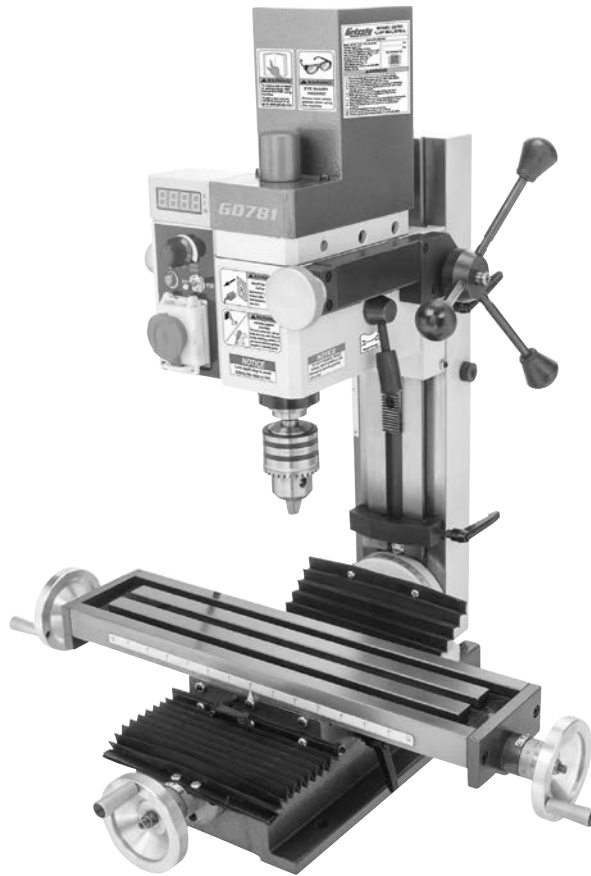


# **Grizzly** **Industrial, Inc.**®

## **MODEL G0781** **4" X 18" <sup>3</sup>/<sub>4</sub> HP MILL/DRILL** **OWNER'S MANUAL**

*(For models manufactured since 02/15)*



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**WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE  
OR FORM WITHOUT THE WRITTEN APPROVAL OF GRIZZLY INDUSTRIAL, INC.**  
#JH17413 PRINTED IN CHINA

V1.10.15

 **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

## 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](http://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.

**Grizzly Industrial** MODEL GXXXX  
MACHINE NAME

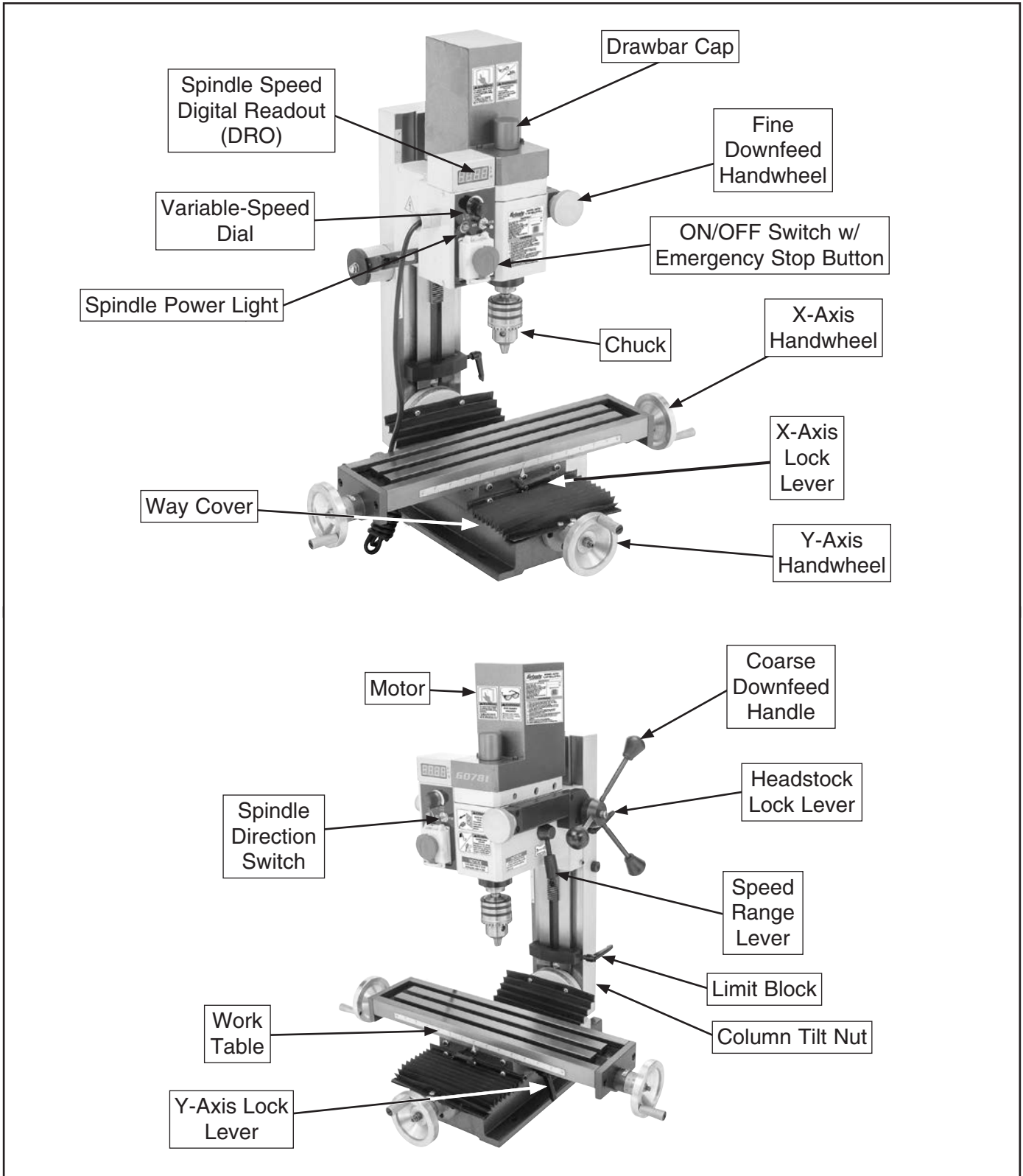
SPECIFICATIONS	WARNING!
Motor: _____	To reduce risk of serious injury when using this machine:
Specification: _____	1. Read manual before operation.
Specification: _____	2. Wear safety glasses and respirator.
Specification: _____	3. Make sure safety is correctly adjusted/setup and
Weight: _____	4. power is connected to grounded circuit before starting.
_____	4. Make sure the motor has stopped and disconnect
_____	power before adjustments, maintenance, or service.
_____	5. DO NOT expose to rain or dampness.
_____	6. DO NOT modify this machine in any way.
_____	7. _____
_____	8. _____
_____	9. _____
_____	10. Maintain machine carefully to prevent accidents.

Manufactured for Grizzly in Taiwan



# Identification

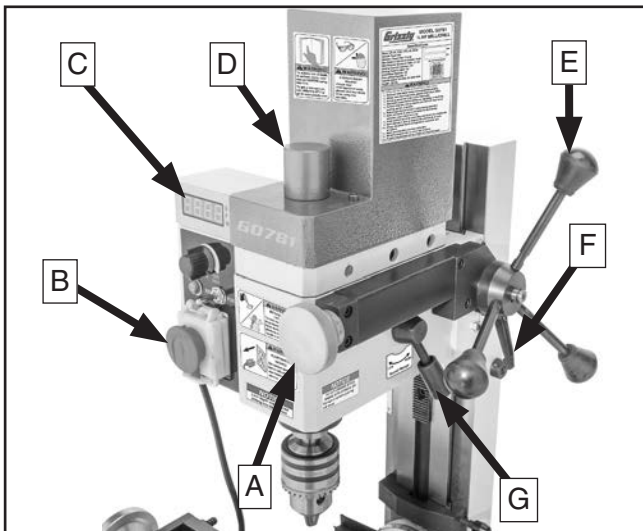
Become familiar with the names and locations of the controls and features shown below to better understand the instructions in this manual.



# Controls & Components



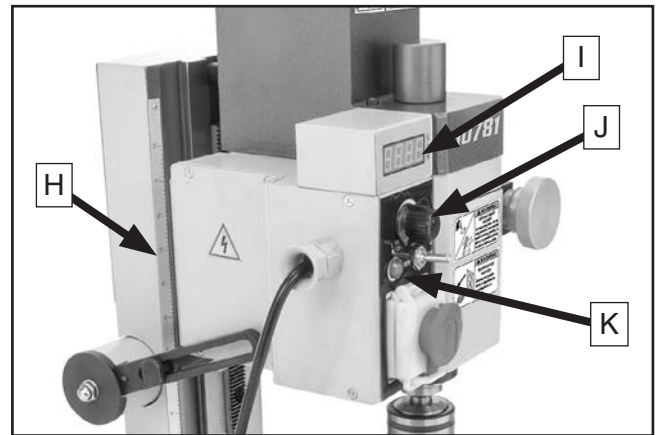
Refer to **Figures 1–2** and the following descriptions to become familiar with the basic controls and components of this machine. Understanding these items and how they work will help you understand the rest of the manual and stay safe when operating this machine.



**Figure 1.** G0781 controls (right side).

- A. Fine Downfeed Handwheel:** Moves spindle up and down for precise Z-axis control when milling. Micrometer collar graduated in increments of 0.001".
- B. ON/OFF Switch with Emergency Stop Button:** Lift cover plate to access **ON** and **OFF** buttons. Press red Emergency Stop button to stop spindle rotation.
- C. Spindle Speed Digital Readout (DRO):** Displays spindle speed in RPM.
- D. Drawbar:** Drawbar cap covers top of drawbar to keep it dust-free. Drawbar is accessed under cap when securing or changing tooling.

- E. Coarse Downfeed Handle:** Typically used for drilling operations for rapid drilling or plunge cutting. Spring assisted return automatically returns spindle to top position when released.
- F. Headstock Lock Lever:** Locks headstock in position along column.
- G. Speed Range Lever:** Selects low gear for maximum torque from 50–1000 RPM, or high gear for 120–2000 RPM.



**Figure 2.** G0781 controls (left side).

- H. Headstock Depth Gauge:** Indicates upward and downward travel of headstock along column for consistent drilling depth.
- I. Variable Spindle Speed Dial:** Controls spindle speed from 50–2000 RPM.
- J. Spindle Direction Switch:** Controls direction of spindle rotation.
- K. Power Light:** Illuminates when machine is connected to power.





# MACHINE DATA SHEET

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

## MODEL G0781 4" X 18" 3/4 HP MILL/DRILL

### Product Dimensions:

Weight..... 137 lbs.  
 Width (side-to-side) x Depth (front-to-back) x Height..... 26-1/2 x 20-1/2 x 31 in.  
 Footprint (Length x Width)..... 14-1/2 x 8-1/2 in.

### Shipping Dimensions:

Type..... Wood Crate  
 Content..... Machine  
 Weight..... 167 lbs.  
 Length x Width x Height..... 25 x 22 x 29 in.  
 Must Ship Upright..... Yes

### Electrical:

Power Requirement..... 110V, Single-Phase, 60Hz  
 Full-Load Current Rating..... 5A  
 Minimum Circuit Size..... 15A  
 Connection Type..... Cord & Plug  
 Power Cord Included..... Yes  
 Power Cord Length..... 6 ft.  
 Power Cord Gauge..... 18 AWG  
 Plug Included..... Yes  
 Included Plug Type..... 5-15  
 Switch Type..... ON/OFF Push Button Switch w/Safety Cover

### Motors:

#### Main

Horsepower..... 600W (3/4 HP)  
 Phase..... Single-Phase  
 Amps..... 5A  
 Speed..... 5000 RPM  
 Type..... Universal Brush-Type Motor  
 Power Transfer ..... Gear Drive  
 Bearings..... Shielded & Permanently Lubricated  
 Centrifugal Switch/Contacts Type..... N/A

### Main Specifications:

#### Operation Info

Max Distance Spindle to Column..... 6-3/8 in.  
 Max Distance Spindle to Table..... 11-1/2 in.  
 Longitudinal Table Travel (X-Axis)..... 11-13/16 in.  
 Cross Table Travel (Y-Axis)..... 5-1/8 in.  
 Vertical Head Travel (Z-Axis)..... 7-1/16 in.  
 Head Tilt (Left/Right)..... 45 deg.  
 Drilling Capacity for Cast Iron..... 1/2 in.  
 Drilling Capacity for Steel..... 1/2 in.  
 End Milling Capacity..... 1/2 in.  
 Face Milling Capacity..... 1 in.



**Table Info**

Table Length.....	18 in.
Table Width.....	4-1/4 in.
Table Thickness.....	1-5/8 in.
Number of T-Slots.....	3
T-Slot Size.....	7/16 in.
T-Slots Centers.....	1-1/4 in.

**Spindle Info**

Spindle Taper.....	R-8
Number of Vertical Spindle Speeds.....	Variable
Range of Vertical Spindle Speeds.....	50 – 1000, 100 - 2000 RPM
Drawbar Thread Size.....	7/16-20
Drawbar Length.....	5-1/2 in.
Spindle Bearings.....	Ball Bearings

**Construction**

Spindle Housing/Quill.....	Cast Iron
Table.....	Precision-Ground Cast Iron
Head.....	Cast Iron
Column/Base.....	Cast Iron
Base.....	Cast Iron
Paint Type/Finish.....	Enamel

**Other Specifications:**

Country of Origin .....	China
Warranty .....	1 Year
Serial Number Location .....	ID Label
ISO 9001 Factory .....	No
Certified by a Nationally Recognized Testing Laboratory (NRTL) .....	No

**Features:**

- High-torque, low-noise DC motor
- Two speed ranges on geared drive
- Safety shutoff switch
- Fine downfeed control
- Adjustable depth stop





# 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** Alerts the user to useful information about proper operation of the machine to avoid machine damage.

## 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/Drills

## **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.

## **WARNING**

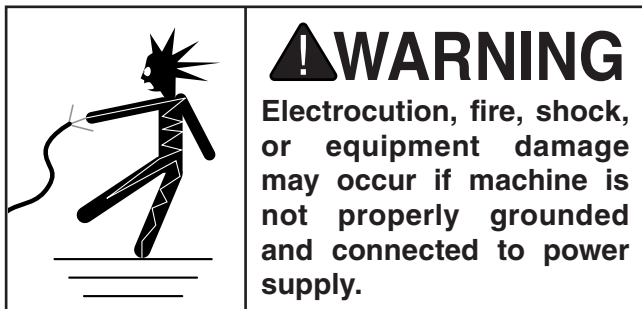
Like all machinery there is potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.



# 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.



## 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..... 5 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.

## **! WARNING**

**Serious injury could occur if you connect machine to power before completing setup process. DO NOT connect to power until instructed later in this manual.**

## 110V Circuit Requirements

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

**Nominal Voltage ..... 110V**  
**Cycle ..... 60 Hz**  
**Phase ..... Single-Phase**  
**Power Supply Circuit ..... 15 Amps**

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.**

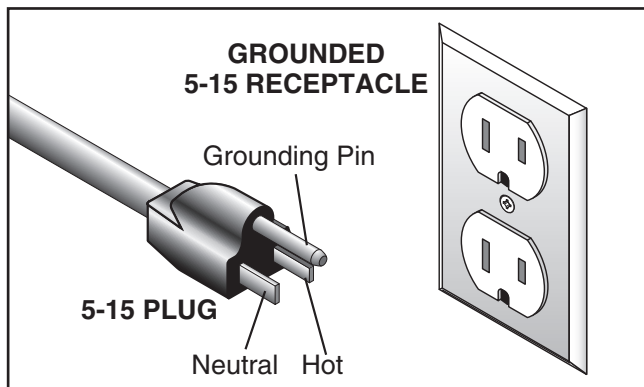
**Note:** *Circuit requirements in this manual apply to a dedicated circuit—where only one machine will be running on the circuit at a time. If machine will be connected to a shared circuit where multiple machines may be running at the same time, consult an electrician or qualified service personnel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



## Grounding & Plug 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.

This machine is equipped with a power cord that has an equipment-grounding wire and a grounding plug. Only insert plug into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances. **DO NOT** modify the provided plug!



**Figure 3.** 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.**

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.

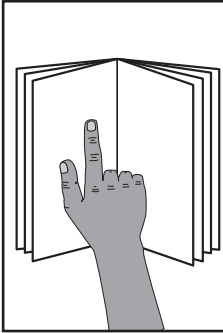
Extension cords cause voltage drop, which can damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

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 .....14 AWG**  
**Maximum Length (Shorter is Better).....50 ft.**

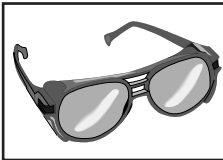


# SECTION 3: SETUP



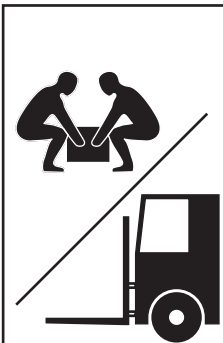
## **!WARNING**

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



## **!WARNING**

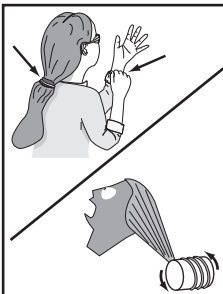
Wear safety glasses during entire setup process!



## **!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.



## **!WARNING**

Keep hair, clothing, and jewelry away from moving parts at all times. Entanglement can result in death, amputation, or severe crushing injuries!

## Needed for Setup

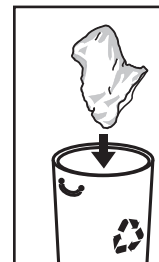
The following items are needed, but not included, for the setup/assembly of this machine.

Description	Qty
• Additional People .....	1
• Safety Glasses .....	1
• Cleaner/Degreaser ( <b>Page 14</b> ) ....	As Needed
• Disposable Shop Rags.....	As Needed
• Forklift.....	1
• Lifting Sling (rated for at least 300 lbs.).....	1
• Mounting Hardware ( <b>Page 16</b> ) ...	As Needed
• Flat Head Screwdriver #2.....	1
• Brass Hammer .....	1
• Mineral Spirits.....	As Needed
• Wood Block .....	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.



# 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 (Figure 4)	Qty
A. Toolbox.....	1
B. Spanner Wrench 38–42 Hook Type.....	1
C. Open-End Wrench 36mm .....	1
D. Spare Fuse.....	1
E. Spindle Pin .....	1
F. Drawbar.....	1
G. Drill Chuck & Arbor.....	1
H. Open-End Wrench 8/10mm.....	1
I. Open-End Wrench 13/16mm.....	1
J. Drill Chuck Key.....	1
K. Bottle for Oil .....	1
L. Hex Wrench 2, 2.5, 3, 4, 5, 6, 8mm .....	1 Ea.
M. T-Slot Nuts 1/2" x M8-1.25 .....	4
N. Studs M8-1.25 x 45 .....	4
O. Hex Nuts M8-1.25.....	4
P. Handwheel Handles w/Screws.....	3

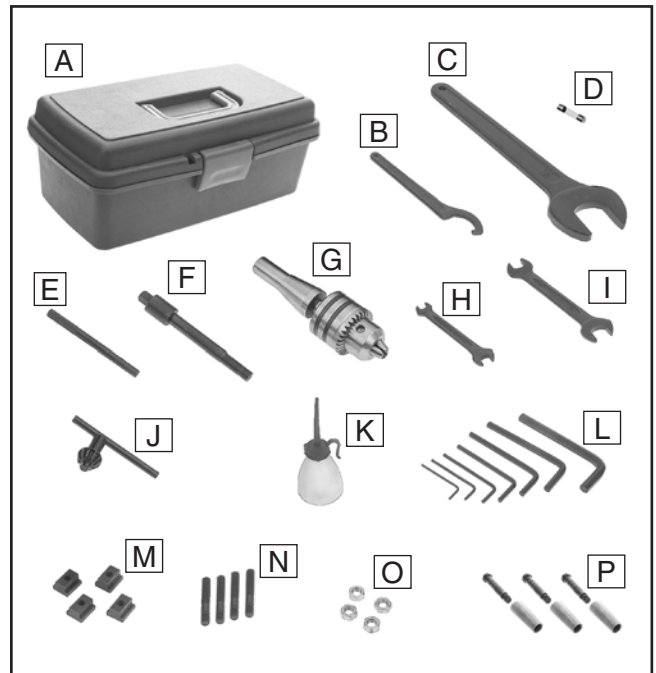


Figure 4. Inventory included with machine.



# 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.

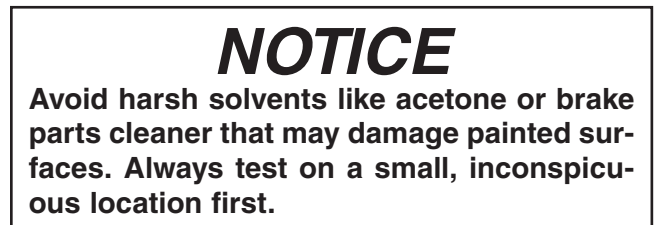
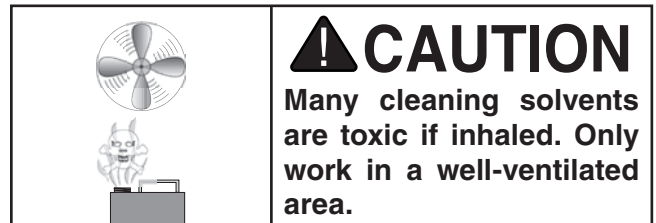
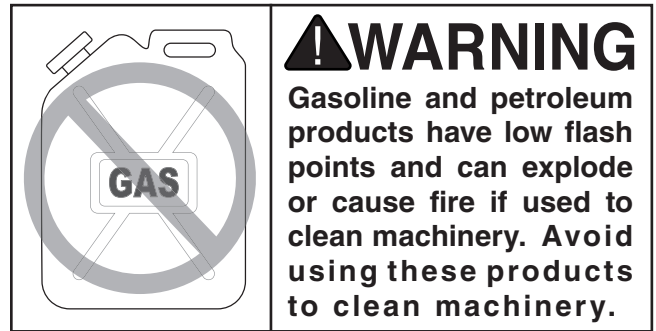
There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

## 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.



## 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 5. T23692 Orange Power Degreaser.





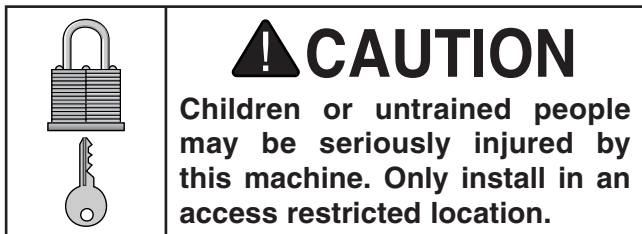
# Site Considerations

## 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.**



## 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.

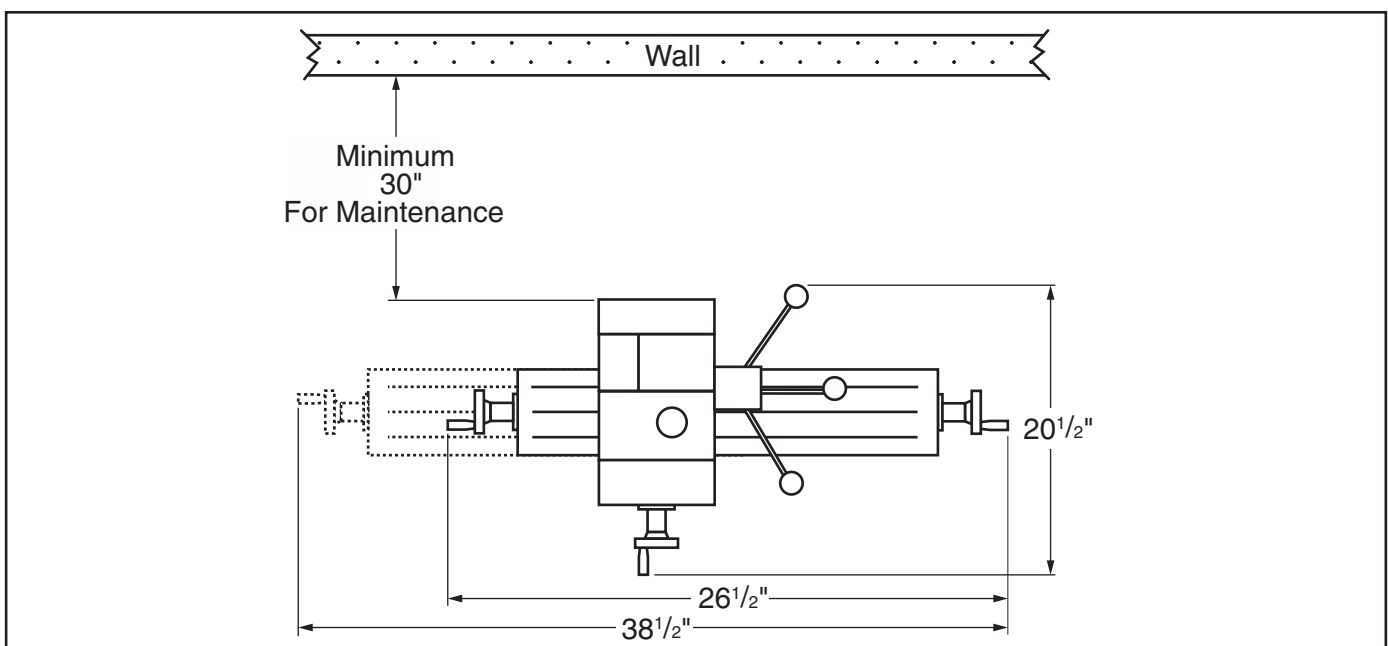



Figure 6. G0781 working clearances.



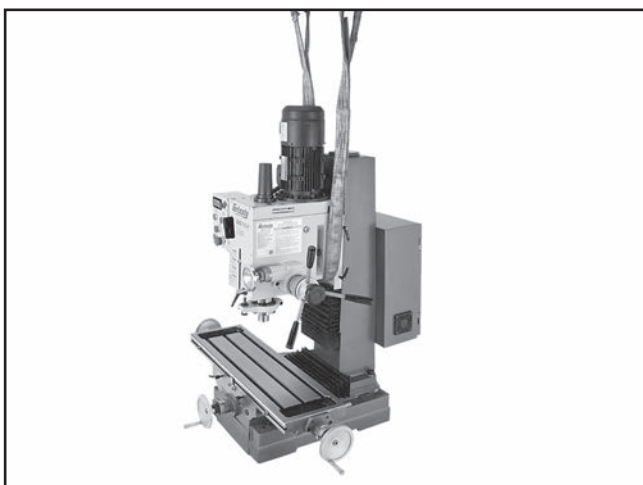
# Lifting & Placing



**!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 place machine:

1. Move shipping crate next to workbench or stand, then unbolt machine from pallet.
2. Move table as close to column as possible, and raise headstock to its highest position. This helps balance machine when moving.
3. Tighten headstock lock lever to avoid sudden shifts when lifting.
4. Position a lifting sling under the headstock, as shown in **Figure 7**. Connect sling ends to a forklift, then lift and place machine on workbench.



**Figure 7.** Example of recommended lifting sling position.

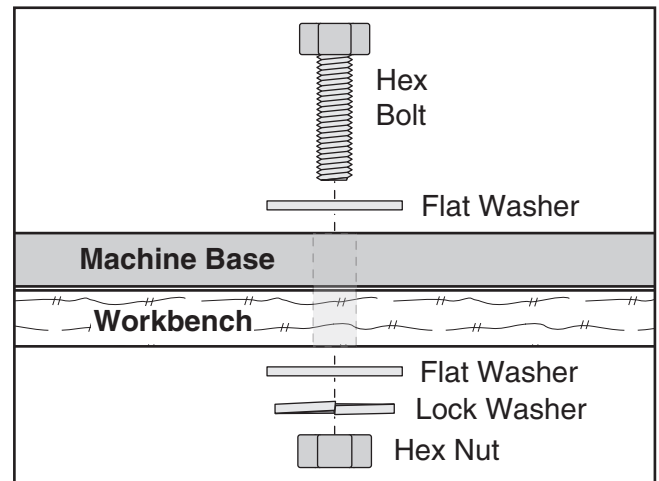
5. Secure machine to workbench, following instructions in **Bench Mounting**.

# Bench Mounting

Number of Mounting Holes ..... 4  
 Diameter of Mounting Hardware..... 1/2"

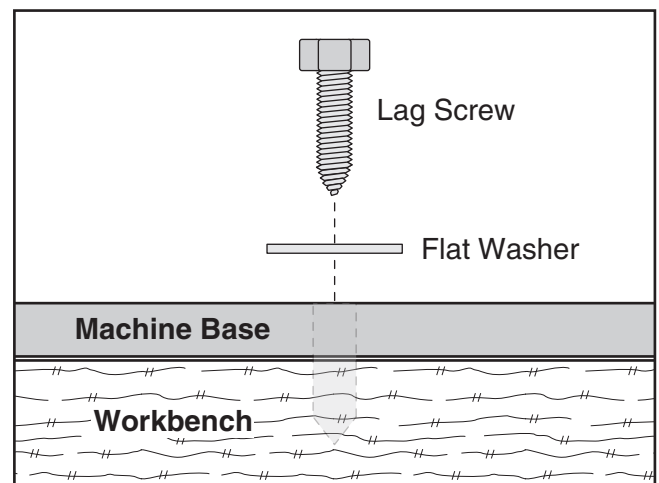
The base of this machine has mounting holes that allow it to be fastened to a workbench or other mounting surface to prevent it from moving during operation and causing accidental injury or damage.

The strongest mounting option is a "Through Mount" (see example below) where holes are drilled all the way through the workbench—and hex bolts, washers, and hex nuts are used to secure the machine in place.



**Figure 8.** "Through Mount" setup.

Another option is a "direct mount" (see example below) where the machine is secured directly to the workbench with lag screws and washers.



**Figure 9.** "Direct Mount" setup.



# Assembly

Except for the handwheel handles, the G0781 mill/drill was fully assembled at the factory.

Use a standard screwdriver to attach handwheel handles, as shown in **Figure 10**.



**Figure 10.** Handles attached to handwheels.

# 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.

The test run consists of the following: 1) The motor powers up and runs correctly, and 2) the Emergency Stop button stops spindle rotation.

## **⚠️ 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**

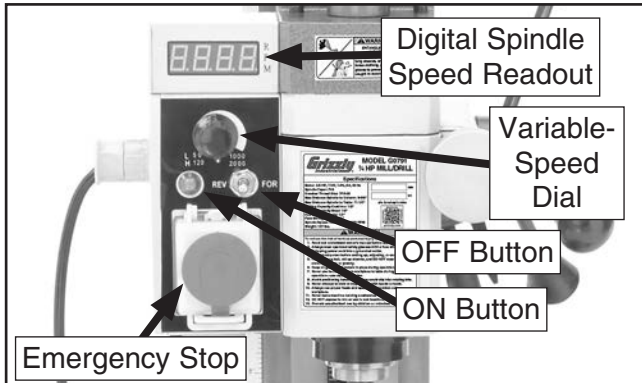
**DO NOT start machine until all preceding setup instructions have been performed. Operating an improperly set up machine may result in malfunction or unexpected results that can lead to serious injury, death, or machine/property damage.**

### To test run machine:

1. Clear all setup tools away from machine.
2. Make sure machine is properly lubricated (see **Page 29**).
3. Ensure there are no obstructions around or underneath spindle.
4. Press red Emergency Stop button (see **Figure 11** on **Page 18**).
5. Connect mill/drill to power source.



6. Turn speed range lever to "LOW" position (see **Figure 1** on **Page 4**), and rotate variable-speed dial all the way counterclockwise (to the slowest position).



**Figure 11.** Location of mill/drill controls (front).

7. Place spindle direction switch in "FOR" (Forward) position. Lift red Emergency Stop button to access ON/OFF switch and to reset Emergency Stop function, then press green button. Spindle will not rotate until variable-speed dial is turned clockwise from the "0" on control panel.

—When operating correctly, machine runs smoothly with little or no vibration or rubbing noises.

—Investigate and correct strange or unusual noises or vibrations before operating machine further. Always disconnect machine from power when investigating or correcting potential problems.

8. Press Emergency Stop button. The machine should stop.

—If machine *does* stop, Emergency Stop button safety feature is working correctly. Continue to **Spindle Break-In**.

—If machine *does not* stop, Emergency Stop button safety feature is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

Congratulations! The test run is complete. Continue to **Spindle Break-In**.

## Spindle Break-In

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.

### **NOTICE**

**Complete the spindle bearing break-in procedure to prevent rapid wear and tear of spindle components once the machine is placed into operation.**

### **NOTICE**

**DO NOT perform this procedure independently of the Test Run section. The machine could be seriously damaged if the controls are set differently than instructed in that section.**



### To perform spindle break-in process:

1. Successfully complete **Test Run** procedure beginning on **Page 17**.
2. Open Emergency Stop button cover and press green button to start spindle.
3. Shift speed range lever in "**LOW**" position, and run spindle at 300 RPM for a minimum of 10 minutes in each direction (**FWD** and **REV**).
4. Repeat **Step 3** at 600 RPM for 5 minutes in each direction.
5. Turn mill/drill **OFF**.
6. Shift speed range lever in "**HIGH**" position, and run spindle at 1000 RPM for 5 minutes in each direction of rotation.
7. Repeat **Step 6** at 1800 RPM.
8. Turn mill/drill **OFF**. Congratulations! The **Spindle Break-In** is complete.

# Inspections & Adjustments

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

- Gib Adjustments ..... **Page 33**
- Head Counterbalance Spring ..... **Page 34**

Be aware that these adjustments can change during the shipping process. Pay careful attention to these adjustments when first operating the machine. If you find that the adjustments are not set to your personal preferences, re-adjust them.

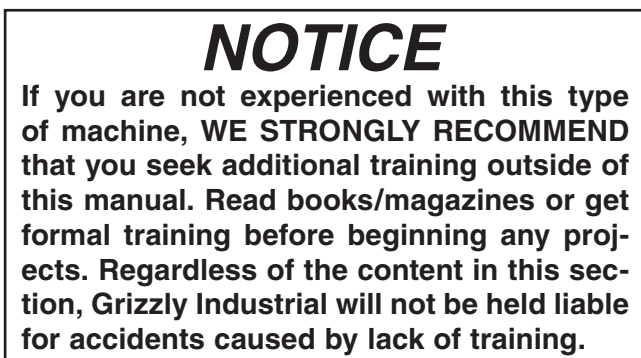


# SECTION 4: OPERATIONS

## 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 risk of injury from unexpected startup of spindle at high speeds, always rotate variable-speed dial to the "0" setting before starting spindle.

To complete typical operation, operator does the following:

1. Examines workpiece to make sure it is suitable for cutting/drilling.
2. Securely clamps workpiece to table.
3. With machine disconnected from power, installs correct tooling.
4. Adjusts headstock height above table.
5. Rotates variable-speed dial to "0" setting, selects spindle direction, and resets Emergency Stop button.
6. Uses speed range lever to select proper spindle speed range.
7. Puts on required safety glasses and face shield.
8. Connects machine to power, presses ON button, and rotates variable-speed dial to correct spindle speed.
9. Uses downfeed controls or table controls to perform operation.
10. Presses Emergency Stop button and waits for spindle to completely stop before removing workpiece, changing tooling, or changing spindle speeds.
11. Disconnects machine from power.



# 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.

$\frac{\text{*Recommended Cutting Speed (FPM)} \times 12}{\text{Tool Dia. (in inches)} \times 3.14} = \text{Spindle Speed (RPM)}$
<p>*Double if using carbide cutting tool</p>

**Figure 12.** Formula for determining best spindle speed.

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.

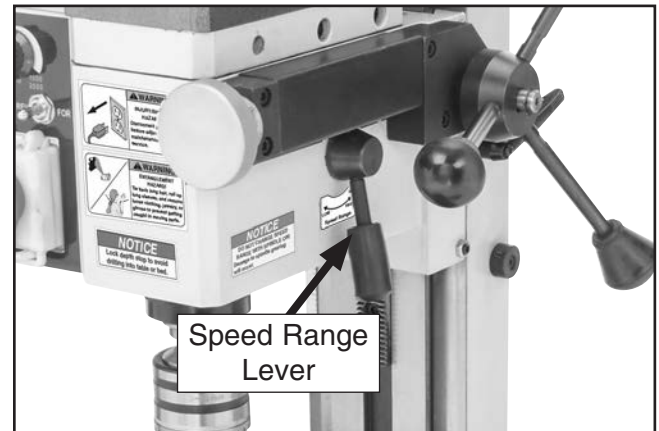
The books **Machinery's Handbook** or **Machine Shop Practice**, and some internet sites, provide excellent recommendations for which cutting speeds to use when calculating the spindle speed. These sources also provide a wealth of additional information about the variables that affect cutting speed and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

1. Rotate variable-speed dial counterclockwise to "0" to set spindle speed at lowest value.
2. Rotate speed range lever (see **Figure 13**) to either "**LOW**" (spindle speeds 50–1000 RPM) or "**HIGH**" (spindle speeds 100–2000 RPM).

**Note:** When switching between speed ranges, it may be necessary to rotate spindle by hand so gears will align and engage.



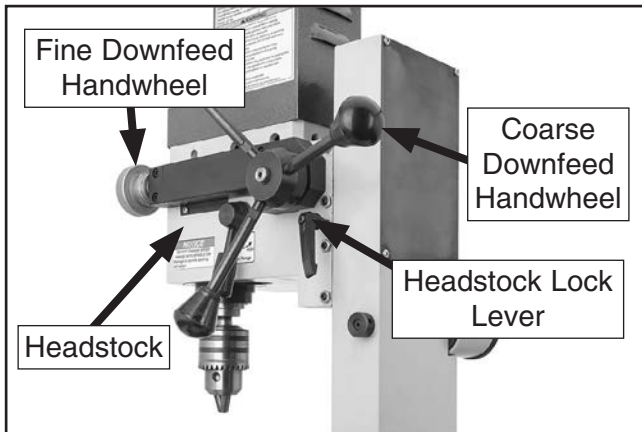
**Figure 13.** Speed range lever location.

3. Turn spindle direction switch to either "**FOR**" (clockwise rotation), or "**REV**" (counterclockwise rotation), and press ON button.
4. While watching RPM display, rotate variable-speed dial clockwise until desired RPM is reached.



# Using Spindle Downfeed Controls

The coarse downfeed handle and fine downfeed handwheel (see **Figure 14**) move the spindle up and down for various milling/drilling operations.



**Figure 14.** Location of headstock lock lever and coarse downfeed handwheel.

The coarse downfeed handles are typically used for drilling. Pull handles downward to lower the spindle. Spindle travel is shown on the depth scale and is limited by the depth stop limit block.

Fine downfeed is typically used for precise milling operations, because the headstock only moves up or down in small increments when the fine downfeed handwheel is rotated. The fine downfeed handwheel graduated dial measures spindle movement in 0.001" increments, with one full revolution equaling 0.060" of spindle travel.

## Using Coarse Downfeed

1. Loosen headstock lock lever and pull out on coarse downfeed handle to engage (see **Figure 14**).
2. Adjust limit block to set desired spindle distance from workpiece.
3. Use coarse downfeed handles to raise and lower headstock and spindle.

## Using Fine Downfeed

The fine downfeed handwheel allows for a precise amount of material to be removed from the workpiece.

**In the following example, the fine downfeed controls are used to mill 0.010" off a workpiece:**

1. Use course downfeed handle to adjust cutting tool just above workpiece surface.
2. Push course downfeed handle into handle hub to engage fine downfeed handwheel.

**Note:** *Spindle may need to be rotated by hand to allow downfeed handle to align with handle hub.*

3. Rotate fine downfeed handwheel clockwise and lower cutting tool so it just touches workpiece, then move workpiece out of the way.
4. Use graduated dial to gauge spindle movement, rotate fine downfeed handwheel clockwise 0.010", then tighten headstock lock lever.
5. Turn mill/drill **ON** and perform cutting pass.





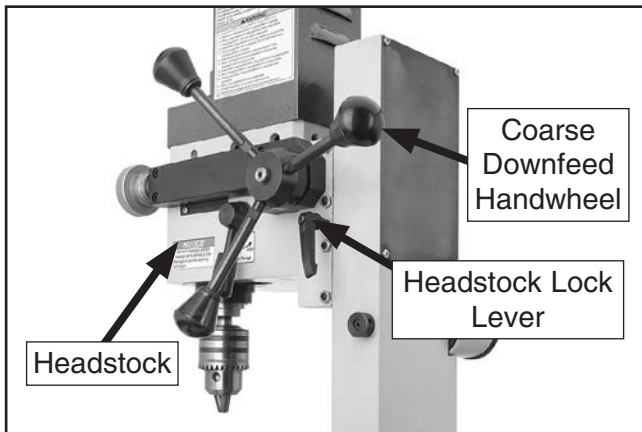
# Adjusting Headstock

The headstock can be adjusted up and down the column and tilted 45° left or right relative to the table. A scale at the base of the column is provided to indicate the tilting angle of the headstock. However, this should be used as a general guide—not relied on for precision operations. Refer to the section on "Tramming the Headstock" (see **Page 36**) for additional details on precisely positioning the head at 0°.

**IMPORTANT:** Do not operate or adjust mill/drill without properly mounting base to tabletop (refer to **Page 16**).

## Raising/Lowering Headstock

1. DISCONNECT MACHINE FROM POWER!
2. Loosen headstock lock lever shown in **Figure 15**.



**Figure 15.** Location of headstock lock lever and coarse downfeed handwheel.

3. Use coarse downfeed handwheel to adjust headstock height.
4. Tighten lock lever to secure setting.

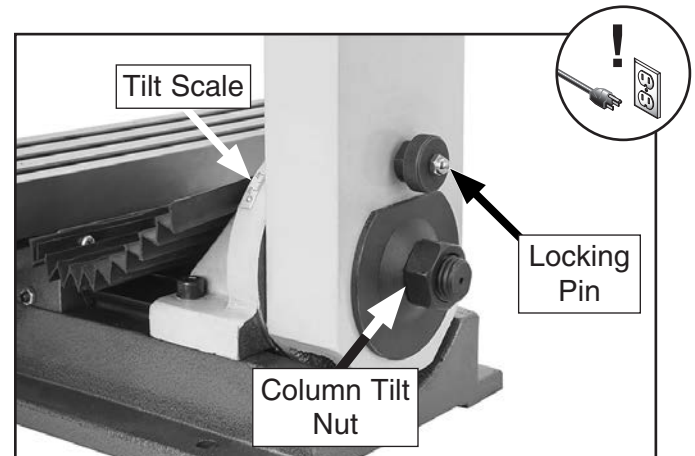
## Tilting Headstock

Tool Needed	Qty
Wrench 36mm .....	1

### To tilt headstock:

1. DISCONNECT MACHINE FROM POWER!
2. Support headstock with one hand, then loosen headstock column tilt nut.  
**Note:** Column locking pin will engage when headstock column reaches 0° on tilt scale.
3. Pull column locking pin outward. Headstock will now freely tilt if pushed or pulled by hand into place. DO NOT let go of headstock while column tilt nut is loose.
4. While supporting headstock, pivot headstock to required angle on tilt scale, then re-tighten headstock column tilt nut.

**Note:** The tilt scale functions as a general guide only.



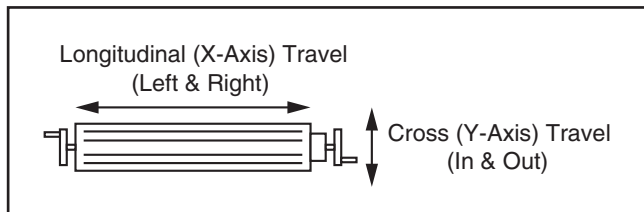
**Figure 16.** Headstock tilt controls.



# Moving Table

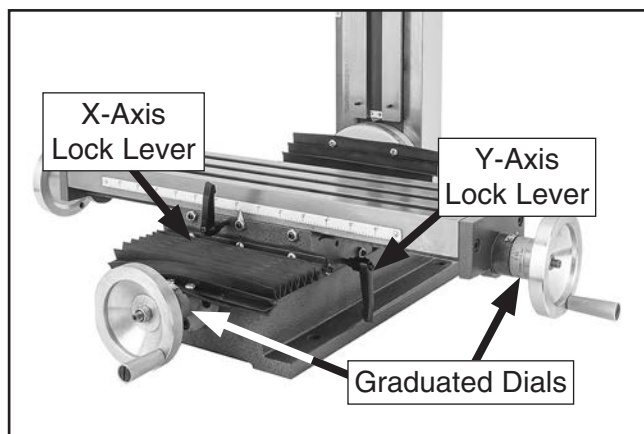
The table travels in two directions and is controlled by handwheels, as illustrated in **Figure 17**.

- Longitudinal (X-axis)
- Cross (Y-axis)



**Figure 17.** Directions of table movement.

Both the X- and Y-axis feature table locks. To ensure unexpected movement of the table does not occur during precision operations, use these locks to secure the table along any axis that should not move for any given operation.



**Figure 18.** Location of graduated dials.

The table handwheels have graduated dials in 0.001" increments, with one full revolution equaling 0.0625". These dials provide an easy way to gauge precise table movements while milling.

## Longitudinal (X-Axis) Travel

Loosen X-axis lock lever shown in **Figure 18**. Turn X-axis handwheels to adjust work table to desired location. Tighten X-axis lock lever before turning machine **ON**.

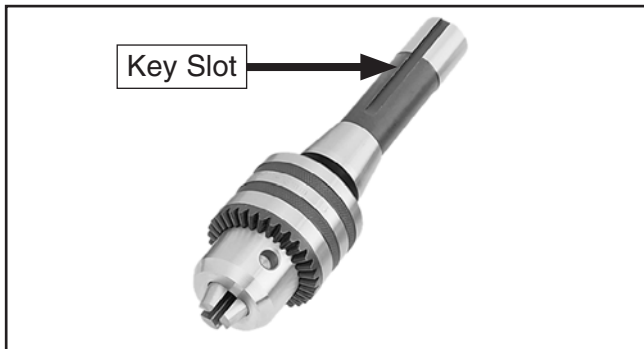
## Cross (Y-Axis) Travel

To move the table along the Y-axis, loosen the Y-axis table lock shown in **Figure 18**, then use the handwheel in front of the table in the same manner as the X-axis handwheel.



# Installing/Removing Tooling

The Model G0781 includes a 3–16mm drill chuck with an R-8 arbor (see **Figure 19**). The R-8 arbor is precision-ground, and features a tool slot for easy, secure alignment in the mill/drill spindle. The tapered R-8 arbor end joins securely with the drill chuck to support tooling from 3–16mm.



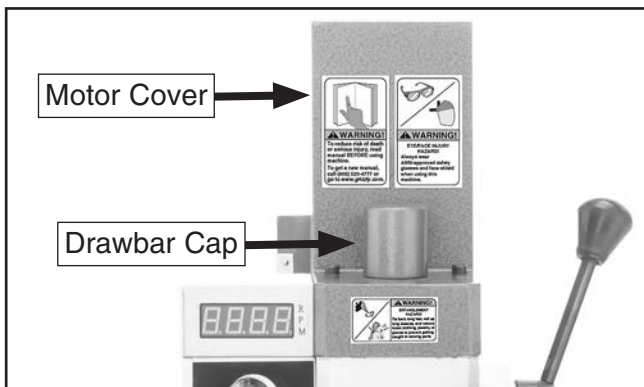
**Figure 19.** 3–16mm drill chuck joined with R-8 arbor.

## Installing Tooling

Tools Needed	Qty
Spindle Pin .....	1
Wrench 10mm .....	1

### To install tooling:

1. DISCONNECT MACHINE FROM POWER!
2. Remove drawbar cap and motor cover.



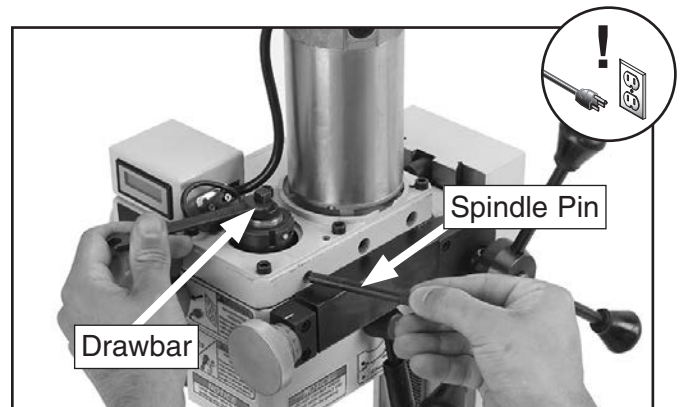
**Figure 20.** Drawbar cap and motor cover.

3. Align key slot (see **Figure 19**) with pin inside spindle, then insert tooling assembly into spindle until it contacts drawbar.

4. Working from above, thread drawbar (by hand) into tooling assembly until snug.
5. Secure spindle with spindle pin and tighten drawbar, as shown in **Figure 21**.

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

6. Re-install drawbar cap and motor cover.



**Figure 21.** Components used when installing or removing tooling.

## Removing Tooling

Tools Needed	Qty
Spindle Pin .....	1
Wrench 10mm .....	1
Brass Hammer .....	1

### To remove tooling:

1. DISCONNECT MACHINE FROM POWER!
2. Remove drawbar cap and secure spindle with spindle pin. Unthread drawbar from tooling one full rotation.

**Note:** Do not fully unthread tooling from drawbar or the drawbar and tool threads could be damaged in the next step.

3. Tap top of drawbar with brass hammer to unseat taper.
4. Hold onto tooling assembly with one hand, and fully unthread drawbar with the other hand.



# 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.

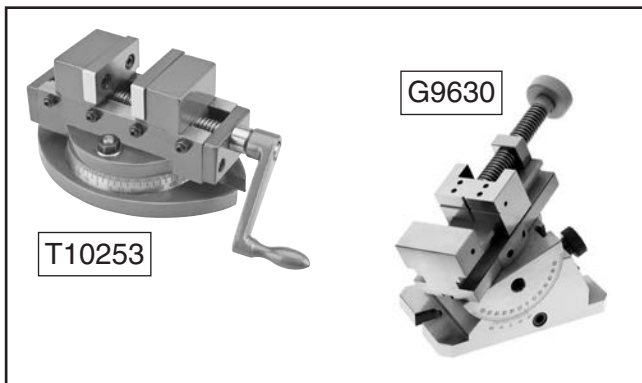
**T10253—2" Swiveling Self-Centering Vise**

**T10254—2" Self-Centering Vise**

**T10441—2" Precision Self-Centering Vise**

**G9630—Precision Universal Vise**

Each 2" vise features perfectly-aligned, precision-ground, self-centering jaws. T10254 and T10441 feature easy-to-read 0°–360° scale. The G9630 offers 360° rotation and vertical plane adjustment.



**Figure 22.** Precision milling vises.

## **T26485—58-Pc. Clamping Kit**

This clamping kit includes: (24) studs (four studs each: 3", 4", 5", 6", 7", and 8" long), (6) step block pairs, (6) T-nuts, (6) flange nuts, (4) coupling nuts, and (6) end hold-downs. The Model T26485 set fits  $\frac{7}{16}$ " T-slots and includes  $\frac{3}{8}$ "-16 studs. Racks can be bolted to the wall or side of machine for easy access.



**Figure 23.** T26485 58-Pc. Clamping Kit.

## **T25702— 5-Pc. R-8 End Mill Holder Set**

This all-inclusive set features a precision 3" boring head, R-8 shank, five-piece set of  $\frac{3}{4}$ " carbide tipped boring bars, five-piece set of  $\frac{1}{2}$ " HSS boring bars,  $\frac{1}{2}$ " to  $\frac{3}{4}$ " adapter, wrenches and fitted case.



**Figure 24.** T25702 5-Pc. R-8 End Mill Holder Set.

**order online at [www.grizzly.com](http://www.grizzly.com) or call 1-800-523-4777**



### G9756—20-Pc. HSS End Mill Set

This High Speed Steel set features 2 flute and 4 flute end cutting end mills in the following sizes: 3/16", 1/4", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16" and 3/4". Sizes are marked in a durable molded case.



Figure 25. G9756 20-Pc. Ball End Mill Set.

**SB1365—South Bend Way Oil-ISO 68**  
**T23964—Moly-D Multi-Purpose NLGI#2 Grease**



Figure 26. Recommended machine lubrication.

### H5939—Grizzly 18-Pc. R-8 Boring Head Set

This all-inclusive set features a precision 2" boring head, R-8 shank, 9 carbide-tipped boring bars with 1/2" shanks, graduated dial in 0.001", 0.05", and 0.025" actual motion, and a carrying case.



Figure 27. H5939 2" Boring Head Set.

**order online at [www.grizzly.com](http://www.grizzly.com) or call 1-800-523-4777**

### H3022—Measurement Tool Set

Includes magnetic base, 1" dial indicator (.001"), and 6" dial caliper (.001"). The extremely low price has made this a very popular seller!



Figure 28. H3022 Measurement Tool Set.

### G9815—Thin Parallel Set - 10 Pairs

### G5646—10-Pc. Precision Angle Block Set

Speed set-up, production and inspection with the Grizzly Precision Angle Block Set and Thin Parallel Set made from hardened and precision-ground steel. Each set offers a wide range of sizes for any job.

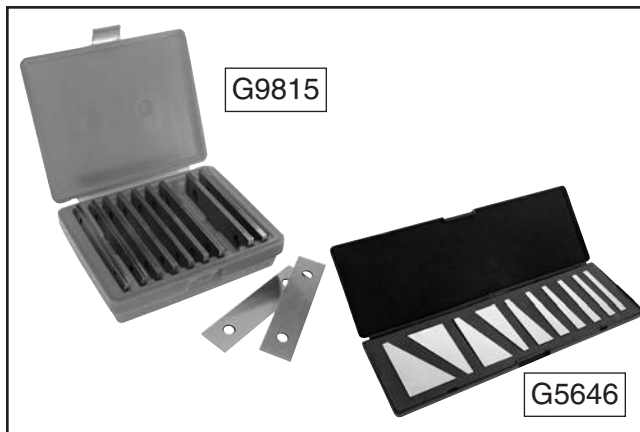


Figure 29. G9815 Thin Parallel Set and G5646 Precision Angle Block Set.

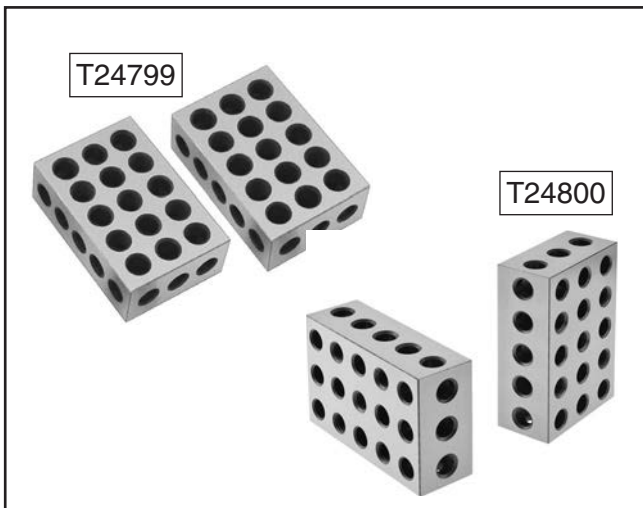


**SB1348—South Bend® 8-Pc. R-8 Collet Set**  
**SB1349—South Bend® 16-Pc. R-8 Collet Set**  
 Get true South Bend® quality and precision with one of these Quick-Change Collet Sets. Each set includes hardened and precision-ground spring collets for maximum holding power, collet chuck, spanner wrench,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



**Figure 30.** Model SB1349 South Bend 16-Pc. R-8 Collet Set.

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



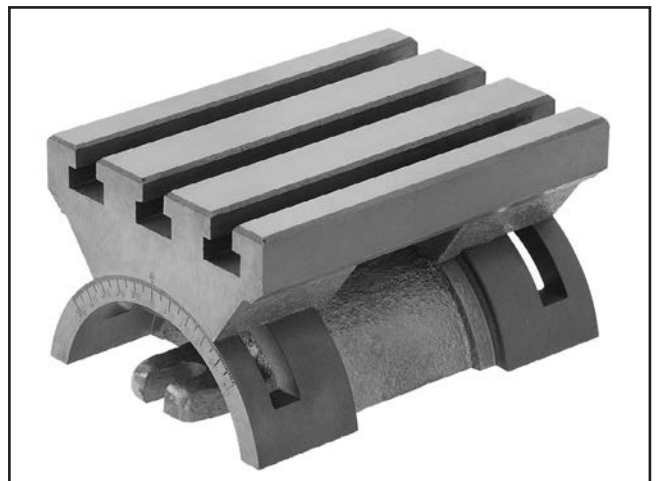
**Figure 31.** T24799 and T24800 Precision Parallel Blocks.

**H7527—6" ROTARY TABLE SET**  
 Use this 6" Rotary Table in either the horizontal or vertical position for a variety of milling applications and with the set of dividing plates and adjustable tailstock, your milling applications are nearly unlimited. With 4° table movement per handle rotation and 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 32.** H7527 6" Rotary Table w/Div. Plates.

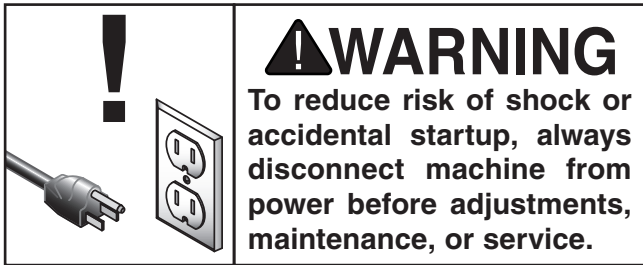
**G5758—5" x 7" x 3 3/4" Tilt Table**  
**G5759—7" x 10" x 5" Tilt Table**  
 Set your work at any angle from -45° to +45° with these sturdy Tilt Tables. Heavy-duty construction includes 7/16" T-slots, two locking screws, and precision base. 1/2" mounting slots.



**Figure 33.** G5758 Tilt Table.



# SECTION 6: MAINTENANCE



## Schedule

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

### Daily Check:

- Loose mounting bolts and damaged tooling.
- Clean debris and built up grime off of machine.
- Worn or damaged wires.
- Any other unsafe condition.

### Every 8 Hours of Operation:

- Lubricate table and column ways (Page 30).

### Every 40 Hours of Operation:

- Lubricate table leadscrews (Page 30).

## Cleaning and Protecting

Metal chips left on the machine that have been soaked with water-based coolant will invite oxidation and a gummy residue build-up around the moving parts. Use a brush and shop vacuum to remove chips and debris from the working surfaces of the mill/drill. Never blow off the mill/drill with compressed air, as this will force metal chips deep into the mechanisms and may cause injury to yourself or bystanders.

Remove any rust build-up from unpainted cast iron surfaces of mill/drill and treat with a non-staining lubricant after cleaning. Protect other unpainted cast iron surfaces with regular applications of ISO 68 oil.

## Lubrication

This mill/drill requires regular lubrication to maintain smooth movement and ensure long-lasting operation.

An essential part of lubrication is cleaning the components before lubricating them. Clean all exterior components in this section with mineral spirits, shop rags, and brushes before lubricating.

This step is critical because grime and chips build up on lubricated components over time, which makes them hard to move.

**DISCONNECT MACHINE FROM POWER BEFORE PERFORMING LUBRICATION!**

## NOTICE

**Follow reasonable lubrication practices as outlined in this manual. Failure to do so could lead to premature failure of machine and will void warranty.**

### Column Rack

Lube Type..Model T23964 or NLGI#2 Equivalent  
Lube Amount .....Thin Coat  
Lubrication Frequency ..... 90 hrs. of Operation

#### To lubricate column rack:

1. Move headstock down to gain full access to column rack (see **Figure 34** on **Page 30**).
2. Clean teeth with mineral spirits, shop rags, and brush.
3. When dry, apply thin coat of grease to teeth and raise/lower quill several times to evenly distribute.



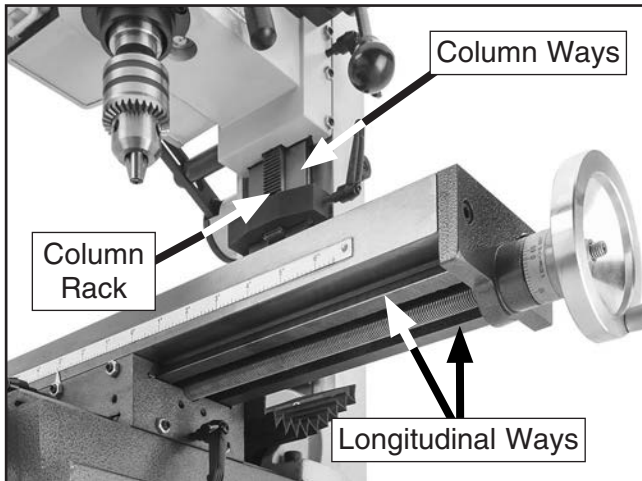
## Table and Column Ways

Lube Type.. Model SB1365 or ISO 68 Equivalent  
 Lube Amount .....Thin Coat  
 Lubrication Frequency ..... 8 hrs. of Operation

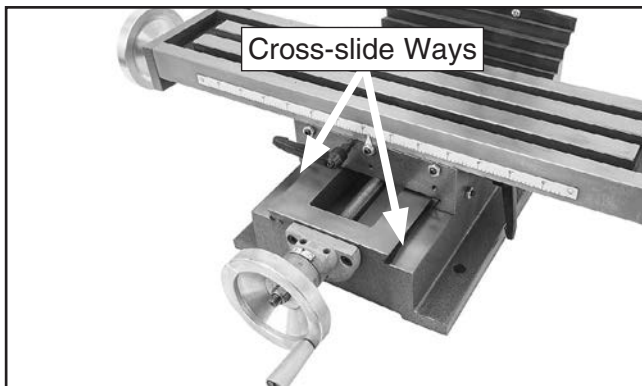
**Tool Needed** Qty  
 Standard Screwdriver..... 1

Disconnect each column way cover, and move the table forward and backward to expose way lubrication points. Raise the headstock to expose the Z-axis ways on the column.

Regular lubrication will ensure the mill/drill performs at its highest potential. Regularly wipe table and column ways with recommended lubrication, then move components back and forth several times to ensure smooth movements (see **Figures 34–35**).



**Figure 34.** Location of column and longitudinal ways.



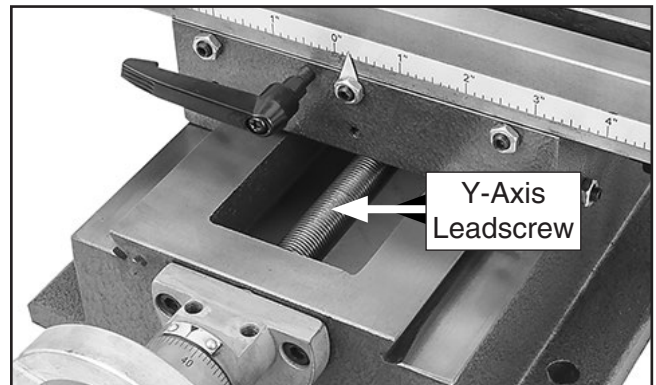
**Figure 35.** Location of cross-slide ways.

## Table Leadscrews

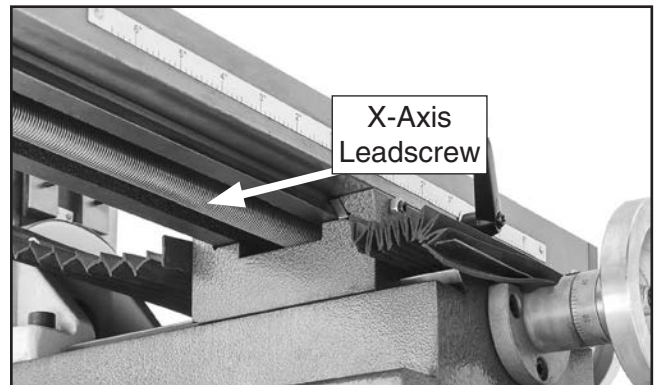
Lube Type.. Model SB1365 or ISO 68 Equivalent  
 Lube Amount .....Thin Coat  
 Lubrication Frequency ..... 40 hrs. of Operation

**To lubricate table leadscrews:**

1. DISCONNECT MACHINE FROM POWER!
2. Using Y-axis handwheel, move table as far forward as possible.
3. Remove rubber way cover, then use mineral spirits and a brush to clean existing grease and debris off of Y-axis leadscrew shown in **Figure 36**. Allow leadscrew to dry.



**Figure 36.** Y-axis leadscrew lubrication point.



**Figure 37.** X-axis leadscrew lubrication point.

4. Apply thin coat of ISO 68 machine oil to exposed leadscrew threads, then move table through its full range motion to disperse oil along full length of leadscrew.
5. Use mineral spirits and a brush to clean X-axis leadscrew. Allow leadscrew to dry.
6. Apply thin coat of ISO 68 machine oil to exposed X-axis leadscrew threads.





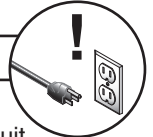
# SECTION 7: SERVICE

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.	<ol style="list-style-type: none"> <li>Emergency stop button depressed/at fault.</li> <li>Incorrect power supply voltage or circuit size.</li> <li>Blown fuse in machine.</li> <li>Power supply circuit breaker tripped or fuse blown in wall panel.</li> <li>Wiring open/has resistance.</li> <li>ON/OFF switch at fault.</li> <li>Potentiometer for variable-speed at fault.</li> <li>Motor brushes at fault.</li> <li>Circuit board at fault.</li> <li>Spindle rotation switch at fault.</li> <li>Motor at fault.</li> </ol>	<ol style="list-style-type: none"> <li>Release button head to reset/replace.</li> <li>Ensure correct power supply voltage and circuit size.</li> <li>Replace fuse/ensure no shorts.</li> <li>Ensure circuit is sized correctly and free of shorts. Reset circuit breaker or replace fuse.</li> <li>Test/replace.</li> <li>Replace switch.</li> <li>Test/repair/replace.</li> <li>Remove/replace brushes.</li> <li>Test/repair/replace.</li> <li>Test/replace switch.</li> <li>Test/repair/replace.</li> </ol>
Machine stalls or is overloaded.	<ol style="list-style-type: none"> <li>Machine undersized for task.</li> <li>Wrong workpiece material.</li> <li>Dull tooling.</li> <li>Motor wired incorrectly.</li> <li>Motor overheated.</li> <li>Motor brushes at fault.</li> <li>Motor potentiometer at fault.</li> <li>Spindle rotation switch at fault.</li> </ol>	<ol style="list-style-type: none"> <li>Use correct cutter/bit; reduce feed rate; reduce spindle RPM; use coolant if possible.</li> <li>Use correct type/size of metal.</li> <li>Sharpen/replace tooling.</li> <li>Wire motor correctly.</li> <li>Clean motor, let cool, and reduce workload.</li> <li>Remove/replace brushes.</li> <li>Test/repair/replace.</li> <li>Test/repair/replace.</li> </ol>
Machine has vibration or noisy operation.	<ol style="list-style-type: none"> <li>Machine is incorrectly mounted to workbench or floor.</li> <li>Motor or machine component loose.</li> </ol>	<ol style="list-style-type: none"> <li>Adjust placement, change mounting area, shim, or tighten mounting hardware.</li> <li>Inspect/replace damaged bolts/nuts, and retighten with thread locking fluid.</li> </ol>



## Mill/Drill Operation

Symptom	Possible Cause	Possible Solution
Tool loose in spindle.	<ol style="list-style-type: none"> <li>1. Cutter/tooling is loose.</li> <li>2. Tool is not fully drawn up into spindle taper.</li> <li>3. Debris on tool or in spindle taper.</li> <li>4. Taking too big of a cut.</li> </ol>	<ol style="list-style-type: none"> <li>1. Make sure tooling is properly secured.</li> <li>2. Tighten drawbar (<b>Page 25</b>).</li> <li>3. Clean tool and spindle taper.</li> <li>4. Lessen depth of cut and allow chips to clear.</li> </ol>
Breaking tools or cutters.	<ol style="list-style-type: none"> <li>1. Spindle speed/feed rate is too fast for depth of cut, cutting tool size, or workpiece material.</li> <li>2. Improper or no lubricant/cutting tool getting too hot.</li> <li>3. Dull tooling.</li> </ol>	<ol style="list-style-type: none"> <li>1. Set spindle speed correctly, use slower feed rate (<b>Page 21</b>), or take lighter cut.</li> <li>2. Use proper lubricant for operation.</li> <li>3. Sharpen/replace tooling.</li> </ol>
Workpiece or tool vibrates or chatters during operation.	<ol style="list-style-type: none"> <li>1. Table locks not tight.</li> <li>2. Workpiece not secure.</li> <li>3. Spindle speed/feed rate is too fast.</li> <li>4. Gibs too loose in table.</li> <li>5. Bit is chattering.</li> <li>6. Chuck or cutter at fault.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten table locks.</li> <li>2. Properly clamp workpiece on table or in vise.</li> <li>3. Set spindle speed correctly or use slower feed rate (<b>Page 21</b>).</li> <li>4. Tighten gibs (<b>Page 33</b>).</li> <li>5. Replace/sharpen bit; index bit to workpiece; use slower feed rate.</li> <li>6. Replace unbalanced chuck; replace/resharpen cutter.</li> </ol>
Table is hard to move.	<ol style="list-style-type: none"> <li>1. Table locks are tightened down.</li> <li>2. Chips have loaded up on ways.</li> <li>3. Ways and leadscrew need lubrication.</li> <li>4. Gibs are too tight.</li> </ol>	<ol style="list-style-type: none"> <li>1. Make sure table locks are fully released.</li> <li>2. Frequently clean away chips during operations.</li> <li>3. Lubricate ways (<b>Page 30</b>).</li> <li>4. Adjust gibs (<b>Page 33</b>).</li> </ol>
Headstock is hard to raise.	<ol style="list-style-type: none"> <li>1. Headstock lock(s) or gib is at fault.</li> <li>2. Column ways are binding.</li> <li>3. Gib is too tight.</li> </ol>	<ol style="list-style-type: none"> <li>1. Loosen/replace lock lever and adjust gib.</li> <li>2. Clean/relubricate column ways and rack (<b>Page 30</b>).</li> <li>3. Adjust gib (<b>Page 33</b>).</li> </ol>
Bad surface finish.	<ol style="list-style-type: none"> <li>1. Spindle speed/feed rate is too fast.</li> <li>2. Workpiece not secure.</li> <li>3. Dull or incorrect cutting tool.</li> <li>4. Wrong rotation direction of cutting tool.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use correct spindle speed or slower feed rate (<b>Page 21</b>).</li> <li>2. Properly clamp workpiece on table or in vise.</li> <li>3. Sharpen cutting tool; select better tool for operation.</li> <li>4. Check for proper direction of cutting tool rotation.</li> </ol>
Cutting results not square.	<ol style="list-style-type: none"> <li>1. Spindle is not exactly 90° to table.</li> <li>2. Table travel is inconsistent.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tram the spindle (<b>Page 36</b>).</li> <li>2. Adjust gibs (<b>Page 33</b>).</li> </ol>
Motor or spindle overheats.	<ol style="list-style-type: none"> <li>1. Mill/drill operated at maximum speed for extended period.</li> <li>2. Fan cover clogged.</li> </ol>	<ol style="list-style-type: none"> <li>1. Allow mill/drill to cool; avoid operating at maximum speed for long times.</li> <li>2. Clean motor, let cool, and reduce workload.</li> </ol>



# Adjusting Gibs

The gibs affect the accuracy of the work table by restricting slide movements along their ways.

Screws on each axis end allow gib adjustment to increase or decrease the friction between the sliding surfaces of the ways.

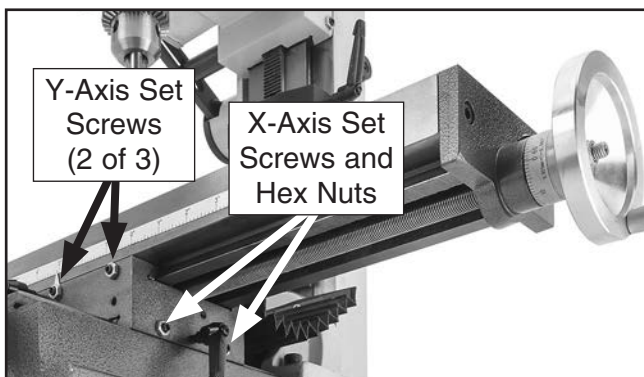
The goal of gib adjustment is to remove unnecessary sloppiness without causing the X-, Y- and Z-axis ways to bind. Tight gibs make the movements more accurate, but harder to perform. Loose gibs make the movements sloppy, but easier to perform.

**Tip:** *Many experienced machinists adjust the gibs until there is just a slight drag in table movement.*

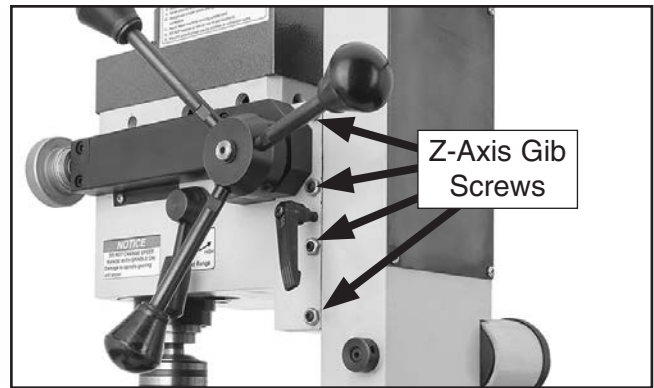
Tools Needed:	Qty
Hex Wrench 3mm.....	1
Wrench 10mm .....	1

## To adjust gibs:

1. DISCONNECT MACHINE FROM POWER!
2. Make sure desired X-, Y- and Z-axis lock lever is loose.
3. Loosen hex nuts on gib screws along desired gib adjustment (see **Figure 38**).
4. Loosen set screws and move sliding device back-and-forth to make sure gibs are loose, then tighten set screws until you feel light resistance in the handwheel.



**Figure 38.** Location of gib adjustment set screws.



**Figure 39.** Location of Z-Axis gib screws.

5. Use hex wrench to prevent set screws from moving, then re-tighten hex nuts to secure the setting.
6. Re-check movement of slide and, if necessary, repeat **Steps 3–5**.

## **NOTICE**

**Excessively loose gibs may cause poor workpiece finishes. Excessively tight gibs may cause premature wear of sliding surfaces and ways.**



# Head Counterbalance Spring

## **⚠️ WARNING**

Head counterbalance spring is under high tension! **DO NOT** remove the cover or the spring. The spring will rapidly uncoil causing personal injury.

The head counterbalance spring (see **Figure 40**) helps keep the mill head in position. This spring has been set and adjusted at the factory and needs no further adjustment. **DO NOT** attempt to make adjustments to this spring. It is under high tension; if it uncoils it will be very hard to return to its original position.



**Figure 40.** Location of head counterbalance spring.

# Replacing Fuse

This machine features a on-board fuse designed to protect sensitive electrical parts in the event of electrical overload. If the spindle fails to start, replace the fuse.

To replace fuse:

1. DISCONNECT MACHINE FROM POWER!
2. Locate black fuse holder (see **Figure 41**) on underside of headstock.
3. Unthread fuse holder by rotating it counter-clockwise, then remove fuse (see **Figure 41**).



**Figure 41.** Removing and replacing fuse.

4. Insert new fuse and re-install fuse holder underneath headstock.



# Replacing Brushes

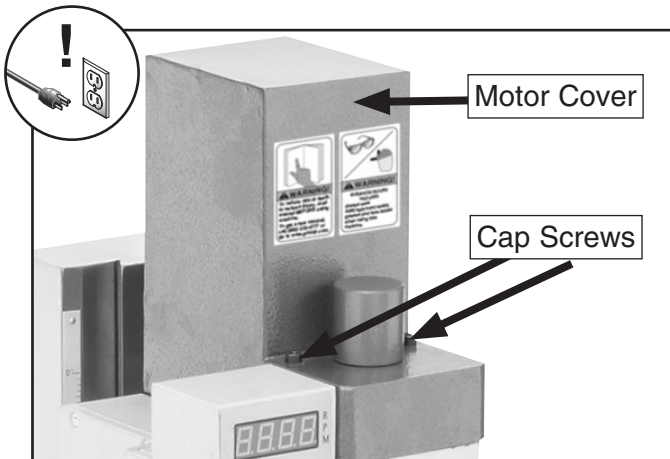
This mill/drill is equipped with a universal motor that uses two carbon brushes to transmit electrical current inside the motor. These brushes are considered to be regular "wear items" or "consumables" that will need to be replaced during the life of the motor. The frequency of required replacement is often related to how much the motor is used and how hard it is pushed.

Replace the carbon brushes (Part #P0781005-2) when the motor no longer reaches full power, or when the brushes measure less than 1/4" long (new brushes are 5/8" long).

Tools Needed:	Qty
Hex Wrench 4mm.....	1
Standard Screwdriver #2.....	1

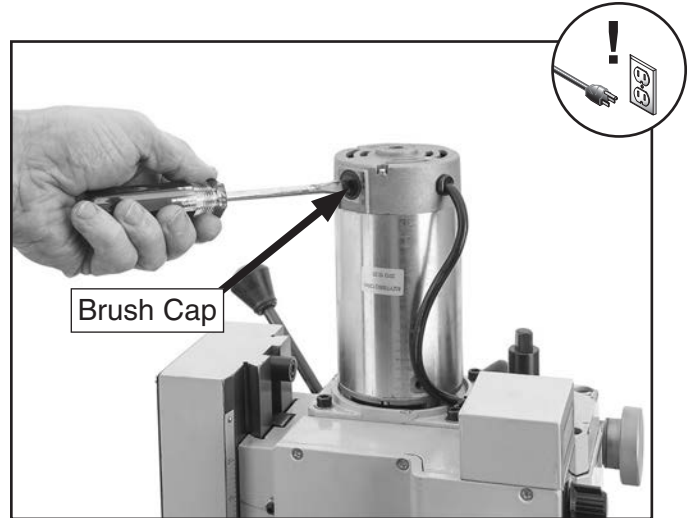
## To inspect and replace motor brushes:

1. DISCONNECT MACHINE FROM POWER!
2. Remove motor cover by removing two cap screws (see **Figure 42**).



**Figure 42.** Location of motor cover cap screws.

3. Unscrew one of the brush caps (see **Figure 43**).



**Figure 43.** Removing motor brush cap.

4. Remove old brush assembly. If brush is worn down to less than 1/4", replace it with a new one. Otherwise, re-install old brush (see **Figure 44**).



**Figure 44.** Inserting new motor brush.

5. Replace brush cap to secure brush.
6. Repeat **Steps 3–5** for second brush assembly on other side of motor.
7. Replace motor cover.

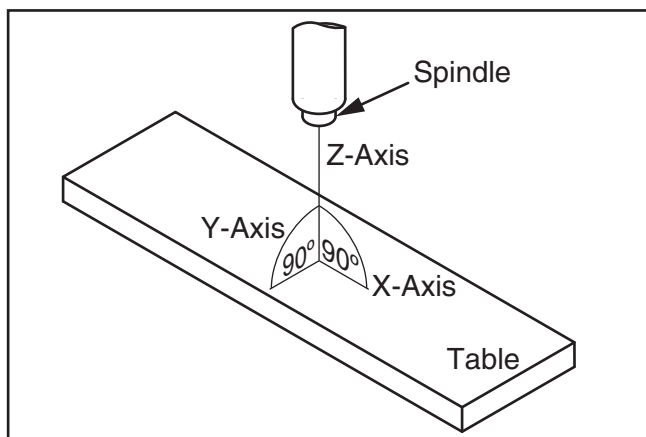
**Note:** Run mill/drill at a medium spindle speed setting for a minimum of five minutes before performing any workpiece operations.



# 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 45**.



**Figure 45.** 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.

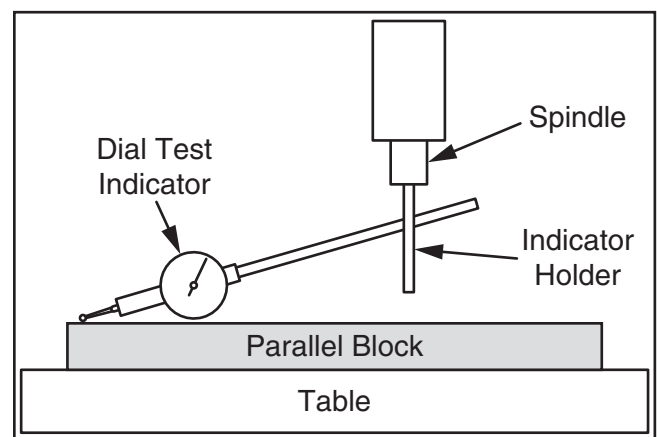
Keep in mind that all workpiece top surfaces are not exactly parallel with the table top. You may choose to tram the spindle to the top surface of the workpiece after it is mounted rather than tramming the spindle to the table.

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/drill 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 the headstock lock lever used during intended milling operations.
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 46**).

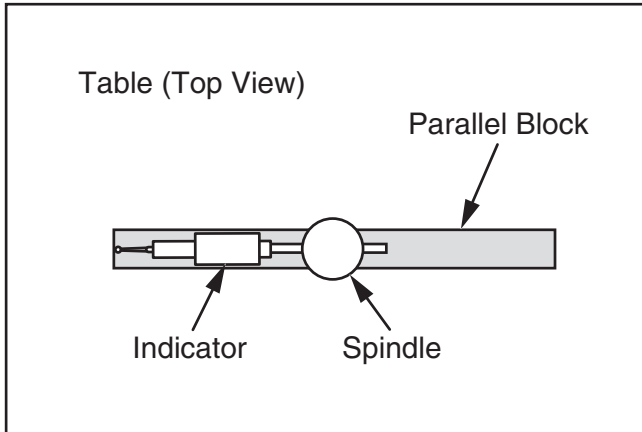


**Figure 46.** Dial test indicator mounted.



- To measure spindle alignment along X-axis, place parallel block directly under spindle and indicator across length of table, as illustrated in **Figure 47**.

**Note:** If you must re-position 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 tramping.



**Figure 47.** Parallel block and indicator positioned for the X-axis measurement.

**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.

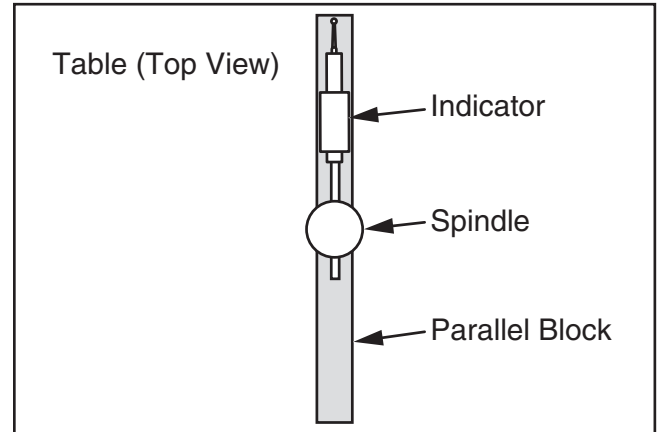
- Rotate spindle by hand so that indicator point rests on one end of parallel block, as illustrated in **Figures 46–47**, then zero the dial.
- Rotate spindle so that indicator point rests in same manner on other end of block, then read dial.

—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.

- Place parallel block directly under spindle and across width of table, as illustrated in **Figure 48**.



**Figure 48.** Parallel block and indicator positioned for the Y-axis measurement.

- Rotate spindle so indicator point rests on parallel bar, as illustrated in **Figure 48**, then zero the dial.
- 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 tramping 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 after-market 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.











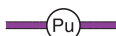



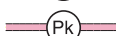
**CAPACITORS/INVERTERS.** Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

**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](http://www.grizzly.com).

#### COLOR KEY

BLACK		BLUE		YELLOW		LIGHT BLUE	
WHITE		BROWN		YELLOW GREEN		BLUE WHITE	
GREEN		GRAY		PURPLE		TURQUOISE	
RED		ORANGE		PINK			





# Wiring Overview

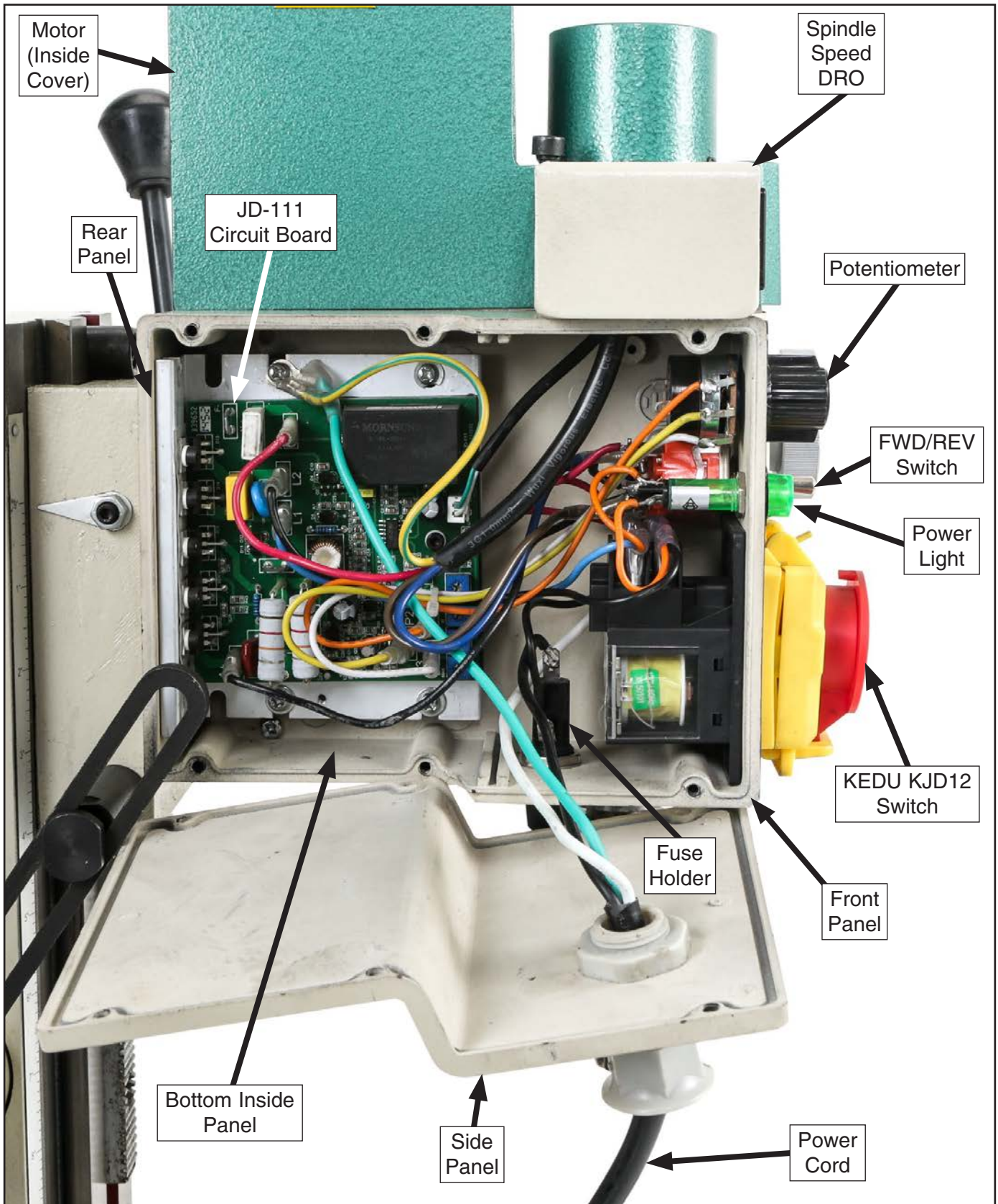
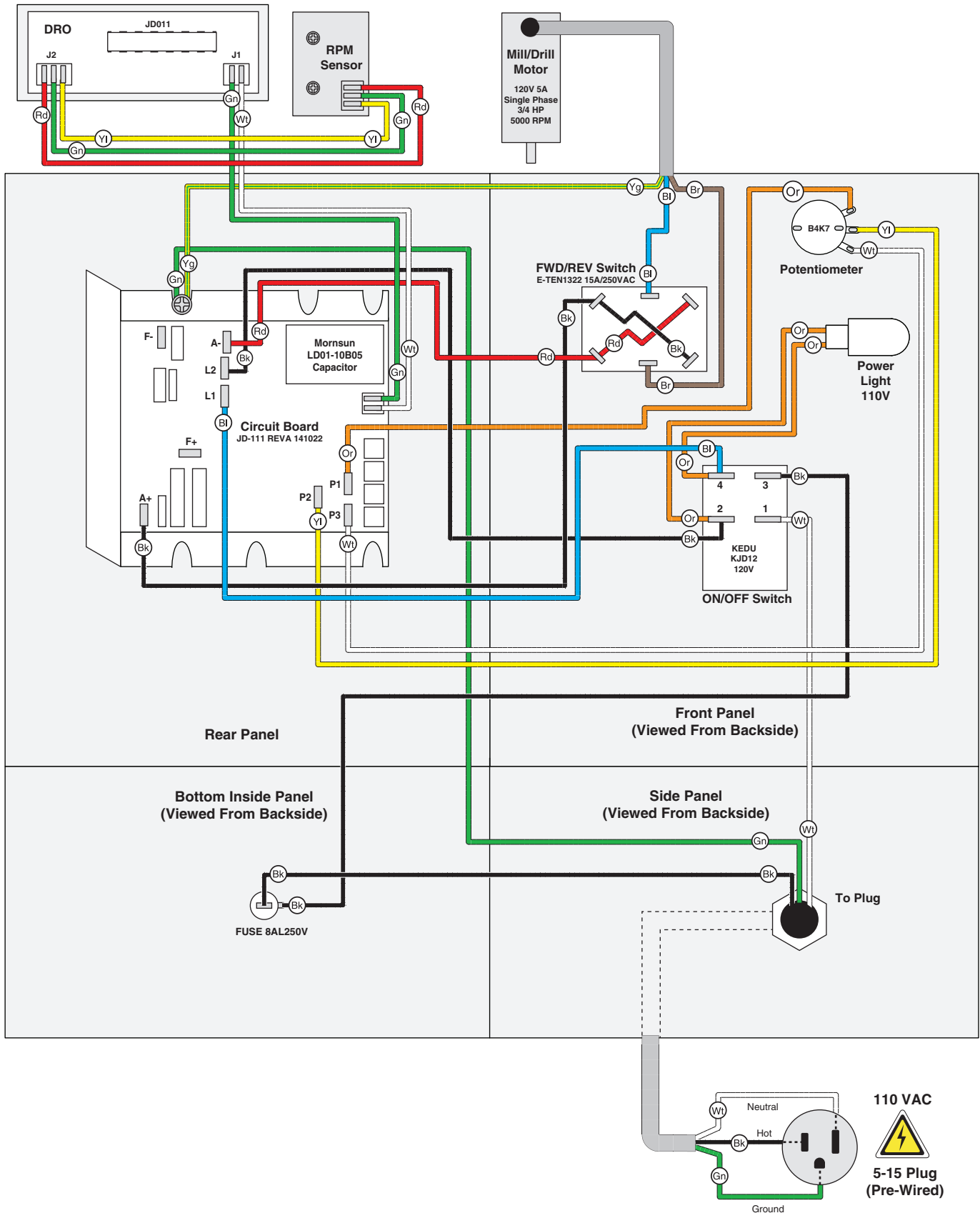


Figure 49. G0781 wiring overview.

# Wiring Diagram





# Headstock

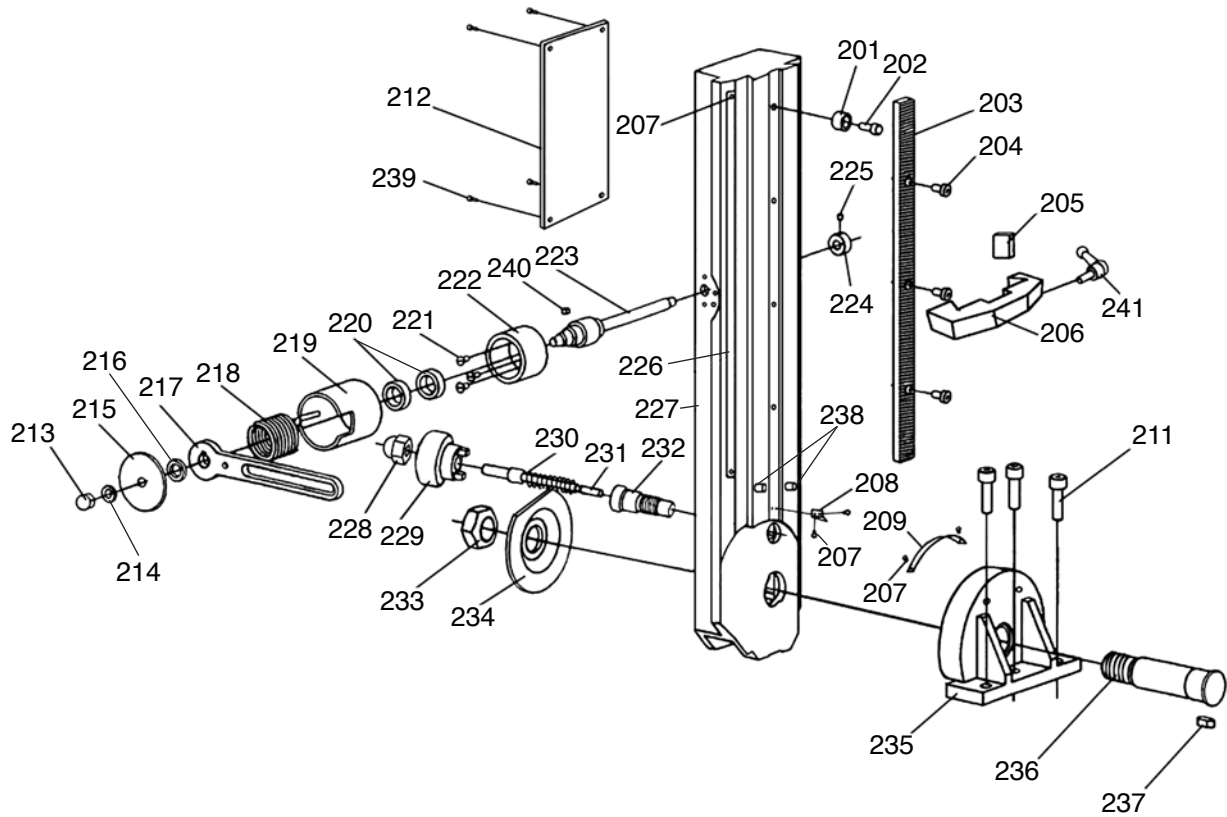
REF	PART #	DESCRIPTION
1	P0781001	MOTOR COVER
2	P0781002	DRO COVER
3	P0781003	DRO JD01
5	P0781005	MOTOR 600W 110V DC
5-1	P0781005-1	MOTOR BRUSH CAP
5-2	P0781005-2	MOTOR CARBON BRUSH 2-PC SET
6	P0781006	KEY 3 X 3 X 16
7	P0781007	DRAWBAR CAP
9	P0781009	GASKET 15MM
10	P0781010	PINION 18T
11	P0781011	FLAT WASHER 5MM
12	P0781012	FLAT HD SCR M5-.8 X 12
13	P0781013	ELECTRICAL BOX COVER GASKET
14	P0781014	ELECTRICAL BOX
15	P0781015	GASKET 7.5MM
16	P0781016	FLAT WASHER 4MM
17	P0781017	GROUNDING PLATE
18	P0781018	PHLP HD SCR M4-.7 X 6
19	P0781019	ELECTRICAL BOX MOUNTING PLATE
21	P0781021	POWER CORD 16G 3W 72" 5-15P
22	P0781022	STRAIN RELIEF PG13 TYPE-9
23	P0781023	TAP SCREW M4-.7 X 12
24	P0781024	ELECTRICAL BOX COVER
26	P0781026	E-STOP KEDU KJD12 120V
27	P0781027	POWER LIGHT 110VAC GREEN 10MM
28	P0781028	HEX NUT M10-1.5 THIN
29	P0781029	TOGGLE SWITCH E-TEN1322, REVERSING
30	P0781030	POTENTIOMETER B4K7 4.7KOHM
31	P0781031	FLAT WASHER 11MM
32	P0781032	HEX NUT M12-1.75 THIN
33	P0781033	FLAT WASHER 12MM
36	P0781036	CAP SCREW M3-.5 X 6
101	P0781101	CAP SCREW M6-1 X 30
102	P0781102	CAP SCREW M6-1 X 45
103	P0781103	HEADSTOCK COVER
104	P0781104	CAP SCREW M5-.8 X 14
105	P0781105	GEAR 38T
106	P0781106	GASKET 10MM
107	P0781107	BALL BEARING 6001Z
108	P0781108	COMBO GEAR 20T/12T
109	P0781109	KEY 4 X 4 X 45
110	P0781110	MOTOR GEAR SHAFT
111	P0781111	EXT RETAINING RING 12MM
112	P0781112	KEY 4 X 4 X 8
113	P0781113	CAP SCREW M5-.8 X 10
114	P0781114	UPPER GEAR CASE RETAINER
116	P0781116	HEADSTOCK CASTING
117	P0781117	SPINDLE NUT M27-1.5
118	P0781118	SET SCREW M6-1 X 8 CONE-PT
119	P0781119	UPPER SPACER 28MM ID
120	P0781120	BALL BEARING 6206-2RS
121	P0781121	LOWER SPACER 28MM ID
122	P0781122	COMBO GEAR 21T/29T
123	P0781123	LOWER GEAR CASE RETAINER
125	P0781125	KEY 5 X 5 X 20
126	P0781126	KEY 5 X 5 X 40

REF	PART #	DESCRIPTION
127	P0781127	SPINDLE
127-1	P0781127-1	SPINDLE PIN
128	P0781128	FLAT WASHER 5MM
129	P0781129	FINE FEED HANDWHEEL 52MM, 8MM BORE
130	P0781130	SET SCREW M4-.7 X 12
131	P0781131	FLAT SPRING
132	P0781132	FINE DOWNFEED GRADUATED DIAL
133	P0781133	CAP SCREW M5-.8 X 25
134	P0781134	FINE DOWNFEED SHAFT BRACKET
135	P0781135	FINE DOWNFEED SHAFT COVER
137	P0781137	WORM SHAFT MOUNTING PLATE
138	P0781138	CAP SCREW M4-.7 X 8
141	P0781141	WORM SHAFT
142	P0781142	SHIFTER FORK
143	P0781143	SET SCREW M5-.8 X 8 CONE-PT
144	P0781144	GEAR SHIFT LINKAGE
146	P0781146	LEVER HUB
148	P0781148	LEVER M8-1.25 X 10, 72L
149	P0781149	STEEL BALL 5MM
150	P0781150	COMPRESSION SPRING 4 X 9MM
151	P0781151	SET SCREW M6-1 X 6 CONE-PT
153	P0781153	SHOULDER STUD-UDE M8-1.25 X 115, 18, 6
154	P0781154	DOWNFEED HANDLE HUB
155	P0781155	BEVEL GEAR 31T
156	P0781156	KEY 4 X 4 X 20
157	P0781157	PINION SHAFT
158	P0781158	ROLL PIN 4 X 20
159	P0781159	GEAR HOUSING
160	P0781160	ADJUSTABLE HANDLE 45L, M6-1 X 25
161	P0781161	GASKET
162	P0781162	COLUMN GIB
163	P0781163	SET SCREW M6-1 X 25
164	P0781164	HEX NUT M6-1
165	P0781165	CAP SCREW M8-1.25 X 45
166	P0781166	HEADSTOCK MOUNT
167	P0781167	ROLL PIN 8 X 25
168	P0781168	SCALE INDICATOR
169	P0781169	STANDOFF-ROUND M8-1.25 X 10MM, M8-1.25
170	P0781170	SHOULDER T-BOLT M8-1.25 X 12, 10 X 10
171	P0781171	CAP SCREW M5-.8 X 20
172	P0781172	CIRCUIT BOARD JD-111
173	P0781173	DOWNFEED LEVER KNOB M8-1.25 BLACK
174	P0781174	RPM SENSOR
176	P0781176	RPM MOUNT PLATE
177	P0781177	PHLP HD SCR M4-.7 X 6
178	P0781178	HEX NUT M3-.5
179	P0781179	PHLP HD SCR M3-.5 X 16
180	P0781180	FLAT WASHER 3MM
181	P0781181	FUSE F8 250V FAST-ACTING, GLASS
182	P0781182	FUSE HOLDER 10A 250V AC
183	P0781183	FLAT WASHER 14MM, NYLON
184	P0781184	FLAT WASHER 14MM
185	P0781185	HEX NUT M14-2
186	P0781186	FUSE CAP
187	P0781187	VARIABLE-SPEED KNOB

**Please Note:** We do our best to stock replacement parts whenever possible, but we cannot guarantee that all parts shown here are available for purchase. Call (800) 523-4777 or visit our online parts store at [www.grizzly.com](http://www.grizzly.com) to check for availability.



# Column

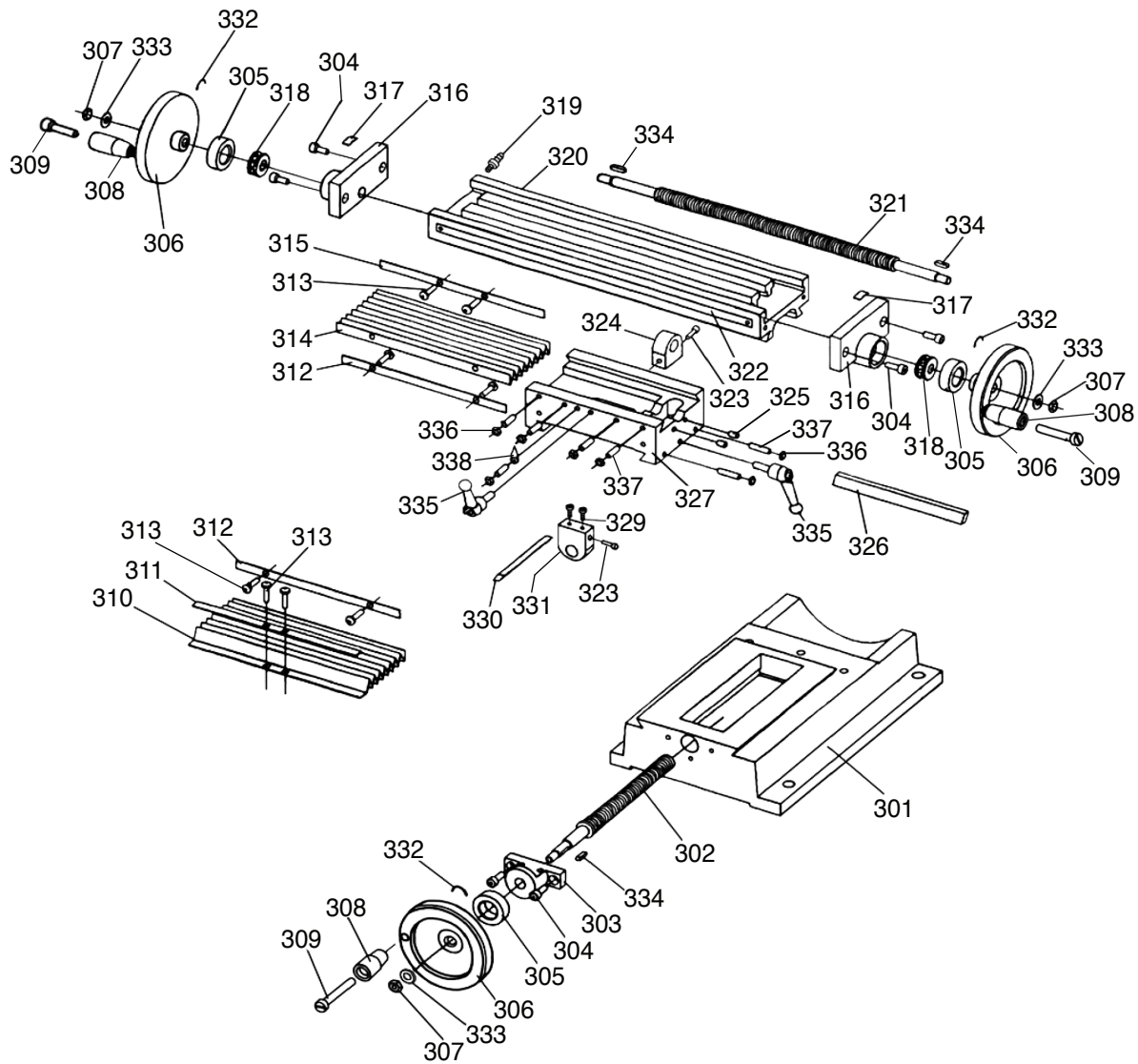


REF	PART #	DESCRIPTION
201	P0781201	FIXED COLUMN STOP
202	P0781202	CAP SCREW M6-1 X 20
203	P0781203	COLUMN RACK 9-1/2"
204	P0781204	CAP SCREW M6-1 X 14
205	P0781205	DEPTH STOP GIB
206	P0781206	COLUMN DEPTH STOP
207	P0781207	RIVET 2 X 5MM NAMEPLATE, ALUMINUM
208	P0781208	Z-AXIS INDICATOR
209	P0781209	HEADSTOCK ANGLE SCALE
211	P0781211	CAP SCREW M10-1.5 X 35
212	P0781212	COLUMN COVER
213	P0781213	ACORN NUT M8-1.25
214	P0781214	FLAT WASHER 8MM
215	P0781215	RETURN SPRING COVER CAP
216	P0781216	SPACER
217	P0781217	RETURN SPRING BAR
218	P0781218	TORSION SPRING
219	P0781219	RETURN SPRING COVER
220	P0781220	BUSHING
221	P0781221	FLAT HD SCR M5-.8 X 10

REF	PART #	DESCRIPTION
222	P0781222	SPRING SUPPORT
223	P0781223	RETURN SPRING SHAFT
224	P0781224	LOCK COLLAR
225	P0781225	SET SCREW M5-.8 X 6 CONE-PT
226	P0781226	COLUMN SCALE 9"
227	P0781227	COLUMN
228	P0781228	ACORN NUT M6-1
229	P0781229	COLUMN LOCK
230	P0781230	COMPRESSION SPRING
231	P0781231	LOCK PIN
232	P0781232	LOCK SLEEVE
233	P0781233	HEX NUT M24-3
234	P0781234	CUT WASHER 24 X 95MM
235	P0781235	PIVOT PLATE
236	P0781236	COLUMN PIVOT SHAFT M24-3 X 33, 105L
237	P0781237	KEY 8 X 8 X 12
238	P0781238	LIMIT BLOCK STOP PIN
239	P0781239	PHLP HD SCR M4-.7 X 6
240	P0781240	KEY 4 X 4 X 8
241	P0781241	ADJUSTABLE HANDLE 45L, M6-1 X 25



# Table



REF	PART #	DESCRIPTION
301	P0781301	TABLE BASE
302	P0781302	X-AXIS LEADSCREW
303	P0781303	LEADSCREW BRACKET
304	P0781304	CAP SCREW M6-1 X 12
305	P0781305	GRADUATED DIAL FOR HANDWHEELS
306	P0781306	HANDWHEEL 90D X 8B X M8-1.25, DISHED
307	P0781307	HEX NUT M8-1.25
308	P0781308	HANDWHEEL HANDLE 36L M8-1.25 X 10 REV
309	P0781309	HANDLE SCREW M8-1.25 X 10, 9 X 36
310	P0781310	FRONT WAY COVER
311	P0781311	FRONT WAY BAR
312	P0781312	REAR WAY BAR
313	P0781313	PHLP HD SCR M6-1 X 8
314	P0781314	REAR WAY COVER
315	P0781315	REAR WAY COLUMN BAR
316	P0781316	Y-AXIS BEARING HOUSING
317	P0781317	DIAL INDICATOR
318	P0781318	THRUST BEARING 51200
319	P0781319	COOLANT HOSE CONNECTOR M10-1.5 X 10

REF	PART #	DESCRIPTION
320	P0781320	TABLE
321	P0781321	Y-AXIS LEADSCREW
322	P0781322	Y-AXIS SCALE
323	P0781323	CAP SCREW M5-.8 X 20
324	P0781324	Y-AXIS LEADSCREW NUT
325	P0781325	SET SCREW M6-1 X 10 CONE-PT
326	P0781326	Y-AXIS GIB
327	P0781327	SADDLE
329	P0781329	CAP SCREW M6-1 X 8
330	P0781330	X-AXIS GIB
331	P0781331	X-AXIS LEADSCREW NUT
332	P0781332	FLAT SPRING FOR HANDWHEEL
333	P0781333	FLAT WASHER 8MM
334	P0781334	KEY 3 X 3 X 16
335	P0781335	ADJUSTABLE HANDLE 45L, M6-1 X 25
336	P0781336	HEX NUT M6-1
337	P0781337	SET SCREW M6-1 X 25
338	P0781338	SCALE INDICATOR



# Accessories

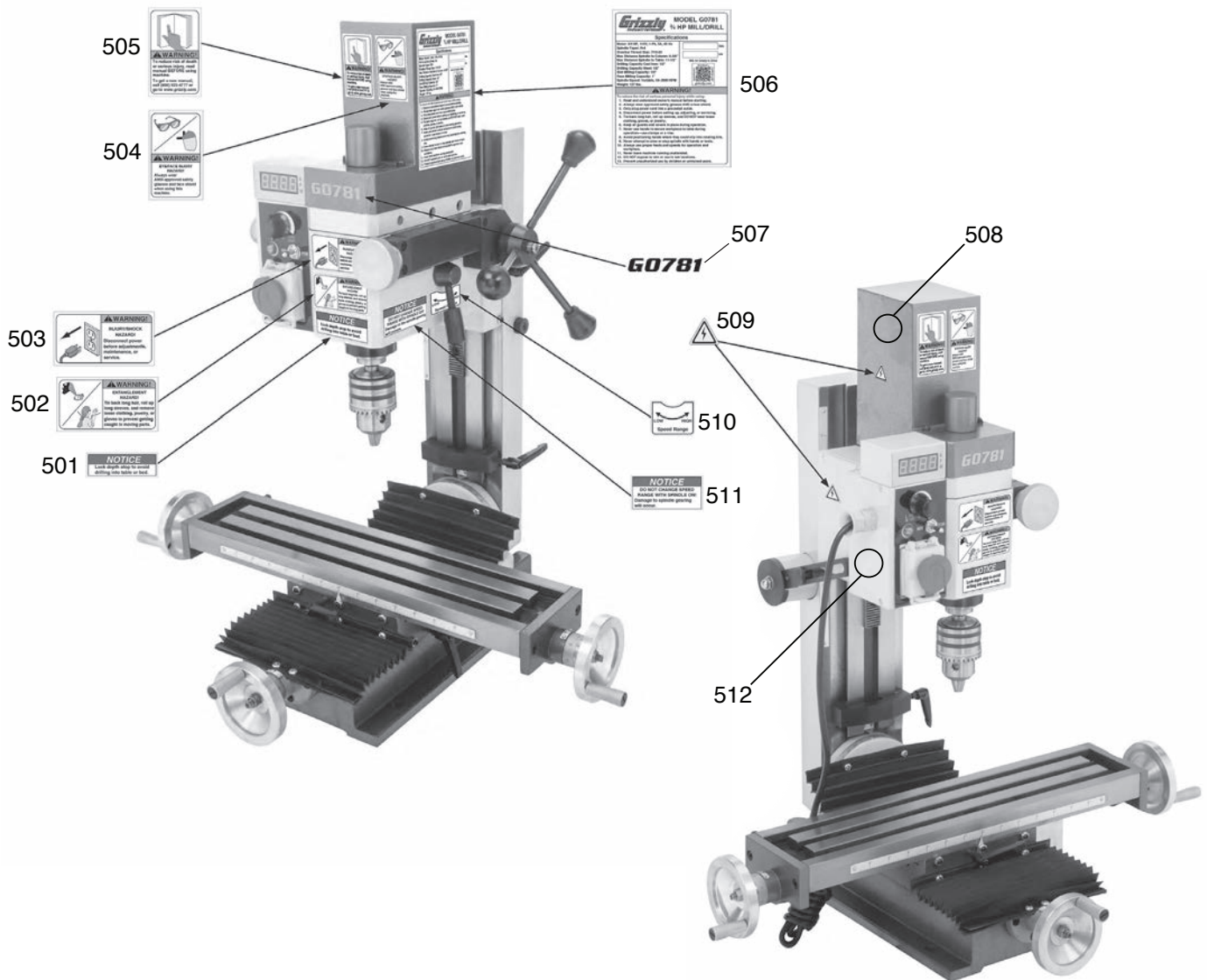


REF	PART #	DESCRIPTION
401	P0781401	DRILL CHUCK KEY 1/4" STD 11T SD-5/8"
402	P0781402	SPINDLE PIN 8 X 100MM
403	P0781403	DRAWBAR 7/16-20 X 5-1/2
404	P0781404	DRILL CHUCK ARBOR R8 X JT3
405	P0781405	TOOLBOX
406	P0781406	WRENCH 36MM OPEN-END
407	P0781407	FUSE 8A 250V 0.25" FAST-ACTING GLASS
408	P0781408	SPANNER WRENCH 38-42MM
409	P0781409	WRENCH 13 X 16MM OPEN ENDS

REF	PART #	DESCRIPTION
410	P0781410	WRENCH 8 X 10MM OPEN ENDS
411	P0781411	BOTTLE FOR OIL
412	P0781412	HEX WRENCH SET 2, 2.5, 3, 4, 5, 6, 8MM
413	P0781413	HANDWHEEL HANDLE 36L M8-1.25 X 10 REV
414	P0781414	HEX NUT M8-1.25
415	P0781415	T-SLOT NUT 1/2" X M8-1.25
416	P0781416	STUD-UDE M8-1.25 X 45, 11, 25
417	P0781417	DRILL CHUCK JT3 3-16MM



# Labels & Cosmetics



REF	PART #	DESCRIPTION
501	P0781501	DEPTH STOP NOTICE LABEL
502	P0781502	ENTANGLEMENT HAZARD LABEL
503	P0781503	DISCONNECT POWER LABEL
504	P0781504	FACE SHIELD & SAFETY GLASSES 1.5W X 2.5H
505	P0781505	READ MANUAL LABEL
506	P0781506	MACHINE ID LABEL

REF	PART #	DESCRIPTION
507	P0781507	MODEL NUMBER LABEL
508	P0781508	GRIZZLY GREEN TOUCH-UP PAINT
509	P0781509	ELECTRICITY LABEL
510	P0781510	SPEED RANGE LABEL
511	P0781511	SPEED RANGE NOTICE LABEL
512	P0781512	GRIZZLY PUTTY TOUCH-UP PAINT

## WARNING

Safety labels help reduce the risk of serious injury caused by machine hazards. If any label comes off or becomes unreadable, the owner of this machine **MUST** replace it in the original location before resuming operations. For replacements, contact (800) 523-4777 or [www.grizzly.com](http://www.grizzly.com).







# 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?

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

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

\_\_\_\_\_  
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BELLINGHAM, WA 98227-2069



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Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

TAPE ALONG EDGES--PLEASE DO NOT STAPLE

# WARRANTY & RETURNS

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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.

# *grizzly.com*<sup>®</sup>

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