

Grizzly **Industrial, Inc.**®

MODEL G0755 **HEAVY-DUTY MILL/DRILL** **w/STAND & POWER FEED** **OWNER'S MANUAL** *(For models manufactured since 1/13)*



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OR FORM WITHOUT THE WRITTEN APPROVAL OF GRIZZLY INDUSTRIAL, INC.**
#TS15627 PRINTED IN CHINA



WARNING!

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

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

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

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



WARNING!

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

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

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

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INTRODUCTION

Machine Description

The Model G0755 is a free-standing mill/drill that strikes a great balance between being heavy-duty and high-precision.

The spindle is equipped with precision P5 spindle bearings and is driven by an oil-bath-lubricated and gear-driven headstock. The spindle is fully reversible and features both coarse and fine downfeed controls. The six spindle speeds range from 90–1970 RPM and are controlled by convenient gear-change levers.

The headstock tilts 90° left/right and moves in the Z-axis along precision dovetailed ways—with both manual and powered elevation control. The table also features both manual and powered X-axis control, but with a manually-controlled Y-axis. All table movement is along scraped dovetail ways. Additionally, this machine features a nice work lamp, tool box with service wrenches, and a handful of assorted tool holders to help you get started.

Contact Info

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

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

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

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

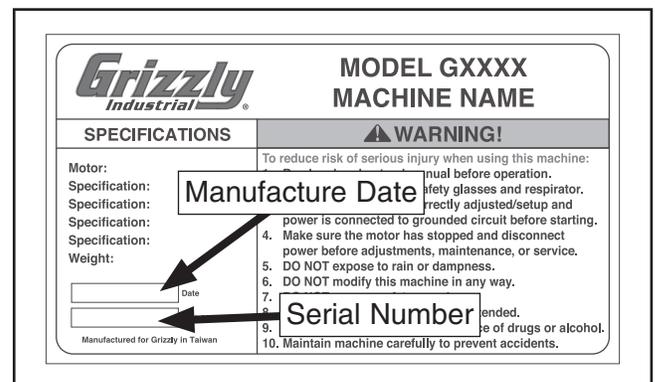
Manual Accuracy

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

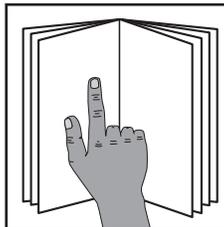
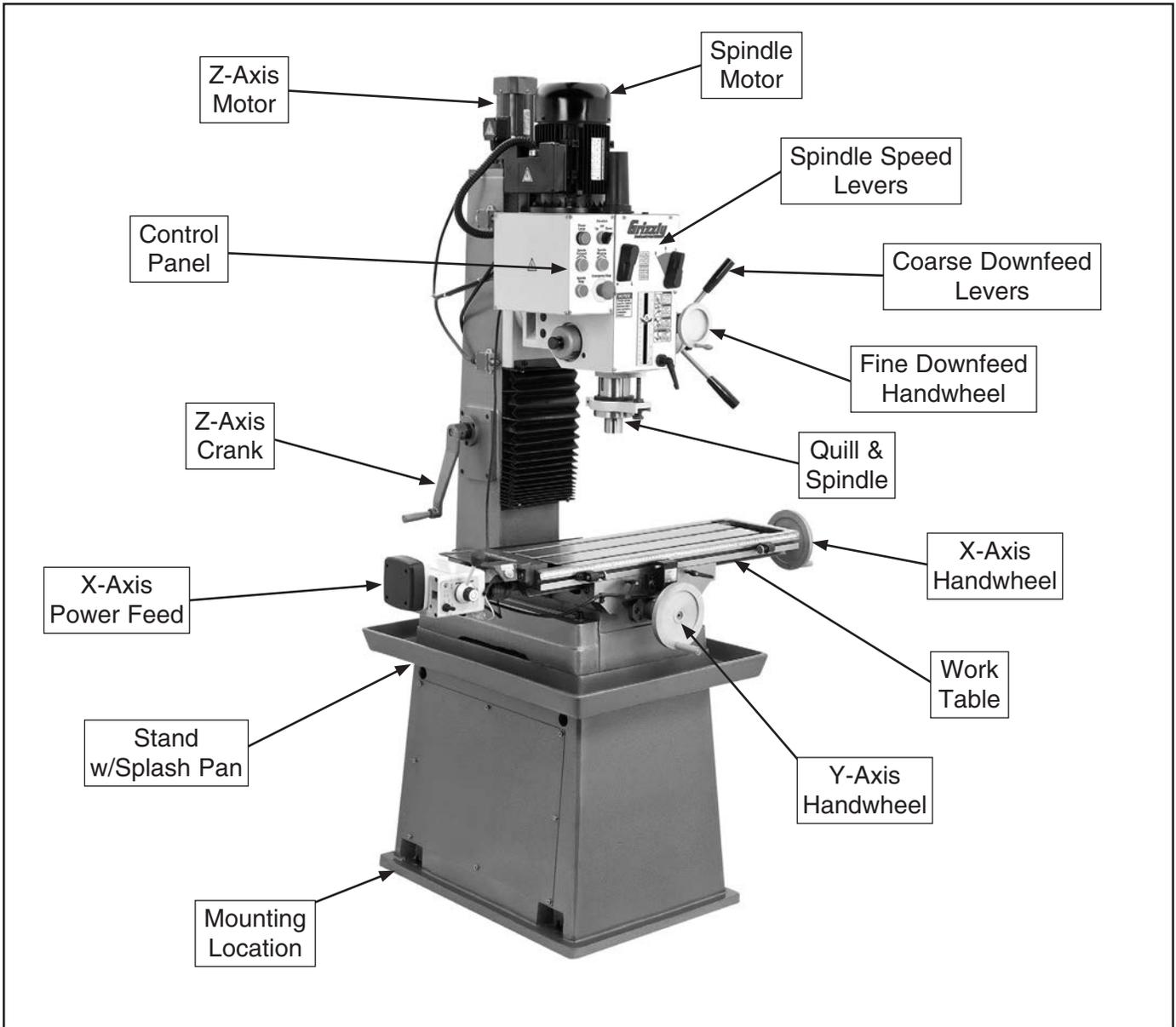
We made every effort to be exact with the instructions, specifications, drawings, and photographs contained inside. Sometimes we make mistakes, but our policy of continuous improvement also means that **sometimes the machine you receive will be slightly different than what is shown in the manual.**

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

Alternatively, you can call our Technical Support for help. Before calling, please write down the **Manufacture Date** and **Serial Number** stamped into the machine ID label (see below). This information helps us determine if updated documentation is available for your machine.



Identification



!WARNING

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





MACHINE DATA SHEET

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

MODEL G0755 HEAVY-DUTY MILL/DRILL WITH STAND AND POWER FEED

Product Dimensions:

Weight..... 992 lbs.
 Width (side-to-side) x Depth (front-to-back) x Height..... 49-1/2 x 34-1/2 x 75-1/4 in.
 Footprint (Length x Width)..... 29 x 21 in.
 Space Required for Full Range of Movement (Width x Depth)..... 68 x 34 in.

Shipping Dimensions:

Type..... Wood Crate
 Content..... Machine
 Weight..... 1102 lbs.
 Length x Width x Height..... 49 x 36-3/4 x 80-3/4 in.
 Must Ship Upright..... Yes

Electrical:

Power Requirement..... 220V, Single-Phase, 60 Hz
 Prewired Voltage..... 220V
 Full-Load Current Rating..... 8.6A
 Minimum Circuit Size..... 15A
 Connection Type..... Cord & Plug
 Power Cord Included..... Yes
 Power Cord Length..... 6 ft.
 Power Cord Gauge..... 14 AWG
 Plug Included..... No
 Recommended Plug Type..... 6-15
 Switch Type..... Magnetic Switch w/Overload Protection

Motors:

Main

Type..... TEFC Capacitor-Start Induction
 Horsepower..... 2 HP
 Phase..... Single-Phase
 Amps..... 8.6A
 Speed..... 1725 RPM
 Power Transfer Gear Drive
 Bearings..... Shielded & Permanently Lubricated

Elevation

Type..... TEFC Capacitor-Start Induction
 Horsepower..... 1/8 HP
 Phase..... Single-Phase
 Amps..... 0.75A
 Speed..... 1725 RPM
 Power Transfer Gear Drive
 Bearings..... Shielded & Permanently Lubricated



Main Specifications:

Operation Info

Spindle Travel.....	5 in.
Max Distance Spindle to Column.....	10 in.
Max Distance Spindle to Table.....	18 in.
Longitudinal Table Travel (X-Axis).....	17 in.
Cross Table Travel (Y-Axis).....	7-7/8 in.
Vertical Head Travel (Z-Axis).....	13-3/4 in.
Head Tilt (Left/Right).....	90 / 45 deg.
Drilling Capacity for Cast Iron.....	1-3/4 in.
Drilling Capacity for Steel.....	1-1/4 in.
End Milling Capacity.....	1-1/4 in.
Face Milling Capacity.....	3-1/8 in.

Table Info

Table Length.....	31-1/2 in.
Table Width.....	9-1/2 in.
Table Thickness.....	1-5/8 in.
Number of T-Slots.....	3
T-Slot Size.....	1/2 in.
T-Slots Centers.....	3-1/8 in.

Spindle Info

Spindle Taper.....	R-8
Number of Vertical Spindle Speeds.....	6
Range of Vertical Spindle Speeds.....	90 – 1970 RPM
Quill Diameter.....	3 in.
Drawbar Thread Size.....	7/16-20
Drawbar Length.....	17-3/4 in.
Spindle Bearings.....	Tapered Roller Bearings

Construction

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

Other Specifications:

Country Of Origin	China
Warranty	1 Year
Approximate Assembly & Setup Time	1 Hour
Serial Number Location	ID Label on Headstock
ISO 9001 Factory	Yes
CSA Certified	No

Features:

- Motorized Head Elevation
- Spindle Speeds Controlled w/Gearhead Levers
- Longitudinal Variable-Speed Power Feed
- Fine Downfeed Control
- Adjustable Spindle Depth Stop
- Reversible Spindle Rotation for Tapping Operations
- High-Precision P5 (ABEC-5 Equivalent) Spindle Bearings
- Dovetail Column
- Scraped Dovetail Ways
- Made in ISO 9001 Factory



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!

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

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

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

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

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

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

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

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

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

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

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

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

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



WARNING

Additional Safety for Mill/Drills

UNDERSTANDING CONTROLS. Make sure you understand the use and operation of all controls before starting the mill/drill.

SAFETY ACCESSORIES. To reduce the risk of injury from flying chips, always use a face shield in addition to safety glasses when using the mill/drill.

CLEAN-UP. Metal chips can cut your hands. DO NOT clear chips by hand or compressed air that can force the chips father into the machine. Use a brush or vacuum, and never clear chips while the spindle is turning.

SECURING TOOLING. Objects that are thrown by the spinning action of the mill/drill can be deadly missiles. Always firmly secure the cutting tool before starting the machine. Always remove the chuck key, drawbar wrench, and any tools immediately after use.

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

STOPPING SPINDLE. Serious injury may occur if you try to stop the moving spindle by hand. DO NOT stop the spindle using your hand or any other object. Allow the spindle to stop on its own.

WORK HOLDING. A workpiece that moves unexpectedly during operation can be ejected from the machine, causing personal injury or property damage. Before starting the machine, be certain the workpiece is properly clamped to the table. NEVER hold the workpiece by hand during operation.

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

MAINTENANCE/ADJUSTMENTS. To avoid possible electrocution or physical injury, make sure the mill is turned **OFF**, disconnected from power, and all moving parts have come to a complete stop before changing cutting tools or starting any inspection, adjustment or maintenance procedure.

SPINDLE SPEEDS. For safe and good results, select the spindle speed that is correct for the type of work and material. Allow the spindle to reach full speed before beginning a cut.

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

WARNING

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

CAUTION

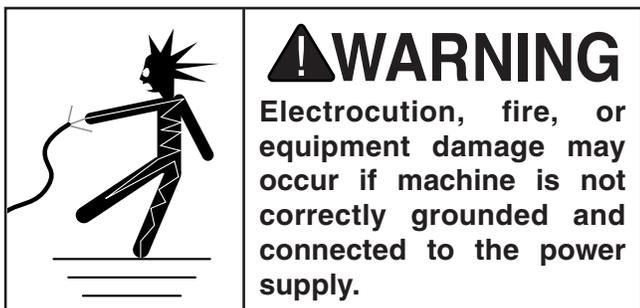
No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or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



SECTION 2: POWER SUPPLY

Availability

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



Full-Load Current Rating

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

Full-Load Current Rating at 220V 9.4 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 Requirements for 220V

This machine is prewired to operate on a 220V power supply circuit that has a verified ground and meets the following requirements:

Nominal Voltage220V
Cycle60 Hz
Phase 1-Phase
Power Supply Circuit 15 Amps
Plug/Receptacle NEMA 6-15

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



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



Grounding Instructions

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.

The power cord and plug specified under “Circuit Requirements for 220V” on the previous page has an equipment-grounding wire and a grounding prong. 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 (see figure below).

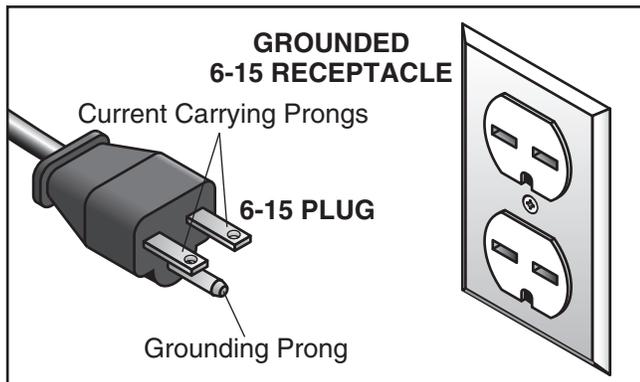
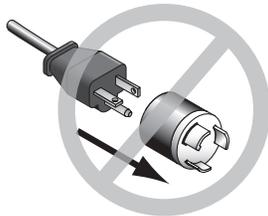


Figure 1. Typical 6-15 plug and receptacle.

!WARNING

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

!CAUTION



No adapter should be used with the required plug. If the plug does not fit the available receptacle, or the machine must be reconnected for use on a different type of circuit, the reconnection must be made by a qualified electrician and comply with all local codes and ordinances.

!WARNING

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

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

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

Extension Cords

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

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

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

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



SECTION 3: SETUP

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.



Needed for Setup

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

Description	Qty
• Additional People	2
• Safety Glasses	1 Per Person
• Cleaner/Degreaser (Page 12)	As Needed
• Disposable Shop Rags.....	As Needed
• Forklift (rated for at least 1500 lbs.).....	1
• Solid Steel Rod 1" Dia. x 42" L	2
• Slotted Screwdriver #2	1

Inventory

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

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

Small Item Inventory (Figure 2):	Qty
A. Handwheel Handles w/Screws.....	2
B. T-Bolts M12-1.75 x 55 w/Washers & Nuts ..	2
C. Bottle for Oil	1
D. Toolbox	1
E. Open-End Wrenches 17/19, 22/24mm ..	1 Ea
F. Hex Wrench Set 2.5, 3, 4, 5, 10mm	1 Ea
G. Drift Key.....	1
H. Drill Chuck B16, 1–13mm w/Chuck Key	1
I. Spindle Sleeve R-8–MT#3	1
J. Drill Chuck Arbor R-8–B16.....	1
K. Spindle Sleeve MT#3–MT#2	1

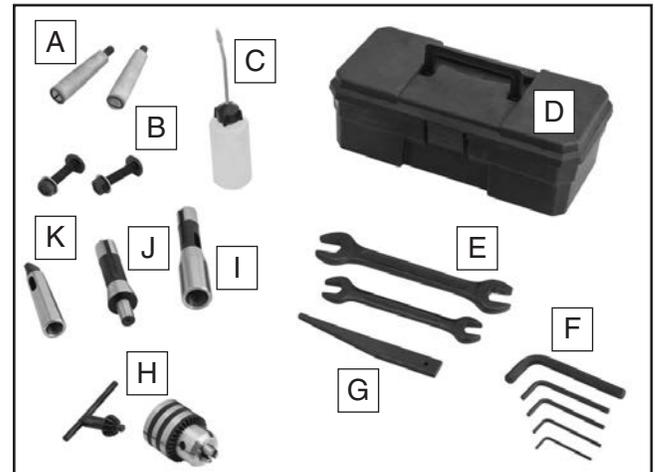


Figure 2. Small item inventory.

NOTICE

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



Cleanup

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

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

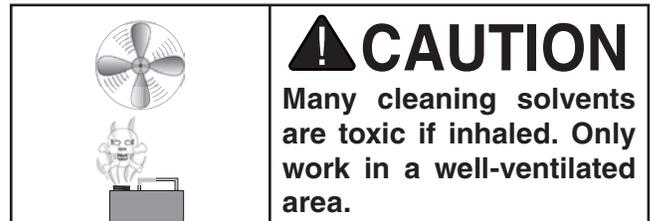
There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

Before cleaning, gather the following:

- Disposable Rags
- Cleaner/degreaser (WD-40 works well)
- Safety glasses & disposable gloves
- Plastic paint scraper (optional)

Basic steps for removing rust preventative:

1. Put on safety glasses.
2. Coat the rust preventative with a liberal amount of cleaner/degreaser, then let it soak for 5–10 minutes.
3. Wipe off the surfaces. If your cleaner/degreaser is effective, the rust preventative will wipe off easily. If you have a plastic paint scraper, scrape off as much as you can first, then wipe off the rest with the rag.
4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant to prevent rust.



T23692—Orange Power Degreaser

A great product for removing the waxy shipping grease from your machine during clean up.



Figure 3. T23692 Orange Power Degreaser.



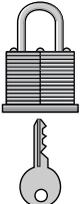
Site Considerations

Weight Load

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

Space Allocation

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

	<p>CAUTION Children or untrained people may be seriously injured by this machine. Only install in an access restricted location.</p>
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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.

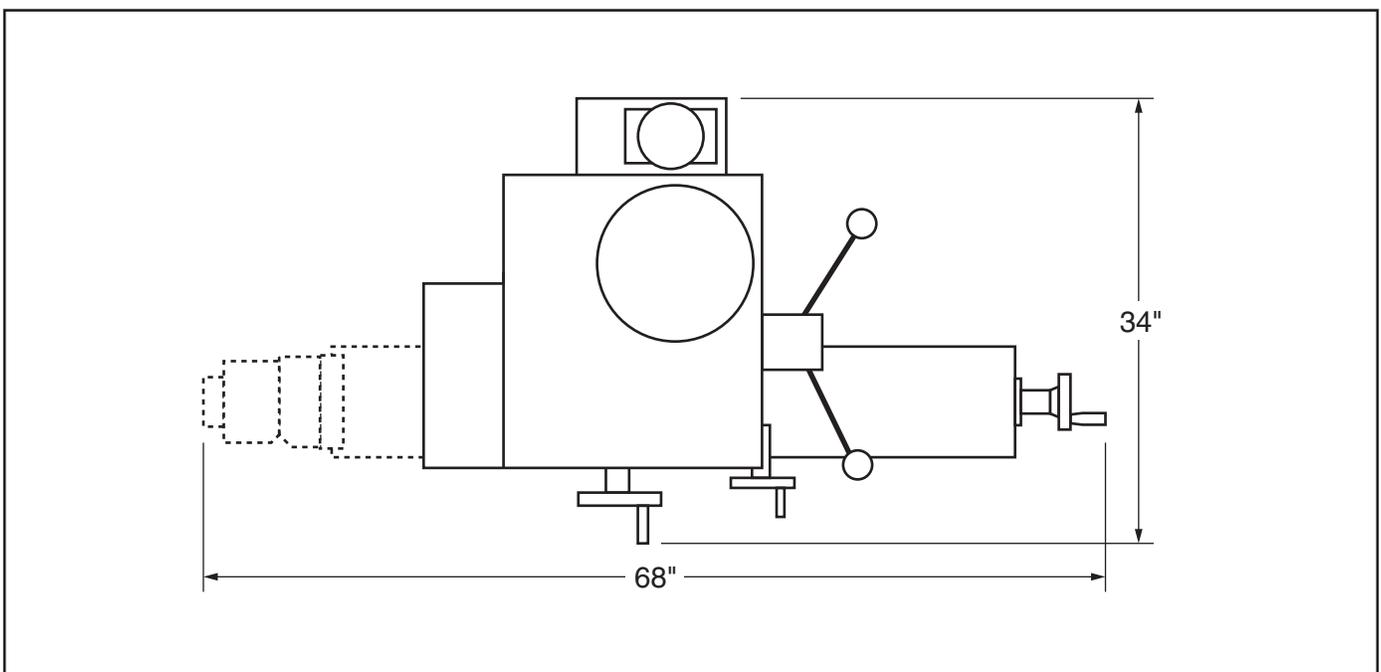
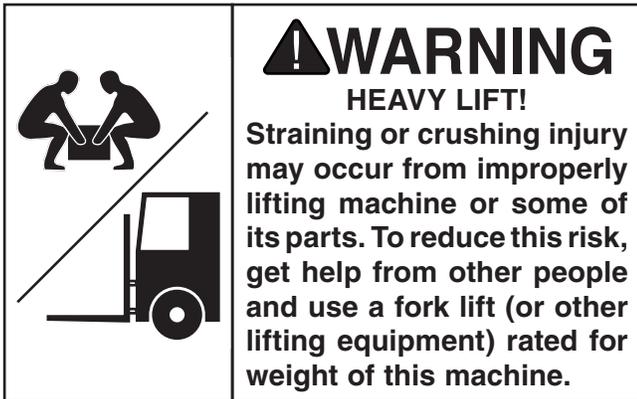


Figure 4. Minimum working clearances.



Lifting & Placing



Power lifting equipment, steel rods (refer to **Page 11**), and at least two other people are required to lift and place the mill.

To move your machine into position:

1. Move shipping crate next to mounting location, then unbolt machine from pallet.
2. To help balance machine during moving, position table as close to column as possible, and adjust headstock to its *lowest* position.
3. Insert steel rods into holes in stand, as shown in **Figure 5**.



Figure 5. Lifting setup.

4. Evenly position forklift forks under steel rods on each side of cabinet.

Note: Before next step, make sure all locks are tight to avoid sudden shifts which could unbalance machine.

5. With help of additional people to steady load, slowly lift machine, remove pallet, then lower machine into position.



Anchoring to Floor

Anchoring the machine to the floor prevents it from tipping or shifting and reduces any vibration that may occur during operation, resulting in a machine 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.

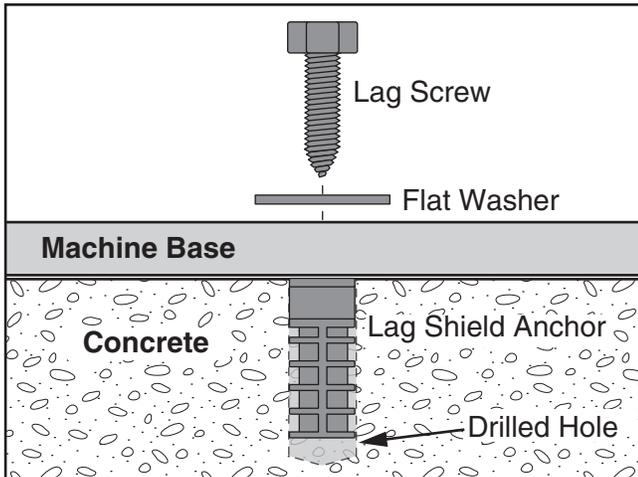


Figure 6. Popular method for anchoring machinery to a concrete floor.

Assembly

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

Use a slotted screwdriver to attach the handwheel handles, as shown in **Figure 7**.

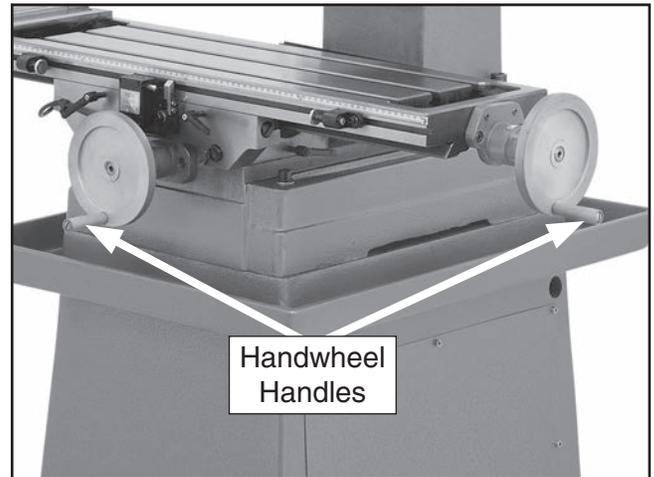


Figure 7. Handwheel handles attached.



Joining Drill Chuck & Arbor

An arbor is included for the drill chuck that comes with this machine. The following procedure describes how to install the arbor in the chuck.

After the arbor is installed in the drill chuck, it is very difficult to separate the assembly. If you would like to use a different chuck in the future, we recommend obtaining a new arbor.

Important: *DO NOT install the drill chuck and arbor assembly into the spindle until AFTER the test run.*

To join the drill chuck and arbor:

1. Use acetone or lacquer thinner to clean drill chuck and arbor mating surfaces, especially the bore.
2. Retract chuck jaws completely into chuck.
3. Insert small end of arbor into chuck.
4. Hold assembly by the arbor and tap chuck onto a block of wood with medium force, as illustrated in **Figure 8**.

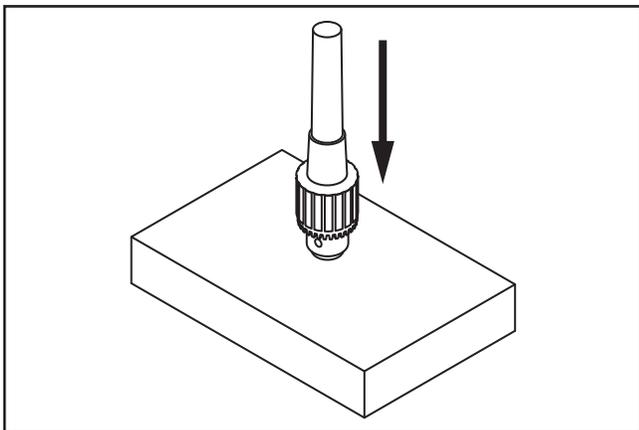


Figure 8. Tapping drill chuck/arbor on block of wood.

5. Attempt to separate drill chuck and arbor by hand—if they separate, repeat **Steps 3–4**.

Lubricating Mill/Drill



The headstock oil reservoir must be properly filled with oil before the mill/drill can be operated for the first time.

Damage caused by running the mill/drill without the proper amount of oil in the reservoir will not be covered under warranty. Refer to the **Lubrication** section, beginning on **Page 30**, for details on how to check and add oil.



Test Run

The purpose of the test run is to verify that the machine functions properly and is ready for regular operation.

Before beginning this procedure, make sure: (1) you understand the safety instructions at the beginning of this manual, (2) the machine is set up properly, and (3) all tools and objects used during setup are cleared away from the machine.

IMPORTANT: If the machine or its components do not function as described, or if the machine has unusual noises or vibrations, immediately turn it **OFF** and disconnect power.

For your convenience, a **Troubleshooting** table is provided on **Page 35**. If you cannot find a remedy, contact our Tech Support at (570) 546-9663 for assistance.

To test run the machine:

1. Push Emergency Stop button (see **Figure 9**).

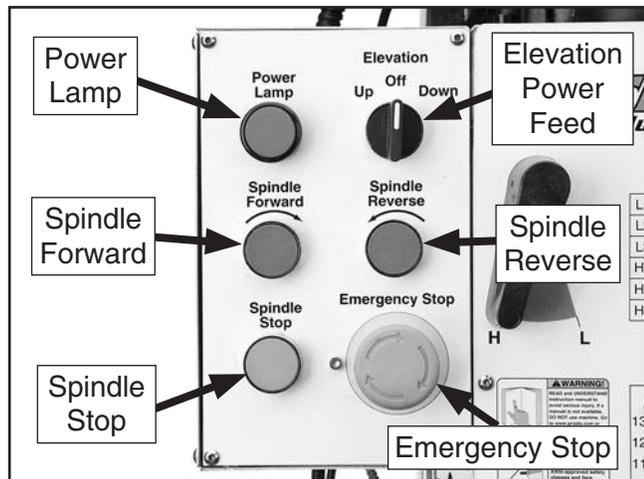


Figure 9. Control panel.

2. Rotate Elevation Power Feed switch to OFF.
3. Connect machine to power source by inserting power cord plug into matching receptacle—the Power Lamp should light after connection.

4. Twist Emergency Stop button clockwise until it pops out—this resets the switch so the machine can be started (see **Figure 10**).



Figure 10. Resetting the switch.

5. Push Spindle Forward button to start machine. A correctly operating machine runs smoothly with little or no vibration or rubbing noises.
6. Press Emergency Stop button to stop machine.
7. WITHOUT resetting Emergency Stop button, press Spindle Forward button—the machine should not start.

—If the machine *does* start (with the Emergency Stop button pushed in), immediately disconnect machine from power.

The Emergency Stop button safety feature is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

8. Reset Emergency Stop button and use Elevation Power Feed switch to raise and lower headstock.

The Test Run is complete. Before beginning any regular operations, perform the **Spindle Break-In** procedure on the next page.



Spindle Break-In

Before placing operational loads on the spindle, complete this break-in procedure to fully distribute lubrication throughout the bearings and ensure trouble-free performance.

NOTICE

Failure to complete the spindle break-in process may lead to premature failure of the bearings—this will not be covered under warranty.

To perform the spindle break-in procedure:

1. Make sure the spindle is completely stopped, then set spindle speed to 90 RPM (refer to **Page 26** for detailed instructions).

NOTICE

Do not leave the mill/drill unattended during the Spindle Break-In procedure. If your attention is needed elsewhere during this procedure, stop the mill/drill and restart the procedure later from the beginning.

2. Run machine for a minimum of 10 minutes.
3. Repeat **Step 2** for each spindle speed, working to progressively higher speeds.

Note: *If the machine is new, we recommend changing the headstock oil while it is still warm and any particles from the manufacturing process are still in suspension (refer to **Page 31** in the **Lubrication** subsection for detailed instructions).*

The spindle break-in is now complete!

Inspections & Adjustments

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

- Gib Adjustments**Page 37**
- Leadscrew Backlash Adjustments.....**Page 37**
- Return Spring Tension..... **Page 40**

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

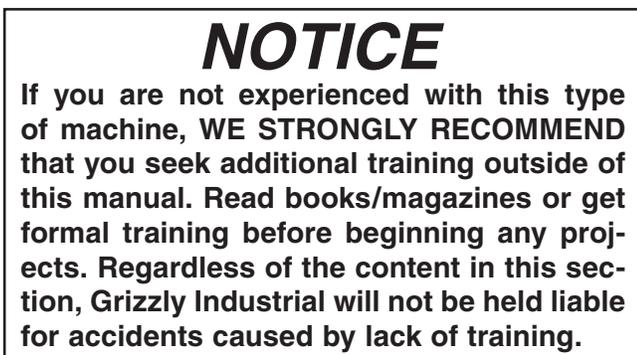


SECTION 4: OPERATIONS

Operation Overview

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

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



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

1. Examines workpiece to make sure it is suitable for cutting.
2. Puts on protective gear.
3. Securely clamps workpiece to table.
4. With machine disconnected from power, installs correct cutting tool.
5. Adjusts headstock height above table.
6. Without the machine running, checks range of table or spindle movement to make sure setup is safe and correct for operation.
7. Selects correct spindle speed.
8. Connects machine to power and turns it **ON**.
9. Uses downfeed controls or table controls to perform cutting operation.
10. Turns machine **OFF** and waits for spindle to completely stop before removing workpiece.



Control Panel

Refer to **Figure 11** and the following descriptions to become familiar with the control panel functions.

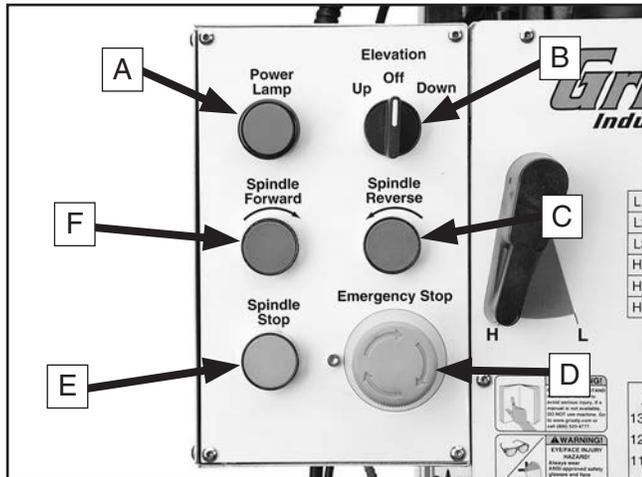


Figure 11. Control panel components.

- A. Power Lamp:** Lights when machine is connected to power.
- B. Elevation (Z-Axis) Power Feed Switch:** Controls headstock elevation.
- C. Spindle Reverse Button:** Starts counter-clockwise spindle rotation.
- D. Emergency Stop Button:** Cuts power to spindle and Z-axis motors. This button does NOT disconnect machine from power.
- E. Spindle Stop Button:** Stops spindle motor.
- F. Spindle Forward Button:** Starts clockwise spindle rotation.

Downfeed Controls

Identification

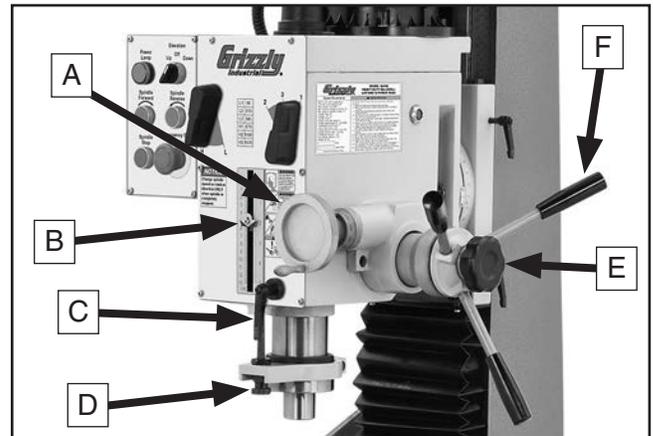


Figure 12. Downfeed controls.

- A.** Fine Downfeed Handwheel
- B.** Depth Pointer and Scale
- C.** Quill Lock Lever
- D.** Depth Pointer Adjustment Knob
- E.** Downfeed Selector Knob
- F.** Coarse Downfeed Lever

Using Coarse Downfeed

1. *Loosen* downfeed selector knob to engage coarse downfeed levers.
2. Use adjustment knob to adjust depth pointer.
3. Use coarse downfeed levers to lower spindle.

Using Fine Downfeed

1. *Tighten* downfeed selector knob to engage fine downfeed handwheel.
2. Use adjustment knob to adjust depth pointer.
3. Rotate fine downfeed handwheel to raise and lower spindle.



Depth Stop

The depth stop limits the downward movement of the cutting tool. With the use of the depth pointer adjustment knob (see **D** in **Figure 12**), it can be adjusted anywhere within 0"–5". This is useful when performing repeat operations.

Headstock Movement

The headstock travels up and down the column, and tilts 90° left and right relative to the table.

Raising/Lowering Headstock

Loosen the lock handles shown in **Figure 13**, then use the Elevation (Z-Axis) Switch (see **Figure 14**) on the control panel to raise/lower the headstock.



Figure 13. Lock handles for headstock elevation.



Figure 14. Elevation switch that controls motorized head travel.

⚠ CAUTION

The Z-axis crank will rotate rapidly and may cause impact injuries if left attached during powered Z-axis operation. Always remove Z-axis crank before using the switch on the control panel.

The limit stops shown in **Figure 15** stop headstock travel when contacted by the limit block.

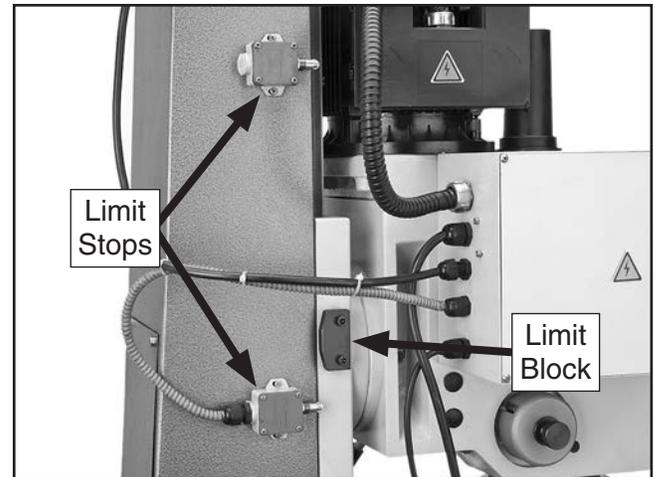


Figure 15. Z-axis limit controls.

The headstock can also be raised/lowered by hand using the crank shown in **Figure 16**.

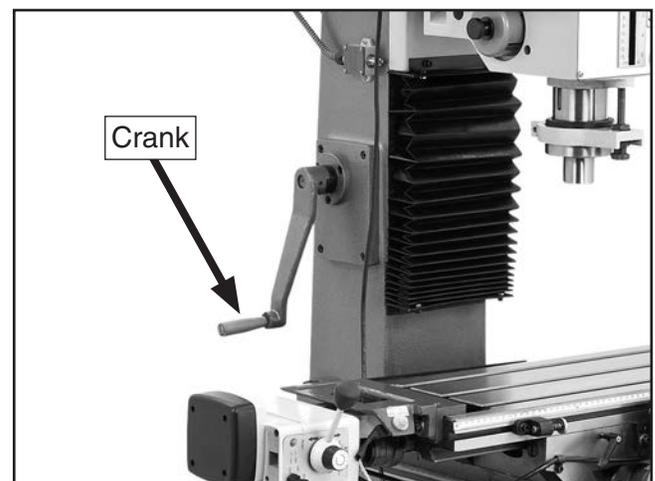


Figure 16. Z-axis crank.

Note: Lock the headstock in place by re-tightening the lock handles before beginning operation to avoid unexpected headstock movement.



Tilting Headstock

1. Use a 22mm wrench to loosen the three locking hex nuts (see **Figures 17–18**), then tilt headstock to desired angle on tilt scale.

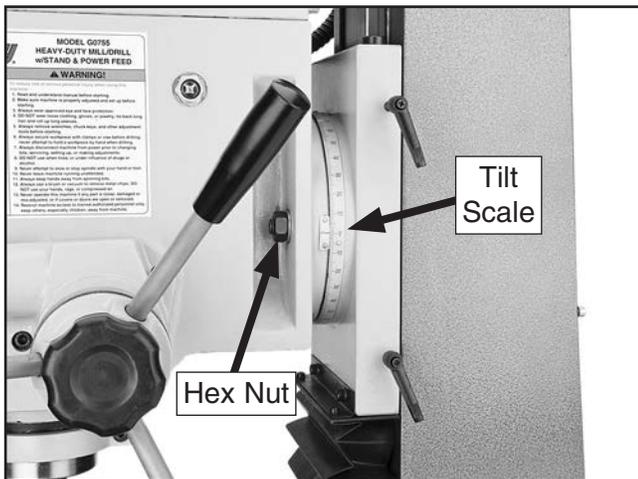


Figure 17. Tilt locking hex nut (one on each side of head).

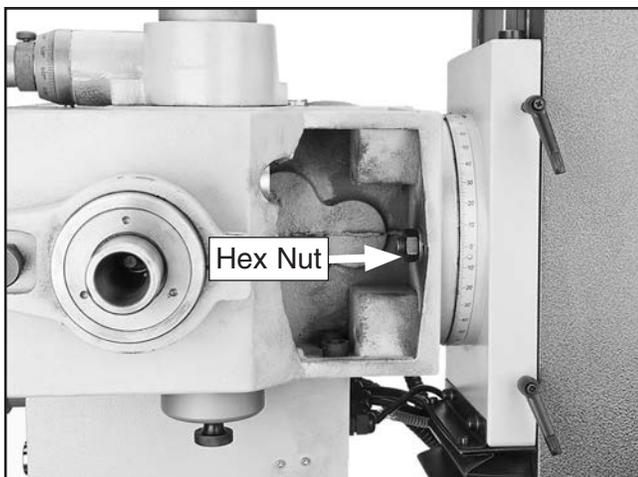


Figure 18. Hex nut underneath head.

2. Lock headstock in place by re-tightening the three hex nuts.

NOTICE

When tilting the head back to 90°, you will need to tram the spindle with the table to ensure a that it is set perfectly. Refer to the *Tramming Spindle* section on *Page 38* for detailed instructions.

Table Travel

The table travels in two directions, as illustrated in **Figure 19**. These movements are controlled by handwheels and the X-axis power feed. When using the power feed, travel is limited by the position of the limit stops along the front of the table.

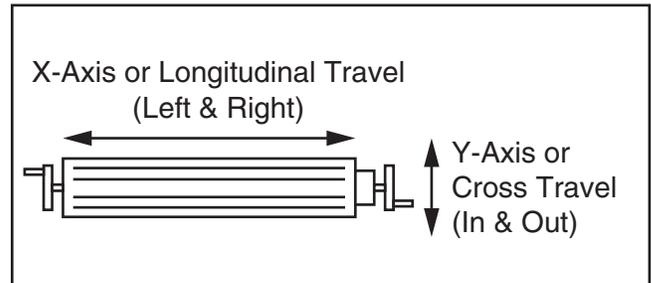


Figure 19. The directions of table movement.

Graduated Dials

The handwheels have graduated scales that are used to determine table movement in 0.001" increments. One full revolution of the handwheel equals 0.100" of table movement.

Loosen the locking thumb screw shown in **Figure 20**, adjust the graduated dial to “zero” it for a relative starting point, then re-tighten the thumb screw.

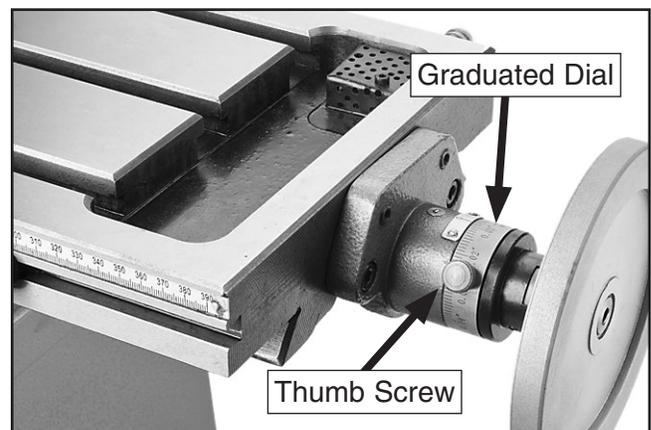


Figure 20. Graduated dial and locking thumb screw.



X- & Y-Axis Handwheels

Use **Figure 21** and the following descriptions to become familiar with the X- and Y-axis manual table movement.

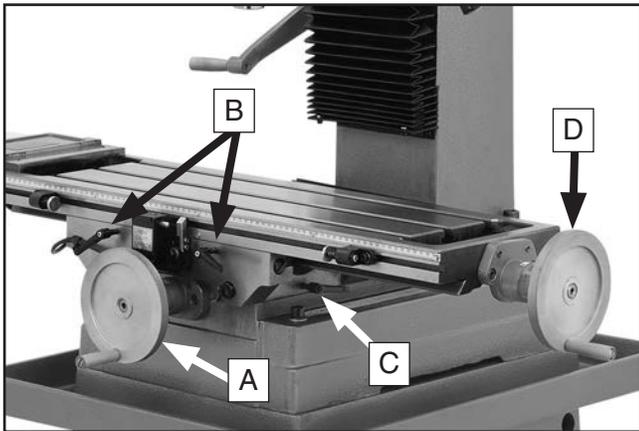


Figure 21. Table locks and limit stops.

- A. Y-Axis Handwheel:** Moves table back and forth.
- B. X-Axis Table Locks:** Increase rigidity of table when X-axis movement is not required for operation.
- C. Y-Axis Table Lock:** Increase rigidity of table when Y-axis movement is not required for operation.
- D. X-Axis Handwheel:** Moves table side to side.

X-Axis Power Feed

Use **Figures 22–23** and the following descriptions to become familiar with the power feed controls.

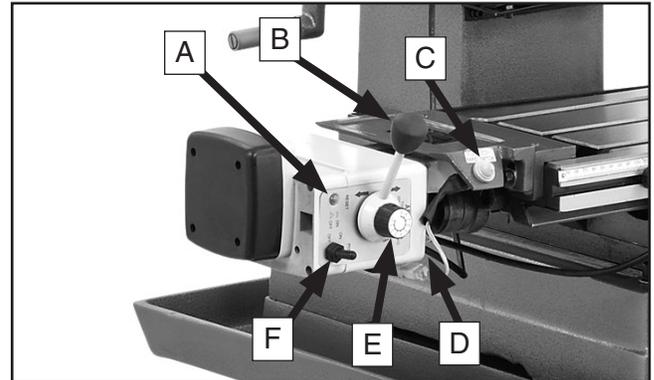


Figure 22. X-axis power feed controls.

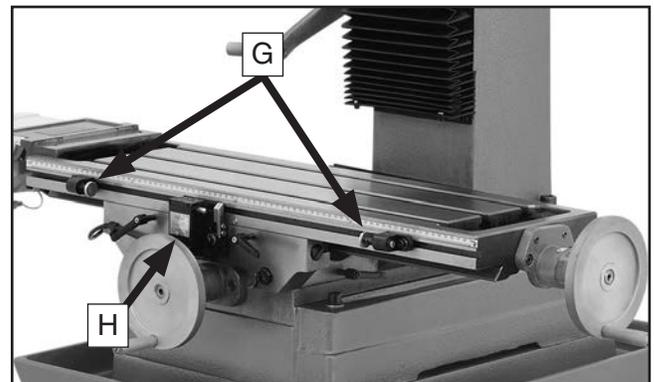


Figure 23. Limit switch and limit stops.

- A. ON/OFF Light:** Lights when unit is turned **ON**.
- B. Direction Lever:** Controls direction of powered table travel.
- C. Rapid Switch:** When held down, moves table rapidly in chosen direction.
- D. Power Light:** Lights when unit is connected to power.
- E. Speed Dial:** Controls rate of power feed.
- F. ON/OFF Switch**
- G. X-Axis Limit Stops:** Adjustable along front of table to restrict X-axis table movement, particularly when using the power feed.
- H. Limit Switch:** Stops power feed when contacted by a limit stop.



Installing/Removing Tooling

The Model G0755 includes the following spindle tools (see **Figure 24**):

- A. **B16 Drill Chuck w/R-8 Arbor:** Use with drill bits.
- B. **R-8-MT#3 Spindle Sleeve:** Use with MT#3 tooling with or without a tang. Has a drift key slot for tool removal.
- C. **MT#3-MT#2 Spindle Sleeve:** Use with the R-8-MT#3 spindle sleeve for MT#2 tooling. Has a drift key slot for tool removal.

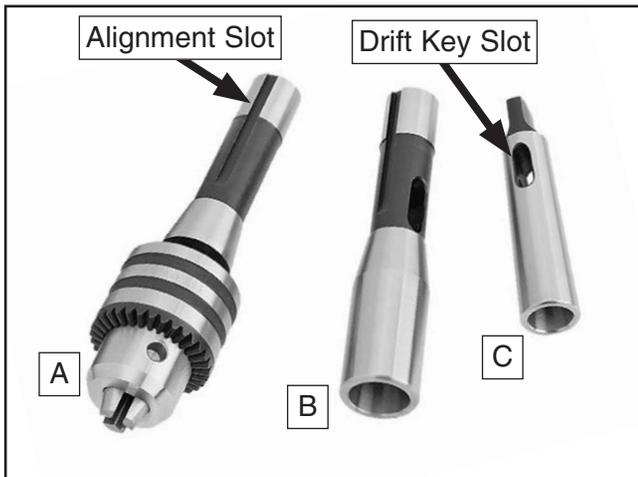


Figure 24. Drill chuck and arbors included with Model G0755.

	<p>CAUTION</p> <p>Cutting tools are sharp and can easily cause laceration injuries. Always protect your hands with leather gloves or shop rags when handling cutting tools.</p>
--	--

Installing Tool Holder

Tool Needed	Qty
Wrench 19mm	1

To install tool holder:

1. DISCONNECT MACHINE FROM POWER!
2. Remove drawbar cap as shown in **Figure 25**.

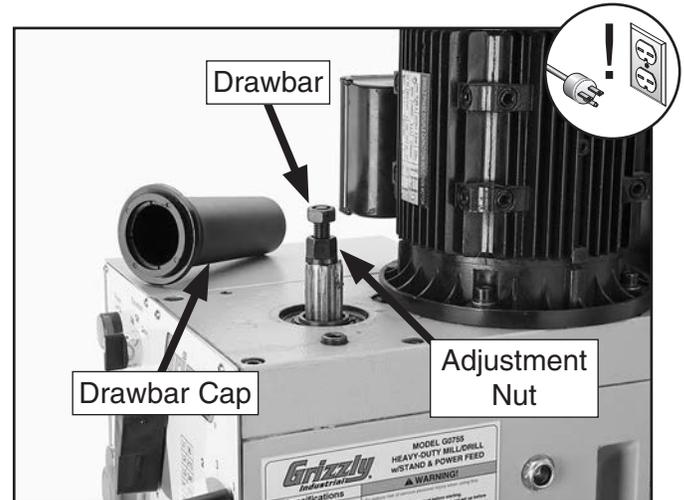


Figure 25. Drawbar components.

3. Align tool holder alignment slot (see **Figure 24**) with pin inside spindle, then insert tool holder into spindle until it contacts drawbar.

Note: Drawbar height inside spindle can be changed by rotating the adjustment nut (see **Figure 25**).

4. Working from the top, hand-thread drawbar into tool holder until snug, then use a 19mm wrench to tighten it.

Note: DO NOT overtighten drawbar. Overtightening makes tool holder removal difficult and could damage arbor and drawbar threads.

5. Re-install drawbar cap.



Removing Tool Holder

Tools Needed	Qty
Wrench 19mm	1
Brass or Dead Blow Hammer.....	1

To remove tool holder:

1. DISCONNECT MACHINE FROM POWER!
2. Remove drawbar cap, and only unthread drawbar from tool holder one full rotation.

Note: Do not fully unthread tool holder from drawbar, or drawbar and tool holder threads could be damaged during the next step.

3. Tap top of drawbar with hammer to unseat taper.
4. Hold onto tool holder with one hand and fully unthread drawbar with the other hand.

Spindle Speed

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

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

Determining Spindle Speed

Many variables affect the optimum spindle speed to use for any given operation, but the two most important are the recommended cutting speed for the workpiece material and the diameter of the cutting tool, as noted in the formula shown in **Figure 26**.

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

Figure 26. Spindle speed formula for mill/drills.

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

A recommended cutting speed is an ideal speed for cutting a type of material in order to produce the desired finish and optimize tool life.

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

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



Setting Spindle Speed

The chart below explains how to position the spindle range and speed levers to set the desired spindle speed.

Spindle Speed	Range Lever	Speed Lever
90 RPM	L	1
210 RPM	L	2
345 RPM	L	3
670 RPM	H	1
1180 RPM	H	2
1970 RPM	H	3

NOTICE

Change spindle speed **ONLY** when the spindle is completely stopped. Otherwise, machine damage could occur.

With the spindle completely stopped, position the spindle range and speed levers (see **Figure 27**) to set the spindle speed.

Note: If the levers will not move to the desired position, rotate the spindle by hand while applying pressure on the lever. When the gear teeth align, the lever will move into place.

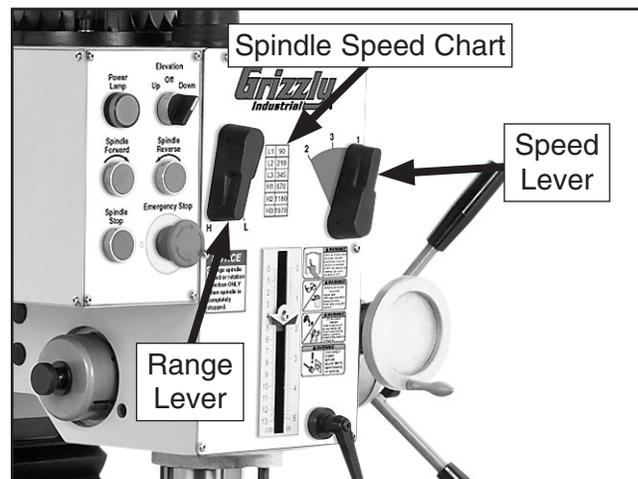


Figure 27. Spindle speed controls.



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.

G1075—52-PC. Clamping Kit for 1/2" T-Slots

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.

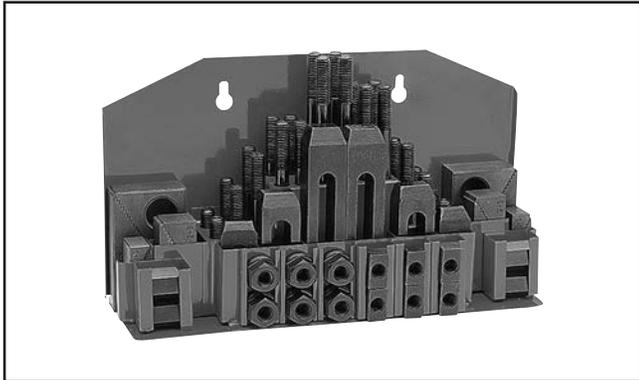


Figure 28. G1075 52-PC. Clamping Kit.

G7066—5" Tilting/Swiveling Milling Vise

H7576—Precision Self-Centering Vise



Figure 29. Specialty milling vises.

T23962—ISO 68 Moly-D Way Oil, 5 gal.

T23963—ISO 32 Moly-D Machine Oil, 5 gal.

Moly-D oils are some of the best we've found for maintaining the critical components of machinery because they tend to resist run-off and maintain their lubricity under a variety of conditions—as well as reduce chatter or slip. Buy in bulk and save with 5-gallon quantities.



Figure 30. ISO 68 and ISO 32 machine oil.

High Pressure Oil Cans

H7616—Plastic Nozzle

H7617—Flexible Plastic Nozzle

Whether you are lubricating cutting tools or maintaining machinery in top operating condition, you will appreciate these High Pressure Oil Cans. Each can holds 5 ounces of oil and has a trigger-activated, high-pressure pump.



Figure 31. High Pressure Oil Cans.

order online at www.grizzly.com or call 1-800-523-4777



H7527—6" Rotary Table Set

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

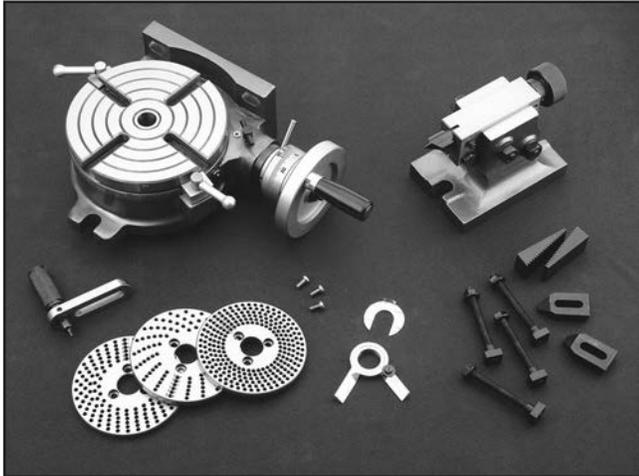
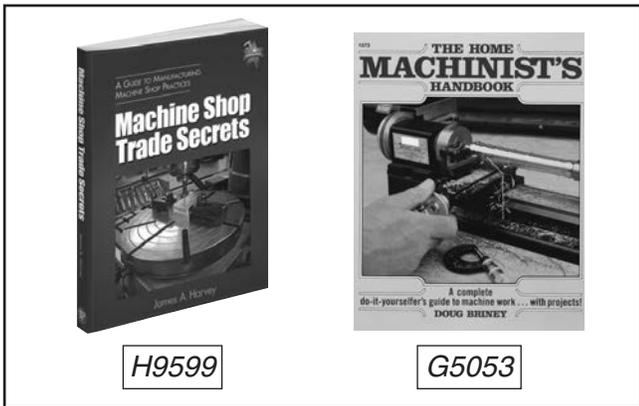


Figure 32. H7527 6" Rotary Table Set.

H9599—Machine Shop Trade Secrets

G5053—The Home Machinist's Handbook

Excellent reference pages for novices and professionals alike. Each book is filled with drawings charts and tables for getting the most of your milling machine. Model H9599 has 320 pages. Model G5053 has 275 pages.



H9599

G5053

Figure 33. Great texts for mill/drills.

SB1348—South Bend® 8-Pc. R-8 Collet Set

SB1349—South Bend® 16-Pc. R-8 Collet Set

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



Figure 34. Model SB1349 South Bend 16-Pc. R-8 Collet Set.

G7156—4" (3 5/8") Precision Milling Vise

G7154—5" (4 1/2") Precision Milling Vise

G7155—6" (5 5/8") Precision Milling Vise

Swiveling Milling Vises feature perfectly aligned, precision ground jaws, large Acme® screws and easy to read 0°–360° scales.



Figure 35. G7154 Precision Milling Vise.

order online at www.grizzly.com or call 1-800-523-4777



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

Includes these sizes and styles in two and four flute styles: $\frac{3}{16}$ " , $\frac{1}{4}$ " , $\frac{5}{16}$ " , $\frac{3}{8}$ " , $\frac{7}{16}$ " , $\frac{1}{2}$ " , $\frac{9}{16}$ " , $\frac{5}{8}$ " , $\frac{3}{8}$ " , $\frac{11}{16}$ " , and $\frac{3}{4}$ " .



Figure 36. G9760 20-PC End Mill Set.

G5774—R-8 End Mill Holder Set

Hold various sized end mills in your R-8 spindle with this End Mill Holder Set. Includes holders for $\frac{3}{16}$ " , $\frac{3}{8}$ " , $\frac{1}{2}$ " , $\frac{5}{8}$ " and $\frac{3}{4}$ " end mills.



Figure 37. G5774 R-8 End Mill Holder Set.

G9612—Test Indicator

This Test Indicator has a 0.03" range in graduations of 0.0005", an easy-to-read dial, and a pivoting stylus that moves at right angles to the dial face.



Figure 38. G9612 Test Indicator.

G5641—1-2-3 Blocks

G9815—Parallel Set

Blocks are square to within .0003". Measure 1" x 2" x 3". Parallel set measures 6" long by $\frac{1}{2}$ " , $\frac{5}{8}$ " , $\frac{3}{4}$ " , $\frac{7}{8}$ " , 1" , $\frac{11}{8}$ " , $\frac{11}{4}$ " , $\frac{11}{8}$ " , $\frac{13}{8}$ " , $\frac{11}{2}$ " , and $\frac{15}{8}$ " .

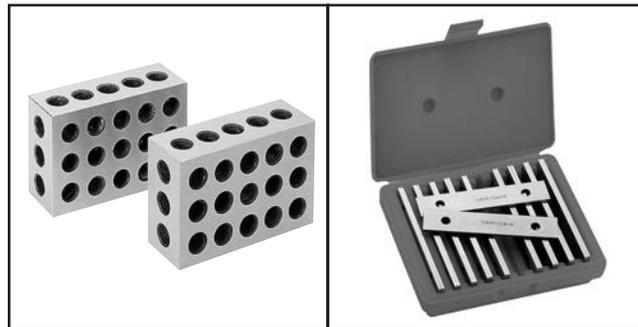


Figure 39. G5641 1-2-3 Blocks and G9815 Parallel Set.

H5930—4-Pc Center Drill Set 60°

H5931—4-Pc Center Drill Set 82°

Double ended HSS Center Drills are precision ground. Includes sizes 1-4.

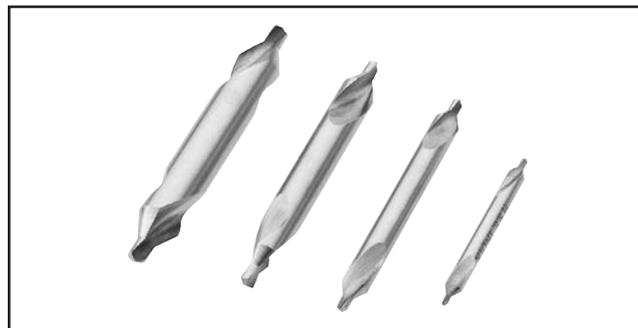


Figure 40. H5930 4-pc Center Drill Set 60°.

G3658—Titanium Drill Bits

Titanium nitride-coated bits last up to six times as long as uncoated bits. This 115-piece set features 29 fractional bits, from $\frac{1}{16}$ " to $\frac{1}{2}$ " in increments of $\frac{1}{64}$ " , letter bits from A-Z, and 60 number bits. Housed in rugged steel case.

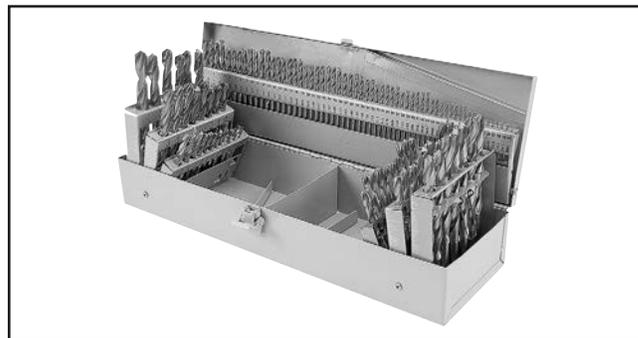
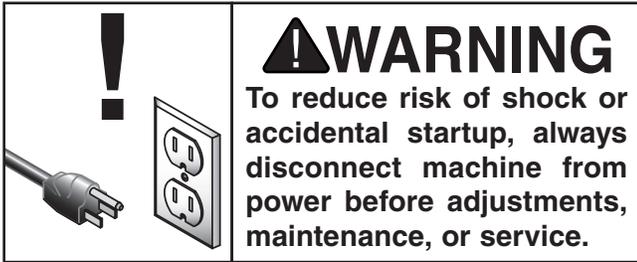


Figure 41. G3658 Titanium Drill Bits.

order online at www.grizzly.com or call 1-800-523-4777



SECTION 6: MAINTENANCE



Schedule

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

Daily Check:

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

Every 8 Hours of Operation:

- Check/add headstock oil (**Page 31**).
- Lubricate ball oilers (**Page 32**).
- Lubricate table/column ways and quill (**Page 32**).

Every 40 Hours of Operation:

- Lubricate table leadscrews (**Page 33**).

Every 90 Days of Operation:

- Lubricate quill rack and pinion (**Page 33**).
- Lubricate Z-axis leadscrew (**Page 34**).

Annually:

- Change headstock oil (**Page 31**).

Cleaning and Protecting

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

Remove any rust build-up from unpainted cast iron surfaces of your mill/drill and treat with a non-staining lubricant after cleaning.

Keep unpainted cast iron surfaces rust-free with regular applications of ISO 68 way oil (see **Page 27** for offerings from Grizzly).

Lubrication

An essential part of lubrication is cleaning the components before lubricating them.

This step is critical because grime and chips build up on lubricated components, which makes them hard to move. Simply adding more lubricant will not result in smooth moving parts.

Clean all exterior components in this section with mineral spirits, shop rags, and brushes before lubricating.

DISCONNECT MACHINE FROM POWER BEFORE PERFORMING LUBRICATION.

NOTICE

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



Headstock Reservoir

Oil TypeModel T23962 or ISO 68 Equivalent
 Oil Amount..... 3¼ Qt.
 Check/Add Frequency8 Hrs. of Operation
 Change Frequency Annually

The headstock has the proper amount of oil when the sight glass is halfway full (see **Figure 42**).



Figure 42. Headstock sight glass.

Tool Needed	Qty
Hex Wrench 8mm.....	1

To change the headstock oil:

1. Run the spindle at 670 RPM for approximately 10 minutes to warm the oil.
2. DISCONNECT MACHINE FROM POWER!
3. Remove the fill plug (see **Figure 43**).



Figure 43. Headstock oil fill plug.

4. Place a 1-gallon or larger drain pan on the table under the headstock.
5. Remove the drain plug (see **Figure 44**) from underneath the headstock. Allow the oil to completely drain into the pan.

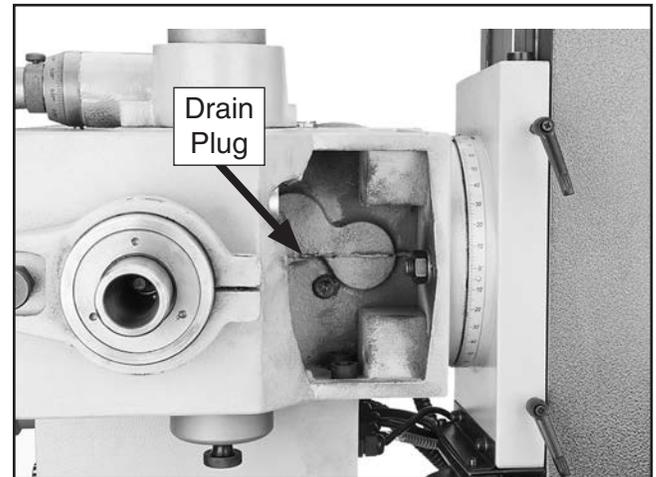


Figure 44. Headstock drain plug (headstock tilted 90° for clarity).

NOTICE

Follow federal, state, and local requirements for proper disposal of used oil.

6. Replace the drain plug.
7. Add oil until the sight glass is halfway full, then replace the fill plug.
8. Clean up any spilled oil to prevent slipping hazards.



Ball Oilers

Oil TypeModel T23963 or ISO 32 Equivalent
 Oil Amount..... 1–2 Pumps
 Lubrication Frequency8 Hrs. of Operation

Proper lubrication of ball oilers (shown in **Figures 45–46**) is done with a pump-type oil can that has a plastic or rubberized cone tip (see **Page 27** for offerings from Grizzly). We do not recommend using metal needle or lance tips, as they can push the ball too far into the oiler, break the spring seat, and lodge the ball in the oil galley.

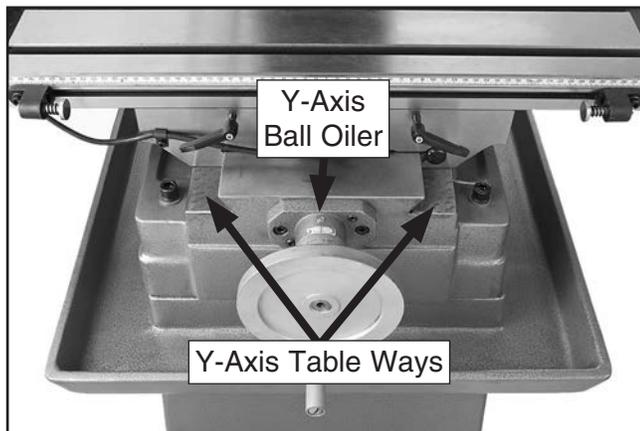


Figure 45. Y-axis ball oiler and ways.

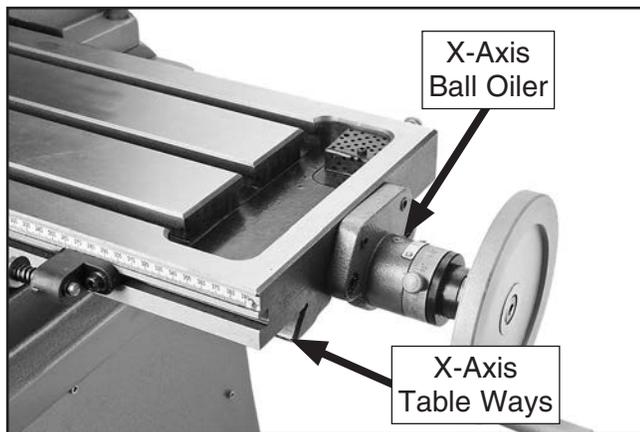


Figure 46. X-axis ball oiler and ways.

Push the tip of the oil can nozzle against the ball oiler to create a hydraulic seal, then pump the oil can once or twice. If you see sludge and contaminants coming out of the lubrication area, continue pumping the oil can until the oil runs clear. When finished, wipe away the excess oil.

Table/Column Ways & Quill

Oil TypeModel T23962 or ISO 68 Equivalent
 Oil Amount.....Thin Coat
 Lubrication Frequency8 Hrs. of Operation

Refer to **Figures 45–48** to identify each component to lubricate.

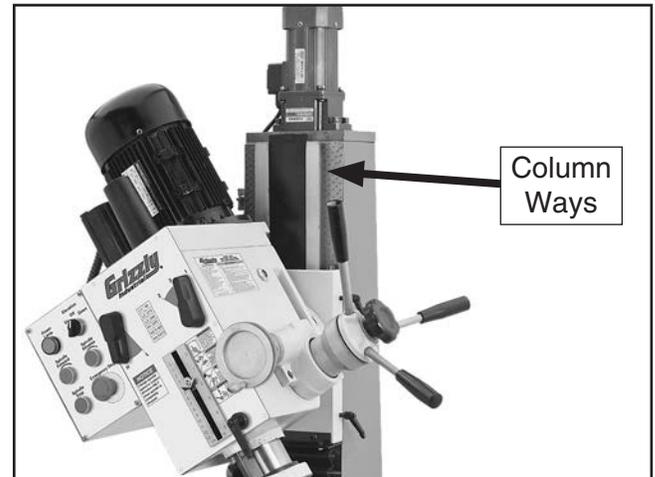


Figure 47. Column ways.

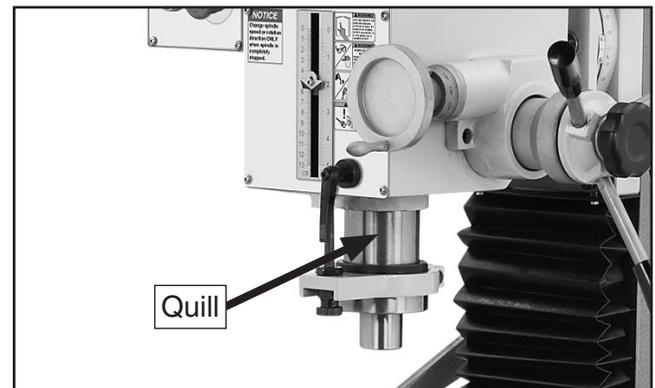


Figure 48. Outside surface of the quill.

Use the component controls to access the entire length of the surfaces, then clean them with mineral spirits and shop rags.

When dry, apply a thin coat of oil to the surfaces. Move each component through the entire path of travel several times to distribute the lubricant.



Table Leadscrews

Oil TypeModel T23962 or ISO 68 Equivalent
Oil Amount.....Thin Coat
Lubrication Frequency40 Hrs. of Operation

Move the table as necessary to access the entire length of the X- and Y-axis leadscrews (see **Figures 49–50**), then use mineral spirits, shop rags, and a brush to clean them.

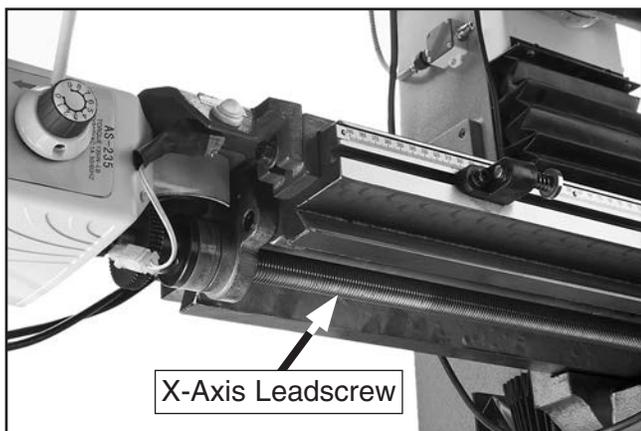


Figure 49. X-axis leadscrew.

Note: Use a 4mm hex wrench to remove the way cover from the column and access the Y-axis leadscrew.



Figure 50. Y-axis leadscrew.

Use a clean brush to apply a thin coat of oil to the leadscrew threads, then move the table through the X- and Y-axis paths to distribute the oil.

Replace the way cover before connecting the machine to power.

Quill Rack & Pinion

Oil TypeNLGI#2 Grease or Equivalent
Oil Amount.....Thin Coat
Lubrication Frequency 90 Days of Operation

Move the quill up and down to gain full access to the rack and pinion (see **Figure 51**), then clean the teeth with mineral spirits, shop rags, and a brush.

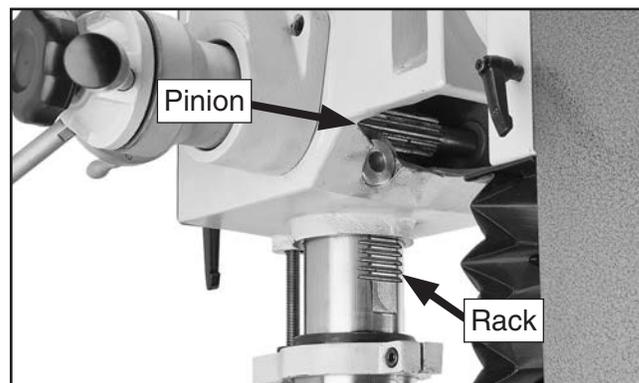


Figure 51. Quill rack and pinion.

Use a brush to apply a thin coat of grease to the teeth, then raise/lower the quill several times to distribute the grease.

Note: Re-apply oil to the smooth outside surface of the quill that was removed during the cleaning process.



Z-Axis Leadscrew

Oil Type NLGI#2 Grease or Equivalent
Oil Amount.....Thin Coat
Lubrication Frequency..... 90 Days of Operation

Using a 5mm hex wrench, remove the rear column cover to access the Z-axis leadscrew and worm gear (see **Figure 52**).

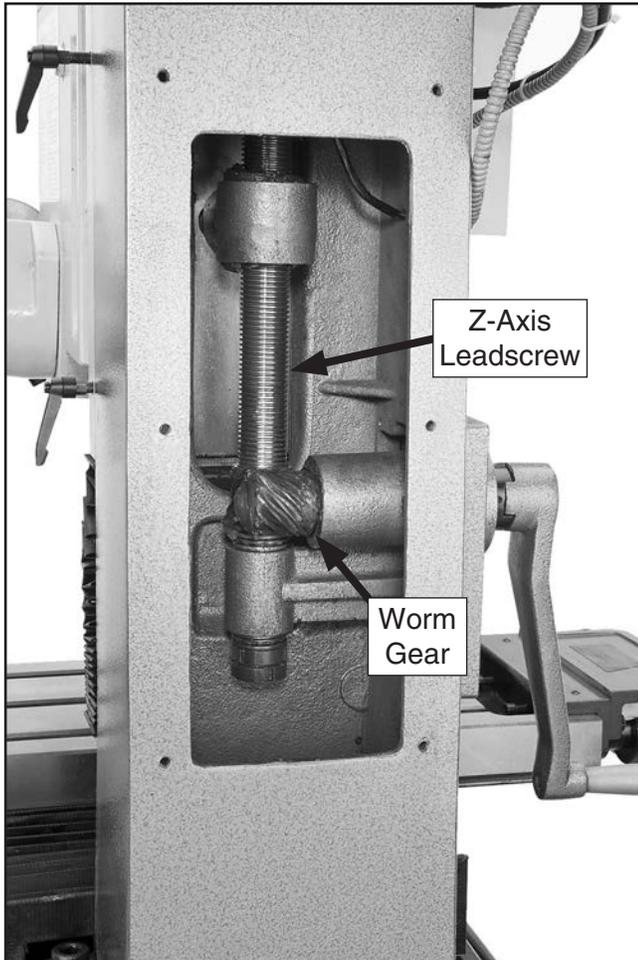


Figure 52. Z-axis leadscrew and worm gear exposed.

Use mineral spirits, shop rags, and a brush to clean away the old grease from the leadscrew threads and the worm gear teeth.

Use a brush to apply a thin coat of grease to the threads and teeth, then raise/lower the headstock several times to distribute the grease.

Note: *Replace the rear column cover before re-connecting the machine to power.*



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



Symptom	Possible Cause	Possible Solution
Machine does not start.	<ol style="list-style-type: none"> Emergency stop button depressed. Plug at fault or wired incorrectly. Incorrect power supply voltage. Wall fuse/circuit breaker is blown/tripped. Wiring is open/has high resistance. Motor wired incorrectly. Control panel buttons at fault. Motor or motor components are at fault. 	<ol style="list-style-type: none"> Twist emergency stop button clockwise until it pops out to reset it. Ensure plug is not damaged and is wired correctly. Ensure power supply voltage matches circuit requirements (Page 11). Ensure circuit size is correct and a short does not exist. Reset breaker or replace fuse. Check for broken wires or disconnected/corroded connections; repair/replace as necessary. Ensure motor wiring is correct (Page 43). Ensure each button is wired correctly; replace if at fault (Page 42). Test/repair/replace.
Machine stalls or is overloaded.	<ol style="list-style-type: none"> Feed rate/cutting speed too fast. Wrong cutter type. Machine is undersized for the task or tooling is incorrect for the task. Motor has overheated. Motor wired incorrectly. Motor bearings are at fault. Motor or motor components are at fault. 	<ol style="list-style-type: none"> Decrease feed rate/cutting speed. Use the correct cutter for the task. Use smaller or sharper tooling; reduce feed rate or spindle speed; use cutting fluid if possible. Clean off motor, let cool, and reduce workload. Ensure motor wiring is correct (Page 43). Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement. Test/repair/replace motor.
Machine has vibration or noisy operation.	<ol style="list-style-type: none"> Motor or machine component is loose. Workpiece not secure. Excessive depth of cut. Cutter/tooling is loose. Cutter is dull or at fault. Bit is chattering. Machine is incorrectly anchored to floor or sits unevenly. Motor fan is rubbing on fan cover. Motor bearings are at fault. 	<ol style="list-style-type: none"> Inspect/replace stripped or damaged bolts/nuts, and re-tighten with thread locking fluid. Properly clamp workpiece on table or in vise. Decrease depth of cut. Make sure tooling is properly secured. Replace/resharpen cutter. Replace/sharpen bit; index bit to workpiece; use appropriate feed rate and cutting RPM. Tighten/replace anchor bolts; relocate/shim machine. Replace dented fan cover or damaged fan. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.



Symptom	Possible Cause	Possible Solution
Tool loose in spindle.	<ol style="list-style-type: none"> 1. Tool is not fully drawn up into spindle taper. 2. Debris on tool or in spindle taper. 3. Taking too big of a cut. 	<ol style="list-style-type: none"> 1. Tighten draw bar. 2. Clean collet and spindle taper. 3. Lessen depth of cut and allow chips to clear.
Breaking tools or cutters.	<ol style="list-style-type: none"> 1. Spindle speed/feed rate is too fast. 2. Cutting tool too small. 3. Cutting tool getting too hot. 4. Taking too big of a cut. 5. Spindle extended too far down. 	<ol style="list-style-type: none"> 1. Set spindle speed correctly (Page 25) or use slower feed rate. 2. Use larger cutting tool and slower feed rate. 3. Use coolant fluid or oil for appropriate application. 4. Decrease depth of cut. 5. Fully retract spindle and lower headstock. This increases rigidity.
Workpiece vibrates or chatters during operation.	<ol style="list-style-type: none"> 1. Table locks not tight. 2. Workpiece not secure. 3. Spindle speed/feed rate is too fast. 4. Spindle extended too far down. 	<ol style="list-style-type: none"> 1. Tighten down table locks. 2. Properly clamp workpiece on table or in vise. 3. Set spindle speed correctly (Page 25) or use a slower feed rate. 4. Fully retract spindle and lower headstock. This increases rigidity.
Table is hard to move.	<ol style="list-style-type: none"> 1. Table locks are tightened down. 2. Chips have loaded up on ways. 3. Ways are dry and need lubrication. 4. Table limit stops are interfering. 5. Gibs are too tight. 	<ol style="list-style-type: none"> 1. Make sure table locks are fully released. 2. Frequently clean away chips that load up during operations. 3. Lubricate ways (Page 32). 4. Check to make sure that all table limit stops are not in the way. 5. Adjust gibs (see Page 37).
Bad surface finish.	<ol style="list-style-type: none"> 1. Spindle speed/feed rate is too fast. 2. Using a dull or incorrect cutting tool. 3. Wrong rotation of cutting tool. 4. Workpiece not secure. 5. Spindle extended too far down. 	<ol style="list-style-type: none"> 1. Set spindle speed correctly (Page 25) or use a slower feed rate. 2. Sharpen cutting tool or select one that better suits the operation. 3. Check for proper cutting rotation for cutting tool. 4. Properly clamp workpiece on table or in vise. 5. Fully retract spindle and lower headstock. This increases rigidity.
Cutting results not square.	<ol style="list-style-type: none"> 1. Table and spindle are not at 90° to each other. 	<ol style="list-style-type: none"> 1. Tram the spindle (Page 38).



Adjusting Gibs

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

Correctly positioning gibs is a matter of trial and error and patience. Tight gibs make table movement more accurate but stiff. Loose gibs make table movement sloppy but easier to do. The goal of gib adjustment is to remove unnecessary sloppiness without causing the ways to bind.

Many experienced machinists adjust the gibs just to the point where they can feel a slight drag in table movement.

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

DISCONNECT MACHINE FROM POWER BEFORE ADJUSTING THE GIBS!

Make sure all table locks are loose. Then, loosen one gib adjustment screw (see **Figure 53**) and tighten the opposing screw the same amount to move the gib, while at the same time rotating the handwheel to move the table until you feel a slight drag in that path of movement.

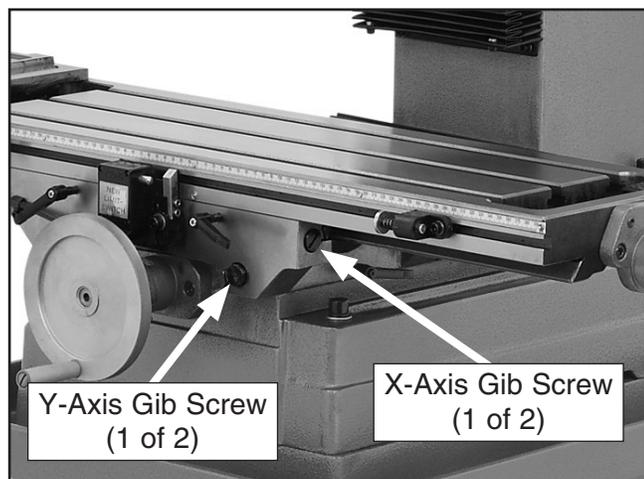


Figure 53. Location of table gib screws.

Adjusting Leadscrew Backlash

Leadscrew backlash is the amount of freeplay movement in the leadscrew (when the leadscrew moves but the table does not) after changing the direction of rotation.

Leadscrews must have a certain amount of backlash to rotate easily, but over time, it increases with wear. Generally, 0.003"–0.006" leadscrew backlash is acceptable to ensure smooth movement and reduce the risk of premature thread wear.

The X- and Y-axis leadscrew backlash is adjusted using a long 4mm hex wrench to tighten/loosen the cap screw on the leadscrew nut. This adjusts the force the leadscrew nut exerts on the leadscrew threads.

The X-axis leadscrew nut shown in **Figure 54** is accessed from underneath the left side of the table.

The Y-axis leadscrew nut is similar and is accessed from inside the cabinet underneath the machine base.

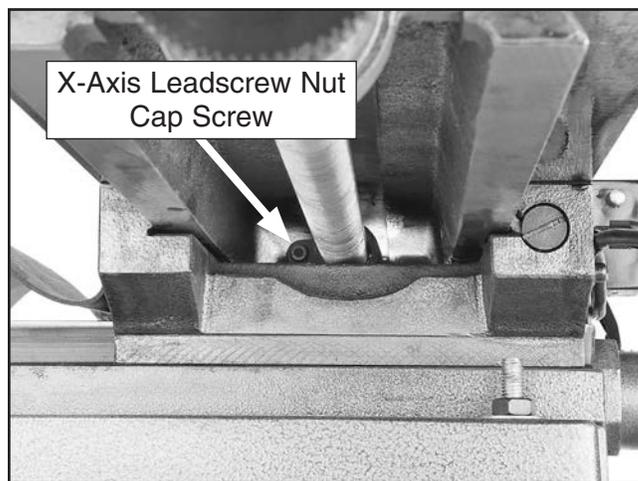


Figure 54. Location of X-axis leadscrew nut for adjusting backlash.



Tramming Spindle

When your operation requires that the spindle axis be precisely perpendicular to the table, you must tram the spindle with the table. Simply adjusting the headstock tilt to the 90° mark on the tilt scale will not be precise enough for highly accurate results.

This procedure involves mounting a dial indicator to the quill or spindle, rotating it around the table, and adjusting the head position so that the spindle axis is 90° to the table X-axis, as illustrated in **Figure 55**.

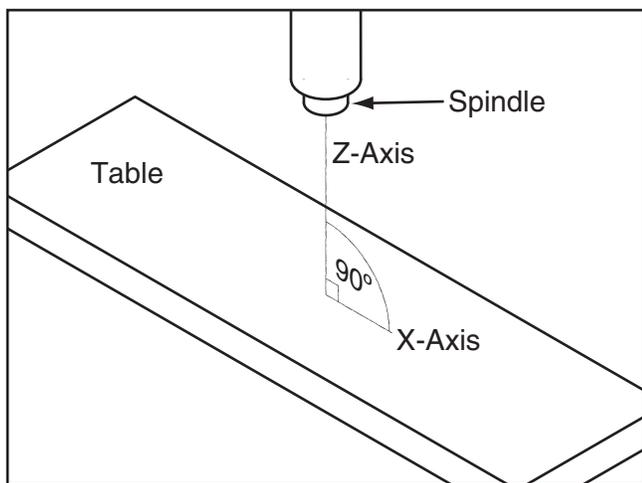


Figure 55. Spindle centerline properly trammed to the table.

Note: Keep in mind that the top surface of your workpiece will not likely be exactly parallel with the table top. Depending on your operation, you may choose to tram the spindle to the top surface of the workpiece after it is mounted instead of tramming to the table.

Tools Needed

Qty

Dial Indicator (with at least 0.0005" resolution) . 1
Indicator Holder (mounted on quill/spindle) 1
Precision Parallel Block (1-2-3 Blocks)..... 1

Note: A precision-ground plate can be substituted for the parallel block. The farther the indicator point can be placed from the spindle axis, the more accurate the alignment measurements will be.

To tram the spindle with the table:

1. DISCONNECT MACHINE FROM POWER!
2. Prepare machine by performing the following tasks:
 - Stone table to remove all nicks and burrs, then clean off all debris. Verify table is clean by running your hand over the top of it.
 - Position table for the operation you intend to perform after tramming—preferably centered with saddle.
 - Tighten any table locks that should be tight during intended milling operation.
3. Place parallel block underneath spindle.
4. Install indicator holder into spindle or onto quill, then mount indicator onto it so that the point is as parallel to the block as possible (see the illustration in **Figure 56** for an example).

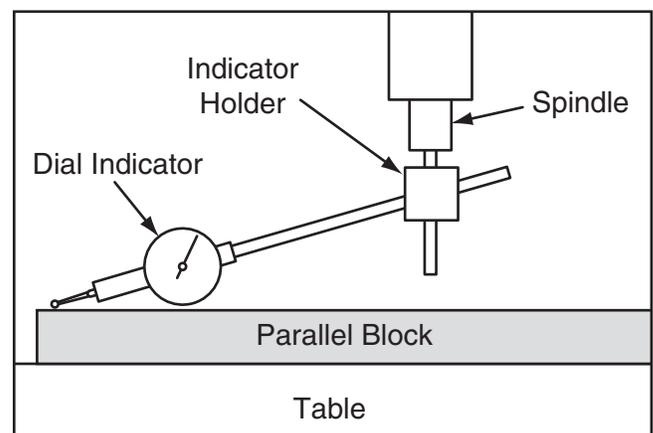


Figure 56. Dial indicator mounted.



- Place the parallel block directly under spindle and indicator across length of table, as illustrated in **Figure 57**.

Note: If you must re-position quill to accommodate the above step, then review tasks in **Step 2** to make sure mill is properly prepared for tramping.

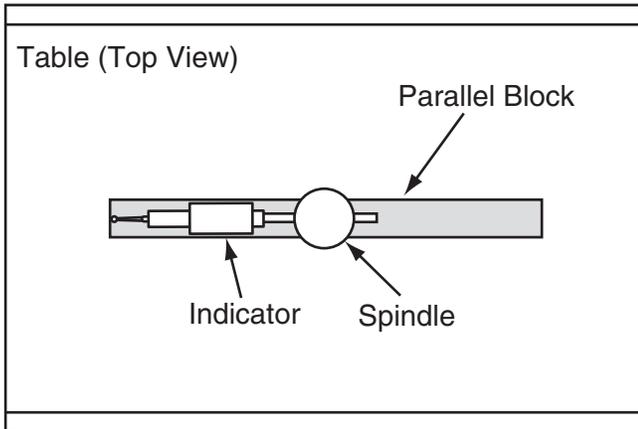


Figure 57. Setup for the X-axis adjustment.

Note: Generally, the goal is to get the difference of the indicator readings between ends of the parallel bar down to 0.0005". However, the acceptable variance will depend on the requirements for your operation.

- Rotate spindle by hand so that the indicator point rests on one end of parallel block, as illustrated in **Figure 57**, then zero dial.
- Rotate spindle so that the indicator point rests in the same manner on other end of block, then read dial.

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

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

Tip: Keep one of the tilting hex nuts snug so that the head does not move loosely while you adjust it in small amounts.

- Re-tighten tilting hex nuts.



Replacing Power Feed Carbon Brushes

The X-axis power feed motor has a carbon brushes that will wear with normal use. There is one on the top of the power feed (see **Figure 58**) and one on the bottom.

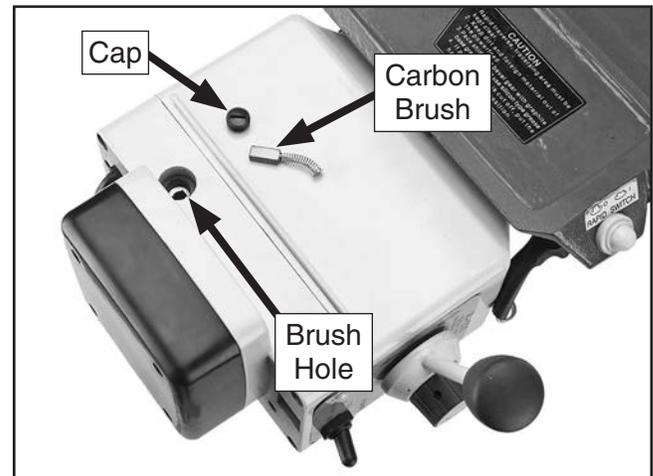


Figure 58. Carbon brush removed from power feed.

If, over time, the power feed starts to seem sluggish or will not operate, check the carbon brushes. If they are less than $\frac{3}{16}$ " in length, replace them with new ones (Part No. P0755501-6).

Note: For proper performance, replace both carbon brushes at the same time.

Use a flat screwdriver to unthread (turn counter-clockwise) the cap covering the carbon brush, replace the brush assembly, then secure it with the cap.

Tightening Return Spring Tension

The return spring moves the spindle back up when the coarse downfeed handles are released. The tension of this spring was adjusted at the factory, but it may need to be tightened during the life of the mill/drill.

Important: Do not perform this procedure unless it is absolutely necessary.

During this procedure, you will loosen the spring cover thumb screw (See **Figure 59**) just enough to pull the cover back to clear the roll pin, then rotate the cover counterclockwise to fit the roll pin in the next slot.

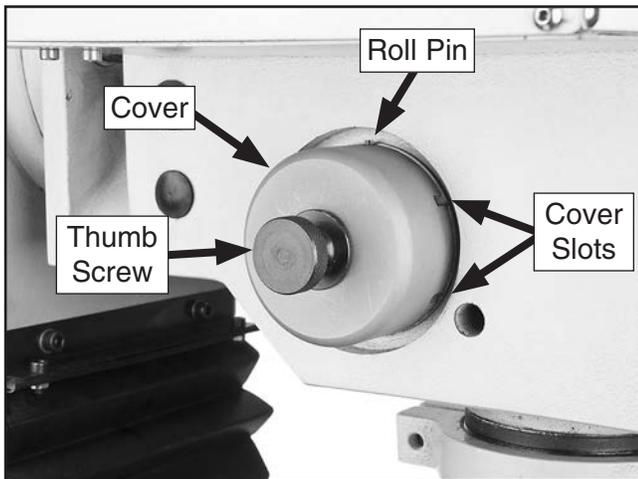


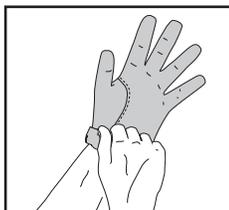
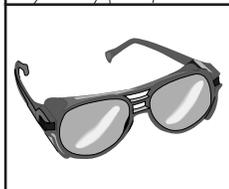
Figure 59. Return spring components.

To adjust the return spring tension:

1. DISCONNECT MACHINE FROM POWER!
2. Wipe off any oil on spring cover so it does not slip when you hold it during adjustments.
3. Mark slot on cover that engages the roll pin at the top—this is the factory setting.
4. Put on heavy leather gloves to protect your hands from lacerations if spring uncoils during next step.

Note: Keep a good grip on spring cover during next step. Letting go of cover when roll pin is not engaged will cause spring to rapidly uncoil.

5. While holding spring cover against side of headstock so the spring will not unwind, loosen thumb screw approximately $\frac{1}{4}$ ".
6. Pull cover out to disengage it with roll pin, then rotate it counterclockwise to engage roll pin in the next slot in cover.
7. Re-tighten thumb screw to secure setting.

	⚠ WARNING If the return spring should come loose from the spring cap and rapidly unwind, laceration or impact injuries could occur. Always wear heavy leather gloves and safety glasses when adjusting the return spring tension.
	



SECTION 8: WIRING

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

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

WARNING

Wiring Safety Instructions

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

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

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

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

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

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

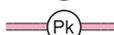
CAPACITORS/INVERTERS. Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

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

NOTICE

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

COLOR KEY

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

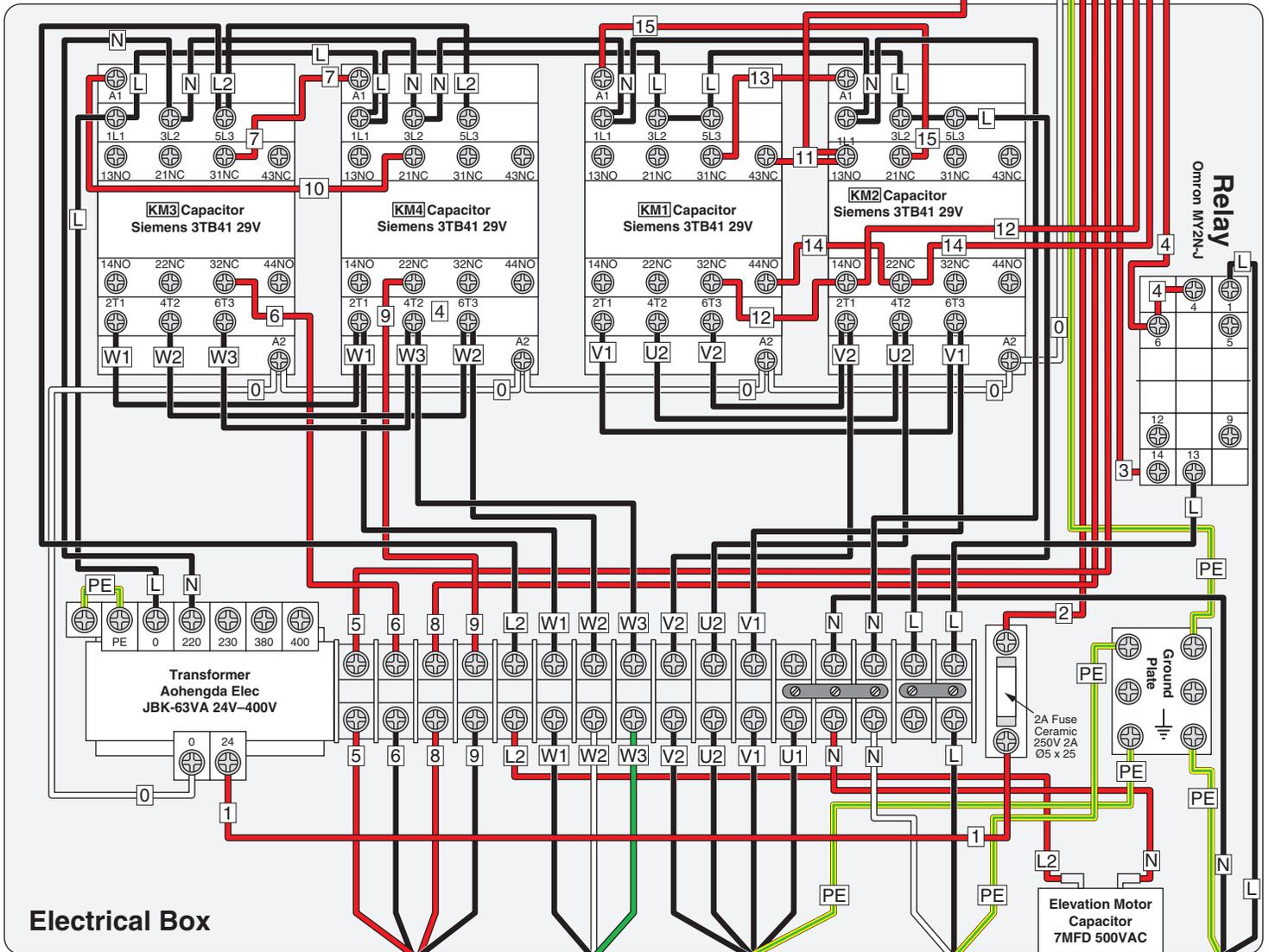
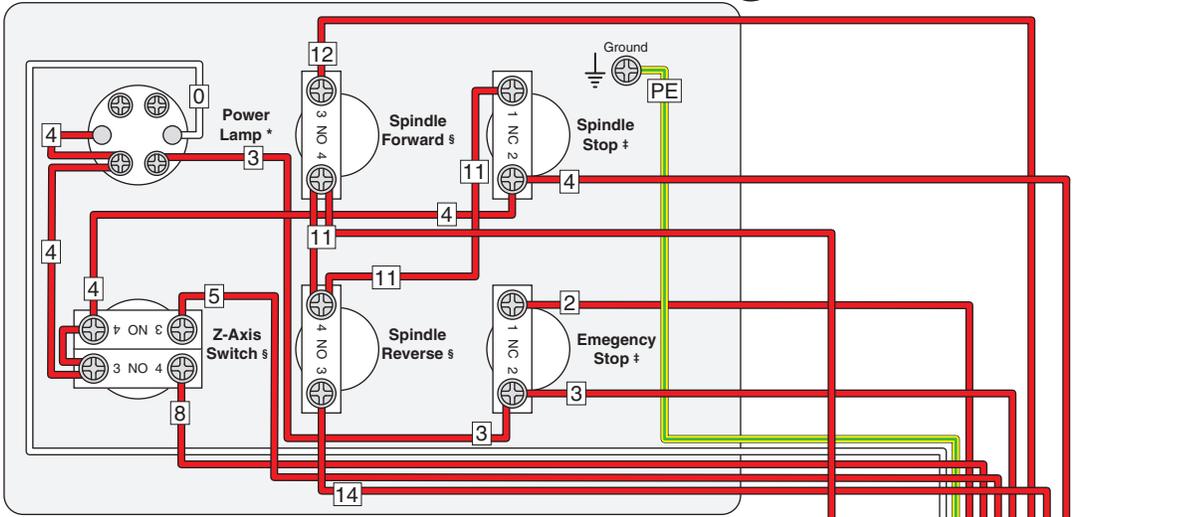


Electrical Box Wiring

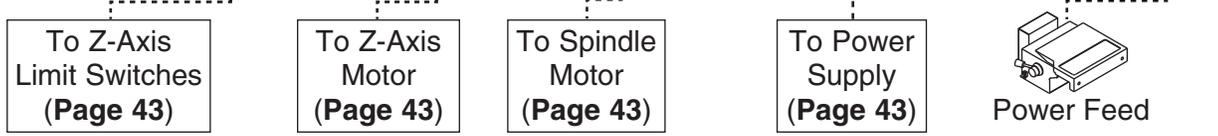
Control Panel

Component Legend:

- * = PNC EB2
- § = Minger LA125H-BE101C
- ‡ = Minger LA125H-BE102C

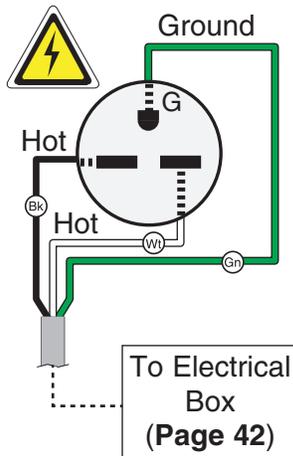


Electrical Box

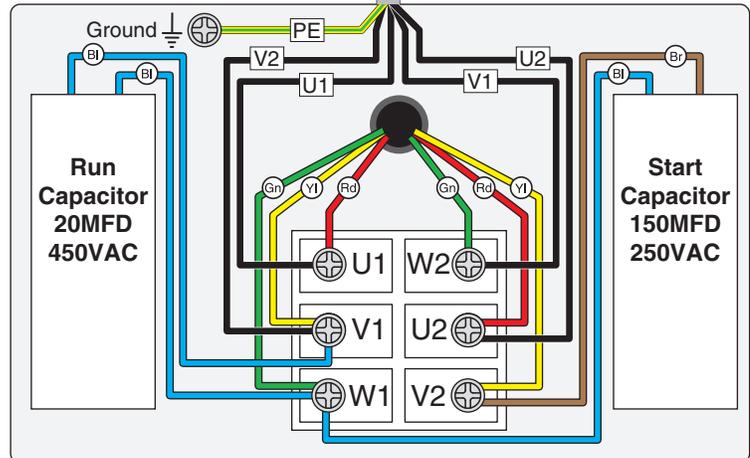


Motors & Other Electrical Wiring

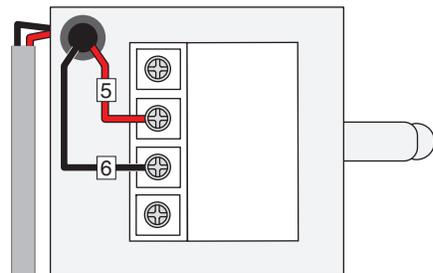
**220V
NEMA 6-15
(As Recommended)**



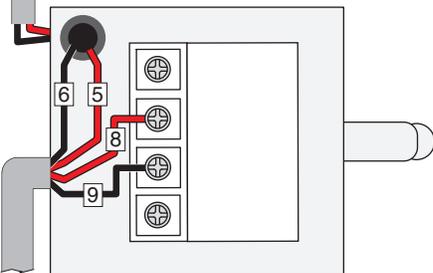
220V Spindle Motor



**Upper Z-Axis
Limit Switch**

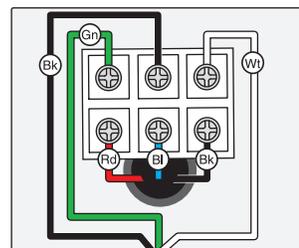


**Lower Z-Axis
Limit Switch**



To Electrical
Box
(Page 42)

**220V
Z-Axis Motor**

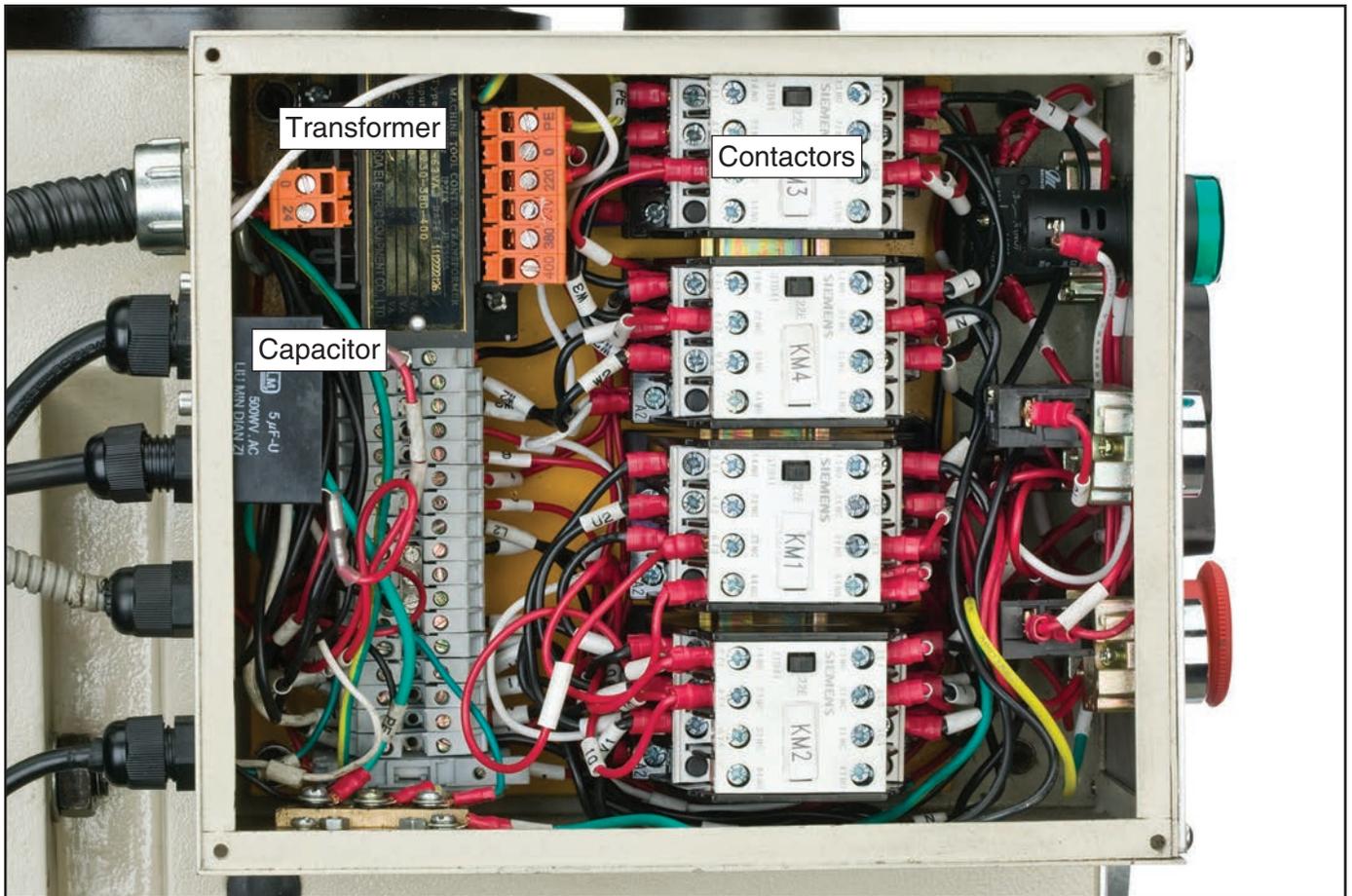


To Electrical
Box
(Page 42)



Electrical Photos

Electrical Box



Z-Axis Motor

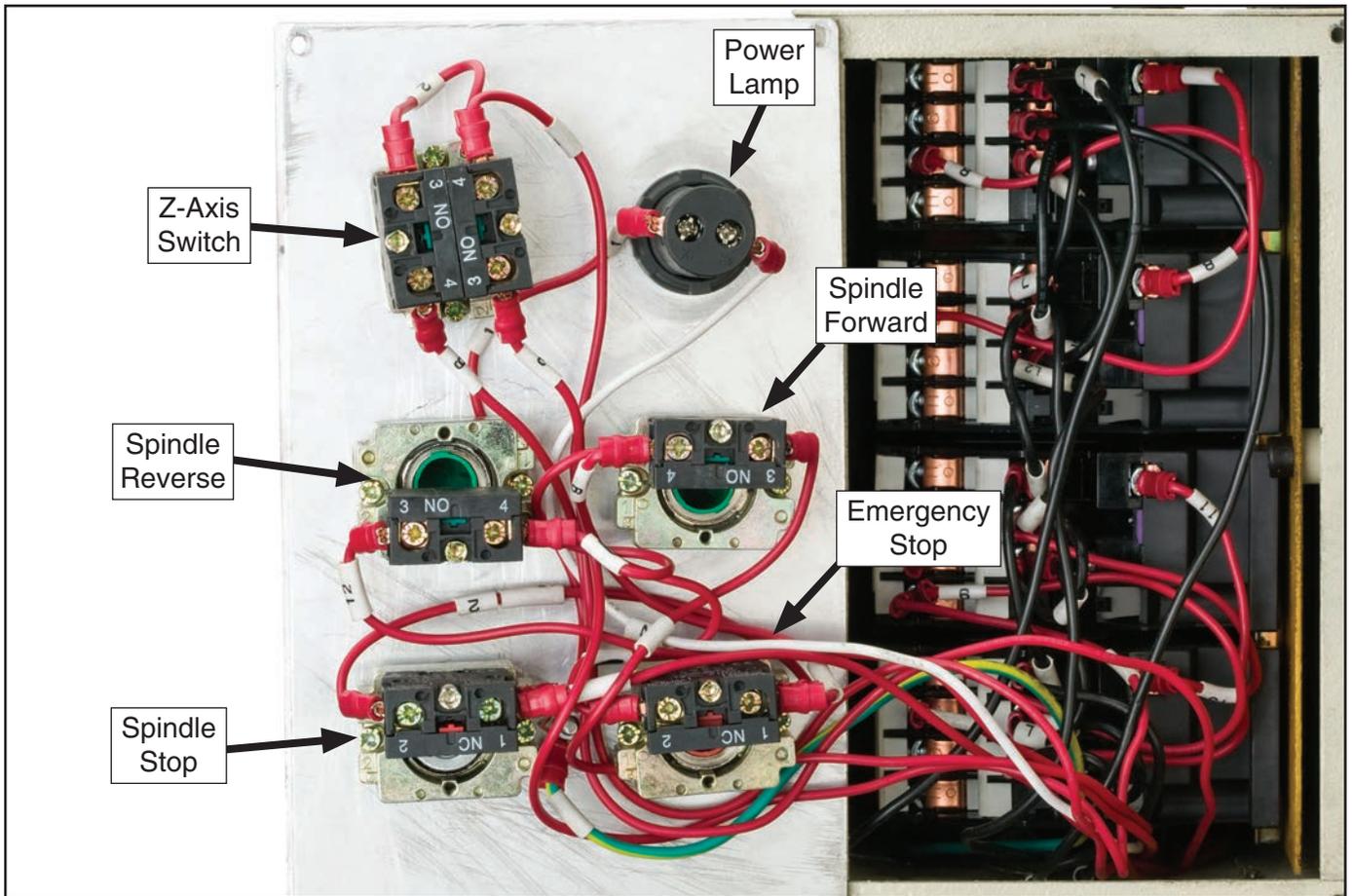


Z-Axis Limit Switch

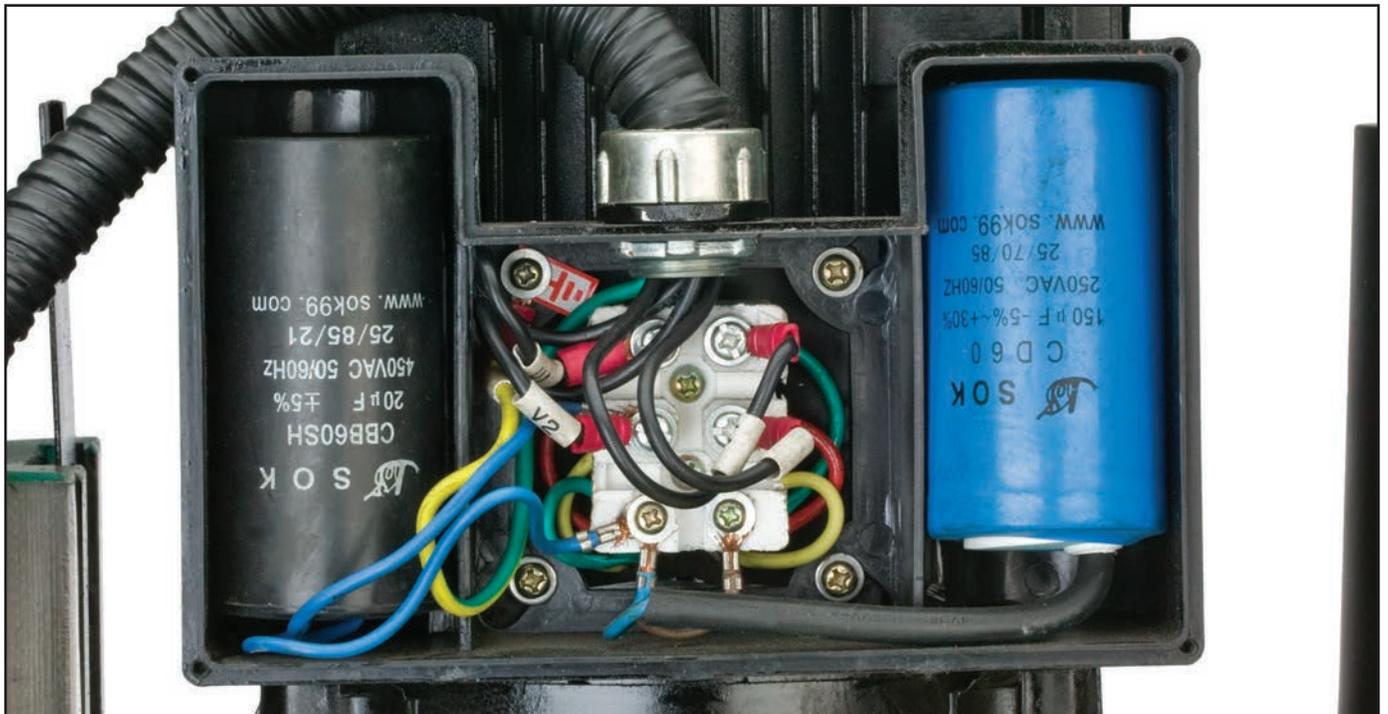


Electrical Photos

Control Panel (Rear View)

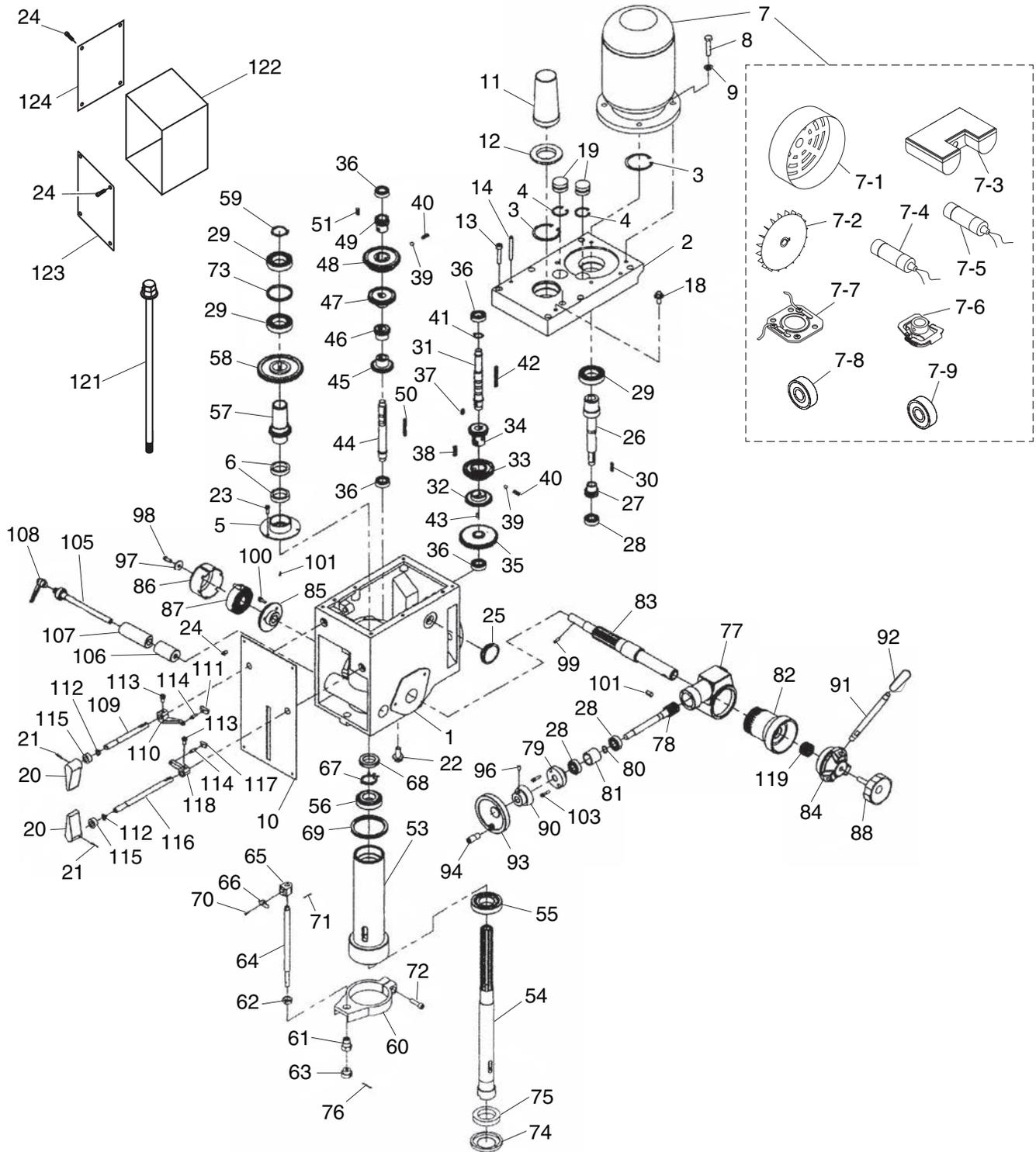


Spindle Motor



SECTION 9: PARTS

Head



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



Head Parts List

REF	PART #	DESCRIPTION
1	P0754001	HEADSTOCK HOUSING
2	P0754002	HEADSTOCK TOP COVER
3	PR38M	INT RETAINING RING 62MM
4	PR21M	INT RETAINING RING 35MM
5	P0754005	FLANGED END CAP
6	P0754006	QUILL SEAL
7	P0754007	MOTOR 2HP 220V 1-PH
7-1	P0754007-1	MOTOR FAN COVER
7-2	P0754007-2	MOTOR FAN
7-3	P0754007-3	MOTOR JUNCTION BOX
7-4	PC150E	S CAPACITOR 150M 250V 1-5/8 X 3
7-5	PC20D	R CAPACITOR 20M 450V 1-1/2 X 3-1/4
7-6	P0754007-6	CENTRIFUGAL SWITCH 25-1725
7-7	P0754007-7	CONTACT PLATE
7-8	P6205ZZ	BALL BEARING 6205ZZ
7-9	P6205ZZ	BALL BEARING 6205ZZ
8	PB07M	HEX BOLT M8-1.25 X 25
9	PW01M	FLAT WASHER 8MM
10	P0755010	HEADSTOCK FRONT COVER
11	P0754011	DRAWBAR CAP
12	P0754012	DRAWBAR CAP RUBBER SEAL
13	PCAP45M	CAP SCREW M8-1.25 X 45
14	P0755014	TAPER PIN 8 X 40
18	P0754018	OIL FILL PLUG 1/2" NPT
19	P0754019	CASTING PLUG
20	P0754020	SHIFT LEVER
21	PRP72M	ROLL PIN 3 X 15
22	P0755022	OIL DRAIN PLUG 3/8" NPT
23	PS09M	PHLP HD SCR M5-.8 X 10
24	PCAP18M	CAP SCREW M4-.7 X 8
25	P0754025	OIL SIGHT GLASS 3/4" NPT
26	P0754026	DRIVE SHAFT
27	P0754027	GEAR 14T
28	P6003ZZ	BALL BEARING 6003ZZ
29	P6007ZZ	BALL BEARING 6007ZZ
30	PK23M	KEY 5 X 5 X 25
31	P0754031	IDLER SHAFT
32	P0754032	GEAR 29T
33	P0754033	GEAR 35T
34	P0754034	GEAR 21T
35	P0754035	GEAR 41T
36	P6202ZZ	BALL BEARING 6202ZZ
37	PK101M	KEY 6 X 6 X 14
38	PK32M	KEY 6 X 6 X 28
39	PSTB002M	STEEL BALL 8MM
40	P0754040	COMPRESSION SPRING
41	PR07M	EXT RETAINING RING 18MM
42	PK36M	KEY 5 X 5 X 50
43	PSS107M	SET SCREW M6-.75 X 12
44	P0754044	SPINDLE SHAFT
45	P0754045	GEAR 25T
46	P0754046	GEAR 18T
47	P0754047	GEAR 32T

REF	PART #	DESCRIPTION
48	P0754048	GEAR 43T
49	P0754049	GEAR 16T
50	PK36M	KEY 5 X 5 X 50
51	PK147M	KEY 6 X 6 X 18
53	P0754053	QUILL
54	P0754054	SPINDLE R-8
55	P30207-P5	TAPERED ROLLER BEARING 30207 P5
56	P30206-P5	TAPERED ROLLER BEARING 30206 P5
57	P0754057	SPLINED SLEEVE
58	P0754058	GEAR 53T
59	PR12M	EXT RETAINING RING 35MM
60	P0754060	DEPTH ROD MOUNT
61	P0754061	INT THREADED SHOULDER BOLT M16-2 X 10
62	PN48M	HEX NUT M16-2 THIN
63	P0754063	DEPTH ROD KNURLED THUMB KNOB M16-2
64	P0754064	STUD-FT M12-1.75 X 230
65	P0754065	DEPTH ROD DOG
66	P0754066	DEPTH POINTER
67	P0754067	SPANNER NUT LOCK WASHER 30MM
68	P0754068	SPANNER NUT M30-1.5
69	P0754069	QUILL RUBBER SEAL
70	PCAP18M	CAP SCREW M4-.7 X 8
71	PRP64M	ROLL PIN 3 X 18
72	PCAP13M	CAP SCREW M8-1.25 X 30
73	P0754073	SPACER
74	P0754074	SPINDLE END CAP
75	P0754075	SPINDLE SEAL
76	PRP02M	ROLL PIN 3 X 16
77	P0754077	WORM GEAR HOUSING
78	P0754078	WORM SHAFT
79	P0754079	WORM SHAFT END BRACKET
80	PR02M	EXT RETAINING RING 14MM
81	P0754081	SPACER
82	P0754082	WORM GEAR
83	P0754083	PINION SHAFT
84	P0754084	LEVER HUB
85	P0754085	SPRING BASE
86	P0754086	SPRING COVER
87	P0754087	COILED SPRING
88	P0754088	KNOB BOLT M10-1.5 X 45
90	P0754090	FINE DOWNFEED GRADUATED DIAL
91	P0754091	SHOULDER STUD-UDE M12-1.75 X 145 15,20
92	P0754092	TAPERED KNOB M12-1.75
93	P0754093	FINE DOWNFEED HANDWHEEL
94	P0754094	HANDWHEEL HANDLE
96	P0754096	KNURLED THUMB SCREW M5-.8 X 12
97	PW03M	FLAT WASHER 6MM
98	P0754098	KNURLED THUMB SCREW M6-1 X 12
99	PS05M	PHLP HD SCR M5-.8 X 8
100	PFH86M	FLAT HD CAP SCR M6-1 X 12
101	PCOTS004M	STANDARD COTTER PIN 8 X 20
103	PCAP50M	CAP SCREW M5-.8 X 10
105	P0754105	LOCK LEVER SHAFT



Head Parts List

REF	PART #	DESCRIPTION
106	P0754106	INNER LOCK PLUNGER
107	P0754107	OUTER LOCK PLUNGER
108	P0754108	ADJUSTABLE HANDLE
109	P0754109	SPEED RANGE SHIFT SHAFT
110	P0754110	SPEED RANGE SHIFT ROCKER ARM
111	P0754111	SPEED RANGE SHIFT FORK
112	PR03M	EXT RETAINING RING 12MM
113	PCAP27M	CAP SCREW M6-1 X 14
114	P0754114	SHIFT ROD

REF	PART #	DESCRIPTION
115	P0754115	SHAFT SEAL
116	P0754116	SPEED SHIFT SHAFT
117	P0754117	SPEED SHIFT FORK
118	P0754118	SPEED SHIFT ROCKER ARM
119	P0754119	COMPRESSION SPRING
121	P0754121	DRAWBAR ASSEMBLY 7/16-20 X 17-3/4
122	P0755122	ELECTRICAL CABINET
123	P0755123	ELECTRICAL CABINET FRONT COVER
124	P0755124	ELECTRICAL CABINET SIDE COVER



Table & Column

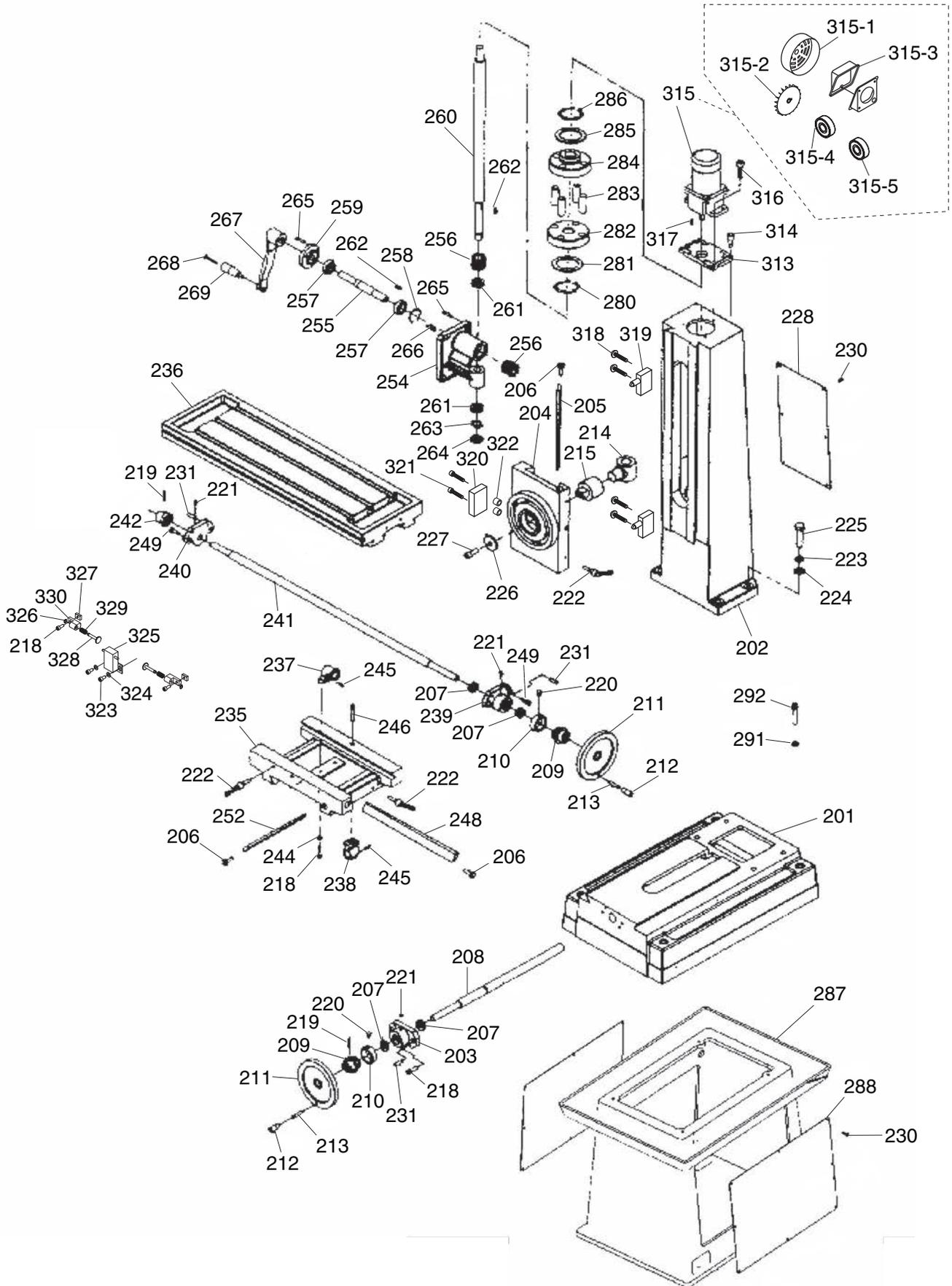


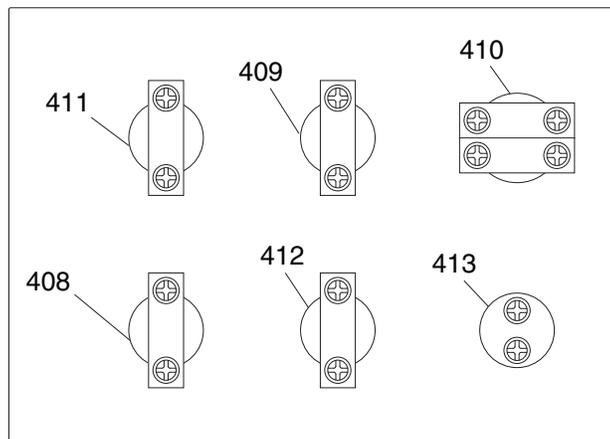
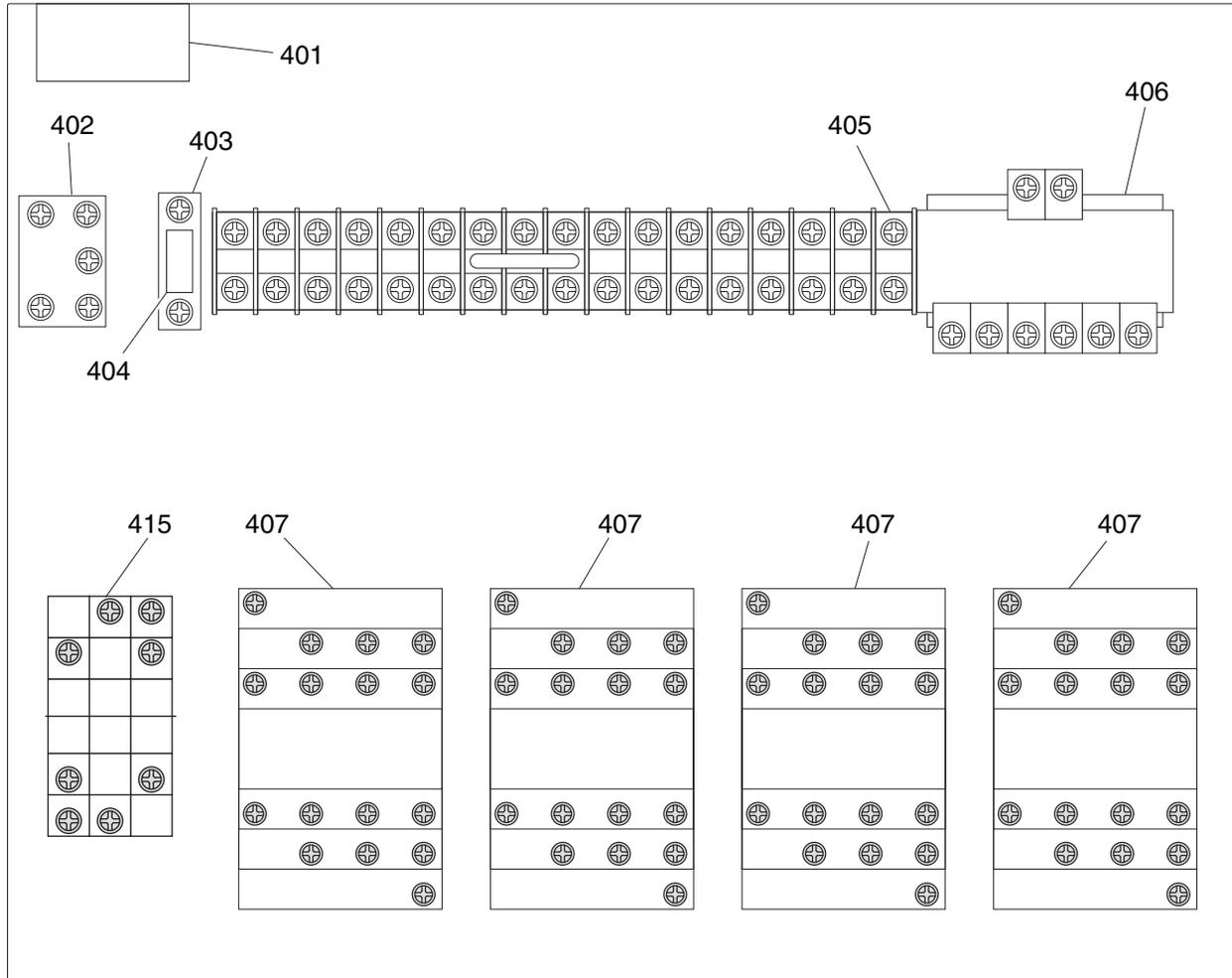
Table & Column Parts List

REF	PART #	DESCRIPTION
201	P0755201	BASE
202	P0755202	COLUMN
203	P0754203	Y-AXIS LEADSCREW BRACKET
204	P0755204	HEAD MOUNT
205	P0755205	Z-AXIS GIB
206	P0754206	GIB ADJUSTMENT SCREW
207	P51103	THRUST BEARING 51103
208	P0755208	Y-AXIS LEADSCREW
209	P0754209	DIAL CLUTCH
210	P0754210	TABLE GRADUATED DIAL
211	P0754211	TABLE HANDWHEEL
212	P0754094	HANDWHEEL HANDLE
213	P0754213	SHOULDER SCREW M8-1.25 X 12 72L
214	P0755214	Z-AXIS LEADSCREW NUT
215	P0755215	LEADSCREW NUT BRACKET
218	PCAP14M	CAP SCREW M8-1.25 X 20
219	P0754219	DOWEL PIN 5 X 45
220	P0754096	KNURLED THUMB SCREW M5-.8 X 12
221	PLUBE002M	TAP-IN BALL OILER 8MM
222	P0754222	ADJUSTABLE HANDLE M8-1.25
223	PLW10M	LOCK WASHER 16MM
224	PW08M	FLAT WASHER 16MM
225	PCAP123M	CAP SCREW M16-2 X 60
226	P0755226	HEAD MOUNT FLAT WASHER 12MM
227	PCAP111M	CAP SCREW M12-1.75 X 35
228	P0755228	COLUMN REAR COVER
230	PCAP26M	CAP SCREW M6-1 X 12
231	P0755231	DOWEL PIN 8 X 30
235	P0755235	SADDLE
236	P0755236	TABLE
237	P0754237	X-AXIS LEADSCREW NUT
238	P0754238	Y-AXIS LEADSCREW NUT
239	P0754239	X-AXIS LEADSCREW RIGHT BRACKET
240	P0755240	X-AXIS LEADSCREW LEFT BRACKET
241	P0755241	X-AXIS LEADSCREW
242	P0755242	POWER FEED CLUTCH
244	PW01M	FLAT WASHER 8MM
245	PCAP38M	CAP SCREW M5-.8 X 25
246	PCAP45M	CAP SCREW M8-1.25 X 45
248	P0755248	TABLE GIB
249	PCAP38M	CAP SCREW M5-.8 X 25
252	P0755252	SADDLE GIB
254	P0755254	Z-AXIS GEAR HOUSING
255	P0755255	Z-AXIS CRANK SHAFT
256	P0755256	GEAR 12T
257	P0755257	BALL BEARING 604ZZ

REF	PART #	DESCRIPTION
258	PR24M	INT RETAINING RING 42MM
259	P0755259	FLANGED BEARING CAP
260	P0755260	Z-AXIS LEADSCREW
261	P51104	THRUST BEARING 51104
262	PK07M	KEY 6 X 6 X 20
263	P0755263	SPANNER NUT LOCK WASHER 20MM
264	P0755264	SPANNER NUT M20-1.5
265	PCAP06M	CAP SCREW M6-1 X 25
266	P0755266	DOWEL PIN 6 X 30
267	P0755267	Z-AXIS CRANK
268	P0755268	SHOULDER SCREW M10-1.5 X 20 90L
269	P0755269	CRANK HANDLE
280	PR15M	EXT RETAINING RING 30MM
281	P0755281	SPACER
282	P0755282	LOWER COUPLER
283	P0755283	NYLON SHAFT
284	P0755282	UPPER COUPLER
285	P0755281	SPACER
286	PR15M	EXT RETAINING RING 30MM
287	P0755287	STAND
288	P0755288	STAND SIDE COVER
291	PW06M	FLAT WASHER 12MM
292	P0755292	CAP SCREW M12-1.75 X 140
313	P0755313	MOTOR MOUNT
314	PCAP31M	CAP SCREW M8-1.25 X 25
315	P0755315	ELEVATION MOTOR 1/8HP 220V 1-PH
315-1	P0755315-1	MOTOR FAN COVER
315-2	P0755315-2	MOTOR FAN
315-3	P0755315-3	MOTOR JUNCTION BOX
315-4	P6001ZZ	BALL BEARING 6001ZZ
315-5	P6000ZZ	BALL BEARING 6000ZZ
316	PCAP31M	CAP SCREW M8-1.25 X 25
317	P0755317	DOWEL PIN 5 X 25
318	PS09M	PHLP HD SCR M5-.8 X 10
319	P0755319	LIMIT SWITCH CHINT YBLX-JW2/11H/L
320	P0755320	Z-AXIS LIMIT BLOCK
321	PCAP02M	CAP SCREW M6-1 X 20
322	P0755322	SPACER
323	PCAP201M	CAP SCREW M8-1.25 X 6
324	PW01M	FLAT WASHER 8MM
325	P0754274	POWER FEED LIMIT SWITCH
326	PR39M	EXT RETAINING RING 8MM
327	P0754276	T-SLOT NUT M8-1.25
328	P0754277	POWER FEED LIMIT STOP
329	P0754278	COMPRESSION SPRING
330	P0754279	LIMIT STOP HOUSING



Electrical Components



REF PART # DESCRIPTION

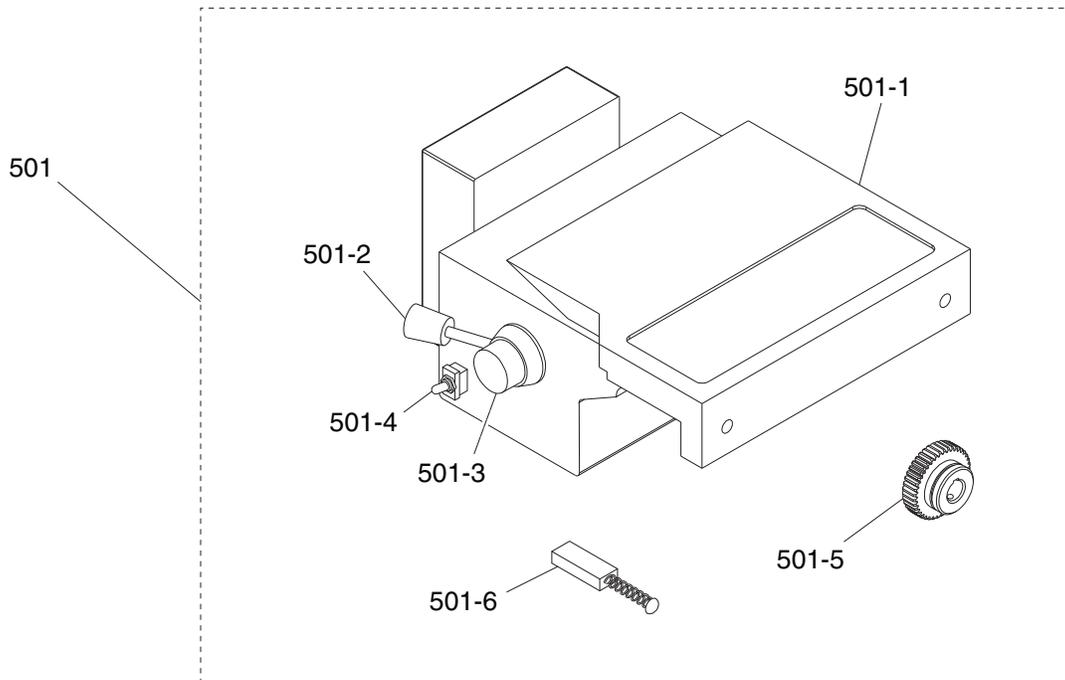
401	P0755401	CAPACITOR 7M 500V 20 X 32 X 48MM
402	P0755402	GROUNDING PLATE
403	P0755403	FUSE HOLDER
404	P0755404	FUSE 2A 250V 5 X 25MM
405	P0755405	TERMINAL BAR 1-PC
406	P0755406	TRANSFORMER AOHENGDA ELEC JBK63VA 24-400V
407	P0755407	CONTACTOR SIEMENS 3TB41 29V
408	P0755408	SPINDLE STOP BUTTON MINGER LA125HBE101C

REF PART # DESCRIPTION

409	P0755409	SPINDLE REV BUTTON MINGER LA125HBE102C
410	P0755410	Z-AXIS SWITCH MINGER LA125HBE102C
411	P0755411	E-STOP BUTTON MINGER LA125HBE101C
412	P0755412	SPINDLE FWD BUTTON MINGER LA125HBE102C
413	P0755413	POWER LAMP MINGER AD622D/S
414	P0755414	ELECTRICAL MOUNTING PLATE
415	P0755415	RELAY OMRON MY2N-J



Power Feed



REF	PART #	DESCRIPTION
501	T24824	POWER FEED ASSY ALIGN AS-235
501-1	PT24824001A	MOUNTING BRACKET 2-PC
501-2	PT24824002	CONTROL HANDLE
501-3	PT24824003	SPEED CONTROL KNOB

REF	PART #	DESCRIPTION
501-4	PT24824004	ON/OFF SWITCH
501-5	PT24824008	ZYTEL GEAR ASSEMBLY
501-6	P0755501-6	POWER FEED MOTOR CARBON BRUSH



Accessories



REF	PART #	DESCRIPTION
504	P0754304	TOOLBOX
505	P0754305	T-BOLT M12-1.75 X 55
506	PW06M	FLAT WASHER 12MM
507	PN09M	HEX NUT M12-1.75
508	P0754308	DRILL CHUCK B16 W/CHUCK KEY
509	P0754309	SPINDLE SLEEVE MT#3-MT#2
510	P0754310	DRILL CHUCK ARBOR R8-B16
511	P0754311	SPINDLE SLEEVE R8-MT#3
512	P0754312	BOTTLE FOR OIL

REF	PART #	DESCRIPTION
513	P0754313	DRIFT KEY
514	PAW10M	HEX WRENCH 10MM
515	PAW05M	HEX WRENCH 5MM
516	PAW04M	HEX WRENCH 4MM
517	PAW03M	HEX WRENCH 3MM
518	PWR1719	WRENCH 17 X 19 OPEN-ENDS
519	PWR2224	WRENCH 22 X 24 OPEN-ENDS
520	PAW02.5M	HEX WRENCH 2.5MM





WARRANTY CARD

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<input type="checkbox"/> Family Handyman	<input type="checkbox"/> Popular Woodworking	<input type="checkbox"/> Woodshop News
<input type="checkbox"/> Hand Loader	<input type="checkbox"/> Precision Shooter	<input type="checkbox"/> Woodsmith
<input type="checkbox"/> Handy	<input type="checkbox"/> Projects in Metal	<input type="checkbox"/> Woodwork
<input type="checkbox"/> Home Shop Machinist	<input type="checkbox"/> RC Modeler	<input type="checkbox"/> Woodworker West
<input type="checkbox"/> Journal of Light Cont.	<input type="checkbox"/> Rifle	<input type="checkbox"/> Woodworker's Journal
<input type="checkbox"/> Live Steam	<input type="checkbox"/> Shop Notes	<input type="checkbox"/> Other:
<input type="checkbox"/> Model Airplane News	<input type="checkbox"/> Shotgun News	
<input type="checkbox"/> Old House Journal	<input type="checkbox"/> Today's Homeowner	
<input type="checkbox"/> Popular Mechanics	<input type="checkbox"/> Wood	
- What is your annual household income?

<input type="checkbox"/> \$20,000-\$29,000	<input type="checkbox"/> \$30,000-\$39,000	<input type="checkbox"/> \$40,000-\$49,000
<input type="checkbox"/> \$50,000-\$59,000	<input type="checkbox"/> \$60,000-\$69,000	<input type="checkbox"/> \$70,000+
- What is your age group?

<input type="checkbox"/> 20-29	<input type="checkbox"/> 30-39	<input type="checkbox"/> 40-49
<input type="checkbox"/> 50-59	<input type="checkbox"/> 60-69	<input type="checkbox"/> 70+
- How long have you been a woodworker/metalworker?

<input type="checkbox"/> 0-2 Years	<input type="checkbox"/> 2-8 Years	<input type="checkbox"/> 8-20 Years	<input type="checkbox"/> 20+ Years
------------------------------------	------------------------------------	-------------------------------------	------------------------------------
- How many of your machines or tools are Grizzly?

<input type="checkbox"/> 0-2	<input type="checkbox"/> 3-5	<input type="checkbox"/> 6-9	<input type="checkbox"/> 10+
------------------------------	------------------------------	------------------------------	------------------------------
- Do you think your machine represents a good value? Yes No
- Would you recommend Grizzly Industrial to a friend? Yes No
- 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: _____

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

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

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

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

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

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