



BETTCHER
Industries, Inc.

Operating Instructions And Spare Parts List



UNIVERSAL BLADE SHARPENER
MODEL 210
(230 Volt)

For Assistance Contact:

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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**

The Whizard® Universal Blade Sharpener Model 210 described in this Operating Instruction meets the requirements of the Machine Safety Directive 89/392/EEC, EMC Directive 89/336/EEC, the Low Voltage Directive 73/23/EEC and also meets the relevant requirements of EN 60335, EN 50081, EN 50082 and EN 292.



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: | 10 feet (3 meters) |

Electrical Specifications:

| | | |
|-------------------------|--|----------|
| Grinder Motor: | 115 VAC/1/50-60 Hz | 1.5 Amps |
| | 1/10 HP | 8000 RPM |
| Blade Drive Gear Motor: | 115 VAC/1/50-60 Hz | 0.6 Amps |
| | 1/50 HP | 162 RPM |
| Power Source: | 230 VAC / 1 Phase / 50 Hz | |
| Input Power Transformer | 200 VA/230V Primary/ 115V Secondary | |

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)

| | | | | |
|---|---|-----------------------------|--|---|
|  |  | <u>W A R N I N G</u> |  |  |
| SHARP BLADE MAY CAUSE CUT INJURY! FOR PROPER PROTECTION OF HANDS, PROTECTIVE GLOVES SHOULD BE WORN WHEN OPERATING THIS EQUIPMENT AND DURING THE HANDLING THE BLADES. | | | | |

| | | | |
|---|---|-----------------------------|--|
|  |  | <u>W A R N I N G</u> |  |
| 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. | | | |

| | | | |
|---|---|-----------------------------|--|
|  |  | <u>W A R N I N G</u> |  |
| EYE INJURY MAY OCCUR! NEVER OPERATE THIS MACHINE WITHOUT THE EYE SHIELD IN PLACE AND PROPER EYE PROTECTION WORN. | | | |

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**

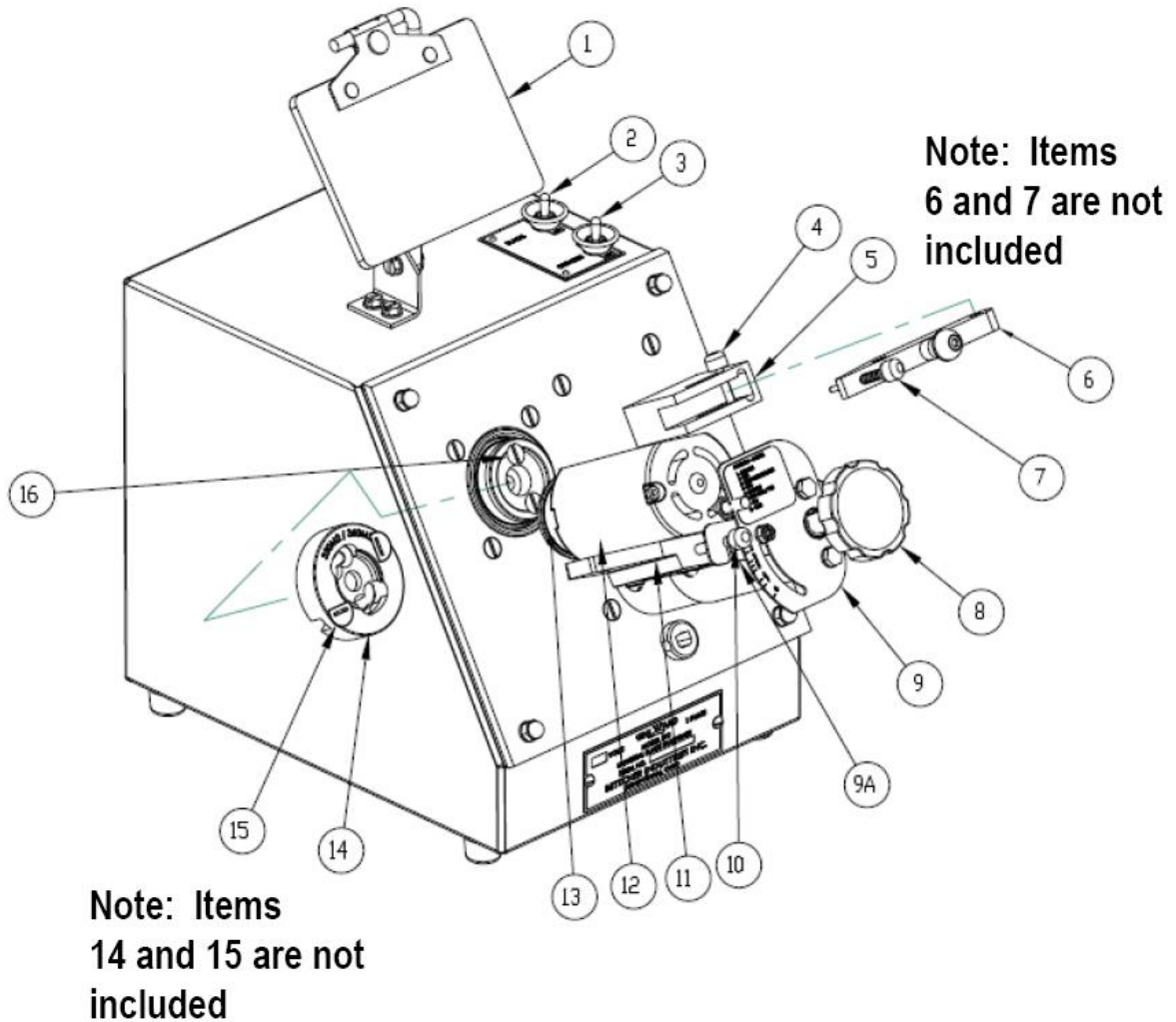
This equipment should be operated while standing in a comfortable and secure position.

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 10.3 and 10.4.

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.

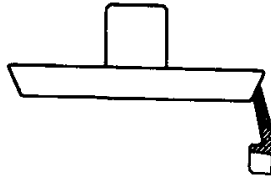
8.6 Grinder Wheel

This grinder wheel is a CBN (Borazon) plated wheel-form and **does not** require dressing of its grinding surfaces. See Section 9.1 for cleaning.

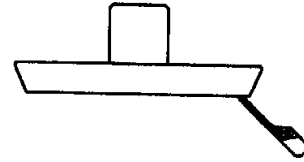
8.6 Grinder Wheel (Continued)

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

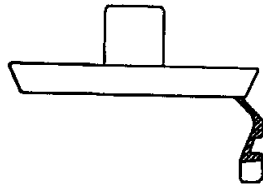
350, 520, 620,
500 564, 750,
754



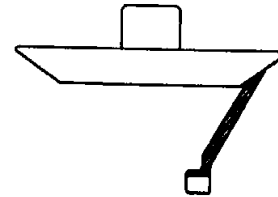
1850, 900-
1500



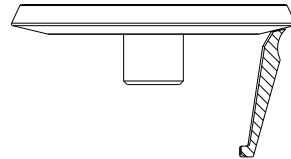
360, 625,
505, 850



350 Cone



TRIMVAC®
TRIMVAC®
14/18 AMX



8.7 Sharpening The Blade

| | | | |
|---|---|-----------------------|---|
|  |  | <u>WARNING</u> |  |
| EYE INJURY MAY OCCUR! | | | |
| NEVER OPERATE THIS MACHINE WITHOUT THE EYE SHIELD IN PLACE. | | | |

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.

| |
|---|
| CAUTION |
| PREMATURE FAILURE OF THE GRINDER WHEEL COULD RESULT IF EXCESSIVE PRESSURE IS APPLIED. ALTHOUGH THE WHEEL SHOULD BE LOWERED AT A CONSTANT RATE, <u>IT MUST NOT BE JAMMED OR RAPIDLY FORCED INTO THE BLADE.</u> 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® 18 AMX 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

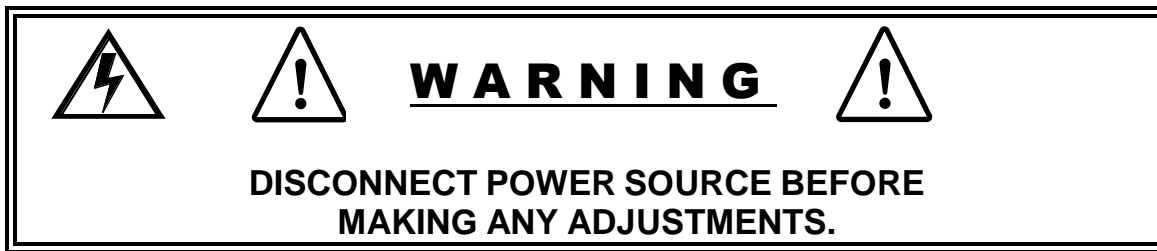
| PROBLEM | PROBABLE CAUSE | REMEDY |
|--|--|--|
| Excessive Sharpener Vibration | Uneven bench top | Level surface |
| | Loose components | Tighten fasteners |
| Excessive Grinder Vibration | Wheel not properly mounted | Check shaft fit and set screw tightness |
| | Damaged wheel Loaded (dirty) grinder 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.

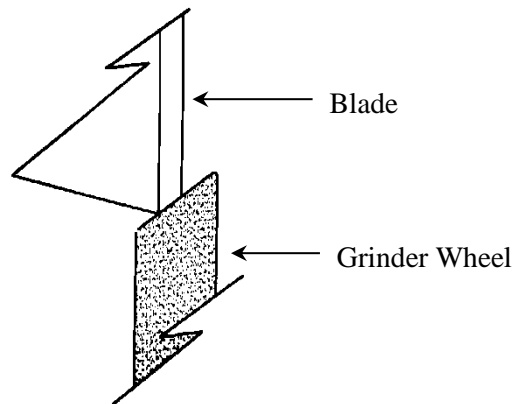
To Set The Pedestal Knob For Feed Control:

- 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:

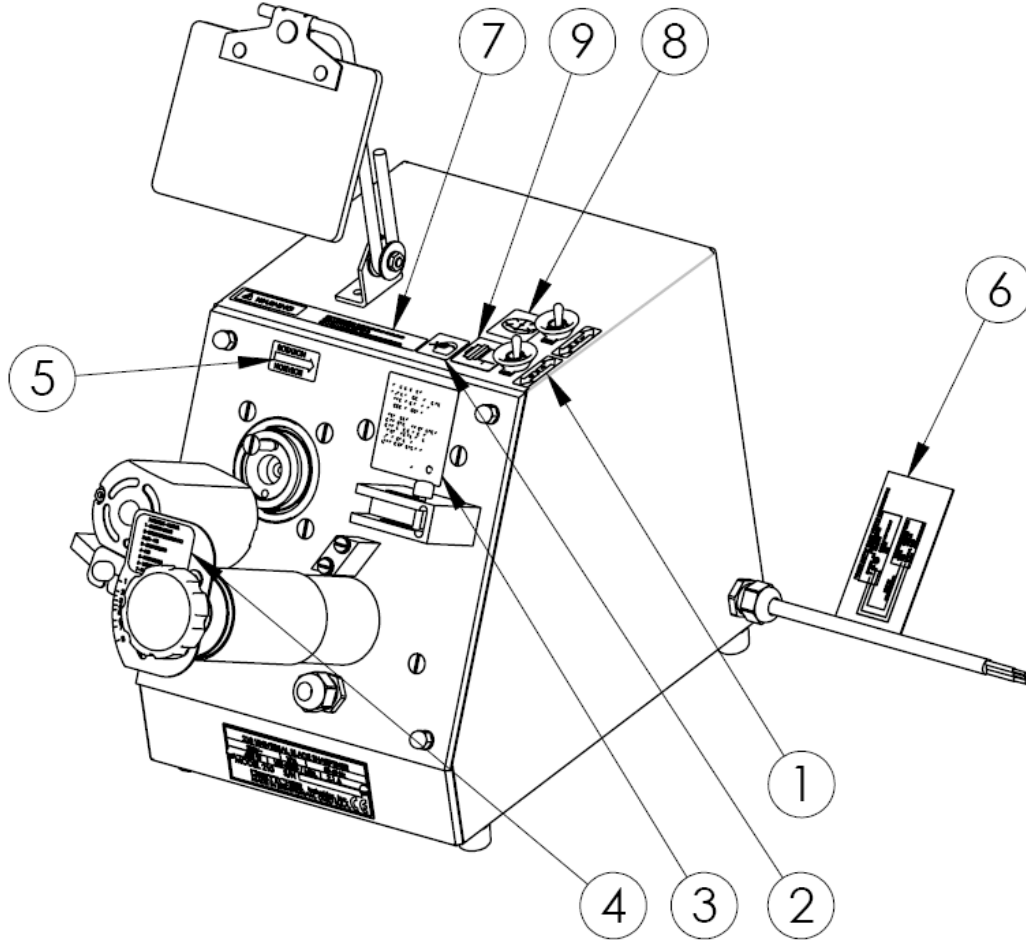
Clean after approximately every 50 blade sharpenings with an all purpose penetrant or cleaning solvent.

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**

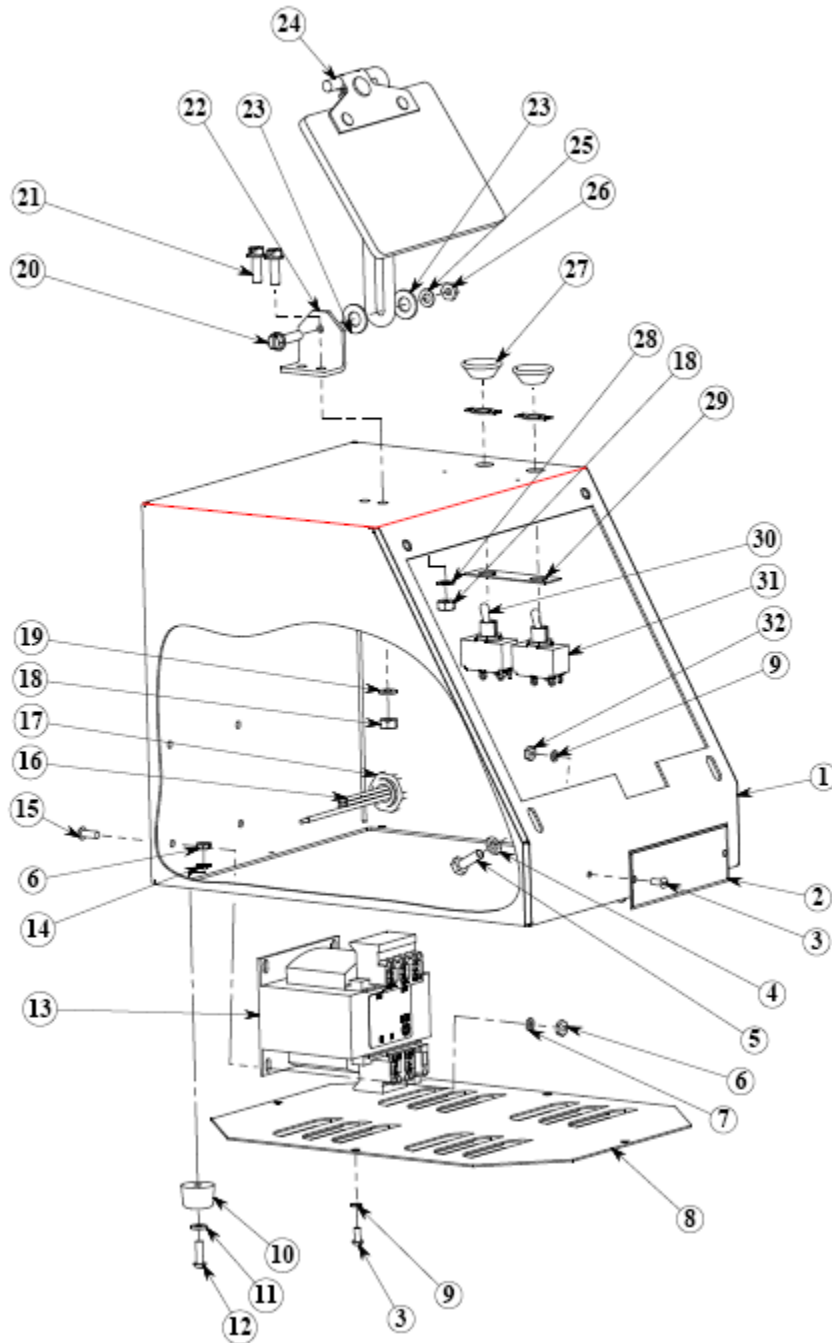
10.1 **External Label Components**



10.1 External Label Components (Continued)

| Item | Part Number | Description | Qty. |
|------|-------------|-------------------------|------|
| 1 | 173166 | ON-OFF LABEL | 2 |
| 2 | 108409 | EYE HAZARD LABEL | 1 |
| 3 | 103709 | WARNING LABEL | 1 |
| 4 | 163238 | SELECTOR LABEL | 1 |
| 5 | 108408 | ROTATION LABEL | 1 |
| 6 | 163591 | WIRING CONNECTION LABEL | 1 |
| 7 | 173240 | OPERATION WARNING LABEL | 1 |
| 8 | 173168 | SPINDLE MOTOR LABEL | 1 |
| 9 | 173167 | GRINDER MOTOR LABEL | 1 |

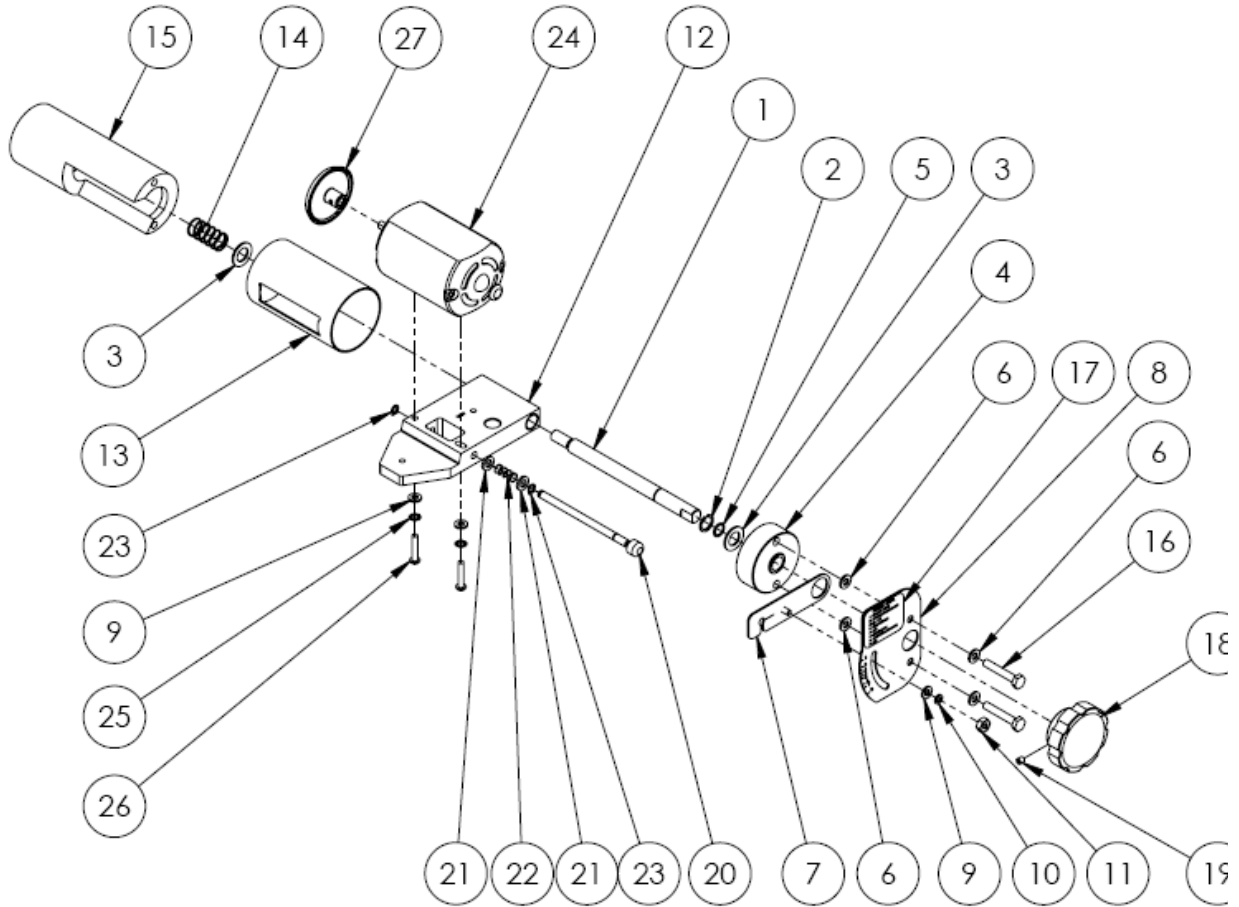
10.2 Cabinet Assembly



10.2 Cabinet Assembly (Continued)

| Item | Part Number | Description | Qty. |
|-------------|--------------------|-----------------------------------|-------------|
| 1 | 113945 | Cabinet | 1 |
| 2 | 163843 | 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 | 8 |
| 7 | 120204 | Lockwasher #10 | 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 | 124894 | Transformer 230/115v | 1 |
| 14 | 120232 | Lock Washer | 4 |
| 15 | 120142 | Round Screw #10-32 x 1/2 | 4 |
| 16 | 173159 | Power Cord | 1 |
| 17 | 123003 | Connector | 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 |
| 29 | 173171 | Key Plate | 1 |
| 30 | 173033 | Blade Holder Motor Harness Switch | 1 |
| 31 | 173032 | Grinder Motor Harness Switch | 1 |
| 32 | 120301 | Nut #8-32 | 2 |

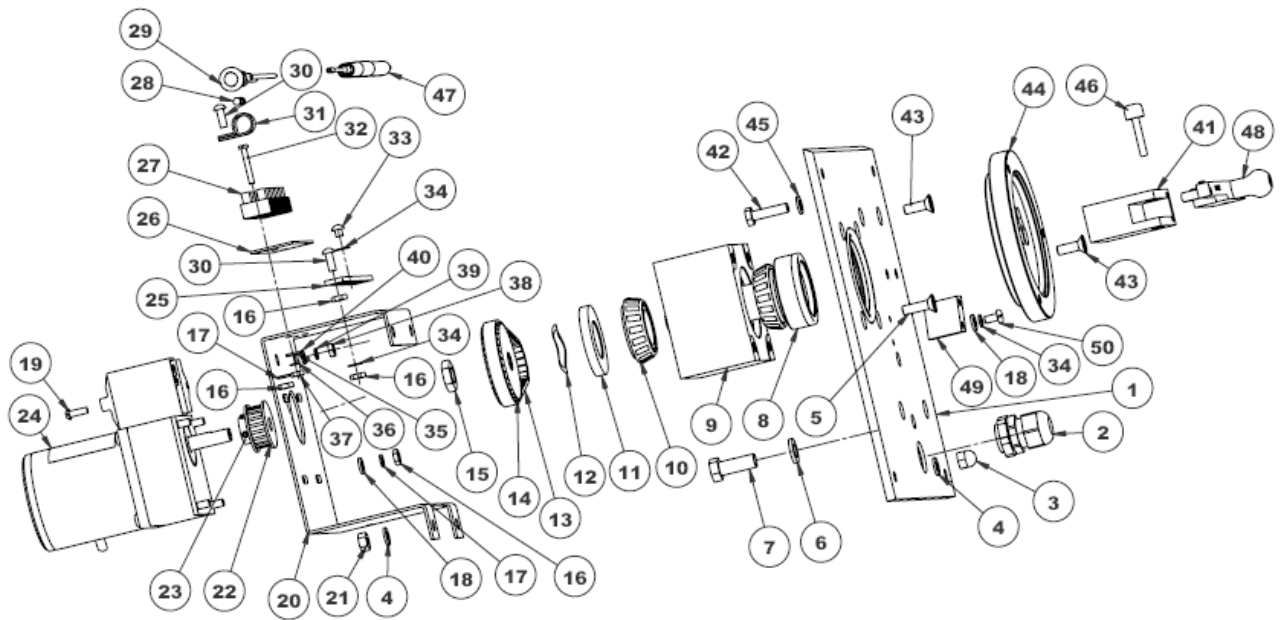
10.3 Grinder Motor Assembly



10.3 Grinder Motor Assembly (Continued)

| Item | Part Number | Description | Qty. |
|-------------|--------------------|----------------------------|-------------|
| 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 | 185680 | Grinder Motor Assembly | 1 |
| 25 | 120232 | Lock Washer, #10 | 2 |
| 26 | 120140 | Screw, #10-32 X 1" | 2 |
| 27 | 113935 | Grinder Wheel | 1 |

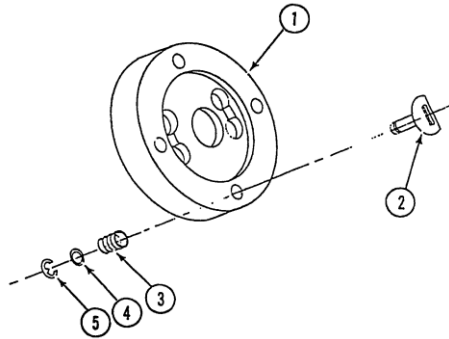
10.4 Drive Motor Assembly



10.4 Drive Motor Assembly (Continued)

| Item | Part Number | Description | Qty. |
|------|-------------|---|------|
| 1 | 113937 | Base with Shaft Seal | 1 |
| 2 | 123003 | Connector | 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 | 6 |
| 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 | 185401 | Gear Motor Assembly | 1 |
| 25 | 113953 | Ground Strip | 1 |
| 26 | 173093 | Terminal Block Plate I.D. 9 Pole | 1 |
| 27 | 124895 | 9 Pole Terminal Block | 1 |
| 28 | 124897 | Fuse 3.1A | 1 |
| 29 | 173162 | Fuse Holder Assembly | 1 |
| 30 | 120142 | Round Screw #10-32 x 1/2 | 3 |
| 31 | 105396 | Cable Clamp | 1 |
| 32 | 120779 | Screw #6-32 x 1 | 3 |
| 33 | 123857 | Screw #10-32 x 3/16 | 3 |
| 34 | 120232 | Lock Washer #10 | 7 |
| 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 10.5 for Variations | 1 |
| 45 | 120220 | Washer ¼ Lock | 2 |
| 46 | 113954 | Pin | 1 |
| 47 | 143010 | Speed Control | 1 |
| 48 | ----- | Steeling Device-See Section 10.6 for Variations | 1 |
| 49 | 143109 | Finger Guard | 1 |
| 50 | 120798 | Screw 10-32 x 1 3/8 | 2 |

10.5 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/X850/X1850/X750LP | 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 |

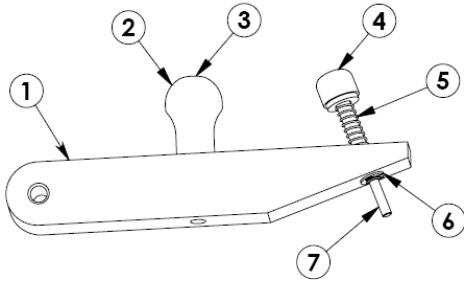
The following kits consist of: Blade Holder Assembly, Steeling Device, Grinder Wheel, and Instructions.

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

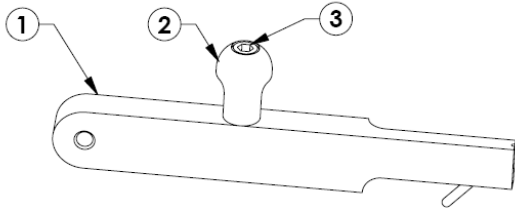
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10.6 Steeling Devices

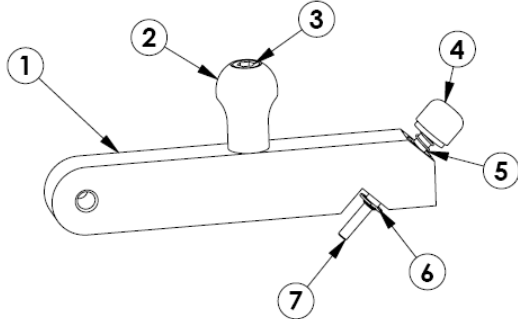
MODELS



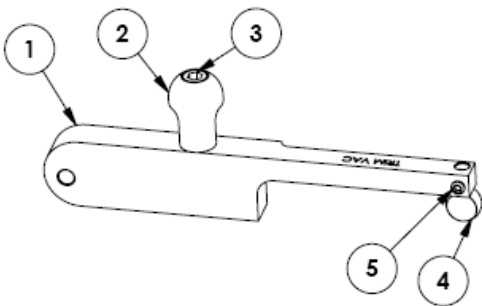
350/440/500/520/560/564/620/750/754



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



900 THRU 1500



TRIMVAC®/ TRIMVAC® 14/18 AMX

10.6 Steeling Devices (Continued)

| Model | Steeling Device Item 1 | Knob Item 2 | Screw Item 3 | Washer Item 4 | Qty. | Spring Item 5 | Ring Item 6 | Shaft Item 7 |
|------------------------------------|-----------------------------------|------------------------|-------------------------|--------------------------|-------------|--------------------------|------------------------|-------------------------|
| 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 | ----- | ----- |

10.7 Grinder Wheels



Standard Grinder Wheel



Grinder Wheel-Cone Blade



Grinder Wheel-All TRIMVAC®

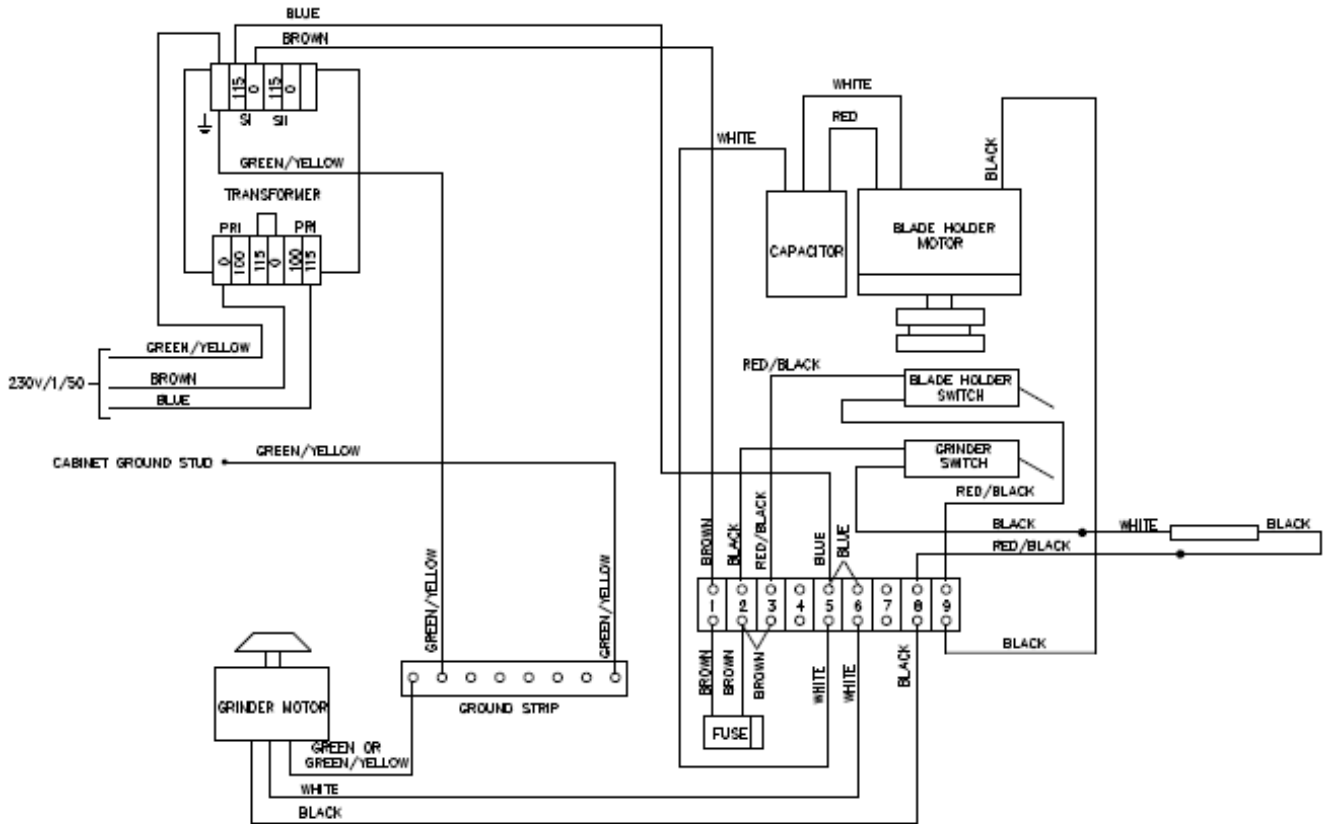
| Item | Part Number | Description | Used With Blade Models |
|------|-------------|--------------------------|-------------------------|
| 1 | 113935 | Standard Grinder Wheel | All Except Listed Below |
| 2 | 173294 | Grinder Wheel-Cone Blade | Cone Blade |
| 3 | 185396 | Grinder Wheel-Trim Vac | All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

10.8 Bettcher® Whizard® Blade Wear Gauges



| ITEM | Part Number | Used with Blade Model(s) |
|------|-------------|--|
| 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 |

10.9 Wiring Diagram



230V WIRING DIAGRAM

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 # 173183
Document Description : Operating Instructions And Spare Parts List
 for Whizard® Universal Blade Sharpener
 Model 210, 230V

Operating Instructions for other Bettcher Industries, Inc. products such as the Whizard® Trimmers, 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 14 points for A-size paper (8.5 x 11 inches).

For more information, contact your local Representative or :

Bettcher Industries, Inc.
Administrative Assistant/Engineering Department
P.O. Box 336
Vermilion, Ohio 44089
U.S.A.

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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Fax: +55 11 4083 2515