



# BETTCHER Industries, Inc.

*Operating Instructions And Spare Parts List*



## UNIVERSAL BLADE SHARPENER MODEL 210 (115 Volt)

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MANUAL NO. \*113985

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[www.bettcher.com](http://www.bettcher.com)

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Written permission to reproduce in whole or part is herewith granted to the legal owners of the Whizard® Universal Blade Sharpener Model 210, 115V which with these Operating Instructions have been supplied.

Operating Instructions in other languages are available on request. Additional copies of this Operating Instruction is available by calling or writing the local Representative or by contacting :

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The Information Provided In These Operating Instructions  
Are 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**

### **General Information:**

Weight: 45 lbs. (20 Kg)  
Overall Size (With Eyeshield): 10" wide x 21" deep x 17.5" high  
(254mm) x (534mm) x (445mm)  
Power Cord Length: 6 feet

### **Electrical Specifications:**

Grinder Motor:	115 VAC/1/50-60 Hz 1/10 HP	1.5 Amps 8000 RPM
Blade Drive Gear Motor:	115 VAC/1/50-60 Hz 1/50 HP	0.6 Amps 162 RPM
Power Source:	115 VAC / 1 Phase / 60 Hz	

## **SECTION 2.0**     **Designated Use**

### **2.1**     **Recommended Operation**

The Whizard® Universal Blade Sharpener Model 210 was designed and built to sharpen only Bettcher Whizard® blades.

## 2.2 Warning

Any use in applications other than those for which the Whizard® Universal Blade Sharpener Model 210 was designed and built may result in equipment damage and/or serious injuries.



## SECTION 3.0    Function

### 3.1 Machine Function

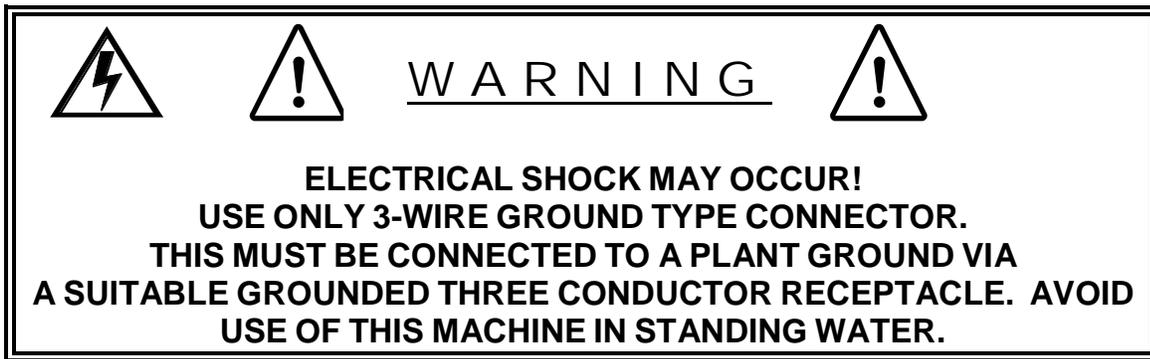
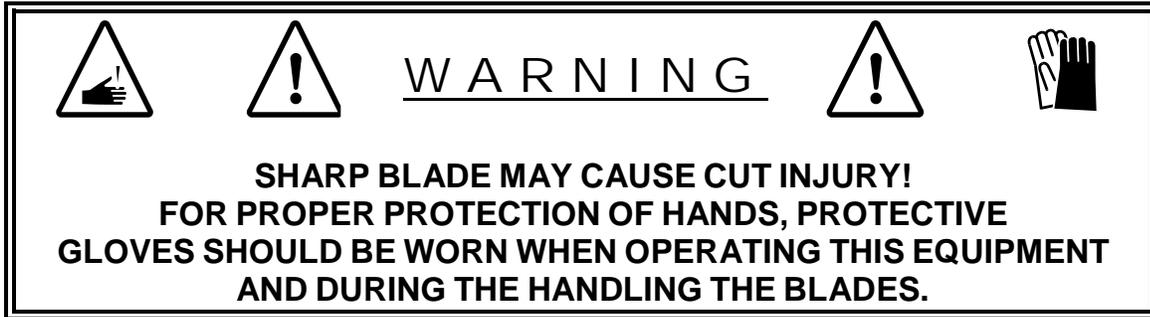
The Whizard® Universal Blade Sharpener is a precision grinding unit that is easy to operate and maintain. As with any cutting device in meat packing, the Whizard® is only as effective as the cutting edge is sharp.

Proper use of this sharpener will eliminate the guesswork as to whether or not the blade edge is ground to the correct angle and is sharp. A properly sharpened Whizard® blade will reduce operator fatigue and pay off big in increased trimming yields.

### 3.2 Safety Recommendations And Warnings



### 3.2 Safety Recommendations And Warnings (Continued)



#### **SECTION 4.0**     **Safety Features**

The Whizard® Universal Blade Sharpener Model 210 is equipped with an eye shield to deflect grinding particles away from the operator.

#### **SECTION 5.0**     **Ergonomics And Environment**

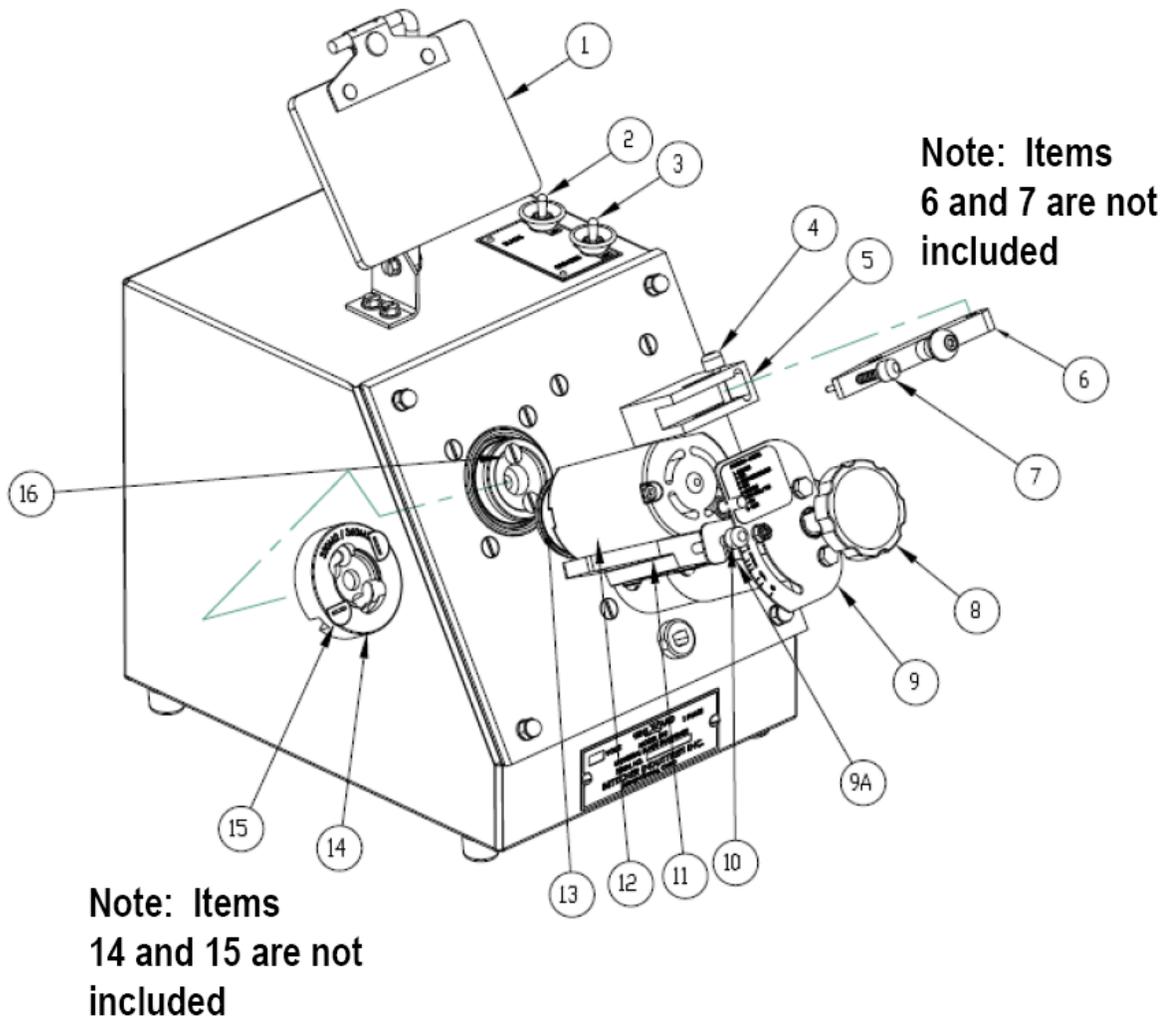
This equipment should be operated while standing in a comfortable and secure position.

The noise emission value is less than 75 dB(A).

## **SECTION 6.0**    **Unpacking**

### **6.1**    **Included With Your Machine**

The following parts and assemblies are included with your Whizard® Universal Blade Sharpener Model 210 except as noted. Due to the wide variety of blade sizes and styles, the blade holder (Item 14) and the steeling device (Item 6) must be ordered separately. Please check when unpacking and advise your local Bettcher Industries representative if the delivery is incomplete.



6.1 Included With Your Machine (Continued)

Item Number	Description
1	Eye Shield
2	Blade Holder Motor Switch
3	Grinder Motor Switch
4	Steeling Device Pin
5	Steeling Device Base
6	Steeling Device (Not Included)
7	Steeling Device Shaft (Included With Item 6)
8	Pedestal Knob
9	Positioner Plate
9A	Positioner Arm
10	Positioner Shaft
11	Grinder Pivot
12	Grinder Motor
13	Grinder Wheel
14	Blade Holder (Not Included)
15	Blade Holder Pin (Included With Item 14)
16	Blade Holder Screws
Operating Instructions and Spare Parts Manual	

## **SECTION 7.0**     **Installation**

### **7.1**     **Work Station & Lighting**

Place the universal sharpener on a bench surface of standard working position height. Appropriate lighting should be available. Head and hands to be kept at a safe distance from the grinding wheel and blade during operation.

## **SECTION 8.0**     **Instructions For Operation**

*Read Complete Operating Instructions Before Attempting To Sharpen Any Blades.*

### **8.1**     **Attaching The Blade Holder**

Refer to Section 6.1 for item callouts.

The blade holders and steeling devices are labeled to indicate the model blade(s) they are related to. See Sections 10.2 and 10.3.

## **C A U T I O N**

THE BLADE HOLDER HAS A PILOT BORE ON THE BOTTOM WHICH LOCATES ON THE DRIVE SHAFT AND A BORE ON TOP WHICH LOCATES THE BLADE. CARE SHOULD BE TAKEN NOT TO DAMAGE THESE SURFACES AS WELL AS THE DRIVE SHAFT. ALWAYS CHECK THAT THESE SURFACES ARE FREE OF DIRT AND DUST PRIOR TO ASSEMBLY.

First lower the grinder (#12) to its rest position.

Hold the grinder pivot (#11) with your left hand and press in the knob of the positioner shaft (#10) with your thumb to release the grinder from the positioner arm (#9A).

Then slowly swing the grinder down until it comes to a stop.

*Do not let the grinder drop freely.*

### 8.1 Attaching The Blade Holder (Continued)

Do not remove blade holder screws (#16) from the drive shaft.

Carefully guide blade holder (#14) straight onto the drive shaft.

With blade holder seated on the drive shaft, loosen blade holder screws (#16) sufficiently to allow the blade holder to rotate until the screws are in line with the countersunk holes of the slots.

Tighten blade holder screws (#16) down snugly. Do not over tighten.

### 8.2 Attaching The Steeling Device

Remove the steeling device pin (#4).

Place steeling device (#6) in slot of steeling device base (#5).

Align hole in steeling device with slot in steeling device base and insert steeling device pin.

### 8.3 Installing Blade Into Blade Holder



Check that all inner surfaces of the holder are free of dirt and dust.

Place blade in blade holder (#14) with gear teeth facing down.

Using a standard flat blade screwdriver, rotate blade hold down pins (#15) to ride onto the blade.

### 8.3 Installing Blade Into Blade Holder (Continued)

Check that blade is secure in the blade holder.

**Note:**

If blade turns freely in blade holder with hold down pins in place, it is worn excessively and will not operate at maximum efficiency in your Whizard® knife. This blade can not be sharpened and should be discarded.

### 8.4 Grinder Feed Control

Turning the pedestal knob (#8) clockwise feeds the grinder wheel (#13) into the blade and counterclockwise moves the grinder wheel away from the blade.

### 8.5 Positioning Grinder To Sharpen Blade

Loosen nut on positioner plate (#9) and align mark on positioner arm (#9A) with mark on positioner plate (refer to "Position-Model" label on positioner plate), then retighten nut. Holding the grinder pivot (#11) with your left hand, press in the knob of the positioner shaft (#10) and lift the grinder (#12) upward, allowing the positioner shaft to enter the slot of positioner arm (#9A). Release positioner shaft into hole of the positioner arm.

**Note:**

Back away grinder as needed when raising into position to avoid hitting the blade.

**DO NOT lift grinder into position with the motor turned on.**

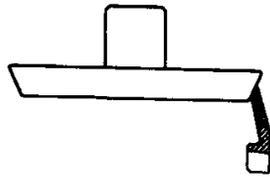
### 8.6 Grinder Wheel

This grinder wheel is a CBN (Borazon) plated wheel-form and **does not** require dressing of its grinding surfaces. See Section 9.0 for cleaning.

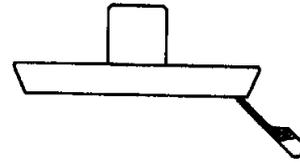
### 8.6 Grinder Wheel (Continued)

Use the correct grinding wheel and grinding wheel surface to sharpen the blades as shown below :

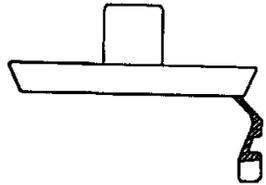
350, 520, 620,  
500 564, 750,  
754



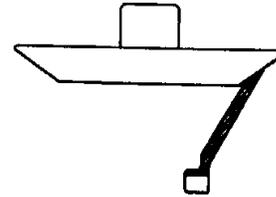
1850, 900-  
1500



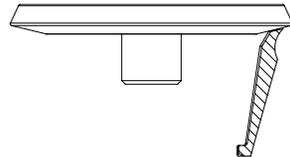
360, 625,  
505, 850



350 Cone



TRIMVAC®  
TRIMVAC®  
14/18 AMX



### 8.7 Sharpening The Blade

		<u>W A R N I N G</u>	
<b>EYE INJURY MAY OCCUR!</b>			
<b>NEVER OPERATE THIS MACHINE WITHOUT THE EYE SHIELD IN PLACE.</b>			

Be sure grinder wheel (#13) is not touching blade. Turn on blade holder motor switch (#2) and grinder motor switch (#3).

With both grinder wheel and blade holder rotating, slowly feed the grinder wheel at a constant rate into the blade until a continuous 360 degree spark is achieved.

<h2>CAUTION</h2>
PREMATURE FAILURE OF THE GRINDER WHEEL COULD RESULT IF EXCESSIVE PRESSURE IS APPLIED. ALTHOUGH THE WHEEL SHOULD BE LOWERED AT A CONSTANT RATE, <b><u>IT MUST NOT BE JAMMED OR RAPIDLY FORCED INTO THE BLADE.</u></b> FATS AND OILS WILL PREMATURELY LOAD THE GRINDING WHEEL. CLEAN BLADES BEFORE AND AFTER SHARPENING.

## 8.7 Sharpening The Blade (Continued)

With a continuous spark appearing for ***complete*** revolutions of the blade, proceed to steel the blade edges as described below.

For Model 360/505/625/850/880/350 Cone/TRIMVAC®/TRIMVAC® 18AMX Blades:

With your right hand, grasp the knob of the steeling device (#6) between your middle and index fingers.

Swing steeling device toward the center of the blade.

Slide the steeling device to the right until the steeling shaft contacts the inside blade edge.

Hold the steeling device *lightly* against the blade for a few complete blade revolutions.

Simultaneously release the steeling device from the blade edge and back off the grinder with your left hand.

Swing steeling device out away from the blade.

Turn off blade motor switch (#2) and grinder motor switch (#3).

For Model 350/500/520/564/620/750/754/900/1040/1200/1000/1300/1400 and 1500 Blades:

With your right hand, grasp the knob of the steeling device (#6) between your middle and index fingers.

Swing the steeling device toward the center of the blade.

Press down on steeling shaft knob (#7) with your thumb and slide the steeling device to the right until the steeling shaft contacts the inside blade edge.

### 8.7 Sharpening The Blade (Continued)

For Model 350/500/520/564/620/750/754/900/1040/1200/1000/1300/1400  
and 1500 Blades: (Continued)

While holding the steeling shaft lightly against the blade edge, move the steeling shaft in and out across the blade edge for a few complete blade revolutions.

Simultaneously release the steeling device from the blade edge and back off the grinder with your left hand.

Swing steeling device out away from the blade.

Turn off blade motor switch (#2) and grinder motor switch (#3)

### 8.8 To Lower Grinder After Sharpening And Steeling Blade

Holding the grinder pivot (#11) with your left hand, press in the knob of positioner shaft (#10) and slowly swing grinder down until it comes to a stop.

**Do not let the grinder drop freely.**

### 8.9 Removing The Blade



Rotate the blade hold down pins (#15) off the blade. Carefully lift the blade from the blade holder.



## 8.10 Check Blade Wear

Blades should be checked after sharpening for their wear height to determine if they should be discarded. Proper blade height effects trimmer operation, steeling device function and performance on its trimming application. Blades that pass through the gauge are worn to the point that they should be discarded. Refer to the accessory listings in the service parts section of the manual to find the blade wear gauges available.



Blades that pass through the gauge should be discarded.

**8.11 Fault Detection And Correction**

<b>PROBLEM</b>	<b>PROBABLE CAUSE</b>	<b>REMEDY</b>
Excessive Sharpener Vibration	Uneven bench top	Level surface
	Loose components	Tighten fasteners
Excessive Grinder Vibration	Wheel not properly mounted	Check shaft fit and set screw tightness
	Damaged wheel Loaded (dirty) grinder wheel	Replace. Clean wheel See Section 9.0
Blade Holder Does Not Run	Gearmotor/capacitor failure	Replace
	Broken drive belt	Replace
Blade Holder Slows Downs/Stops During Sharpening	Loose drive belt	Tighten belt
	Grease on drive belt	Clean belt
Blade Loose in Holder	Worn blade	Discard
	Loose hold down pin	Check for missing snap ring
	Damaged hold down pin	Replace
Blade Not Steeling Properly	Worn steeling device	Replace
Excessive Sharpening Time	Worn grinder wheel. Loaded (dirty) grinder wheel	Replace. Clean wheel. See Section 9.0

## **SECTION 9.0**    **Maintenance/Cleaning**

### **General:**

The Whizard® Universal Blade Sharpener has been designed to be practically maintenance free. It is suggested that the sharpener be completely cleaned periodically with the use of a small brush and vacuum cleaner. (**Do Not** use pressure air hose to blow off grinding dust).

### **Procedure For Adjustments When Replacing The Grinder Motor, Grinder Wheel And Pedestal Parts**



### **To Position The Grinder Motor:**

- Loosen the two motor mounting screws under the motor pivot.
- Facing the top of the motor, rotate the motor counterclockwise until all clearance in the mounting holes are taken up. Then tighten the mounting screws. This ensures the wheel will only grind in the downward direction.

### **To Position The Grinder Wheel On The Motor Shaft:**

- Place the grinding wheel on the motor shaft with 1/64 inch (4mm) space between the end of the wheel hub and the front of the motor housing. Then tighten the set screw on the wheel hub.

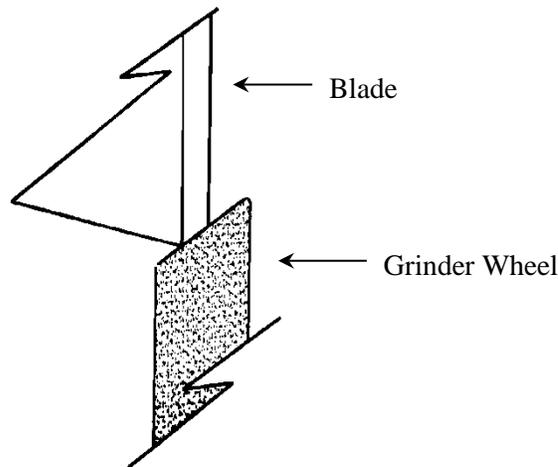
### **To Set The Pedestal Knob For Feed Control:**

- Install a blade holder and place the grinder motor in its respective position as indicated on the “positioner” plate.
- Loosen the pedestal knob set screw. Turn the pedestal knob clockwise running the grinder in toward the blade holder to within 1/64 inch (.4mm) from the top of the hold down pins.
- Tighten the pedestal knob set screw. Turn the pedestal knob counterclockwise to return the grinder assembly to it’s full back position.

## **SECTION 9.0    Maintenance/Cleaning    (Continued)**

### **Check Grinder Wheel Position:**

- Place a Model 620 blade (or similar angular type model blade) into the blade holder and place the grinder in it's respective position.
- Turn the grinder so the angled surface of the wheel contacts the blade. Contact should be as shown.



If the blade and wheel do not make contact, loosen the two screws under the pedestal knob and rotate the grinder, motor pivot and positioner plate as a unit until the blade to wheel contact is as shown. Should more adjustment be needed, loosen the pedestal mounting screws on the rear side of the base plate. Then rotate the pedestal assembly as a unit until the blade and grinder wheel make contact and tighten all screws.

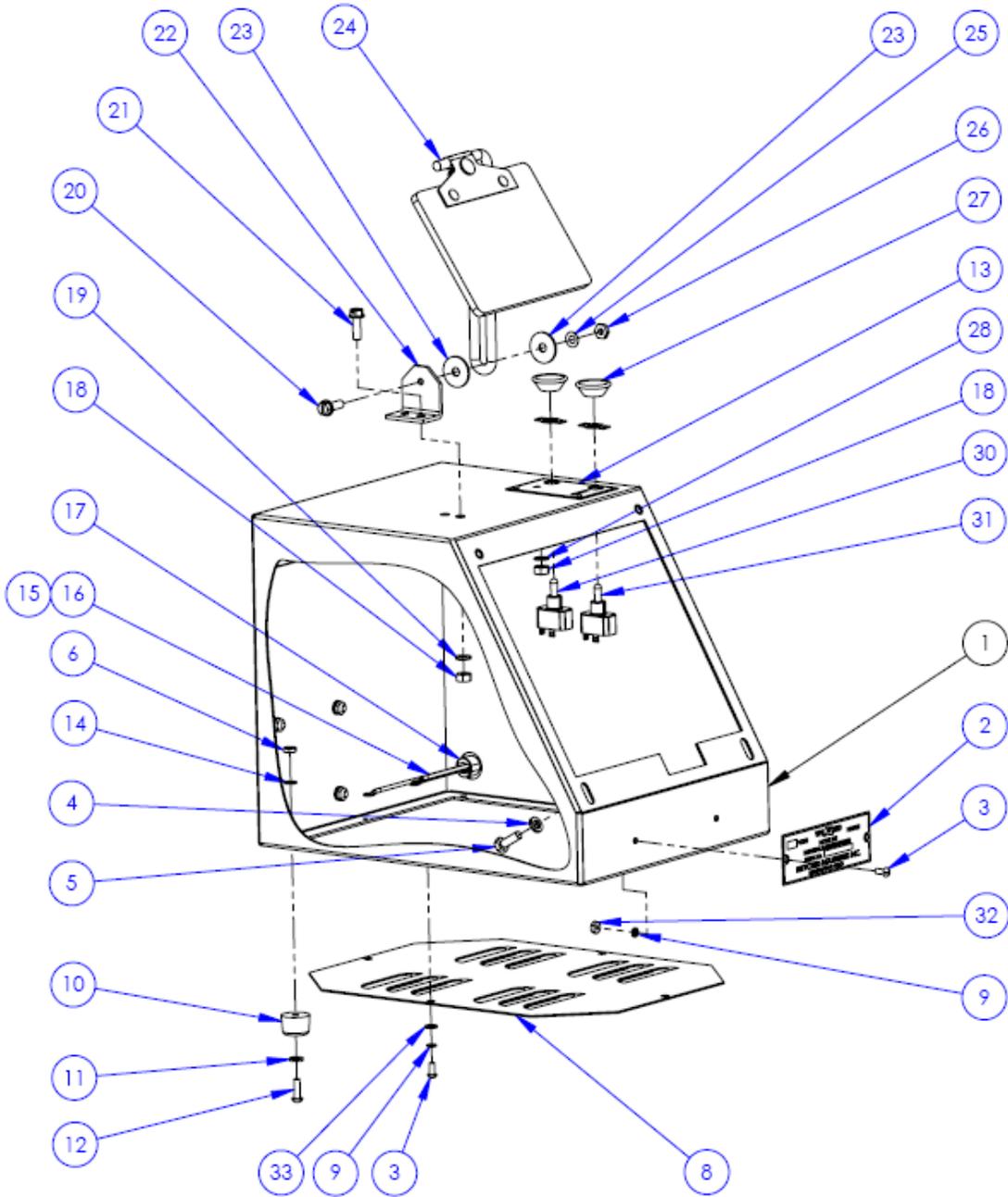
### **Grinder Wheel:**

Clean after approximately every 50 blade sharpenings with an all purpose penetrant or cleaning solvent.

Check for smooth bare metal areas where the borazon crystals have been worn or chipped off.

The sharpener requires no lubrication.

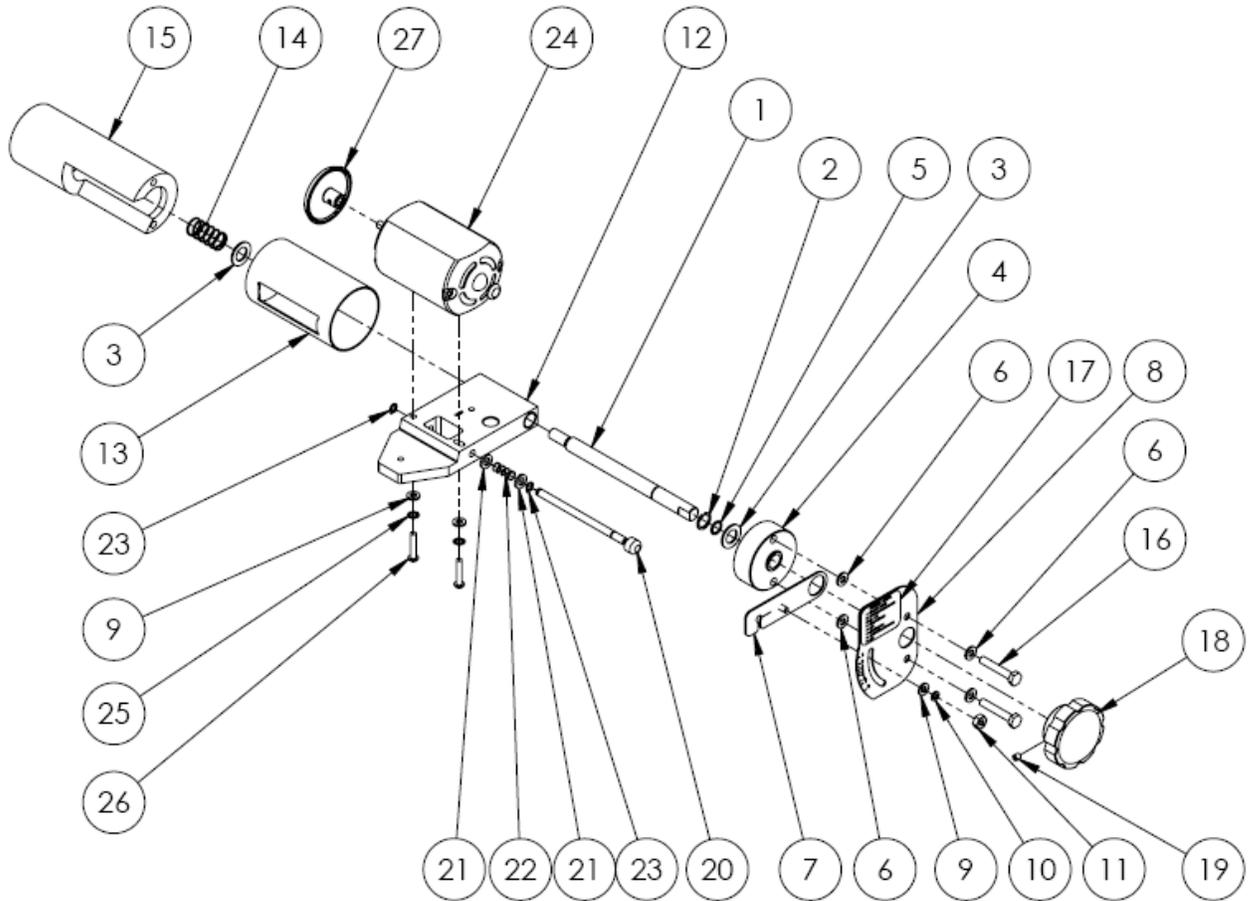
**SECTION 10.0**    **Service Parts**  
**10.1**    **Cabinet Assembly**



**10.1 Cabinet Assembly (Continued)**

<b>Item</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
1	113945	Cabinet	1
2	113938	Specification Plate	1
3	123467	Round Screw #8-32 x 3/8	6
4	120296	Flat Washer 1/4	2
5	121408	Hex Screw 1/4 -20 x 3/4	4
6	120342	Nut #10-32	4
8	143108	Cabinet Bottom	1
9	120202	Lock Washer #8	6
10	105395	Recessed Bumper	4
11	120281	Flat Washer #10	4
12	120127	Round Screw #10-32 x 5/8	4
13	113949	Switch Identification Plate	1
14	120232	Lock Washer	4
15	103413	Male Plug (Not Shown)	1
16	113962	Power Cord (Without Plug)	1
17	103460	Wire Clamp	1
18	120327	Nut 1/4-20	3
19	120220	Lock Washer 1/4	2
20	123263	Screw-Hex Washer Head 1/4-20 x 1	1
21	123264	Screw 1/4-20 x 3/4	2
22	185310	Bracket	1
23	120257	Washer	2
24	185312	Eyeshield	1
25	143044	Spring Disk	1
26	120304	Nut, ESNA	1
27	103408	Guard	2
28	120226	Lock Washer 1/4-20	1
30	113948	Blade Holder Motor Harness Switch	1
31	113947	Grinder Motor Harness Switch	1
32	120301	Nut #8-32	2
33	120260	Flat Washer	4

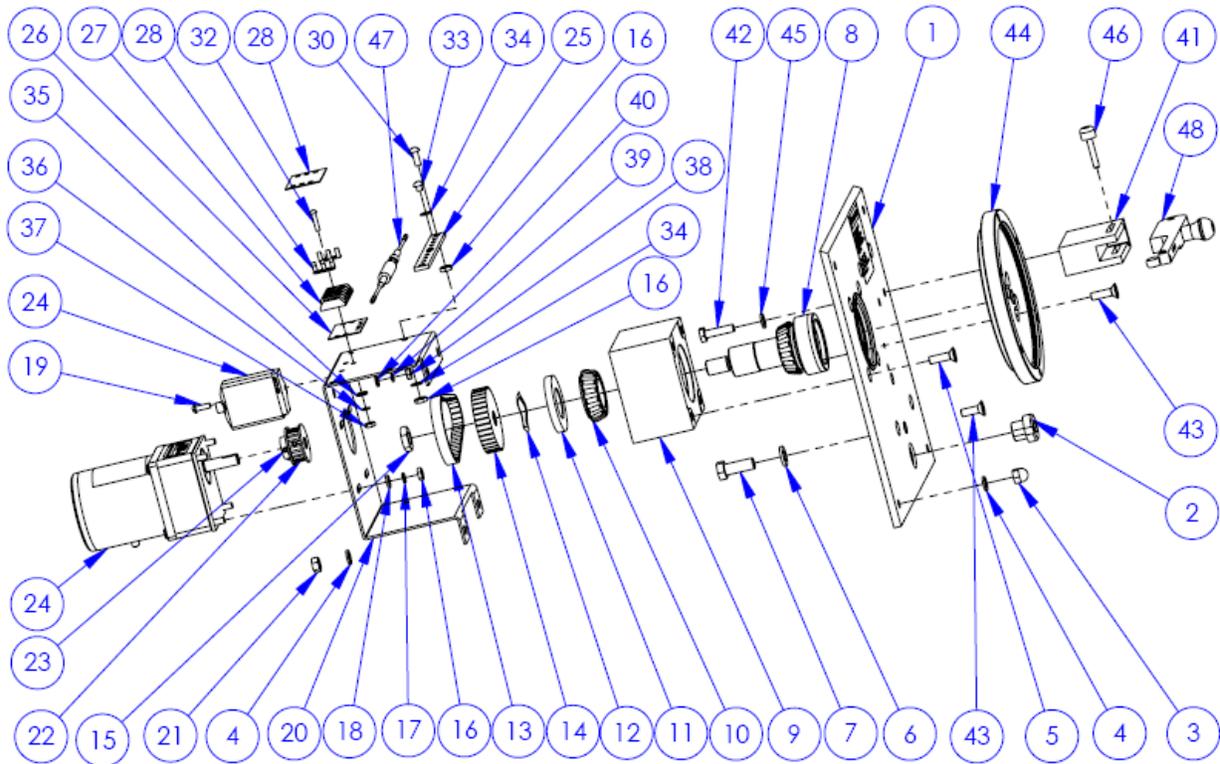
## 10.2 Grinder Motor Assembly



10.2 Grinder Motor Assembly (Continued)

<b>Item</b>	<b>Part Number</b>	<b>Description</b>	<b>Qty.</b>
1	113924	Pedestal Shaft	1
2	122021	Retaining Ring, 1/2"	1
3	120275	Flat Washer, 1/2"	2
4	113925	Pedestal Cap	1
5	122335	O-ring	1
6	120220	Lock Washer, 1/4"	2
7	163236	Position Arm	1
8	163235	Position Plate	1
9	120281	Flat Washer, #10	3
10	120204	Lock Washer #10	1
11	185398	Motor Position Nut	1
12	113934	Pivot Motor Assembly	1
13	113926	Dust Shield	1
14	121607	Compression Spring	1
15	113929	Pedestal With Bearing	1
16	120563	Hex Screw, 1/4-20 X 1-1/2"	2
17	163238	Selector Label	1
18	113923	Feed Knob	1
19	120053	Set Screw, #10-32 X 1/4"	1
20	113933	Positioner Shaft Assembly	1
21	120296	Flat Washer, 1/4"	2
22	121609	Compression Spring	1
23	122020	Retaining Ring	2
24	185681	Grinder Motor Assembly	1
25	120232	Lock Washer, #10	2
26	120140	Screw, #10-32 X 1"	2
27	113935	Grinder Wheel	1

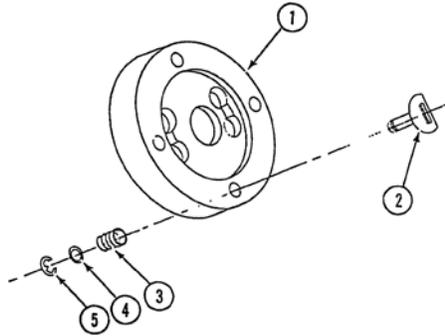
### 10.3 Drive Motor Assembly



### 10.3 Drive Motor Assembly (Continued)

Item	Part Number	Description	Qty.
1	113937	Base with Shaft Seal	1
2	103460	Wire Clamp	1
3	120718	Acorn Nut ¼-20	4
4	120220	Lock Washer 1/4	8
5	120768	Flat Screw ¼ -20 x 7/8	4
6	120221	Washer	2
7	120008	Screw Hex Head 3/8-16 x 1	2
8	113940	Drive Shaft with Bearing Cone	1
9	113959	Bearing Housing with Bearing Cup	1
10	121741	Cone Bearing	1
11	113957	Preload Spacer	1
12	121608	Wave Spring	1
13	125944	Timing Belt	1
14	185230	Driven Pulley	1
15	123603	Nut ½-13	1
16	120342	Nut #10-32	12
17	120204	Lock Washer #10	8
18	120281	Flat Washer #10	4
19	120104	Screw #8-32 x 1/2	1
20	185399	Gear Motor Mounting Bracket	1
21	120327	Nut ¼-20	4
22	185403	Drive Pulley	1
23	120053	Screw #10-32 x 1/4	1
24	185526	Gear Motor Assembly 115V	1
25	113953	Ground Strip	1
26	124041	Marker Strip	1
27	120966	4 Position Terminal Board	1
28	120967	Cover With Bracket Clips	1
30	120142	Round Screw #10-32 x 1/2	3
32	120779	Screw #6-32 x 1	3
33	123857	Screw #10-32 x 3/16	4
34	120232	Lock Washer #10	6
35	120282	Flat Washer #6	3
36	120240	Lock Washer #6	3
37	120336	Hex Nut #6-32	3
38	120301	Nut #8-32	1
39	120202	Lock Washer #8	1
40	120260	Washer #8	1
41	113956	Steeling Device Base	1
42	120576	Screw ¼-20 x 1	2
43	120768	Screw ¼-20 x 7/8	2
44	-----	Blade Holder –See Section 10.4 for Variations	1
45	120220	Washer ¼ Lock	2
46	113954	Pin	1
47	143010	Speed Control	1
48	-----	Steeling Device-See Section 10.5 for Variations	1

### 10.4 Blade Holders



Model	Complete Holder		Pin		Spring		Washer		Ring	
	Item 1	Qty.	Item 2	Qty.	Item 3	Qty.	Item 4	Qty.	Item 5	Qty.
350M2 / 360M2/ Q350/Q360	183653	1	173587	2	113825	2	120299	2	122019	2
X350/X360/X350LP	107122	1	173587	2	113825	2	120299	2	122019	2
440M2/Q440	173601	1	173587	2	113825	2	120299	2	122019	2
X440	107124	1	173587	2	113825	2	120299	2	122019	2
620M2/625M2/ Q620/Q625	183370	1	113978	3	113825	3	120299	3	122019	3
X620/X625/X620LP	105494	1	173333	3	113825	3	120299	3	122019	3
500M2/505M2/ Q500/Q505	183587	1	113978	3	113825	3	120299	3	122019	3
X500/X505/X500LP	107126	1	173333	3	113825	3	120299	3	122019	3
564M2	173580	1	113978	3	113825	3	120299	3	122019	3
X564	107261	1	173333	3	113825	3	120299	3	122019	3
750M2/850M2/ 880M2/1850M2/ 1880M2/Q750/ Q850/Q880/ Q1850/Q1880	173331	1	113978	3	113825	3	120299	3	122019	3
X750/X750LP/ X850/X1850	105492	1	173333	3	113825	3	120299	3	122019	3
1000M2-1500M2	183165	1	183167	6	113825	6	120299	6	122019	6
Q1000-Q1500	102557	1	183167	6	113825	6	120299	6	122019	6
X1000-X1300	105490	1	183167	6	113825	6	120299	6	122019	6
TRIMVAC®	173565	1	173557	4	113825	4	120299	4	122019	4
TRIMVAC® 14/18 AMX	184341	1	184340	4	113825	4	120299	4	122019	4
FLEX TRIMVAC® 14/18	107324	1	184340	4	113825	4	120299	4	122019	4

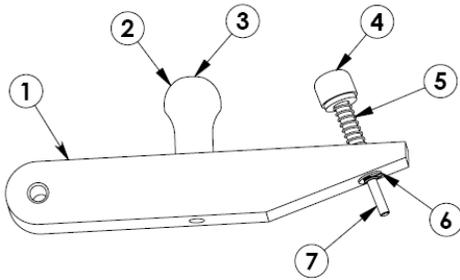
The following kits consist of: Blade Holder Assembly, Steeling Device, Grinder Wheel, and Instructions.

TRIMVAC® Kit	173566
TRIMVAC® 14/18 AMX Kit	173569
QUANTUM FLEX TRIMVAC® Kit	107326

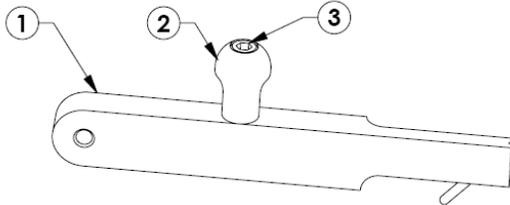
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10.5 Steeling Devices

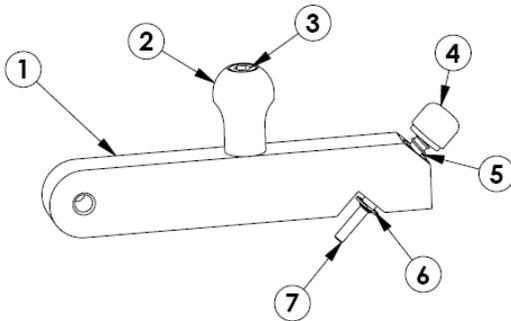
MODELS



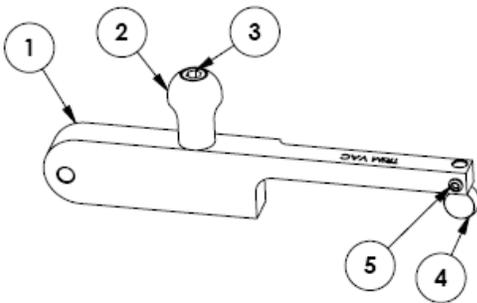
350/440/500/520/560/564/620/750/754



350 Cone/360/505/625/850/880/1850/1880



900 THRU 1500



TRIMVAC®/ TRIMVAC® 14/18 AMX

10.5 Steeling Devices (Continued)

<b>Model</b>	<b>Steeling Device Item 1</b>	<b>Knob Item 2</b>	<b>Screw Item 3</b>	<b>Washer Item 4</b>	<b>Qty.</b>	<b>Spring Item 5</b>	<b>Ring Item 6</b>	<b>Shaft Item 7</b>
350	113914	113960	120570	120281	1	113285	122019	113964
500	113915	113960	120570	120281	2	113285	122019	113964
350 Cone	173255	113960	120570	-----	--	-----	-----	-----
520	113917	113960	120570	120281	1	113285	122019	113964
X350/440/ 564/620	143047	113960	120570	120281	1	113285	122019	113964
750/754	113918	113960	120570	120281	1	113285	122019	113964
360	143025	113960	120570	-----	--	-----	-----	-----
505	113916	113960	120570	-----	--	-----	-----	-----
625	143619	113960	120570	-----	--	-----	-----	-----
850/880	113919	113960	120570	-----	--	-----	-----	-----
1850/1880	163157	113960	120570	-----	--	-----	-----	-----
1000/1500	113920	113960	120570	120281	1	113285	122019	113964
1300/1400	113921	113960	120570	120281	1	113285	122019	113973
TRIMVAC® / TRIMVAC® 14/18 AMX	185409	113960	120570	185389 Insert	--	120053 Set Screw	-----	-----

## 10.6 Grinder Wheels



Standard Grinder Wheel



Grinder Wheel-Cone Blade



Grinder Wheel-All TRIMVAC®

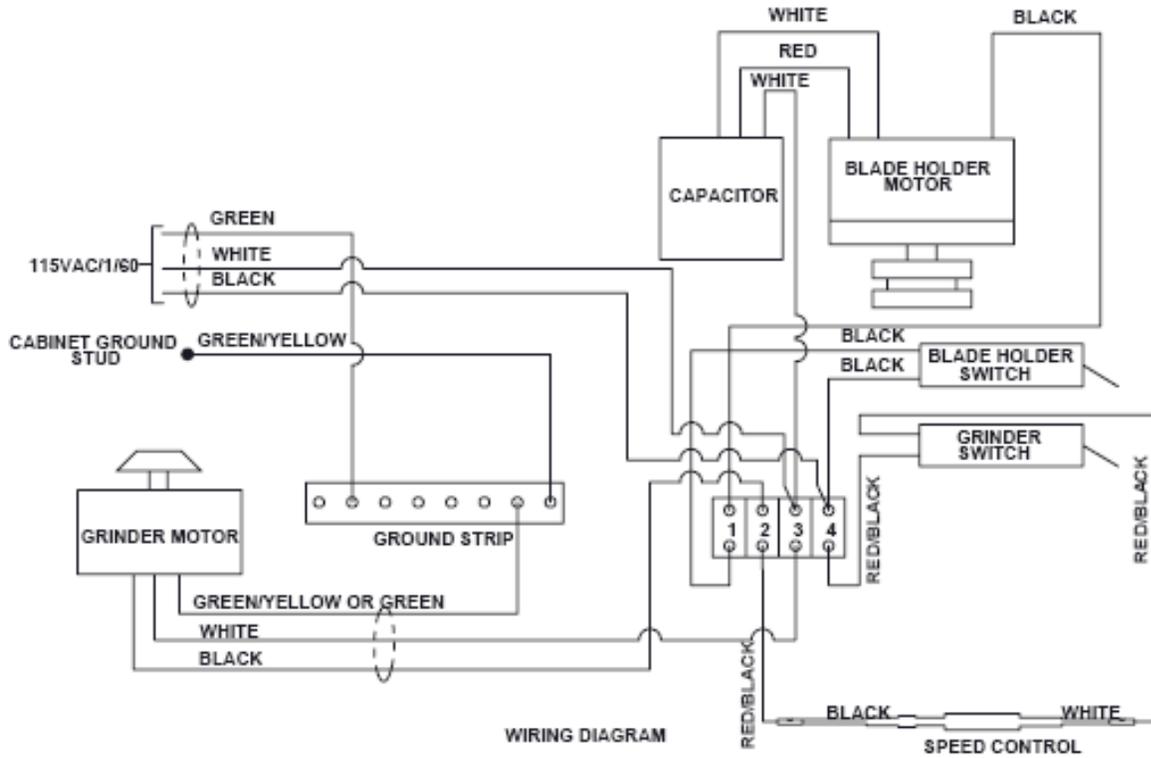
Item	Part Number	Description	Used With Blade Models
1	113935	Standard Grinder Wheel	All Except Listed Below
2	173294	Grinder Wheel-Cone Blade	Cone Blade
3	185396	Grinder Wheel-Trim Vac	All TRIMVAC®

**10.7 Bettcher® Whizard® Blade Wear Gauges**



<b>ITEM</b>	<b>Part Number</b>	<b>Used with Blade Model(s)</b>
1	163917	350M2
2	163918	360M2/350M2 Low Profile/Q350/Q360/X350/X360/X350LP
3	107232	X440
4	173576	620M2
5	163924	625M2/Q625/X625
6	173577	620M2 Low Profile/Q620/X620/X620LP
7	163920	500M2/505M2/Q505/X505
8	173575	500M2 Low Profile/Q500
9	107233	X500/X500LP
10	163922	564M2/X564
11	163925	750M2
12	173578	750M2 Low Profile/Q750
13	107234	X750/X750LP
14	163926	850M2/880M2/Q850/Q880/X850/X880
15	163927	1850M2/1880M2/Q1850/Q1880/X1850/X1880
16	163928	1000M2-1500M2/Q1000-Q1500
17	107235	X1000-X1500

### 10.8 Wiring Diagram





**SECTION 12.0    Contact Addresses & Phone**

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

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SWITZERLAND  
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