

Grizzly *Industrial, Inc.*®

MODEL G0816 HEAVY-DUTY BEAD ROLLER OWNER'S MANUAL

(For models manufactured since 10/15)



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V1.08.16



WARNING!

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

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

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

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



WARNING!

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

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

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

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INTRODUCTION

Contact Info

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

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

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

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

Manual Accuracy

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

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

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

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

		MODEL GXXXX MACHINE NAME	
SPECIFICATIONS		▲ WARNING!	
Motor:	To reduce risk of serious injury when using this machine:		
Specification:	Read manual before operation.		
Specification:	Wear safety glasses and respirator.		
Specification:	Ensure safety glasses/respirator are properly adjusted/setup and		
Specification:	power is connected to grounded circuit before starting.		
Weight:	4. Make sure the motor has stopped and disconnect power before adjustments, maintenance, or service.		
	5. DO NOT expose to rain or dampness.		
	6. DO NOT modify this machine in any way.		
	7.		
	8.		
	9. Do not use while under the influence of drugs or alcohol.		
	10. Maintain machine carefully to prevent accidents.		
Manufactured for Grizzly in Taiwan			

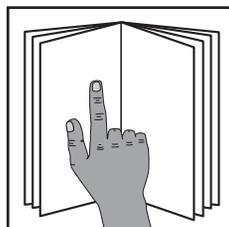
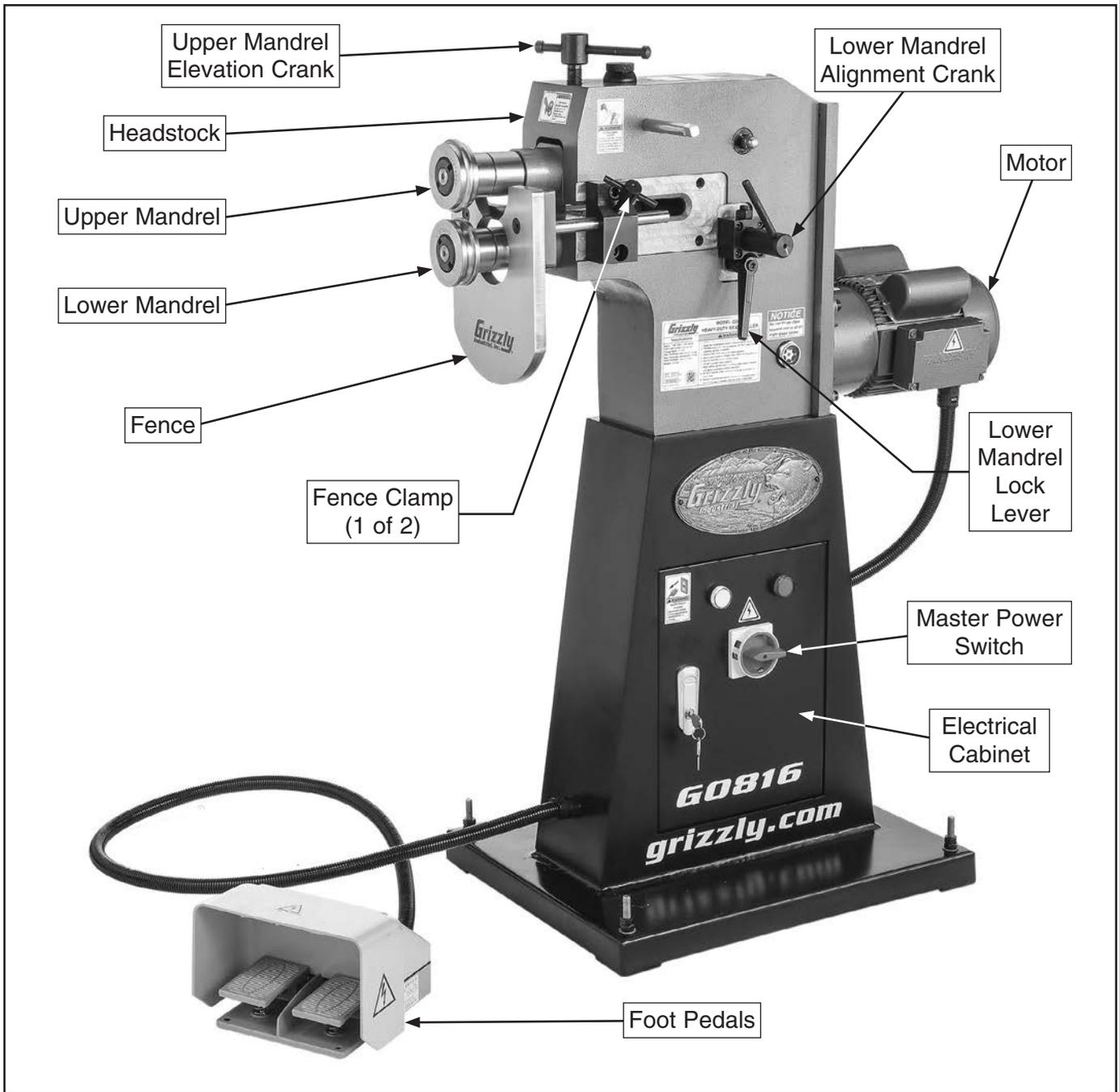
Manufacture Date []

Serial Number []



Identification

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



⚠️ WARNING

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



Controls & Components



Refer to **Figures 1–4** and the following descriptions to become familiar with the basic controls and components of this machine. Understanding these items and how they work will help you understand the rest of the manual and stay safe when operating this machine.

Headstock Controls

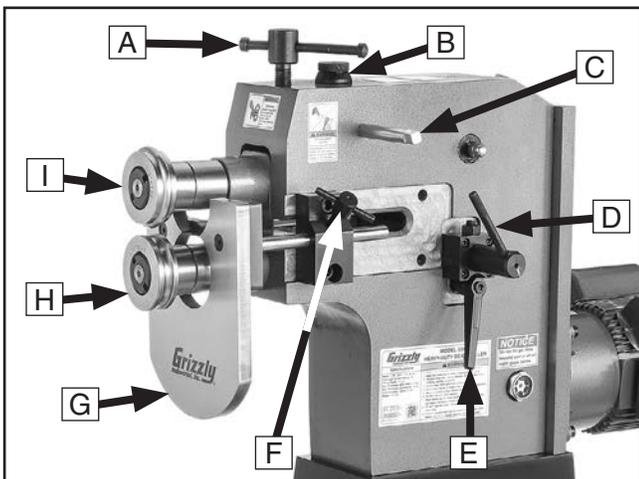


Figure 1. Headstock controls.

- A. Upper Mandrel Elevation Crank.** Rotate clockwise to lower upper mandrel; rotate counterclockwise to raise it.
- B. Spring Tension Knob.** Adjusts upper mandrel return spring tension. Rotate clockwise to increase tension; rotate counterclockwise to decrease tension (refer to **Adjusting Return Spring Tension** on **Page 33** for more information).

Note: *The spring tension knob is set at the factory and does not require day-to-day adjustment. Only adjust if return spring stretches or is replaced.*

- C. Lifting Bars (1 of 2 shown).** Connect lifting straps/lifting equipment to lifting bars to move machine (refer to **Lifting & Placing** on **Page 17** for more information).
- D. Lower Mandrel Alignment Crank.** Adjusts lateral alignment of lower mandrel to upper mandrel. Rotate clockwise to move lower mandrel toward headstock; rotate counterclockwise to move it away from headstock.
- E. Lower Mandrel Lock Lever.** Tighten to lock lower mandrel alignment adjustment; loosen to allow adjustment.
- F. Fence Clamps (1 of 2 shown).** Tighten to lock fence in position. Loosen to allow fence adjustment.
- G. Fence.** Guides workpiece when rolling straight beads parallel to a workpiece edge (see **Adjusting Fence** on **Page 22** for more information).
- H. Lower Mandrel.** Rotates counterclockwise against upper mandrel to shape workpiece as it advances through mandrels. Lower mandrel can be adjusted laterally to align with upper mandrel.
- I. Upper Mandrel.** Rotates clockwise against lower mandrel to shape workpiece as it advances through mandrels. Upper mandrel is raised to remove/insert workpiece, and lowered against workpiece with moderate pressure during operations.



Power Controls

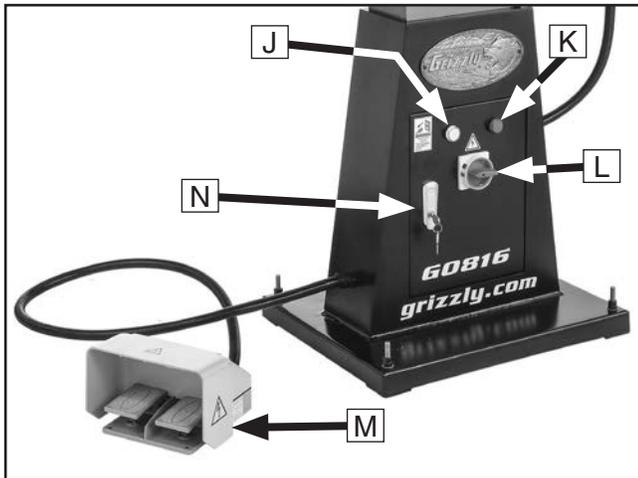


Figure 2. Power controls.

- J. Power Indicator.** Illuminates when machine is connected to power.
- K. Overload Indicator.** Illuminates when overload relay has tripped (see **Wiring** section, beginning on **Page 35** for more information).
- L. Master Power Switch:** Toggles incoming power **ON** or **OFF**. Vertical position (see **Figure 2**) toggles incoming power **ON**. Horizontal position toggles incoming power **OFF**.
- M. Foot Control Pedals.** When pressed, mandrels rotate. Left pedal advances workpiece to the left; right pedal advances workpiece to the right. When released, mandrels stop rotating.
- N. Electrical Cabinet.** Provides access to electrical panel and switch connections.

Headstock Lubrication Components

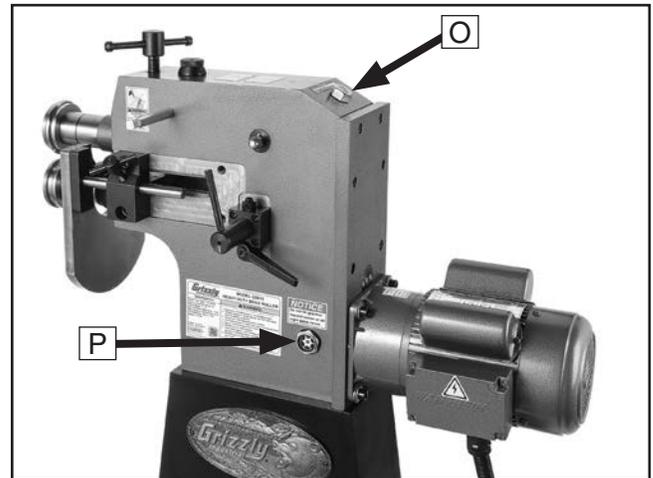


Figure 3. Location of headstock oil fill plug and sight glass.

- O. Headstock Oil Fill Plug.** Remove to add headstock oil; re-install when finished (see **Lubrication** section, beginning on **Page 28** for more information).
- P. Headstock Oil Sight Glass.** Displays amount of oil in headstock. Oil level should appear approximately halfway in sight glass (see **Lubrication** section, beginning on **Page 28** for more information).

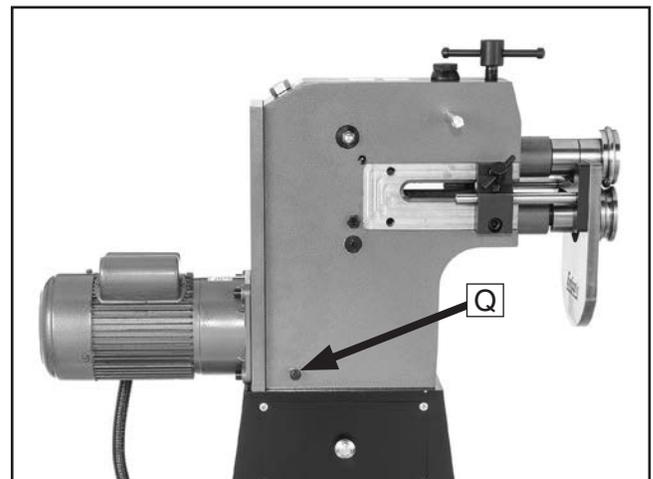


Figure 4. Location of headstock oil drain plug.

- Q. Headstock Oil Drain Plug.** Remove to drain headstock oil; re-install when finished (see **Lubrication** section, beginning on **Page 28** for more information).





MACHINE DATA SHEET

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MODEL G0816 HEAVY-DUTY BEAD ROLLER

Product Dimensions:

Weight 410 lbs.
Width (side-to-side) x Depth (front-to-back) x Height 22-1/2 x 34 x 44 in.
Foot Print (Length/Width)..... 18 x 22-1/2 in.

Shipping Dimensions:

Type Wood Crate
Weight..... 455 lbs.
Length/Width/Height..... 40 x 23 x 53 in.
Must Ship Upright Yes

Electrical:

Power Requirement 220V, Single-Phase, 60 Hz
Full-Load Current Rating..... 5A
Minimum Circuit Size 15A
Connection Type..... Cord & Plug
Power Cord Included Yes
Recommended Power Cord Gauge..... 14 AWG
Plug Included No
Recommended Plug Type 6-15
Switch Type ON/OFF Switch, Foot Pedal

Motor:

Main

Type..... TEFC Capacitor-Start Induction
Horsepower 1 HP
Voltage 220V
Phase Single-Phase
Amps 5A
Speed 1650 RPM
Power Transfer..... Gear Drive
Bearings Shielded & Permanently Lubricated



Main Specifications:

Operation Information

Maximum Thickness (Mild Steel)	14 Gauge
Maximum Thickness (Aluminum)	12 Gauge
Throat Depth	11-1/2 in.
Adjustable Depth Stop.....	Yes
Shaft Diameter	30 mm

Construction

Roll	Steel
Body	Steel
Stand	Steel
Paint/Finish.....	Urethane

Fluid Capacity

Gearbox Capacity.....	0.6 qt.
Gearbox Fluid Type.....	ISO 68 (eg. Grizzly T23962, Mobil Vactra 2)

Other Specifications:

Country of Origin.....	China
Warranty.....	1 Year
Approximate Assembly & Setup Time	30 Minutes
Serial Number Location	ID Label
ISO 9001 Factory.....	No
CSA Certified	No

Features:

- Hands-Free Operation with Movable Foot Switch
- Adjustable Throat Depth
- Heavy-Duty Steel Body and Stand
- 11½" Throat Capacity for Workpieces up to 23" Wide
- 14-Gauge Mild Steel Capacity
- 12-Gauge Aluminum Capacity
- One-Hand Mandrel Height Adjustment
- Ball Oiler Lubrication
- Oil Level Sight Glass
- 1-Year Warranty
- Bronze Bushings for Moving Components

Accessories:

- Special Wrench for Removing Tooling
- Keys for Electrical Cabinet Lock
- ½" Bead Mandrel Set



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 reduce risk of slipping and losing control or accidentally contacting cutting tool or moving parts.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



Additional Safety for Bead Rollers

WARNING

Serious injury or death can occur from fingers, clothing, jewelry, or hair becoming entangled/ crushed in rotating or moving parts. To minimize risk of injury, anyone operating this machine MUST completely heed hazards and warnings below.

AVOIDING ENTANGLEMENT. Becoming entangled in moving parts of this machine can cause pinching and crushing injuries. To avoid these hazards, **DO NOT** wear loose clothing or jewelry, and tie back long hair.

HAND PLACEMENT. Holding workpiece too close to rollers during operation increases risk of pinching and crushing injuries. To reduce your risk, **NEVER** place hands and fingers near rollers during operation.

FOOT PROTECTION. Heavy workpieces accidentally falling off of rollers during operation can crush operator's feet. To reduce your risk, wear steel-toed boots when using machine.

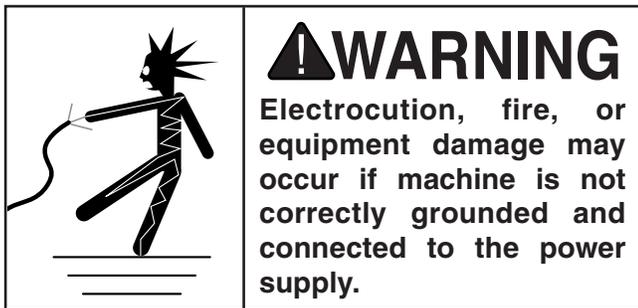
FEEDING WORKPIECE. Forcefully jamming workpiece through rollers could cause hands or fingers to slip and get caught in moving parts, causing pinching and crushing injuries. Only advance workpiece using foot pedals. **DO NOT** use hands to force workpiece through rollers.



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 5 Amps

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

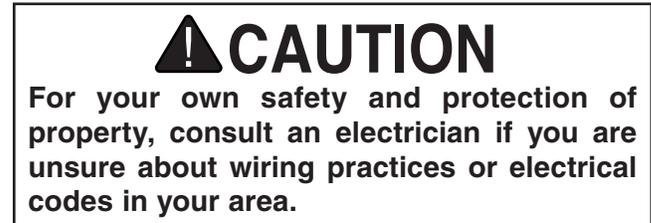
If the machine is overloaded for a sufficient length of time, damage, overheating, or fire may result—especially if connected to an undersized circuit. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets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

Circuit Requirements for 220V

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

Nominal Voltage 208V, 220V, 230V, 240V
Cycle 60 Hz
Phase Single-Phase
Power Supply Circuit 15 Amps
Plug/Receptacle NEMA 6-15
Cord “S”-Type, 3-Wire, 14 AWG, 300 VAC

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



Grounding 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).

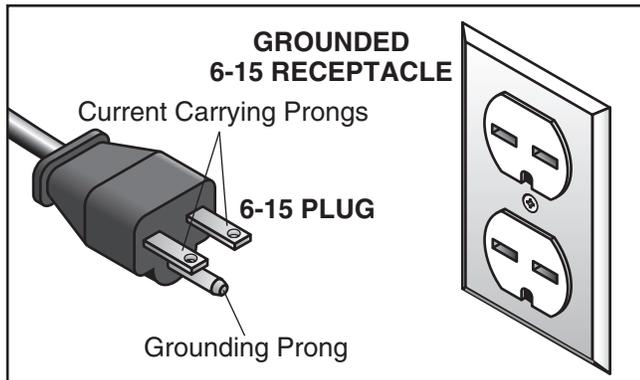
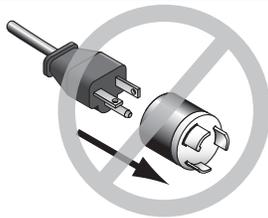


Figure 5. Typical 6-15 plug and receptacle.

!WARNING

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

!CAUTION



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

!WARNING

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

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

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

Extension Cords

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

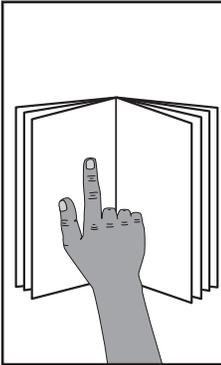
Extension cords cause voltage drop, which can damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

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

Minimum Gauge Size14 AWG
Maximum Length (Shorter is Better).....50 ft.



SECTION 3: SETUP



!WARNING

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



!WARNING

Wear safety glasses during the entire setup process!



!WARNING

HEAVY LIFT!

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

Needed for Setup

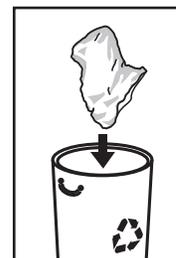
The following items are needed, but not included, for the setup/assembly of this machine.

Description	Qty
• Safety Glasses (for each person).....	1
• Solvent/Cleaner.....	1
• Shop Rags.....	1
• Lifting Strap (Rated for at least 600 lbs.)....	1
• Lifting Equipment (Rated for at least 600 lbs.).....	1
• Another Person	1

Unpacking

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

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



!WARNING

SUFFOCATION HAZARD!

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



Inventory

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

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

NOTICE

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

Box 1 (Figures 6–7)	Qty
A. Assembled Machine	1
B. Retainer Nut Spanner Wrench	1

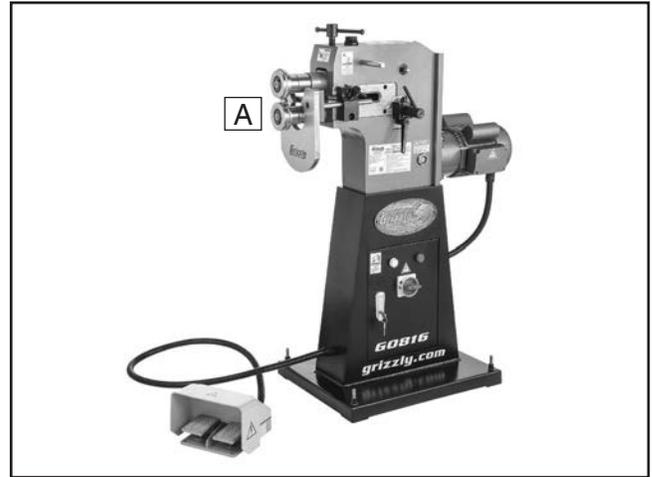


Figure 6. Model G0816.

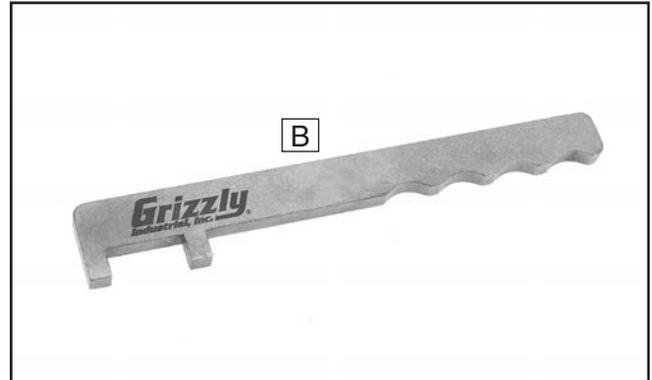


Figure 7. Retainer nut spanner wrench.



Cleanup

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

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

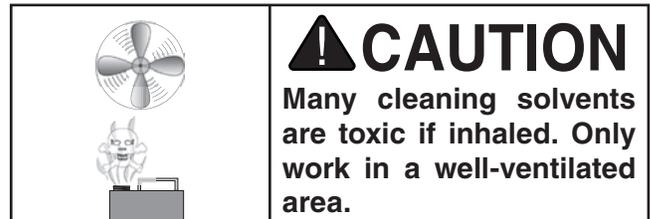
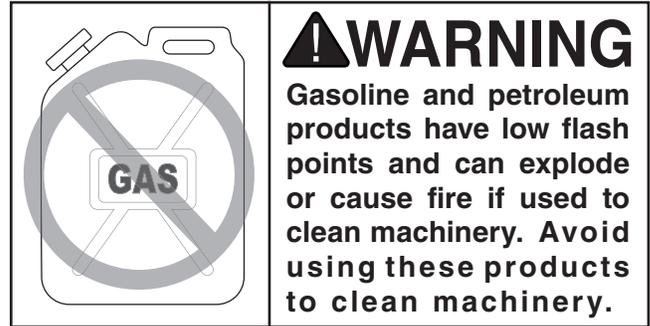
There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

Before cleaning, gather the following:

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

Basic steps for removing rust preventative:

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



T23692—Orange Power Degreaser

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



Figure 8. T23692 Orange Power Degreaser.



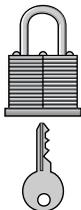
Site Considerations

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

Physical Environment

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

Electrical Installation

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

Lighting

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

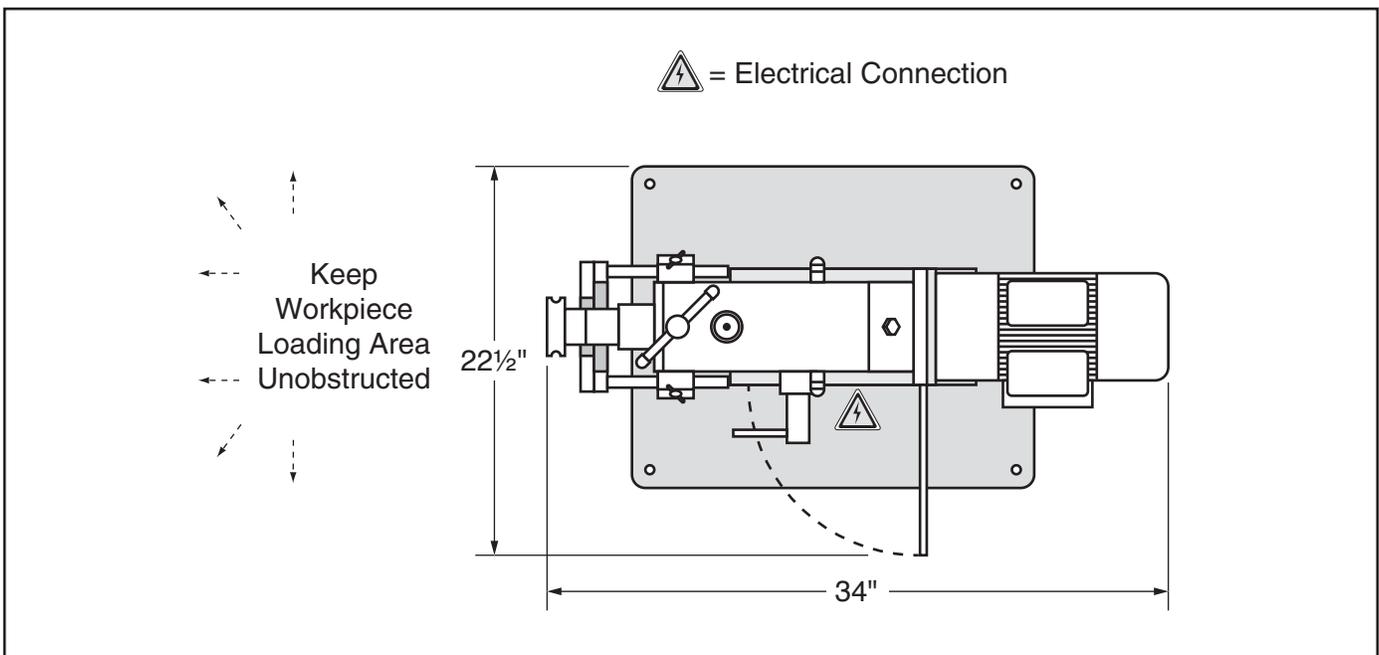


Figure 9. Minimum working clearances.



Lifting & Placing

	<p>⚠️ WARNING HEAVY LIFT! Straining or crushing injury may occur from improperly lifting machine or some of its parts. To reduce this risk, get help from other people and use a forklift (or other lifting equipment) rated for weight of this machine.</p>
---	--

To lift and place the machine, wrap a lifting strap rated for at least 600 lbs. around lifting bars, as shown in **Figure 10**, unbolt machine from pallet, then use a forklift to lift the machine off of the pallet and onto a suitable location.



Figure 10. Using forklift and lifting straps to lift and place machine.

Anchoring to Floor

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

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

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

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

Anchoring to Concrete Floors

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

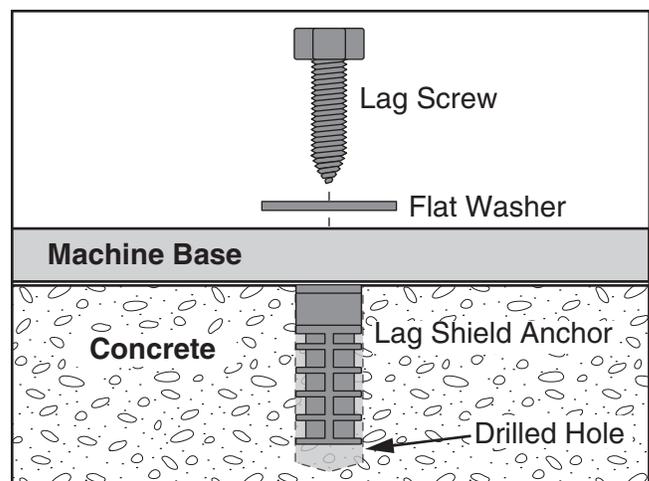


Figure 11. Popular method for anchoring machinery to a concrete floor.



Power Connection

Before the machine can be connected to the power source, an electrical circuit and connection device must be prepared per the **POWER SUPPLY** section in this manual, and all previous setup instructions in this manual must be complete to ensure that the machine has been assembled and installed properly.

Always make sure the master power switch on the machine is turned OFF before connecting power.

Power Connection

Install a NEMA 6-15 plug on end of power cord per manufacturer's instructions, then Insert power cord plug into a matching power supply receptacle. The machine is now connected to the power source.

If you need to disconnect the machine from power later, pull the plug completely out of the receptacle.

Verify Lubrication



This machine was shipped from the factory with oil in it, but the headstock oil reservoir level must be verified before the machine can be operated for the first time. Refer to the **Lubrication** section, beginning on **Page 28**, for details on how to check oil.

NOTICE

Damage caused by running the bead roller without oil in the reservoir will not be covered under warranty.

Test Run

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

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

⚠️ WARNING

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

⚠️ WARNING

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

To test run machine:

1. Clear all setup tools away from machine.
2. Connect machine to power. Power indicator (see **Page 5**) should illuminate.
3. Rotate master power switch to ON position.
4. Press left control pedal to start motor. Verify motor starts up and runs smoothly without any unusual problems or noises.
5. Confirm upper mandrel rotates clockwise and lower mandrel rotates counterclockwise, then release foot pedal to stop motor.
6. Repeat **Step 4–5** with right control pedal. Confirm mandrels rotate in opposite direction, then turn master power switch **OFF**.

Congratulations! The **Test Run** is complete.

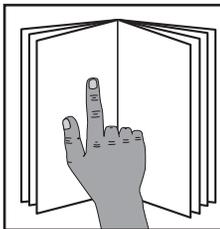


SECTION 4: OPERATIONS

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.



!WARNING

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



!WARNING

Eye injury hazard! Always wear safety glasses when using this machine.



!WARNING

Laceration hazard! Always wear heavy leather gloves when handling sheet metal.

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

1. Examines workpiece to make sure it is suitable for bead rolling.
2. Installs appropriate mandrel set for operation.
3. Properly adjusts mandrels and fence for operation.
4. Connects machine to power and turns master power switch to ON position.
5. Puts on required safety glasses and heavy leather gloves.
6. Places workpiece on lower mandrel, then lowers upper mandrel against workpiece with moderate pressure.
7. Uses foot pedal control to feed workpiece through mandrels, then releases foot pedal to stop motor.
8. Removes workpiece, inspects bead, and if necessary, repeats **Steps 5–6** until desired bead radius or profile is achieved.
9. Turns master power switch to OFF position and disconnects machine from power.

NOTICE

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



Aligning Mandrels

Before operations, and whenever you change mandrel sets, always make sure the mandrels are aligned (see **Figure 12**) to ensure properly formed beads.

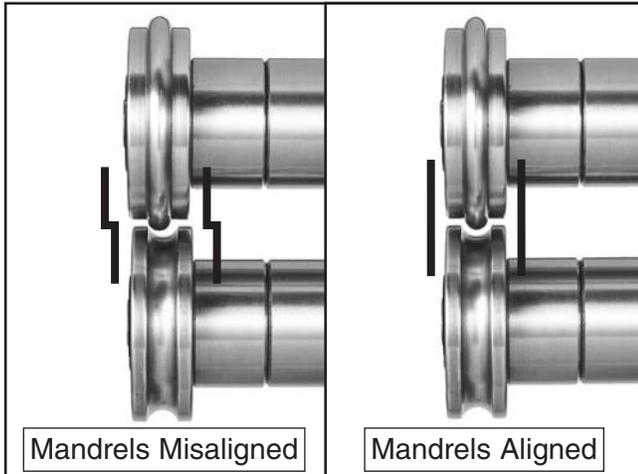


Figure 12. Examples of mandrel misalignment and alignment.

To align the mandrels, lower the upper mandrel until it almost touches the lower mandrel. Loosen the lower mandrel lock lever (see **Figure 13**), rotate the lower mandrel alignment crank until the lower mandrel aligns with the upper mandrel, then tighten the lock lever.

- To move the lower mandrel *toward* the headstock, rotate the crank *clockwise*.
- To move the lower mandrel *away* from the headstock, rotate the crank *counterclockwise*.

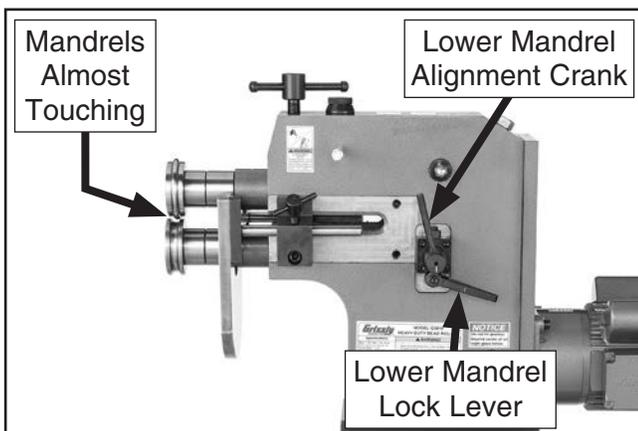


Figure 13. Location of mandrel alignment components.

Adjusting Fence Position

The fence guides the workpiece in a straight line at a set distance from the mandrels to create straight, consistent beads that are parallel with an edge of the workpiece.

The fence can be mounted in two positions (see **Figures 14–15**).

- **Forward Position** (see **Figure 14**): Use for beads closer to the workpiece edge. The fence adjusts from 0"–4" from the mandrels.
- **Rear Position** (see **Figure 15**): Use for beads farther away from the workpiece edge. The fence adjusts from 5½"–10¼" from the mandrels.

Note: The fence can be removed altogether for rolling curved or straight, non-parallel beads (refer to **Rolling Curved or Straight Beads Not Parallel With Edge of Workpiece** on Page 24).

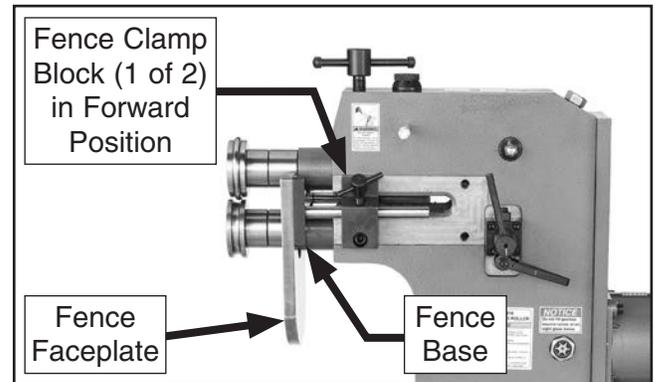


Figure 14. Fence installed in forward position.

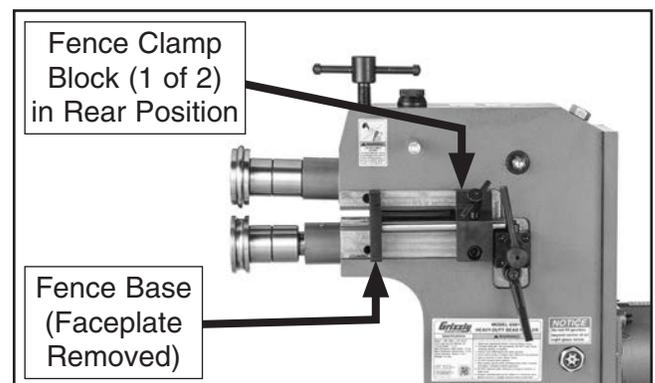


Figure 15. Fence installed in rear position.



Changing Fence Mounting Position

This machine comes with the fence mounted in the forward position. To use the rear position, you must partially disassemble and remove the fence, move the mounting blocks, then re-assemble and install the fence in the new position (see **Figures 14–15 on Page 20**).

Tools Needed	Qty
Hex Wrenches 6, 10mm.....	1 Ea.
Retainer Nut Spanner Wrench	1

To mount fence in rear position:

1. DISCONNECT MACHINE FROM POWER!
2. Use retainer nut spanner wrench to remove lower retainer nut, then remove lower mandrel (see **Figure 16**).
3. Remove faceplate from fence base (see **Figure 16**).
4. Remove two clamp bolts (see **Figure 16**) from clamp blocks (one on each side of machine).

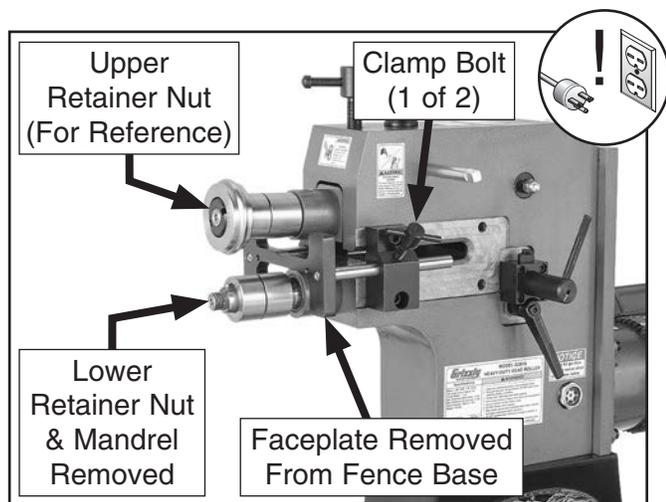


Figure 16. Location of clamp bolts; lower retainer nut, mandrel, and faceplate removed.

5. Slide fence base out of clamp blocks (see **Figure 17**).

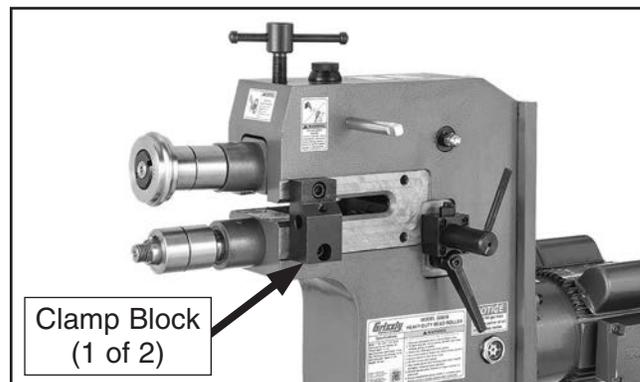


Figure 17. Fence base removed from clamp blocks.

6. Install clamp blocks in rear position (see **Figure 18**).
7. Install clamp bolts (see **Figure 18**).
8. Install fence base without faceplate (see **Figure 18**) and adjust as needed (see **Adjusting Fence on Page 22**).

Note: In the rear position the faceplate is not used; instead, the fence base functions as the faceplate.

9. Re-install lower mandrel.

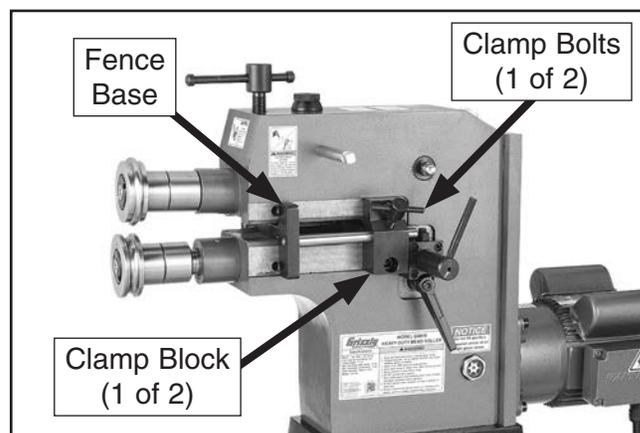


Figure 18. Fence mounted in rear position.

Note: To mount the fence in the forward position, remove the fence and clamp blocks, then install the clamp blocks in the forward position. Re-install the faceplate on the fence base and install the fence in the forward position. Re-install the lower mandrel.



Adjusting Fence

The fence adjusts from 0"–4" from the mandrels in the forward position, and from 5½"–10¼" in the rear position (refer to **Adjusting Fence Position**, beginning on **Page 20** for more information).

To adjust the fence, loosen the clamp bolts, move the faceplate (forward position) or base (rear position) toward or away from the mandrels as needed, then retighten the clamp bolts (see **Figures 19–20**).

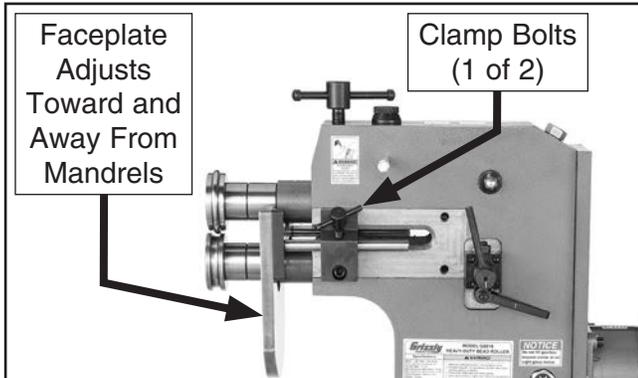


Figure 19. Fence adjustment components (forward position).

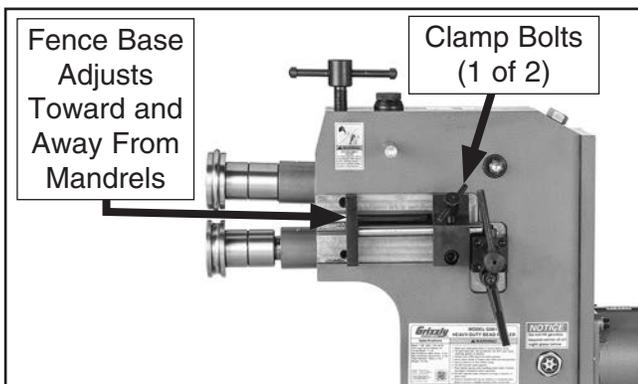


Figure 20. Fence adjustment components (rear position).

Rolling Beads

The Model G0816 can be used to create grooves of various shapes in sheet metal panels. The operator places a workpiece between the upper and lower mandrels, lowers the upper mandrel down, exerting moderate pressure on the workpiece, then feeds the workpiece through the mandrels.

If necessary, the operator repeats the process, feeding the workpiece in the opposite direction, and exerting incrementally greater force with the upper mandrel during each pass until the desired bead radius or profile is achieved.

- To roll straight beads that are parallel with one edge of the workpiece, use the fence.
- To roll curved beads or straight beads that are not parallel with an edge of the workpiece, *remove* the fence.

Rolling Straight Beads Parallel with Edge of Workpiece

1. DISCONNECT MACHINE FROM POWER!
2. Align mandrels and adjust fence position according to needs of operation (refer to **Adjusting Fence Position** beginning on **Page 20**).
3. Raise upper mandrel enough to fit workpiece between mandrels (see **Figure 21**).

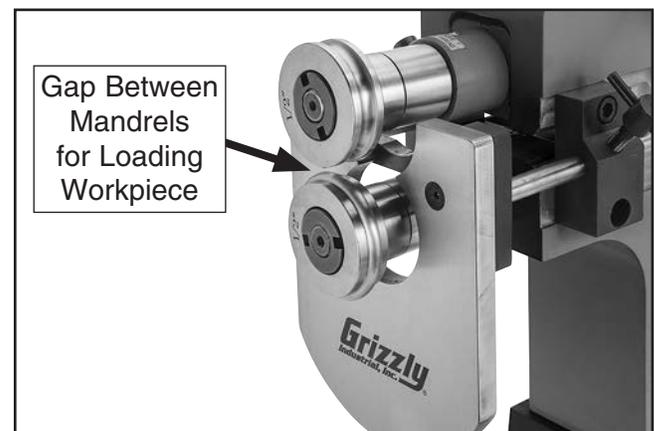


Figure 21. Upper mandrel raised in preparation for loading workpiece.



4. Place workpiece on lower mandrel with edge against fence, then lower upper mandrel until it just touches workpiece (see **Figure 22**).

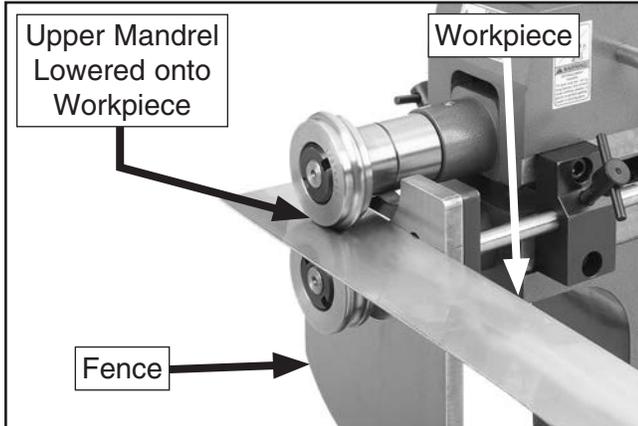


Figure 22. Workpiece placed on lower mandrel in preparation for bead rolling.

5. Crank down upper mandrel an additional $\frac{1}{2}$ -turn, or enough to exert moderate pressure on workpiece.

Note: *The amount of force to use in **Step 5** will vary depending upon workpiece material and thickness. Use a test piece of the same material and thickness as your workpiece to get a feel for the pressure required.*

6. Using both hands to steady workpiece, press foot pedal to advance workpiece through mandrels and create bead (see **Figures 23–24**). When you reach end of bead, release foot pedal to stop motor.

— To advance the workpiece to the *left*, press the *left* foot pedal (see **Figure 24**).

— To advance the workpiece to the *right*, press the *right* foot pedal (see **Figure 24**).

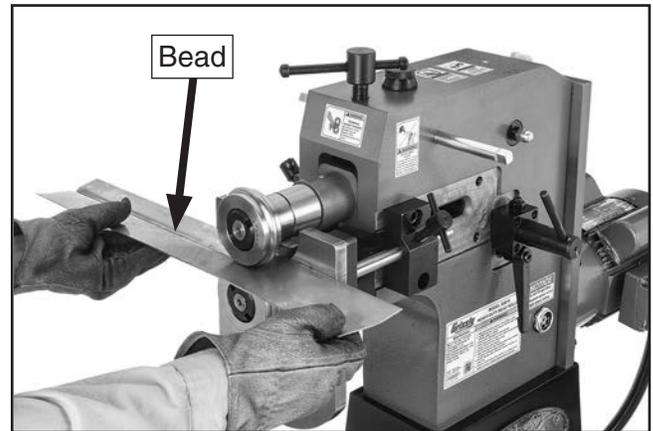


Figure 23. Bead-rolling pass complete.

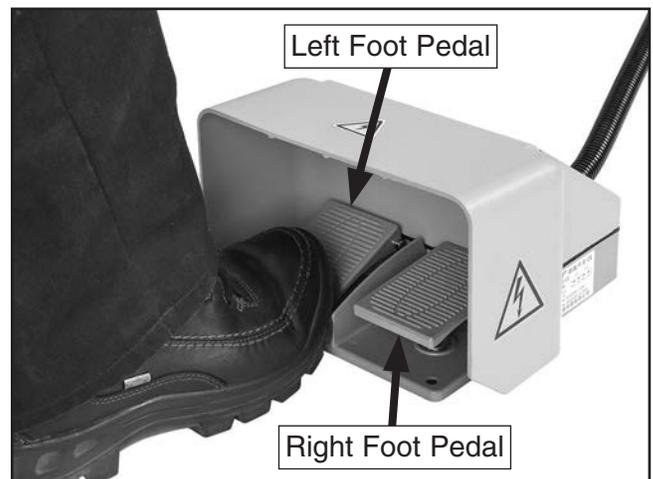


Figure 24. Using left foot pedal to advance workpiece to the left.

7. If necessary, repeat **Steps 5–6**, feeding workpiece in opposite direction until you achieve desired results.



Rolling Curved or Straight Beads Not Parallel with Edge of Workpiece

To roll curved or straight beads not parallel with a workpiece edge, you must first remove the fence and clamp blocks. This will open up the throat (see **Figure 25**), allowing room to maneuver your workpiece.

Tools Needed	Qty
Hex Wrenches 6, 10mm.....	1 Ea.
Retainer Nut Spanner Wrench	1

To remove fence:

1. DISCONNECT MACHINE FROM POWER!
2. Raise upper mandrel.
3. Use retainer nut spanner wrench to remove lower retainer nut, then remove lower mandrel (see **Figure 25**).
4. Remove faceplate (see **Figure 25**).

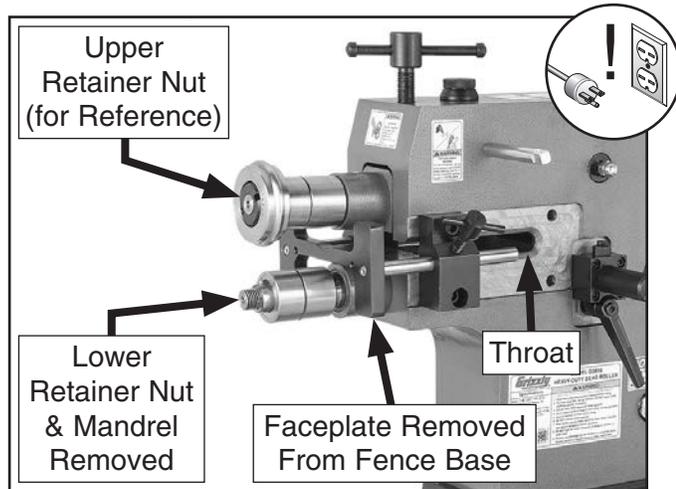


Figure 25. Lower mandrel and fence faceplate removed.

5. Remove clamp bolts from clamp blocks (one on each side of machine), then remove fence assembly (see **Figure 26**).

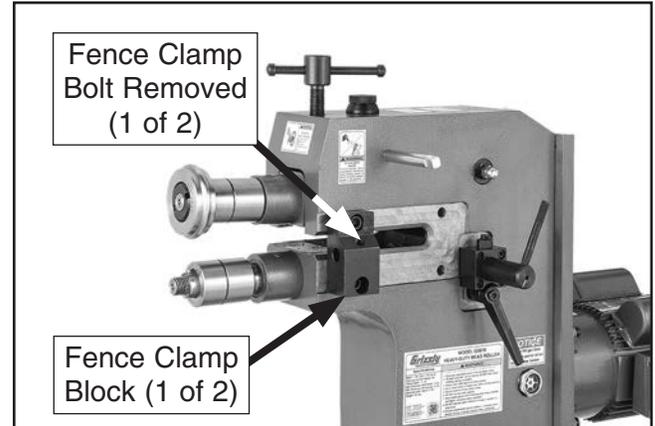


Figure 26. Fence assembly removed.

6. Remove fence clamp blocks and re-install lower mandrel (see **Figure 27**).

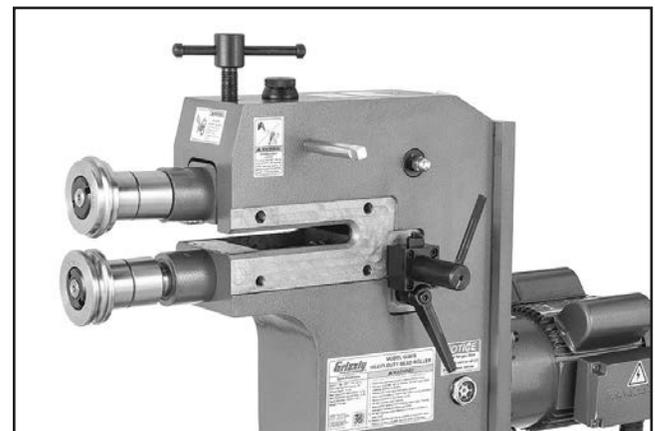


Figure 27. Machine set up for rolling curved or straight, non-parallel beads.



To roll curved or straight, non-parallel beads:

1. Mark path of desired bead on workpiece.
2. Align mandrels (see **Page 20**).
3. Place workpiece between mandrels, then lower upper mandrel until it just touches workpiece (see **Figure 28**).

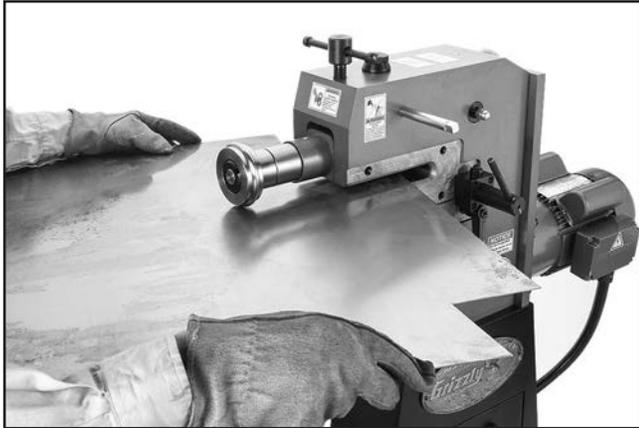


Figure 28. Workpiece loaded for rolling curved bead.

4. Crank upper mandrel down an additional $\frac{1}{2}$ -turn, or enough to exert moderate pressure on workpiece.

Note: *The amount of force to use in **Step 4** will vary depending upon workpiece material and thickness. Use a test piece of the same material and thickness as your workpiece to get a feel for the pressure required.*

5. Using hands to steady and guide workpiece, press foot pedal to advance workpiece through mandrels and create bead (see **Figure 29**). When you reach end of bead, release foot pedal to stop motor.

— To advance the workpiece to the *left*, press the *left* foot pedal.

— To advance the workpiece to the *right*, press the *right* foot pedal.

Note: *When rolling curved beads, you must rotate the workpiece by hand as it advances through mandrels in order to create the curve. If necessary, have an assistant help with rotating the workpiece.*



Figure 29. Rolling a curved bead.

6. If necessary, repeat **Steps 4–5**, feeding workpiece in opposite direction until you achieve desired results.



Changing Mandrels

Replacement mandrel sets are available for various applications (see **Accessories** on **Page 27** for more information). To change the mandrels, first use the included spanner wrench to remove the retainer nuts (see **Figures 30–31**).

- The upper retainer nut (see **Figure 30**) has left-hand threads. Rotate it clockwise to loosen and counterclockwise to tighten.
- The lower retainer nut (see **Figures 30–31**) has right-hand threads. Rotate it counterclockwise to loosen and clockwise to tighten.

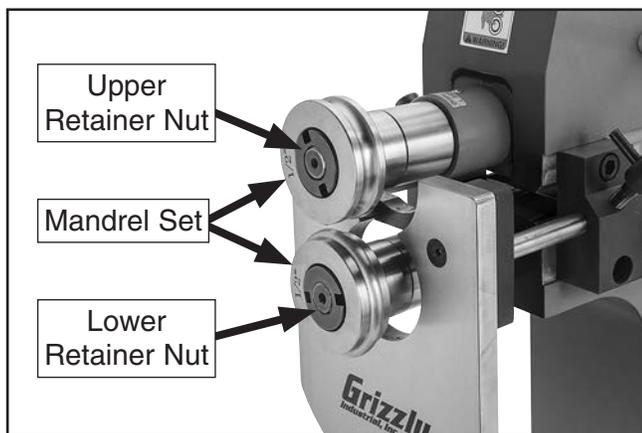


Figure 30. Location of retainer nuts and mandrels.

Remove the existing mandrel set (see **Figure 32**), then install a new mandrel set and secure with retainer nuts.

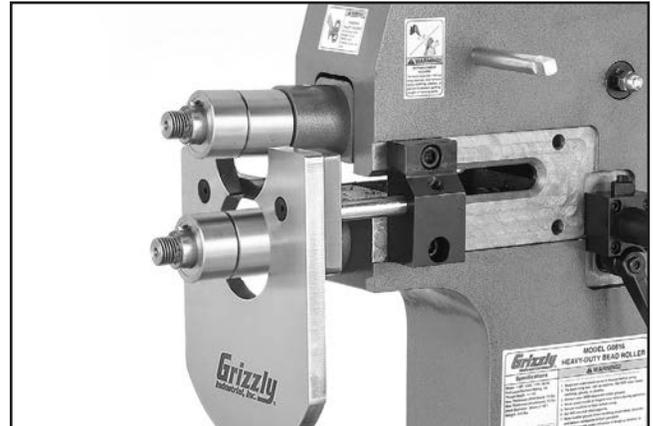


Figure 32. Mandrels removed.

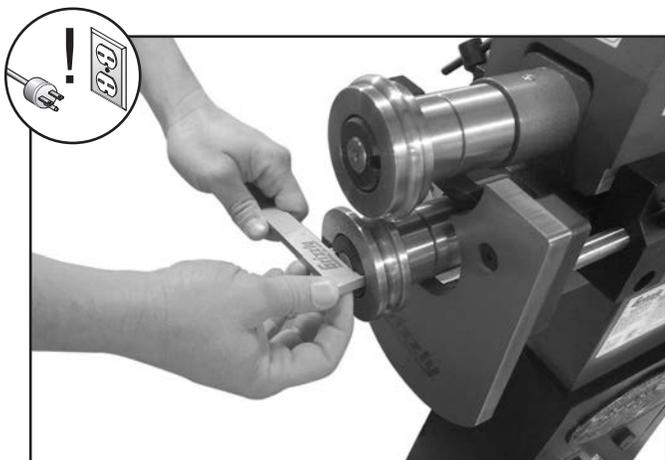


Figure 31. Using included spanner wrench to remove lower retainer nut.



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.

Mandrel Sets

- T27610—Bead Forming Mandrel Set, 1/4"
- T27611—Bead Forming Mandrel Set, 5/16"
- T27612—Bead Forming Mandrel Set, 3/8"
- T27613—Bead Forming Mandrel Set, 1/2"
- T27614—Bead Forming Mandrel Set, 1"
- T27615—V-Groove Forming Mandrel Set
- T27616—Flanging Mandrel Set, 3/8"
- T27617—Flanging Mandrel Set, 1/2"
- T27618—Shear Mandrel Set



Figure 33. Grizzly mandrel sets for Model G0816.

- SB1365—Machine and Way Oil-ISO 68
- T23964—Multi-Purpose NLGI#2 Grease
- T26685—Moly-D Machine Oil-ISO 32
- G2545—Silicone Lubricant



Figure 34. Recommended products for machine lubrication.

H7616—Oil Can w/Plastic Nozzle

This high-pressure oil can is perfect for lubricating the ball oilers found on your machine. Each can holds 5 ounces of oil.

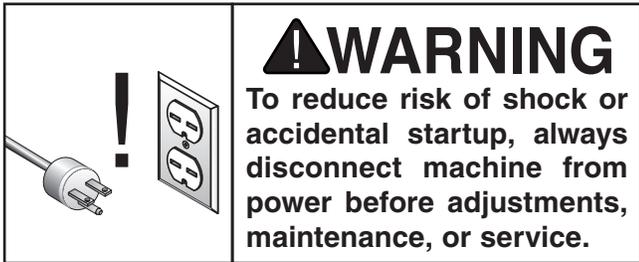


Figure 35. High-pressure oil can for ball oilers.

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.
- Worn or damaged wires.
- Check/adjust lubrication.
- Any other unsafe condition.

Cleaning & Protecting

Cleaning the Model G0816 is relatively easy. Wipe down all unpainted and machined surfaces daily to keep them rust free and in top condition. This includes any surface that is vulnerable to rust if left unprotected. Use ISO 68 machine oil or any other quality metal lubricant (see **Page 27** for offerings from Grizzly) to prevent corrosion.

Lubrication

Use the information in the charts below as a daily guide for lubrication tasks. We recommend using SB1365 (ISO 68) or T26685 (ISO 32) lubricants (see **Accessories** on **Page 27**) for most of the lubrication tasks.

Lubrication Frequency

Lubrication Task	Frequency	Page Ref.
Headstock	Daily	29
Ball Oilers	Daily	30
Upper Mandrel Elevation Crank	Daily	30

Lubrication Amount & Type

Lubrication Task	Oil Type	Amount
Headstock	ISO 68	0.63 Qt.
Ball Oilers	ISO 32	1-2 Squirts
Upper Mandrel Elevation Crank	ISO 68	As Needed

Items Needed

	Qty
Wrench or Socket 12mm	1
1-2-Gallon Catch Pan	1
Pump-Type Oil Can (see Page 27)	1
Mineral Spirits.....	As Needed
Small Brushes	2



NOTICE

The recommended lubrication is based on light-to-medium usage. Keeping in mind that lubrication helps to protect the value and operation of the machine, these lubrication tasks may need to be performed more frequently than recommended here, depending on usage.

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

Headstock

Oil Type.....SB1365 or ISO 68 Equivalent
Oil Amount..... 0.63 Quarts
Check/Add Frequency..... Daily
Change..... Every 1000 Operating Hours

The headstock gearing is lubricated by an oil bath that distributes the lubricant with the motion of the gears, much like an automotive manual transmission.

Note: Change the oil after the first 300 hours of use, then after every 1000 hours of use. The first oil change is done earlier than usual to remove any dust or particles that may remain in the gearbox after manufacturing.

Checking Oil Level

The headstock reservoir has the proper amount of oil when the oil level in the sight glass is approximately halfway. The oil sight glass is located on the right side of the headstock, as shown in **Figure 36**.

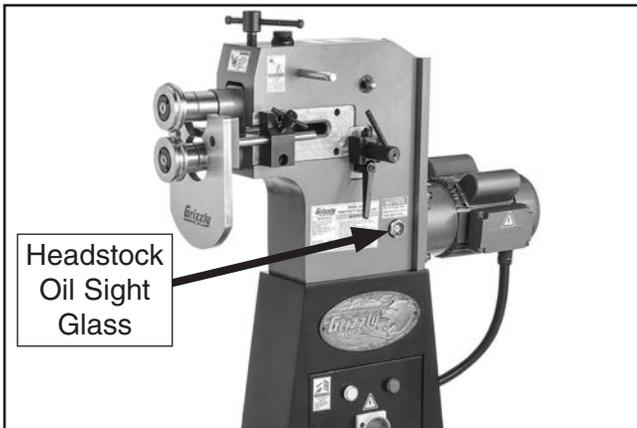


Figure 36. Location of headstock oil sight glass.

Adding Oil

The oil fill plug is located on top of the headstock, as shown in **Figure 37**.

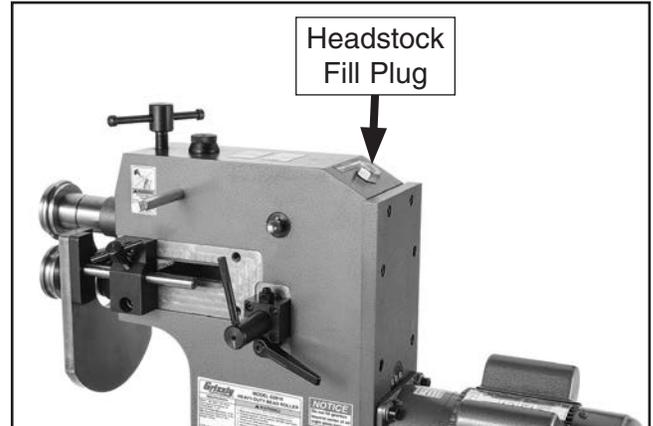


Figure 37. Location of headstock fill plug.

To change headstock oil:

1. DISCONNECT MACHINE FROM POWER!
2. Remove fill plug from top of headstock.
3. Place 1–2-gallon catch pan under headstock drain plug (see **Figure 38**), then remove drain plug.

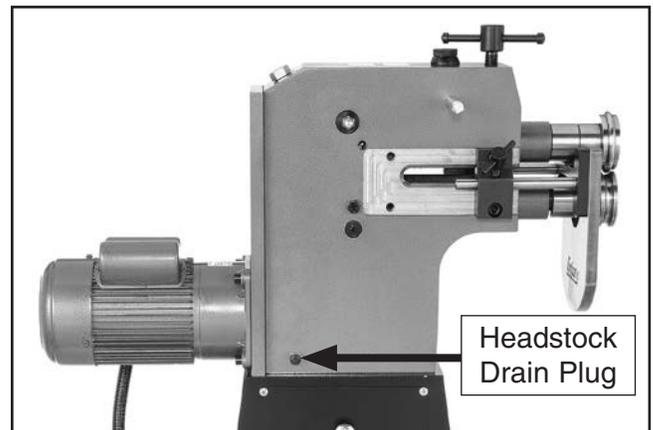


Figure 38. Location of headstock drain plug.

4. When headstock reservoir is empty, re-install drain plug and clean away any spilled oil.
5. Fill headstock reservoir until oil level is approximately halfway in sight glass, then re-install fill plug.



Ball Oilers

Oil Type Grizzly T26685 or ISO 32 Equivalent
Oil Amount.....1 or 2 Squirts
Lubrication Frequency..... Daily

This machine has 5 ball oilers that should be oiled on a daily basis before beginning operation. Refer to **Figure 39** for their locations.

Ball Oilers

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

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

Below is a list of the ball oilers and their locations (see Figure 39):

- A. Upper Mandrel Shaft (Front)
- B. Upper Headstock
- C. Lower Mandrel Shaft (Front)
- D. Upper Mandrel Shaft (Rear)
- E. Lower Mandrel Shaft (Rear)

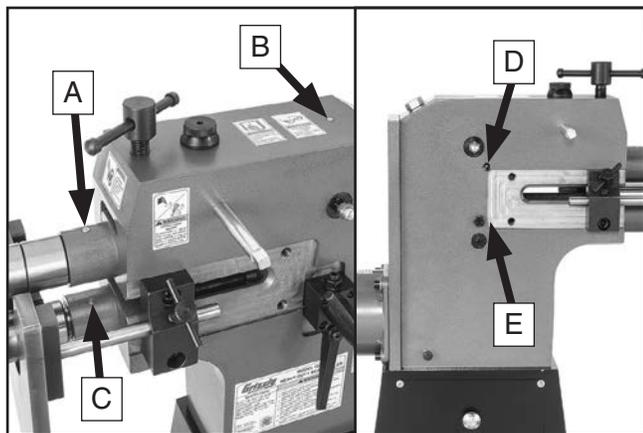


Figure 39. Locations of ball oilers.

Upper Mandrel Elevation Crank

Oil Type.....SB1365 or ISO 68 Equivalent
Oil Amount..... As Needed
Lubrication Frequency..... Daily

Before lubricating the elevation crank, remove it (see **Figure 40**) and clean the threads with mineral spirits. A stiff brush works well to help clean out the threads.

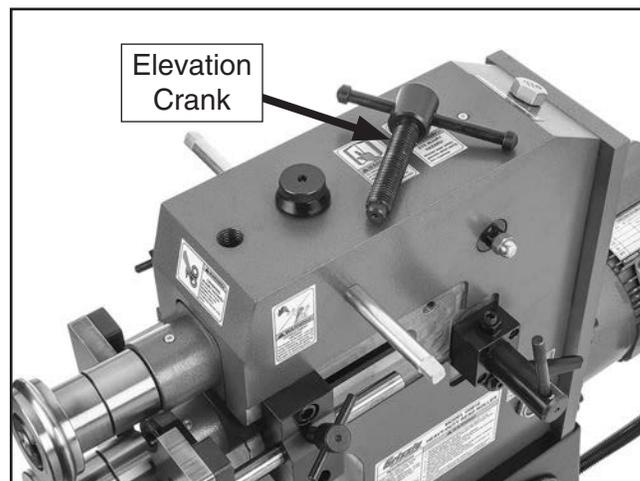


Figure 40. Upper mandrel elevation crank removed for cleaning/lubrication.

Apply a thin coat of oil along the length of the threads. Use a stiff brush to make sure the oil is applied evenly and down into the threads. Re-install the elevation crank, and then rotate it up and down through its range of motion a few times to distribute the lubricant.

Note: *In some environments, abrasive material can become caught by the lubricant and drawn into the threads. In this case, lubricate the elevation crank threads with a quality dry lubricant.*



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. **Note:** *Please gather the serial number and manufacture date of your machine before calling.*

Troubleshooting

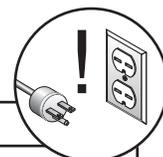


Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start or a breaker trips.	<ol style="list-style-type: none"> 1. Main power switch in OFF position/at fault. 2. Plug/receptacle at fault/wired wrong. 3. Incorrect power supply voltage/circuit size. 4. Power supply circuit breaker tripped or fuse blown. 5. Motor wires connected incorrectly. 6. Contactor not energized/has poor contacts. 7. Wiring open/has high resistance. 8. Foot pedal switch at fault. 9. Start capacitor at fault. 10. Centrifugal switch at fault. 11. Motor at fault. 	<ol style="list-style-type: none"> 1. Rotate switch to ON position. Replace. 2. Test for good contacts; correct the wiring. 3. Ensure correct power supply voltage/circuit size. 4. Ensure circuit is sized correctly and free of shorts. Reset circuit breaker or replace fuse. 5. Correct motor wiring connections. 6. Test all legs for power/replace. 7. Check/fix broken, disconnected, or corroded wires. 8. Test/replace switch. 9. Test/replace. 10. Adjust/replace centrifugal switch if available. 11. Test/repair/replace.
Machine stalls or is underpowered.	<ol style="list-style-type: none"> 1. Machine undersized for task. 2. Wrong workpiece material. 3. Motor overheated. 4. Motor wired incorrectly. 5. Contactor not energized/has poor contacts. 6. Plug/receptacle at fault. 7. Gearbox at fault. 8. Run capacitor at fault. 9. Centrifugal switch at fault. 10. Foot pedal switch at fault. 11. Motor bearings at fault. 	<ol style="list-style-type: none"> 1. Reduce downward pressure of upper roller. 2. Use correct type/size of sheet metal stock. 3. Clean motor, let cool, and reduce workload. 4. Wire motor correctly. 5. Test all legs for power/replace. 6. Test for good contacts/correct wiring. 7. Replace broken or slipping gears. 8. Test/replace. 9. Adjust/replace centrifugal switch if available. 10. Test/replace switch. 11. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.
Machine has vibration or noisy operation.	<ol style="list-style-type: none"> 1. Motor or component loose. 2. Motor fan rubbing on fan cover. 3. Motor mount loose/broken. 4. Machine incorrectly mounted on floor. 5. Mandrel(s) at fault/incorrectly installed. 6. Centrifugal switch at fault. 7. Motor bearings at fault. 	<ol style="list-style-type: none"> 1. Inspect/replace damaged bolts/nuts, and retighten with thread-locking fluid. 2. Fix/replace fan cover; replace loose/damaged fan. 3. Tighten/replace. 4. Tighten mounting bolts; relocate/shim machine. 5. Ensure mandrels are correctly installed, replace if necessary. 6. Adjust/replace centrifugal switch if available. 7. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.



Machine Operation



Symptom	Possible Cause	Possible Solution
Workpiece deforms, kinks, or is crushed during operation.	<ol style="list-style-type: none"> Excessive rolling pressure. Mandrels not properly aligned. Mandrel(s) are damaged. 	<ol style="list-style-type: none"> Reduce downward pressure of upper mandrel. Align mandrels (Page 20). Replace mandrel(s)
Bead is not deep enough.	<ol style="list-style-type: none"> Not enough rolling pressure. 	<ol style="list-style-type: none"> Increase downward pressure of upper mandrel.
Bead is too deep.	<ol style="list-style-type: none"> Excessive rolling pressure. 	<ol style="list-style-type: none"> Reduce downward pressure of upper mandrel.
Workpiece does not move when rollers rotate.	<ol style="list-style-type: none"> Not enough rolling pressure. Grease/oil on workpiece/mandrels, causing mandrels to slip against workpiece. 	<ol style="list-style-type: none"> Increase downward pressure of upper mandrel. Thoroughly clean workpiece/mandrels to prevent slipping.
Upper mandrel does not raise when elevation crank is loosened.	<ol style="list-style-type: none"> Upper mandrel return spring tension set too low. Upper mandrel return spring worn/disconnected. 	<ol style="list-style-type: none"> Increase return spring tension (Page 33). Inspect/re-attach return spring; replace if necessary (Page 33).



Adjusting Return Spring Tension

The return spring causes the upper mandrel to raise when the elevation crank is rotated counterclockwise. The return spring tension can be adjusted by rotating the spring tension knob (see **Figure 41**).

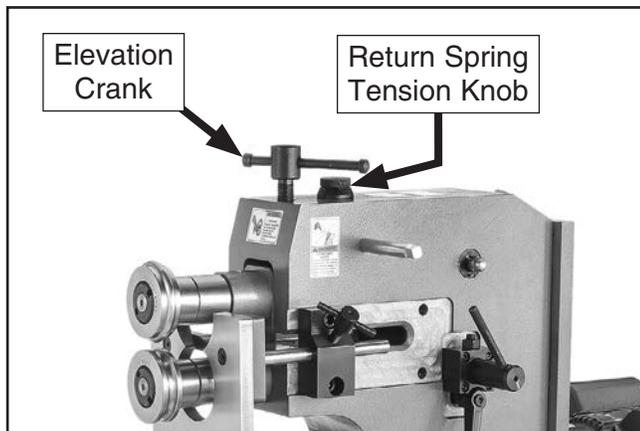


Figure 41. Location of spring tension knob.

The return spring tension is set at the factory and should not need routine adjustment. However, if after prolonged use the upper mandrel fails to raise, the return spring may have become stretched, requiring a tension adjustment.

- Tighten the return spring tension knob to increase spring tension. Do not overtighten.
- Loosen the knob to decrease spring tension.

Important: *Be careful when loosening the knob. Loosening it too much can cause the spring to become detached, making it extremely difficult to re-install. If this happens, refer to following section **Removing/Installing Return Spring**.*

Removing/Installing Return Spring

If the return spring requires replacement or re-installation, follow the instructions below to remove and install a new return spring.

Removing Return Spring

1. DISCONNECT MACHINE FROM POWER!
2. Manually lift upper mandrel all the way and support it with a piece of foam or a wood block to prevent it from dropping during **Step 3** (see **Figure 42**).

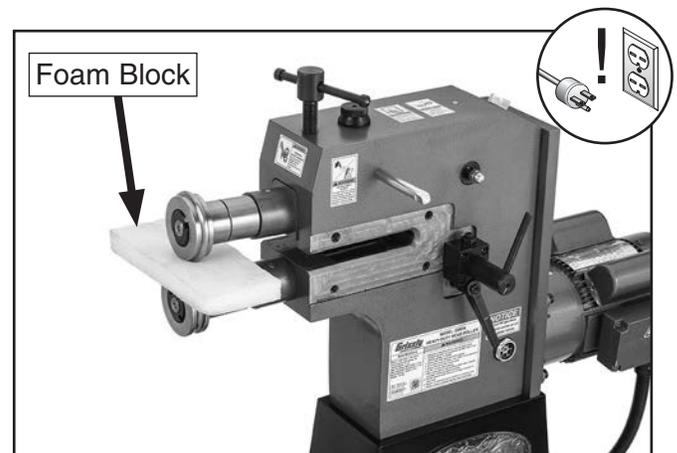


Figure 42. Upper mandrel supported with foam block.

3. Loosen return spring tension knob all the way, and remove it from threaded pull rod (see **Figure 43**).

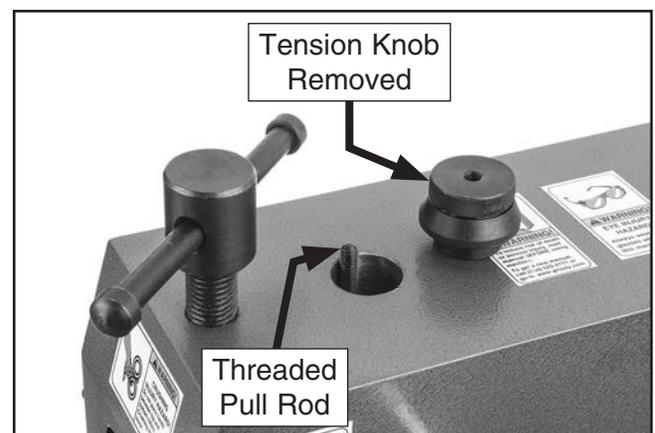


Figure 43. Tension knob removed from threaded pull rod.



- Remove return spring with pull rod from upper mandrel shaft inside headstock, then remove pull rod from spring (see **Figures 44–45**).

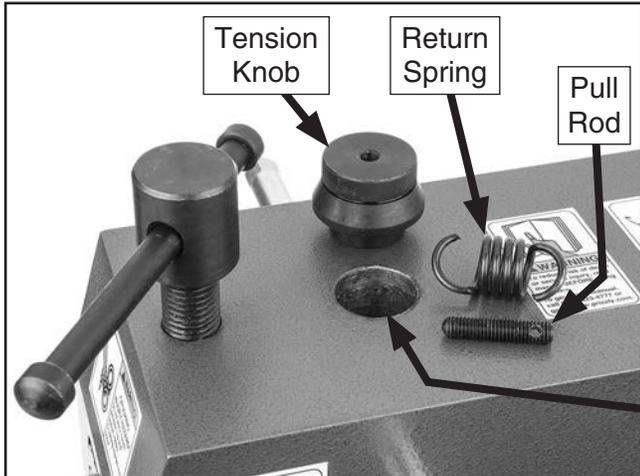


Figure 44. Return spring components removed.

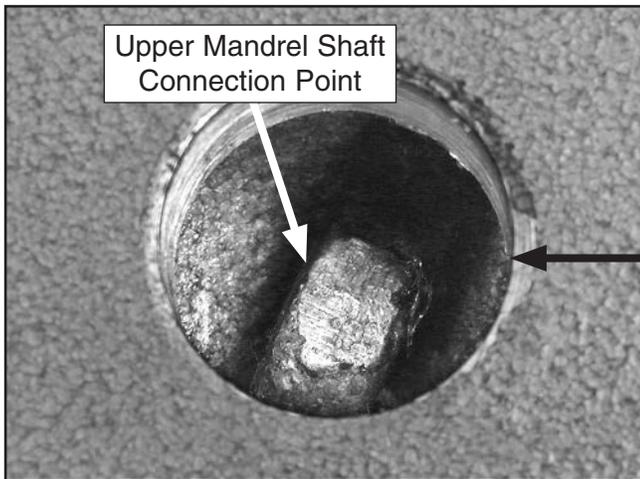


Figure 45. Upper mandrel shaft connection point located inside headstock.

Installing Return Spring

Tools Needed

	Qty
Needle-Nose Pliers	1
Flashlight	1

To install return spring:

- Insert one end of spring into hole in pull rod, then attach other end to connection point on upper mandrel shaft, inside headstock (see **Figure 46**). Use flashlight if necessary.

Tip: Tie a piece of string around the spring in case it drops during installation.

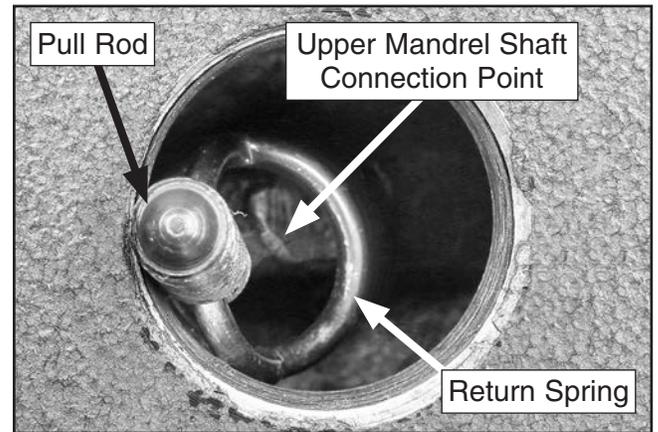


Figure 46. Return spring with pull rod installed on upper mandrel shaft (located in headstock).

- Use needle-nose pliers to stretch spring upwards, then thread spring tension knob onto pull rod (see **Figure 47**) 2–3 turns.

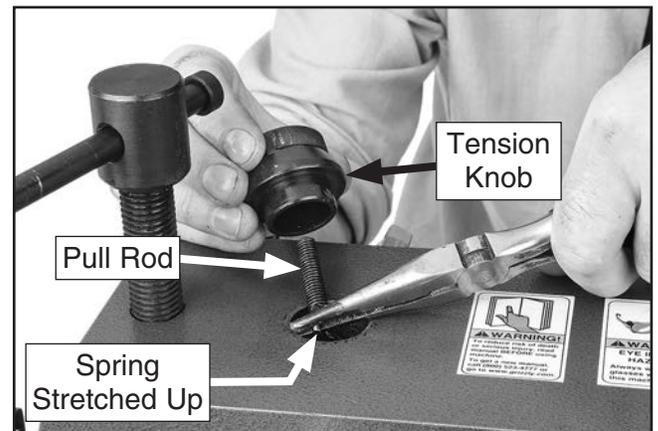


Figure 47. Using needle-nose pliers to stretch return spring up while installing tension knob.

- Allow tension knob to seat in hole, then adjust spring tension until upper mandrel raises properly. **DO NOT** overtighten.



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.

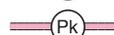
CAPACITORS/INVERTERS. Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

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

NOTICE

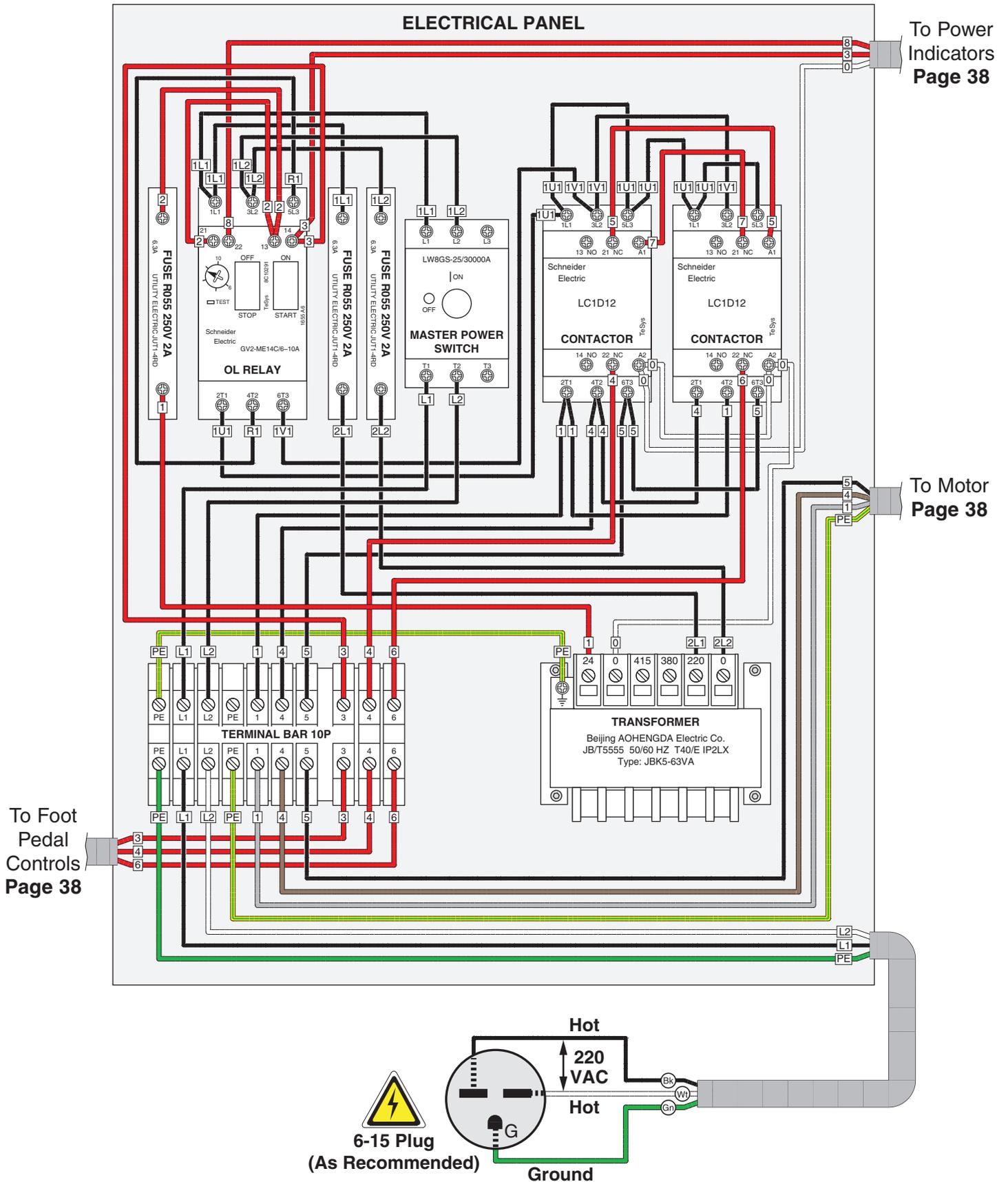
The photos and diagrams included in this section are best viewed in color. You can view these pages in color at www.grizzly.com.

COLOR KEY

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



Electrical Panel Wiring Diagram



Electrical Panel Wiring Photo

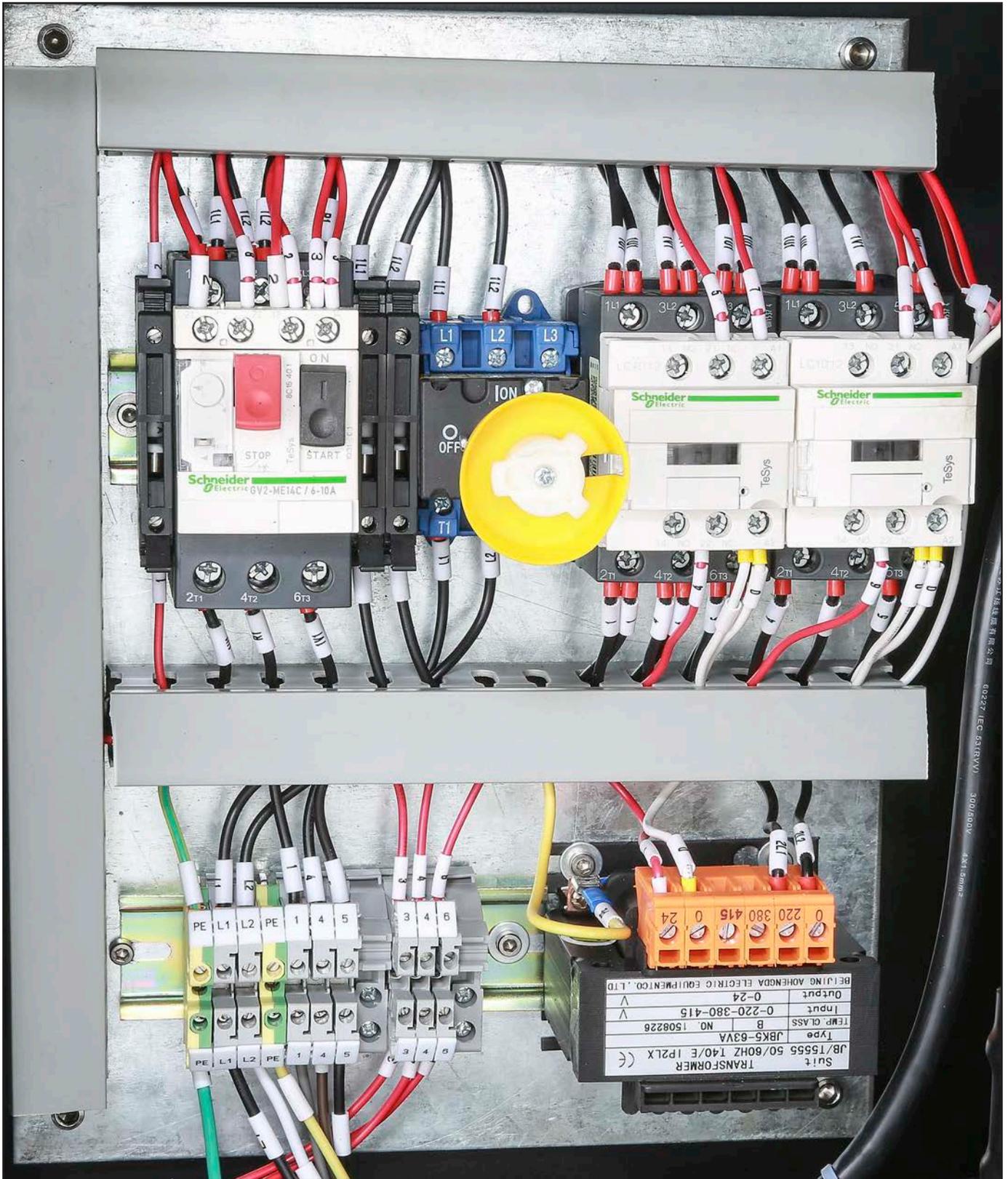


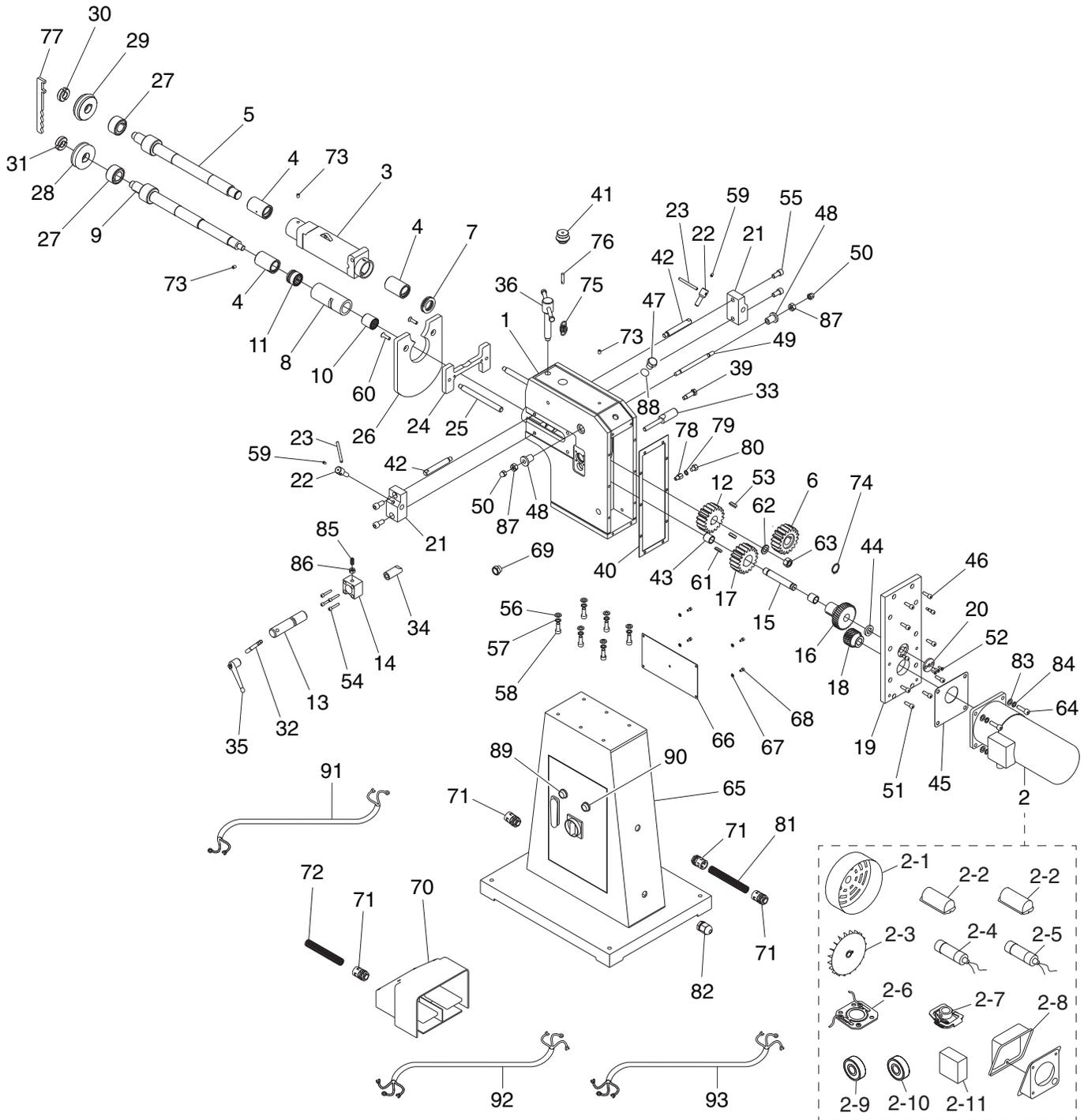
Figure 48. Electrical panel wiring.



SECTION 9: PARTS

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

Main



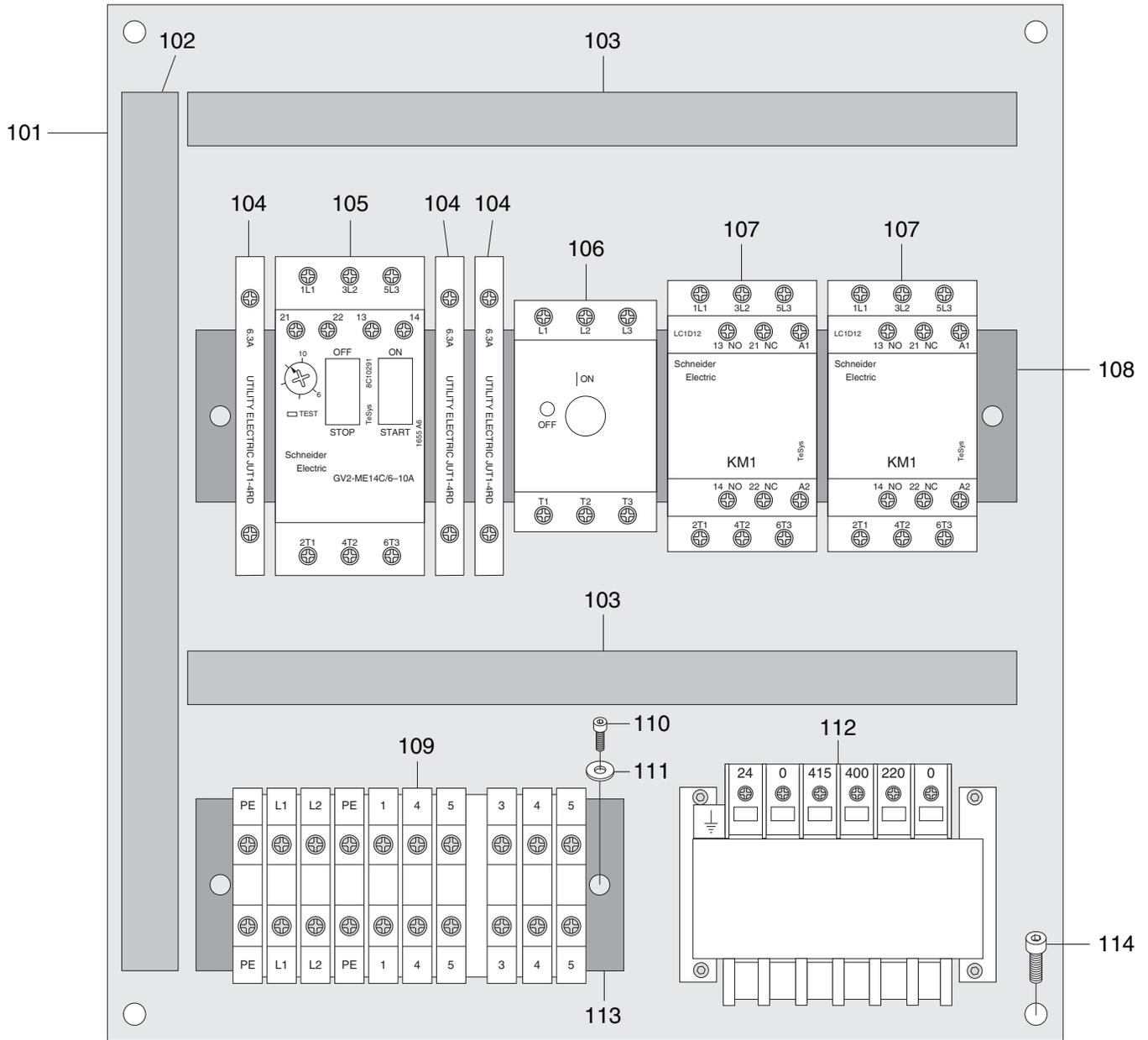
Main Parts List

REF PART #	DESCRIPTION
1	P0816001 HEADSTOCK
2	P0816002 MOTOR 1HP 220V 1-PH
2-1	P0816002-1 MOTOR FAN COVER
2-2	P0816002-2 CAPACITOR COVER
2-3	P0816002-3 MOTOR FAN
2-4	P0816002-4 R CAPACITOR 30M 450V 1-5/8 X 2-7/8
2-5	P0816002-5 S CAPACITOR 300M 275V 2 X 3-5/8
2-6	P0816002-6 CONTACT PLATE
2-7	P0816002-7 CENTRIFUGAL SWITCH
2-8	P0816002-8 MOTOR JUNCTION BOX
2-9	P0816002-9 BALL BEARING 6203ZZ (FRONT)
2-10	P0816002-10 BALL BEARING 6303ZZ (REAR)
2-11	P0816002-11 STARTING SWITCH ESS1-40
3	P0816003 UPPER SHAFT HOUSING
4	P0816004 BUSHING 35 X 45 X 67 (BRONZE)
5	P0816005 UPPER SHAFT
6	P0816006 GEAR 18T
7	P0816007 THRUST BEARING 51107
8	P0816008 LOWER SHAFT BUSHING
9	P0816009 LOWER SHAFT
10	P0816010 NEEDLE BEARING HK3038
11	P0816011 COMBINATION BEARING NKX30Z
12	P0816012 GEAR 18T
13	P0816013 LOWER MANDREL ADJUSTMENT SHAFT
14	P0816014 ADJUSTMENT SHAFT BLOCK
15	P0816015 GEAR SHAFT
16	P0816016 GEAR 40T
17	P0816017 GEAR 18T
18	P0816018 GEAR 24T
19	P0816019 GEAR COVER PLATE
20	P0816020 CLAMPING PLATE
21	P0816021 FENCE CLAMP BLOCK
22	P0816022 FENCE CLAMP BOLT M12-1.75 X 32
23	P0816023 FENCE CLAMP HANDLE 8 X 71
24	P0816024 FENCE MOUNTING PLATE
25	P0816025 FENCE SHAFT M12-1.75 X 16, 16 X 170
26	P0816026 FENCE FACE PLATE
27	P0816027 COLLAR 30 X 54 X 30
28	P0816028 MANDREL CONVEX 1/2" BEAD, 3-1/2 X 1"
29	P0816029 MANDREL CONCAVE 1/2" COVE, 3 X 1"
30	P0816030 MANDREL RETAINER NUT M22-2.5 LH
31	P0816031 MANDREL RETAINER NUT M22-2.5
32	P0816032 ADJUSTMENT SHAFT LEVER 3/8 X 3-1/2"
33	P0816033 CLAMP BLOCK SHAFT
34	P0816034 CLAMP BLOCK SLEEVE
35	P0816035 ADJUSTABLE HANDLE M12-1.75, 95L
36	P0816036 UPPER MANDREL CRANK M20-2.5 X 110
39	P0816039 HEX BOLT M12-1.75 X 42 DOG-PT
40	P0816040 GASKET
41	P0816041 SPRING TENSION KNOB M8-1.25, 42 X 33
42	P0816042 LIFTING ARM 12 X 14, 16 X 100

REF PART #	DESCRIPTION
43	P0816043 GEAR SHAFT BUSHING
44	P0816044 SPACER
45	P0816045 MOTOR GASKET
46	P0816046 CAP SCREW M8-1.25 X 25
47	P0816047 OIL FILL PLUG M20-1.5 X 18
48	P0816048 BUSHING
49	P0816049 SHOULDER STUD-DE M10-1.5 X 14, 12 X 127
50	P0816050 ACORN NUT M10-1.5
51	P0816051 HEX BOLT M8-1.25 X 25
52	P0816052 FLAT HD CAP SCR M5-.8 X 16
53	P0816053 KEY 8 X 8 X 28
54	P0816054 CAP SCREW M6-1 X 35
55	P0816055 CAP SCREW M12-1.75 X 25
56	P0816056 FLAT WASHER 10MM
57	P0816057 LOCK WASHER 10MM
58	P0816058 CAP SCREW M10-1.5 X 25
59	P0816059 SET SCREW M4-.7 X 8
60	P0816060 FLAT HD CAP SCR M8-1.25 X 25
61	P0816061 KEY 6 X 6 X 28
62	P0816062 FLAT WASHER 16MM
63	P0816063 HEX NUT M16-2
64	P0816064 CAP SCREW M10-1.5 X 35
65	P0816065 STAND
66	P0816066 COVER PLATE
67	P0816067 FLAT WASHER 5MM
68	P0816068 CAP SCREW M5-.8 X 10
69	P0816069 OIL SIGHT GLASS M20-1.5
70	P0816070 FOOT PEDAL ASSY YEUQING ENCHI ECFS-H5(LTH)
71	P0816071 STRAIN RELIEF M20-1.5 TYPE-5
72	P0816072 CONDUIT 7/8 X 51"
73	P0816073 BALL OILER 8MM PRESS-IN
74	P0816074 EXT RETAINING RING 28MM
75	P0816075 EXTENSION SPRING 3 X 22 X 54
76	P0816076 PULL ROD M8-1.25 X 36
77	P0816077 RETAINER NUT SPANNER WRENCH
78	P0816078 STANDOFF-HEX MF M10-1 X 8, M10-1
79	P0816079 FLAT WASHER 10MM CP
80	P0816080 DRAIN PLUG M10-1 X 10
81	P0816081 CONDUIT 7/8 X 16"
82	P0816082 STRAIN RELIEF M20-1.5 TYPE-3
83	P0816083 FLAT WASHER 10MM
84	P0816084 LOCK WASHER 10MM
85	P0816085 SET SCREW M12-1.75 X 30 DOG-PT
86	P0816086 HEX NUT M12-1.75
87	P0816087 HEX NUT M10-1.5
88	P0816088 O-RING 19.8 X 2.4 P20
89	P0816089 POWER LAMP YIJIA AD16-22DS 24V 22MM WHT
90	P0816090 POWER LAMP YIJIA AD16-22DS 24V 22MM RED
91	P0816091 SWITCH CORD 14G 2W 72"
92	P0816092 MOTOR CORD 14G 3W 24"
93	P0816093 POWER CORD 14G 3W 72"



Electrical Panel

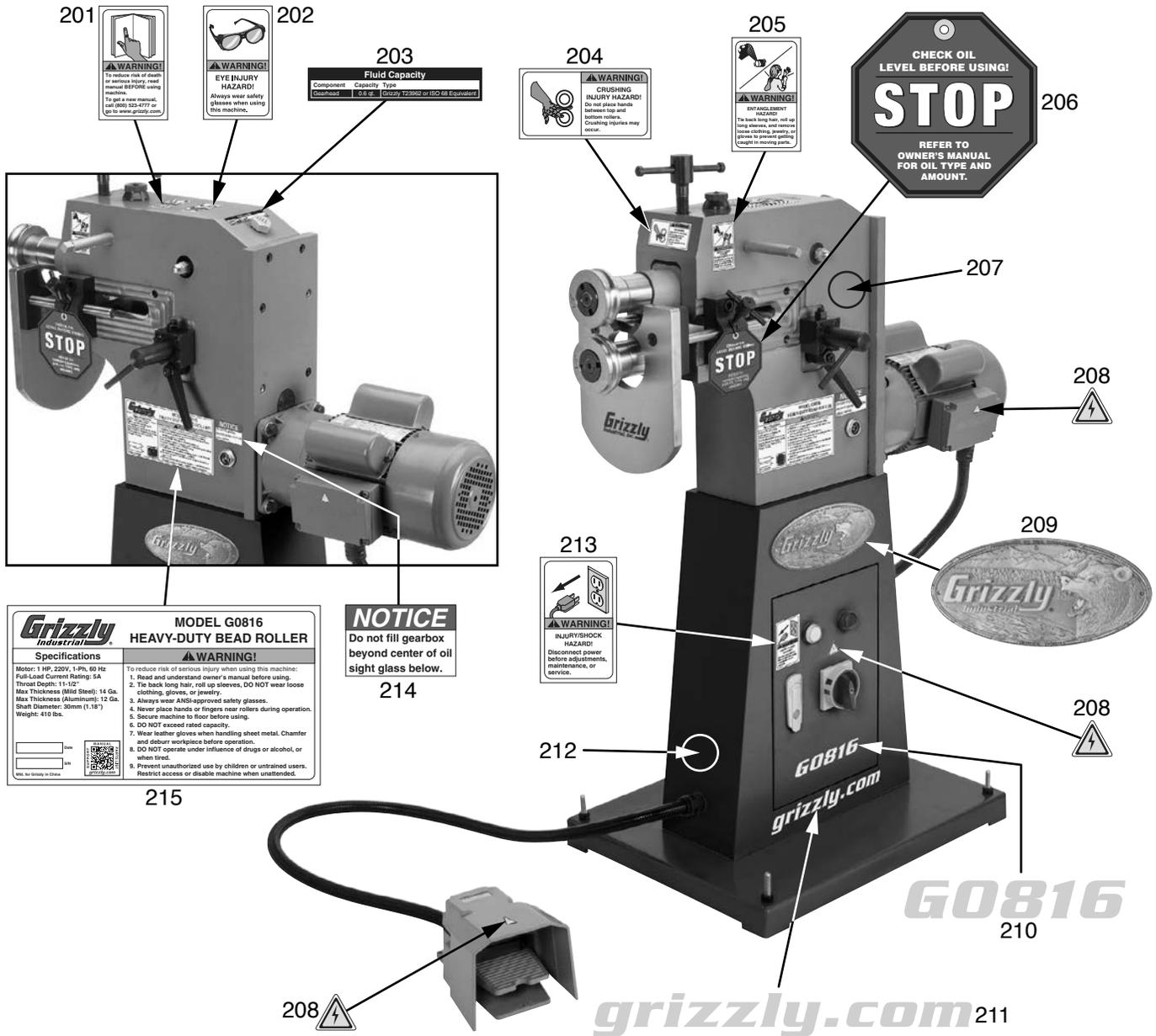


REF PART #	DESCRIPTION
101	P0816101 ELECTRICAL PANEL MOUNTING PLATE
102	P0816102 WIRE RACE 210MM
103	P0816103 WIRE RACE 176MM
104	P0816104 TERMINAL BLOCK UTILITY ELEC. JUT1-4RD 6.3A
105	P0816105 OL RELAY SCHN GV2ME14C/6-10A
106	P0816106 MASTER POWER SWITCH ASSEMBLY
107	P0816107 CONTACTOR SCHN LC1D12

REF PART #	DESCRIPTION
108	P0816108 DIN RAIL (UPPER)
109	P0816109 TERMINAL BAR 10P
110	P0816110 CAP SCREW M4-.7 X 8
111	P0816111 FLAT WASHER 4MM
112	P0816112 TRANSFORMER BEIJING AOHENGDA JBK5-63VA
113	P0816113 DIN RAIL (LOWER)
114	P0816114 CAP SCREW M6-1 X 12



Labels



REF	PART #	DESCRIPTION
201	P0816201	READ MANUAL LABEL
202	P0816202	EYE INJURY HAZARD LABEL
203	P0816203	FLUID CAPACITY LABEL
204	P0816204	CRUSHING INJURY HAZARD LABEL
205	P0816205	ENTANGLEMENT INJURY HAZARD LABEL
206	P0816206	STOP OIL FILL TAG
207	P0816207	TOUCH-UP PAINT, GRIZZLY GREEN
208	P0816208	ELECTRICITY LABEL

REF	PART #	DESCRIPTION
209	P0816209	GRIZZLY NAMEPLATE
210	P0816210	MODEL NUMBER LABEL
211	P0816211	GRIZZLY.COM LABEL
212	P0816212	TOUCH-UP PAINT, GLOSSY BLACK
213	P0816213	DISCONNECT POWER LABEL
214	P0816214	GEARBOX FILL LEVEL NOTICE
215	P0816215	MACHINE ID LABEL

⚠ WARNING

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





WARRANTY CARD

Name _____
 Street _____
 City _____ State _____ Zip _____
 Phone # _____ Email _____
 Model # _____ Order # _____ Serial # _____

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

- How did you learn about us?

<input type="checkbox"/> Advertisement	<input type="checkbox"/> Friend	<input type="checkbox"/> Catalog
<input type="checkbox"/> Card Deck	<input type="checkbox"/> Website	<input type="checkbox"/> Other:
- Which of the following magazines do you subscribe to?

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

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

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