BETTCHER® Industries, Inc.

Operating Instructions & Parts List for

WHIZARD®

MODEL 214 BLADE SHARPENER

(230 VOLT)

Manual# 185349
Reissued: July 13, 2018
TMC #830

For Assistance, Write:
BETTCHER INDUSTRIES INC.
P.O. Box 336
Vermilion, Ohio 44089-0336
U.S.A.
Phone: 440/965-4422
Phone: 800/321-8763
Fax: 440/328-4535
http://www.bettcher.com

Information in this document is subject to change without notice.

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

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P.O. Box 336
Vermilion, Ohio 44089-0336
U.S.A.
Telephone: 440/965-4422
(In The U.S.A.): 800/321-8763
Fax: 440/328-4535

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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.

Original Instructions

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Section 1 Safety and Ergonomics

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NOTE

The manufacturer assumes no liability for any unauthorized changes in operating procedures or for unauthorized changes or modifications made to the design of the machine or any factory-installed safety equipment, whether these changes are made by the owner of this equipment, by his employees, or by service providers not previously approved by Bettcher Industries, Inc.

NOTE

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.

SAFETY RECOMMENDATIONS AND WARNINGS

Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain this product. Protect yourself, others and equipment by observing all safety information. Failure to comply with instructions could result in personal injury and/or damage to the equipment. Any use in applications other than those for which the Whizard® Model 214 Blade Sharpener was designed and built may result in equipment damage and/or serious injuries.

Retain this manual for future reference. Be thoroughly familiar with the controls and proper use of this equipment.

Warnings identify conditions that can cause serious bodily injury to the user.

Cautions identify conditions that are important to the operation, care and maintenance of the machine.

Notes indicate important information, that if not followed, may cause damage to equipment.

SAFETY RECOMMENDATIONS AND WARNINGS (CONTINUED)

W A R N I N G

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.

W A R N I N G

ELECTRICAL SHOCK MAY OCCUR!

ALWAYS DISCONNECT UNIT FROM POWER SUPPLY PRIOR TO SERVICING

W A R N I N G

SHARP BLADES MAY CAUSE CUT INJURY! FOR PROPER PROTECTION OF HANDS, A PROTECTIVE GLOVE SHOULD BE USED WHEN OPERATING THIS EQUIPMENT AND DURING HANDLING OF BLADES.

SAFETY RECOMMENDATIONS AND WARNINGS (CONTINUED)


WARNING

EYE INJURY MAY OCCUR!

NEVER OVERATE THIS MACHINE WITHOUT THE EYE SHIELD IN PLACE AND PROPER EYE PROTECTION WORN.

CAUTION

USE ONLY REPLACEMENT PARTS MANUFACTURED BY BETTCHER INDUSTRIES, INC. THE USE OF SUBSTITUTE PARTS WILL VOID THE WARRANTY AND MAY CAUSE INJURY TO OPERATORS AND/OR DAMAGE THE EQUIPMENT.

SAFETY FEATURES

The Whizard® Model 214 Blade Sharpener is equipped with an eye shield to deflect grinding particles away from the operator.

ERGONOMICS AND ENVIRONMENT

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

ADDITIONAL FEATURES

The noise emission value is less than 85 dB(A).

Section 2 Designated Use

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MACHINE FUNCTION

The Whizard® Model 214 Blade Sharpener is a precision grinding unit that is designed to sharpen the blades used in Whizard® Trimmers. 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® Trimmer Blade will reduce operator fatigue and will result in shortening the return on investment through increased trimming yields.

The Whizard® Model 214 Blade Sharpener is easy to operate and maintain.

RECOMMENDED OPERATION

The Whizard® Model 214 Blade Sharpener was designed and built to sharpen only Bettcher® Whizard® Trimmer Blades.

WARNING

ANY USE IN APPLICATIONS OTHER THAN THOSE FOR WHICH THE WHIZARD® MODEL 214 BLADE SHARPENER WAS DESIGNED AND BUILT MAY RESULT IN EQUIPMENT DAMAGE AND/OR SERIOUS INJURIES.

MACHINE SPECIFICATIONS

The Whizard® Model 214 Blade Sharpener described in this Operating Instruction meets the applicable safety directives and related international standards as identified in the Declaration of Conformity included with this manual.

CE

MACHINE SPECIFICATIONS (CONTINUED)

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

- **Volts AC:** • **230 Volt**
- **Watts:** • **60 Watts**
- **Frequency:** • **50 Hz**
- **Phase** • **1**

Section 3 Unpacking and Installation

CONTENTS OF THIS SECTION

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Information Sheet 3-3
Installation 3-4
Work Station and Lighting 3-4
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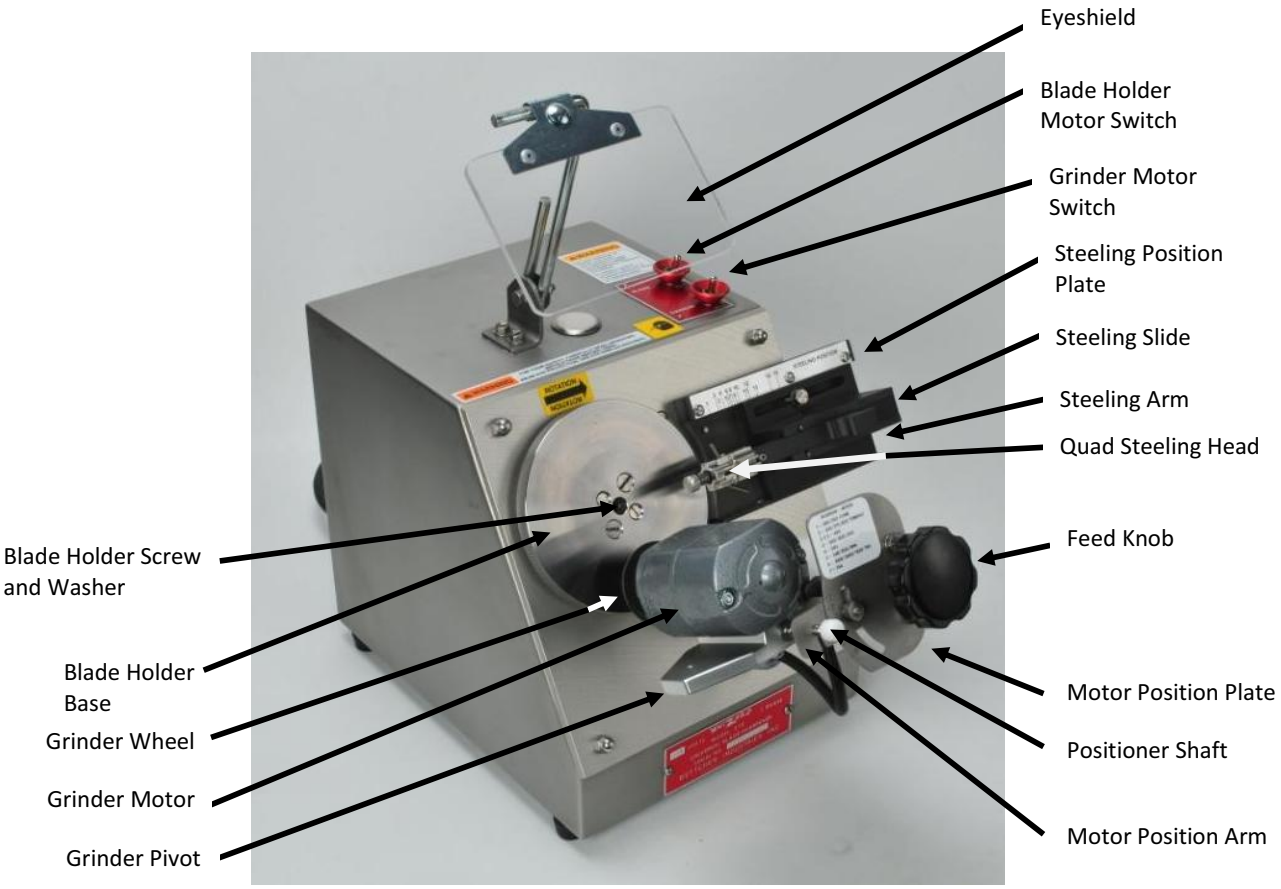
INCLUDED WITH YOUR MACHINE

The following parts and assemblies are included with your Whizard® Model 214 Blade Sharpener. Please check when unpacking and advise your local Bettcher Industries representative if the delivery is incomplete.

Blade Holders and Special Steeling Devices are **NOT INCLUDED** with the Sharpener and must be purchased separately.



ITEMS NOT SHOWN:

185348	Information Sheet
120547	Brush
120545	Hex Wrench 3/32
120546	7/16 Nut Driver

INFORMATION SHEET

This Information Sheet lists the various Whizard® Trimmer Blade models with their respective sharpener setting for the "Grinder Motor" and "Steeling Base" position.

Under the "Steeling Head" column, the letter designations (A,B,C,D) apply to the Quad Steeling Head Assembly included with the Sharpener. The part numbers listed are Optional Steeling Devices which are **NOT INCLUDED** with the Sharpener.

- Part numbers for the "Quantum" type blade holders are under the column "Blade Holder Q"
- Part numbers for the "Series II" type blade holders are under the column "Blade Holder M2"
- Part numbers for the "Quantum Flex" type blade holders are under the column "Blade Holder X"

BETTCHER Industries, Inc.

Whizard® Model 214 Blade Sharpener
Machine Settings & Accessories

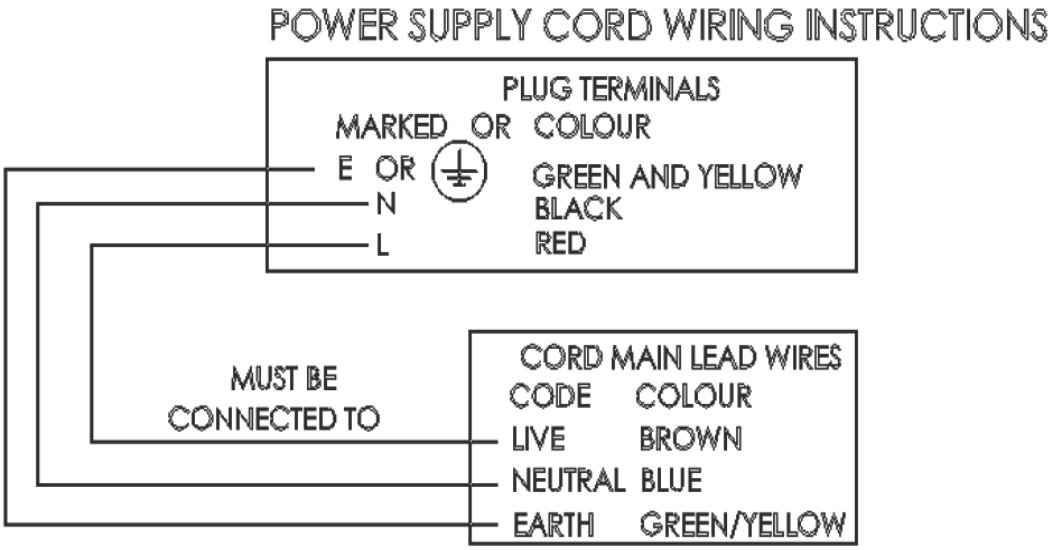
Blade Model	Grinder Motor Position	Steeling Base Position	Steeling Head	Blade Holder X	Blade Holder Q	Blade Holder M2
350M2/M2L/Q350	2	3	185228	N/A	185223	185223
X350 CONE	1	1	185421	105464	N/A	N/A
X350 / X350LP	2	3	A	105464	N/A	N/A
360M2/Q360/X360	1	1	C	105464	185223	185223
440M2/440Q	2 ½	4	B	N/A	185234	185234
X440	2 1/2	4	A	107143	N/A	N/A
620M2/M2L/Q620/X620/X620LP	3	6	A	105464	185223	185223
625M2/Q625/X625	2	2	C	105464	185223	185223
500M2/M2L/Q500/X500/X500LP	5	10	B	105464	185223	185223
505M2/Q505/X505	3	5	C	105464	185223	185223
564M2/X564	5	9	A	107143	N/A	185236
750M2/M2L/Q750/X750/X750LP	6	12	B	105446	185257	185257
850M2/Q850/X850	5	9	C	105446	185257	185257
1850M2/Q1858/X1850	3	6	C	105446	185257	185257
1000M2/Q1000/X1000	6	13	C	105461	185291	185291
1300M2/Q1300/X1300	6	11	D	105461	185291	185291
TRIMVAC® AMX 14	2	1	185390	105464	185223	185223
TRIMVAC® AMX 18	2	1	185390	105464	185223	185223

M2=Whizard® Series II Trimmer Blade
M2L=Whizard® Series II Low-Profile Trimmer Blade
Q=Whizard Quantum® Trimmer Blade
X=Quantum Flex® Trimmer Blade

INFORMATION SHEET
REVISION: E
ECN: BP030875
DRAWING NO: 185348

INSTALLATION

An electrical plug is **NOT PROVIDED** with the machine. A suitable grounded three conductor plug and receptacle must be used with this machine.



WORK STATION AND LIGHTING

Place the Universal Sharpener on a bench surface of standard working position height. Appropriate lighting should be available.

WARNINGS

W A R N I N G

ELECTRICAL SHOCK MAY OCCUR!

ALWAYS DISCONNECT UNIT FROM POWER SUPPLY PRIOR TO SERVICING.

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Section 4 Instructions for Operation

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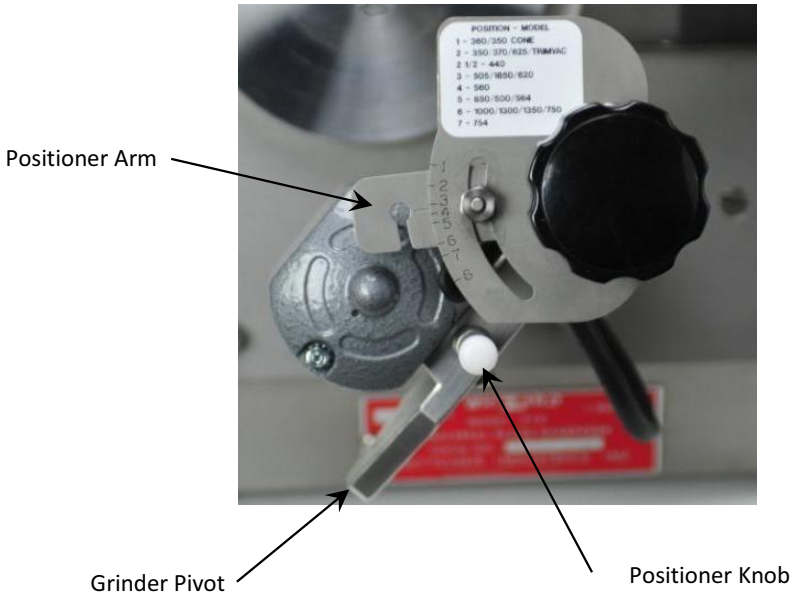
INSTRUCTIONS FOR OPERATION

Read Complete Instructions Before Attempting To Sharpen Any Blades.

ATTACHING THE BLADE HOLDER

- Lower the Grinder Motor from the Positioner Arm by holding the Grinder Pivot with your left hand and pressing IN on the Positioner Knob with your thumb.
- Slowly swing the Grinder Motor DOWN until it comes to a stop.

NOTE
DO NOT LET THE GRINDER MOTOR DROP FREELY.

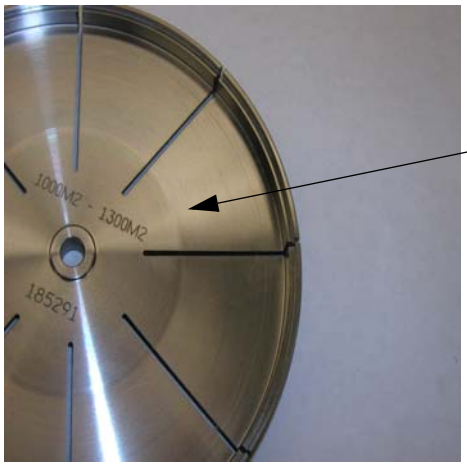


ATTACHING THE BLADE HOLDER (CONTINUED)

Select the proper Blade Holder.

NOTE

BLADE HOLDERS ARE MARKED WITH THE BLADE MODEL(S) THEY ARE USED WITH. REFER TO THE INFORMATION SHEET IN SECTION 3 TO SELECT THE CORRECT BLADE HOLDER.



The Blade Model(s) and the Blade Holder Part Number are Etched on the Holder.

ATTACHING THE BLADE HOLDER (CONTINUED)

A Pilot Boss on the back of the Blade Holder locates into the Pilot Bore of the Blade Holder Base.

NOTE

INSURE ALL MOUNTING SURFACES FOR THE BLADE HOLDER ARE CLEAN.

CAUTION

THE BLADE HOLDER HAS A PILOT BOSS ON THE BOTTOM WHICH LOCATES ON THE BLADE HOLDER BASE 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 GRINDING DUST PRIOR TO ASSEMBLY.

ATTACHING THE BLADE HOLDER (CONTINUED)

Place the Blade Holder on the Blade Holder Base and install the Blade Holder Washer and Screw through the hole in the Blade Holder.

NOTE

DO NOT TIGHTEN THE SCREW AT THIS TIME.

Blade Holder

Blade Holder Screw and Washer

INSTALLING A BLADE FOR SHARPENING

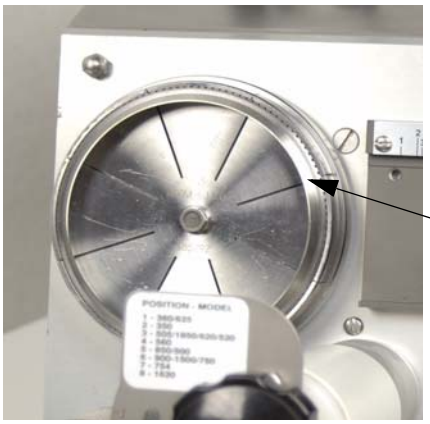
WARNING

SHARP BLADE MAY CAUSE CUT INJURY! FOR PROPER PROTECTION OF HANDS, A PROTECTIVE GLOVE SHOULD BE USED WHEN OPERATING THIS EQUIPMENT AND DURING HANDLING OF BLADES.

Make certain the proper Blade Holder is installed. The model/part number on the Blade Holder should match with the Information Sheet provided.

Check that the Recess of the Blade Holder is free of grinding dust.

Recess of the Blade Holder



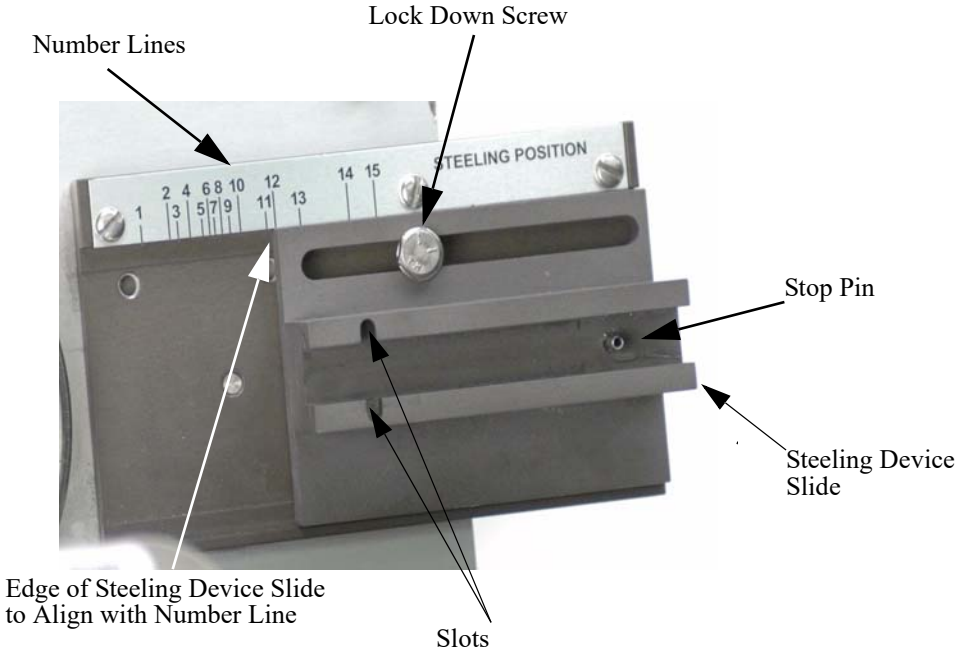
Blade Installed in Blade Holder.

- Place the blade into the Recess of the Blade Holder.
- Carefully hold the blade in the Recess and tighten the Blade Holder Screw until there is some resistance against the blade.
- Hold the outside diameter of the Blade Holder Base and tighten the Blade Holder Screw to fully secure the blade in the Blade Holder.

SETTING THE STEELING DEVICE SLIDE

Refer to the Information Sheet in Section 3 for the proper steeling device setting position for the blade model to be sharpened.

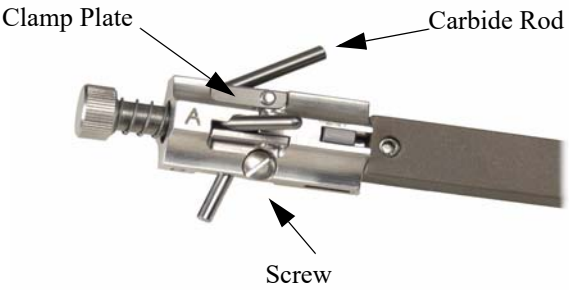
- Loosen the Lock Down Screw with the 7/16 Nut Driver provided and move the Steeling Device Slide so the front edge lines up with the number line on the Steeling Position Plate.
- Tighten the Lock Down Screw.

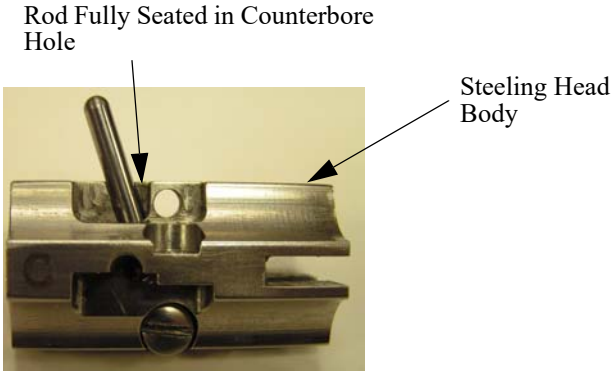


QUAD STEELING HEAD ASSEMBLY

The Quad Steeling Head Assembly has a body with carbide rods held in place by Clamp Plates and Screws. The Clamp Plate can be loosened to rotate the rod for a new wear surface and for rod replacement.

IMPORTANT: Make sure the rod(s) are fully seated at the bottom of the counterbore hole in the Steeling Head Body. This assures the proper rod height for steeling the blade.



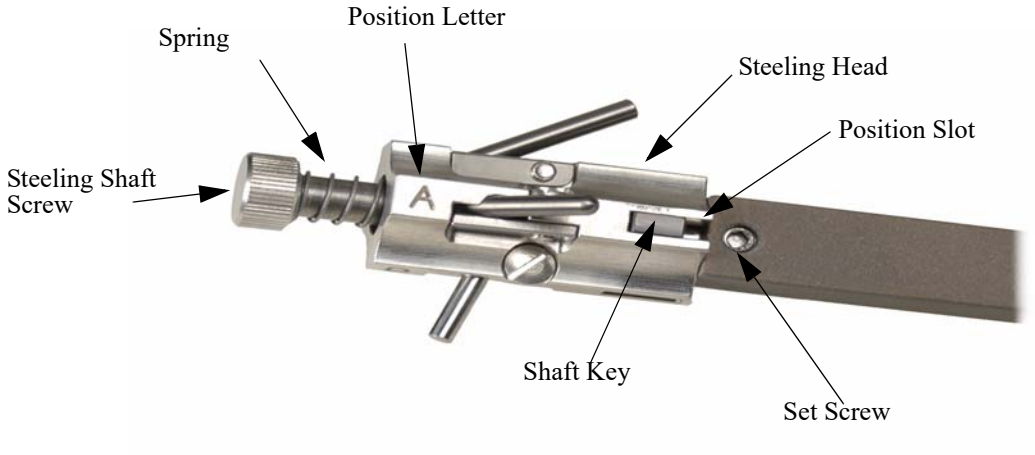


SELECTING THE STEELING HEAD POSITION

Refer to the Information Sheet in Section 3 for the steeling head setting position of the blade to be sharpened.

The standard Quad Steeling Head has four steeling rod positions, marked A, B, C and D.

- Pull the Quad Steeling Head out and rotate it so the “Position” letter is facing outward and aligned with the Set Screw in the Steeling Arm.



- The Quad Steeling Head will then slide back so the Steeling Shaft Key slides into the position slot of the Quad Steeling Head.
- The Position Letter, Position Slot and Set Screw should be aligned.
- The Quad Steeling Head should slide freely on the Steeling Shaft against the Spring and be guided on the Shaft Key.
- To remove the Quad Steeling Head, remove the Steeling Shaft Screw and slide the Spring and Quad Steeling Head off of the Steeling Shaft.
- Reverse this procedure to install the Quad Steeling Head.

INSTALLING THE STEELING DEVICE ARM ASSEMBLY

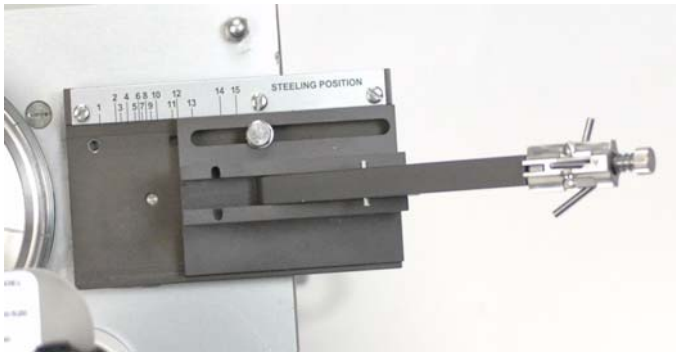
- Insert the Rear Guide Pins of the Steeling Arm into the slots in the Steeling Device Slide and lower the Steeling Arm into the Steeling Device Slide.

- Move the Steeling Arm to the right until the front Guide Pins align with the slots then lower the Steeling Arm into the Steeling Device Slide.

INSTALLING THE STEELING DEVICE ARM ASSEMBLY (CONTINUED)

- The Steeling Device Arm should move freely back and forth by hand control in the Steeling Device slide. The Stop Pin in the Steeling Device Slide limits the backward travel.

- Move the Steeling Arm so the front Guide Pins come out of the Steeling Device Slide then lift the Steeling Arm up and pivot it on the Rear Guide Pins so the Steeling Arm rests on the Steeling Slide Body.



NOTE

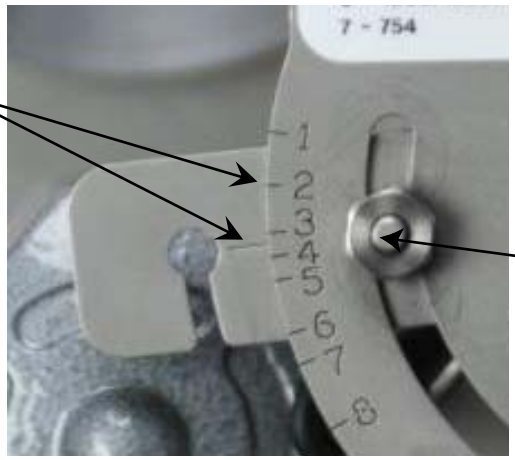
THERE ARE SPECIAL STEELING HEADS FOR NON-STANDARD BLADE MODELS LISTED IN THE SERVICE PARTS SECTION 7 OF THIS MANUAL. THEY ARE ALSO LISTED ON THE INSTRUCTION SHEET IN SECTION 3.

POSITIONING GRINDER MOTOR TO SHARPEN BLADE

Refer to Information Sheet in Section 3 for the Grinder Motor Position of the blade to be sharpened.

- Loosen the Nut on Position Plate and align the mark on the Position Arm with the mark on the Position Plate then retighten the Nut.

Align marks on the Position Plate and the Position Arm.



NOTE

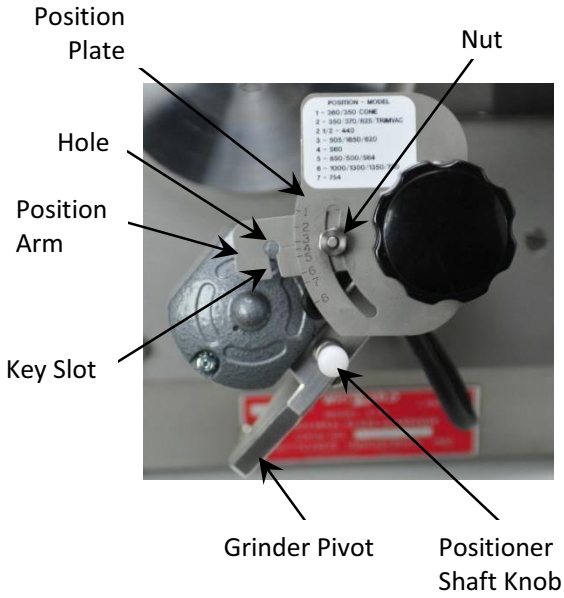
MAKE SURE THAT THE GRINDING WHEEL WILL NOT HIT THE BLADE WHEN RAISING THE GRINDER MOTOR INTO POSITION.

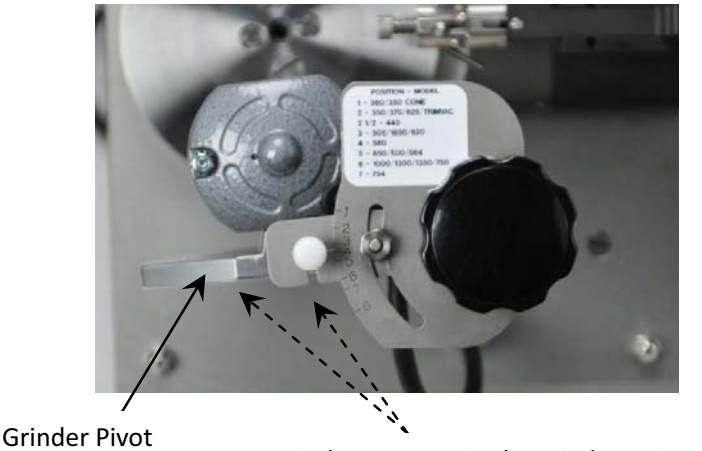
WARNING

DO NOT LIFT GRINDER MOTOR INTO POSITION WITH THE MOTOR TURNED ON.

POSITIONING GRINDER MOTOR TO SHARPEN BLADE (CONTINUED)

- Hold the Grinder Pivot with your left hand and press in the Positioner Shaft Knob.
- Lift the Grinder Pivot upward so the Positioner Shaft Knob enters the key slot of the Position Arm and release the Positioner Shaft Knob into hole of the Position Arm.





GRINDER WHEEL

This Grinder Wheel is a CBN (Borazon) plated wheel-form and **DOES NOT** require dressing of its grinding surfaces. See Cleaning Instructions in this manual.

The following shows the Grinding Wheel surface contact to the different models of blade.

There are different Grinder Wheels for the TRIMVAC® and 350 Cone type blades as shown below:

Description	Part Number
Standard Grinder Wheel	113935
350 Cone Grinder Wheel	173294
TRIMVAC® Grinder Wheel	185396

The TRIMVAC® Grinder Wheel must be installed with the hub toward the blade.

Part # 113935

360, 625, 505, 850, 900-1500, 1850

Part # 113935

350, 620, 500, 564, 750, 754

350 Cone Blade

Part # 173294

TRIMVAC® Blades
Note: Hub of wheel faces the blade.

Part # 185396

SHARPENING THE BLADE

W A R N I N G

EYE INJURY MAY OCCUR!

NEVER OPERATE THIS MACHINE WITHOUT THE EYE SHIELD IN PLACE AND PROPER EYE PROTECTION WORN.

C A U T I O N

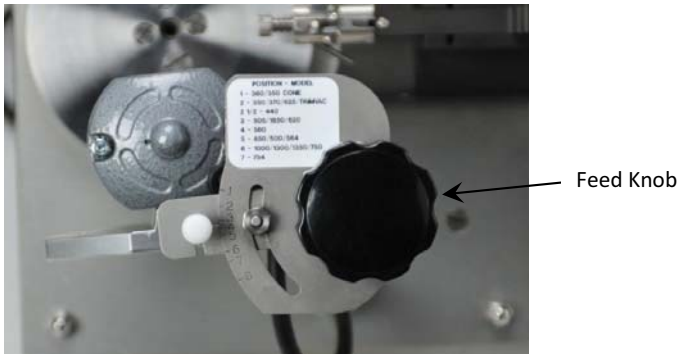
PREMATURE FAILURE OF THE GRINDER WHEEL COULD RESULT IF EXCESSIVE PRESSURE IS APPLIED. THE GRINDING WHEEL SHOULD BE LOWERED AT A CONSTANT RATE.

IT MUST NOT BE JAMMED OR RAPIDLY FORCED INTO THE BLADE.

FATS AND OILS WILL PREMATURELY LOAD THE GRINDING WHEEL. CLEAN BLADES BEFORE AND AFTER SHARPENING.

GRINDER FEED CONTROL

Turning the Feed Knob **Clockwise, feeds the Grinder Wheel into the Blade** and turning it **Counterclockwise, moves the Grinder Wheel away from the blade**.



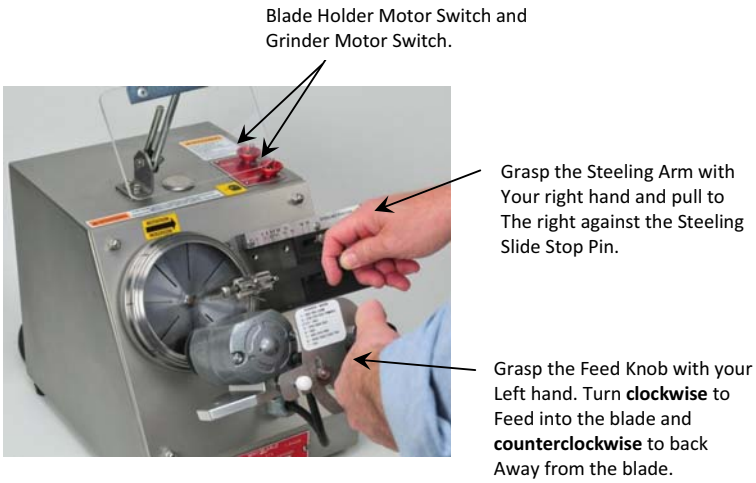
SHARPENING THE BLADE (CONTINUED)

IMPORTANT: Be sure Grinder Wheel is not touching blade.

- Turn on the Blade Holder Motor Switch and Grinder Motor Switch.
- With both Grinder Wheel and Blade Holder rotating, first grasp the Feed Knob with your left hand and **SLOWLY TURN CLOCKWISE** to feed in the Grinder Wheel at a constant rate into the blade until a continuous 360 degree spark is achieved.
- With a continuous spark appearing for a few **COMPLETE** revolutions of the blade, you are now ready to proceed to steel the blade edge.

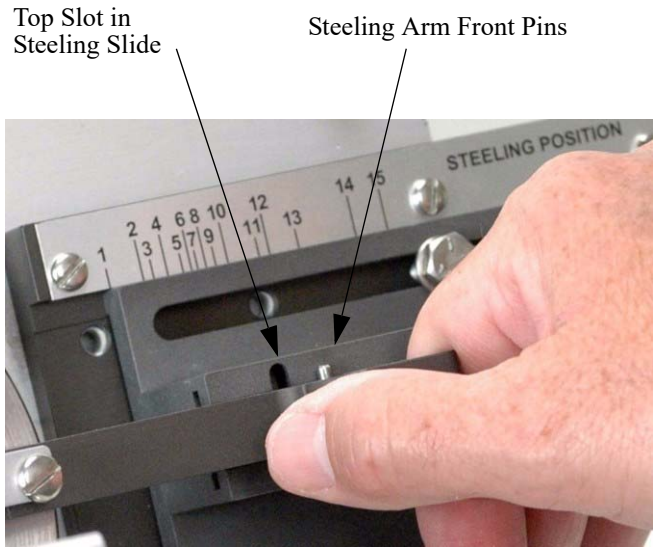
STEELING PROCEDURE FOR THE QUAD HEAD STEELING DEVICE

- With your right hand, grasp the Steeling Arm and swing the Steeling Device toward the center of the blade.
- Slide the Steeling Device Arm slowly to the right until the Steeling Device contacts the inside of the blade cutting edge then pull the Steeling Arm against the Stop Pin of the Steeling Slide
- Hold the Steeling Device Arm against the Stop Pin for a few complete blade revolutions.
- At the same time, release the Steeling Device from the blade edge and back off the Grinder Motor with your left hand by turning the Feed Knob Counter Clockwise.
- Swing the Steeling Device out, away from the blade.
- Turn off the Blade Motor Switch and the Grinder Motor Switch.



STEELING PROCEDURE FOR TRIMVAC® AND 350 CONE STEELING DEVICES

- With your right hand, grasp the Steeling Arm and slide the arm along the top of the Steeling Slide until the Steeling Arm Front Pins fall into the top slot of the Steeling Slide. This will guide the Steeling Device Head into the center of the blade.



STEELING PROCEDURE FOR TRIMVAC® AND 350 CONE STEELING DEVICES (CONTINUED)

- Slide the Steeling Device Arm slowly to the right until the Steeling Device contacts the inside of the blade cutting edge.
- Hold the Steeling Device against the blade cutting edge with "**light**" pressure for a few complete blade revolutions.
- At the same time, release the Steeling Device from the blade edge and back off the Grinder Motor with your left hand by turning the Feed Knob Counter Clockwise.
- Swing the Steeling Device out, away from the blade.
- Turn off the Blade Motor Switch and the Grinder Motor Switch.

WARNING

WAIT FOR THE GRINDER WHEEL TO COME TO A COMPLETE STOP.

LOWERING THE GRINDER MOTOR AFTER SHARPENING AND STEELING BLADE

- Lower the Grinder Motor by holding the Grinder Pivot with your left hand and pressing the Positioner Shaft Knob, then slowly swinging the Grinder Motor down until it comes to a stop. **DO NOT LET THE MOTOR DROP FREELY!**

REMOVING THE BLADE

WARNING

SHARP BLADES MAY CAUSE CUT INJURY!

FOR PROPER PROTECTION OF HANDS, A PROTECTIVE GLOVE SHOULD BE USED WHEN OPERATING THIS EQUIPMENT AND DURING THE HANDLING OF BLADES.

- Loosen the Blade Holder Screw but do not remove.
- Carefully lift the blade from the Blade Holder.

CAUTION

AFTER SHARPENING, CAREFULLY WASH BLADE WITH HOT, SOAPY WATER AND A SMALL BRUSH.

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.

FAULT DETECTION AND CORRECTION

PROBLEM	PROBLEM 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 Cleaning Instructions in this manual)
Blade Holder Does Not Run	Gearmotor/capacitor failure	Replace
	Broken drive belt	Replace
Blade Holder Slows Down/Stops During Sharpening	Loose Drive Belt	Tighten Belt
	Loose Pully	Tighten Pully
Blade Loose in Holder	Worn Blade	Discard
Blade not Steeling Properly	Worn steeling device	Replace
Excessive Sharpening Time	Worn grinder wheel. Loaded (dirty) grinder wheel	Replace. Clean Wheel. See Cleaning Instructions in this manual

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Section 5 Maintenance

CONTENTS OF THIS SECTION

Maintenance / Cleaning 5-2
To Position the Grinder Motor 5-2
To Install the Grinder Wheel on the Motor Shaft 5-3
To Set the Grinder Wheel Position 5-4
To Set the Grinder Feed Travel 5-6

NOTE

ALL MAINTENANCE PROCEDURES SHOULD BE PERFORMED BY QUALIFIED PERSONNEL.

MAINTENANCE / CLEANING

GENERAL:

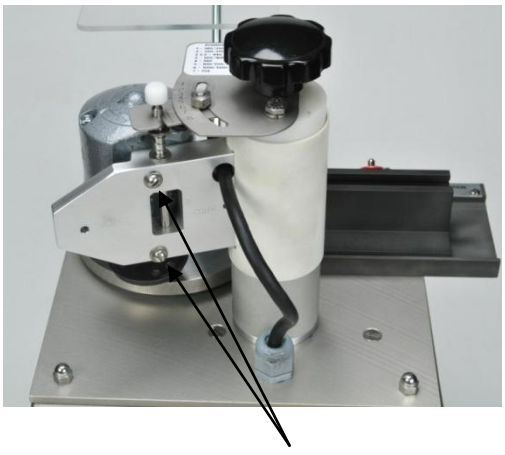
The Whizard® Model 214 Blade Sharpener has been designed to be practically maintenance free. It is suggested that the sharpener be completely cleaned periodically with the use of a small brush and vacuum cleaner. (Do not use pressure air hose to blow off grinding dust).

WARNING

DISCONNECT POWER SOURCE BEFORE MAKING ANY ADJUSTMENTS

TO POSITION THE GRINDER MOTOR

- Loosen the two motor mounting screws under the motor pivot.
- Rotate the motor counterclockwise until all clearance in the mounting holes are taken up, then tighten the mounting screws.

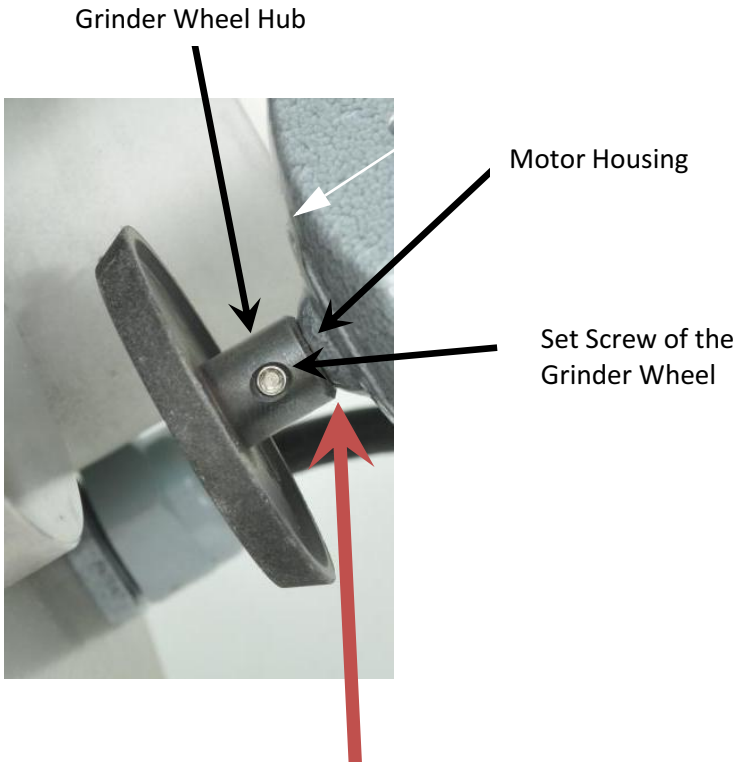


Motor Mounting Screws

Rotate Motor Counterclockwise.

TO INSTALL THE GRINDER WHEEL ON THE MOTOR SHAFT

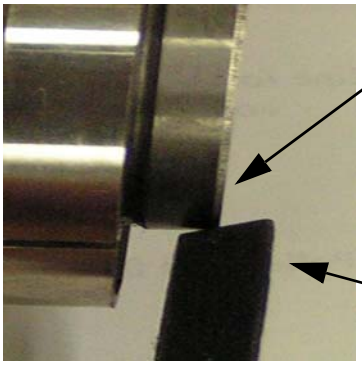
- Place the Grinding Wheel on the Motor Shaft so the flat on the Motor Shaft and the Set Screw of the Grinder Wheel are aligned and with 1/64 inch (.4mm) space between the end of the Wheel Hub and the front of the Motor Housing.
- Tighten the Set Screw on the Grinder Wheel with the 3/32 Hex Wrench provided.



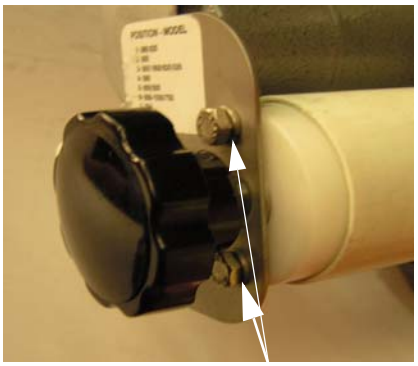
1/64 inch (4mm) space between the end of the Grinder Wheel Hub and the front of the Motor Housing.

TO SET THE GRINDER WHEEL POSITION

- Place a Model 620 blade (or similar angular type model blade) into the Blade Holder and place the Grinder Motor in its respective position.
- With the Grinder Motor turned OFF, feed the Grinder Motor in so the angled surface of the Grinder Wheel contacts the blade. Contact should be as shown.



If the blade and Grinder Wheel do not make contact as shown, loosen the two screws on the Position Plate and rotate the Grinder Motor, Motor Pivot and Position Plate as a unit until the blade to wheel contact is as shown.



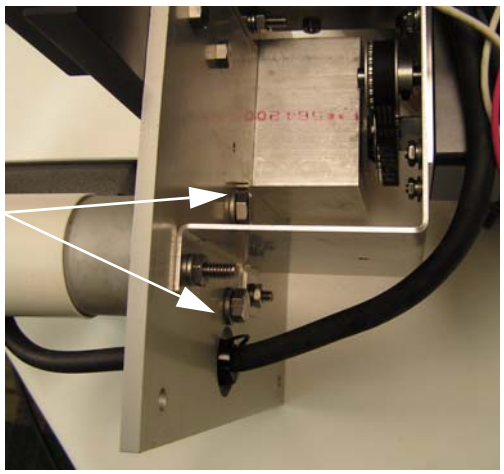
Loosen Screws to Rotate the Grinder Motor, Motor Pivot and Position Plate.

Grasp the Motor Pivot and Rotate Clockwise Against the Blade.

TO SET THE GRINDER WHEEL POSITION (CONTINUED)

ADDITIONAL ADJUSTMENT

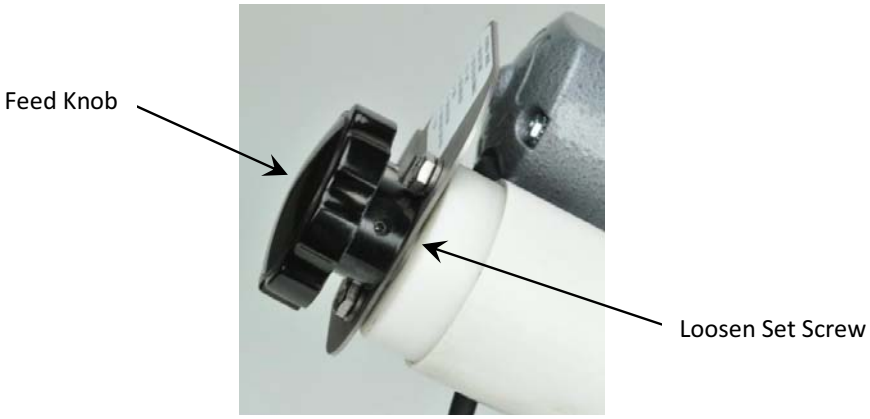
Should additional adjustment be needed, remove the Base Plate Assembly from the Cabinet and loosen the Pedestal Mounting Screws on the rear side of the Base Plate. Rotate the Grinder Motor, Motor Pivot and Position Plate as a unit until the Blade and Grinder Wheel make contact, then tighten all screws.



TO SET THE GRINDER FEED TRAVEL

This setting procedure will prevent the Grinder Wheel from hitting the Blade Holder and ensures the Travel Range of the Grinder Assembly for sharpening the various blade heights.

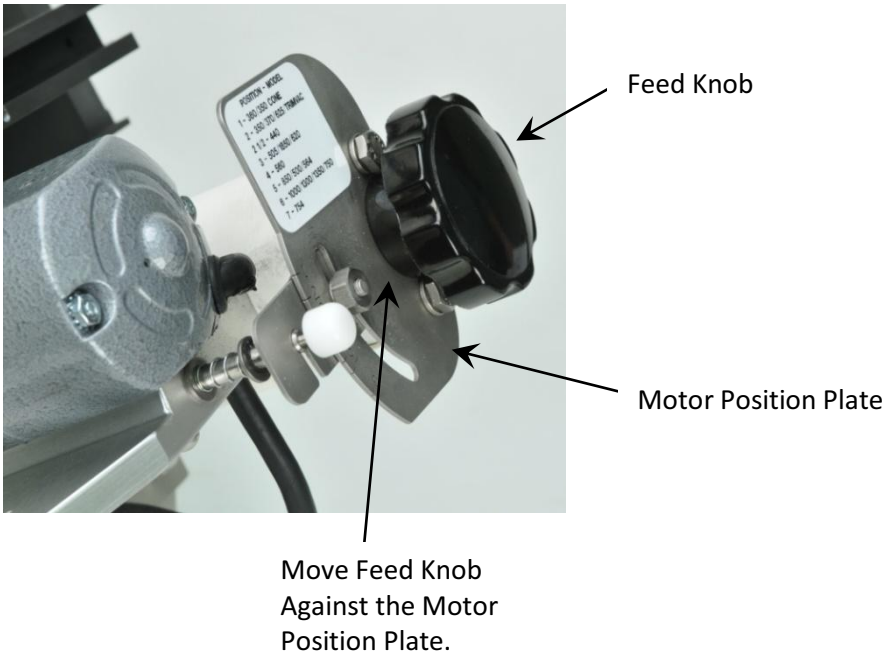
- With Grinder Motor turned OFF, install a Blade Holder and place the Grinder Motor in its respective position.
- Loosen the Feed Knob Set Screw approximately 1/4 turn with the 3/32 Hex Wrench provided. This will allow the Feed Knob to slide freely on the shaft and still turn the shaft.



- With the Set Screw still loosened, turn the Feed Knob **Clockwise**, running the Grinder Motor in toward the Blade Holder to within 1/64 inch (.4mm) from the top of the Blade Holder.

TO SET THE GRINDER FEED TRAVEL (CONTINUED)

- Move and Hold the Feed Knob against the Motor Position Plate then tighten the Set Screw.



- Turn the Feed Knob **Counterclockwise** to move the Grinder Motor to its full back position.

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Section 6 Cleaning

CONTENTS OF THIS SECTION

Periodic Cleaning During Use 6-2
Cleaning the Grinding Wheel 6-2
Cleaning the Steeling Device After Daily Use 6-3
Cleaning Solutions 6-4

PERIODIC CLEANING DURING USE

While the Whizard® Model 214 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)**.

CLEANING THE GRINDING WHEEL

After approximately every 100 blades sharpened, remove the wheel and clean, using a brush and warm, soapy water. For best results, clean with Bettcher® EXTRA© Heavy Duty Cleaner, diluted according to the directions on the container. Rinse thoroughly with water.

NOTE
THE SHARPENER REQUIRES NO LUBRICATION.

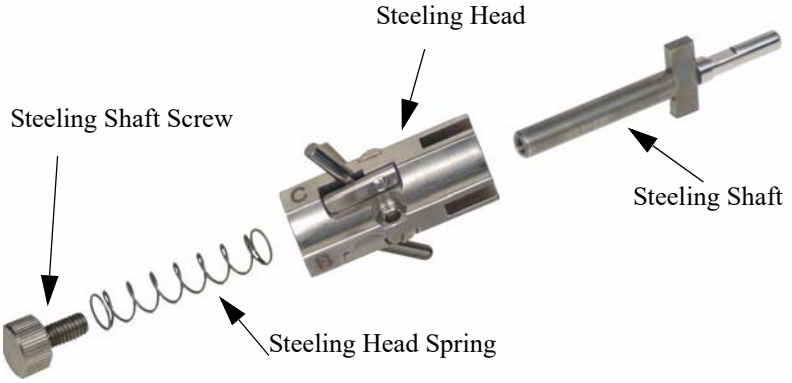
NOTE
DO NOT USE PRESSURE AIR HOSE TO BLOW OFF GRINDING DUST.

CLEANING THE STEELING DEVICE AFTER DAILY USE

- Remove the Steeling Shaft Screw, the Steeling Head Spring, and the Steeling Head from the Steeling Shaft.
- Clean any grinding dust out of the bore of the Steeling Head.
- Clean the Steeling Shaft and Steeling Head Spring. A light, greaseless solvent such as alcohol or acetone can be used, as long as the parts are dry when reassembled. **Do Not Use Any Liquid Lubricants On These Parts! Liquid Lubricants Will Cause The Grinding Dust To Form A Paste.**
- Reassemble the parts, starting with the Steeling Head, then the Steeling Head Spring, and finally, the Steeling Shaft Screw.
- Tighten the Steeling Shaft Screw securely with your fingers.

NOTE

DO NOT USE PRESSURE AIR HOSE TO BLOW OFF GRINDING DUST.



NOTE

DO NOT USE ANY LIQUID LUBRICANTS ON THESE PARTS! LIQUID LUBRICANTS WILL CAUSE THE GRINDING DUST TO FORM A PASTE.

CLEANING SOLUTIONS

For best results, clean with Bettcher® EXTRA© Heavy Duty Cleaner, diluted according to the directions on the container. Rinse thoroughly with water.

Section 7 Service Parts

CONTENTS OF THIS SECTION

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Steeling Device Assembly 7-8
Drive Motor Assembly 7-10
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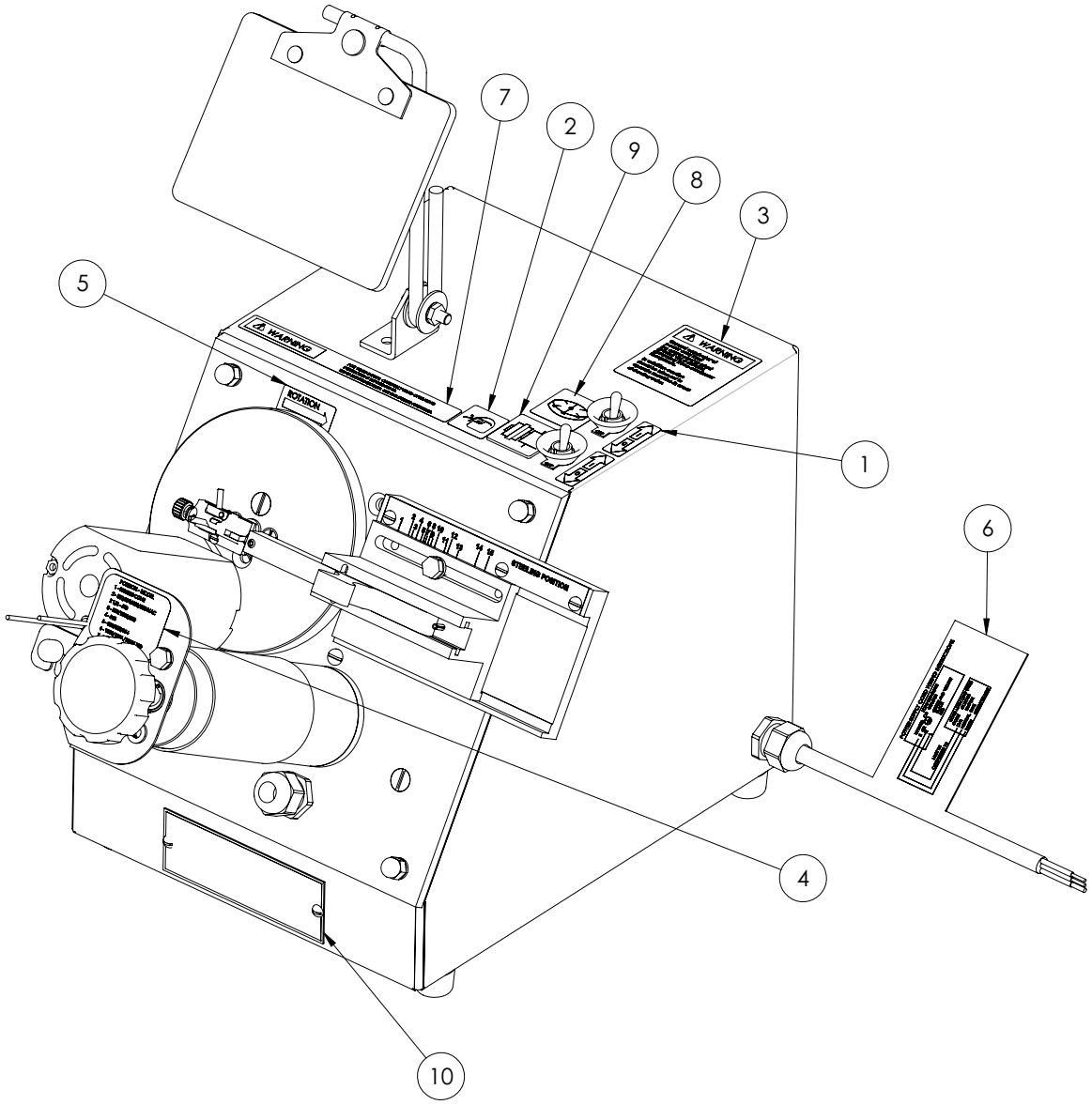
CAUTION

USE ONLY REPLACEMENT PARTS MANUFACTURED BY BETTCHER INDUSTRIES, INC. THE USE OF SUBSTITUTE PARTS WILL VOID THE WARRANTY AND MAY CAUSE INJURY TO OPERATORS AND/OR DAMAGE THE EQUIPMENT.

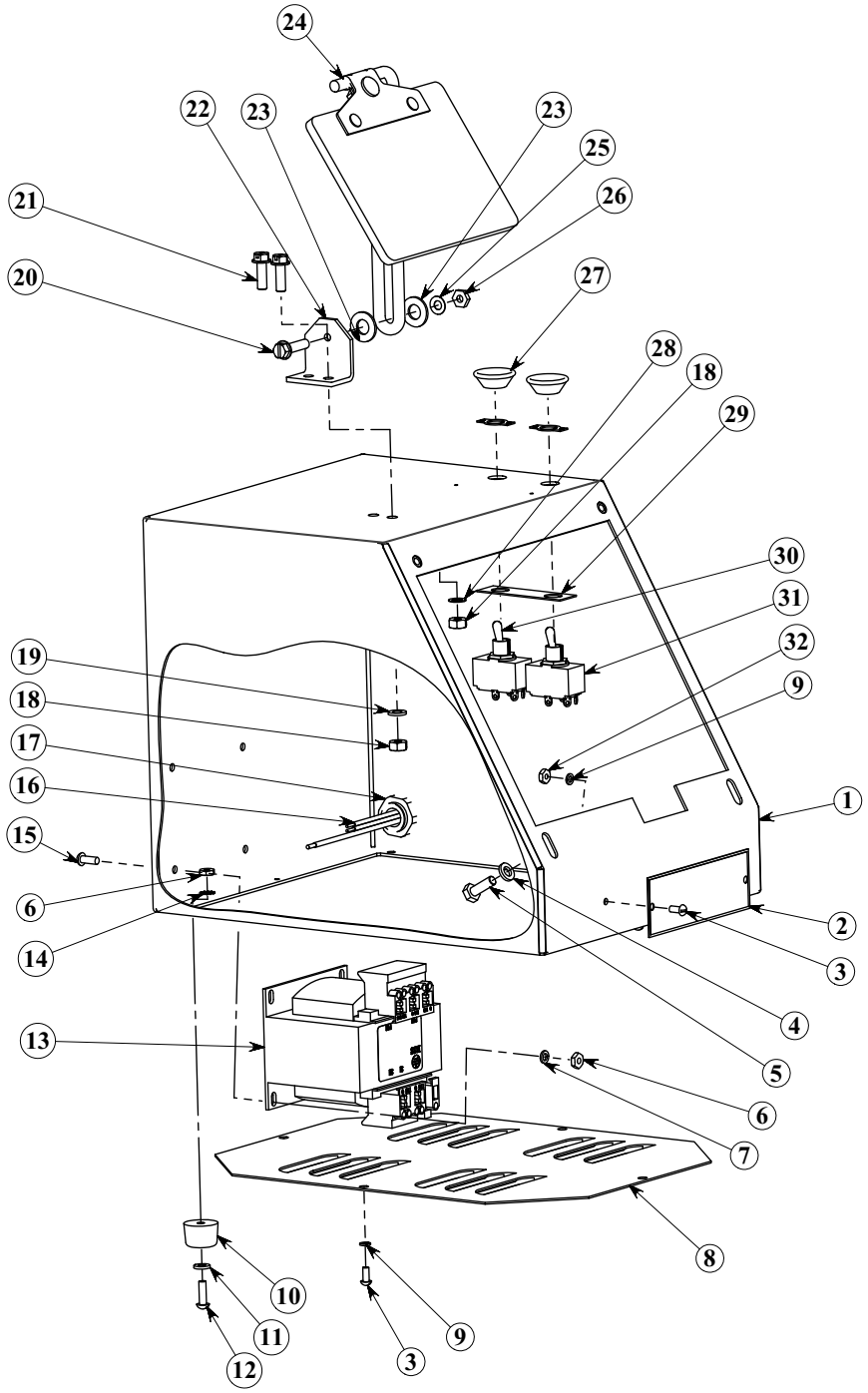
EXTERNAL LABEL COMPONENTS



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	185381	Specification Plate	1

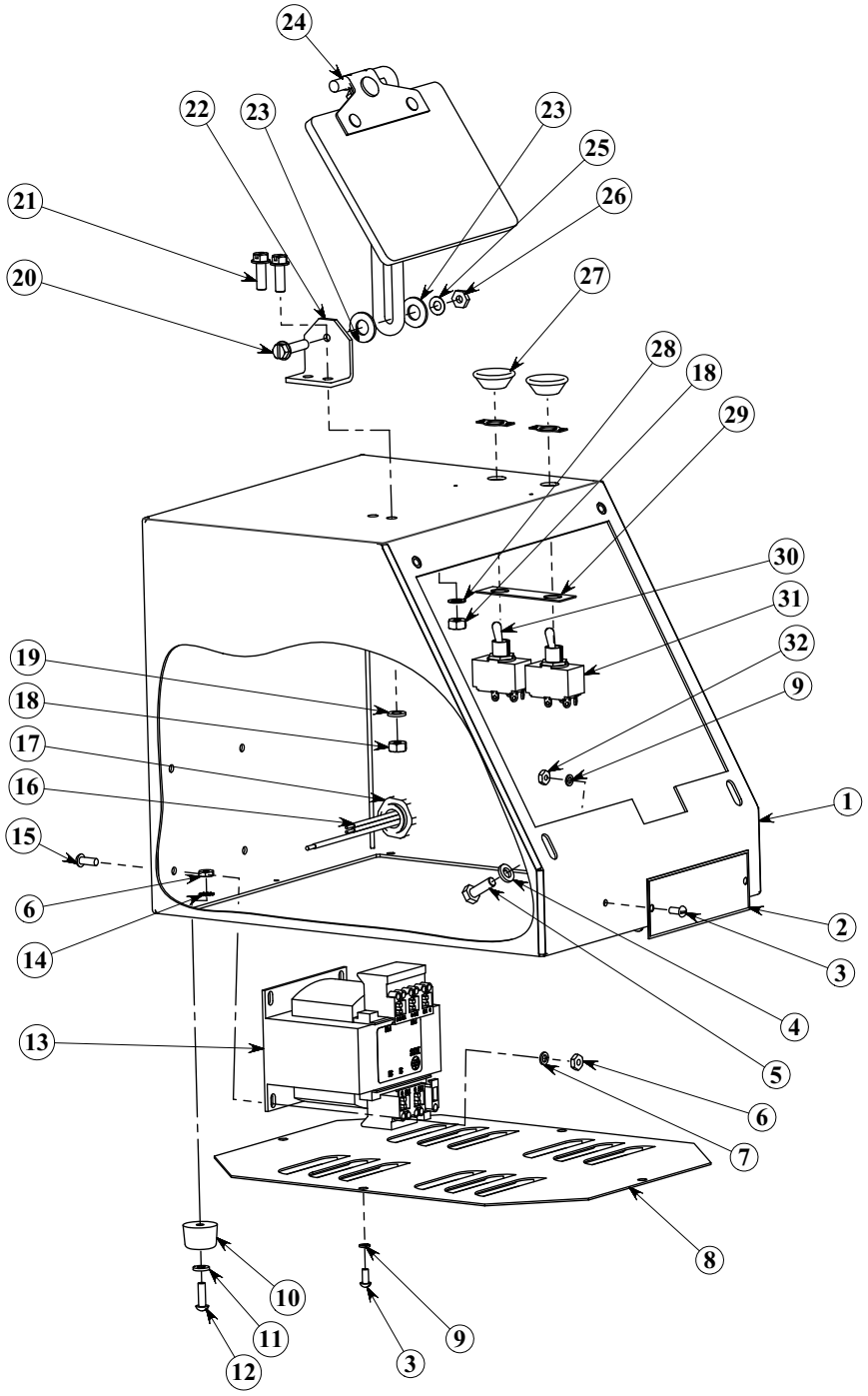
CABINET ASSEMBLY



CABINET ASSEMBLY (CONTINUED)

Item	Part Number	Description	Qty.
1	113945	Cabinet	1
2	185381	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

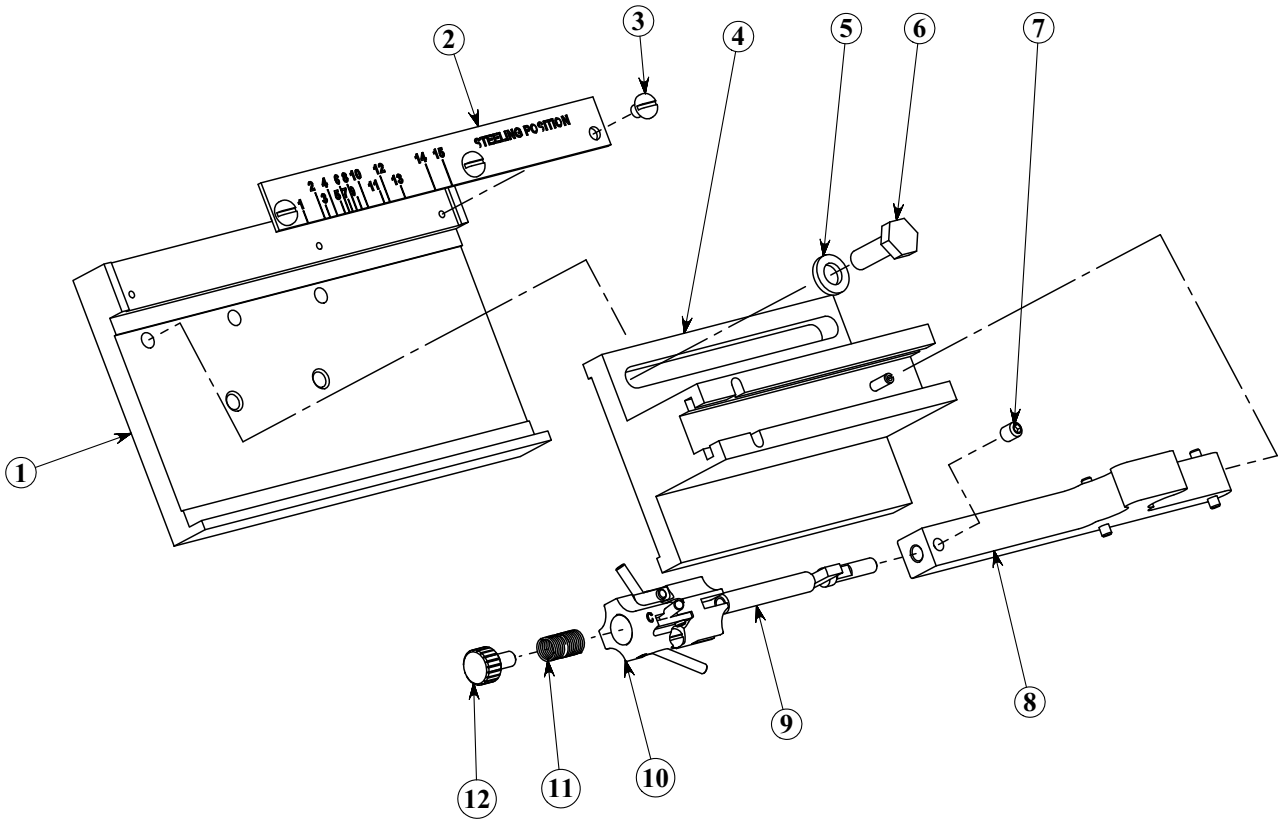
CABINET ASSEMBLY (CONTINUED)



CABINET ASSEMBLY (CONTINUED)

Item	Part Number	Description	Qty.
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

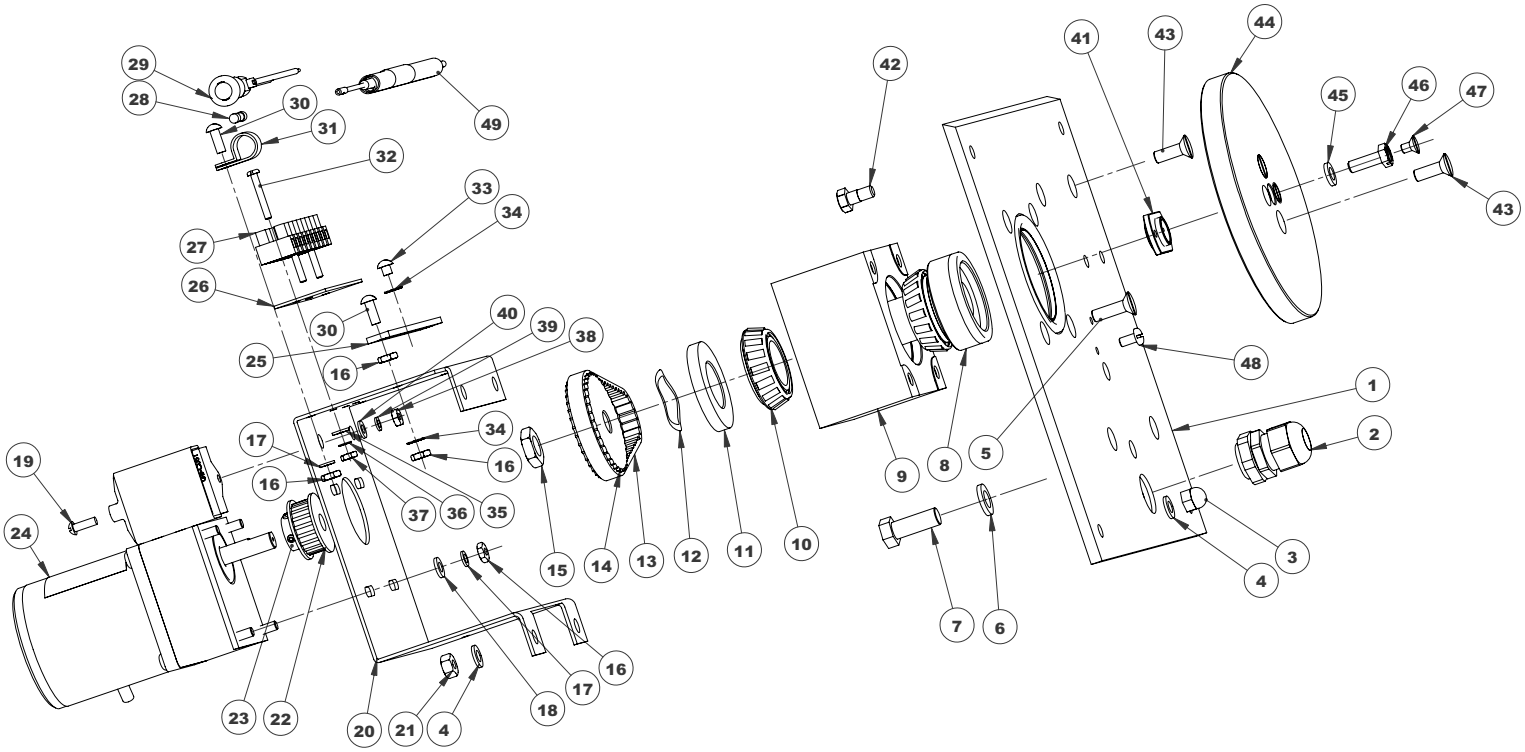
STEELING DEVICE ASSEMBLY



STEELING DEVICE ASSEMBLY (CONTINUED)

Item	Part Number	Description	Qty.
1	185340	Slide Base	1
2	185159	Steeling Position Plate	1
3	123250	Screw #8-32 x 3/16	3
4	185344	Steeling Slide	1
5	120296	Flat Washer 1/4	1
6	121408	Hex Screw 1/4-20 x 3/4	1
7	120053	Screw #10-32 x 1/4	2
8	185345	Steeling Arm	1
9	185171	Steeling Shaft	1
10	185376	Steeling Head (Quad) Assembly	1
11	121642	Spring	1
12	185172	Steeling Shaft Screw	1

DRIVE MOTOR ASSEMBLY



DRIVE MOTOR ASSEMBLY (CONTINUED)

Item	Part Number	Description	Qty.
1	113937	Base with Shaft Seal	1
2	123003	Connector	1
3	120718	Acorn Nut 1/4-20	4
4	120220	Lock Washer 1/4	8
5	120768	Flat Screw 1/4-20 x 7/8	4
6	120221	Washer 3/8	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 1/2-13 L.H.	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 1/4-20	4
22	185403	Drive Pulley	1

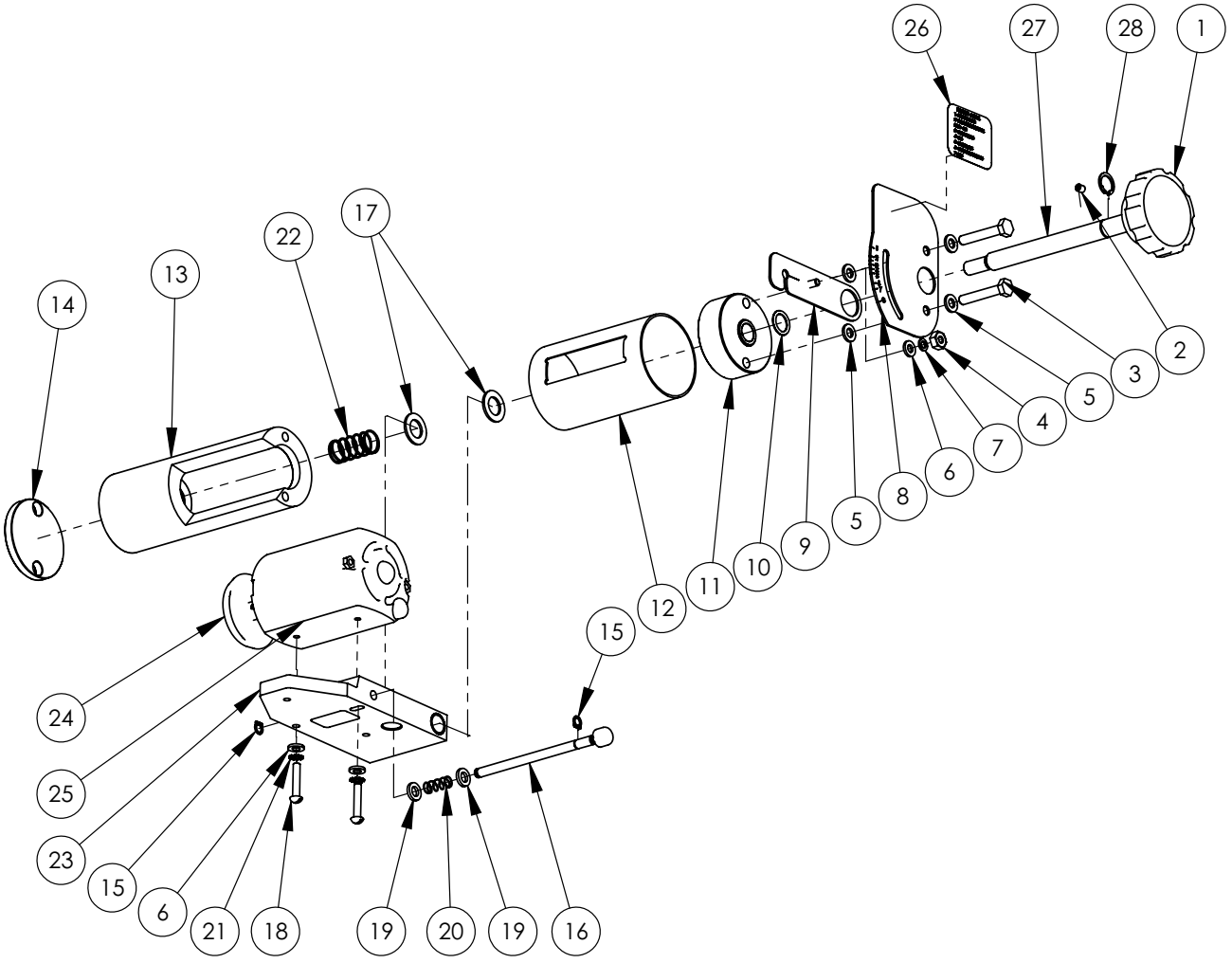
DRIVE MOTOR ASSEMBLY (CONTINUED)

Item	Part Number	Description	Qty.
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 3.15A	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	5
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

DRIVE MOTOR ASSEMBLY (CONTINUED)

Item	Part Number	Description	Qty.
41	185285	Nut Base	1
42	185346	Base Screw	2
43	120132	Screw 1/4-20 x 3/4	6
44	185208	Blade Holder Base	1
45	120296	Flat Washer 1/4	2
46	185300	Blade Holder Screw	1
47	123257	Screw #10-32 x 5/16	2
48	120754	Screw #10-32 x 3/8	1
49	143010	Speed Control Kit	1

GRINDER MOTOR ASSEMBLY



GRINDER MOTOR ASSEMBLY (CONTINUED)

Item	Part Number	Description	Qty.
1	113923	Feed Knob	1
2	120053	Screw #10-32 x 1/4	1
3	120563	Hex Screw 1/4-20 x 1 1/2	2
4	185398	Motor Position Nut	1
5	120220	Lock Washer 1/4	4
6	120281	Flat Washer #10	1
7	120204	Lock Washer #10	1
8	163235	Position Plate	1
9	163236	Position Arm	1
10	122335	O-Ring	1
11	113925	Pedestal Cap	1
12	113926	Dust Shield	1
13	113929	Pedestal with Bearing	1
14	185343	Pedestal Spacer	1
15	122020	Retaining Ring	2
16	113933	Positioner Assembly Shaft	1
17	120275	Flat Washer 1/2	2
18	120140	Round Screw #10-32 x 1	2
19	120296	Flat Washer 1/4	2
20	121609	Compression Spring	1

GRINDER MOTOR ASSEMBLY (CONTINUED)

Item	Part Number	Description	Qty.
21	120232	Lock Washer #10	2
22	121607	Compression Spring	1
23	113934	Pivot Motor Assembly	1
24	113935	Grinder Wheel	1
25	185680	Motor, Grinder Assembly	1
26	163238	Selector Label	1
27	113924	Pedestal Shaft	1
28	122021	Retaining Ring	1

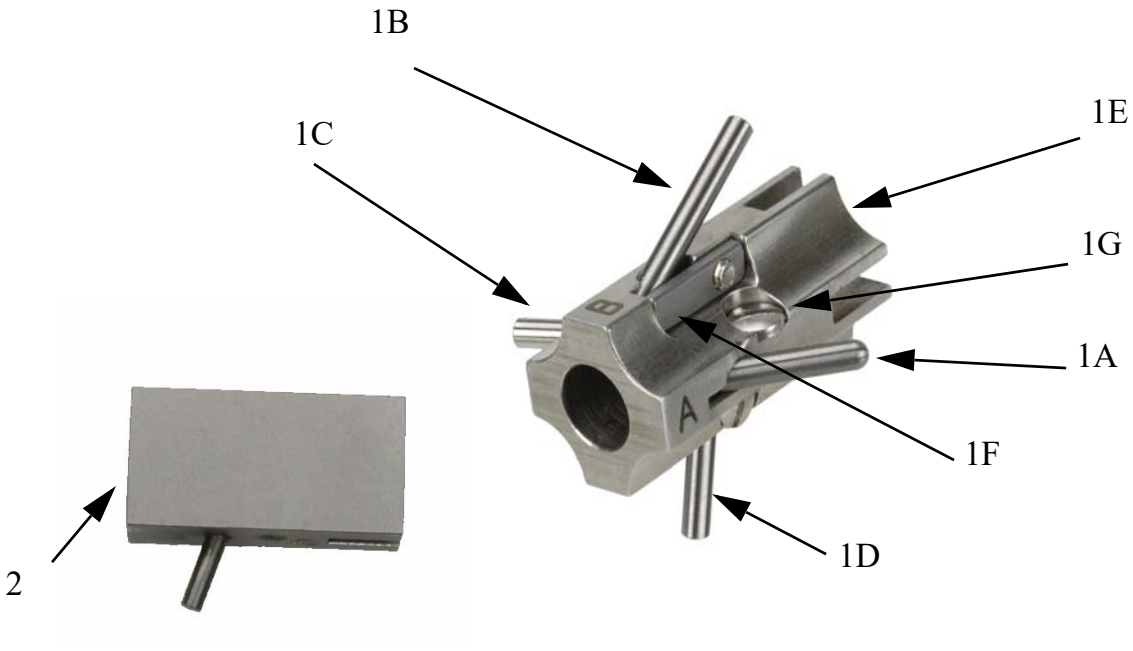
*Also Available: 185694 Replacement Brush for Grinder Motor 185680.

ACCESSORY LIST- BLADE HOLDERS

Blade Holder Part Number	Blade Holder Model Number	Used with Blade Models
185223	350-620-500M2/Q	350M2/350M2LP/Q350/360M2/Q360/620M2/620M2LP/ Q620/625M2/Q625/500M2/500M2LP/Q500/505M2/Q505
105464	X350-X620-X500	X350/X360/X620/X625/X500/X505/X350LP/X620LP/ X500LP
107143	X440-X564	X440/X564
185257	750-850-1850M2/Q	750M2/750M2LP/Q750/850M2/Q850/1850M2/Q1850
105446	X750-X850-X1850	X750/X850/X1850/X750LP
185291	1000-1300M2/Q	1000M2/Q1000/1300M2/Q1300
105461	X1000-X1300	X1000/X1300
185227	1930-1940M2	1930M2/1940M2
185234	440M2/Q	440M2/Q
185236	564M2	564M2
185235	754M2	754M2

ACCESSORY LIST- STEELING HEADS

Item	Part Number	Description	Used with Blade Model(s)
1	185376	Steeling Head (Quad) Assembly	All Except Those Listed
1A	185176	"A" Steeling Rod	----------
1B	185175	"B" Steeling Rod	----------
1C	185382	"C" Steeling Rod	----------
1D	185382	"D" Steeling Rod	----------
1E	185377	Steeling Head Only	----------
1F	185378	Clamp Plate (4)	----------
1G	120852	Screw #4-40 (4)	----------
2	185228	350M2/M2L/Q	350M2/350M2L/Q350

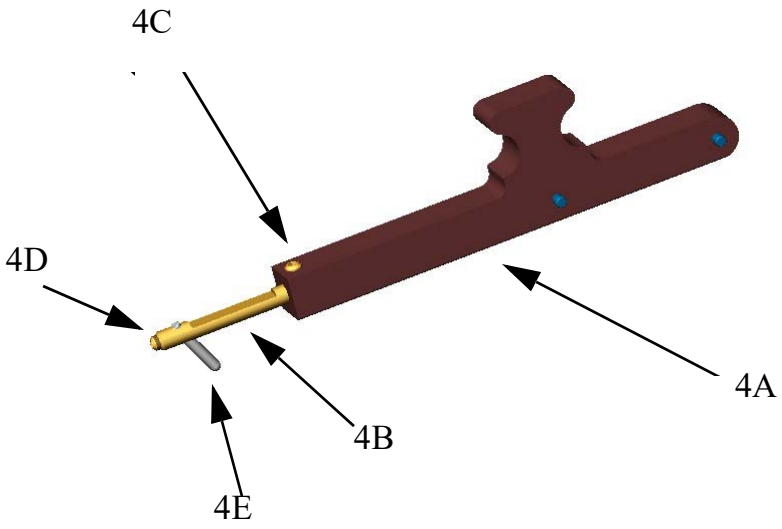


ACCESSORY LIST-STEELING HEADS (CONTINUED)

Item	Part Number	Description	Used with Blade Model(s)
3	185390	TRIMVAC® Steeling Head Assembly	TRIMVAC®/AMX14/AMX18
3A	185345	Steeling Arm Assembly	----------
3B	185391	Arm Extension	----------
3C	120754	Screw #10-32	----------
3D	120053	Set Screw #10-32	----------
3E	185389	Insert	

ACCESSORY LIST-STEELING HEADS (CONTINUED)

Item	Part Number	Description	Used with Blade Model(s)
4	185421	Cone Blade Steeling Head Assembly	350 Cone Blade
4A	185345	Steeling Arm Assembly	----------
4B	185422	Steeling Shaft Cone Blade	----------
4C	120053	Set Screw #10-32	----------
4D	120053	Set Screw #10-32	----------
4E	113961	Steeling Rod	----------



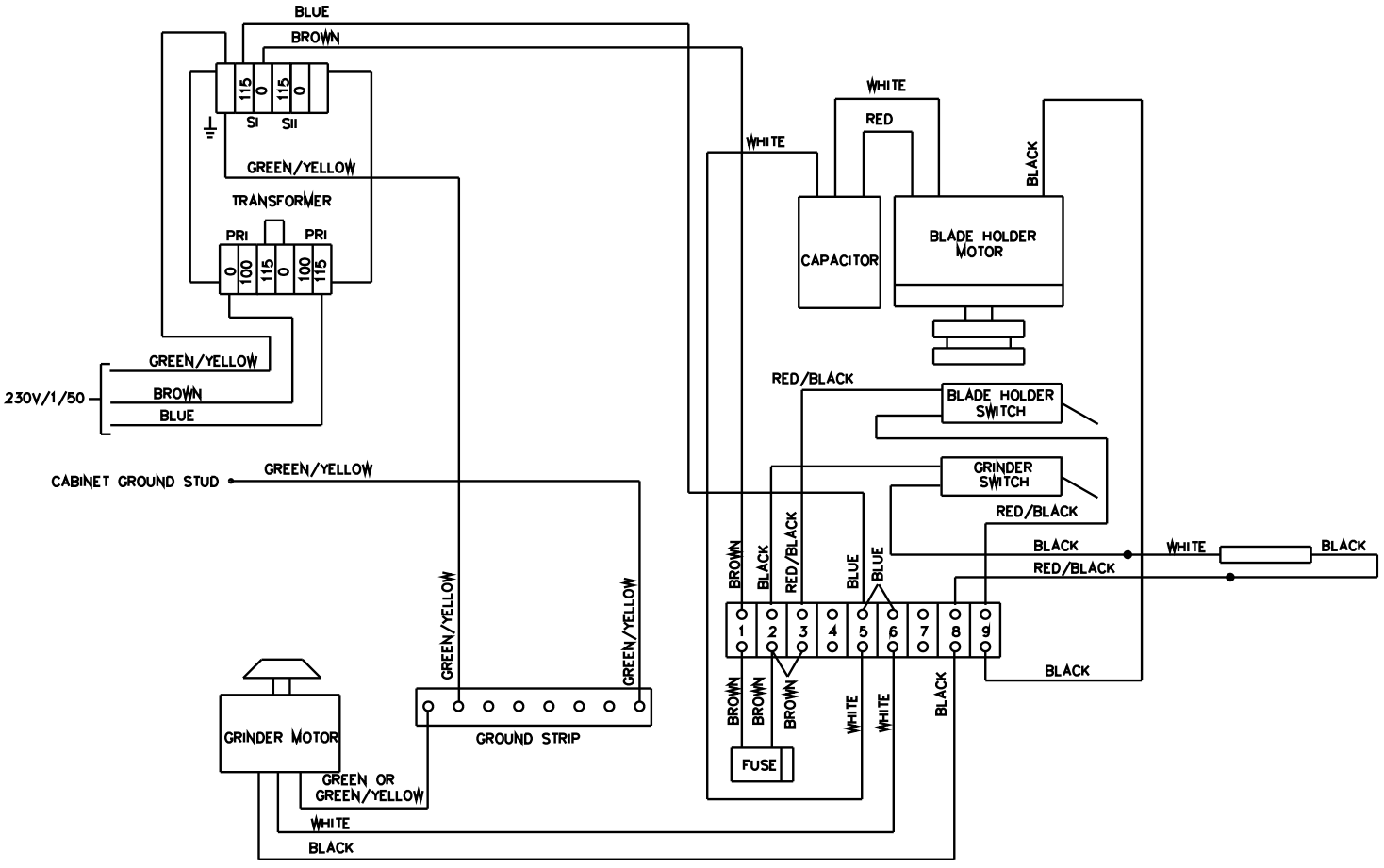
ACCESSORY LIST- GRINDER WHEELS

Item	Part Number	Description	Used with Blade Model(s)
1	113935	Standard Grinder Wheel	All Except Listed Below
2	173294	Grinder Wheel-Cone Blade	Cone Blade
3	185396	Grinder Wheel-TRIMVAC®	All TRIMVAC®

ACCESSORY LIST - BETTCHER® WHIZARD® BLADE WEAR GAUGES

Item	Part Number	Used with Blade Model(s)
1	163917	350M2
2	163918	360M2/350M2LP/Q350/Q360/X350/X360/X350LP
3	107232	X440
4	173576	620M2
5	163924	625M2/Q625/X625
6	173577	620M2LP/Q620/X620/X620LP
7	163920	500M2/505M2/Q505/X505
8	173575	500M2LP/Q500
9	107233	X500/X500LP
10	163922	564M2/X564
11	163925	750M2
12	173578	750M2LP/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

WIRING DIAGRAM



230V WIRING DIAGRAM

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Section 8

Contact and Document Information

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Contact Address and Phone 8-2
Document Identification 8-2
Software and Duplication 8-2

CONTACT ADDRESS AND PHONE

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

Bettcher Industries, Inc.
P.O. Box 336
Vermilion, Ohio 44089
USA
Tel: +1 440/965-4422
Fax: +1 440/328-4535

BETTCHER GmbH
Pilatusstrasse 4
CH-6036 Dierikon
SWITZERLAND
Tel: +011-41-41-348-0220
Fax: +011-41-41-348-0229

Bettcher do Brasil Comércio de Máquinas Ltda.
Av. Fagundes Filho, 145 Cj 101/102 - São Judas
São Paulo - SP
CEP 04304-010 - BRASIL
Tel: +55 11 4083 2516
Fax: +55 11 4083 2515

DOCUMENT IDENTIFICATION

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

Document ID:	Manual #185349
Document Description:	Operating Instructions and Spare Parts List For Whizard® 214 Blade Sharpener, 230V
Reissued:	July 13, 2018

Operating Instructions for other Whizard® Models may be requested by quoting the model designation of the tool as shown on the identification plate.®

SOFTWARE AND DUPLICATION

For more information, contact your local Representative or:

Bettcher Industries, Inc.
Administrative Assistant/Engineering Department
PO Box 336
Vermilion, Ohio 44089
USA