MODEL G0801/G0802
6" x 26" VERTICAL MILL
OWNER'S MANUAL
(For models manufactured since 09/15)

#WK17759 PRINTED IN CHINA
V1.05.18

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

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INTRODUCTION

Contact Info

We stand behind our machines! If you have questions or need help, contact us with the information below. Before contacting, make sure you get the **serial number** and **manufacture date** from the machine ID label. This will help us help you faster.

Grizzly Technical Support
1815 W. Battlefield
Springfield, MO 65807
Phone: (570) 546-9663
Email: techsupport@grizzly.com

We want your feedback on this manual. What did you like about it? Where could it be improved? Please take a few minutes to give us feedback.

Grizzly Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

Machine Differences

Models G0801 and G0802 are the same machines in all respects with one exception: Model G0802 comes with an X-axis power feed unit.

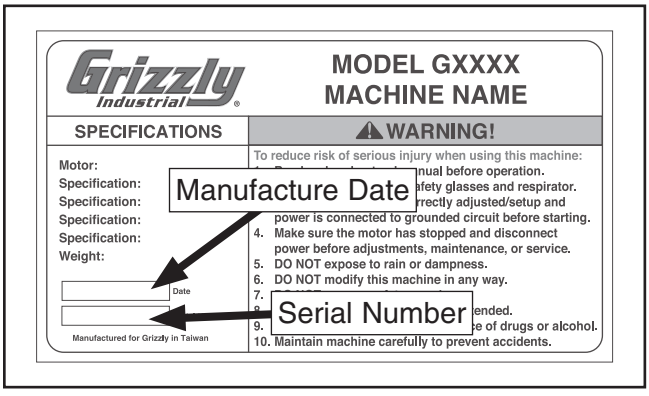
Manual Accuracy

We are proud to provide a high-quality owner's manual with your new machine!

We made every effort to be exact with the instructions, specifications, drawings, and photographs in this manual. Sometimes we make mistakes, but our policy of continuous improvement also means that **sometimes the machine you receive is slightly different than shown in the manual**.

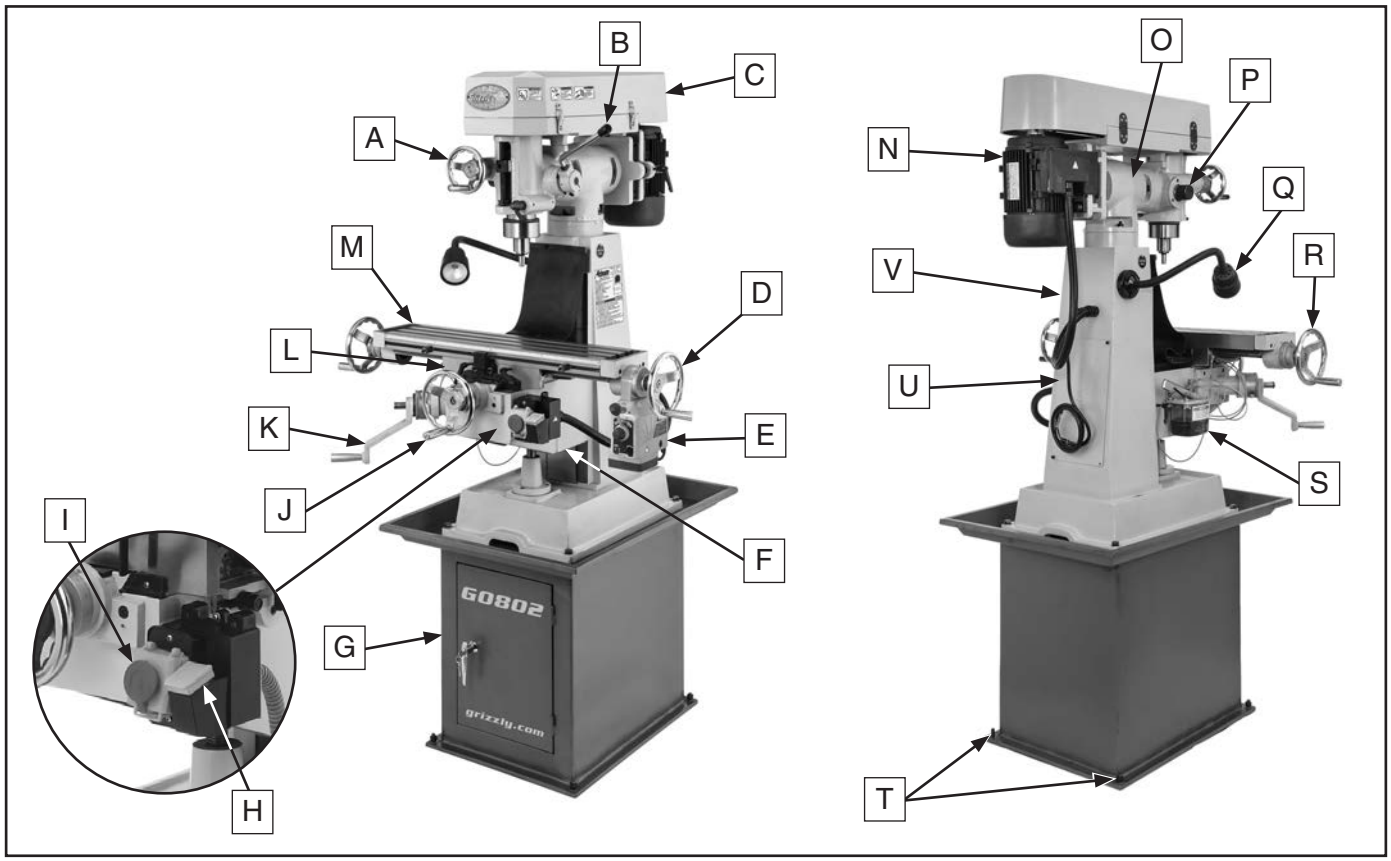
If you find this to be the case, and the difference between the manual and machine leaves you confused or unsure about something, check our website for an updated version. We post current manuals and manual updates for free on our website at **www.grizzly.com**.

Alternatively, you can call our Technical Support for help. Before calling, make sure you write down the **Manufacture Date** and **Serial Number** from the machine ID label (see below). This information is required for us to provide proper tech support, and it helps us determine if updated documentation is available for your machine.

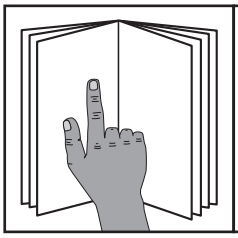


Identification

Become familiar with the names and locations of the controls and features shown below to better understand the instructions in this manual.



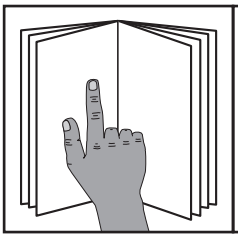
A. Fine Downfeed Handwheel
B. Coarse Downfeed Lever
C. V-Belt Cover
D. X-Axis Longitudinal Handwheel (Right)
E. Longitudinal Power Feed (Model G0802)
F. Knee
G. Cabinet Stand/Storage Compartment
H. Spindle Direction Switch
I. Power ON/OFF Switch
J. Cross Handwheel (Y-Axis)
K. Knee Crank (Z-Axis)
L. Cross Slide
M. Table
N. Spindle Motor
O. Turret
P. Downfeed Selection Knob
Q. Halogen Work Light
R. X-Axis Longitudinal Handwheel (Left)
S. One-Shot Way Oiler
T. Floor Mounting Points
U. Electrical Panel Access Cover
V. Column



⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using machine.

Controls & Components



⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using machine.

Refer to **Figures 1–2** and the following descriptions to become familiar with the basic controls and components of this machine. Understanding these items and how they work will help you understand the rest of the manual and stay safe when operating this machine.

Downfeed Controls

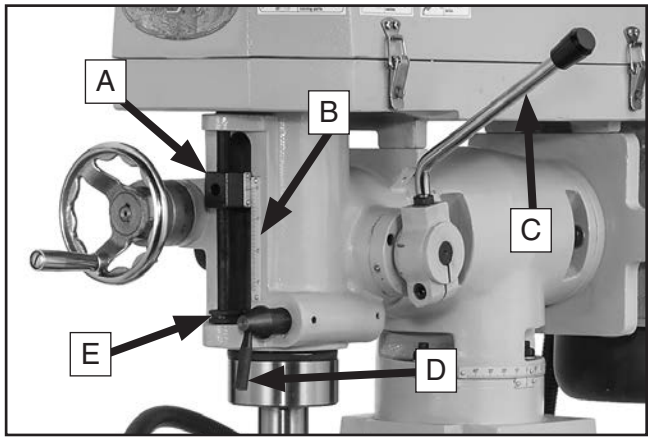


Figure 1. Downfeed controls viewed from the right side.

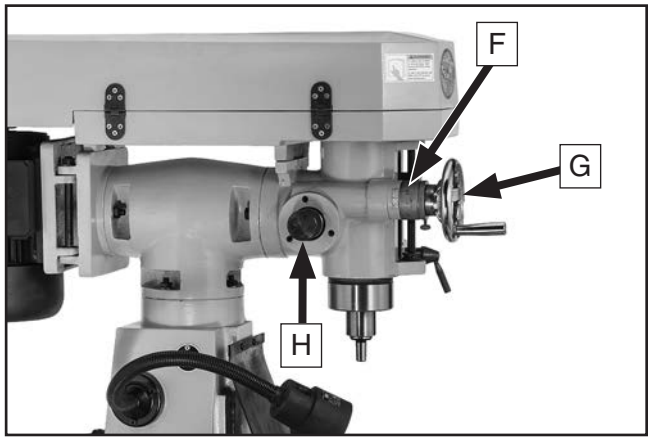


Figure 2. Downfeed controls viewed from the left side.

A. Quill Dog: Moves with the quill. Use the pointer on the side with the downfeed scale to determine the depth of downfeed travel.

B. Downfeed Scale: Displays the amount of quill travel in inches.

C. Coarse Downfeed Lever: When this lever is enabled with the downfeed selector, it raises/lowers the quill quickly.

D. Quill Lock Lever: Locks the quill in place but does not affect spindle rotation.

E. Downfeed Stop & Lock Wheels: Stops the downfeed travel when the quill dog reaches this point. Set the stop wheel along the downfeed scale for the desired depth of cut, then secure it in place by tightening the lock wheel.

F. Graduated Collar (Fine Downfeed): Displays quill travel in 0.001" increments when the fine downfeed handwheel is used. One full revolution represents 0.100" of quill travel.

G. Fine Downfeed Handwheel: When enabled, it raises/lowers the quill in small increments.

H. Downfeed Selector: Enables either the coarse or fine downfeed control. Tighten the selector to enable the fine downfeed handwheel, and loosen it to enable the coarse downfeed lever.

Table Controls

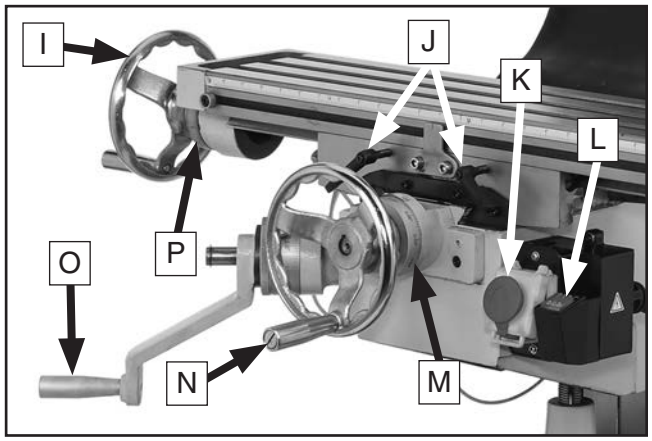


Figure 3. Table control handwheels and X-axis locks.

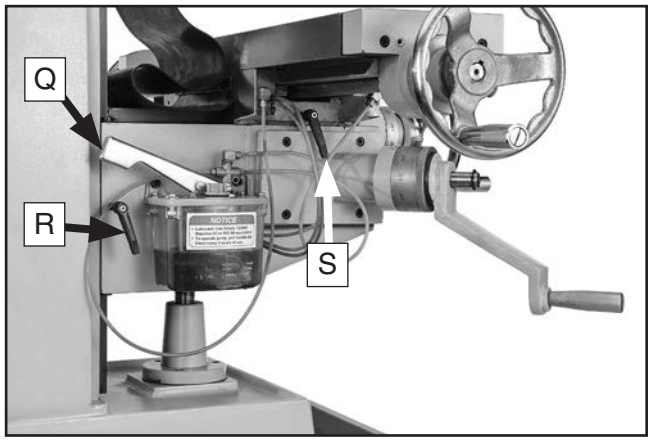


Figure 4. Knee and cross slide locks, and one-shot oiler.

I. X-Axis Handwheel (1 of 2): Manually moves table along X-axis (left and right).

J. X-Axis Locks: Tighten to prevent X-axis table movement for increased rigidity during operations when the X-axis should not move.

K. Power ON/OFF Switch: Turns machine ON and OFF.

Note: *Front panel of switch contains Stop button only. Lift panel to access ON button, then leave panel in "down" position during use.*

L. Spindle Direction Switch: Changes direction of spindle rotation.

M. Graduated Collar (Y-Axis): Displays Y-axis table movement in 0.001" increments. One full revolution represents 0.100" of table travel.

N. Y-Axis Handwheel: Manually moves table along Y-axis (front and back).

O. Knee Crank: Manually moves table along Z-axis (up and down).

P. Graduated Collar (X-Axis): Displays X-axis table movement in 0.001" increments. One full revolution represents 0.100" of table travel.

Q. One-Shot Oiler: Lubricates table ways.

R. Z-Axis Lock: Tightens to prevent Z-axis table movement for increased rigidity during operations when the Z-axis should not move.

S. Y-Axis Lock: Tightens to prevent Y-axis table movement for increased rigidity during operations when the Y-axis should not move.

X-Axis Power Feed Controls (G0802)

Model G0802 is equipped with a power feed unit for X-axis table movement. Refer to **Figure 5** and the following descriptions to understand the functions of the various components of the power feed system.

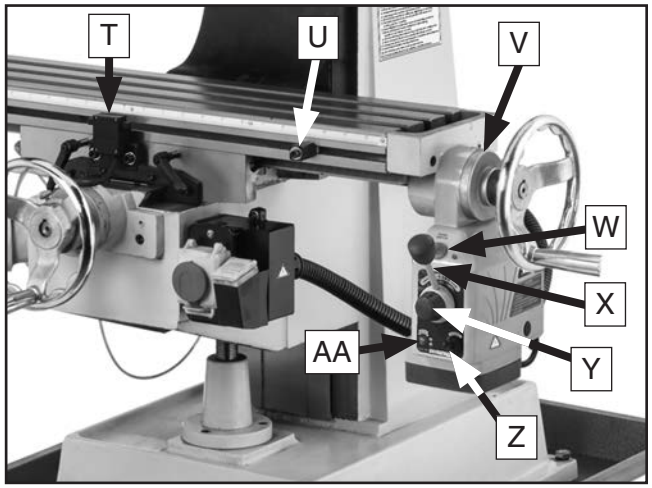


Figure 5. Power feed controls.

T. Power Feed Limit Switch: Stops table movement when either of the switch side plungers are pressed by limit stops.

U. Limit Stop (1 of 2): Restricts table movement by its positioning along front of table.

V. Graduated Collar (X-Axis): Displays distance of X-axis table travel in 0.001" increments. One full revolution equal to 0.100" of table travel.

W. Rapid Traverse Button: When pressed, moves table at full speed when already in motion.

X. Direction Lever: Selects direction of table movement. Middle position is neutral.

Y. Speed Dial: Controls speed of table movement. Turning dial clockwise causes table to move faster.

Note: *Feed rates for table travel are extremely difficult to precisely calculate. We recommend that you combine research and experimentation to find feed rates that best work for your operations.*

Z. ON/OFF Switch: Turns power feed ***ON*** and ***OFF***.

AA. Circuit Breaker Reset Button: Resets internal circuit breaker if unit is overloaded and shuts down.

MACHINE DATA SHEET

Customer Service #: (570) 546-9663 · To Order Call: (800) 523-4777 · Fax #: (800) 438-5901

MODEL G0801 6" X 26" VERTICAL MILL WITH LED WORKLIGHT

Product Dimensions:

Weight..... 800 lbs.
Width (side-to-side) x Depth (front-to-back) x Height..... 45 x 41 x 68 in.
Footprint (Length x Width)..... 21 x 28 in.
Space Required for Full Range of Movement (Width x Depth)..... 59 x 39-1/2 in.

Shipping Dimensions:

Type..... Wood Crate
Content..... Machine/Stand
Weight..... 904 lbs.
Length x Width x Height..... 40 x 37 x 74 in.
Must Ship Upright..... Yes

Electrical:

Power Requirement..... 110V or 220V, Single-Phase, 60 Hz
Prewired Voltage..... 110V
Full-Load Current Rating..... 17.8A at 110V, 8.6A at 220V
Minimum Circuit Size..... 20A at 110V, 15A at 220V
Connection Type..... Cord & Plug
Power Cord Included..... Yes
Power Cord Length..... 6 ft.
Power Cord Gauge..... 14 AWG
Plug Included..... Yes
Included Plug Type..... 5-15 for 110V
Recommended Plug Type..... 6-15 for 220V
Switch Type..... ON/OFF Push Button Switch

Motors:

Main

Horsepower..... 1.5 HP
Phase..... Single-Phase
Amps..... 17.8A/8.6A
Speed..... 1720 RPM
Type..... TEFC Capacitor-Start Induction
Power Transfer ..... V-Belt Drive
Bearings..... Shielded & Permanently Lubricated
Centrifugal Switch/Contacts Type..... Internal

Main Specifications:

Operation Info

Spindle Travel	3 in.
Max Distance Spindle to Column	5-1/4 in.
Max Distance Spindle to Table	11 in.
Longitudinal Table Travel (X-Axis)	14-1/4 in.
Longitudinal Leadscrew (X-Axis)	36 in.
Cross Table Travel (Y-Axis)	6 in.
Cross Leadscrew (Y-Axis)	14-3/4 in.
Vertical Table Travel (Z-Axis)	11 in.
Vertical Leadscrew (Z-Axis)	17 in.
Turret or Column Swivel (Left /Right)	45 deg.
Head Tilt (Left/Right)	45 deg.
Drilling Capacity for Cast Iron	1 in.
Drilling Capacity for Steel	3/4 in.
End Milling Capacity	3/4 in.
Face Milling Capacity	3 in.

Table Info

Table Length	26 in.
Table Width	6-1/8 in.
Table Thickness	1-3/4 in.
Table Height (from Floor/Base)	17-3/4 in.
Number of T-Slots	3
T-Slot Size	1/2 in.
T-Slots Centers	1-11/16 in.
X/Y-Axis Travel per Handwheel Revolution	0.1 in.
Z-Axis Travel per Handwheel Revolution	0.1 in.

Spindle Info

Spindle Taper	R-8
Number of Vertical Spindle Speeds	9
Range of Vertical Spindle Speeds	230 – 2520 RPM
Quill Diameter	2.950 in.
Drawbar Thread Size	7/16-20 TPI
Drawbar Length	11-5/8 in.
Spindle Bearings	Tapered Roller Bearings

Construction

Spindle Housing/Quill	Cast Iron
Table	Cast Iron
Head	Cast Iron
Column/Base	Cast Iron
Base	Cast Iron
Stand	Steel
Paint Type/Finish	Epoxy

Other Specifications:

Country of Origin	China
Warranty	1 Year
Approximate Assembly & Setup Time	1 Hour
Serial Number Location	ID Label
ISO 9001 Factory	Yes
Certified by a Nationally Recognized Testing Laboratory (NRTL)	No

MACHINE DATA SHEET

Customer Service #: (570) 546-9663 · To Order Call: (800) 523-4777 · Fax #: (800) 438-5901

MODEL G0802 6" X 26" VERTICAL MILL WITH POWER FEED AND LED WORKLIGHT

Product Dimensions:

Weight	810 lbs.
Width (side-to-side) x Depth (front-to-back) x Height	45 x 41 x 68 in.
Footprint (Length x Width)	21 x 28 in.
Space Required for Full Range of Movement (Width x Depth)	59 x 39-1/2 in.

Shipping Dimensions:

Type	Wood Crate
Content	Machine/Stand
Weight	914 lbs.
Length x Width x Height	40 x 37 x 74 in.
Must Ship Upright	Yes

Electrical:

Power Requirement	110V or 220V, Single-Phase, 60 Hz
Prewired Voltage	110V
Full-Load Current Rating	17.8A at 110V, 8.6A at 220V
Minimum Circuit Size	20A at 110V, 15A at 220V
Connection Type	Cord & Plug
Power Cord Included	Yes
Power Cord Length	6 ft.
Power Cord Gauge	14 AWG
Plug Included	Yes
Included Plug Type	5-15 for 110V
Recommended Plug Type	6-15 for 220V
Switch Type	ON/OFF Push Button Switch

Motors:

Main

Horsepower	1.5 HP
Phase	Single-Phase
Amps	17.8A/8.6A
Speed	1720 RPM
Type	TEFC Capacitor-Start Induction
Power Transfer	V-Belt Drive
Bearings	Shielded & Permanently Lubricated
Centrifugal Switch/Contacts Type	Internal

Main Specifications:

Operation Info

Spindle Travel	3 in.
Max Distance Spindle to Column	5-1/4 in.
Max Distance Spindle to Table	11 in.
Longitudinal Table Travel (X-Axis)	14-1/4 in.
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Vertical Table Travel (Z-Axis)	11 in.
Vertical Leadscrew (Z-Axis)	17 in.
Turret or Column Swivel (Left /Right)	45 deg.
Head Tilt (Left/Right)	45 deg.
Drilling Capacity for Cast Iron	1 in.
Drilling Capacity for Steel	3/4 in.
End Milling Capacity	3/4 in.
Face Milling Capacity	3 in.

Table Info

Table Length	26 in.
Table Width	6-1/8 in.
Table Thickness	1-3/4 in.
Table Height (from Floor/Base)	17-3/4 in.
Number of T-Slots	3
T-Slot Size	1/2 in.
T-Slots Centers	1-5/8 in.
X-Axis Table Power Feed Rate	0 – 3-3/8 FPM
X/Y-Axis Travel per Handwheel Revolution	0.1 in.
Z-Axis Travel per Handwheel Revolution	0.1 in.

Spindle Info

Spindle Taper	R-8
Number of Vertical Spindle Speeds	9
Range of Vertical Spindle Speeds	230 – 2520 RPM
Quill Diameter	2.950 in.
Drawbar Thread Size	7/16-20 TPI
Drawbar Length	11-5/8 in.
Spindle Bearings	Tapered Roller Bearings

Construction

Spindle Housing/Quill	Cast Iron
Table	Cast Iron
Head	Cast Iron
Column/Base	Cast Iron
Base	Cast Iron
Stand	Steel
Paint Type/Finish	Epoxy

Other Specifications:

Country of Origin	China
Warranty	1 Year
Approximate Assembly & Setup Time	1 Hour
Serial Number Location	ID Label
ISO 9001 Factory	Yes
Certified by a Nationally Recognized Testing Laboratory (NRTL)	No

SECTION 1: SAFETY

For Your Own Safety, Read Instruction Manual Before Operating This Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures. Always use common sense and good judgment.

⚠DANGER **Indicates an imminently hazardous situation which, if not avoided, WILL result in death or serious injury.**

⚠WARNING **Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

⚠CAUTION **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.**

NOTICE **This symbol is used to alert the user to useful information about proper operation of the machine.**

Safety Instructions for Machinery

⚠WARNING

OWNER'S MANUAL. Read and understand this owner's manual BEFORE using machine.

TRAINED OPERATORS ONLY. Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make your workshop kid proof!

DANGEROUS ENVIRONMENTS. Do not use machinery in areas that are wet, cluttered, or have poor lighting. Operating machinery in these areas greatly increases the risk of accidents and injury.

MENTAL ALERTNESS REQUIRED. Full mental alertness is required for safe operation of machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

ELECTRICAL EQUIPMENT INJURY RISKS. You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

DISCONNECT POWER FIRST. Always disconnect machine from power supply BEFORE making adjustments, changing tooling, or servicing machine. This prevents an injury risk from unintended startup or contact with live electrical components.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are NOT approved safety glasses.

⚠WARNING

WEARING PROPER APPAREL. Do not wear clothing, apparel or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to reduce risk of slipping and losing control or accidentally contacting cutting tool or moving parts.

HAZARDOUS DUST. Dust created by machinery operations may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material. Always wear a NIOSH-approved respirator to reduce your risk.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

REMOVE ADJUSTING TOOLS. Tools left on machinery can become dangerous projectiles upon startup. Never leave chuck keys, wrenches, or any other tools on machine. Always verify removal before starting!

USE CORRECT TOOL FOR THE JOB. Only use this tool for its intended purpose—do not force it or an attachment to do a job for which it was not designed. Never make unapproved modifications—modifying tool or using it differently than intended may result in malfunction or mechanical failure that can lead to personal injury or death!

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating machine. Do not overreach! Avoid awkward hand positions that make workpiece control difficult or increase the risk of accidental injury.

CHILDREN & BYSTANDERS. Keep children and bystanders at a safe distance from the work area. Stop using machine if they become a distraction.

GUARDS & COVERS. Guards and covers reduce accidental contact with moving parts or flying debris. Make sure they are properly installed, undamaged, and working correctly BEFORE operating machine.

FORCING MACHINERY. Do not force machine. It will do the job safer and better at the rate for which it was designed.

NEVER STAND ON MACHINE. Serious injury may occur if machine is tipped or if the cutting tool is unintentionally contacted.

STABLE MACHINE. Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify machine is stable and mobile base (if used) is locked.

USE RECOMMENDED ACCESSORIES. Consult this owner's manual or the manufacturer for recommended accessories. Using improper accessories will increase the risk of serious injury.

UNATTENDED OPERATION. To reduce the risk of accidental injury, turn machine ***OFF*** and ensure all moving parts completely stop before walking away. Never leave machine running while unattended.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

DAMAGED PARTS. Regularly inspect machine for damaged, loose, or mis-adjusted parts—or any condition that could affect safe operation. Immediately repair/replace BEFORE operating machine. For your own safety, DO NOT operate machine with damaged parts!

MAINTAIN POWER CORDS. When disconnecting cord-connected machines from power, grab and pull the plug—NOT the cord. Pulling the cord may damage the wires inside. Do not handle cord/plug with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals, and wet/damp locations.

EXPERIENCING DIFFICULTIES. If at any time you experience difficulties performing the intended operation, stop using the machine! Contact our Technical Support at (570) 546-9663.

Additional Safety for Mills

⚠WARNING

You can be seriously injured or killed by getting clothing, jewelry, or long hair entangled with rotating cutter/spindle. You can be severely cut or have fingers amputated from contact with rotating cutters. You can be blinded or struck by broken cutting tools, metal chips, workpieces, or adjustment tools thrown from the rotating spindle with great force. To reduce your risk of serious injury when operating this machine, completely heed and understand the following:

UNDERSTAND ALL CONTROLS. Make sure you understand the function and proper use of all controls before starting. This will help you avoid making mistakes that result in serious injury.

AVOIDING ENTANGLEMENT. DO NOT wear loose clothing, gloves, or jewelry, and tie back long hair. Keep all guards in place and secure. Always allow spindle to stop on its own. DO NOT stop spindle using your hand or any other object.

WEAR FACE SHIELD. Always wear a face shield in addition to safety glasses. This provides more complete protection for your face than safety glasses alone.

USE CORRECT SPINDLE SPEED. Follow recommended speeds and feeds for each size and type of cutting tool. This helps avoid tool breakage during operation and ensures best cutting results.

INSPECT CUTTING TOOL. Inspect cutting tools for sharpness, chips, or cracks before each use. Replace dull, chipped, or cracked cutting tools immediately.

PROPERLY SECURE CUTTER. Firmly secure cutting tool or drill bit so it does not fly out of spindle during operation.

POWER DISRUPTION. In the event of a local power outage during operation, turn spindle switch ***OFF*** to avoid a possible sudden startup once power is restored.

CLEAN MACHINE SAFELY. Metal chips or shavings can be razor sharp. DO NOT clear chips by hand or compressed air that can force chips farther into machine—use a brush or vacuum instead. Never clear chips while spindle is turning.

SECURE WORKPIECE TO TABLE. Clamp workpiece to table or secure in a vise mounted to table, so workpiece cannot unexpectedly shift or spin during operation. NEVER hold workpiece by hand during operation.

PROPERLY MAINTAIN MACHINE. Keep machine in proper working condition to help ensure that it functions safely and all guards and other components work as intended. Perform routine inspections and all necessary maintenance. Never operate machine with damaged or worn parts that can break or result in unexpected movement during operation.

DISCONNECT POWER FIRST. To reduce risk of electrocution or injury from unexpected startup, make sure mill/drill is turned ***OFF***, disconnected from power, and all moving parts have come to a complete stop before changing cutting tools or starting any inspection, adjustment, or maintenance procedure.

REMOVE CHUCK KEY & SPINDLE TOOLS. Always remove chuck key, drawbar wrench, and other tools used on the spindle immediately after use. This will prevent them from being thrown by the spindle upon startup.

SECTION 2: POWER SUPPLY

Availability

Before installing the machine, consider the availability and proximity of the required power supply circuit. If an existing circuit does not meet the requirements for this machine, a new circuit must be installed. To minimize the risk of electrocution, fire, or equipment damage, installation work and electrical wiring must be done by an electrician or qualified service personnel in accordance with all applicable codes and standards.

⚠WARNING

Electrocution, fire, shock, or equipment damage may occur if machine is not properly grounded and connected to power supply.

Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

Full-Load Current Rating at 110V....17.8 Amps
Full-Load Current Rating at 220V .... 8.6 Amps

The full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating.

If the machine is overloaded for a sufficient length of time, damage, overheating, or fire may result—especially if connected to an undersized circuit. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the specified circuit requirements.

Circuit Information

A power supply circuit includes all electrical equipment between the breaker box or fuse panel in the building and the machine. The power supply circuit used for this machine must be sized to safely handle the full-load current drawn from the machine for an extended period of time. (If this machine is connected to a circuit protected by fuses, use a time delay fuse marked D.)

⚠CAUTION

For your own safety and protection of property, consult an electrician if you are unsure about wiring practices or electrical codes in your area.

Note: *Circuit requirements in this manual apply to a dedicated circuit—where only one machine will be running on the circuit at a time. If machine will be connected to a shared circuit where multiple machines may be running at the same time, consult an electrician or qualified service personnel to ensure circuit is properly sized for safe operation.*

Circuit Requirements for 110V

This machine is prewired to operate on a power supply circuit that has a verified ground and meets the following requirements:

Nominal Voltage 110V, 115V, 120V
Cycle ..... 60 Hz
Phase ..... Single-Phase
Power Supply Circuit ..... 20 Amps
Plug/Receptacle ..... NEMA 5-15

Circuit Requirements for 220V

This machine can be converted to operate on a power supply circuit that has a verified ground and meets the requirements listed below. (Refer to **Voltage Conversion** instructions for details.)

Nominal Voltage 208V, 220V, 230V, 240V
Cycle ..... 60 Hz
Phase ..... Single-Phase
Power Supply Circuit ..... 15 Amps
Plug/Receptacle ..... NEMA 6-15

Grounding Requirements

This machine MUST be grounded. In the event of certain malfunctions or breakdowns, grounding reduces the risk of electric shock by providing a path of least resistance for electric current.

For 110V operation: This machine is equipped with a power cord that has an equipment-grounding wire and a grounding plug (see following figure). The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances.

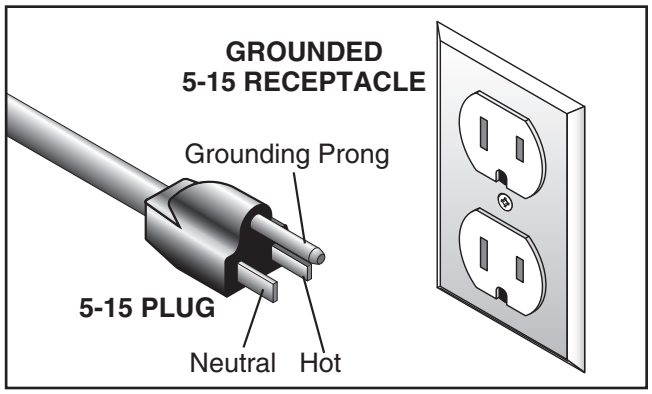
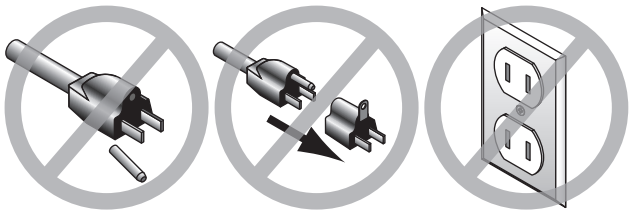


Figure 6. Typical 5-15 plug and receptacle.

⚠CAUTION



SHOCK HAZARD!

Two-prong outlets do not meet the grounding requirements for this machine. Do not modify or use an adapter on the plug provided—if it will not fit the outlet, have a qualified electrician install the proper outlet with a verified ground.

For 220V operation: The plug specified under "Circuit Requirements for 220V" on the previous page has a grounding prong that must be attached to the equipment-grounding wire on the included power cord. The plug must only be inserted into a matching receptacle (see following figure) that is properly installed and grounded in accordance with all local codes and ordinances.

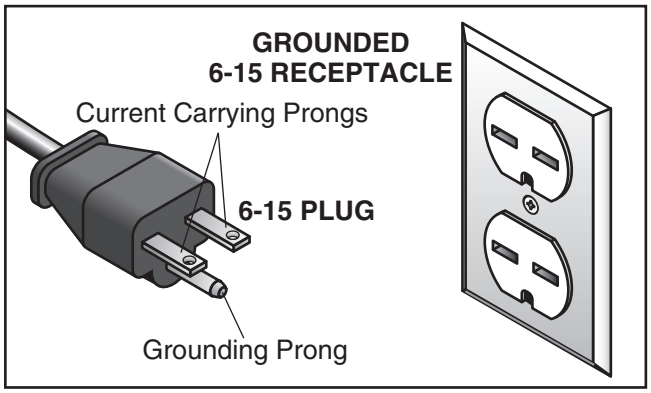


Figure 7. Typical 6-15 plug and receptacle.

Improper connection of the equipment-grounding wire can result in a risk of electric shock. The wire with green insulation (with or without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the tool is properly grounded. If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

Extension Cords

We do not recommend using an extension cord with this machine. If you must use an extension cord, only use it if absolutely necessary and only on a temporary basis.

Extension cords cause voltage drop, which can damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must be in good condition and contain a ground wire and matching plug/receptacle. Additionally, it must meet the following size requirements:

Minimum Gauge Size (G0801).....12 AWG
Minimum Gauge Size (G0802) .....14 AWG
Maximum Length (Shorter is Better).....50 ft.

Converting Voltage to 220V

The voltage conversion MUST be performed by an electrician or qualified service personnel. The voltage conversion procedure consists of rewiring the motor and transformer, and installing the correct plug. Wiring diagrams are provided on **Pages 54–54** for your reference.

IMPORTANT: *If the diagram included on the motor conflicts with those on* **Pages 54–54***, the motor may have changed since the manual was printed. Use the diagram included on the motor instead.*

Tools Needed: **Qty**

- Phillips Head Screwdriver #2 1
- Plug 6-15 1
- Wire Cutters/Stripper 1

To convert machine to 220V:

1. DISCONNECT MACHINE FROM POWER!

2. Remove 110V switch and replace with 220V switch (P0801405).

3. Cut off existing 5-15 plug.

4. Remove motor junction box cover, then remove two jumpers, shown in **Figure 8**.

5. Stack both jumpers and install them across middle terminals, (see **Figure 8**), then make sure all wires are securely installed in same locations as they were when you started.

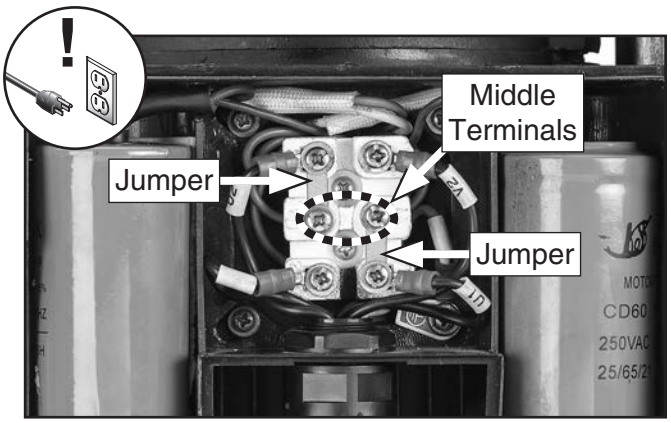


Figure 8. Location of jumpers and middle terminals inside motor junction box.

Tip: *Although it is only necessary to install one jumper across middle terminals, installing both jumpers here prevents misplacing the extra one in case you need it later to convert machine back to 110V.*

6. Re-install motor junction box cover.

7. Remove electrical panel access cover, then locate transformer lower terminals and two wires marked "L" and "N" (see **Figures 9–10**), then disconnect wire from 110V terminal and connect it to 220V terminal.

Note: *DO NOT move wire marked "N."*

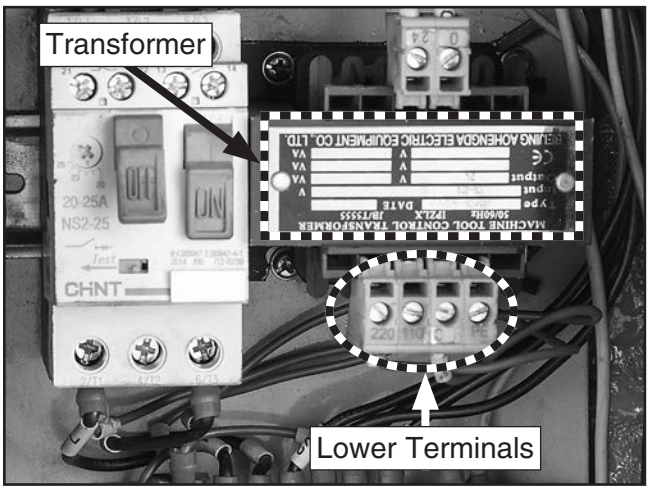


Figure 9. Location of transformer lower terminals.

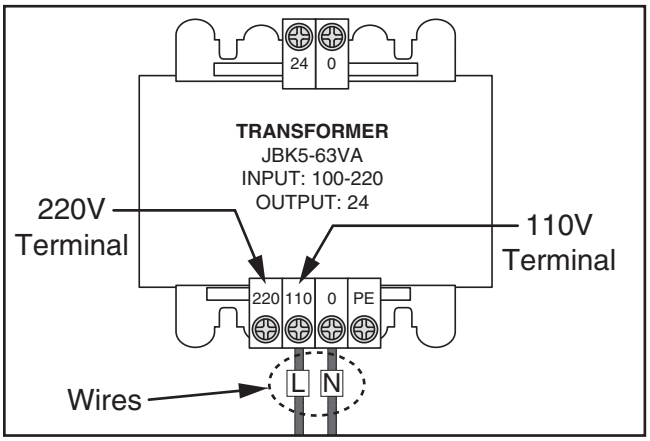
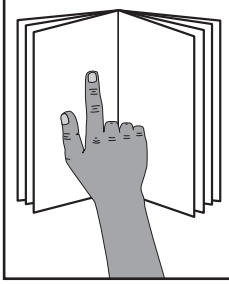


Figure 10. Transformer wired for 110V.

8. Re-install electrical panel access cover.

9. Install a 6-15 plug on the power cord, according to the plug manufacturer's instructions. If the plug manufacturer's instructions are not available.

SECTION 3: SETUP

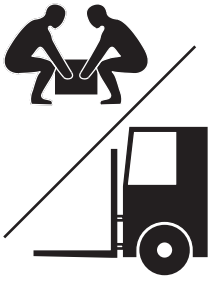


⚠WARNING

This machine presents serious injury hazards to untrained users. Read through this entire manual to become familiar with the controls and operations before starting the machine!

⚠WARNING

Wear safety glasses during the entire setup process!



⚠WARNING

HEAVY LIFT!

Straining or crushing injury may occur from improperly lifting machine or some of its parts. To reduce this risk, get help from other people and use a forklift (or other lifting equipment) rated for weight of this machine.

Needed for Setup

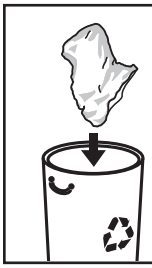
The following items are needed, but not included, for the setup/assembly of this machine.

Description	Qty
• Precision Level	1
• Safety Glasses (for each person)	1
• Solvent/Degreaser (see **Page 19**)	1
• Disposable Rags	As Needed
• Brass Hammer	1
• Lifting Straps (Rated for at least 1000 lbs.)	2
• Forklift or Lifting Equipment (Rated for at least 1000 lbs.)	1
• Lifting Bar ¾" Dia. x 36" L	1
• Another Person	1

Unpacking

This machine was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage. ***If items are damaged, please call us immediately at (570) 546-9663.***

IMPORTANT: Save all packaging materials until you are completely satisfied with the machine and have resolved any issues between Grizzly or the shipping agent. *You MUST have the original packaging to file a freight claim. It is also extremely helpful if you need to return your machine later.*



⚠WARNING

SUFFOCATION HAZARD!

Keep children and pets away from plastic bags or packing materials shipped with this machine. Discard immediately.

Inventory

The following is a list of items shipped with your machine. Before beginning setup, lay these items out and inventory them.

If any non-proprietary parts are missing (e.g. a nut or a washer), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local hardware store.

NOTICE

If you cannot find an item on this list, carefully check around/inside the machine and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.

Small Item Inventory (Figures 11–12)	Qty
A. Power ON/OFF Switch 220V	1
B. Toolbox	1
C. Bottle for Oil	1
D. Spindle Sleeve MT#3 x MT#2	1
E. Spindle Sleeve R-8 x MT#3	1
F. Chuck Key	1
G. Drill Chuck B16 1–13mm	1
H. Drill Chuck Arbor R-8/B16	1
I. Drawbar 7/16"-20	1
J. Open-End Wrenches 12/14mm & 17/19mm	1 Ea.
K. Hex Wrenches 3, 4, 5, 6mm	1 Ea.
L. T-Bolts M12-1.75 x 55 w/Hex Nuts & Flat Washers	2
M. Screwdrivers Standard & Phillips #2	1 Ea.
N. Handwheel Handles	4

Figure 11. Large item inventory.

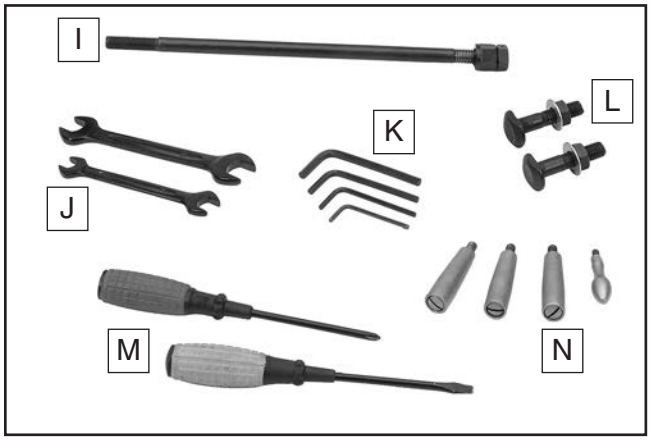


Figure 12. Small item inventory.

Cleanup

The unpainted surfaces of your machine are coated with a heavy-duty rust preventative that prevents corrosion during shipment and storage. This rust preventative works extremely well, but it will take a little time to clean.

Be patient and do a thorough job cleaning your machine. The time you spend doing this now will give you a better appreciation for the proper care of your machine's unpainted surfaces.

There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

Before cleaning, gather the following:
- Disposable rags
- Cleaner/degreaser (WD•40 works well)
- Safety glasses & disposable gloves
- Plastic paint scraper (optional)

Basic steps for removing rust preventative:

1. Put on safety glasses.

2. Coat the rust preventative with a liberal amount of cleaner/degreaser, then let it soak for 5–10 minutes.

3. Wipe off the surfaces. If your cleaner/degreaser is effective, the rust preventative will wipe off easily. If you have a plastic paint scraper, scrape off as much as you can first, then wipe off the rest with the rag.

4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant to prevent rust.

⚠WARNING

Gasoline and petroleum products have low flash points and can explode or cause fire if used to clean machinery. Avoid using these products to clean machinery.

⚠CAUTION

Many cleaning solvents are toxic if inhaled. Only work in a well-ventilated area.

NOTICE

Avoid harsh solvents like acetone or brake parts cleaner that may damage painted surfaces. Always test on a small, inconspicuous location first.

T23692—Orange Power Degreaser
A great product for removing the waxy shipping grease from the ***non-painted*** parts of the machine during clean up.

Figure 13. T23692 Orange Power Degreaser.

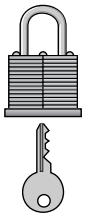
Site Considerations

Weight Load

Refer to the **Machine Data Sheet** for the weight of your machine. Make sure that the surface upon which the machine is placed will bear the weight of the machine, additional equipment that may be installed on the machine, and the heaviest workpiece that will be used. Additionally, consider the weight of the operator and any dynamic loading that may occur when operating the machine.

Space Allocation

Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers as required by the maintenance and service described in this manual. **See below for required space allocation.**



⚠CAUTION

Children or untrained people may be seriously injured by this machine. Only install in an access restricted location.

Physical Environment

The physical environment where the machine is operated is important for safe operation and longevity of machine components. For best results, operate this machine in a dry environment that is free from excessive moisture, hazardous chemicals, airborne abrasives, or extreme conditions. Extreme conditions for this type of machinery are generally those where the ambient temperature range exceeds 41°–104°F; the relative humidity range exceeds 20%–95% (non-condensing); or the environment is subject to vibration, shocks, or bumps.

Electrical Installation

Place this machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure to leave enough space around machine to disconnect power supply or apply a lockout/tagout device, if required.

Lighting

Lighting around the machine must be adequate enough that operations can be performed safely. Shadows, glare, or strobe effects that may distract or impede the operator must be eliminated.

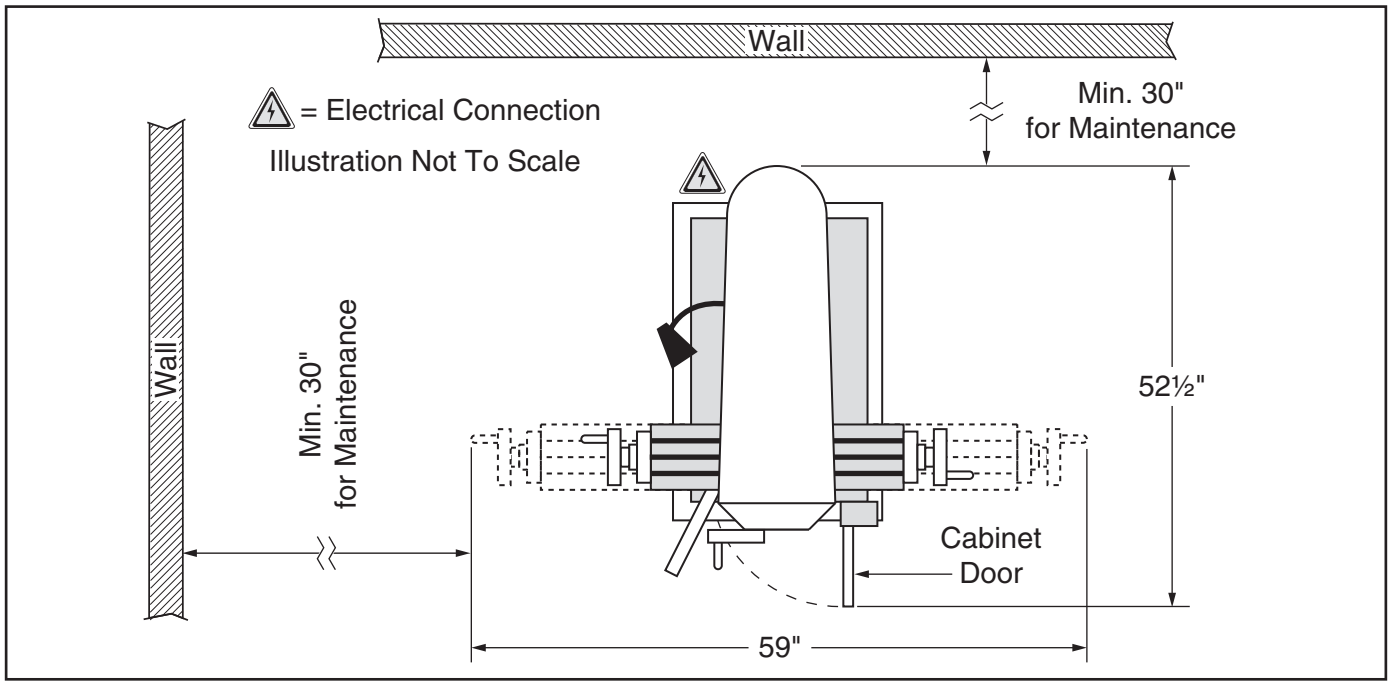
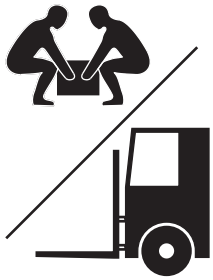


Figure 14. Minimum working clearances.

Lifting & Placing



⚠WARNING

HEAVY LIFT!

Straining or crushing injury may occur from improperly lifting machine or some of its parts. To reduce this risk, get help from other people and use a forklift (or other lifting equipment) rated for weight of this machine.

To lift and move mill:

1. Remove crate from shipping pallet, then with mill still on pallet, move pallet to installation location.

2. Insert 36" long steel bar that is ⅝"–¾" diameter through hoisting holes on both sides of column (see **Figure 15**).

   Note: *Make sure the round bar is high-grade steel capable of holding the load without bending.*

3. Position forklift forks under bar and close to column on both sides (see **Figure 15**) to minimize potential bending leverage on bar while lifting.

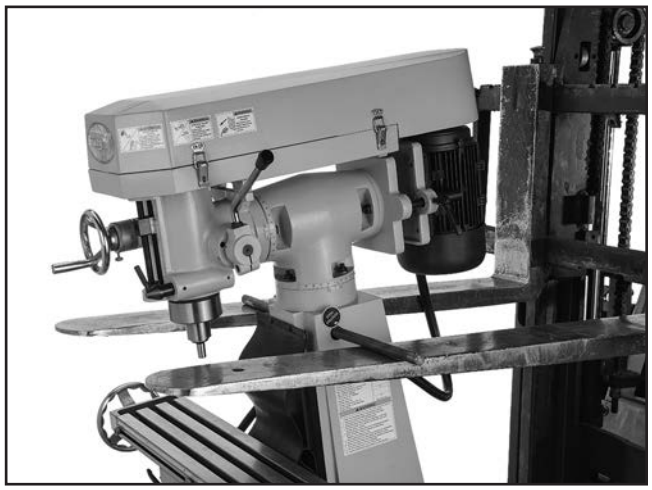


Figure 15. Lifting Model G0801/G0802.

4. Unbolt mill from shipping pallet.

5. With another person steadying mill to keep it from swaying, lift mill a few inches above pallet.

6. Remove shipping pallet and lower mill onto its prepared location.

Leveling

Leveling precision machinery helps components, such as dovetail ways, remain straight and flat during the lifespan of the machine. Components on an unleveled machine may slowly twist due to the dynamic loads placed on the machine during operation.

Use metal shims between the base and the floor when leveling the machine.

For best results, use a precision level that is at least 12" long and sensitive enough to show a distance movement when a 0.003" shim (approximately the thickness of one sheet of standard newspaper) is placed under one end of the level.

See **Figure 16** for an example of a high-precision level available from Grizzly.

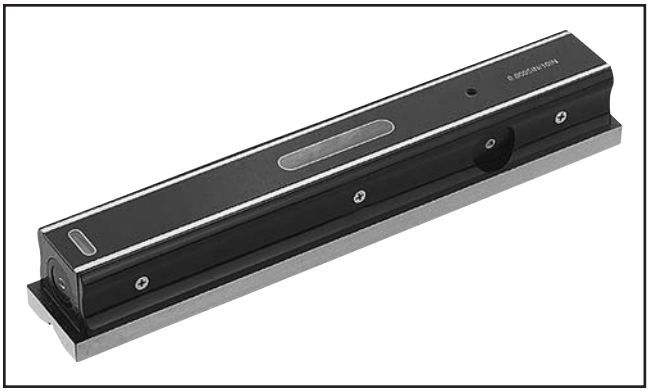


Figure 16. Model H2683 12" Master Machinist's Level.

Anchoring to Floor

Number of Mounting Holes 4
Diameter of Mounting Hardware..... 3/8"

Anchoring machinery to the floor prevents tipping or shifting and reduces vibration that may occur during operation, resulting in a machine that runs slightly quieter and feels more solid.

If the machine will be installed in a commercial or workplace setting, or if it is permanently connected (hardwired) to the power supply, local codes may require that it be anchored to the floor.

If not required by any local codes, fastening the machine to the floor is an optional step. If you choose not to do this with your machine, we recommend placing it on machine mounts, as these provide an easy method for leveling and they have vibration-absorbing pads.

Anchoring to Concrete Floors

Lag shield anchors with lag screws (see below) are a popular way to anchor machinery to a concrete floor, because the anchors sit flush with the floor surface, making it easy to unbolt and move the machine later, if needed. However, anytime local codes apply, you MUST follow the anchoring methodology specified by the code.

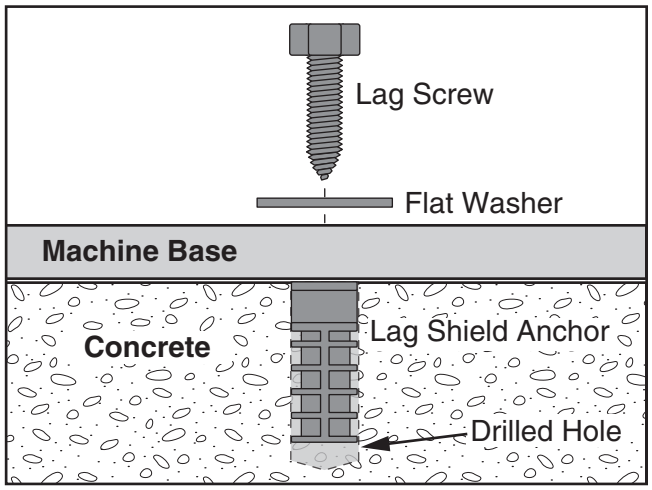


Figure 17. Popular method for anchoring machinery to a concrete floor.

Assembly

The Model G0801/G0802 comes fully assembled except for the X-, Y-, and Z-axis handwheel handles.

To fully assemble the machine, thread the included handwheel handles into the X-, Y-, and Z-axis handwheels (see **Figure 18**).

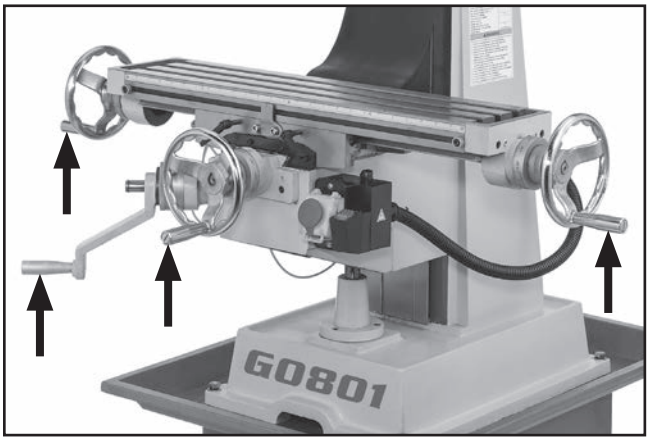


Figure 18. Location of handwheel handle installation to complete assembly.

Test Run

Once assembly is complete, test run the machine to ensure it is properly connected to power and safety components are functioning correctly.

If you find an unusual problem during the test run, immediately stop the machine, disconnect it from power, and fix the problem BEFORE operating the machine again. The **Troubleshooting** table in the **SERVICE** section of this manual can help.

⚠WARNING

Serious injury or death can result from using this machine BEFORE understanding its controls and related safety information. DO NOT operate, or allow others to operate, machine until the information is understood.

⚠WARNING

DO NOT start machine until all preceding setup instructions have been performed. Operating an improperly set up machine may result in malfunction or unexpected results that can lead to serious injury, death, or machine/property damage.

To test run machine:

1. Clear all setup tools and loose objects away from machine.

2. Connect machine to power supply.

3. Lift switch cap and push ON button underneath to turn machine ***ON*** (see **Figure 19**).

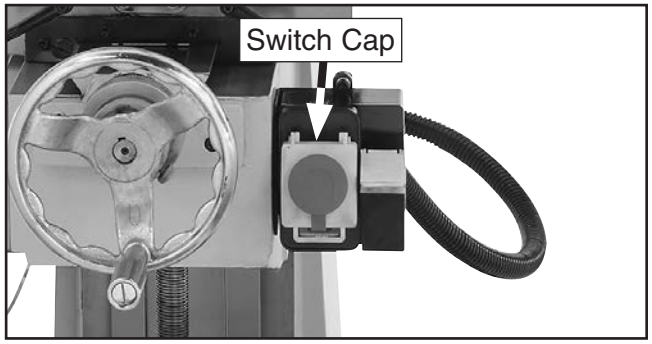


Figure 19. Location of switch cap.

4. Listen for abnormal noises and watch for unexpected actions from mill. Machine should run smoothly and without excessive vibration or rubbing noises.

   — Strange or unusual noises or actions must be investigated immediately. Turn machine ***OFF*** and disconnect it from power source before investigating or correcting potential problems.

5. Turn machine ***OFF*** and wait for spindle to come to a complete stop.

6. Use spindle direction switch to change direction of spindle rotation.

7. Turn mill ***ON*** and verify that spindle is rotating in opposite direction.

8. Turn machine ***OFF*** and wait for spindle to stop.

Congratulations! The **Test Run** of the mill is complete.

For Model G0801, continue to **Spindle Break-In** and **Inspections & Adjustments** procedures, beginning on **Page 25**.

For Model G0802, continue to the next page to perform the **Power Feed Test Run** procedure.

Power Feed Test Run

The Model G0802 comes with a power feed unit for X-axis table travel. Proper operation of the limit switch attached to the front middle of the table is important to the operation of this power feed unit. If the power feed does not operate as expected during the following steps, disconnect it from power and refer to **Troubleshooting** on **Page 44**.

⚠CAUTION

During power feed operation, X-axis handwheels spin rapidly when engaged. Always stay clear of X-axis handwheels when using power feed. Failure to do so could lead to entanglement or impact injuries.

To test run power feed:

1. Make sure all tools, cables, and other items are well clear of table movement and potential direction of travel.

2. Refer to **Operating X-Axis Power Feed** section, beginning on **Page 28**, to understand how power feed, table locks, and limit switch function.

3. Adjust limit stops to far right and left of table to allow for maximum table movement in following steps.

4. Loosen X-axis locks on front of table.

5. Plug power feed power cord into a grounded 110V power outlet.

6. Make sure power feed direction lever is in neutral (middle) position, turn speed dial counterclockwise to lowest setting, then move ON/OFF switch to ON position.

7. Move direction lever to left, slowly turn speed dial clockwise to increase speed, then confirm that table is moving to left.

8. Allow table limit stop to hit limit switch and turn power feed ***OFF***. Table movement should stop.

   — If table movement does not stop, DISCONNECT POWER IMMEDIATELY and troubleshoot limit switch.

9. Move direction lever through neutral (middle) position and all the way to the right. Table should begin moving to the right.

10. Repeat **Step 7** with table moving to the right.

11. Move direction lever through neutral (middle) position and all the way to the left, then press and hold Rapid Traverse button for a few moments to confirm rapid traverse is operating correctly. Table should move rapidly to the left.

12. Release Rapid Traverse Button and move direction lever to neutral (middle) position.

13. Repeat Steps 11–12 with table moving to the right.

14. Turn speed dial to lowest setting, and move ON/OFF switch to OFF position.

    Congratulations! The **Test Run** of the power feed is complete. Continue to the next page to perform the **Spindle Break-In** and **Inspections & Adjustments** procedures.

Spindle Break-In

NOTICE

You must complete this procedure to maintain the warranty. Failure to do this could cause rapid wear-and-tear of spindle bearings once they are placed under load.

The spindle break-in procedure distributes lubrication throughout the bearings to reduce the risk of early bearing failure if there are any "dry" spots or areas where lubrication has settled in the bearings. You ***must*** complete this procedure ***before*** placing operational loads on the spindle for the first time when the machine is new or if it has been sitting idle for longer than 6 months.

Always start the spindle break-in at the lowest speed to minimize wear if there *are* dry spots. Allow the spindle to run long enough to warm up and distribute the bearing grease, then incrementally increase spindle speeds and repeat this process at each speed until reaching the maximum spindle speed. Following the break-in procedure in this progressive manner helps minimize any potential wear that could occur before lubrication is fully distributed.

To perform spindle break-in procedure:

1. Successfully perform all steps in **Test Run** section beginning on **Page 23**.

2. Configure V-belts for a spindle speed of 230 RPM (refer to **Spindle Speed,** beginning on **Page 30** for detailed instructions).

3. Connect machine to power, turn it ***ON*** and let it run for 10 minutes in each direction.

4. Turn machine ***OFF***, allow spindle to come to a complete stop, then DISCONNECT MACHINE FROM POWER!

5. Repeat **Steps 2–4** for 1200 RPM, and then for 2520 RPM.

   Congratulations, the spindle break-in is now complete!

Inspections & Adjustments

The following list of adjustments were performed at the factory before the machine was shipped:

- Gib Adjustments ..... **Page 47**
- Leadscrew Backlash Adjustments ..... **Page 48**

Be aware that machine components can shift during the shipping process. Pay careful attention to these adjustments during operation of the machine. If you find that the adjustments are not set according to the procedures in this manual or your personal preferences, re-adjust them.

NOTICE

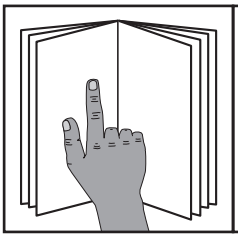
Since the mill head has been moved around for shipping purposes, you will need to tram the spindle with the table to ensure a 90° alignment. Refer to the *Tramming Spindle* section on *Page 50* for detailed instructions.

SECTION 4: OPERATIONS

Operation Overview

The purpose of this overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, so the machine controls/components discussed later in this manual are easier to understand.

Due to the generic nature of this overview, it is **not** intended to be an instructional guide. To learn more about specific operations, read this entire manual, seek additional training from experienced machine operators, and do additional research outside of this manual by reading "how-to" books, trade magazines, or websites.

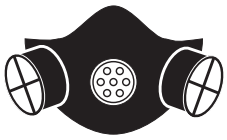


⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using machine.

⚠WARNING

To reduce risk of eye injury from flying chips or lung damage from breathing dust, always wear safety glasses and a respirator when operating this machine.



NOTICE

If you are not experienced with this type of machine, WE STRONGLY RECOMMEND that you seek additional training outside of this manual. Read books/magazines or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

To complete a typical operation, the operator does the following:

1. Examines workpiece to make sure it is suitable for milling.
2. Positions table according to operation and size of workpiece.
3. Firmly clamps workpiece to table or a mill vise.
4. Installs correct cutting tool for operation.
5. Uses manual downfeed and table controls to correctly position cutting tool and workpiece for operation.
6. **G0802 Only:** If X-axis power feed will be used during operation, operator confirms speed and length of table movement required, and sets limit stops accordingly.
7. Configures mill for correct spindle speed.
8. Puts on required safety glasses and face shield, and makes sure workpiece and table are clear of all tools, cords, and other items.
9. Selects spindle direction, then turns mill ***ON***, and performs operation.
10. Turns mill ***OFF***.

Positioning Table

The mill table moves in three directions, as illustrated in **Figure 20**:

- X-axis (longitudinal)
- Y-axis (cross)
- Z-axis (vertical)

These movements are controlled by rotating the X- and Y-axis handwheels and the Z-axis crank. Additionally, the G0802 table can be moved along the X-axis with the power feed.

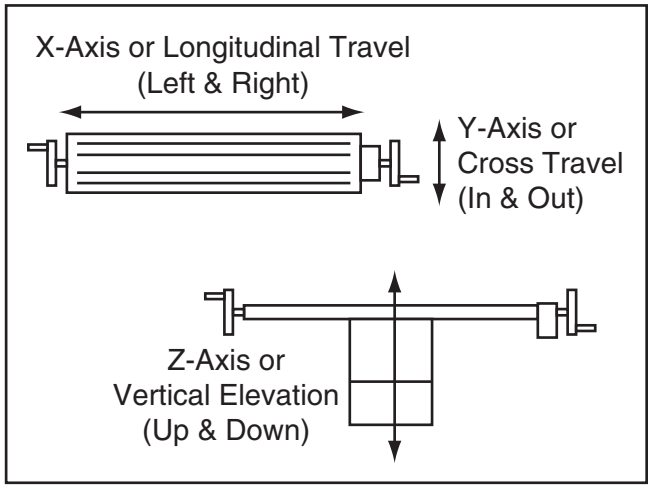


Figure 20. The directions of table movement.

Graduated Collars

The X- and Y-axis handwheels and knee crank have graduated collars (see **Figure 21**) that are used to determine table movement in the increments listed below:

Axis	Individual Increment	One Full Revolution
X	0.001"	0.100"
Y	0.001"	0.100"
Z	0.001"	0.100"

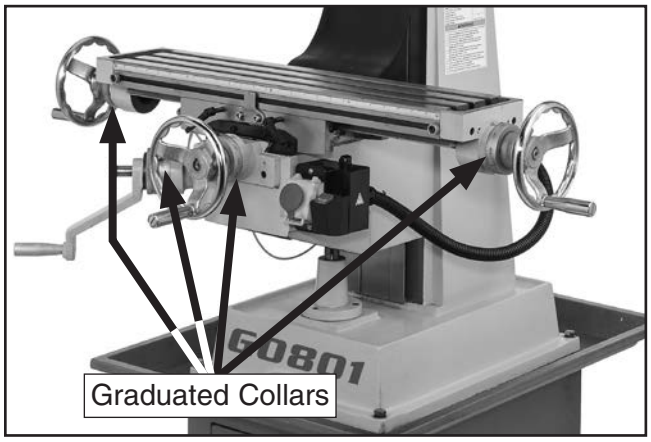


Figure 21. Locations of graduated collars.

Table Locks

Use table locks to increase the rigidity of the table when movement in that direction is not required for the operation.

Refer to **Figure 22** to identify the locks for each table axis.

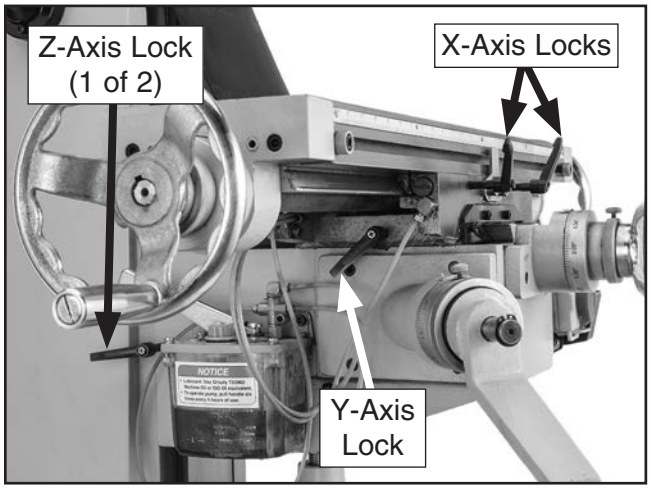


Figure 22. Locations of table locks for each axis.

NOTICE

Always keep table locked in place unless table movement is required for your operation. Unexpected table and workpiece movement could cause cutter to bind with workpiece, which may ruin cutter or workpiece.

Power Feed (G0802)

The Model G0802 is equipped with a power feed system for controlled X-axis table movement. Refer to **Figure 24** and the following descriptions to understand the functions of these devices.

Table Limit Stops

Two adjustable table limit stops are located at each end of the table (see **Figure 23**). They limit automatic table movement by pressing the table limit switch, which stops the power feed unit.

To adjust the position of the limit stops, use an 8mm hex wrench to loosen the cap screws securing the stops, reposition, and tighten securely. If not being used, position stops at far ends of table so as not to interfere with table movement.

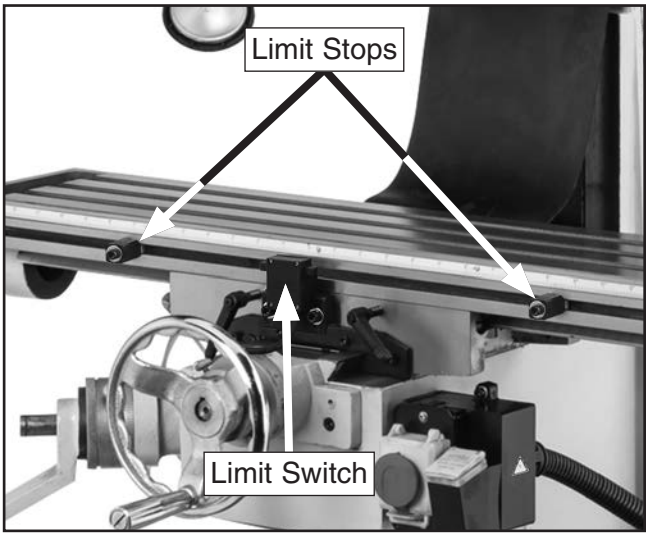


Figure 23. Location of limit switch and limit stops.

Operating Power Feed

1. Loosen table locks.

2. Turn speed dial (see **Figure 24**) all the way counterclockwise to slowest setting.

3. Move direction lever to neutral (middle) position, then move ON/OFF switch (see **Figure 24**) to ON position.

4. With your hand poised over ON/OFF switch in case you need to suddenly turn unit ***OFF***, move direction lever (see **Figure 24**) to select direction of table travel.

5. Use speed dial (see **Figure 24**) to slowly bring speed of movement up to desired rate.

   To cause table to instantly move at full speed when already in motion, press rapid traverse button (see **Figure 24**). The table will resume previous speed when button is released.

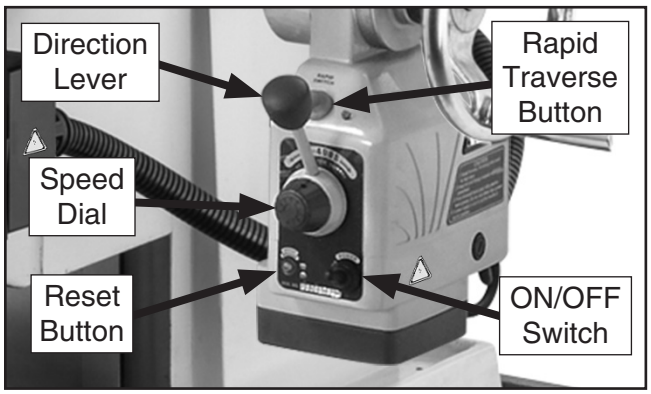


Figure 24. Power feed controls.

6. When you are finished using power feed, turn unit ***OFF***, rotate speed dial all the way counterclockwise, and move direction lever to neutral (middle) position to avoid unexpected table movement later.

   For additional component details, refer to **X-Axis Power Feed Controls** on **Page 6**.

Positioning Headstock

The head tilts 45° left or right and is mounted to a turret that rotates 45° left or right around the column (see **Figures 25–26**).

Any time the head has been tilted or rotated, you must tram the spindle with the table when setting the headstock back to the 90° position. This is the only way to ensure precision milling results later. Refer to **Tramming Spindle** on **Page 50** for more information.

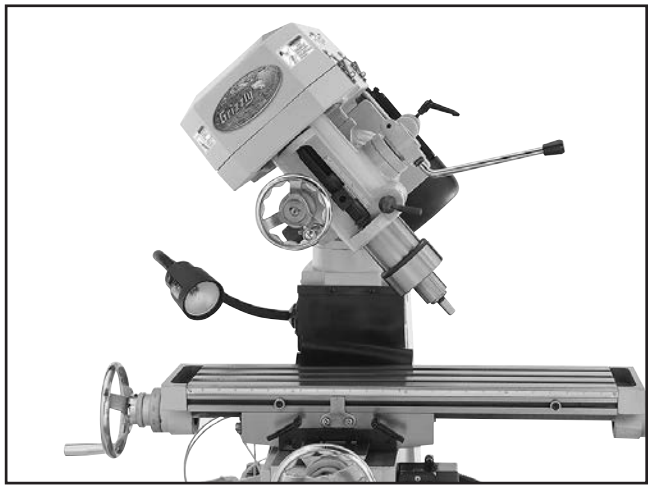


Figure 25. Head tilted to the left.

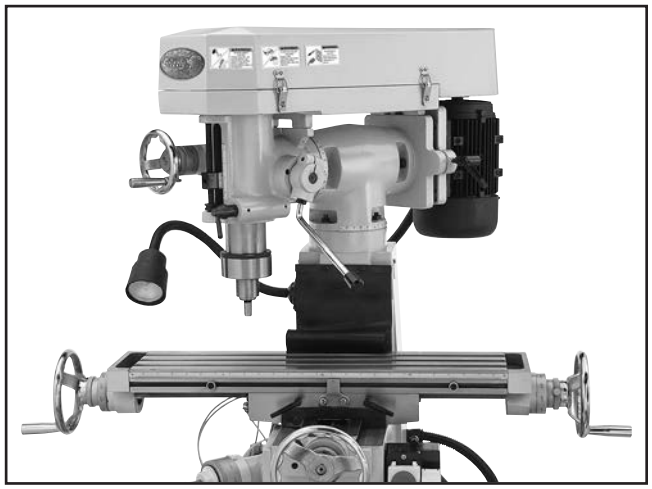


Figure 26. Head rotated to the left.

Tilting Head Left/Right

1. DISCONNECT MACHINE FROM POWER!

2. Use a 17mm wrench to loosen the four tilt locking nuts on either side of turret (see **Figure 27**). Do not remove locking nuts.

   Note: *The head is heavy. Have an assistant help to support its weight as you make adjustments.*

3. Manually tilt head to left or right. Use head tilt scale (see **Figure 27**) to determine angle.

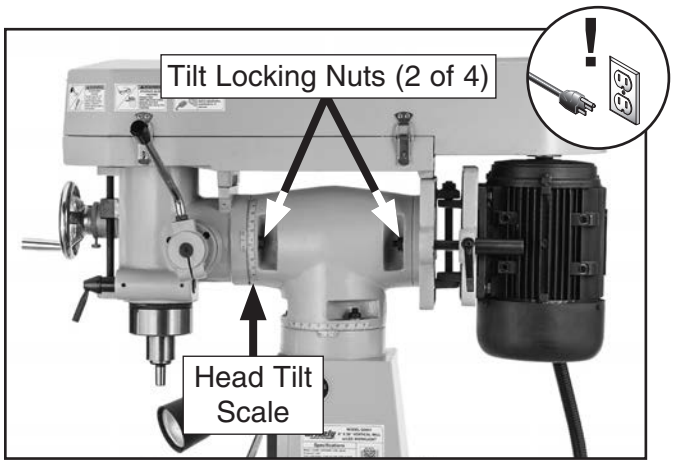


Figure 27. Head tilt controls.

4. Retighten all tilt locking nuts to secure head.

   Note: *The tilt locking nuts shown in **Figure 27** are threaded onto T-bolts that travel in a circular slot during head tilt adjustment. When tilting head, it is possible for these T-bolts to jam in the slot preventing movement of head. If this happens, gently rotate each nut, one at a time, until you free up the jammed T-bolt. Then continue to tilt head to desired position.*

NOTICE

Always lock head firmly in place after tilting or rotating it. Unexpected movement of head during operations could cause damage to cutter or workpiece.

Rotating Turret

1. DISCONNECT MACHINE FROM POWER!

2. Use a 17mm wrench to loosen the three turret locking nuts on base of turret (see **Figure 28**).

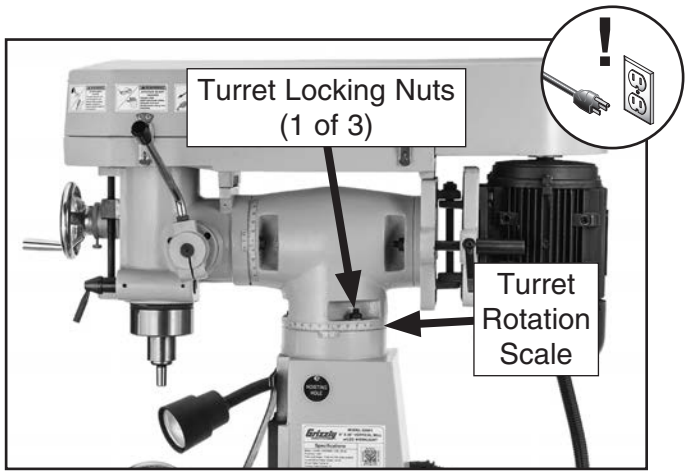


Figure 28. Turret rotational controls.

3. Push mill head to manually rotate turret. Use rotation scale to determine correct position for your operation, then retighten nuts to secure turret in place.

Spindle Speed

Using the correct spindle speed is important for safe and satisfactory results, as well as maximizing tool life.

To set the spindle speed for your operation, you will need to: 1) Determine the best spindle speed for the cutting task, and 2) configure the spindle controls to match the closest spindle speed.

Determining Spindle Speed

Many variables affect the optimum spindle speed to use for any given operation, but the two most important are the recommended cutting speed for the workpiece material and the diameter of the cutting tool, as noted below.

$$\frac{{}^{*}\text{Recommended Cutting Speed (FPM)} \times 12}{\text{Tool Dia. (in inches)} \times 3.14} = \text{Spindle Speed (RPM)}$$

*Double if using carbide cutting tool

Figure 29. Spindle speed formula for milling.

Cutting speed, typically defined in feet per minute (FPM), is the speed at which the edge of a tool moves across the material surface.

The "Recommended Cutting Speed" varies depending on the type of workpiece material. It is the ideal speed for cutting that material in order to optimize tool life and produce a desirable finish.

The books **Machinery's Handbook** or **Machine Shop Practice**, and some internet sites, provide excellent recommendations for which cutting speeds to use when calculating the spindle speed. These sources also provide a wealth of additional information about the variables that affect cutting speed and they are a good educational resource.

Also, there are a large number of easy-to-use spindle speed calculators that can be found on the internet. These sources will help you take into account all applicable variables to determine the best spindle speed for the operation.

Setting Spindle Speed

The Model G0801/G0802 has nine spindle speeds, which are selected by positioning the V-belts in various configurations on the pulleys.

To set spindle speed:

1. DISCONNECT MACHINE FROM POWER!

2. Open V-belt cover.

3. Support motor with one hand and loosen motor lock shown in **Figure 30**.

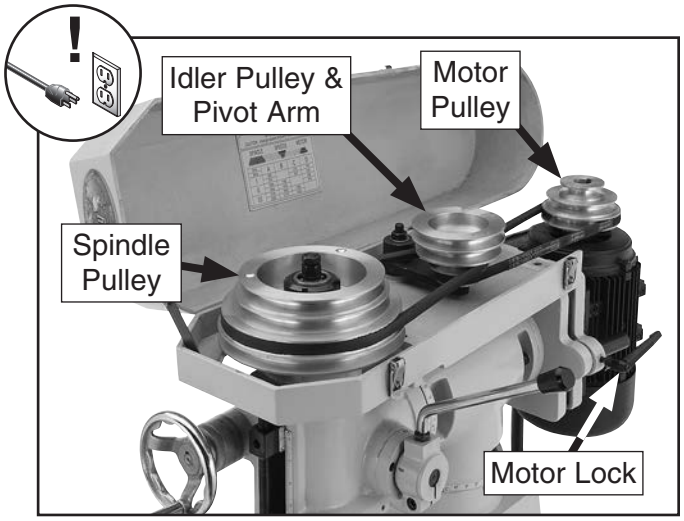
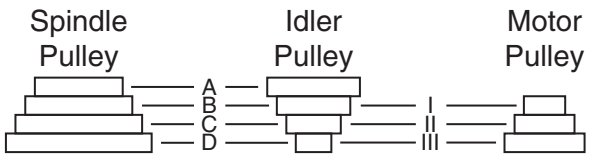


Figure 30. V-belts and pulleys.

4. Press motor toward front of headstock to release tension on V-belts, then tighten motor lock to prevent it from re-tensioning belts.

5. Refer to V-belt configuration chart in **Figure 31** (or chart inside V-belt cover) to configure V-belts on pulleys for selected spindle speed.



SPINDLE R.P.M.

	A	B	C	D
I	670		320	230
II	1650	1420		570
III	2520	2170	1200	

Figure 31. V-belt configuration chart.

6. When V-belts are properly positioned on pulleys, loosen motor lock, pull motor away from machine with moderate force to tension V-belts, then lock the tension pin in place by retightening motor lock.

   Note: *The pivot arm of the idler pulley will equally distribute the tension between the two V-belts.*

7. Check V-belt tension by applying moderate pressure on belt with your finger between two pulleys. The proper amount of belt deflection for this machine is approximately ½" (see **Figure 32**).

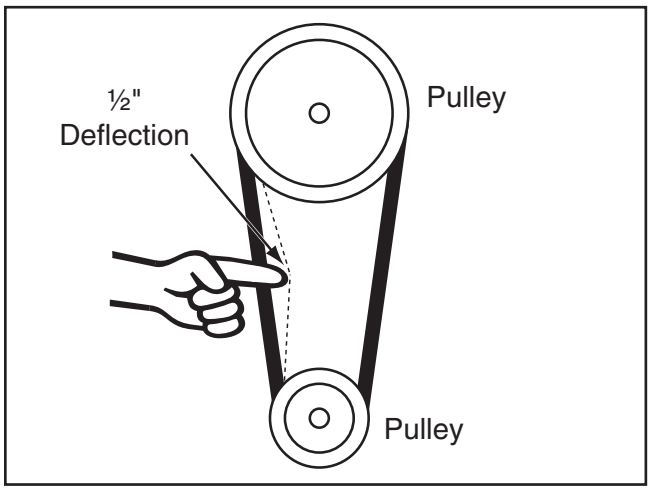


Figure 32. The correct amount of V-belt deflection when properly tensioned.

8. Close V-belt cover before beginning operations.

Configuration Example

Figure 33 shows the V-belts configured on the pulleys for a spindle speed of 320 RPM.

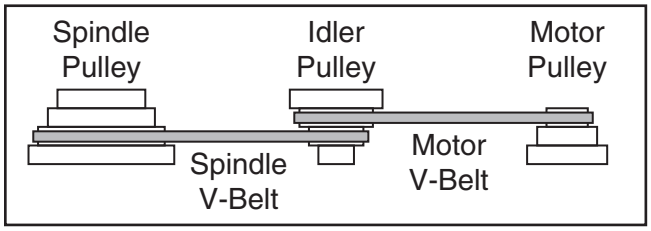


Figure 33. Example of V-belts configured for a spindle speed of 320 RPM.

Spindle Downfeed

Spindle downfeed movement on the mill is controlled by two mechanisms: 1) The coarse downfeed lever, and 2) the fine downfeed handwheel. Refer to **Downfeed Controls** on **Page 4** for detailed descriptions of all downfeed controls and components.

Using Coarse Downfeed

Coarse downfeed is typically used for drilling, because it allows you to quickly lower the spindle with varying speed/pressure, and it automatically retracts the spindle to the top position when released.

To use coarse downfeed, make sure the spindle is completely stopped. Loosen the downfeed selector, and then rotate the coarse downfeed lever around the hub to control spindle depth (see **Figures 34**–**35**).

Note: *To maintain control of the upward spindle travel, always continue holding the lever until the spindle returns to the top position. Letting go of the lever too soon will cause the spindle to retract too quickly and slam up into the headstock.*

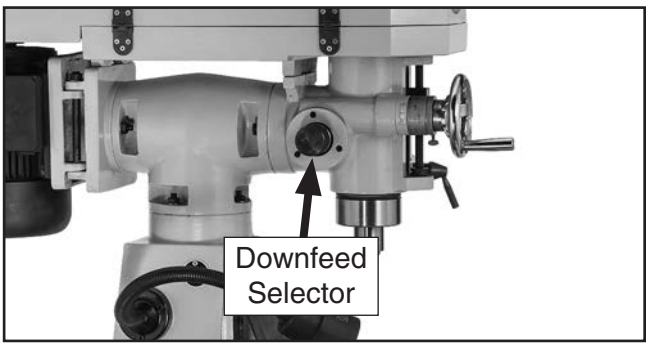


Figure 34. Location of downfeed selector.

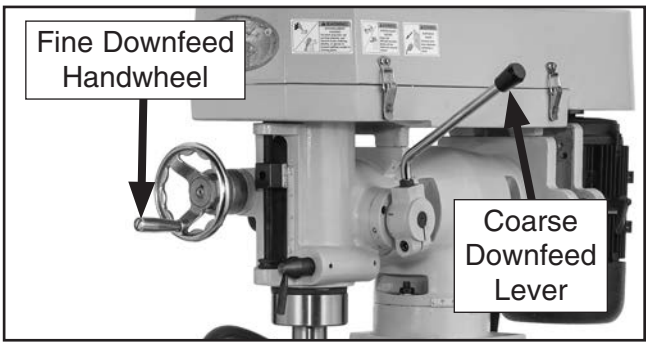


Figure 35. Location of fine and coarse downfeed controls.

Using Fine Downfeed

Fine downfeed is used for precise Z-axis positioning of a cutter or end-mill when milling a flat surface across the face of a workpiece. In order to ensure the milled surface remains flat, the quill lock lever should be locked after each adjustment to ensure the spindle height cannot move until the entire milling operation is complete.

To use fine downfeed, make sure the spindle is completely stopped. Tighten the downfeed selector, and then rotate the fine downfeed handwheel to raise or lower the spindle (see **Figures 34**–**35**).

Setting Downfeed Stop

The downfeed stop sets the depth of spindle travel for repeat operations.

To set downfeed stop:

1. Lower spindle to desired depth, then lock quill.

2. Rotate downfeed stop until it contacts quill dog, then tighten locking wheel against stop to secure it (see **Figure 36**).

3. Release quill lock and raise quill (see **Figure 36**).

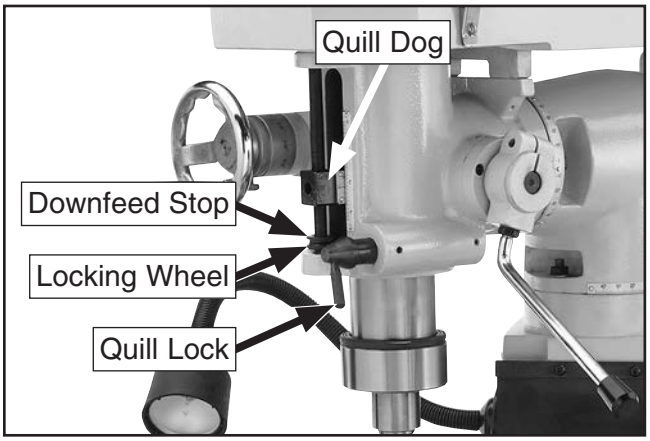


Figure 36. Location of downfeed stop controls.

Loading/Unloading Tooling

The mill is equipped with an R-8 spindle taper and a 7/16"-20 spindle drawbar (see **Figure 37**).

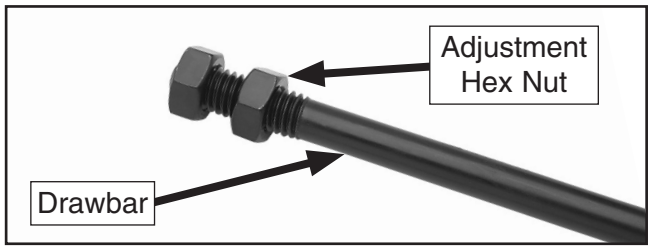


Figure 37. Drawbar and adjustment nut.

Loading Tooling

1. DISCONNECT MACHINE FROM POWER!

2. Clean any debris or oily substances from inside spindle taper and mating surface of tooling.

   Note: *Debris or oily substances can prevent tooling and spindle from properly mating. This condition can cause excessive vibration, poor cutting results, or tool/workpiece damage.*

3. Open V-belt cover, rotate adjustment hex nut to top of drawbar, then place drawbar through top of spindle (see **Figure 38**).

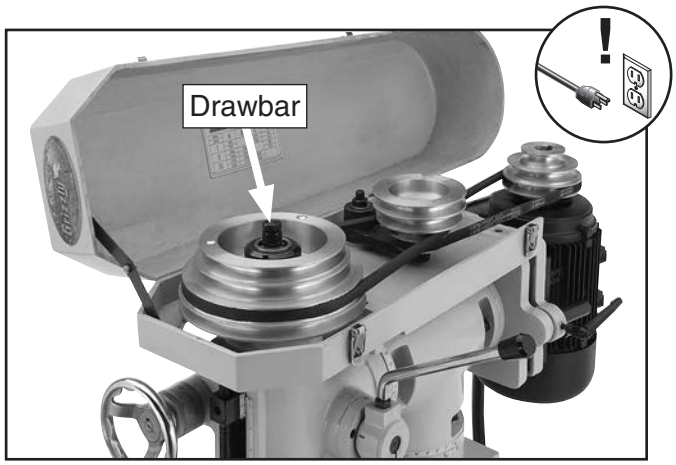


Figure 38. Drawbar inserted through the top of the spindle.

4. Align keyway of tool (see **Figure 39**) with protruding pin inside spindle taper, and firmly push tool into spindle to seat it.

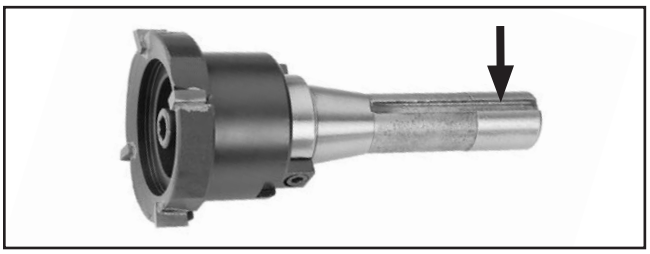


Figure 39. Identifying tool keyway.

5. Thread drawbar into tool by hand until it is snug.

6. Use 19mm wrench to tighten drawbar an additional ¼-turn.

   Note: *Do not overtighten drawbar. Overtightening makes tool removal difficult and may damage arbor and threads.*

Unloading Tooling

1. DISCONNECT MACHINE FROM POWER!

2. Loosen drawbar one full rotation.

   Note: *Make sure drawbar has at least three threads engaged with tooling, or drawbar and tool threads could be damaged in next step.*

3. Tap top of drawbar with brass or dead-blow hammer to unseat taper (see **Figure 40**).

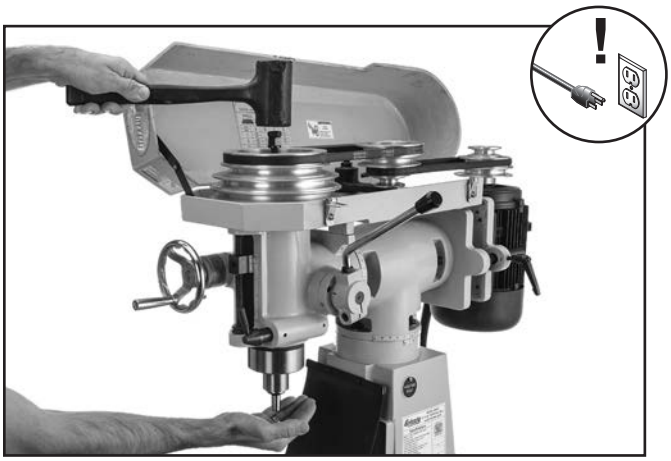


Figure 40. Tapping drawbar to unseat tool taper.

4. Support tool with one hand and fully unthread drawbar from tool.

SECTION 5: ACCESSORIES

⚠WARNING

Installing unapproved accessories may cause machine to malfunction, resulting in serious personal injury or machine damage. To reduce this risk, only install accessories recommended for this machine by Grizzly.

NOTICE

Refer to our website or latest catalog for additional recommended accessories.

SB1348—South Bend® 8-Pc. R-8 Collet Set
SB1349—South Bend® 16-Pc. R-8 Collet Set
Get true South Bend® quality and precision with one of these Quick-Change Collet Sets. Each set includes hardened and precision-ground spring collets for maximum holding power, collet chuck, spanner wrench, and protective moulded case.

Figure 41. Model SB1349 South Bend 16-Pc. R-8 Collet Set.

T25702— 5-Pc. R-8 End Mill Holder Set
SB1382—Keyless Integral Chuck R8, ½"
Model T25702 includes holders for 3/16", 3/8", 1/2", 5/8", and 3/4" end mills. Takes 7/16"-20 drawbar.

Mode SB1382 keyless chucks come as close to zero TIR (Total Indicated Runout) as possible. Takes 7/16"-20 drawbar.

Figure 42. 5-Pc. end mill holder set and keyless integral chuck.

G9756—20-Pc. 2- & 4-Flute HSS End Mill Set
G9760—20-Pc. 2- & 4-Flute TiN End Mill Set
Includes these sizes and styles in two and four flute styles: 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", and 3/4".

Figure 43. Grizzly 20-Pc. end mill set.

H5939—18-Pc. R-8 Boring Head Set
Set comes with 2" boring head with 7/8"-20 mounting threads, nine carbide-tipped boring bars with 1/2" shanks, and two facing tools with 3/16" square HSS cutting tools.

Figure 44. H5939 18-Pc. R-8 Boring Head Set.

G7154—5" Precision Milling Vise
G7156—4" Precision Milling Vise
Swiveling Milling Vises feature perfectly aligned, precision-ground jaws, large Acme® screws, and easy to read 0°–360° scales.

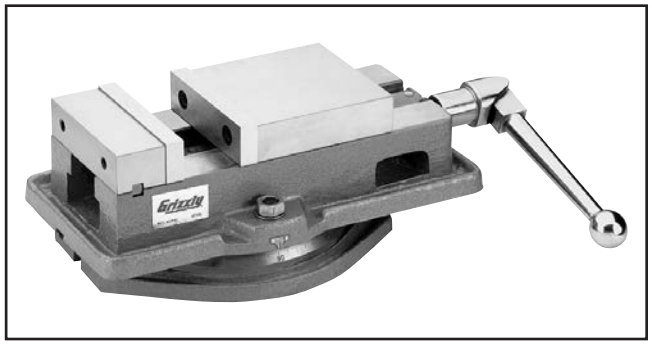


Figure 45. G7154 Precision Milling Vise.

H5935—3-Pc. Fly Cutter Set w/ 1/2" Tool Bits
H8321—2 1/2" Face Mill Cutter
These cutters provide top-of-the-line precision, quality, and efficiency.

Figure 46. H5935 3-Pc. Fly Cutter Set and H8321 2 1/2" Face Mill Cutter.

H7527— 6" Rotary Table w/ Div. Plates
Use this 6" rotary table in either the horizontal or vertical position for a variety of milling applications. With the set of dividing plates and adjustable tailstock, your milling applications are nearly unlimited. With 4 degrees of table movement per handle rotation, and a 20-second vernier scale, control is very accurate and precise. Also includes a 3/8" clamping set for the 4-slot table. Everything you need in one great set!

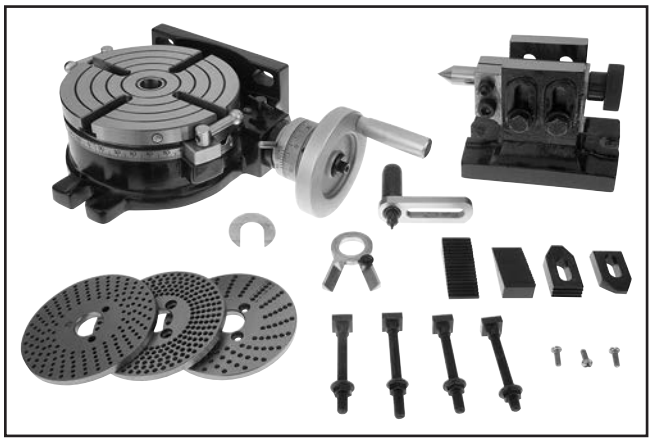


Figure 47. H7527 6" Rotary Table w/Div. Plates.

G1075—52-Pc. Clamping Kit
This kit includes 24 studs, 6 step block pairs, 6 T-nuts, 6 flange nuts, 4 coupling nuts, and 6 end hold-downs. The rack is slotted so it can be mounted close to the machine for easy access. Made for 1/2" T-slots.

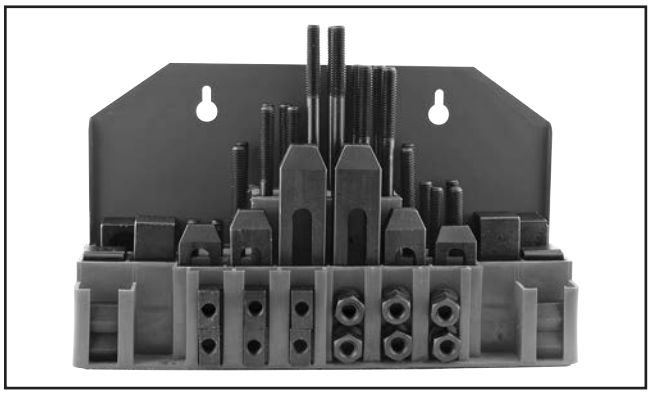


Figure 48. G1075 52-Pc. Clamping Kit.

V-Block Pairs w/Clamps

H5608—1⅝" x 1¾" x 1¼", 1" Capacity
H5609—1¾" x 1⅝" x 1⅜", 1" Capacity
H5610—2" x 1½" x 1½", 1½" Capacity
H5611—2¾" x 1¾" x 1⅝", 1½" Capacity
These V-blocks with clamps are numbered and are precision-ground for accuracy. Sold in matched pairs.

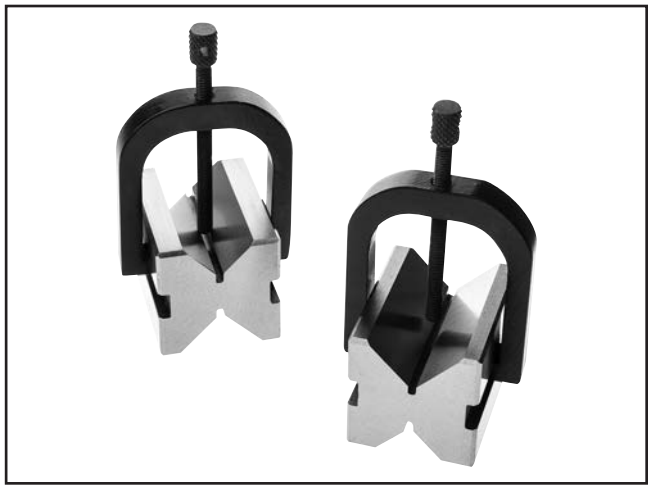


Figure 49. Grizzly V-block pairs with clamps (Model H5610 shown).

G9806—Dial Indicator 0.05" Range x 0.0001"
H3326—Digital Indicator
The G9806 Dial Indicator has graduations of 0.0001" (one ten thousandth of an inch) and range of 0.05" (five hundredths of an inch). Fits all dial indicator magnetic bases.

The H3326 Digital Indicator reads down to 0.0005" (five ten thousandths of an inch) with a range of 0.50". LCD display reads in inches and millimeters, and mounts to most magnetic bases having a ¼" stud

Figure 50. G9806 Dial Indicator 0.05" Range x 0.0001".

G9815—Thin Parallel Set, 10 Pairs
G5646—10-Pc. Precision Angle Block Set
H2940—Round Bar Center Finder
H5556—4-Pc. Edge Finder Set
Speed setup, production and inspection with the Grizzly Precision Angle Block Set and Thin Parallel Set made from hardened and precision-ground steel, Round Bar Center Finder, and 4-Pc. Edge Finder Set.

Figure 51. Grizzly precision angle block sets, and center and edge finders.

T24799—1-2-3 Precision Parallel Blocks
T24800—2-4-6 Precision Parallel Blocks
These blocks are extremely handy for layout and setup work. Matched blocks are hardened and precision-ground so all six sides are square to within 0.0003".

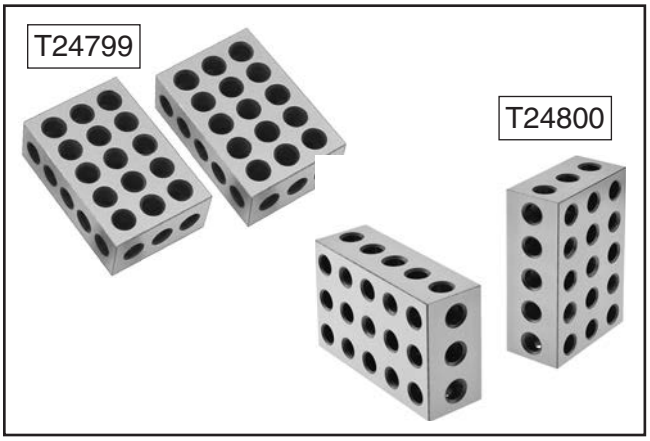


Figure 52. T24799 and T24800 Precision Parallel Blocks.

H6087—2 Axis Digital Readout (8" x 20")
This DRO features selectable resolution down to 5μm, absolute/incremental coordinate display, arc function, line of holes function, angled cuts function, 199 user defined datum points, centering/cutter offset, double sealed scales, inches/millimeters, calculator with trig functions, and linear error compensation.

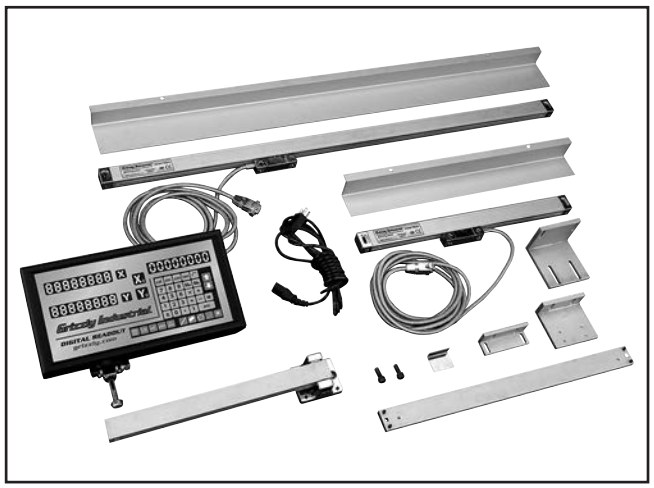


Figure 53. H6087 2-Axis Digital Read Out.

Basic Eye Protection

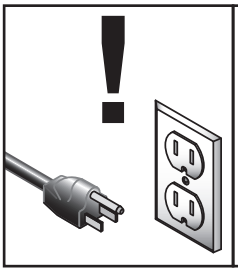
T20501—Face Shield Crown Protector 4"
T20502—Face Shield Crown Protector 7"
T20503—Face Shield Window
T20451—"Kirova" Clear Safety Glasses
T20452—"Kirova" Anti-Reflective S. Glasses
H7194—Bifocal Safety Glasses 1.5
H7195—Bifocal Safety Glasses 2.0
H7196—Bifocal Safety Glasses 2.5

Figure 54. Assortment of basic eye protection.

SB1365—South Bend Way Oil-ISO 68
T26419—Syn-O-Gen Synthetic Grease

Figure 55. Recommended products for machine lubrication.

SECTION 6: MAINTENANCE



⚠WARNING

To reduce risk of shock or accidental startup, always disconnect machine from power before adjustments, maintenance, or service.

Schedule

For optimum performance from your machine, follow this maintenance schedule and refer to any specific instructions given in this section.

Ongoing

To help minimize your risk of injury and maintain proper machine operation, if you ever observe any of the items below shut the machine down immediately, disconnect it from power, and fix the problem before continuing operations.

- Loose mounting bolts or fasteners.
- Worn, frayed, cracked, or damaged wires.
- Open belt guard.
- Any other unsafe condition.

Before Beginning Operations

- Press the OFF button on front panel of ON/OFF switch to prevent spindle startup when connected to power (see **Page 5**).
- Make sure the X-axis power feed is turned ***OFF*** (G0802) to prevent unintentional table movement when connected to power (see **Page 28**).
- Perform lubrication tasks as directed in the **Lubrication** section on **Page 39**.
- Check table movement in all three axis directions for loose/tight gibs. Adjust the gibs if necessary (see **Page 47**).

Daily, After Operations

- Disconnect the machine from power.
- Vacuum/clean all chips and swarf from table, slides, and base.
- Wipe down all unpainted or machined surfaces with a good quality rust preventative.

Cleaning & Protecting

Regular cleaning is one of the most important steps in taking good care of this mill. Each operator is responsible for cleaning the machine immediately after using it or at the end of the day. We recommend that the cleaning routine be planned into the workflow schedule, so that adequate time is set aside to do the job right.

Typically, the easiest way to clean swarf from the ways and table is to use a wet/dry shop vacuum that is dedicated for this purpose only. The small chips leftover after vacuuming can be wiped up with a slightly oiled rag. Avoid using compressed air to blow off chips, as this may drive them deeper into moving surfaces and could cause sharp chips to fly into your face or hands.

Besides the ways and elevation leadscrew, all other unpainted and machined surfaces should be wiped down daily to keep them rust-free and in top condition. This includes any surface that could be vulnerable to rust if left unprotected (this especially includes any parts that may be exposed to water soluble cutting fluids). Typically with these parts, a thin film of oil is all that is necessary for protection.

Keep tables rust-free with ISO 68 way oil.

Lubrication

The mill has numerous moving metal-to-metal contacts that require regular and proper lubrication to ensure efficient and long-lasting operation, and to protect your investment.

Other than the lubrication points covered in this section, all other bearings are internally lubricated and sealed at the factory. Simply leave them alone unless they need to be replaced.

Before performing any lubrication task, DISCONNECT MACHINE FROM POWER!

Important: *Before adding lubricant, clean the debris and grime from the oil cup or grease fitting and the immediate area to prevent contamination of the new lubricant.*

Use the schedule and information in the chart below as a daily guide for lubrication tasks. Follow the referenced sections on the following pages for detailed instructions.

NOTICE

The following recommended lubrication schedule is based on light to medium mill usage. Keeping in mind that lubrication helps to protect value and operation of mill, you may need to perform lubrication tasks more frequently depending on your usage.

Lubrication Task	Frequency (Hours of Operation)	Page Ref.
Table Ways	4–8 Hrs.	**This Page**
Leadscrews	40 Hrs.	**40**
Downfeed Gearing	120 Hrs.	**41**
Power Feed Gears	160 Hrs.	**42**

Figure 56. Recommended lubrication tasks, schedules, and instruction page references.

NOTICE

Failure to follow reasonable lubrication practices as instructed in this manual for the mill could lead to premature failure of the mill and will void the warranty.

Table Ways (One-Shot Oiler)

Oil Type ..... Model SB1365 or ISO 68 Equivalent
Oil Amount..... One Pull of Pump Handle
Check/Add Frequency..... 4–8 Hrs. of Operation

The one-shot oiler is connected to a series of tubes that carry the lubricant to wear points along the table horizontal and vertical ways.

Pump the handle slowly to send the oil through the tubes (see **Figure 57**), then move the table through all paths of movement to evenly distribute the lubricant.

Look through the clear sides of the reservoir to know when to re-fill it. The reservoir capacity is ½-liter.

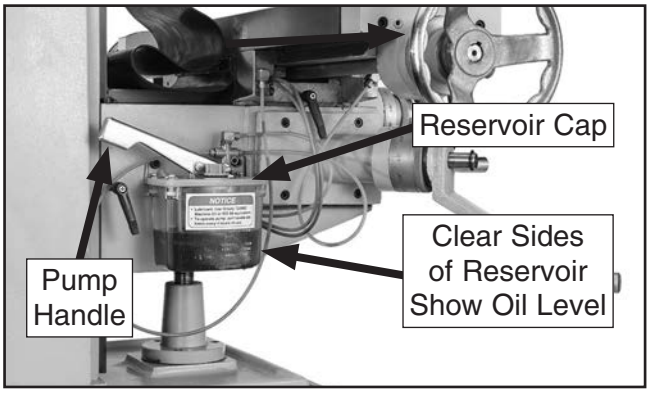


Figure 57. One-shot oiler components.

Table Leadscrews

Grease Type .....NLGI #2 or Equivalent
Grease Amount .....Thin Coat
Check/Add Frequency .....40 Hrs. of Operation

Use mineral spirits to clean the leadscrews shown in **Figures 58–60**, then wipe them dry. Brush a thin coat of lubricant on the leadscrew threads, then rotate each leadscrew through its full path to distribute the grease.

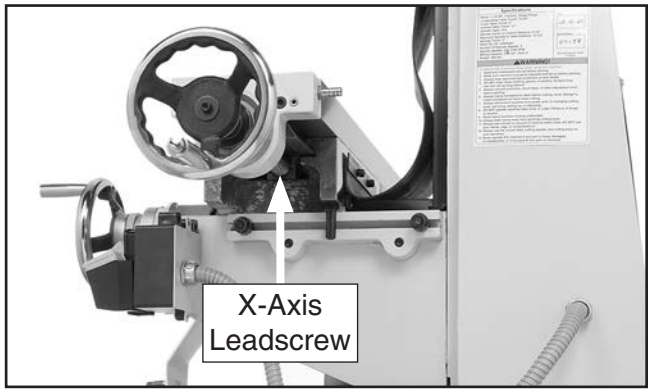


Figure 58. X-axis leadscrew as viewed from the underneath right side of the table.

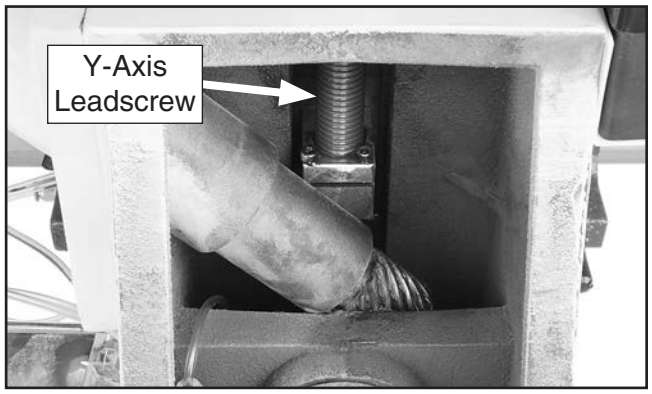


Figure 59. Y-axis leadscrew viewed from underneath the knee.

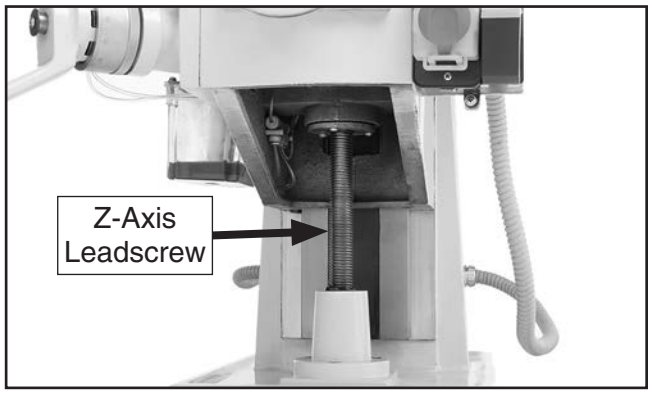


Figure 60. Z-axis leadscrew viewed from underneath the knee.

Quill Gear Shaft Ball Oiler

Oil Type .....SB1365 or ISO 68 Equivalent
Oil Amount.....1 or 2 Squirts
Lubrication Frequency..... As Needed

The coarse downfeed shaft has a ball oiler that is used for lubricating the shaft (see **Figure 61**).

Proper lubrication of the ball oiler is done with a pump-type oil can that has a plastic or rubberized cone tip. We do not recommend using metal needle or lance tips, as they can push the ball too far into the oiler, break the spring seat, and lodge the ball in the oil galley.

Lubricate the ball oiler before and after machine use, and more frequently under heavy use. When lubricating the ball oiler, first clean the outside surface to remove any dust or grime. Push the rubber or plastic tip of the oil can nozzle against the ball oiler to create a hydraulic seal, then pump the oil can once or twice. If you see sludge and contaminants coming out of the lubrication area, keep pumping the oil can until the oil runs clear. When finished, wipe away any excess oil.

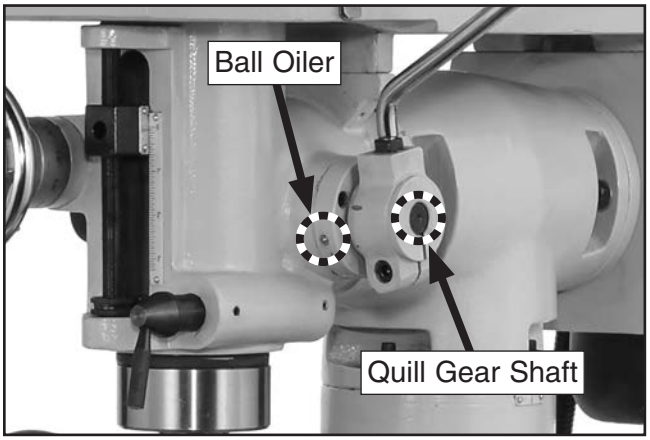


Figure 61. Location of coarse downfeed shaft ball oiler.

Downfeed Gearing

Grease Type ..... NLGI #2 or Equivalent
Grease Amount ..... Thin Coat
Check/Add Frequency ..... 40 Hrs. of Operation

Tools Needed	Qty
Hex Wrench 4mm	1
Hex Wrench 6mm	1
External Retaining Ring Pliers	1

To lubricate quill downfeed gears:

1. DISCONNECT MACHINE FROM POWER!

2. Use quill lock to keep quill from moving during following steps.

3. Loosen set screw that secures coarse downfeed lever assembly to quill gear shaft, then remove assembly from shaft (see **Figure 62**).

4. Remove external retaining ring that secures end cap (see **Figure 62**) to quill gear shaft, then remove end cap.

   Note: *As end cap becomes loose, it will spin slightly as the spring inside cavity unwinds—this is normal.*

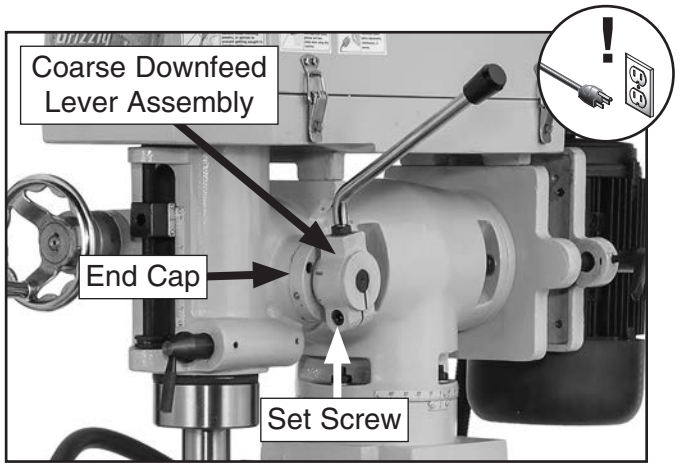


Figure 62. Coarse downfeed lever assembly and end cap.

5. Clean away any grime from inside cavity and on gear shaft, then use nozzle of a grease gun to apply a small amount of lubricant to teeth of gear shaft and quill pinion (see **Figure 63**).

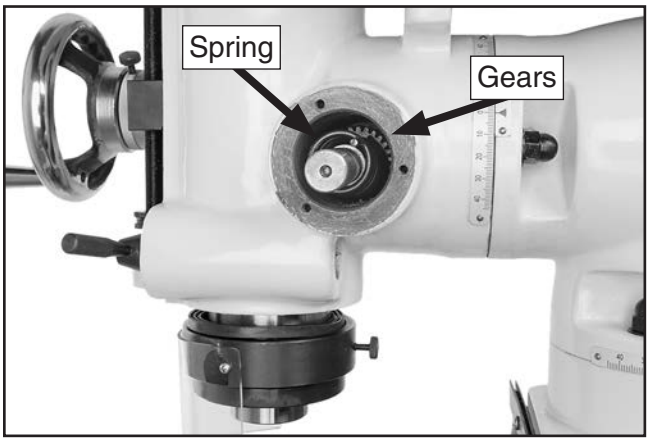


Figure 63. Right side of quill gear shaft exposed.

6. Remove end cap from left side of quill gear shaft that surrounds downfeed selector (see **Figure 64**).

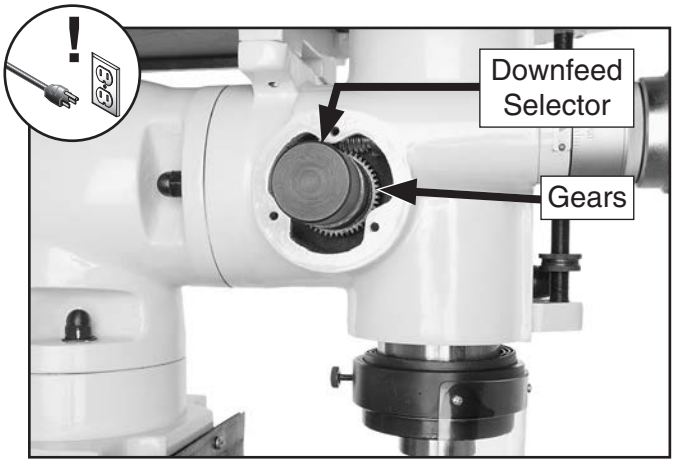


Figure 64. Left side of quill gear shaft exposed.

7. Clean away any grime from inside the cavity and the gear shaft, then use nozzle of a grease gun to apply a small amount of lubricant to teeth of gear shaft and fine downfeed worm gear.

8. Re-install parts in reverse order they were removed.

Note: *When re-installing end cap on right side of quill gear shaft, insert spring prong into inside hole of end cap shown in* ***Figure 65****, then rotate end cap approximately ⅓-turn clockwise to tension spring before securing it to head.*

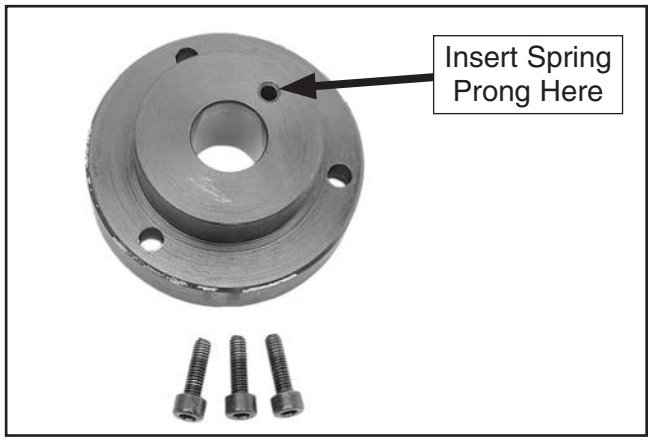


Figure 65. End cap from the right side of quill gear shaft.

Power Feed Gears

Grease Type .....NLGI #2 or Equivalent
Grease Amount .....Two Pumps of Grease Gun
Check/Add Frequency .....160 Hrs. of Operation

Tool Needed	Qty
Wrench 19mm	1

To lubricate power feed gears:

1. DISCONNECT UNIT FROM POWER!

2. Push handwheel *in* to engage detent sleeve and prevent leadscrew from rotating, then remove cap screw, fender washer, and handwheel from power feed end of X-axis leadscrew (see **Figure 66**).

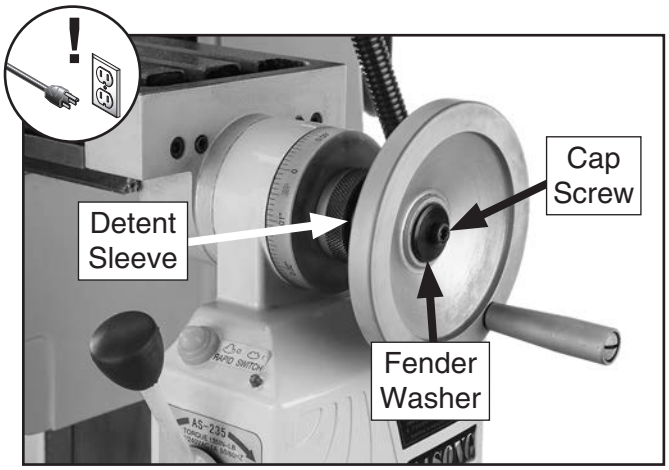


Figure 66. X-axis handwheel mounting fasteners.

3. Remove compression spring, spacer, and detent sleeve (see **Figure 67**).

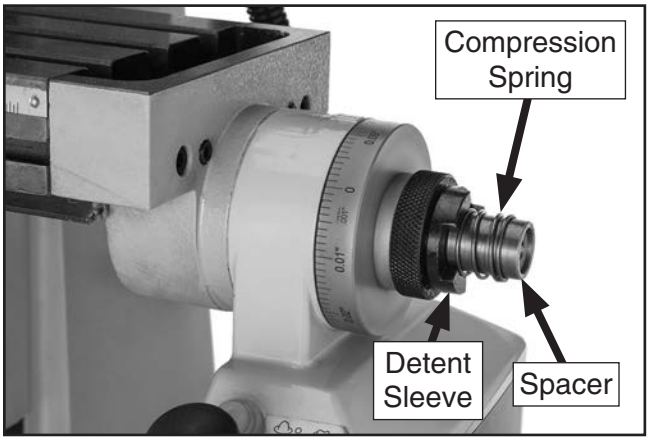


Figure 67. X-axis leadscrew with cap screw, fender washer, and handwheel removed.

4. Slide graduated dial assembly off of X-axis leadscrew (see **Figure 68**).

   Note: *Do not remove bevel gear or knurled knob from assembly (see **Figure 68**).*

   Tip: *Rotate graduated dial assembly by hand until leadscrew alignment key faces upward (see **Figure 68**), to help prevent losing key in the following steps.*

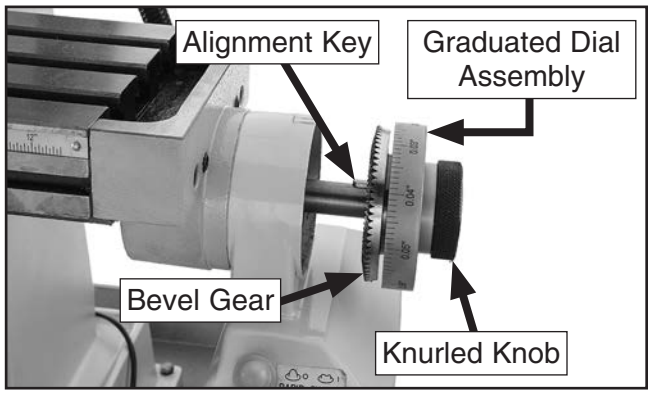


Figure 68. Removing graduated dial assembly from X-axis leadscrew.

5. Brush a light coat of grease on teeth of bevel gear and smaller drive gear (see **Figure 69**).

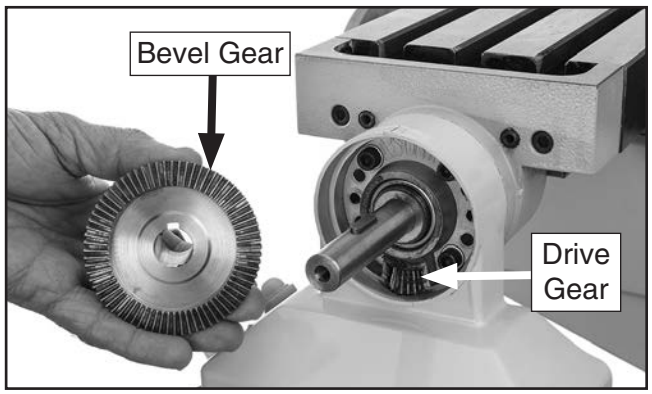


Figure 69. Power feed bevel gear and drive gear.

6. Make sure leadscrew alignment key is installed, then align graduated dial assembly keyway with key as you slide assembly onto leadscrew and mesh bevel gear with drive gear.

7. Re-install graduated dial assembly, spacer, detent sleeve, compression spring, and X-axis handwheel in reverse order from removal.

8. Manually move table with X-axis handwheel to check gear movement and to distribute grease on gears. If movement is not smooth, repeat **Steps 2–8** until it is.

Machine Storage

To avoid rust problems or corrosion damage, use the following information to protect your investment when storing the mill for any length of time.

- DISCONNECT MACHINE FROM POWER!

- Lubricate the mill as directed in the **Lubrication** section beginning on **Page 39**.

- Thoroughly clean all unpainted, bare metal surfaces, then coat them with a light weight grease or rust preventative. Take care to ensure these surfaces are completely covered but that the grease or rust preventative is kept off painted surfaces.

  Note: *If the machine will be out of service for only a short period of time, use way oil or a good grade of medium-weight machine oil (not auto engine oil) in place of the grease or rust preventative.*

- Loosen the belts to prevent them from stretching during storage. Post a reminder on the mill that the belts need to be re-tensioned before resuming operations.

- Cover and place the machine in a dry area that is out of direct sunlight and away from hazardous fumes, paint, solvents, or gas. Fumes and sunlight can bleach or discolor paint and plastic parts.

- At least once a month, start the mill and run all gear-driven components for a few minutes. This will keep the bearings, bushings, gears, and shafts well lubricated and protected from corrosion, especially during the winter months.

SECTION 7: SERVICE

Review the troubleshooting procedures in this section if a problem develops with your machine. If you need replacement parts or additional help with a procedure, call our Technical Support. **Note:** *Please gather the serial number and manufacture date of your machine before calling.*

Troubleshooting

Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start or a breaker trips.	1. Incorrect power supply voltage/circuit size. 2. Power supply circuit breaker tripped or fuse blown. 3. Motor wires connected incorrectly. 4. Plug/receptacle at fault/wired wrong. 5. Wiring open/has high resistance. 6. Spindle rotation switch at fault. 7. Start capacitor at fault. 8. Centrifugal switch at fault. 9. Motor at fault.	1. Ensure correct power supply voltage/circuit size. 2. Ensure circuit is sized correctly and free of shorts. Reset circuit breaker or replace fuse. 3. Correct motor wiring connections. 4. Test for good contacts; correct the wiring. 5. Check/fix broken, disconnected, or corroded wires. 6. Replace switch. 7. Test/replace. 8. Adjust/replace centrifugal switch if available. 9. Test/repair/replace.
Machine stalls or is underpowered.	1. Machine undersized for task. 2. Feed rate/cutting speed too fast. 3. Wrong tooling for workpiece material. 4. Belts are loose/slipping/worn/oily. 5. Motor wired incorrectly. 6. Spindle rotation switch at fault. 7. Motor overheated. 8. Pulley/sprocket slipping on shaft. 9. Centrifugal switch at fault. 10. Motor bearings at fault.	1. Use correct cutter/bit; reduce feed rate; reduce spindle RPM; use coolant if possible. 2. Decrease feed rate/cutting speed. 3. Use correct type/size of tooling. 4. Properly tension belts (**Page 48**). Replace belts if worn or contaminated with grease or oil. 5. Wire motor correctly. 6. Test/replace switch. 7. Clean motor, let cool, and reduce workload. 8. Replace loose pulley/shaft. 9. Adjust/replace centrifugal switch if available. 10. Test/repair/replace.
Machine has vibration or noisy operation.	1. Workpiece loose. 2. Belt(s) worn or loose. 3. Motor or component loose. 4. Chuck or cutter at fault. 5. Belt(s) slapping headstock casting/guard. 6. Motor fan rubbing on fan cover. 7. Pulley loose. 8. Machine incorrectly mounted. 9. Motor bearings at fault. 10. Centrifugal switch at fault.	1. Use correct holding fixture/reclamp workpiece. 2. Inspect/replace belts with a new matched set. 3. Inspect/replace damaged bolts/nuts, and retighten with thread locking fluid. 4. Replace unbalanced chuck; replace/resharpen cutter; use correct feed rate. 5. Replace/re-align belts with a matched set. 6. Fix/replace fan cover; replace loose/damaged fan. 7. Re-align/replace shaft, pulley set screw, and key. 8. Tighten mounting bolts; relocate/shim machine. 9. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement. 10. Replace.

Mill

Symptom	Possible Cause	Possible Solution
Tool loose in spindle.	1. Tool is not fully drawn up into spindle taper. 2. Debris on tool or in spindle taper before tool installed. 3. Taking too big of a cut.	1. Tighten drawbar. 2. Clean tool and spindle taper. 3. Lessen depth of cut and allow chips to clear.
Breaking tools or cutters.	1. Spindle speed/feed rate is too fast for workpiece material or tooling. 2. Cutting tool is too small. 3. Cutting tool getting too hot. 4. Taking too big of a cut. 5. Spindle extended too far down.	1. Set spindle speed correctly or use slower feed rate (**Page 30**). 2. Use larger cutting tool and slower feed rate. 3. Use coolant or oil for appropriate application. 4. Lessen depth of cut and allow chips to clear. 5. Fully retract spindle and raise table (**Pages 27** and **32**) to increase rigidity.
Workpiece or tool vibrates or chatters during operation.	1. Table locks not tight. 2. Workpiece not secure. 3. Spindle speed/feed rate is too fast for workpiece material or tooling. 4. Spindle extended too far down. 5. Quill lock lever not tight. 6. Gibs too loose in table.	1. Tighten table locks (**Page 27**). 2. Properly clamp workpiece on table or in vise. 3. Set spindle speed correctly or use slower feed rate (**Page 30**). 4. Fully retract spindle and raise table (**Pages 27** and **32**) to increase rigidity. 5. Tighten quill lock lever (**Page 32**). 6. Tighten gibs (**Page 47**).
Table is hard to move.	1. Table locks are tightened down. 2. Chips have loaded up on ways. 3. Ways are dry and need lubrication. 4. Table limit stops are interfering. 5. Gibs are too tight.	1. Fully release table locks (**Page 27**). 2. Frequently clean away chips or debris. 3. Lubricate ways (**Page 39**). 4. Make sure that table limit stops are not in the way. 5. Adjust gibs (**Page 47**).
Bad surface finish.	1. Spindle speed/feed rate is too fast. 2. Dull or incorrect cutting tool. 3. Wrong rotation of cutting tool. 4. Workpiece not secure. 5. Spindle extended too far down.	1. Set spindle speed correctly or use slower feed rate (**Page 30**). 2. Sharpen cutting tool or select one that better suits the operation. 3. Check for proper cutting tool rotation. 4. Properly clamp workpiece on table or in vise. 5. Fully retract spindle and raise table (**Pages 27 and 32**). This increases rigidity.
Cutting results not square.	1. Spindle is not 90° to table. 2. Table travel is inconsistent.	1. Tram the spindle (**Page 50**). 2. Adjust gibs (**Page 47**).
Spindle overheats.	1. Poor spindle bearing lubrication. 2. Spindle bearings too tight. 3. Spindle operated at high speeds for extended period.	1. Replace spindle bearings. 2. Properly adjust spindle bearing preload. 3. Allow spindle to cool during regular intervals.
Lack of power at spindle.	1. Belts are loose/slipping/worn/oily. 2. Wrong voltage.	1. Properly tension belts (**Page 48**). Replace belts if worn or contaminated with grease or oil. 2. Correct voltage.
Spindle switch does not work.	1. Shorted/disconnected wiring. 2. Switch at fault.	1. Inspect wiring connections. 2. Replace/repair as necessary.
Fine downfeed selector does not function.	1. Selector knob not engaged with key on shaft.	1. Remove selector knob and re-install, making sure it is engaged with key on shaft.

Power Feed

Symptom	Possible Cause	Possible Solution
Power feed will not turn on.	1. Power feed unit unplugged. 2. Limit switch engaged.	1. Move on/off switch to OFF position, move direction lever to neutral (middle) position, and rotate speed dial all the way counter clockwise to lowest setting to prevent accidental startup (**Page 28**), then plug power feed unit into properly grounded outlet. 2. Adjust limit stops, if necessary (**Page 28**).
Power feed does not move table or is slipping when turned on.	1. Table locked. 2. Direction lever not engaged. 3. Gears not meshing or teeth missing. 4. Motor shaft and gear shaft not engaged.	1. Disengage table locks (**Page 27**). 2. Engage direction lever (**Page 28**). 3. Check gears and adjust/replace. 4. Replace clutch.
Operates at high speed only or is inconsistent.	1. Rapid micro switch is stuck. 2. Wiring harness unplugged from circuit board.	1. Lightly tap on it to lower it. 2. Reconnect wiring harness.

Lamp

Symptom	Possible Cause	Possible Solution
Lamp will not light.	1. Power switch not turned on. 2. Bulb is burned out. 3. Short in wiring or wired incorrectly. 4. Switch at fault.	1. Press switch/button on lamp or control panel. 2. Replace bulb. 3. Trace and test wiring. Fix any errors. 4. Replace/repair as necessary.

Adjusting Gibs

Gibs are tapered lengths of metal that are sandwiched between two moving surfaces. Gibs control the gap between these surfaces and how they slide past one another. Correctly adjusting the gibs is critical to producing good milling results.

Tight gibs make table movement more accurate but stiff. Loose gibs make moving the table sloppy but easier to do. The goal of gib adjustment is to remove unnecessary sloppiness without causing the ways to bind.

Gibs are adjusted with a screw on each end of the gib, that move the tapered gib back-and-forth to increase or decrease the friction pressure between the sliding surfaces. The process of properly adjusting the gibs requires trial-and-error and patience.

Refer to **Figures 70–72** to identify the locations of the table, saddle, and knee gibs, and one of the two adjustment screws for each.

Note: *It will be necessary to remove small parts, such as way wipers and covers, to access the gib adjustment screws.*

Tool Needed	**Qty**
Screwdriver Flat Head #2	1

To adjust gibs:

1. DISCONNECT MACHINE FROM POWER!
2. Make sure all table/knee locks are loose.
3. Loosen one gib adjustment screw, then tighten the other the same amount to move the gib.
4. Use handwheels/knee crank to move table/knee until you feel a slight drag in the path of movement. Repeat **Steps 3–4** as necessary.

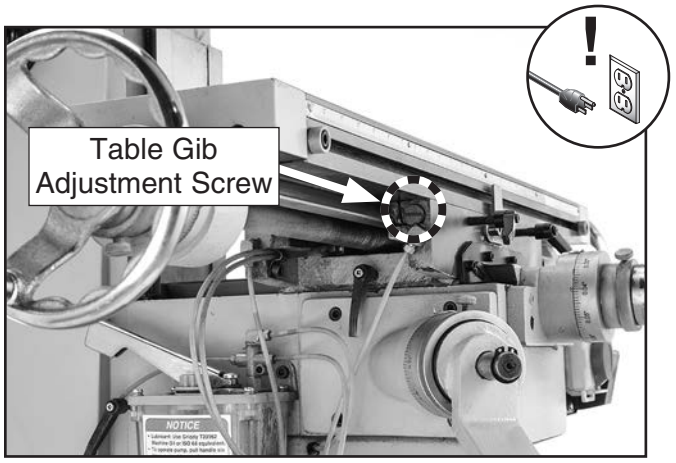


Figure 70. Table gib adjustment screw (1 of 2).

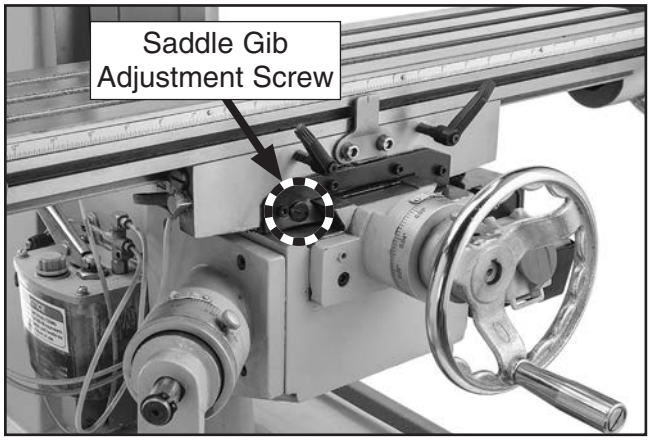


Figure 71. Saddle gib adjustment screw (1 of 2).

Figure 72. Knee gib adjustment screw (1 of 2).

Adjusting Leadscrew Backlash

Leadscrew backlash is the amount of motion or "play" in leadscrew rotation before the attached device begins to move. Leadscrews will always have a certain amount of backlash that will increase with normal wear.

Generally, 0.005"–0.010" leadscrew backlash is acceptable to ensure smooth movement and reduce the risk of premature thread wear. However, if you find it necessary to adjust leadscrew backlash, perform the following procedure.

Tool Needed **Qty**
T-Handle Hex Wrench 5mm 1

To adjust leadscrew backlash:

Tighten or loosen the cap screws on the leadscrew nuts (see **Figures 73–74**), then test the amount of backlash by slowly rocking the handwheels back-and-forth. Repeat if necessary.

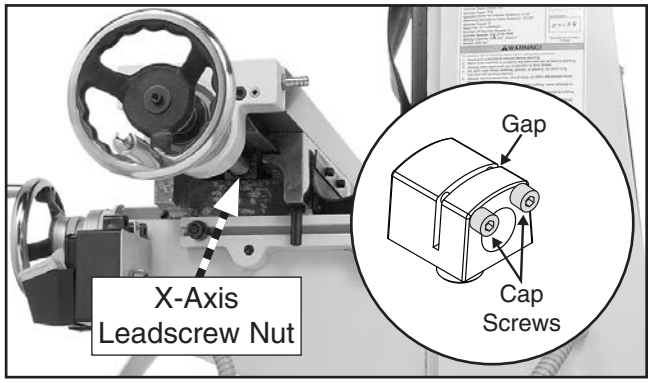


Figure 73. Location of X-axis leadscrew nut.

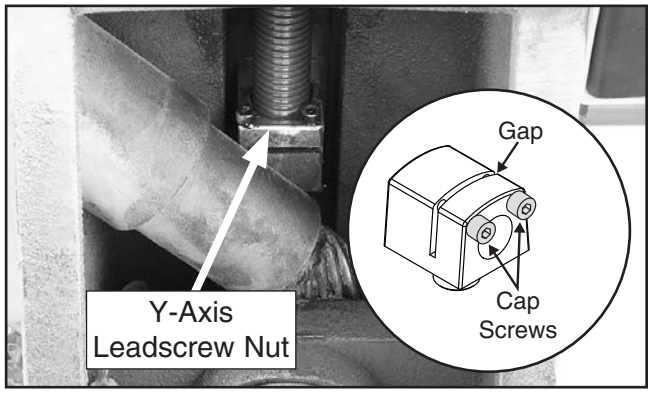


Figure 74. Y-axis leadscrew nut located under Y-axis handwheel.

Tensioning/ Replacing V-Belts

Inspect V-belts regularly for tension and wear. The proper amount of belt deflection for this machine is approximately ½" (see **Figure 76**). Replace the belts if they become frayed, cracked, damaged, or show any other signs of excess wear.

Tensioning V-Belts

The Model G0801/G0802 V-belt tension is controlled by the motor's position relative to the headstock. The closer the motor is to the headstock, the looser the belts, and the farther away from the headstock, the tighter the belts.

The motor position is secured by setting the tension pin, and then tightening the motor lock (see **Figure 75**).

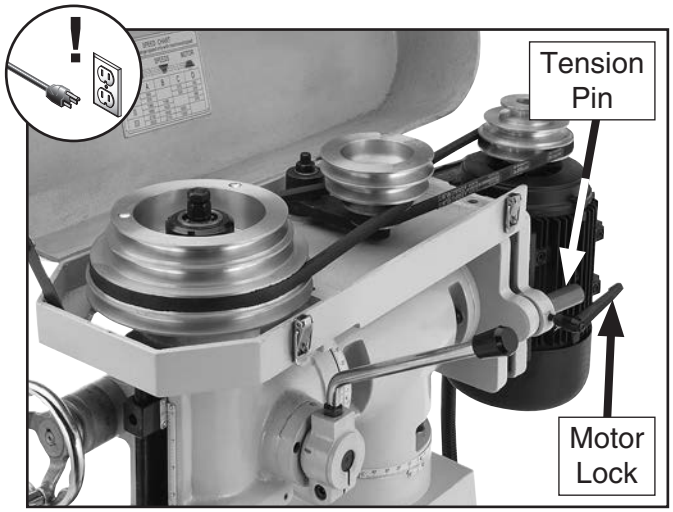


Figure 75. Location of motor lock and tension pin.

To tension V-belts:

1. DISCONNECT MACHINE FROM POWER!

2. Open V-belt cover and apply moderate pressure on belts with your finger between two pulleys. The proper amount of belt deflection for this machine is approximately ½" (see **Figure 76**).

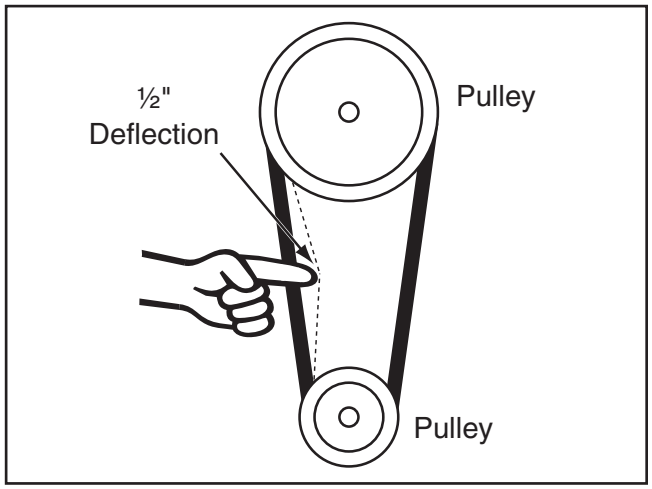


Figure 76. Correct amount of V-belt deflection when properly tensioned.

— If there is approximately ½" deflection, V-belts are properly tensioned and no adjustment is necessary.

— If there is more than ½" deflection, the V-belts are not properly tensioned and must be adjusted. Proceed to **Step 3**.

3. Loosen motor lock (see **Figure 77**), pull motor away from machine with moderate force to tension V-belts, make sure tension pin is pressing against headstock, then secure tension pin by retightening motor lock.

   Note: *Idler pivot arm (see **Figure 77**) will equally distribute tension between V-belts.*

4. Check V-belt tension again, and if necessary, repeat **Step 3**.

5. Close V-belt cover.

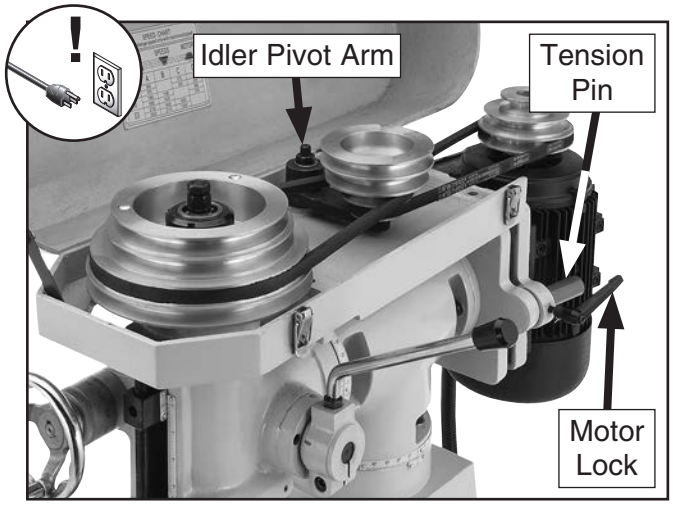


Figure 77. Belt tension controls and components.

Replacing V-Belts

Replacement V-belt part numbers can be found in the back of this manual in the **PARTS** section, beginning on **Page 56**.

To remove and replace V-belts:

1. DISCONNECT MACHINE FROM POWER!

2. Open V-belt cover.

3. Loosen motor lock (see **Figure 77**), and push motor toward machine to loosen V-belts.

4. Remove belt(s) from pulleys.

5. Install new V-belt(s) according to desired spindle speed (see **Setting Spindle Speed** on **Page 31**).

6. Properly tension V-belts.

Tramming Spindle

After positioning the head at an angle and when your operation requires that the spindle axis be precisely perpendicular to the table, you must tram or align the spindle with the table to ensure the spindle is exactly 90° to the table.

This procedure involves mounting a dial test indicator to the quill or spindle, rotating it around the table, and adjusting the spindle axis (Z-axis) 90° to the table X- and Y-axis, as illustrated in **Figure 78**.

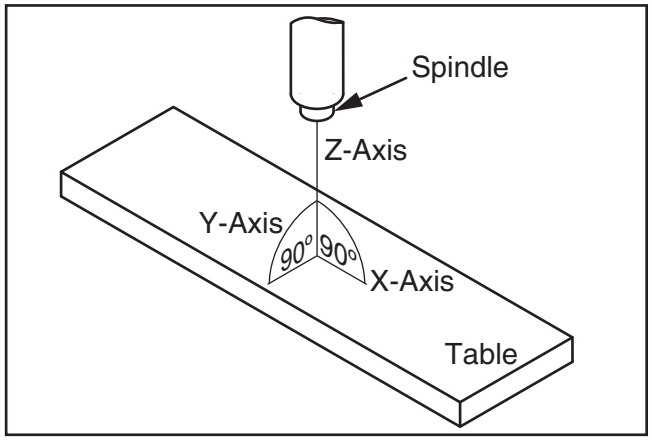


Figure 78. Spindle Z-axis perpendicular to the table X- and Y-axis.

We encourage you to research the many variations of spindle tramming to find the one that works best for you. If you do not already have a preference for performing this operation, use the following widely-used procedure for accurately tramming the spindle to the table.

Keep in mind that all workpiece top surfaces are not exactly parallel with the table top. You may choose to tram the spindle to the top surface of the workpiece after it is mounted rather than tramming the spindle to the table.

Tools Needed **Qty**

Dial Test Indicator
(with at least 0.0005" resolution) 1
Indicator Holder
(mounted on the quill/spindle) 1
Precision Parallel Block
(at least 9" in length)..... 1

Note: *A precision-ground plate can be substituted for the parallel blocks. Keep in mind that the farther the indicator point can be placed from the spindle axis, the more accurate the alignment measurements will be.*

To tram spindle to table:

1. DISCONNECT MACHINE FROM POWER!

2. Prepare mill for tramming by performing following tasks:

   - Verify the table is clean by running your hand over the top of it. If necessary, stone the table to remove all nicks and burrs, then clean off all debris.

   - Position the table for the milling operation you intend to perform after tramming—preferably centered with the saddle.

   - Tighten any table, knee, quill, or ram locks that should be tight during the intended milling operation.

3. Place parallel block underneath spindle.

4. Install indicator holder in spindle or on quill, then mount indicator so that point is as parallel to block as possible (see **Figure 79**).

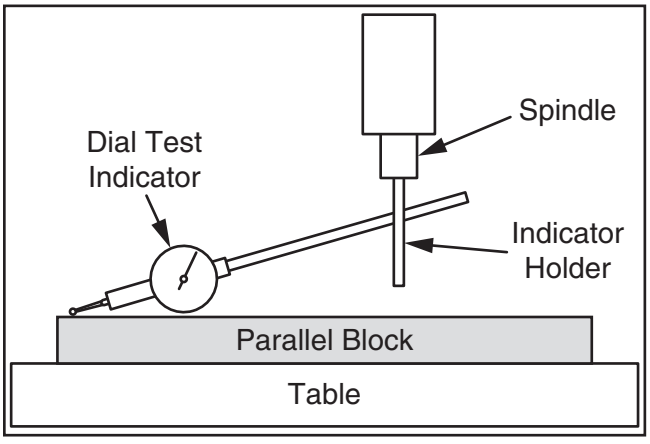


Figure 79. Dial test indicator mounted.

5. To measure spindle alignment along X-axis, place parallel block directly under spindle and indicator across length of table, as illustrated in **Figure 80**.

Note: *If you must reposition the quill or the knee to accommodate the above step, then review the tasks in **Step 2** to make sure the mill is properly prepared for tramming.*

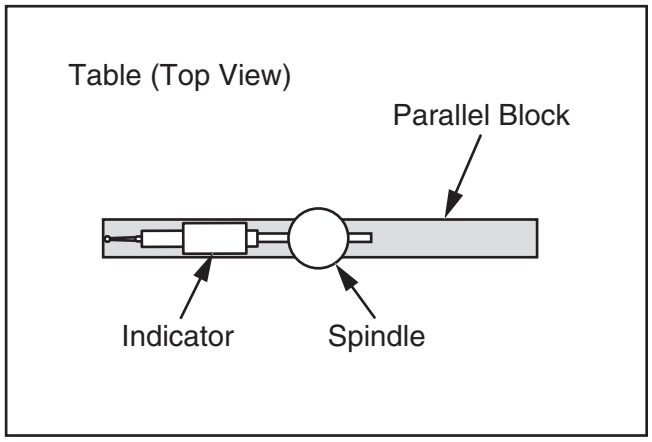


Figure 80. Parallel block and indicator positioned for the X-axis measurement (top view).

Note: *Your general goal in the next steps should be to get the difference of the indicator readings between the ends of the parallel bar down to 0.0005". However, the acceptable variance will depend on the requirements for your operation.*

6. Rotate spindle by hand so that indicator point rests on one end of parallel block, as illustrated in **Figures 79–80**, then zero the dial.

7. Rotate spindle so that indicator point rests in same manner on other end of block, then read dial.

— If the indicator dial still reads zero or is within the acceptable variance, continue on with **Step 8**.

— If the indicator dial has moved from zero beyond the acceptable variance, you will need to compensate for that amount by rotating the head left or right. Repeat **Steps 6–7** until you are satisfied with the spindle axis alignment along the table X-axis.

Note: *Keep one of the rotation lock bolts just snug so the head does not move loosely while you adjust it. Remember to tighten all the rotation lock bolts after adjusting the head.*

8. Place parallel block directly under spindle and across width of table, as illustrated in **Figure 81**.

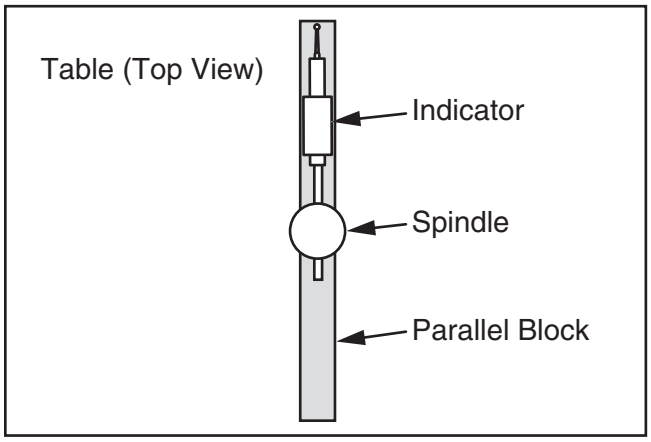


Figure 81. Parallel block and indicator positioned for the Y-axis measurement (top view).

9. Rotate spindle so indicator point rests on parallel bar, as illustrated in **Figure 81**, then zero the dial.

10. Rotate spindle so that indicator point rests on other end of bar in same manner, then read dial.

— If the indicator dial still reads zero or is within the acceptable variance, the spindle is precisely perpendicular to the table in both the X- and Y-axis, and the tramming procedure is complete.

— If the indicator dial has moved from zero beyond the acceptable variance, you will need to compensate for that amount by tilting the head forward or backward. Repeat **Steps 9–10** until you are satisfied with the spindle axis alignment along the table Y-axis.

Note: *Keep one of the tilt lock bolts just snug so the head does not move loosely while you adjust it. Remember to tighten all the tilt lock bolts after adjusting the head.*

SECTION 8: WIRING

These pages are current at the time of printing. However, in the spirit of improvement, we may make changes to the electrical systems of future machines. Compare the manufacture date of your machine to the one stated in this manual, and study this section carefully.

If there are differences between your machine and what is shown in this section, call Technical Support at (570) 546-9663 for assistance BEFORE making any changes to the wiring on your machine. An updated wiring diagram may be available. **Note:** *Please gather the serial number and manufacture date of your machine before calling. This information can be found on the main machine label.*

⚠WARNING
Wiring Safety Instructions

SHOCK HAZARD. Working on wiring that is connected to a power source is extremely dangerous. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. Disconnect the power from the machine before servicing electrical components!

MODIFICATIONS. Modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire. This includes the installation of unapproved aftermarket parts.

WIRE CONNECTIONS. All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.

CIRCUIT REQUIREMENTS. You MUST follow the requirements at the beginning of this manual when connecting your machine to a power source.

WIRE/COMPONENT DAMAGE. Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components.

MOTOR WIRING. The motor wiring shown in these diagrams is current at the time of printing but may not match your machine. If you find this to be the case, use the wiring diagram inside the motor junction box.

CAPACITORS/INVERTERS. Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

EXPERIENCING DIFFICULTIES. If you are experiencing difficulties understanding the information included in this section, contact our Technical Support at (570) 546-9663.

NOTICE

The photos and diagrams included in this section are best viewed in color. You can view these pages in color at www.grizzly.com.

COLOR KEY

BLACK	Bk	BLUE	Bl	YELLOW	Yl	LIGHT BLUE	Lb
WHITE	Wt	BROWN	Br	YELLOW GREEN	Yg	BLUE WHITE	Bw
GREEN	Gn	GRAY	Gy	PURPLE	Pu	TURQUOISE	Tu
RED	Rd	ORANGE	Or	PINK	Pk		

Electrical Wiring Photos

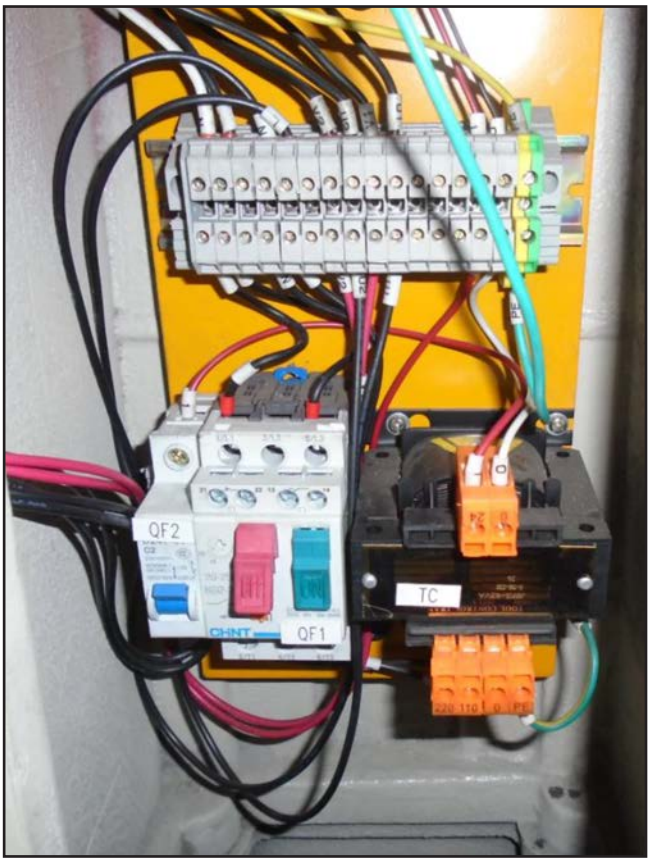


Figure 82. G0801 electrical panel wiring.

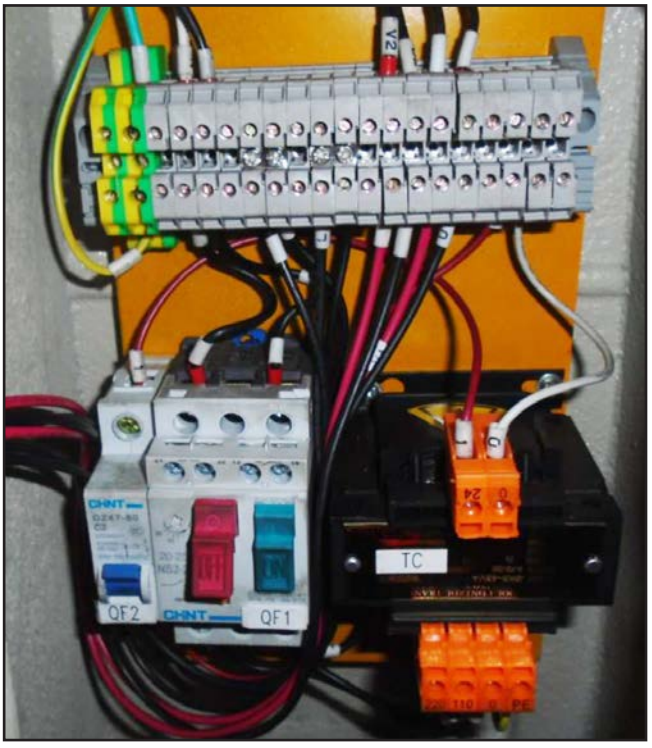


Figure 83. G0802 electrical panel wiring.

Figure 84. 110V motor wiring.

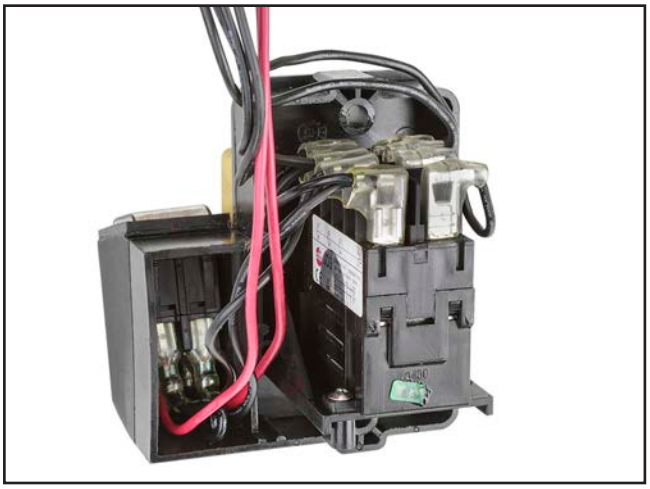
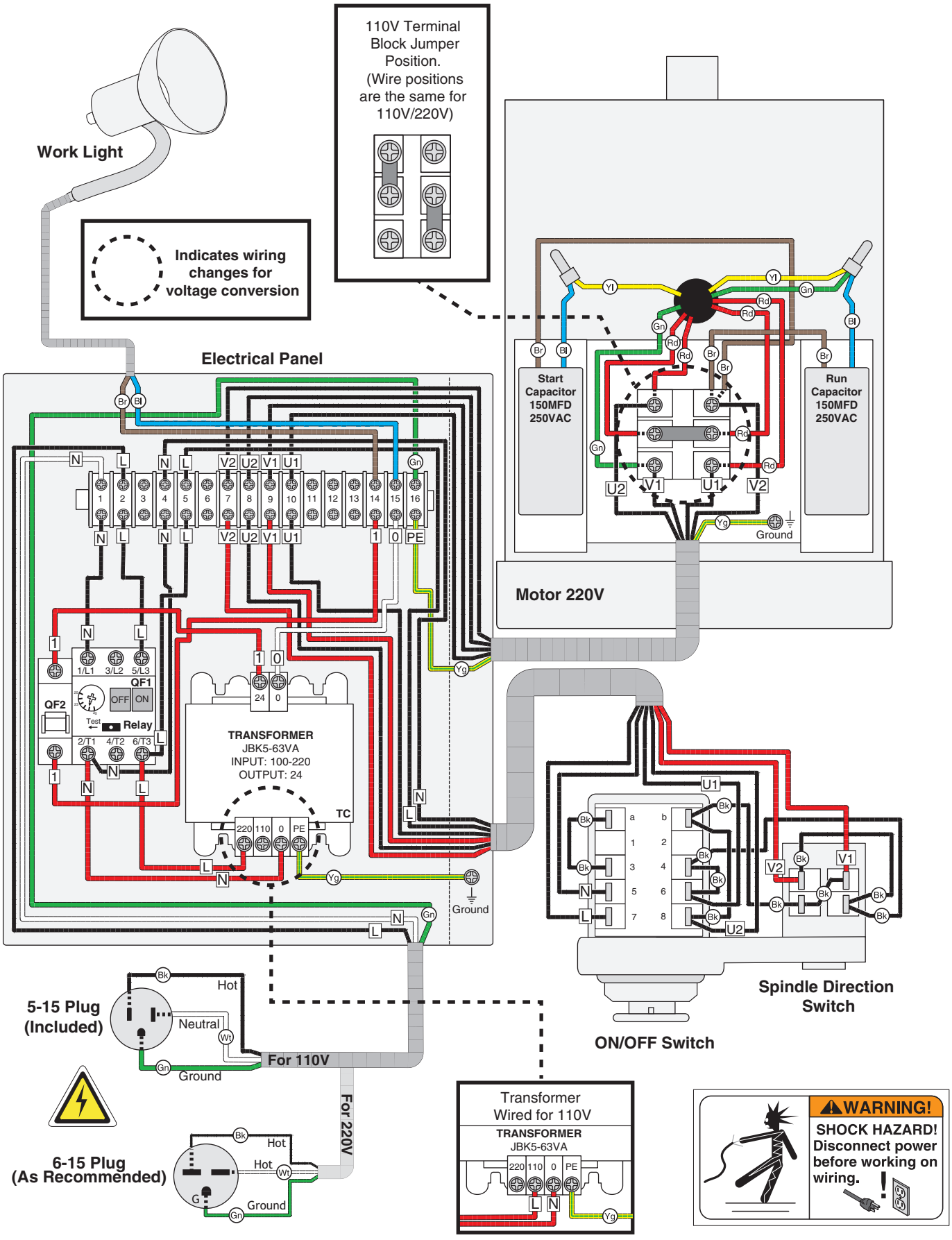


Figure 85. Power ON/OFF and spindle direction switches.

G0801 Wiring Diagram



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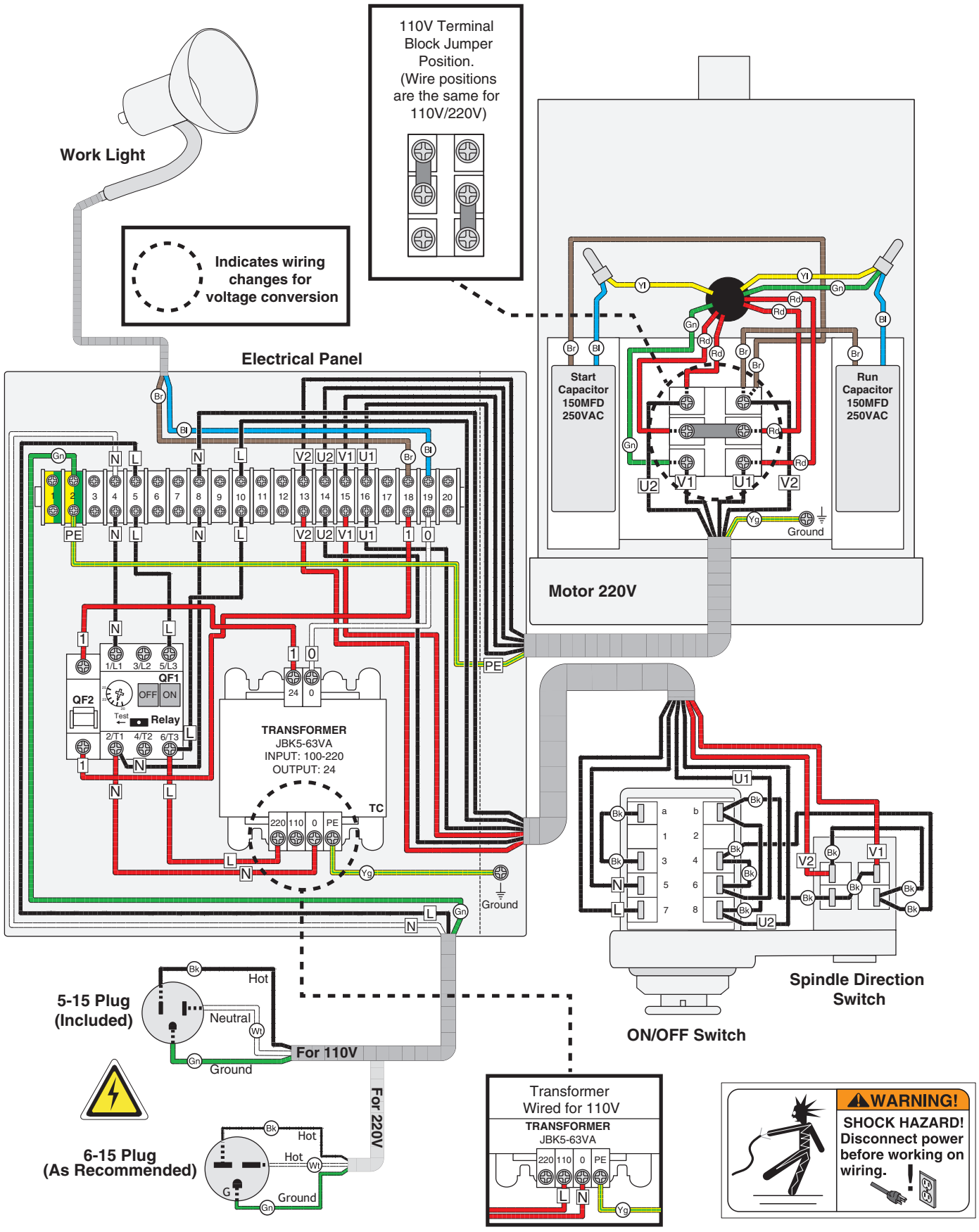
G0802 Wiring Diagram



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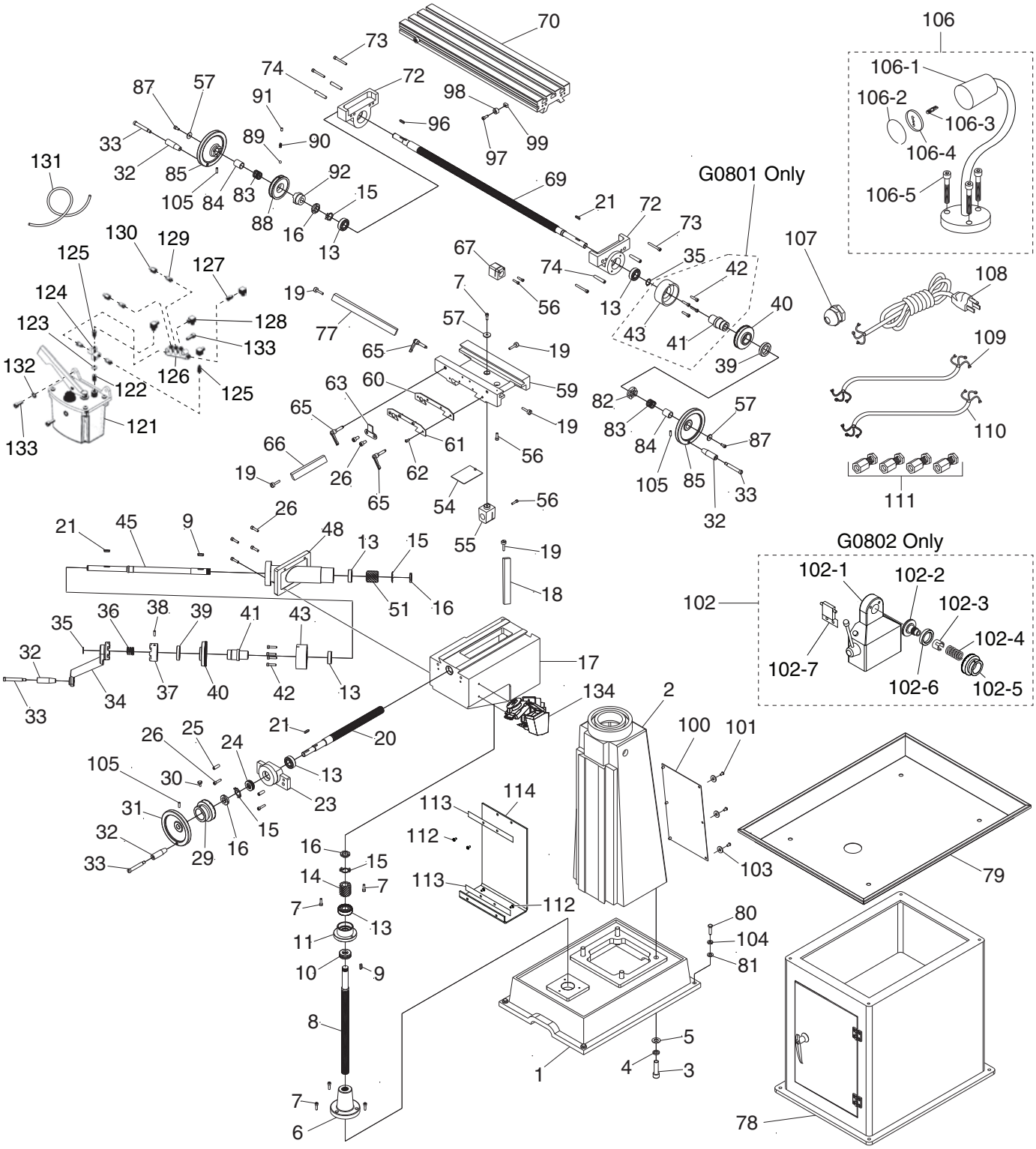
SECTION 9: PARTS

We do our best to stock replacement parts when possible, but we cannot guarantee that all parts shown are available for purchase. Call **(800) 523-4777** or visit **www.grizzly.com/parts** to check for availability.

Main



Main Parts List

REF	PART #	DESCRIPTION
1	P0801001	BASE
2	P0801002	COLUMN
3	P0801003	CAP SCREW M14-2 X 50
4	P0801004	LOCK WASHER 14MM
5	P0801005	FLAT WASHER 14MM
6	P0801006	ELEVATION LEADSCREW NUT
7	P0801007	CAP SCREW M6-1 X 20
8	P0801008	ELEVATION LEADSCREW
9	P0801009	KEY 6 X 6 X 20
10	P0801010	THRUST BEARING 51204
11	P0801011	ELEVATION BEARING BASE
13	P0801013	BALL BEARING 6004-2RS
14	P0801014	ELEVATION GEAR 12T
15	P0801015	TABBED WASHER 20MM
16	P0801016	SPANNER NUT M20-1.5
17	P0801017	TABLE BASE CASTING
18	P0801018	GIB
19	P0801019	GIB ADJUSTMENT SCREW M6-1 X 38
20	P0801020	CROSS LEADSCREW
21	P0801021	KEY 5 X 5 X 20
23	P0801023	LEADSCREW BRACKET
24	P0801024	THRUST BEARING 51104
25	P0801025	INT THREADED TAPER PIN 8 X 25
26	P0801026	CAP SCREW M6-1 X 20
29	P0801029	GRADUATED DIAL
30	P0801030	KNURLED KNOB M5-.8 X 12
31	P0801031	HANDWHEEL TYPE-20 155D X 16B-K X M10-1.5
32	P0801032	HANDLE W/O SHAFT 12, 22 X 75
33	P0801033	SHOULDER SCREW M10-1.5 X 12, 12 X 68
34	P0801034	ELEVATION CRANK
35	P0801035	EXT RETAINING RING 17MM
36	P0801036	COMPRESSION SPRING 20 X 20
37	P0801037	ELEVATION HANDLE CLUTCH
38	P0801038	SET SCREW M6-1 X 16
39	P0801039	ADJUSTMENT NUT 1-1/4 X 20
40	P0801040	X-AXIS GRADUATED DIAL (RIGHT)
41	P0801041	BUSHING (G0801)
42	P0801042	CAP SCREW M6-1 X 25 (G0801)
43	P0801043	ADAPTER SLEEVE (G0801)

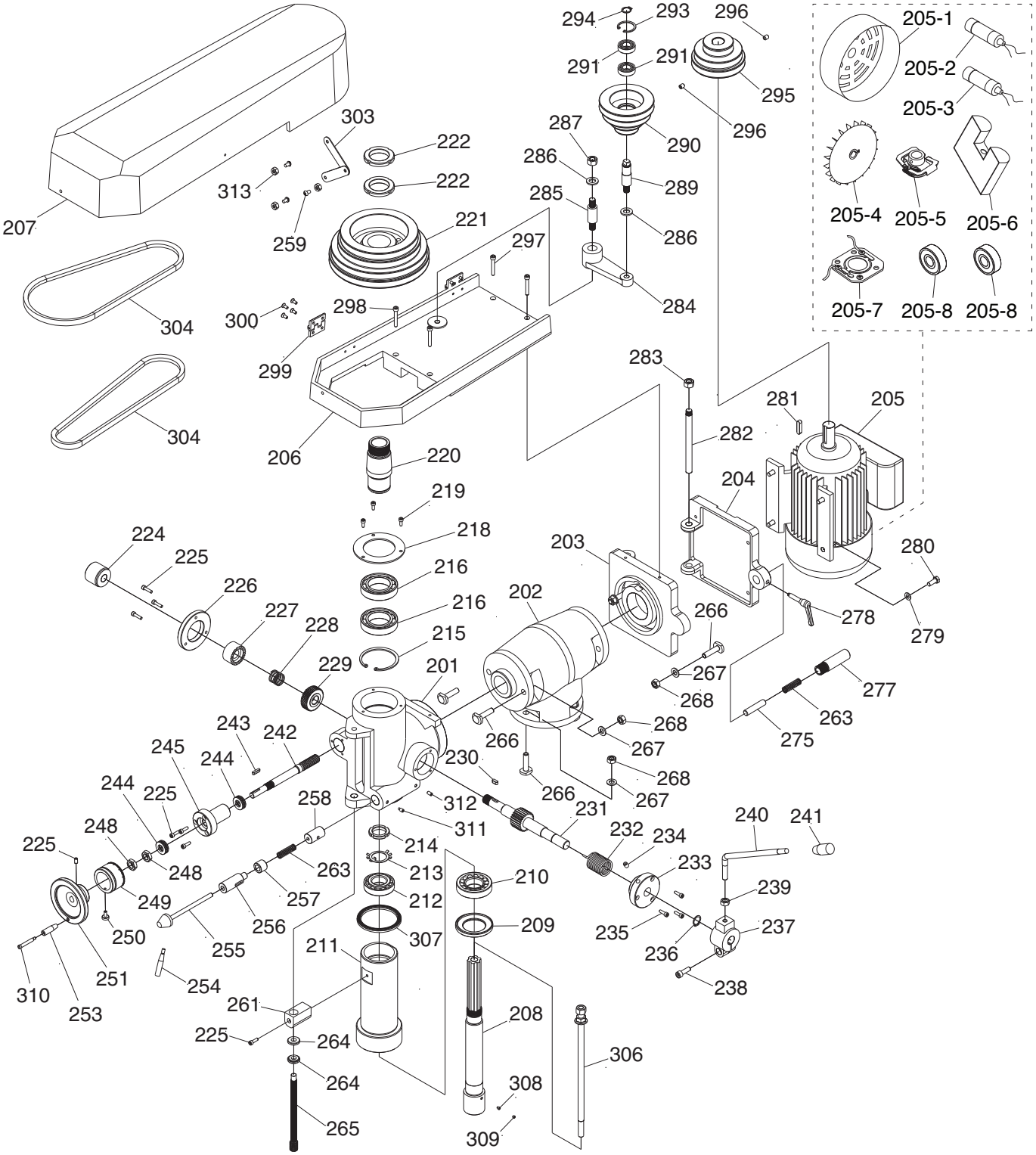
REF	PART #	DESCRIPTION
45	P0801045	ELEVATION SHAFT
48	P0801048	GEAR SHAFT SLEEVE
51	P0801051	ELEVATION GEAR 12T
54	P0801054	SPLASH GUARD
55	P0801055	CROSS LEADSCREW NUT
56	P0801056	CAP SCREW M5-.8 X 25
57	P0801057	FLAT WASHER 6MM
59	P0801059	SADDLE
60	P0801060	WAY WIPER (REAR)
61	P0801061	WAY WIPER (FRONT)
62	P0801062	CAP SCREW M5-.8 X 12
63	P0801063	X-AXIS SCALE INDICATOR
65	P0801065	ADJUSTABLE HANDLE M8-1.25 X 35
66	P0801066	Y-AXIS GIB
67	P0801067	LONGITUDINAL LEADSCREW NUT
69	P0801069	LONGITUDINAL LEADSCREW
70	P0801070	WORK TABLE
72	P0801072	X-AXIS LEADSCREW BRACKET
73	P0801073	CAP SCREW M6-1 X 45
74	P0801074	INT THREADED TAPER PIN 8 X 50
77	P0801077	X-AXIS GIB
78	P0801078	CABINET BASE
79	P0801079	OIL PAN
80	P0801080	HEX BOLT M10-1.5 X 45
81	P0801081	FLAT WASHER 10MM
82	P0801082	CLUTCH
83	P0801083	COMPRESSION SPRING 24 X 15
84	P0801084	SPACER
85	P0801085	HANDWHEEL
87	P0801087	CAP SCREW M6-1 X 12
88	P0801088	X-AXIS GRADUATED DIAL (LEFT)
89	P0801089	STEEL BALL 5MM
90	P0801090	COMPRESSION SPRING 4 X 12
91	P0801091	CAP SCREW M6-1 X 8
92	P0801092	CLUTCH
96	P0801096	KEY 5 X 5 X 16
97	P0801097	CAP SCREW M8-1.25 X 16
98	P0801098	LIMIT STOP
99	P0801099	LIMIT STOP SLIDE NUT M8-1.25

Main Parts List (Cont.)

REF	PART #	DESCRIPTION
100	P0801100	REAR COLUMN COVER
101	P0801101	PHLP HD SCR M6-1 X 12
102	P0802102	POWER FEED ASSEMBLY (G0802)
102-1	P0802102-1	POWER FEED BODY (G0802)
102-2	P0802102-2	POWER FEED ADAPTER GEAR (G0802)
102-3	P0802102-3	DETENT SLEEVE (G0802)
102-4	P0802102-4	POWER FEED COMPRESSION SPRING (G0802)
102-5	P0802102-5	POWER FEED GRADUATED DIAL (G0802)
102-6	P0802102-6	RETAINING COLLAR (G0802)
102-7	P0802102-7	LIMIT SWITCH (G0802)
103	P0801103	FLAT WASHER 6MM
104	P0801104	LOCK WASHER 10MM
105	P0801105	SET SCREW M6-1 X 10
106	P0801106	WORKLAMP ASSEMBLY
106-1	P0801106-1	LAMP BODY
106-2	P0801106-2	LENS RETAINER
106-3	P0801106-3	BULB LED 3W 24V BI-PIN
106-4	P0801106-4	LENS
106-5	P0801106-5	CAP SCREW M5-.8 X 25
107	P0801107	STRAIN RELIEF TYPE-3 M20-1.5
108	P0801108	POWER CORD 14G 3W 72" 5-15P

REF	PART #	DESCRIPTION
109	P0801109	MOTOR CORD 14G 5W 48"
110	P0801110	SWITCH CORD 14G 3W 24"
111	P0801111	STRAIN RELIEF TYPE-5 M24-1.5
112	P0801112	BUTTON HD CAP SCR M6-1 X 10
113	P0801113	WAY COVER HOLDER
114	P0801114	WAY COVER
121	P0801121	ONE-SHOT OILER ASSEMBLY
122	P0801122	PIPE CONNECTOR M8-1 X 25
123	P0801123	FLAT WASHER 8MM
124	P0801124	OIL DISTRIBUTOR 4-PORT M8-1
125	P0801125	TUBING CONNECTOR M8-1 X 8
126	P0801126	OIL DISTRIBUTOR 5-PORT M8-1
127	P0801127	TUBING SHEATH HNL 4-600
128	P0801128	RIGHT-ANGLE FITTING M8-1 X 8
129	P0801129	PIPE JOINT M8-1
130	P0801130	STRAIGHT COUPLING M8-1
131	P0801131	TUBING (NYLON)
132	P0801132	FLAT WASHER 6MM
133	P0801133	CAP SCREW M6-1 X 20
134	P0801134	ON/OFF SWITCH 110V KEDU KJD10

Headstock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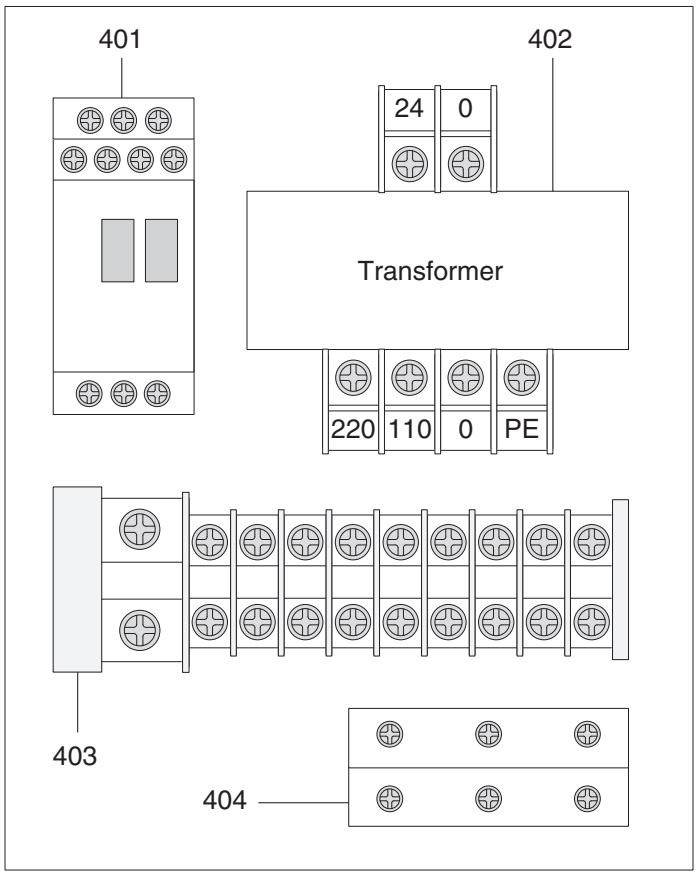
Headstock Parts List

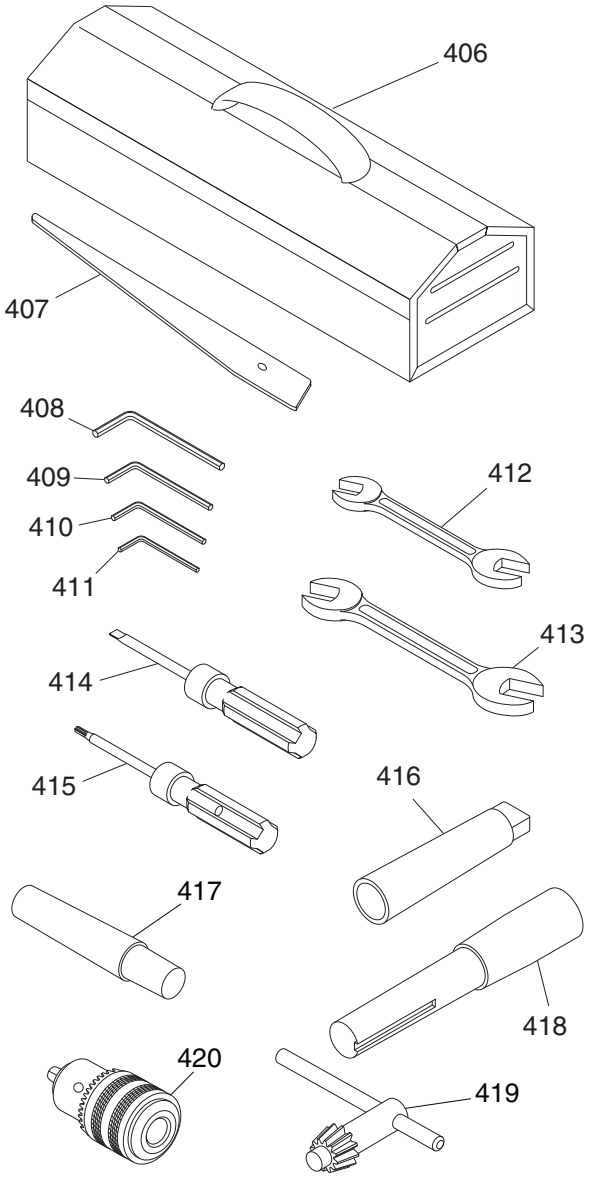
REF	PART #	DESCRIPTION
201	P0801201	SPINDLE HEAD
202	P0801202	ROCKER ARM BRIDGE
203	P0801203	MOTOR BRACKET
204	P0801204	MOTOR MOUNTING PLATE
205	P0801205	MOTOR 1.5 HP 110V/220V 1-PH
205-1	P0801205-1	MOTOR FAN COVER
205-2	P0801205-2	S CAPACITOR 150M 250V 1-5/8 X 3-1/4
205-3	P0801205-3	R CAPACITOR 20M 450V 1-5/8 X 3-1/4
205-4	P0801205-4	MOTOR FAN
205-5	P0801205-5	CENTRIFUGAL SWITCH
205-6	P0801205-6	CAPACITOR COVER
205-7	P0801205-7	CONTACT PLATE
205-8	P0801205-8	BALL BEARING 6205ZZ
206	P0801206	BELT HOUSING BASE
207	P0801207	BELT HOUSING COVER
208	P0801208	SPINDLE R-8
209	P0801209	BEARING COVER
210	P0801210	TAPERED ROLLER BEARING 30207
211	P0801211	SPINDLE SLEEVE
212	P0801212	TAPERED ROLLER BEARING 30206
213	P0801213	TABBED WASHER 30MM
214	P0801214	SPANNER NUT M30-1.5
215	P0801215	INT RETAINING RING 75MM
216	P0801216	BALL BEARING 6009ZZ
218	P0801218	SPINDLE COVER
219	P0801219	PHLP HD SCR M5-.8 X 12
220	P0801220	SHAFT
221	P0801221	SPINDLE PULLEY
222	P0801222	SPANNER NUT M42 X 1.5
224	P0801224	SPINDLE RETURN NUT M18-1.5
225	P0801225	SET SCREW M6-1 X 10
226	P0801226	RETURN SPRING COVER (LEFT)
227	P0801227	CLUTCH
228	P0801228	COMPRESSION SPRING 25 X 33
229	P0801229	GEAR 48T
230	P0801230	KEY 6 X 6 X 15
231	P0801231	GEAR SHAFT
232	P0801232	TORSION SPRING 32 X 80
233	P0801233	RETURN SPRING COVER (RIGHT)
234	P0801234	OIL CUP 8MM
235	P0801235	CAP SCREW M5-.8 X 20
236	P0801236	EXT RETAINING RING 19MM
237	P0801237	HANDLE HUB
238	P0801238	CAP SCREW M8-1.25 X 25
239	P0801239	HEX NUT M10-1.5
240	P0801240	HANDLE SHAFT M10-1.5 X 240
241	P0801241	HANDLE M10-1.5 X 24D X 32L (PLASTIC)
242	P0801242	GEAR SHAFT
243	P0801243	KEY 4 X 4 X 20
244	P0801244	THRUST BEARING 51102
245	P0801245	SHAFT SLEEVE

REF	PART #	DESCRIPTION
248	P0801248	HEX NUT M14-1.5 THIN
249	P0801249	GRADUATED DIAL
250	P0801250	KNURLED KNOB M5-.8 X 12
251	P0801251	HANDWHEEL TYPE-21 115D X 12B-K X M18-2.5
253	P0801253	HANDLE W/O SHAFT 8, 18 X 65
254	P0801254	KNURLED HANDLE M6-1 X 10, 58L, 10 OD
255	P0801255	QUILL LOCK SCREW M8-1.25 X 125
256	P0801256	LOCK SET
257	P0801257	SPACER
258	P0801258	LOCK SET
259	P0801259	CAP SCREW M6-1 X 12
261	P0801261	QUILL DOG
263	P0801263	COMPRESSION SPRING 11 X 48
264	P0801264	DEPTH STOP LIMIT NUT M12-1
265	P0801265	LEADSCREW
266	P0801266	T-BOLT M10-1.5 X 40
267	P0801267	FLAT WASHER 10MM
268	P0801268	HEX NUT M10-1.5
275	P0801275	DOWEL PIN 14 X 55
277	P0801277	BUSHING
278	P0801278	ADJUSTABLE HANDLE M8-1.25 X 25
279	P0801279	FLAT WASHER 8MM
280	P0801280	HEX BOLT M8-1.25 X 20
281	P0801281	KEY 8 X 8 X 35
282	P0801282	STUD-SE M12-1.75 X 155, 12
283	P0801283	HEX NUT M12-1.75
284	P0801284	ROCKER ARM
285	P0801285	PIVOT SHAFT
286	P0801286	FLAT WASHER 12MM
287	P0801287	LOCK NUT M12-1.75
289	P0801289	IDLER PULLEY SHAFT
290	P0801290	IDLER PULLEY
291	P0801291	BALL BEARING 6003-2RS
293	P0801293	INT RETAINING RING 35MM
294	P0801294	EXT RETAINING RING 17MM
295	P0801295	MOTOR PULLEY
296	P0801296	SET SCREW M8-1.25 X 8
297	P0801297	CAP SCREW M6-1 X 35
298	P0801298	CAP SCREW M6-1 X 45
299	P0801299	HINGE 40 X 40
300	P0801300	FLAT HD SCR M5-.8 X 12
303	P0801303	BELT HOUSING HINGE
304	P0801304	V-BELT A33
306	P0801306	DRAWBAR 7/16-20
307	P0801307	GASKET
308	P0801308	CAP SCREW M5-.8 X 6
309	P0801309	CAP SCREW M5-.8 X 5
310	P0801310	SHOULDER SCREW M8-1.25 X 12, 10 X 60
311	P0801311	SET SCREW M6-1 X 8 CONE-PT
312	P0801312	SET SCREW M6-1 X 8
313	P0801313	HEX NUT M6-1

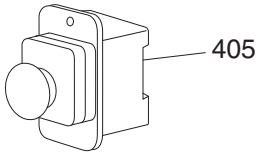
Electrical Panel & Accessories

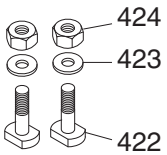
Electrical Panel





220V Magnetic Switch

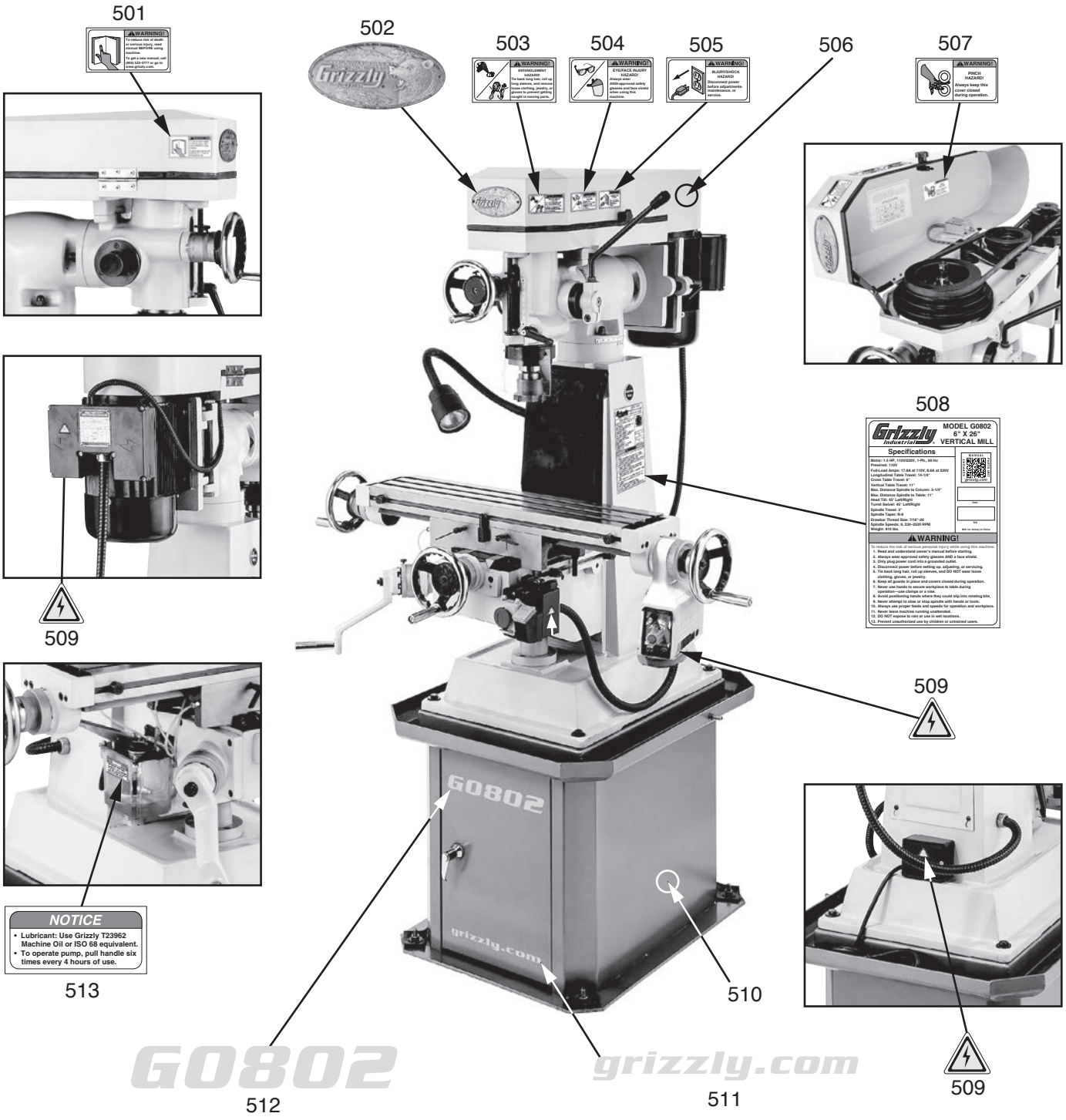




REF	PART #	DESCRIPTION
401	P0801401	MANUAL STARTER CHINT NS2-25 20-25A
402	P0801402	TRANSFORMER BEIJ AOHENGDA JBK5-63VA
403	P0801403	TERMINAL BAR 10P
404	P0801404	TERMINAL BAR 6P
405	P0801405	ON/OFF SWITCH 220V KEDU JD3
406	P0801406	TOOLBOX
407	P0801407	DRIFT KEY
408	P0801408	HEX WRENCH 6MM
409	P0801409	HEX WRENCH 5MM
410	P0801410	HEX WRENCH 4MM
411	P0801411	HEX WRENCH 3MM
412	P0801412	WRENCH 12 X 14MM OPEN-ENDS

REF	PART #	DESCRIPTION
413	P0801413	WRENCH 17 X 19MM OPEN-ENDS
414	P0801414	SCREWDRIVER FLAT #2
415	P0801415	SCREWDRIVER PHILLIPS #2
416	P0801416	ADAPTER MT#3-MT#2
417	P0801417	DRILL CHUCK ARBOR R8-B16
418	P0801418	SPINDLE SLEEVE R8-MT#3
419	P0801419	CHUCK KEY
420	P0801420	DRILL CHUCK B16 1-13MM
421	P0801421	BOTTLE FOR OIL
422	P0801422	T-BOLT M12-1.75 X 55
423	P0801423	FLAT WASHER 12MM
424	P0801424	HEX NUT M12-1.75

Labels



REF	PART #	DESCRIPTION
501	P0801501	READ MANUAL LABEL
502	P0801502	GRIZZLY NAMEPLATE
503	P0801503	ENTANGLEMENT HAZARD LABEL
504	P0801504	EYE/FACE INJURY HAZARD LABEL
505	P0801505	DISCONNECT POWER LABEL
506	P0801506	GRIZZLY BEIGE TOUCH-UP PAINT
507	P0801507	PINCH HAZARD LABEL
508	P0801508	MACHINE ID LABEL (G0801)

REF	PART #	DESCRIPTION
508	P0802508	MACHINE ID LABEL (G0802)
509	P0801509	ELECTRICITY LABEL
510	P0801510	GRIZZLY GREEN TOUCH-UP PAINT
511	P0801511	GRIZZLY.COM LABEL
512	P0801512	MODEL NUMBER LABEL (G0801)
512	P0802512	MODEL NUMBER LABEL (G0802)
513	P0801513	LUBRICATION NOTICE

Grizzly Industrial, Inc. WARRANTY CARD

Name _____

Street _____

City _____ State _____ Zip _____

Phone # _____ Email _____

Model # _____ Order # _____ Serial # _____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. ***Of course, all information is strictly confidential.***

1. How did you learn about us?

____ Advertisement ____ Friend ____ Catalog
____ Card Deck ____ Website ____ Other:

2. Which of the following magazines do you subscribe to?

____ Cabinetmaker & FDM
____ Family Handyman
____ Hand Loader
____ Handy
____ Home Shop Machinist
____ Journal of Light Cont.
____ Live Steam
____ Model Airplane News
____ Old House Journal
____ Popular Mechanics
____ Popular Science
____ Popular Woodworking
____ Precision Shooter
____ Projects in Metal
____ RC Modeler
____ Rifle
____ Shop Notes
____ Shotgun News
____ Today's Homeowner
____ Wood
____ Wooden Boat
____ Woodshop News
____ Woodsmith
____ Woodwork
____ Woodworker West
____ Woodworker's Journal
____ Other:

3. What is your annual household income?

____ $20,000-$29,000 ____ $30,000-$39,000 ____ $40,000-$49,000
____ $50,000-$59,000 ____ $60,000-$69,000 ____ $70,000+

4. What is your age group?

____ 20-29 ____ 30-39 ____ 40-49
____ 50-59 ____ 60-69 ____ 70+

5. How long have you been a woodworker/metalworker?

____ 0-2 Years ____ 2-8 Years ____ 8-20 Years ____ 20+ Years

6. How many of your machines or tools are Grizzly?

____ 0-2 ____ 3-5 ____ 6-9 ____ 10+

7. Do you think your machine represents a good value? _____Yes _____No

8. Would you recommend Grizzly Industrial to a friend? _____Yes _____No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?
Note: *We never use names more than 3 times.* _____Yes _____No

10. Comments: _____

_____

_____

_____

CUT ALONG DOTTED LINE

FOLD ALONG DOTTED LINE

Place
Stamp
Here

GRIZZLY INDUSTRIAL, INC.
P.O. BOX 2069
BELLINGHAM, WA 98227-2069

FOLD ALONG DOTTED LINE

Send a Grizzly Catalog to a friend:

Name_____

Street_____

City_____State_____Zip_____

TAPE ALONG EDGES--PLEASE DO NOT STAPLE

WARRANTY & RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number,'' which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.