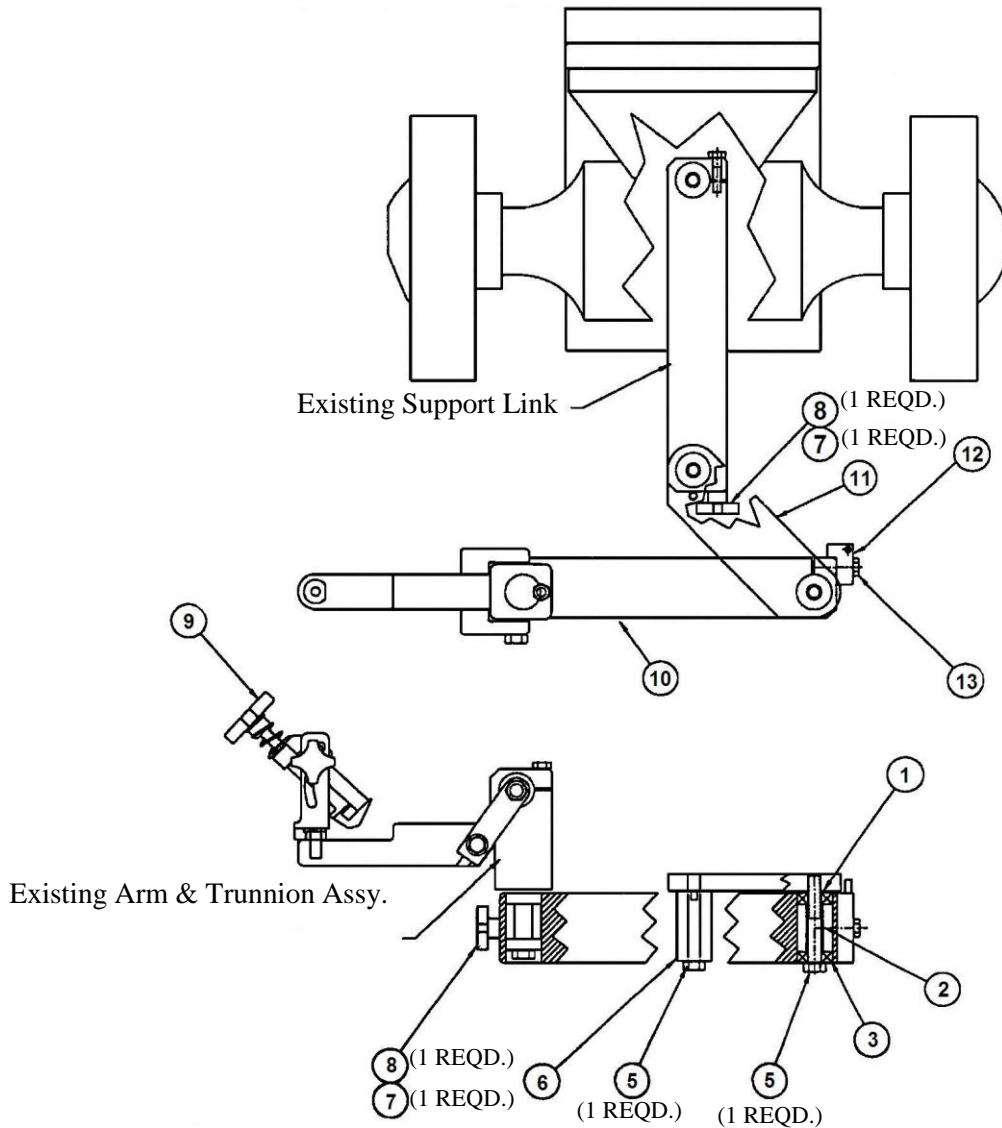
Knife-type blades can be clamped and grind-sharpened only. Each side of these blades must be clamped and ground separately. Longer knife-type blades may have to be clamped offset toward the left to prevent an irregular sharpening action.

The EdgeKing's steeling rod and buffing wheel that are used for scissors sharpening **CAN NOT** be used with this kit. A hand steeling device must be used to complete the sharpening of knife-type blades. Do not attempt to flip knife-type blades over and buff them on the EdgeKing®. Serious Damage to the EdgeKing® and/or the operator may result.

 <u>WARNING</u> 
THE EDGEKING®'S STEELING ROD AND HOLDER <u>CAN NOT</u> BE USED WHEN SHARPENING BLADES WITH THIS KIT. A HAND HELD STEELING DEVICE MUST BE USED.

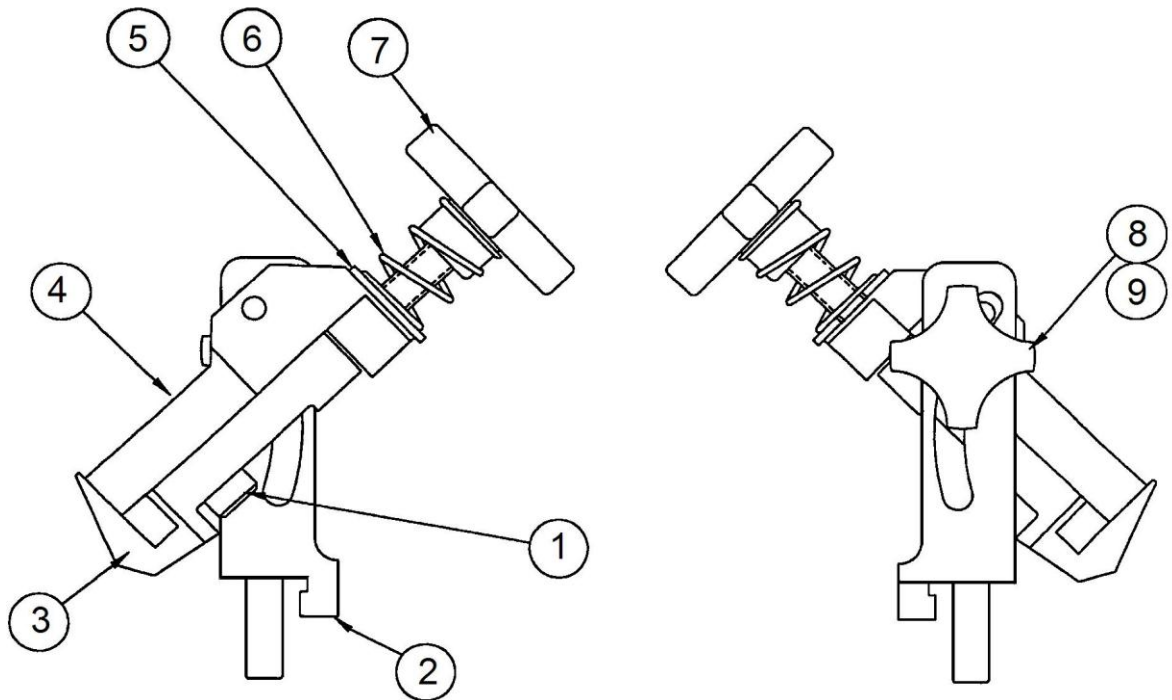
 <u>WARNING</u> 
THE LONG BLADE SHARPENING KIT IS TO BE USED TO GRIND KNIFE-TYPE BLADES ONLY! THE BUFFING WHEEL ON THE RIGHT SIDE OF THE EDGEKING® <u>CAN NOT</u> BE USED WITH THIS KIT. SERIOUS INJURY TO THE OPERATOR MAY RESULT.

10.7.1 Optional Equipment - Long Blade Sharpening Kit



Item	Part Number	Description	Qty.
	108478	Long Blade Sharpening Kit	
1	103272	Spacer, .375 x .06	1
2	108266	Spacer, .375 x 1.37	1
3	121753	Ball Bearing	2
5	120851	Screw, 3/8-16 x 2.5	2
6	108481	Bushing	1
7	120268	Flat Washer 1/4	2
8	108378	Knob Screw Assembly	2
9	108483	Clamp Assembly – 1.75 Wide, 45°-80°	1
10	108303	Support Link, 8.5 Inch	1
11	108495	Extension & Pin Assembly	1
12	108493	Block, Stop & Pin Assembly	1
13	120563	Hex Head Cap Screw, 1/4-20 x 1.5	1

10.7.2 Optional Equipment - Blade Clamp Assembly 45° - 80°



Item	Part Number	Description	Qty.
	108483	Blade clamp assembly 45°-80°, 1.75 wide	
1	108326	Shoulder Screw 5/16 x 3/8	1
2	108492	Support Assembly, 45°-80°	1
3	108485	Jaw Clamp, 1.75 Wide	1
4	108491	Base Clamp Assembly	1
5	108484	Seat Spring	1
6	121629	Compression Spring	1
7	108355	Knob Screw Assembly, .312-18 UNC	1
8	108378	Knob Screw Assembly	1
9	120268	Flat Washer 1/4	1

SECTION 11.0 **About These Operating Instructions**

11.1 **Document Identification**

Copies of this Operation Instruction may be ordered by quoting the Document ID as listed below:

Document ID : Manual #108427
Document Description : Operating Instructions and Spare Parts List for
 EdgeKing® Scissors Sharpener
Re-Issued : May 21, 2004

Operating Instructions for other Bettcher Industries, Inc. products such as the Airshirz® may be requested by quoting the model designation of the product as shown on the identification plate on the product.

11.2 **Software and Duplication**

This document has been created with Microsoft Word for Windows and set in Times New Roman 12 points for A-size paper (8.5 x 11 inches).

For more information, contact your Regional Manager or:

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Administrative Assistant/Engineering Department
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Vermilion, Ohio 44089
U.S.A.

SECTION 12.0 **Contact Addresses & Phone**

For additional information, technical support and spare parts, contact your Regional Manager, Distributor, or Bettcher Industries Representative:

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