READ THIS FIRST

Models G0728–31

******IMPORTANT UPDATE******

For Machines Mfd. Since 12/16
and Owner's Manual Revised 09/14

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

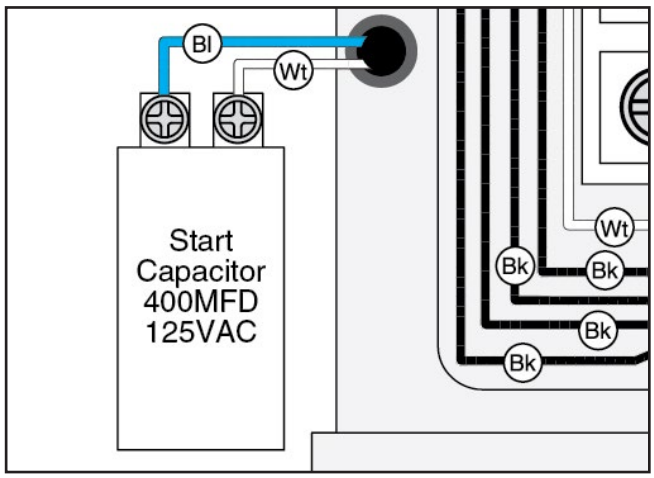
The following changes were recently made since the owner's manual was printed:

- The start capacitor wires on the G0728 and G0729 are both now white.
- The start capacitor wires on the G0730 and G0731 are both now blue.

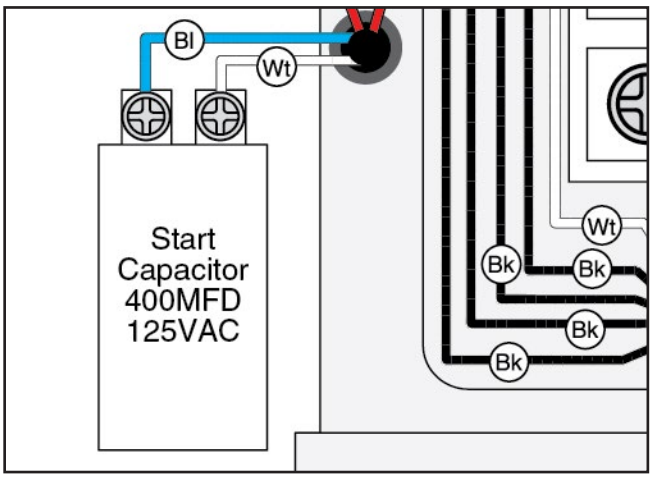
Aside from this information, all other content in the owner's manual applies and MUST be read and understood for your own safety. **IMPORTANT: Keep this update with the owner's manual for future reference.**

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

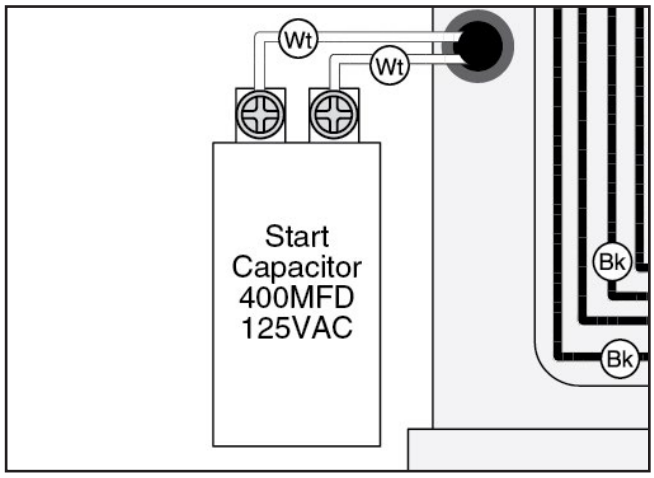
G0728/G0729 Old Capacitor Wiring



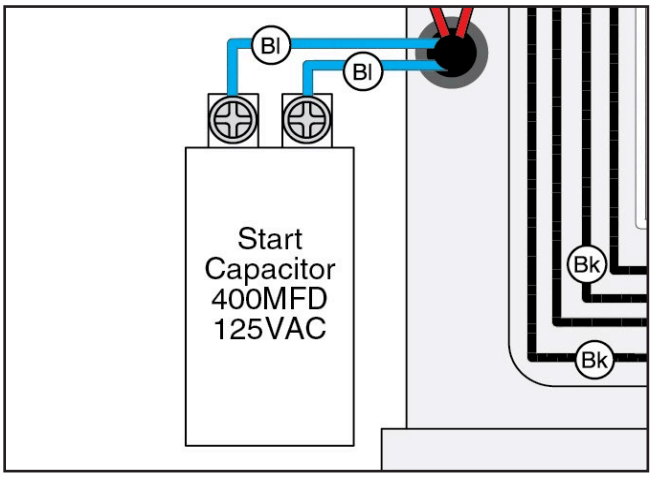
G0730/G0731 Old Capacitor Wiring



G0728/G0729 New Capacitor Wiring



G0730/G0731 New Capacitor Wiring



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#HE19485 PRINTED IN CHINA

(Replaces Page 39 in the Manual)

G0728 & G0729 Wiring Diagram

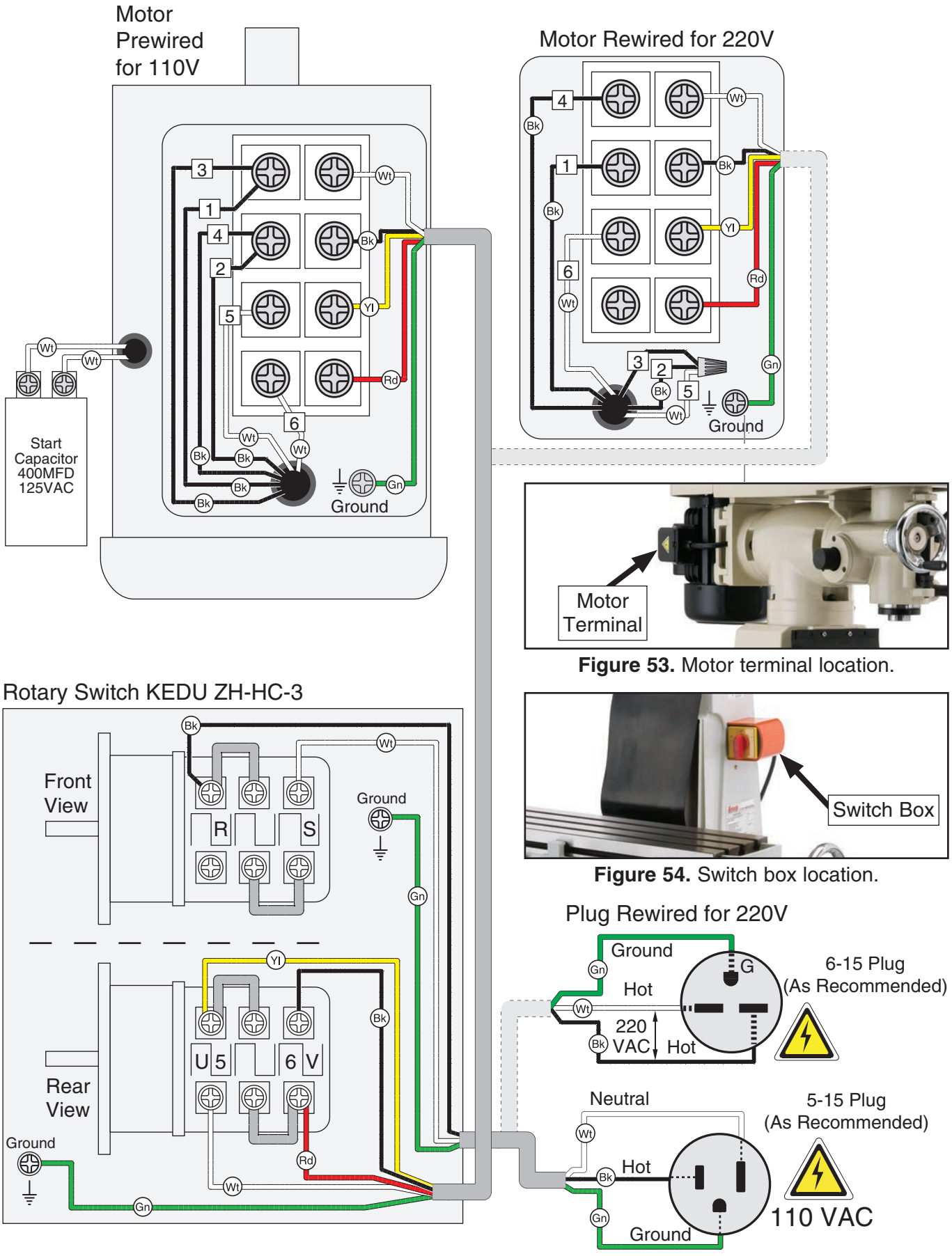
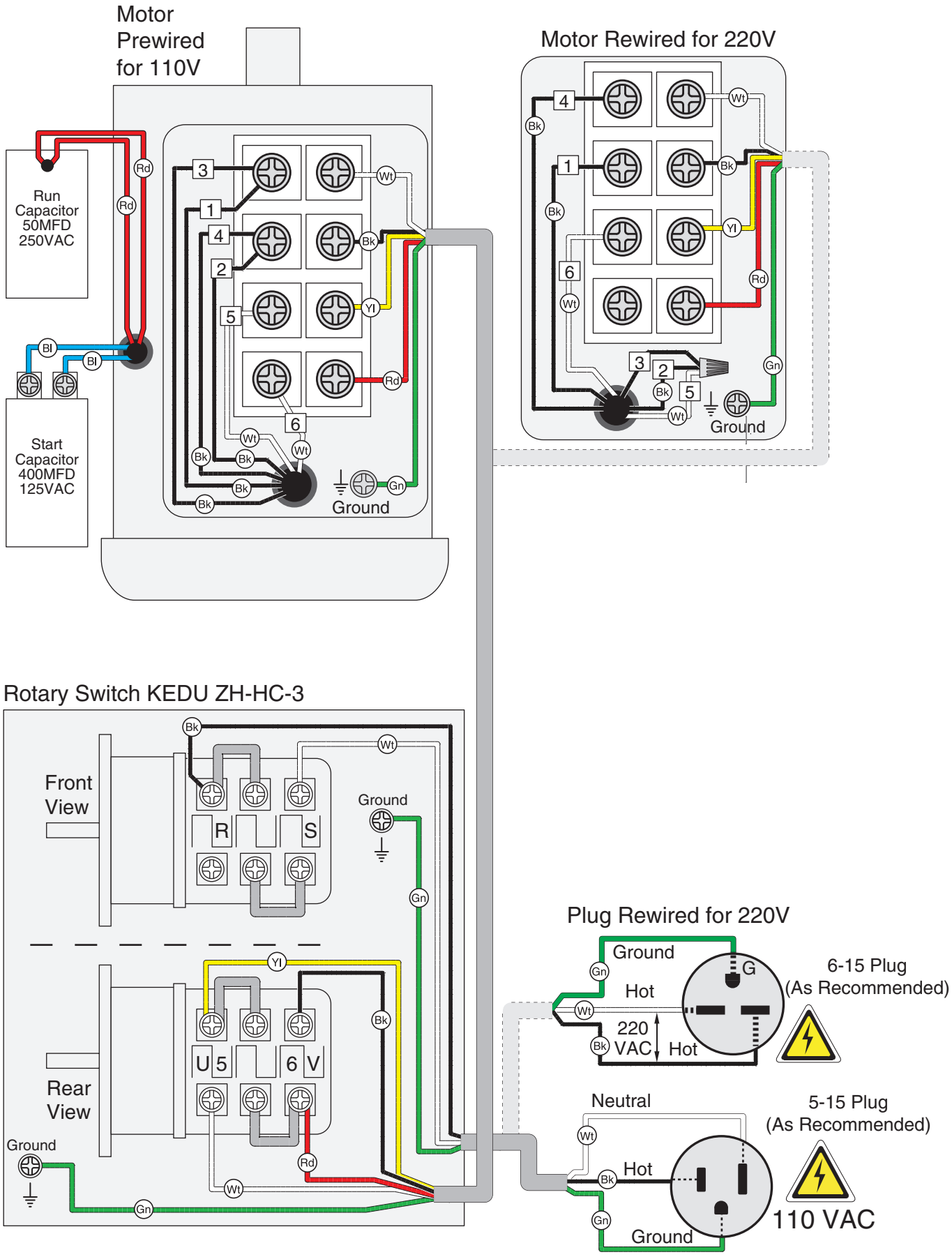


Figure 53. Motor terminal location.

Figure 54. Switch box location.

(Replaces Page 40 in the Manual)

G0730 & G0731 Wiring Diagram



READ THIS FIRST

Model G0728-31

IMPORTANT UPDATE

For Machines Mfd. Since 01/17
and Owner's Manual Revised 09/14

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

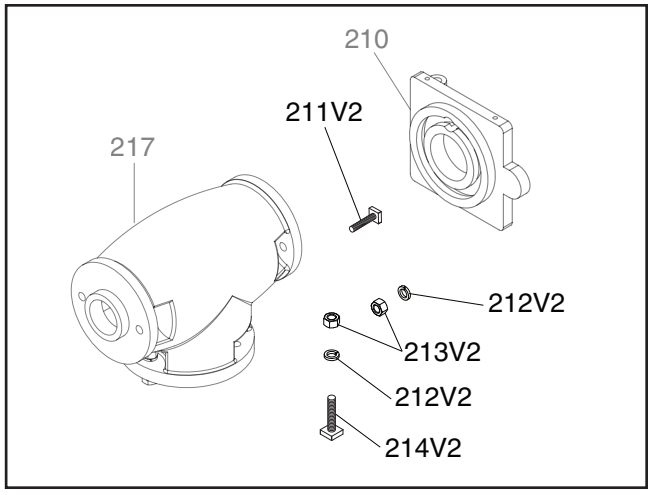
The following change was recently made to this machine since the owner's manual was printed:

- Headstock hex bolts replaced with square head bolts.

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.

New Headstock Bolts



G0728 & G0729 Parts

REF	PART #	DESCRIPTION
211V2	P0728211V2	SQUARE BOLT M10-1.5 X 35 V2.01.17
212V2	P0728212V2	FLAT WASHER 10MM V2.01.17
213V2	P0728213V2	HEX NUT M10-1.5 V2.01.17
214V2	P0728214V2	SQUARE BOLT M10-1.5 X 40 V2.01.17

G0730 & G0731 Parts

REF	PART #	DESCRIPTION
211V2	P0730211V2	SQUARE BOLT M12-1.75 X 40 V2.01.17
212V2	P0730212V2	LOCK WASHER 12MM V2.01.17
213V2	P0730213V2	HEX NUT M12-1.75 V2.01.17
214V2	P0730214V2	SQUARE BOLT M12-1.75 X 45 V2.01.17

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#MN18825 PRINTED IN TAIWAN

Models G0728, G0729, G0730 & G0731
VERTICAL MILLING MACHINES
OWNER'S MANUAL
(For models manufactured since 11/11)

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#KN14570 PRINTED IN TAIWAN

⚠ 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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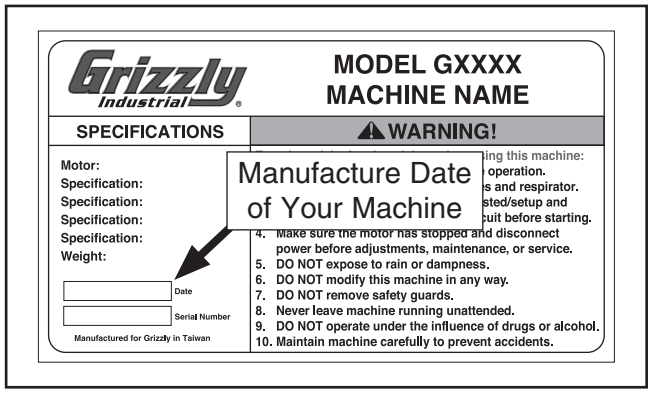
INTRODUCTION

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**. 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 service questions, parts requests or general questions about the machine, please call or write us at the location listed below.

Grizzly Industrial, Inc.
1203 Lycoming Mall Circle
Muncy, PA 17756
Phone: (570) 546-9663
Fax: (800) 438-5901
E-Mail: techsupport@grizzly.com

If you have any comments regarding this manual, please write to us at the address below:

Grizzly Industrial, Inc.
C/O Technical Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

Machine Description

The G0728/G0729/G0730/G0731 Vertical Milling machines are knee mills with 3-axis table movement and 9 speeds designed for milling solid materials. The turret and head pivot, increasing versatility for cutting operations. These are great mills for basic machine operations, such as slot and keyway cutting, planing, and drilling.

Identification

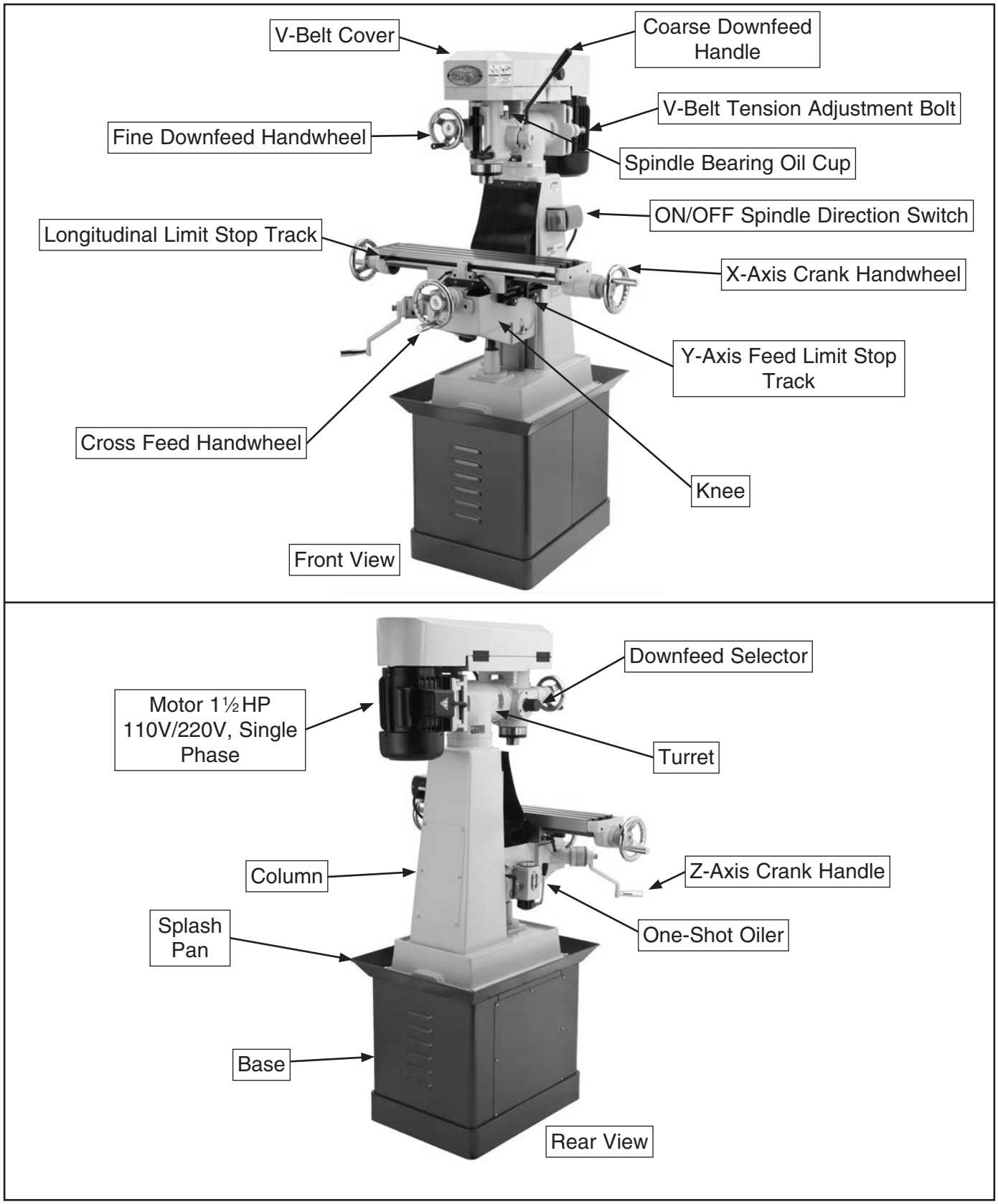


Figure 1. Vertical mill identification (Model G0728 shown).

MACHINE DATA SHEET

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

MODEL G0728/G0729/G0730/G0731 VERTICAL MILLING MACHINES

Model Number	G0728	G0729	G0730	G0731
Product Dimensions				
Weight	660 lbs.	671 lbs.	924 lbs.	935 lbs.
Width x Depth x Height	45¾" x 49¾" x 68"		40½" x 42¾" x 67"	
Footprint Size (Length x Width)	27½" x 21"		19" x 36"	
Shipping Dimensions				
Type	Wood Crate			
Content	Machine			
Weight	770 lbs.	781 lbs.	1078 lbs.	1089 lbs.
Length x Width x Height	42" x 42" x 71"		44" x 44" x 76"	
Electrical				
Power Requirement	110V/220V, Single-Phase, 60 Hz			
Prewired Voltage	110V			
Full Load Current Rating	18A at 110V; 9A at 220V			
Minimum Circuit Size	20A at 110V; 15A at 220V			
Switch	Forward/Reverse Rotary Switch			
Switch Voltage	110V/220V			
Cord Length	72"			
Cord Gauge	14 AWG			
Plug Included	Yes			
Included Plug Type	NEMA 5-15			
Recommended Plug/Outlet Type	NEMA 6-15 for 220V			
Motor				
Type	TEFC Capacitor Start Induction			
Horsepower	1½			
Voltage	110V/220V			
Prewired	110V			
Phase	Single-Phase			
Amps	18A/9A			
Speed	1725 RPM			
Cycle	60 Hz			
Number of Speeds	1			
Power Transfer	V-Belt Drive			
Bearing	Shielded and Permanently Lubricated			
Operation Info				
Spindle Travel	3"		3½"	

Model Number	G0728	G0729	G0730	G0731
Operation Info (cont'd)				
Swing	13"		14"	
Longitudinal Table Travel	15 5/8"		18"	
Cross Table Travel	6"		7 3/4"	
Knee Travel	13 1/2"		17 3/4"	
Head Swivel (Left-to-right)	45° Left/Right			
Turret/Column Swivel (Left and Right)	360°			
Max. Distance Spindle to Column	6 1/2"		7"	
Max. Distance Spindle to Table	12 1/4"		20"	
Drilling Capacity for Cast Iron	1"			
Drilling Capacity for Steel	3/4"			
Number of Vertical Spindle Speeds	9			
Range of Vertical Spindle Speeds (RPM)	230, 320, 570, 670, 1200, 1420, 1650, 2170, 2520		270, 420, 490, 950, 1110, 1410, 1720, 2050, 3200	
Quill Diameter	2.950"			
Table Info				
Table Length	26"		30"	
Table Width	6 1/8"		8"	
Table Thickness	1 3/4"		2"	
Number of T-Slots	3			
T-Slots Width	9/16"		1/2"	
T-Slots Height	13/16"		7/8"	
T-Slots Centers	1 11/16"		2 3/16"	
Stud Size	3/8"			
Spindle Info				
Spindle Taper	R8			
End Milling Capacity	3/4"		1"	
Face Milling Capacity	3"			
Drawbar Diameter	7/16"			
Drawbar TPI	20 TPI			
Drawbar Length	12"		12 3/8"	
Spindle Bearings	Angular Contact Bearing			
Leadscrew Info				
Leadscrew Diameter	7/8"			
Leadscrew TPI	8 TPI			
Leadscrew Length	35"		41"	
Construction				
Spindle Housing/Quill	Chrome-Plated Cast Iron		Chrome-Plated Steel	
Table	Precision-Ground Cast Iron			
Head/Column/Base	Cast Iron			
Stand	Stamped Steel		Cast Iron	
Paint	Epoxy			
Other Specifications				
Warranty	1 Year			
Country of Origin	Taiwan			

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 Instructions For Mills

UNDERSTANDING CONTROLS: The mill is a complex machine that presents severe cutting or entanglement hazards if used incorrectly. Make sure you understand the use and operation of all controls before you begin milling.

SAFETY ACCESSORIES: Flying chips or debris from the cutting operation can cause eye injury or blindness. Always use a chip guard in addition to your safety glasses, or use a face shield when milling.

WORK HOLDING: Milling a workpiece that is not properly clamped to the table could cause the workpiece to be thrown at the operator with deadly force! Before starting the machine, be certain the workpiece has been properly clamped to the table. NEVER hold the workpiece by hand during operation.

SPINDLE SPEED: To avoid tool or workpiece breakage that could send flying debris at the operator and bystanders, use the correct spindle speed and feed rate for the operation. Allow the mill to gain full speed before beginning the cut.

SPINDLE DIRECTION CHANGE: Changing spindle rotation direction while it is spinning could lead to gear damage or impact injury from broken tool or workpiece debris. ALWAYS make sure the spindle has completely stopped before changing spindle direction.

STOPPING SPINDLE: To reduce the risk of hand injuries or entanglement hazards, DO NOT attempt to stop the spindle with your hand or a tool. Allow the spindle to stop on its own or use the spindle brake.

CHIP CLEANUP: Chips from the operation are sharp and hot and can cause cuts or burns. Using compressed air to clear chips could cause them to fly into your eyes and may drive them deep into the working parts of the machine. Use a brush or vacuum to clear away chips and debris from the machine or workpiece and NEVER clear chips while the spindle is turning.

MACHINE CARE AND MAINTENANCE: Operating the mill with excessively worn or damaged machine parts increases the risk of machine or workpiece breakage, which could eject hazardous debris at the operator. Operating a mill that is in poor condition will also reduce the quality of the results. To reduce this risk, maintain the mill in proper working condition by ALWAYS promptly performing routine inspections and maintenance.

CUTTING TOOL USAGE: Cutting tools have very sharp leading edges—handle them with care! Using cutting tools that are in good condition helps to ensure quality milling results and reduces the risk of personal injury from broken tool debris. Inspect cutting tools for sharpness, chips, or cracks before each use, and ALWAYS make sure the cutting tools are firmly held in place before starting the machine.

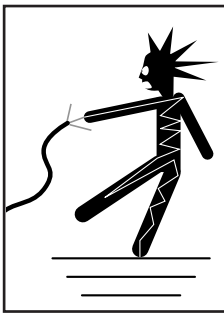
⚠WARNING

Like all machinery there is potential danger when operating this mill. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this mill with respect and caution to reduce the risk 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 electrican or qualified service personnel in accordance with all applicable codes and standards.



⚠WARNING

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

Full-Load Current Rating

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

Full-Load Current Rating at 110V..... 18 Amps
Full-Load Current Rating at 220V ..... 9 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.)

⚠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: *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:

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

Circuit Requirements for 220V

This machine can be converted to operate on a 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
Power Supply Circuit ..... 15 Amps
Plug/Receptacle ..... NEMA 6-15

Grounding Requirements

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

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

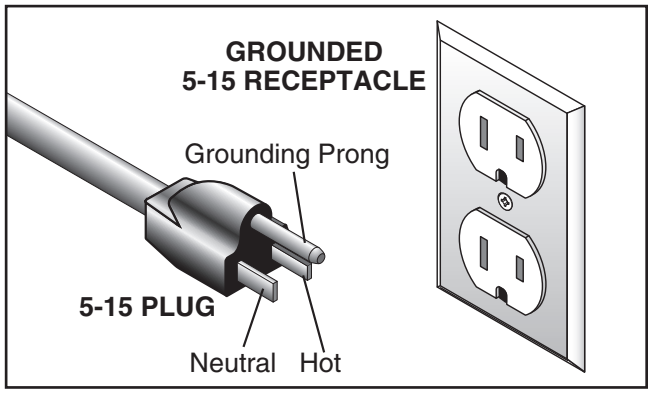
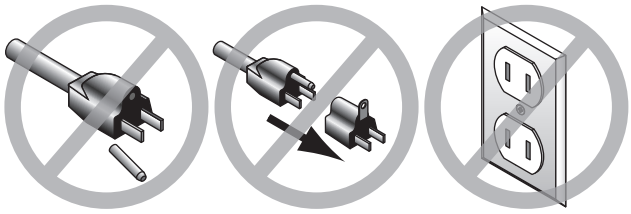


Figure 2. Typical 5-15 plug and receptacle.

⚠CAUTION



SHOCK HAZARD!

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

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

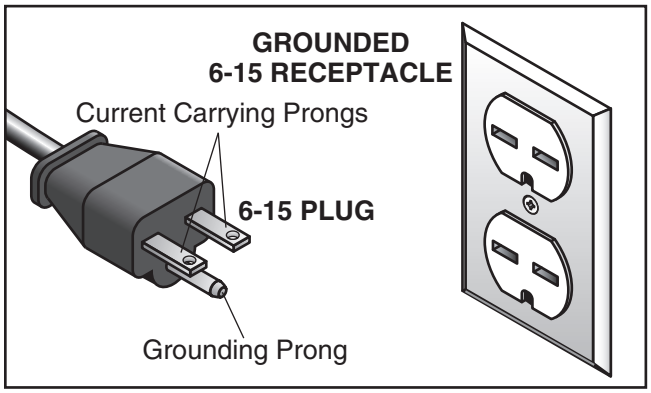


Figure 3. Typical 6-15 plug and receptacle.

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

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

Extension Cords

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

Extension cords cause voltage drop, which 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.

Voltage Conversion

To convert this mill for 220V power, you must re-wire the motor and install a NEMA 6-15 plug and receptacle.

Refer to **Page 39** for the full **Wiring Diagram**.

⚠WARNING

You MUST disconnect the mill from the power source before beginning any of the following 220V conversion procedures to avoid serious personal injury or death by electrocution.

Tools/Items Needed	Qty
Phillips Head Screwdriver #2	1
Wire Nut	1

To rewire the motor:

1. Remove the cover of the motor wiring junction box.
2. Re-configure the motor wiring by removing wires 1, 3, 4, 2, 5, and 6 from the terminal block (see **Figure 4**).
3. Replace wires 4, 1, and 6 on the terminal block, as shown in **Figure 5**.
4. Use the wire nut to secure wires 2, 3, and 5 together, as shown in **Figure 5**.
5. Replace the cover of the motor wiring junction box.

Replacing the Plug

Replace the molded NEMA 5-15 plug with a NEMA 6-15 by removing the original and installing the new plug according to the manufacturer's instructions.

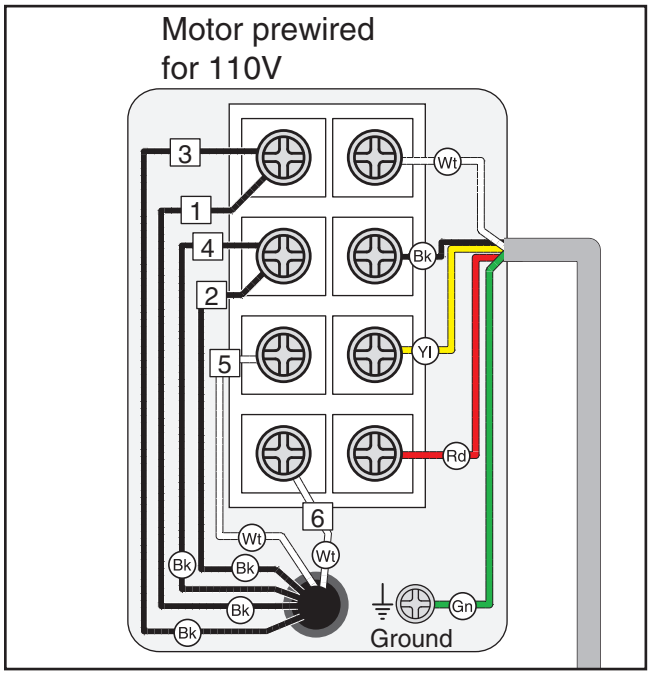


Figure 4. Motor configured for 110V operation.

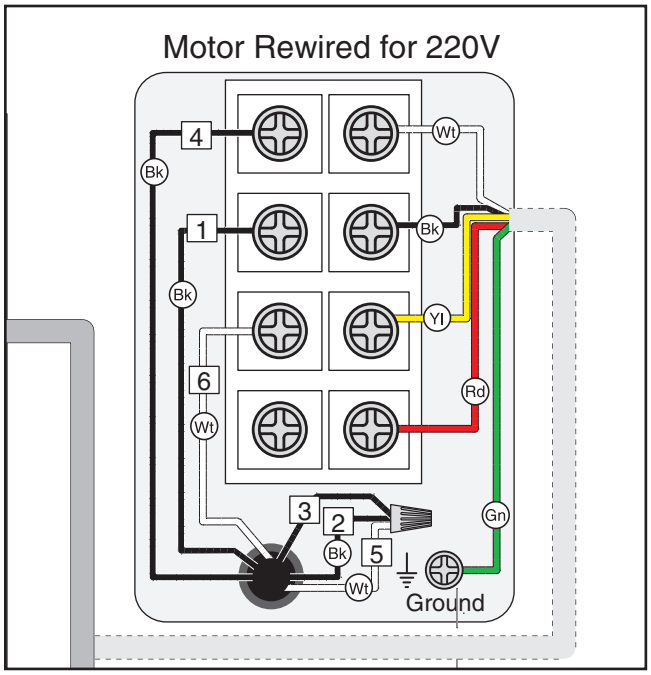


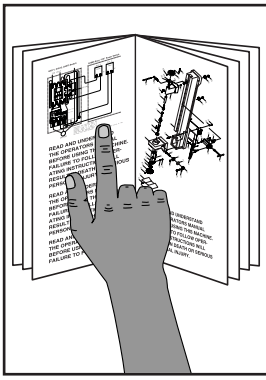
Figure 5. Motor configured for 220V operation.

⚠WARNING

Covers, guards, and safety devices on this machine are provided for your safety. Always keep them secured in place before connecting the machine to power to avoid serious personal injury.

SECTION 3: SETUP

Setup Safety

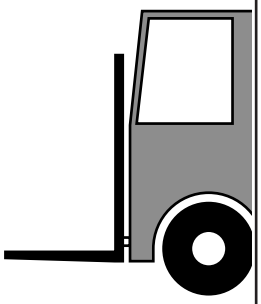


⚠WARNING

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

⚠WARNING

Wear safety glasses during the entire setup process!



⚠WARNING

This vertical mill is a heavy machine. Serious personal injury may occur if safe moving methods are not used. To be safe, get assistance and use power equipment rated for at least 1500 lbs. to move the shipping crate and remove the machine from the crate.

Needed for Setup

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

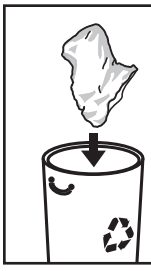
Description	Qty
• Assistants	2
• Precision Level	1
• External Retaining Ring Pliers	1
• Safety Glasses	1 Per Person
• Lifting Straps (rated for at least 1500 lbs.)	2
• Power Lifting Equipment (rated for at least 1500 lbs.)	1
• Machine Mounting Hardware	As Needed
• Cleaning Solvent & Rags	As Needed
• Wrench ½"	1

Unpacking

Your machine was carefully packaged for safe transportation. Remove the packaging materials from around your machine and inspect it. If you discover any damage, *please call us immediately 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, inventory the contents.



⚠WARNING

SUFFOCATION HAZARD!

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

Inventory

The following is a description of the main components shipped with your machine. Lay the components out to inventory them.

Note: *If you can't find an item on this list, check the mounting location on the machine or examine the packaging materials carefully. Occasionally we pre-install certain components for shipping purposes.*

Inventory: (Figure 6)		**Qty**
A.	Hex Wrench 4mm	1
B.	Hex Wrench 5mm	1
C.	Double End Wrench 12mm & 14mm	1
D.	Handwheel Handles	3
E.	Crank Arm (not shown)	1

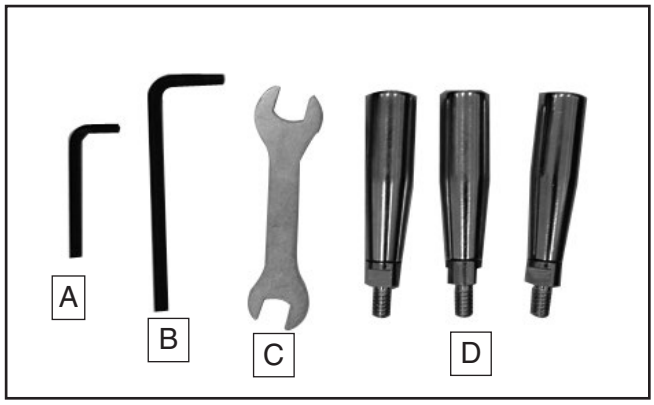


Figure 6. Model G0728 inventory.

If any nonproprietary 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.

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.

NOTICE

Avoid chlorine-based solvents, such as acetone or brake parts cleaner, that may damage painted surfaces.

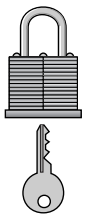
Site Considerations

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.

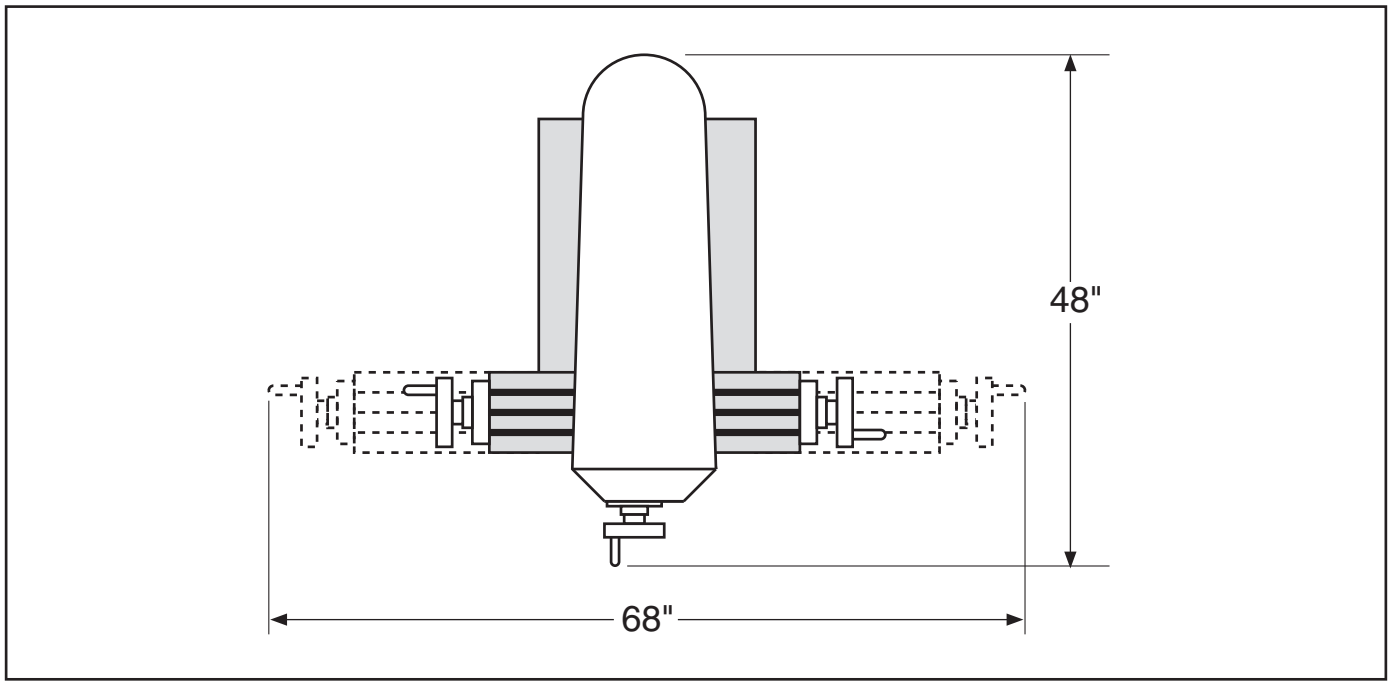
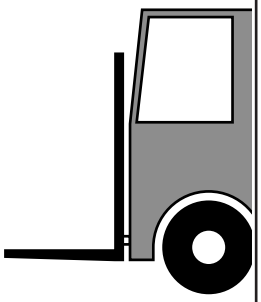


Figure 7. Minimum working clearances.

Moving & Placing Base Unit



⚠WARNING

The vertical mill is a heavy machine. Serious personal injury may occur if safe moving methods are not used. To be safe, get assistance and use power equipment rated for at least 1500 lbs. to move the shipping crate and remove the machine from the crate.

To move and place this mill:

1. After removing the crate from the shipping pallet, wrap lifting straps around the turret, as shown in **Figure 8**, and securely attach them to your power lifting equipment.

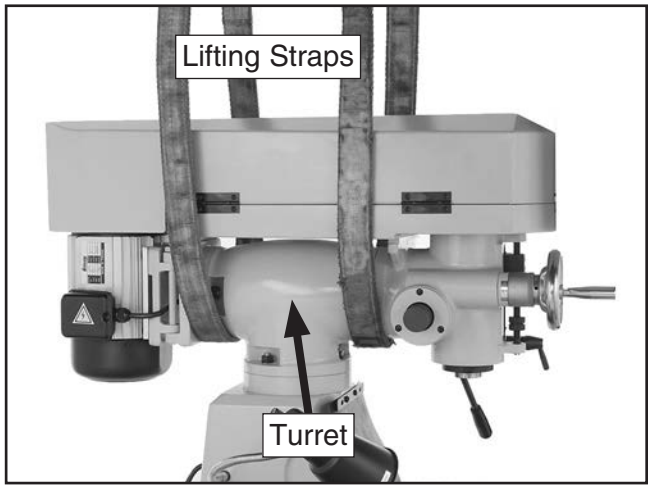


Figure 8. Positioning the lifting straps.

2. Use a ½" wrench to unbolt the mill from the pallet.

3. With assistance to steady the machine, move it as close to the prepared location as possible.

4. Lift it just enough to clear the pallet and any floor obstacles, then situate it in its final position.

5. When mounting the machine to the floor, use a precision level to make sure the table is level from side to side and front to back.

   Note: *If necessary, use shims to make sure there are no gaps between the base and the floor to avoid cracking or warping the cast iron.*

Anchoring to Floor

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

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

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

Anchoring to Concrete Floors

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

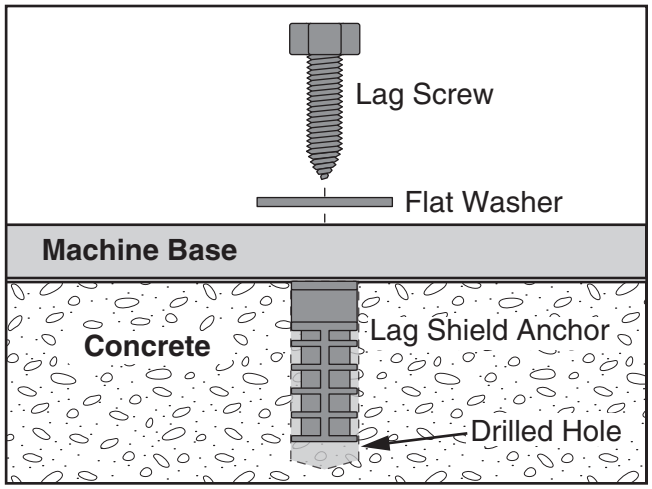


Figure 5. Popular method for anchoring machinery to a concrete floor.

NOTICE

Anchor studs are stronger and more permanent alternatives to lag shield anchors; however, they will stick out of the floor, which may cause a tripping hazard if you decide to move your machine.

Using Machine Mounts

Using machine mounts, shown in **Figure 10**, gives the advantage of fast leveling and vibration reduction. The large size of the foot pads distributes the weight of the machine to reduce strain on the floor.

Figure 10. Machine mount example.

Assembly

Gather the needed tools and components listed in **Needed for Setup** on **Page 12**.

To assemble the mill:

1. Secure the three handles to the handwheels, as shown in **Figures 11 and 12**.

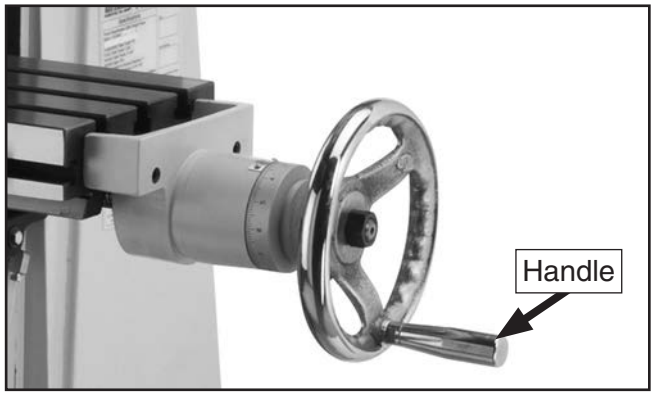


Figure 11. Right table handle attached to handwheel (left table handle not shown).

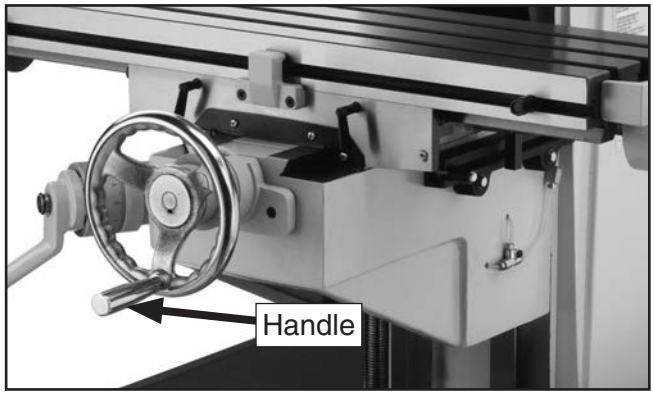


Figure 12. Cross feed handle attached to handwheel.

2. Remove the retaining ring from the end of the vertical crank screw, install the crank handle, then re-install the retaining ring, as shown in **Figure 13**.

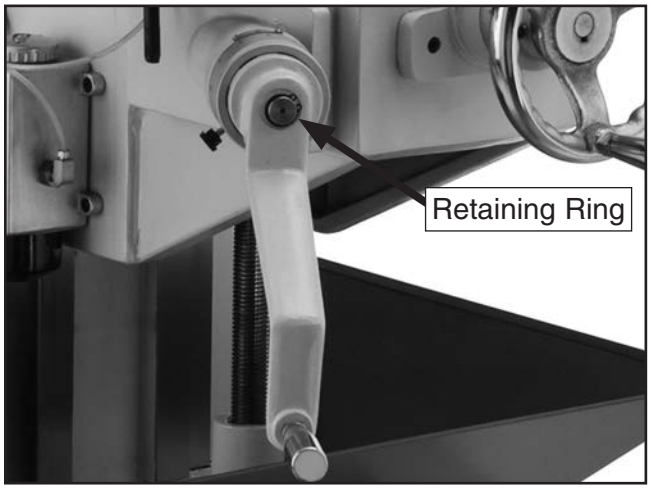


Figure 13. Vertical crank handle properly installed.

Initial Lubrication

This mill has numerous moving metal-to-metal contacts that require proper lubrication to help ensure efficient and long-lasting mill operation. However, some lubrication must be performed manually. Lubricate the spindle and quill before proceeding to the **Test Run** or **Spindle Break-In** sections.

NOTICE

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

To lubricate the spindle do the following steps:

1. Use the coarse downfeed handle, completely feed out the quill and lock it in position with the quill lock. Rub the quill down with a lightly oiled rag.

2. While holding the coarse downfeed handle, release the quill lock and return the quill to its initial position.

3. Add 6 to 10 drops of oil to the spindle lubrication cup and wait 5–10 minutes (see **Figure 14**).

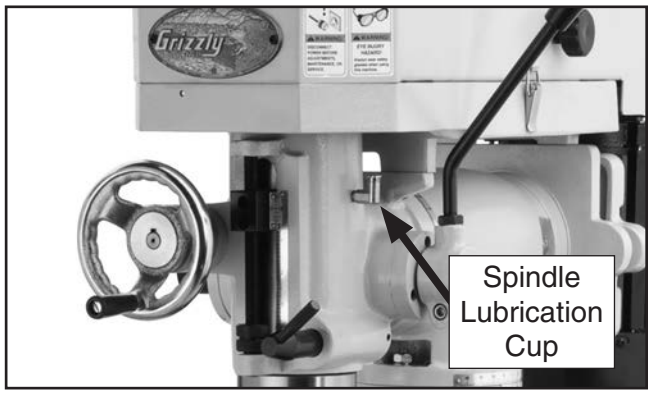


Figure 14. Spindle lubrication cup location.

Note: *The spindle lubrication cup is a gradual gravity powered system. Extending the quill at this stage will empty the cup too rapidly to effectively lubricate the spindle.*

Power Connection

After you have completed all previous setup instructions and circuit requirements, the machine is ready to be connected to the power supply.

To avoid unexpected startups or property damage, use the following steps whenever connecting or disconnecting the machine.

Connecting Power

1. Turn the machine power switch **OFF**.

2. Insert the power cord plug into a matching power supply receptacle. The machine is now connected to the power source.

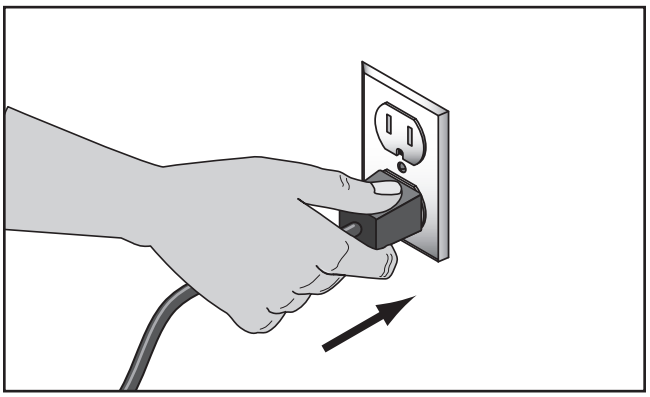


Figure 15. Connecting power.

Disconnecting Power

1. Turn the machine power switch **OFF**.

2. Grasp the molded plug and pull it completely out of the receptacle. Do not pull by the cord as this may damage the wires inside.

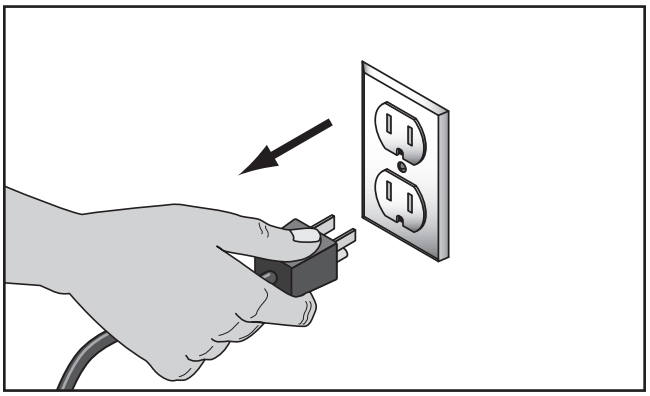


Figure 16. Disconnecting power.

Test Run

Once the assembly is complete, test run your machine to make sure it runs properly and is ready for regular operation. The test run consists of verifying the following: 1) The motor powers up and runs correctly and 2) the spindle switch works correctly.

If, during the test run, you cannot easily locate the source of an unusual noise or vibration, stop using the machine immediately, then review **Troubleshooting** on **Page 34**.

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

⚠WARNING

Before starting the mill, make sure you have performed the preceding assembly instructions, and you have read through the rest of the manual and are familiar with the various functions and safety features on this machine. Failure to follow this warning could result in serious personal injury or even death!

NOTICE

Complete the Initial lubrication procedures on Page 18 before proceeding. Failure to follow reasonable lubrication practices as outlined in this manual could lead to premature failure of your mill and will void the warranty.

To test run the machine:

1. Make sure you understand the safety instructions at the beginning of the manual and that the machine is set up properly.

2. Make sure all tools and objects used during setup are cleared away from the machine.

3. Make sure the spindle is lubricated (refer to **Initial Lubrication** on **Page 18** for detailed instructions).

4. Ensure the spindle switch is in the OFF position.

5. If it is not already, connect the machine to the power source.

6. Verify that the machine is operating correctly by turning the spindle switch to the FWD position.

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

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

7. Turn the spindle switch to the OFF position.

8. Turn the spindle switch to the REV position.

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

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

When all of the **Test Run** procedures are successfully completed, proceed to **Spindle Break-In**.

Spindle Break-In

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

⚠WARNING

Do not attempt to perform the spindle break-in until successful completion of the Test Run section on Page 19. Failure to complete the test run of the machine increases the chance for serious injury or property damage.

NOTICE

Complete the Initial lubrication procedures on Page 18 before proceeding. Failure to follow reasonable lubrication practices as outlined in this manual could lead to premature failure of your mill and will void the warranty.

NOTICE

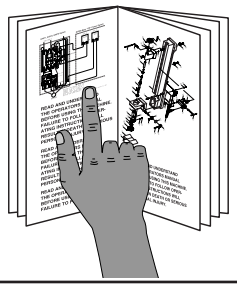
Successfully complete the spindle break-in procedure to avoid rapid wear of spindle components when placed into operation.

To perform the spindle break-in procedure:

1. Adjust the pulleys to set the spindle speed to 230 RPM (G0728/G0729), or 270 RPM (G0730/G0731) (see **Page 27** for detailed instruction on **Adjusting Spindle Speed**).
2. Turn the switch to the FWD position.
3. Let the mill run at this speed for 20 minutes, then turn the spindle ***OFF*** and wait for it to stop.
4. Turn the spindle direction switch to the REV position, and let it run for another 20 minutes.
5. Set the spindle speed at 1650 RPM (G0728/G0729), or 1720 RPM (G0730/G0731), then repeat **Steps 2–4**.
6. Turn the mill ***OFF***. The spindle break-in is now complete and the machine is ready for operation.

SECTION 4: OPERATIONS

Operation Safety

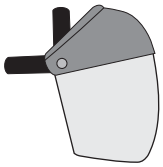


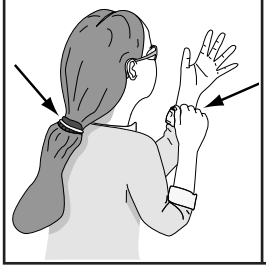
⚠WARNING

To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.

⚠WARNING

Damage to your eyes or face could result from using this machine without proper protective gear. Always wear safety glasses or a face shield when operating this machine.





⚠WARNING

Loose hair, clothing, or jewelry could get caught in machinery and cause serious personal injury. Keep these items away from moving parts at all times to reduce this risk.

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.

Basic Controls

This vertical mill is equipped with an ON/OFF spindle direction switch, as shown in **Figure 17**. The mill can be turned ON in the Forward (FWD) direction, and turned ON in the Reverse (REV) direction. Returning the switch to the vertical OFF position turns the motor off.

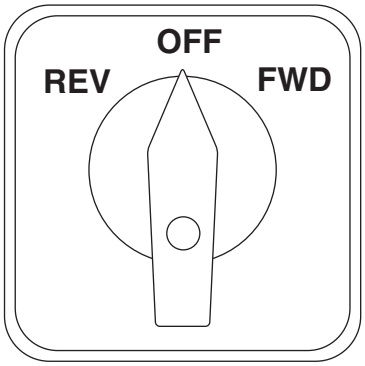


Figure 17. Illustration of spindle direction switch

Table Movement

This mill table has three paths of movement that are controlled by the corresponding handwheels or the vertical crank handle (see **Figure 18**).

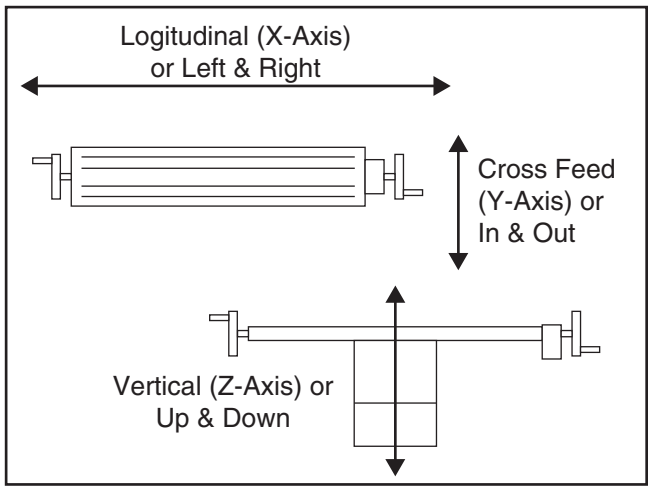


Figure 18. Three movement paths of the mill table.

The graduated dials are marked in increments of 0.001", with one full revolution moving the table 0.125".

Locks

The table of this vertical mill has locks to secure the table in position along each axis of movement. Locking the table reduces unwanted movement and reduces error in milling operations. Use the table, saddle, and knee locks shown in **Figures 19–20** to secure the table in position.

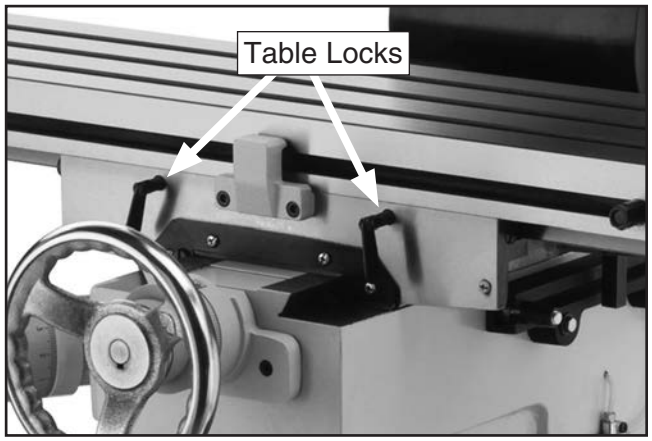


Figure 19. Table locks.

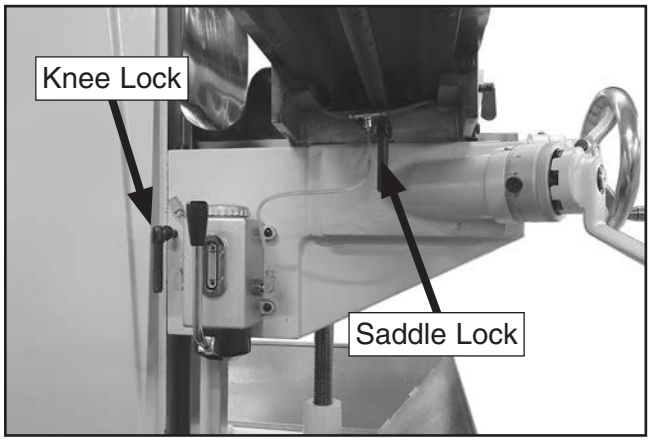


Figure 20. Saddle and knee locks.

Limit Stops

Limit stops increase repeatability in milling operations. Positioning the stops along the table slots limits the distance the table or saddle can travel (see **Figures 21–22**).

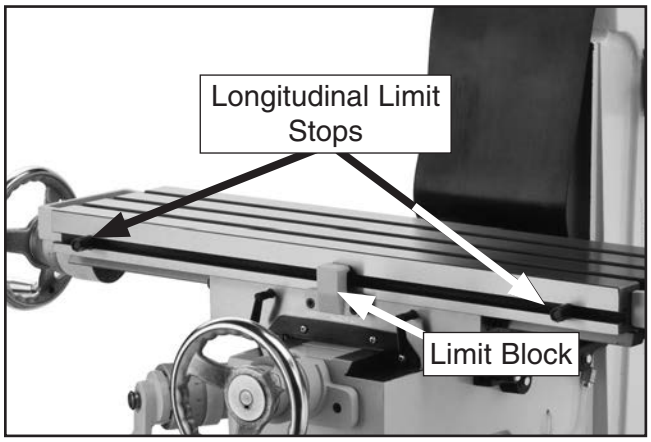


Figure 21. Table limit stops and block.

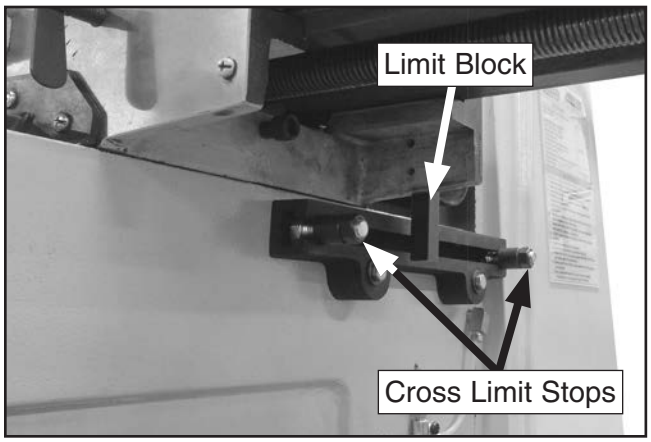


Figure 22. Cross limit stops and block.

Longitudinal Power Feed System

The G0729 and G0731 vertical mills are equipped with a longitudinal power feed and limit switch for controlled X-axis table movement. Refer to **Figure 23** and the descriptions below to understand the functions of these devices.

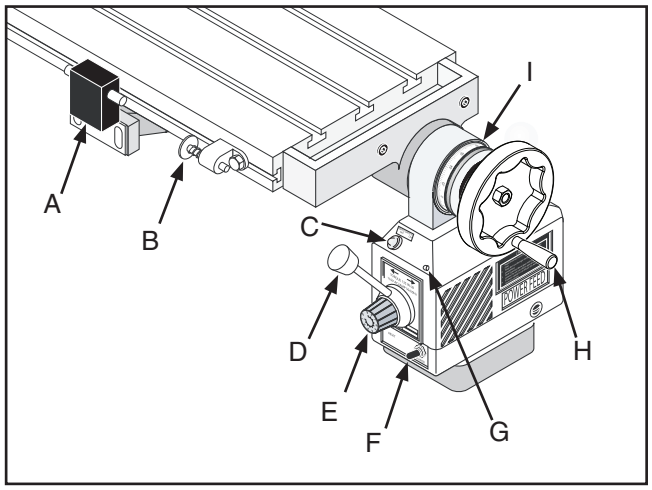


Figure 23. Longitudinal power feed system.

A. Limit Switch: Stops powered table movement when either limit stop presses a plunger on the switch.

B. Limit Stop: Activates the limit switch. Secure these devices along the table to limit longitudinal movement.

C. Rapid Movement Button: When pressed, moves the table at the maximum speed in the direction selected.

D. Direction Lever: Starts, reverses, and stops longitudinal table movement.

E. Speed Dial: Controls the speed that the table moves—turn the dial clockwise to increase the speed.

F. ON/OFF Switch: The master power switch for the power feed.

G. Power Lamp: Lights when the power feed is turned ***ON***.

H. Handwheel: Manually positions the table.

I. Graduated Dial: Marked in 0.001" increments, each complete revolution is equal to 0.200" of longitudinal table travel.

Tools Needed **Qty**
Wrench or Socket 12mm 1

To operate the longitudinal power feed:

1. Loosen the table locks (see **Figure 24**).

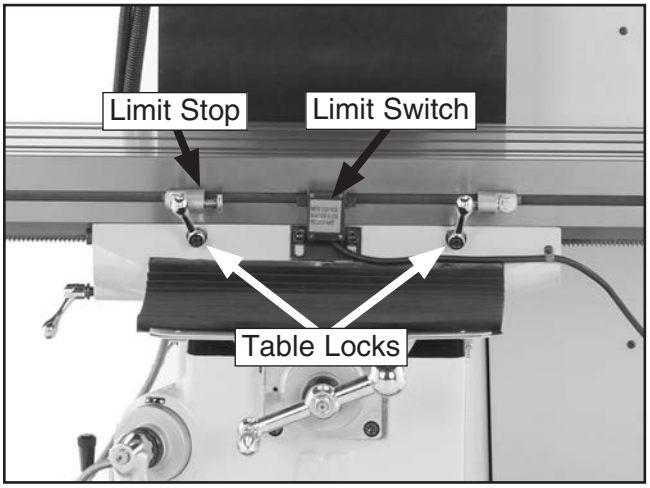


Figure 24. Example of table locks, limit switch, and limit stop.

2. Position the limit stops along the table to confine the longitudinal distance you want the table to travel, then tighten the hex bolts to secure them in place.

3. Move the power feed direction lever to the center or neutral position, then plug the power feed power cord into an appropriate receptacle.

⚠CAUTION

Be sure there is enough running clearance between the table, spindle, vise/clamps, or jigs before turning the power feed *ON*. Failure to do so could result in injury from tool breaking and pieces being thrown at high speed.

4. Rotate the speed dial to the minimum speed (all the way to the left), and use the direction lever to select the direction of table travel.

5. Flip the ON/OFF switch up to turn the power feed ***ON***.

6. Adjust the speed dial to move the table at the correct speed for your operation.

   Note: *Power feed rates are difficult to precisely adjust. We recommend that you experiment with different dial settings to find the feed rate that best works for your operation.*

7. When you are through using the power feed, leave the direction lever in the center or neutral position, and flip the ON/OFF switch down to turn the power feed ***OFF***.

⚠CAUTION

Always keep the table locked in place unless controlled movement is required for your operation. Unexpected table movement during operations could cause the cutter to bind with the workpiece, resulting in personal injury, and possible damage to the cutter and workpiece.

Head Tilting

The head tilts 90° to the left or right (see **Figure 25**).

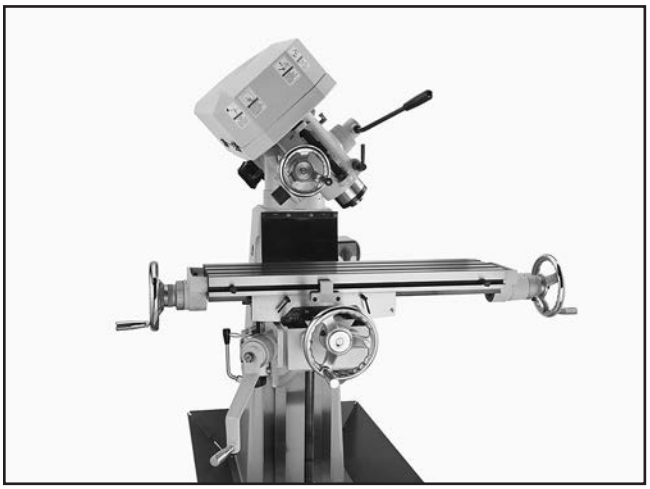


Figure 25. Head tilted 45° to the left.

Tools Needed	**Qty**
Wrench 17mm	1

To tilt the head left or right:

1. DISCONNECT THE MILL FROM POWER!

2. Loosen the four hex nuts and lock washers on both sides of the turret (see **Figure 26**).

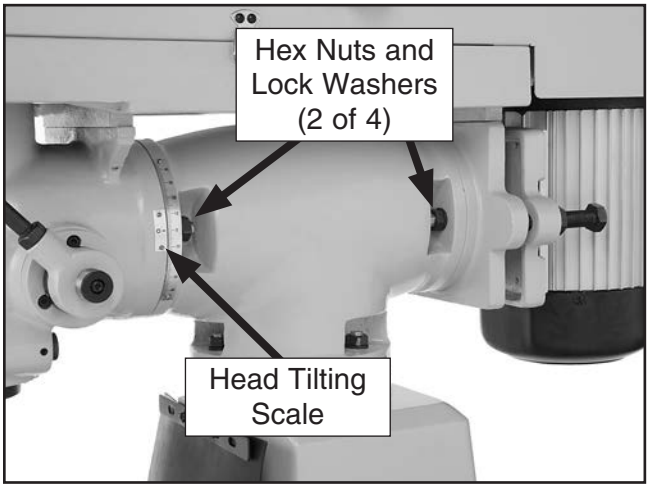


Figure 26. Head tilting hex nuts and lock washers (2 of 4 shown).

3. Tilt the head to the left or right and use the head tilt scale to determine the angle of tilt.

4. Re-tighten the four hex nuts and lock washers to secure the head.

⚠CAUTION

Always lock the head in place after adjusting tilt. Unexpected movement of the head during operations could cause the cutter to bind with the workpiece, resulting in personal injury, and possible damage to the cutter and workpiece.

Turret Rotation

The turret rotates 360° around the column (see **Figure 27**).

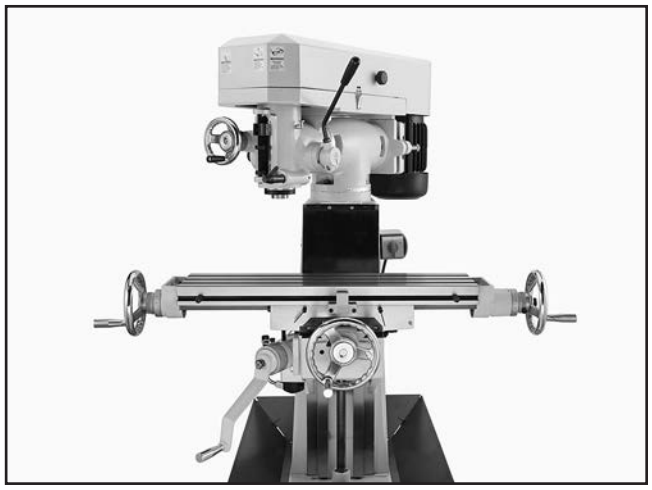


Figure 27. Head and turret rotated 45° to the left.

Tools Needed	**Qty**
Wrench 17mm	1

To rotate the turret left or right:

1. DISCONNECT THE MILL FROM POWER!

2. Loosen the three hex nuts and lock washers on the turret (see **Figure 28**).

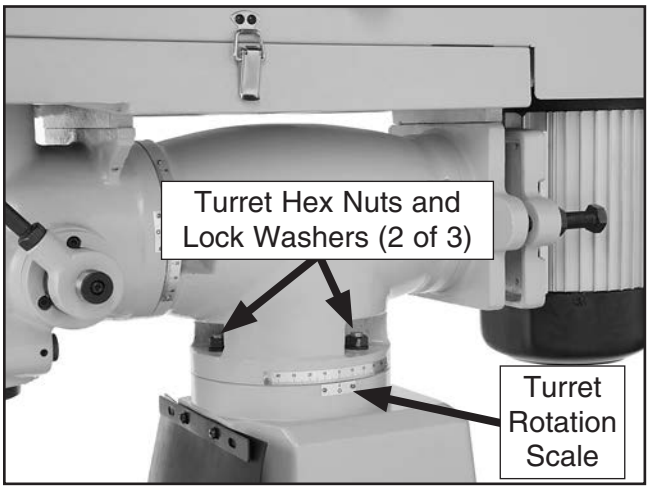


Figure 28. Turret rotation hex nuts and lock washers (2 of 3 shown).

3. Rotate the head and turret around the column to the left or right using the turret rotation scale to determine the amount of rotation.

4. Re-tighten the three hex nuts and lock washers to secure the head and turret in place.

⚠CAUTION

Always lock the turret in place after rotation. Unexpected movement of the head during operations could cause the cutter to bind with the workpiece, resulting in personal injury, and possible damage to the cutter and workpiece.

Tramming Spindle

Tramming the spindle ensures that the spindle and table are perpendicular along the X-axis (see **Figure 29**). This operation should be performed when returning the spindle to the vertical position after operations in which the head was tilted.

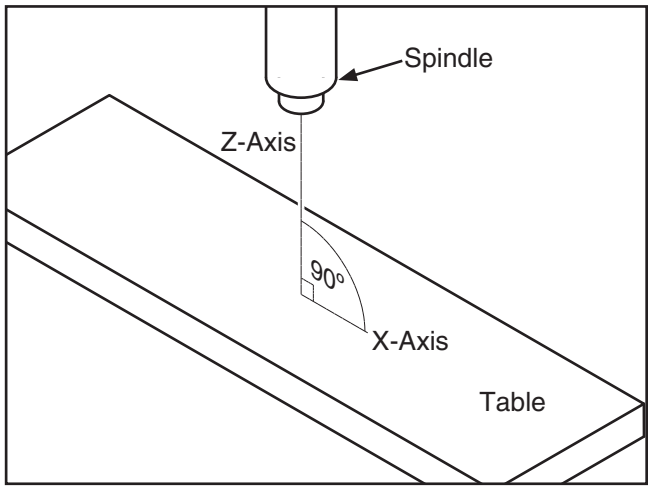


Figure 29. Spindle perpendicular to the table in the X-axis.

Tools Needed	Qty
Wrench 17mm	1
Dial Test Indicator	1
Indicator Holder	1
Precision Parallel Block	1

To tram the spindle:

1. DISCONNECT THE MILL FROM POWER!

2. Loosen the 4 head tilt hex nuts and lock washers.

   Note: *When tramming the spindle it is best to tighten the nuts snug enough that the head needs light taps with a rubber mallet to move. This prevents the head from moving freely and losing adjustments between measurements.*

3. Ensure the table is free from chips and nicks that may change the elevation of the parallel block.

4. Center the parallel block under the spindle and tighten the table, knee, and quill locks to eliminate unwanted movement.

5. With the test indicator attached to the indicator holder, mount the holder in the spindle.

   Note: *The goal is to adjust the head so that the differences between the measurements are zero within the capabilities of the test indicator. However, specific tolerances will be determined by each operation.*

6. Measure spindle alignment along the X-axis at one end of the parallel block (see **Figure 30**).

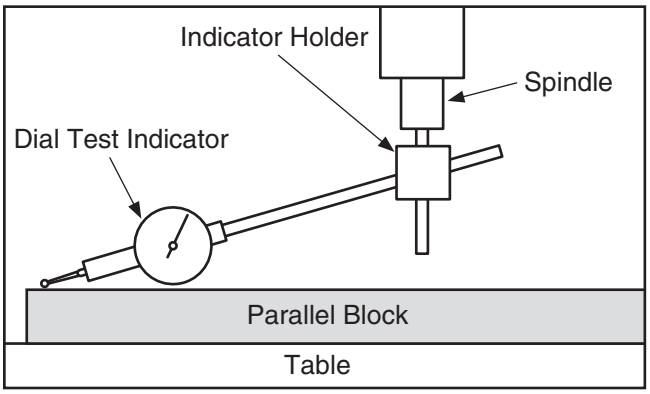


Figure 30. Dial test indicator mounted.

7. Rotate the spindle by hand so that the indicator rests on the other end of the parallel block along the X-axis.

   —If the indicator dial reads zero or is within the acceptable tolerances, continue to **Step 8**.

   —If the indicator has moved from zero outside acceptable tolerances, adjust the tilt of the head and repeat **Steps 6 and 7**.

8. Retighten the four hex nuts and lock washers.

⚠CAUTION

Always lock the head in place after adjusting tilt. Unexpected movement of the head during operations could cause the cutter to bind with the workpiece, resulting in personal injury, and possible damage to the cutter and workpiece.

Adjusting Spindle Speed

To select the correct spindle speed (RPM) for a milling operation, you will need to: 1) Determine the spindle speed needed for the workpiece, and 2) configure the belts to provide the closest calculated speed.

Calculating Spindle Speed

1. Use the table in **Figure 31** to determine the cutting speed or surface feet per minute (SFM) required for the workpiece material.

Cutting Speeds for High Speed Steel (HSS) Cutting 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
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.*	

Figure 31. Cutting speed table for HSS cutting tools.

2. Measure the diameter of the cutting tool in inches.

3. Use the following formula to calculate the required spindle speed RPM:

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

*Double if using carbide cutting tool

Setting Spindle Speed

Tools Needed **Qty**
Wrench 24 mm 2

To set the spindle speed:

1. DISCONNECT THE MILL FROM POWER.

2. Release motor pulley tension by loosening the jam nut and then the tensioner bolt (see **Figure 32**).

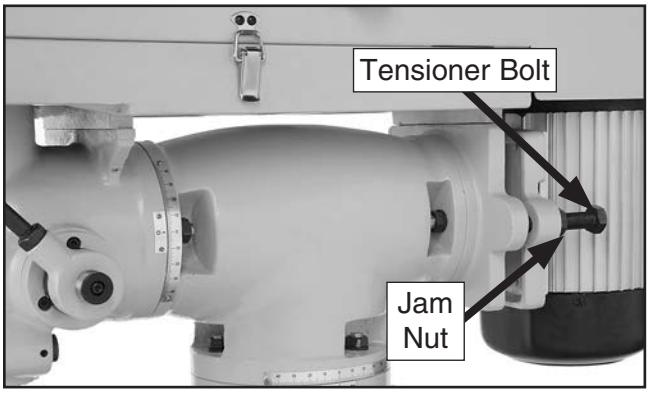
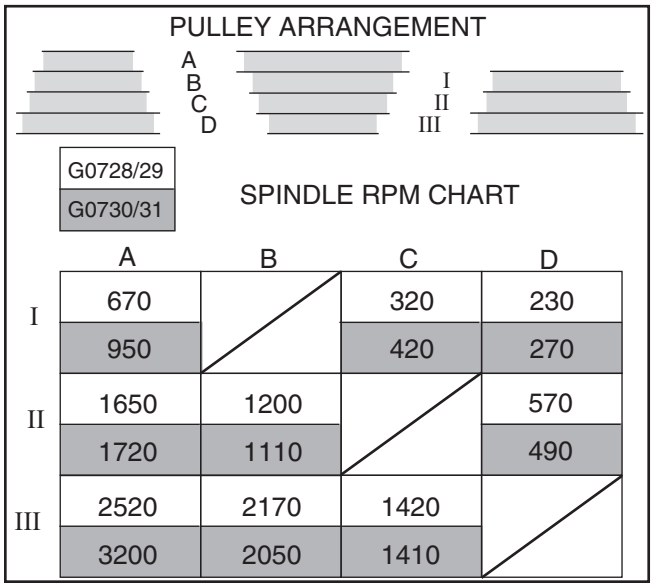


Figure 32. Tensioner bolt and jam nut location.

3. Using the table in **Figure 33**, arrange the belts to provide the best RPM for the cutting operation.



	A	B	C	D
I	670		320	230
	950		420	270
II	1650	1200		570
	1720	1110		490
III	2520	2170	1420	
	3200	2050	1410	

Figure 33. Vertical milling machine RPM table.

4. Retension the belts to the proper tension (see **V-Belt Tensioning** on **Page 33**).

Downfeed Controls

Refer to **Figures 34–35** and the following descriptions to understand the functions of the downfeed controls that affect the travel of the quill, spindle, and cutter.

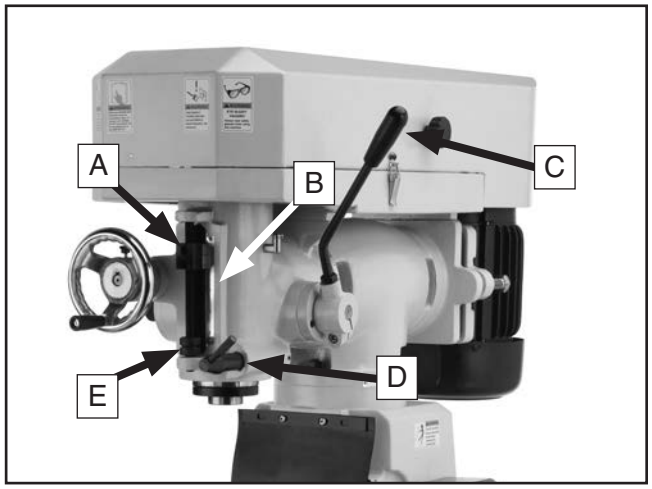


Figure 34. Downfeed controls viewed from the right side.

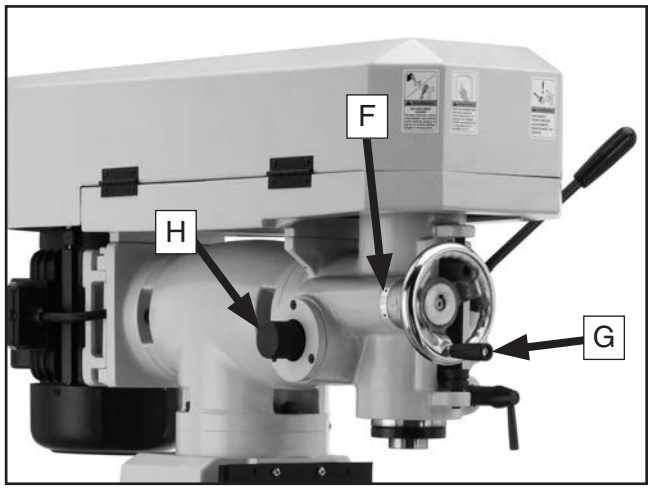


Figure 35. Downfeed controls viewed from the left side.

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

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

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

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

E. Downfeed Stop & Lock: Stops downfeed travel when the quill dog reaches this point. Set the stop at any position along the downfeed scale, then secure it in place by tightening the lock up to it.

F. Graduated Scale: Displays quill travel in 0.001" increments when the fine downfeed handwheel is used. One full revolution represents 0.080" of quill travel.

G. Fine Downfeed Handwheel: When this handwheel is enabled with the downfeed selector, it raises/lowers the quill in small increments.

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

Loading/Unloading Tooling

This mill is equipped with a 7/16"-20 drawbar (see **Figure 36**). Use the drawbar to secure/remove tooling during loading/unloading.

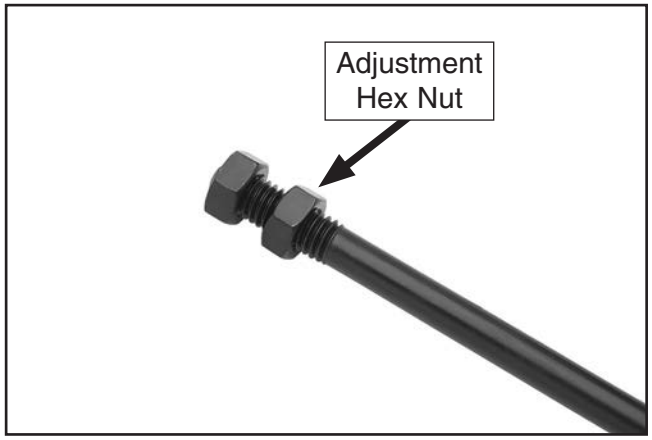


Figure 36. Drawbar and adjustment nut.

Tools Needed	Qty
Wrench 19mm	2

Loading Tooling

1. DISCONNECT THE MILL FROM POWER!

2. Clean any debris or oily substances from the mating surfaces of the spindle and tool tapers.

⚠CAUTION

Cutting tools are sharp and can easily cut your hands. Always protect your hands when handling cutting tools.

3. Open the V-belt cover and rotate the adjustment hex nut to the top of the drawbar to extend the drawbar fully within the spindle (see **Figure 37**).

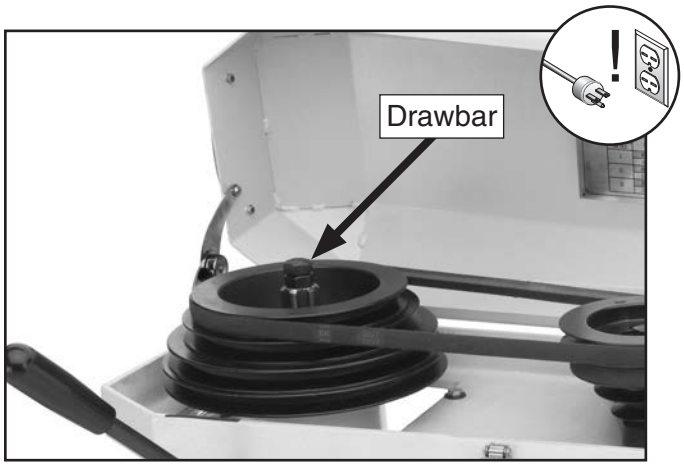


Figure 37. Drawbar inserted through the top of the spindle.

4. Align the tooling key way with the quill set screw while pushing the tool firmly into the spindle taper to seat it.

5. While holding the tool in place with one hand, thread the drawbar into the tool and hand tighten.

6. To fully seat the tool into the spindle, use the wrenches to tighten the drawbar adjustment hex nut down to draw the tool up until it is snug.

   Note: *Over-tightening the drawbar could make removing the tool difficult.*

Unloading Tooling

1. DISCONNECT THE MILL FROM POWER!

2. Keep one hand on the tool, loosen the adjustment hex nut, then completely unthread the drawbar.

   —If the tool does not release from the spindle as the drawbar is unthreaded, turn the drawbar back into the tool one or two threads, then tap the top of the drawbar with a dead-blow hammer or rubber mallet until the tool releases.

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.

T10063—Milling Vise 12 5/16" x 6 9/16"
T10064—Milling Vise 17 1/8" x 8 3/4"

- Ultra precise in flatness, parallelism and verticality.
- Anti-lift mechanism ensures the workpiece does not lift when jaws are tightened.
- Ductile iron body.
- Flame hardened vise bed and jaws.
- Sealed bearing system.
- 8200 lbs. of clamping pressure.

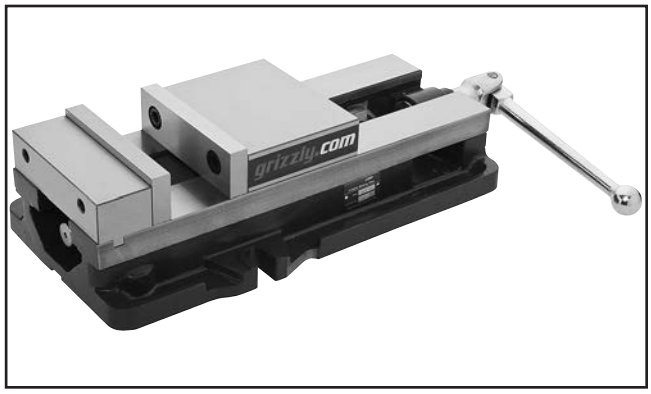


Figure 38. T10064 Milling vise (handle included, but not shown.

G1075—52-PC. Clamping Kit
This clamping kit includes 24 studs, 6 step block pairs, 6 T-nuts, 6 flange nuts, 4 coupling nuts, and 6 end hold-downs. The rack is slotted so it can be mounted close to the machine for easy access. Made for ½" T-slots.

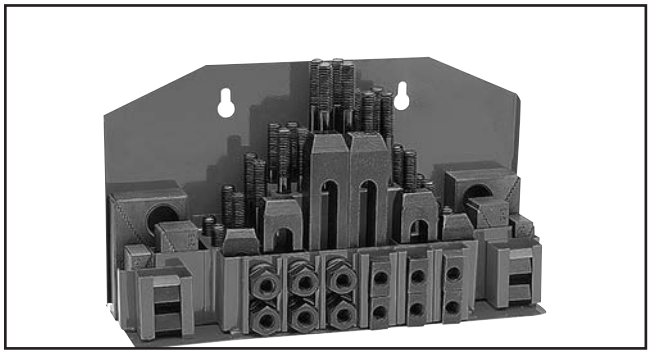
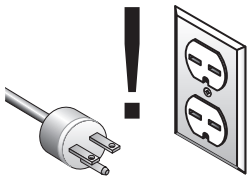


Figure 39. G1075 52-PC. Clamping Kit.

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

Figure 40. Eye protection assortment.

SECTION 6: MAINTENANCE



⚠WARNING

Always disconnect power to the machine before performing maintenance. Failure to do this may result in serious personal injury.

Schedule

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

Before Daily Operation:
- Check/tighten loose mounting bolts.
- Check/sharpen/replace worn or damaged tooling.
- Check/repair/replace worn or damaged wires.
- Check for any other unsafe condition.
- Use the one-shot oiler (**Page 32**).

Every 8 Hours of Operation:
- Use the one-shot oiler (**Page 32**).
- Add oil to the spindle lubrication cup (**Page 32**).
- Clean the mill.

Every 40 Hours of Operation:
- Lubricate the vertical bevel gears (**Page 32**).
- Lubricate the longitudinal, cross, and vertical leadscrews (**Page 33**).

Note: *This maintenance schedule is based on average usage. Adjust the maintenance schedule to match your actual usage to keep this mill running smoothly and to protect your investment.*

Cleaning & Protecting

Use a brush and shop vacuum to remove chips and debris from the mill. Never blow off the mill with compressed air, as this will force metal chips deep into the mechanisms and may injure yourself or bystanders.

Wipe built-up grime from the mill with a rag and a mild solvent. Remove any rust from the unpainted cast iron surfaces of this mill, then treat them with regular applications of products such as Primrose Armor Plate Way Oil, G96® Gun Treatment, SLIPIT®, or Boeshield® T-9 (see Grizzly Catalog for more details).

Lubrication

This mill has numerous moving metal-to-metal contacts that require proper lubrication to help ensure efficient and long-lasting mill operation.

NOTICE

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

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

Before adding lubricant, clean debris and grime from the devices to avoid contaminating the new lubrication.

DISCONNECT THE MILL FROM POWER BEFORE PERFORMING LUBRICATION!

One-Shot Oiler

Lubricant	Frequency	Qty
ISO 68 Lubricant or Equivalent	Every 8 Hours of Operation	1 Pump

The oil lines running from the one-shot oiler feed lubrication to the ways of the column (knee), saddle, and table.

Use the sight glass on the front of the oiler to make sure it is full, then pull the handle (see **Figure 41**) and release it to send the lubricant through the lines.

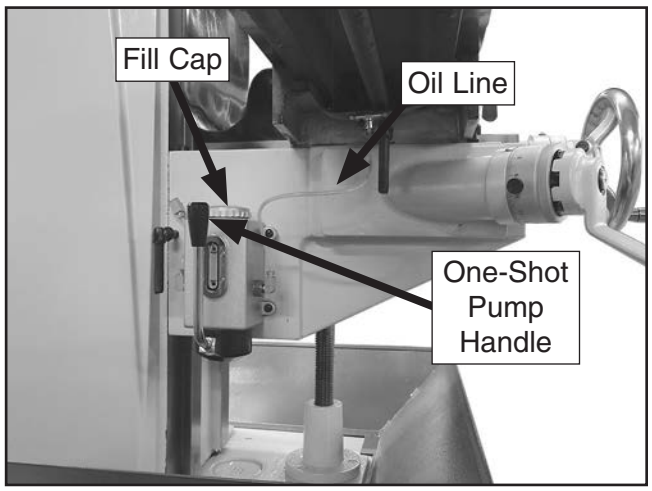


Figure 41. One-shot oiler.

Quill Gearing

Lubricant	Frequency	Qty
ISO 68 Lubricant or Equivalent	Every 8 Hours of Operation	5 Drops

Lift the cap of the oil cup shown in **Figure 42** to add the lubricant.

Figure 42. Quill gearing oil cup.

Vertical Bevel Gears

Lubricant	Frequency	Qty
NLGI #2 Grease	Every 40 Hours of Operation	Thin Coat

Raise the knee up to access the vertical bevel gears underneath the saddle, then using a lightly oiled shop rag or stiff brush, clean and lubricate the bevel gears shown in **Figure 43**.

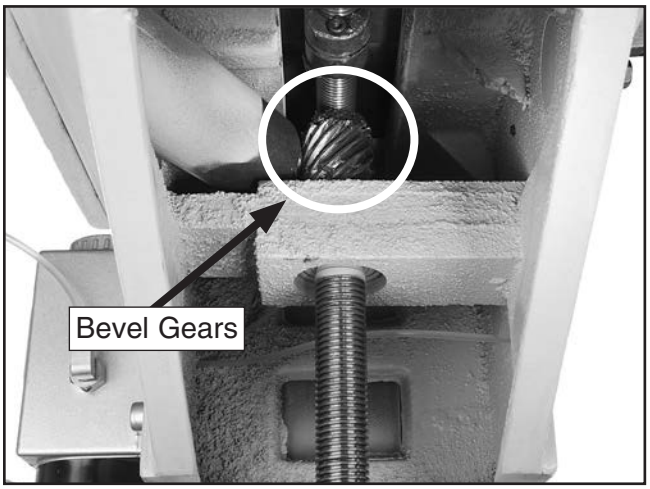


Figure 43. Vertical bevel gears.

Leadscrews

Lubricant	Frequency	Qty
NLGI #2 Grease	Every 40 Hours of Operation	Thin Coat

Use a shop rag, stiff brush, and mineral spirits to clean away debris and grime from the longitudinal, cross, and elevation leadscrews and leadscrew nuts. Apply a thin coat of lubricant to the leadscrews, then move the table through the full range of movement for each leadscrew to distribute the grease (see **Figures 44–45**).

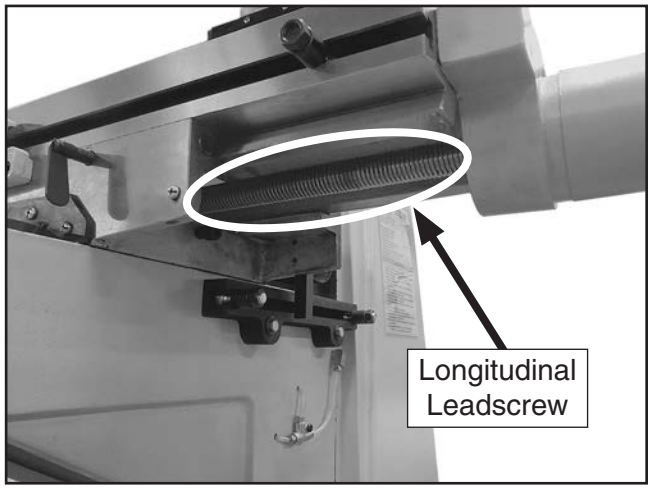


Figure 44. Longitudinal leadscrew.

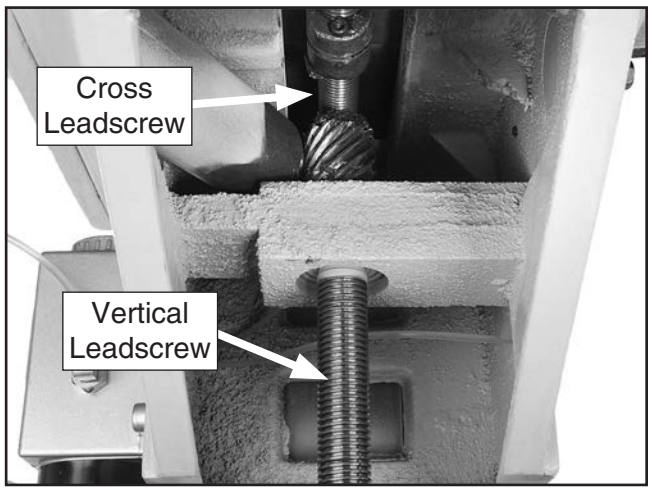


Figure 45. Cross and vertical leadscrews.

V-Belt Tensioning

Power is transferred from the motor to the spindle with a V-belt. With normal use, this belt will gradually stretch over time. When it does, perform the following procedures to re-tension it.

Tools Needed	Qty
Wrench 24mm	2

To tension the V-belt:

1. DISCONNECT THE MILL FROM POWER!

2. Lift the V-belt cover, then loosen the adjustment bolt jam nut near the motor (see **Figure 46**).

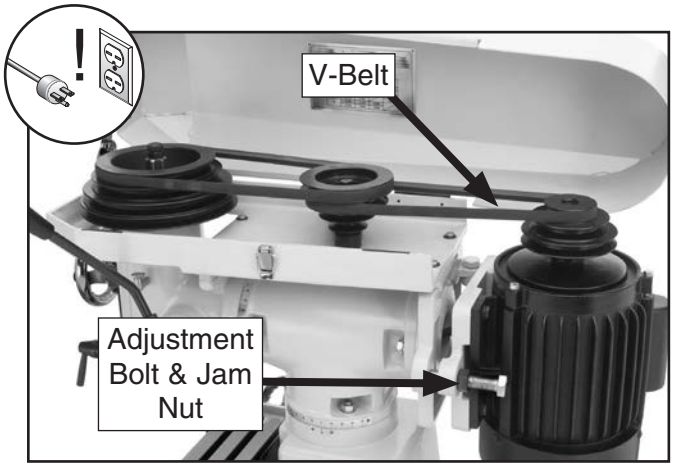


Figure 46. V-belt tension adjustment bolt.

3. The V-belts tighten uniformly because of the idler pulley. Rotate the adjustment bolt until the V-belt has approximately ⅛" of deflection when moderate pressure is applied midway between the pulleys (see **Figure 47**), then re-tighten the jam nut and close the V-belt cover.

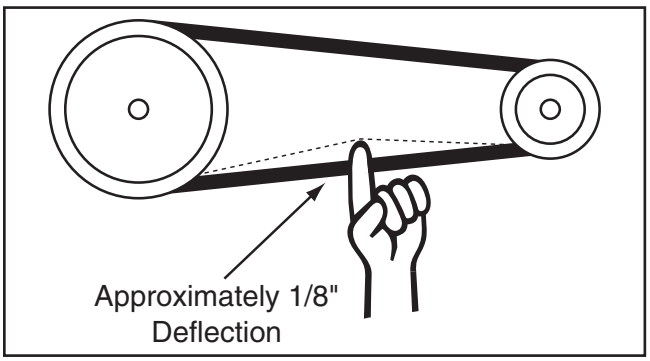


Figure 47. Checking for belt deflection.

SECTION 7: SERVICE

Review the troubleshooting and 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 at (570) 546-9663.
Note: *Please gather the serial number and manufacture date of your machine before calling.*

Troubleshooting

Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start or a breaker trips.	1. Spindle direction switch is at fault. 2. Plug/receptacle is at fault or wired incorrectly. 3. Power supply is switched ***OFF*** or is at fault. 4. Motor connection wired incorrectly. 5. Motor windings or motor is at fault.	1. Replace faulty spindle direction switch. 2. Test for good contacts; correct the wiring. 3. Ensure hot lines have correct voltage on all legs and main power supply is switched ***ON***. 4. Correct motor wiring connections (**Page 38**). 5. Replace motor.
Machine stalls or is overloaded.	1. Machine is undersized for the task. 2. Motor connection is wired incorrectly. 3. Plug/receptacle is at fault. 4. Pulley/sprocket slipping on shaft. 5. Motor bearings are at fault. 6. Motor has overheated. 7. Motor is at fault.	1. Use smaller sharp tooling; reduce the feed rate; reduce the spindle RPM; use coolant. 2. Correct motor wiring connections (**Page 38**). 3. Test for good contacts; correct the wiring. 4. Replace loose pulley/shaft. 5. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement. 6. Clean off motor, let cool, and reduce workload. 7. Test and repair or replace.
Machine has vibration or noisy operation.	1. Tool holder or cutter is at fault. 2. Motor or component is loose. 3. Pulley is loose. 4. Machine is incorrectly mounted or sits unevenly. 5. Motor fan is rubbing on fan cover. 6. Motor bearings are at fault.	1. Replace out-of-round tool holder; replace/resharpen cutter; use appropriate feed rate and cutting RPM. 2. Inspect/replace stripped or damaged bolts/nuts, and re-tighten with thread locking fluid. 3. Realign/replace shaft, pulley, setscrew, and key as required. 4. Tighten/replace mounting bolts in floor; relocate/shim machine. 5. Replace dented fan cover or fan. 6. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.

Operation

Symptom	Possible Cause	Possible Solution
Tool slips in collet.	1. Collet is not fully drawn into spindle taper. 2. Wrong size collet. 3. Debris on collet or spindle mating surface. 4. Excessive depth of cut.	1. Snug up drawbar. 2. Use correct collet for shank diameter. 3. Remove oil and debris from collet and spindle mating surfaces, then re-install. 4. Decrease depth of cut and allow chips to clear.
Breaking tooling.	1. Spindle speed/feed rate too fast. 2. Tooling getting too hot. 3. Excessive depth of cut.	1. Use correct spindle RPM and feed rate (**Page 27**). 2. Use coolant; reduce spindle RPM/feed rate. 3. Decrease depth of cut and allow chips to clear.
Machine is loud when cutting; overheats or bogs down in the cut.	1. Excessive depth of cut. 2. Dull tooling. 3. Feed rate too fast.	1. Decrease depth of cut and allow chips to clear. 2. Use sharp tooling. 3. Decrease feed rate.
Workpiece vibrates or chatters during operation.	1. Locks not tight. 2. Workpiece not securely clamped to table or mill vise. 3. Tooling not secure or is damaged. 4. Spindle speed/feed rate too fast. 5. Gibs are too loose.	1. Tighten all locks on mill that are not associated with movement for the operation. 2. Check that clamping is tight and sufficient for the operation; make sure mill vise is tight to table. 3. Secure tooling; replace if damaged. 4. Use correct spindle RPM and feed rate (**Page 27**). 5. Adjust gibs properly (**Page 36**).
Table hard to move.	1. Locks are tightened down. 2. Chips have loaded up on the ways. 3. Ways are dry and in need of lubrication. 4. Gibs are too tight.	1. Fully loosen locks needed for movement. 2. Frequently clean away chips that load up during operations. 3. Use one-shot oiler to lubricate ways (**Page 32**). 4. Adjust gibs properly (**Page 36**).
Bad surface finish.	1. Wrong spindle speed/feed rate. 2. Dull/damaged tooling; wrong tooling for operation. 3. Wrong spindle rotation for tooling. 4. Workpiece not securely clamped to table or mill vise. 5. Gibs are too loose.	1. Use correct spindle RPM and feed rate (**Page 27**). 2. Sharpen/replace tooling; use correct tooling for operation. 3. Check for proper spindle rotation for tooling. 4. Check that clamping is tight and sufficient for the operation; make sure mill vise is tight to table. 5. Adjust gibs properly (**Page 36**).

Adjusting Gibs

Gibs control the accuracy of table movement along the ways. Tight gibs make the movement more accurate, but harder to move. Loose gibs make the movement sloppy, but easier to move. The goal of gib adjustment is to remove unnecessary sloppiness without causing the ways to bind.

NOTICE

Excessively loose gibs may cause poor workpiece finishes, and may cause undue wear of sliding surfaces and ways. Overtightening the gibs may cause premature wear of these sliding devices.

Each sliding surface for the table, saddle, and knee has a tapered gib that is sandwiched between the stationary and moving surfaces. The saddle and knee have a gib on both sides. There are two adjustment screws, one on each end of each gib, that move the tapered gib back and forth, increasing or decreasing friction of the sliding surfaces.

DISCONNECT THE MILL FROM POWER BEFORE ADJUSTING THE GIBS!

To adjust the gibs, loosen one adjustment screw and tighten the other the same amount to move the gib until you feel a slight drag in that path of movement.

Refer to **Figures 48–50** for the locations of the table, saddle, and knee gib adjustment screws.

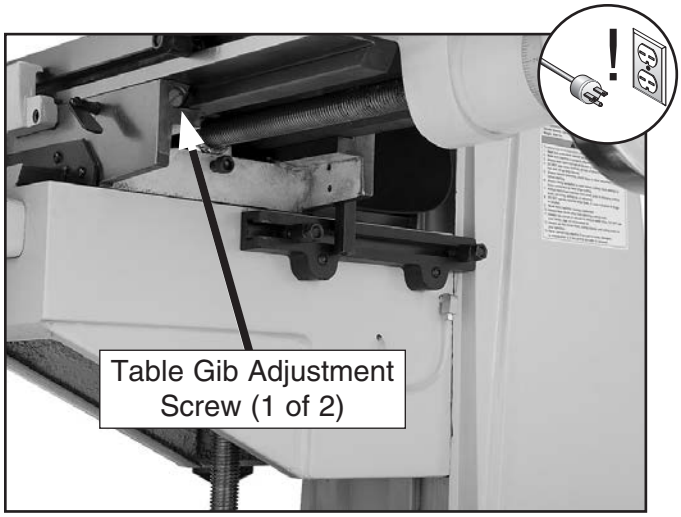


Figure 48. Table gib adjustment screw (1 of 2).

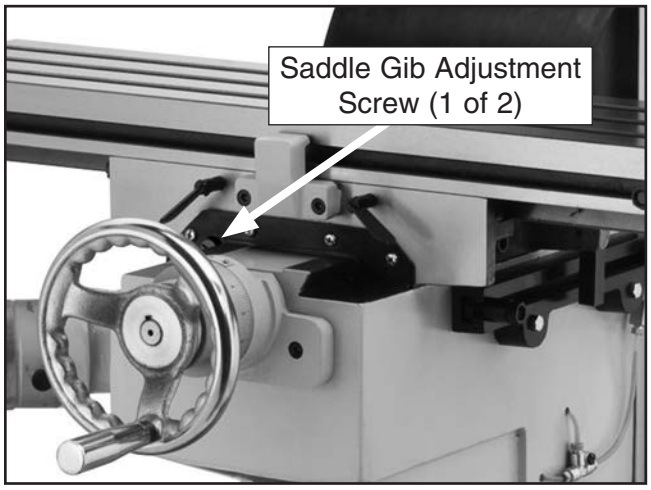


Figure 49. Saddle gib adjustment screw (1 of 2).

Figure 50. Knee gib adjustment screw (1 of 2).

Adjusting Backlash

Leadscrew backlash is the amount of motion the leadscrew rotates before the device begins to move. Leadscrews always have a certain amount of backlash which increases with wear. Generally, 0.005"–0.010" of backlash is an acceptable range.

The backlash of the longitudinal and cross leadscrew is adjusted by changing the gap in the leadscrew nuts (see **Figures 51–52**).

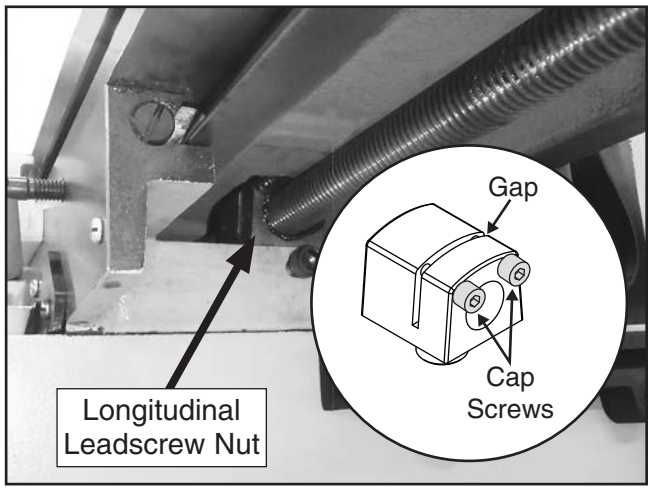


Figure 51. Longitudinal leadscrew nut.

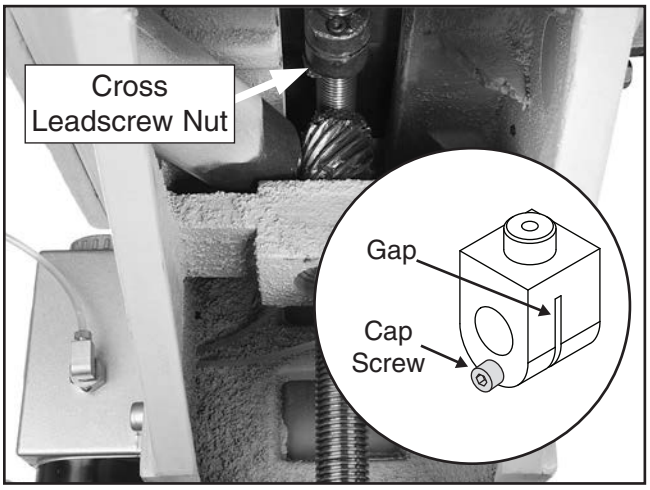


Figure 52. Cross leadscrew nut.

Use a 5mm hex wrench to tighten or loosen the cap screws on the leadscrew nuts shown in **Figures 51–52**, then test the amount of backlash by slowly rocking the handwheels back-and-forth.

SECTION 8: WIRING

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

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

⚠WARNING
Wiring Safety Instructions

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

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

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

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

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

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

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

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

NOTICE

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

COLOR KEY

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

G0728 & G0729 Wiring Diagram

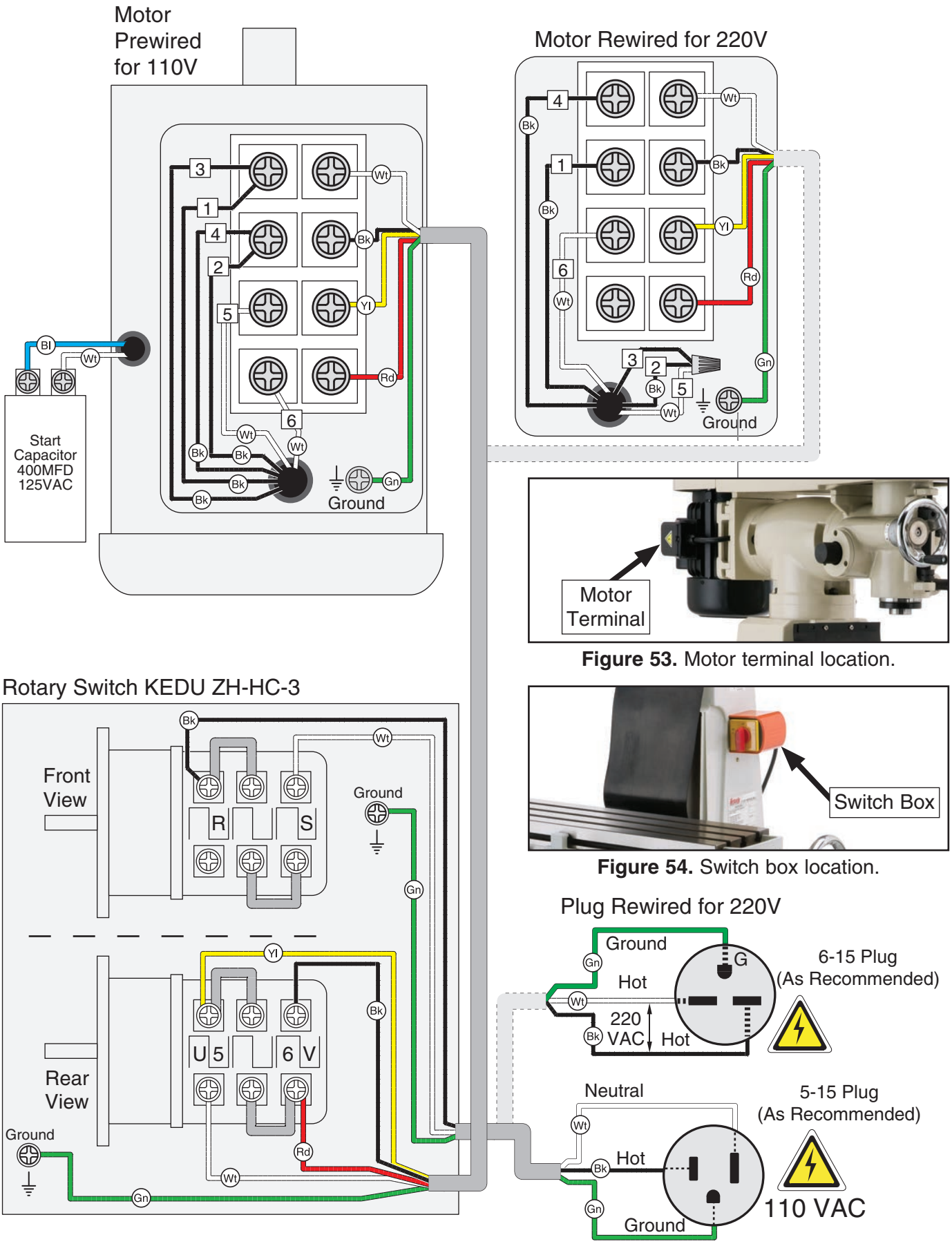
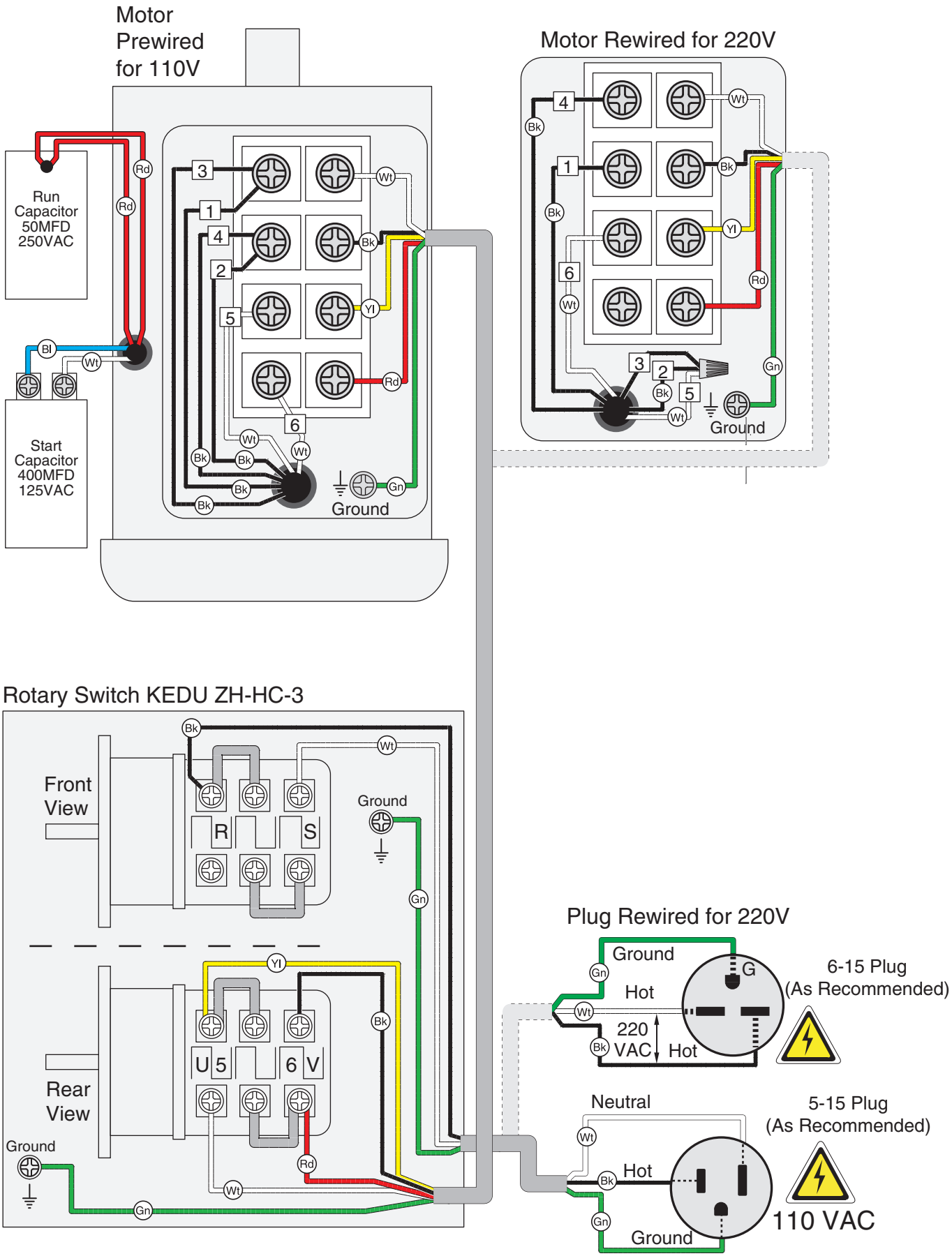


Figure 53. Motor terminal location.

Figure 54. Switch box location.

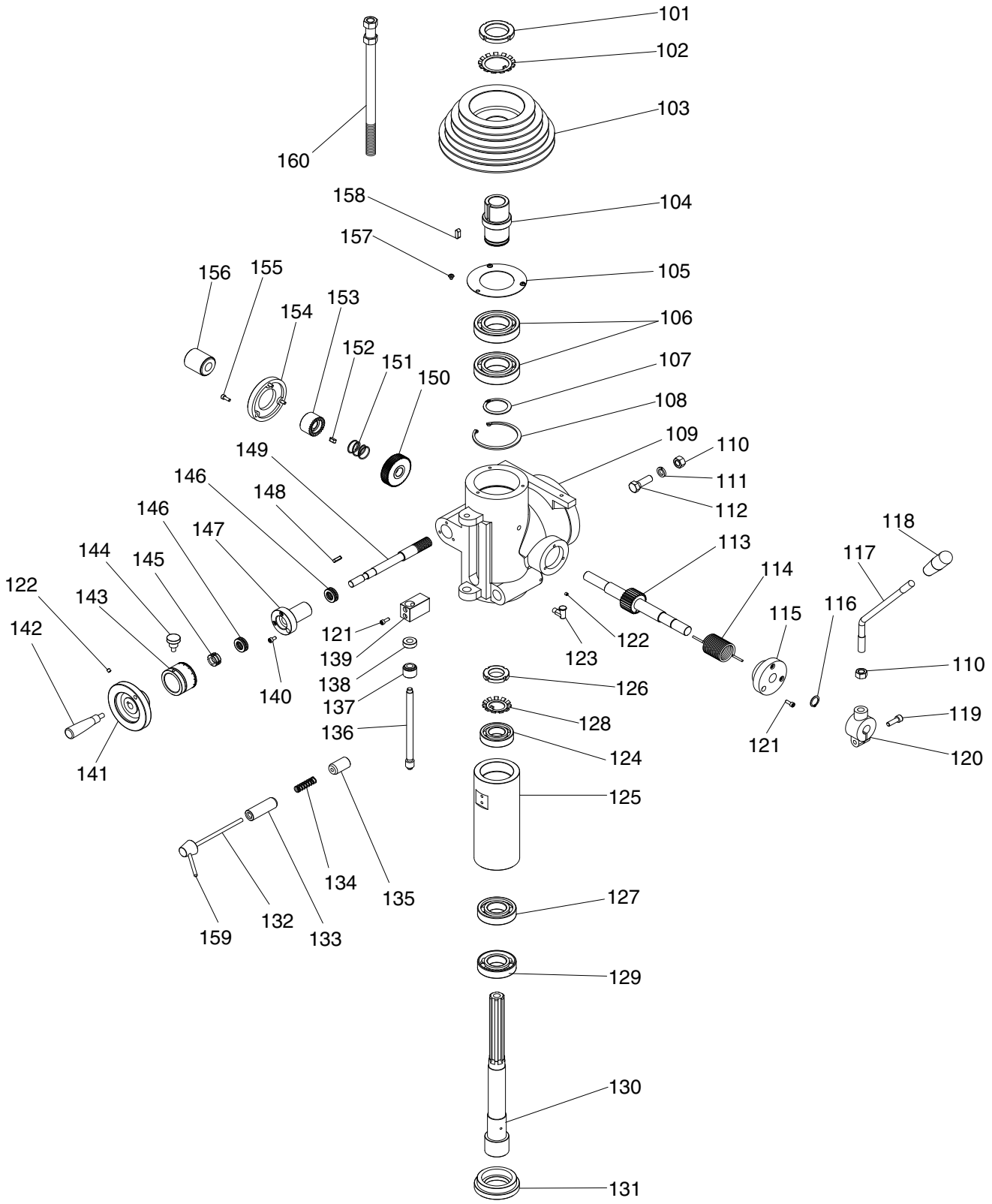
G0730 & G0731 Wiring Diagram



STOP ***READ ELECTRICAL SAFETY ON PAGE 38!***

SECTION 9: PARTS

G0728 & G0729 Head

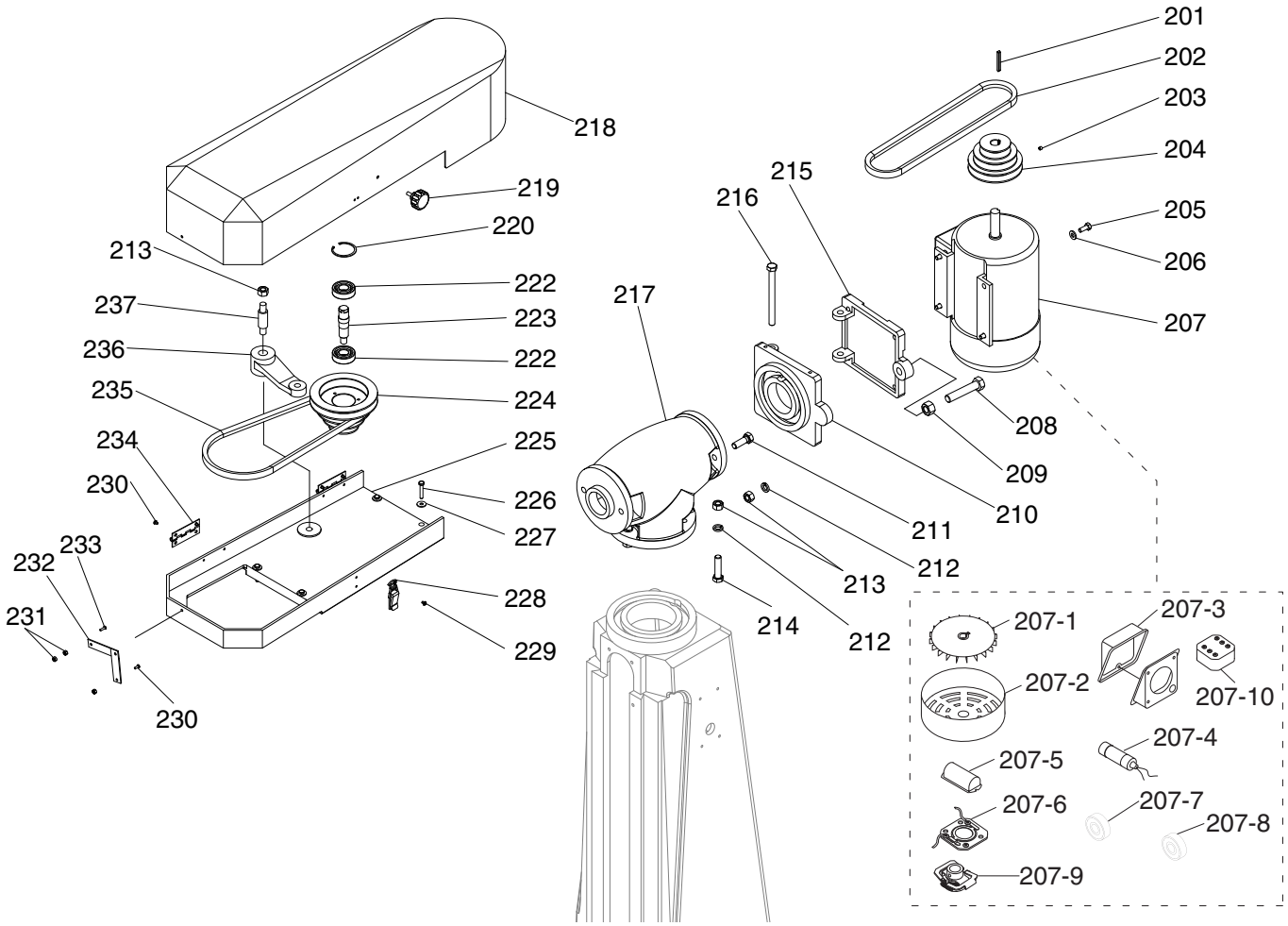


G0728 & G0729 Head Parts List

REF	PART #	DESCRIPTION
101	P0728101	SPINDLE NUT
102	P0728102	SHAFT LOCK WASHER
103	P0728103	SPINDLE PULLEY
104	P0728104	SPLINE SLEEVE
105	P0728105	BEARING COVER
106	P0728106	BALL BEARING 6009ZZ
107	P0728107	EXT RETAINING RING 45MM
108	P0728108	INT RETAINING RING 75MM
109	P0728109	HEAD CASTING
110	P0728110	HEX NUT 1/2-13
111	P0728111	LOCK WASHER 1/2
112	P0728112	HEX BOLT 1/2 -13 X 1/2
113	P0728113	GEAR SHAFT
114	P0728114	TORSION SPRING
115	P0728115	END CAP
116	P0728116	EXT RETAINING RING 19MM
117	P0728117	HANDLE LEVER
118	P0728118	KNOB 1/2-13
119	P0728119	CAP SCREW M8-1.25 X 20
120	P0728120	HANDLE BASE
121	P0728121	CAP SCREW M5-.8 X 16
122	P0728122	SET SCREW M6-1 X 8
123	P0728123	OIL CUP
124	P0728124	BALL BEARING 6206ZZ
125	P0728125	SPINDLE QUILL
126	P0728126	SPANNER NUT 30MM
127	P0728127	BALL BEARING 6007ZZ
128	P0728128	SHAFT LOCK WASHER 30MM
129	P0728129	ANG CONTACT BEARING 7207
130	P0728130	SPINDLE

REF	PART #	DESCRIPTION
131	P0728131	SPINDLE NUT
132	P0728132	LOCK KNOB SHAFT
133	P0728133	LOCK BLOCK SLEEVE
134	P0728134	COMPRESSION SPRING
135	P0728135	LOCK PLUNGER SMALL
136	P0728136	LIMIT BLOCK SCREW
137	P0728137	DOWNFEED LOCK RING
138	P0728138	DOWNFEED STOP RING
139	P0728139	QUILL DOG
140	P0728140	PHLP HD SCR M5-.8 X 15
141	P0728141	HANDWHEEL
142	P0728142	HANDLE 5/16-18 X 1/2
143	P0728143	GRADUATED DIAL
144	P0728144	LOCKING THUMB SCREW 5-.8 X 12
145	P0728145	SPANNER NUT 9/16-12
146	P0728146	THRUST BEARING 51102
147	P0728147	SLEEVE
148	P0728148	WOODRUFF KEY 5 X 20
149	P0728149	WORM SHAFT
150	P0728150	COUPLING WORM GEAR
151	P0728151	COMPRESSION SPRING
152	P0728152	WOODRUFF KEY 6 X 15
153	P0728153	COUPLING
154	P0728154	END CAP
155	P0728155	PHLP HD SCR M5-.8 X 10
156	P0728156	KNURLED KNOB
157	P0728157	PHLP HD SCR M5-.8 X 8
158	P0728158	KEY 7 X 7 X 20
159	P0728159	LOCK HANDLE
160	P0728160	DRAWBAR 7/16-20 X 12 W/NUT

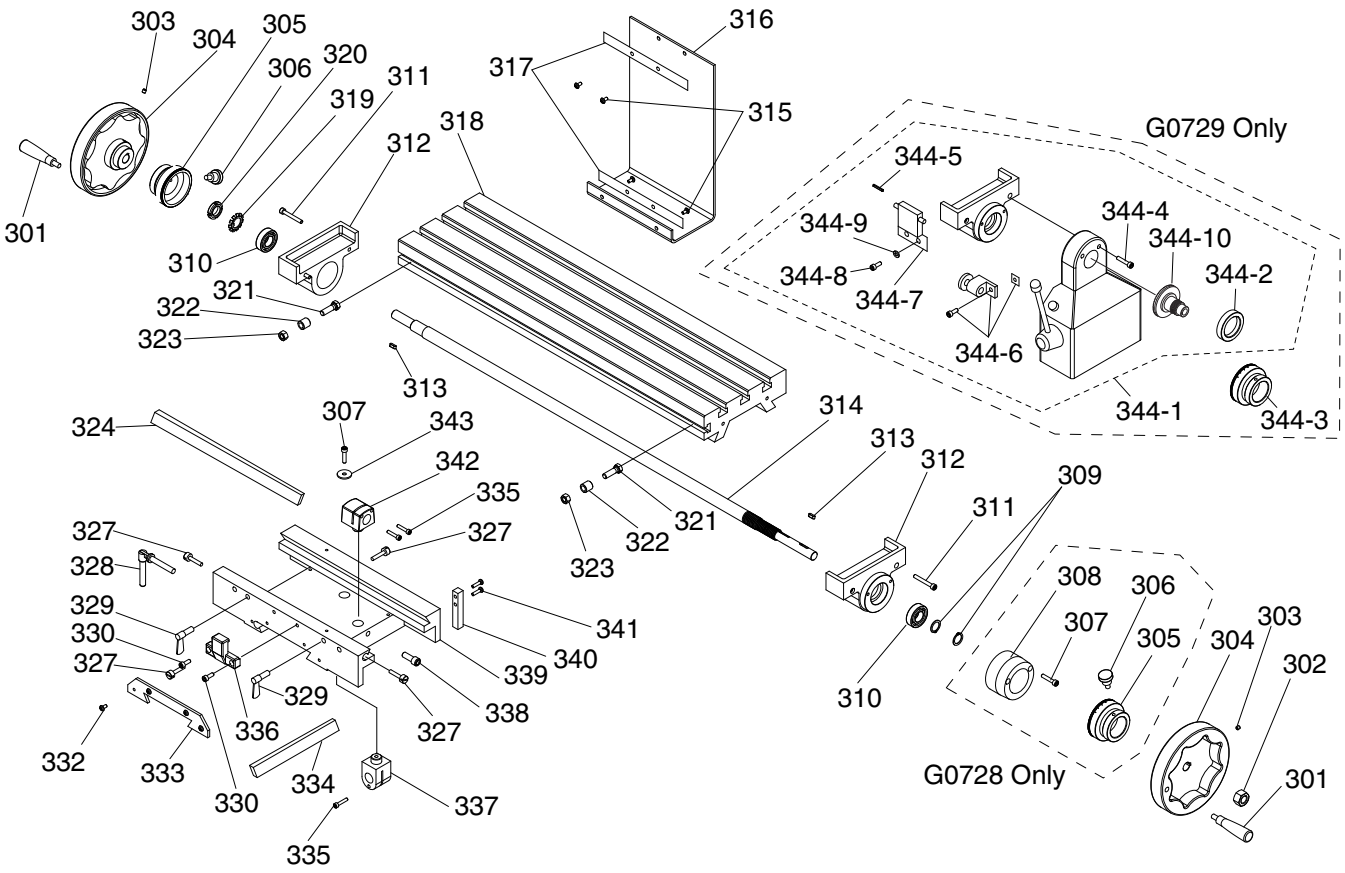
G0728 & G0729 Drive System



REF	PART #	DESCRIPTION
201	P0728201	KEY 5 X 40
202	P0728202	V-BELT A32
203	P0728203	SET SCREW M6-1 X 8
204	P0728204	MOTOR PULLEY
205	P0728205	CAP SCREW M8-1.25 X 20
206	P0728206	FLAT WASHER 8MM
207	P0728207	MOTOR 1-1/2HP 1PH 110V/220V
207-1	P0728207-1	MOTOR FAN
207-2	P0728207-2	MOTOR FAN COVER
207-3	P0728207-3	JUNCTION BOX
207-4	P0728207-4	START CAPACITOR
207-5	P0728207-5	CAPACITOR COVER
207-6	P0728207-6	CONTACT PLATE
207-7	P0728207-7	BALL BEARING 6205ZZ
207-8	P0728207-8	BALL BEARING 6203ZZ
207-9	P0728207-9	CENTRIFUGAL SWITCH 1725RPM
207-10	P0728207-10	TERMINAL BAR 3P
208	P0728208	HEX BOLT M16-2 X 75
209	P0728209	HEX NUT M16-2
210	P0728210	BRACKET
211	P0728211	HEX BOLT 1/2-13 X 1-1/2
212	P0728212	LOCK WASHER 1/2
213	P0728213	HEX NUT 1/2-12

REF	PART #	DESCRIPTION
214	P0728214	HEX BOLT 1/2-13 X 1-3/4
215	P0728215	MOUNTING PLATE
216	P0728216	BRACKET PIVOT PIN
217	P0728217	VERTICAL HEAD ADAPTER
218	P0728218	UPPER BELT COVER
219	P0728219	KNOB 3/8-16 X 1/2
220	P0728220	INT RETAINING RING 35MM
222	P0728222	BALL BEARING 6202ZZ
223	P0728223	PULLEY PIVOT PIN
224	P0728224	PULLEY IDLER
225	P0728225	LOWER BELT COVER
226	P0728226	HEX BOLT M6-1 X 35
227	P0728227	FLAT WASHER 6MM
228	P0728228	LATCH
229	P0728229	PHLP HD SCR M3-.5 X 8
230	P0728230	PHLP HD SCR M5-.8 X 8
231	P0728231	HEX NUT 1/2-13
232	P0728232	COVER SUPPORTING ARM
233	P0728233	PHLP HD SCR M5-.8 X 10
234	P0728234	COVER HINGE
235	P0728235	V-BELT A35
236	P0728236	PULLEY SWIVEL
237	P0728237	PULLEY SWIVEL PIN

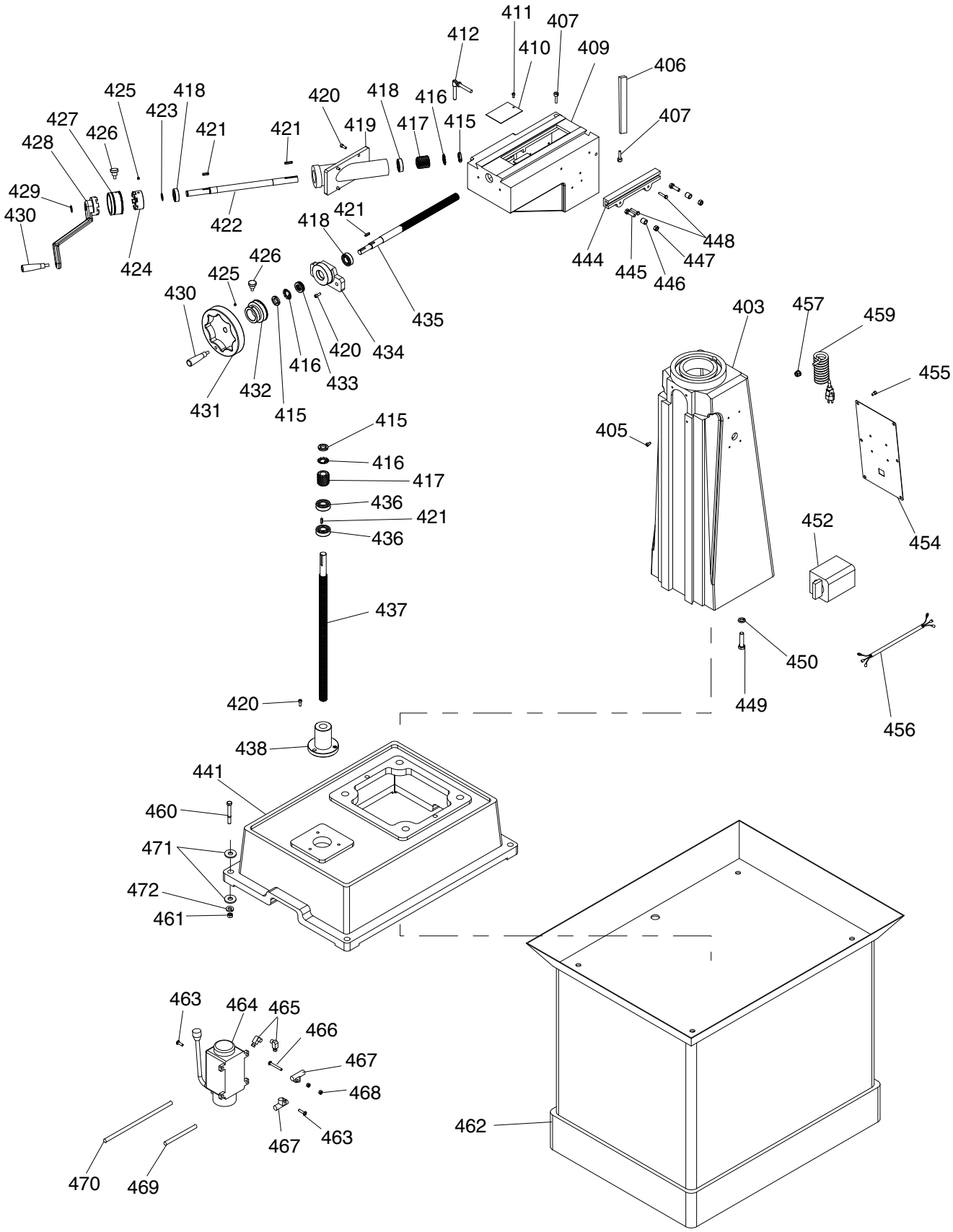
G0728 & G0729 Table & Saddle



REF	PART #	DESCRIPTION
301	P0728301	HANDLE 3/8-16 X 1/2
302	P0728302	HEX NUT 5/8-11
303	P0728303	SET SCREW M6-1 X 8
304	P0728304	HANDWHEEL
305	P0728305	GRADUATED DIAL
306	P0728306	LOCKING THUMB SCREW 5-.8 X 12
307	P0728307	CAP SCREW M6-1 X 25
308	P0728308	SPACER
309	P0728309	EXT RETAINING RING 20MM
310	P0728310	BALL BEARING 6004ZZ
311	P0728311	CAP SCREW M6-1 X 45
312	P0728312	LEADSCREW BRACKET
313	P0728313	WOODRUFF KEY 5 X 20
314	P0728314	LONGITUDINAL LEADSCREW
315	P0728315	PHLP HD SCR M6-1 X 8
316	P0728316	WAY COVER
317	P0728317	WAY COVER HOLDER
318	P0728318	TABLE
319	P0728319	SPANNER NUT WASHER
320	P0728320	SPANNER NUT
321	P0728321	HEX BOLT M10-1.5 X 30
322	P0728322	ADJUSTING SCREW SLEEVE
323	P0728323	HEX NUT M10-1.5
324	P0728324	TABLE GIB
327	P0728327	GIB ADJUSTING SCREW

REF	PART #	DESCRIPTION
328	P0728328	LOCK LEVER
329	P0728329	TABLE LOCKING LEVER
330	P0728330	CAP SCREW M6-1 X 16
332	P0728332	PHLP HD SCR M5-.8 X 10
333	P0728333	WAY WIPER
334	P0728334	SADDLE GIB
335	P0728335	CAP SCREW M5-.8 X 25
336	P0728336	LIMIT SEAT
337	P0728337	CROSS LEADSCREW NUT
338	P0728338	CAP SCREW M8-1.25 X 25
339	P0728339	SADDLE
340	P0728340	STOP BLOCK
341	P0728341	PHLP HD SCR M5-.8 X 20
342	P0728342	LONGITUDINAL NUT
343	P0728343	FLAT WASHER 6MM
344-1	P0729344-1	POWER FEED ASSEMBLY
344-2	P0729344-2	RETAINING COLLAR
344-3	P0729344-3	GRADUATED DIAL
344-4	P0729344-4	CAP SCREW M6-1 X 25
344-5	P0729344-5	WOODRUFF KEY 3 X 30
344-6	P0729344-6	STOP W/ PLUNGER ASSY
344-7	P0729344-7	AUTO STOP SWITCH
344-8	P0729344-8	PHLP HD SCR M6-1 X 16
344-9	P0729344-9	FLAT WASHER 6MM
344-10	P0729344-10	POWER FEED ADAPTER GEAR

G0728 & G0729 Knee & Base

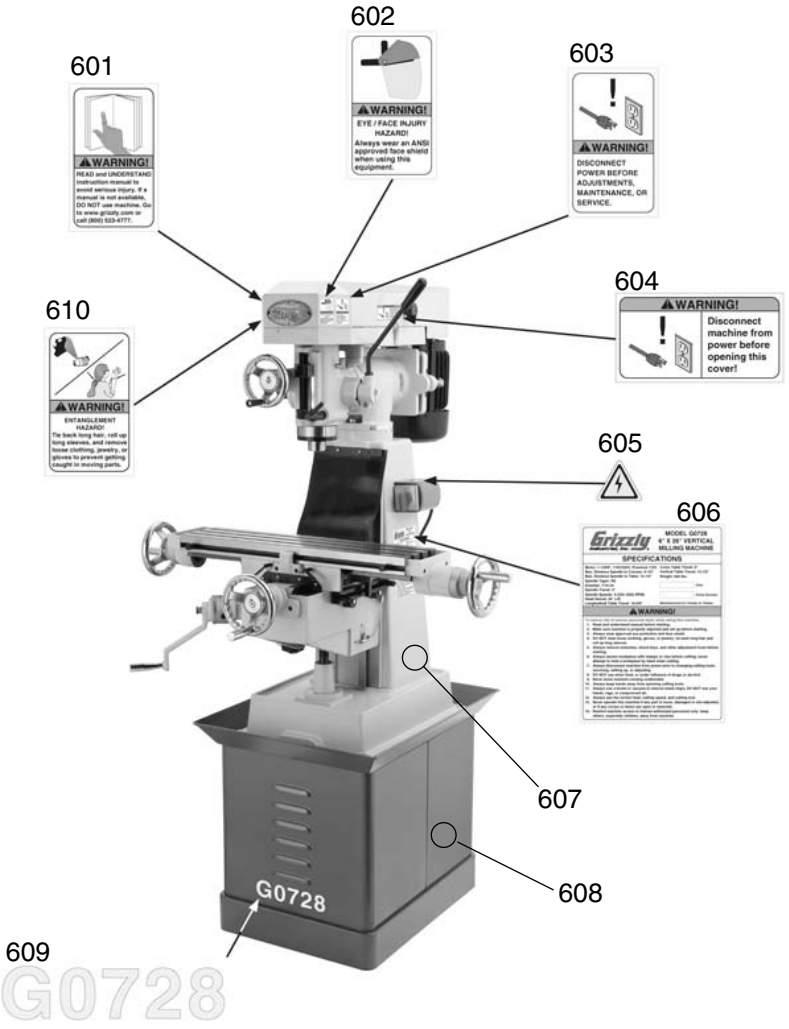


G0728 & G0729 Knee & Base Parts List

REF	PART #	DESCRIPTION
403	P0728403	COLUMN
405	P0728405	CAP SCREW M6-1 X 8
406	P0728406	KNEE GIB
407	P0728407	GIB ADJUSTMENT SCREW
409	P0728409	KNEE
410	P0728410	KNEE COVER
411	P0728411	PHLP HD SCR M3-.5 X 6
412	P0728412	LOCK LEVER
415	P0728415	SPANNER NUT
416	P0728416	TAB WASHER
417	P0728417	BEVEL GEAR
418	P0728418	BALL BEARING 6004ZZ
419	P0728419	GEAR SHAFT SLEEVE
420	P0728420	CAP SCREW M6-1 X 16
421	P0728421	WOODRUFF KEY 5 X 20
422	P0728422	VERTICAL CRANK SHAFT
423	P0728423	EXT RETAINING RING 20MM
424	P0728424	CLUTCH
425	P0728425	SET SCREW M6-1 X 8
426	P0728426	LOCKING THUMB SCREW 5-.8 X 12
427	P0728427	GRADUATED DIAL
428	P0728428	CRANK HANDLE ARM
429	P0728429	EXT RETAINING RING 18MM
430	P0728430	HANDLE 3/8-16 X 1/2
431	P0728431	HANDWHEEL
432	P0728432	GRADUATED DIAL
433	P0728433	THRUST BEARING 51104
434	P0728434	BEARING HOUSING
435	P0728435	CROSS LEAD SCREW
436	P0728436	BALL BEARING 6204ZZ

REF	PART #	DESCRIPTION
437	P0728437	LEADSCREW
438	P0728438	PEDESTAL
441	P0728441	MACHINE BASE
444	P0728444	LIMIT TRACK
445	P0728445	HEX BOLT M10-1.5 X 30
446	P0728446	SLEEVE
447	P0728447	HEX NUT M10-1.5
448	P0728448	HEX BOLT M6-1 X 30
449	P0728449	HEX BOLT 1/2 -13 X 2
450	P0728450	LOCK WASHER 1/2
452	P0728452	SPINDLE SWITCH KEDU ZH-HC-3
454	P0728454	COLUMN ACCESS PANEL
455	P0728455	PHLP HD SCR M6-1 X 10
456	P0728456	MOTOR CORD 14G 5W 36"
457	P0728457	STRAIGHT LT STRAIN RELIEF 3/8 PT
459	P0728459	POWER CORD 14G 3W 72" 5-15
460	P0728460	HEX BOLT 3/8-16 X 2
461	P0728461	HEX NUT 3/8-16
462	P0728462	STAND
463	P0728463	PHLP HD SCR M5-.8 X 15
464	P0728464	ONE SHOT OILER ASSEMBLY
465	P0728465	JOINT
466	P0728466	PHLP HD SCR M5-.8 X 30
467	P0728467	LIMIT BLOCK
468	P0728468	HEX NUT M5-.8
469	P0728469	OIL TUBING 4MM X 100MM
470	P0728470	OIL TUBING 4MM X 340MM
471	P0728471	FLAT WASHER 3/8
472	P0728472	LOCK WASHER 3/8

G0728 & G0729 Machine Labels



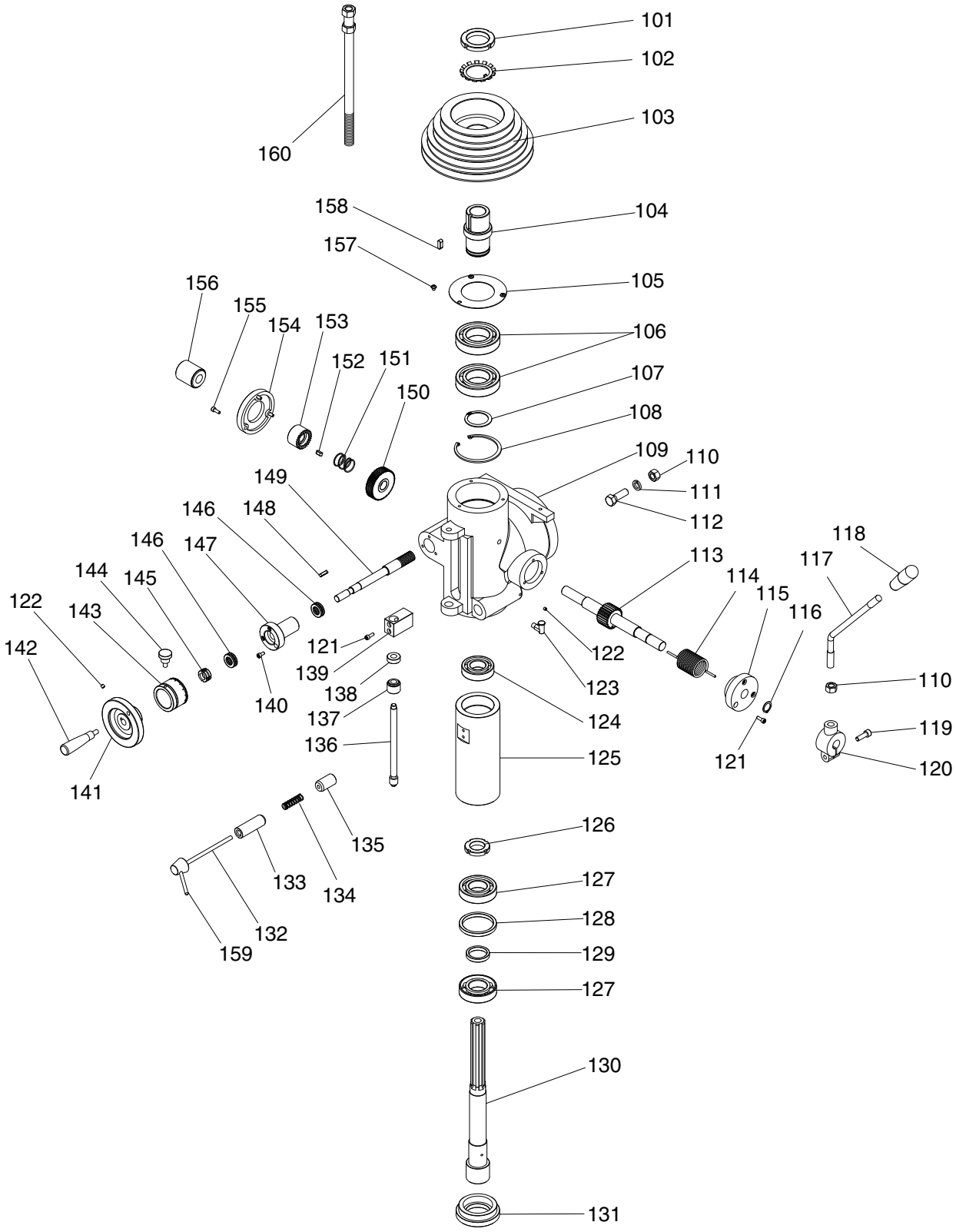
REF	PART #	DESCRIPTION
601	P0728601	READ MANUAL LABEL
602	P0728602	FACE SHIELD LABEL
603	P0728603	DISCONNECT 11OV LABEL
604	P0728604	DISCONNECT 110V LABEL
605	P0728605	ELECTRICITY LABEL
606	P0728606	MACHINE ID LABEL (G0728)

REF	PART #	DESCRIPTION
606	P0729606	MACHINE ID LABEL (G0729)
607	P0728607	GRIZZLY TOUCH UP PAINT–PUTTY
608	P0728608	GRIZZLY TOUCH UP PAINT–GREEN
609	P0728609	MODEL NUMBER G0728
609	P0729609	MODEL NUMBER G0729
610	P0728610	ENTANGLEMENT HAZARD LABEL

⚠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 to order new labels.

G0730 & G0731 Head

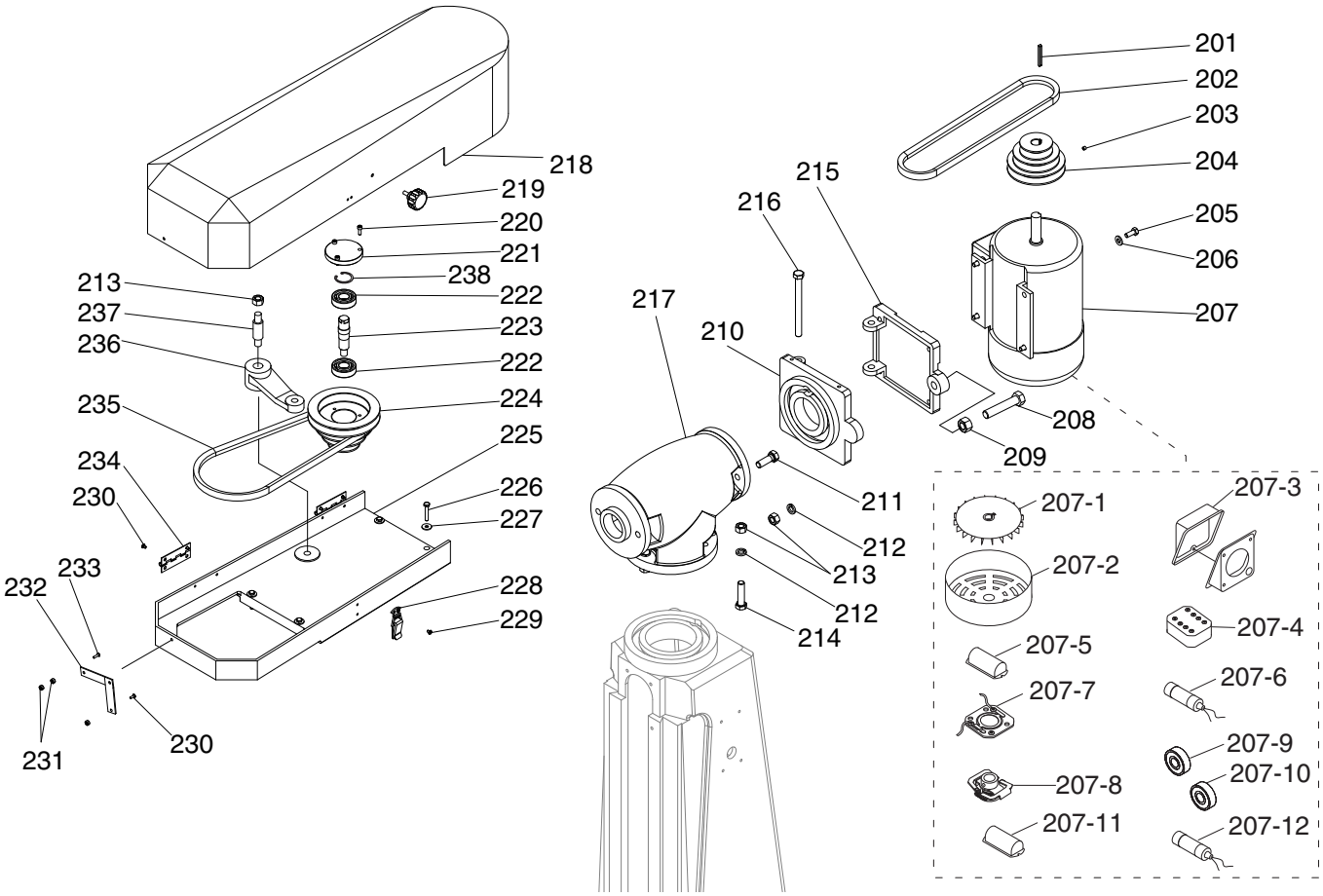


G0730 & G0731 Head Parts List

REF	PART #	DESCRIPTION
101	P0730101	SPINDLE NUT
102	P0730102	SPANNER LOCK WASHER
103	P0730103	SPINDLE PULLEY
104	P0730104	SPLINE SLEEVE
105	P0730105	BEARING COVER
106	P0730106	BALL BEARING 6209ZZ
107	P0730107	EXT RETAINING RING 45MM
108	P0730108	INT RETAINING RING 85MM
109	P0730109	HEAD CASTING
110	P0730110	HEX NUT 1/2-13
111	P0730111	LOCK WASHER 1/2
112	P0730112	HEX BOLT 1/2-13 X 1-1/2
113	P0730113	GEAR SHAFT
114	P0730114	TORSION SPRING
115	P0730115	END CAP
116	P0730116	EXT RETAINING RING 19MM
117	P0730117	HANDLE LEVER
118	P0730118	KNOB 1/2-13
119	P0730119	CAP SCREW M8-1.25 X 25
120	P0730120	HANDLE BASE
121	P0730121	CAP SCREW M5-.8 X 16
122	P0730122	SET SCREW M6-1 X 8
123	P0730123	OIL CUP
124	P0730124	BALL BEARING 6206ZZ
125	P0730125	SPINDLE QUILL
126	P0730126	SPANNER NUT 35MM
127	P0730127	ANGULAR CONTACT BEARING 7207
128	P0730128	BEARING SPACER LARGE
129	P0730129	BEARING SPACER SMALL
130	P0730130	SPINDLE

REF	PART #	DESCRIPTION
131	P0730131	SPINDLE COLLAR
132	P0730132	LOCK KNOB SHAFT
133	P0730133	LOCK BLOCK SLEEVE
134	P0730134	COMPRESSION SPRING
135	P0730135	LOCK PLUNGER SMALL
136	P0730136	LIMIT BLOCK SCREW
137	P0730137	DOWNFEED LOCK RING
138	P0730138	DOWNFEED STOP RING
139	P0730139	QUILL DOG
140	P0730140	PHLP HD SCR M5-.8 X 15
141	P0730141	HANDWHEEL
142	P0730142	HANDLE 5/16-18 X 1/2
143	P0730143	GRADUATED DIAL
144	P0730144	LOCKING THUMB SCREW 5-.8 X 12
145	P0730145	SPANNER NUT 9/16-12
146	P0730146	THRUST BEARING 51102
147	P0730147	SLEEVE
148	P0730148	WOODRUFF KEY 5 X 20
149	P0730149	WORM SHAFT
150	P0730150	COUPLING WORM GEAR
151	P0730151	COMPRESSION SPRING
152	P0730152	WOODRUFF KEY 6 X 15
153	P0730153	COUPLING
154	P0730154	END CAP
155	P0730155	PHLP HD SCR M5-.8 X 10
156	P0730156	KNURLED KNOB
157	P0730157	PHLP HD SCR M5-.8 X 8
158	P0730158	KEY 7 X 7 X 20
159	P0730159	LOCK HANDLE
160	P0730160	DRAWBAR 7/16-20 X 12 W/NUT

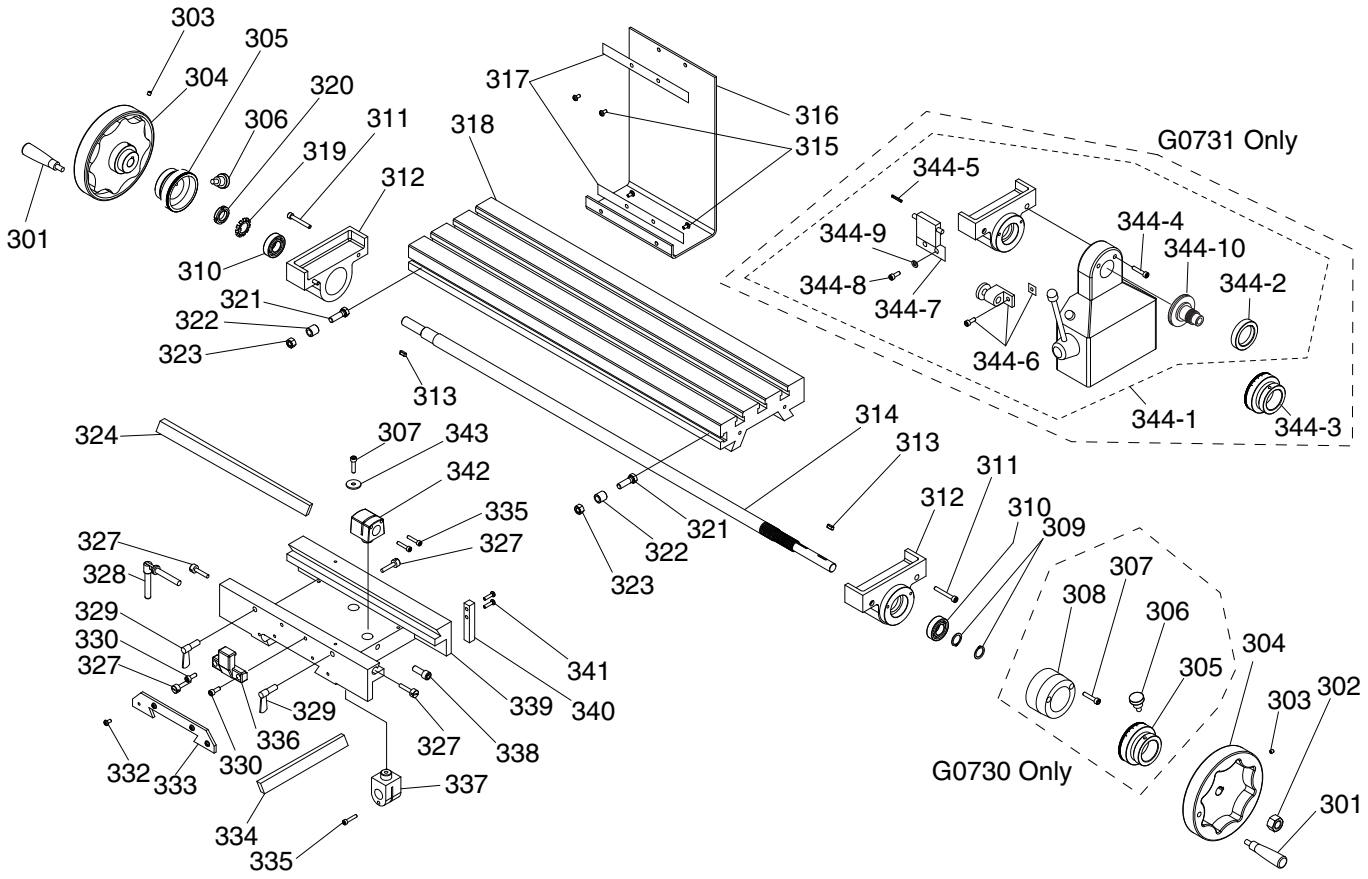
G0730 & G0731 Drive System



REF	PART #	DESCRIPTION
201	P0730201	KEY 5 X 40
202	P0730202	V-BELT B35
203	P0730203	SET SCREW M6-1 X 8
204	P0730204	MOTOR PULLEY
205	P0730205	CAP SCREW M8-1.25 X 20
206	P0730206	FLAT WASHER 8MM
207	P0730207	MOTOR 1-1/2HP 110V/220V 1-PH
207-1	P0730207-1	MOTOR FAN
207-2	P0730207-2	MOTOR FAN COVER
207-3	P0730207-3	JUNCTION BOX
207-4	P0730207-4	TERMINAL BAR 4P
207-5	P0730207-5	START CAPACITOR COVER
207-6	P0730207-6	S CAPACITOR 400M 125V 3 X 2
207-7	P0730207-7	CONTACT PLATE
207-8	P0730207-8	CENTRIFUGAL SWITCH 1725RPM
207-9	P0730207-9	BALL BEARING 6205ZZ
207-10	P0730207-10	BALLBEARING 6203ZZ
207-11	P0730207-11	RUN CAPACITOR COVER
207-12	P0730207-12	R CAPACITOR 50M 250V
208	P0730208	HEX BOLT M16-2 X 70
209	P0730209	HEX NUT M16-2
210	P0730210	MOTOR BRACKET
211	P0730211	HEX BOLT 1/2-13 X 1-1/2
212	P0730212	LOCK WASHER 1/2
213	P0730213	HEX NUT 1/2-12

REF	PART #	DESCRIPTION
214	P0730214	HEX BOLT 1/2-13 X 1-3/4
215	P0730215	MOUNTING PLATE
216	P0730216	BRACKET PIVOT PIN
217	P0730217	TURRET
218	P0730218	UPPER BELT COVER
219	P0730219	KNOB 3/8-16 X 1/2
220	P0730220	CAP SCREW M5-.8 X 20
221	P0730221	FLANGE COVER
222	P0730222	BALL BEARING 6204ZZ
223	P0730223	PULLEY PIVOT STRD
224	P0730224	PULLEY
225	P0730225	LOWER BELT COVER
226	P0730226	HEX BOLT M6-1 X 35
227	P0730227	FLAT WASHER 6MM
228	P0730228	LATCH
229	P0730229	PHLP HD SCR M3-.5 X 8
230	P0730230	PHLP HD SCR M5-.8 X 8
231	P0730231	HEX NUT M5-.8
232	P0730232	BRACE
233	P0730233	PHLP HD SCR M5-.8 X 10
234	P0730234	COVER HINGE
235	P0730235	V-BELT B40
236	P0730236	PULLEY SWIVEL
237	P0730237	PULLEY SWIVEL PIN
238	P0730238	INT RETAINING RING 45MM

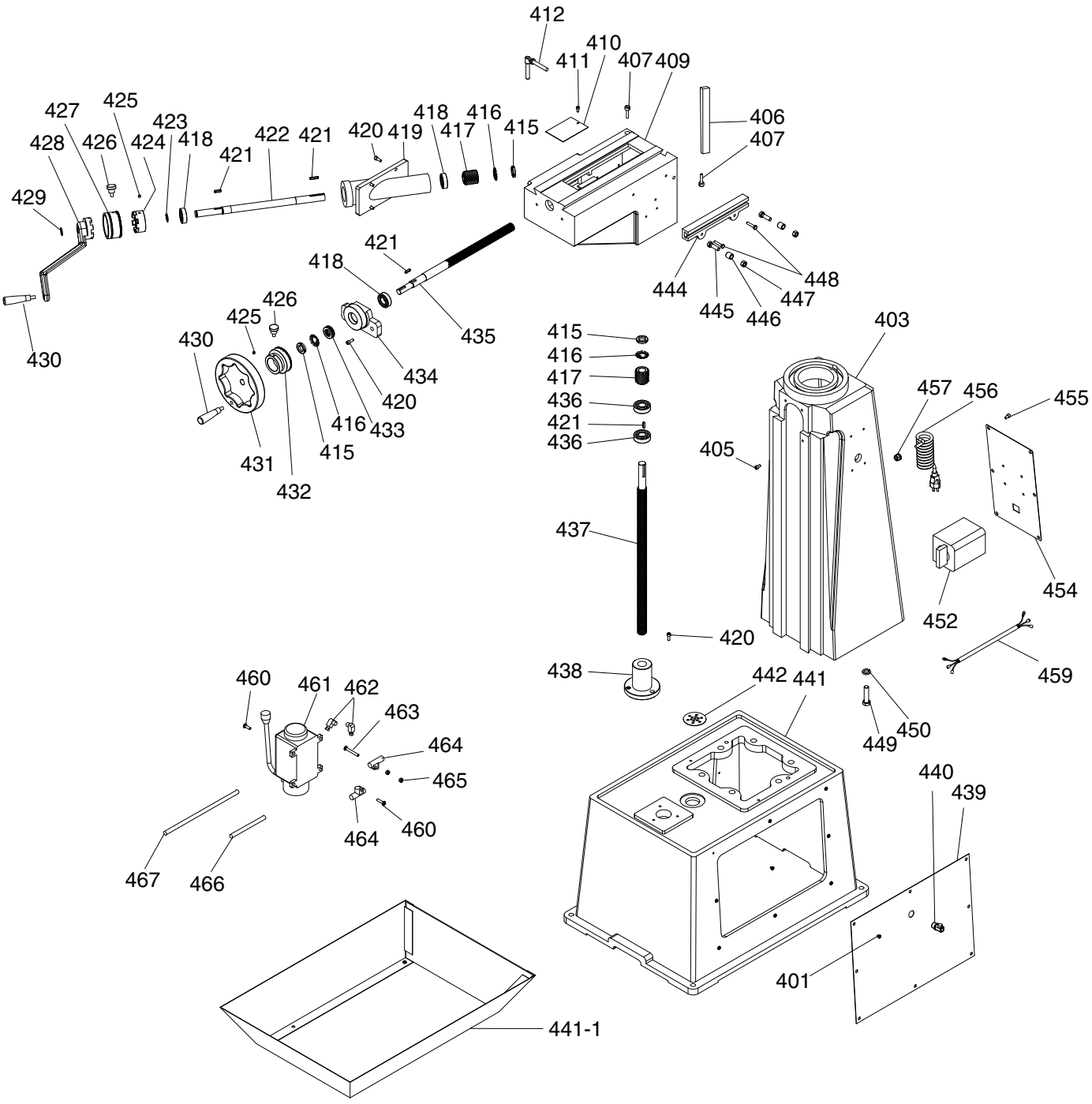
G0730 & G0731 Table & Saddle



REF	PART #	DESCRIPTION
301	P0730301	HANDLE 3/8-16 X 1/2
302	P0730302	HEX NUT 5/8-11
303	P0730303	SET SCREW M6-1 X 8
304	P0730304	HANDWHEEL
305	P0730305	GRADUATED DIAL
306	P0730306	LOCKING THUMB SCREW 5-.8 X 12
307	P0730307	CAP SCREW M6-1 X 25
308	P0730308	SPACER
309	P0730309	EXT RETAINING RING 20MM
310	P0730310	BALL BEARING 6004ZZ
311	P0730311	CAP SCREW M6-1 X 45
312	P0730312	LEADSCREW BRACKET
313	P0730313	WOODRUFF KEY 5 X 20
314	P0730314	LONGITUDINAL LEADSCREW
315	P0730315	PHLP HD SCR M6-1 X 8
316	P0730316	WAY COVER
317	P0730317	WAY COVER HOLDER
318	P0730318	TABLE
319	P0730319	SPANNER NUT WASHER 20MM
320	P0730320	SPANNER NUT
321	P0730321	HEX BOLT M10-1.5 X 30
322	P0730322	LIMIT STOP
323	P0730323	HEX NUT M10-1.5
324	P0730324	TABLE GIB
327	P0730327	GIB ADJUSTMENT SCREW

REF	PART #	DESCRIPTION
328	P0730328	SADDLE LOCK SCREW
329	P0730329	TABLE LOCK SCREW
330	P0730330	CAP SCREW M6-1 X 16
332	P0730332	PHLP HD SCR M5-.8 X 10
333	P0730333	WAY WIPER
334	P0730334	SADDLE GIB
335	P0730335	CAP SCREW M5-.8 X 25
336	P0730336	LIMIT SEAT
337	P0730337	CROSS LEADSCREW NUT
338	P0730338	CAP SCREW M8-1.25 X 25
339	P0730339	SADDLE
340	P0730340	STOP BLOCK
341	P0730341	PHLP HD SCR M5-.8 X 20
342	P0730342	LONGITUDINAL NUT
343	P0730343	FLAT WASHER 6MM
344-1	P0729344-1	POWER FEED ASSEMBLY
344-2	P0729344-2	RETAINING COLLAR
344-3	P0729344-3	GRADUATED DIAL
344-4	P0729344-4	CAP SCREW M6-1 X 25
344-5	P0729344-5	WOODRUFF KEY 3 X 30
344-6	P0729344-6	STOP W/ PLUNGER ASSY
344-7	P0729344-7	AUTO STOP SWITCH
344-8	P0729344-8	PHLP HD SCR M6-1 X 16
344-9	P0729344-9	FLAT WASHER 6MM
344-10	P0729344-10	POWER FEED ADAPTER GEAR

G0730 & G0731 Knee & Base

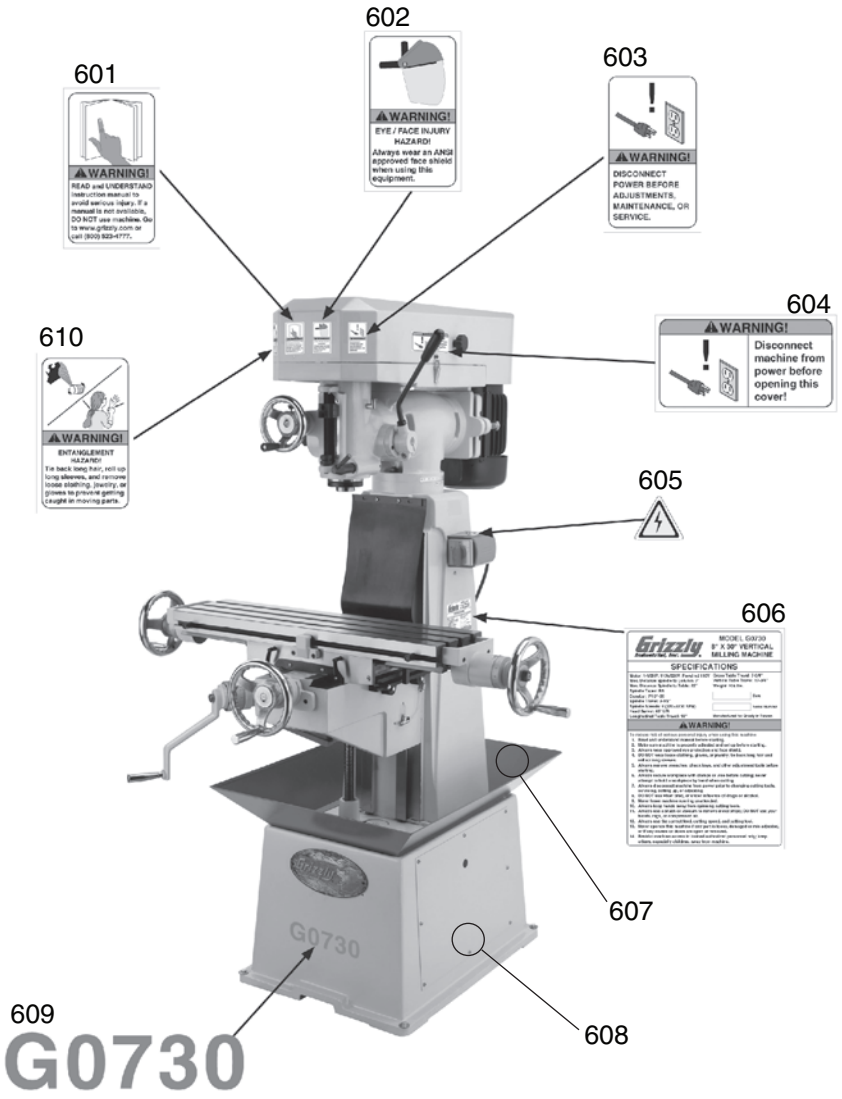


G0730 & G0731 Knee & Base Parts List

REF	PART #	DESCRIPTION
401	P0730401	PHLP HD SCR M6-1 X 10
403	P0730403	COLUMN
405	P0730405	CAP SCREW M6-1 X 8
406	P0730406	KNEE GIB
407	P0730407	GIB ADJUSTMENT SCREW
409	P0730409	KNEE
410	P0730410	CHIP GUARD
411	P0730411	PHLP HD SCR M3-.5 X 6
412	P0730412	KNEE LOCKING SCREW
415	P0730415	SPANNER NUT
416	P0730416	SPANNER NUT WASHER 20MM
417	P0730417	BEVEL GEAR
418	P0730418	BALL BEARING 6004ZZ
419	P0730419	VERTICAL CRANK HOUSING
420	P0730420	CAP SCREW M6-1 X 16
421	P0730421	WOODRUFF KEY 5 X 20
422	P0730422	VERTICAL CRANK SHAFT
423	P0730423	EXT RETAINING RING 20MM
424	P0730424	CLUTCH
425	P0730425	SET SCREW M6-1 X 8
426	P0730426	LOCKING THUMB SCREW 5-.8 X 12
427	P0730427	GRADUATED DIAL
428	P0730428	CRANK HANDLE ARM
429	P0730429	EXT RETAINING RING 18MM
430	P0730430	HANDLE 3/8-16 X 1/2
431	P0730431	HANDWHEEL
432	P0730432	GRADUATED DIAL
433	P0730433	THRUST BEARING 51104
434	P0730434	BEARING HOUSING
435	P0730435	CROSS FEED LEADSCREW

REF	PART #	DESCRIPTION
436	P0730436	BALL BEARING 6204ZZ
437	P0730437	VERTICAL LEADSCREW
438	P0730438	LEADSCREW BASE
439	P0730439	BASE SIDE COVER
440	P0730440	PLUG
441	P0730441	BASE
442	P0730442	COVER
444	P0730444	LIMIT TRACK
444-1	P0730444-1	SPLASH PAN
445	P0730445	HEX BOLT M10-1.5 X 30
446	P0730446	LIMIT STOP
447	P0730447	HEX NUT M10-1.5
448	P0730448	HEX BOLT M6-1 X 30
449	P0730449	HEX BOLT 1/2-13 X 2
450	P0730450	LOCK WASHER 1/2
452	P0730452	SPINDLE SWITCH KEDU ZH-HC-3
454	P0730454	COLUMN ACCESS PANEL
455	P0730455	PHLP HD SCR M6-1 X 8
456	P0730456	POWER CORD 14G 3W 72" 5-15
457	P0730457	STRAIGHT LT STRAIN RELIEF 3/8 PT
459	P0730459	MOTOR CORD 14G 5W 36"
460	P0730460	PHLP HD SCR M5-.8 X 15
461	P0730461	ONE SHOT OILER ASSEMBLY
462	P0730462	ELBOW ADAPTER
463	P0730463	PHLP HD SCR M5-.8 X 30
464	P0730464	T-ADAPTER
465	P0730465	HEX NUT M5-.8
466	P0730466	OIL TUBING 4MM X 100MM
467	P0730467	OIL TUBING 4MM X 340MM

G0730 & G0731 Machine Labels



REF	PART #	DESCRIPTION
601	P0730601	READ MANUAL 1.5W X 2.5H
602	P0730602	FACE SHIELD 1.5W X 2.5H
603	P0730603	DISCONNECT 110V 1.5 X 2.5H
604	P0730604	DISCONNECT 110V 2.8 X 1.5H
605	P0730605	ELECTRICITY 0.7W X 0.6H
606	P0730606	MACHINE ID LABEL (G0730)

REF	PART #	DESCRIPTION
606	G0731606	MACHINE ID LABEL (G0731)
607	P0730607	GRIZZLY TOUCH UP PAINT–GREEN
608	P0730608	GRIZZLY TOUCH UP PAINT–PUTTY
609	P0730609	MODEL NUMBER G0730
609	P0731609	MODEL NUMBER G0731
610	P0730610	ENTANGLEMENT HAZARD 2.5W X 1.5H

⚠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 to order new labels.

Grizzly Industrial, Inc. WARRANTY CARD

Name _____

Street _____

City _____ State _____ Zip _____

Phone # _____ Email _____

Model # _____ Order # _____ Serial # _____

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

1. How did you learn about us?

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

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

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

3. What is your annual household income?

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

4. What is your age group?

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

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

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

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

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

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

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

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

10. Comments: _____

_____

_____

_____

CUT ALONG DOTTED LINE

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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

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®

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