

# READ THIS FIRST



Model G1005Z

**\*\*\*IMPORTANT UPDATE\*\*\***

For Machines Mfd. Since November, 2013  
and Owner's Manual Printed July, 2010

For questions or help with this product contact Tech Support at (570) 546-9663 or [techsupport@grizzly.com](mailto:techsupport@grizzly.com)

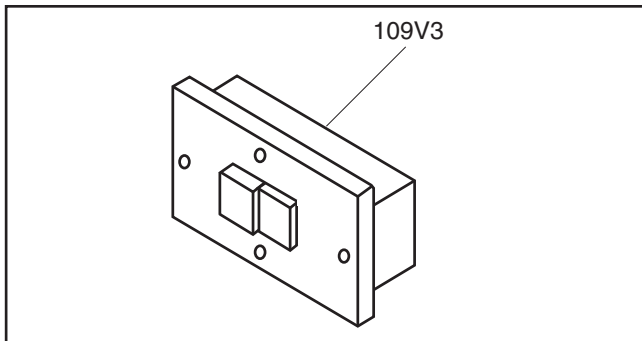
The following changes were recently made to this machine since the owner's manual was printed:

- Changed ON/OFF switch.

Aside from this information, all other content in the owner's manual applies and **MUST** be read and understood for your own safety. **IMPORTANT: Keep this update with the owner's manual for future reference.**

For questions or help, contact our Tech Support at (570) 546-9663 or [techsupport@grizzly.com](mailto:techsupport@grizzly.com).

## Revised Switch Parts

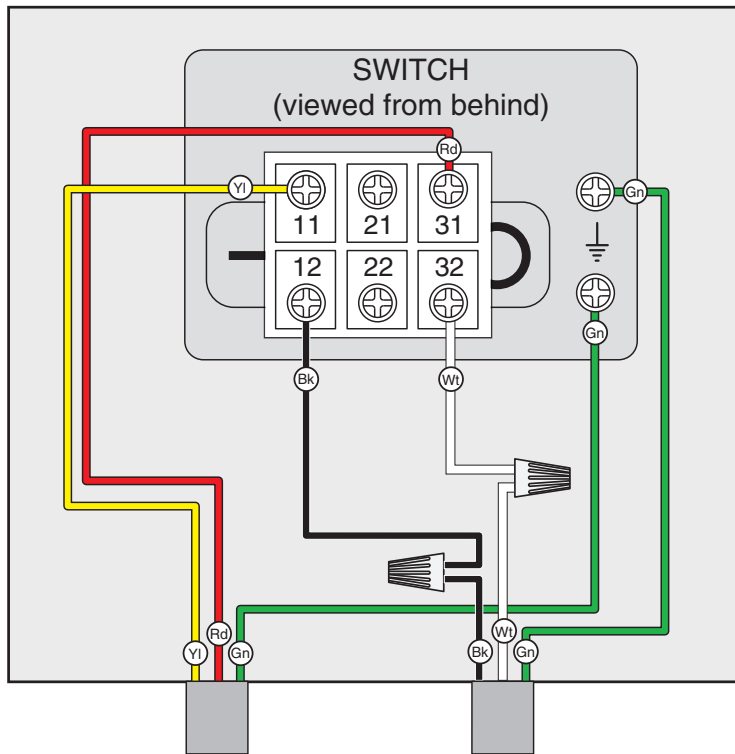


REF	PART #	DESCRIPTION
109V3	P1005Z109V3	ON/OFF SWITCH TWCHT DA7 V3.12.13



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OR FORM WITHOUT THE WRITTEN APPROVAL OF GRIZZLY INDUSTRIAL, INC.**  
#ST16198 PRINTED IN CHINA

# P1005Z109V3 Switch Wiring



COLOR KEY	
BLACK	
WHITE	
GREEN	
RED	
YELLOW	

**⚠ DANGER**

Disconnect power before performing any electrical service. Electricity presents serious shock hazards that will result in severe personal injury and even death!

**⚠ WARNING!**

**SHOCK HAZARD!**  
Disconnect power before working on wiring.



# *Grizzly* *Industrial, Inc.*®

## MODEL G1005Z MILL/DRILL OWNER'S MANUAL



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(FOR MACHINES MFG. SINCE 7/10) #JK8304 PRINTED IN CHINA



## **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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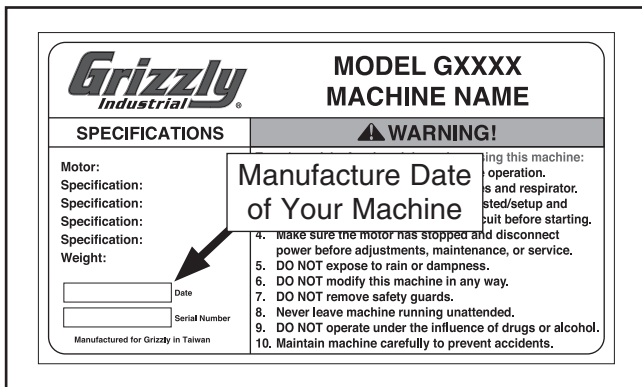
# INTRODUCTION

## Manual Accuracy

We are proud to offer this manual with your new machine! We've made every effort to be exact with the instructions, specifications, drawings, and photographs of the machine we used when writing this manual. However, sometimes we still make an occasional mistake.

Also, owing to our policy of continuous improvement, **your machine may not exactly match the manual**. If you find this to be the case, and the difference between the manual and machine leaves you in doubt, check our website for the latest manual update or call technical support for help.

Before calling, find the manufacture date of your machine by looking at the date stamped into the machine ID label (see below). This will help us determine if the manual version you received matches the manufacture date of your machine.



For your convenience, we post all available manuals and manual updates for free on our website at [www.grizzly.com](http://www.grizzly.com). Any updates to your model of machine will be reflected in these documents as soon as they are complete.

## Contact Info

We stand behind our machines. If you have any questions or need help, use the information below to contact us. Before contacting, please get the serial number and manufacture date of your machine. This will help us help you faster.

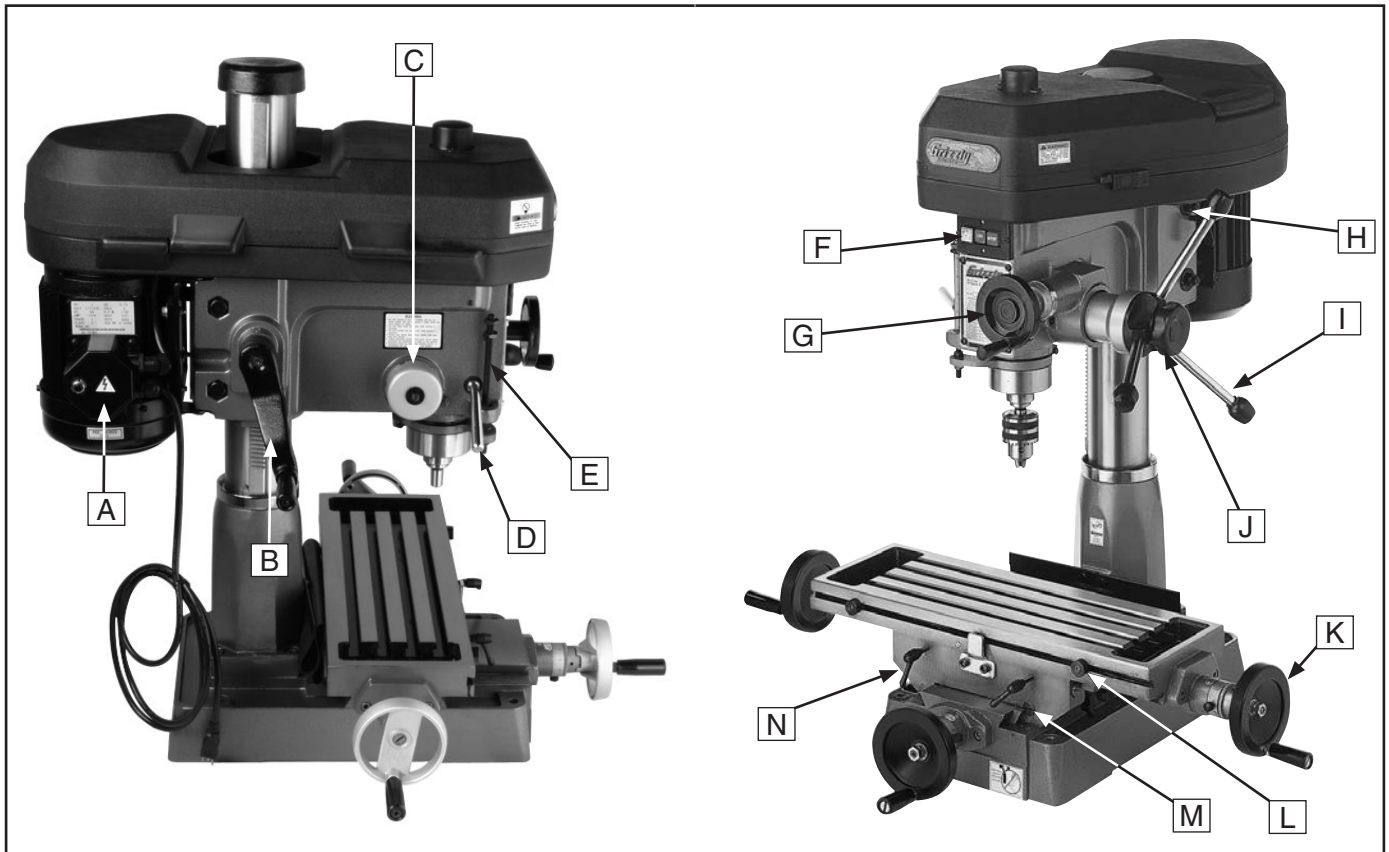
Grizzly Technical Support  
1203 Lycoming Mall Circle  
Muncy, PA 17756  
Phone: (570) 546-9663  
Email: [techsupport@grizzly.com](mailto:techsupport@grizzly.com)

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.

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# Identification



**Figure 1.** G1005Z Identification.

- A.** Junction Box
- B.** Headstock Height Crank
- C.** Return Spring Assembly
- D.** Quill Lock
- E.** Depth Stop
- F.** ON/OFF Switch
- G.** Micro-Downfeed Handwheel
- H.** Motor Pivot Lock
- I.** Downfeed Handles
- J.** Pinion Hub Lock Knob
- K.** Table Handwheels
- L.** Longitudinal Stops
- M.** Gib Screws
- N.** Longitudinal Locks





# MACHINE DATA SHEET

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

## MODEL G1005Z MILL/DRILL MILLING MACHINE #25

### Product Dimensions:

Weight..... 374 lbs.  
 Width (side-to-side) x Depth (front-to-back) x Height..... 36-1/2 x 34-1/2 x 40 in.  
 Footprint (Length x Width)..... 20-1/2 x 13 in.  
 Space Required for Full Range of Movement (Width x Depth)..... 48-3/4 x 34-1/2 in.

### Shipping Dimensions:

Type..... Wood Crate  
 Content..... Machine  
 Weight..... 435 lbs.  
 Length x Width x Height..... 28 x 29 x 41 in.  
 Must Ship Upright..... Yes

### Electrical:

Power Requirement..... 110V or 220V, Single-Phase, 60 Hz  
 Prewired Voltage..... 110V  
 Full-Load Current Rating..... 12A at 110V, 6A at 220V  
 Minimum Circuit Size..... 15A at 110V, 15A at 220V  
 Connection Type..... Cord & Plug  
 Power Cord Included..... Yes  
 Power Cord Length..... 6 ft.  
 Power Cord Gauge..... 14 AWG  
 Plug Included..... Yes  
 Included Plug Type..... 5-15 for 110V  
 Recommended Plug Type..... 6-15 for 220V  
 Switch Type..... Push Button

### Motors:

#### Main

Type..... TEFC Capacitor-Start Induction  
 Horsepower..... 1 HP  
 Phase..... Single-Phase  
 Amps..... 12A/6A  
 Speed..... 1725 RPM  
 Power Transfer ..... Belt Drive  
 Bearings..... Shielded & Permanently Lubricated

### Main Specifications:

#### Operation Info

Spindle Travel..... 3-5/8 in.  
 Max Distance Spindle to Column..... 8 in.  
 Max Distance Spindle to Table..... 14-3/8 in.  
 Longitudinal Table Travel (X-Axis)..... 15 in.  
 Cross Table Travel (Y-Axis)..... 5-1/2 in.  
 Drilling Capacity for Cast Iron..... 1 in.  
 Drilling Capacity for Steel..... 1 in.  
 End Milling Capacity..... 1/2 in.  
 Face Milling Capacity..... 3 in.



**Table Info**

Table Length.....	23 in.
Table Width.....	7-1/2 in.
Table Thickness.....	1-3/4 in.
Number of T-Slots.....	4
T-Slot Size.....	1/2 in.
T-Slots Centers.....	1-1/2 in.
X/Y-Axis Travel per Handwheel Revolution.....	0.100 in.

**Spindle Info**

Spindle Taper.....	R-8
Number of Vertical Spindle Speeds.....	12
Range of Vertical Spindle Speeds.....	110 – 2580 RPM
Quill Diameter.....	2.440 in.
Drawbar Thread Size.....	7/16-20
Drawbar Length.....	13-1/2 in.
Spindle Bearings.....	Tapered Roller Bearings

**Construction**

Spindle Housing/Quill.....	Cast Iron
Table.....	Ground Cast Iron
Head.....	Cast Iron
Column/Base.....	Ground Cast Iron
Base.....	Cast Iron
Paint.....	Enamel

**Other**

Optional Stand.....	G5943
Recommended Mobile Base.....	D2057A

**Other Specifications:**

Country Of Origin .....	China
Warranty .....	1 Year
Approximate Assembly & Setup Time .....	30 Minutes
Serial Number Location .....	ID Label on Head Casting
Sound Rating .....	80 dB
ISO 9001 Factory .....	Yes
CSA Certified .....	No

**Features:**

- Head Swivels 360 deg.
- Front Mounted On/Off Switch with Thermal Overload Protection
- Excellent Speed Range
- Extremely Quiet Machine
- Easy Clutch-Type Mechanism for Engaging Fine Down-Feed
- Positive Quill Lock
- Adjustable Gibs on Table and Saddle
- Adjustable Stops on Table
- Spindle Supported by Heavy Duty, Tapered Roller Bearings
- Graduations in Inches

**Accessories Included:**

- 1/2" Drill Chuck and key
- 2-1/2" Carbide-Tipped Face Mill and R-8 Arbor
- 3-1/2" Angle Drill Vise




# SECTION 1: SAFETY

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

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

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

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

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

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

## Safety Instructions for Machinery

### **WARNING**

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

**TRAINED OPERATORS ONLY.** Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make 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 avoid accidental slips, which could cause loss of workpiece control.

**HAZARDOUS DUST.** Dust created while using machinery may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material, and 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!

**INTENDED USAGE.** Only use machine for its intended purpose and never make modifications not approved by Grizzly. Modifying machine or using it differently than intended may result in malfunction or mechanical failure that can lead to serious 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.

**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.

**CHECK DAMAGED PARTS.** Regularly inspect machine for any condition that may affect safe operation. Immediately repair or replace damaged or mis-adjusted parts before operating machine.

**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.



# WARNING

## Additional Safety for Mill/Drills

**UNDERSTANDING CONTROLS.** Make sure you understand the use and operation of all controls.

**SAFETY ACCESSORIES.** Always use a chip guard in addition to your safety glasses when milling to prevent bodily injury.

**WORK HOLDING.** Before starting the machine, be certain the workpiece has been properly clamped to the table. NEVER hold the workpiece by hand when using the mill/drill.

**CHUCK KEY SAFETY.** Always remove your chuck key, drawbar wrench, and any service tools immediately after use.

**SPINDLE SPEEDS.** Select the spindle speed that is appropriate for the type of work and material. Allow the mill/drill to gain full speed before beginning a cut.

**STOPPING SPINDLE.** DO NOT stop the spindle by hand. Allow it to come to a stop by itself.

**AVOIDING ENTANGLEMENT.** Keep loose clothing articles such as sleeves, belts or jewelry items away from the mill/drill spindle. Never wear gloves when operating the mill/drill.

**BE ATTENTIVE.** DO NOT leave mill/drill running unattended for any reason.

**POWER DISRUPTION.** In the event of a local power outage during use of the mill, turn OFF all switches to avoid possible sudden start up once power is restored.

**MACHINE CARE AND MAINTENANCE.** Never operate the mill/drill with damaged or worn parts. Maintain your mill/drill in proper working condition. Perform routine inspections and maintenance promptly. Put away adjustment tools after use.

**DISCONNECT POWER.** Make sure the mill/drill is turned **OFF**, disconnected from its power source and all moving parts have come to a complete stop before starting any inspection, adjustment, or maintenance procedure.

**CLEAN-UP.** DO NOT clear chips by hand. Use a brush, and never clear chips while the mill/drill is turning.

**CUTTING TOOL INSPECTION.** Inspect drills and end mills for sharpness, chips, or cracks before each use. Replace dull, chipped, or cracked cutting tools immediately. Handle new cutting tools with care. Leading edges are very sharp and can cause lacerations.

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

# 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.

# CAUTION

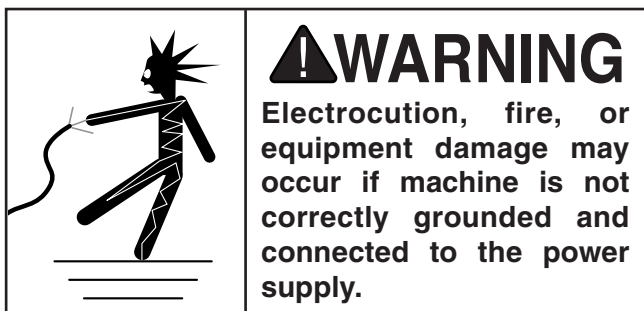
No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.



# 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..... 12 Amps**

**Full-Load Current Rating at 220V ..... 6 Amps**

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

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

## Circuit Information

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



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

## Circuit Requirements for 110V

This machine is prewired to operate on a 110V power supply circuit that has a verified ground and meets the following requirements:

**Acceptable Voltage Range ..... 99V–121V**  
**Cycle ..... 60 Hz**  
**Phase ..... Single-Phase**  
**Power Supply Circuit ..... 20 Amps**  
**Plug/Receptacle ..... NEMA 5-20**

## Circuit Requirements for 220V

This machine can be converted to operate on a 220V power supply (refer to **Voltage Conversion** instructions). This power supply must have a verified ground and meet the following requirements:

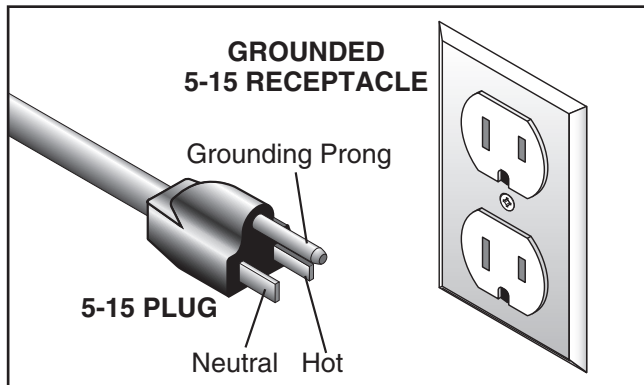
**Nominal Voltage ..... 220V/240V**  
**Cycle ..... 60 Hz**  
**Phase ..... Single-Phase**  
**Circuit Rating ..... 15 Amps**  
**Plug/Receptacle ..... NEMA 6-15**



## Grounding Requirements

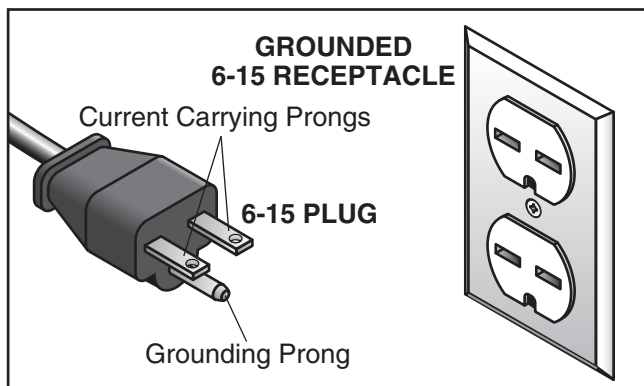
This machine **MUST** be grounded. In the event of certain malfunctions or breakdowns, grounding reduces the risk of electric shock by providing a path of least resistance for electric current.

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



**Figure 2.** Typical 5-15 plug and receptacle.

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



**Figure 3.** Typical 6-15 plug and receptacle.

## **!WARNING**

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

## **NOTICE**

**The Model G1005Z is prewired for 110V operation. If you plan to operate your machine at 220V, the motor must be rewired (see Page 37).**

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.

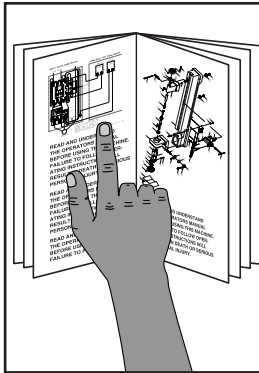
Extension cords cause voltage drop, which may damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

Any extension cord used with this machine must contain a ground wire, match the required plug and receptacle, and meet the following requirements:

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

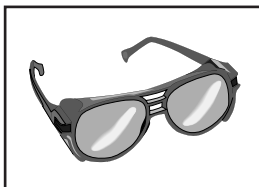


# SECTION 3: SET UP



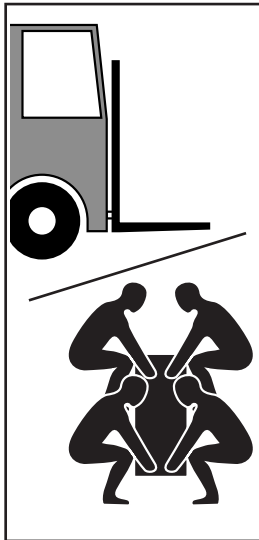
## **!WARNING**

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



## **!WARNING**

Wear safety glasses during the entire set up process!



## **!WARNING**

The Model G1005Z is an extremely heavy machine (400 lbs). Serious personal injury may occur if safe moving methods are not followed. To be safe, you will need power equipment when moving the shipping crate, and a number of assistants when moving the machine onto a stand or workbench.

## Needed for Setup

The following items are needed to complete the set up process, but are not included with your machine:

Description	Qty
• Safety Glasses (for each person).....	1
• Rubber Mallet.....	1
• Hex Wrench 5mm.....	1
• Wrench 17mm .....	1
• Solvent Cleaner.....	As needed
• Rags for cleaning .....	As needed

## Unpacking

The Model G1005Z was carefully packed when it left our warehouse. If you discover the machine is damaged after you have signed for delivery, *please immediately call Customer Service at (570) 546-9663 for advice.*

Save the containers and all packing materials for possible inspection by the carrier or its agent. *Otherwise, filing a freight claim can be difficult.*







When you are completely satisfied with the condition of your shipment, you should inventory the contents.









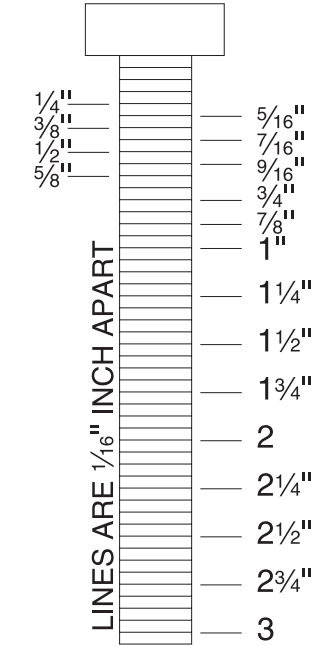
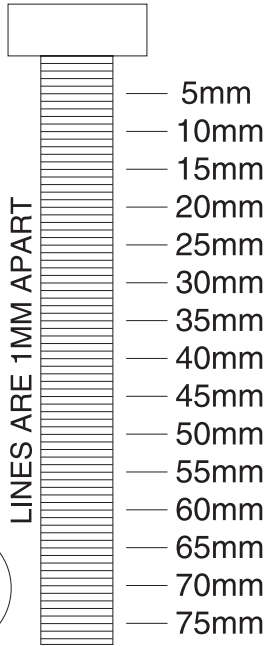
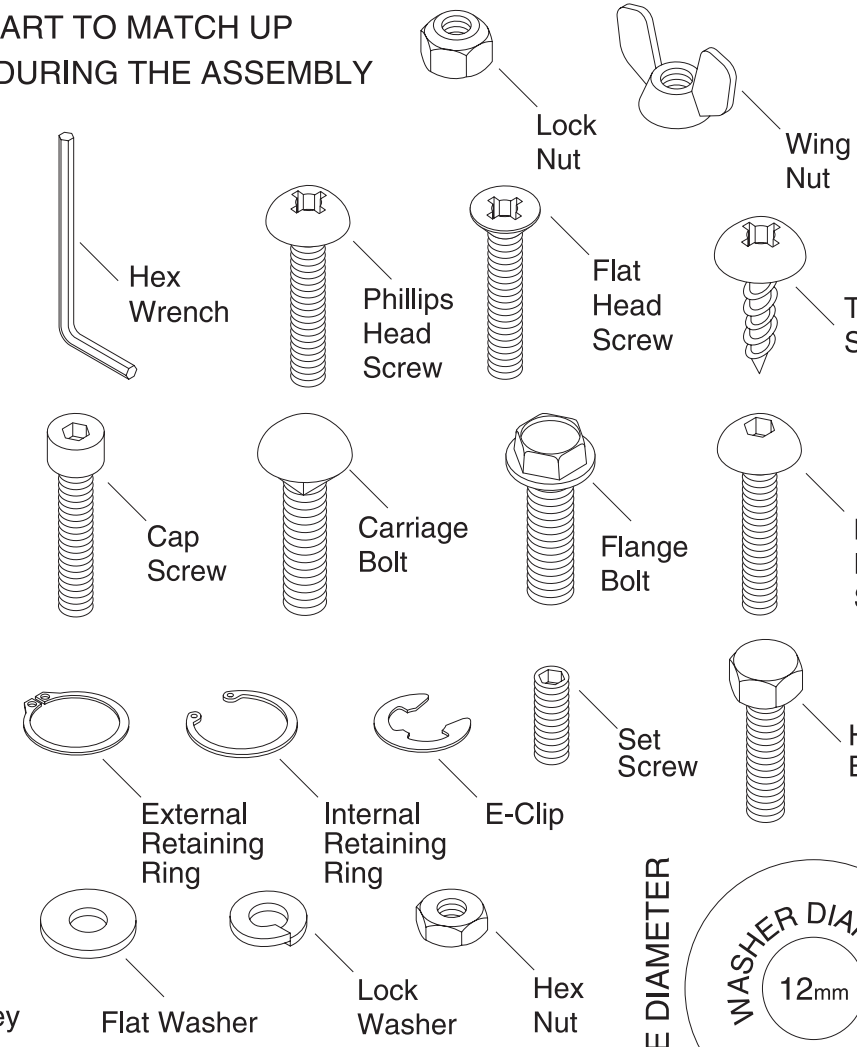
# Hardware Recognition Chart

USE THIS CHART TO MATCH UP HARDWARE DURING THE ASSEMBLY PROCESS.

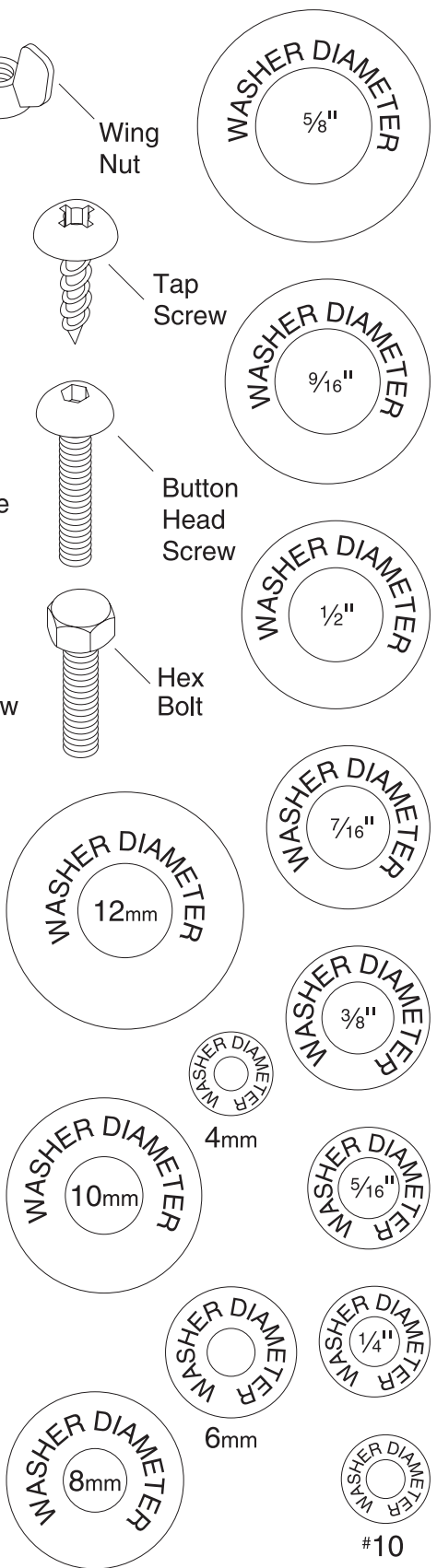
MEASURE BOLT DIAMETER BY PLACING INSIDE CIRCLE

-  #10
-  1/4"
-  5/16"
-  3/8"
-  7/16"
-  1/2"

-  4mm
-  6mm
-  8mm
-  10mm
-  12mm
-  16mm



WASHERS ARE MEASURED BY THE INSIDE DIAMETER



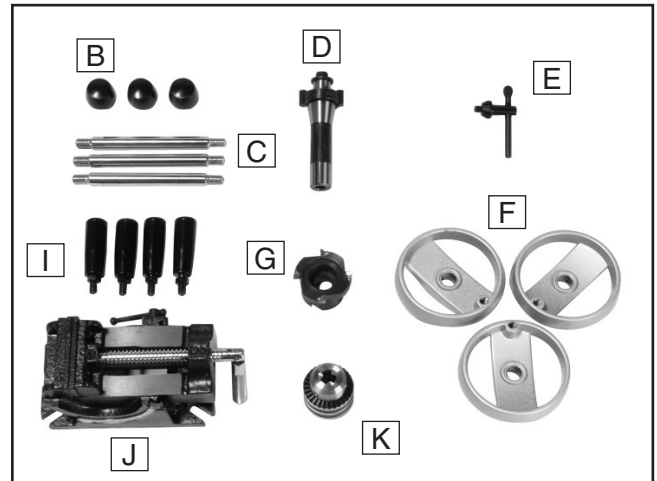
# Inventory

After all the parts have been removed from the shipping crate, you should have the following items:

<b>Main Components: (Figure 4)</b>		<b>Qty</b>
A.	Mill/Drill (not shown) .....	1
B.	Downfeed Handle Knobs 1/2"-12 .....	3
C.	Downfeed Handles 1/2"-12.....	3
D.	Face Mill Arbor R8 .....	1
E.	Chuck Key .....	1
F.	Handwheels.....	3
G.	Face Mill 2 1/2".....	1
H.	Arbor R <sup>8</sup> /JT6 (installed, not shown) .....	1
I.	Handwheel Handles 3/8-16 x 7/8.....	4
J.	Vise 3 1/2".....	1
K.	Drill Chuck JT6 1/2" .....	1

**Other Components and Hardware:**

- Cap Screw 3/8-16 x 1 (mill arbor) .....
- Flat Washer 3/8" (mill arbor) .....
- Hex Wrench 4mm.....
- Hex Wrench 5mm.....



**Figure 4. G1005Z Inventory.**

In the event that any nonproprietary parts are missing (e.g. a nut or a washer), we would be glad to replace them, or for the sake of expediency, replacements can be obtained at your local hardware store.

## ***NOTICE***

**Some hardware/fasteners on the inventory list may arrive pre-installed on the machine. Check these locations before assuming that any items from the inventory list are missing.**



# 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.

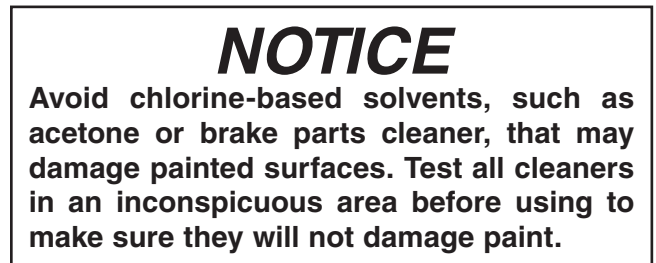
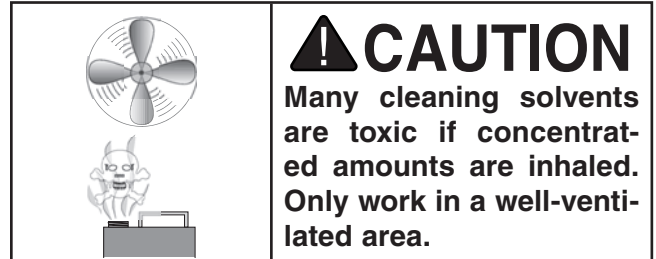
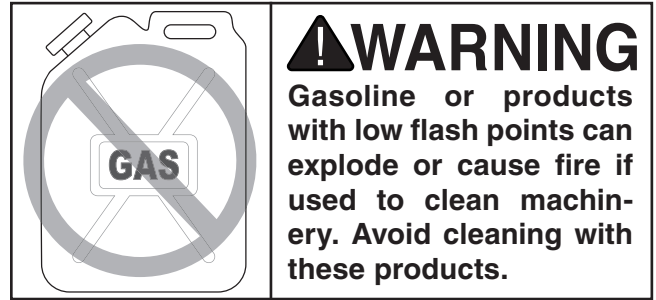
There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

## 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.



**H9692—Orange Power Cleaner & Degreaser**  
One of the best cleaners we've found for quickly and easily removing rust preventative.



**Figure 5.** Model H9692 Industrial Orange Power Cleaner/Degreaser (99.9% biodegradable).



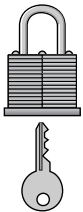
# Site Considerations

## Weight Load

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

## Space Allocation

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



## CAUTION

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

## Physical Environment

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

## Electrical Installation

Place this machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure to leave access to a means of disconnecting the power source or engaging 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.

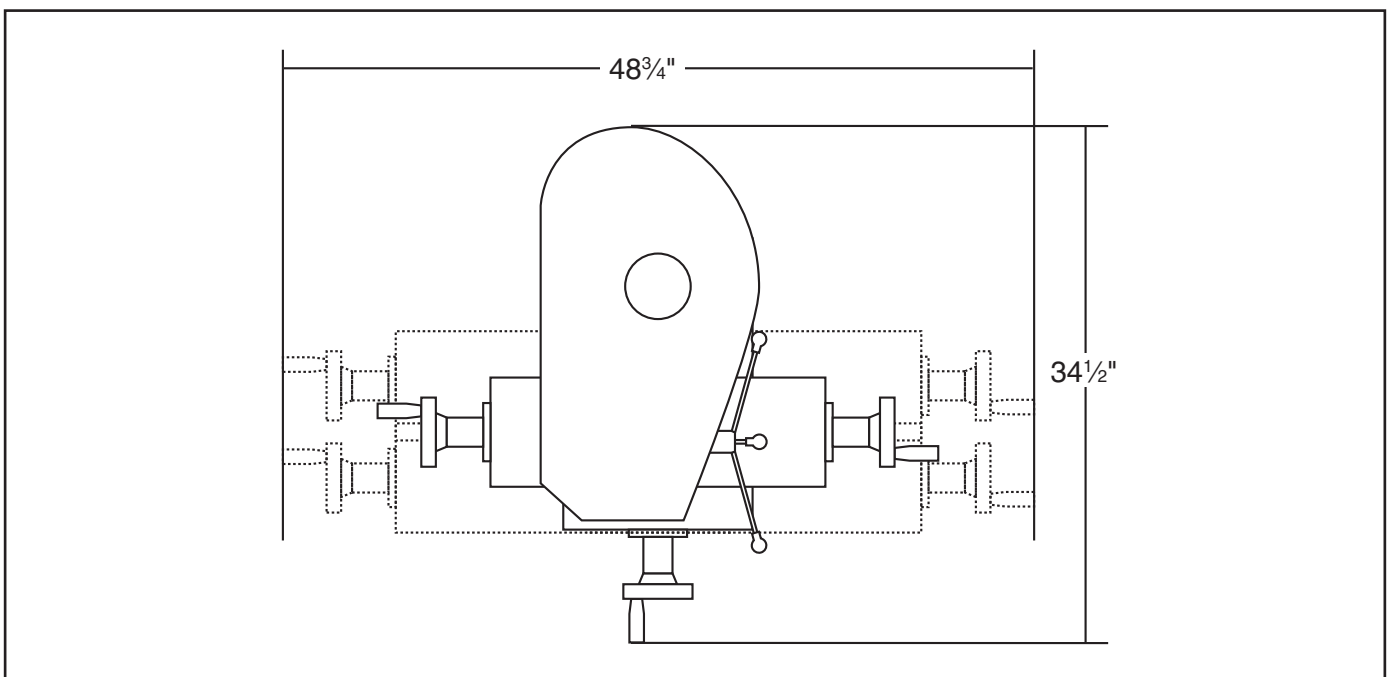


Figure 6. Minimum working clearances.

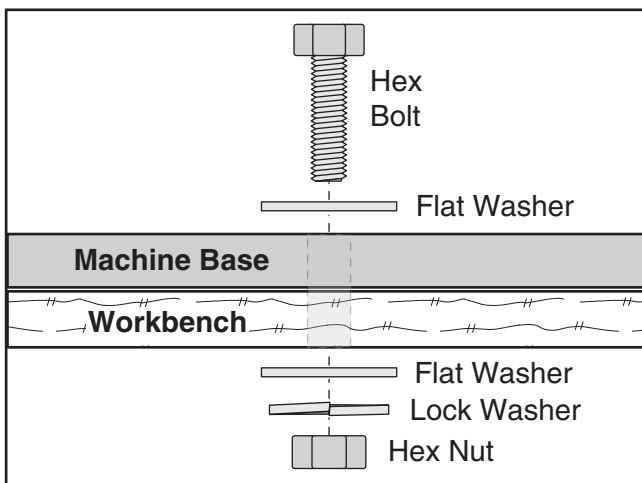


# Mounting

The Model G1005Z must be mounted to a workbench or stand before it can be safely used.

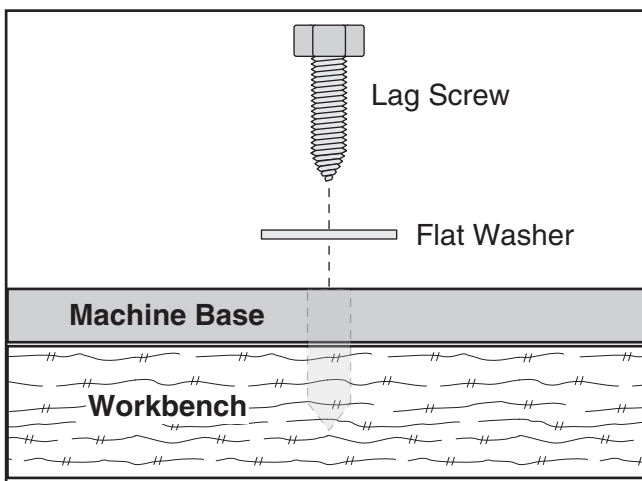
If mounting to a stand, follow the mounting instructions included with the stand. We recommend using the Grizzly Model G5943 stand, which can be found in **SECTION 5: ACCESSORIES** on **Page 27**.

For workbenches, the strongest mounting option is a "through mount" where holes are drilled all the way through the workbench, and hex bolts, washers, and hex nuts are used to secure the mill/drill to the workbench.



**Figure 7.** Example of a through mount setup.

Another option for mounting is a "direct mount" where the machine is simply secured to the workbench with a lag screw.



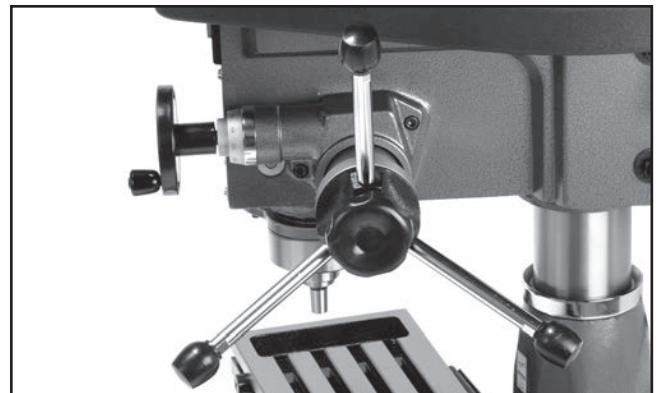
**Figure 8.** Example of a direct mount setup.

# Assembly

The Model G1005Z must be completely assembled before it can be safely used.

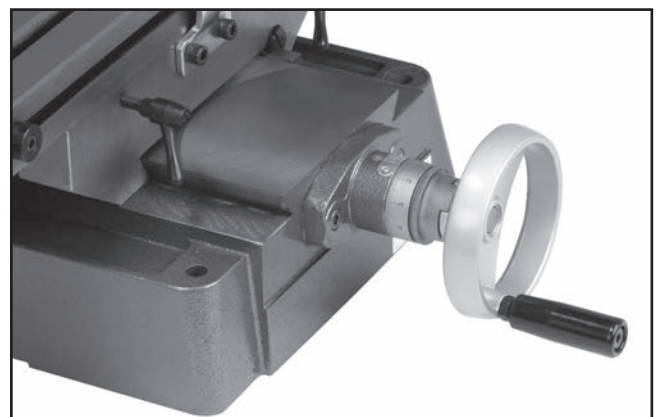
**To assemble the Model G1005Z:**

1. Thread the downfeed handle knobs onto the downfeed handles.
2. Thread the downfeed handles into the pinion hub, as shown in **Figure 9**.



**Figure 9.** Downfeed handles installed.

3. Remove the caps from the handwheel hubs.
4. Slide the handwheels onto the handwheel shafts as shown in **Figure 10**, and tighten the handwheel setscrews.



**Figure 10.** Table handwheels installed.

5. Thread the handwheel handles into the handwheels and tighten using a 5mm hex wrench.
6. Thread the remaining handwheel handle into the headstock adjustment handle.  
Model G1005Z (Mfg. since 7/10)



# Test Run

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Once the assembly is complete, test run your machine to make sure it runs properly.

If, during the test run, you cannot easily locate the source of an unusual noise or vibration, stop using the machine immediately, then review the **Troubleshooting** on **Page 30**.

If you still cannot remedy a problem, contact our Tech Support at (570) 546-9663 for assistance.

## To test run the machine:

1. Connect the machine to the power source.
2. Make sure you have read the safety instructions at the beginning of the manual and that the machine is setup properly.
3. Make sure all tools and objects used during setup are cleared away from the machine.
4. Turn the machine **ON**.
5. Listen to and watch for abnormal noises or actions. The machine should run smoothly with little or no vibration or rubbing noises.

—Strange or unusual noises should be investigated and corrected before operating the machine further. Always disconnect the machine from power when investigating or correcting potential problems.

6. Turn the machine **OFF**.

# Spindle Break-In

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## **NOTICE**

**Successfully complete the spindle break-in procedure to avoid rapid wear of spindle components when placed into operation.**

It is essential to closely follow the proper break-in procedures to ensure trouble-free performance of your mill.

## To perform the spindle break-in procedure:

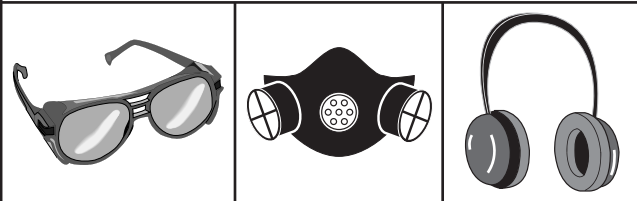
1. Make sure the mill is turned **OFF** and the spindle is stopped.
2. **DISCONNECT MILL/DRILL FROM POWER!**
3. Set the spindle speed to 300 RPM (refer to **Choosing Milling Speeds** on **Page 23** for detailed instructions).
4. Turn the motor **ON**, and let the mill run at this speed for 20 minutes, then turn the motor **OFF** and wait for the spindle to stop.
5. **DISCONNECT MILL/DRILL FROM POWER!**
6. Set the spindle speed at 2580 RPM.
7. Turn the motor **ON**, and let the mill run at this speed for 20 minutes, then turn the motor **OFF** and wait for the spindle to stop.
8. Turn the mill **OFF**. The spindle break-in is now complete and your mill is ready for operation.



# SECTION 4: OPERATIONS

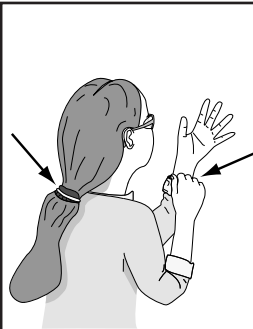
## **!WARNING**

Damage to your eyes, lungs, and ears could result from using this machine without proper protective gear. Always wear safety glasses, a respirator, and hearing protection when operating this machine.



## **!WARNING**

Loose hair and clothing could get caught in machinery and cause serious personal injury. Keep loose clothing and long hair away from moving machinery.



## **NOTICE**

If you have never used this type of machine or equipment before, WE STRONGLY RECOMMEND that you read books, trade magazines, or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

## Installing/Removing Tooling

The Model G1005Z is supplied with both an R8 face mill arbor, for use with the included 2½" face mill, and a JT6 drill chuck.

### Using Clean Tapers

When installing any tapered tooling, always ensure that both tapers (the tooling and the spindle) are clean and free of grit, oil, dust, and other debris that could prevent a good fit. Dirty tapers can lead to poor seating, causing loose (and potentially dangerous) tooling, or can cause jammed tapers, making them near impossible to separate.

### To install tooling on included mill arbor:

1. UNPLUG THE MILL/DRILL!
2. Seat the tooling on the mill arbor as shown in Figure 11.

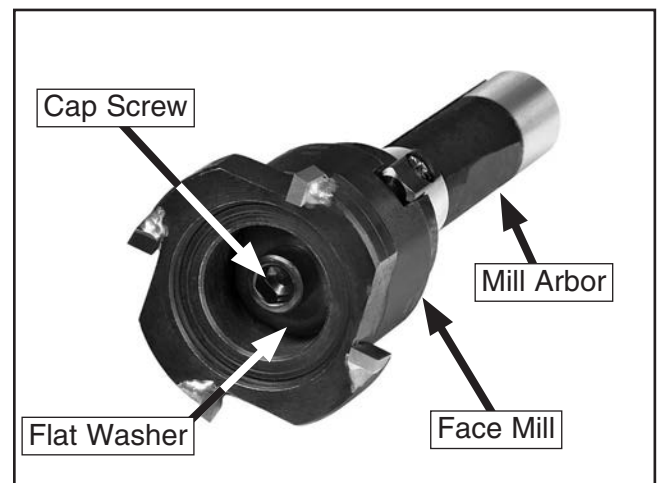


Figure 11. Attaching a face mill to the mill arbor.

3. Secure the tooling in place with the included cap screw and flat washer.



### To install an arbor:

1. UNPLUG THE MILL/DRILL!
2. Slide the arbor into the spindle, ensuring that the arbor keyway aligns with the pin inside the spindle.
3. While holding the arbor in place, turn the drawbar clockwise until the drawbar engages with the arbor.
4. Continue turning the drawbar until the arbor is firmly secured in place.

### To remove an arbor:

1. UNPLUG THE MILL/DRILL!
2. Using a 17mm wrench, turn the drawbar hex nut counterclockwise two turns, as shown in **Figure 12**.



**Figure 12.** Turning the drawbar nut.

3. Strike the end of the drawbar with a dead blow mallet to unseat the arbor from the spindle.
4. While holding the arbor, unscrew the drawbar until the arbor comes free.

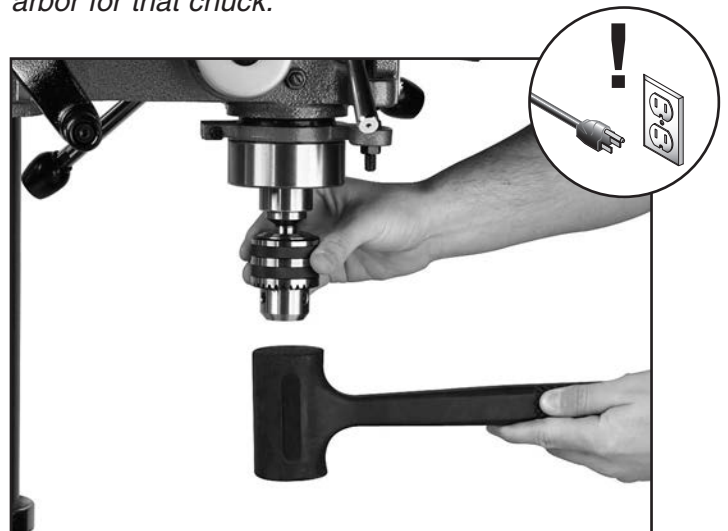
### To install end mill tooling:

1. UNPLUG THE MILL/DRILL!
2. Insert the appropriate-sized R8 collet into the spindle, ensuring that the collet keyway aligns with the pin inside the spindle.
3. Using a heavy rag or gloves to protect your hands, insert the end mill tooling into the collet.
4. While holding the collet in place, turn the drawbar hex nut clockwise until the drawbar engages with the collet.
5. Turn the drawbar nut clockwise until the tooling is completely secured in the collet.

### To install the drill chuck:

1. UNPLUG THE MILL/DRILL!
2. Ensure that both the arbor and chuck are clean, dry and free of dirt, debris or grit.
3. Slide the chuck onto the arbor.
4. Securely seat the chuck in place by giving it a single hard tap with a rubber mallet, as shown in **Figure 13**.

**Note:** Once the chuck is seated on the arbor, it is a semi-permanent connection. If you wish to use a different chuck, we recommend obtaining a new arbor for that chuck.



**Figure 13.** Seating the JT6 drill chuck.



### To install a drill bit:

1. UNPLUG THE MILL/DRILL!
2. Open the drill chuck wide enough to accept the shank of the drill bit.
3. Insert the drill bit as far as possible into the chuck WITHOUT allowing the chuck jaws to touch the fluted portion of the bit, and tighten the chuck using the chuck key.

**Note:** Make sure the bit is not trapped between the edges of two jaws, as it will not be secure enough to use for drilling.

4. Once you are sure the bit is installed correctly, tighten the chuck as tight as possible.

### To remove a drill bit:

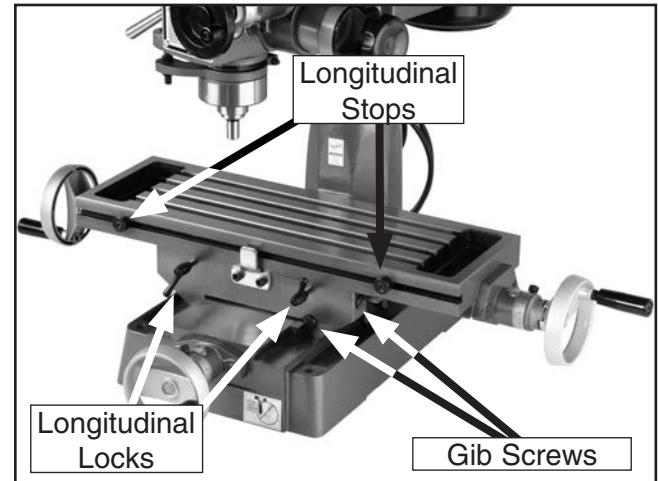
1. UNPLUG THE MILL/DRILL!
2. Open the drill chuck using the chuck key, and catch the drill bit with a rag to protect your hands.

## ⚠ CAUTION

Larger bits turning at slower speeds tend to grab the workpiece aggressively. This can result in the operator's hand being pulled into the bit or the workpiece being thrown with great force. Always clamp the workpiece to the table to prevent injuries.

# Table

The mill/drill table can be moved in the X-axis (side-to-side) and Y-axis (forward/backward). The various features are called out in **Figure 14** and are described below.



**Figure 14.** G1005Z table components.

### Longitudinal Feed:

The longitudinal feed, or X-axis, is moved by handwheels at either end of the table. These handwheels will move the table in both directions side to side. One complete revolution of the handwheel moves the longitudinal feed 0.100".

### Cross Feed:

The cross feed, or Y-axis, is moved with the handwheel on the front of the table base. One complete revolution of the handwheel moves the cross slide 0.100".

### Longitudinal Locks:

The longitudinal feed can be temporarily locked in position using one or both lock handles located on the front of the table.

### Longitudinal Stops:

The two sliding longitudinal stops are used to limit the X-axis travel distance. These can be loosened and locked in place using a 5mm hex wrench.

### Gib Screws:

Both the longitudinal and cross slides can each be locked via a gib screw, located respectively on the right side of the cross slide underneath the table, and on the front right of the cross slide.



# Graduated Dials

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The handwheels and the micro-downfeed adjustment knob have graduated dials. Each mark represents 0.001" of movement and one full revolution of the micro-downfeed knob equals 0.100". The graduated dials float and can be indexed or "zeroed" using the knurled knob on the dial. One full revolution of the handwheel equals 0.100".

# Backlash

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Backlash and graduated dials are somewhat interconnected. When you change direction of the table in either axis, you must correct the graduated dial for backlash. Normal recommended backlash is less than 0.010".

**Note:** *It is up to you to determine an acceptable amount of backlash for your system. The frictional wear on your lead screw increases as backlash is reduced. Attempting to completely eliminate backlash can place excessive wear on your lead screw and decrease its operational capability.*

## To correct for backlash:

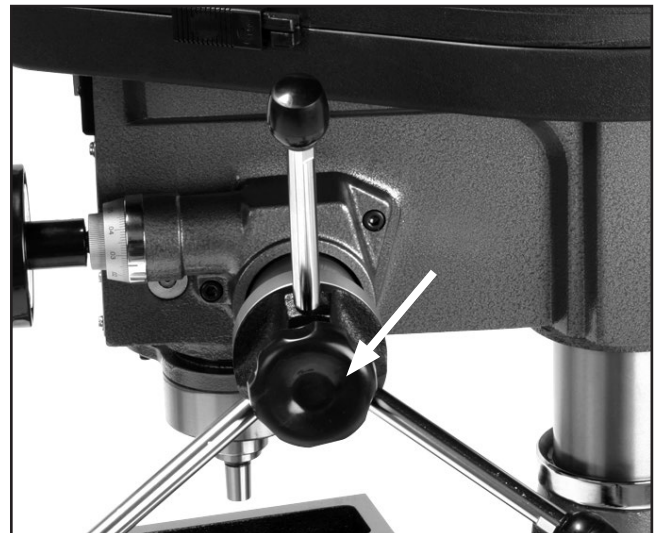
1. Turn the handwheel and move the table the opposite direction of your next operation.
2. Turn the handwheel to move the table in the intended direction.
3. The exact moment the lead screw catches and the table begins to move, backlash has been eliminated and the graduated dial can be "zeroed."

**Note:** *You will not need to adjust for backlash as long as the table keeps moving in the same direction.*

# Micro-Downfeed Handwheel

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The micro-downfeed handwheel (**Figure 15**) is used when vertical milling accuracy is required. Each full rotation of the micro-downfeed handwheel is equal to 0.100".



**Figure 15.** Pinion hub lock knob.

To engage the micro-downfeed handwheel, tighten the pinion hub lock knob clockwise against the pinion hub.

To disengage the micro-downfeed handwheel, hold the downfeed handles and loosen the pinion hub lock knob counterclockwise.



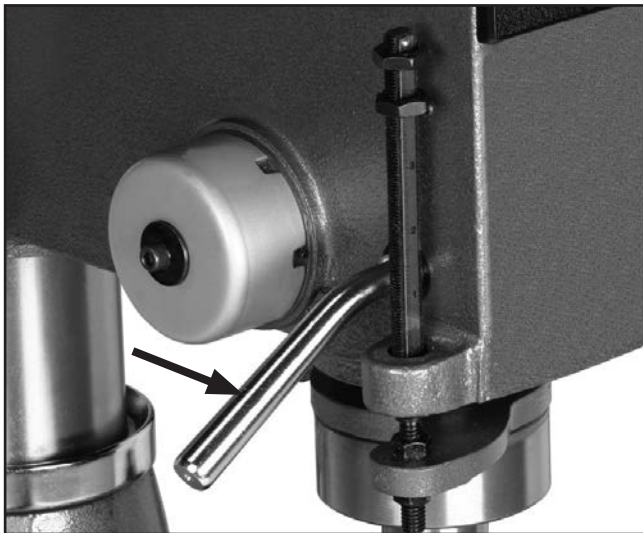
# Quill Lock

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The spindle can be locked in place to provide tool stability when milling.

## To lock the quill in place:

1. Lower the quill to the desired height.
2. Tighten the quill lock handle clockwise to lock the quill in place, as shown in **Figure 16**.



**Figure 16.** Quill lock handle.

## To unlock the quill:

1. While holding the downfeed handles, turn the quill lock handle counterclockwise until the quill is free to move.

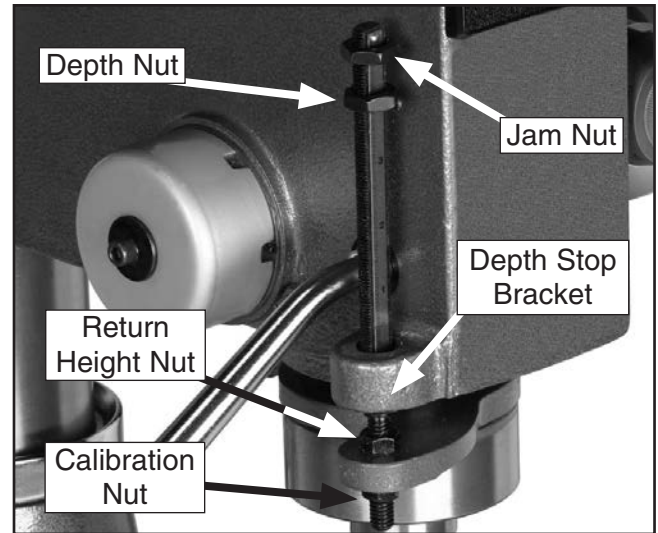
# Depth Stop

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The Model G1005Z has a depth stop that allows you to lower the drill bit or milling tool to the same point every time.

The depth stop consists of a stud attached to the quill with two hex nuts that can be lowered or raised on the stud, so the lower nut (depth nut) hits a stop bracket when the drill bit is lowered. The upper nut (jam nut) is then used to tighten against the depth nut to secure it in place, so the depth nut doesn't move with repeated operations.

The depth stop also features a return height nut that is used to set the minimum spindle return distance. **Figure 17** shows the various components of the depth stop.



**Figure 17.** Depth stop components.

## To set the depth stop:

1. Lower the tooling/bit to the required height.
2. Thread the depth nut down against the stop bracket.
3. Lower the jam nut against the depth nut.
4. Hold the depth nut in place and tighten the jam nut against the depth nut.

## To set the spindle return distance:

1. Lower the tooling/bit.
2. Thread the return height nut up the stud to the desired height.

**Note:** *The scale on the depth stop can be recalibrated if it gets moved or has changed since the factory setting. Refer to **Depth Stop Calibration** on **Page 33** for instructions on how this is done.*



# Choosing Milling Speeds

It is essential to closely follow the proper cutting speed and proper feed to reduce undue strain on all moving parts and for operator safety.

Prior to machining, you need to determine the RPM needed to cut your workpiece, and then set the speed on the machine.

## To determine the needed RPM:

1. Use the table in **Figure 18** to determine the cutting speed required for the material of your workpiece.
2. Measure the diameter of your cutting tool in inches.
3. Use the following formula to determine the needed RPM for your operation:

$$\text{(Cutting Speed x 4) / Tool Diameter} = \text{RPM}$$

**Note:** For carbide cutting tools, double the cutting speed. These values are a guideline only. Refer to the MACHINERY'S HANDBOOK for more detailed information.

Cutting Speeds for High Speed Steel (HSS) Milling Tools	
Workpiece Material	Cutting Speed (sfm)
Aluminum & alloys	300
Brass & Bronze	150
Copper	100
Cast Iron, soft	80
Cast Iron, hard	50
Mild Steel	90
Cast Steel	80
Alloy Steel, hard	40
Tool Steel	50
Stainless Steel	60
Titanium	50
Plastics	300-800
Wood	300-500

**Figure 18.** Cutting speeds for HSS cutting tools.

## WARNING

Failure to follow RPM and Feed Rate Guidelines may result in ejected parts or broken tools. Parts ejected at high speeds can cause serious injury!

# Choosing Drilling Speeds

## Using the Drill Bit Speed Chart

The chart shown on **Page 24** is intended as a guide only. Always follow manufacturer's speed recommendations if provided with your drill bits, cutters, or hole saws. Exceeding the recommended speeds may be dangerous to the operator.

The speeds shown here are intended to get you started. The optimum speed will always depend on various factors, including tool diameter, drilling pressure, material hardness, material quality, and desired finish.

Often, when drilling materials other than wood, some type of lubrication is necessary.

## Lubrication Suggestions

Wood/Cast Iron.....None  
 Plastics .....Soapy Water  
 Brass .....Water-Based Lubricant  
 Aluminum..... Paraffin-Based Lubricant  
 Mild Steel..... Oil-Based Lubricant



Twist/Brad Point Drill Bits	Soft Wood	Hard Wood	Plastic	Brass	Aluminum	Mild Steel
1/16" – 3/16"	3000	2500	2500	2500	3000	2500
13/64" – 3/8"	2000	1500	2000	1250	2500	1250
25/64" – 5/8"	1500	750	1500	750	1500	600
11/16" – 1"	750	500	1000	400	1000	350
Spade/Forstner Bits	Soft Wood	Hard Wood	Plastic	Brass	Aluminum	Mild Steel
1/4" – 1/2"	2000	1500				
9/16" – 1"	1500	1250				
1-1/8" – 1-7/8"	1000	750				
2–3"	500	350				
Hole Saws	Soft Wood	Hard Wood	Plastic	Brass	Aluminum	Mild Steel
1/2" – 7/8"	500	500	600	600	600	500
1" – 1-7/8"	400	400	500	500	500	400
2" – 2-7/8"	300	300	400	400	400	300
3" – 3-7/8"	200	200	300	300	300	200
4" – 5"	100	100	200	200	200	100
Rosette Cutters	Soft Wood	Hard Wood	Plastic	Brass	Aluminum	Mild Steel
Carbide Insert Type	350	250				
One-Piece Type	1800	500				
Tenon/Plug Cutters	Soft Wood	Hard Wood	Plastic	Brass	Aluminum	Mild Steel
3/8" – 1/2"	1200	1000				
5/8" – 1"	800	600				

Figure 19. Drill bit speed chart.

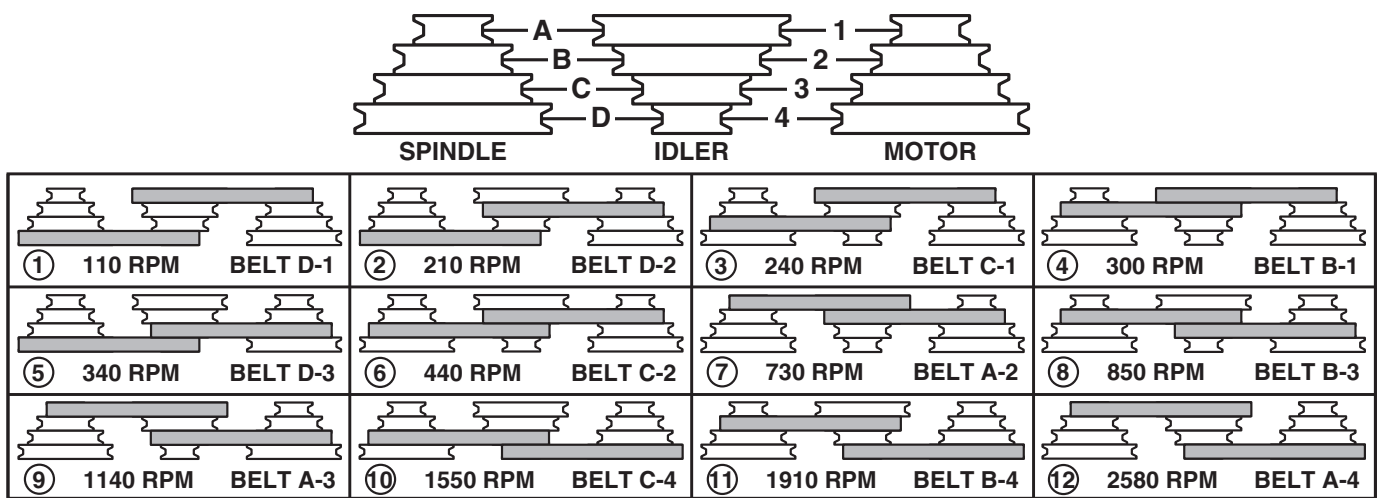


Figure 20. Belt configuration and speed settings.

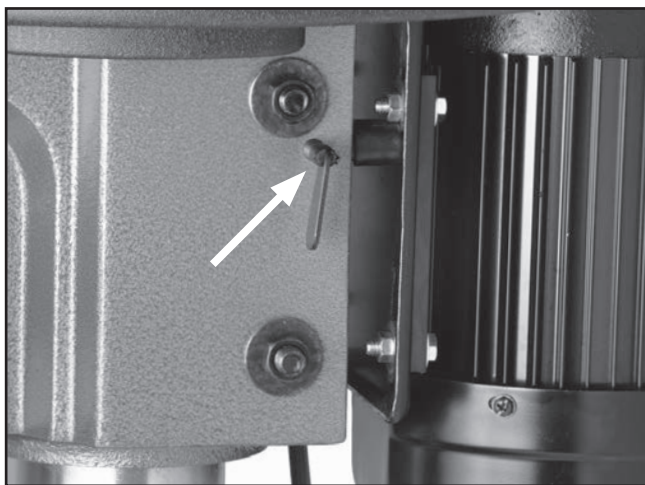


# Changing Speeds

The belts in the head of the mill/drill must be rearranged to change speeds. A chart on the belt cover shows the belt positions needed to make the mill/drill run at the desired speed.

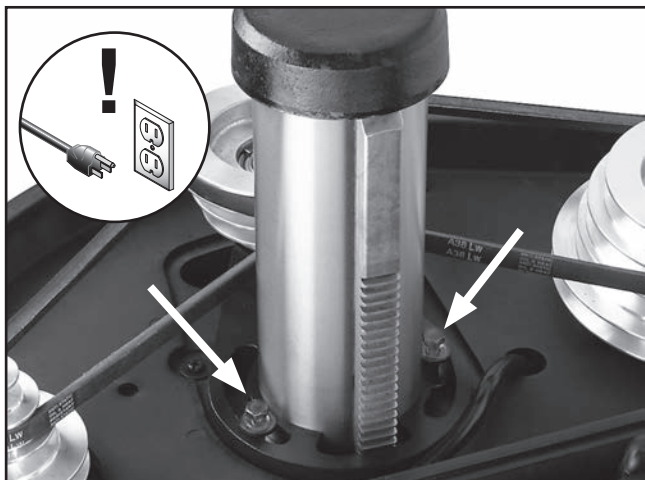
## To change speeds:

1. UNPLUG THE MILL/DRILL!
2. Loosen the motor lock screw (shown in **Figure 21**), so the motor is free to pivot.



**Figure 21.** Motor lock screw.

3. Pivot the motor to loosen the belt tension.
4. Loosen, but do not remove, the two idler bracket hex bolts shown in **Figure 22**.



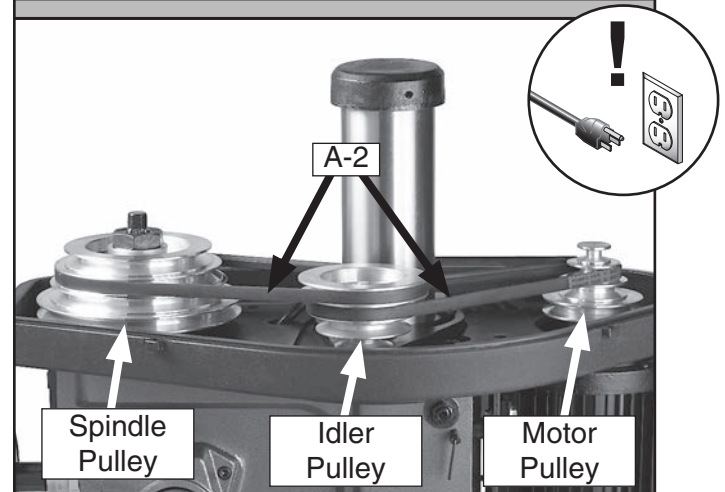
**Figure 22.** Idler bracket hex bolts.

5. Locate the desired speed on the belt cover speed chart or on **Page 24** and move the V-belts to the desired V-grooves on the motor, idler, and spindle pulleys.

**For Example:** As indicated in the speed chart (**Figure 23**), a belt combination of **A-2** creates 730 RPM.

**Note:** Both belts may have to be removed before certain speed changes can be made. It is normal for the idler bracket to move in response to a belt change.

D-2	③	240 RPM	BELT C-1	④
C-2	⑦	730 RPM	BELT A-2	⑧
C-4	⑪	1910 RPM	BELT B-4	⑫



**Figure 23.** A-2 pulley combination for 730 RPM.

6. Tighten both idler bracket hex bolts.
7. Remove any slack in the motor pulley belt by shifting the motor back into position.
8. Tighten the motor lock screw.
9. Close the cover before plugging in the machine.



# Drilling Guidelines

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The Model G1005Z is designed for drilling holes in wood, plastics or metal. Basic operation consists of lining up your drill bit with the intended hole location, turning the mill/drill **ON**, and using the downfeed handles to move the spinning drill bit into the workpiece.

**For safe operation and optimum results, it is very important to follow these guidelines when drilling:**

**SECURING WORKPIECE TO TABLE:** Secure the workpiece to the table or in a vise that is secured to the table before drilling.

**CLEARING CHIPS:** Raise the drill bit often to clear chips and cool the drill bit. This will ease the work of the mill/drill motor and extend the life of your drill bits.

**PROTECTING TABLE:** Protect the table by placing the workpiece on scrap wood. Also, use the depth stop so that the drill bit goes no deeper than necessary.

**USING CORRECT SPEEDS:** Use the correct speed for the diameter of the drill bit being used and the type of material being drilled. Refer to the **Drill Bit Speed Chart** on **Page 24** to help you choose the correct speed for your application.

**LARGE DIAMETER BITS:** Large diameter drill bits require slower spindle speeds.

**SMALL DIAMETER BITS:** Smaller diameter drill bits require faster spindle speeds.

**HARD MATERIAL:** The harder the material, (steel vs. wood) the slower the spindle speed.

**SOFT MATERIAL:** The softer the material, the faster the spindle may turn. (Plastics can melt at too high of a spindle speed!)

**LUBRICANT:** Use some form of lubricant on all materials except wood. Refer to **Lubrication Suggestions** on **Page 23** to find the correct lubrication for your application.

**DRILLING ACCURACY:** To prevent drill bit wandering and ensure accurate placement of holes, mark the hole location with a center punch before drilling. Also consider using a center-point drill to start the hole.

**PLUG/ROSETTE CUTTERS:** Plug cutters and rosette cutters are for wood only. However, carbide-tipped bits and cutters cut at a higher speed and can cut materials other than wood, depending on the cutter type.

**5-FLUTE/2-FLUTE CUTTERS:** Use a 5-flute cutter when cutting into plastics, brass, aluminum, and mild steel. A 2-flute cutter can aggressively grab the workpiece and damage the tool if used with materials other than wood.

**SPADE BITS AND PLASTIC:** When drilling plastic with a spade bit, use a spade bit with spurs.

**HOLE SAWS:** When using hole saws, apply firm and even pressure, so the saw teeth contact the surface all at the same time—not at an angle. You can also flip the workpiece and finish cutting from the other side.

## CAUTION

**Larger bits turning at slower speeds tend to grab the workpiece aggressively. This can result in the operator's hand being pulled into the bit or the workpiece being thrown with great force. Always clamp the workpiece to the table to prevent injuries.**



# SECTION 5: ACCESSORIES

## **⚠️ WARNING**

Some aftermarket accessories can be installed on this machine that could cause it to function improperly, increasing the risk of serious personal injury. To minimize this risk, only install accessories recommended for this machine by Grizzly.

## **NOTICE**

Refer to the newest copy of the Grizzly Catalog for other accessories available for this machine.

**Call 1-800-523-4777 To Order**

### **G5944—Stand for Model G1005Z Mill/Drill**

This companion stand for the Model G1005Z Mill/Drill features a snap-style door handle and raised lip to guard against coolant splashes.



**Figure 24.** G5944 Stand for G1005Z.

### **H6880—Turret Mill Operation**

### **G5053—The Home Machinist's Handbook**

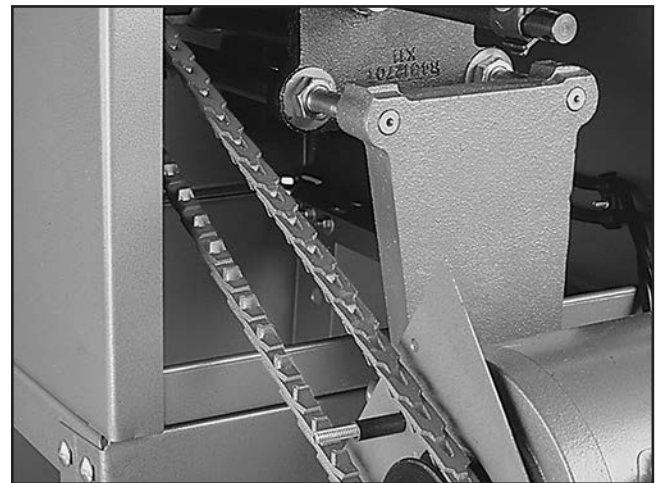
Excellent reference pages for novices and professionals alike. Each book is filled with drawings, charts and tables for getting the most of your milling machine. Model H6880 has 176 pages. Model G5053 has 275 pages.



**Figure 25.** Great texts for milling machines.

### **T21992—A 1/2" x 4' Power Twist® V-Belt**

Perfect for lathes, table saws, bandsaws and other powered tools. Smooth running with less vibration than solid belts. Power Twist® V-Belts can be customized in minutes to any size—just add or remove sections to fit your needs. Carry a Power Twist® V-Belt in your vehicle for a fix anywhere solution to broken fan belts.



**Figure 26.** Power Twist® V-Belt.



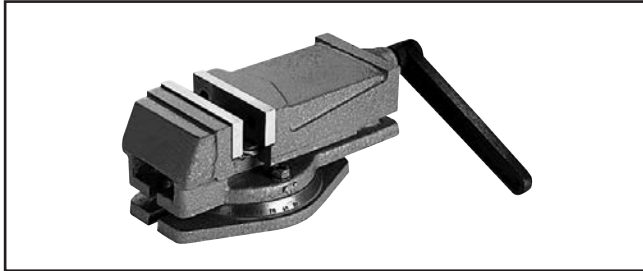
**G5971—3½" Swivel Base Milling Vise**

**G5972—4" Swivel Base Milling Vise**

**G5973—5" Swivel Base Milling Vise**

**G5973—5" Swivel Base Milling Vise**

Features 360° rotation with fine graduations, precision-ground jaw faces, enclosed acme screw and detachable swivel base.

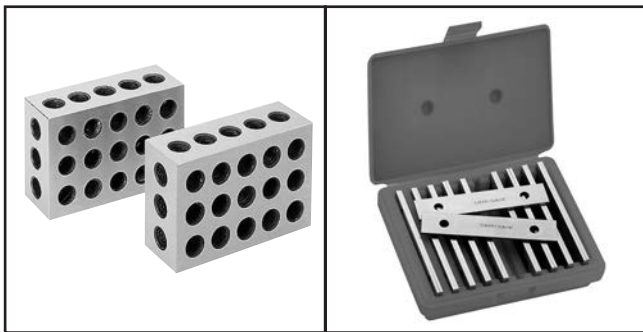


**Figure 27.** Swivel base milling vise.

**G5641—1-2-3 Blocks**

**G9815—Parallel Set**

Blocks are square to within .0003". Measure 1" x 2" x 3". Parallel set measures 6" long by ½", ⅝", ¾", ⅞", 1", 1⅛", 1¼", 1⅝", 1⅜", 1½", and 1⅝".



**Figure 28.** G5641 1-2-3 Blocks and G9815 Parallel Set.

**G9760—20-PC. 2 & 4 Flute TiN End Mill Set.**

Includes these sizes and styles in two and four flute styles: ⅜", ¼", ⅝", ⅜", ⅞", ½", ⅞", ⅝", ⅜", 11/16", and ¾".



**Figure 29.** G9760 20-PC End Mill Set.

**G5562—SLIPIT® 1 Qt. Gel**

**G5563—SLIPIT® 12 oz Spray**

**G2871—Boeshield® T-9 12 oz Spray**

**G2870—Boeshield® T-9 4 oz Spray**

**H3788—G96® Gun Treatment 12 oz Spray**

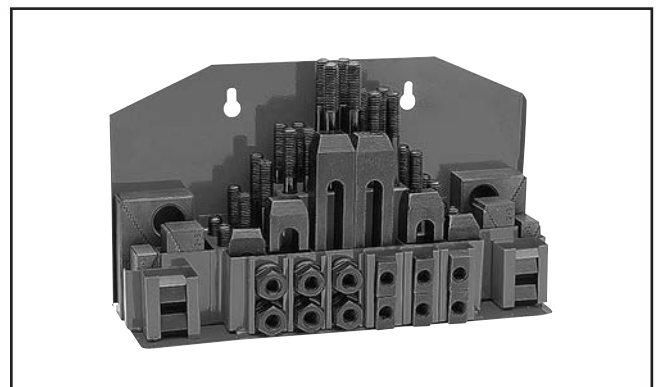
**H3789—G96® Gun Treatment 4.5 oz Spray**



**Figure 30.** Recommended products for protecting unpainted cast iron/steel part on machinery.

**G1075—52-PC. Clamping Kit**

All the blocks, bolts, nuts, and hold-downs are case hardened. This clamping kit includes: 24 studs, 6 step block pairs, 6 T-nuts, 5 flange nuts, 4 coupling nuts, and 6 end hold-downs. The rack can be bolted to the wall or side of the machine for easy access. Features ½" T-Nuts & ⅜" bolts.

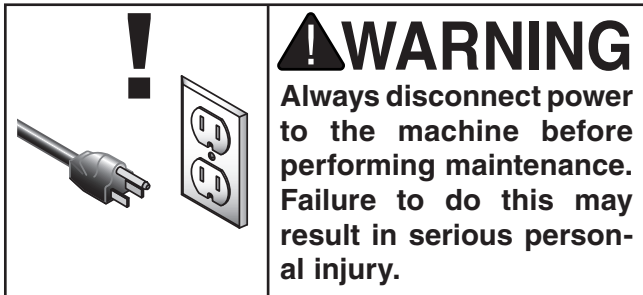


**Figure 31.** G1075 52-PC. Clamping Kit.

**Call 1-800-523-4777 To Order**



# SECTION 6: MAINTENANCE



## Schedule

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

### Daily Check:

- Loose mounting bolts.
- Worn or damaged wires.
- Any other unsafe condition.
- Mill/drill is completely powered down at the end of use.
- Excess cutting fluids and chips have been removed and unpainted surfaces are dry and protected.

### Weekly Maintenance:

- Clean/grease all dovetail ways.
- Mill/drill is clean and lubricated.

## Cleaning

Cleaning the Model G1005Z is relatively easy. Remove excess cutting fluid and chips, and wipe off the remaining moisture with a dry cloth. Treat all unpainted cast iron and steel with a non-staining lubricant after cleaning.

## Unpainted Cast Iron

Protect the unpainted cast iron surfaces on the table by wiping the table clean after every use—this ensures moisture does not remain on bare metal surfaces.

Keep tables rust-free with regular applications of products like G96® Gun Treatment, SLIPIT®, or Boeshield® T-9.

## Lubrication

Since all bearings are shielded and permanently lubricated, simply leave them alone until they need to be replaced. DO NOT lubricate them.

Keep quill, spindle, column, and table top well lubricated to prevent rust.

Each table handwheel must be oiled periodically to prevent binding. For each handwheel, use an ISO VG 68 or SAE-20 oil in the location shown in **Figure 32**.



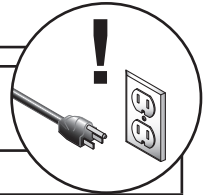
**Figure 32.** Handwheel oiling location.



# SECTION 7: SERVICE

Review the troubleshooting and procedures in this section to fix your machine if a problem develops. If you need replacement parts or you are unsure of your repair skills, then feel free to call our Technical Support at (570) 546-9663.

## Troubleshooting



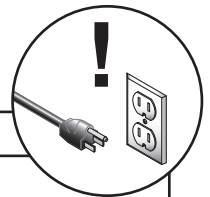
### Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start or a breaker trips.	<ol style="list-style-type: none"> <li>1. Plug or receptacle is at fault or wired incorrectly.</li> <li>2. Start capacitor is faulty.</li> <li>3. Motor connection is wired incorrectly.</li> <li>4. Power supply is faulty, or is switched <b>OFF</b>.</li> <li>5. ON/OFF switch is faulty.</li> <li>6. Cable or wiring is open or has high resistance.</li> <li>7. Motor is at fault.</li> </ol>	<ol style="list-style-type: none"> <li>1. Test power plug and receptacle for good contact and correct wiring.</li> <li>2. Replace capacitor.</li> <li>3. Correct motor wiring (see <b>Page 37</b>).</li> <li>4. Make sure all hot lines and grounds are operational and have correct voltage on all legs.</li> <li>5. Replace faulty switch.</li> <li>6. Troubleshoot wires for internal or external breaks, check for disconnected or corroded connections and repair or replace wiring.</li> <li>7. Test, repair or replace motor.</li> </ol>
Machine stalls or is underpowered.	<ol style="list-style-type: none"> <li>1. Incorrect spindle speed for task.</li> <li>2. Machine is undersized for the task.</li> <li>3. Belt(s) is slipping.</li> <li>4. Plug or receptacle is at fault.</li> <li>5. Motor connection is wired incorrectly.</li> <li>6. Pulley is slipping on shaft.</li> <li>7. Motor bearings are at fault.</li> <li>8. Motor has overheated.</li> <li>9. Motor is at fault.</li> <li>10. Feed rate is too high.</li> </ol>	<ol style="list-style-type: none"> <li>1. Decrease spindle speed.</li> <li>2. Use smaller drill bits/cutters and reduce feed rate and spindle speed.</li> <li>3. Replace bad belts, align pulleys, and re-tension.</li> <li>4. Test power plug and receptacle for good contact and correct wiring.</li> <li>5. Correct motor wiring (see <b>Page 37</b>).</li> <li>6. Replace loose pulley and shaft.</li> <li>7. Rotate motor shaft for noisy or burnt bearings, repair/replace as required.</li> <li>8. Let cool, clean linside/outside of motor, and reduce workload on machine.</li> <li>9. Test, repair or replace motor.</li> <li>10. Reduce feed rate.</li> </ol>



Symptom	Possible Cause	Possible Solution
Machine has vibration or noisy operation.	<ol style="list-style-type: none"> <li>1. Motor or component is loose.</li> <li>2. Belts are slapping belt cover.</li> <li>3. V-belt(s) is worn or is loose.</li> <li>4. Motor fan is rubbing on fan cover.</li> <li>5. Pulley is loose.</li> <li>6. Machine is incorrectly mounted to the bench, or the bench is uneven.</li> <li>7. Chuck or cutter is at fault.</li> <li>8. Motor bearings are at fault.</li> <li>9. Spindle bearings at fault.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inspect, replace for damaged bolts/nuts and retighten with thread locking fluid.</li> <li>2. Replace/realign belts with a new matched set, and retension belts (refer to <b>Page 25</b>).</li> <li>3. Replace belts.</li> <li>4. Replace/repair dented fan cover, and replace loose or damaged fan.</li> <li>5. Remove pulley, replace with key as required, and re-install securely.</li> <li>6. Make sure bench mounting hardware is tight; place shims under machine.</li> <li>7. Replace out-of-round chuck, replace or sharpen cutter, use appropriate feed rate and cutting RPM.</li> <li>8. Check bearings, replace motor or bearings as required.</li> <li>9. Replace bearing.</li> </ol>

## Operation



Symptom	Possible Cause	Possible Solution
Milling/drilling stops, but the motor still operates.	<ol style="list-style-type: none"> <li>1. The belt is loose or worn.</li> <li>2. The pulley for the spindle shaft or the motor is slipping on the shaft.</li> <li>3. Drill bit slips in chuck.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace and/or adjust the belt.</li> <li>2. To resecure the pulley: <ol style="list-style-type: none"> <li>a. UNPLUG THE MILL/DRILL!</li> <li>b. Remove nut and slipping pulley.</li> <li>c. Clean all dust, grit and debris from the pulley arbor.</li> <li>d. Warm the pulley and nut so that they slide back onto the pulley arbor.</li> <li>e. Tighten the nut.</li> </ol> </li> <li>3. Tighten bit; inspect bit for burrs or other obstructions that might interfere with clamping surface.</li> </ol>
Chuck, arbor or tooling wobbles or is loose on the spindle shaft.	<ol style="list-style-type: none"> <li>1. Foreign material is stuck between the arbor-to-spindle mating surface.</li> <li>2. Damaged tooling or chuck.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove the chuck and clean and de-burr the tapered chuck and spindle mating surfaces, then reassemble.</li> <li>2. Replace.</li> </ol>
The spindle does not retract completely in the uppermost position or it binds.	<ol style="list-style-type: none"> <li>1. The quill shaft is gummy with sawdust and oil.</li> <li>2. The feed shaft return spring is weak.</li> <li>3. The quill deflection screw is binding the quill.</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean the gummy substance with penetrating oil and lubricate with a light coat of oil.</li> <li>2. Increase the feed shaft return spring tension as described on <b>Page 33</b>.</li> <li>3. Loosen jam nut, and slightly turn out screw where the quill binds. Retighten jam nut and recheck for binding and looseness at all spindle locations.</li> </ol>
The quill has excessive deflection.	<ol style="list-style-type: none"> <li>1. The quill shaft is at fault.</li> <li>2. The quill and/or bearings are worn.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust the quill screw.</li> <li>2. Replace the quill and/or bearings.</li> </ol>



Symptom	Possible Cause	Possible Solution
Drill bit wobbles, holes are oversized.	<ol style="list-style-type: none"> <li>1. Drill bit installed incorrectly.</li> <li>2. Drill bit is bent.</li> </ol>	<ol style="list-style-type: none"> <li>1. Remove drill bit and reinstall.</li> <li>2. Replace drill bit.</li> </ol>
Tool slips in collet.	<ol style="list-style-type: none"> <li>1. Collet is not fully drawn up into spindle taper.</li> <li>2. Wrong size collet.</li> <li>3. Debris in collet or in spindle taper.</li> <li>4. Taking too big of a cut.</li> </ol>	<ol style="list-style-type: none"> <li>1. Snug up draw bar.</li> <li>2. Measure tool shank diameter and match with appropriate diameter collet.</li> <li>3. Remove all oil and debris from collet 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. RPM and or feed rate is too fast.</li> <li>2. Cutting tool getting too hot.</li> <li>3. Taking too big of a cut.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use tables to set correct RPM and feed rates.</li> <li>2. Use cutting fluid or oil for appropriate application.</li> <li>3. Lessen depth of cut and allow chips to clear.</li> </ol>
Machine is loud when cutting, overheats or bogs down in the cut.	<ol style="list-style-type: none"> <li>1. Excessive depth of cut.</li> <li>2. Dull cutting tools.</li> <li>3. RPM and feed rate too high.</li> </ol>	<ol style="list-style-type: none"> <li>1. Decrease depth of cut.</li> <li>2. Use sharp cutting tools.</li> <li>3. Use appropriate RPM and feed for the job.</li> </ol>
Workpiece vibrates or chatters during operation.	<ol style="list-style-type: none"> <li>1. Table locks not tight.</li> <li>2. Spindle lock not tight.</li> <li>3. Workpiece not securely clamped to table or into mill/drill vice.</li> <li>4. RPM and feed rate too high.</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten down table locks.</li> <li>2. Tighten spindle lock.</li> <li>3. Check that clamping is tight and sufficient for the job. Make sure mill/drill vice is tight to the table.</li> <li>4. Use appropriate RPM and feed for the job.</li> </ol>
Table hard to move.	<ol style="list-style-type: none"> <li>1. Table locks are tightened down.</li> <li>2. Chips have loaded up on bedways.</li> <li>3. Bedways are dry and in need of lubrication.</li> <li>4. Longitudinal stops are interfering.</li> <li>5. 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 that load up during milling operations.</li> <li>3. Lubricate bedways and handles.</li> <li>4. Check to make sure that stops are loose and not hitting the center stop.</li> <li>5. Loosen gib screw(s).</li> </ol>
Bad surface finish.	<ol style="list-style-type: none"> <li>1. Wrong RPM or feed rate.</li> <li>2. Dull cutting tool or poor cutting tool selection.</li> <li>3. Wrong rotation of cutting tool.</li> <li>4. Workpiece not securely clamped.</li> </ol>	<ol style="list-style-type: none"> <li>1. Adjust for appropriate RPM and feed rate.</li> <li>2. Sharpen cutting tool or select a better cutting tool for the intended operation.</li> <li>3. Check for proper cutting rotation for cutting tool.</li> <li>4. Secure properly.</li> </ol>

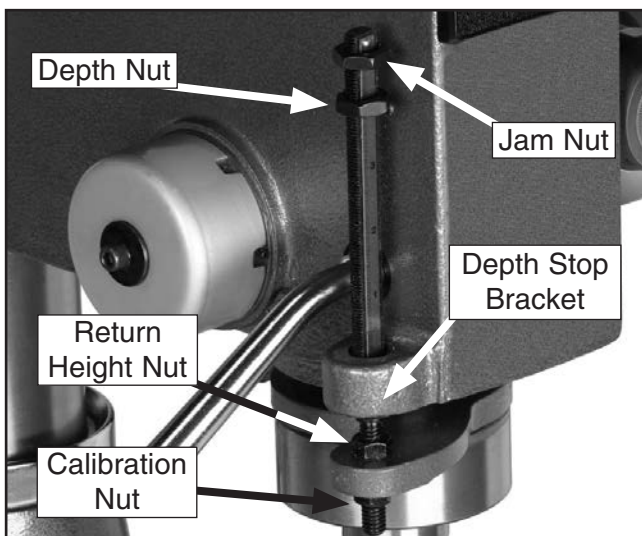


# Depth Stop Calibration

The Model G1005Z comes fitted with a depth stop to use when drilling multiple holes at the same depth. The scale on this depth stop can be calibrated if it ever becomes incorrect.

## To calibrate the depth stop:

1. Loosen the calibration nut shown in **Figure 33**.



**Figure 33.** Depth stop assembly.

2. Set the depth nut to zero, and secure it with the jam nut.
3. Tighten the calibration nut to hold the depth stop in position.
4. Move the depth nut and jam nut to a non-zero measurement to allow the spindle to move.
5. Test the depth stop by measuring how far the spindle actually moves from where you set the depth stop.

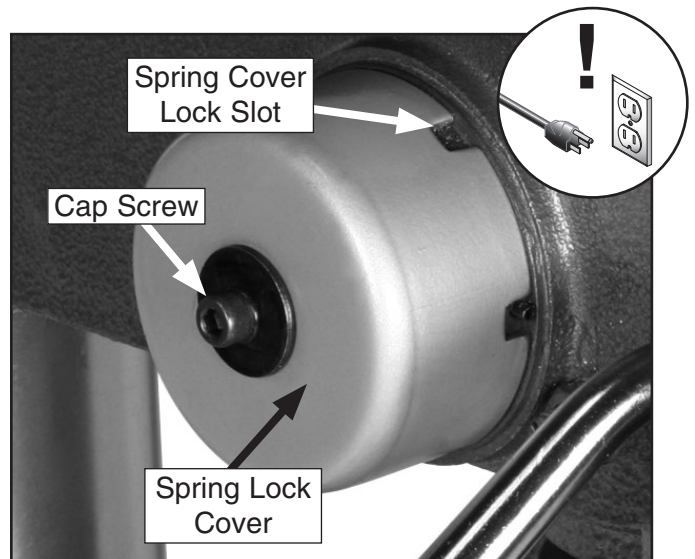
# Feed Shaft Spring Tension

The feed shaft return spring is adjusted at the factory; however, during the life of the mill/drill you may want to adjust the feed shaft return spring so the return pressure suits your operating needs.



## To adjust the feed shaft spring tension:

1. UNPLUG THE MILL/DRILL!
2. Wipe off any oil on the spring lock cover so it does not slip in your fingers when you hold the cover from spinning (see **Figure 34** for spring lock cover identification).



**Figure 34.** Return spring assembly.



## ⚠ CAUTION

A high tension coiled spring is underneath the cover. Put on heavy leather gloves to protect your hands from possible injury when removing the cover.



**Figure 35.** Loosening cover and cap screw.

3. Put on heavy leather gloves to protect your hands from possible injury if the spring uncoils during the next step.
4. While holding the spring lock cover against the side of the head stock so the cover stays splined with the locking lug; loosen the cap screw approximately  $\frac{1}{4}$ " (see **Figure 35**).

5. Pull the cover outward just enough to disengage the spring-cover lock slot from the locking lug.

**Note:** *It is important to keep a good grip during this step. Letting go of the cover will cause the spring to rapidly uncoil, which could cause serious injury!*

6. Rotate the cover counterclockwise to increase spring tension, or let the cover slowly unwind in the clockwise direction to reduce spring tension.
7. Engage the next available spring-cover lock slot with the locking lug and hold the spring cover tightly against the side of the head stock.
8. Tighten the lock nut against the spring cover just until the cap screw stops, and then back off the cap screw approximately  $\frac{1}{3}$  turn, or just enough so there is no binding at complete spindle travel.



# 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. 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.

## 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 	



# Electrical Components

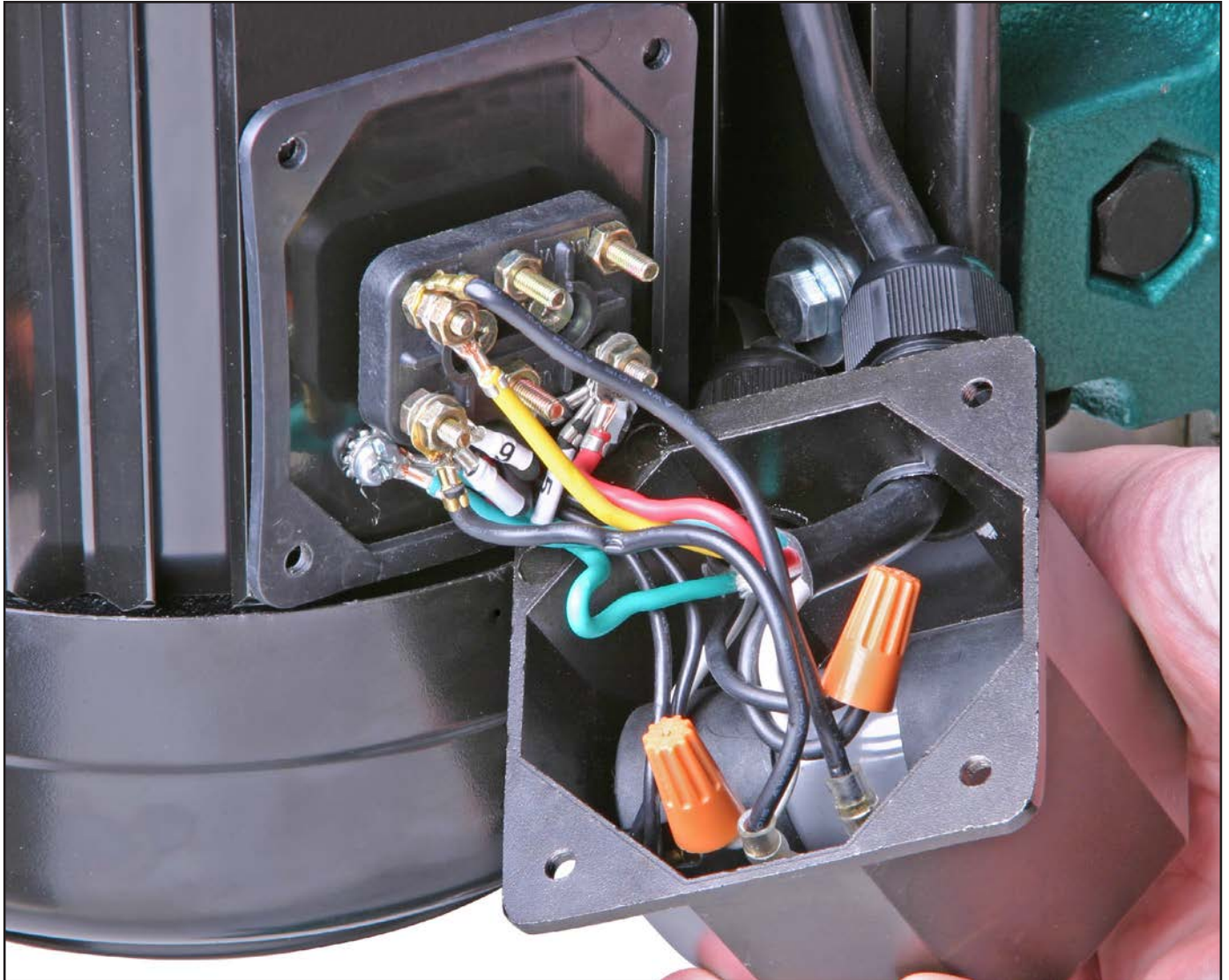


Figure 36. G1005Z Junction Box.



# Wiring Diagram

**COLOR KEY**

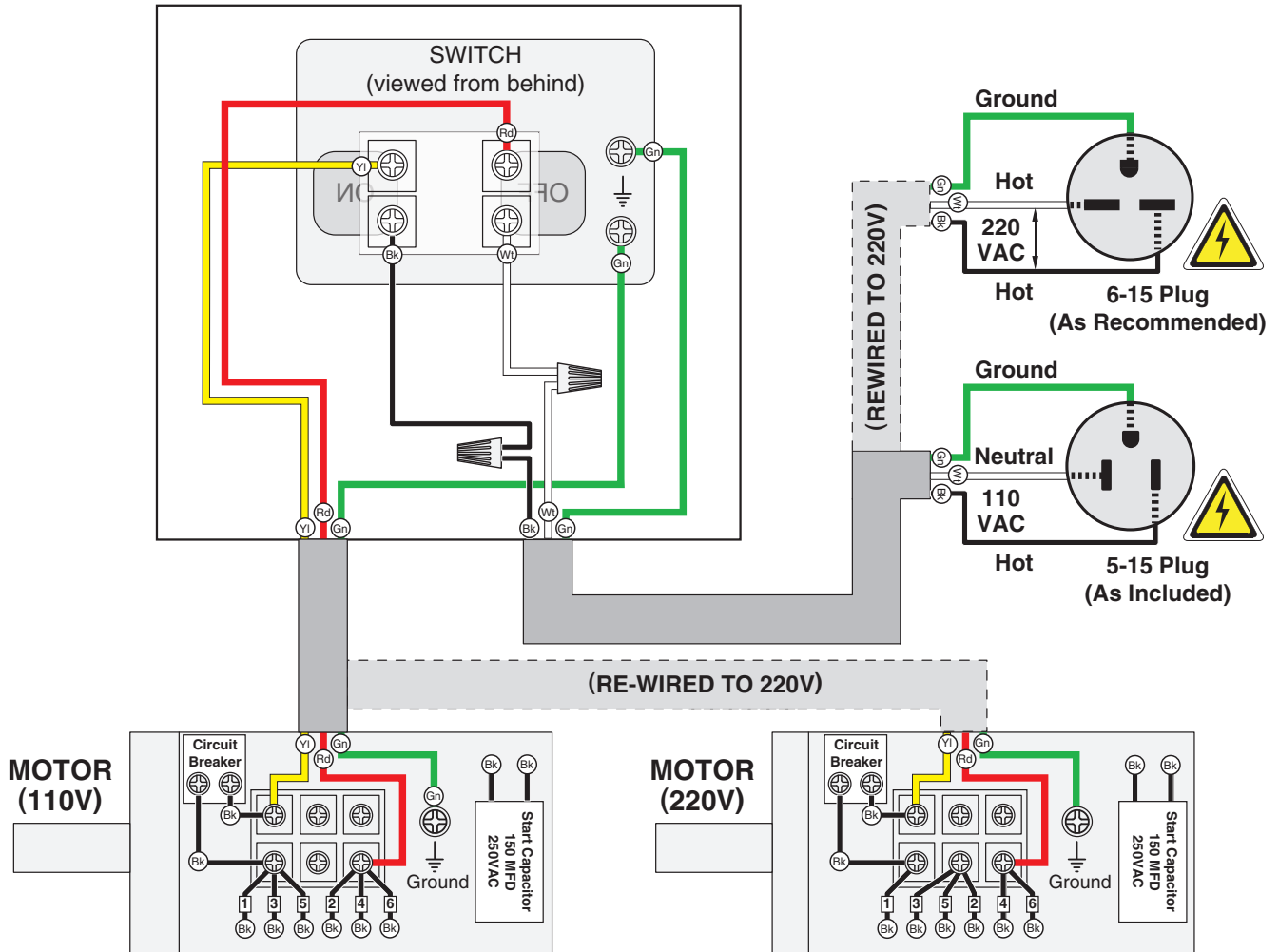
BLACK	
WHITE	
GREEN	
RED	
YELLOW	

**⚠ DANGER**

Disconnect power before performing any electrical service. Electricity presents serious shock hazards that will result in severe personal injury and even death!

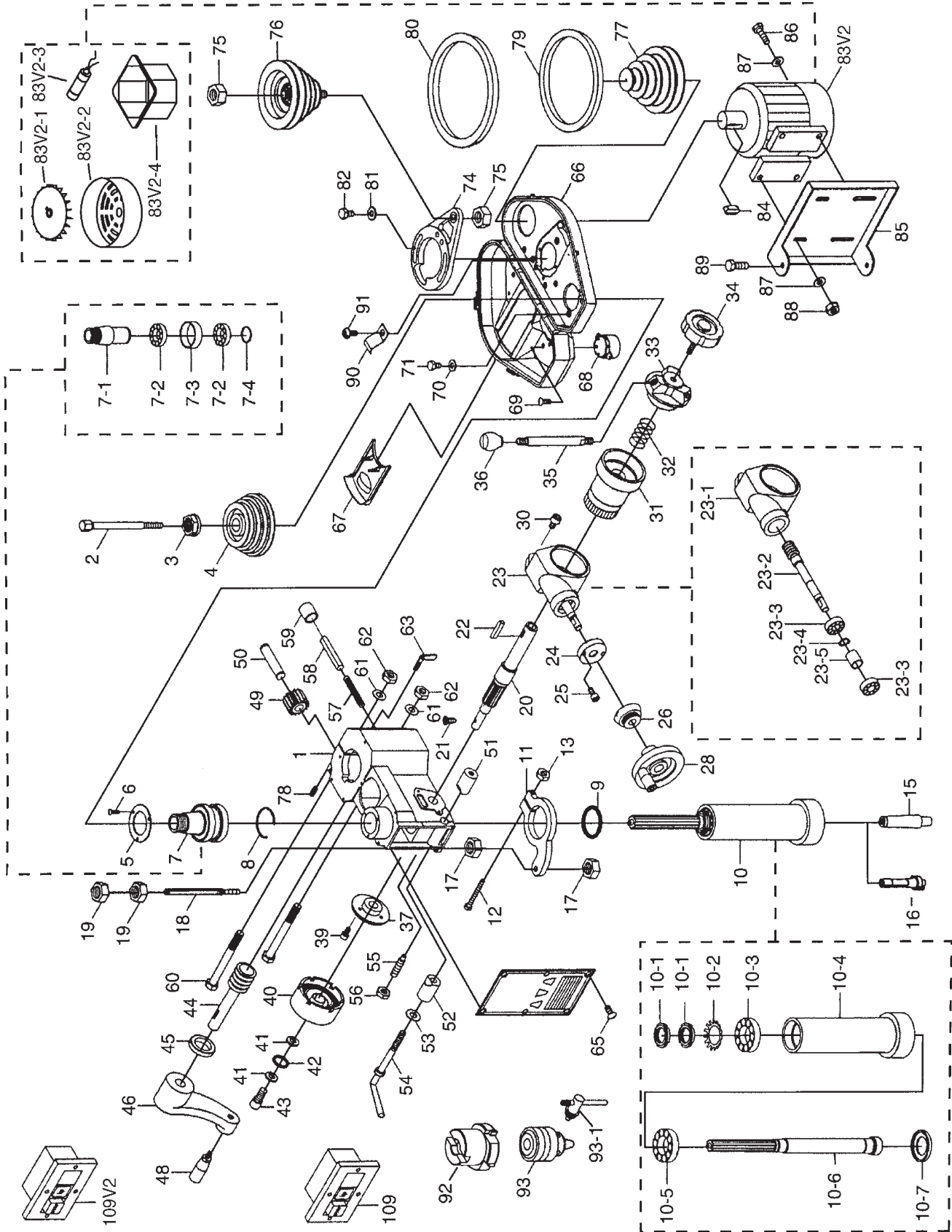
**⚠ WARNING!**

**SHOCK HAZARD!**  
Disconnect power before working on wiring.



# SECTION 9: PARTS

## Main Assembly Breakdown



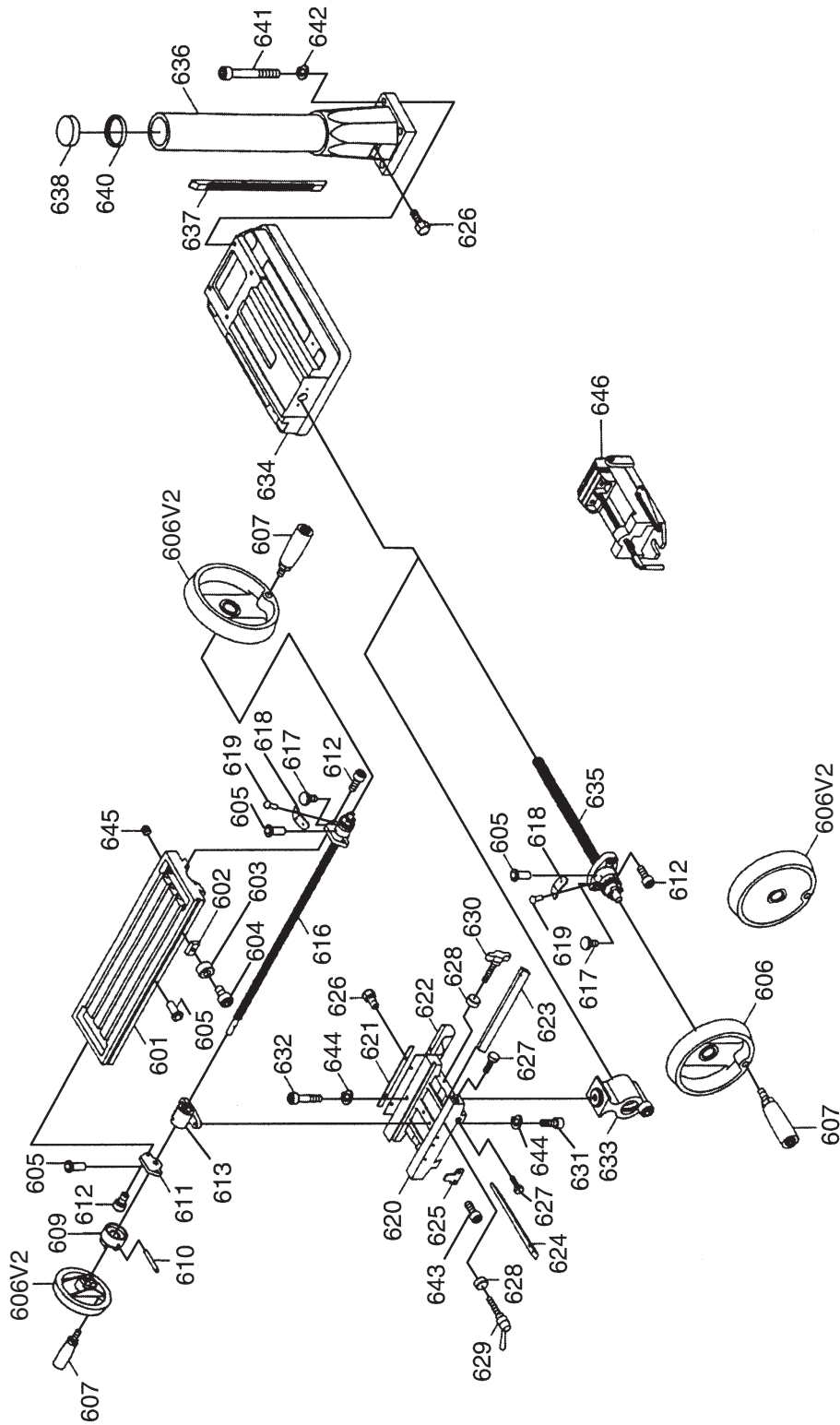
# Main Assembly Parts List

REF	PART #	DESCRIPTION
1	P1005Z001	HEAD BODY
2	P1005Z002	CHUCK ARBOR BOLT 7/16-20
3	P1005Z003	SPINDLE LOCKNUT 34 X 16
4	P1005Z004	SPINDLE PULLEY
5	P1005Z005	OUTER BEARING PLATE
6	P1005Z006	PHLP HD SCR 1/4-20 X 1/2
7	P1005Z007	SPINDLE TAPER SLEEVE SET
7-1	P1005Z007-1	SPINDLE TAPER SLEEVE
7-2	P1005Z007-2	BALL BEARING 6007ZZ
7-3	P1005Z007-3	WASHER 60 X 55 X 16
7-4	P1005Z007-4	EXT RETAINING RING 35MM
8	P1005Z008	EXT RETAINING RING 61MM
9	P1005Z009	RUBBER SEAL
10	P1005Z010	RACK SLEEVE SET
10-1	P1005Z010-1	SPANNER NUT 24.5-20
10-2	P1005Z010-2	EXT TOOTH WASHER 25 MM
10-3	P1005Z010-3	TAPERED ROLLER BEARING 30205
10-4	P1005Z010-4	QUILL
10-5	P1005Z010-5	TAPERED ROLLER BEARING 30206
10-6	P1005Z010-6	SPINDLE SHAFT
10-7	P1005Z010-7	BEARING CAP
11	P1005Z011	FEED BASE
12	P1005Z012	HEX BOLT 1/4-20 X 2
13	P1005Z013	HEX NUT 1/4-20
15	P1005Z015	CHUCK ARBOR R8 W7/16-20
16	P1005Z016	CUTTER ARBOR R8 W7/16-20
17	P1005Z017	HEX NUT 3/8-16
18	P1005Z018	GRADUATED ROD SET
19	P1005Z019	HEX NUT 1/2-20
20	P1005Z020	PINION SHAFT
21	P1005Z021	FLAT HD SCR 10-24 X 1/2
22	P1005Z022	KEY 7 X 7 X 20
23	P1005Z023	FEED COVER SET
23-1	P1005Z023-1	FEED COVER
23-2	P1005Z023-2	WORM SHAFT
23-3	P1005Z023-3	BALL BEARING 6202ZZ
23-4	P1005Z023-4	EXT RETAINING RING 15MM
23-5	P1005Z023-5	SPACER 34 X 28
24	P1005Z024	WORM COVER
25	P1005Z025	PHLP HD SCR 10-24 X 3/8
26	P1005Z026	GRADUATED DIAL
28	P1005Z028	HANDWHEEL ASSEMBLY
30	P1005Z030	CAP SCREW 5/16-18 X 3/4
31	P1005Z031	WORM GEAR
32	P1005Z032	COMPRESSION SPRING 11/16 X 1
33	P1005Z033	PINION HUB
34	P1005Z034	PINION HUB CAP
35	P1005Z035	DOWNFEED SHOULDER STUD
36	P1005Z036	DOWNFEED HANDLE KNOB 1/2-12
37	P1005Z037	COIL SPRING BASE
39	P1005Z039	PHLP HD SCR 10-24 X 3/4
40	P1005Z040	COIL SPRING & SPRING COVER
41	P1005Z041	LOCK WASHER 1/4
42	P1005Z042	FLAT WASHER 1/4

REF	PART #	DESCRIPTION
43	P1005Z043	CAP SCREW 1/4-20 X 5/8
44	P1005Z044	WORM SHAFT
45	P1005Z045	BUSHING
46	P1005Z046	CRANK ARM
48	P1005Z048	CRANK HANDLE
49	P1005Z049	WORM GEAR
50	P1005Z050	WORM GEAR SHAFT
51	P1005Z051	GIB
52	P1005Z052	GIB
53	P1005Z053	FLAT WASHER 1/2
54	P1005Z054	LOCK HANDLE
55	P1005Z055	SET SCREW 3/8-16 X 32 DOG POINT
56	P1005Z056	HEX NUT 3/8-16
57	P1005Z057	COMPRESSION SPRING 1/2 X 3-1/16
58	P1005Z058	PIN
59	P1005Z059	RUBBER BUSHING
60	P1005Z060	HEX BOLT 1/2-12 X 6-3/4
61	P1005Z061	FLAT WASHER 1/2
62	P1005Z062	HEX NUT 1/2-12
63	P1005Z063	THUMB SCREW 3/8-16 X 17
65	P1005Z065	PHLP HD SCR 1/4-20 X 1/4
66	P1005Z066	BELT COVER
67	P1005Z067	SLIDING COVER
68	P1005Z068	SPINDLE COVER
69	P1005Z069	FLAT HD SCR M3-.5 X 15
70	P1005Z070	FLAT WASHER 1/4
71	P1005Z071	PHLP HD SCR 1/4-20 X 1/2
74	P1005Z074	IDLER PULLEY BASE
75	P1005Z075	HEX NUT 5/8-11
76	P1005Z076	IDLER PULLEY SET
77	P1005Z077	MOTOR PULLEY SET
78	P1005Z078	OILER 1/4
79	P1005Z079	V-BELT A-30 4L300
80	P1005Z080	V-BELT A-38 4L380
81	P1005Z081	FLAT WASHER 5/16
82	P1005Z082	HEX BOLT 5/16-18 X 1-1/2
83V2	P1005Z083V2	MOTOR 1HP 110V/220V V2.07.10
83V2-1	P1005Z083V2-1	MOTOR FAN V2.07.10
83V2-2	P1005Z083V2-2	MOTOR FAN COVER V2.07.10
83V2-3	P1005Z083V2-3	START CAPACITOR V2.07.10
83V2-4	P1005Z083V2-4	MOTOR JUNCTION BOX V2.07.10
84	P1005Z084	KEY 7 X 7 X 38
85	P1005Z085	MOTOR MOUNT PLATE
86	P1005Z086	HEX BOLT 5/16-18 X 1
87	P1005Z087	FLAT WASHER 5/16
88	P1005Z088	HEX NUT 5/16-18
89	P1005Z089	HEX BOLT 3/8-16 X 1/2
90	P1005Z090	WIRE RELIEF RETAINER
91	P1005Z091	PHLP HD SCR 1/4-20 X 1/2
92	P1005Z092	MILLING CUTTER
93	P1005Z093	CHUCK 1/2-JT6
93-1	P1005Z093-1	CHUCK KEY
109	P1005Z109	SWITCH
109V2	P1005Z109V2	SWITCH V2.07.08



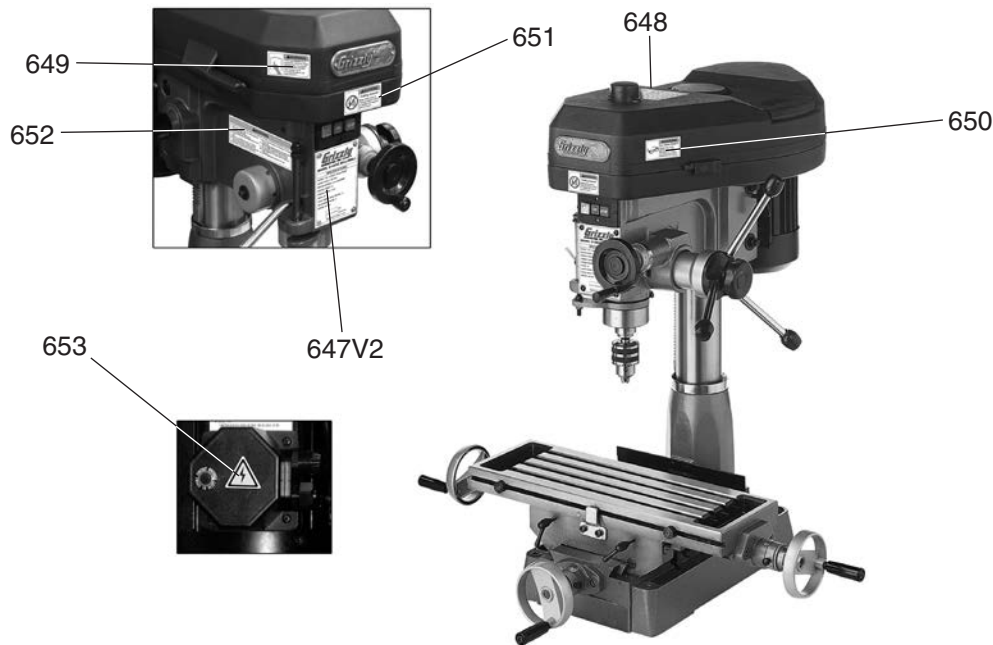
# Table Breakdown



# Table and Labels Parts List

REF	PART #	DESCRIPTION
601	P1005Z601	TABLE
602	P1005Z602	FIXED BLOCK
603	P1005Z603	MOVABLE FIXED RING
604	P1005Z604	CAP SCREW 1/4-20 X 1/2
605	P1005Z605	OILER 1/4
606V2	P1005Z606V2	HANDWHEEL PLASTIC V2.07.08
607	P1005Z607	HANDWHEEL HANDLE
609	P1005Z609	TABLE CLUTCH
610	P1005Z610	ROLL PIN 5 X 38
611	P1005Z611	LEFT FLANGE
612	P1005Z612	CAP SCREW 5/16-18 X 3/4
613	P1005Z613	TABLE NUT 23.5-10
616	P1005Z616	ACME SCREW 23.5 X 10 X 762
617	P1005Z617	KNURLED THUMB SCREW M6-1 x 10
618	P1005Z618	LIMIT PLATE
619	P1005Z619	RIVET 2
620	P1005Z620	SADDLE
621	P1005Z621	ANTIDUST PLATE
622	P1005Z622	ANTIDUST PLATE
623	P1005Z623	GIB STRIP
624	P1005Z624	GIB STRIP
625	P1005Z625	MOVABLE FIXED BLOCK
626	P1005Z626	HEX BOLT 5/16-18 X 1/2
627	P1005Z627	GIB STRIP BOLT 5/16-18 X 42
628	P1005Z628	BUSHING

REF	PART #	DESCRIPTION
629	P1005Z629	LOCK HANDLE 5/16-18 X 1-3/8
630	P1005Z630	T SCREW 5/16-18 X 42
631	P1005Z631	CAP SCREW 5/16-18 X 1
632	P1005Z632	CAP SCREW 5/16-18 X 1/4
633	P1005Z633	ACME NUT 23.5 X 10
634	P1005Z634	SWIVEL BASE
635	P1005Z635	ACME SCREW 23.5 X 10 X 390
636	P1005Z636	COLUMN BASE
637	P1005Z637	RACK
638	P1005Z638	COLUMN HEAD SET
640	P1005Z640	COLUMN FLANGE RING
641	P1005Z641	CAP SCREW 7/16-14 X 2
642	P1005Z642	LOCK WASHER 7/16
643	P1005Z643	CAP SCREW 5/16-18 X 3/4
644	P1005Z644	LOCK WASHER 5/16
645	P1005Z645	PLUG
646	P1005Z646	WISE
648	P1005Z648	MACHINE SPEED CHART
649	P1005Z649	READ MANUAL 2.8W X 1.5H
650	P1005Z650	SAFETY GLASSES 2.8W X 1.5H
651	P1005Z651	HAND MILL WARNING SMALL
652	P1005Z652	MACHINE WARNING LABEL
653	P1005Z653	ELECTRICITY
647V2	P1005Z647V2	MACHINE NAME PLATE V2.07.08



## **⚠️ WARNING**

Safety labels warn about machine hazards and ways to prevent injury. The owner of this machine **MUST** maintain the original location and readability of the labels on the machine. If any label is removed or becomes unreadable, **REPLACE** that label before using the machine again. Contact Grizzly at (800) 523-4777 or [www.grizzly.com](http://www.grizzly.com) to order new labels.







# 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

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Place Stamp Here



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



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Send a Grizzly Catalog to a friend:

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

TAPE ALONG EDGES--PLEASE DO NOT STAPLE

# WARRANTY AND 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.

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